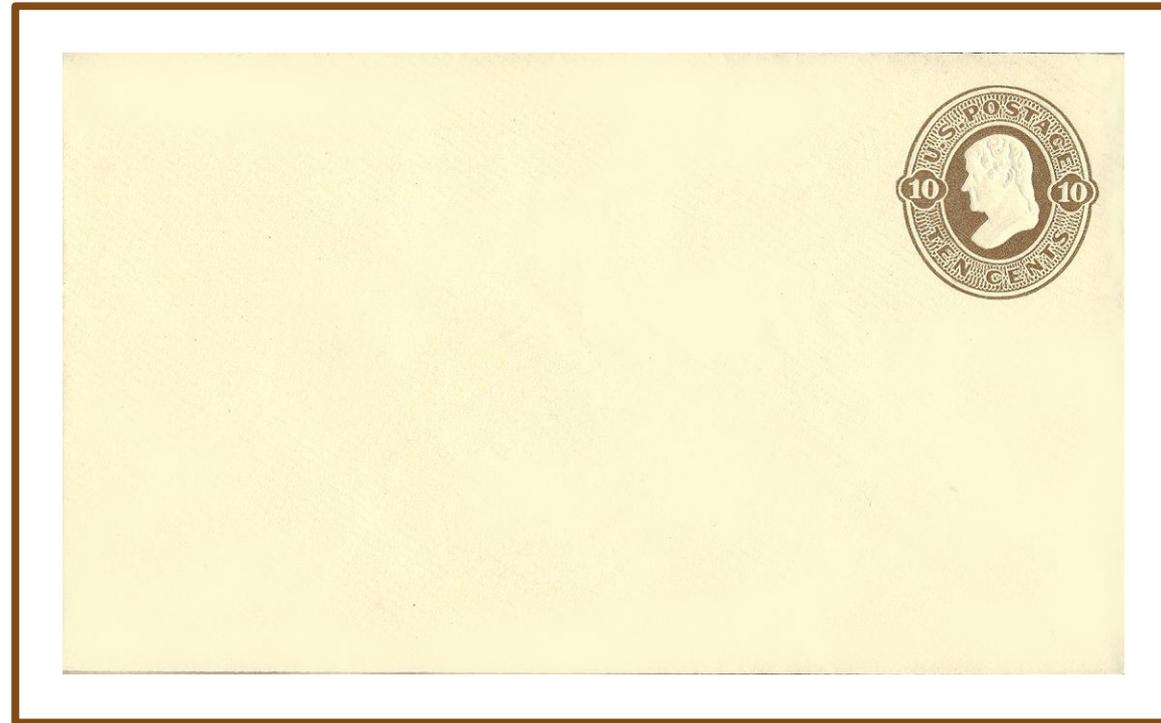


The All New 10 Cent US Envelopes of 1870-1874
New design, New contractor, A high point in quality.



The eBook

Version 1.0 October 28, 2013

Introduction:

Starting in 1855, the United States issued 10 cent stamped envelopes almost continuously through 1900.

1870 marked a turning point. Virtually every aspect of all US stamped envelopes was revised. For the first time, there was a one to one correspondence between adhesive stamps and stamped envelopes, in denomination, subject, and color.

1870 also saw the stamped envelope contract pass from George F. Nesbitt, the 1st US Stamped Envelope contractor, to George H. Reay. The envelopes produced by Reay, are widely regarded as the finest ever produced.

Part 1 of this exhibit and eBook looks at all aspects of the 10 cent Reay envelopes, and draw contrasts to earlier and later issues, pointing out the high level of quality produced by Reay.

Part 2 looks at usages and the associated postal history.

Outline:

- [1] On Quality and Refinement
- [2] Perspective: A time line of 10 cent envelopes and rates.
- [3] The Contract
- [4] George H Reay
- [5] The Design
- [6] Proofs
- [7] Paper and Watermarks
- [8] Size and Knife
- [9] Introduction to Orientation
- [10] Production Envelopes and Varieties
- [11] Specifying Orientation
- [12] Official Envelopes
- [13] Specimen Envelopes
- [14] Usages: Rates
- [15] Usages: Convention Rates
- [16] Usages: Steamship Rates
- [17] Usages: Express Company
- [18] Conclusion
- [A] Appendices

Scope: Pre-Production through normal use period 1870 – 1880.

This eBook is written to accompany a single frame, traditional style, Exhibit by the same name. Both the Exhibit and eBook are each intended to stand on their own. The eBook contains all the information contained in the exhibit including scans of all the philatelic material. In addition, the eBook expands on points introduced in the exhibit, and provides information on additional, related subjects.

The Exhibit uses a non-standard format featuring (2) 18”w x 48”h panels and a multi-layer mounting method, where the philatelic items appear through windows in the top sheet. This allows the indicium to be displayed without displaying the entire envelope. The large page format affords greater flexibility of arrangement.

The exhibit assumes a certain amount of philatelic knowledge. A QR code in the exhibit link to this eBook posting. **The eBook** is written for all levels of experience, containing *Stamped Envelope Basics* as well as advanced studies and original research. If you're new to stamped envelopes, this may help shorten the learning curve.

The Subject, The 10 cent Reay envelopes were chosen in part because their limited scope would fit well into a single frame. The traditional treatment was chosen to illustrate a wide variety of postal stationery topics, as well as a certain amount of associated postal history.

Quality & Refinement, a recurring theme throughout the Exhibit and eBook is introduced in the Preface.

Rarity and Condition: All 10¢ Reay material is scarce. Bear in mind that 10¢ stamp production during the same time frame was more than 125 x 10¢ envelope production. Top quality used material is especially hard to find. In recent years, these envelopes have joined the ranks of those that catalog higher *used* than *mint*. With this in mind, all available material is presented, regardless of condition. Ugly covers have stories to tell too.

Studies: A study group of 30 items was used in the research for this project. Two detailed studies were undertaken: **An analytical color study**. This study has shown interesting results, especially when comparing the brown vs olive shades, however, calibration concerns persisted at the time of this writing. As a result, only general, relative, results will be presented at this time. **A study of knife and paper orientation**. As a result of this study, methods were developed to specify, record and display the orientation of a given envelope. An orientation icon is shown for each cover showing how the blank was cut from the paper, and how the watermark is oriented on the envelope. The usefulness of this data became apparent in support of new conclusion concerning the Olive shades.

A Work in Progress: As with the underlying collection, this eBook is a work in progress and will be updated (and corrected if necessary) from time to time as new material and information become available.



Some Thoughts (and Ramblings) on Collecting Stamped Envelopes: (Based in personal experiences)

Stamped envelopes are one of the most under appreciated categories of philately. They have long been relegated to the back of the book, even though their intended use, for postage, is the same as regular adhesive stamps. This can most likely be traced to an era when philately was mainly about filling album spaces. Envelope entires don't fit well into pre-printed albums. The options: ignore them, or cut the "stamps" off and put *them* in an album. Today, cover collecting and postal history hold a high place in philately, yet stamped envelopes still lag behind.

Collecting stamped envelopes can be very rewarding. True rarities can be obtained by average collectors. It's not unusual to find original issue quantities in the low thousands or less. In some cases, items with estimated quantities in existence of 10 or less, can be purchased for a few hundred dollars.

A "traditional" collection of stamped envelopes can contain all of the categories that apply to adhesive stamps, plus envelope only features like size, knife, and return requests.

Collecting used entires opens the door to the world of Postal History, the study of rates, markings, Postal Systems, and other subjects related to how the envelope traveled through the mails. Used envelope entires are by definition Postal History, since they exist in the form that traveled through the mails. With used stamps on the other hand, one needs to make the jump to collecting 'on cover' for the Postal history to be revealed.

A specialty area of Postal History is Express Company uses. Once Stamped Envelopes were issued in 1853, the Express Co's were required by law to use them (as opposed to adhesive stamps) for all mail that they carried privately. As a result, most Express uses are on Stamped Envelopes.

Stamped Envelope collecting options are great. Very few of us have the resources to form a complete collection of mint envelopes. Most collectors specialize. Break the bonds of the checklist. Just because it's cataloged, doesn't mean you have to collect it, and more importantly, just because you have one doesn't mean you can't buy another. Many varieties are not cataloged. Make your own catalog entries. For instance, color varieties of certain issues can make a dramatic display. Try to gain an understanding of the significance of different issues and envelope features, then choose things that you find interesting. Find a particular issue attractive? - Collect it. The "Stamped Envelope Basics" boxes introduce many aspects of the subject.

Postal History is a fascinating area with few limits – there is no such thing as a complete Postal History collection. Regardless of what you collect, learn as much as you can about it – the fun is in the details.

The philatelic material presented here represents a relatively deep collection of a very specific issue.

Cut Squares: To most Envelope Entire collectors, cut squares are like stamps with the perf's cut off. Over the years, many rare and valuable entires have been destroyed for the sake of filling a space on a cut square page. Nothing makes this collector cringe more than seeing a used 40 cent cut square on ebay. NEVER EVER cut up a scarce used item regardless of condition – it may be the only one in existence. Even cutting up a stained hi-cat mint entire can deprive a collector on a tight budget. Stained or damaged entires can often be displayed by overlapping a nice, related item (White over Amber, Size 21 over Size 25, etc).

Stamped Envelope Basics: Features and Cataloging:

Stamped envelopes are generally cataloged by Die, Ink Color, Paper, Size, Watermark, Knife, and Gum all of which will be examined in the following pages.

Collecting Cut Squares deals with only Die, Ink Color, and Paper. The Scott Catalog lists only these features.

Collecting Entires (the complete envelope as issued) generally adds Size, Watermarks, and Knife, to the features collected. These can help add additional chronological information, and help to pinpoint the exact origin. Many early envelope Working Die Types have also been cataloged. The UPSS Stamped Envelope Catalogs and their predecessors (Thorp, Bartels, Tiffany Bogert & Rechert, etc) detail all of these features.

Stamped Envelope Specimens are listed in a separate UPSS Catalog, as are Essays & Proofs.

In this eBook, we will also delve into two areas not commonly considered; Watermark varieties & orientation, and color analysis of ink and paper.

Preface:

[1] Refinement and Quality, The Hallmarks of the 1870 Issue: {10}

Refinement and quality – two words that well describe the 1870 envelope issue. Virtually every aspect of the US Stamped Envelopes was refined in 1870. Thanks in no small part to George H Reay and the people he employed, the issue bearing his name is widely regarded as the finest US stamped envelopes ever produced. Reay was able to maintain a consistency not seen previously, or for years afterwards. While Reay played a major role, the stage had been set before, and during, the bidding process, as part of the reform and modernization efforts of Postmaster General John A J Creswell.

In late 1869, PMG Creswell questioned the legality of the often extended Nesbitt stamped envelope contracts, and, on the advice of the, Attorney General, canceled the current contract, and called for bids for a new four year contract.

A careful reading of the original advertisement for bids for the new contract, leads one to believe that the Department was not entirely satisfied with the current envelopes from George Nesbitt. It states that the current envelopes are not to be regarded as the style and quality required for the new contract. It also indicated that the winner will be the one *considered most advantageous to the Department* taking into account prices, quality, workmanship, and ability.

Creswell appointed a commission *to review bids and report on the relative merits of said samples and specimens taking into consideration the prices set forth in the several bids.*

In both cases above, price does not appear to be the prime consideration. It seems apparent that PMG Creswell had improvements in mind for the US Stamped Envelopes.

The Commission, headed by Third Assistant PMG W H H Terrell defined several improvements which, when implemented by George Reay, would help bring about the refinement and quality seen throughout the new issue.

First, the commission recommended three grades of each class of envelope: *Best, Medium, and Ordinary, believing that by the adoption of these grades, every public demand can be met, both of quality and price, and the use of stamped envelopes thereby considerably increased.* This opened the door for premium envelopes for those willing to pay a little extra.

Second, they recommended that the new stamp designs of the National Banknote Co. be used as the basis for the new envelope dies. The envelope stamps to be oval instead of square. Prior to that, there had been no relation of stamp and envelope design.

Third, they recommended a new “monogram” watermark which would be more tasteful and harder to counterfeit.

Quality & Refinement

Keys:

Items related to Refinement and Quality appear throughout this eBooklet, and are boxed in Orange.

Quality & Refinement

Frame Line Color indicates the primary rate as introduced in the time line. Brown for unused, green for Express

RARE

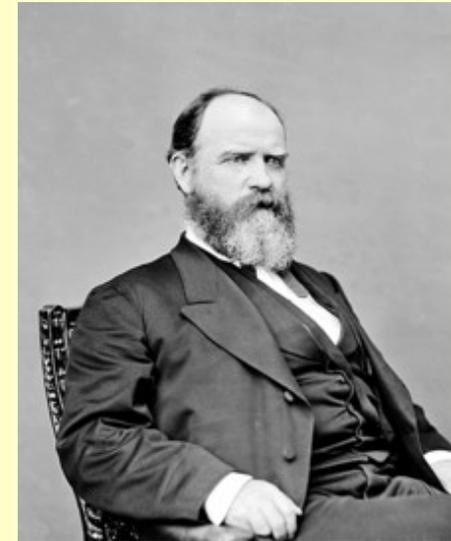
Rarity: All material seen here is quite scarce. Exceptionally rare items will include a note in the frame line, and in some cases a quantity known to exist.

Referencing:

Text [5.1] References: [5.1] Title or [5.1] Title

Text {5} References Bibliography

[1.1] PMG John A J Creswell:



John Angel James Creswell was born in Creswells Ferry (now Port Deposit), MD on November 18, 1828. He graduated from Dickenson College in 1848 and passed the bar in 1850. During the Civil War, he remained loyal to the Union and supported Lincoln and his efforts to end slavery.

Creswell's political carrier included election to the Maryland house of Delegates in 1861, the US House of Representatives in 1862, and the US Senate in 1864.

He was appointed Postmaster General by President Grant on March 5, 1869. Many consider him to be the best, organizer ever to hold the office. His constructive reforms and modernization cut costs while increasing service. These efforts were especially beneficial in the ever expanding west. He also worked to revise postal treaties, reducing international rates. He led the effort to abolish the *free franking privilege* extended to congress an government agencies. This resulted in calls for his removal, but Grant resisted. The penny post card was also introduced during his tenor. He resigned suddenly in 1874, giving no official reason. Some speculate it was due the impending scandals in the Grant administration. {20}

[2] Perspective: A Time Line of US 19th Century 10 cent Envelopes

Dates and Rates of Importance to 10 Cent Envelopes {30,40,50}

Envelope Issues

Rates, Domestic and Foreign

1851

July 1, 1851: New, reduced rates go into effect

Domestic 1st Class: <3000 mi. 3¢; >3000 mi: 6¢, The later commonly known as the "California Rate"

Foreign Mail: New reduced rate for letters carried "*wholly or in part by sea, to or from a foreign country*" of 10¢ if less than 2500 mi, and 20¢ if greater than 2500. This applied only to steamships with mail contracts on established postal routes.

Aug. 31, 1852: Stamped envelopes authorized by Act of Congress. Contract issued to George F Nesbitt Co of New York on Oct 31 1852

1853

1st US Stamped Envelopes

June 1853: After delays, George Nesbitt began delivering envelopes. Portions of the design were based on the British envelopes issue of 1841.

Initially only 3¢ and 6¢ denominations were issued. The 3¢ in red, in note and letter size, the 6¢ in red, in official (legal) size, for 2x rate, and in green in letter size for the 6¢ rate for over 3000 mi (the California rate). Interestingly, no 6¢ adhesive stamps were available.



1855

March 3, 1855: Domestic 1st Class >3000 mi "California Rate" increased to 10 cents

Apr 25, 1855 1st 10 Cent Envelopes

On April 25, Nesbitt delivered the first 10 cent envelopes in green, in letter size, for mail to the west coast. A small percentage found use for steamship mail.

Two different dies were used during the 1st issue, the difference being the label widths. These envelopes continued to be issued until the fall of 1860 when a new design was introduced.



July 1, 1855: Official Registration Begins as a way of tracking valuable letters. An additional fee of 5¢ was charged.

1860

2nd Nesbitt Issue

Oct 1860:

The new designs of 1860 are referred to by collectors as the "Star Dies". Again, 3¢, 6¢, and 10¢ denominations were issued, with a new 1c envelope added for drop letters. Also, issued in limited quantities was a 4¢ envelope with a 3¢ and 1¢ die to pay the 3¢ postage plus 1¢ carrier fee.



This Star Die design was similar to the new Canadian envelopes (their 1st) issued in early 1860, also produced by Nesbitt. The American Banknote Co held the Canadian contract and subcontracted to Nesbitt.

The Star Dies were short lived. Mint 10 cent Star Dies are rare while used ones are quite scarce.

By June 14, '61: Envelopes of new design ordered.

3rd Nesbitt Issue

Aug 15, 1861:

The new envelopes are made available. The design of the 1861 10 cent envelope is a bit of an enigma. In the earlier issues, all denominations were of the same design. The new 10 cent, however, is significantly more elaborate than its 3¢ and 6¢ counterparts. The design was apparently taken from the yet to be issued 12¢ – 40¢ Bi-Color envelopes,

These five dies are the only US envelopes to feature colored lettering in a colorless field. They are essentially "dressed up" Star Dies. Given the rush to produce the replacement envelopes, it seems odd that extra time would be invested in the 10 cent dies. Perhaps the 10 cent was already in the works.



1861

Feb 8, 1861
Initial Order for 12¢ – 40¢

George Nesbitt, in a letter to 3rd Asst PMG Zevely states that the dies for the new high denomination envelopes were being made, and requests an order. This indicates that the Bi-Color series were originally planned to be part of the "Star Die" issue, and that the design had been approved by that date. {1}



April 1861: The "Rebellion"

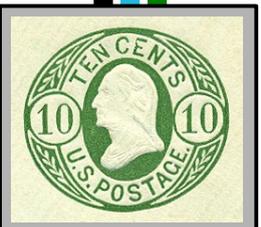
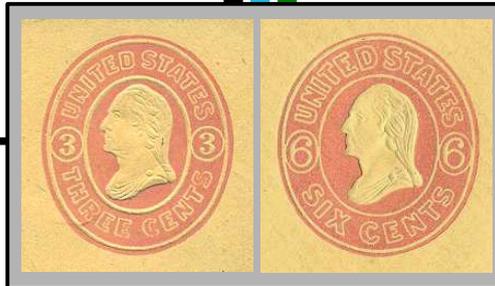
In April of 1861, the Civil War began. Shortly thereafter, the PO Dept made the decision to redesign all postal issues and demonetize all current issues to invalidate supplies in the hands of Southern Postmasters.

Demonetization:

Aug 15, 1861 – Jan 1862:

The 1st & 2nd issues invalidated.

Demonetization took place relatively quickly in the east. The west coast, where most 10 cent envelopes were used, was a different story. Long transit times made the transition more gradual. A mix of the old and new issues continued through the end of 1861, possibly even early 1862. At one point in late 1861, supplies of 10 cent stamped envelopes in California ran out altogether, forcing Wells Fargo to use 10 cent adhesive stamps on franked, plain envelopes.



1863

July 1, 1863:

10c Envelopes Discontinued:

The vast majority of 10¢ envelope use was for the 10¢ rate to the West Coast. With the end of the California Rate, very little demand was expected for 10¢ envelopes.

July 1, 1863

10c California Rate Discontinued

Domestic 1st Class rate becomes 3¢ per 1/2 oz regardless of distance, effective July 1.

July 1, 1863

Registry Fee Raised to 20¢

This rate included a return receipt. The registry fee was required to be paid in cash, not stamps.

1864

4th Nesbitt Issue

Sept, 1864: New designs issued for 2¢, 3¢, and 6¢ envelopes, but no 10¢.

Jul 1, 1864:

Steamship Rate Change

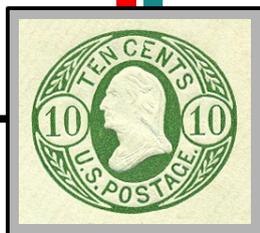
The 10¢ / 20¢ Steamship rate of 1851 is reduced to a flat 10¢ regardless of distance. This rate applies to mail carried to or from foreign ports by contract steamers, over established postal routes, and not covered by other treaties or conventions. The 10c rate of 1851 was restricted to distances less than 2500 miles. With the revision, 10¢ now paid the rate to, or from, any point in the US. It is referred to by many as the *Blanket Rate*.

1865

1861 10c Envelope Re-Issued

July 1, 1865:

The 1861 10 cent envelopes are reissued for use with the revised Steamship Rate. At the time, the 1861 10¢ – 40¢ designs were still current since the re-designed 9¢ – 40¢ “Pumpkin Head” series was not issued until Dec 1865. In fact, bi-color essays of the new 9¢, 18¢, and 30¢ denominations were produced in the 1861 design. The 10¢ envelopes were not redesigned, in part, as a cost saving measure, however the new designs would have been quite large for a letter size envelope.



1867- 69

June 1, 1867

20¢ Registry Fee of 1863 must now be paid by stamps.

Jan 1, 1868

**New, North German Union direct mail rate set at 10¢
Reduced to 7¢ July 1870**

Jan 1, 1869

Registry Fee reduced to 15¢.

1870

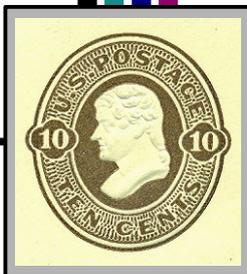
The 1870 Reay Issue:

George H Reay of New York was awarded the 4 year stamped envelope contract on March 30th 1870, and began production on July 3rd. In the mean time, protests had been filled by the losing bidders, resulting in the annulment of the contract on July 11th. Reay was issued a temporary contract to avoid shortages. After considerable controversy, Reay was once again awarded the 4 year contract on October 7th.

The new designs were derived from the engraved die of the new stamps produced by the National Banknote Co. For the first time, the stamped envelopes matched the adhesive stamps in denomination, subject and color. The Reay envelopes are widely regarded as the finest US stamped envelopes ever produced.

April 12th 1870:

As part of the new adhesive stamp issue, the National Banknote Co begins delivering new 10¢ stamps featuring a portrait bust of Thomas Jefferson. The stamp engraving served as the basis for the new stamped envelope design.



Jan 1870 – July 1871 European Rate Reductions:

The Jan 1 1870 rate reduction on mail to Great Britain from 12¢ to 6¢, and later, the NGU rate reduction to 7¢, then to 6¢, resulted in revisions to the Postal Conventions between the US and most major European countries. These set 10¢ rates for mail passing through England and the NGU to the signatory countries. Most of these rates remained in effect until the 1875 introduction of the 5¢ GPU universal rates.

1871

The 1874 Plimpton Contract and Initial Production:

Controversy once again surrounded the new contract, scheduled to take effect on Oct 1st. Newly appointed PMG Marshall Jewell, of Hartford CT, apparently favored The Plimpton Manufacturing Co, also of Hartford. After the initial bids were rejected on a technicality, the contract was awarded to Plimpton on Sept 23rd 1874. Reay protested on the grounds that Plimpton was subcontracting the production to The Morgan Envelope Co. in violation of the contract. This forcing Plimpton, to produce the envelopes in their facility with the help of Morgan. Considerable delays occurred. Instead of annulling the contract, Jewell ordered envelopes from Reay to bail out Plimpton. Plimpton produced new 1¢, 2¢, 3¢, and 10¢ dies which were judged unacceptable, but were allowed to be used temporarily. These are generally referred to as the "Defective Dies". Compare the 10¢ seen here with the Reay Die above. 10¢ envelopes with this die were produced in limited quantities, and are unknown used. PMG Jewell had ordered a significant quantity of Reay 10¢ envelopes as a safety net.

Jan 1 1874: Resistry Fee Reduction

The fee to register a letter was reduced from 15¢ to 8¢. This resulted in a total rate of 11¢ for a domestic registered letter. 10¢ + 1¢ was the only option for payment with 2 stamps. This rate was short lived, lasting only until July 1, 1875.

1874



The Plimpton Contracts, 1874 - 1899:

Plimpton began delivering 10¢ envelopes from the new, approved die (seen here) in early 1875. This die remained in use through the 1890 contract. Small quantities with watermark 8 (1890 contract) exist but are unknown used.

This die can easily be distinguished from the Reay 10¢ die by looking at the queue (tied hair) at the back of the neck. The line work on the Plimpton die has a coarser appearance as well.



Reay



Plimpton

1874



July 1 1875: Registry Fee Raised to 10c:

The Jan 1 1874 8¢ registry was raised to 10¢. This rate would remain in effect until 1893. 10¢ stamps and stamped envelopes found use paying the registry fee for domestic and foreign mail, with the postage being paid by adding adhesive stamps.

1875

July 1 1875: GPU Rates:

Universal international rates begin to be implemented under GPU. 5¢ per 1/2 oz to Central American & Europe, 10¢ per 1/2 oz to South America, Asia, & Africa. 10¢ stamps and stamped envelopes found use paying single and 2x rates.

1883 - 85

Oct 1 1883: 1st Class Rate Reduction:

Domestic 1st Class rate reduced from 3¢ to 2¢ per 1/2 oz

July 1 1885: 1st Class Rate Reduction:

Domestic 1st Class rate reduced from 2¢ per 1/2 oz to 2¢ per oz

1893

Jan 1 1893: Registry Fee Reduced:

The 10¢ July 1, 1875 registry fee was reduced 8¢. 10¢ stamps and stamped envelopes found use paying the combined 2¢ 1st class postage + 8¢ registry fee.

The Columbian Issue, 1893:

This special series was issued in conjunction with the World's Columbian Exposition to commemorate the 400th anniversary of Columbus's discovering America. The set consisted of 1¢, 2¢, 5¢, and 10¢ envelopes, all of the same design, which was similar to the reverse of the Columbian half dollars. Interestingly, the stamped envelope indicia are also round. The issue was produced on special, extra quality creamy white paper with a special watermark. This paper was never used for other envelopes. Approximately 215,000 of the 10 ¢cents were issued.



1900 and Beyond - The Long Dry Spell:

The Columbian 10¢ envelopes remained in limited use into the early 1900's. They marked the last 10¢ postal stationery issued until 1947 when 10¢ Air Letter Sheets for Foreign mail were issued. The next 10¢ envelope was not issued until 1968 when the Domestic Air Mail rate went to 10¢. The next 10¢ regular issue envelope came in 1973 when the Domestic 1st Class went to 10¢. Finally, the next 10¢ Commemorative was the Tennis envelope of 1974.

***Part 1:
The Envelopes***



[3] The Contract:

[3.1] The First Contract:

[3.1.1] Cancellation of the Nesbitt Contract: {10}

Contrary to common belief, the Nesbitt contracts of 1853, 1857, and 1861 were competitively bid. During the Civil War, economic conditions caused significant increases in the cost of paper and other supplies. Nesbitt and the Department, under PMG Blair and PMG Randall, came to a series of agreements which resulted, first, in cancellation of the existing contract, and replacing it with a negotiated one, which was later extended three times, the last to end March 31, 1871.

John A J Creswell replaced Randall as PMG in 1869, and served until 1874. During that period, he successfully reorganized and reformed the department, and codified postal law. On Nov. 24, 1869, Creswell requested an opinion from Attorney General Hoar on the legality of the ongoing Nesbitt contract extensions by his predecessor. On Dec 4, 1869, Hoar's opinion was that, even though the contract contained a clause allowing mutually agreed extensions, the option for extension was not in the original advertisement, and therefore violated the Statute of Aug 26, 1842, which required that all stationery and printed matter be supplied by the lowest bidder. As such, it was within the authority of the PMG to cancel the extended contract.

In an order of Dec. 23, 1869, Creswell terminated the contract, effective Apr. 1, 1870. George F. Nesbitt was later issued an interim three month contract at a 15% price reduction, to fill the gap

[3.1.2] January 10, 1870: The Advertisement:

On Jan 10, 1870, ads appeared in major newspapers, calling for sealed proposals to furnish the Post Office Department with Stamped Envelopes and Wrappers for four years beginning July 1, 1870.

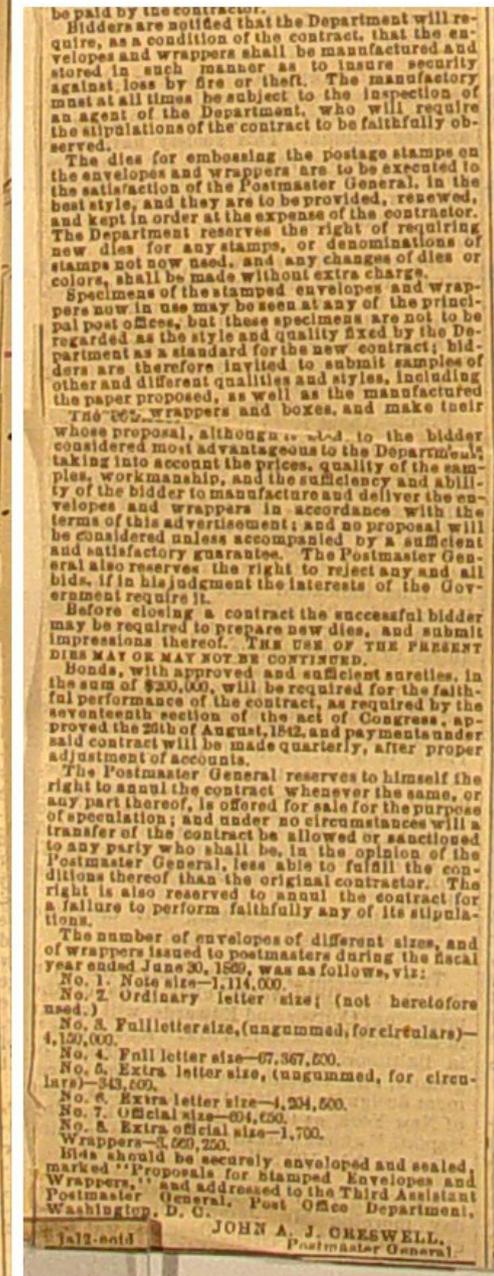
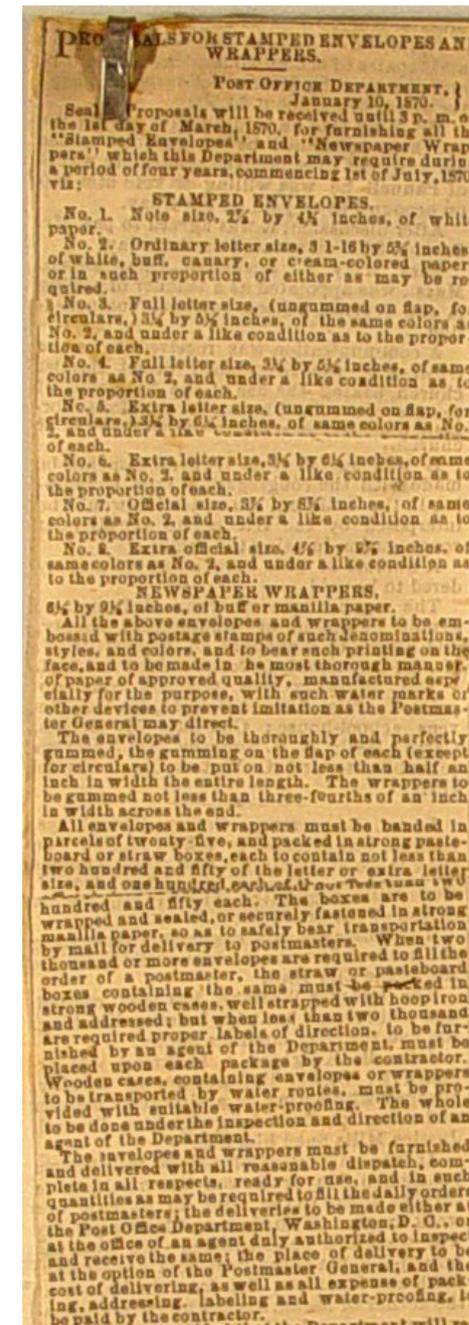
The ad specified the following:

- (8) different envelopes sizes plus Newspaper Wrappers.
- White, Buff, Canary, and Cream paper as well as manila for wrappers.
- Stamps are to be embossed, and paper is to be watermarked.
- Dies are to be supplied and maintained by the contractor.

The ad stated that Specimens of the current envelopes may be seen at principal Post Offices, but that they are not to be regarded as the style and quality required for the new contract. Bidders were invited to provide samples of other designs and qualities.

The ad also stated that the winner would be the contractor whose proposal was considered *most advantageous to the Department taking into account the prices, quality of the samples, workmanship, and the sufficiency and ability of the bidder to manufacture and deliver the envelopes and wrappers in accordance with the terms of this advertisement*, and that *Before closing a contract, the successful bidder may be required to prepare new dies and submit impressions thereof. THE USE OF THE PRESENT DIES MAY OR MAY NOT BE CONTINUED.*

The statements in the last two paragraphs above seem to indicate that the Department was not entirely satisfied with the current envelopes and were looking for improvements. The statement about how the winner would be chosen, seem to set the stage for choosing a new contractor over Nesbitt, who had traditionally been the low bidder. {10} (2033)



[3.1.3] Proposals; March 1, 1870:

Proposals were received (and opened on Mar 1) from the following eight companies:

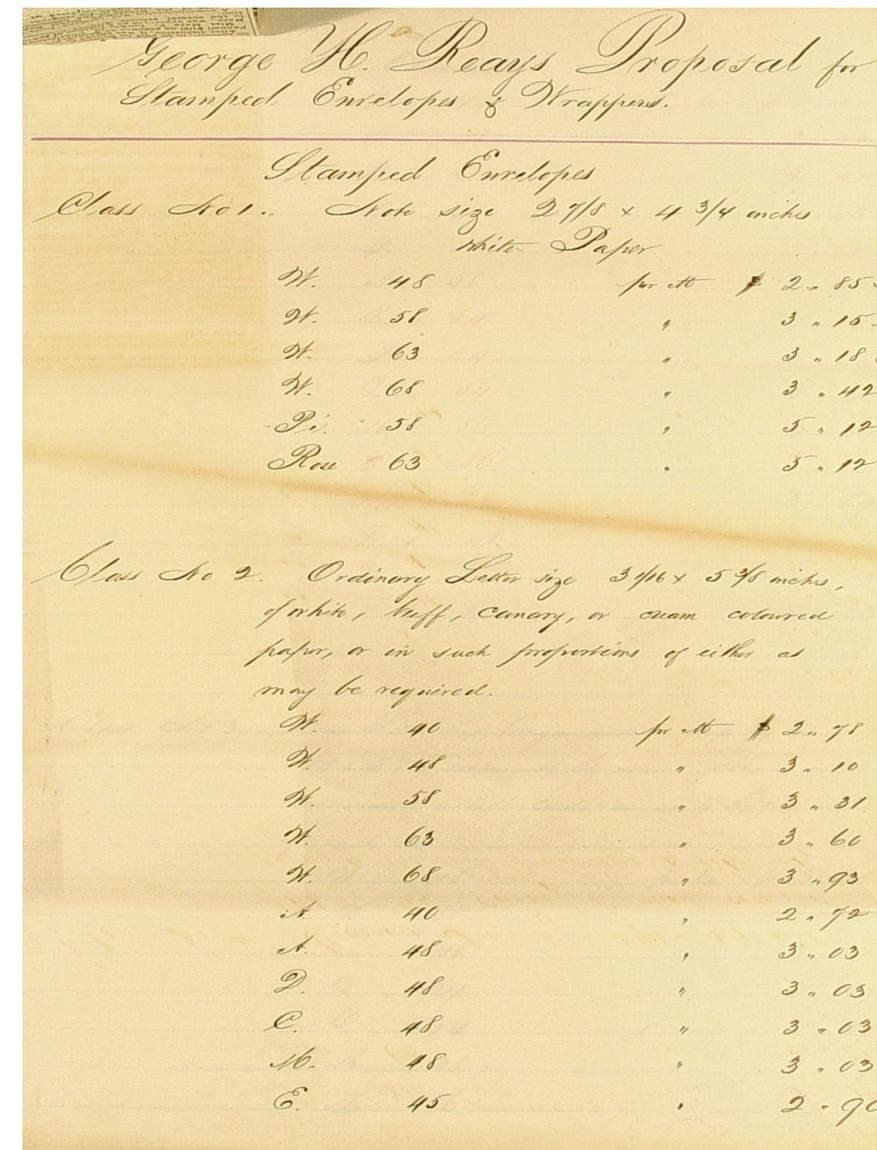
- George F Nesbitt
- George H Reay
- Samuel Raynor & Co.
- Berlin Jones Envelope Co.
- E. D. Lockwood Co.
- National Banknote Co.
- McLaughlin Brothers
- Woolworth and Graham

The first page of Reay's proposal is shown at right. In his Feb 28th cover letter, Reay stated:
I respectfully submit specimens of dies and stamping which I have prepared to illustrate in part the quality and style of my work.

It should be noted that since the proposal prices are for printing and envelope costs, no mention of stamp denomination is made. The stamp value only became effective when the envelope was sold by the Post Office.

A total of 763 sample impressions and envelopes (essays) were sent with the 8 proposals.

A sampling is shown on the following page. {10}



Proposal from George H Reay. [National Archives]

[3.1.4] Stamped Envelopes Basics: Essays:

Essays are artists conceptions of a proposed design for a stamp or envelope die. Most differ from the finally accepted design, many bearing no resemblance thereto. Others represent early stages of the final design. In some cases, the design process can be illustrated through a series of essays.

Essays can take a number of forms, including pencil drawings; ink drawings (often in color); surface printed designs from temporary dies; fully embossed examples; and models.

Models are built up essays of several forms. For example, a bust cut from a production envelope, pasted on a surface printed, or hand drawn background.

Envelope die essays can take the form of an entire, a piece (similar to an envelope front), or a cut square (small piece). Many never existed as entires. Some essay cut squares only exist with clipped corners.

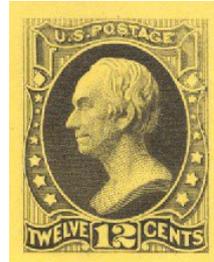
Envelope essays can also be of a final die on a never issued size envelope. These blur the difference between Essays and Proofs.

[3.1.5] Essays:

Representative examples of Essays supplied with the original bids for the 1870 contract. {60}



Seven Essays supplied by George Reay.

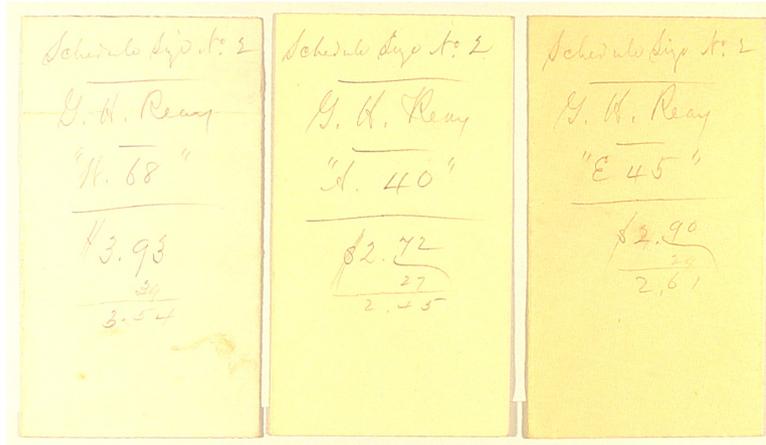


The National Banknote Co supplied a large number of Essays of various designs and colors, 12 of which are seen here. They were described by the Commission as "beautiful" but were rejected since the specifications called for embossing.

A Non-Denominated Essay from E D Lockwood

[3.1.6] Paper Samples:

Reay also sent at least 12 samples of complete, unstamped envelopes to illustrate paper colors and quality. {10} (20080)



[3.1.7] March 8, 1870: The Commission:

In an order dated Mar 8, 1870, Postmaster General Creswell appointed a commission consisting of 3rd Assistant PMG William H H Terrell, Charles F MacDonald (Superintendent of Money Order System), and John J Hayden (Chief of Stamp Division) to review bids and report on the relative merits of said samples and specimens taking into consideration the prices set forth in the several bids. {10}

Quality & Refinement

[3.1.8] March 26, 1870: The Commission Report:

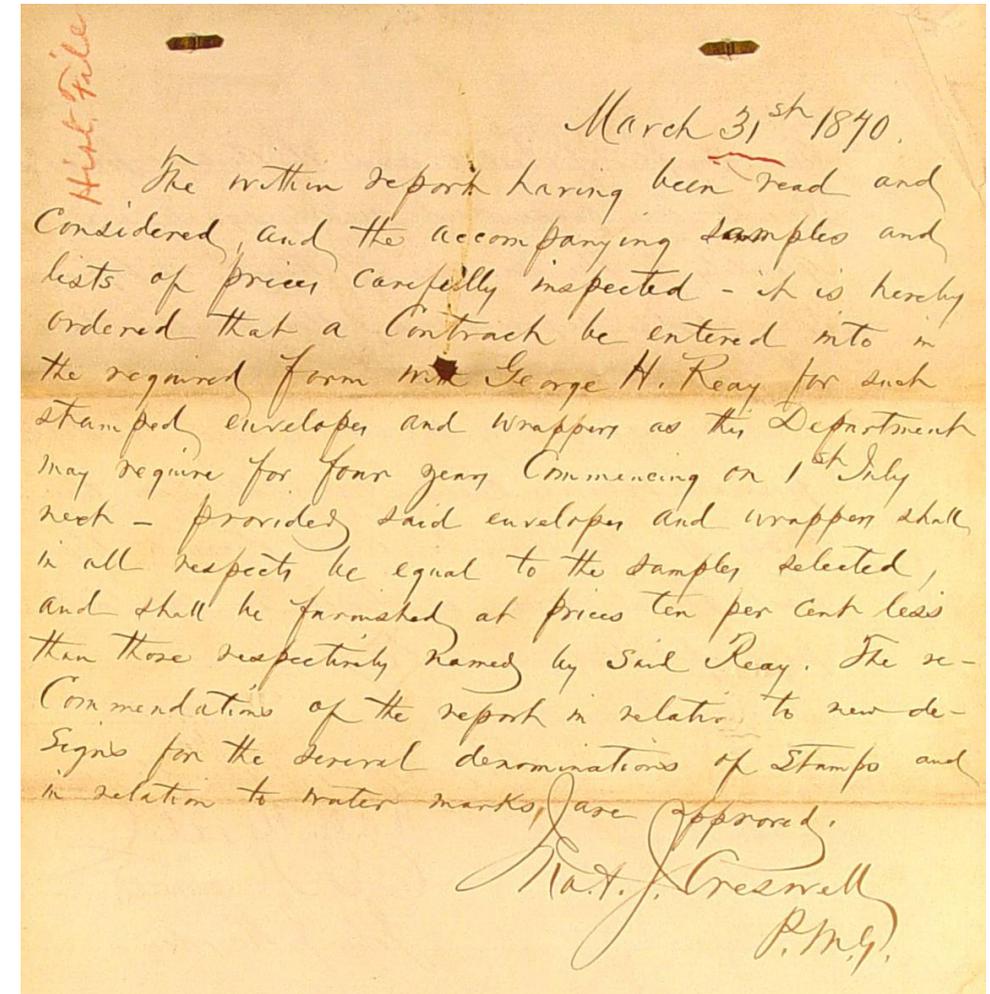
The report of the commission was instrumental in steering the course of stamped envelopes for years to come. First, the commission recommended that three grades, or qualities be adopted for envelopes to allow the public to choose the best balance of quality and price. Second, they recommended that the new stamp designs be used as the basis for the new envelope dies. The envelope stamps to be oval instead of rectangular. Third, they recommended a new "monogram" watermark which would be more tasteful and harder to counterfeit.

Evaluating the bids was a complicated process since many bidders priced as many as six quality levels, and the relative overall quality varied from bidder to bidder. In the opinion of the commission, three bidders made the grade: Berlin & Jones Co, George F Nesbitt Co, and George H Reay. Of the three, Reay was the highest priced, but submitted the highest quality samples, and Berlin & Jones was the lowest priced, with good quality approximately equal to Nesbitt. This would seem to eliminate Nesbitt. The report was sent to PMG Creswell on March 26, 1870. {10}

Quality & Refinement

[3.1.9] March 31, 1870: The Contract Awarded to George H Reay:

In an order dated March 31st 1870, Postmaster General Creswell awarded the four year Stamped Envelope Contract to George H Reay of New York, provided that the envelopes to be supplied were of equal quality to the samples selected, and that the prices are reduced by 10%. The price reduction apparently to compensate for the price difference with Berlin Jones & Co. The contract was executed on April 6, 1870. Reay immediately began work on the dies for the new envelopes. {10}



Order from PMG Creswell awarding the 1870 Stamped Envelope contract to George H Reay {10} (2066)

[3.2] The Second Contract:

[3.2.1] April 5, 1870: Protests:

On April 5, Samuel Raynor sent a letter to PMG Creswell complaining that Reay's bid was higher than his, and stating that the samples Raynor supplied were at least as good as Reay's. He asked for re-consideration of the award. {1} (2047)

On April 20, Berlin Jones sent a letter of protest citing that the figures in the commission report were in error. {10} (2048)

On May 17, a formal protest was filed with the Congressional Committee on Appropriations, by Samuel Raynor Co., Berlin Jones Envelope Co., and E. D. Lockwood Co. Six points were cited including: that Reay was given the opportunity to reduce his bid by 10% while others were not; that Reay's samples were no better than others; that the contract was made for other sizes than advertised; and that a clause for additional compensation was included. {10}

[3.2.2] July 11, 1870: Annulment and Temporary Contract:

A provision was included in the July 11, 1870 Act making appropriations for the Post Office Department, which stated that the public interest would be best served if the contract were re-bid.

On the same day, advertisements were placed for new bids. By this time, Reay had the new design envelopes in production. Bidders samples were supplied by Reay to illustrate what would be required for the new contract. [13.2.4] This was the first use of Bidders Samples in the bidding process.

On July 18, PMG Creswell ordered the contract annulled.

On July 19, a temporary contract was drawn up for supplying stamped envelopes through Sept 30, which was executed by Reay on July 21.

[3.2.3] August 11, 1870: Rebid and 2nd Award:

Three bids were received, George Reay, George Nesbitt, and Dempsey & O'Toole. Strangely, no bid was received from any of those who filed protests. On August 11, the new bids were opened. Dempsey & O'Toole was the low bidder.

On August 16, the contract was awarded to Dempsey & O'Toole. Given the outcome of the original award, this award was made solely on price.

George Reay immediately filed a protest stating: that Dempsey & O'Toole were not envelope manufacturers; that their bid did not conform to the advertisement; and that other contracts made with Dempsey & O'Toole by other Governmental Departments had been annulled. {30}

[3.3] The Third Contract:

[3.3.1] October 4, 1870: Dempsey & O'Toole Fail to Deliver:

Reay's allegations proved correct. On August 30, Dempsey & O'Toole applied for permission to assign the contract to Nesbitt. The PMG consulted the Department of Justice who stated that the PMG does not have the authority to allow the contract to be re-assignment. {10} (4008)

On September 29, three days prior to the October 1 start of the new contract, Dempsey & O'Toole submitted proofs of the 1¢, 2¢, 3¢, and 6¢ dies. They were immediately rejected by the Department as defective. On October 2, another set was submitted which were also rejected. The images below are Dempsey & O'Toole proofs. It is unclear whether these are from the first or second submission.



Dempsey & O'Toole Rejected Proofs {60}

Around the same time, an inspection was made of Dempsey & O'Toole's facility. It was found that they did not have sufficient equipment to produce the quantities and varieties of envelopes required under the contract. {50}

[3.3.2] October 4, 1870: The 2nd Annulment and Final Contract:

In a cabinet meeting on October 4, the decision was made to cancel the contract with Dempsey & O'Toole. Reay was immediately notified by telegraph. He expressed his willingness to fulfill the terms of his bid.

On October 8, The final contract was awarded to Reay for four years, ending October 1, 1874.

Dempsey & O'Toole filed a protest with Congress, which was rejected, but on February 28, 1871, an appropriation of \$29,433.89 was made to reimburse them for purchases made. {50}

[3.3.3] Fate ?:

It would seem as though fate stepped in to vindicate PMG Creswell's original "Most advantageous to the Department" standard. The three protesting bidders of the first round, never entered bids when the opportunity was presented to re-bid, and the Dempsey & O'Toole debacle would never have happened under the original standard. One way or another, it seems that the contract ended up where it belonged.

Two accounts exist concerning the Reay production. One provides great detail on equipment and personnel employed for the contract. The other says that the envelope production was done by Nesbitt. Perhaps Reay used Nesbitt to assist with overages.

[4] George H Reay: { 50, 70, 80, 90}

[4.1] George H Reay was born in Drogheda, Ireland on August 31, 1837. He emigrated to the US in 1854 or 1855. He was an imposing figure, standing 6' 3" tall. Soon after coming of age, he became a naturalized citizen.

Upon arriving in New York, Reay went to work for West & Berlin, the predecessor of Berlin & Jones Co. He was tasked with making improvements to the French made, Rabbate envelope folding machines. Although, he had little success on that project, in the process, he gained information and ideas for a new design. In 1856, Reay left Berlin & Jones and went to work for Butler & Bryan, a small envelope firm in Brooklyn, NY. The firm was soon purchased by Louis Negbaur.

[4.2] The Reay Envelope Folding Machine: With funding by Negbaur, Reay developed and built his new folding machine, which was first sold as the Negbaur Machine. Reay eventually left Negbaur and secured other funding to finish the development of his machine, completing the project in late 1862 or early 1863, 7 years after starting. He received US patent 39,702 on August 25, 1863. The machine was first manufactured for Reay by Martin Rau and Leonard Ankele, then by Rau & Ekstine, then, still later, by Martin Rau, and sold by Reay as the Reay Machine. Reay also supervised installation. From 1863 to 1865, Reay Machines were installed in at least six major envelope companies in the New York / Connecticut area, including Berlin & Jones Envelope Co, and Samuel Raynor and Co. both of whom would bid against Reay for the 1870 Stamped Envelope contract. The Reay machine was the first US made machine to gain a significant market share, and for many years, was practically the only mass produced machine on the open market. By 1876, it was said that 600 Reay Machines were in use in the US, Canada, and Europe. It was not until 1913 that another mass produced machine could out produce the Reay.

[4.3] Envelope Counting Mechanism: While working on the folding machine, Reay invented what has been described as the earliest, accurate counting mechanism for an envelope machine. He received a patent for the device on December 16, 1862.

[4.5] George H Reay Stationery: George Reay began manufacturing envelopes in the mid 1860's. The business, located at 77 John St in New York was prosperous, but Reay had a reputation as a big spender, especially when entertaining clients who came to New York. As a result, he never accumulate much capital.

By the time of the Stamped envelope contract, the factory occupied 22,000 square feet, over several floors. For stamped envelope production Reay employed 227 people under superintendent George Watkins, 43 men, 7 boys, and 177 girls. Their capacity was 550,000 stamped envelopes in a 10 hour day.

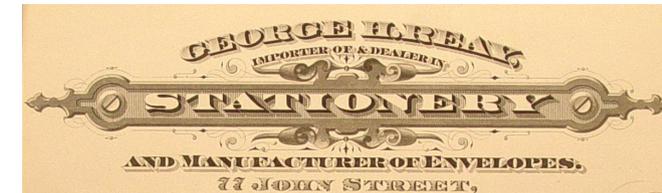
[4.6] Marie Martine Reay: In 1868, George Reay married Marie Martine, a native New Yorker. At the time, she was the forewoman at Reay's business. From all accounts, she was a brilliant business woman. After George Reay died on March 14, 1876 at age 39, she continued to run the business until selling it in 1887. From 1880 to 1887, she fought successfully for damages from infringements on her husbands patents. Stories have it that after disagreements with the POD concerning the stamped envelope dies, she carried them on a ferry, and dropped them in the East River south of the Brooklyn Bridge..



George H. Reay

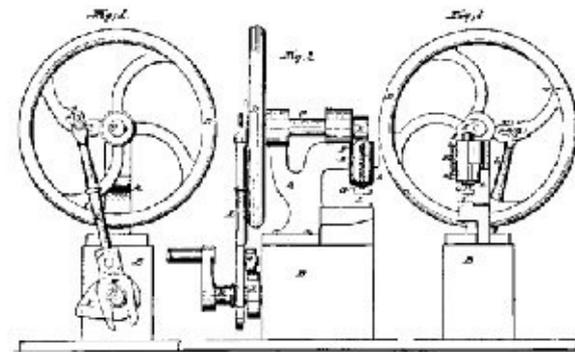


Mr & Mrs George Reay (seated)
George Nesbitt far left

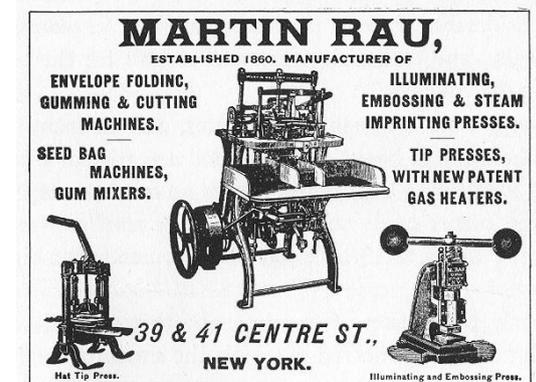


[4.4] Embossing Mechanism: Perhaps Reay's greatest contribution to Stamped Envelopes was the embossing mechanism he developed as an attachment to an envelope machine. He was granted US patent 61,686 on January 29, 1867. The quality of the impressions on the Reay envelopes has been attributed to this Embossing Mechanism.

Quality & Refinement



Reay Embossing Mechanism



Martin Rau Ad showing
Reay Folding Machine

[5] *The Design and Dies:*

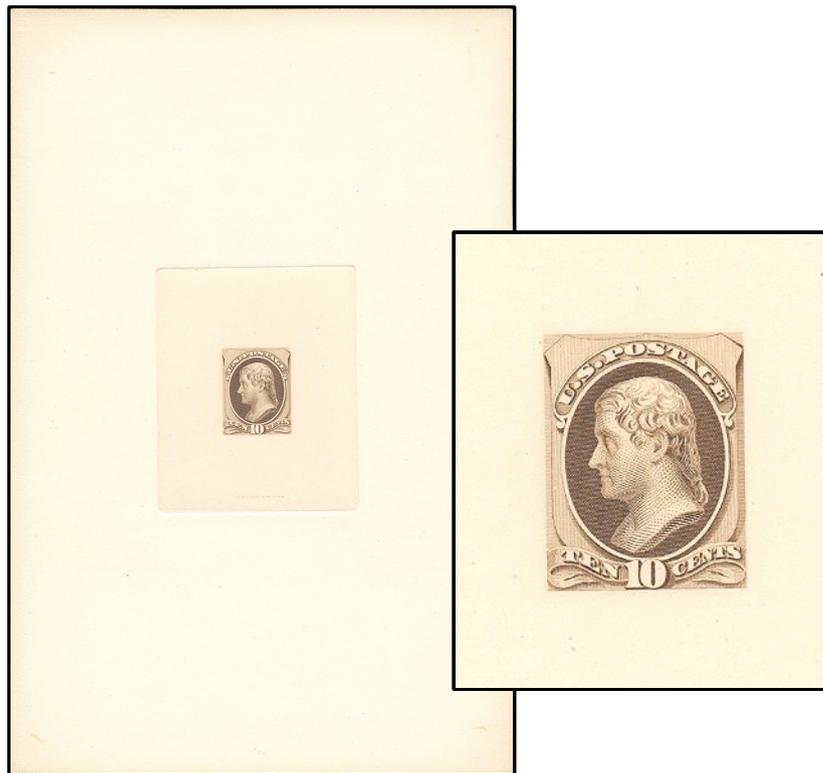
[5.1] Envelopes to Match Stamps: At the recommendation of the commission that reviewed the bids, the designs of the new series of stamped envelopes of 1870 were based on the engravings for the new Postage Stamps of the same year. This was the first time that US stamped envelopes and adhesive stamps shared the same subjects and colors. {10}

[5.2] The 10c Stamp Design was issued on April 12, 1870. it featured a portrait bust of Thomas Jefferson patterned after the life size marble statue by Hiram Powers. This statue and a statue of Benjamin Franklin, also by Powers, were installed in the US Capitol building in 1863.

The stamps were printed by the National Banknote Co. The stamp was designed by Butler Packard. The portrait portion of the 10c stamp was engraved by Lewis Delnoce. Both were employed by National Banknote. {100, 120}



Plaster Model for
Jefferson Statue
Smithsonian Museum



Die Proof of 10c 1870 Stamp (150P1)

[5.2.1] *Hiram Powers and the Jefferson Statue:*

Hiram Powers was born in Vermont in 1805. In 1818, his father moved the family to Cincinnati. Hiram worked several odd jobs before going to work for a local clock maker, where his modeling talents began to emerge. By 1826 he had developed a passion for sculpture and began working with local artists and a museum. In 1834, he moved to Washington, DC, where, over the next 3 years, his skills received recognition for modeling busts of distinguished men. In 1837 he moved to Florence, Italy, which had a long tradition of stone cutting, and good supplies of marble. In 1843, he produced *The Greek Slave* which gained him international acclaim. In 1859, Powers was commissioned by the US Government to produce two life size marble statues for the US Capitol Building, one of Benjamin Franklin, the other of Thomas Jefferson. Jefferson was carved between 1860 and 1862 and installed in 1863 in the East corridor of the House of Representatives wing. Powers remained in Florence until his death in 1873. {100, 130}



[5.2.2] *The Stamp Designer and Engraver:*

Butler Packard was born in Albany, NY in 1838. He began his career in the engraving field early on. His father was a script engraver. In 1860 Butler began working for the American Banknote Co in Brooklyn, NY. In 1869 he took a position with the National Banknote Co. as a modeler, where he designed the entire 1870 stamp issue, and in 1875, the 5c Taylor stamp

Lewis (Luigi) Delnoce was born in Italy around 1822 and apprenticed in the engraving business at an early age. By 1848, he was in business for himself in New York, engraving book illustration through the 1850's. He learned the bank note business from John W Casilear, and worked for the National Banknote Co from the early 1860's until 1870. Along with the 1870 10c Jefferson portrait, he also engraved the portraits for the 2c, 12c and 90c 1870 stamps. {100}

[5.3] The New 10c Envelope Die Design:

The Mar 26, 1870 report of the commission set up to review the stamped envelope bids [3.1.8] stated: *We recommend the adoption of new designs for the several denominations, conforming in colors and designs with the profile busts represented in the new series of postage stamps – the shape to be oval instead of square.* This appears to be the earliest reference to common designs for stamps and envelopes. The Mar 31, 1870 order of PMG Creswell accepts this proposal, stating *The recommendations of the report in relation of the new designs of the several denominations of stamps and in relation to water marks, are approved.* This is the same order that awarded the envelope contract to Reay. Illustrated on the previous page is a die proof of the new 1870 10c Jefferson stamp. The new 10c stamp was issued on Apr 12, 1870. These proofs would most likely have been pulled before the Mar 31 PMG order. A Proof like this may have been sent to Reay as part of the design process for the envelope dies. {10} (2063, 2066)

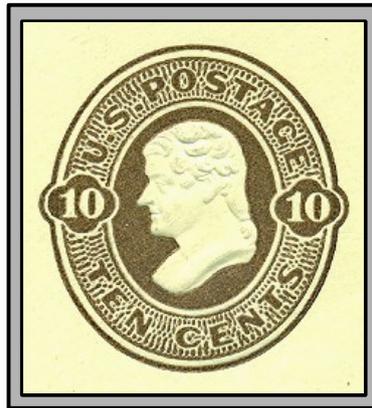
Quality & Refinement

[5.3.2] The Reay Dies:

The dies for the Reay envelopes were produced by Rudolph P Laubenheimer, a master engraver and die sinker, who came to the US from Holland in 1851.

The Laubenheimer dies are widely considered the finest ever produced for US stamped envelopes. Compare the Reay example to the other 10 cent dies shown to the right.

Note the fine detail in the line work in the outer oval. This added a new dimension to the 1870 envelopes. Stamped envelopes are printed in what amounts to solid color. The colorless, embossed areas of the indicium are recessed into the die. Stamps are line engraved. The ink is held in the engraved lines. The width, spacing and shape of the line produce the effects of shading and contouring with a single ink color. The fine line work in the new dies produces some of the same effects.



The New Reay 1870 10¢
Shown 1.5x

Quality & Refinement

[5.3.1] Stamped Envelope Basics: Dies:

The term “Indicium” refers to the printed and embossed “stamp” on the envelope. Note that Indicium is singular while Indicia is plural – a commonly seen mistake.

Like other postal issues, stamped envelopes are printed on paper and assigned a value by the POD. Unlike other postal issues, the indicium on stamped envelopes is also embossed, giving them some of the characteristics of coins. Indeed, the manufacturing processes bear certain similarities.

The dies used to print and emboss the envelopes have a negative impression of the finished design. Ink is applied to the flat area of the die, which prints the field areas of the indicium. At the same time, a rubber or leather backing plate forces the paper into the un-inked, recessed areas of the die, producing the colorless, embossed bust, lettering, and line work.

Master Dies: The master die is a small cylindrical piece of steel. The design is engraved into the end of the cylinder, as a negative, mirror image, that is, the raised areas of the design are cut into the die blank. Much of the work was done by hand by highly skilled engravers. The area of the blank surrounding the engraving is trimmed away to a depth deeper than the engraving. Once the die is accepted, and trimmed, it is hardened.

Hub Dies: During the process of printing and embossing millions of envelopes, the die wears. Paper is somewhat abrasive. Because of the expense and skill of producing the master die, master dies are not used for production printing unless the expected quantities are very low. Furthermore, because of the manual engraving process, no two dies would ever be identical.

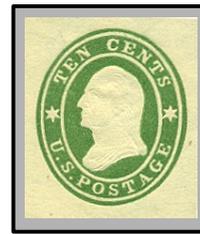
Instead the master die is used to produce working dies. Since the working die, like the master die, must be a negative (mirror image), an intermediate die, known as a hub (or hob) die, is first produced. The hardened master die is forced under high pressure into another cylinder of soft steel in a process called hobbing. The hub die is now a positive image, resembling the face of a coin. The hub die is then hardened.

Working Dies: The hobbing process is now used again to produce working (production) dies from the hub die. Many working dies can be produced from one hub die. On earlier issues, the process described here was only used for the bust. The lettering was then engraved by hand directly into the working dies. The result was minor variations from one working die to the next. The working die varieties have been cataloged for most of the early issues, and are collected by specialists.

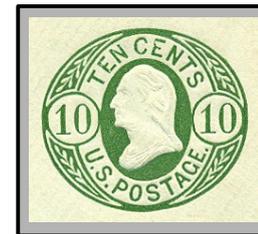
[5.3.3] Perspective: Earlier and Later 10¢ Envelope Dies:



Nesbitt 1855



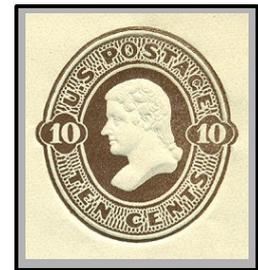
Nesbitt 1860



Nesbitt 1861



Plimpton 1874
Rejected



Plimpton 1874
Approved

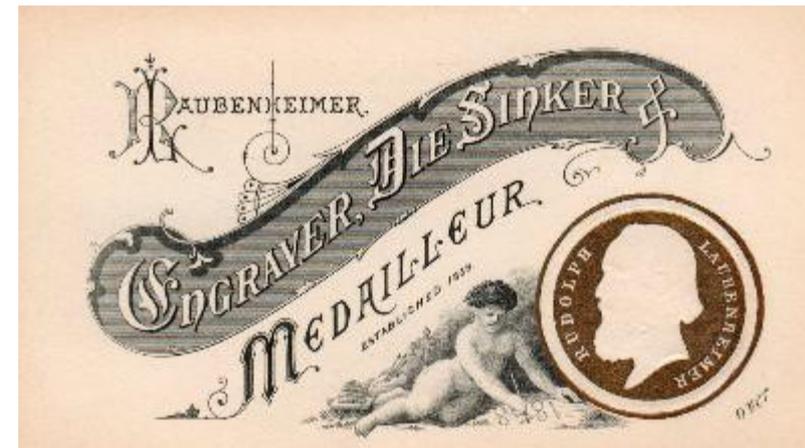
[5.3.4] Rudolph P. Laubheimer was born on July 11, 1833 in Germany. Early in life, he showed a talent for the arts. By age 14 he was working as an engraver's apprentice in Holland. At age 17, he emigrated to the US, arriving in New York on May 18, 1851, where he found employment in the engraving trade.

In 1858, he opened his own engraving business located at 6 John St in New York (a few blocks down the street from the future location of George H Reay's business). He had a distinguished career of over 50 years as an engraver, die sinker and medaillieur. His clients ranged from individuals and business to governments, including the US, Canada, and many Central and South American countries.

George Reay employed Laubheimer in 1870 to engrave the dies for the new stamped envelope contract, with striking results. On August 12, 1870, Laubheimer was sent a letter of commendation from the Third Asst PMG (see below). Reay kept him under contract at least through 1874 to prevent Plimpton from employing him for the 1874 Stamped Envelope Dies.

In 1876, Laubheimer engraved a series of medals for the Centennial Exhibition, one of which is shown at right. Around 1880, Laubheimer moved his office and studio to 241 Broadway. In leisure time, he was a gifted musician, and composer, and also painted.

He died on Feb 25, 1905 from injuries sustained after being struck by a horse-drawn freight wagon while walking in New York. {130}



Business card of Rudolph P. Laubheimer {130}



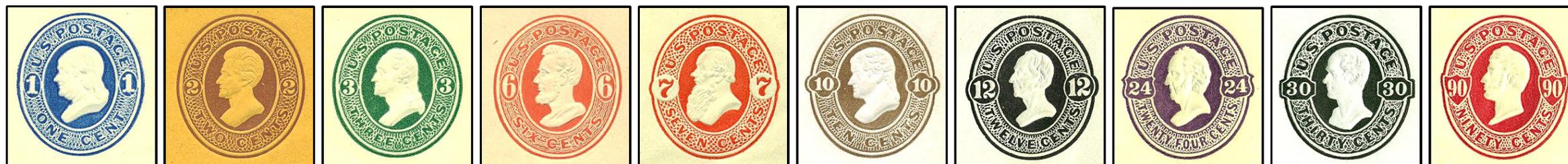
Example of a Medal engraved by Laubheimer for the 1876 Centennial Exhibition

[5.3.5] Letter of Commendation:

The quality of the Dies was not lost on the Post Office Dept. From an August 12, 1870 letter from W H H Terrell, Third Asst Postmaster General to Rudolph Laubheimer:

"The dies executed by you for the new series of stamped envelopes are so beautifully and faithfully executed, I cannot refrain from expressing the highest appreciation the Department entertains for your taste and skill. You have been singularly successful in reproducing the heads of the distinguished personages represented on the steel plate adhesive stamps, and in the treatment of the borders and lettering, you have fully accomplished all that can be desired. The new stamped envelopes from your dies, so far as I have heard, are universally approved." {50}

Quality & Refinement



The Complete 1870 Stamped Envelope Issue Dies

[6] Proofs: {60}

[6.1] The 10 Cent Reay Die Approval: The final version of the 10 cent die was submitted for approval on June 29, 1870, along with a brief cover letter from George Reay. This letter is marked *Approved* by 3rd Assistant PMG Terrell on June 30th. The proof submitted is no longer with the letter.

Cataloging: This die is cataloged as Die 39. (Sequential numbering starting with the 1st Nesbitt 3 cent die.

[6.3] Reay 10 Cent Proofs: Three different proofs are known to exist for the Reay 10c Die. It is unclear exactly when these were produced and for the exact purposes. All are rare. Most likely, no more than 2-3 of each exist.

[6.3.1] Green 10 Cent Die Proof:

This proof was produced from the untrimmed master die. Note the green field around the die, printed by the unused area of the cylindrical die blank. This area would later be trimmed away so that the engraved die would project from the surrounding area. This appears to be the completed engraving. This may have been the proof submitted with the approval letter referenced above, although there is no mention in the letter or Department response of the green color.

Why the green ink was used is unclear. The commission recommended that the envelope colors match the stamp colors. This was approved by PMG Creswell at the time the Stamped Envelope contract was awarded, yet proofs of the 1870 1c – 15c die all exist as untrimmed trial color proofs in colors other than the stamp colors. Trial color proofs exist, although rare, for the 10c adhesive stamp in green, and also in rose red, blue, and violet, as well as brown.

[6.3.2] Brown Hybrid Proof:

This proof was also produced from the master die, but in the final color. This is a Hybrid proof. The indicium is trimmed to shape, apparently from an untrimmed die proof, note the corners outside of the 10's. The trimmed proof is then mounted in a sunken pocket in a piece of card stock. The outer rectangular frame is also embossed into the card. This is obviously intended as a display piece which may have been presented for promotion or as a gift. Proofs of this style exist for the entire 1870 series from 1c to 90c. George Reay was good at promotion. These appear to be the first series of presentation proofs of US envelopes to be produced. The style was most likely derived from the Die Proof for stamps [5.2]. Two of the 10c versions are known to exist.

[6.3.3] Yellow Hybrid Proofs:

Two Yellow Hybrid proofs are listed by Brazer. Both are cut to an octagonal shape. One is mounted on White paper, the other on buff. These have not been seen for many years. Like the Green proofs, the reason for the Yellow is unclear.

[6.2] Stamped Envelopes Basics: Proofs:

Proofs are test impressions of a die or printing plate. Once the engraving is complete, proofs are made from the stamp or envelope master die for approval. In some cases, test impressions may be made as the engraving process progresses. Most envelope die proofs are taken from the master die, sometimes before trimming away the surface outside of the engraved area. These proofs, therefore, show a partially inked circle of color outside of the design, printed by the untrimmed area of the die blank.

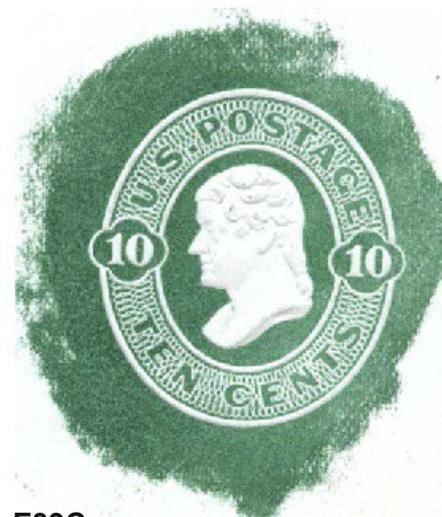
Hybrid proofs of envelope dies consist of a master die proof which has been cut to shape and mounted on another piece of paper or card. The card is often die sunk for the proof, and usually has a die sunk rectangular frame as well. These proofs have a finished, presentation, appearance

Trial color proofs illustrate the finished die in the various colors that are under consideration. In the case of stamped envelopes, many are full envelopes. The color selected for production is usually in the group, but these proofs may be indistinguishable from later production envelopes.

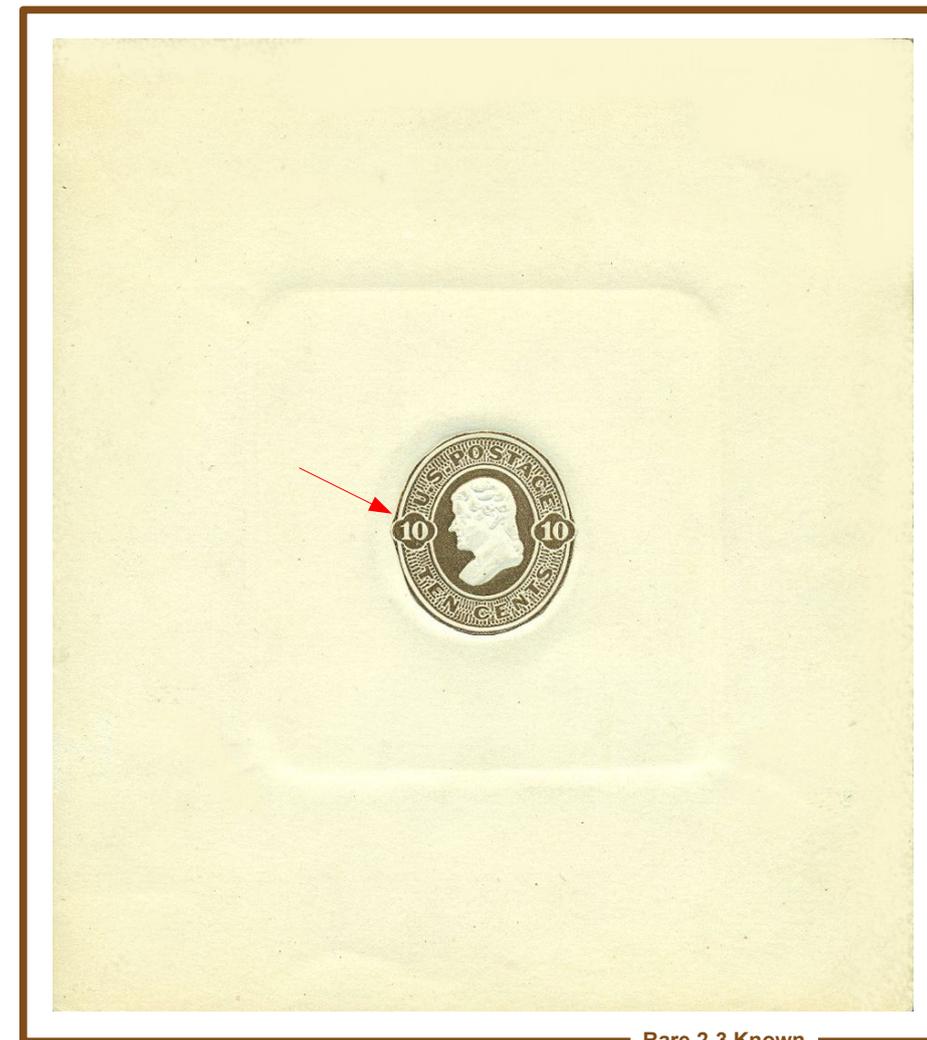


1874 Proof of partially complete Plimpton die.

Note the lack of detail in the hair.



E39C-a



E39C-b

Rare 2-3 Known

[7] Paper and Watermarks:

[7.1] Paper:

From the beginning in 1853, and continuing through the Reay issue, almost all US envelopes were made from laid, watermarked paper.

Laid and Chain Lines: The screens used in the paper making process produce an all over watermark consisting of a grid of lines. The lines running across the width of the paper are finely spaced, and are referred to as "**Laid Lines**". The lines running along the length of the paper are widely spaced and are referred to as "**Chain Lines**". On the paper used for the Reay envelopes, the laid lines are spaced approximately 21 lines per inch, while the chain lines are 3/4 inch apart. See insert at right.

Machine made paper: The following page illustrated the Wet Section of a paper making machine as would have been used in the mid 1800's. [7.1.2]

Diagonally Laid Paper: This is a bit of a misnomer. The laid and chain lines on most US envelopes are on a diagonal to the edges of the envelopes. Less paper is used if the the envelope blanks are cut diagonally from the sheet. Thus the paper itself is not diagonally laid, the orientation of the envelope results in the diagonal lines. (See Orientation for more details [9])

[7.1.3] Reay Paper: Quality, Thickness, and Color: The paper quality, which had improved noticeably during the Nesbitt contracts, took another step forward during the Reay contract. Starting in 1870, three paper qualities were specified by the POD for regular envelopes. First Quality White and Amber, Second Quality Amber and Cream, and Third Quality Amber. These could all be characterized as hard paper. The change from two to three paper qualities allowed the grade of the first quality paper to be increased while maintaining economical alternatives.

In addition, a lower quality Orange paper was used for un-gummed envelopes for circulars, and manila paper was used on wrappers. The Buff paper used in large quantities under the Nesbitt contracts was dropped. The typical thickness of each of the three qualities are as follows:

1st Quality: .0044"; 2nd Quality: .0034"; 3rd Quality: .0028"

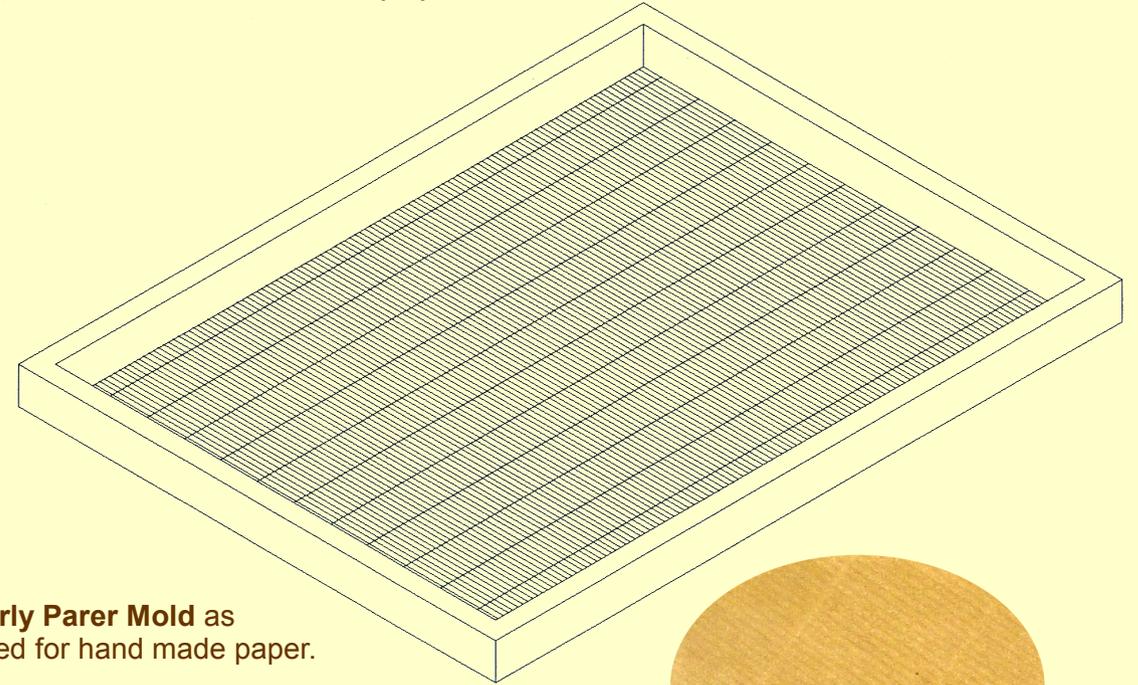
For point of comparison, the thickness found on 1865 10¢ re-issue's was typically .0036, while some original 1861 issue 10's were as thin as .0025

[7.1.4] Paper for 10 Cent Reay Envelopes:

Only 1st quality White and 1st quality Amber paper was used for the 10c Reay envelopes. Aside from being thicker, the first quality paper has a finer, smoother appearance. The laid lines, which were commonly visible on the surface of Nesbitt envelopes, are barely noticeable. The white paper runs from bright to creamy, and the amber from pale to medium. In general, if the envelope has a creamy cast, it is white, if it has a yellowish cast it is amber. Side by side comparison is helpful.

[7.1.1] Envelope Basics: Laid Paper:

The term laid paper dates from the early days of paper making when the wet slurry was *laid* by hand onto screens in a mold. The molds were then stacked while the paper dried. The screen consisted of finely spaced wires across the short axis of the mold, connected by widely spaced wires (chain wires) along the long axis. The screen left an impression in the paper resulting in minor thickness variations. When held to a light, these thickness variations are visible as alternating light and dark lines. The finely spaced lines are generally called "Laid Lines", while the widely spaced are called "Chain Lines" {140}



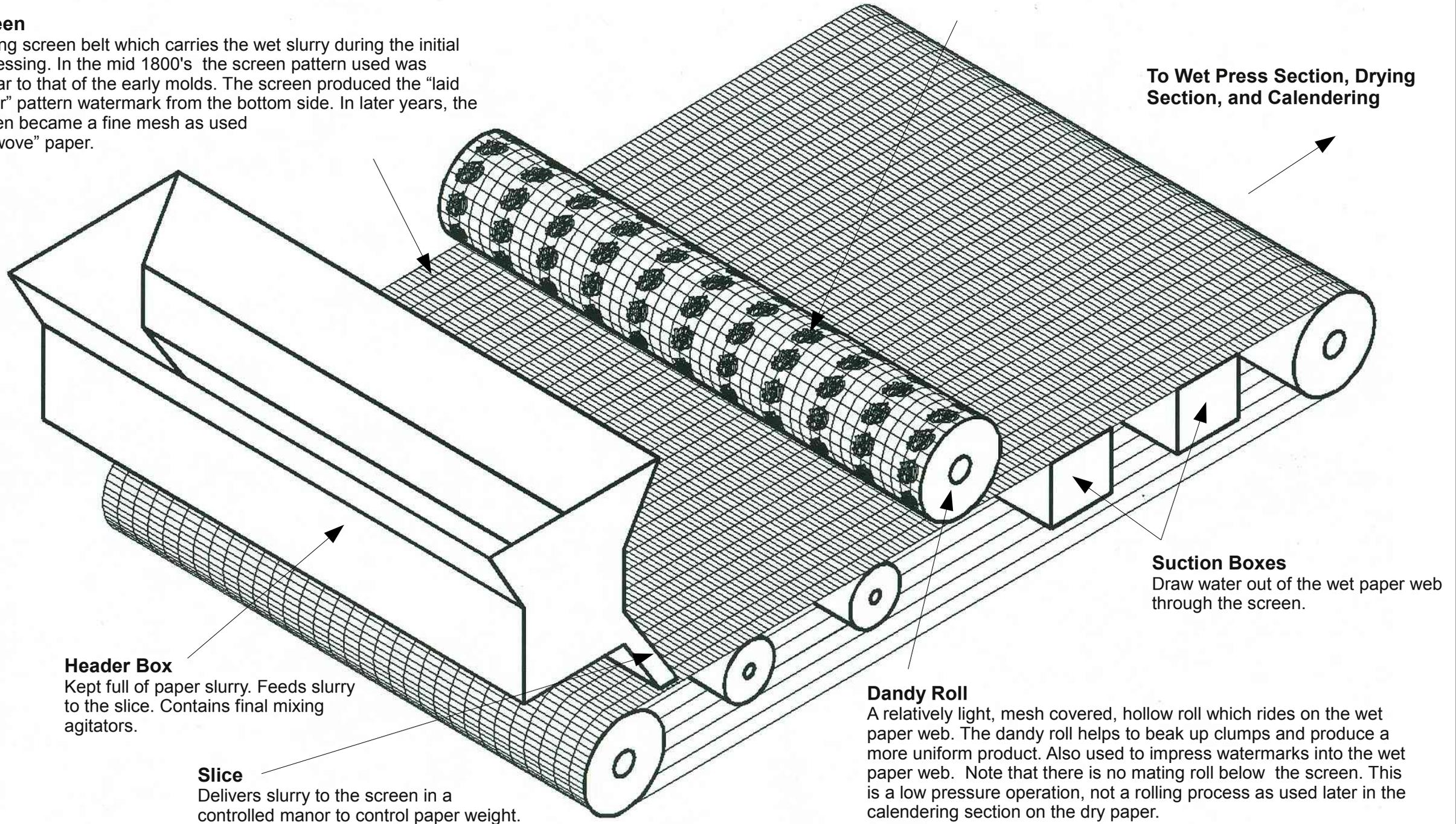
Early Paper Mold as used for hand made paper.

Laid & Chain Line Watermarking

[7.1.2] Fourdrinier Paper Machine: Wet Section {150}

Screen

Moving screen belt which carries the wet slurry during the initial processing. In the mid 1800's the screen pattern used was similar to that of the early molds. The screen produced the "laid paper" pattern watermark from the bottom side. In later years, the screen became a fine mesh as used for "wove" paper.



Watermark Wire-forms
Attached to mesh covering on Dandy Roll

To Wet Press Section, Drying Section, and Calendering

Header Box
Kept full of paper slurry. Feeds slurry to the slice. Contains final mixing agitators.

Slice
Delivers slurry to the screen in a controlled manor to control paper weight.

Suction Boxes
Draw water out of the wet paper web through the screen.

Dandy Roll
A relatively light, mesh covered, hollow roll which rides on the wet paper web. The dandy roll helps to beak up clumps and produce a more uniform product. Also used to impress watermarks into the wet paper web. Note that there is no mating roll below the screen. This is a low pressure operation, not a rolling process as used later in the calendering section on the dry paper. See enlargement on next page.

[7.2] Watermarks & The Dandy Roll:

[7.2.1] Stamped Envelope Basics: Watermarks:

From the first stamped envelope contract in 1853, watermarked paper was specified for all envelopes. Watermarked paper provides an added deterrent to counterfeiting. The same process which results in the laid paper “watermarks” can be used to produce watermarks of any desired design. Wires bent into the shape of the design are added to the Dandy roll. As the Dandy roll rolls over the moving web, the design is impressed into the wet paper material. The resulting impression, which is thinner than the surrounding paper, is readily visible when the paper is held up to a light. The watermark design seen below, cataloged as watermark 2, was used during the Reay contract and the 1874 Plimpton contract. Starting in 1878, the watermark changed with each new contract. The watermarks can therefore be used to date otherwise identical envelopes.

Watermarks used on 19th Century 10 Cent Regular Issue Envelopes:



[7.2.2] Laid Lines - Screen vs Dandy Roll: {50,150}

References to modern paper making state that the “Laid” lines and watermark are produced by the Dandy Roll. This contradicts historical reports that the laid pattern was produced by the screen. The pictures below confirm that the Reay paper was produced by a machine configured as seen in Fig 7.2.2 . These pictures were taken using a 1/16” high, fiber-optic light source directed horizontally across the surface of the envelope. Under this low angle lighting, the low areas are shadowed, producing a readily visible image that illustrates which patterns are impressed into each side of the paper. The images below show that the watermark is on the top surface, while the laid lines are on the bottom. A third pattern, produced by the fine mesh on the Dandy Roll, is somewhat visible in the watermark photo, and is clearly seen on the back flap (top surface. Same side as watermark).

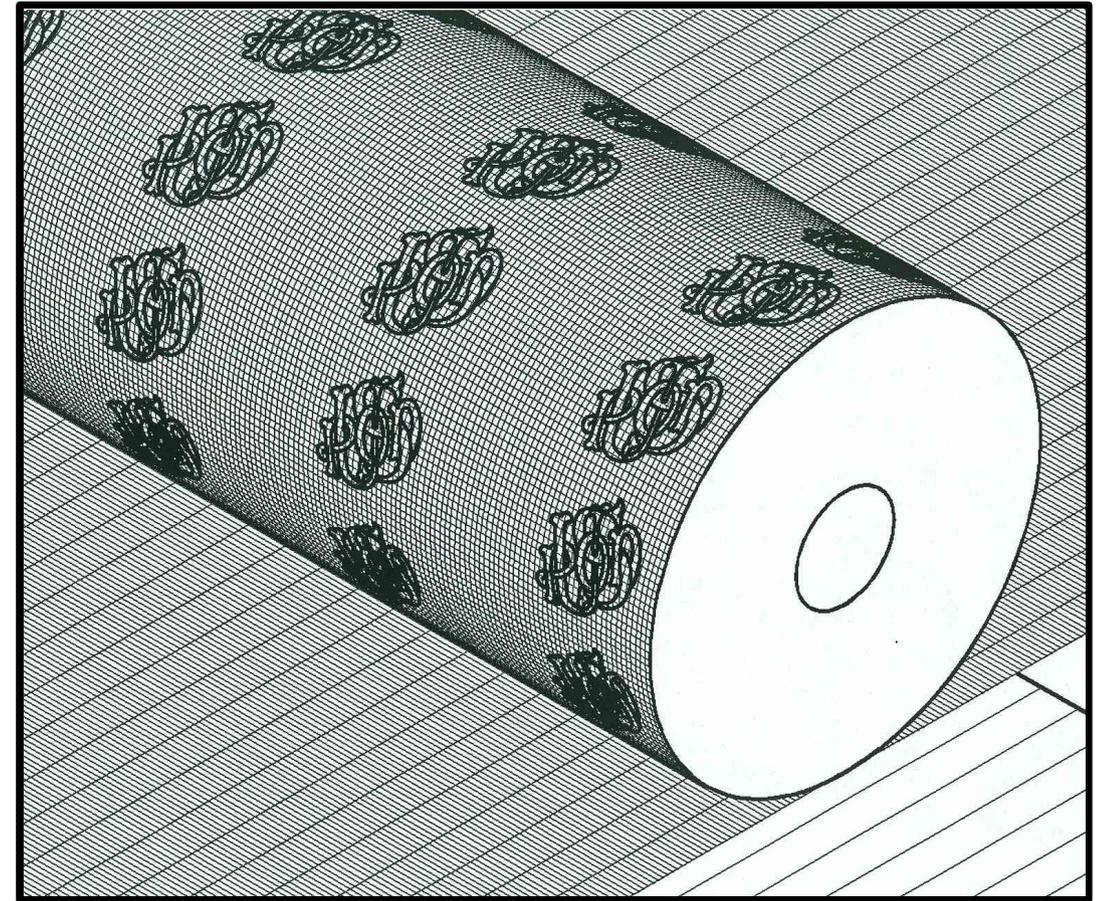
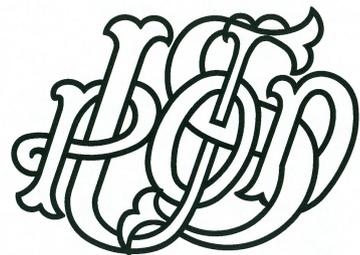


Figure 7.2.2 : Dandy Roll and Screen

Error: The watermark wire forms on the dandy roll should be inverted.



**Watermark 2
1870-1874 Reay &
1874-1878 Plimpton**



**Watermark; Front of Envelope.
Top paper surface**



**Dandy Roll Mesh; Back Flap, Outside.
Top paper surface**



**Laid Lines; Inside Back Flap.
Bottom paper surface**

[7.3] Reay Watermarks: {30}

[7.3.1] The New Reay Watermark: The March 26, 1870 report of the commission that reviewed the initial contract proposals included the following: *Water Marks: We recommend that a new design – a “P.O.D.” monogram for Instance, with “accessories”, making it more tasteful and rendering imitation more difficult, be adopted.* {1} (2064). In his order of March 31, PMG Creswell accepted this recommendation {1} (2066). In a May 28th 1870 letter, Reay submitted a *sample sheet showing the dandy* (watermark). The Department notes on the back indicate that the new watermark was approved on Jun 9, 1870. {1} (2033). The new design was a significant refinement over the original Nesbitt watermark seen on the previous page.

Quality & Refinement

[7.3.2] One Design, Two Major Types: For the Reay Issue, modern catalogs only list one Watermark, known as Watermark 2, however, old catalogs recognize two types. In 1892 Tiffany, Bogert, & Reichert (TBR) cataloged these as watermarks B1 & B2. They will be referred to here as watermarks 2A & 2B. For a horizontal reference, we will use a line tangent to the tops of the “P” and “D”. No information has been found on the significance of the two major types, but it seems plausible that they were from different paper mills.

Watermark 2A: The lettering slants only slightly to the right (approx 5° to vertical). There is a small flourish on the extension on the “P” at the far left. Watermark 2A is oriented on the sheet such that the chain lines run from upper left to lower right. The intended orientation on the envelope appears to be Vertical, bottom of lettering towards right side of envelope.

Watermark 2B: The lettering slants significantly to the right (20° to vertical). There is no flourish on the “P”. Watermark is oriented on the sheet such that the chain lines run from lower left to upper right. The intended orientation on the envelope appears to be Horizontal, bottom of lettering towards bottom of envelope.

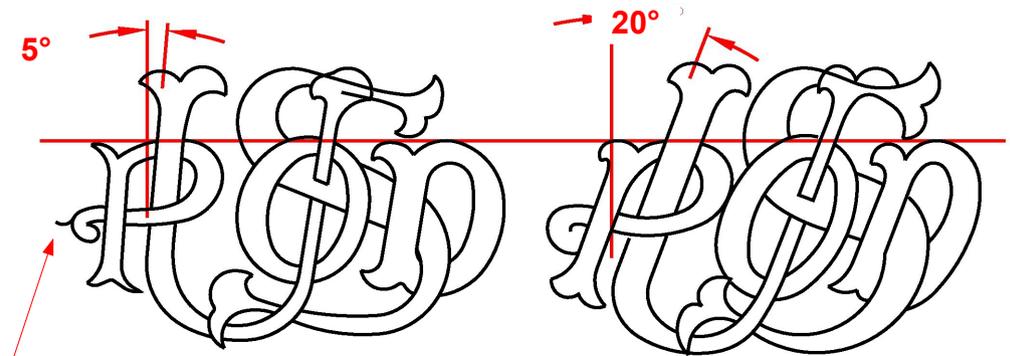
[7.3.3] Sheet Layouts: The watermarks are at an angle to the sheet edge. See the Knife section [8] for more on this subject. The illustration to the right show the orientation and spacing for each type. Since the chain lines are from the screen, and the watermark is from the dandy roll, their relative position can vary, and thus is a factor of production, not design. If the dandy roll or screen float side to side, the alignment will change. Since the sheets are cut from a long roll of paper, it is likely that the watermark position with respect to the end of the sheet is random, although more study is needed to conform this.

[7.3.4] Photographing Watermarks: When studying watermarks it is very helpful to photograph them. Digital unfolding provides views not otherwise possible. These are especially helpful when looking at watermark spacing. Refer to Appendix A-1 for more information. Examples of digital unfolding can also be seen in the orientation section [9].

[7.3.5] Varieties:

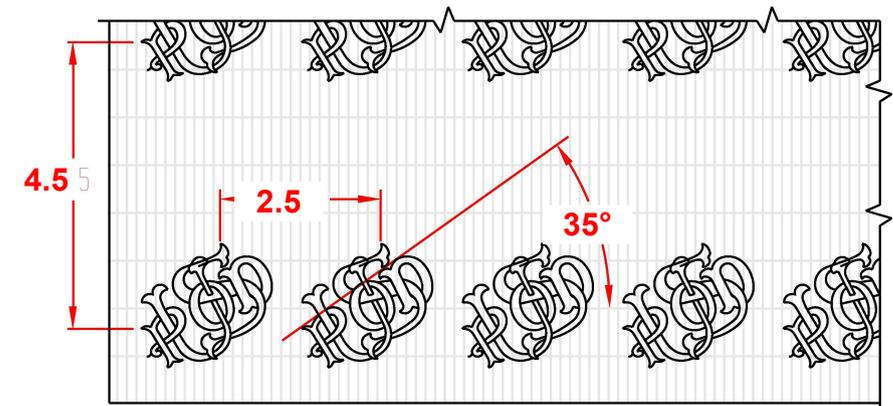
Form: As can be seen in figure 7.2.2, many watermark wire-form are required. For example, if a dandy roll 8” in diameter, and 48” wide were used to produce the paper used during the Reay contract, 110 wire-forms would be required. Since they were formed by hand, working varieties may number in the hundreds. The 10 cent study group used here (less than 30 pieces) is far too small to study working varieties.

Placement: Minor variations in watermark rotation were observed from one watermark to the next. These appear to be limited to a few degrees. Significant variation, however was observed in watermark spacing. A few envelopes in the study group have one widely spaced watermark, set 3.25” from the adjacent one. One envelope in the study group has 3.25 to 3.5” nominal spacing. This needs more study, but seems to indicate a different dandy roll. Both rotation and spacing are functions of the wire-form placement on the dandy roll.

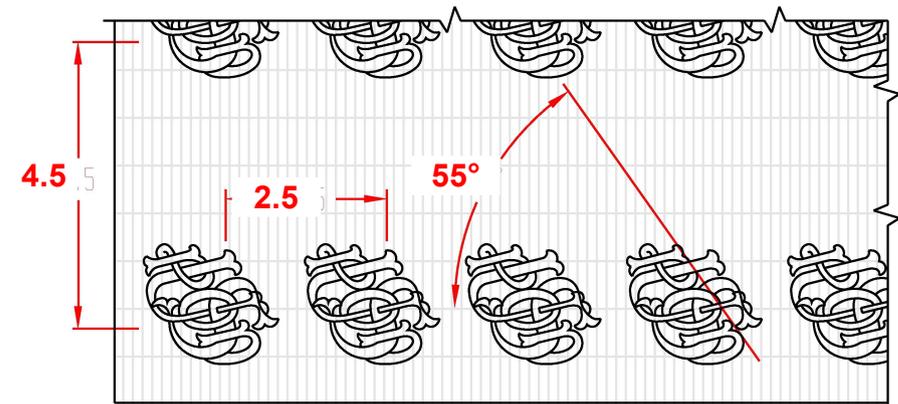


Watermark 2A

Watermark 2B



Paper “A”: Watermark 2A



Paper “B”: Watermark 2B

Looking for a challenge? In theory, by identifying all working varieties of the watermarks, and pairing them together, one could “Plate” the Dandy Rolls in the same way early stamp printing plates have been reconstructed.

[8] Size and Knife:

[8.1] Perspective: 10¢ Size and Knife 1855 – 1878: {30,40,50}

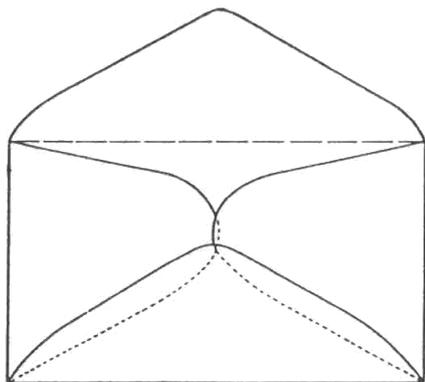
Reay 10 Cent Envelope Size: Size was one of the few things that remained unchanged when the new 10 cent envelopes were issued in 1870. During the Nesbitt and Reay contracts, all 10 cent envelopes were $3\frac{1}{4}$ " x $5\frac{1}{2}$ ", designated: "No. 3" – "Letter Size" ("Full Letter Size" in 1870), now UPSS size 7.

Nesbitt Knives: Nesbitt used five different knives for Letter size envelopes, four of which were used on 10 cent's; two plain, and two self-ruling ("Patent line").

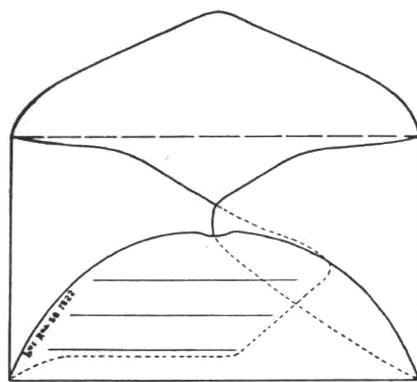
Reay Knives: Reay made all new knives to his designs. Three knives have been cataloged for the $3\frac{1}{4}$ x $5\frac{1}{2}$ "Full Letter" size used on the 10 cent Reay envelopes. The three are minor variations on the same design. (Details on next page) All feature a shallower throat than the Nesbitt knives, and a more refined design.

Patent Line & Ruled Envelopes: Reay produced a limited number of Patent Line (Self-Ruling) envelopes (Full Letter size are knife 23) and also some with faint blue lines printed on the front face (Ruled). Neither were ever used for 10 cent envelopes.

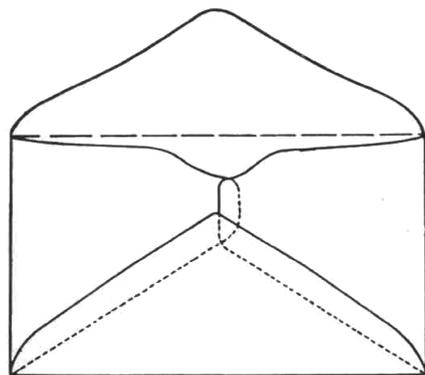
Plimpton Knives: Initially, in 1874 Plimpton knives for No 3 envelopes were very similar to the Reay knives, but they shortly switched to a somewhat deeper throat.



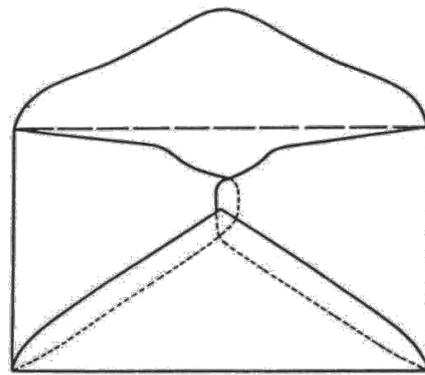
Knife 24: Nesbitt



Patent Line Knife 23:



Knife 26: Reay



Knife 30: Plimpton

[8.0.1] Stamped Envelope Basics: Size

Taken literally, size refers to the width and height of the finished envelope, in inches or mm.

Post Office Sizes: For convenience, the Post Office numbered and named the various sizes and qualities. For example "No. 3 – Full Letter Size" measured $3\frac{1}{4}$ " x $5\frac{1}{2}$ ". "No. 4" envelopes were the same size, but 3rd quality, ungummed, envelopes for circulars. These designations changed over the years. In 1890, the size numbers were replaced by letters. The $3\frac{1}{4}$ " x $5\frac{1}{2}$ " became sizes "A" and "B". In 1894, numbers once again replaced letters, however, old "No. 3" became "No. 2". If using the PO sizes, year must be taken into account.

UPSS Sizes: When the UPSS catalog was introduced in 1984, an entirely new set of "catalog" size numbers was introduced, based entirely on actual dimensions. The larger the size number, the larger the envelope. In the new system, a $3\frac{1}{4}$ " x $5\frac{1}{2}$ " envelope is always a size 7. This reduces confusion when identifying envelopes by their dimensions, however, one needs to remain aware that the old numbers still appear from time to time. In general, "Size 7" refers to the UPSS size, while "No. 7" refers to the old PO designations. ("No.7" was "Official" (long) size).

Table of sizes used for 19th Century 10 Cent Envelopes: See Appendix A-2

[8.0.2] Stamped Envelope Basics: Knives:

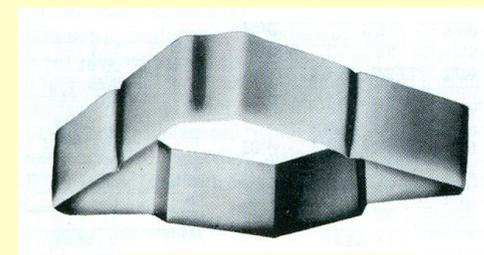
When cataloging stamped envelopes, "Knife refers to the size and *shape* of the envelope blank, including the four flaps. In the 19th century, envelope blanks were cut by a hardened steel "knife" formed into the shape of the envelope blank. A stack of paper was placed in a hydraulic press with the knife on top.

When the press closed, the knife was forced through the stack of paper, cutting the blanks.

Knife and size are related. A given knife will produce only one size envelope blank, however, for a given size envelope there can be multiple knives.

The shape of the knife was left largely to the contractor, and was designed in part to minimize paper usage. The shapes changed, sometimes drastically, with a change of contractor. For a given contractor, the shape of the flaps were often similar for a series of sizes. Other than functionality, the shape, especially in the early years, was of little concern to the POD, and received no PO designations. Knife designation and study is largely a philatelic pursuit. In the UPSS catalogs, Knives are organized by envelope size, then by date, and are numbered sequentially. When more than one knife was used for a given issue, the final identification of an envelope is done by comparison to knife drawings.

Self Ruling: Introduced in 1859, the self ruling envelopes (also known as Patent Line envelopes) had black lines printed on one side flap such that they ended up inside the envelope once folded. They would show through the paper of the front, in the address space, to aid in addressing. When the contents were inserted, the lines are hidden. This required a drastically different blank shape, and different knife,



Envelope Knife

[8.2] Reay Full Letter Knife Identification:

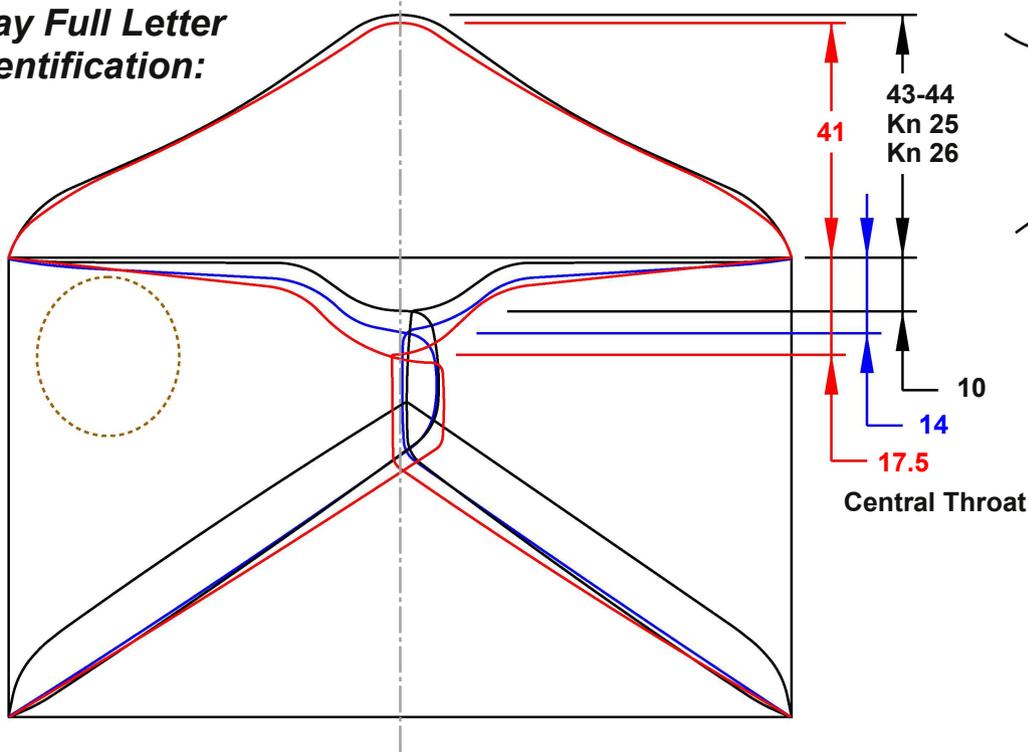


Figure 8.1.1 : The 3 Reay "Full Letter" Knives:
Knife 25, Knife 26, Knife 27
 Common features shown in Black

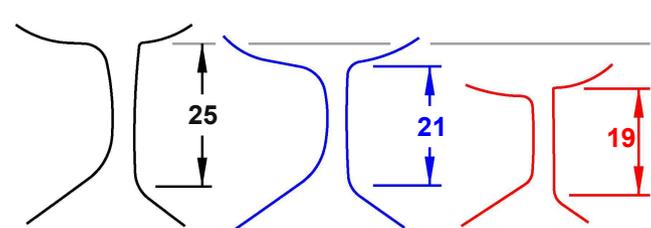


Figure 8.1.2
 RH Flat End Height

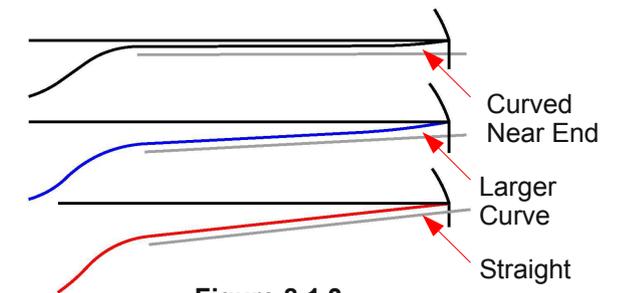


Figure 8.1.3
 Upper Throat Shape

Knife 25: Appears to be the earliest Reay Full Letter size knife. This knife was used to make the Form 10 Specimens, which were used as bidders samples during the contract re-bid in July of 1870. Knife 25 has almost no throat, and a 43-44mm top flap. The central throat is nominally 10mm deep. The flattened section of the RH flap end is approx 25mm (1") high.

Knife 26: Appears to be a modified version of Knife 25. The top and bottom flaps are unchanged. The central throat had been deepened to approximately 14mm, resulting in shorter ends on the side flaps. The left hand flap end is more rounded. The upper throat is also deeper, with a distinct curve near the corners.

Knife 27: Appears to be the latest Reay Full Letter size knife. The top flap has been shortened to 41mm. The bottom flap remained unchanged. The central throat has been deepened to approximately 17.5mm, resulting in noticeably shorter side flap ends which are distinctly squared. The upper throat edges are straight lines.

[8.2.1] Geometry, Knife vs Folding: When examining an envelope to determine which knife was used, bear in mind that the finished envelope is the product of the knife and the folding operation. The shape and dimensions of the paper are cut by the knife, and are generally reliable. The shape and dimensions of the open areas are subject to folding variations, and cannot be entirely trusted.

The Reay 10 cent envelopes were machine folded, and are generally more consistent than the early Nesbitt envelopes, however, minor variations still occurred in production. Two common symptoms of imperfect folding are open corners, and discontinuities in the central throat. Figure 8.1.4 illustrates a commonly occurring variation on knife 26. If the right fold is rotated 1° CW about the lower right corner, the results are an open corner of almost 1/16", and a mismatch in the central throat. The right hand upper throat is also decreased. In some cases, this can lead to confusion when determining knife 26 vs 25. Figure 8.1.5 shows the same 1° variation applied to a knife 25 envelope. The right hand upper throat closes to nothing. If the top of the side flap crosses the top flap fold, an interference would occur. This may have been the reason for replacing knife 25 with 26.

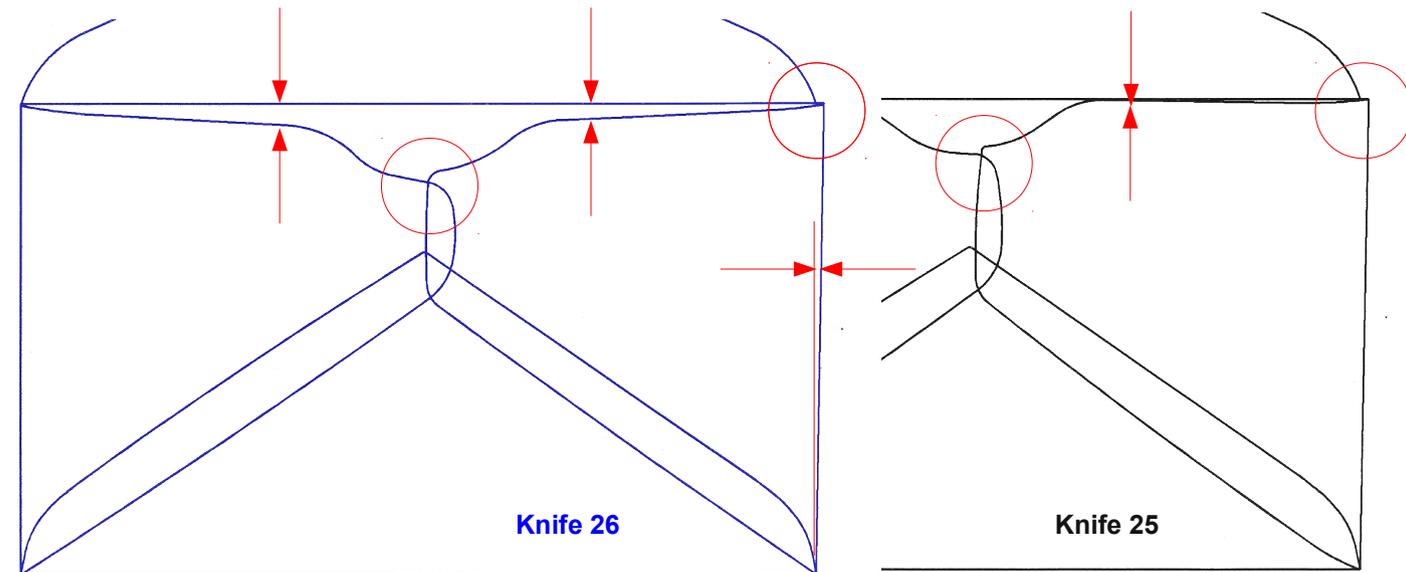
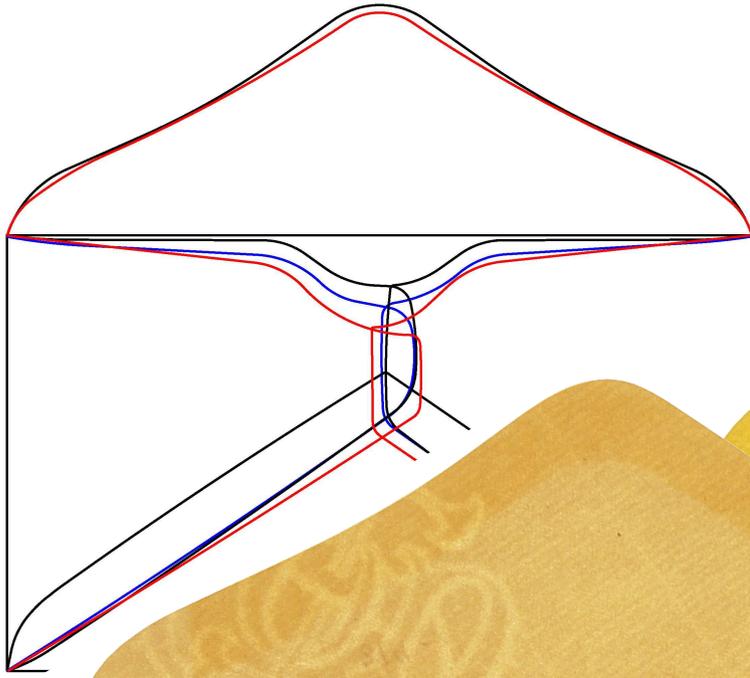


Figure 8.1.4 : Common folding variations

Figure 8.1.5 : Knife 25 Potential Interference

[8.3] Reay Knife Examples:



Knife 25

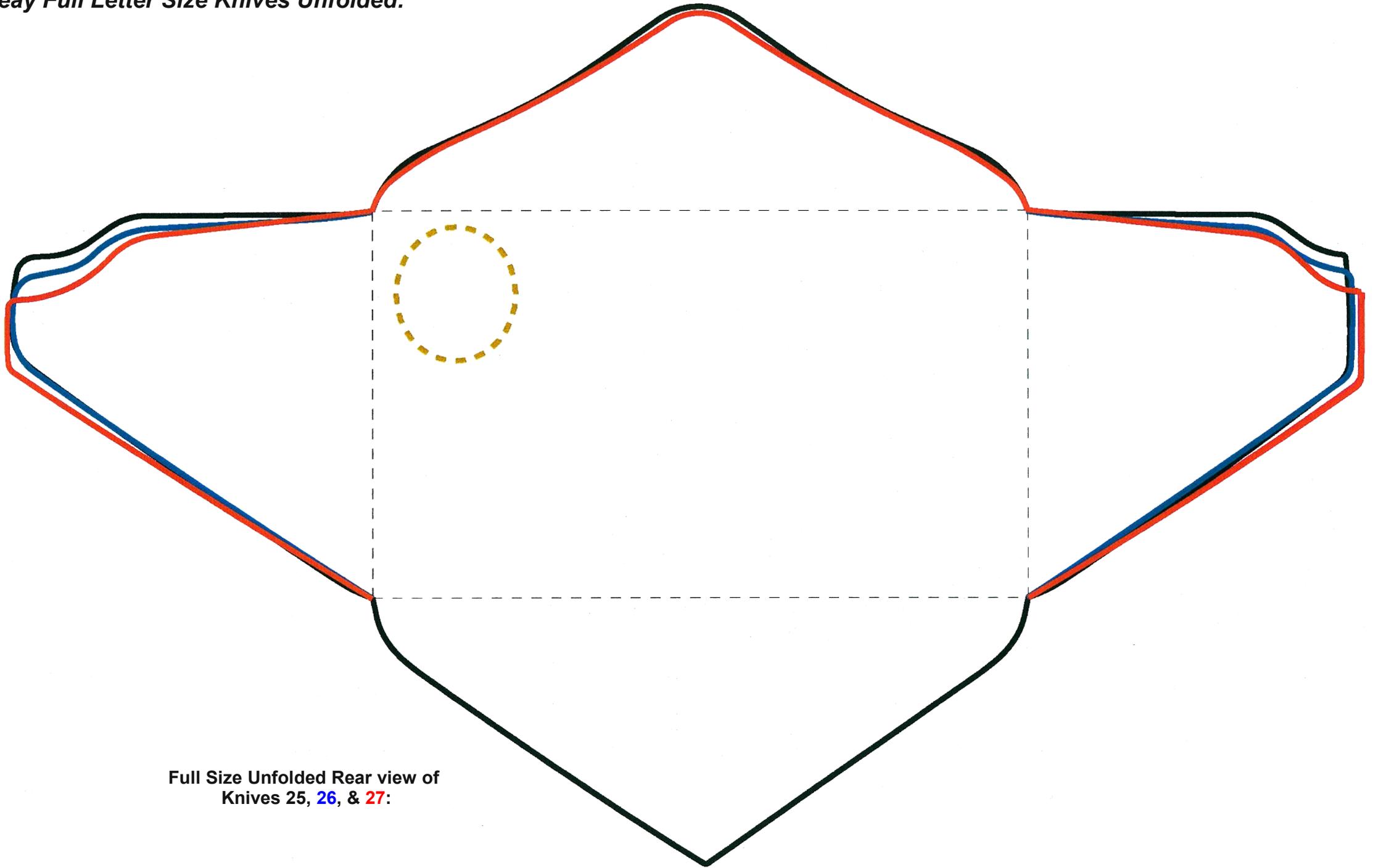


Knife 26



Knife 27

[8.4] Reay Full Letter Size Knives Unfolded:



Full Size Unfolded Rear view of
Knives 25, 26, & 27:

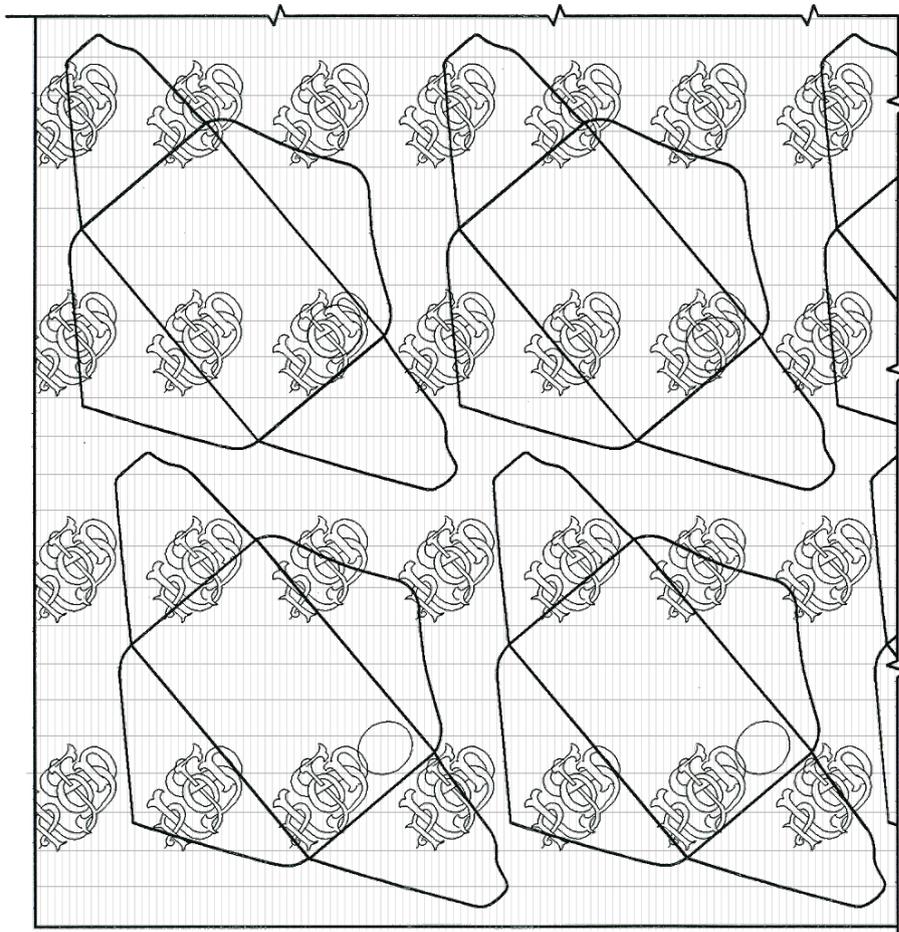
[9] Introduction to Orientation:

Orientation is an envelope parameter that is rarely examined in detail. Catalogs do not recognize orientation by name, but do address a portion of orientation in very general terms; Diagonally Laid, Horizontal Laid, etc. which only appear in the Notes column. These are far from a complete description of orientation.

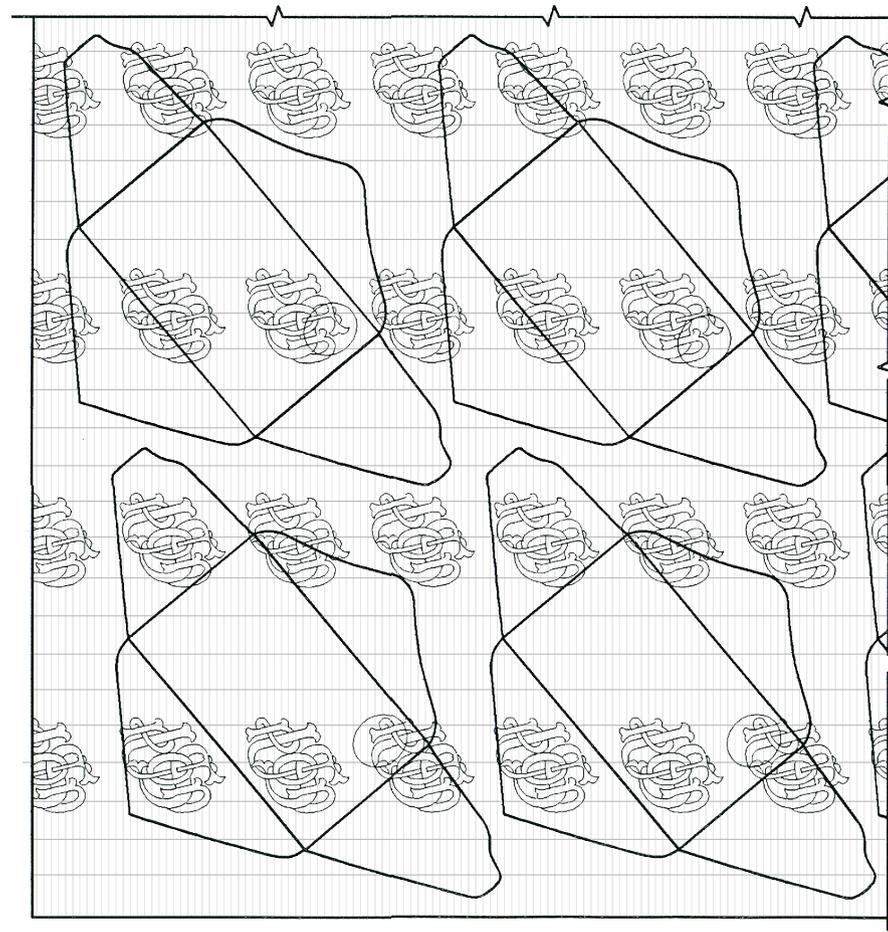
Definition: We can define Orientation as *The angular position of the knife with respect to the paper when the envelope blank was cut.*

Design (or Standard) Orientation: With the exception of the very earliest production in 1853, the envelope blanks were cut diagonally from the paper. This method yields more blanks for a given paper size. The original intent in 1853 was for the watermark to be horizontal on the front of the envelope. As a result of the diagonal cutting, the watermarks needed to be at the same angle to the paper edge (and the chain lines) as the fold lines. The figures below illustrates a best guess at the Design (or Standard) Orientation for the Reay Full Letter size envelope blanks for Types A & B paper.

Production Variations vs Design Changes: Some will argue that orientation variations are simply production variations, and many are. If the paper were rotated 180°, the watermark would be inverted, but the chain line angle would remain the same. If the paper were face down, the watermark would be a mirror image. All of these have no bearing on the knife placement with respect to the paper edge. All can follow the design orientation to the paper edge, and all are relatively common. Since the knife was placed by hand, some amount of rotational change is to be expected. The cases of greater interest, are ones that do not follow the standard knife placement. These raise several questions: Why were these oriented differently? Was it simply operator error, or was it done for a reason? When was the envelope produced, and is this information useful in other studies?



Probably Design of Full Letter Size Orientation from Type A Paper



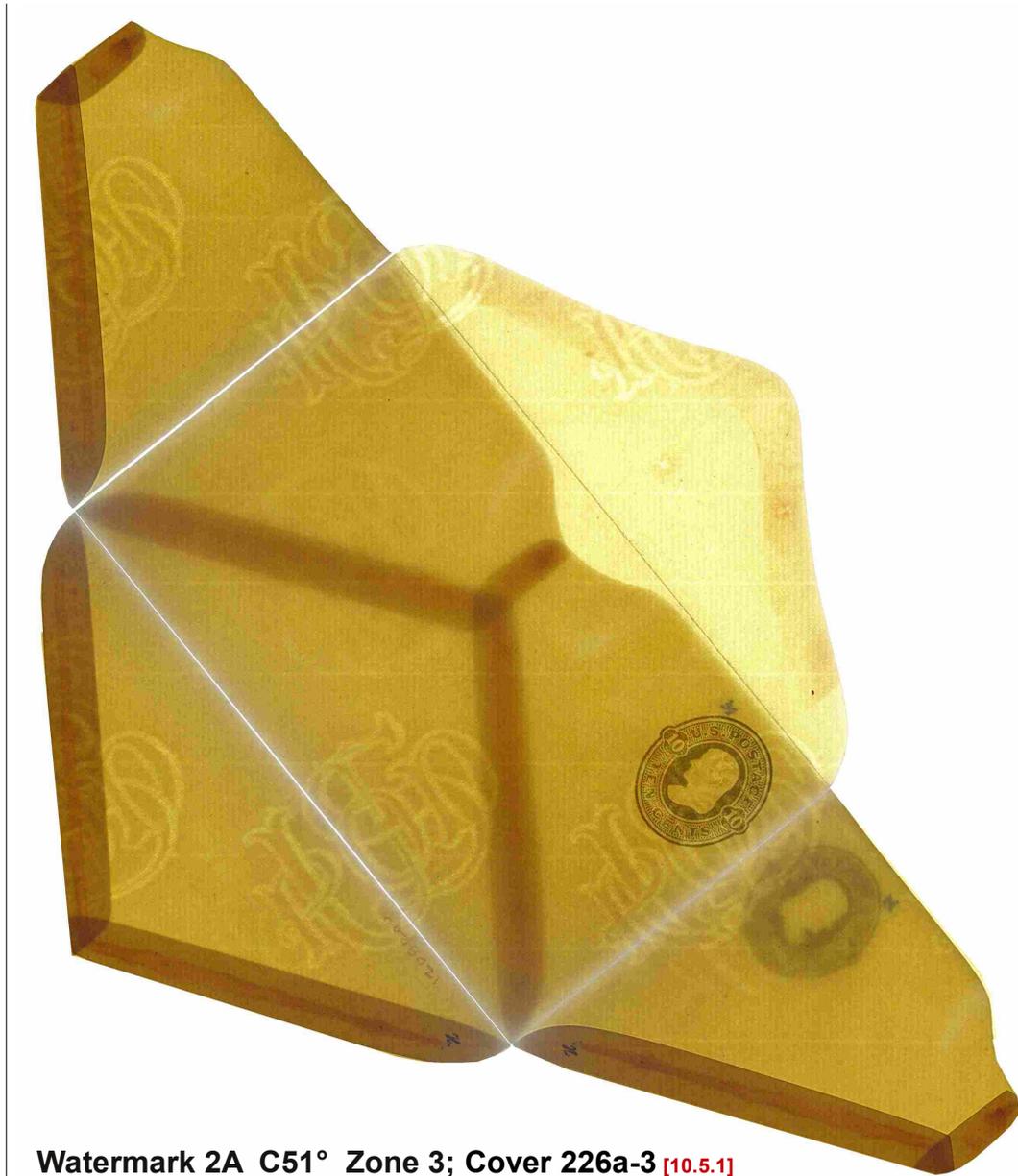
Probable Design of Full Letter Size Orientation from Type B Paper

[9.1] Standard Orientation Examples:

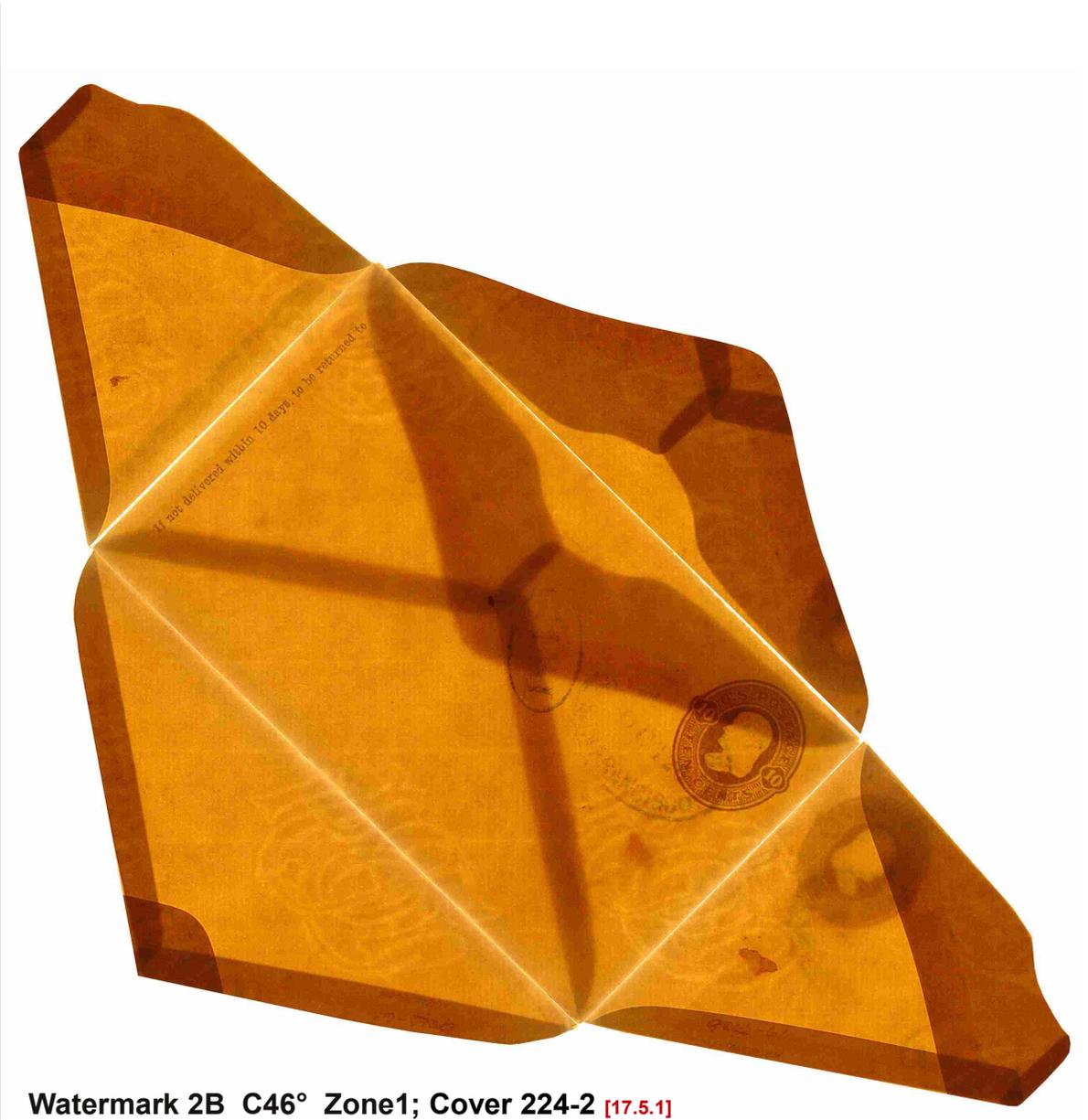
The following are digitally unfolded images which illustrate orientations seen in the study group. Refer to Appendix A-1 for information on how the images were created. Note that the images are rotated so that the chain lines are horizontal. The frame lines represent the paper edges.

Standard Orientation images:

Note that normally the Watermark 2A is vertical on the envelope



Watermark 2A C51° Zone 3; Cover 226a-3 [10.5.1]



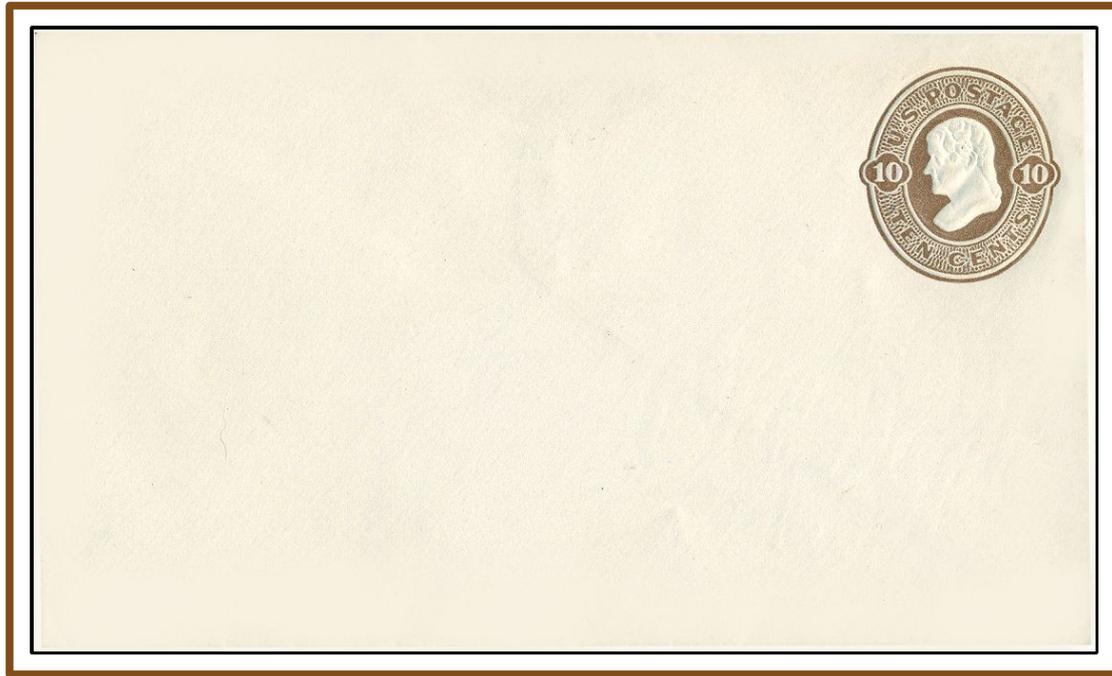
Watermark 2B C46° Zone1; Cover 224-2 [17.5.1]

[10] Production Envelopes:

[10.0] USPOD Specifications: {30,40,50}

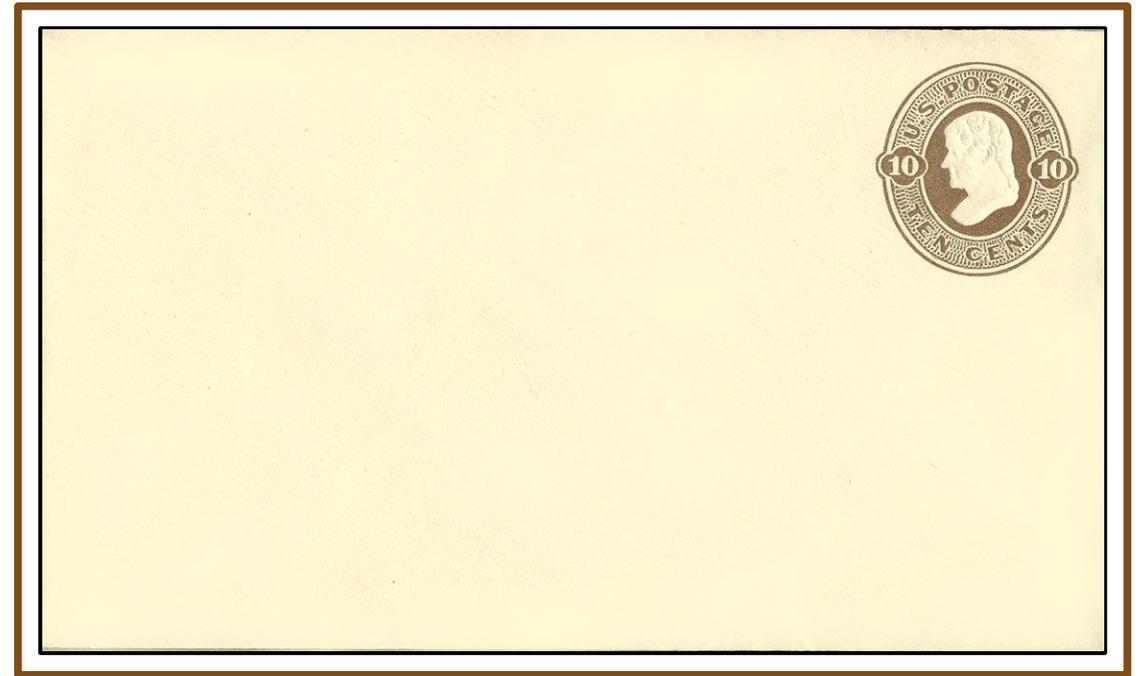
The exact date that Reay first produced 10¢ envelopes is unknown, however, Specimen envelopes were known to exist by Aug 11, 1870.

Under the 1870 contract, the Department specified two different 10¢ envelopes. Both with the new 10¢ Jefferson Die (discussed above) in brown ink, both No. 3 Full Letter Size, both on First Quality paper with the new Monogram watermark, one on White Paper, one on Amber. Gum was specified to be 1/2" wide minimum across the full width. Note: The official ink color name was Chocolate. Because color names are often inconsistent, we will use the generic *Brown* when describing the ink color.



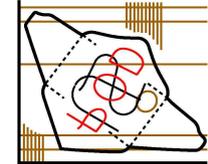
Item 224-1: 10¢ Brown on 1st Quality White, .0043”
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U91; UPSS 224;

Watermark 2B; Orientation C51, Z5: [11.2]



Item 228-2: 10¢ Brown on 1st Quality Amber, .0042”
No. 3 Full Letter Size; UPSS Size 7;
Knife 27; U92; UPSS 228;

Watermark 2B; Orientation C56, Z3M: [11.2]



Catalog table: {50}

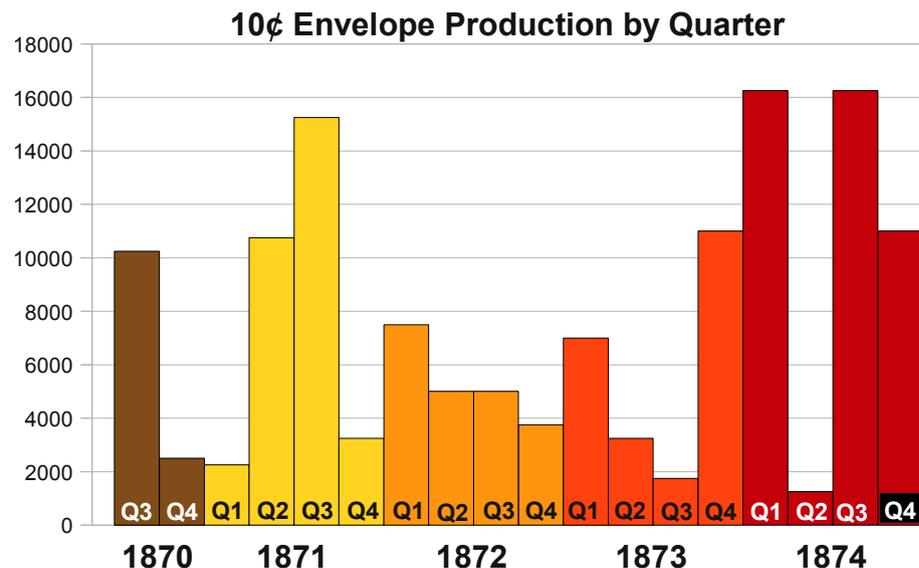
Scott	UPSS	Ink Color	Paper Color	Knife
U91	223	Brown	White	25
U89	223a (& b)	Olive Black (Gray)	White	25
U91	224	Brown	White	26
U92	226	Brown	Amber	25
U90	226a (& b)	Olive Black (Gray)	Amber	25
U92	227	Brown	Amber	26
U92	228	Brown	Amber	27

Production Data: {160}

The bar graph at the right shows 10¢ envelope production by Reay, by calendar quarter. The data is taken from the Annual Reports of the Postmaster General. Note that the Q4 production for 1874 was after the end of the Reay contract. A small portion of this figure was from Plimpton. These were most likely the first Plimpton 10¢ (defective) die.

Extended life for the 10¢ Reay envelopes: Note that approximately 20% of the total Reay 10¢ production was in the third and fourth quarters of 1874. These were ordered under PMG Jewell to help bail out Plimpton who was having trouble fulfilling the new contract. The net result was that the 10¢ Reay envelopes continued in use for several years after the contract ended.

Envelopes vs Stamps: The estimated total production of 10¢ envelopes by Reay is 125,000 to 130,000. During the same time frame, 10¢ adhesive stamp production totaled almost 16 million. This amounts to **125 10¢ stamps for each 10¢ envelope.**



Estimated Total: 125,000 to 130,000

4th Quarter 1874 split between Reay and Plimpton 10¢

Stamps issued during same period: 15,928,770

Stamps to Stamped Envelopes: Approximately 125 : 1

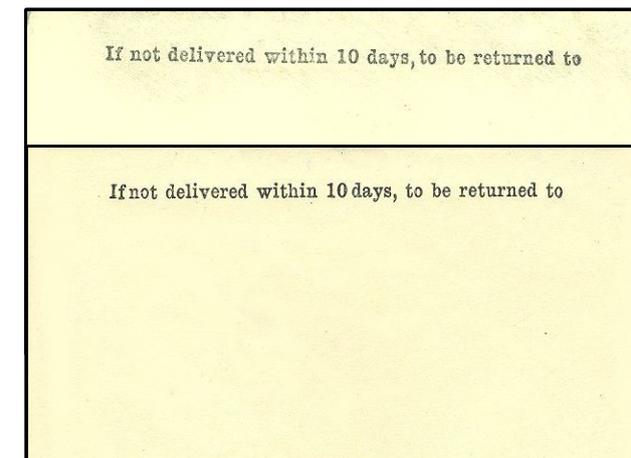
[10.1] Return Requests: {50}

Plain Requests: In 1860 the Post Office Department began having return requests printed on stamped envelopes. The main reason for making these available was to cut down on the amount of undeliverable mail that ended up in the Dead Letter Office. Several versions were issued over the years. The style referred to as a "Plain Request" consisted of the following single line of text: "If not delivered within 10 days, to be returned to", below which the sender would write his name and address.

Special Requests: Beginning in 1865, the POD would supply envelopes with the name and address of the sender added to the return request at no charge as long as a minimum quantity was ordered. It appears that one order of 500 special request 10¢ envelopes were ordered from Reay. None have been seen by this collector.

Both Plain and Special Requests were printed by the stamped envelope contractors. Originally both were printed vertically along the left edge of the envelope. In subsequent years, the position changed to horizontal in the upper left corner. The printing was typeset. As such, many minor variations occurred during subsequent setups.

On the Reay 10¢ envelopes, the Plain Requests were printed vertically at the left. In the study group, 8 of the 27 envelopes bear a Plain Request. All include the same text, however at least 5 different setups are seen, ranging in overall length from 59 to 62 mm. One, shown at right, has "If" and "not" set much closer than in other setups.



Plain Return Request Examples on 10¢ Reay Envelopes.

Top: 62mm length [17.4: 226-3]

Bottom: 59mm length, close set "If not" [10.5: 226a-1]

[10.2] Gum: {10, 50}

The contract called for the gum on the top flap to be 1/2" wide over the full width. Gum was applied to the envelope blanks. If, instead, the gumming were done to the otherwise finished envelopes, another operation would have been required to fold down the top flap. Envelope blanks were lined up as shown in figure 10.1.3. It is uncertain how many were gummed at a time, but certainly, far more than shown. Some sort of mask would have been used over the top blank. The gum was applied by hand with a wide brush. Reay had over 400 gumming tables. It took about 20 minutes for the gum to dry, so the operator would move from table to table. A girl could gum 25,000 envelope per day.

The figure 10a illustrates the gum on a Reay envelope. Note the straight (square) ends produced by the brush stroke. This is commonly known as square or hand gum (abbreviated SG or HG). Automatic machine gumming began during the 1874 Plimpton Contract. The Centennial special printing envelopes were some of the earliest with the Machine or Round gum (abbreviated RG). The gum was "printed" with a felt pad on the same machine that embossed the stamp and folded the envelope. Figure 10b shows the Round Gum on a Plimpton Envelope.

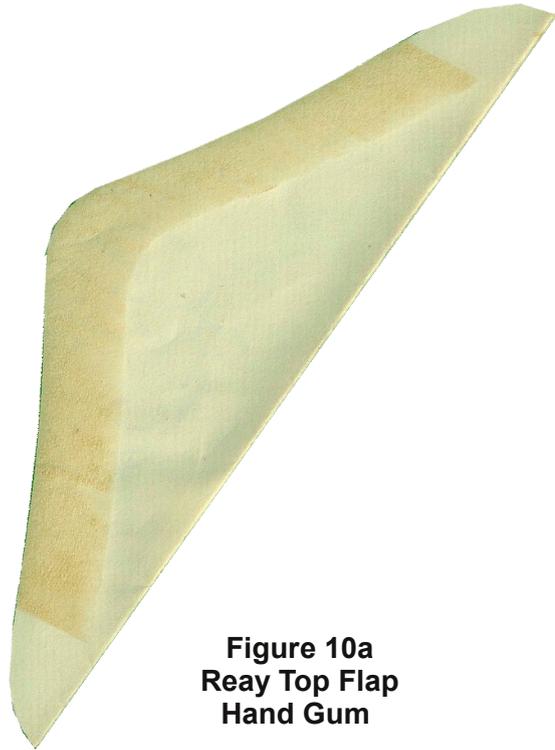


Figure 10a
Reay Top Flap
Hand Gum

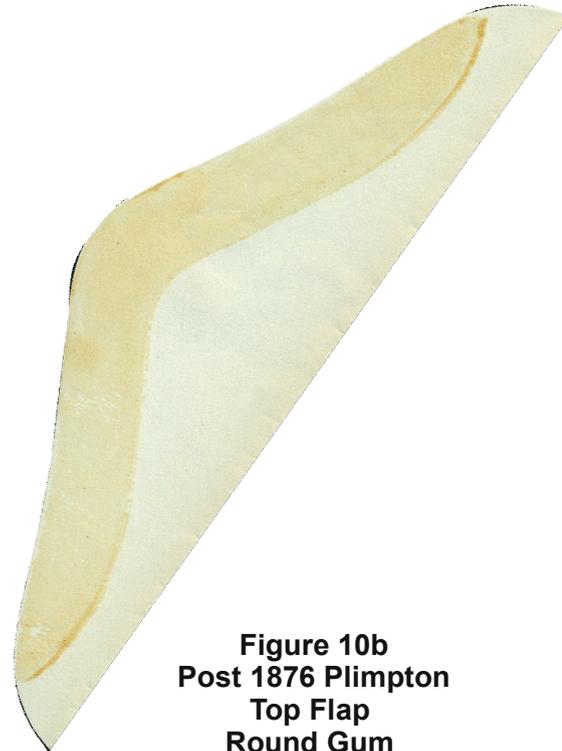


Figure 10b
Post 1876 Plimpton
Top Flap
Round Gum

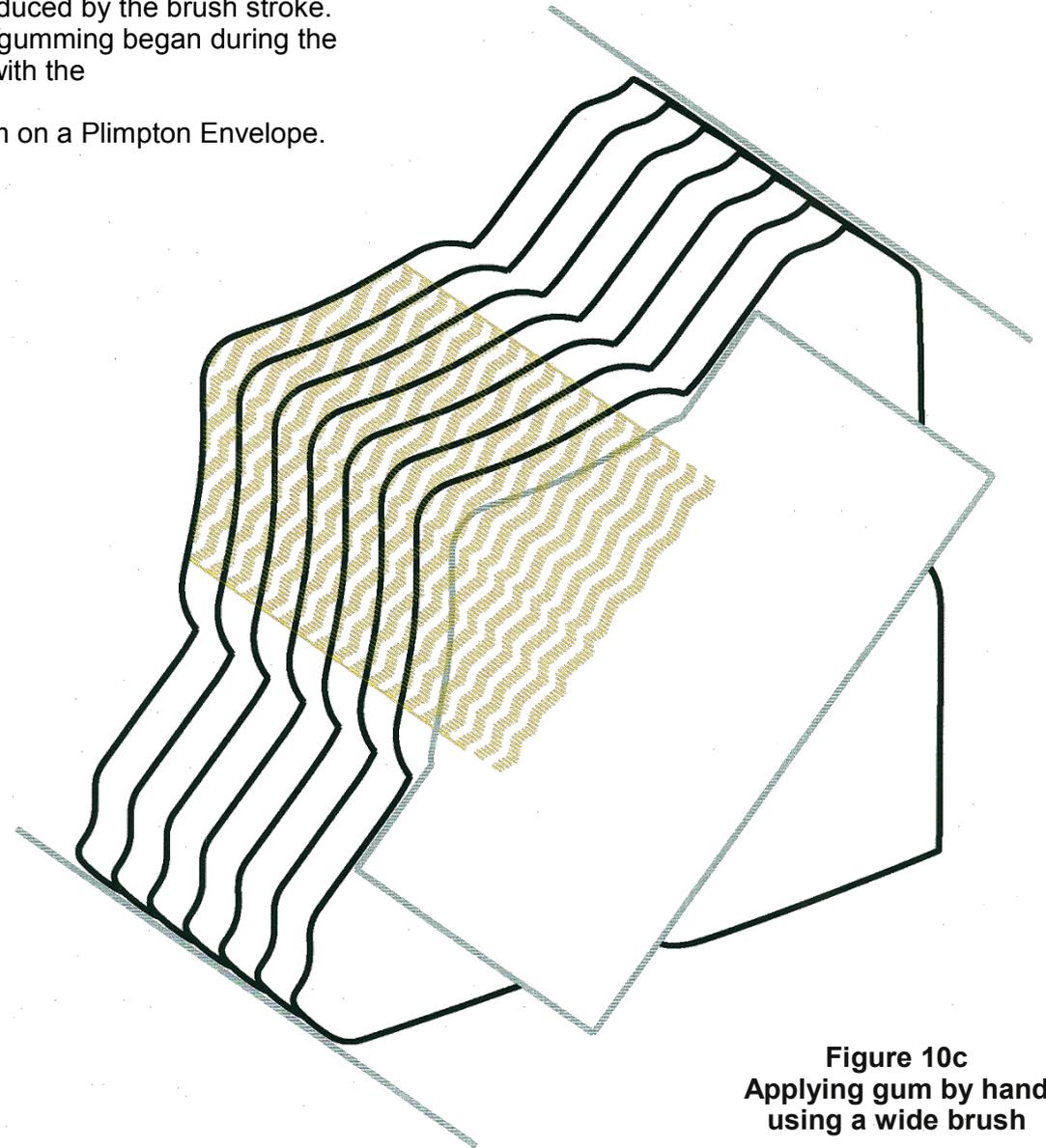


Figure 10c
Applying gum by hand
using a wide brush

[10.3] Color in Philately: {170}

Observing Color: Since the light we see from philatelic objects is purely reflective, it is very important to use a well balanced, white light source when studying color. Mid-Day sunlight is generally considered the standard, but is not always practical. Common artificial light sources all have significant color shifts. Special, daylight balanced compact fluorescent bulbs are available from lighting retailers. The Ott Light brand is sold by philatelic suppliers. Look for 5500°K color temperature. For digital photography, be sure to use a "White Card" (Kodak, etc) to set the *white balance* on the camera under the light used.

Measuring Color: Color measurements are not commonly used in philately (at least by collectors). Research is ongoing by the Institute for Analytical Philately, The National Postal Museum, and others, on using color measurement to distinguish color shades. With modern computer technology, it's only a matter of time until color analysis becomes a tool for the average collector.

Basics: Color and Color Measurement:

Color, as perceived by the human eye, falls into two categories, light color (or direct), and surface color (or reflected). A number of systems of color measurement (color spaces) are in common use. Each has preferred applications.

Direct Color (RGB System): Direct color is the color of the light emitted by a light source, the sun, a light bulb, a video screen, etc. The color of direct light is dependent on the light source and any filter which the light passes *through*. If multiple light sources of different colors are used, the colors are *additive*. By combining the primary colors of light, Red, Green, and Blue, in varying intensities, any color can be created. Black is the absence of light (R 0%, G 0%, B 0%), White is R 100%, G 100%, B 100%. A common use of the RGB system is video displays.

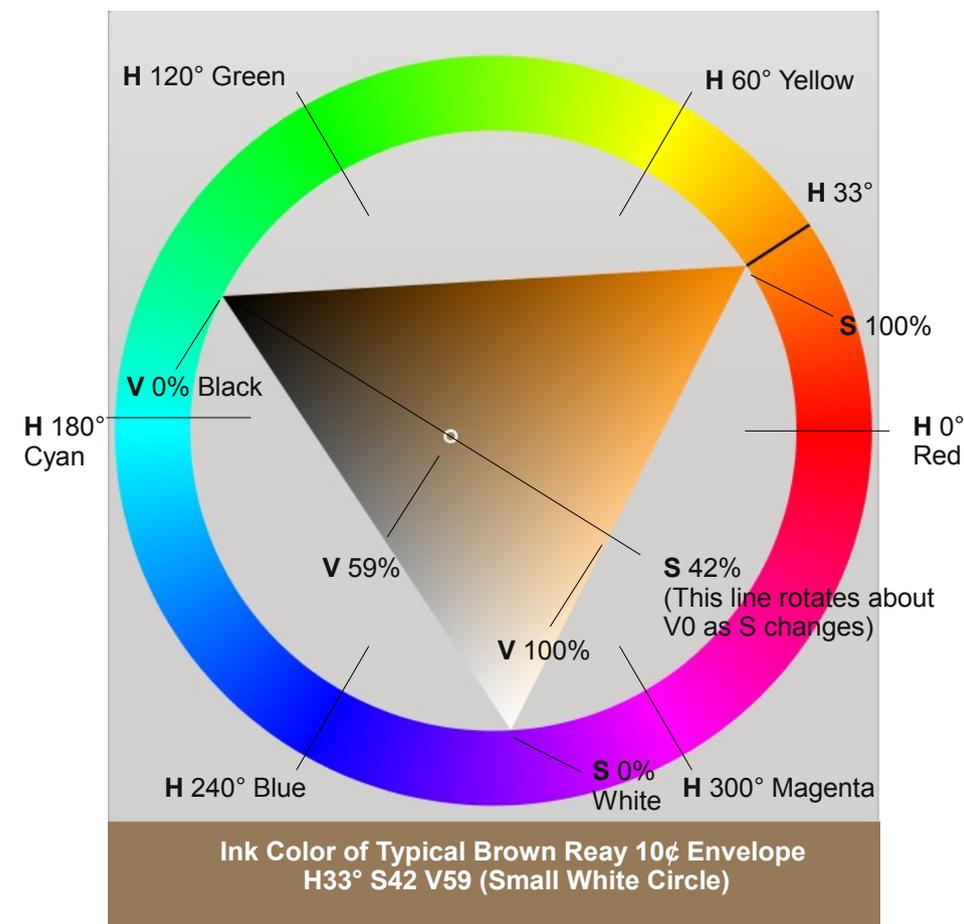
Surface Color (Reflected Light): The surface color we perceive is dependent on the color of the light source which is reflected, and on the properties of the reflecting surface. If white light illuminates a surface, and only green light is reflected (red and blue are absorbed), we perceive the object as green. The color of the surface is thus considered to be *subtractive*, i.e. the red and blue are subtracted from the white.

CYMK System: Colorants for surfaces can be made *additive* (with respect to RGB primary colors) by using Cyan, Magenta, and Yellow as the primary colors. These are the opposites of red, green, and blue. Thus, for example, adding magenta subtracts green. If a pure magenta surface were illuminated by pure green light, no light would be reflected, and the surface would appear black. In this system, white is the absence of color, and black is C 100%, M 100%, and Y 100%. From a practical standpoint, this does not yield acceptable grays and blacks, so a 4th color, Black (K) is added to this system. CYMK is used with inks and paints. Color printers use this system.

HSV: A third system which has found wide use in computer graphics is HSV (Hue, Saturation, Value). This system is somewhat more intuitive to work with than the others.

- **Hue:** Of the three parameters, Hue is the only one that describes "color". On the diagram at the right, Hue (H) is represented by the angle on the color circle.
- **Saturation** specifies the proportions of the Hue color, and White. On the diagram, The Saturation Line connects the Hue and the White points on the triangle. At full brightness, S100 contains 100% Hue color, while S0 is 100% White. At S0, Hue is meaningless (but normally set to H0).
- **Value** is represented by a line connecting the Black point on the triangle with the active point on the Saturation Line. If S = 0, the Value Line connects the Black and White points, and becomes the gray scale.

If you have image processing software (Photoshop, GIMP, etc, or even the color palette functions in many other programs), try experimenting with RGB, CMYK, and HSV color system. Its an interesting and fun exercise.



HSV Color Space Diagram

[10.4] Color Varieties:

Brown Ink: The majority of the Reay 10¢ envelopes, as represented in [10.0] above, were printed with the Brown ink. Below are illustrated production ink color variations for three consecutive issues of 10¢ envelopes. In each case, total ranges of HSV data is presented. Clearly, by both visual examination and numeric data, the Reay ink color is remarkably consistent.

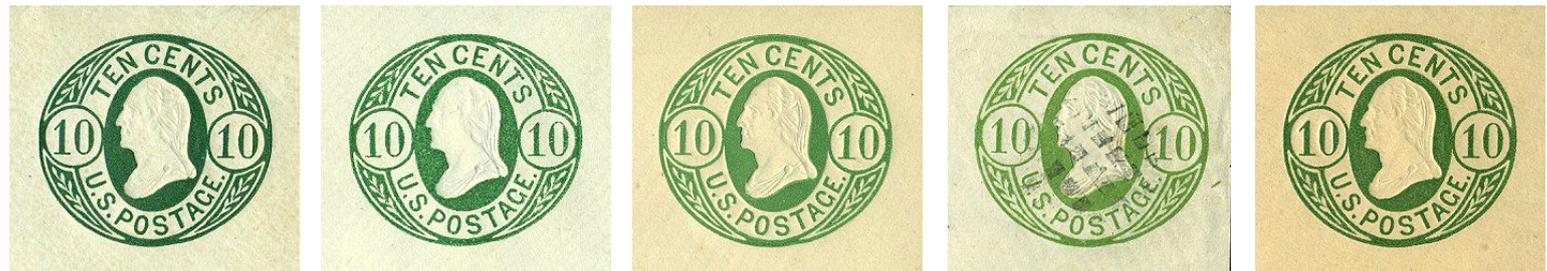
Paper Color: During the issue of the 1861 Nesbitt 10¢ envelopes, drastic paper color variations occurred, particularly on the Buff paper. A few examples are shown below. In fairness to Nesbitt, this issue was produced during the Civil War, and paper shortages were commonplace. With the Reay 10¢ Issue came much higher paper quality, with better color control. The White paper ranges from Bright to Creamy, the Amber from Pale to Medium.

Quality & Refinement

Color in the Study Group:

As part of the research for this exhibit, HSV measurements were made on the ink and paper colors of all the envelopes in the study group. While efforts were made to calibrate the scanner used, at the time of this writing, calibration questions still remain, particularly in reference to the Olive Black shades. As a result, no absolute data will be published at this time. In certain cases, as below, comparative data will be presented.

1861 Issue 10¢ production color variations: Measured HSV variations of the five examples at the right are as follows: H54, S15, V14

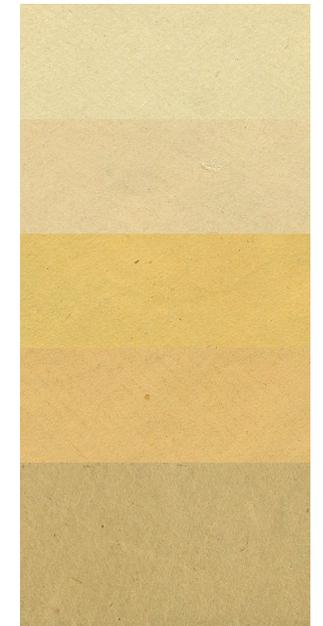
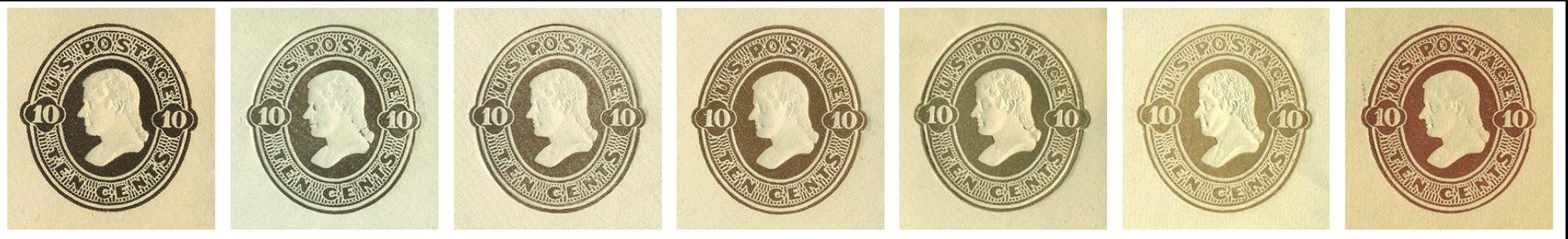


Reay Issue 10¢ production color variations: Measured HSV variations within the study group are as follows: H7, S9, V14



These two indicia represent the widest variation of brown ink seen in the study group as determined by subjective visual inspection

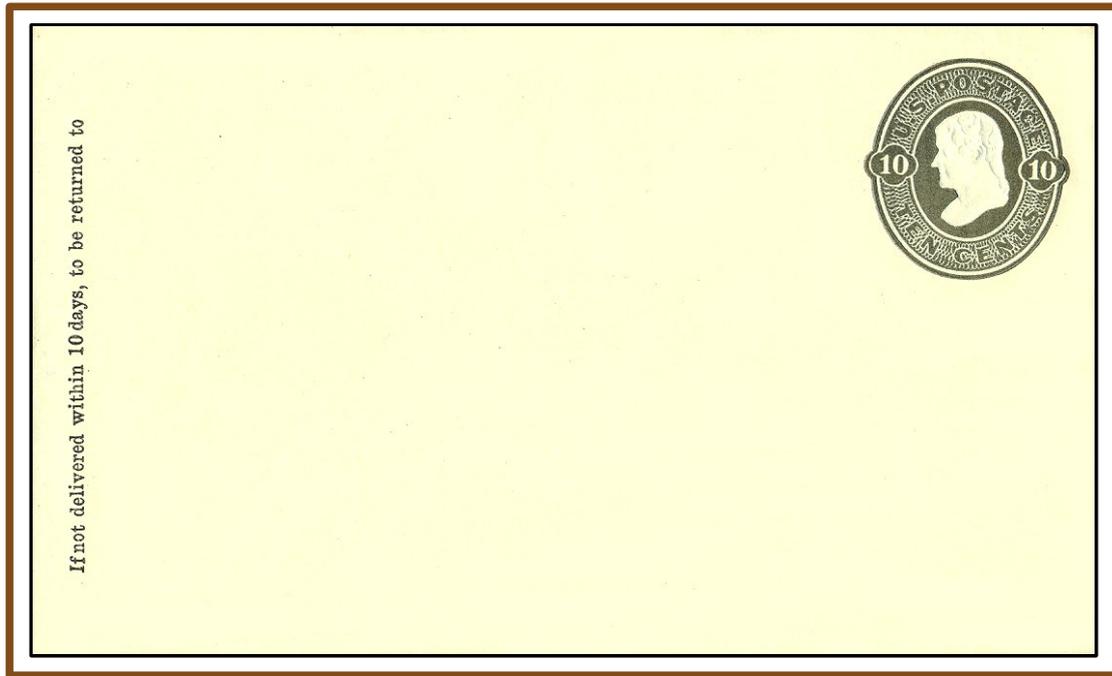
Plimpton 10¢ Issues production color variations: Measured HSV variations of the seven examples at the right are as follows: H24, S25, V31



Buff Color Variations seen on 1861 10¢ Envelopes

[10.5] Anomalies:

Anomalies and errors consist of things such as *over inked impressions*, *under inked impressions*, *offset images* on the back of the paper (inside the envelope), *misplaced indicia*, *color errors* and any other abnormalities. The Brown samples in the study group are remarkably free of anomalies. Of the 24 items, only one questionable anomaly was found. This is an offset inside one envelope, so faint, that its existence is questionable.



Item 226a-1: 10¢ Olive Black on 1st Quality Amber, .0043";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U90: UPSS 226a;
Watermark 2A; Orientation C122, Z8:[10.5.4]

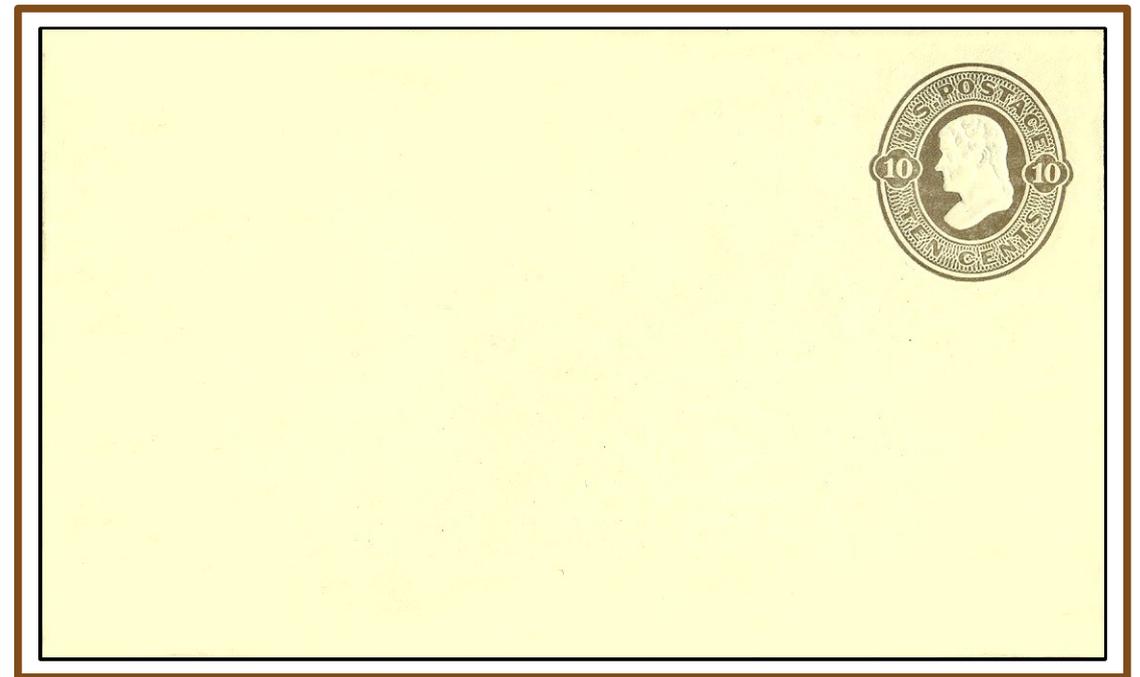
Also on white: 223a-1 [15.2]



[10.5.2] Inking Problems: Along with the color deviations, the printing doesn't meet the same standards as seen in the rest of the issue. The above example is somewhat over inked, while the one to the right is under inked. Under and over inking is almost never seen on Reay envelopes. Of the 30 10¢ envelopes examined, these are the only two with inking problems. Other Olive Black examples in the usages sections [15.2], [16.3] have normal inking. 223a-1 [15.2] is an Olive Black on White, while 226a-2 [16.3] is a medium Olive Gray (which might be more correctly described Olive Brown).

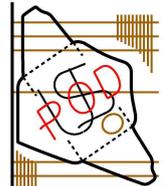
[10.5.1] The Big Anomaly: The Olive Shades: {30}

The biggest anomalies to the Reay quality standard in the entire 1870 issue, are the Olive Black and Olive Gray shades found on a very limited number of 10¢ envelopes. Very little is known about the origins of this major color deviation. They have long been recognized and sought after by collectors. TBR cataloged them with full catalog numbers in 1892, describing them as "Almost Black". From preliminary HSV Color data, it appears that the hue of the Olive Gray is Yellow Orange, about 10° higher than the Orange Hue of the Brown indicia, and the hue of the Olive Black is Greenish Yellow, another 10° higher. The Olive Shades occur only on Knife 25 envelopes, on both White and Amber paper. We know that Knife 25 was in use in July 1870 since all Specimen Form 10 envelopes were cut by Knife 25. The SF10's were used as bidders samples for the Re-Bid of the 1870 contract. [13.2.1].



Item 226a-3: 10¢ Olive Gray on 1st Quality Amber, .0042";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U90; UPSS 226b;

Watermark 2A; Orientation C51, Z3: [9.1]



[10.5.3] Offset Impressions:

A common printing anomaly found on early stamped envelopes is offset impressions on the inside surface. If the press was cycled without an envelope blank, the ink was printed on the backing pad. Subsequent envelopes would be printed on both side until the ink on the backing plate faded. Of the group, two of the Olive Black shades have partial offset impressions, including the cut square seen here.

[10.5.4] More on the Olive Shades Anomaly:

Before the study leading up to this exhibit, I considered the Olive Black Shades a color variety, as does most of the Philatelic community. However, during the study, it became apparent that there is more involved than a simple color variety. Six Olive Shade items are in the study group, four entires and two cut squares. Within the six, the following anomalies were found:

- One item with Over Inking (center)
- One item with Under Inking (far right)
- Two with Offsets (cut square at left)
- Three items with Non-Standard Orientation, two entires and one cut square. (diagrams of entires shown at below)

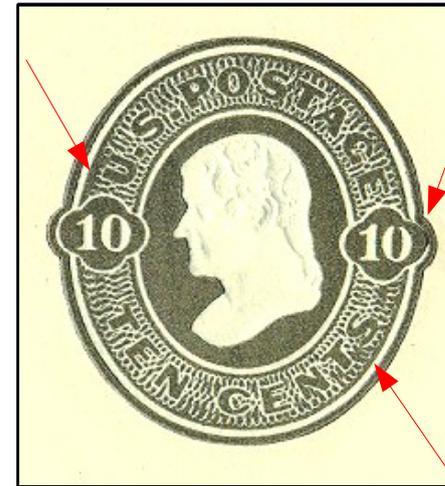
Only one item is anomaly free. Seven anomalies were found on five items.

Given 1) the lack of anomalies found on the Brown items (one in 24 items), 2) The color deviations within the Olive Shades, and 3) The above list of anomalies, the question becomes "What was going on during the production of the Olive Shade envelopes?" It certainly was not business as usual.

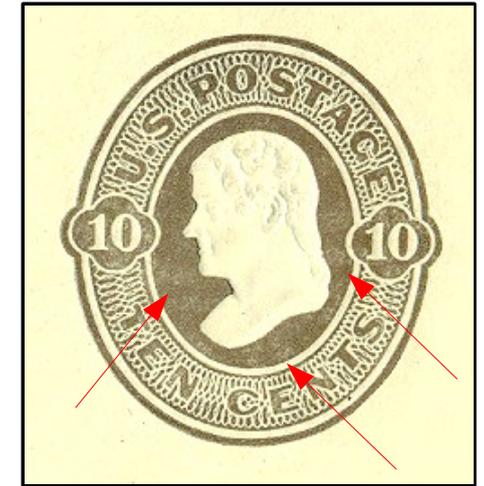
We may never know the answer, but it appears to me that the entire, very limited group should be considered something other than a normal production variety.



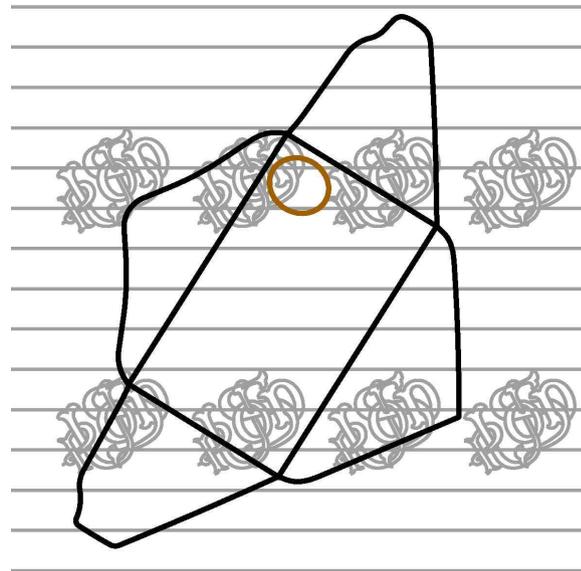
Olive Gray Cut Square with Offset Impression



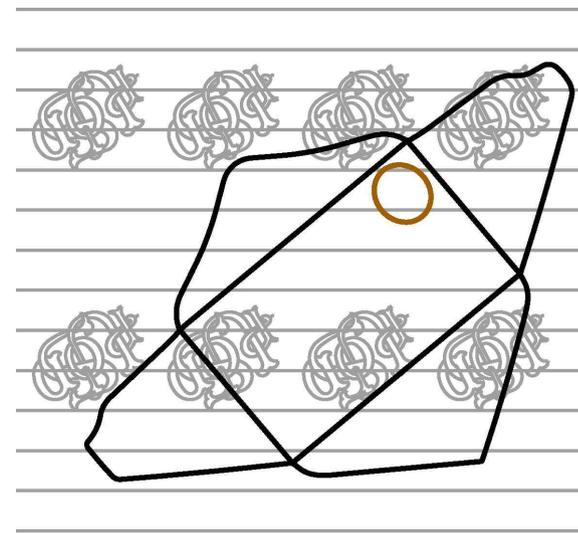
Enlargement of LH item on previous page showing Over Inking



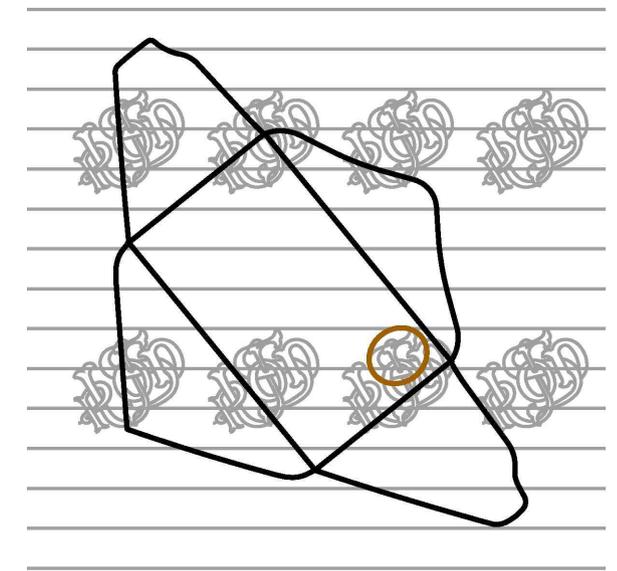
Enlargement of RH item on previous page showing Under Inking



Non-Standard Orientation Cover 226a-1 [10.5]
Only cover in group with Diagonal WMK
C122 Z8



Non-Standard Orientation Cover 223a-1 [15.2]
C140 Z5



WMK 2A Standard Orientation for reference.
Cover 226a-3 [10.5] C51 Z3

[10.5.5] Watermark 2A Non-Standard Orientations

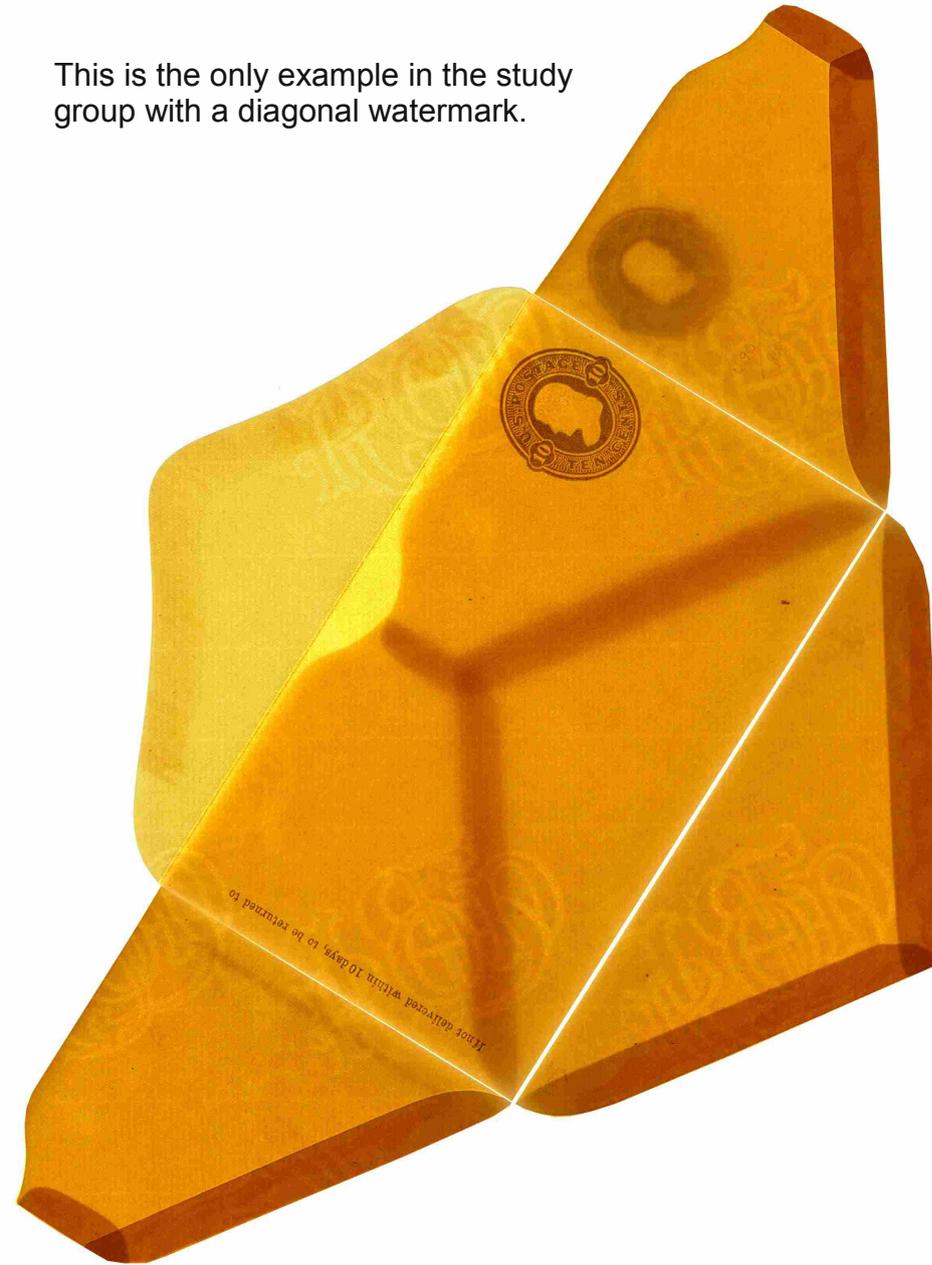
In both cases, the Chain Line angle is greater than 90°.

In this example, because of the non-standard knife orientation, the Watermark 2a is horizontal, but not mirrored.



Watermark 2A C140° Zone 5; Item 223a-1 [15.2]

This is the only example in the study group with a diagonal watermark.



Watermark 2A C122° Zone 8; Item 226a-1 [10.5]

[11] Specifying Orientation:

[11.0] Specifying and Cataloging Orientation:

Two things must be considered when describing orientation:

1) The way the paper was positioned on the table in front of the operator.

The paper can be placed in 1 of 4 ways: Normal, Rotated 180° (Watermark Inverted), Verso (Face Down; Watermark Mirrored), and Verso Rotated 180° (Watermark Mirrored & Inverted).

2) The way the knife was placed on the paper stack by the operator.

The knife can be positioned from 0° to 360°

The two are partially redundant in that paper rotated 180° is the same relative orientation as knife rotated 180°.

Given our definition of Orientation as angular, we will not attempt to specify the linear placement of the knife at this time.

[11.1] A Proposed Method: Since we are examining the finished envelopes, we will measure paper orientation with respect to the envelope rather than vice versa. We will use the chain lines as references on the paper, and the bottom edge as reference on the envelope. We can then specify Orientation as follows:

Chain Line Angle (C) : The angle of the Chain Lines, measured CCW with respect to the bottom edge of the envelope, over a range 0° to 180°. This ignores the watermark and eliminates the redundancy mentioned above, and allows us to look at just the chain lines. C should be measured with a protractor.

Watermark Zone (Z) : Specifies the angular zone which contains the base line of the watermark. The line is always taken to run from the “P” to the “D” regardless of watermark orientation. See figure 11a. There are 8 zones. The four odd number zones are centered about the X and Y axes. These are the zones associated with the four paper positions of the standard orientation. The four even number zones fill the gaps, and are used for non-standard conditions. In all cases, for clarity, an “M” is added after the zone number to indicate a mirror image watermark (verso paper). Z should be a quick, visual evaluation.

Use: The range of C for standard orientation will need to be evaluated for each envelope size and paper type. For the Reay Full Letter Size of either type A or B paper, it appears to be about 35° to 60°. The two non-standard cases in the study group are both greater than 120°.

First measure C, and determine whether it falls within the limits of standard orientation. Then evaluate the zone.

[11.1.1] The Reasoning Behind the System:

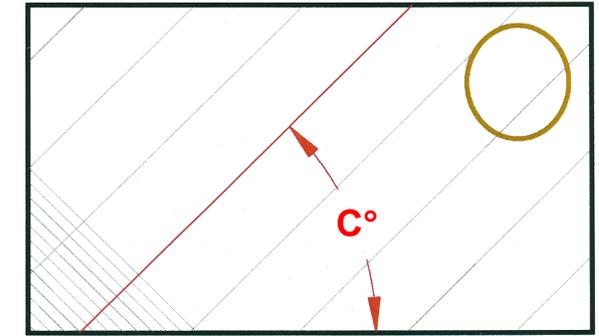
C is intended to specify knife placement. Z is intended to specify paper placement.

We could fully specify orientation with a single parameter by giving C a range of 0° to 360°, however, we would need to identify + and – directions of the chain lines with respect to the watermark. Since Watermarks 2A and 2B are 90° apart, a different definition would be required for each paper type. This still would not account for the verso cases.

We could be clever, and define verso cases as negative angles, but things would get far too difficult to use. Limiting C to 180° allows us to make a simple measurement based solely on the chain lines.

The watermark to chain line angle is defined by the paper type. Minor variations are seen because of watermark wire form positioning on the dandy roll. This has no bearing on orientation, and should not be measured here. Significant deviations would indicate a different dandy roll and new paper type.

Zones are intended to specify the 4 paper positions from [11.0] above. This would seem to imply that 4 zones would be adequate, but because of the normal C variations, ambiguities exist. For example, a horizontal watermark around 10° and a vertical watermark around 80° would be in the same zone. Rotating the zone 45° just moves the problem. The 8 zone system shown eliminates ambiguities and also provides an indication of standard vs non-standard.



Chain Line Angle (C)

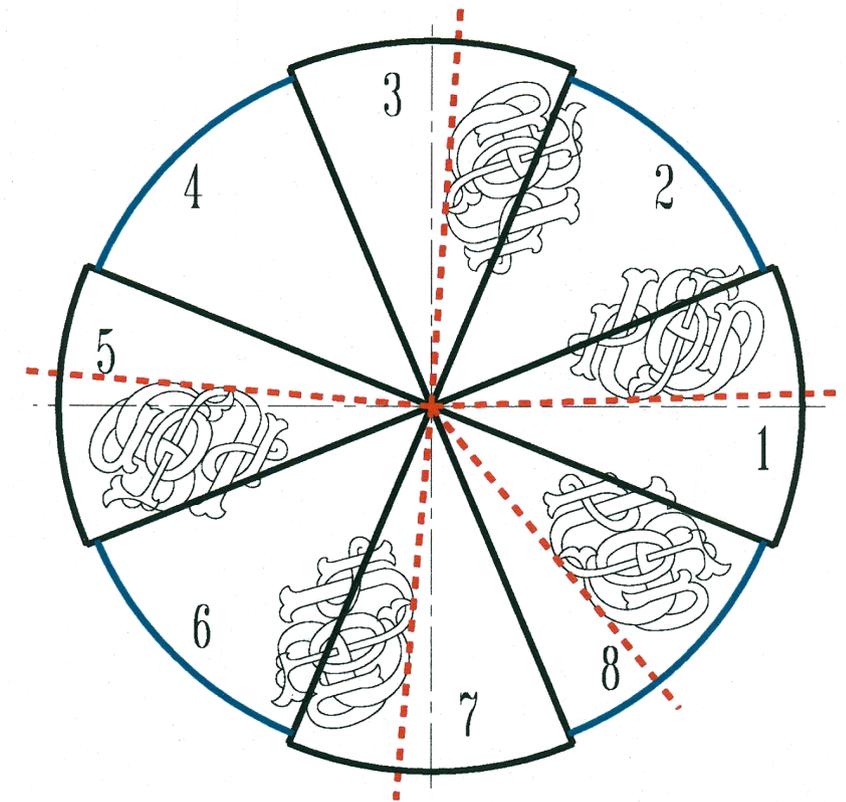


Figure 11a: Zone Diagram: Watermark 2B Shown

The Odd Numbered Zones are standard knife Placement for each of the four paper positions.

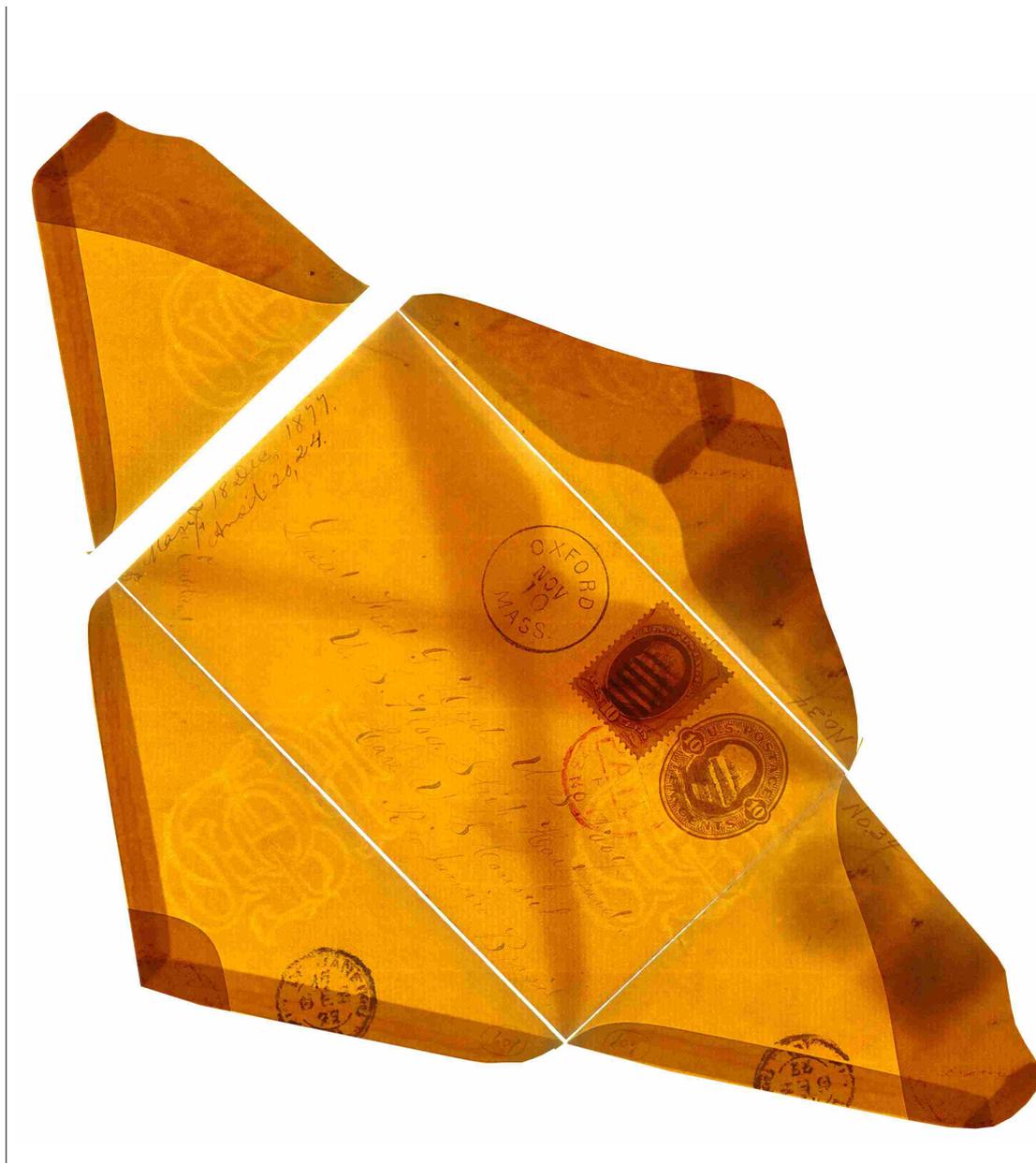
The Even Zones are non-standard knife placement.

Red lines indicate base lines of watermarks.

WMK 2B: Zone 1 is Standard; WMK 2A, Zone 3 is Standard

[11.2] Additional Common Orientation Examples:

Watermark 2A & 2B Inverted (Paper 'Face Up' but Rotated 180°)



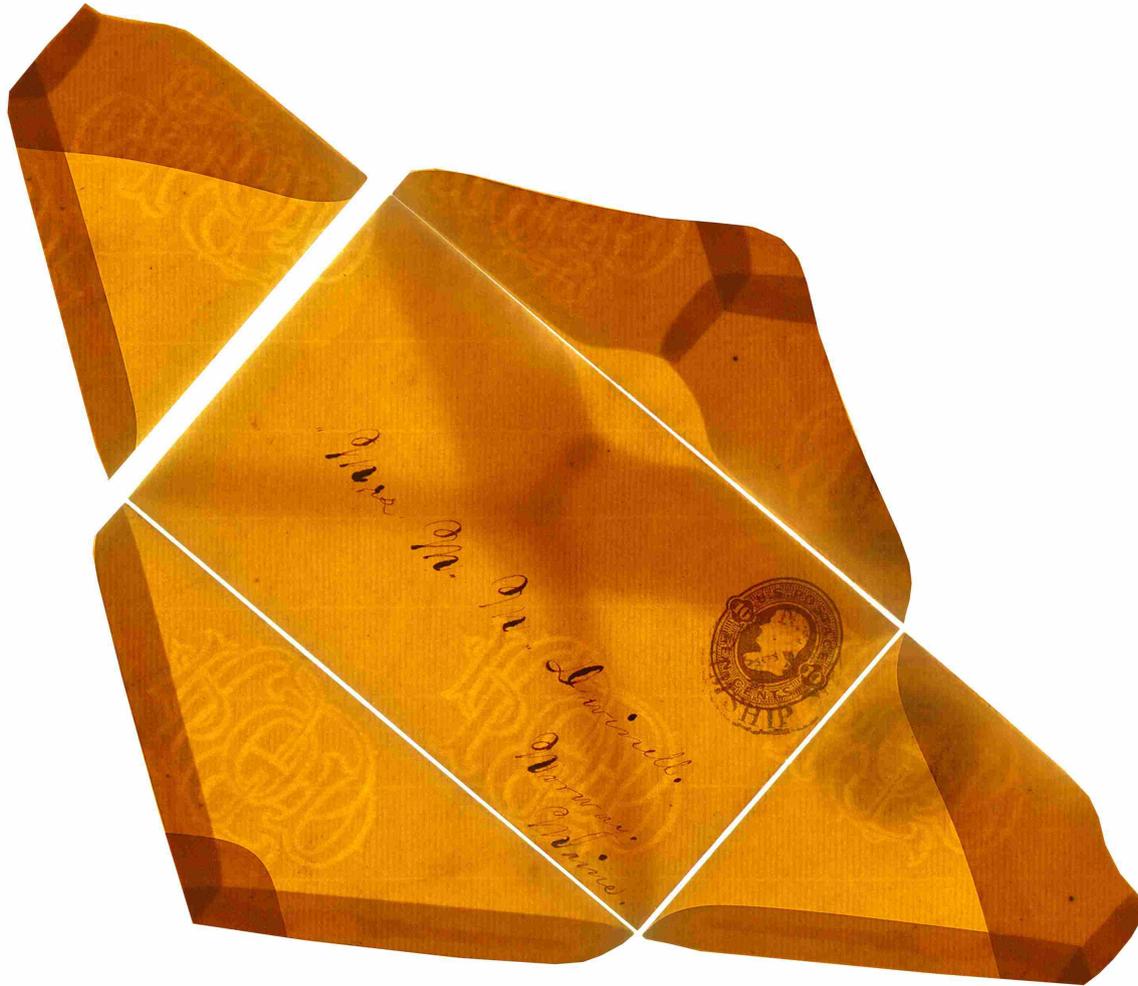
Watermark 2A Rotated 180°; C47° Zone 7; Cover 227-2 [15.5]



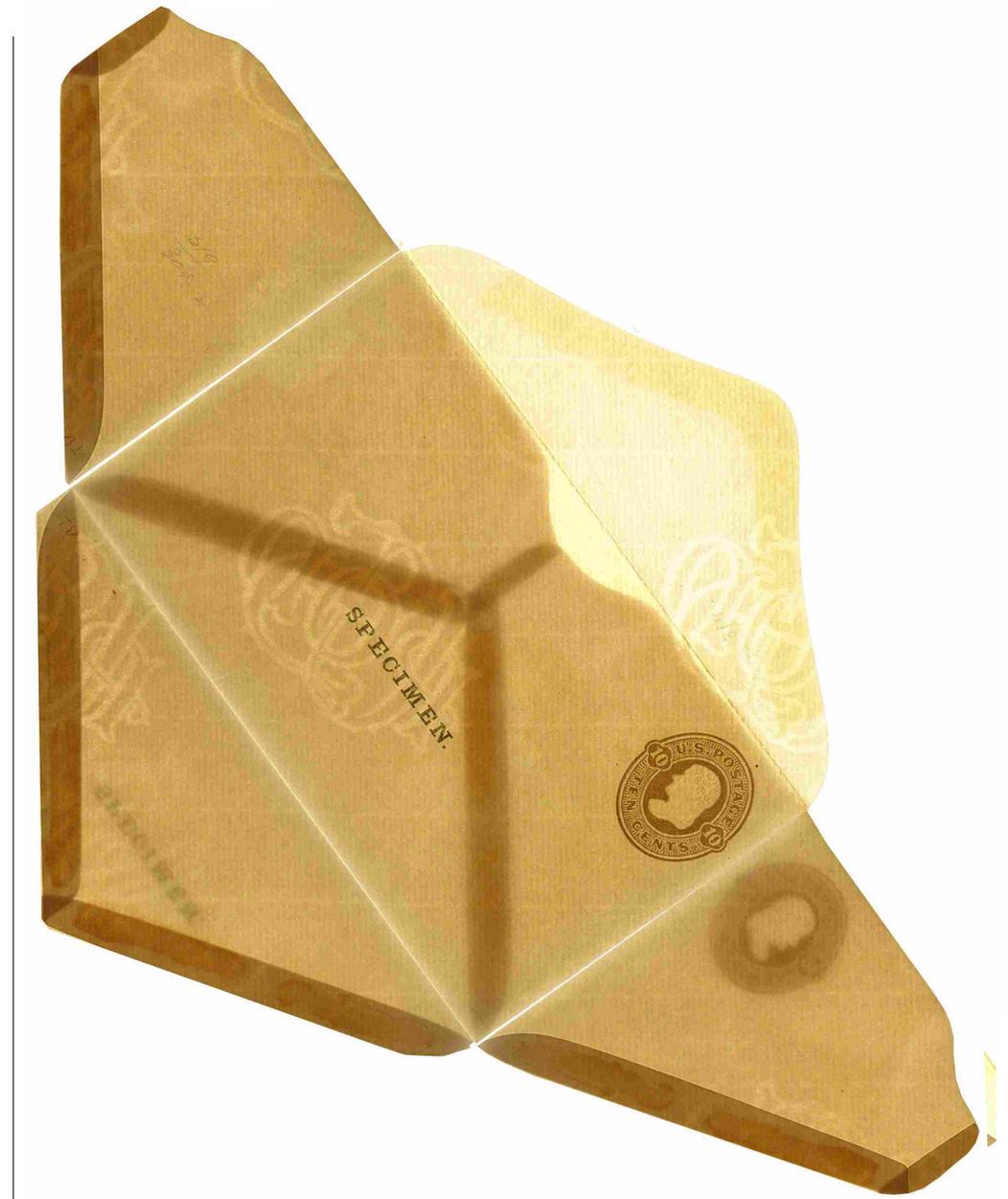
Watermark 2B Rotated 180°; C51° Zone 5; Cover 224-1 [10]

[11.2] Additional Common Orientation Examples:

Watermark 2A Mirrored & Mirrored Rotated 180°
Mirrored watermarks result from 'Face Down' paper.
Note that the Watermark 2A is now horizontal.



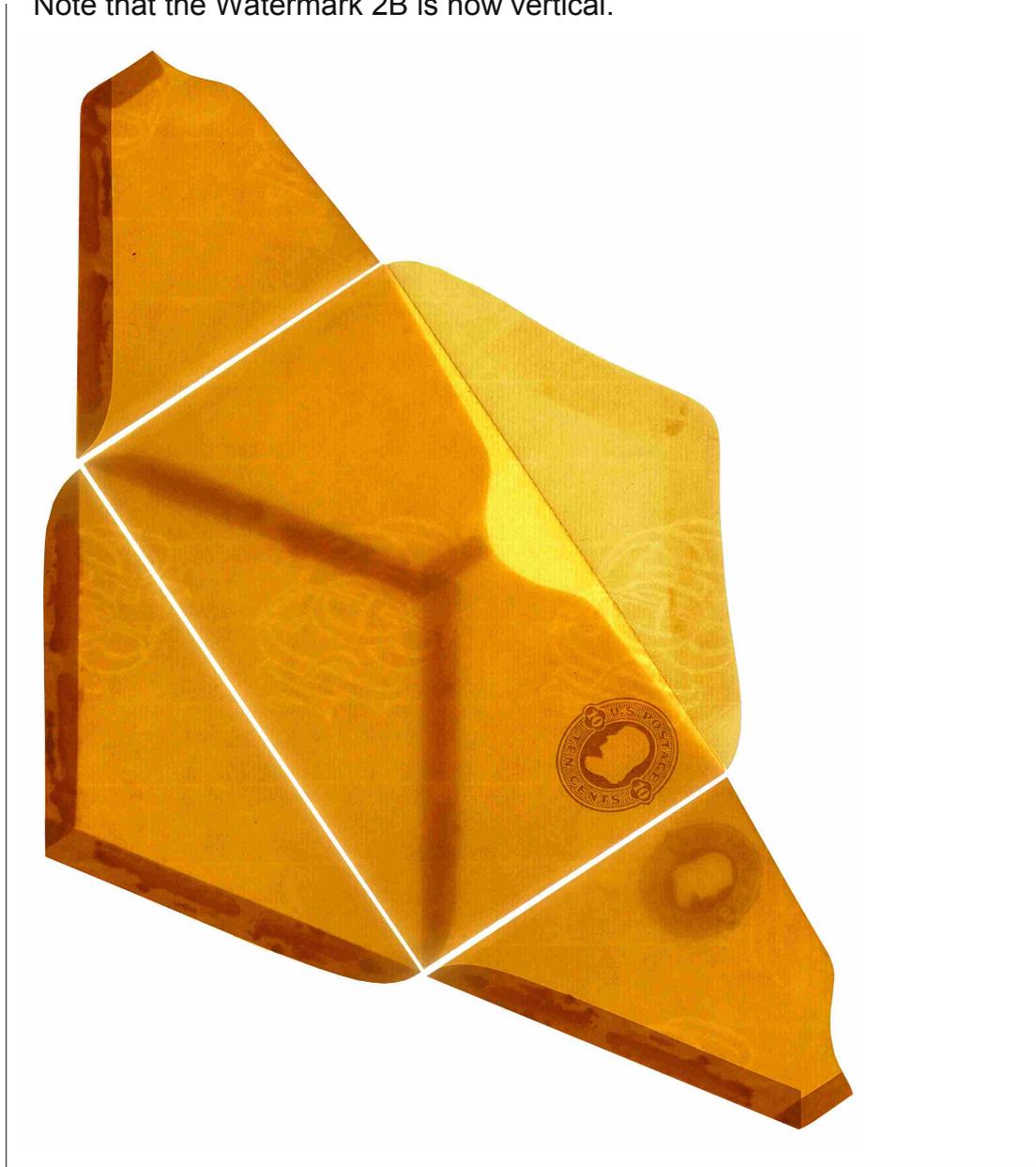
Watermark 2A Mirrored; C41° Zone 1; Cover 226a-2 [16.3]



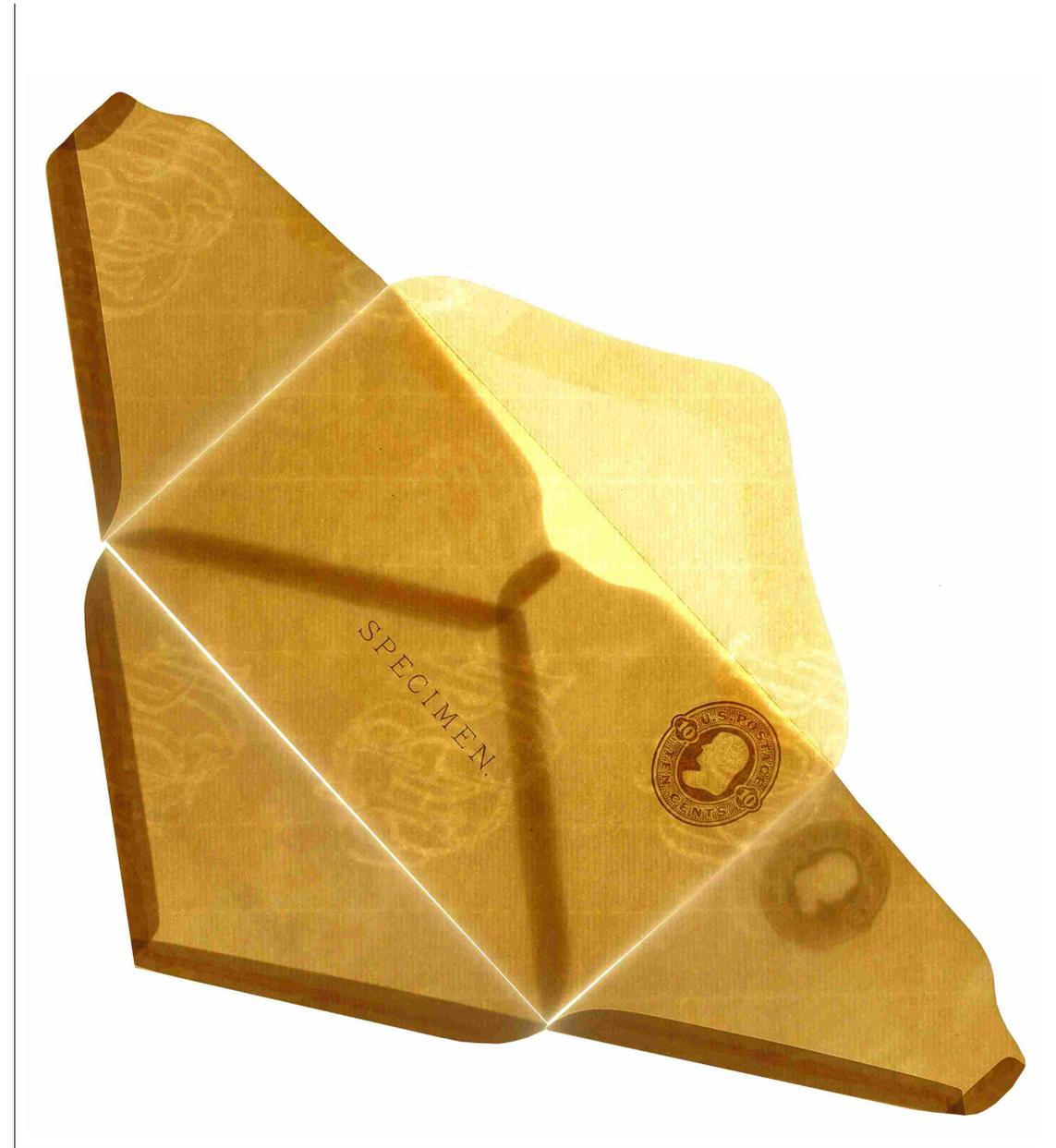
Watermark 2A Mirrored & Rotated; C55° Zone 5; Cover 223-3 [13.2.2]

[11.2] Additional Common Orientation Examples:

Watermark 2B Mirrored & Mirrored Rotated 180°
Mirrored watermarks result from 'Face Down' paper.
Note that the Watermark 2B is now vertical.



Watermark 2B Mirrored; C56° Zone 3; Cover 228-2 [10]



Watermark 2B Mirrored & Rotated; C48° Zone 7; Cover 224-6 [13.2.3]

[11.3] Orientation Study Results:

This study is in the very early stages. The data is shown here to present a methodology and stimulate discussion, not to draw hard and fast conclusions, Even though the study group of 27 envelopes is very small, some information is emerging, as follows:

Watermark Type by Catalog Number:

In 1892 Tiffany, Bogert & Rechert cataloged all stamped envelopes then issued. Their tables list both watermark types, and was the basis of this study. In the study group,

- 15 Envelopes are Wmk2A, 12 are Wmk 2B.

Points of agreement with TBR:

- All Olive Black & Olive Gray envelopes are Wmk 2A
- All #226 & #227 (Amber Paper) are Wmk 2A
- All #228 (Amber Paper) are Wmk 2B

Points of exception to TBR:

- #223 & #224 occur with both watermark types. TBR list only Wmk 2B. Of the 13 in the study, 3 were Wmk 2A.

Chain Line Angle (Knife Orientation):

The Watermark to Chain Line angles shown in the Watermark section are as follows. These represent the Standard angle for C

- Wmk 2A 55°
- Wmk 2B 35°

The data from 25 of the 27 samples in the study shows the following:

- Wmk 2A: Range of C: 38° - 55°; Average 47.5°
- Wmk 2B: Range of C: 37° - 54°; Average 47.5°
- The Remaining two are 122°, and 140° (approx. 55°+90°)

Watermark Zone (Paper Orientation):

- 75% of the samples of each watermark are 'Face Up' Paper (Std & 180°)
- 18% of the total are 'Face Down' Paper (Mirror Image Wmk).
- Of the 'Face Up' Paper, 55% have 180° (Inverted) Watermarks.
- 2 of the 27 are Non-Standard (Chain line angle of 122° & 140°

The C 140° example represents a 90° rotation from the 55° standard, and results in a Wmk 2A in Zone 5 (Horizontal Inverted). The C 122° example has Wmk 2A in Zone 8 (Angled). Both are Olive Shades.

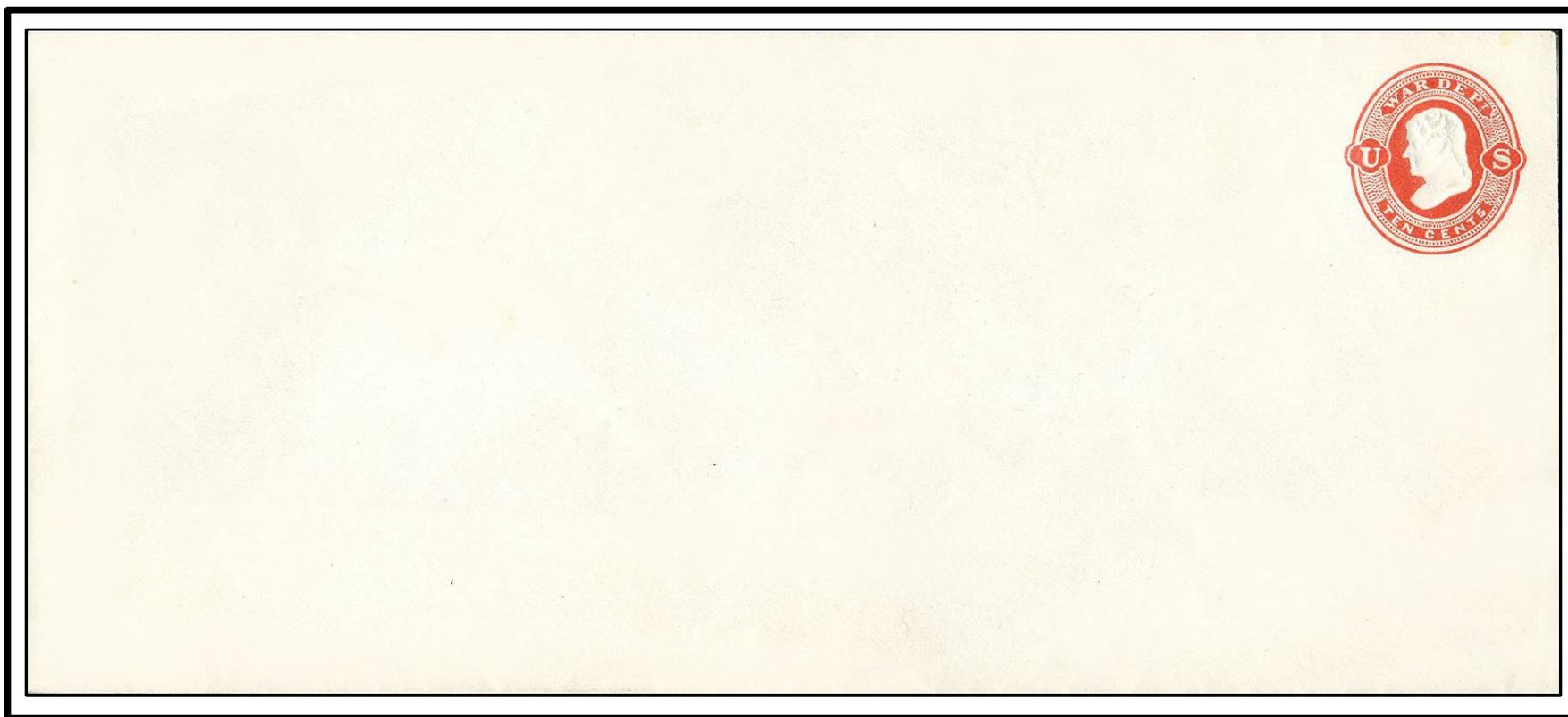
UPSS #	Paper Color	Knife	Wmk 2A	Wmk 2B	Total
223	White	25	1	5	6
223a Olive Shades	White	25	1	0	1
224	White	26	2	5	7
226	Amber	25	4	0	4
226a Olive Shades	Amber	25	3	0	3
227	Amber	26	4	0	4
228	Amber	27	0	2	2

Orientation Zone	Wmk 2A	Notes	Wmk2 B	Notes
Z1	1	Mirror	3	Std
Z3	6	Std	2	Mirror
Z5	1	Mirror	6	180°
Z7	5	180°	1	Mirror
Other	2	Non-Standard C	0	

[12] *Official Envelopes:* {50}

In his efforts to reform and modernize the Post Office Department, Postmaster General John Creswell worked to end "Free Franking". This privilege had allowed Government Agencies and Officials to send mail at no charge. The Congressional Act of January 27, 1873 abolished this privilege and required that the normal postal rate apply to official mail. The Act of March 3, 1873 directed the PMG to prepare Official stamps and stamped envelopes for each department. Each department's stamps were a different design and color. All except the Post Office Dept used the profile busts from the regular issue stamps with different frames. The POD official stamps replaced the bust with a large numeral.

Official Stamped envelopes were only issued for the Post Office Dept, and the War Dept. They were made under the existing stamped envelope contracts. Under the Reay contract, the POD envelopes were issued in 2¢, 3¢, & 6¢ denominations only, and used the Numeral design of the official stamps. Most were on Canary paper with special POD watermarks. The War Dept envelopes used the same busts as the regular issue envelopes with a different frame. All regular issue denominations were issued for the War Dept except the 90¢. They were on the normal Watermark 2 paper. All were issued on White paper. In addition, the 3¢ & 6¢ were issued on Cream paper, and 1¢ wrappers on Manila. All War Dept envelopes exist in two color varieties; Dark Red and Vermillion. All Dark Red's are on WMK 2A paper. All Vermillion's are on WMK 2B.



Item WD41-1: 10¢ Red on 1st Quality White; No. 7 Official Size; UPSS Size 21;
Knife 98; UO39; UPSS WD41 Watermark 2B
Reay 10¢ War Department envelopes were made only in No. 7 Official Size
Rarity: Less than 500 issued

Official envelope production continued during the 1874 Plimpton contract, but on March 3, 1877, an Act of Congress established a new free privilege provided the mail was enclosed in an envelope marked "Official Business, Penalty for Private Use \$300". This ended the need for official stamps and envelopes.

[13] Specimen Envelopes:

[13.1.1] Perspective: Earlier Specimens {180}

1855: Originally, Specimen markings were in manuscript (Fig.13a)

1861: In 1861, printed markings began to appear.

1865: By the 1865 10c re-issue, a more refined marking was in use known to collectors as SF3 (Fig.13b). Also introduced around the same time were Advertising markings which identified the size, paper and pricing. A series of these were used with the prices changed for different denominations. The 10¢ version is cataloged as A14 (Fig.13d). Note that both the SF3 and A14 shown also have the one line general return request.

Specimen markings on Essays and Proofs: By March 21, 1862, small (1.5mm & 2mm) "Specimen" markings were being used just below the indicium on essays and proofs. The 2mm SF5 is known on 1861 10¢ envelopes. Whether these are production (or pre-production) proofs is unclear. They are far more scarce than the SF3's or A14's. (Fig.13c)

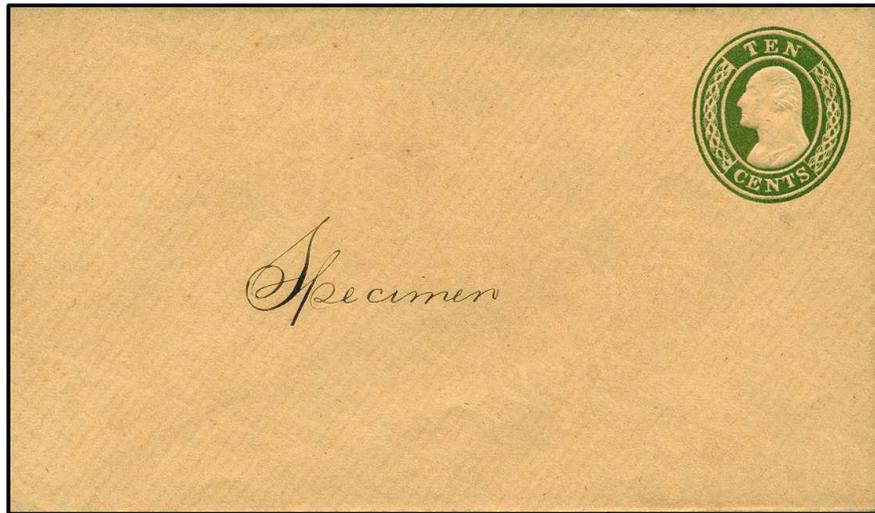


Figure 13a: 1855 10¢ with Manuscript Specimen

Figure 13b
1865 10¢ Re-issue with Specimen Form 3 (SF3)

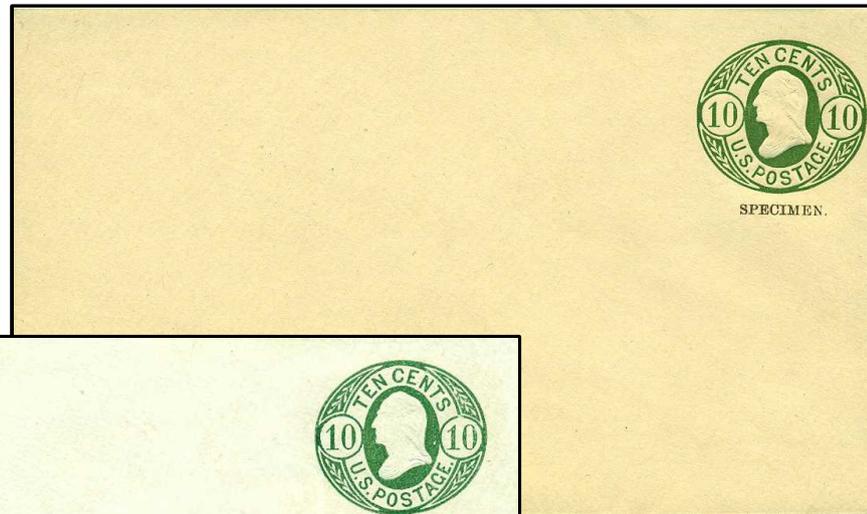
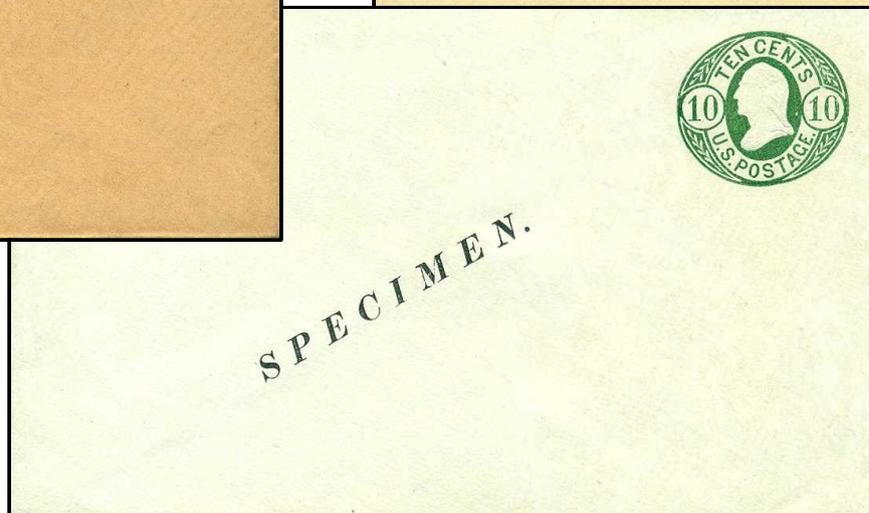
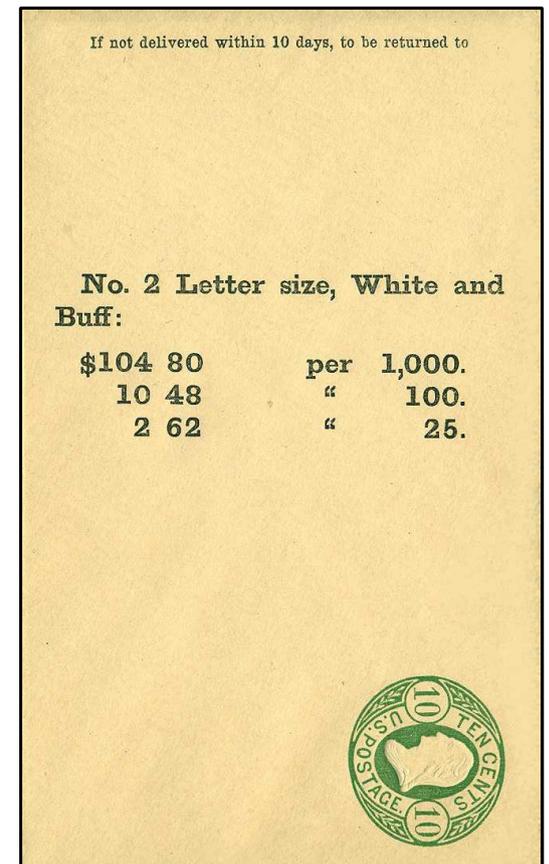


Figure 13c
1865 10¢ Re-Issue with SF5 (facsimile)

Figure 13d
1865 10¢ Re-issue with Advertising Form 14 (A14)



[13.1] Stamped Envelope Basics: Specimens: {180}

Specimen envelopes are standard production envelopes, marked, in most cases, with the word "Specimen", for non-postal use as examples of envelopes currently in use. The specimen marking served as a form of cancellation to demonetize the envelope. These markings were generally applied by the envelope contractor on order of the POD. The form of the marking was apparently left to the contractor.

Over the years, Specimen envelopes were used for a number of purposes as follows:

- **Advertising and Promotion:** Specimen envelopes were distributed to Post Offices to be shown to potential buyers. In some cases, size, paper and pricing information was printed instead of, or in addition to the word "Specimen".
- **Presentation Samples** to be distributed to Government officials, and later to the UPU. The UPU maintained examples of all postal issued worldwide.
- **Bidders Samples:** Starting with the 1870 re-bid, Bidders Samples were distributed to anyone who requested a bid form.
- **Production Samples for Quality Control.** Production samples were taken from time to time by the Stamped Envelope Agent, to evaluate quality.

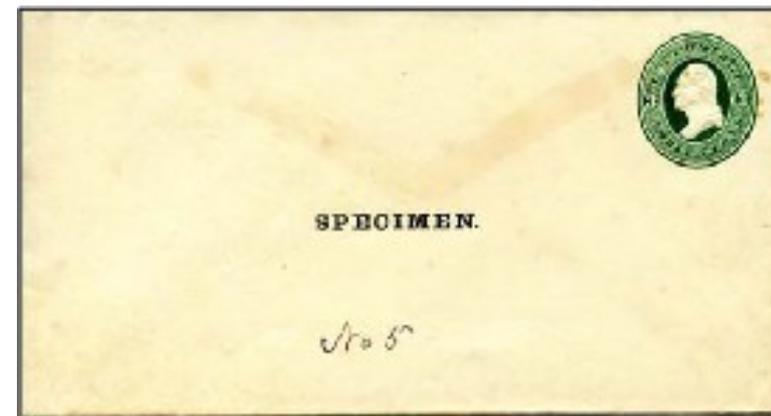
[13.2] Reay Specimens: {180}

New Specimen Markings: In keeping with the assumption that the details of the Specimen markings were left to the contractor, the form of the "Specimen" changed when George Reay became the contractor.

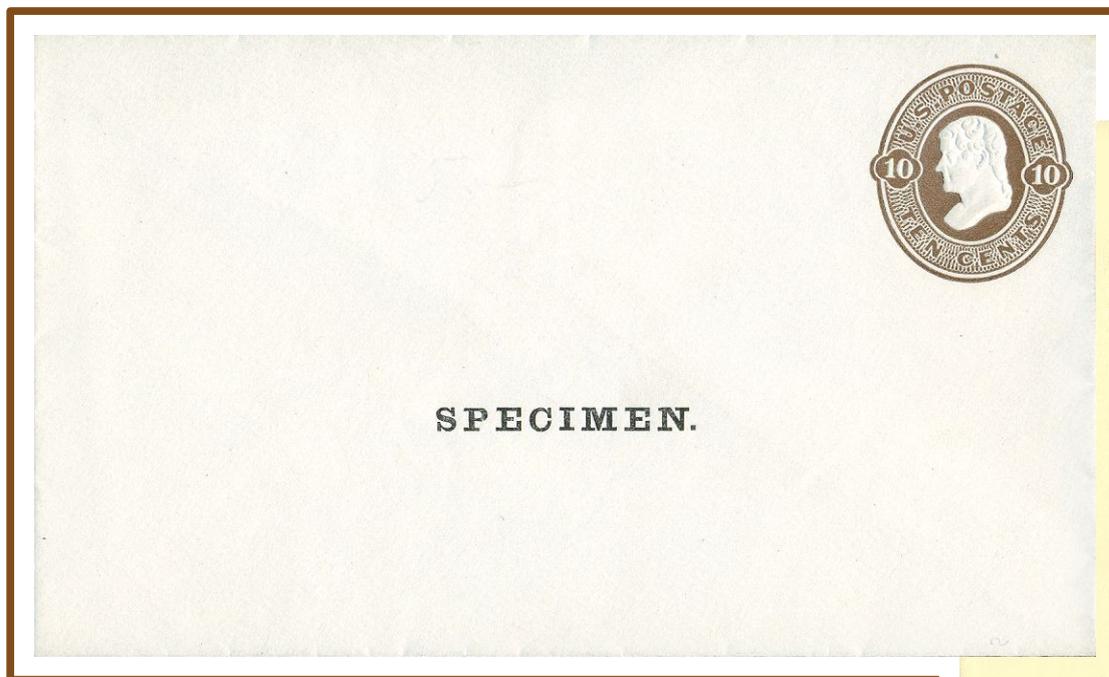
[13.2.1] Bidders Samples: When the stamped envelope contract was rebid in July 1870, Reay was already in production. The new envelopes with "Specimen" overprint (SF10 & SF11), were further marked by the POD with a size designation in manuscript, and sent to perspective bidders as examples of what was expected of them. This was the first use of printed specimen envelopes as Bidders Samples during the contracting process. Used bidders samples are rare. In most cases, the quantity produced is less than 10 pieces. Used Bidders Samples can be distinguished by punched hole or slits which were used to tie the set together with a ribbon.

[13.2.2] Specimen Form 10 & 11: The first specimen marking used by Reay are cataloged as Specimen Form 10. This is known to be the first type because they were used as bidders samples during the July 1870 rebid. A similar marking in the same type face with wider spacing (SF11) was used only on Extra-Official (size 25) envelopes.

Knife 25 and SF10: All Full Letter size envelopes with SF10 are Knife 25. This shows that Knife 25 was in use in July 1870 at the beginning of production.

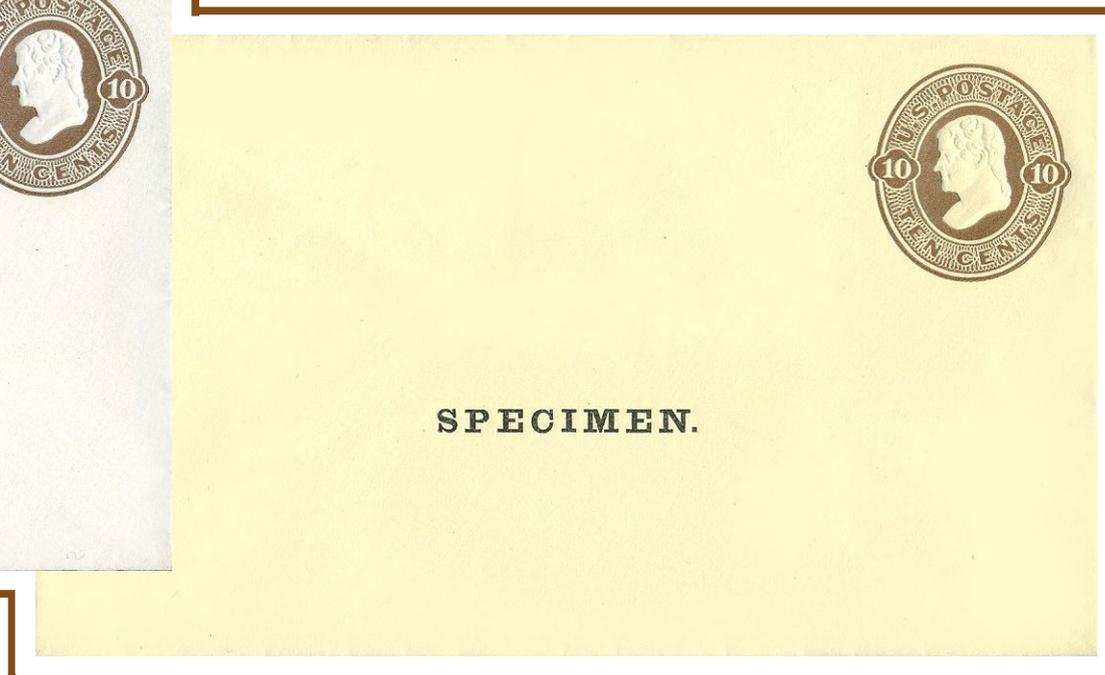
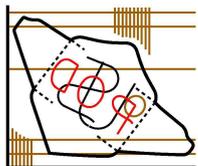


3c 1870 Rebid Bidders Sample. 10¢ Bidders Samples are said to exist, but at the time of this writing, no images were available {180}



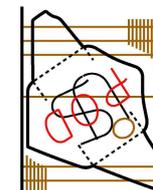
Item 223-3: 10¢ Brown on 1st Quality White, .0042"
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U91; UPSS 223;

Watermark 2A; Orientation C55, Z5M [11.2]:



Item 226-1: 10¢ Brown on 1st Quality Amber, .0044"
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U92; UPSS 226:
Specimen Form 10;

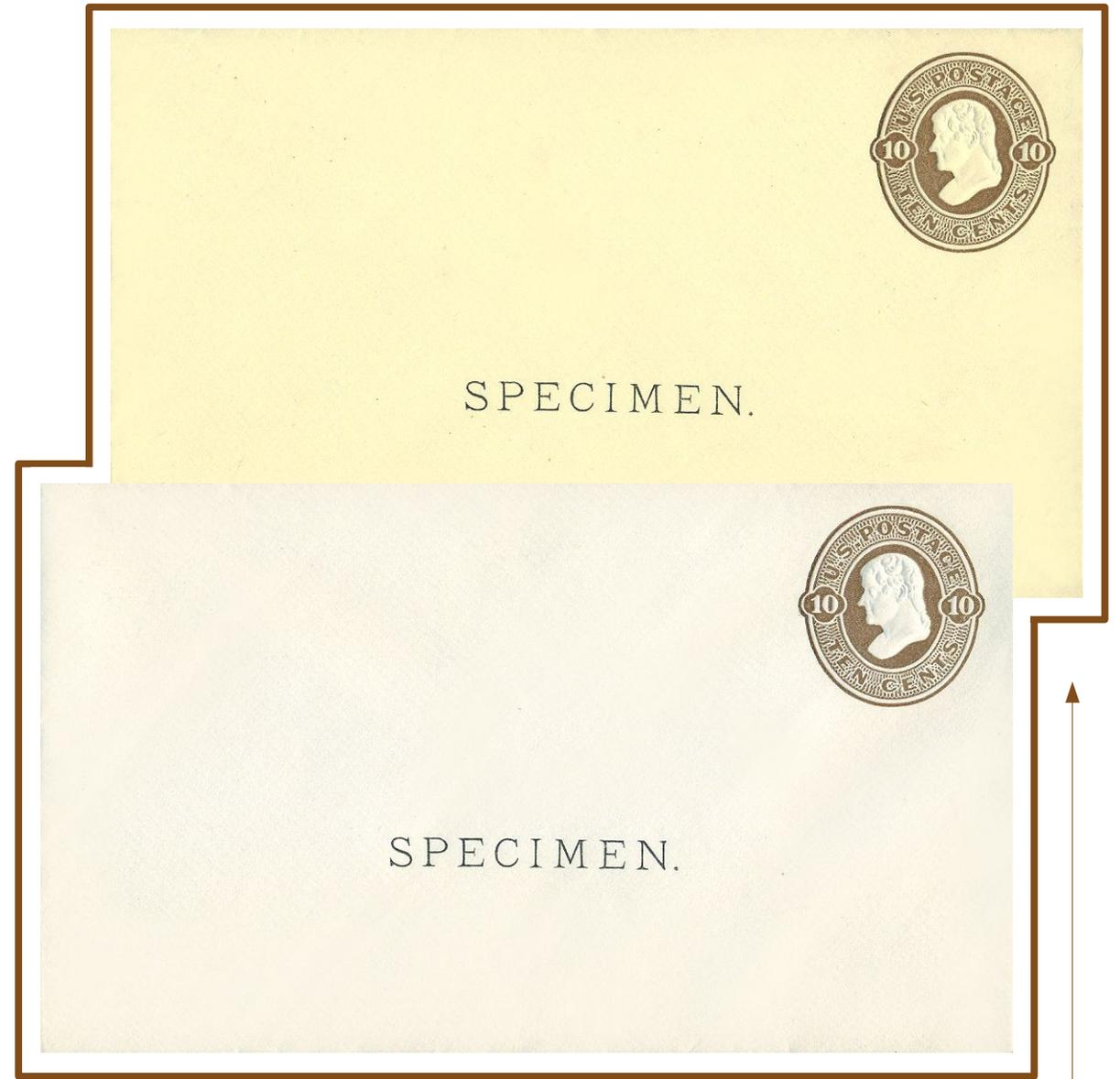
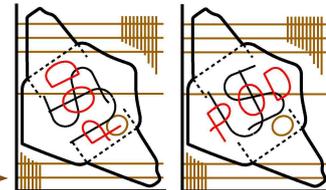
Watermark 2A; Orientation C55, Z7:



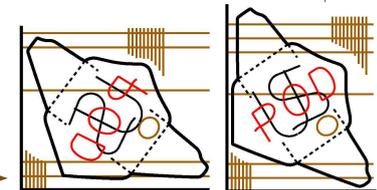
[13.2.3] Later Reay Specimens: Later Specimen printings by Reay used a different type face. Two different spacings were used. The narrower (SF13) is 35mm wide. The wider (SF14) is 41mm wide. It is assumed that these were two different printings since on the Full Letter size, SF13 is only found on Knife 25 envelopes, while SF14 is only found on Knife 26. The odd part is that SF13 are only found on Full Letter size and smaller envelopes, while SF14 occurs on all sizes.



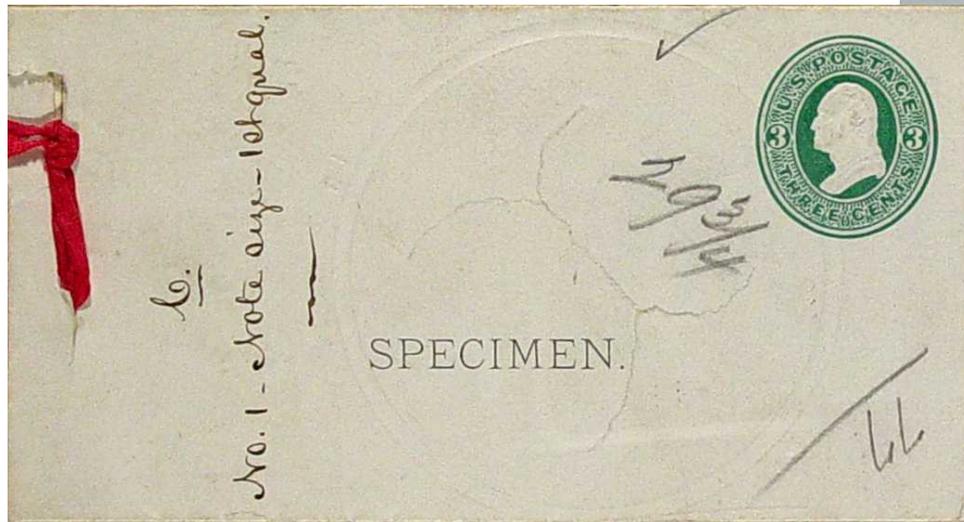
Specimen Form 13's; 10¢ Brown on 1st Quality Paper;
 No. 3 Full Letter Size; UPSS Size 7;
 Items 226-2 (Top): On Amber; Knife 25; U92; UPSS 226, SF13;
 .0044 paper Watermark 2A; Orientation C38, Z3;
 Items 223-4 (Bot.): On White; Knife 25; U91; UPSS 223 SF13;
 .0043 paper Watermark 2B; Orientation C54, Z5: →



Specimen Form 14's; 10¢ Brown on 1st Quality Paper;
 No. 3 Full Letter Size; UPSS Size 7;
 Items 227-4 (Top): Amber; Knife 26; U92; UPSS 227, SF14;
 .0038 paper; Watermark 2A; Orientation C40, Z3;
 Items 224-6 (Bot.): White; Knife 26; U91; UPSS 224 SF14;
 .0042 paper; Wmk 2B; Orientation C48, Z7M [11.2]: →



[13.2.4] Bidders Samples for the 1974 Contract: A mix of SF13's and SF14's were used as Bidders Samples for the 1874 contract. The 1874 Bidders Sample set in the National Archives has SF13's for all sizes up to Full Letter, and SF14's for all larger sizes. No SF13 or SF14 Bidders Samples have been reported on 10¢ Reay envelopes.



Reay Specimen envelopes used as Bidders Samples for the 1874 Contract bid. Note the manuscript markings added by the POD. The letter "C" is a set identification. Attached is the bid sheet from The Morgan Envelope Co. {10}

PROPOSAL FOR STAMPED ENVELOPES AND NEWSPAPER WRAPPERS.

The undersigned, *The Morgan Envelope Co.* doing business as manufacturers of envelopes in the city of *Hampshire* submit to the Post Office Department, in conformity with the terms and conditions of an advertisement dated July 13, 1874, a printed copy of which is hereto attached and made part hereof, the following proposal for furnishing Stamped Envelopes and Newspaper Wrappers, (specimens of which, selected and furnished by said Department, are also hereto attached and made part hereof,) to wit:

The undersigned, *The Morgan Envelope Co.* propose to furnish the stamped envelopes and newspaper wrappers, as per specimens attached, with such embossed stamps thereon as the Postmaster General may direct, at the following prices per thousand:

DESCRIPTION.	Quality.	Color.	Size (inches.)	Mark of samples.	Bidder's Price per Thousand.		
					Dollars.	Cents.	
ENVELOPES AND NEWSPAPER WRAPPERS							
.....	First	White	2 1/4 by 5 1/4	A	2	13 ✓	
.....	Second	Amber	" "	B	2	26 ✓	
.....	First	"White, or amber	3 1/4 by 5 1/4	C	2	48 ✓	
.....	Second	Cream	" "	D	2	45 ✓	
.....	Third	Amber	" "	E	1	93 ✓	
.....	First	"White, or amber	3 1/4 by 5 1/4	F	2	65 ✓	
.....	Second	Cream	" "	G	2	58 ✓	
.....	Third	Amber	" "	H	2	12 ✓	
.....	ungummed	Dark-buff	" "	I	1	76 ✓	
.....	gummed	First	"White, or amber	3 1/4 by 6 1/4	K	3	05 ✓
.....	Second	Cream	" "	L	3	05 ✓	
.....	Third	Amber	" "	M	2	37 ✓	
.....	ungummed	Dark-buff	" "	N	1	98 ✓	
.....	gummed	First	"White, or amber	3 1/4 by 8 1/4	O	4	46 ✓
.....	Second	Cream	" "	P	4	46 ✓	
.....	First	"White, or cream	4 1/4 by 10 1/4	Q	5	45 ✓	
.....	"	Manilla	Light-buff	6 1/4 by 9 1/4	R	1	22 ✓
OFFICIAL STAMPED ENVELOPES FOR POST OFFICE DEPT.							
.....	gummed	Canary	3 1/4 by 6 1/4	S	2	65 ✓	
.....	"	Canary	3 1/4 by 6 1/4	T	3	05 ✓	
.....	"	Canary	4 by 9	U	4	46 ✓	
.....	"	Canary	4 1/4 by 10 1/4	Y	5	25 ✓	

* Only one price must be named for furnishing envelopes in either of the two colors required for this quality.

[13.3] Perspective: Later Specimens

Plimpton Specimens: The Specimen markings changed again when Plimpton was awarded the contract in 1874. Illustrated are various 10¢ Plimpton envelopes with Specimen and Bidders sample markings.

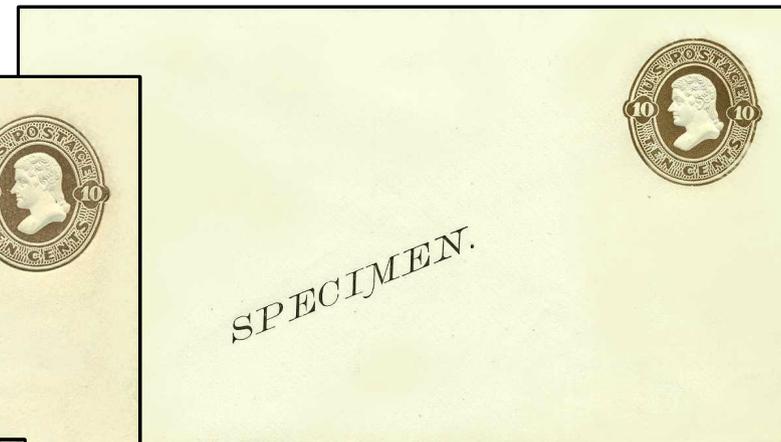
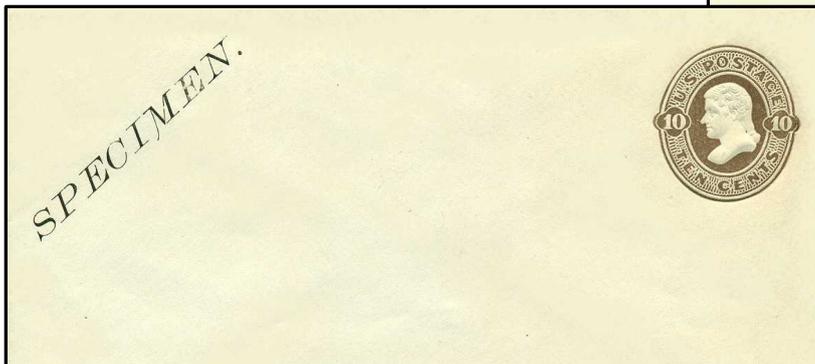
Points of note:

For the 1878 and 1882 contracts, Specimen envelopes with red manuscript markings were used. Starting in 1886, specially printed bidders samples were printed.

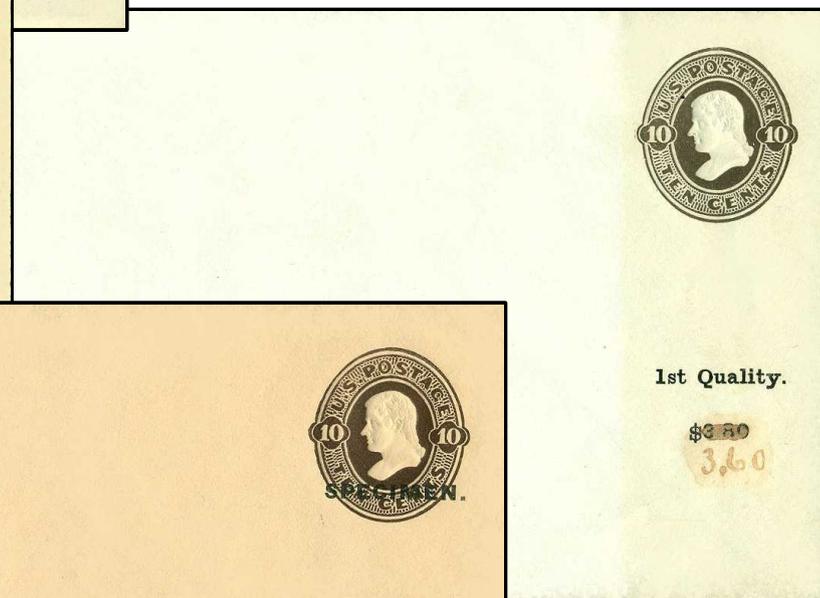
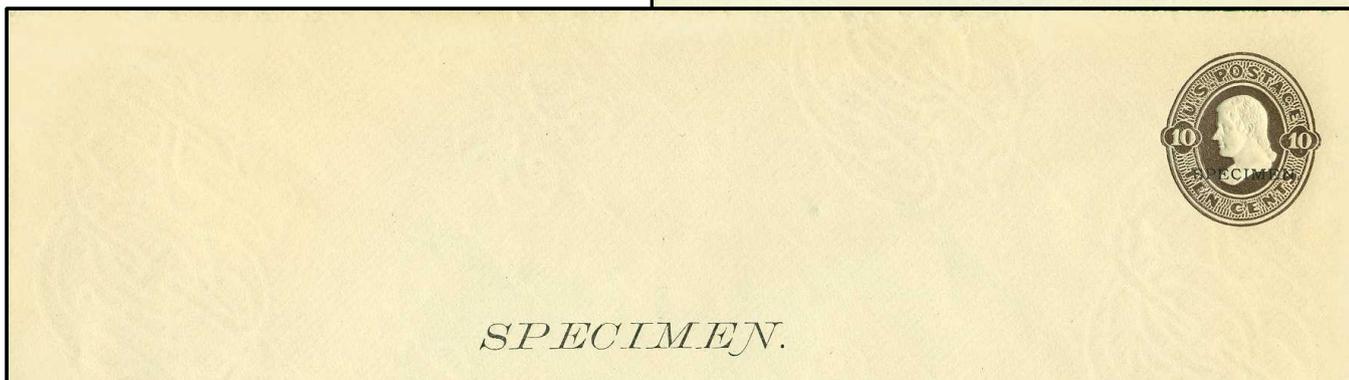
In 1879, display frames with examples of available stamped envelopes were assembled and hung in the lobbies of certain Post Offices. An example of a 10¢ display frame envelope is shown below.

Specimen Forms 35 & 34, Wmk 6, 1882
Note small "Specimen" over indicium

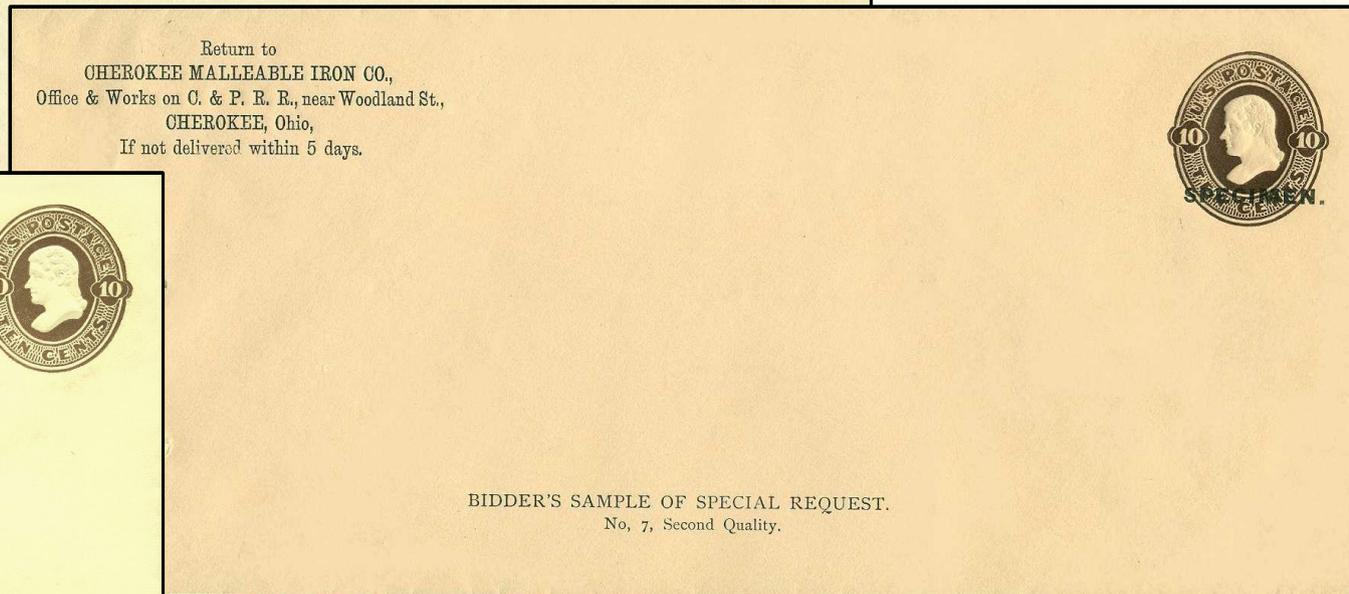
Specimen Form 17, Wmk 2, 1874



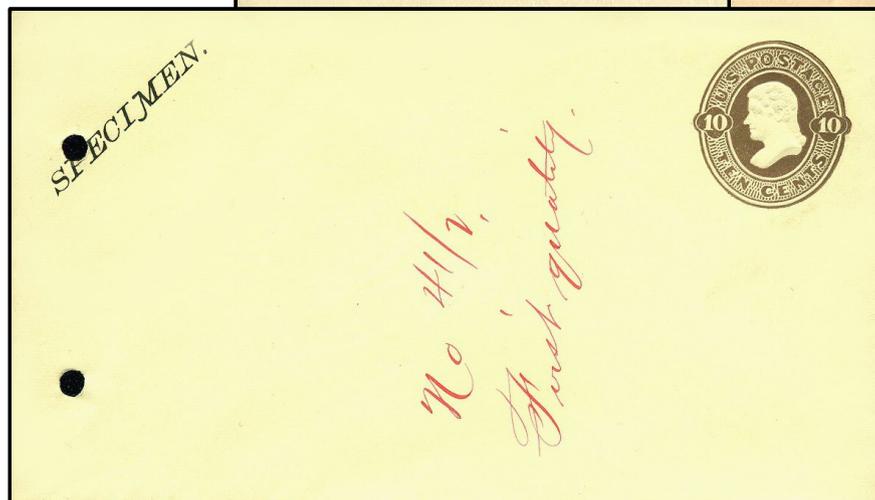
Specimen Form 16, Wmk 2, 1874



Specimen Code 21 Wmk 5, 1878
PO Display Board Sample.
Note un-toned area was covered by another envelope. Also note price change (unlisted)



Specimen Form 36, Code 11, Wmk 6, Bidders Sample for 1886 Contract
Specimen Form 18, Wmk 5, Used Bidders Sample for 1882 Contract. Note Ribbon Holes



to be returned to

PAID
Wells, Fargo & Co.
OVER OUR CALIFORNIA AND COAST ROUTES

PAID OVER OUR
MEXICAN COAST AND CALIFORNIA EXPRESS--35 CTS.

WELLS, FARGO & CO.
ATLANTAN MEX.



Monsieur
Le Post de Créteil,
à Paris, près la Porte Blanche
France.

Part 2: Usages

[14] Usages, Rates:

During the Reay Stamped Envelope contract, there were no 10c domestic postal rates. The California rate had ended seven years earlier. The registry fee had been bouncing around, but it would not be until 1875 that it settled at 10c. Usages as 1c overpayment of a 3x first class rate could have occurred, but stuffing 1.5 oz into a Full Letter Size envelope is no small feat. The closest domestic rate to 10c was the Jan 1, 1874 to July 1, 1875 *1st Class + Registered* rate, at 3c + 8c. Here 10c + 1c was the logical choice, but 10c stamped envelopes in this service are virtually unknown.

The intended purpose, and the vast majority of uses of the 10c Reay envelopes were for foreign mail. Convention rate reductions in 1870 resulted in 10c rates from the US to most of Europe. The 10c Steamship "Blanket" rates of 1864 were still in effect to most of Central America and the islands. The following is a brief review of 10 cent rates.

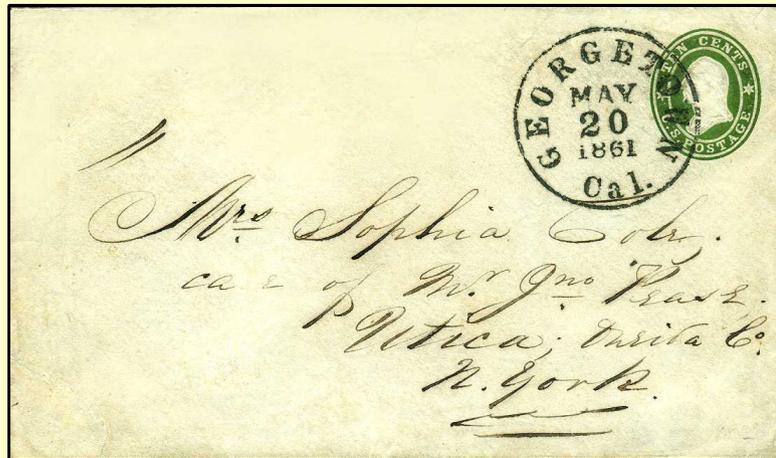
10 cent Rates in the Stamped Envelope Era:

[14.1] Domestic Rates:

[14.1.1] Perspective: The California Rate

Effective July 1, 1855, the rate for 1st class domestic mail traveling more than 3000 miles was raised from 6c to 10c per 1/2 oz. This rate, commonly referred to as the "California Rate", remained in effect until July 1, 1863. At that time, the rate for all domestic mail became 3c regardless of distance. The early 10 cent envelopes were issued for this service, and a very high percentage were used on eastbound mail from California. So much so, that when the rate ended, 10c envelopes were discontinued, at least temporarily. Initially, the majority of the mail from California traveled down the coast by steamer to Panama where it was transported overland to the gulf coast, then by steamer again to New York.

An 1861 California Rate use of an 1860 Star Die issue from Georgetown Cal. To Utica, New York. Note that this cover was mailed after the start of the Civil War, but prior to the time when new designs were ordered.



[14.1.2] Registered Rates: {190, 200}

Perspective: Early Registered Rates:

July 1, 1855: Official Registered mail service begins as a means to track valuable letters. The fee was originally 5c.

July 1, 1863: Registry fee was raised to 20c and included a return receipt. The fee was required to be paid in cash, not stamps.

June 1, 1867: 20c Registry Fee of 1863 must now be paid by stamps. This marks the beginning of the era when 10c cent envelopes might have been used to pay a portion of the registry fee.

Registry Rates During the Reay Era:

Jan 1, 1869: Registry Fee reduced from 20c to 15c.

Jan 1 1874: Registry Fee reduced from 15c to 8c. This resulted in a total rate of 11c for a domestic registered letter. 10c + 1c was the only option for payment with 2 stamps, or an envelope with one additional stamp. This rate was short lived, lasting only until July 1, 1875.

July 1 1875: Registry Fee raised from 8c to 10c. This rate would remain in effect until 1893. 10c stamps and stamped envelopes now would pay the full registry fee for domestic and foreign mail, with the postage being paid by adding adhesive stamps.

Perspective:

Jan 1 1893: Registry fee reduced from 10c to 8c. 10c stamps and stamped envelopes found use paying the combined 2c 1st class postage + 8c registry fee.

An 1898 First Class Registered Use. 10c Columbian Envelope paying the 2c + 8c rates.



[14.2] Foreign mail rates:

Today we can buy a stamp for the international rate, and use it to pay the postage to almost anywhere in the world. This was far from the case prior to the General Postal Union of 1875. Up to that point, a myriad of rates existed based on treaties and agreements between individual countries, and extended service based on the agreements of an intermediary country. As a result, it was commonplace to have multiple rates from the US to another country based on the route the letter took. In general, the greater the distance the more different rates and the more variation in cost. By 1870, some amount of uniformity was emerging, especially from the US to Europe. 10c would pay the 1/2 oz rate to most European countries. Most 10c Reay envelopes were used in this service. Perhaps the second most common use, was mail carried to and from Mexico by Wells Fargo & Co Express. The 10c envelope paid the Steamship rate.

1851 10¢ Steamship Rates: Effective July 1, 1851, the rate for domestic postage was reduced to 3c per 1/2 oz if less than 3000 mi, and 6c if greater. The same Act also set the rate for mail “conveyed wholly or in part by sea, and to or from a foreign country” at 10c if less than 2500 mi, and 20c if greater. This applied to mail carried by contract mail steamships operating over established postal routes, to countries with which there was no other treaty or convention. The 2500 mi. threshold included any inland distance prior to leaving port. Initially, NY to Panama via Havana (the established postal route) was rated greater than 2500 mi. By Dec 1856, it had been established that the distance was actually 2345 mi., at which time the rate was reduced to 10c. The rate from Boston and many other points in the US, however, would have remained 20c.

It is important to note that since this rate involved no agreements with foreign countries, it only paid the US postage to the port of entry. Any inland postage within the destination country would normally be treated as postage due. {210 pg 56}

1864 10¢ Steamship Rate: Effective July 1, 1864, the distance provision of the 1851 rate was removed, making the rate a flat 10c regardless of distance. Again, this rate applies to mail carried to or from foreign ports over established postal routes, on contract mail steamers. This rate only applied in cases where no other rate established by treaty or convention existed. Many, therefore, refer to it as the “Blanket Steamship Rate”. With the revision, 10c now paid the rate to, or from, any point within the US.

Again since this rate involved no agreements with foreign countries, it only paid the US postage to the port of entry. {210 pg 61}

1867 Postal Conventions:

In 1867 a series of postal conventions were signed between the US and most European countries. All featured a 15c per 1/2 oz rate. This could be considered the beginning of rate standardization. {220, 221}

Jan 1, 1868 10¢ NGU Postal Convention Rate:

This convention, signed by the US and the newly formed North German Union, replaced the earlier Hamburg, Bremen, and Prussian conventions. It set a rate of 10c per 1/2 oz for direct mail, and 15c for closed mail via Great Britain. On July 1, 1870, the rate was reduced to 7c per 1/2 oz for direct mail, and 10c via England. The direct mail rate was further reduced to 6c on July 1, 1871. {220, 221}

Jan 1870 – July 1871 European Rates:

The Jan 1, 1870 rate reduction on mail to Great Britain from 12c to 6c, and later, the NGU rate reduction to 7c (and still later to 6c) resulted in revisions to the 1867 Postal Conventions between the US and most major European countries. These set the rate at 10c for mail passing through England and the NGU. In most cases, these represented a rate reduction of 5c from the 1867 15c rates. It should be noted that these rates were negotiated individually by the US and another single country. Most of these rates remained in effect until the 1875 introduction of the 5c GPU universal rates. By far, most of the US mail destined for Europe in the early 1870's, went by way of the British Mails. {220, 221}

July 1, 1875: GPU Rates:

Universal international rates begin to be implemented under General Postal Union. The rate to signatory countries was set at a flat 5c per 1/2 oz to Central American & Europe, and 10c per 1/2 oz to South America, Asia, & Africa. This marked the beginning of universal international rates as we know them today. Countries that did not sign on initially, did so individually over the next few decades.

July 1, 1875: Steamship Rate:

The Steamship Rate was reduced to 5¢ to coincide with the new universal GPU Rate.

[14.3] Basics: Foreign Mail:

Closed Mail: Mail sent to a foreign country in a sealed (closed) mail bag. Closed mail involves Postal Convention which defines the exchange offices. The sealed bag was passed thru the mail systems defined by the convention until it reached the exchange office in the destination country. The bag was then opened and sorted. In many cases, a dated transit mark of the exchange office was applied. Since the bag remained sealed until it reached the exchange office, no intermediate transit marks were applied.

Open Mail: Mail sent unsealed. Typically this mail would be sorted en route as it passed thru various mail systems. Open mail did not involve postal conventions between the originating and destination countries, but involved agreements with intermediary countries. For example, in the early 1870, the US and France had not postal agreements. US mail to France went as British open mail. The US and UK had agreements as did the UK and France. Open mail typically received transit markings at the sort points.

Direct Mail: Mail sent directly from the country of origin to the destination country under conventions between the two.

[15] Usages, Convention Rates:

[15.1] US to Europe Mail Routes: {240}

1870, The 10¢ British Closed Mail Rates: {220,221,230}

In the early years of the 1870's, much of the US mail bound for Europe traveled through the British mail system. The rate to Great Britain had been reduced from 12¢ to 6¢ per 1/2 oz. on Jan 1, 1870. This set the stage for the 10¢ rates to most of Europe.

US Mail to France: From 1870 to 1874, the US had not postal agreement with France. Most US mail to France went by way of London and Calais for delivery under the British – French convention.

US Mail the US rest of Europe went as closed mail via Great Britain. This normally went through the Belgian system, entering at Ostende. From there, mail bound for Germany and beyond traveled by train from Verviers, Belgium to Cologne, entering Germany at Aachen. While on board, the bags were opened, marked, and sorted by the Aachen *traveling* post office.

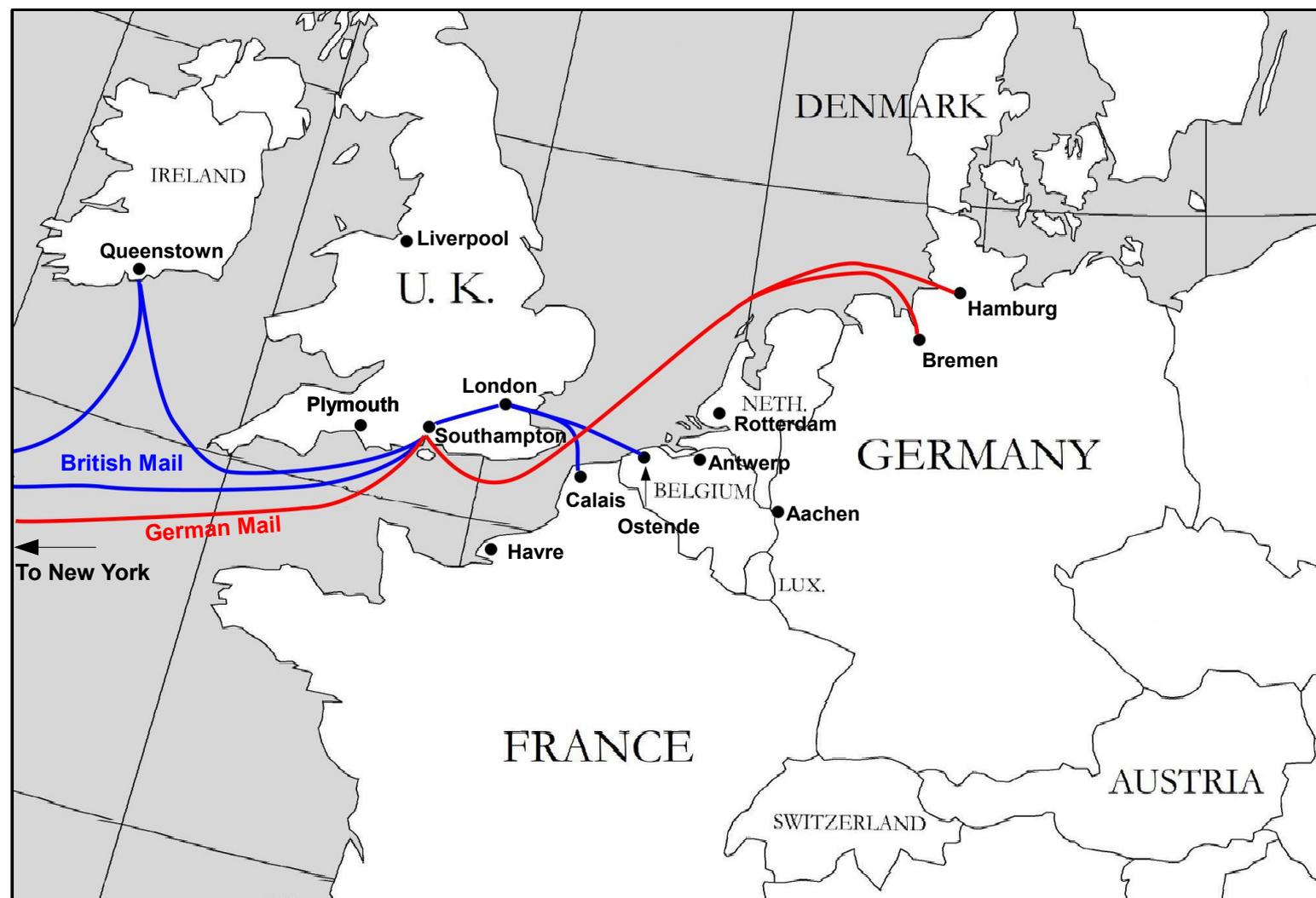
US mail destined for Switzerland remained closed until entering Switzerland at Basal. The German – Austrian – Hungarian agreements effectively made the three countries one from a postal standpoint. US mail bound for Austria or Hungary thus paid the same rate as to Germany.

The Cunard Line, Inman Line, Guion Line, White Star Line, and American Line all landed at Queenstown. Some continued to Liverpool.

German steamers also carried British mail, The HAPAG line stopped at Plymouth in route to Hamburg, and the North German Lloyd Line Stopped at Southampton in route to Bremen

Other Systems undercut the 10¢ Rates:

Over the next few years, other systems further reduced the rates. North German Union rate was reduced to 7¢ and then to 6¢. This resulted in an 8¢ rate to Switzerland in 1872. 1873 brought a 6¢ Direct Mail rate to Belgium, followed by a 6¢ Direct rate to The Netherlands. In 1874, The US and France also signed an agreement for 9¢ Direct mail. In many cases however, these systems took longer because of less frequent sailings.



[15.2] Usages: US to Europe:

{220,221,230,240,260}

Belgium:



May 17, 1873

San Francisco to Denerleeuw, Belgium

Rate History:

Jul 1849	21¢ Open Mail via great Britain
Feb 1867	18¢ Bremen or Hamburg Mail
Jan 1868	15¢ Belgian Closed or Direct Mail
Mar 1870	10¢ Closed Mail via Great Britain •
Jul 1873	8¢ Closed Mail via Great Britain
	6¢ Direct Mail
Jul 1875	5¢ UPU

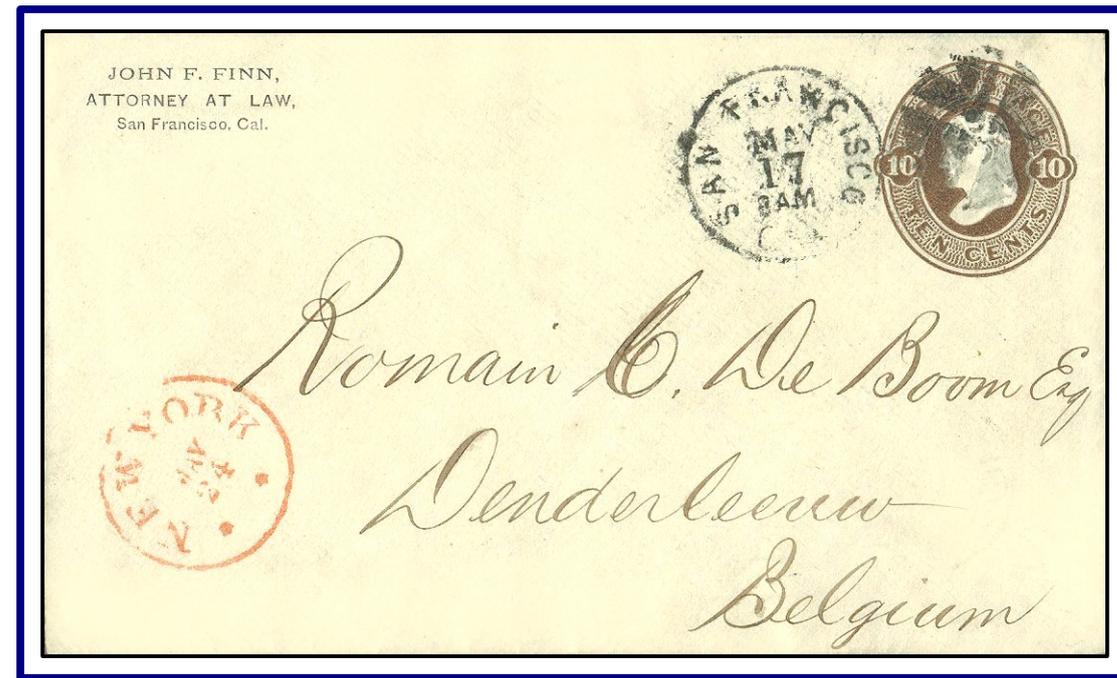
An addition to the 1867 Postal Convention between the United States and Belgium was signed on March 1, 1870, which, as a result of the reduced rate to Great Britain, reduced the rate for Closed Mail from the US to Belgium via Great Britain to 10c per 15g (1/2 oz). The new rate took effect March 15, 1870. Exchange offices remained New York or Boston, and Ostende or Antwerp Belgium.

On May 9, 1873, another Convention addition was signed, further reducing the rate to 8c, effective July 1, 1873.

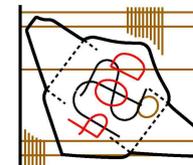
This envelope paid the March 15, 1870 to June 30, 1873 10c rate for closed mail via Great Britain. By the time it was mailed, the 1873 reduction had been signed, but was not yet in effect. There is no Belgian exchange office transit marking, only a weak Jun _ 1873 Denerleeuw receiving CDS on the back, with an illegable day date.

Routing:

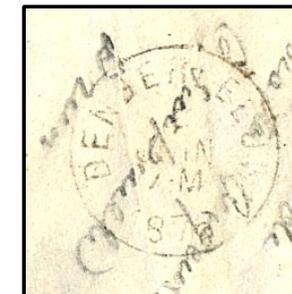
Mailed: San Francisco May 17, (1873) CDS;
San Francisco to New York: Rail
New York: Orange Red "NEW YORK MAY 24 **" Exchange office CDS
Depart New York Saturday May 24, 1873 in Closed Mail Bag via:
NGL "Donau"; Arrive South Hampton Jun 3
or White Star "Adriatic" Arrive Queenstown Jun 2
Closed Mail Bag forwarded to Ostende, Belgium;
Bag opened, but no transit mark applied at Ostende.
Arrived: Denerleeuw; Jun _ 1873 receiving CDS on back.



Item 228-1: 10¢ Brown on 1st Quality Amber, .0048";
No. 3 Full Letter Size; UPSS Size 7;
Knife 27; U92; UPSS 228;



Watermark 2B; Orientation C52, Z3M:



Receiving CDS

Switzerland:



Dec 12, 1873

Williamsburg?, ?? to Lausanne, Switzerland

Rate History:

Apr 1857	21¢ French Mail
Oct 1860	19¢ Bremen of Hamburg Mail
Jan 1868	15¢ Closed via GB or NGU Direct Mail
May 1870	10¢ Closed Mail via Great Britain •
Jul 1872	8¢ Closed Mail via Bremen of Hamburg
Jul 1875	5¢ UPU

An addition to the 1867 Postal Convention between the United States and Switzerland was signed on April 15, 1870, which, as a result of the reduced rate to Great Britain, reduced the rate for Closed Mail from the US to Switzerland via Great Britain to 10c per 15g (1/2 oz). The new rate took effect May 1, 1870. Exchange offices remained New York and Basel or Geneva, Switzerland.

On May 6, 1872, another Convention addition was signed, which introduced a second closed mail route via Hamburg or Bremen, at a rate of 8¢ per 1/2 oz. The 10¢ British closed mail route remained the default.

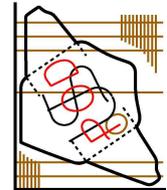
This envelope paid the May 1, 1870 to June 30, 1875 10c rate for closed mail via Great Britain. The "VIA ENG. & OSTD" marking was used to direct the letter via Great Britain rather than Hamburg or Bremen. The cover also bears a Basel transit marking and a Lausanne receiving mark.

Routing:

Mailed: Williamsburg?, ?? Dec 12, (1873) blurred CDS;
New York: Orange Red "NEW YORK PAID ALL VIA ENG & OSTD DEC 17"
Exchange office CDS
Depart New York Wednesday DEC 17, 1873 in Closed Mail Bag via:
NGL "America"; Arrive South Hampton Dec 29
or Guion "Wyoming"; Arrive Queenstown Dec 28
Closed Mail Bag forwarded to Basel Switz. Via Ostende, Belgium and Germany
Bag opened, Dec 31, 1873 in Basel and transit mark applied.
Arrived: Lausanne, Switz. Dec 31, 1873 receiving CDS on back.



Item 223-1: 10¢ Brown on 1st Quality White, .0042";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U91; UPSS 223;



Watermark 2B; Orientation C40, Z5:



Transit and Receiving Marks

Netherlands (Holland):



Aug 27, 1874

Grand Rapids?, Mich, to Veenendaal, Netherlands

Rate History:

Apr 1857	21¢ French or British Mail
Oct 1866	17¢ Direct Mail, American Packet via Antwerp
Jan 1868	15¢ Netherlands Closed Mail
Feb 1870	10¢ Netherlands Closed Mail via Great Britain •
Oct 1874	6¢ Netherlands Direct Mail
Jul 1875	5¢ UPU

An addition to the 1867 Postal Convention between the United States and the Netherlands was signed on January 29, 1870, which, as a result of the reduced rate to Great Britain, reduced the rate for Closed Mail from the US to the Netherlands via Great Britain to 10c per 15g (1/2 oz). The new rate took effect February 1, 1870. Exchange offices remained New York and the Moerdyk traveling Post office, Netherlands. On September 14, 1874, another Convention addition was signed, established a rate of 8¢ per 1/2 oz for direct mail via the Holland America Line. This rate was only in effect for nine months until the GPU was signing by both countries. The 6¢ rate saw very little use. The 10¢ British closed mail route remained the default.

This envelope paid the February 1, 1870 to June 30, 1875 10c rate for closed mail via Great Britain. The "PAID ALL B^R. TRANSIT" marking indicates that the letter was fully paid and was to go via Great Britain, although, at the time, this was the only option. The cover also bears a Veenendaal receiving marking on the back.

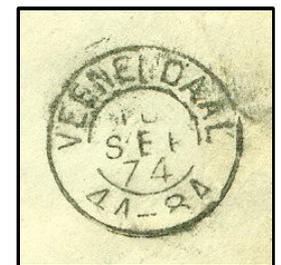
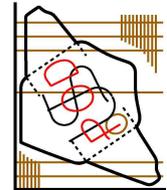
Routing:

Mailed: Grand Rapids?, Mich, partial Aug 27 (1873) blurred CDS;
Michigan to New York: Rail
New York: Orange Red "NEW YORK PAID ALL B^R TRANSIT SEP 1"
Exchange office CDS
Depart New York Tuesday SEP 1?, 1874 in Closed Mail Bag via:
Guion "Wisconsin"; Arrive Queenstown Sep 11
Closed Mail Bag forwarded to the Moerdyk traveling exchange office via
Belgium.
Bag opened, but no transit mark applied.
Arrived: Veenendaal, Netherlands Sep 10, 1874 receiving CDS on back



Item 224-5: 10¢ Brown on 1st Quality White, .0043";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U91; UPSS 224;

Watermark 2B; Orientation C50, Z5:



Receiving CDS

Austria: {260}



Feb 24, (1871)

Elizabeth, NJ, to Gablonz, Bohemia, Austria (now Czech Republic)

Rate History: German mail under GAPS terms

July 1857	15¢ NGU Direct Mail
Jan 1868	10¢ NGU Direct Mail
July 1870	7¢ NGU Direct Mail
Aug 1870	10¢ NGU Closed Mail via Great Britain (Thru Sept 1871) •
Nov 1870	7¢ NGU Direct Mails
Oct 1871	6¢ NGU Direct Mail
July 1875	5¢ UPU

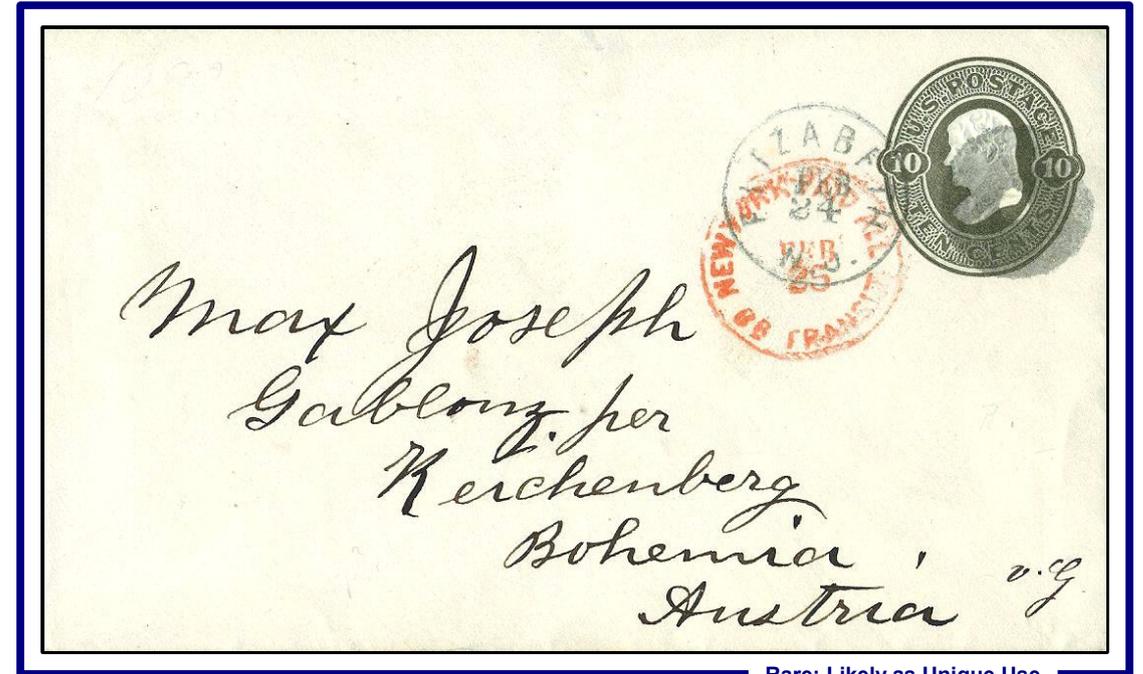
The GAPS (German-Austrian (Hungarian) Postal Union) established uniform postal rates withing the three countries starting in 1850. After a brief suspension in 1866, an agreement was again signed on Nov 23, 1867 with the same terms. For other countries, including the US, this meant that mail to destinations in Austria and Hungary would be charged the same rate as mail to Germany.

The 1868 Postal Convention between the US and the North German Union (NGU), set a rate for direct mail of 10¢ per 15g (1/2 oz). This rate was reduced to 7¢ July 1, 1870, just prior to the issue of the 1870 Reay envelopes. This rate was temporarily suspended due to the Franco Prussian War. Starting in August 1870, mail to Germany was routed, in closed bags, via Great Britain at a rate single rate of 10¢. This rate ended in September 1871, when all mail was again routed direct at 7¢. In October 1871, the NGU direct mail rate was reduced to 6¢ per 1/2 oz.

This envelope paid the Aug 1870 to Sept 1871 10c rate for closed mail via Great Britain. Since Austria came under the German-Austrian postal conventions, mail from the US was treated as though Austria was a part of Germany. No additional charges applied, and no additional markings were applied. The "PAID ALL B^R TRANSIT" marking was used to direct the letter via Great Britain. No other transit markings were applied, only an unreadable receiving mark on the back. Today, Gablonz (now Jablonec nad Nisou) is in the Czech Republic, just a few miles from the German and Polish borders.

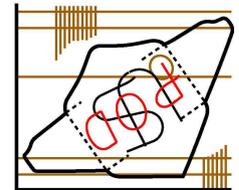
Routing:

Mailed: Elizabeth NJ Feb 24, (1871 – only year possible);
New York: Orange Red "NEW YORK PAID ALL B^R TRANSIT FEB 25"
Exchange office CDS
Depart New York Sarurday Feb 25, 1871 in Closed Mail Bag via:
Inman Line "City of Brooklyn"; Arrive Queenstown Mar 6
Closed Mail Bag forwarded to Germany via England and Belgium
Bag opened. Letter forwarded to Austria via German mail system.



Rare: Likely as Unique Use

Item 223a-1: 10¢ Brown on 1st Quality White, .0043";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U89; UPSS 223a;



Watermark 2A; Orientation C140, Z5:

This Cover is a rare use of a 10¢ stamped envelope paying the short lived 10¢ NGU closed mail rate via England, then to Austria by German mail. The rarity is compounded by the use of a rare Olive Black envelope. Likely Unique. Note also, the unusual 'Donut' killer.

France:



Dec 6, 1873
San Francisco, Cal to Paris, France

Rate History:

Apr 1857	15¢ French Mail
Jan 1870	10¢ American or French Packet Direct (1864 Blanket Steamship Rate)
July 1870	10¢ Open Mail via Great Britain •
Aug 1874	9¢ French Mail
Jan 1876	5¢ UPU

The US and France failed to negotiate a new Postal Convention from 1867 through 1869. As a result, on January 1, 1870, the 1857 convention was terminated. It would not be until August 1874 that a new convention would be implemented.

From January 1870 until August 1874, two methods were used to transport mail between the US and France:

The 1864 Steamship Rate took over as the default, since there was no agreement in place. This rate only paid the postage to the French port of arrival. Additional internal French postage was required, usually as postage due.

Open Mail via Great Britain: Since the US and France both had postal conventions with Great Britain, US mail to and from France could be sent via Great Britain. This had to be done as open mail since closed bags would have required a postal agreement. At first, this was not an announced rate, but by July 1, 1870 it was official.

This envelope paid the January 1, 1870 to July 31, 1874 10c rate for open mail via Great Britain. The additional markings are due to this envelope being sent as open mail. The orange red New York CDS indicates a 6¢ credit to Great Britain, and that the letter was fully paid (PD partially visible below date). On passing through London, the cover was again marked paid with a DE 23 CDS and also with a PD oval. The blue Calais 12 24 handstamp indicates French entry. The cover also bears a black Paris 24 DEC receiving mark on the back.

Routing:

Mailed: San Francisco, Cal Dec 6, (1873) CDS
San Francisco to New York: Rail
New York: Orange Red "NEW YORK 6 P.D. DEC 1(3)" Foreign mail office CDS
Depart New York Most likely Saturday DEC 13, 1873 as Open Mail to England via:
Probably NGL "Donau"; Arrive South Hampton Dec 23
Arrived London same day. Dec 23 PAID CDS & PD oval.
Entered France at Calais. Blue 12 24 transit mark
Arrived: Paris. DE 24 receiving CDS on back.



Item 227-1: 10¢ Brown on 1st Quality Amber, .0040";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U92; UPSS 227;



Watermark 2A; Orientation C57, Z3:



Paris Receiving CDS

[15.3] Usages: 8c Registered Rate US to Europe:

{190,200,201,220,221,230,240}

Prussia (Germany):



Jan 16 (most likely 1874)

New York, NY to Deutsch Crone, W. Prussia

1874 8¢ Registered Rate + 6¢ NGU Direct Mail Rate

Rate History: US to Germany

(see [14.1.2] for Registry Rate History)

Jul 1857	15¢ Bremen of Hamburg Mail
Jan 1668	10¢ NGU Direct Mail
Jul 1870	7¢ NGU Direct Mail
Aug 1870	10¢ NGU Closed Mail via Great Britain
Nov 1870	7¢ NGU Direct Mail
Jul 1871	6¢ NGU Direct Mail •
Jul 1875	5¢ UPU

This envelope and the additional stamps (1873 1¢ & 3¢, #158 & #158) paid the Jan 1, 1874 to June 30, 1875 8¢ Registry fee and the July 1 1871 to July 1, 1875 NGU direct mail rate. New York Jan 16 (Friday) Registered CDS. No transit or receiving marks.

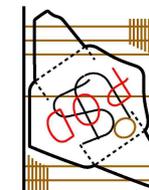
Routing:

Mailed: New York, NY Jan 16, (1874) NEW YORK REGISTERED DCDS
With matching Rectangular "DIRECT SERV. PAID ALL" for
NGU direct mail
Depart New York Saturday Jan 17, 1874 via:
NGL "New York"; Arrive South Hampton Jan 29
No additional markings other than
German "Recomandir" (Registered) mark.



Rare Use

Item 224-3: 10¢ Brown on 1st Quality White, .0043";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U91; UPSS 224;



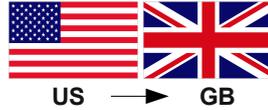
Watermark 2A; Orientation C50, Z7:

This cover is a rare use of a 10¢ stamped envelope paying the short lived 8¢ registry fee. In period, stamp dealer commercial use. The 10¢ + 1¢ is the most efficient franking for 1st class domestic registered mail of that period (8¢ + 3¢). Adding and additional 3¢ paid the registered NGU direct 6¢ rate (or the British 6¢ rate), allowing the 10¢ entires to cover either option.

[15.4] Usages: 10¢ Registered Rate + UPU Rate:

{190,200,201,220,221,230,240}

England:



Date Unknown; Post July 1, 1875
Philadelphia, Pa to Birmingham, England
1875 10¢ Registered Rate + 10¢ 2x 5¢ GPU Rate

Rate History:

Feb 1849	24¢ British Mail
Jan 1868	12¢ Closed via GB or NGU Direct Mail
Jan 1870	6¢ Closed Mail via Great Britain •
Jul 1875	5¢ UPU

As seen on the previous pages, a large portion of the US mail bound for Europe, went by via British mail. As a result of the close working relationship between Great Britain and the US, the rate history is very simple. The 6¢ rate of 1870 brought about most of the 10¢ rate to the rest of Europe in the early 1870.

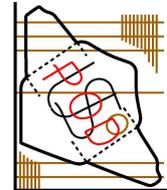
GPU / UPU Rates: The implementation of the General Postal Union, beginning July 1, 1875 reduced and simplified rates. Rates of 5¢ per 1/2 oz to signatory countries in Europe began on July 1, 1875. At the same time, the US registry fee was raised from 8¢ to 10¢. The 10¢ fee would remain in effect until 1893 when it was again reduced to 8¢.

This envelope and the additional stamps (1873 1¢, 3¢, & 6¢, #156, #158, & #159) paid a 2x GPU rate to England + the 10¢ registry fee, from Philadelphia, Pa to Birmingham, England. Unfortunately, there are no readable date markings on this cover. Note the **British Crown Registered mark**. Also present is a weak strike of a Birmingham receiving mark on the back. Most likely from the late 1870's.



Item 224-4: 10¢ Brown on 1st Quality White, .0043";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U91; UPSS 224;

Watermark 2B; Orientation C48, Z1:



[15.5] Usages: 10¢ UPU Rate: {230}

2x Rate to Brazil, via England:



Date Nov 10, 1877
Oxford Mass to Rio de Janeiro. Brazil
2x UPU 10¢ Rate

Rate History:

Feb 1853	45¢ British Mail
Oct 1860	33¢ French Mail
Oct 1865	10¢ Steamship Rate (10¢ only to port of entry) thru Jul 1875
Oct 1870	15¢ Treaty Rate, American Packet from NY
Jul 1877	10¢ UPU •

Brazil signed on to the Universal Postal Union in July of 1877. This set the single letter rate at 10¢ per 1/2 oz. At that time, the UPU rate to Europe was 5¢.

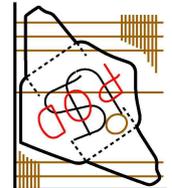
This envelope and the 1873 series 10¢ adhesive (#161), paid 2x the 10¢ UPU rate to Brazil. It was carried by British mail via England. It carried a letter to a Naval Officer from his future wife. At least one other cover exists from the same correspondence with the same franking.

Routing:

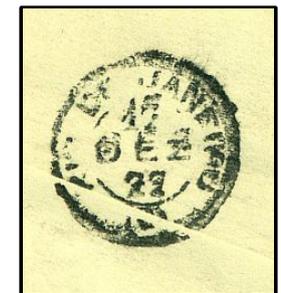
Mailed:Oxford, Mass Nov 10, (1877)
London, 23 NO 77 PAID CDS
Rio de Janeiro, Brazil, 15 DEZ 77, Receiving mark on back
Delivered 18 Dec 1877 from docketing.



Item 227-2: 10¢ Brown on 1st Quality Amber, .0041";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U92; UPSS 227;



Watermark 2A; Orientation C47, Z7 [11.2]:



Rio de Janeiro Receiving CDS

[16] Usages, Steamship Rates:

[16.1] Pan American Steamship

Routes: {260}

In the early 1870's, six steamship mail routes saw regularly scheduled service to the Caribbean and Latin America:

The Mexico Line: Sailed every 20 days to Vera Cruz via the Yacatan. Officially the New York and Mexican Mail Steamship line, operated by F. Alexandre & Sons of New York. The line stopped at Havana en route but did not carry mail to Cuba.

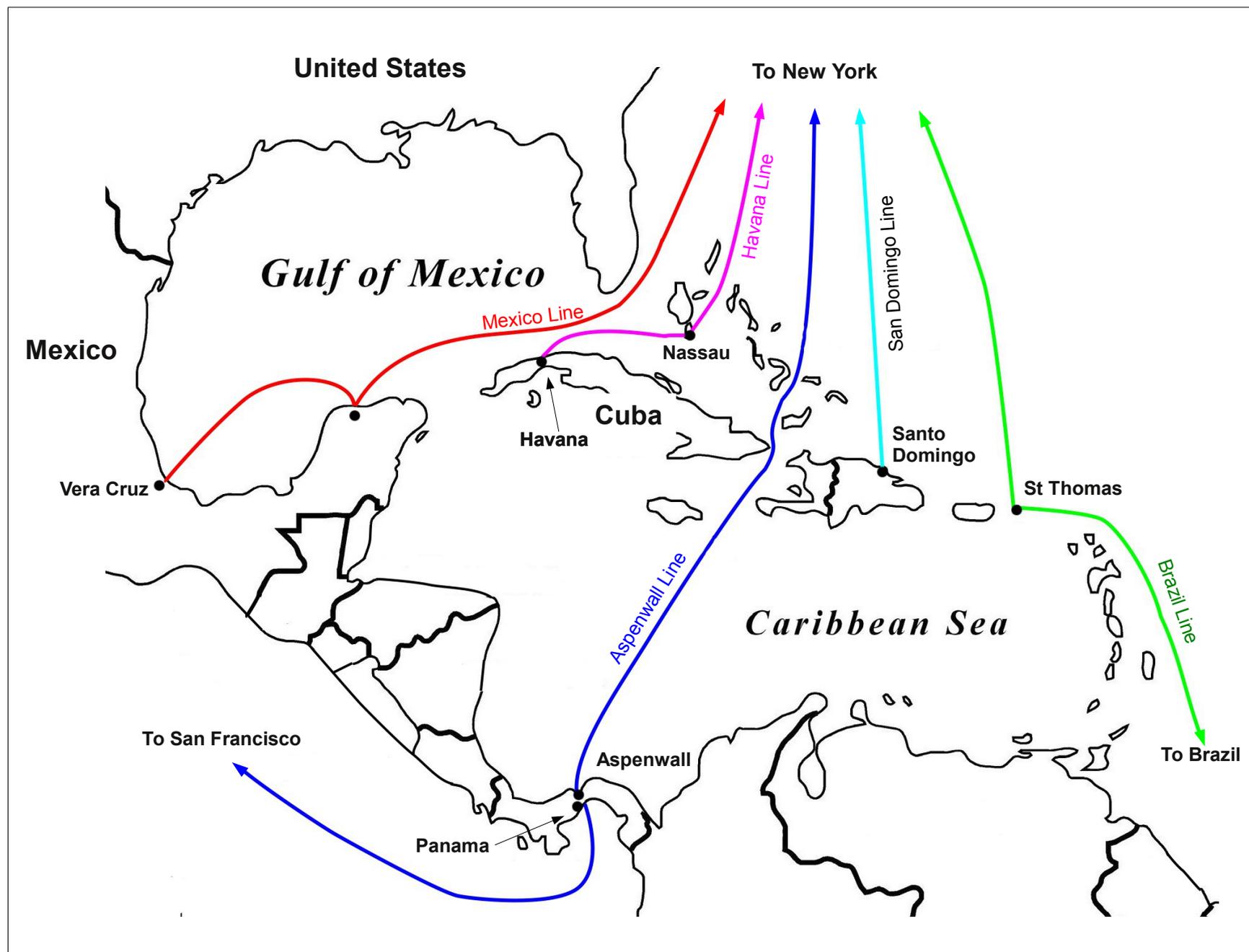
The Havana Line: Sailed weekly to Havana with occasional stops at Nassau

The Aspenwall Line: Once the main route to San Francisco, the 1869 opening of the Transcontinental Railroad resulted in a decreasing schedule on this route. Connections on the Pacific side continued, North to San Francisco, and South to Valpariso. In 1870, Sailings from New York left every 15-17 days.

The San Domingo Line: Sailed monthly to Santo Domingo. This line started in 1870, and made stops at St Thomas on at least some trips.

The Brazil Line: Sailed monthly to Brazil via St Thomas.

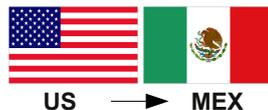
The Bermuda Line (not shown): Varying schedule to Hamilton.



Steamship Mail Routes of the Early 1870's

[16.2] Usages: Outbound to Latin America: {210,260}

Mexico:



Date Uncertain; July 21, (possibly 1871)
New Orleans to Vera Cruz, Mexico
10¢ Steamship Rate
2 reales Mexican Postage due for local delivery.

Rate History:

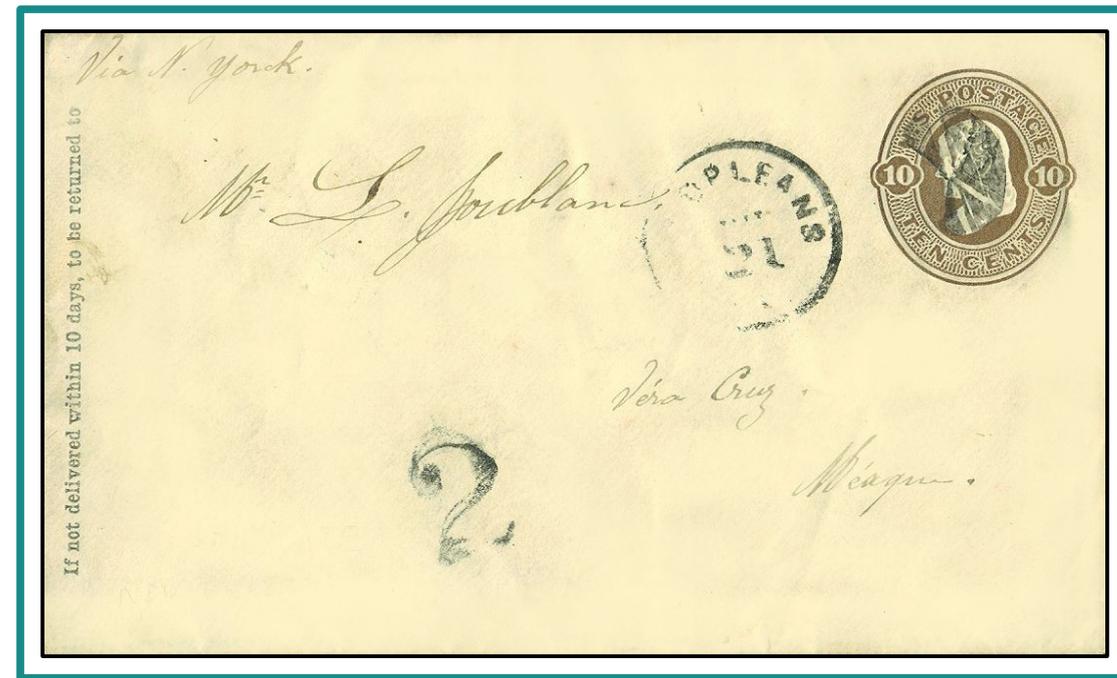
July 1851	10¢/20¢ Steamship Rate
	3¢ Land Routes
July 1864	10¢ Steamship Rate
Apr 1879	5¢ UPU

Prior to the Civil War, a mail route was run directly from New Orleans to Vera Cruz. In the early 1870's, one of the Steamship mail routes was the New York to Mexico route, contracted to the New York and Mexican Mail Steamship Line, owned by Alexandre and Sons of New York. Ships left New York every 20 days and stopped in Havana and at varying ports on the Yucatan peninsula en route to Vera Cruz. This route continued into the UPU period.

This envelope paid the 10¢ Steamship rate from New Orleans to Mexico. The cover is directed *Via N York*. The lack of a New York marking is a bit curious. "Ten-Cent 1869 Covers" {260} lists two Steamship covers to Cuba which originated in New Orleans and have no other US markings, and suggests that they may have taken a route other than New York. In this case, the directive on this cover suggests otherwise. As Steamship mail, the 10 cents paid the rate only to the port of arrival, in this case, Vera Cruz. Most covers addressed to Vera Cruz show no Mexican markings, apparently delivered without entering the Mexican Mails. This cover is somewhat unusual in that it bears a (blurred) Vera Cruz receiving mark on the back (probably Aug 6, maybe 1871), and a large 2 (reales) due marking for the Mexican postage for delivery.

Routing:

Mailed: New Orleans, LA Jul 21,
(New York) per ms directive, but no transit markings
Vera Cruz, Mexico, probably Aug 6 (possibly 1871) receiving mark on back
Local Delivery by Mexican Postage, 2 reales due.



Item 227-3: 10¢ Brown on 1st Quality Amber, .0041";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U92; UPSS 227;

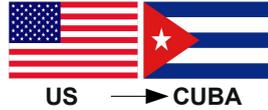


Watermark 2A; Orientation C45, Z3:



Vera Cruz Receiving CDS

Cuba: (Almost)



Addressed but Never Mailed

Rate History:

Jul 1851	10¢/20¢ Steamship Rate
Jul 1864	10¢ Steamship Rate
Jul 1875	5¢ Steamship Rate
May 1877	5¢ UPU

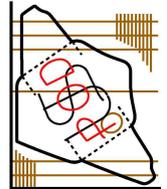
In the early 1870's, the Havana Line provided weekly service to Cuba. The route was contracted to the Atlantic Mail Steamship Co.

This envelope would have paid the paid the 10¢ Steamship rate to Cuba. This rate would have paid the postage to the port of entry, in this case Havana. Had it been mailed, it would most likely have received a Cuban NA1 postage due marking. Unfortunately, it never made the journey.



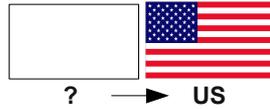
Item 223-2: 10¢ Brown on 1st Quality White, .0044";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U91; UPSS 223;

Watermark 2B; Orientation C47, Z5:



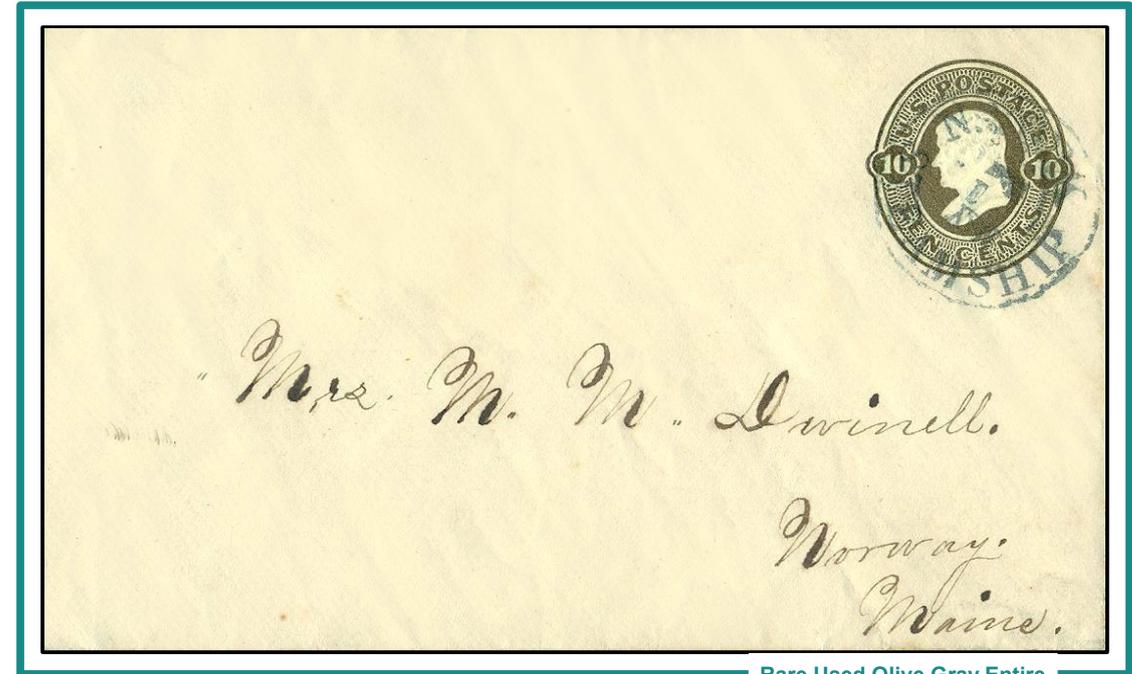
[16.3] Usages: Inbound from Latin America: {210,260}

Unknown Origin:



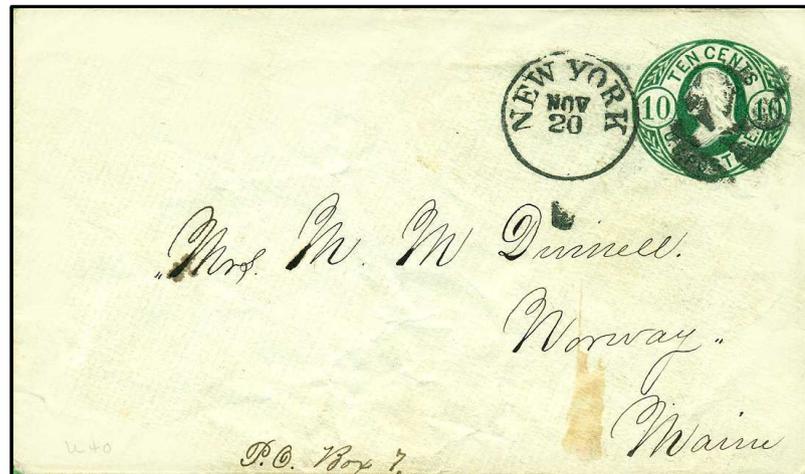
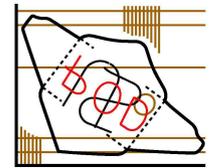
Date Unknown;
Destination: Norway, Maine
10¢ Steamship Rate

This envelope is an example of an inbound steamship letter. It paid the 10¢ Steamship rate over one of the Pan American Steamship Routes to New York then on to Norway, Maine. The N YORK STEAMSHIP CDS was applied when the cover reached New York. This marking was commonly applied to prepaid, inbound Steamship mail. This illustrates a common problem with Steamship covers. Since Steamship mail did not involve agreements with other countries, inbound steamship mail did not normally enter foreign postal system. Hence, markings of origin were not normally applied. Instead, markings were applied upon arrival at New York. The only keys to origin are docketing, contents, or markings of forwarding agents. If dates can be established, in some cases, ship sailing and arrival records can establish origin. An 1865 10¢ re-issue cover from the same correspondence, also of unknown origin (probably the same) is shown below.



Rare Used Olive Gray Entire

Item 226a-2: 10¢ Olive Gray on 1st Quality Amber, .0046";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U90; UPSS 226a;
A rare used Olive Gray envelope.
Watermark 2A; Orientation C41, Z1M [11.2]:



1865 10¢ re-issue from the same correspondence,
also of unknown origin.
Note the unusual deep blue green color. (shown .75x)

This cover is a rare used Olive Gray envelope.
The color might more be correctly described as Olive Brown

[17] Usages: Express Company: {270,280}

Stamped Envelope and the Express Companies: In the years prior to US stamped envelopes, privately carried mail was common in the sparsely settled West. While acknowledging that it was a necessity in remote areas, the Post Office Department saw it as lost business, and sought ways to rectify the situation. In 1852, the same Act of Congress that authorized stamped envelopes, required that US postage be paid on all mail carried privately, by the express companies and others. It further required that government issued stamped envelopes be used, as opposed to adhesive stamps. Indeed, this was one of the reasons for issuing stamped envelopes. In many cases, the express companies carried mail from remote areas, then delivered it to the Post Office for the rest of it's journey. In these cases, the envelopes paid that postage. In other cases, the express companies carried the mail to it's destination. Here, the Post Office got paid even though it never touched the letter.

Wells Fargo & Co. : Wells Fargo started in 1852, with offices in New York, San Francisco, and Sacramento, and gradually grew to be the dominant name in the express business. Over the next 30 or so years, they bought out dozens of smaller operations. By the end of 1852, they had opened offices in Boston, Philadelphia, Portland, Panama, and a number of additional locations in the areas surrounding Sacramento, and on Jan 1, 1853 Honolulu. By 1855 they had 60 offices. By 1874, this number had increased to over 600. As part of the express business, Wells Fargo operated stage lines throughout the west, transporting everything from people to mining supplies and gold. In 1858, Wells Fargo, in association with three other express companies, began operating semi-weekly stages on the southern route from San Francisco to St Louis via El Paso, as the Overland Mail Co. Travel time was 3 weeks. {270}

As the country became more settled, and the Post Office expanded operation, the letter express business declined. On May 24, 1895, Wells Fargo discontinued letters express operations as it was no longer profitable, but continued carrying parcels and freight. Around the same time, the Government made it illegal to privately carry mail. Early on, Wells Fargo entered the banking business. An operation which continues today.

Wells Fargo Franks: Wells Fargo's first printed franks appeared in August 1855. The fee was initially 12 1/2 cents, but was soon reduced to 10c, or 20c for "Atlantic" (transcontinental) franks. By January 1858, Wells Fargo was buying (and franking) 100,000 3c stamped envelopes per month. {270}



Type D1



Type F (Eastbound)



Type G (Westbound)

WF Atlantic Franks as Used on 10¢ Envelopes

[17.1] Basics: The Express Companies:

Today, UPS and FedEx carry parcels and overnight "Letters". In the mid to late 1800's, a host of private express companies performed similar services. In those days, the country was a far different place, with many unsettled and remote areas, and few transportation options. This was especially true in the west. The California gold rush, in the years following 1848, brought an influx of people who traveled to remote areas in search of fortune. The USPOD had no service to remote locations, so the express companies, who transported people and supplies to these areas, also carried mail. No postal contracts were involved. The mail service was purely a private operation. In some cases, the express companies delivered the mail once it reached its destination, or held it for pick-up. In other cases, the mail was delivered to the Post Office for delivery. In areas with postal service, the expresses acted in competition, offering expedited service. The express companies ranged in size from one man, to large operations that served the entire country. The larger express companies regularly sent couriers to accompany privately carried mail by ship from San Francisco to New York and back, and to Mexico and other foreign ports.

[17.2] Basics: Express Company Franks and Handstamps:

The express companies commonly had their franking printed on the stamped envelopes they bough from the POD. In the same way that the Government indicium indicated that the postage had been paid, the express frank indicated that the express fee had been paid. Thus one could buy a franked, stamped envelope to prepay all Express and POD fees.

When ready to mail, an express franked could be given to an agent of the express company for delivery. In more populated areas, the express companies had offices. In smaller towns, the agent may have been a store or inn keeper.

Like the Post Office, the express companies used handstamps to cancel the envelope. Thousands of express company handstamps are known to have been used. Their use however, was less regimented than that of the Post Office. In many cases, mail that was picked up in small California towns, was not handstamped until it reached San Francisco. This is especially true of mail bound for the east.



Pacific Express Horse and Rider Frank

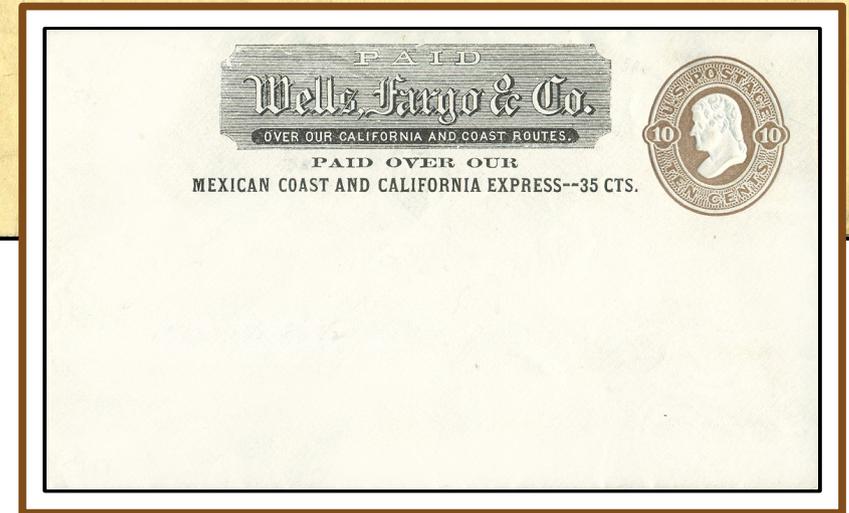
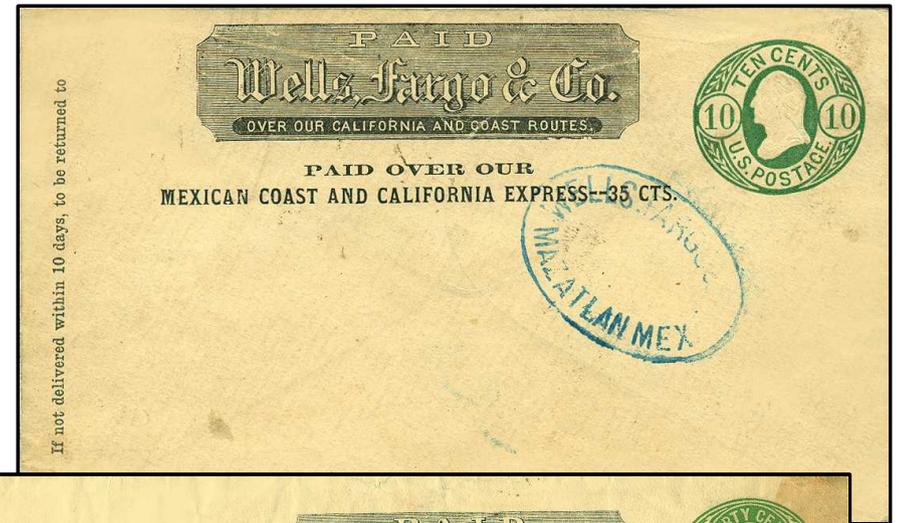


WF Atlantic Frank & Handstamp

[17.3] Wells Fargo in Mexico: {290}

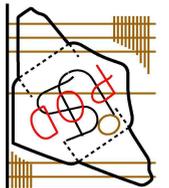
In the years following the California Gold Rush, mining activity expanded to Arizona and Northwestern Mexico. Americans and Europeans moved to the region in search of riches. In Mexico, much of the activity was near the Pacific coast. The area was bordered on the east by the Sierra Madre. The rough and desolate terrain isolated the area from the east. Port cities of Guaymas and Mazatlan on the mainland, and LaPaz on the Baja, which had been in existence for many years, saw rapid expansion. Wells Fargo set up express operations to support expanding commerce.

Wells Fargo's first Mexican office opened in **Guaymas** in 1859. This was followed in 1863 by offices in **LaPaz** and **Mazatlan**. The later two remained active until 1889. The Guaymas office remain in operation until 1915, primarily because it had become the terminus of the Sonora Railroad. Wells Fargo also had short term offices, farther down the coast, in the port cities of Acapulco, Manzanillo, Salina Cruz, and San Blas. San Blas opened April 1, 1870, but was closed before October 1. This was the only activity during the 1870's for these four offices.



[17.3.1] Rates and Franks: The Steamship rates of 1851 and 1864 applied to Mexico. Wells Fargo argued that since it was contracting with the steamship lines for express shipments, which included mail, that they did not have to charge the 10¢ Steamship rate. For most of the 1860's they used 3¢ stamped envelopes with a 25¢ express frank applied. In early 1870, the POD took exception, and beginning March 1, 1870, Well Fargo began charging the 10¢ rate. At the same time, Wells Fargo raised their Express fee to 35¢. This was a few months prior to the beginning of production by Reay. The top right image shows an 1865 re-issue 10¢ Nesbitt entire with the new 35¢ Mexican frank, used from Mazatlan. Also, for the first time, Wells Fargo began printing multiple Mexican rate franks on higher denomination envelopes. 70¢, \$1.05, and \$1.40 values were issued to cover up to 2 oz letters. The center right image shows a \$1.05 Mexican frank on an 1865 30¢ envelope used from La Paz. Item 224-7 is an unused, franked 10¢ Reay Envelope. **Re Chandler article**

Item 224-7: 10¢ Brown on 1st Quality White, .0041"; No. 3 Full Letter Size; UPSS Size 7; Knife 26; U91; UPSS 224; (shown .75x) Wells Fargo Type M-1; Watermark 2A; Orientation C44, Z7:



[17.4] Express Usages: Inbound: {290}

From Mexico:



Date July 11 (1872)
La Paz Mexico to San Francisco
10¢ Steamship Rate + 35¢ Wells Fargo Express Fee
Carried outside of the mails.

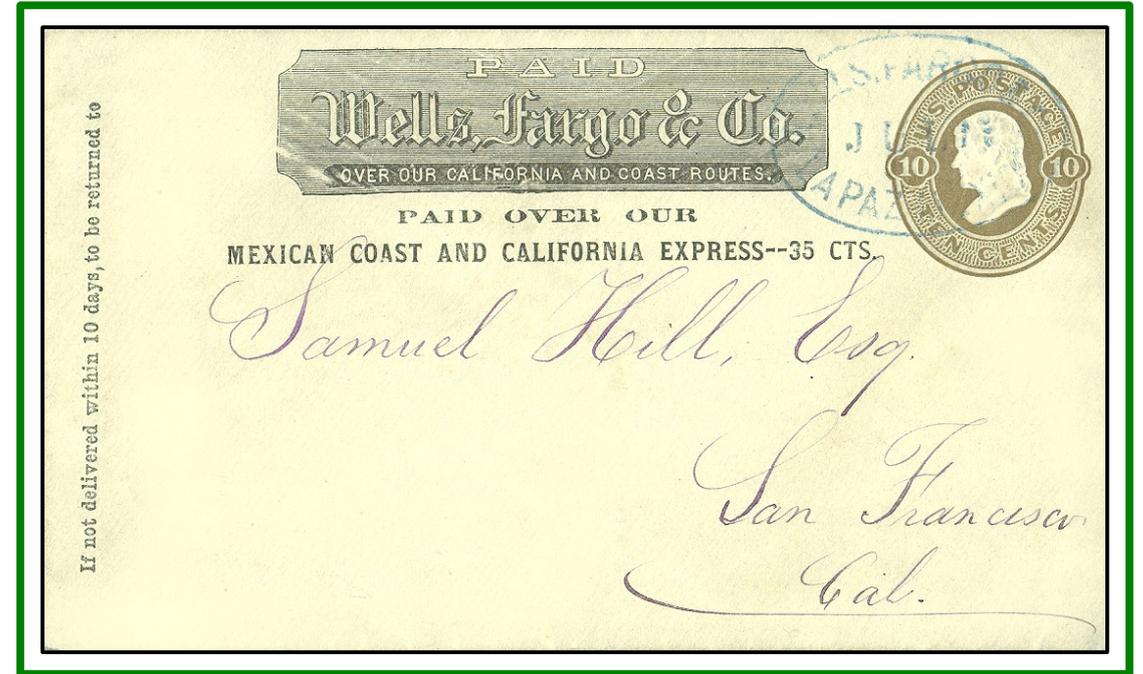
Rate History:

July 1851	10¢/20¢ Steamship Rate
	3¢ Land Routes
July 1864	10¢ Steamship Rate
Apr 1879	5¢ UPU

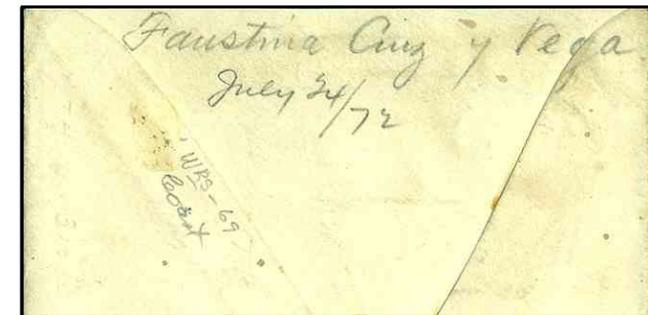
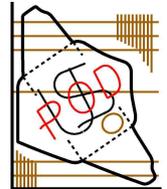
Wells Fargo established an office in La Paz, (Baja) Mexico in 1863. A significant number of Americans were living and working in the area at the time, many involved in mining operations. Wells Fargo operated regular express service to and From San Francisco. These franked envelopes were made available at their offices in Mexico as well as San Francisco.

This envelope paid the 10¢ steamship rate called for by the POD even though the letter never passed through the Post Office. It also paid the 35¢ express fee. A significant percentage of the uses of these Mexican franked envelopes, was inbound mail. The 1872 year date is per docketing on the back which shows a received date of July 24, 1872.

This is the first of three envelopes presented here from the three Wells Fargo Mexican Coast offices. [17.5.2: 226-4, 223-5]



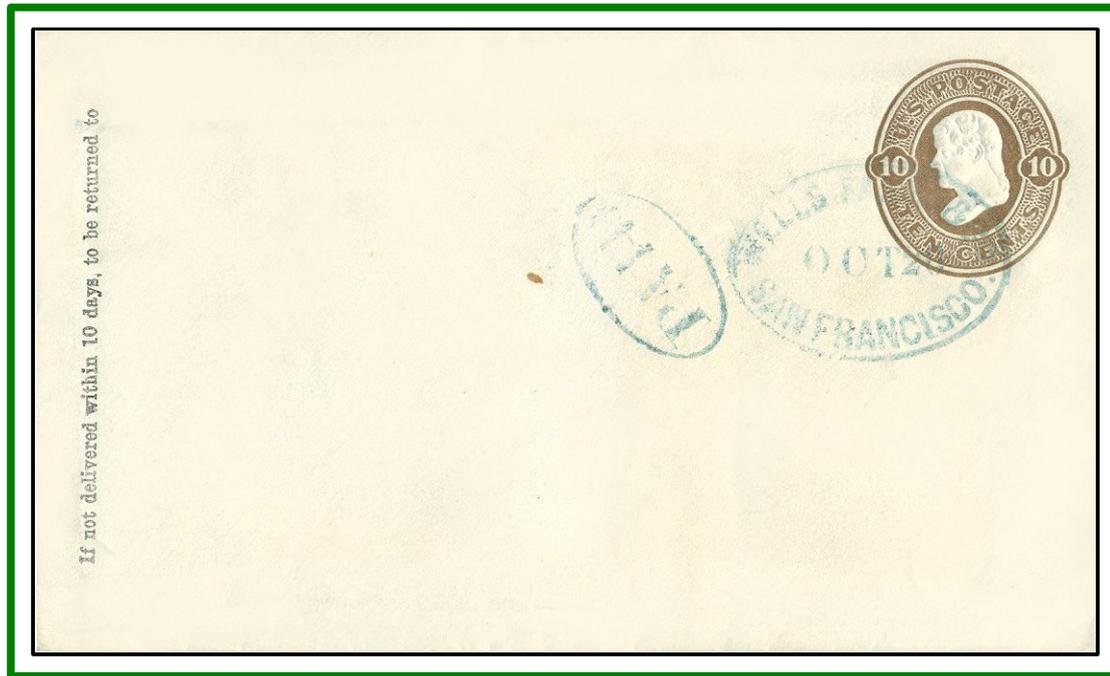
Item 226-3: 10¢ Brown on 1st Quality Amber, .0046";
No. 3 Full Letter Size; UPSS Size 7;
Knife 25; U92; UPSS 226;
Wells Fargo Type M-1;
Watermark 2A; Orientation C54, Z3:



[17.5] Express Usages: Paste-Ups:

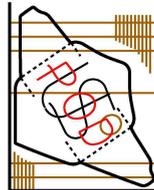
[17.5.1] Unaddressed, Un-Franked Paste-Up:

This Envelope is an unusual un-franked paste-up. This cover was pasted to an otherwise addressed piece of mail, to pay the postage or additional postage. The express fee was paid, and acknowledged by the PAID oval. It was most likely used to pay the 10¢ steamship rate to Mexico via Wells Fargo, or to pay for an additional 1/2 oz. In either case, the PAID oval represents the 35¢ express fee.



Item 224-2: 10¢ Brown on 1st Quality White, .0045";
No. 3 Full Letter Size; UPSS Size 7;
Knife 26; U91; UPSS 224;

Watermark 2B; Orientation C46, Z1:



[17.5.1] Basics: Paste-Ups:

The 1852 Act that authorized stamped envelopes, required the express companies to use them for all mail that they carried. Paste-ups could be considered an unintended consequence of that act. Since the expresses were not allowed to use stamps, the only option was to use stamped envelopes as stamps (very large stamps). The intended method was to enclose the letter in a franked, stamped envelope which paid the postage and express fee. Two situations resulted in paste-ups.

Plain Addressed Envelopes: If a customer brought a letter to be mailed to the express office in a plain, addressed envelope, the express clerk would typically paste a franked, stamped envelope onto the back, and cancel it. This always resulted in an unaddressed paste-up envelope as seen on this page.

Additional Postage and Fees: If additional postage was required on an addressed, franked stamped envelope, or if an envelope of the required domination was not available, an additional franked stamped envelope, or envelopes, would be pasted to the back. In this case, one of the envelopes would be addressed.

Paper Remnants: Paste-ups generally have paper or glue remnants on their backs.



Typical back of an unattached paste-up

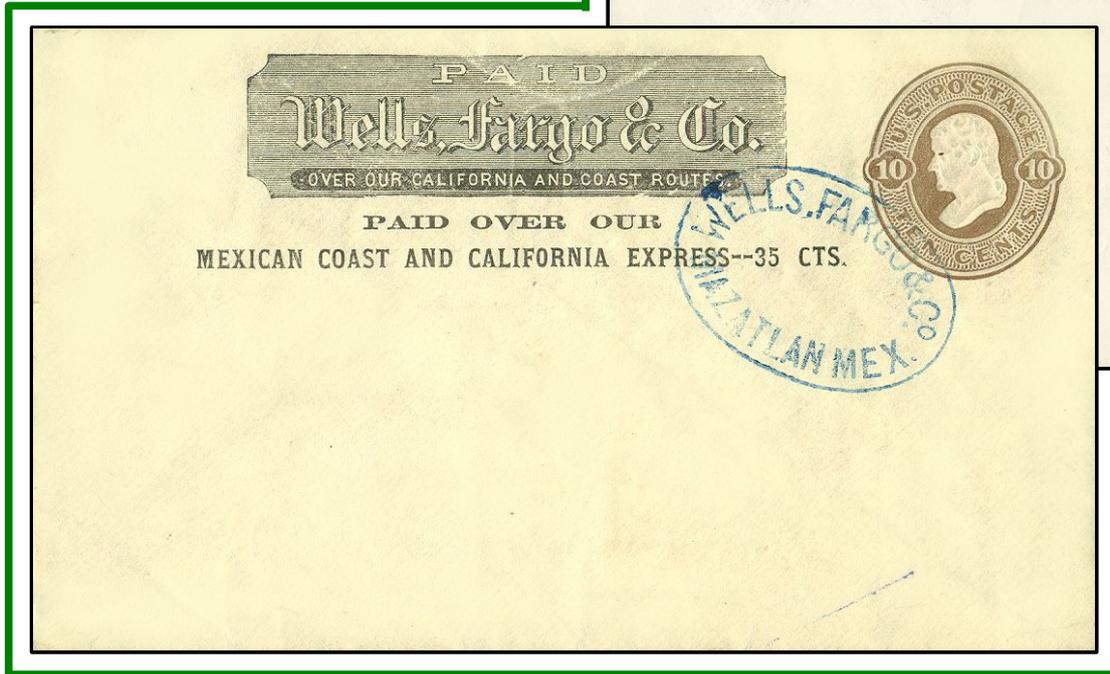
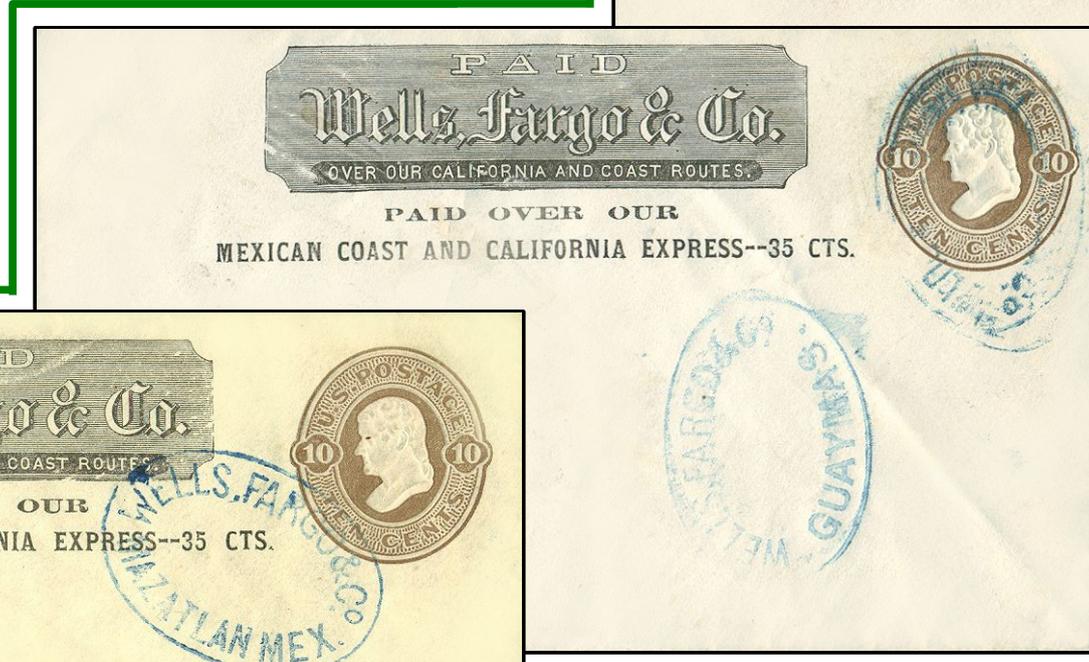
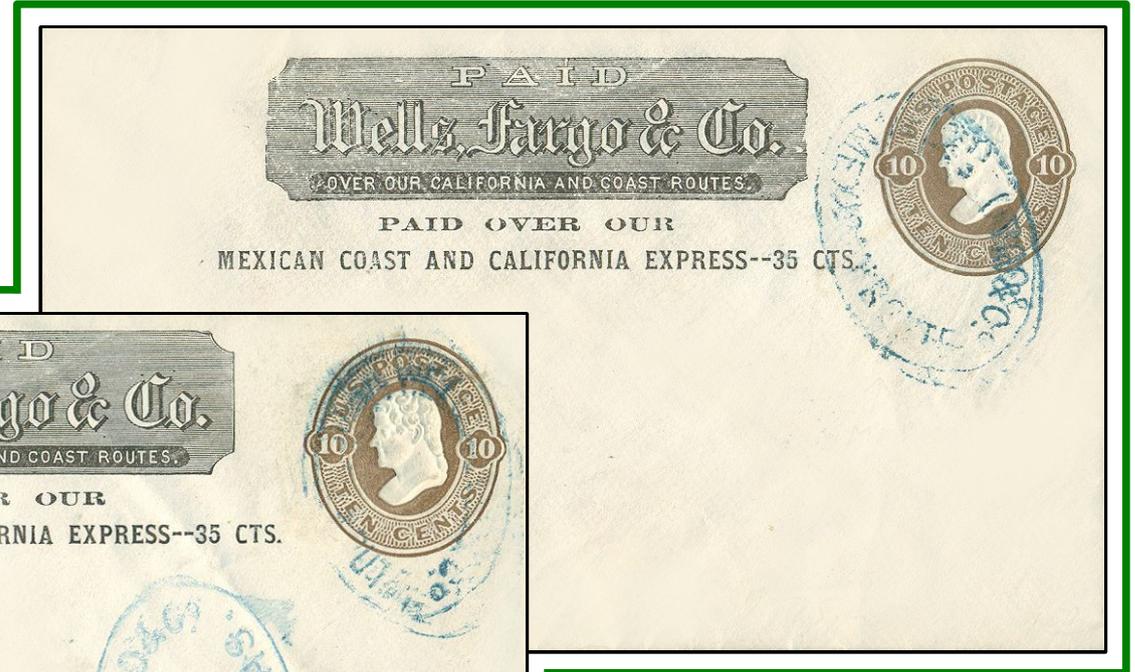
[17.5.2] Unaddressed Paste-Ups, Inbound: {290}



From Mexico:

These three envelopes illustrate franked paste-ups used for inbound express mail from Mexico. These were pasted to otherwise addressed mail and paid the postage and express fee, or paid for an additional 1/2 oz. The 10¢ steamship rate was required by the POD even though these probably never entered the mails.

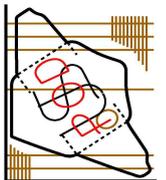
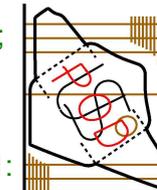
The first two are from two of the three Wells Fargo Mexican offices. The Guaymas office was the first office established in Mexico, in 1859. Mazatlan Office was established in 1863, The third office, La Paz was seen above [17.4: 226-3]. The Guaymas cover also has a weak "Mexican Route" oval, as does the right hand cover. This marking indicated that the Letter was received along the route.



Item 223-6: 10¢ Brown on 1st Quality White; No. 3 Full Letter Size; UPSS Size 7; .0043" Knife 25; U91; UPSS 223; Wells Fargo Type M-1; Watermark 2B; Orientation C38, Z5:

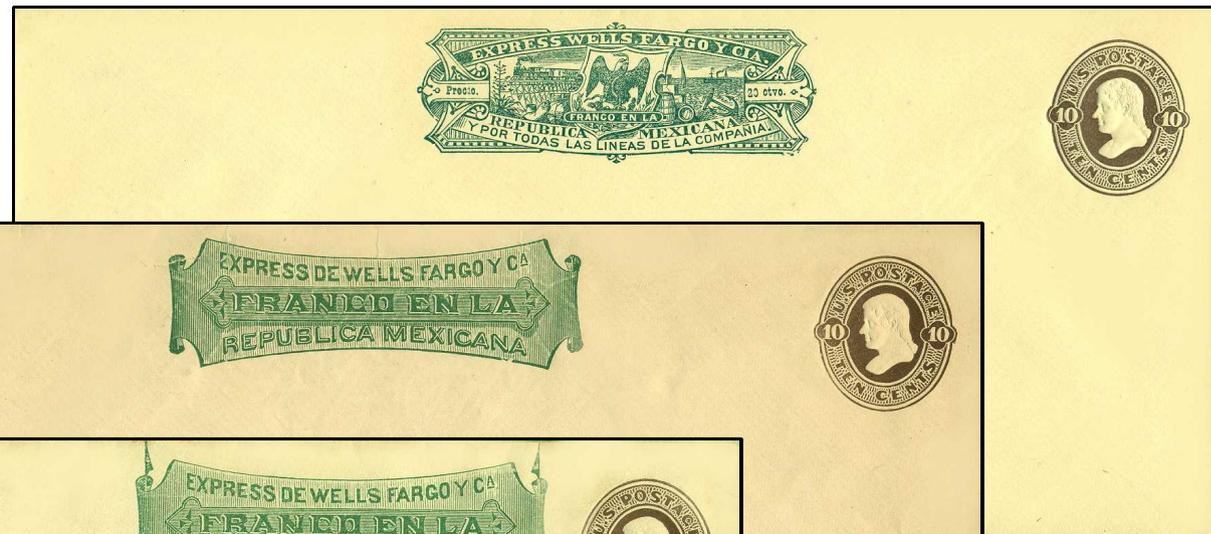
Item 223-5: 10¢ Brown on 1st Quality White, .0046"; No. 3 Full Letter Size; UPSS Size 7; Knife 25; U91; UPSS 223; Wells Fargo Type M-1; Watermark 2B; Orientation C37, Z1:

Item 226-4: 10¢ Brown on 1st Quality Amber, .0046"; No. 3 Full Letter Size; UPSS Size 7; Knife 25; U91; UPSS 226; Wells Fargo Type M-1; Watermark 2A; Orientation C42, Z7:

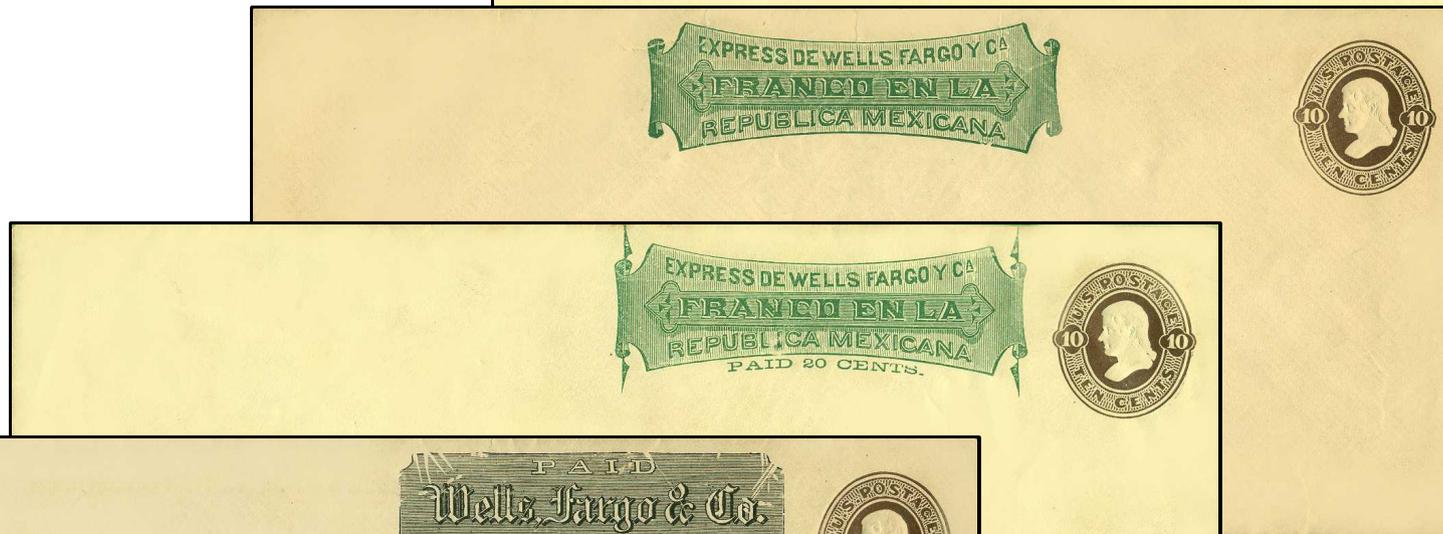


[17.6] Perspective: Later Wells Fargo Mexican Franks on 10¢ Envelopes:

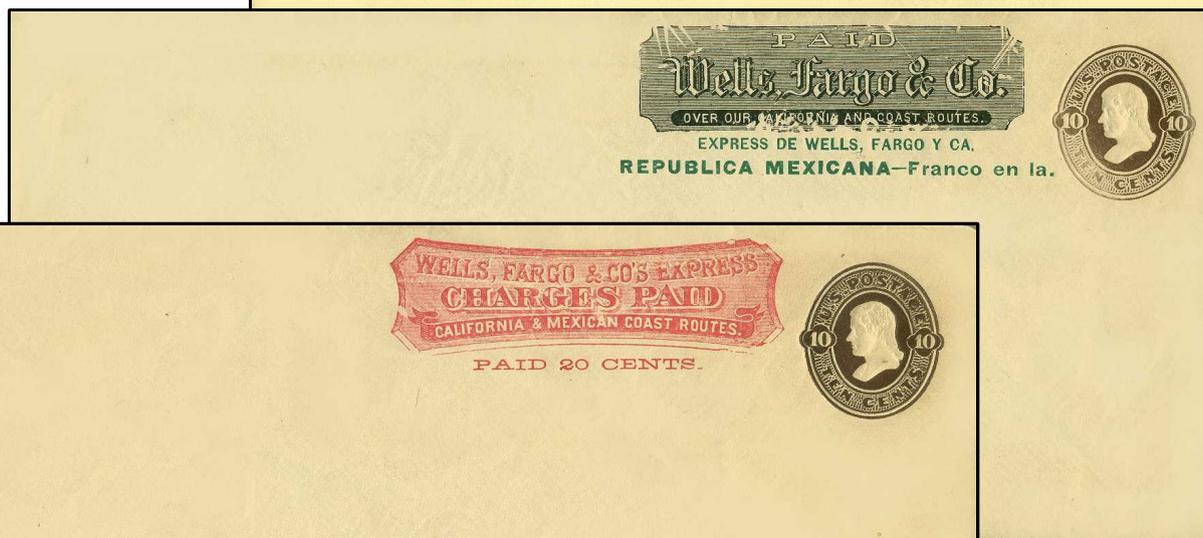
In 1876, the 1851 3¢ overland rate to Mexico was rediscovered in San Francisco and publicized. Wells Fargo took advantage and began, once again, using the 3¢ rate to Mexico. The 35¢ frank was applied to 3¢ Reay and Plimpton envelopes. In 1879, Mexico joined the UPU and adopted the universal 5¢ rate. Wells Fargo reduced their fee to 10¢ and adopted a new series of "Shield" franks in black, blue, and green. Red, 20¢ franks were printed on 10¢ envelopes for 2x rates. Beginning in 1882, a series of green, Spanish language franks went into use on 5¢ and 10¢ envelopes. {290}



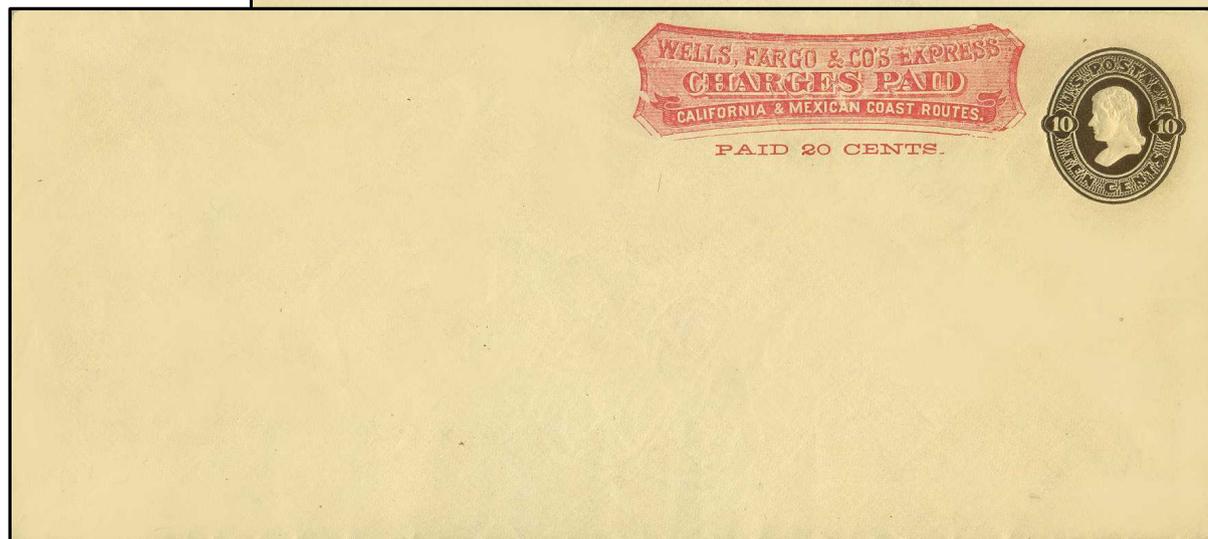
"20 ctvo Eagle Frank" Type M18.
(Also 10, 15, & 25 ctvo)



"Scroll Frank" Type M15



20¢ "Scroll & Spears Frank" Type M14



Red 20¢ "Shield Frank" Type M13

Temporary Spanish Language Frank Type M11

[18] Conclusion:

The 1874 Stamped Envelope Contract: {50}

The Reay Contract expired on October 1, 1870. On September 23, the new contract was awarded to the Plimpton Envelope Co. of Hartford CT, a small player in the envelope business.

The initial stages of the 1874 contract bore many similarities to the re-bid 1870 contract. In 1870, Dempsey & O'Toole won the rebid but were not prepared to fulfill the contract. Their dies were rejected by the Department, and they did not have the equipment in place for the required production quantities. In the mean time, Reay had been meeting all the requirements of the temporary contract with high quality envelopes. After a short period, PMG Creswell stepped in and canceled the Dempsey & O'Toole contract and awarded it to Reay.

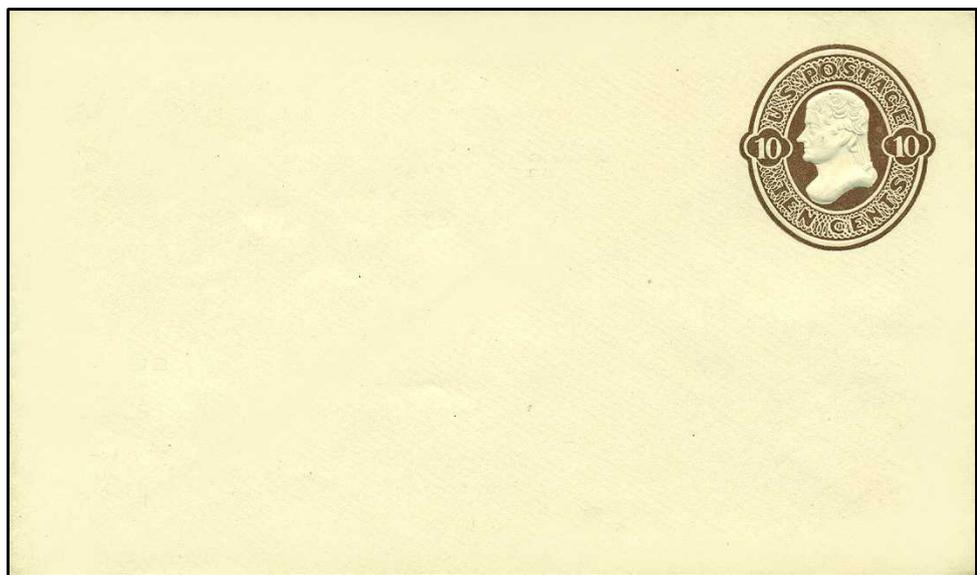
By the time of the 1874 bidding, PMG Creswell had resigned for reasons still not entirely clear. His replacement, PMG Marshall Jewell of Hartford, CT, seemed more intent on seeing Plimpton win the contract, than he was on a quality product. Plimpton had won the contract, but, like Dempsey & O'Toole, was unprepared to fulfill it. Their initial dies were rejected, but PMG Jewell allowed them to be used on an interim basis. Plimpton was also ill-equipped for production. This time however, rather than canceling the contract, Jewell issued further orders to Reay to bail out Plimpton. Concerning 10¢ envelopes, 20% of the 10¢ Reay envelopes were ordered in the third and fourth quarters of 1874.

Reay, more than likely, figured that it was only a matter of time until the Plimpton contract was canceled. Unfortunately for him, that never happened.

On February 17, 1875, the Department authorized payment for the last group of 1,130,416 Regular and Official envelopes (leftovers) from Reay.

Had John Creswell still been Postmaster General in late 1874, things may well have turned out quite differently.

Quality & Refinement



Rejected Die 10¢ Plimpton Envelope. Often referred to as the “Booby Head Die” {40}
It is unclear if these were ever issued since none are known used.

201

February 17, 1875.

Stamped Envelopes and Newspaper Wrappers turned over to Department
at expiration of contracts with George H. Reay. - Bill approved
February 17, 1875. - Purchased in open market, as under signature, requiring immediate delivery.

Class.	Size.	Quality.	Number.	Price per M.	Amount.
No. 1	Note	First	4,245	2.58	10.95
"	"	Second	34,000	2.25	76.50
No. 2	Ordinary letter	First	528,289	3.23	1,706.37
"	"	Second	5,971	2.71	16.18
"	"	Third	35,842	2.24	80.29
No. 3	Full letter	First	133,551	3.75	500.82
"	"	Second	18,352	3.03	55.61
"	"	Third	5,439	2.25	12.24
No. 4	"	Un gummed	18,707	1.79	33.49
No. 5	Extra letter	First	136,835	4.10	561.02
"	"	Second	8,977	3.46	30.71
"	"	Third	13,610	2.79	37.97
No. 6	"	Un gummed	381	2.58	.98
No. 7	Official	First	17,359	6.50	112.83
"	"	Second	9,075	5.60	50.82
No. 8	Extra official	First	31,651	9.79	309.86
No. 9	Newspaper Wrappers	Standard	29,396	1.25	36.74
-	Total ordinary	-	1,031,574	-	3,633.38
<u>Official Official Envelopes for Post.</u>					
No. 1	Letter	-	42,975	2.75	118.18
No. 2	Extra letter	-	15,795	3.75	59.23
No. 3	Official	-	37,993	6.00	227.96
No. 4	Extra official	-	2,079	8.00	16.63
-	Total official	-	98,842	-	422.00
-	Total cost	-	-	-	4,055.38

Stamp Bill Book entry of last payment to Reay {300}

Appendices:

[A-1] Watermark Imaging:

When studying watermarks and orientation, it is very helpful to have images to study and display rather than trying to view the watermarks directly. In previous section of this eBook, digitally unfolded images were introduced to illustrate watermark placement and spacing, and also knife and paper orientation. The following explains how these images were created.

Photographing Watermarks: The watermark images in this eBook were taken with a 4 mega pixel digital camera on a copy stand with back lighting (in the base). If you don't have access to such a device, you can make your own. You will need a bright light source and a piece of translucent plastic 1/8" to 1/4" thick. You can probably find the plastic on ebay. If not, try elsewhere on the net, or a local plastics supplier. Space the plastic above the light far enough to get uniform lighting over the size of the envelope. If you have a tripod with an extension tube below the camera mount, slide the tube out of the base and insert it up side down so the camera mount is between the legs of the tripod. This makes a quick and easy camera stand.

The real key to photographing watermarks, is to insert a piece of translucent plastic film or tracing paper inside the envelope to diffuse the light passing through. This defocuses the watermarks on the 2nd side of the envelope and provides a clear image of those on the top side. It needs to be thick enough to diffuse the light but thin enough not to block too much light. Consider folding it in half and using a piece of card stock in the fold to insert it into the envelope.

Exposure: Choose an envelope that has clear, prominent, watermarks, and if possible, chose a second with indistinct watermarks. Set you camera on manual and experiment with exposure until you get the results you want. Don't be afraid to overexpose. I shot most of these images at EV2.0. Also, open you test images with an image processing program (GIMP, photoshop, etc) and try increasing brightness and contrast. Most images here had both pushed 20-30%. Office packages also have brightness and contrast controls on pictures.

Photograph both sides: Be sure to take images from the back of the cover also. If the top flap is not stuck down, you have the option of taking the images with it fully open. You'll want to use a piece of clear plastic or glass to flatten the envelope. This is strictly your call and should be based on the condition of the envelope. If the envelope is at all brittle, opening the flap open may cause damage. Photographing with the flap open will result in exposure variations from the single to double layer portions.

Digital Unfolding: Once you have images from the front and back, you can create a digitally unfolded image. This is a tremendous help since it allows you to see the watermarks as they appeared on the envelope blank prior to folding. To create a neatly trimmed image, you'll need image processing software. I used GIMP on the LINUX operating system (it's all free). You may to adapt terminology if using Photoshop or another program.

- 1) Open the Front Image and increase the canvas size to approx 4x the size of the image to allow space for the flaps. Move the image to the center of the canvas.
- 2) If necessary, rotate the image to square it up to the canvas. Turning on the grid may be helpful.
- 3) Crop the image to remove any background. Don't worry about flap shape if you're using a 'Flap Open' image.
- 4) Open the Back Image on a new layer and repeat steps 2 and 3 on this image.
- 5) Move the Back Image so that it's left edge butts up to the right edge of the Front Image. Note that if working with a used envelope that has been shortened, you'll need to leave a gap, twice the width of the amount shortened.
- 6) Duplicate the Back Image Layer 3 times (2 for a 'Flap Open' image)
- 7) Move one of these to butt with the left side of the Front Image.
- 8) Move the other two copies, one above and one below the Front Image and rotate each 180°. Butt each to the edges of the Front Image.
- 9) If desires, trim out the flaps to the shape of the blank. If you're not interested in aesthetics, simply crop the entire image to eliminate some of the extraneous portions of the back images. This will reduce image and file size. You can also rough trim quickly using straight lines to approximate the blank shape..
- 10) Consider saving the image in the native format of the image processing software as well as one of the common image formats (jpg, gif, png etc). The native format will retain your layers and save an uncompressed image. You can always generate another format from this file.

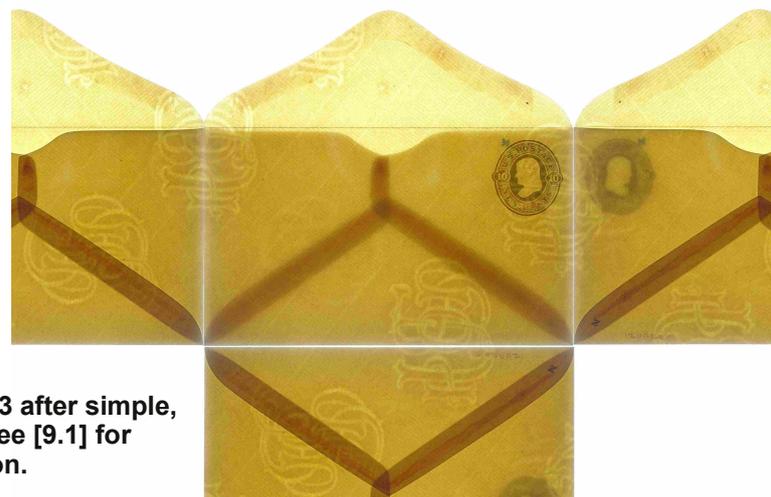


Image of 226a-3 after simple, overall crop. See [9.1] for trimmed version.

[A-2] Appendix: Envelope Sizes {50}

Table of sizes of 19th century 10 cent envelopes

Dimensions	POD Designation	UPSS Size			
Nesbitt, 1855-1870:	3 1/4 x 5 1/2;	No. 3	Letter Size	size 7	
Reay, 1870-1874	3 1/4 x 5 1/2;	No. 3	Full Letter Size	size 7	
Plimpton, 1874-1890	3 1/8 x 5 1/8;	No. 2	Commercial Note	size 4	
	3 1/4 x 5 1/2;	No. 3	Letter Size	size 7	
	3 3/8 x 5 7/8;	No. 4 1/2	Commercial Size	size 8	
	3 1/2 x 6 5/16;	No. 5	Extra Letter Size	size 10	
	3 3/4 x 6 3/4;	No. 9	Legal Size	size 13	
	4 1/8 x 5 1/8;	No. 11	Large Baronial	size 15	
	3 7/8 x 8 7/8;	No. 7	Official Size	size 21	
	4 3/8 x 10 1/8;	No. 8	Extra Official Size	size 25	
	Columbian Issue, 1893	3 3/4 x 6 5/16;	"Q"	Small Legal Size	size 11
		4 1/8 x 9 1/2;	"H"	Large Official Size	size 23
4 3/8 x 10 1/8;		"I"	Extra Official Size	size 25	

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