The Dating Game: De Steiger Glass Co.

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Histories

Phoenix Glass Co., La Salle, Illinois (1867-1878)

The earliest glass operation in La Salle was an unnamed bottle factory that apparently began ca. 1860. The plant was unsuccessful, but virtually nothing else is known about it. The second factory in La Salle, the Phoenix Glass Co. plant, opened in 1867. The plant was originally a cooperative that manufactured window glass. The group incorporated ca. 1870 and remained in business until 1878 (Baldwin 1877:542; Etheridge, personal communication 2007; *Past and Present* 1877:302; Toulouse 1971:167).

De Steiger Glass Co., La Salle, Illinois (1878-ca. 1896)

Joseph De Steiger and his three brothers moved from St. Louis to La Salle in 1878 (Link n.d.). The eldest brother, Joseph, was born ca. 1858 and was only 20 years old at the time of the move. Edward was a year younger. The family opened the De Steiger Glass Co., almost certainly replacing the earlier Phoenix Glass Co. This time, however, the emphasis was on container glass. A fire destroyed the plant in 1881, but it had been rebuilt by at least 1883, probably earlier (United States 1880; *National Glass Budget* 1909:4; Toulouse 1971:167-169).

The new operation had two factories, but a devastating fire destroyed both of them on the morning of November 5, 1883. Rebuilding commenced February 4, 1884 (*Decatur Review* 11/7/1883; *Decatur Herald* 2/9/1884). William F. Modes, formerly with the Mississippi Glass Co., St. Louis, Missouri, a noted name in container manufacture for his entire life, became the manager of the factory at this time.

This decade was an interesting and intense period in the history of bottle manufacture. Valentine Blatz commissioned the first 26-ounce export beer bottle in 1873, and both the sale of bottled beer and the manufacture of export beer bottles skyrocketed the following year and for at least the next decade. The De Steiger plant was probably instigated as part of that trend, and beer bottles were almost certainly the main product of the factory, based on both empirical and documentary evidence (as shown throughout this article). Because of the bottle boom in the late 1870s-early 1880s:

> Blowers were so scarce that it was a very difficult matter to keep places filled, and so hard pressed was the De-Steiger (*sic*) company at La Salle that it was compelled to procure workmen from Germany and Sweden, their coming having been the advent of the twister or turn ware makers (*National Glass Budget* 1909:4)

The manufacture of "twister or turn ware" was an important development. The turn-mold or paste-mold process began with the application of a paste to the inside of a two-piece mold.[1] The gaffer (i.e., a highly skilled master glass blower) blew the bottle into the mold, then twisted or turned it around to remove traces of the mold seams. Turn-mold bottles were made in Europe prior to 1865 (Jones & Sullivan 1989:31; Switzer 1974:23-25), although how early they were used has not been determined. For a thorough discussion of the turn-mold process, see Lindsey (2007).

Although an attempt to design a mold for a seamless bottle was patented in the United States by C.D. Fox on April 29, 1873 (Pat. No. 138,323), it was *not* a turn-mold design (U.S. Patent Office 1873). Fox patented another device for making seamless wide-mouth containers or tableware on June 7, 1881, but it, too, did not use turn-mold technology. Despite the assertion by Toulouse (1969:532) that "several United States patents were granted in the 1870s and 1880s for 'seamless bottles' with and without turn molding," we have been unable to find any other patents until the December 13, 1898, patent for a paste mold (No. 615,910) by Christian Z.F. Rott and Theodore C. Steimer (U.S. Patent Office 1898b).

Our conclusion is that the German and Swedish immigrants, imported by the De Steiger Glass Co., were probably the first "twister blowers" in the United States. It is highly likely that De Steiger attracted these gaffers after the opening of the factory, and the transportation of these workers from Europe would certainly have taken some time. Thus, the probable date for their arrival and the concurrent instigation of the turn-mold process into the United States is 1879 or 1880. This confirms the ca. 1880 date initially set by Toulouse (1969:532) and hence accepted (e.g., Newman 1970:72; Jones & Sullivan 1989:31).

The De Steigers advertised their beer bottles in the *Western Brewer*[2] from at least 1879 to March 1883 (Wilson & Caperton 1994:70). In 1883, P.R. De Steiger was president, A.F. De Steiger was secretary and treasurer, and W.F. Modes was superintendent. Four members of the family were connected with the glass works (La Salle and Peru Directory 1883). Along with national sales, the De Steigers made bottles for two local breweries as well as the city's distillery. Yet another fire destroyed the two "glass ovens" at the plant in 1885, and it was "unclear whether the business survived the fire." (Link n.d.). The end of advertising in the *Western Brewer* in 1883 may have indicated limitations in production even before the 1883 fire. Even if beer bottle production continued after 1883, it was almost certainly ended after the 1885 fire.

Following the 1885 fire, 60 or more De Steiger employees, "many of them German 'twister blowers'" moved to the Streator Bottle & Glass Co., Streator, Illinois. Business increased so much that Streator built a third furnace (Toulouse 1971:461-462). The area where the group settled in Streator became known as "Twister Hill" (Toulouse 1969:532). At that point, the manufacture of turn-mold bottles transferred from De Steiger to Streator. The former De Steiger manager, William F. Modes, also moved to Streator.

Previous literature (e.g. Toulouse 1971:168) only listed two patents filed by the De Steigers. The real patent history is much more interesting. On February 4, 1886, Joseph L. De Steiger and Edward A. De Steiger filed for their first patent, a "Fruit-Jar." They received Patent No. 340,428 on April 20, 1886 (U.S. Patent Office 1886). Oddly, William E. Marlett received Patent No. 433,901 on August 5,

1890, for "A Device for Operating the Doors to Elevator Shafts" and assigned the patent to the four De Steiger brothers (U.S. Patent Office 1890).

Many years later, on June 15, 1894, Joseph and Edward De Steiger next applied for a patent on a "Jar or Bottle Cover and Fastener" and received Patent No. 534,864 on February 26, 1895 (U.S. Patent Office 1895). Joseph, alone, filed for a patent on a "Fruit-Jar" on March 14, 1896, and received Patent No. 574,306 on December 29 of that year (U.S. Patent Office 1896). Joseph and Edward filed yet another application on May 11, 1897, and received Patent No. 611,958 for a "Jar or Bottle Fastener" on October 4, 1898 (U.S. Patent Office 1898a).

On April 29, 1899, the brothers designed an improved clip for their 1896 closure and received Patent No. 640,332 for a "Jar Closure" on January 2, 1900. Joseph filed his final application (in his name only) on May 3, 1906, for a "Fruit-Jar Wrench" and received Patent No. 846,016 on March 5, 1907 (U.S. Patent Office 1907). This is the last known connection between the De Steiger family and the glass industry.

The final ending of the De Steiger plant is debatable. As noted above, Link (n.d.) found "unclear" evidence locally for the survival of the business after the 1885 fire. The De Steiger Glass Co. was mentioned in connection with side tracks in the 1888 La Salle city ordinances (O'Conor 1888). Ayres et al (1980:14-15), however, stated that a "firm titled 'De Steiger & Co.' of LaSalle (*sic*) was in existence in 1889." Rydquist (2002:4) noted that De Steiger was last listed in the *National Bottlers Gazette* in 1896, and Etheridge (personal communication 2007) stated that the De Steiger "bottle plant burned in 1899," although that may refer to the bottle plant long after production had ceased.

De Steiger Glass Co., Buffalo, Iowa (1880-at least 1882)

In 1880, the De Steiger Glass Co. of La Salle bought out the local glass works at Buffalo, Iowa. The plant had been erected in 1874 by Wilkinson & Co., then sold to Henry Dorman in 1876 (Larson 1983:33, 43; People of Scott County n.d.), but we have been unable to find the name of the factory. The *Iowa State Gazeteer and Business Directory* of 1882 listed a "DeSteiger Glass Co." in Buffalo, Iowa (Labath 2006). Larson (1983:37) published an almost certainly apocryphal story about the gaffers at the factory, told by Ferdinand Bald (at the age of 89):

> Those glass blowers were beer bottle blowers[,] too. Someone would come in and ask them to blow them a bottle. They'd say they would if the person would take the bottle to the brewery (only a short distance away, owned by John Bartberger) and get it filled up. When the person would agree they'd blow a gallon bottle and insist they fill it.

Unfortunately, we have found no further information about this branch of the company.

Bottles and Marks

One of De Steiger's customers was Anheuser Busch. Plavchan (1969:75) noted the following from Anheuser Busch records:

> Prior to 1886 the main source[s] of beer bottles for the Anheuser-Busch Brewing Association were four glass works: the Mississippi Glass Co. and the Lindell Glass Co. of St. Louis; the Pittsburgh City Glass Co. of Pittsburgh, Pennsylvania; and the DeSteiger (*sic*) Glass Co. of LaSalle, (*sic*) Illinois.

Busch (who actually ran the Anheuser Busch operation) almost certainly bought his first bottles from the two St. Louis companies, but he probably added De Steiger soon after. It would not be surprising if Cunninghams & Co. (Pittsburgh City Glass Co.), the most distant of the group, were not added until ca. 1879 or later.

Turn-Mold Bottles

Although it is likely that De Steiger was the first American company to make turn-mold bottles, the bottles, themselves, are very difficult to date. Examples have been found in 1880s contexts, and these were likely made by either De Steiger or Streator. Unfortunately, the manufacturing technique creates no attributes for dating individual bottles **[Figure 1]**.

DSGCo (ca. 1878-ca. 1896)

Thus far, DSGCo is the only embossed mark discovered for the De Steiger Glass Co. Jones (1966:16) misidentified the mark as belonging to Duncan Sons Glass Co. but admitted that was only a guess. She later speculated (Jones 1968:16) that the company might be the Dawes Manufacturing Co. or John L. Dawes, Sons & Co. (in business in Pittsburgh sometime prior to 1894) but again acknowledged that she was unsure. Toulouse (1971:167) only reported the mark on beer bottles and dated it "circa 1879 to 1896," the entire duration of the De Steiger Glass Co.

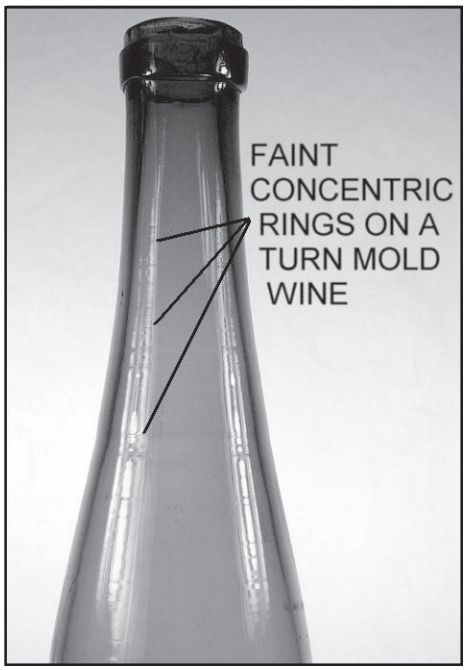


Figure 1: Turn-Mold Bottle Characteristics *(Lindsey 2007)*

Thus far, we have only discovered DSGCo marks on beer bottles, liquor flasks, bitters bottles and fruit jars. Although Giarde discussed the mark in connection with milk bottles, it is highly unlikely that De Steiger made any milk containers.

Beer Bottles

Bottle studies by Ayres et al. (1980:unnumbered page), Brose & Rupp (1967:90), Herskovitz (1978:8), Jones (1966:7; 1968:16), Lockhart and Olszewski (1994), Mobley (2004), and Wilson (1981:114) all illustrated or described the DSGCo mark on beer bottle bases. The marks fit one of two patterns: 1) DSGCo in an arch at the top of the base **[Figure 2]**; or 2) DSGCo in an inverted arch at the bottom of the base **[Figure 3]**.

The first variation has been recorded with accompanying numbers ranging from at 4 to 71 in the center of the base or occasionally no number. The second variation was always accompanied by letters, the sample ranging from B to O, as

Figure 2: DSGCo Mark – Arched Variation *(San Elizario)*

Figure 3: DSGCo Mark – Inverted Arch Variation *(TUR Collection)*

well as RBB and XI, again in the center of the base.[3] The first variation included punctuation; in the second, punctuation was sometimes present and sometimes absent. In all cases where punctuation was present, the periods were evenly interspersed between the letters – rather than the more typical spacing with punctuation immediately following the letter.

Our observation of the Tucson Urban Renewal collection revealed both marks on export beer bottle bases with a variety of applied, two-part finishes with sharp-edged lower rings. This suggests that De Steiger ceased making beer bottles (at least the generic type for the export trade) by the early 1880s. Two-part finishes on export beer bottles were intended for use with wired-down corks. Historic and empirical data explored by Lindsey (2007) and Lockhart (2006; 2007) suggest that lower rings of the finishes with sharp edges (whether in wedge or flared forms) were generally used on earlier bottles. Empirical evidence, from Fort Stanton, New Mexico, and the Tucson Urban Renewal (TUR) project suggests that sharp-edged lower rings were being actively phased out by ca. 1880, although some were still made (e.g., Carl Conrad bottles) as late as 1882.

Although there is no firm date for the initial use of two-part finishes with rounded lower rings, they were probably not used until the late 1870s and continued to be in use until at least ca. 1915. All two-part finishes with sharp-edged lower rings were applied to the end of the neck. Applied finishes were the industry standard for export beer bottles until at least 1896. Tooled finishes began to be used on some body-embossed beer bottles by ca. 1890 but were uncommon until after ca. 1896. Tooled finishes completely dominated the industry by ca. 1900.

Fruit Jars

Creswick (1987:48) illustrated a grooved-ring wax-sealer fruit jar in either aqua or lime green with the second variation of the DSGCo mark and a number 4 in the center of the base **[Figure 4]**. Roller (1983:110) described these wax sealers but noted the colors as green and amber.

Other Bottle Types

Ring (1988:[15]) listed a "D.S.C.CO" mark (in an inverted arch) on the base of a Millard's Paris Bitters bottle. This is very likely a misreading of the DSGCo mark; the "tail" or serif on the letter "G" was often unclearly embossed. The bottle was square in cross section and amber in color. We have also discovered an example of a square bottle on eBay in light aqua color **[Figure 5]**. Freeman (1964:109) listed a single flask embossed DSGCo. An eBay auction showed a shoo-fly flask in light aqua color embossed on the base with "D.S.G.Co." (inverted arch) and "1" (including the upper serif) in the center **[Figure 6]**. This and the wax sealer described above are the only examples we have seen of the inverted variation accompanied by a number instead of a letter or letters, as in the beer bottle examples.

Milk Bottles

Giarde (1980:34) discussed the DSGCo mark in connection with dairy containers and noted that the mark "was not confirmed on milk bottles during research but the De Steiger family was connected to fruit jars which improves the possibility the company engaged in the manufacture of wide mouth dairy containers at some point in time." We have found no other reference to milk bottle production and consider it unlikely. Even if De Steiger had been in business until 1896, this was still the early days, and virtually all milk bottles were still patent protected and thus made by few companies. No De Steiger patents were connected to milk bottles (usually called milk jars at that

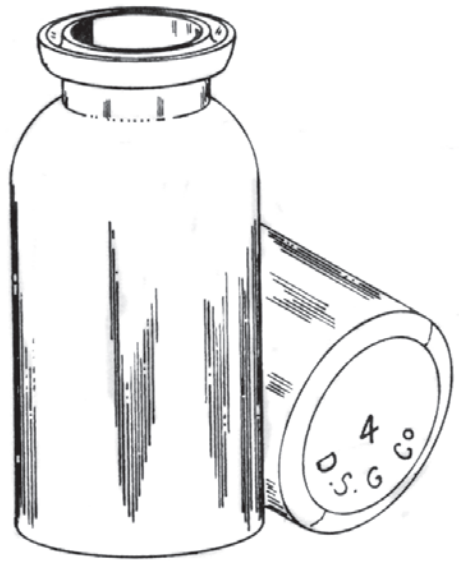


Figure 4: DSGCo Mark on a Grooved-Ring, Wax-Sealer Fruit Jar *(Creswick 1987:48)*

Figure 5: DSGCo Mark on a Square Bottle *(eBay)*

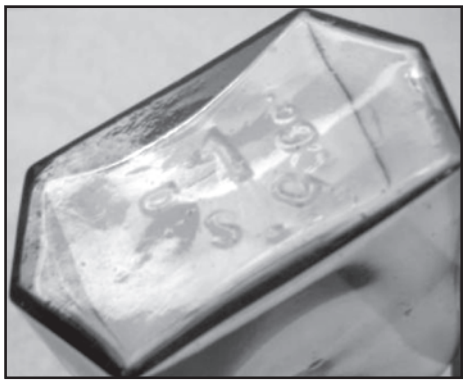


Figure 6: DSGCo Mark on a Flask *(eBay)*

time).

Giarde (1980:35) went on to state that "suggestions that the DSGCo mark might be that of Duncan Sons Glass Company[4] in the East cannot be totally rejected but seems unlikely." Although Giarde discussed the possibility, the presence of the mark on so many beer bottles, and documentary evidence that De Steiger was one of the early makers of beer bottles for Anheuser-Busch makes the identification of De Steiger as the user of the DSGCo mark almost absolute.

Fruit Jar Patents

Creswick (1987:42) illustrated a jar with an IMPERIAL lid that bore the De Steigers' 1886 patent **[Figures 7 - 8]**. Creswick (1987a:33-34) also showed a lid embossed "PATENTED / COLUMBIA / DEC 29th 1896" **[Figure 9]** – a patent held by the De Steiger brothers **[Figures 10 - 12]**. She described four variations of the jar, three of which only bear the COLUMBIA name on the lids. One has COLUMBIA embossed on the side. None of these bear the DSGCo marks. The lids illustrated by Creswick are obviously the ones shown in the patent documents. The various jars were made in colorless, aqua, and amber.

Figure 7: Imperial Lid with De Steiger's 1886 Patent *(Creswick 1978:42)*

Creswick noted that the jars were made by the Whitney Glass Works and Illinois Glass Co. Roller (1983:92) also discussed the Columbia jars/lids and included an undated Illinois Glass Co. trade card that featured the Columbia and noted that the jars were made in pint, quart, and half-gallon sizes. He dated the jars late 1890s to 1910s "by several glasshouses, including

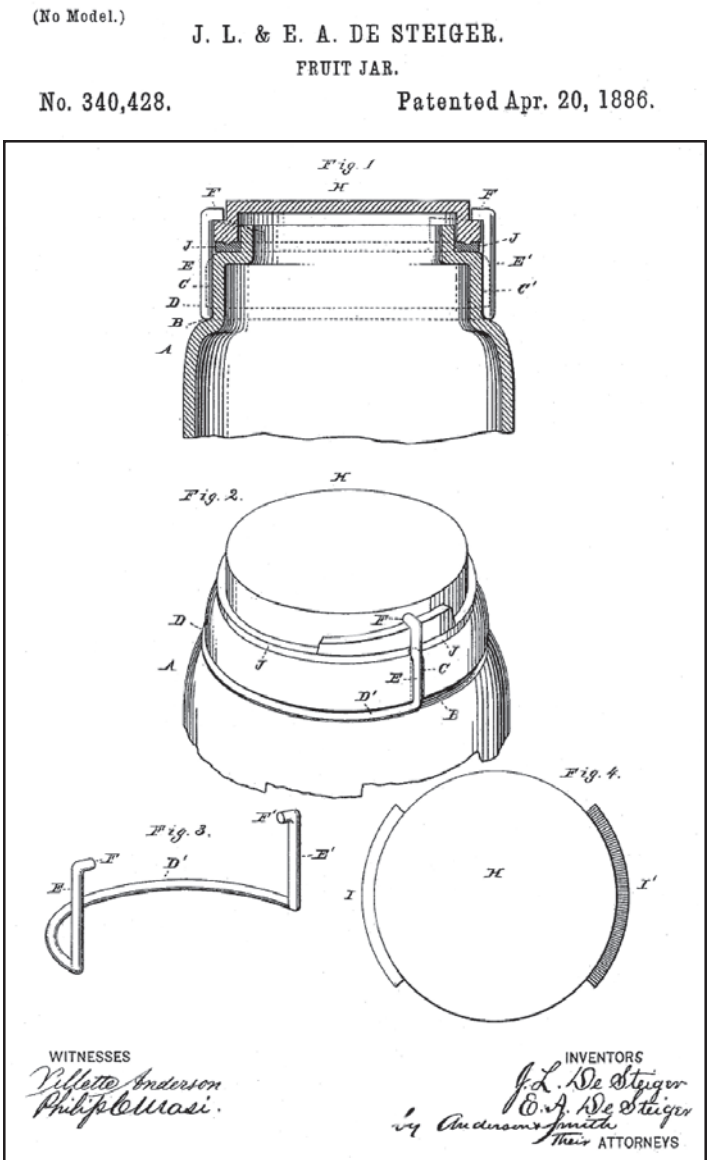


Figure 8: De Steiger's Patent, April 20, 1886 *(U.S. Patent Office)*

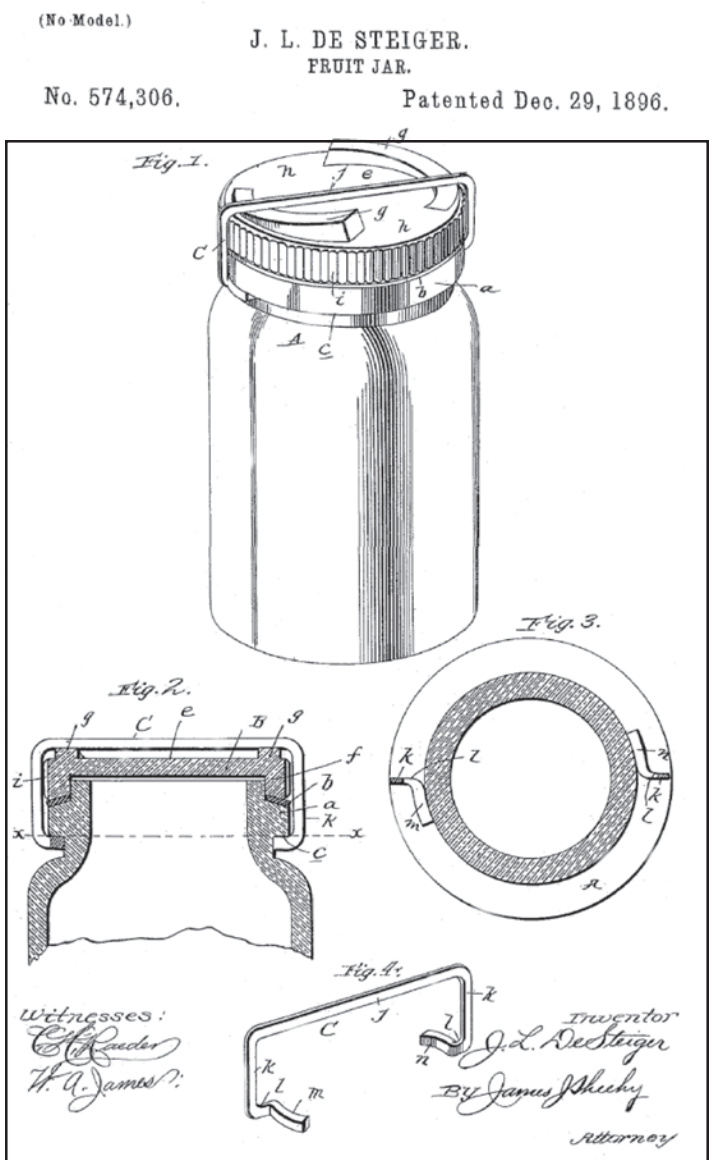
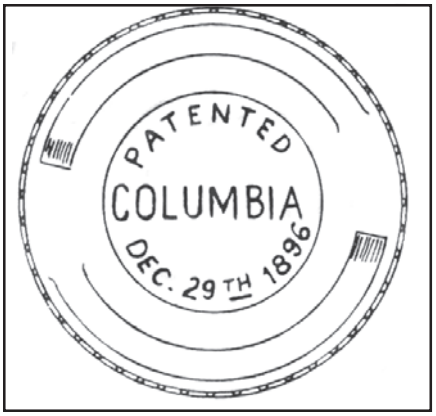
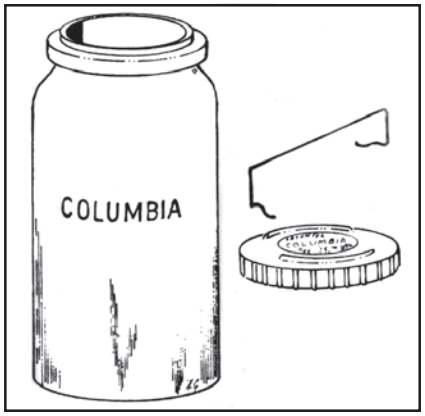
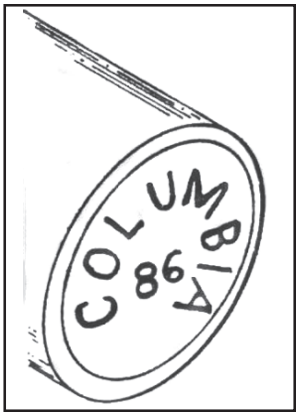


Figure 9: De Steiger's Patent, December 29, 1896 *(U.S. Patent Office)*



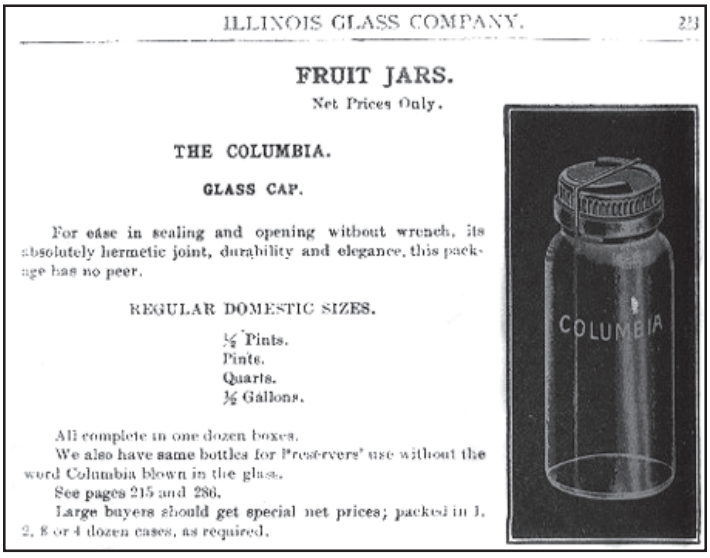




L-R: Figure 10: Lid for the COLUMBIA Jar with De Steiger's 1896 Patent *(Creswick 1987:33)*
Figure 11: A Variation of the COLUMBIA Jar *(Creswick 1987:34)*
Figure 12: COLUMBIA Jar Base *(Crewsick 1987:33)*

Whitney . . . and Illinois Glass."

The Columbia jars, with the name embossed on the body, appeared in Illinois Glass Catalogs until 1908 (an abridged variation of the 1906 catalog). By 1911, the "Columbia Preserve" was still offered, but the body no longer contained the embossed name **[Figure 13]**. This was not the same jar; however, the cap was significantly different – no longer the De Steiger patent (Illinois Glass Co. 1908:223; Putnam 1965:220). The embossed jars may be dated pretty reliably from ca. 1896 to ca. 1908, based on Illinois Glass data – too late to have been made by De Steiger.


ILLINOIS GLASS COMPANY. 223

FRUIT JARS.

Net Prices Only.

THE COLUMBIA.

GLASS CAP.

For ease in sealing and opening without wrench, its absolutely hermetic joint, durability and elegance, this package has no peer.

REGULAR DOMESTIC SIZES.

½ Pints.
Pints.
Quarts.
½ Gallons.

All complete in one dozen boxes.
We also have same bottles for Preservers' use without the word Columbia blown in the glass.
See pages 215 and 286.
Large buyers should get special net prices; packed in 1, 2, 3 or 4 dozen cases, as required.

Figure 13: Columbia Jar in the Illinois Glass Co. 1908 Catalog *(Illinois Glass Co. 1908:223)*

Discussion and Conclusions

Based on historical and archaeological evidence, we can make a few definitive statements about variations of the marks. Thus far, all reported beer bottles were amber in color, and beer bottles seem to have been made in far greater quantities than other types of glassware that are marked with the DSGCo log. De Steiger made at least beer and bitters bottles as well as flasks and fruit jars. Marks fall into two variations:

1. DSGCo in an arch at the top of the base (on beer bottles only)
2. DSGCo in a inverted arch at the bottom of the base (on beer and bitters bottles, flasks, fruit jars)

The company may have actually been formed to manufacture export beer bottles (by far the most common style with the DSGCo mark) for Anheuser-Busch, so this may have been their only initial product. This line of reasoning further suggests that the arched variation of the DSGCo mark (#1 above) was used first and probably was the exclusive mark of the La Salle factory (1878-1885); the second mark was likely used by the Buffalo plant (1880-ca. 1883) on a variety of container types.

This identification further reflects two observations and leads to two tentative conclusions. First, since the DSGCo mark in the arched format has only been found (at least in our sample and the literature) on beer bottles, the original plant probably exclusively made beer containers. Second, the Buffalo plant likely made both beer bottles and other container types (bitters, flasks, and wax-sealer fruit jars).

Based on the presence of only sharp-edged lower rings on beer bottle finishes, we can also hypothesize that beer bottles were probably made from the inception of the business (1878) to the early 1880s.[5] Coupled with the lack of advertising in the *Western Brewer* after 1883, the presence of only sharp lower rings suggests that beer bottle manufacture stoppeded about the time advertising ceased. This also coincides with the 1883 fire at La Salle. Beer bottle manufacture may have been suspended after the plant was rebuilt.

This hypothesis does not quite fit with the conclusions that link each mark to a separate plant; it fails to account for the two-year period from 1883 to 1885. The two years in contention may reflect at least three possibilities: 1) the hypothesis is incorrect; 2) beer bottles manufacture continued until 1885; or 3) the plant never actually resumed production.

Two interrelated final important historical aspects need to be addressed: fruit jar patents and the end of the company. It may be significant that the De Steigers' first patent was filed on February 4, 1886, shortly after the disastrous (possibly final) fire. This almost certainly signaled De Steiger's entry into the more progressive fruit jar business. Although the company had manufactured grooved-ring, wax-sealers earlier, the jars indicated by the patents concerned more advanced closure technology.

The patents seem to indicate a major change in De Steiger after the 1885 fire. The ad noted by Roller and the identification of Illinois Glass and Whitney as the manufacturers of the jars suggest that the De Steiger brothers may have become jobbers after the final fire rather then rebuilding the glass factory. The lack of information on the Buffalo plant after 1882 supports the idea. This would also explain a listing for "De Steiger & Co." in 1889 and an 1896 mention. The adoption of a patent for "A Device for Operating the Doors to Elevator Shafts" may indicate that the brothers were only engaged in inventions and marketing after the fire.

More research needs to be undertaken on this company and the marks. Operational dates of 1878-1885 fit the little empirical evidence we have. The dates fit within the ca. 1863-ca. 1891 time period when both Fort Union and Fort Bowie were occupied as well as the ca. 1880-1886 dates for San Elizario. However, further historical inquiry (e.g., a search of newspapers in La Salle, Illinois, and Buffalo, Iowa) could potentially be useful, especially during the 1886-1896 period in La Salle. We also need a much larger sample of bottles to examine.

Acknowledgments

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Footnotes:

[1] Although the term "two-piece" mold appears often in the literature, it is slightly misleading. There was an actual two-piece mold that was used in the earlier days of molded bottle blowing, although this simple style was almost completely replaced by a mold with two side pieces and a baseplate, prior to the introduction of the export beer bottle. The baseplate could be in post or cup form, but post-bottom molds were the most common for beer bottle production during the 19th century.

[2] Wilson and Caperton (1994:70) recorded all beer bottle advertising in the *Western Brewer* between 1883 and 1890 as well as samples from issues between 1878 and 1882.

[3] These numbers and letters only reflect examples reported by the sources we have found. Surely, the numbers began with "1"; letters began with "A."

[4] Although there was a John Duncan's Sons connected with Lea & Perrins sauce bottles, this company was never associated with milk bottles to our knowledge. The meaning of this reference is very unclear. Even though Giarde (1980:35) stated that the identification "cannot be totally rejected," it is totally irrelevant, unless someone actually *finds* a bottle.

[5] See Lockhart (2007) for a discussion on dating export beer bottles. Sharp lower rings were generally used on export beers between 1873 and ca. 1882. Beer bottles with the DSGCo logo and rounded lower rings have not been reported by any source, and we have not observed any bottles with them.