

# **Crystal Jars and the Crystal Glass Companies**

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During the late 19th century and early 20th century, at least five jars were embossed with the name “CRYSTAL.” One of those had a patent number that clearly placed it as a product of the Hero Glass Works, and one other was advertised by the Crystal Glass Co. of Pittsburgh and had a patent date tying the jar to the Pittsburgh firm. A third variation had the same patent date – also tying the jar to the Pittsburgh Crystal Glass Co. To increase the complexity of the issue, the Independent Jar Co. – located just three blocks away from Crystal Glass – also made the same Crystal jar.

Earlier researchers were ambivalent about the makers of the final two jars. At least six glass companies wore the Crystal name. Although two of these made tableware, at least four were involved in the manufacture of bottles and jars. Our task was to discover the manufacturers of the final jars.

## **Crystal Jars**

As noted in the abstract, the major jar sources listed five containers embossed with the word “CRYSTAL” on the front. We have divided our discussions into five sections in chronological order. Note that the dates are for the manufacture of the jars *not* the entire life of the glass houses:

1. CRYSTAL – Hero Glass Works, Philadelphia (ca. 1873-1883)
2. CRYSTAL JAR – Crystal Glass Co., Pittsburgh (1879-1884)
3. CRYSTAL JAR CG – Crystal Glass Co., Pittsburgh (1885-1887)
4. MASON’S CRYSTAL JAR – Crystal City Glass Co., Bowling Green, Ohio (1888-1892)
5. Crystal MASON – Akron Glass & Machinery Co. (1909-1911) or Cumberland Glass Mfg. Co. (1909-1920)

Note that the identification of the last three of these manufacturers is based on our research – although the first two are positive. Since the CRYSTAL JAR was also produced by the Independent Glass Co. concurrently with the Crystal Glass Co. of Pittsburgh, each firm and its jars are included in that section. Each section will begin with a description of the jar or jars, followed by a review of the major jar sources, then a discussion about why we chose the manufacturer. Finally, we will have a history of each glass house. Where appropriate, we will discuss relevant patents in either the discription/review areas or the glass house history.

## 1. CRYSTAL – Hero Glass Works, Philadelphia (ca. 1873-1883)

### CRYSTAL (ca. 1873-1883)

The jars embossed “CRYSTAL” in an arch on the front face were also embossed “PAT. NOV. 26. 67.” on the resting point of the base and “PAT FEB 4 73” around an “A” in the center of the base (Figures 1 & 2). The letters



Figure 2 – Crystal base  
(North American Glass)

on the resting point of the base served the same purpose as embossed “feet” – to hold the jar above the surface of the pan during the canning process and let the hot water circulate under the base. The “feet” also aided in cooling. The patents belonged to the Hero Glass Works, and we discuss the jars in more detail in that section. Hero made the jars from ca. 1873 to 1883.



Figure 1 – Crystal jar  
(North American Glass)

### Hero Glass Works, Philadelphia, Pennsylvania (1869-1883)

The Hero Glass Works opened in late 1869 or early 1870 and specialized in fruit jars. The business failed in 1883. For more information, see the Hero Glass Works section.

## 2. CRYSTAL JAR – Crystal Glass Co., Pittsburgh (1870-1887)

### Bennett’s Jars

Prior to opening the Crystal Glass Co., the Bennett family operated a pottery in Pittsburgh, although some of them designed and patented jars for Adams & Co., a Pittsburgh

glass house. Although we have not discovered the exact nature of the agreements, Gillender family members were involved in other glass houses – Gillinder & Bennett and Bennett & Fawcett – that made and/or sold some of the Bennett-patented jars as well (Figure 3). Adams & Co. almost certainly made the No. 1 and No. 2 jars between 1867 and 1870. The line was apparently discontinued when the Bennett brothers closed their pottery factory and converted it to a glass house – the Crystal Glass Co. See Adams & Co. in the “A” section for more information.

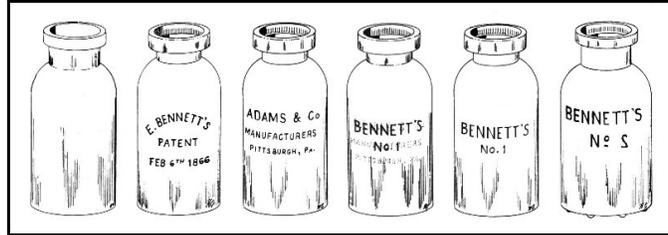


Figure 3 – Bennett’s jar series (Creswick 1987:2, 17)

**CRYSTAL JAR** (ca. 1879-1882)

Toulouse (1969:83) listed the “CRYSTAL JAR” but believed it to be a product of the Consolidated Fruit Jar Co. and dated it ca. 1879. Roller (1983:97) discussed the jar in greater detail. These had the word “CRYSTAL” in an arch, above “JAR” horizontal, both embossed on the front (Figure 4). The glass screw cap sealed on the shoulder “with inside lugs to engage jar threads and was embossed “PATENTED DEC. 17, 1878” on the top. This sets the earliest date for the manufacture of these jars and their lids. See below for more on the lids.



Figure 4 – Crystal Jar (North American Glass)

Roller showed ads from the Crystal Glass Co. that illustrated these jars for use in both canning and dairy containers (Figure 5). He dated the jars made by Crystal ca. 1879-1882 and 1885-1888 – with no jars made by the firm in 1883 or 1884. The Independent Glass Co. of Pittsburgh made the Crystal Jars during the 1882-1884 period. Crystal apologized for failing to meet the demand for the jars in 1884 but noted that their jars were superior to any that were made by other manufacturers.



Figure 5 – 1880 Crystal Jar ad (Roller 1983:97)

Creswick (1987a:38) illustrated four jars embossed “CRYSTAL (arch) / JAR (horizontal)” on the front, one with a reversed “S” (Figure 6). One of these had gently sloping shoulders and a smaller mouth. All were mouth blown (ground rim) and had a “Mason shoulder

seal/glass cover” (Figure 7). Each lid had internal embossed lugs to engage the continuous threads on the finish and two posts or tabs extending above the top of each lid allowing a screwdriver or other long object to be used to apply extra pressure for opening and closing the cap. The lids were embossed “PATENTED DEC 17 1878”; “PAT DEC 17 1878”; or “PAT<sup>D</sup> DEC 17 1878,” and at least one had solarized to an amethyst hue (Figure 8). At least one of these lids was used on a straight-sided jar with no side embossing (Figure 9).

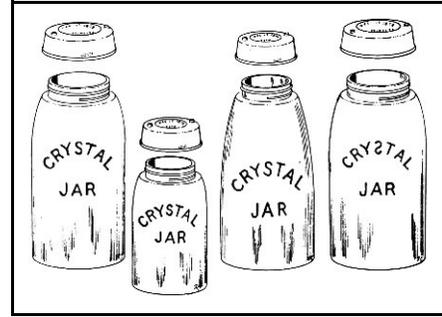


Figure 6 – Crystal Jars (Creswick 1987a:38)

The Roller editors (2011:152) noted that “‘CRYSTAL’ jars are notorious for having finish areas of slightly different diameters which means that any given size of ‘CRYSTAL’ screw cap would not interchange. Also, pint size jars have narrow mouths.” In addition, some unembossed jars needed “a specially shaped glass screw cap with a shoulder on the underside to press the gasket down on the straddle lip sealing surface.”



Figure 7 – Shoulder seal (North American Glass)

The Crystal Glass Co. advertised the Crystal Jar by at least June 5, 1879, in the

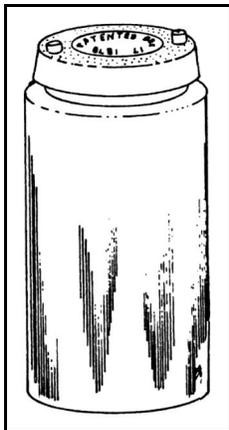


Figure 9 – Unembossed jar with Crystal lid (Creswick 1987a:38)

*Crockery & Glass Journal*.

On March 2, 1882, the Independent Glass Co.

advertised the Crystal Fruit

Jar in the same journal – with an illustrated example. On the same page, the Crystal Glass Co. advertised the Crystal Milk Jar. Independent Glass had made the Crystal Jars by at least July 28, 1881, according to the *American Pottery & Glassware Reporter*. By January 3, 1884, Crystal Glass was advertising “Crystal Fruit Jars, Crystal Milk Jars, Crystal Pickle Jars” along with tableware and lantern globes in the same journal. The Independent Glass Co. also continued the ads for the Crystal Jar – including the December 17, 1878, patent date – to at least the January 31, 1884, edition (Hawkins 2009:141; Roller 1997a).



Figure 8 – Crystal Jar lids (North American Glass)

On January 22, 1885, the *American Pottery and Glassware Reporter* noted that the “Crystal Glass Co. . . . will continue the manufacture of the Crystal Jar this year . . . . They will devote almost exclusive attention to [these jars].” Various sources used the terms “resume” and “continue” in connection with Crystal’s jar production in January of 1885, suggesting that production had ceased earlier. It is possible that Crystal ceased production of the jars in early 1882 and subbed the actual manufacture to the Independent Glass Co. – although both firms advertised the products. Production by Independent ceased with the January 1885 resumption of jar making by Crystal, although the failure of pots at the Crystal plant delayed manufacture until March. A January 9, 1885, Independent Glass Co. ad touted the Independent Jar but no longer mentioned the Crystal Jar (Roller n.d.).

### Crystal Milk Jar

The Crystal Glass Co. advertised the Crystal Milk Jar in quart and half-gallon sizes by September 1880. These jars appeared and “functioned for all intents like a glass-topped fruit jar with a wire bail [i.e., a wire carrying handle attached to the continuous-thread lid]” (Hawkins 2009:141). On November 11, 1880, the *American Pottery and Glass Ware Reporter* included an ad for the Crystal Milk Jar – a container that was virtually identical with the Crystal fruit jar but with a wire handle (Roller 1997a). On March 2, 1882, the Crystal Glass Co. advertised the Crystal Milk Jar in the *Crockery & Glass Journal* and still advertised the jar at least as late as January 3, 1884 (Hawkins 2009:141; Roller 1997a – Figure 10).



Figure 10 – March 2, 1882, ad (Roller 2011:152)

The authors of the Dairy Antique Site (2014) noted that “a special threaded glass lid was used for the milk jars that had two round glass lugs with a metal bail handle attached to them.” This use of glass lugs was different from the lids used on the fruit jars. They further stated that “one complaint by dairymen was although the bail handle made it easy to carry the jar, the bail also made it difficult to pack the jars closely in shipping boxes, especially if there was a lid on the box.” Finally, the researchers had

came across an article in an 1879 magazine that told of a dairy in New Jersey that was using the Crystal jar . . . to deliver milk to homes. . . . Unfortunately the name

of the dairy was not identified. The article said that the jars used by the New Jersey dairy were fitted with a carrying handle much like the bail on a pail. We have never heard of a Crystal jar embossed with a dairy name.

Along with the 1882 ad noted above, Roller (2011:152) included a mention of the Crystal Dairy Jar in *Dairy Farming*, a book written for the 1880 London Dairy Exposition and cited an ad in the *Dairyman's Manual* of 1892. This suggests that the jar continued to be made four years after both the Crystal Glass Co. and the Independent Glass Co. had closed – although the date could be a typo. The book noted that Jerry McCann had provided a Crystal Jar with a lid embossed “PURE –C&C– CREAM MILK WARRANTED” surrounding “CLEVELAND (arch) / OHIO (horizontal) / PAT'D DEC 17 1878 (inverted arch).” The lid had a wire-bale handle attached to embossed “knobs” (Figure 11).



Figure 11 – Crystal Milk Jar lid (Roller 2011:152)

### Jelly Jar

Creswick (1987a:38) added information on a jelly jar with a lid embossed “PATENTED JULY 28 1874 CRYSTAL” apparently in a circle around the top of the lid. This was a colorless tumbler, and the patent was assigned to the Crystal Glass Co. by Mark J. Bennett (see patent section below). Creswick described the process of using the lid:

After the glass was filled, and the cover in place, a gummed paper label was placed around the jar covering the joint between jar and lid. The label, printed with the names of fruits, could be marked to show the contents of the glass.



Figure 12 – Jelly jar (eBay)

On April 17, 1875, the Crystal Glass Co. advertised the “‘Crystal’ Jelly Tumbler, Glass Cover, M.J. Bennett’s Adhesive Combined Air-Tight Register Label for Fruit Jars & Jelly Glasses” in the *Crockery Journal* (Roller 1997a). Hawkins (2009:141) essentially agreed on all points (Figure 12).

## **Manufacturers**

Although the earlier glass house – the Crystal Glass Works – did not make the Crystal Jars, we have included its history here because it probably was the original firm leading to the establishment of the Crystal Glass Co. Also included is the history of the Independent Glass Co., another make of the Crystal Jar.

### **Crystal Glass Works, Pittsburgh (1868-1870)**

According to Hawkins (2009:140, 462), Frank Semple and George W. Fry operated the Crystal Glass Works as Semple & Fry from 1868 to 1869. In addition, Semple, Henry Clay (H.C.) Fry (George Fry's brother) and John D. Reynolds operated the Crystal Flint Glass Works. The two plants displayed their goods at the Merchants Hotel on Smithfield St. Semple & Fry made French Flint Glassware.

Both of the Fry Brothers left their respective firms in 1869. The new partnership of Semple, Reynolds & Co. (Frank Semple and George D. Reynolds) apparently operated both plants from 1869 to 1870. The Crystal Flint Glass Works was located at the intersection of Josephine and 18<sup>th</sup> streets in Birmingham (a Pittsburgh suburb). Plunkett & Co. had taken over the Crystal plant by at least 1872, but the Crystal Glass Works apparently became the Crystal Glass Co., operated by the Bennett family (Hawkins 2009:462). It is unclear whether the Crystal Glass Works was the factory situated beside the Bennett pottery or whether this was a second location (see next entry).

### **Crystal Glass Co., Pittsburgh (1870-1890)**

Daniel Bennett, William Bennett, and Mark J. Bennett (Daniel's son) founded the Crystal Glass Co. at Birmingham (later part of Pittsburgh) in 1870.<sup>1</sup> By 1871, Daniel was the president, with William as secretary and treasurer, Mark as the business agent, and John Henderson as the factory manager. The plant was on Washington St., between S. 16<sup>th</sup> and S. 17<sup>th</sup> Streets. The Bennetts previously manufactured pottery at Birmingham as Bennett & Brothers from 1844 to

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<sup>1</sup> Roller (1983:97) place the founding date at 1869.

1869, although the firm was originally at East Liverpool, Ohio. The brothers located the glass plant at the old pottery factory – possibly immediately beside it – and made Crystal fruit jars and milk jars that were actually fruit jars with wire-bale lids – along with tableware and lamp chimneys (Hawkins 2009:139; Roller 1997a).

In 1876, the factory used two furnaces and 20 pots to produce tableware (*Crockery and Glass Journal* 1876:15). The plant was noted on Warren St., between S. 16<sup>th</sup> (Franklin) and S. 17<sup>th</sup> (Franklin), but this was a change in street names – not a relocation. Although no researchers suggested a reason, the Independent Glass Co. made the Crystal Jars – apparently on contract with the Crystal Glass Co. – from 1881 to 1884. Crystal leased the factory to King, Son & Co. in August 1884, when the King plant burned to the ground. Crystal continued to sell its own products as well, and the King group moved out in January of 1885.<sup>2</sup> Crystal resumed production of Crystal Fruit Jars in March (Hawkins 2009:142; Roller 1983:97; Roller 1997a).

Thomas Evans & Co. leased the Crystal plant from August 1885 to February 1886. In February, the plant returned to fruit jar manufacture, and Crystal converted at least part of the factory to colored tableware by April of 1886. By 1887, however, the plant was only listed as making tableware. When the Farmers & Merchants Bank of Pittsburgh’s South Side failed in 1888, both Crystal and Independent became insolvent. Crystal sold the factory to W.C.E. Succop for \$21,000 on February 11, 1890. Succop razed the glass plant and converted the property to dwellings (Hawkins 2009:142; Roller 1983:97; 1997a).

## **Patents**

### **Edwin Bennett, February 6, 1866**

Edwin Bennett received Patent No. 52,379 for an “Improved Fruit Jar” on February 6, 1866. This was the beginning of glass designs by the Bennett family (at that time potters), and dealing with glass houses to make the jars may have been the impetus that spurred the family to leave the pottery business and open the glass factory. See the Adams & Co. section in the “A” volume for more information about these earlier jars.

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<sup>2</sup> Although Hawkins noted that Crystal sold its products while King, Son & Co. leased the plant, he could not determine *where* the firm was making them. It seems likely that Crystal was only selling items from its warehouse along with jars made by the Independent Glass Co.

### Jonathan Haley, July 30, 1872

Jonathan Haley received Patent No. 130,039 for an “Improvement in Glass Presses” on July 30, 1872. He assigned the patent to the Crystal Glass Co., Pittsburgh. Although Haley’s description is ambiguous about the intended products to be made on the press, it appears to have been aimed toward tableware (Figure 13). This was the same Haley who patented a glass machine with W.W. Bridgewater in 1901 – the machine apparently used to produce the Crystal MASON jars discussed below.

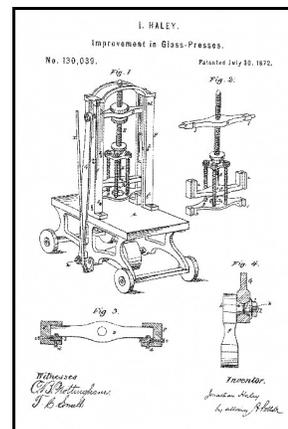


Figure 13 – Haley’s 1872 patent

### Mark Bennett, July 28, 1874

Mark J. Bennet filed for a patent on July 15, 1874, and received Patent No. 153,529 just 13 days later, on July 28 of the same year. The patent was for a “an Improvement in Jelly Glasses or Tumblers.” The straight-sided glass had a “slip top or cover” with “a sealing-strip applied on the outside of the tumbler.” He used a “regular label, bearing on one side the names of all fruits or vegetables usually put up in such glasses” that was “coated on the reverse side with mucilage, shellac, sealing-wax, or other adhesive material” to affix the label under the cover. The label acted as a seal between the lid and the glass while indicating the contents (Figure 14).

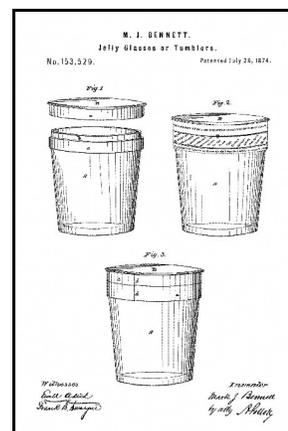


Figure 14 – Bennett’s 1874 patent

### Daniel Bennett, December 17, 1878

On July 19, 1878, Daniel Bennett filed for a patent for an “Improvement in the Manufacture of Glassware.” He received Patent No. 210,984 on December 17, 1878. According to Roller (1983:97) the patent was for a press mold to make lids for the Crystal fruit jar. This was the patent date that accompanied the jars (Figure 15).

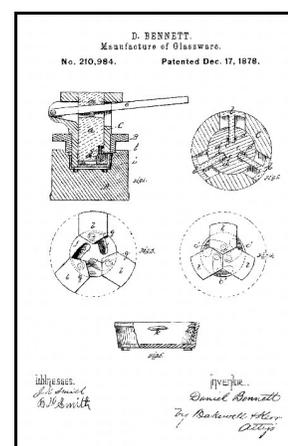


Figure 15 – Bennett’s 1878 patent

## **Independent Glass Co., Pittsburgh (1880-1888)**

Plunkett & Co., apparently consisting of F.T. Plunkett and Michael Ward, operated a glass works at the corner of 14<sup>th</sup> and Breed Streets, on Pittsburgh's South Side, by at least 1877. The plant was sold at a sheriff's sale about August 1, 1880, to a Mr. Dunlap. Although the exact mechanism is unclear, the Independent Glass Co. had taken possession of the factory by at least September 9.

Michael Ward and Henry F. Voigt (a cashier at Farmers & Merchants Bank) were the principals of the Independent Glass Co. The firm primarily made lamp chimneys, but it contracted with the Crystal Glass Co. in May 1881 to produce the Crystal Jars. By August, the plant devoted its entire production to the jars, although the factory had resumed making lamp chimneys and lantern globes by March 1882. As was often the case in the 19<sup>th</sup> century, an operating firm, Voigt, Ward & Co., had charge of the Independent Glass Co. When Ward invented a glass press in 1882, he assigned half the patent to Voigt, and William H. Brunt – secretary for the firm – assigned his 1882 jar lid patent to Voigt, Ward & Co. (Hawkins 2009:286). See patent section below for details.

The factory made “bubble tumblers” along with jars and chimneys at a single 10-pot furnace. By at least June 23, 1881, the *Crockery & Glass Journal* reported that Independent Glass was “busy on orders from the Crystal Glass Co.” Independent Glass made the Crystal Jars until the end of 1884 and made its own Independent Jars by at least April 17 of that year. The plant made the jars as well as lamp chimneys until it closed for the summer in May of 1887 and never reopened. Voigt was charged with embezzlement in 1888 in connection with the failure of the Farmers & Merchants Bank. He was arrested and jailed. The Independent Glass Co. factory was sold at a sheriff's sale in January 1889 (Creswick 1987a:90, 268; Hawkins 2009:286-287; Roller 1983:162, 167-168; n.d.).

## **Patents**

### **Michael Ward, October 24, 1882**

On July 27, 1882, Michael Ward applied for a patent for a “Glass-Press.” He received Patent No. 266,565 on October 24 of the same year. He assigned one-half of the rights to Henry

F. Voigt. The press was intended to make “female screw-threads in articles of glassware, such as fruit-jars and the like.” This was undoubtedly used for making lids for both the Independent Jars (Figure 16).

**William H. Brunt, December 12, 1882**

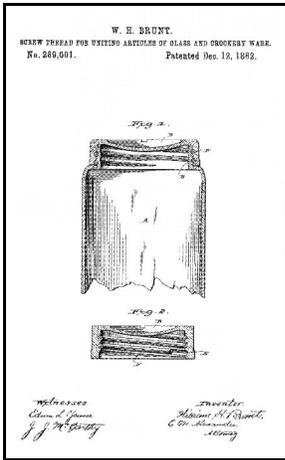


Figure 17 – Brunt’s 1882 patent

William H. Brunt filed for a patent for “Screw Thread for Uniting Articles of Glass and Crockery Ware” on October 24, 1882, and received Patent No. 269,001 on December 12 of the same year (Figure 17). A unique feature of this lid was a wire spiraling through the continuous threads that prevented the “disagreeable gritting which results from the rubbing together of glass surfaces” (Figure 18). Brunt was the secretary for the Independent Glass Co., and he assigned the patent to Voigt, Ward & Co. This was the

patent date embossed on Independent Jar lids (Roller n.d.).

**Containers & Marks**

**Independent Jar**

Toulouse (1969:159) listed a jar embossed “INDEPENDENT” in an arch on the front. He noted variations in flint and aqua colors. The glass screw cap was embossed “PAT OCT. 24 1882.” He noted that the jar was made by the Independent Glass Co., but the patent was the same as on the lids of the Franklin-Dexter jars. Other sources, however, noted that the Franklin-Dexter lids were embossed “PAT<sup>D</sup> AUG. 8<sup>TH</sup> 1865.” Toulouse noted a variation embossed “INDEPENDENT (arch) / JAR (horizontal)” made by the same firm (Figure 19). No other source mentioned a jar embossed “INDEPENDENT” without “JAR.”

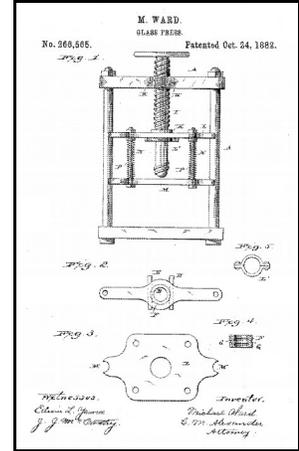


Figure 16 – Ward’s 1882 patent



Figure 18 – Wire in Independent Jar lid (North American Glass)

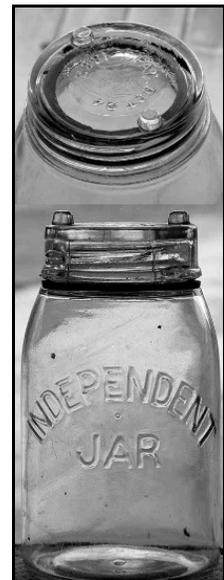


Figure 19 – Independent Jar (North American Glass)



Figure 20 – Independent Jar (Creswick 1987a:90)

Roller (1983:157) agreed that the shoulder-seal glass lids were embossed with the October 24, 1882 patent date, but he attributed it to Michael Ward’s patent of that year (see patent discussion below). Some of the lids were double-stamped – even though they were apparently all made on the Ward press (see Figure 19). Creswick (1987a:90) illustrated the jar and noted that some of the lids were cobalt blue (Figures 20). The Roller editors (2011:256-257) noted a single example of quart jar in



Figure 21 – Independent Jar (North American Glass)



Figure 22 – CCC jar & American Cough Drop jar (North American Glass)

cobalt blue as well as a colorless pint jar with a cobalt blue lid (Figure 21). Two interesting variations were embossed “CCC” horizontally on the front and “GREAT (arch) / AMERICAN (horizontal) / COUGH DROPS (inverted arch)” in a round plate, also on the front (Figure 22). They also noted two variations with no embossing on the jars. All of these had caps with the October 24, 1882, patent date.

### 3. CRYSTAL JAR CG – Crystal Glass Co., Pittsburgh (1885?-1887)

#### CRYSTAL JAR CG (1885?-1882)

Toulouse (1969:83-84) discussed a jar marked “CRYSTAL (arch) / JAR / CG (both horizontal)” on the front and a lid embossed “PATENTED DEC. 17, 1878” (Figure 23). He speculated that the jar was made by the Consolidated Fruit Jar Co. and suggested counter-intuitively that “‘CG’ may stand for Consolidated Glass” – a name that was never used by the firm. Roller (1983:97-98) also noted the jar but listed the maker as unknown. Creswick (1987a:38) illustrated two examples (see Figure 23). The Roller editors (2011:152) considered the “CG” jar to be a variation of the Crystal Jar described above. They noted both “CG” and “C•G” variations. Photos from North American Glass showed the “CG” with and without punctuation.

Aside from the addition of “CG” below “JAR,” these appear to be identical to the Crystal Jar made by the Crystal Glass Co. of Pittsburgh and are found with the same lids. Creswick stated that these were made by the Crystal Glass Co. of Pittsburgh, and the embossing on the lids supports that assertion – although we suggest that Crystal made the “CG” jars beginning in March 1885 to distinguish ones made by Crystal from those produced by Independent Glass. Leybourne (2008:118) added a variation with the “J” in “JAR” over a ghosted reversed “J.” See the history of the Crystal Glass Co. in the section above.

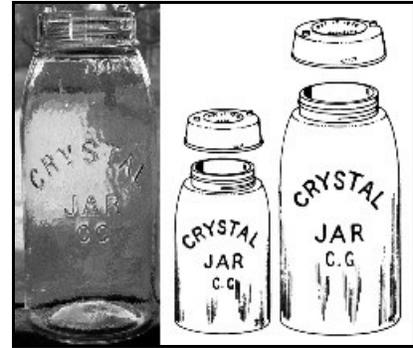


Figure 23 – Crystal Jar CG (North American Glass; Creswick 1987a:38)

#### 4. MASON’S CRYSTAL JAR – Crystal City Glass Co., Bowling Green, Ohio (1888-1892)

##### MASON’S CRYSTAL JAR

Toulouse (1969:84) noted a jar embossed “MASON’S (Crystal 2025b.wpdarch) / CRYSTAL / JAR (horizontal)” on the front. He suggested that the jar was made for the Consolidated Fruit Jar Co. as “probably Consolidated’s answer to the CRYSTAL of Hero’s Rowley, or vice versa.” We feel that this is highly unlikely. Roller (1983:98) added a CRYSTAL MASON and assumed that the Crystal Glass Co. (Pittsburgh) was the manufacturer. This was separate from the *Crystal* MASON described below, and it may have been a misunderstanding of the MASON’S CRYSTAL JAR. Examples sold at the North



Figure 24 – Mason’s Crystal Jar (North American Glass; Creswick 1987a:38)

American Glass auction had typical Mason shoulder seal lids (Figure 24). With one exception, the curvature of the shoulders in the three types of jars (CRYSTAL JAR, CRYSTAL JAR CG, AND MASON’S CRYSTAL JAR) were virtually identical. Creswick (1987a:38) illustrated an example, noted that it was a “Midget pint,” and dated it ca. 1878-1882, although she did not specify a manufacturer (see Figure 24).

Although the company identification is less certain than the other Crystal jar types, the Mason’s Crystal Jars were probably produced by the Crystal City Glass Co. at Bowling Green,

Ohio. Of the Crystal glass houses, the Crystal Glass Mfg. Co. at Camden, New Jersey, is the only one of our possibilities not specifically listed as making fruit jars – so we have eliminated it. The Canadian Crystal Glass Co. was not in business long enough to have made comparatively large quantities of the Mason’s Crystal Jars.

The Pittsburgh Crystal plant – certainly the manufacturer of the Crystal Jars – was already successful with that product and had no reason to try another one – although the possibility cannot be entirely ruled out. The final possibility was the Crystal City Glass Co., listed by Paquette (2002:150) as making pint Mason jars. Supporting Paquette, the *Bowling Green Daily Sentinel-Tribune* for May 5, 1891, announced that “The Crystal City Glass Co. will ship out a car-load of Mason fruit jars every day this week.” It is certainly possible – maybe even probable – that Crystal City also made the jars in other sizes. Crystal City certainly becomes the logical choice.

#### **Crystal City Glass Co., Bowling Green, Ohio (1888-1892)**

The Crystal City Glass Co. incorporated in November 1887, with Solon L. “S.L.” Boughton as the president, Henry Newland as vice president, Frank Boughton (son of S.L.) as secretary, and John R. Hankey as treasurer. The firm capitalized at \$25,000. None of the officers were glass makers, so they hired Jacob Bonshire, a former supervisor at Adams & Co. (Pittsburgh) and other factories, as plant manager. They began construction of the factory in mid-April 1888 and blew the first bottle on July 22 (Figure 25). The plant had five three-ton continuous tanks that produced pint Mason jars, flasks, bottles, and druggists’ sundries (Paquette 2002:149-150).

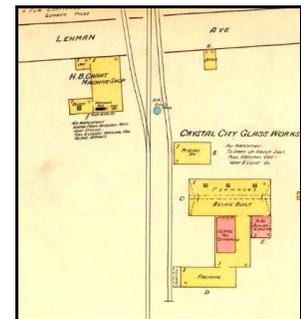


Figure 25 – Crystal City Glass Co. (Sanborn map, 1888)

The company’s non-union employees went on strike in February of 1889, causing a reorganization of the plant. Bonshire resigned and was replaced by Leonard Strickel. Oddly, the plant preferred small orders to large ones. Boughton told reporters that “there is better profit on small [orders]” (Paquette 2002:150-151). Problems with the natural gas supply and a decline in general glass prices placed the firm in financial trouble during the winter of 1889-1890. Strickel resigned to be replaced by Alfred A. Thurstin, but the financial decline continued through the next winter, forcing the plant to close on March 16, 1892. The plant reopened in the spring of

1893 but closed again on June 27 – never to reopen. John Giles purchased the plant and its equipment on September 2, 1893 (Paquette 2002:152-153). This period beginning in 1893 was known as the Panic (i.e., depression) of 1893, when numerous businesses failed.

## 5. Crystal MASON – Unknown Glass House (ca. 1910-ca. 1930)

### Crystal MASON

Roller (1983:98) noted that jars embossed “Crystal (upwardly slanted) / MASON (horizontal)” had a “smooth lip” – i.e., machine made – and that the closure was “uncertain, probably bead seal, zinc screw cap.” He added that “these are very scarce jars” but did not know the maker. Although the earlier study included a variation with “CRYSTAL” in capital letters, this was retracted in the 2011 update and probably did not exist. The Roller update (2011:153) used the same entry for the italicized “Crystal.”

In her first book, Creswick (1987a:38) discussed the jar but did not illustrate it. She described the lid as the same Patented Dec. 17, 1878, one used by the Pittsburgh Crystal Jar Co. and claimed that the jars were mouth blown (ground lip) with a Mason shoulder-seal finish and lid. Although Roller did not state a size, Creswick claimed that the jar was a “midget pint.” In her second book, Creswick (1987b:40) provided an illustration of the jar, showing a later-style probably tin lid and a bead-seal, continuous-thread finish (Figure 26). She noted the Crystal MASON as being machine made (smooth lip). Creswick must have been confused in the first volume; a lid patented in 1878 for a shoulder seal cannot be compatible with bead seal, first used in 1909. Unfortunately, McCann (2005) failed to illustrate the jar and included little information. He dated the jar ca. 1920 (almost certainly focusing on the bead-seal finish), colorless, and “available” for \$10-15. The five examples we have located have surfaced in the past few years.

We were able to locate three quart examples of the jar and two pints. All five had the same manufacturing characteristics, one that sets them apart from the vast majority of Mason jars. They were embossed “Crystal / MASON” with “Crystal” in an upwardly slanted font that had some serifs but



Figure 26 – Crystal Mason (Creswick 1987b:40; eBay)

was not cursive (see Figure 26). Although Creswick’s drawing showed a curl at the base of the “y,” the actual jars lacked the curl (see Figure 26). Even though each jar photo had the cap on, the finishes were clearly bead seals. Each jar had a horizontal seam at the bead seal, the heel, and another more faint seam at the shoulder (Figure 27). The shoulder seam on the quart jars was a half inch or so below the bead on the neck, but was at the widest part of the shoulder on the pint jars. In each case, the location of the shoulder seam was in line vertically with the seam at the center of the bead or further separated. The shoulder seam illustrated by Creswick was much lower on the jar than the one on an actual quart size.



Figure 27 – Crystal seams (eBay)

These seams indicated that the jars were made by an unusual machine. On a typical wide-mouth machine, a jar is made by five mold parts. The baseplate (virtually always a cup bottom by that time) left a horizontal seam around the heel. Two body parts created the main section of the jar, shoulder, and sometimes part of the neck, making two vertical side seams from the heel to the finish. A final two parts made the finish, leaving a horizontal seam at the base of the finish and two side seams running to the top of the jar. Typically, the same machine part that blew the air created the rim.

The machines that made these jars used the same technique and construction with one notable difference. The upper two mold pieces that created the finish stopped at the widest part of the finish, always leaving a distinct horizontal seam at that widest part. On a rounded, single-part finish, that meant a horizontal seam at the widest part of the rounded section. On these Crystal Mason jars with the bead seal finish, the widest part was the bead – showing a distinct seam (Figure 28). On the next two pieces – that created the body section – each side was made in two pieces, but these two stayed together – unlike the other machines that had these parts made of a single piece. The joint between these two pieces was a vertical line that met at the shoulder. This created a fine “seam” line that was much more indistinct than the typical seam (Figure 29).

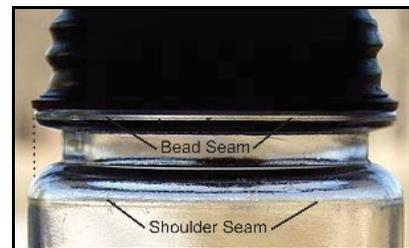


Figure 28 – Relationship between the bead seam and the shoulder seam

One seller said his jar was “topped by a . . . zinc lid that is embossed in script Ball on the exterior with a perfect white porcelain lined interior. There is no reason to believe that the Ball Brothers made these jars; the lid was almost certainly added later by a user or owner. Roller had unfettered access to Ball production records and would have mentioned this jar if he had located it in their records. However, the shoulder seams may provide a strong clue to the maker. The Haley-Bridgewater machine, discussed in the Akron Glass & Machinery Co. section below, is the only one we have found that would have left a horizontal seam on the shoulder. Our searches only discovered three glass houses that used the Haley-Bridgewater machines to make jars: the Akron Glass & Machinery Co. the Cumberland Glass Mfg. Co., and the L.E. Smith Glass Co.

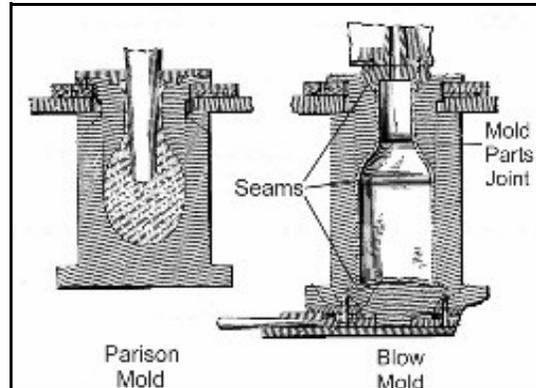


Figure 29 – Joint that created the shoulder seam (Haley-Bridgewater 1900 patent)

The Akron firm made and sold the machines, but it also produced Mason jars from its inception in 1901 apparently to its demise in 1911. L.E. Smith probably obtained one of the Haley-Bridgewater machines about the time the firm moved to Mt. Pleasant, Pennsylvania, in 1910. Smith had recently purchased the Anchor Glass Co. and had begun making the Anchor Mason jars. Only a small percentage of the Anchor jars had the faint shoulder seam of the Haley-Bridgewater machine, so the firm likely only had one of these machines.

Cumberland Glass began using the machine in 1898, two years before Haley and Bridgewater received the patent. The *Bridgeton Pioneer* described the testing of the machine on June 23 of that year. Although we have no record of when Cumberland ceased the use of the machine, the plant closed in 1920, and a 19-year machine life was not unusual. Although Cumberland made fruit jars by at least 1904 (probably much earlier), we have no evidence for Mason jars until the 1911 catalog. That catalog included a drawing of a shoulder-seal Mason jar with the Hero cross above the word “MASON” (Figure 30). Since the Hero Fruit Jar Co. had closed in 1909, the drawing must have been carried forward from an older catalog. An ad in the August 26, 1912, edition of the *Camden Courier-Post*, showed that Cumberland continued to make Mason jars at least that long.



Figure 30 – Mason jar (Cumberland Glass Mfg. Co. 1911 catalog)

In our first study, we suggested the Crystal Glass Co. at Westminister, British Columbia, as the most likely maker of these jars. The factory made fruit jars, and the firm was very short lived – actually only producing glass from July 1907 to May 1908. Although the accounts, including the few newspaper articles, mentioned fruit jar production for Crystal Glass, *none* suggest Mason jars specifically. Since the invention of the bead seal did not occur until 1909, the Canadian firm could not have been the maker. See the history section below for the fruit jars actually made by the Canadian Crystal Glass. Because the identification of the manufacturer of the Crystal MASON is less certain than most, we have included the histories of all three contenders below.

### **Coincidence?**

Every story should have its irony. In this case, it is ironic that Jonathan Haley, the main push behind the invention of the Haley-Bridgewater jar machine, assigned an early patent to the Crystal Glass Co. of Pittsburgh. Crystal Glass produced Crystal jars during the 1880s but did not remain in business long enough to make use of the later machine. Typically, when an inventor assigns a patent to a business, it means that person was an employee of that firm. So, Haley received at least some of his training from the Crystal Glass Co., later making a machine used to produce Crystal MASON jars for a separate company.

In 1900, he patented a jar machine with H.H. Bridgewater and opened the Akron Glass & Machinery Co. the following year. The machine left a faint horizontal seam on the shoulders of jars, and Akron Glass made Mason jars by at least 1902. The Crystal MASON jars could not have been made prior to the 1909 Schies patent that first put the the Mason bead seal on the market via the Greenfield Fruit Jar & Glass Co.

As noted above, we have only discovered three glass houses that used the Haley-Bridgewater machine: the Akron Glass & Machinery Co., the Cumberland Glass Mfg. Co., and the L.E. Smith Glass Co. Of the three, only Haley would have had some incentive to have chosen the name “Crystal” after his work for the Crystal Glass Co. of Pittsburgh. Cumberland Glass, open until 1920, seems like a more logical choice to have made the jars, continuing in production for 12 years after the introduction of the bead seal. But, why would Cumberland have chosen the name “Crystal?”

## Possible Manufacturers

As noted above, the final choice for the producer of the Crystal MASON jars is not as absolute as we prefer. As a result, we have included all three contenders, including the Canadian plant that was almost certainly incorrect. The plants below are addressed in alphabetical order.

### **Akron Glass & Machinery Co., Akron, Ohio (1901-1911)**

On January 23, 1901, the *Akron Evening Times* reported that the Akron Glass & Machinery Co. “was organized last night.” J.B. Wright was president and treasurer with C.C. Benner as secretary. Additional directors were Jonathan Haley, H.H. Bridgewater, and Clifford Haley. The firm found land near Cherry St. “and will erect a factory for the manufacture of bottles, jars, etc., by process invented by Jonathan Haley, a director of the company.”

The *Akron Beacon Journal* added on March 20, 1902, that the firm “incorporated a year ago with a capital of \$50,000, and erected a plant near Cherry street and the canal. The plant was put into operation last May.” John B. Wright was now president, with C.C. Benner as secretary. Of particular interest to our study, the newspaper further stated, “In order to test [the machines] Mason jars are made, although every form of glassware can be made by simply changing the mold. . . . one of these machines was running at the rate of 5,000 quart fruit jars per day.” So, there is absolutely no doubt that the Haley-Bridgewater machines produced not only fruit jars but MASON jars (Figure 31).

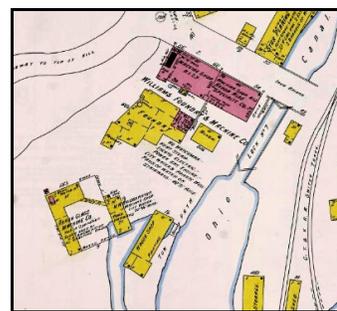


Figure 31 – Akron Glass & Mfg. Co. (Sanborn map, 1904)

However, the life of the firm was short. On September 15, 1911, the *Akron Beacon Journal* posted a notice of the final stockholders’ meeting to dissolve the Akron Glass & Machinery Co. on September 30. On September 2, 1911, the State of Ohio formally withdrew the corporate charter for the Akron Glass & Machinery Co.

## Patents

Since we have discussed the Haley-Bridgewater 1900 and 1902 patents in some detail in both the Cumberland Glass Mfg. Co. section and in our study of Bromo-Seltzer jars (Lockhart et

al. 2014), we will only address them briefly here. Jonathan Haley and Harry H. Bridgewater applied for a patent for a “Machine for Forming Hollow Glass Articles” on December 28, 1898, and received Patent No. 654,451 a year and a half later on July 24, 1900 (Figure 32). Oddly, Haley assigned his part of the patent to Bridgewater. Newspaper accounts repeatedly claimed Haley as the machine’s inventor, and Bridgewater seems to have been mechanic and/or machinist who actually created the parts and assembled the apparatus. Bridgewater also may have been more business inclined. The 1900 machine was limited to wide-mouth bottles, and as described above, the parts of the molds for this machine would have left a faint seam at the shoulder – apparently unique to this machine and the one that followed (see Figure 29).

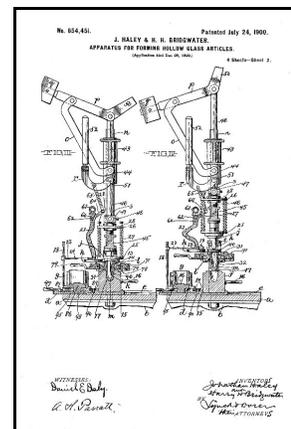


Figure 32 – Haley-Bridgewater 1800 patent

Their 1902 patent was similar, but it was adapted to create narrow-mouth bottles such as beer and soda containers. Born 1841, Haley died in 1904 – at the age of 63. He received his first glass-related patent for a glass press on October 1, 1867, and made numerous other glass-related inventions. He would have been 31 when he received the 1872 patent used by the Crystal Glass Co. He teamed up with Bridgewater later.

### **Crystal Glass Co., Ltd., New Westminister, British Columbia (1906-1908)**

Although Toulouse (1971:36) and Creswick (1987b:158) dated the Crystal Glass Co., Ltd., from 1907 to 1910, King (1987:118), the Canadian expert, noted dates of 1906 to 1908. The company was incorporated on June 14, 1906, with a capital of \$150,000, using the former American Can Co. facility at 772 Brunette St., New Westminister, British Columbia, as the factory. The plant consisted of two corrugated-iron buildings, each 200 feet in length and 90 feet wide. Donald Lamont managed the factory and had a continuous tank built with six rings. About 100 workers made flint glass at the tank. Although the plant produced fruit jars and wide-mouth ware by machine, beer, soda, wine, and brandy bottles were all mouth blown (King 1987:118-120).

The first fires were lit in early July 1907. The plant made ca. 2,500 fruit jars and a similar amount of beer bottles each day. E. Cook was the president, with N.M. Garland as vice president and J.S. Henderson as secretary and treasurer (King 1987:118-120). On May 7, 1908, the firm

announced that it would be put into the hands of a receiver – a sure indication that production had stopped before that point (*Vancouver Daily News Advisor* 5/7/1908). The plant had been open no longer than ten months. Toulouse (1971:36) noted that the factory was listed as making “flint glass in all lines.”

### Coronet Jars

The Crystal Glass Co. of British Columbia very likely produced Coronet jars – jars embossed “CORONET” below a drawing of a crown on the front (Figure 33). According to Roller (198:95), “these scarce jars are almost always found in British Columbia. They were advertised in a 1909 catalog of Kelly, Douglas & Co., wholesale grocers of Vancouver, British Columbia.” He described the closure as a “straddle lid top seal, glass lid and metal screw band” and identified the Crystal Glass Co. of New Westminster as the manufacturer. Since the Crystal Glass Co. was in production less than a year, it seems unlikely that the firm would have made *two* very similar jars during that short a period. In addition, we have found no evidence that the Crystal MASON jars were found in Canada – much less British Columbia.



Figure 33 – Coronet jar (North American Glass)

Creswick (1987b:37) illustrated three examples of the “CORONET” below a drawing of a crown on the front (Figure 34). The jars had no other markings, but Creswick attributed them to the Crystal Glass Co., New Westminster, British Columbia – although she gave no reason for the attribution. The machine-made jars (smooth lip) were colorless but would solarize to an amethyst hue.

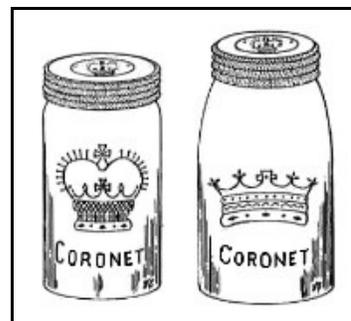


Figure 34 – Coronet jars (Creswick 1987a:37)

Ryder (1978) added an important aspect, deriving her information from several later books on Canadian fruit jars. She claimed that the Coronet

was first made by the Crystal Glass Co., New Westminster, B.C. It has a straight oval shaped design beneath the crown in which there are five dots. A little later, these were made by the Diamond Flint Glass Co., which listed this type in addition to others. In this time the oval shape was curved downward at the ends.

### **Cumberland Glass Mfg. Co., Bridgeton, New Jersey (1885-1920)**

Open in 1885, the plant made a variety of bottles as well as fruit jars (by at least 1904, probably much earlier), including pharmaceuticals, proprietaries, prescriptions, toilets, cosmetics, panels, and catsups in green, amber, and flint glass, blue Bromo-Seltzers, gallons, five-gallons, beers, liquors, and inks. In 1898, the plant adopted a Haley-Bridgewater machine to make wide-mouth ware – adding more machines over time. At some point, probably prior to 1910, Cumberland Glass began using the machine to make Bromo-Seltzer bottles and was the main supplier for the Emerson Drug Corp. until Emerson created the Maryland Glass Corp. to supply its own bottles in 1907. The Illinois Glass Co. bought the firm in 1920. See the section on Cumberland Glass for more information.

We have made arguments in both the Cumberland Glass Mfg. Co. section and our study on Bromo Seltzer jars/bottles (Lockhart et al. 1914) that Cumberland produced the Bromo bottles with an extra seam at the shoulder. Assuming that Cumberland continued to operate the machine or machines between ca. 1910 and the plant's closure in 1920, Cumberland Glass could have produced Crystal MASON jars with exactly that type of shoulder seam. The Akron Glass & Machinery Co. not only manufactured the Haley-Bridgewater machines, it also produced Mason jars, demonstrating beyond a doubt that the machines could produce such jars.

### **L.E. Smith Glass Co., Mt. Pleasant, Pennsylvania (1910-2010)**

Smith's predecessor, the Anchor Glass Co., opened at Mt. Pleasant, Pennsylvania, in 1907 and sold to L.E. Smith just two years later in 1909. The plant made jars embossed "ANCHOR / MASON / PATENTED" on the side. Smith meanwhile also had opened a factory in 1907 at Jeanette, Pennsylvania, but he sold that operation when he purchased Anchor Glass and moved his business to Mt. Pleasant. Smith made a variety of tumblers and glass ware, adding the Anchor Mason jars when he took over Anchor Glass. When the plant burned in 1913, many of the tools remained useable, so Smith continued in production outside. The jar machines, however, apparently were destroyed, and Smith never resumed jar manufacture, although the firm remained in business until 2010. For more information about both firms, see the section on the Anchor Glass Co.

## Discussion and Conclusions

As noted in the sections above, we have assigned manufacturers to all five variations of the Crystal jars. Also, as noted above, the jar embossed “CRYSTAL” with no other words had patent dates that indicated a manufacture by the Hero Glass Works, so that will be discussed in the Hero section. The other four variations require additional discussion.

### CRYSTAL JAR

The combination of the patent date – consistently embossed on lids of the “CRYSTAL JAR” – and illustrated advertisements leave no question whatsoever that these were made by the Crystal Glass Co. at Pittsburgh. However, we question Roller’s dates for Crystal Jar manufacture, and two tables (Table 1 and Table 2) summarize the details of events and jar production to help clarify some issues. The fact that two different glass houses made the jars further complicates the situation.

**Table 1 – Probable Manufacturers of Crystal Jars**

Jar Variations	Factory	Location	Date Range
CRYSTAL	Hero Glass Works	Philadelphia	ca. 1873-1883
CRYSTAL JAR	Crystal Glass Co.	Pittsburgh	1879-1884*
CRYSTAL JAR	Independent Glass Co.	Pittsburgh	1881-1884
CRYSTAL (Milk) JAR	Crystal Glass Co.	Pittsburgh	1879-1884; 1885-87
CRYSTAL (Jelly Jar)	Crystal Glass Co.	Pittsburgh	1874-1884; 1885-87
CRYSTAL JAR CG	Crystal Glass Co.	Pittsburgh	1885-1887
MASON’S CRYSTAL JAR	Crystal City Glass Co.	Bowling Green, Ohio	1888-1892
Crystal MASON	Akron Glass & Machinery Co.	Akron, Ohio	1909-1911
INDEPENDENT JAR	Independent Glass Co.	Pittsburgh	1884-1887

\* Crystal Glass Co. may have ceased production of the fruit jars in 1881.

**Table 2 – Crystal Jar Timeline**

Date	Event
December 17, 1878	Daniel Bennett received Patent No. 210,984 for a press-mold to make Crystal Jars
June 5, 1879	Crystal Glass Co. ad for Crystal Jars
1879	Crystal Milk Jar used by a dairy in New Jersey
May 1881	Crystal contracted with Independent Glass Co. to make Crystal Jars
September 1880	Crystal Glass Co. ad for Crystal Milk Jars
March 2, 1882	Crystal Glass Co. ad for Crystal Milk Jars
March 2, 1882	Independent Glass Co. ad for Crystal Jars
January 3, 1884	Crystal Glass Co. ad for Crystal fruit and milk jars
January 31, 1884	Independent Glass Co. ad for Crystal Jars
August 1884	King, Son & Co. leased Crystal Glass Co.
January 1885	King, Son & Co. lease ended
March 1885	Crystal Glass Co. resumed production of Crystal Jars
August 1885	Thomas Evans & Co. leased the Crystal Glass Co. plant
February 1886	Thomas Evans & Co. lease ended
April 1886	Crystal Glass Co. resumed production of Crystal Jars
1887	Crystal was only listed as making tableware
1888	Crystal Glass Co. ceased production

Roller used dates of 1879-1882 and 1885-1888 for the production of the jars by Crystal, with the Independent Glass Co. making the same jars from at least July 1881 to late 1884. The dates for the Independent Glass Co. production are solidly supported by historical advertising and articles. Various sources show that Crystal Glass made both the fruit jars and milk jars during 1879. Meanwhile, Crystal licensed the Independent Glass Co. to make the Crystal *fruit* jars by at least July of 1881. Roller (1997a) noted ads from Crystal Glass for the milk jars on March 2, 1882, and for *both* milk and fruit jars on January 3, 1884.

This suggests that Crystal had sublet the production of fruit jars to Independent Glass in mid-1881 but had resumed production of those jars at some point – at least early 1884 and was making glassware until at least May 1 of that year. The plant certainly stopped manufacture of the jars during the period between early August of 1884, when King, Son & Co. leased the plant and January of 1885, when Crystal resumed its own production. Milk jar manufacture continued until at least March 1882 and either resumed in January 1884 or had remained during that entire period. None of the sources suggested milk jar production by the Independent Glass Co.

It seems likely that the demand for the jars was so great that the Bennett family sublet production of the jars to the nearby Independent Glass Co. to augment the supply – while continuing its own production at least until 1882. Although we have *no* data for 1883, Independent Glass became the sole producer from mid-1884 to the end of the year. When Crystal resumed production, the firm must have retracted the permission to the Independent Glass Co. Roller's (1983:97; 2011:152) phrasing – “Crystal had expressed regret for not being able to meet the demand for their jars in 1884 but stated that their own jars were better than they could get from other manufacturers” – suggests that Crystal was *only* out of production of the jars for the one-year period when King, Son & Co. leased the plant. Thus, the first phase of manufacture of both types of jars extended from 1879 to 1884.

The second period in question was from August 1885 to February 1886, when Crystal leased its plant to Thomas Evans & Co. Roller seemed to believe that Crystal continued production during that period, although we can find no supporting evidence for any manufacture during that time. It seems likely that Crystal Jars were off the market during this six-month period – unless the Independent Glass Co. resumed production, or Crystal Glass sold previously manufactured jars that were stored in a warehouse. It seems logical that Crystal resumed manufacture of the jars after February 1886 and continued until the firm apparently discontinued jar production in 1887. Hawkins (2009:142) noted that “whenever the Crystal Glass Co. was operating the works, they continued to produce the Crystal fruit jar and their jelly glass tumblers.”

The jars embossed “CRYSTAL / JAR / CG” were almost certainly made by the Pittsburgh Crystal Glass Co., since they had the same patent date on the lids. As noted above, in 1884, Crystal claimed that the jars produced at its own factory were superior to the Crystal Jars made by “other” plants – a direct stab at the Independent Glass Co. It is thus possible that the

“CG” jars were made after Crystal resumed production in March 1885. The “CG” would have distinguished the Crystal Glass Co. jars from those made by the Independent Glass Co. Unfortunately, we have no historical documentation to support this idea.

## **INDEPENDENT JAR**

Each Independent Jar lid was embossed with the October 24, 1882, patent for a jar manufacturing machine. However, the earliest date we have found for actual production of the jars was April 17, 1884, apparently in anticipation of the Crystal Glass Co. resumption of manufacture of the Crystal Jars. Independent Glass made the Independent Jars until the factory closed in mid-1887.

### **Crystal and Independent Jar Lids**

The similarities between the lids of the Crystal Jars and Independent Jars is unmistakable (Figure 35). Externally, they are virtually identical, although the Crystal Jar lid has internal lugs, where the Independent Jar lid has continuous threads. The Crystal Jar lid also lacks the wire insert. It is apparent that Ward and Brunt based their ideas for the press and lid for the Independent Jar directly from the Crystal Jar lids – that their factory was making for Crystal Glass. This could even have created a breach between the two firms and caused Crystal to withdraw the contract that allowed the Independent Glass Co. to make the Crystal Jar.



Figure 35 – Crystal & Independent jar lids (North American Glass)

## **MASON’S CRYSTAL JAR**

Our identification for this factory is one of the least solid of any in this study. These jars were made in sufficient quantities that a dozen or so examples have been auctioned by North American Glass. Thus, we eliminated the Canadian Crystal Jar Co. as being in business for two short a period (less than a year) and because they made jars by machine. The Crystal Glass Mfg. Co. at Camden, New Jersey, was also only in production for about two years and was listed as

making a variety of bottles but no fruit jars. The Crystal Glass Co. at Pittsburgh is well documented for the Crystal Jar – as discussed above – and was unlikely to have made this different model. This leaves the Crystal City Glass Co. of Bowling Green, Ohio – 1888-1892 – a firm that made pint Mason jars as well as producing Mason jars (size unspecified) in quantity. Although this identification is very circumstantial, it remains the best choice of the available glass houses. The Pittsburgh plant, however, may not be completely eliminated.

## Crystal MASON

Although our initial study suggested that the Crystal Jar Co. at British Columbia was the manufacturer of the *Crystal* Mason Jar, new evidence makes this highly unlikely – especially the lack of any special reports of the jars from Canada. In addition, the standard U.S. diameter (70mm) zinc screw caps usually do not fit well on Canadian screw-threaded jars. The bead seal finish on the jars makes it clear that they were made after the close of the Canadian firm.

Since the bead seal (found on this jar) was first used in 1909, the jars had to have been made after that time. The horizontal seam at the shoulder only was made by one wide-mouth machine that we have discovered – the Haley-Bridgewater machine patented in 1900. So far, the only users of the machine that we have discovered were the Akron Glass & Machinery Co., the manufacturer’s of the machines, the Cumberland Glass Mfg. Co., Bridgeport, Connecticut, and the L.E. Smith Glass Co., Mt. Pleasant, Pennsylvania. A review of the development of the bead seal may be useful at this point.

### The Development of the Mason Bead Seal

John Schies applied for a patent on August 23, 1909, and received Patent No. 941,538 for a “Jar-Closure” on November 30, 1909 (Figure 36). This was the patent that created the bead seal used on Mason jars – a V-shaped bead of glass that wrapped horizontally around the outside of the neck at the base of a continuous-thread finish to allow a jar to seal above the shoulder. In Schies’s words, “A sealing ring 19 of rubber or suitable composition is received between the lower flaring foot 20 of the screw top and the ledge 9 on the outer face of the lip of the jar. In this manner, a secure seal is formed for the jar.”

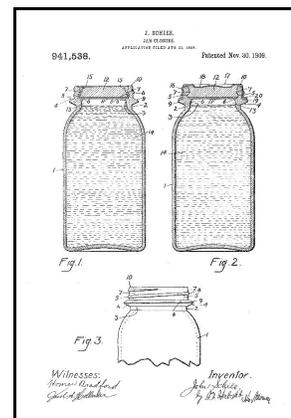


Figure 36 – Schies 1909 patent

Although Schies was most excited about his technique for sealing in the contents of the jar, collectors and researchers are much more interested in the way he sealed the jar, itself. Schies did not assign his patent to a glass house, showing that he operated independently. He licensed at least three glass manufacturers to use the seal:

Greenfield Fruit Jar & Bottle Co., Greenfield, Indiana (1902-1909)

BOYD PERFECT MASON

As shown by a 1909 ad from Greenfield discovered by Dick Roller, Greenfield probably was the first to receive a license, certainly not an exclusive one. The license likely shifted to the Ball Brothers when the Balls purchased Greenfield later that year. Since Schies lived in Anderson, Indiana, when he received the patent, he likely approached Greenfield – only 20 miles south of his location – as his first customer.

L.E. Smith Glass Co., Mt. Pleasant, Pennsylvania (1910-2010)

ANCHOR MASON PATENT

L.E. Smith took over the Anchor Mason Patent jar production from the Anchor Glass Co. in 1909 and may have become Schies's next customer. Lockhart & Bernas (2013 revised 2021) dated the Anchor Mason jars with bead-seal finishes made on the Haley-Bridgewater machines from 1910 to ca. 1915. The plant made other Anchor Mason jars with bead seals on more typical machines.

Akron Glass & Machinery Co., Akron, Ohio (1901-1909) *or*  
Cumberland Glass Mfg. Co., Bridgeton, New Jersey (1885-1920)

Crystal MASON

Although the Akron firm made Mason jars from its inception, it could only have produced Crystal MASON jars between 1909 and its closure in 1911. Since Crystal MASON jars did not appear in Cumberland's 1911 catalog, Cumberland could not have made the jars earlier than 1912, possibly any time between then and 1920. Both firms used the Haley-Bridgewater machines that created the seam around the bead and faint seam on the shoulder.

Although we searched for other machines that would have left a similar mark, the only ones even close left a horizontal seam at the base of the finish – *notably* higher than the shoulder seams on the Crystal MASON jars. We also searched for other users of the Haley-Bridgewater machines with no luck.

### Sorting Out the Final Candidates

In summary, our searches turned up three final candidates – all glass houses that made Mason jars *and* used the Haley-Bridgewater machines.

#### L.E. Smith Glass Co.

A review of the Mason jars embossed “ANCHOR (horizontal) / MASON (slight arch) / PATENT (horizontal)” on the front shows that some of the jars were made with a horizontal seam around the bead seal and a faint horizontal seam on the sharply angled shoulder plus a typical machine valve scar on the base (Figures 37 & 38). Although the Anchor Glass Co., Mt. Pleasant, Pennsylvania, made the original jars with embossed “ropes” on the letters for the word “ANCHOR,” these used the Mason shoulder seal and were mouth blown.

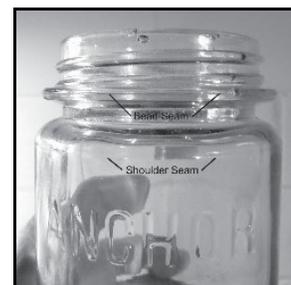


Figure 37 – Seams on Anchor Mason jar (Barry Bernas)

When the L.E. Smith Glass Co., Mt. Pleasant, Pennsylvania (1910-2010), took over Anchor Glass in 1909, the plant continued to produce the Anchor Mason jars. As noted just above, a few of these jars – prior to the burning of the plant in 1913 – used Mason bead seals and had the requisite faint shoulder seam. While we have not discovered an exact reference to the Haley-Bridgewater machine, the plant used at least one of those, probably *only* one, since the vast majority of the bead-seal jars had *no* shoulder seam – not a characteristic of the Haley-Bridgewater machine. Since Smith already made a line of Mason jars (Anchor Masons) from 1910 to the burning of the plant in 1913, it is unlikely that the factory introduced another line – making L.E. Smith the least likely of the three.



Figure 38 – Base of Anchor Mason jar (Barry Bernas)

### **Cumberland Glass Mfg. Co.**

The Cumberland Glass Mfg. Co. was the earliest user of the Haley-Bridgewater machine, testing the device in mid-1898 and ordering at least one of the machines soon after. Cumberland used the machines to produce Bromo-Seltzer bottles until 1907. Cumberland's 1911 catalog illustrated a shoulder-seal Mason jar but not a Crystal Mason, and the firm advertised Mason jars in 1912. Although Cumberland *could* have produced the Crystal Masons on the Haley-Bridgewater machines any time between 1912 and 1920, we have no evidence that they did so, and the firm's major reason for adopting the machines was for the Bromo bottles.

### **Akron Glass & Machinery Co.**

Although Haley and Bridgewater created their machine by mid-1898, they did not receive their patent until 1900, opening the Akron Glass & Machinery Co. in 1901 to make the machines as well as jars and possibly bottles to demonstrate the quality of the glass. By at least 1902, the plant made Mason jars to test the machines. Of course, those had to be shoulder-seal Masons.

Although we have no further evidence, the Akron firm certainly *could* have made the Crystal Mason jars. It is certain that Schies distributed a license (or permission) to use the bead seal to almost any glass house that showed interest rather than granting anyone an exclusive license. Use of the bead seal also spread rapidly. Schies received his patent in 1909, and jars using it appeared in the Greenfield Fruit Jar & Bottle Co. in its 1909 catalog. Of course, Greenfield was only 20 miles south of Schies. By no later than 1913, the L.E. Smith Glass Co. made Anchor Mason jars with the bead seal, showing that the process had spread at least as far as Mt. Pleasant, Pennsylvania, by that point.

This is important because it demonstrates that the Akron (Ohio) firm certainly had access to the bead seal process. A manufacture by the Akron facility would also explain the scarcity of the Crystal jars – likely *only* made as demonstrations and only sometime during the 1909-1911 period. These may have been sent out as samples to various glass houses, or they may have been sold to the public for a very limited period. The final reason to suspect Akron Glass as the producer is the use of the name "Crystal." As noted above, Haley worked for the Crystal Glass Co. at Pittsburgh at least during the early 1870s, so he is the only one in this study (i.e., the only one we have discovered) who had a reason to focus on the term "Crystal."

## **Crystal MASON Conclusion**

Actually, focused best guess would be a better term than conclusion because there is insufficient evidence to be certain. However, L.E. Smith Glass was the least likely, since the firm already made its own line of Anchor Mason jars. It also seems less likely that the Cumberland Glass Mfg. Co. produced the Crystal MASON jars. Mason jars were certainly not a focus for the plant, and there was no reason for the use of the word “Crystal.” Finally, the Cumberland factory was huge, so we would expect any product to have been sold in large numbers. Still, we cannot entirely rule out Cumberland as the possible maker.

That leaves the Akron Glass & Machinery Co., a small firm with a small factory, making glass-blowing machines as its primary concern. Since the plant produced Mason jars as its demonstration item, and it closed in 1911, it could only have made the Crystal MASON jars during a two-year period at maximum, probably less than that. Finally, the Akron concern is the only one with a reason to have chosen “Crystal” as a name due to Haley’s past connection with the Crystal Glass Co.

Even though we have evaluated the evidence to the best of our abilities, there still remains one other possibility: The maker of the Crystal MASON jar may have been a currently unknown small glass house that had some reason to select the name “Crystal” – a reason we currently could not even guess.

## **Acknowledgments**

We wish to express our gratitude to Doug Leybourne for allowing us to use the Alice Creswick drawings and to Greg Spurgeon for granting us permission to use the North American Glass photos. These two resources provide an incredible information base.

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First Published 10/10/2014; Last updated 2/20/2025