

# **The Perfection Glass Co.**

## **Separating Tableware and the Simplex Jar**

Bill Lockhart and Barry Bernas

Although the Bottle Research Group originally intended for the story of the Simplex jar to be a footnote in the Hazel-Atlas section, a series of articles written by Barry Bernas from 2005 to 2007 convinced us that both the jar and glass factory deserved a section of their own. Although our emphasis is on jars, the main production of the Perfection Glass Co. was separating tableware. Jars were never the primary production item.

### **Histories**

#### **Blair Glass Co., Washington, Pennsylvania (1893-1894)**

J. Holmes Blair started the J. H. Blair Co. by March 25, 1893, transforming an old carriage house into a glass factory. The factory began production of cathedral glass on May 1. The plant was the first of several that would occupy the same location in Washington, Pennsylvania. The firm was incorporated as the Blair Glass Co. on October 12, 1893. Possibly due to the Panic of 1893 (i.e., depression), the company was placed in receivership on March 31, 1894 (Bernas 2005a:66; 2005c:3).

#### **Novelty Glass Works, Washington, Pennsylvania (1894-1902)**

The Novelty Glass Works opened on December 17, 1894, at the location formerly occupied by the Blair Glass Co. By August 1895, the company installed a new four-pot furnace that made novelties and tableware. The plant burned to the ground early on June 1, 1897. The company built a new plant at the same location that commenced operation on September 20 that same year (Bernas 2005a:67; 2005c:3).

Charles S. Caldwell, George L. Caldwell, and other family members took ownership from the former proprietors, Col. James B.R. Streator and Maj. Samuel Hazlett, in May 1898 and

incorporated the firm on June 8. This plant had a single furnace with nine pots and two day tanks with eight rings. Although the company was successful for awhile, William B. Fenn was appointed receiver in February 1902, and he joined the Caldwells in purchasing the factory and changing the name (Bernas 2005a:67-68).

### **Sterling Glass Co., Washington, Pennsylvania (1902-1903)**

William B. Fenn and the Caldwell family turned the former Novelty Glass Co. into the short-lived Sterling Glass Co. in 1902. The factory made separating tableware, apparently successfully, but another group of investors incorporated the firm as the Perfection Glass Co. in June 1903 (Bernas 2005a:68).

On January 20, 1903, Fenn applied for a patent for his “Glass Pressing and Blowing Machine.” Patent No. 767,807 was approved on August 16, 1904 (U.S. Patent Office 1904b). The mold drawings from his patent show a bowl of his separating tableware (water bottle, decanter, cruet, squirt bottle, syrup bottle, etc.) being made on this machine. The earliest Simplex jars were probably made on these machines. The machine shops of the Northrop and Washington Mfg. Co., Washington, Pennsylvania, made the machines, and they were tested in the Sterling Glass Co. plant.

### **Perfection Glass Co., Washington, Pennsylvania (1903-1906)**

William B. Fenn and seven others incorporated the Perfection Glass Co., a reorganization of the Sterling Glass Co., on July 9, 1903, to produce separating tableware and his new Simplex jar. Apparently laden with debts he could not pay, Fenn left town unexpectedly in October, causing the company to cease operations by November. Creditors (including the Caldwells) who purchased Fenn’s interests in the plant reopened the works, and the plant resumed production in January 1904 (Bernas 2005a:68-69; 2005b:56-58; 2005c:8-9, 13-22).

The Simplex, all-glass packer jar designed by William Fenn (see Bottle and Marks section) and the new all-glass SIMPLEX MASON fruit jar (Russell Uhl patented cap) became so popular that the Caldwells closed the plant between August 1904 and March 1905 to refit the plant for its increased production. The process included the erection of a (possibly) 30-ton

continuous tank, specifically for making the all-glass Mason jars. During that period (at least), the packers' jars were made at the Republic Glass Mfg. Co., Moosic, Pennsylvania, on Fenn semiautomatic jar machines. Machinery (probably glass presses for the tableware) was shipped to Moosic in 1904 and then back again from Moosic in February 1905, and production resumed in early April with the factory running nine shops on one shift and eight on the other by September (Bernas 2005a:69; 2005b:58-60; 2005c:23-26).

In November 1905, with a new plant manager, project production would be shifted to a new line of tableware, and the Hazel-Atlas Glass Co. probably began the manufacture of the all-glass, Simplex packer jar and the glass screw cap (Uhl patent) for the SIMPLEX MASON in early 1906. The new line of tableware, however, was never introduced. Perfection continued to make separating tableware, tumblers, and likely the SIMPLEX MASON fruit jar but ceased all production sometime after August 1906. The plant remained standing, and the company continued to sell off the machinery until at least April 1909. Although Hazel-Atlas had three plants in Washington, none of them were at the site of the old Perfection Glass Co. (Bernas 2005a:69; 2005b:60-62; 2005c:33-34, 37-38, 45-48).

Perfection introduced machines for separating tableware, packer, and fruit jar production and presses for tableware and glass screw caps (Fenn and Uhl patents) at some point and had almost certainly eliminated hand manufacture (with the possible exception of some hand presses) by the end of production. The list of items for sale when the company disbanded included one Teeple & Johnson machine; three Miller Automatic Jar machines; four glass presses (for tableware), 9 ½" between the uprights; and five glass presses, 14" between the uprights (Bernas 2005b:62).

The machine invented by Fenn was almost certainly used for the earliest "Simplex" jars. Bernas (2007a:32) noted that the machines were tested at Sterling, installed there and at the Republic Glass Mfg. Co., and were used at the Perfection plant from July 1903 to August 1904. The plant acquired Miller machines during its refurbishing. When the other machines were adopted is currently unknown.

## **Republic Glass Mfg. Co., Moosic, Pennsylvania (1903-1905)**

The Republic Glass Mfg. Co. was formed by William B. Fenn and John P. Elkin in September 1902 (Bernas 2005b:59).<sup>1</sup> Except for a brief period in 1903, however, the plant remained idle until 1904. From at least August 15, 1904, to March 1905, the Caldwells of the Perfection Glass Co. shifted production of the Simplex all-glass packer jar to the Republic factory, while the Perfection plant was revamped (Bernas 2005a:69; 2005b:59; 2007a:32). The plant was listed in 1904 as making fruit jars and packers' ware at one continuous tank and one furnace with nine pots. Republic was out of business by 1905 (*American Glass Review* 1934:169). The buildings finally burned to the ground in January 1908 (Bernas 2005b:60-62).

## **Perfection Mfg. Co., Washington, Pennsylvania (1902-1903)**

The Perfection Mfg. Co., Washington, Pennsylvania, was a jobber (i.e., wholesaler) of glass tableware, descended from the Perfection Bottle Co., Washington and Wilkes-Barre, Pennsylvania, and the Perfection Water Bottle Co., New York, New York. The firm opened in Washington during September 1902. Russell Uhl, the inventor of a single jar closure (see below) was the president of the Washington Perfection company, until his shares were purchased by the other major stockholder, William B. Fenn, to create the Perfection Glass Co. (Bernas 2005b:56; 2005c:3).

## **Containers and Marks**

Although Perfection primarily produced tableware, our emphasis is on the jars made by the company and the identifying marks found on those containers. All fruit jars were produced on semiautomatic machines; there was no hand production (of jars). See Table 1 for a chronology of the Fenn-patented jars and lids.

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<sup>1</sup> According to Roller (1983:327-328) the company was formed in 1903, but Bernas obtained his information on the spot and is likely correct.

**Table 1 – Chronology of Simplex Jars, Lids, and Manufacturers**

Jar	Lid [embossing on inside or outside surface]	Manufacturer	Date Range
Unembossed with empty plate mold on front	PAT. APLD. FOR (no SIMPLEX) [in]	Republic Glass Mfg. Co.	April-May 1903
Unembossed with empty plate mold on front	PAT. APLD. FOR (no SIMPLEX) [in]	Sterling Glass Co.	June 1903
Unembossed with empty plate mold on front	PAT. APLD. FOR / SIMPLEX / <i>Trade Mark Registered</i> [in]	Perfection Glass Co.	July-Oct 1903*
SIMPLEX in a diamond	PAT. APLD. FOR / SIMPLEX / <i>Trade Mark Registered</i> [out]	Perfection Glass Co.	Dec 1903-May 1904
SIMPLEX in a diamond	PAT.MAY.3.1904 / SIMPLEX in diamond [out]	Perfection Glass Co.	May-June 1904**
SIMPLEX in a diamond	SIMPLEX in a diamond [out]	Republic Glass Mfg. Co.	Aug-Nov 1904
SIMPLEX in a diamond	SIMPLEX in a diamond [out]	Perfection Glass Co.	Apr 1905-June 1906
SIMPLEX in a diamond or unembossed	SIMPLEX in a diamond [out]	Hazel-Atlas Glass Co.	Jan 1906-June 1908
SIMPLEX MASON	“SIMPLEX MASON PATENT APPL’D FOR.” [out]	Perfection Glass Co.	Apr-June 1904; Apr-May 1905
SIMPLEX MASON	“SIMPLEX GLASS CAP / PAT <sup>D</sup> [out] / DEC 5 05 / FOR MASON JARS”	Perfection Glass Co.	June 1905-June 1906

ATLAS / MASON'S / PATENT	“SIMPLEX GLASS CAP / PAT <sup>D</sup> [out] / DEC 5 05 / FOR MASON JARS”	Hazel-Atlas Glass Co.	Jan 1906- June 1908
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\* In the 1903-1905 bankruptcy case against William B. Fenn, court records show the Flaccus Brothers firm of Wheeling, West Virginia owed the Perfection Glass Company \$943 for goods billed on October 23, 1903. This debt suggests that either separating tableware was ordered or the FLACCUS STEERS HEAD FRUIT JAR embossed jar bodies with PAT.APLD.FOR / SIMPLEX in a diamond / *Trade Mark Registered* [out] screw caps were turned out by Perfection personnel and shipped to Wheeling.

\*\* This style may have extended into the Republic period

† Alice Creswick hinted that the Hazel-Atlas Glass Company may have also made the embossed FLACCUS STEERS HEAD FRUIT JAR when the SIMPLEX in diamond {out} screw caps were being made.

## The William B. Fenn Patents

During his fifty years of inventive fervor, William B. Fenn received 67 patents.<sup>2</sup> Fenn’s initial interest was carpentry tools, but he bent his creative talents toward glass articles from 1896 to 1906. He shifted to the sterilization of food from 1907 to 1914 and continued with food-related ideas until the 1920s. Fenn’s glass interests centered around separating tableware (i.e., water bottles, decanters, back-bar bottles, syrups, cruets, etc. that came apart into at least two pieces) and closures for jars and other containers. He also patented a jar-making machine discussed above in the machinery segment of the history section (Bernas 2007a:29, 32; 2005c:52-63).

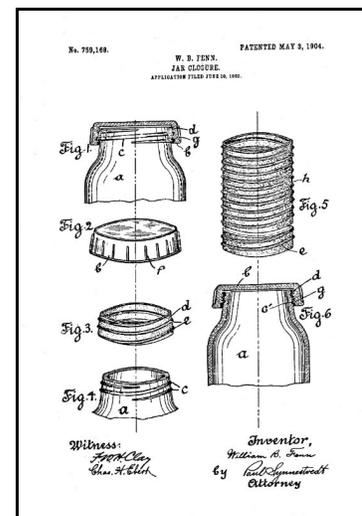


Figure 1 – Fenn 1904 patent

Only one of Fenn’s jar-closure inventions is pertinent to the study of Simplex jars. This patent, No. 759,168, was for a “Jar Closure.” Fenn applied for the patent on June 10, 1903, and received it on May 3, 1904 (U.S. Patent Office 1904b). The glass closure was threaded and fit on a continuous-thread finish on the jar (Figure 1). A threaded rubber packing ring or tube between the

<sup>2</sup> His obituary credited him with “more than 250” patents, but that was an exaggeration.

lid and the finish actually sealed the jar. The lid was surrounded on the outside by a series of vertical embossed ribs. The closure was usually embossed SIMPLEX in a diamond and was used on both SIMPLEX and FLACCUS BROS. STEERS HEAD jars (Bernas 2007a:32-33; 2005c:III).

Fenn patented two other lids; one called a “Closing Device for Glass Jars, Cans, and the Like” and the other a “Closing Device for Vessels,” Patents No. 802,381 and No. 843,670. Fenn applied for the first patent on April 2, 1904 and the second on March 28, 1906, and received them on October 24, 1905 and February 12, 1907, respectively (U.S. Patent Office 1907). While the lid closely resembles the May 3, 1904 patent, a noticeable difference is the shape of the vertical ribs along the outside edge. This could easily be confused with the earlier patent, but it was not used on the Simplex jars.<sup>3</sup>

Bernas (2006c:15) attributed the 1905- and 1907-patented lids to the Federal Jar. The Federal Glass Co. advertised the Federal Jar as “the only sanitary all glass jar on the market” (also see Iwen 2006:17). The Bernas lid and jar matched the Federal ad. We have been unable to determine how long Federal made and marketed the jar.<sup>4</sup> Toulouse (1971:301) attributed the lid to the Sunshine Jar. Roller (1983:348) and Creswick (1987:129) both followed the Toulouse attribution (see Sunshine Jar below). The Federal Jar was advertised by at least 1907 (Bernas (2007:17).

An observer reported that “among the molds sold [after the initial closing of the Perfection Glass Co.] were those for making a fruit jar invented by Mr. Fenn of which a patent is pending” (Bernas 2005a:68). Thus, the jar lids marked “PAT. APL’D. FOR” must have been made by the Sterling Glass Co., then the Perfection company. The patent was not granted until May 3, 1904.

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<sup>3</sup> The 1905 patented cap (mentioned below) and the 1907 one are related, in my opinion with the latter being an improvement (better inner skirt gripping devices) over the former. The main differences between the 1904 and 1905/1907 caps are two fold. For one, the former had a continuous screw thread on the inner skirt while the latter had different types of gripping devices (1905 a series on vertical lines and 1907 lines and boxes). The second is the sealing mechanism between the jar’s finish and the inner skirt of the cap. On the 1904 model, it was a threaded rubber tube while on the 1905/1907 examples, it was a composition (paper, cloth, cardboard, etc.) that was waxed (Bernas, personal communication 7/12/2008).

<sup>4</sup> Bernas (personal communication 7/12/2008), however, believed that the reason for embossing the earlier patent was for the composition sealing sleeve.

## SIMPLEX in a Diamond

The patent that became the Simplex jar consisted of a glass jar with a continuous-thread finish, sealed by a “rubber ring” (actually more of a rubber sleeve), held in place by a glass screw cap with embossed vertical ribs to provide a gripping surface (U.S. Patent Office 1904a). The earliest lids were embossed “PAT. APLD. FOR (arch)” and “PAT. APLD. FOR (arch) / SIMPLEX in a diamond / *Trade Mark Registered* (inverted arch)” on the *inside* of the lid in mirror configuration to be viewed from the outside. Later markings, “PAT. APLD. FOR (arch) / SIMPLEX in a diamond / *Trade Mark Registered* (inverted arch),” “PAT. MAY.3.1904 (arch) / SIMPLEX in a diamond” and simply “SIMPLEX in a diamond” were embossed on the top surface of the cap (Figures 2 & 3).



Figure 2 – Simplex jar (eBay)

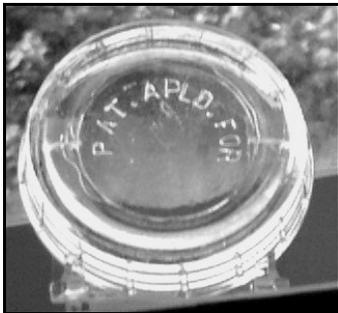


Figure 3 – Pat. Appld. For. lid (Barry Bernas)

“Packers’ Jars” and feels they were incorrectly classified as fruit jar. The confusion apparently stems from the similarity between Sunshine jars and Federal jars.

Initial production began before the patent was granted. Bernas (2006a:30; 2008) described and illustrated the earliest lid, embossed on the inside in mirror image

Creswick (1987b:123) illustrated and listed three variations of the jar and two of the lids (Figure 4). Creswick (1987b:123; 150) noted that the Perfection Glass Co. registered the Simplex trade mark (No. 60,759) on February 19, 1907. Although Creswick did not mention the date of first use, Bernas (2007c:9) noted that the trademark document claimed the initial use during the first week of June 1903. The registered SIMPLEX was in capital block letters with no surrounding diamond. The typical fruit jar sources (see below) included examples of Simplex, although Bernas (2007:50) called them

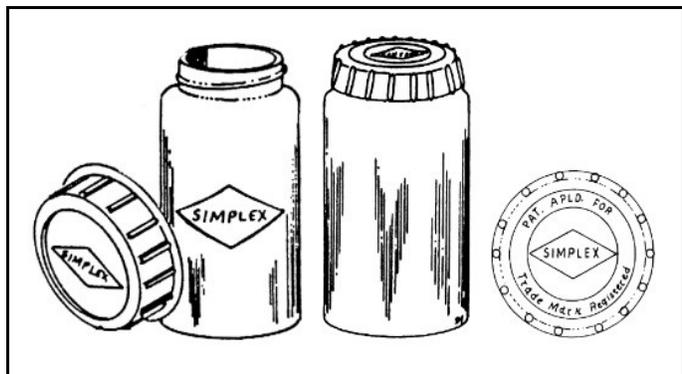


Figure 4 – Simplex jars & lids (Creswick 1987b:123)

with “PAT. APLD. FOR.” Presumably, the accompanying jar was unembossed. These could only have been made between June 1903, when the patent was applied for and May 1904, when it was received. A single lid style was embossed “PAT.MAY.3.1904 / SIMPLEX (in an elongated diamond),” but it was probably only used for a short while after the patent was received in 1904. The next lids were embossed SIMPLEX in an elongated diamond (Figure 5). However, Bernas (personal communication 2/19/2008) noted that a run of as many as 150 gross of jars (ca. 21,600) was completed at the Republic Glass Mfg. Co. during April 1903 in anticipation of the upcoming advertising campaign. Also see Table 1 for a chronology of the lids.



Figure 5 – Simplex lid (North American Glass)

Bernas (2005c:XXX-L; 2007c:50-55) cataloged numerous variations of the SIMPLEX jars. He discussed the jars in 9-, 10-, 12-, 13-, 14-, 15-, 16-, and 33-ounce sizes. One possibly datable characteristic is the variations in the letter “M” on jar front and possibly caps. On one variation, the inner two lines of the “M” (the slanted ones) created a letter “V”; on the other, the same lines merged to form a vertical line, creating a letter “Y.” The “V” variation was also subdivided with a “v” (the lower tip of the “V” even with the bottom of the letter and the “v” with the lower tip of the “v” only reaching ca. halfway down). With current information, we are unable to assign specific years to each variation (Figure 6).



Figure 6 – M variations

## SIMPLEX MASON

Toulouse (1969:285-286) noted the jars and lids marked “SIMPLEX,” including one marked “SIMPLEX GLASS CAP (arch) / PAT<sup>d</sup> / DEODE (both horizontal) / FOR MASON JARS (inverted arch).” The actual central lettering was “PAT<sup>d</sup> / DEC 5 05” – *not* “PAT<sup>d</sup> / DEODE.” The jars were embossed “SIMPLEX (slight arch) / MASON (horizontal)” on the front (Creswick 1987b:123). Roller (1983:21, 328)



Figure 7 – Simplex Mason (North American Glass)

also noted a cap embossed “SIMPLEX MASON PATENT APPL’D FOR” (Figures 7, 8 & 9). The jars were embossed “SIMPLEX (arch) / MASON.” Hazel-Atlas offered these caps on Atlas Mason Patent Jars by ca. 1906-1908.

Toulouse (1969:286) did not know the maker but suggested the lids were protected by the Russell Uhl patent. Uhl patented a glass lid that sealed on a



Figure 9 – Simplex Mason lids (eBay)

rubber gasket on Mason jar shoulders, a twist on Fenn’s rubber ring seal. He applied for the patent on May 20, 1905, and it was granted on December 5 of that year (Figure 10). Uhl assigned the patent to the Perfection Glass Co. (Bernas 2005c:27; U.S. Patent Office 1905). Bernas (2005b:59; 2005c:37-38, 45-46) suggested that the Simplex Mason was the jar that the Perfection Glass Co. made from April 1904 to December 1905, possibly into late 1906.

Bernas (2004:29-30) speculated (with good evidence) that the screw cap patented by Russell Uhl was actually invented by William Fenn. Uhl, along with other creditors, sued Fenn for money owed. Some of the others received Fenn patents in payment, but there is only a record for a small cash payment to Uhl. Uhl had no background as an inventor, however, so it is likely that he received the design for the 1905 invention as a settlement for the money owed by Fenn (see history section above).

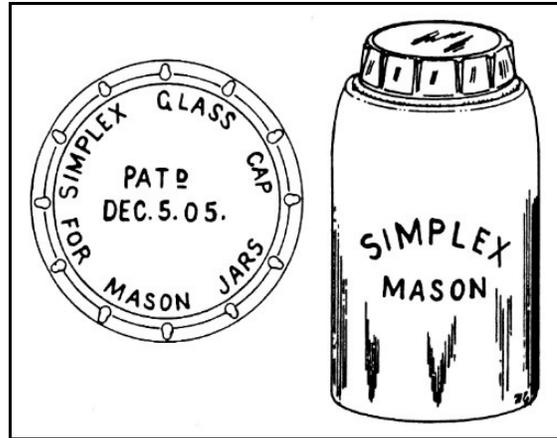


Figure 8 – Simplex Mason (Creswick 1987b:123)

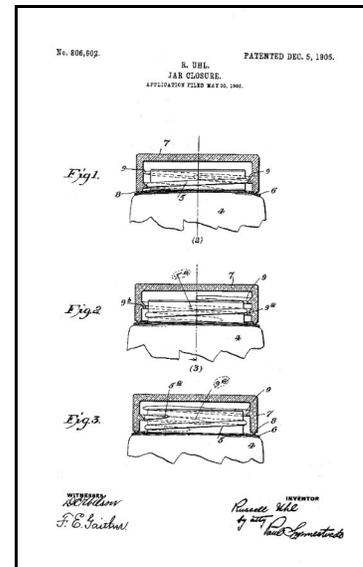


Figure 10 – Uhl 1905 patent

Bernas (2004:30-33) divided the lids according to several categories. Of use to archaeologists, the PATENT APPL’D FOR variation and the one that was actually dated may be the most important. He used other categories including minor embossing differences, shapes (mainly

of vertical embossed ribs), closure heights, and variations in the letter “M” in “SIMPLEX.” For a thorough discussion of Uhl-patent lid variations, see Bernas (2005c:XIX-XXIX – also see Table 1).

## SUNSHINE jars

Toulouse (1969:301) described the Sunshine jar and illustrated the symbol. The lid was embossed on the top with “SUNSHINE” in a stippled, elongated diamond and “IGCO” in an elongated diamond on the inside. He suggested a date range of 1905-1910 for the manufacture of the jar. Roller (1983:348) added that the jars had I.G.Co. embossed on the base. He attributed the lid to Fenn and noted the inclusion of the jar in the 1911 catalog. Creswick (1987:126) noted that the jars could have the IGCo logo on the base or could be unmarked. She dated the jar at ca. 1905, a bit early.

Bernas (2006b:54-55; 2008:14) hypothesized that a Fenn-patented lid was also used on the Sunshine jar, although he noted that there is no evidence from collectors that a lid embossed with “SUNSHINE” in a Stippled Diamond (as noted by Toulouse – see above) actually exists. The genuine lid may have been derived from Fenn’s October 24, 1905, patent.

Bernas (2007d:10-13) noted that a drawing of the Sunshine jar appeared in both the 1908 and 1911 Illinois Glass Co. catalogs (Figure 11). The jar was on pages 303 and 387 (the latter under machine-made bottles) of the 1908 Illinois Glass Co. catalog but was not in the 1906 listing. The text on page 303 noted that “the closure of this jar is effected (*sic*) by screwing the glass cap down over a muslin disc. which has been treated with a special wax preparation suited to the contents. It can be used on either hot or cold goods, and has been proven effective, speedy, and handsome.” The jar was only offered in 10-ounce size and was again illustrated in the 1911 catalog but with much less fanfare.

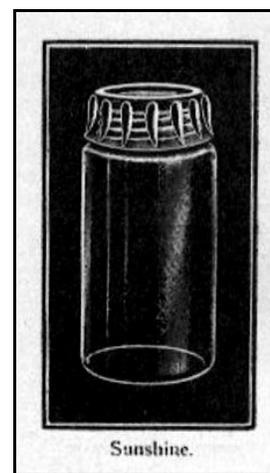


Figure 11 – 1911 Illinois Glass Co. catalog

Bernas (2007d:10-17) was concerned with the difference between the Sunshine jar and the very similar Federal Jar. The two were notably alike, using a Fenn-style glass lid on an unmarked, cylindrical jar. His article disclosed only one easily discernable difference in the actual jars with notable variations in the lids. The Sunshine Jar was threaded to the actual rim, where the Federal

jar had a distinct unthreaded area between the top end of the thread and the rim of the finish. The actual lid of the Sunshine Jar was much taller than the one on the Federal jar. The inside surface of the Sunshine lid was either unembossed or could be marked with IGCo or IGCo in an elongated diamond, both marks used by the Illinois Glass Co. between ca. 1895 and 1916. The embossing was in mirror image so that it could be read from the top of the jar. The lid on the Federal Jar was embossed on the top surface “WARM CAP SLIGHTLY TO SEAL OR UNSEAL” around the edge of the top with “PAT'D / OCT 24 / 1905” in the center (Figure 12).



Figure 12 – Warm Cap (eBay)

### **An Unrelated Simplex**

Creswick (1987a:192) noted a “SIMPLEX PAT. NOV. 4<sup>th</sup> 1890 W & D (on base)” with “petal-like protrusions around shoulder & heel.” She did not know who made the colorless quart jar. The 2011 update of Roller’s *The Standard Fruit Jar Reference* provided more information re this jar.

The February 8, 1896, edition of *The Commoner and Glassworker* may have given a clue to the history of this jar. In it, a reporter stated that the unfinished glass house in Baltimore, Maryland of the newly formed Baltimore, Maryland Glass Manufacturing Company would “manufacture and use a patent on Simplex glass, stoppered and metal screw-top bottles and fruit jars” . . . Perhaps, the trade journal columnist was referring to these jars. Two of the officers of the new company were general manager I.B. Whitlick and I.I. van Diehl as secretary.

The “W&D” on the base of this jar may refer to Whitlick and Diehl. Of note, at the receiver’s sale of the Baltimore Glass Mfg. Co., Westport, Baltimore County, held on July 21, 1897, 31 cases of Simplex Fruit Jars were among the items for sale (*Baltimore Sun* 7/20/1897).

## **Discussion and Conclusions**

In sorting through the tremendous amount of research on the Perfection Glass Co. and the various Simplex jars and lids, it is clear that Barry Bernas has done his homework, and very little

remains, except to summarize his findings as we have attempted above. In his book on Simplex/Perfection and his various articles, Bernas has dissected the nuances of the characteristics of virtually all the variations in lids and jars connected with Simplex. Anyone wishing to delve into minute nuances need only access the Bernas publications.

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