

GUM BASICS

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The problem of applying adhesives to stamps has been around as long as the first postage stamp. Advocates of issuing postage stamps understood that in order to get postal patrons and employees to use stamps in the first place, they had to supply a way to adhere the stamps to the letters being mailed. It was unlikely that postal patrons would embrace the concept of using stamps if they had to apply their own glue to the back of the stamp each time they wanted to mail a letter.

Great Britain applied gum with brushes to the back of the very first sheets of postage stamps printed, the Penny Blacks in 1840, after the stamp images were printed (Figure 1). The gum dried and was water-activated, typically with saliva, immediately before application to a letter.

Liquid-activated gums can be natural based – plant or animal – or synthetic based. Natural-based gums are referred to as dextrin. Collectors may run across the term gum Arabic, which refers to gum derived specifically from the acacia plant. Since the mid-1960s, synthetic gums came into popular use. Polyvinyl acetate adhesives (PVA) fall into this category.

About gum color

Gum appearance depends on the type of ingredients used, the method of application and environmental controls used when the gum was applied to the paper. Color will range from clear or white to yellow to brown. Texture and gloss will range from smooth to matte and dull to shiny.

Years after its original issue, a stamp's gum may encounter environmental changes that cause the gum to change characteristics, especially color. It is therefore difficult to sort stamps by gum color. There are still many stamps in which differences in gum appearance create different catalog listings. For example, there are early European stamps, including Germany, in which stamps were reprinted from the original plates and one way to differentiate these from the originals is the gum.

Differences in manufacturing

Once a stamp has been issued, the gum can be described as “original gum,” often abbreviated to “OG.” Original gum can take on many different appearances based on the processing techniques used to manufacture the stamp. Originally, gum was applied by brushes – the term “streaked gum” refers to the appearance of brush strokes. Gum applied mechanically by grooved glass or metal rollers will leave tiny



Figure 1. Workers applied gum with brushes to the world's first standardized postage stamps, as shown on Great Britain Scott 3, a mint example with a hinge remnant.

Figure 2. A 1948 U.S. Mississippi Territory stamp (Scott 965) shows vertical ridges of gum (ridged gum) produced when the gum was applied with a mechanical grooved roller as part of the rotary press production process.

parallel ridges (Figure 2) and is often called “ribbed gum.” “Economy gum” is a term applied sometimes when the cost or availability of raw materials was limited, so the gum was applied in patterns. You can spot “economy gum” if you see spots or areas with no gum (Figure 3).

Gum was originally applied after the printing of engraved stamps because the paper was moistened to draw the printing ink off the plates and onto the paper. Wetting the paper would cause the gum to react, so the gumming was delayed until after printing. Later process improvements allowed already-gummed paper to be printed and this method became more popular than gumming after printing.

Since the paper and gum react to temperature and humidity conditions in different ways, printers have historically had to solve the issue of sheets or panes of stamps curling. Printers attempted to relieve stress – or “break” – the gum by using a set of metal edges to create cracks or thin spots in the dried gum. This would allow the gum side to better conform to the expansion and contraction of the paper as it reacted with the environmental instability.



Figure 3. An example of economy gum found on Russian-occupied Saxony stamp from World War II era.



Figure 4. A Swiss stamp (Scott 220) with grilled gum to minimize stamp curling.

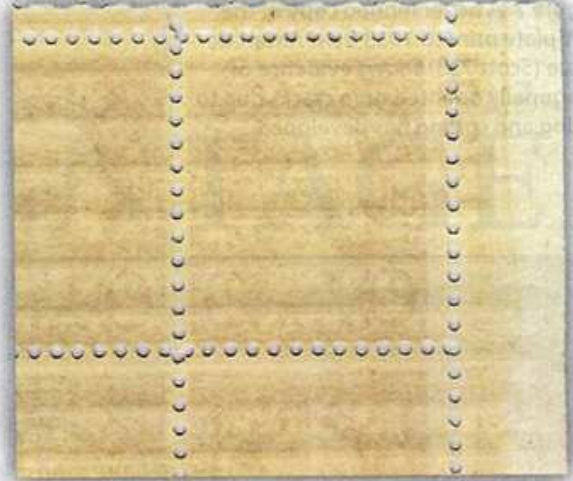


Figure 5. An enlarged view of a plate block of the U.S. 2-cent regular issue (Scott 634) from 1928 shows a gum breaker pattern being tested at the time. The gum breakers appear in the photograph as horizontal ridges. There are approximately six ridges per stamp. (Image courtesy of the United States Stamp Society).

In the 1930s, the Swiss used a grid pattern (Figure 4), creating what is called “grilled gum.” The pattern can be seen by looking at the back of a gummed stamp with your light source reflected at an angle. The U.S. experimented with “gum breaker” rollers on the stamps of the 1920s and 1930s which created horizontal ridges at a slight angle (Figure 5).

User-created differences

The downstream handling and storage of the stamp after its issue subjects the original gum to changes in appearance. The changes will have a great impact on the desirability, and consequently the value, to collectors.

Once a stamp is mounted in an album, and subsequently removed, the gum may have any one of the following characteristics:

• A “hinged stamp” is one that shows evidence that it was mounted by a stamp hinge. A hinge is a small, transparent gummed piece of paper made specifically for the purpose. The mark left on the gum can be as simple as removing a small portion of the stamp’s original gum, sometimes labeled as a “hinge mark” or “lightly hinged,” to a condition where a portion of the hinge is still attached, called a “hinge remnant.”

• Stamps where the hinge has been aggressively removed may remove a portion of the stamp as well, creating a damaged stamp (Figure 6). The thin spot may be referred to as a “hinge thin.” Some stamps mounted in early stamp mounts made of unstable polymers will show a characteristic called “glazed gum,” an extremely shiny area of gum where moisture caused a reaction with the environmentally unstable mount.

• If stamps aren’t mounted in an album as described above, they may still experience gum changes during storage and handling.

As mentioned earlier, not all stamps received gum breakers during manufacture, so such stamps are subject to natural “gum cracks” during environmental changes (Figure 7). Sometimes, such cracks are described as “natural gum cracks,” implying that the stamp was never exposed to hinging, and sometimes, when a large number of cracks have developed, the term “crazed gum” will be used.



Figure 6. This U.S. 1934 Mt. Rainier National Park Stamp (Scott 742) shows evidence of multiple times being hinged, with at least two hinge remnants still attached. In addition, two hinge thins can be seen (as whiter area to the upper left and to the right of the hinge remnants). These thins are regarded as stamp damage and will show up as darker spots if the stamp is immersed in watermark fluid.

The term “tropical gum stains” is used to describe stamps or gum discolored by exposure to environmental conditions. “Partial original gum” describes stamps that no longer include all of their original gum and this may be caused by any of the events described above.

• A “mint stamp” is an even broader description and the stamp may have no gum at all. Mint stamps can range from perfect stamps, often called “post office fresh,” to any stamp that shows no signs of ever being canceled. This might include stamps that were attached to an envelope or package and simply were not canceled, but some will debate if this can truly be called a mint stamp.

In the early days of collecting, gum condition was not as highly revered as today, but collectors still understood the risks of moisture exposure. Many intentionally soaked the gum off of mint stamps for the sake of the stamps. Today, it is quite common to find copies of classic stamps listed as “no gum” (NG). Catalogs list such varieties and price them accordingly.

The collective term applied to any stamp with gum condition issues is “disturbed gum.”

Stamps with value (and sometimes even lower-priced stamps) may be subject to “re-gumming.” Re-gumming is the practice of taking a stamp that had a condition issue and adding

Figure 7. A never hinged copy of the flat-plate printed 1933 Byrd Antarctic Issue (Scott 733) shows evidence of diagonally oriented gum cracks due to aging and curling has developed.



Figure 8. An original gum, never hinged copy of the flat plate printed American Indian stamp (Scott 565) is overlaid on a previously hinged, but regummed copy of a stamp with the same Scott number stamp. Although the gum of the regummed stamp is very close to the original gum's color and texture, the hinge mark can still be seen when the stamp is examined from various angles under a strong light.



Figure 9. A regummed copy of one of the most desirable of all U.S. stamps, the Western Cattle in Storm (Scott 292). Although we can't identify when the stamp was altered, today the stamp carries catalog prices of \$1,500 for a hinged, fault free stamp, but \$3,750 – a \$2,250 premium – for a never hinged copy. This example indicates the motivation for the re-gumming fraud.



new gum in an attempt to create a more desirable collectible.

Regumming (Figure 8) is applied to look as much like the original gum as possible, and as such is deceptive. Stamps that may have demonstrated a thin to the naked eye may now appear solid. Previously hinged stamps might now appear unhinged. The best way to scrutinize a suspect stamp for regumming is to inspect it side-by-side with a stamp from the same series or era that is known to have original gum.

Modern self-adhesives

Today, the latest technological update and most common gum type applies to self-adhesive stamps. These stamps feature pressure-sensitive adhesive, which requires no wetting.

Collectors of modern stamps should understand that in order to save a mint, original gum stamp of this type, it must be saved still affixed to the liner, the piece of backing paper that the adhesive is adjoined to when it is sold. PSA gums come in various forms and sometimes, but not often, can be removed from envelopes after use with water. More typically, a solvent is needed because of the nature of the chemical reaction that occurred when attaching the stamp to the envelope.

Learn more

Some philatelic references can be referred to as building blocks of the foundation of a good philatelic library, and the best, as far as the subject of postage stamp gum goes, is *Fundamentals of Philately* by L.N. Williams. Chapter 14, pages 607 through 642, is dedicated exclusively to the story of “Gum.” It provides a history lesson on the subject and an excellent glossary of terms that will help collectors.

Printing Postage Stamps by Line Engraving, by James H. Baxter and first published in 1939, goes into great detail about the manufacturing of postage stamps, especially at the United States Bureau of Engraving and Printing. Page 138 discusses gumming and gum drying on rotary printing presses at the BEP at that time and pages 143 through 145 show and explain the R. Hoe & Co. flat-bed printed stamp gumming machines at the BEP.

As collectors develop specialties, they will find that many references tied to specialized collecting also explain the gum specifics involved in the issues. For example, for those interested in coils such as the Transportation Issue of the United States, *The 1995 Plate Number Coil Catalog* (Eighth Edition), edited by Richard J. Nazar, provides running chronological commentary on gum changes during the 1981-1995 era when PVA gum was evolving.

Regumming of previously hinged stamps (Figure 9) in response to the investment craze for never hinged stamps grew at an alarming rate in the 1980s and has been a problem for collectors ever since.

Two articles with helpful identification suggestions are William Hatton's Basics and Beyond column, “Know Original Gum to Detect Regumming” (*Linn's Stamp News*, June 10, 1985, p. 6) and Scott A. Shaulis' “Tips for Determining if a Stamp is Original Gum or Not” (*The Brookman Times*, Spring 2014). For those more technically minded, *The American Philatelist* published “A Novel Approach to Looking at Stamps” (nondestructive spectroscopic analysis) by Matthew Poslunsny and Kenneth E. Daugherty (*The American Philatelist*, August, 1990) and “Gum Characterization by Infrared Spectroscopy” by W.W. Hanneman and R.E. Hintze (*The American Philatelist*, September, 1991).

The Author

Jay Stotts is a lifelong collector who has interests in all areas of philately, but has gravitated to U.S. 20th century philately and postal history. He has specialized in the U.S. Fourth Bureau Issues for more than 40 years and is the editor of a 100th anniversary book, *The United States Fourth Bureau Issue 1922-1938*, to be released later this year by the United States Stamp Society at the Great American Stamp Show in Sacramento. He is a former president of the Bureau Issues Association and the United States Stamp Society. He has exhibited extensively, winning four APS World Series show grand awards and has been an APS accredited exhibit judge since 1989. He was awarded the American Association of Philatelic Exhibitors' Hennig Award in 2019 for excellence in stamp show judging.