

# Salem Glass Works

Bill Lockhart, Carol Serr, Beau Schriever, and Bill Lindsey

The Salem Glass Works had a long history of glass making history in the U.S., beginning in 1862 and running through changes until it sold to the Anchor Cap and Closure Co. in 1934. Unfortunately, the firm rarely marked its products in any way, only embossing its full name on two types of fruit jars and possibly briefly using an “S” on very limited goods during its early years and in its final period.

## Histories

### Salem Glass Works, Salem, New Jersey (1862-1934)

Henry D. Hall, Joseph D. Pancoast and John V. Craven built the Salem Glass Works at Salem, New Jersey, in 1862, first starting the furnace in September (Creswick 1987a:264; Knittle 1927:356; Roller 1998; Van Rensselear 1962:149). This system, where the glass factory used one name, and the operating company went by another, was common during the 19<sup>th</sup> century. Thus, the original plant/company was known as both the Salem Glass Works and Hall, Craven and Pancoast. In general, manufacturer’s marks could (and did) reflect either name.

In 1870, the Salem Glass Works printed its own scrip (currency) in at least 5¢, 10¢, 25¢, and 50¢ denominations (Figure 1). This scrip was only redeemable in merchandise at “our store.” In other words, the company scrip was only useable at the company store – an excellent way to keep workers in bondage. This invokes the memory of Tennessee Ernie Ford’s lyrics, “I owe my soul to the company store.”



Figure 1 – Salem scrip (eBay)

Hall received Patent No. 181,067 for a fruit jar on August 15, 1876. However, he must have died or left the company after August 1877, the last listing we can find for the original operating company. By at least May 12, 1879, company letterheads showed the firm only as

Pancoast & Craven, although Toulouse (1971:458) placed the date for Pancoast & Craven at 1878. After Pancoast died on January 8, 1880, a letterhead showed only John Craven as the operator. Craven sold an interest in the company to his brother, Thomas J. Craven, and the operating company became Craven Brothers by 1881. The firm had two factories, both in Salem (Roller 1998; National Park Service 2005).<sup>1</sup>

The firm incorporated under the Salem Glass Works name on October 28, 1895, with a capital of \$400,000, and that has confused some researchers into thinking that the plant was not known by the Salem name until that time. As noted above, the factory was called the Salem Glass Works from the beginning of the company in 1862. Thomas J. Craven was the president with Louis Pancoast as secretary and D. Barton Bullock as treasurer. By 1897, the plant used four furnaces with 21 pots and one day tank with five rings (Corporations of New Jersey:621; Pepper 1971:206; Roller 1998). Another listing for 1897 placed Salem in the “Green Glass and Hollowware Factories” category, using 26 pots to make its products. The number of pots increased to 30 in 1898 but was back to 26 by 1900 and remained the same until at least 1902 (*National Glass Budget* 1897:7; 1898:7; 1899:7; 1900:11; 1901:11; 1902:11).

In 1904, the plant made “flint, green and amber beers, proprietary and packers’ ware” at two furnaces with 16 pots and three continuous tanks with 19 rings. T.J. Craven, J.D. Dilworth, D.S. Craven, and I.H. Bacon were directors (*American Glass Review* 1934:157). On December 5, 1905, John D. Dilworth, one of the directors for Salem Glass, received Patent No. 806,119 for a “Device for Manufacturing Bottles.” That was followed by a patent for an “Apparatus for Manufacturing Glassware” (No. 822,623), issued to Thomas J. McElherron on June 5, 1906. The patent was transferred to Salem Glass. The Dilworth machine was intended for bottles, while the one invented by McElherron was more typical of jar machines made during the era. We have found no evidence that either machine was particularly successful in the long run.

The *National Glass Budget* (1912:1) noted that a factory in “Salem” (almost certainly the Salem Glass Works) operated three semiautomatic jar machines in 1905. If these machines were the ones invented by Dilworth or McElherron, they were certainly in place prior to the patent approvals, and that is possible. Dilworth applied for his patent on March 9, 1905, and

---

<sup>1</sup> These dates are very slightly different from those offered by Toulouse (1971:458). Most of these slight changes reflect more accurate information provide by Roller 1998).

McElherron followed by a little more than a month, on April 24 of the same year. Both were the typical press-and-blow machines, the style used almost exclusively prior to the invention of the fully automatic bottle machine by Michael J. Owens in 1903.

William Hazelton and some of the principals of the Salem Glass Works incorporated the Safety Valve Fruit Jar Co. in Salem on November 17, 1908. The relationship between this corporation and Salem Glass is currently unknown, although Salem glass is known to have made fruit jars. This may have been a secondary corporation connected with Salem Glass or may have been a separate company that shared many of the directors.

Salem Glass Works made “All Kinds” of bottles and fruit jars from 1907 to at least 1920 (Thomas Publishing Co. 1907:159, 798; 1920:827, 4615). The plant had three continuous tanks and one day tank with 23 rings to make a “general line” of bottles by both semiautomatic and hand methods in 1913 (*Journal of Industrial and Engineering Chemistry* 1913:952). In July 1916, Salem ordered at least one O’Neill semiautomatic machine. The new machine “does away with one boy” (*National Glass Budget* 1916:1). According to Toulouse (1971:459), Salem Glass was one of the first to install Hartford feeders, one of the earliest devices to convert semi-automatic bottle machines into fully automatic ones.

According to an April 21, 1936, letter from F.C. Ball to the president of Hartford-Empire, the Salem Glass Works had the right to use the Hartford-Empire automatic glass feeders to make “Lightning style and Eureka Jars for domestic use” – although the letter did not include the date when the right was granted (Cole 2003). Assuming this was an early Hartford-Empire license, it was probably issued around 1920. Ball was reviewing the glass houses with rights to the Hartford-Empire feeders.

By 1927, Salem made “blue, green, amber and flint prescriptions and vials, minerals, patent and proprietary, fruit jars, packers and preservers” by both automatic machine and hand methods. The plant used two furnaces with 11 pots; four tanks with 30 rings; and one day tank with five rings. The company stopped listing the furnaces and pots in 1930, instead noting the four tanks with 28 rings and the same day tank with five rings. The plant continued to use both hand production and automatic machines. The same listing continued until at least 1936 (*American Glass Review* 1927:144; 1930:95). It is likely that the hand production referred to prescription (drug store) bottles. Many companies made bottles for individual drug stores by

hand into the 1920s. In the early days after the repeal of Prohibition, the plant made beer bottles “running on a day and night schedule” (*Ceramic Age* 1933:25).

Salem sold to Anchor Cap and Closure Co. in 1934. Prior to the sale, J. Dale Dilworth was president and treasurer with D.S. Craven as vice president and W.E. Garvey as secretary. The plant made “blue, green, amber & flint prescriptions & vials, minerals, patent & proprietary, fruit jars, packers and preservers [by] Automatic machine and hand” at four continuous tanks with 28 rings and a single day tank with five rings (Roller 1998). When Anchor merged with the Hocking Glass Co. on December 31, 1937, the Salem plant became part of the larger conglomerate. On June 23, 2013, the Ardagh Group announced that it was “new owner of the former Anchor Glass plant on Griffith Street in Salem.” However, Ardagh quickly tired of the factory, claimed a major loss of business as its reason for announcing the closure of the 250-year-old business on October 15, 2014. Gallo claimed at the time that the plant was the oldest glass house still in operation in the U.S. (Gallo 2014; Hopper 2000; NJ.com 2013; Pepper 1971:207; Perrine 1985; Toulouse 1971:459).

### **Safety Valve Fruit Jar Co., Salem, New Jersey (1908-1916)**

The Safety Valve Fruit Jar Co. incorporated on November 21, 1908, at No. 10 Fourth St., Salem, with J. Dale Dilworth, William H. Hazelton, and D. Stewart Craven as directors. This was almost certainly a sales outlet for the Safety Valve jars made by the Salem Glass Works. The last entry we can find for the firm was when it paid its corporate taxes in 1916 (Division of Corporate Assessment 1916:192; Roller 1998).

### **Containers and Marks**

With the possible exception of a fruit jar embossed with a “C” surrounded by arrows, that Toulouse (1971:99) claimed was possibly made by the Craven Brothers, there are no bottle marks known to have come from any of the early operating companies of the Salem Glass Works. A July 29, 1870, ad from Hall, Craven & Pancoast in the *Salem Sunbeam*, however, offered “Patent Glass Top Fruit Jars . . . Mason’s Patent Screw Neck Jars . . . Eagle Patent Jar, Glass Top . . . [and] Lyman’s Patent Jar, Metal Top” (Roller 1998).

## S (ca. 1860s on Gothic pepper sauce jars)

Gerth (2006:64-65; personal communication 1/25/2007) found a number of Gothic (also called Cathedral) pepper sauce (smaller bottles) and pickle bottles (larger containers) in the remains of the SS Republic, sunk in 1865. Some of the smaller, Gothic pepper sauce bottles were embossed with a thick, serif “S” on the base, but the mark was only on just over a dozen out of 150 bottles (Figure 2). Toulouse (1971:449, 458) had identified the mark as belonging to the Salem Glass Works. On the surface, this looks like an easy identification.

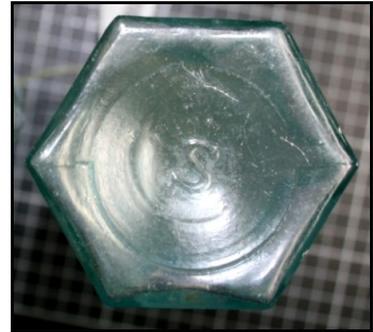


Figure 2 – S - peppersauce (Ellen Gerth)

However, there are problems with the identification, especially when applied to the pepper sauce bottles. First, the thick-lined serif-S mark noted by Toulouse (1971:449, 458) was listed as being found “above ‘Mason’s’ Less Crude” and “On Mason jars machine-made pre-1915 style.” He further noted (page 458) the “S” mark was used in conjunction with the “Hero cross” used by the Hero Glass Works, and he dated that “S” 1882-1884. None of these identifications fit a peppersauce bottle from 1865.

Second, an uncited identification of an “S” mark is a bit shaky at best, given the vast number of glass companies whose names began with the letter “S.” Toulouse (1971:449, 458) attributed his identifications to his earlier book *Fruit Jars* (Toulouse 1969:266-267) and “Anchor Hocking glass Corp. historical notes.” In the earlier book, Toulouse noted four separate examples of “S” and illustrated three of them. Two showed the wide “S” – but only one had serifs (Figure 3).

To further complicate the issue, Creswick (1987a:143) illustrated the Mason jar with the “S” and the Hero cross but showed the “S” as normal rather than serif (Figure 4). She also illustrated a similar jar with an “S” and a normal cross (or plus sign) in place of the

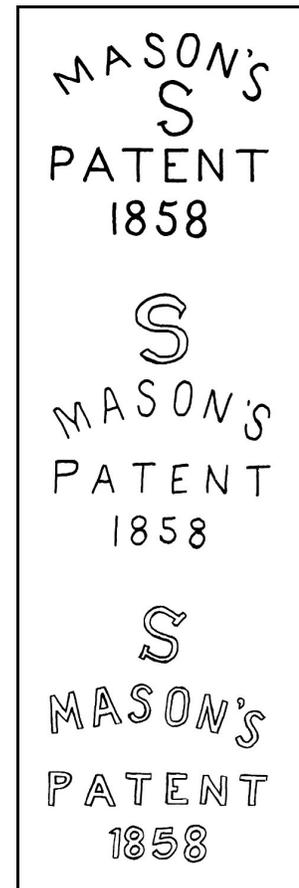


Figure 3 – S fruit jar marks (Toulouse 1969:266-267)

Hero cross. In addition, Creswick (1987a:127, 147) illustrated the “S” with serifs and without serifs on other Mason jars but listed the maker(s) as unknown (Figure 5). Finally, Creswick (1987a:187) listed or illustrated two grooved-ring wax-sealer jars, one with an “S” embossed on the front, the other with the “S” on the base (Figure 6). As with the others, she made no attribution for the maker.

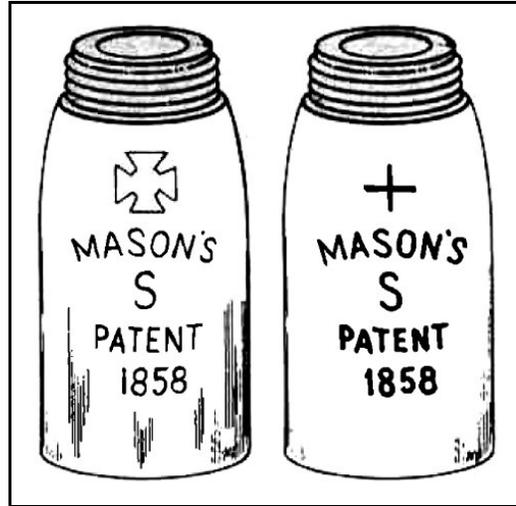


Figure 4 – S with crosses (Creswick 1987a:143)

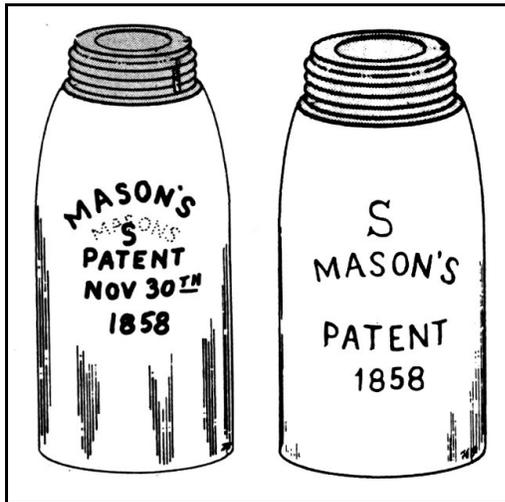


Figure 5 – S jars (Creswick 1987a:127, 147)

Other glass houses from

the period have names beginning with the letter “S.” We have found two other “S” factories that both made bottles and were in business in 1865. The South Stoddard Glass Works made bottles and flasks at Stoddard, New Hampshire, from 1850 to 1873 (McKearin & McKearin 1941:607). A.R. Samuel, a Philadelphia, Pennsylvania, glass house, made bottles and flasks from 1863 to at least 1874 (McKearin and Wilson 1978:173; Roller 1983:425, 443). We have

found no indications that Samuel ever made pepper sauce bottles, although he almost certainly used “ARS” on some flasks. See the A.R. Samuel discussion in the A section for more information.

Field (1975:32) stated that the main product of the South Stoddard Glass Co. was “dark glass quart bottles” for Saratoga Springs mineral water. Almost all of the plant’s products were made of dark colored glass (also see Yankee Bottle Club 1990:36-39). Although she studied the identified Stoddard bottles thoroughly, Field (1975:46, 80, 82) only noted manufacturer’s marks of “Weeks and Gilson, So. Stoddard, N.H.” and “Weeks Glass Works” (both companies that owned the plant). The only other initial associated with Stoddard

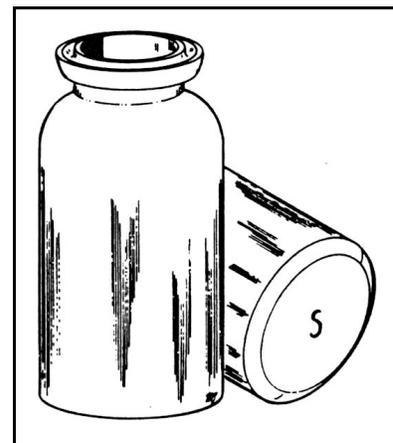


Figure 6 – S wax sealer (Creswick 1987a:187)

bottles is a “W” embossed on the base of an oval snuff bottle that may have indicated one of the owners, Luman Weeks. She illustrated a single, unmarked, dark pickle bottle, but it was not in Gothic form. There is no evidence that South Stoddard made pepper sauce bottles and no indication that the plant ever used an “S” mark.

In its early days, Salem Glass Works made a large variety of bottles and jars, many of which are known fairly specifically. Among its numerous items, Salem made pepper sauce bottles, “Hex. Pickle jar[s],” and “½ gal pickle jar[s]” (Pepper 1971:206). Gothic pickle bottles were made in hexagonal shapes, although that does not preclude Salem from making other pickle jars/bottles in hexagonal forms.

We can find no evidence that links an “S” mark to any glass factory that was in business in 1865 except the Salem Glass Works. Nor could we find any other factories with “S” names that were noted for making pepper sauce bottles during the period. From all available evidence, the Salem Glass Works is the most likely user of the “S” mark on pepper sauce bottles.

One final intriguing bit of evidence concerns the ship carrying the cargo. The Republic left New York on October 18, 1865, en route to New Orleans and sunk in a storm off the coast of Georgia on October 25. A New York departure would have been perfectly in keeping with the transportation of peppersauce bottles made in New Jersey.

Unfortunately, the “S” could also indicate the manufacturer of the pepper sauce.

### **S on whiskey bottles and flasks (1934-1938)**

We discovered a factory code of “S” on a colorless Oldtyme Distillers’ Three Feathers whiskey flask. In 1934, the Treasury Dept. required all glass houses that made the newly legal liquor bottles and flasks to emboss several codes on the bases. These included a distiller’s code, manufacturer’s permit number for the glass house, and a date code. The new law also established a position for the logo or initials of the glass house.

The base of this bottle was embossed “D-682 / 9 S 7.” D-682 was a number for the Olde Tyme Distillery; “9” was the glass company permit code, and “7” indicated 1937. We currently

have recorded two additional similar codes: 9 S 4 and 9 S 7. This creates a date range for the “S” logo from 1934 to 1937.

The 1969 list of manufacturer’s permit numbers assigned No. 9 to the Anchor Hocking Glass Corp. The Salem Glass Works sold to Anchor Cap & Closure in 1934 – the year that the liquor bottle law was passed – and the timing is interesting. Although we have no documentary evidence, Salem Glass probably operated under its own name until the Anchor Hocking merger in 1937. The date range for the “S” permit code (1934-1937) fits perfectly. Further, we have recorded Anchor Hocking logos on the same types of liquor flasks with codes of 9 {AH logo} 40, 9 {AH logo} 41, and 9 {AH logo} 48.

Although the sample is small, it provides a good working hypothesis that the Salem Glass Works, under the auspices of Anchor Cap & Closure (or on its own just prior to the sale), received Permit No. 9 to produce liquor containers in 1934 (along with the letter “S” as its company logo) and used those codes until it lost its individual identity with the Anchor Hocking merger of 1937; whereupon, the number transferred to Anchor Hocking.

## **Anchor Symbol**

On April 26, 1935, the Salem Glass Works – by that time owned by the Anchor Cap & Closure Co. – applied for a trademark for a tilted anchor and received No. 329,022 on October 15 of that year (Figure 7). The firm claimed a first use of the logo on January 2, 1935, for use on tumblers, bottles, and jars. The anchor, of course, signified the ownership of Salem Glass by Anchor.

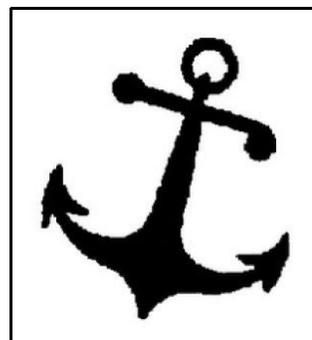


Figure 7 – Anchor trademark

## **SGW Monogram**

Toulouse (1969:248) and Creswick (1987a:116) credited the Salem Glass Works with an SGW monogram found on fruit jars. Although Roller (1983:217) noted the mark and its relationship to the QG monogram, he did not assign it to a manufacturer. In actuality, the mark was used by the Southwestern Glass Mfg. Co., Los Angeles. See the section on the Quartz Glass & Mfg. Co. for more information about the two monograms, the jars, and the manufacturers.

**SAFETY – WIDE MOUTH – MASON** (ca. 1909-as long as 1937)

Toulouse (1969:268) suggested that jars only marked “SAFETY” on the sides were made by the Salem Glass Works. He noted two variations, one hand made (ca. 1895-1910) and one made by machine (ca. 1910-1925). As usual, he gave no explanation for his choice of dates or for his identification. His choice, however, almost certainly came from the jars marked “SAFETY / – WIDE MOUTH – / MASON / SALEM GLASS WORKS / SALEM, N.J.” (Figure 8). These were machine made ca. 1910-1925 (Toulouse 1969:271).

Roller (1983:313, 315), however, provided evidence that the “SAFETY” jars were made by the Nelson Glass Co. and dated the



Figure 9 – Safety cap (Creswick 1987b:116; North American Glass)

“SAFETY – WIDE MOUTH – MASONS” ca. 1909-1910 (see the Other S section for a discussion of the Salem jars). Roller added that the gold cap was marked “SANITARY JAR CAP FOR WIDE MOUTH



Figure 8 – Safety Mason (North American Glass)

MASON JAR around MFD. BY AMERICAN CAN CO. FOR SALEM GLASS WORKS SALEM N.J. around

Sanicap PAT APPLIED FOR painted in black on top” (Figure 9). Creswick (1987a:187) agreed with the Nelson Glass Co. identification for the “SAFETY” jar; however, she maintained that the Safety Wide Mouth Masons were made for a longer period – ca. 1915-1938, and she illustrated the jar (Creswick 1987b:116) (Figure 10).



Figure 10 – Safety & Sanity jars (Creswick 1987b:116)

The Roller editors (2011:460) added a bead seal closure and another lid. This lid had a “screw on beater attachment” (possibly similar to an egg beater) that was debossed “HOLT’S IMPROVED DOVER PATENTED MADE BY HOLT-LYON CO. TARRYTOWN, N.Y. U.S.A.” They otherwise agreed with the 1983 edition.

### **SANETY WIDE MOUTH MASON** (ca. 1909-as long as 1937)

A virtually identical jar had the misspelled word “SANETY” in place of “SAFETY” (Figure 11). Otherwise, the embossed lettering was the same and identified the Salem Glass Works as the maker. Toulouse (1969:273) dated the machine-made jar ca. 1915-1938 and an identical jar “same except Mason shoulder seal, which would be earlier” ca. 1910. Roller (1983:317) did not note the difference and dated the jars ca. 1909-1910. He added that the lid was identical to the Salem Wide Mouth but that “the reason for the change from SAFETY to SANETY (or vice versa) is not known.” Creswick (1987b:116) also dated this jar for a longer period – ca. 1915-1938. In addition, she described and illustrated a variation with a ghosted “F” beneath the “N” in “SANETY” (see Figure 10).

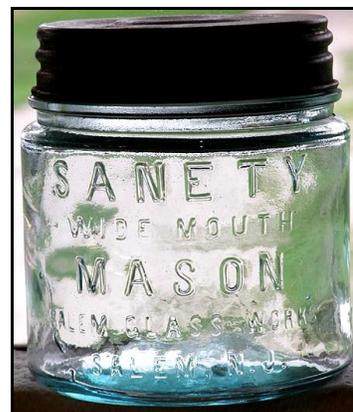


Figure 11 – Sanety jar (North American Glass)

The Roller editors (2011:462) added two variations. One was embossed on the reverse with “HOLT’S JAR CREAM WHIPS / HOLT-LYON CO. / TARRYTOWN, N.Y.” and had a shoulder-seal closure. The finish had a ground rim, indicating mouth-blown production – even though the other variations were all machine made. This may indicate that these were made in a limited run – probably as salesman’s samples. The other variation was the same as the basic one, except “WIDE MOUTH” was no longer flanked by dashes. These used bead seals and were machine made.

Assuming that Creswick was correct – a variation *not* included by Roller – the ghosted “F” below the “N” suggests that the Sanety jars were produced after the Safety jars. The misspelling of the word “sanety” also suggests a change in that direction – although the word “safety” could have been created to correct the spelling. However, changing the “e” to an “I”

seems like a better solution if the change were to correct “sanety.” A possible explanation could be a threatened suit in some fashion over the use of the word “SAFETY” on the jars.

## **SALEM GLASS WORKS**

Toulouse (1969:271), Roller (1983:315, 317), and Creswick (1987b:116-117) all listed at least two jars that had “SALEM GLASS WORKS / SALEM, N.J.” embossed on the front (see SAFETY and SANETY section above).

### **Discussion and Conclusions**

The process of elimination suggests that the serif “S” on the bases of some Gothic pepper sauce bottles could have been an early mark of the Salem Glass Works. Since the firm began in 1862, and examples of these bottles were found in an 1865 context, this would have been a mark used during the Hall, Pancoast, & Craven period from 1862 to no later than 1879. Although it seems odd that a company would use a mark on only a single product, there are numerous other examples of single-product uses of logos in glass manufacturing history.

Later in the history of Salem Glass, the firm used another solitary “S” to comply with the post-Prohibition federal liquor bottle manufacturing statutes along with the number “9.” Although the number transferred to the Anchor Hocking Glass Co., the firm retired the letter. See the section on “S” basemarks for the use of “S” on earlier flasks and other containers.

There is no doubt about the identification for the jars marked with the Salem Glass Work name. The Safety and Sanety jars were probably made after the 1895 incorporation, although the Salem Glass Works went by that name from the beginning in 1862. Since mouth production and machine manufacture are known for the same type of jar, it is likely that these containers were not made before 1895. The factory may have used machines to make jars as early as 1905 (or slightly earlier).

Because of the name, however, it seems likely that the Safety Valve Fruit Jar Co., incorporated in November 1908, was a sales agent for Salem Glass. If this is correct, the jars were probably made beginning ca. 1909. We know of no way to determine how long these jars

were made, although the last listing we could find for the Safety Valve Fruit Jar Co. was 1916. They may have continued in production until the company sold to the Anchor Cap & Closure Corp. in 1934.

## Acknowledgment

We wish to thank Doug Leybourne for allowing us to use the drawings from the Alice Creswick books and Greg Spurgeon for letting us reproduce the photos from North American Glass. Gratitude also to Wanda Wakkinen for proofreading this work.

## Sources

### *American Glass Review*

1927 “Glass Factory Yearbook and Directory.” *American Glass Review*, Pittsburgh, Pennsylvania.

1930 “Glass Factory Yearbook and Directory.” *American Glass Review*, Pittsburgh, Pennsylvania.

1934 “Glass Factory Yearbook and Directory.” *American Glass Review*, Pittsburgh, Pennsylvania. Includes reprint of the *Glass Trade Directory for 1904*. Commoner Publishing Co., Pittsburgh, Pennsylvania.

### *Ceramic Age*

1933 “Glass Plants Increase Activity in South Jersey.” *Ceramic Age* 22:25.

Cole, Richard H.

2003 “Fruit Jar Controversy in the 1930’s.” Minnetrista.

<http://www.fruitjar.org/Hartford%20License.htm>

Corporations of New Jersey

n.d. “Corporations of New Jersey, page 621.”

[http://www.njstatelib.org/slic\\_files/searchable\\_publications/corp/NJCORPn621.html](http://www.njstatelib.org/slic_files/searchable_publications/corp/NJCORPn621.html)

Creswick, Alice

1987a *The Fruit Jar Works, Vol. I, Listing Jars Made Circa 1820 to 1920's*. Douglas M. Leybourne, N. Muskegon, Michigan.

1987b *The Fruit Jar Works, Volume II, Listing Jars Made Circa 1900 to Modern*. Privately printed, Grand Rapids, Michigan.

Division of Corporate Assessment

1916 *First Annual Report of the State Board of Taxes and Assessment of the State of New Jersey for the Year 1915*. Unionis-Gazette Assoc., Somerville, New Jersey.

Field, Anne E.

1975 *On the Trail of Stoddard Glass*. Bauhan, Dublin, New Hampshire.

Gerth, Ellen C.

2006 *Bottles from the Deep: Patent Medicines, Bitters, & Other Bottles from the Wreck of the Steamship Republic*. Shipwreck Heritage Press, Las Vegas, Nevada.

Gallo, Bill, Jr.

2014 "Ardagh Glass to close 150-year-old Salem City plant, 290 will lose jobs." NJ.com. [https://www.nj.com/salem/index.ssf/2014/07/ardagh\\_glass\\_to\\_close\\_salem\\_city\\_plant\\_about\\_300\\_will\\_lose\\_jobs.html](https://www.nj.com/salem/index.ssf/2014/07/ardagh_glass_to_close_salem_city_plant_about_300_will_lose_jobs.html)

Hopper, Phillip

2000 *Anchor Hocking Commemorative Bottles and Other Collectibles*. Schiffer, Atglen, Pennsylvania.

*Journal of Industrial and Engineering Chemistry*

1913 "The Present Status of the Glass Bottle and Hollow Ware Industries in the United States." *Journal of Industrial and Engineering Chemistry* 5(11):951-954.

Knittle, Rhea Mansfield

1927 *Early American Glass*. Appleton-Century, New York.

McKearin, Helen and George McKearin

1941 *American Glass*. Crown Publishers, New York.

McKearin, Helen and Kenneth M. Wilson

1978 *American Bottles & Flasks and Their Ancestry*. Crown Publishers, New York.

*National Glass Budget*

1897 "Flint and Green Glass Review." *National Glass Budget* 13(26):4-6.

1898 "Flint, Green and Cathedral Glass Factories of the United States and Canada in Operation." *National Glass Budget* 13(38):7.

1899 "Glass Directory." *National Glass Budget* 12(42):7.

1900 "Complete List of Glass Factories in the United States and Canada." *National Glass Budget* 15(48):11.

1901 "Complete List of Glass Factories in the United States and Canada." *National Glass Budget* 17(1):11.

1902 "Complete List of Glass Factories in the United States and Canada." *National Glass Budget* 17(52):11.

1912 "Changes Wrought in 7 Years." *National Glass Budget* 30:1.

1916 "Big Demand for O'Neill Machines." *National Glass Budget* 32:(8):1.

National Park Service

2005 "Southern New Jersey and the Delaware Bay: Historic Themes and Resources within the New Jersey Coastal Heritage Trail Route."

[http://www.cr.nps.gov/history/online\\_books/nj2/chap5.htm](http://www.cr.nps.gov/history/online_books/nj2/chap5.htm)

NJ.com

2013 “Under a new name and ownership, Salem City glass plant celebrates 150 years in operation.”

[https://www.nj.com/salem/index.ssf/2013/06/under\\_a\\_new\\_name\\_and\\_ownership\\_salem\\_citys\\_glass\\_plant\\_celebrates\\_150\\_years\\_in\\_operation.html](https://www.nj.com/salem/index.ssf/2013/06/under_a_new_name_and_ownership_salem_citys_glass_plant_celebrates_150_years_in_operation.html)

Pepper, Adeline

1971 *Glass Gaffers of New Jersey*. Scribner's Sons, New York.

Perrine, Lowell E.

1985 “Directory Issue 1985.” *Glass Industry* 66(3):1-170.

Roller, Dick

1983 *Standard Fruit Jar Reference*. Privately published.

1998 “Salem, NJ History Notes.” Dick Roller files.

2011 *Standard Fruit Jar Reference: 2011 Update*. Edited by Jerome McCann and Barry Bernas. Fruit Jar Annual/Phoenix Press, Chicago.

Thomas Publishing Co.

1907-1908 *Thomas' Register of American Manufacturers and First Hands in all Lines: The Buyers Guide*. Thomas Publishing Co., New York.

1920 *Thomas' Register of American Manufacturers and First Hands in All Lines*. Thomas Publishing Co., New York.

Toulouse, Julian Harrison

1969 *Fruit Jars*. Thomas Nelson & Sons, Camden, New Jersey.

1971 *Bottle Makers and Their Marks*. Thomas Nelson, New York.

Van Rensselaer, Stephen

1969 *Early American Bottles and Flasks*. Rev. Ed. J. Edmund Edwards, Stratford, Connecticut.

Yankee Bottle Club

1990 *Yankee Glass: A History of Glassmaking in New Hampshire, 1790-1886*. Yankee Bottle Club, Keene, New Hampshire.

Last updated 2/18/2019