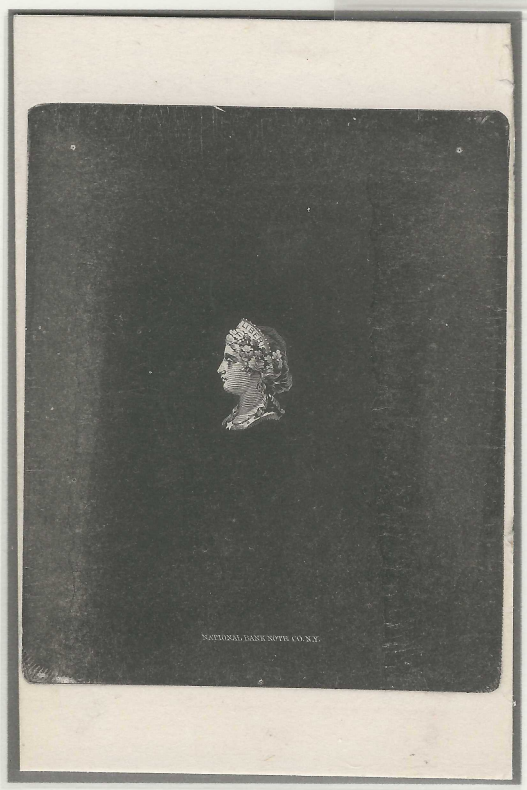
Additional Experiments

Liberty Head essays on soft card

Bright blue

Black



Blue green

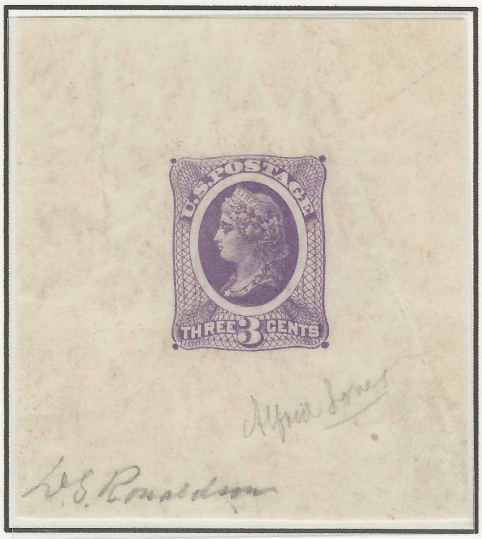
Additional Experiments

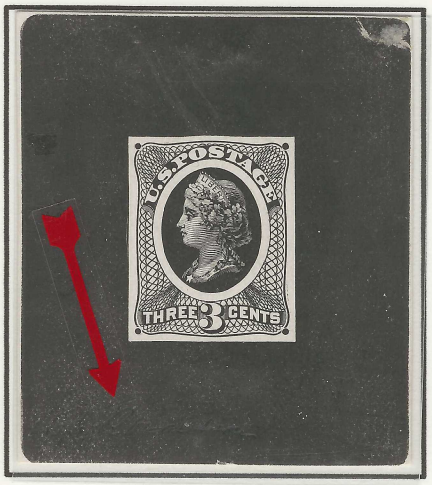
The complete design

All the essays on this page have been signed by the engravers, **Jones** and **Ronaldson**. They are **unique**.

Die on transparent white wove paper

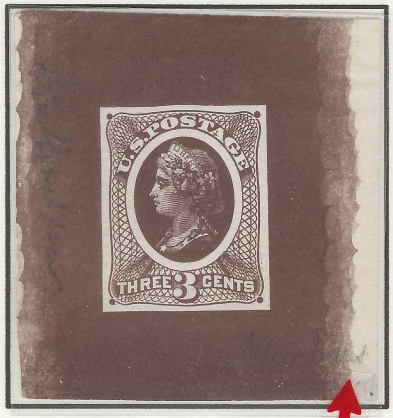
Pale blue purple





Die on stiff yellowish card

Black



Complete design: die on proof paper

Red brown, Carmine, Blue green

Additional Experiments

Plate experiments on stiff ivory paper, ungummed

Carmine

Dark blue green

Yellow

Rose violet

Block of 4 – no colour outside design

Carmine

Strip of four

Dark violet, orange, dark green, dull yellow green

Additional Experiments

On transparent white wove, imperf, ungummed

Pinkish Red

Four different colours: purple, pale gold, blue-green, dull green

Blue-green, Gold
and Pale Gold

The Rainbow block of eight

Dull scarlet – Gold
Gold – Carmine

Red violet – Deep violet
Deep violet – Carmine

Dark violet – Blue green
Blue green – Dark violet red

One of only two known blocks

The other is in the Richard Drews collection

Additional Experiments

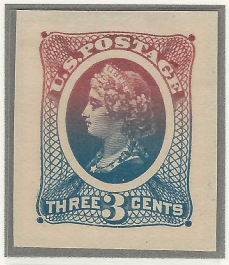
Complete set of 'rainbow' colors on stiff yellowish wove: imperf

Dark brown to Orange

Blue green to Dull carmine

Deep blue to Dark brown

Brown olive to Brown red



Dull carmine to Deep blue

Dull carmine to Orange

Dull orange to Deep blue

Dull carmine to Yellow green

Additional Experiments

Complete set of 'rainbow' colors on white wove: separated by 7 mm vertically and 6 mm horizontally

This complete set shows **all the colors** and the **true vertical pairings**

The Scott catalogue *fails* to list *dull carmine* to *brown-olive*. Brazer lists all the colors, but he doesn't get the pairings right.

Red-brown to *Dark orange*
Dark orange to *Brown-red*

Brown-olive to *Red-brown*
Red-brown to *Yellow-green*

Yellow-green to *Dull carmine*
Dull carmine to *Yellow-green*

Blue-green to *Dull carmine*
Dull carmine to *Deep blue*

Dull carmine to *Brown-olive*
Brown-olive to *Dull carmine*

Dull-carmine to *Orange*
Orange to *Deep blue*

Deep blue to *Orange-brown*
Orange-brown to *Dull orange*

Additional Experiments

Complete set of 'rainbow' colors on stamp paper: perf 12, gummed

This complete set shows **all the colors** and the **true vertical pairings**

Both Brazer and Scott catalogue *fail* to list *brown red* to *brown-olive* (paired on the bottom right with the listed *brown-olive* to *brown-red*)

Blue-green to *Dull carmine*
Dull carmine to *Deep blue*

Deep blue to *Dark brown*
Dark brown to *Dull orange*

Dull carmine to *Dull orange*
Dull orange to *Deep blue*

Yellow-green to *Dull carmine*
Dull carmine to *Yellow-green*

Brown-red to *Brown-olive*
Brown-olive to *Brown-red*

Additional Experiments

Thorpe experiment – printing on a ground color: surface-printed color on white wove paper

Research: Thorpe's aim was to prevent the cleaning of a stamp with either an acidic or an alkaline solvent. This meant that the entire design, printed in one fugitive ink, should touch a printing in the other fugitive ink. This could be done, as Thorpe points out, by printing the design on what he called a '**ground color**'.

These essays aren't usually ascribed to Thorpe's patent, but they could be examples of 'printing on a ground color'

Yellow-surfaced, ungummed.

The two items are a perfect fit.

143 x 82 mm

Uncatalogued

Green-surfaced, ungummed.

135 x 78 mm

Additional Experiments

Thorpe experiment – printing on a ground color: surface-printed color on white wove paper

Design printed on deep orange-surfaced white wove paper

Imperf, ungummed.

Perf 12, gummed.

Thorpe experiment – double printing: printing the design twice, one on top of the other

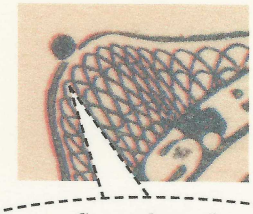
Research

The stamps below illustrate a third possible way in which Thorpe's '**double printing**' could be achieved. In this case, two copies of the design have been printed – one directly on top of the other.

Black on **Scarlet**

e: PF
Imperf, gummed

Perf 12



Scans shows the color differences and the effects of double printing

Discovery copies: Brown on **Scarlet**

Imperf

Perf 12

Additional Experiments

The Thorpe patent 95,624: Double-printing with two fugitive inks

> **Patent 95,624** involved what Thorpe called 'double-printing': '*The nature of my invention consists in* ***the printing of... stamps with two kinds of ink****... so different in their chemical composition that* ***a solution of acid will destroy the one****, while the other will be... destroyed by...* ***a solution of alkali****...*'
>
> *From Thorpe's letters patent dated* ***October 5, 1869***

The set below is usually attributed to Thorpe's patent. It has the design printed over a network safety under-print.

Liberty head printed over various designs: imperf and ungummed – six complete sets at most

Black 'ONE' repeated

Red horizontal diamonds

Red X repeated

Reconstructed strip of three
Red 3 in diamonds

Red 2 in ovals

Red 2 in circular stars

Black 5 in hexagons

The Evolution of the Grill

Correspondence suggests that Steel's experiments with embossing stamps to prevent reuse, began as early as 1865. The Post Office finally adopted what's called 'the grill' in 1867. The 'grill' was the last form that the 1861 Washington took. In 1869, the USPO introduced a new issue, bringing the era of the 1861 Washington to a close.

This section is devoted to the grills. I show:

- Early essays: the various flat top, biscuit grill, and music box grill experiments
- The rare 'first experiments' and unique biscuit grill **patent claim**
- Essays and stamps for the 'A', 'C', 'Z', 'D', 'E', and 'F' grills including surface printing experiments
- Earliest known use; and varieties including the unique **F-grill used printed on both sides**

Charles Steel's patent 70,147 was for '... *embossing or partially breaking the paper...*'. This would allow '... *the oil of the cancelling ink to strike very deeply ...*'; and in so doing, make it difficult to clean the stamp for reuse.

Quoted from ***Steel's patent*** *dated October 22, 18637*

e: PF

The **only known** F-grill used and printed on both sides

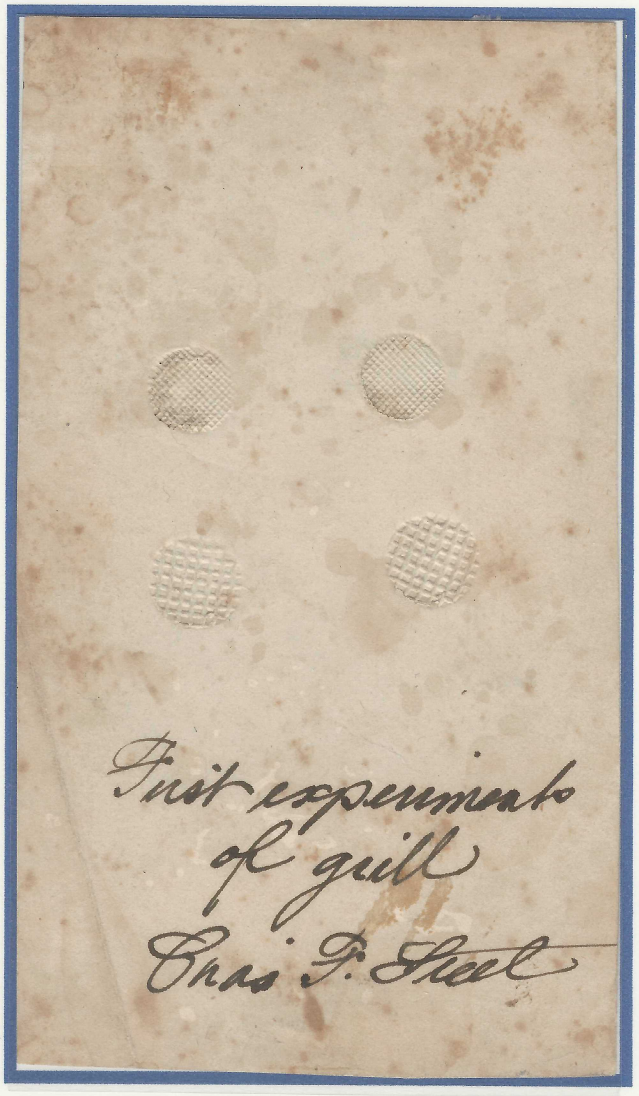
On the eve of the introduction of the 'grills', a civic minded citizen self-cancels a stamp that had escaped cancellation '*Not stamped but I don't want to defraud the government out of 3 cents*'

The Evolution of the Grill

The earliest known essay pre-dating the patent by some years

By the early 1860's efforts to prevent re-use were well underway. These culminated in the eventual adoption by the United States Postal Service of **Charles F. Steel**'s 'embossing' method.

Steel was a supervisor at the N.B.N.C.



This is **one** of **three** recorded '**first experiments**' by Steel. This is the listing copy in the Brazer and Scott catalogues.

Correspondence indicates that Steel had been trying to persuade the postal authorities to adopt the 'grill' as early as 1865.

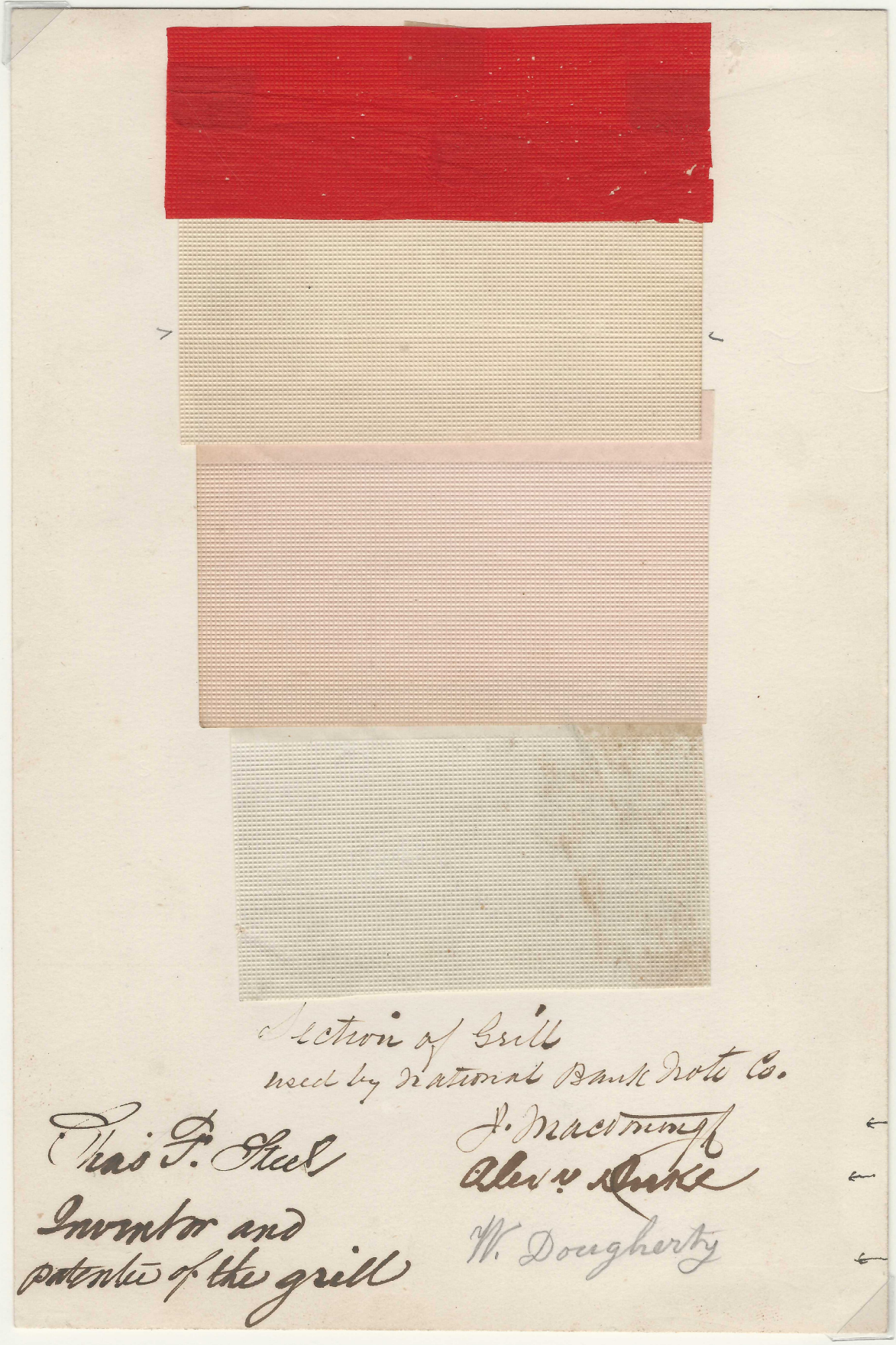
This experiment may therefore date from 1865.

From: the Finkelburg collection

Two sets of **circular grills** produced by **square, flat-topped** embossing mechanisms. The experiment tests **small** and **large** grills **on thin card**. The production challenge was to **break the paper sufficiently to absorb the ink** while, at the same time, not doing too much **damage to the stamp**.

The Evolution of the Grill

This important essay recognizes Steel's rights as the inventor and probably pre-dates the patent

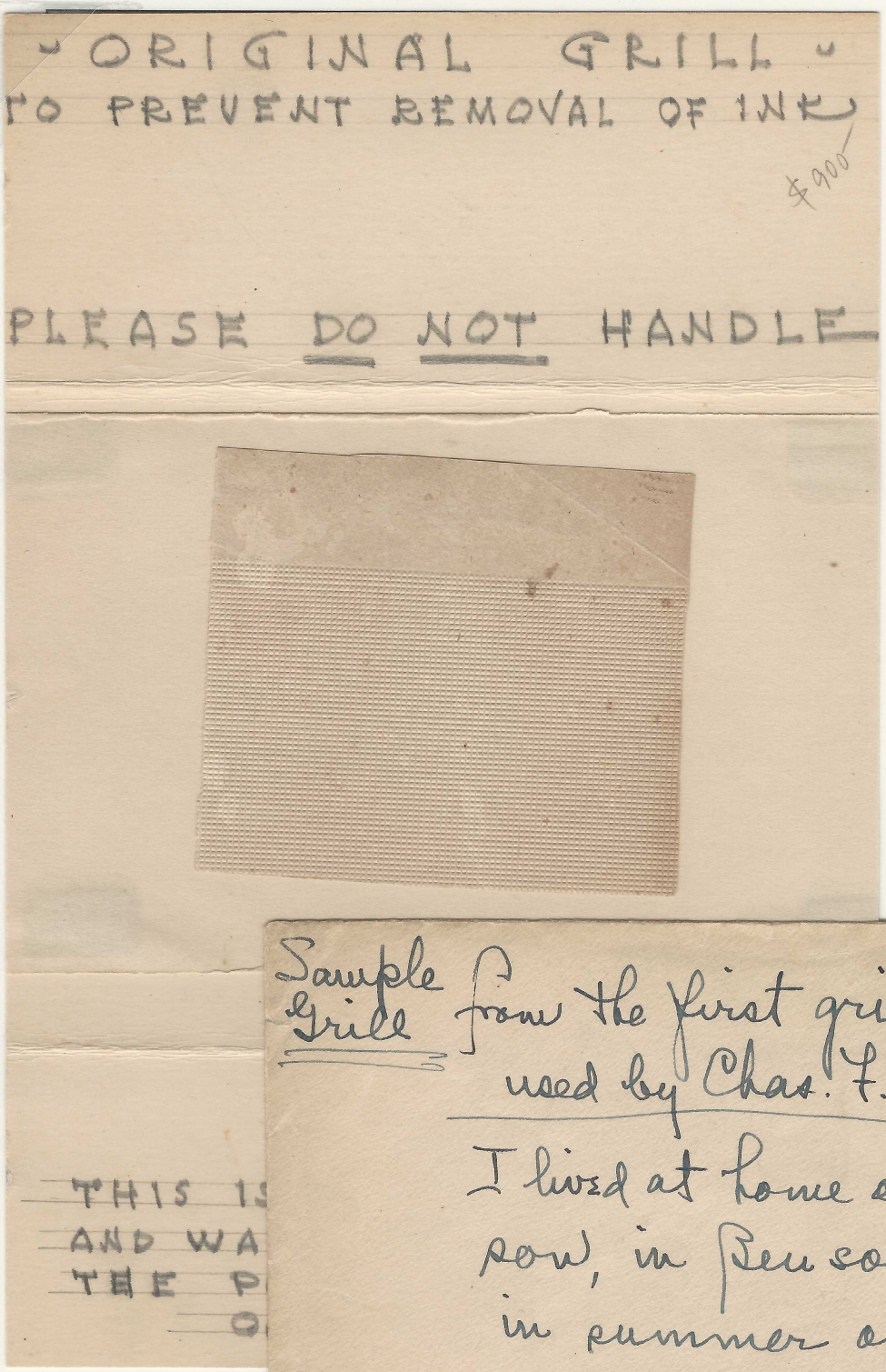


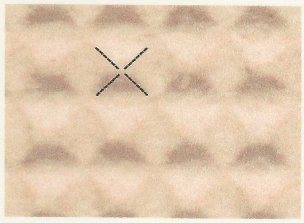
The 'Biscuit grill' printed on various colored papers by the first grilling machine.

Adopted on May 8th, 1867.

Signed by various officers of the N.B.N.C.

James Macdonough was the GM. Alexander Duke was a machine operator.





e: PF

All-over Biscuit Grill on white wove paper (70 x 44 mm). Similar to **Scott 79-E14b.**

The essay has a **personal connection to Steel.** The original owner claims to have been given it while staying at the home of **Steel's son** in the summer of 1904/5.

The Evolution of the Grill

Early experiments based on Steel's patent: a 'flat top' pyramid grill. Various papers, gummed.

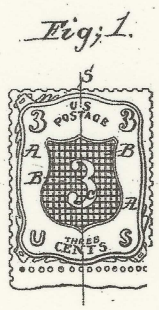
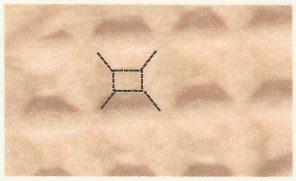
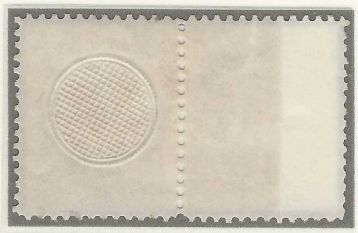


Fig. 1 from Steel's patent showing '3' in an embossed shield.

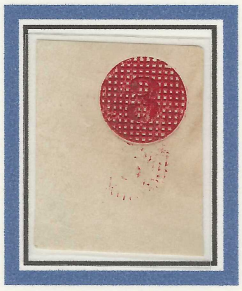


The scan shows that this early grill is a 'flat top' pyramid.



Circle on white wove. Flat top embossing, points down. Gummed.

'3' in circle, raised ridges inked in red.



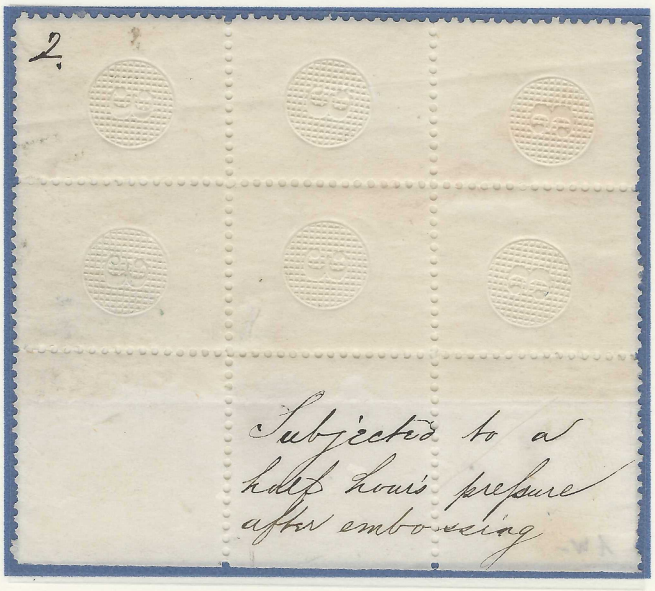
Only one known.

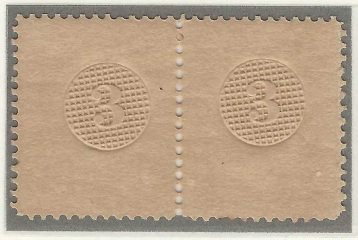
White wove paper

Steel's patent calls for pressure to flatten the embossing.

This essay records '*a half hour's pressure after embossing*'.

3c grilled circle, gummed, perf 12





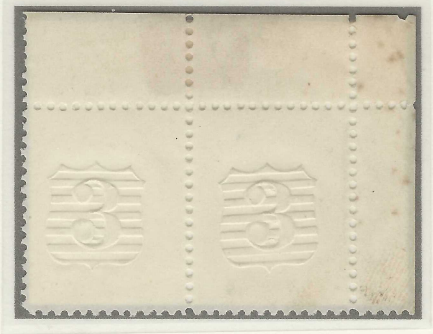
Tan wove paper

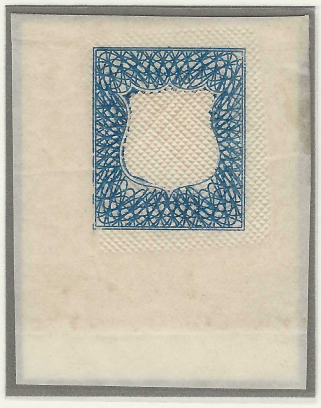
Yellowish wove paper

Albino 3 in shield

Thin lines

Thick lines





Blue border surrounds shield

All over diagonal grill on white wove

Embossed blue '3' in shield on lilac paper

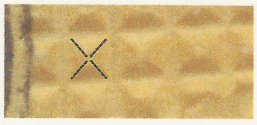
Lathe work similar to the other essays

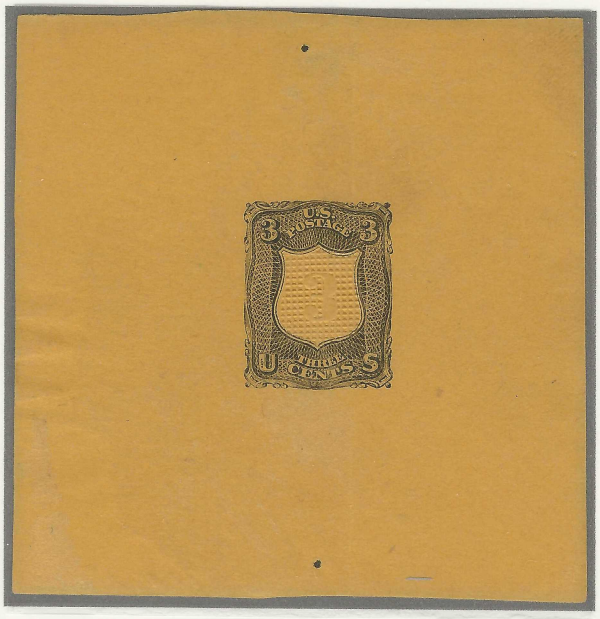
Ungrilled, ungummed

Progressive essay on yellow wove, perf 12. Shows pen and ink tests of the idea.

The Evolution of the Grill

Die using Steel's patent: a 'pointed top' pyramid grill. Lithographed frame.



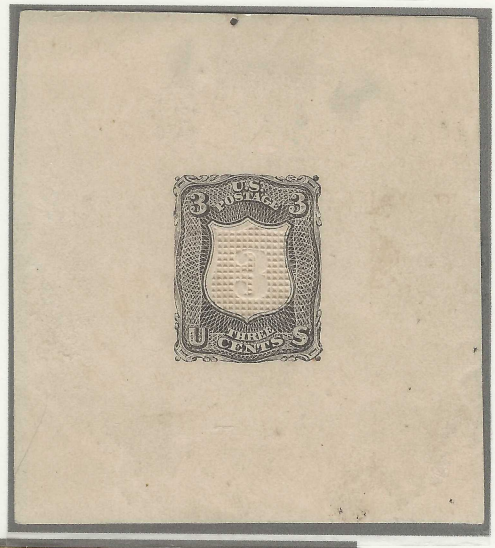


Die on thick orange wove, gummed

Black

Die on thick white wove, gummed

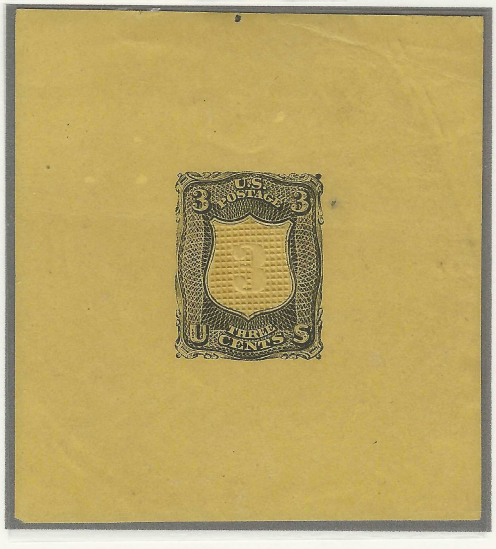
Deep pink

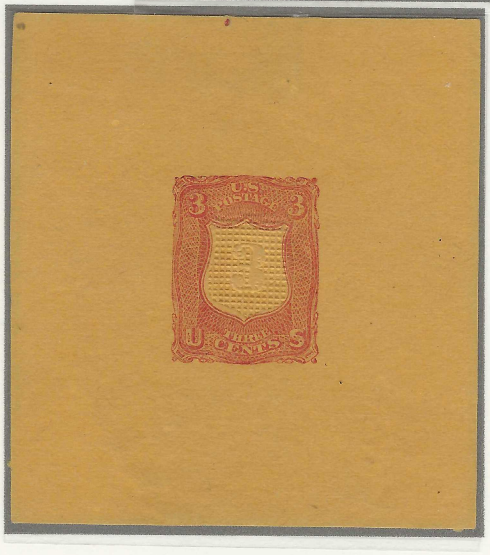


Black

Die on yellow wove, gummed

Black





Die on thick orange wove, gummed

Deep pink