Yesterday in U.S. Stamp News:
The Stickney Press Precancels and Overprints

by Louis E. Repeta *(From USSN, July 2003)*

Abstract

The Stickney rotary printing press was a major development of the Bureau of Engraving and Printing. This roll-fed press represented a significant technological advance in intaglio printing postage stamps from recess engraved rotary plates.

Attention in this article is focused upon the precancel/overprint station that was later added to the press. Various Bureau precancel and overprint production and printing varieties are described and illustrated. Information relative to the cause of these anomalies is presented.

Precancel/Overprint

The word overprint is often used as a general term to describe the additional printing found on finished printed stamps and coupons. A precancel is a specific type of overprint, a cancel, applied to a stamp, envelope, or wrapper prior to actual use, in advance of mailing, with an authorized device made specifically for that purpose. There are two basic classes of U.S. precancels: City types, often called local prints, and Bureau prints, done in Washington, D.C. at the Bureau of Engraving and Printing.

Local precancel overprints were often handstamp impressions applied to the stamps by post office employees at various post offices. Local printers were able to obtain contracts to precancel quantities of stamps using their regular printing presses to accomplish this work. The printing base or form used was generally an electrotype plate supplied by the Post Office Department (POD). In some instances, the local printer "hand-set" individual pieces of printer's type to produce a letterpress overprint precancel base.

The first order issued to the Bureau of Engraving and Printing to furnish precanceled stamps was filled by flat-bed overprinting full 400-subject sheets of several denominations of the perf. 10, unwatermarked, 1917 series postage stamps. These Bureau precanceled stamps are known as the experimentals. Four million stamps were produced for each city: AUGUSTA/MAINE, NEW ORLEANS/LA., and SPRINGFIELD/MASS. No further precancel production runs were made by the Bureau until 1923.

A significant step in the development of Bureau precancels was precipitated by complaints the Stickney rotary press sheet stamp pane side margins were too narrow, and the panes also had a tendency to curl, which made local overprinting almost impossible. On August 4, 1922 Postmaster General Hubert Work issued POD Order 7877 that appointed a five member POD-BEP Committee to investigate these complaints.

The Stickney rotary press was a manually controlled, single color, roll-fed printing press and gumming machine. Figure 1 shows the paper path, using a dashed line, during press operation. The development of the rotary printing press by Benjamin R. Stickney gave life to several schemes to precancel full finished printed rolls of stamps.

The first plan to precancel stamps was to run a finished printed and gummed roll (web) of stamps through

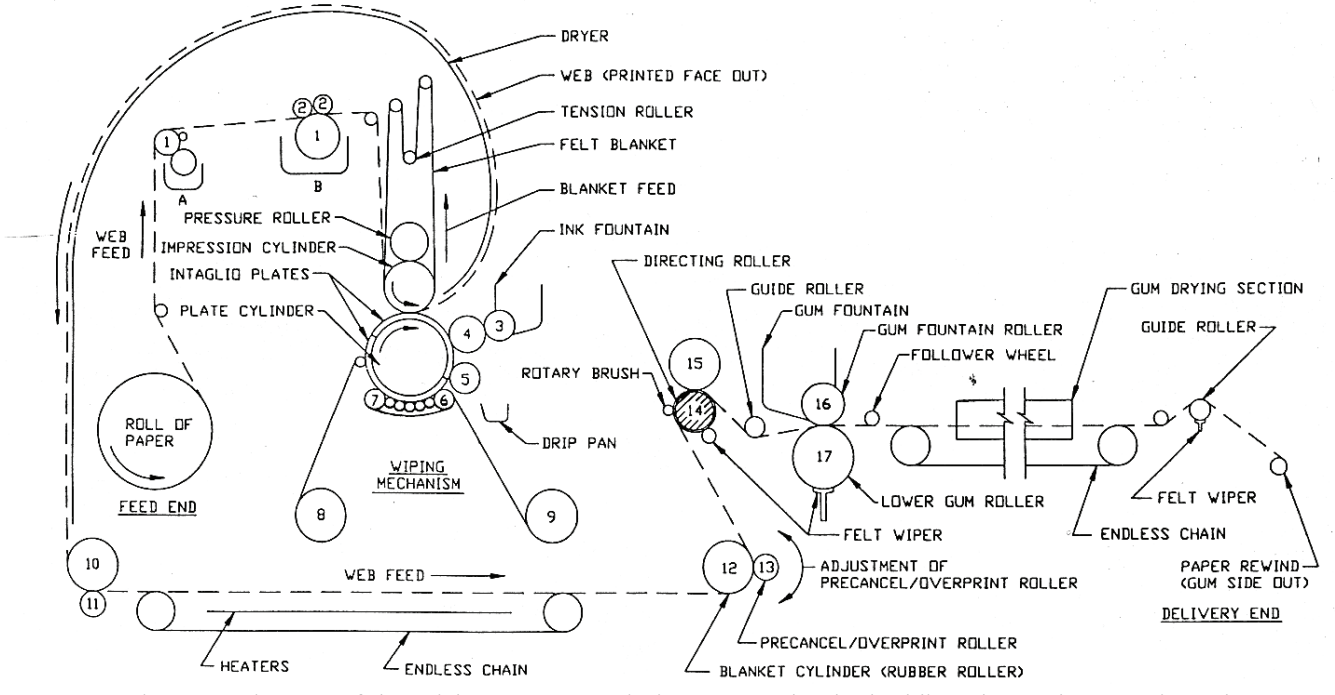

Figure 1. Diagram of the Stickney Rotary Printing Press. The dashed line shows the paper's path.

a second rotary press. The second press would be fitted with a pair of precancel plates instead of intaglio stamp printing plates to accomplish this task. An economic analysis indicated this process was too expensive to implement and it was discarded.

Richard Breadon, Assistant to the Superintendent, Division of Stamps of the POD, suggested a raised design commonly termed typography (and with the help of Blair McKenzie, a machinist employed at the Bureau, developed a letterpress printing system) to precancel/overprint on the Stickney press at the time when the stamps were printed. In the latter part of April 1923, the letterpress printing unit was integrated with the Stickney rotary press, and the Stickney then became a two color press. The 1-cent green Franklin sheet stamp, series of 1922, precanceled NEW YORK/N.Y. in black and issued in early June 1923 was the first stamp produced by this set-up. The addition of the letterpress printing unit coupled to the Stickney rotary press enabled the Bureau to become cost competitive with the local printers to overprint large orders of precancel stamps.

The second printing unit was an afterthought. It was positioned as far away from the stamp printing station as possible, and before the gumming unit. This printing unit is designated as (13) in Figure 1, page 19. Since the paper path between roller (12) and roller (14) was too short to accommodate an overprint drying operation, a very quick-drying ink was employed. The viscous or stiff overprint ink was a semi-heat-setting oil-based ink with as little tack as possible. Inks that are too tacky may pluck or pick the paper surface. The heat that remained in the paper as it exited the intaglio drier enabled the overprint ink to set more quickly. The gum drying oven also helped "set" the overprint ink.

The letterpress printing process was the opposite of the recess engraved printing process used to print the stamps. All letterpress printing surfaces were raised to the same height above the plane of the supporting material, in "relief", like the ubiquitous rubber stamp. The ink was spread fairly evenly over the printing areas by a roller, and plate cleaning after inking was not required. The letterpress ink needed to have sufficient consistency—body—to adhere to the raised portion of the plate. However, some ink was deposited on the vertical edges of each character due to a slight compression of the ink roller. The image was impressed directly on the raised lines of the recess engraved stamp design by a short duration high pressure contact. The precancel/overprint impression roller pressure was adjusted, increased or released, by screws. The impression pressure caused the precancel lines and letters to be pressed into the printed face of the paper. This resulted in corresponding ridges being produced on the back of the paper. See Figure 2. After the application of wet gum and subsequent drying cycle these ridges (deformations) became less perceptible.

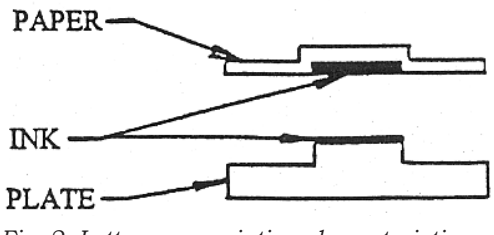

Fig. 2. Letterpress printing characteristics.

There was a length-to-width ratio problem associated with the small 3-1/4 inch outside diameter precancel plates. To cover the diameter and full width of the web, four plates were used. Two plates covered the width and two plates were used to complete the cylinder. See Figure 3. These four plates were machined as a group and formed a set. But when one plate was damaged beyond repair a single new plate could be substituted for the discarded plate.

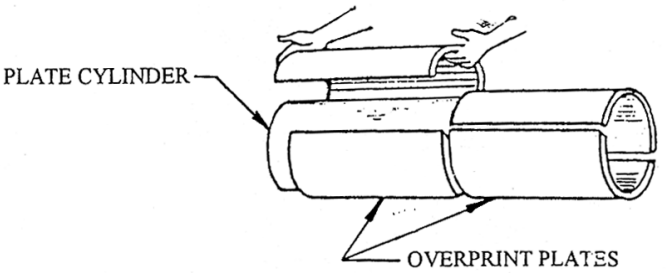

Figure 3. Four precancel plates.

Each precancel plate was numbered and lettered. When the plates were properly mounted on the precancel plate cylinder the position of numbers and letters formed a check. This ensured that each of the four plates when mounted by a machinist was in the correct position. This arrangement is shown schematically in Figure 4, as viewed from the delivery end of the printing press.

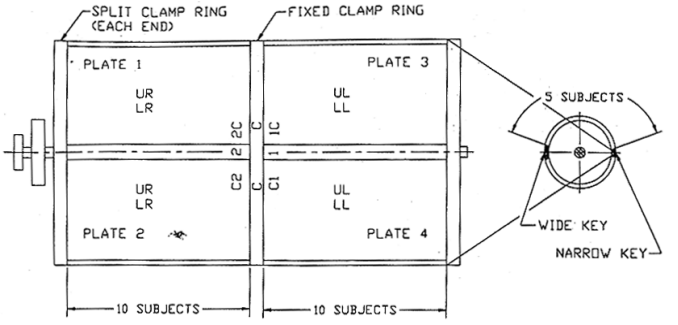

Figure 4. Fifty-subject precancel plates.

The precancel plates were not a very close fit around the plate cylinder. They were contingent upon the undercut clamps at the center and each end for tightness. In theory any plate could be mounted in any of the four positions on the plate cylinder. No examples exist showing that this happened. In addition, each of the four precanceling plates were issued a plate number. Unlike the stamp plates, this number did not print.

The difference in outside diameters between the stamp printing plates (13 inches) and precancel plates (3-1/4 inches) required a speed ratio adjustment. The precancel plate cylinder was geared to revolve at four times the speed of the 400-subject sheet stamp plates.

The precancel plates for the 400-subject sheet stamps contained 50 subjects, arranged ten-subjects across the web by five-subjects along the web with continuous lines above the name of the city and below the state. These lines are also known as rules. A pane of 100 subjects was printed by two plates: the first five rows by one plate and the remaining five rows by the second plate. Plate four

of Figure 4 will overprint vertical format stamps UL and LL 1 to 50. Plate three will overprint stamps UL and LL 51 to 100. The precancel printing cylinder circumference was equal to the length of a 100-subject pane of vertical format sheet stamps.

The four precancel plates for sidewise coil stamps contained 30 subjects each, arranged six-subjects along the web by five-subjects across the web. The first six rows of the coil plate were then overprinted by one plate and the next six rows by the second plate. Each revolution of the sidewise coil precancel plate cylinder would overprint 120-subjects from the 170-subject intaglio stamp plate.

The first precancel plates used on the Stickney rotary press were electrotype plates made from handset, Bureau made "type page" and manufactured at the Government Printing Office. The Bureau was not equipped to manufacture curved electrotype printing plates. For economic reasons, in February 1932 the GPO machine-set type (Ludlow) replaced the BEP hand-set type used to manufacture the forms for the precancel plates. An attempt was made to obtain a font style exactly like the hand-set type. The machine-set type was similar, but there were slight differences in the formation of some letters. These variations have been well documented in the precancel literature. Some examples of blocks or vertical pairs, from the fifth and sixth vertical rows, are known showing both types of overprint.

The plates used to precancel coils formed a circle. These plates produced a continuous overprint except for the gaps in the precancel lines. The joint between two precancel plates shows as a gap. See the sketches shown in Figure 5 that illustrate these varieties.

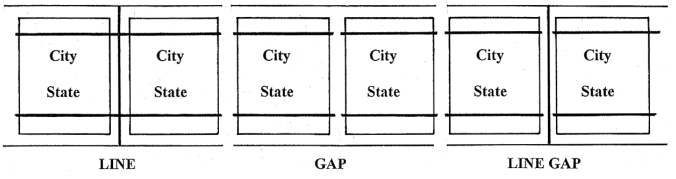

Figure 5. Coil joint line and gap varieties.

The major (wide) gap was caused by a key that prevented the curved printing plates from turning on the plate cylinder. The width of this gap is equal to the key width (0.05") plus any beveling of the ends of the precancel lines. This gap was between each group of twelve stamps. A narrow key was diametrically opposite the major key, and produced a narrow precancel gap six coil stamps from the major gap. A horizontal strip of eight with the gaps between the end stamps and the joint line between the gaps illustrates these printing varieties, See Figures 6 and 7. A line gap pair, which is a most desirable variety, would occur every 204 (12x17) stamps.

The fit and alignment between adjacent precancel plates may be nearly perfect or mask the narrow gap. However, the pairs of lines (rules) at the minor gap plate joint are seldom absolutely continuous but are slightly offset. Each set of working electroplates was manufactured from the same flat master or pattern plate and are therefore identical. The offset rules of adjacent plates are the most conspicuous indicators that the entire plate has been offset. This variety was produced when the plates were mounted on the plate cylinder. This is illustrated by the sketch and coil pair shown in Figure 8.

Synchronization of the coil overprinting plates was limited to keeping the overprint centered on the stamp image.

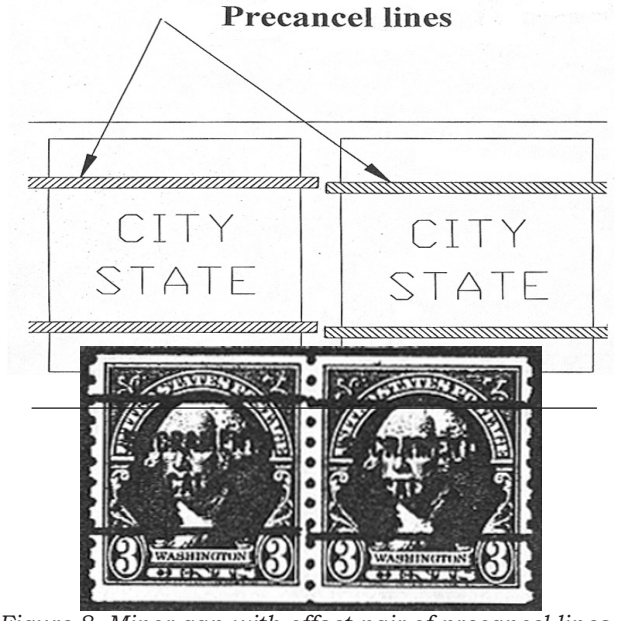

Figure 8. Minor gap with offset pair of precancel lines.

When a precanceled coil is compared with a precanceled sheet stamp from the same city a difference in the space between the lines and the length of the city and state names will be noted. This variation is caused by the curving of the precancel plates. The coil plates are curved to fit sidewise; therefore, the precancel lines revolve in the direction of curvature. The sheet stamp precancel plates are curved upright and the precancel lines revolve parallel to the axis of curvature. As a result, the lines on the coils are slightly closer together than the lines on the sheet stamps. The city and state names on the coils are slightly longer than those on the sheet stamps.

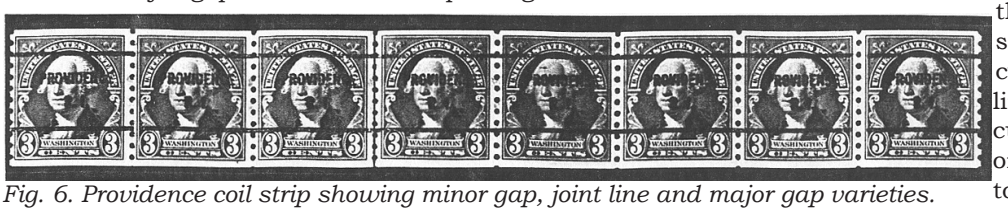

Fig. 6. Providence coil strip showing minor gap, joint line and major gap varieties.

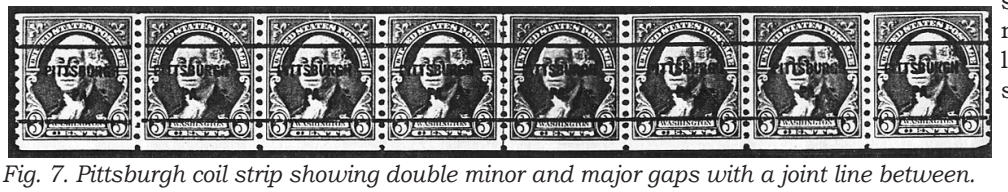

Fig. 7. Pittsburgh coil strip showing double minor and major gaps with a joint line between.

The Molly Pitcher, Hawaii

and Kans./Nebr. overprint plates were similar to the 400-subject precancel plates. These stamp overprints were produced by the same letterpress overprint machinery. The overprinted Molly Pitcher and Hawaii stamps were issued as commemoratives. The Kans./Nebr. overprints were a form of security endorsement whose purpose was to prevent post office burglaries of large quantities of stored stamps.

The position of the precancel/overprint image was raised or lowered relative to the finished printed stamp on the vertical format sheet stamps. The coil stamp precancel registration was moved to the right or left of the finished printed stamp. These centering registration adjustments were made on the fly, while the press was running, independent of the web drive of the rotary printing press and the overprint cylinder drive.

To maintain proper registration, the overprint plate cylinder was adjusted opposite the movement of the web, or with the movement of the web. In other words, the overprint plate cylinder (13) of Figure 1 was rotated about the blanket cylinder (12) to maintain registration with the moving printed web. A high register, Figure 9, or a low register, Figure 10, of the overprint would result on vertical format sheet stamps from this adjustment.

Figure 9. High register.

Figure 10. Low register.

The 400-subject stamp plates had a 5/16 inch horizontal imprinted space, a gutter, on each plate that separated the upper and lower stamp panes. A 5/16 inch horizontal gutter space also occurred at the two joints between the companion plates.

The overprint plates for these 400-subject sheets were designed with a wide space every ten subjects along the plate circumference to bridge the stamp plate gutters. If the overprint plates were out of synchronization and register with the stamp plates, the wide spacing on the overprint plates could fall on the stamps well outside of the gutter and create a wide spacing variety, see Figure 11.

Figure 11. Top two stamps show a wide spacing.

Fig. 12. The middle stamp lacks the overprint.

When the overprint wide space worked well into the body of the stamp pane, the height of the wide space plus the normal distance between overprints could create a space wide enough for one horizontal row of stamps to be without the overprint, see center stamp, Figure 12.

In addition to the change in position of the overprint, the characteristics of the overprint could change. A wiped overprint variety, often called a "stretched" print, occurred when the overprint cylinder was quickly moved, on the fly, opposite the movement of the web at the moment the type was in contact with the paper. Figure 13 shows a wiped or "stretched" Nebr. overprint on the bottom stamp.

Fig. 13. Stretched overprint on the bottom stamp.

In addition, when the press was stopped there may have been web backlash. If the web tension had been too high this would permit the web to slide back when the tension was reduced or released. This movement of the web with the type in contact would also yield a "stretched" print: A wider line on precanceled sheet definitives, Figure 14, or a wider letter(s) but no line width change on a precancel coil.

Figure 14. Bottom precancel line wider.

A thinned line on a precanceled sheet definitive, or a shortened coil overprint called a "squeezed" overprint was produced by an adjustment of the precancel plate cylinder in the direction of web movement. See Figure 15.

Figure 15. Bottom precancel line thinner.

Conclusion

The major goal of this article was to familiarize readers with the mechanics employed to produce Bureau precancel and overprints on the Stickney press. It is my hope that readers' interest in these Bureau precancels and overprints was stimulated.

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