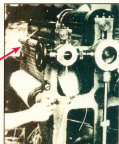


# Gum Breakers on Fourth Bureau Issue Rotary Stamp Production



**Scope and Coverage:** This exhibit documents the development of gum breaker technology by Bureau of Engraving and Printing (BEP) engineers designed to overcome paper curl on rotary press sheet stamp and booklet pane production. All significant gum breaker configurations are represented here, including both short-term trials and long term standards. Examples of gum breakers illustrate a diagnostic tool to distinguish genuine from altered stamps and date printings from long press runs.

**Background:** Gummed paper curls during changes in temperature and humidity causing production problems and difficulty handling finished stock. Introduction of the Stickney automated web-fed press

and companion perforation machine enabled automatic, mechanical application of gum breakers to replace hand operations used on earlier flat plate output.

Benjamin Stickney designed a pair of free-rotating, gear-like cylinders with raised steel ribs to be mounted on the perforation machine between the web (paper roll) and the first set of perforation pins (red arrow.) The lead edge of the web passed between the two cylinders, which, when engaged, applied uniform creases to the pre-gummed paper. Gum breaker application occurred inches ahead of the web meeting the first set of perforation pins.

Much experimenting occurred until a standard gum breaker configuration emerged near the end of the Fourth Bureau Issue era. Gum breakers continued to appear on sheet and booklet pane stock until 1981 when introduction of dull (moisture resistant) and later, self-stick gums made them obsolete.

**Organization:** The story line moves chronologically, with each new gum breaker configuration presented in the order the machined cylinder pair was first mounted on the perforation machine.

**Significance:** The exhibit documents a step of rotary stamp production during the Fourth Bureau Issue that is often poorly or inaccurately described. It shows all breaker configurations known.

**Key items:** Rare and discovery items are bordered in red and annotated in italics.

## Exhibit Plan

- Early Trials 1919-1924
- First Gum Breaker Standard 1924-1928
- Additional Trials 1928
- Second Gum Breaker Standard 1928-1930
- Third Gum Breaker Standard 1931-1938
- Epilogue