

The Glass Factories and Bottles of Alexander and David H. Chambers

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with contributions by Ken Farnsworth, Jay Hawkins and Tod von Mechow

The series of factories operated by the Chambers family remained in business for more than half a century. The final company – A.&D.H. Chambers – used the same manufacturer’s mark throughout most of its existence as well as embossing its full name on some bottles and jars. Throughout the history of the first three firms, window glass was the primary product – although the factories also turned out numerous bottles and fruit jars. After 1889, the succeeding firms returned to almost exclusive window glass production.

Histories

The Chambers family operated a total of five glass houses – often in conjunction with one or more other glass makers – over a period of 58 years. Although the primary product was usually window glass, the third firm manufactured a large number of containers.

Anderson, Chambers & Co., Pittsburgh, Pennsylvania (1841-1843)

Anderson, Chambers & Co. was probably open from 1841 to 1843, although the firm may have dissolved in late 1842. Built on the Southside at the corner of South Sixth and Bingham Streets, the plant produced vials and window glass. This appears to be the factory later known as the Pittsburgh Glass Works (Hawkins 2009:33; Thurston 1888; McKearin & Wilson 1978:155).

Alexander Chambers was born in Ireland in 1819, although the family migrated to Pittsburgh when he was a child (Figure 1). He was educated in the common schools and set to work in a glass factory as a boy. During the Civil War, he equipped “several companies” for the Union side at his own expense (Seymour 1885:377). Seymour (1885:378-379) described Chambers as

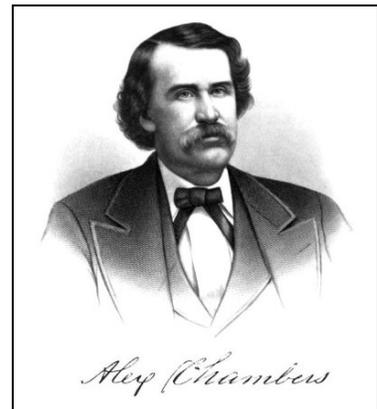


Figure 1 – Alexander Chambers
(Seymour 1885:377)

“one of the most generous-hearted men that could be anywhere found. . . . He was noted for his generous industry and indomitable pluck, while his uprightness of character was recognized and acknowledged by all. . . . His mind was acute, and active suggesting methods in the manufacture of glass calculated to lessen the cost and improve the quality. He was essentially practical

Anderson may have been the Alexander Anderson of Bakewells & Anderson, open from 1832 to 1836. After leaving Bakewells, Anderson partnered with John Robinson and his son under the name Robinson, Anderson & Co. from 1836 to 1837 at the Stourbridge Flint Glass Works. He apparently next joined the Chambers brothers – briefly (Hawkins 2009:33). A 1909 article (below), however, suggested that the partner was Dr. William Anderson.

Chambers, Agnew & Co. (1843-ca. 1852)

The major Pittsburgh sources (Creswick 1987a:4, 278; *Crockery and Glass Journal* 1876:15; Innes 1976:36; McKearin & Wilson 1978:155; McKearin and McKearin 1941:604; Van Rensselaer 1969:186) disagree on the dates that the firm they called “Chambers & Agnew” was in business. All, however, confirm that Alexander Chambers, his brother, David, and John Agnew were involved in a small glasshouse at Pittsburgh (apparently the same one previously occupied by Anderson, Chambers & Co.), and the dates range from 1841 to 1843. The 1841 date almost certainly reflects the founding of the earlier firm (Anderson, Chambers & Co.). Early sources (e.g., Seymour 1855:377) place the opening date for Chamber, Agnew & Co at 1843, and we have accepted that date.

Although earlier sources called the firm Chambers & Agnew, Hawkins (2009:125) identified the company as Chambers, Agnew & Co. and stated that it was briefly referred to as Chambers & Agnew. An 1847 ad, reproduced in Hawkins (2009:126) confirmed the name as Chambers, Agnew & Co. (Figure 2). The firm’s October 1866 Catalog noted that

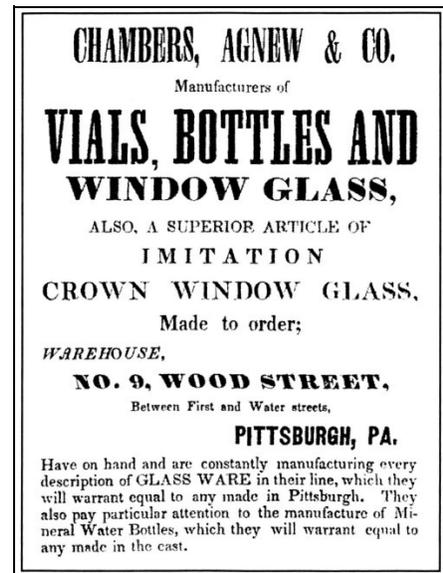


Figure 2 – 1847 Chambers, Agnew & Co. ad (Hawkins 2009:125)

the company was established in January 1843 – almost certainly reflecting the opening of Chambers, Agnew & Co., and the plant was called the Pittsburgh Glass Works.

The Pittsburgh Glass Works actually produced green (aqua-colored container) glass, and a second plant made window glass. The green-glass factory operated a single furnace with six double-mouth pots. As with the company beginning, sources disagree about the end date. Dates vary radically, from 1843 (McKearin & Wilson 1978:155) to 1847 (Creswick 1987a:4, 278) to 1854 (Van Rensselaer 1969:186 and McKearin & McKearin 1941:604). Hawkins (2009:15, 125) agreed with ca. 1852, set by an anonymous 1909 article (*National Glass Budget* 1909:11):

In 1843 Dr. William Anderson, Terrence Clark, Alexander Chambers and John Agnew, Sr., started a glass bottle factory on the bank of the Allegheny river [*sic*] near the foot of Twentieth street, which was familiarly known as the “Little Gem”, for the manufacture of bottles and vials. It was a small concern consisting of one 2-pot furnace, size of pots 20 inches. In 1844 Clark and Anderson severed their connection with the establishment after which it was operated by Agnew and Chambers. . . . At a later date, Messrs. Agnew and Chambers added a small factory for the production of window glass, which was located at the foot of Fifth street [*sic*], South Side. In 1852 Agnew and Chambers separated, Mr. Chambers taking the window glass factory and Mr. Agnew retaining the bottle house. A short time thereafter Mr. Chambers built a bottle factory adjoining his window house.

This source, of course, also questions the accuracy of the other early histories. Unfortunately, we may never sort out all the nuances of the early history of the Chambers brothers.

Containers and Marks

Hawkins (2009:125) noted that no mark is known for Chambers, Agnew & Co. It is equally unlikely that Anderson, Chambers & Co. used a logo on any containers.

A.&D.H. Chambers (ca. 1852-1889)

Alexander and David H. Chambers started their new business in Pittsburgh, Pennsylvania, about 1852 (Hawkins 2009:121). Although McKearin & Wilson (1978:155, 730) claimed that the firm built a *new* plant, Roller (1997) suggested that the brothers may have built an additional plant because it was at the same address as the older factory. It is also possible, of course, that the brothers razed the older plant and built completely anew. Hawkins (2009:121) noted specifically that this was the same plant used by both preceding firms. By 1857, the factory operated three furnaces with 25 pots to make window glass, vials, and bottles in both black and green glass. David Chambers died while visiting Chicago in 1862, leaving his brother, Alexander, as sole proprietor (Hawkins 2009:121, 123).

The Chambers firm published a catalog in October 1866. Along with window glass, the plant made patent medicine vials, castor oil bottles, ink bottles, prescription ware, fancy cologne bottles, liquor flasks, Chambers' Improved Fruit Jars, Lyman's Patent Fruit Jars, mineral water and beer bottles. The factory called its amber line "ruby colored glass" and manufactured porter, ale, wine, brandy, sarsaparilla, schnapp, hock wine and claret bottles in that color. The plant's flint (colorless) line included apothecaries' shop furniture, glass funnels, graduated measures, syringes, vials, and ball-neck panel bottles. The plant also made flint lamp chimneys (Chambers 1866).

By 1866, Robert Riddle had become a partner, although the name of the firm remained the same. Although the date is currently unknown, the company was probably one of the early beer bottle makers in business after the 1872 pioneering of Pasteurization by the Anheuser Busch Co. By 1876, the firm operated a green glass works at 6th & Birmingham, using two furnaces and a total of 12 pots to make bottles (*Crockery and Glass Journal* 1876:15; Hawkins (2009:123; Roller 1997). If not earlier, the brothers certainly made beer bottles by 1878, along with window glass, "phials" (vials), and wine bottles (*Crockery and Glass Journal* 1878:26).

James A. Chambers (Alexander's son) and Hartley Howard had joined the proprietors' list by 1872. The price list that year included the Improved Jar (with offset necks for corks), the Union Fruit Jar, and grooved-ring wax sealers. When the elder Chambers died on March 28, 1875, his son, James, and Harry B. Patton apparently gained complete control of the firm

(Hawkins 2009:123; Knittle 1927:342; Roller 1997; Seymour 1885:379). In 1881, the plant made vials and bottles at two furnaces with 20 pots (Commonwealth of Pennsylvania 1882:59).

A major flood of the Monongahela River completely submerged the entire compound in 1884. The plants were rebuilt by September 1885 and consisted of five factories, with five furnaces and 41 pots. The firm remained open until early 1889, when it was succeeded by the Chambers & McKee Glass Co. (Ayres et al. 1980:8; Hawkins 2009:124).

Containers & Marks

Alexander & David H. Chambers originally made flasks and other bottles, later adding fruit jars and still later beer bottles (Knittle 1927:342; Toulouse 1971:37-38). Van Rensselaer (1969:38) added that the firm “made many of the bottles for the mid-western bitters compounders.” In almost all cases, the mark was embossed with punctuation, although the period was often missing from one or more of the initials. 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. A.&D.H. Chambers advertised beer bottles by at least 1879 and ran ads until mid-1884.

Ken Farnsworth (personal communication 11/14/2011) stated that he and John Walthall found no Illinois bottles embossed with manufacturer’s marks prior to 1860. However, Tod von Mechow (personal communication, 11/20/2011) provided a list of 33 glass houses that made at least 818 soda and beer bottles with both embossed manufacturer identification *and* pontil scars. Most of these were probably made prior to 1860. The firm of A.&D.H. Chambers, however, was missing from the list. It is thus likely that the Chambers brothers were latecomers to the use of manufacturer’s marks, applying their first ones at some point after 1860, possibly not until 1865 or 1866. We have chosen ca. 1865 as the most probable date of first use of any form of embossed logo.

A&DHC (1860-ca. 1884)

Toulouse (1971:37) dated this mark “circa 1865 on flasks; later on beers.” Knittle (1927:441) noted the mark but provided no dates. Jones (1966:15) dated the mark from 1843-

1886 “and was still operating.” The logo, however, has different connotations connected with different bottle types.

In a study of Illinois bottles used between 1840 and 1880, Farnsworth & Walthall (2011:57-58) discovered that the A&DHC logo was used on bottles in the state between 1860 and 1880 but not during the earlier two decades. The researchers found the mark on numerous soda, beer, ale, and porter bottles as well as two medicine bottles and one bitters. They noted that the height, thickness, and style of the embossed letters in the logo varied from bottle to bottle and that punctuation could be absent or in virtually any conceivable pattern (e.g., behind every letter except H or except A, etc.). The authors stated that the reasons for the differences are unknown; however, they could have been caused by engraver errors or by individual periods filling with the “dope” (lubricant) used on the molds.

Farnsworth & Walthall (2011) discovered 129 bottles with the A&DHC logo used by 87 bottling companies at 41 Illinois cities and towns (including 24 Chicago companies). Several of these bottles were dated ca. 1860. For example, Joseph Fisher at Belleville used a bottle with the mark that only could have been filled by him during the 1859-1861 period. The Oetter bottling works at Galena used a smooth-based, bottle (as opposed to the earlier pontiled base) that was likely made in 1860. The Fischer & Boschulte A&DHC soda bottle from Quincy, Illinois, was also smooth-based, and their partnership in Quincy lasted just a single-season: 1861 (Farnsworth & Walthall 2011:113-115, 505-506, 951).

Of interest in dating, Ken Farnham and John Walthall (personal communication, Ken Farnsworth 12/8/2011, 2/13/2013) documented more than 70 embossed bottle styles at St. Louis that were used by over 40 bottling companies between 1845 and the early 1860s.) They noted that the glass houses from Missouri and Pittsburgh that made embossed soda bottles used by bottlers at St. Louis and downstate Illinois “rapidly modified their factory operations to stop producing pontiled bottles and shift to smooth-based bottle production over a period of perhaps 12 months or less during the 1859 and 1860 bottling seasons. Four bottle-mold varieties that were made during this short transitional period for H. Grone & Co. of St. Louis are found in both pontiled and smooth-based varieties, and all of them have A&DHC heel marks.”

Flasks (1865-1880s)

McKearin & Wilson (1978:156, 651-653, 656-657) identified five flasks marked with A&DHC (always on the sides) usually with



Figure 4 – Closeup of flask logo (Hawkins 2009:122)

the logo was used on “both historical and plain sided” whiskey flasks and cylinder whiskey bottles.

PITTSBURGH embossed close by (Figures 3-5). According to their classification system, the flasks were GXII-9, GXII25, GXII26, GXII27, and GXIII-3. They dated the flasks as being produced ca. 1865-1875.” Van Rensselaer (1921:6) and Freeman (1964:69, 89, 104) also noted flasks with the mark. Hawkins (2009:124) stated that the



Figure 3 – Union flask - A&D.H.C logo (McKearin & Wilson 1978:563)

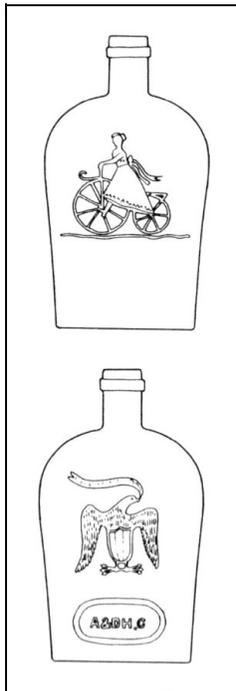


Figure 5 – A&D.H.C logo (McKearin & Wilson 1978:567)

The mark has also been advertised at eBay auctions on generic (i.e., unembossed sides) union oval (strap-sided) and shoo-fly flasks. Variations on the bases of otherwise unmarked flasks include “A&DHC” embossed: 1) horizontally across the base of a shoo-fly flask (Figure 6); and 2) in a tight circle in a post on a union oval flask and on a shoo-fly flask (Figures 7 & 8). Union oval flasks were generally made between 1861 and the 1920s, while shoo-fly flasks were produced from the early 1870s well into the 20th century (Lindsey 2013; Lockhart et al. 2012:13).



Figure 6 – A&DHC horizontal (eBay)



Figure 7 – A&DHC in a circular post (eBay)

Cylinder Whiskey Bottles (late-1870s-1880s)

Once the Chambers factory stopped using the older logo with the full name of the firm (see whiskey base discussion in the A&DH CHAMBERS PITTSBURGH PA. section below), they embossed the



Figure 9 – Cylinder whisky - A&DHC logo (Glass Works Auctions)

bases of four-piece mold, cylinder whiskey bottles with A.&D.H.C. in an arched format (Figure 9).

According to Lindsey (2013), cylinder whiskey bottles “were most popular from the 1870s through the 1910s until National Prohibition in 1919-1920.”

Because the base in the photo was indented (see Rickett’s-Style

Bases on Whiskey Bottles below), the plant likely used the initials on cylinder whiskey bottles between the late-1870s and the 1880s. It is possible that the Chambers plant also made whiskey bottles with concave bases during the 1870s.



Figure 8 – Shoofly flask (eBay)

Porter, Ale, and Beer Bottles (1860-1880s)

The early porter and ale bottles were made in various shapes, but Lindsey (2013) noted that “the dominant theme seems to be short and squatty with a moderate length neck.” There is no consensus among researchers about shape or style. Lindsey (2013) lumped porter and ale bottles together, while von Mechow (2013) divided them into porter shape (1760-1918), early ale shape (1847-1851, early lager shape (1847-1851), and late ale or Lager Shape (1851-1910). Farnsworth and Walthall (2011:15-16) divided their bottles into ale, porter, and lager. In all cases, the bottles are characterized by two-part finishes. These have an upwardly tapered upper part with sharp edges and a sharp, upwardly tapered lower part. All of the older bottles had applied finishes.

The Chambers brothers apparently made quite a few of these bottles. The A&DHC logo was usually embossed at the reverse heel or lower body, although some were on the front. Bottles observed in this study had applied finishes (Figures 10 & 11). These bottles may have been made as early as ca. 1865 and probably continued to be used until 1880 or later. Some beer was packaged in Hutchinson bottles, and those are dealt with in the soda bottle section below.



Figure 10 – Porter bottle (Lindsey 2013)

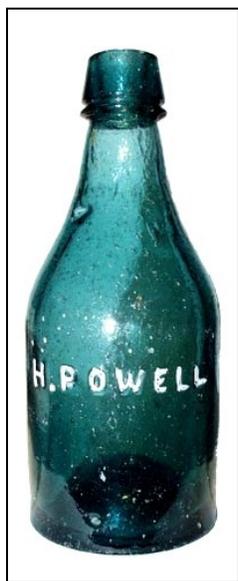


Figure 11 – Late ale bottle (von Mechow 2013)

The most common beer bottles made by the Chambers plant were generic (called “slick-sided” by collectors), “quart” (actually ca. 26-ounce) export beer bottles. These were tall, with long “swelled” necks. Export beer bottles were the dominant style used west of the Mississippi beginning in 1873 (see Lockhart 2007 for a discussion about this bottle type). Champagne, Weiss, and other beer bottle shapes were more common in the east (Lindsey 2013; von Mechow 2013). After Prohibition ended in 1933, however, export beer bottles became the dominant form throughout the U.S.

Wilson (1981:113-114) illustrated 13 beer and whiskey bases made by the Chambers brothers. These are divided into three distinct styles – two variations of “A&DHC,” one for “A&DHCHAMBERS PITTSBURGH PA.”¹ Herskovitz (1978:8) found 21 beer bottles or bases with the A&DHC mark, although he did not describe the pattern. Lockhart and Olszewski (1994) excavated only three examples of export beer bottles (in a ca. 1880-1886 context), and all three were of the arched variety shown by Wilson (see below). Ayres et al. (1980) showed the same two A&DHC variations as Wilson. Although some examples were only base fragments, all of these were very likely marks on export beer bottles.

¹ The full-name variation was undoubtedly a whiskey bottle and will be discussed below.

Probably the earliest style was A&DHC embossed horizontally across the base in evenly spaced letters (Figure 12). A variation of the horizontal logo was embossed “A&DHC” with the last three letters scrunched together due to the limited space within a small, post-bottom circle. The



Figure 12 – Horizontal A&D.H.C - export beer (Fort Laramie collection)



Figure 13 – Arched A&D.H.C - export beer

second, probably later variation was in an arch at the top of the base. In both cases, the mark could be alone or accompanied by one- or two-digit numbers (Figure 13).

Our examples of export bottles with A&DHC logos all had two-part applied finishes with sharp lower rings (Figure 14). Generally, the sharp lower rings on beer bottle finishes began to be actively phased out by the very early 1880s. This suggests that the beer bottles with the logo were not made much later than ca. 1882, although ads noted above make it likely that the bottles were made as late as 1884. At this point, we have not discovered any evidence linking manufacturer’s marks to export beer bottles any earlier than ca. 1876 (Lockhart et al. 2006:38).



Figure 14 – Two-part finish, sharp lower ring (eBay)

Soda Bottles

Soda bottles made by the Chambers’ factory may be divided into three types: blob-tops, Christin-finished bottles, and Hutchinson bottles. Each of these has a reasonably dated range. Tod von Mechow (2013) listed a total of 263 soda and beer bottles with the A.&D.H.C. logo, although the various container types were all mixed together. Most had the logo at or near the heel, although some were basemarked.

Blob-Top Soda Bottles (1860-1880s)

As with beer bottles, von Mechow (2013) noted numerous classifications for soda bottles, citing two early styles as the early pontil shape (1838-1845) and the late pontil shape (1844-1846). Lindsey (2013) lumped the two together as early soda and mineral water styles. Although Lindsey (2013) called these “blob-tops” – the most commonly used term – von Mechow disliked the phrase and divided the same



Figure 16 – “Blob-top” bottle (Farnsworth & Walthall 2011:709)

Clint (1976:144) illustrated two bottles with “blob-top” finishes and A&DHC embossed on the back heel. Both finishes were applied. He dated one bottle as being made between 1870 and 1872 (possibly to 1880) and the other from 1880 to 1883. Fletcher (1994:221, 268, 276, 278-279, 304) also listed the mark as embossed on both heels and bases of “blob-top” soda bottles from Kansas. The A&DHC



Figure 15 – “Blob-top” finish (Farnsworth & Walthall 2011:550)

bottle type into soda shape (1845-1865) and pony shape (1852-1905). The dominant characteristic of these bottles is a large, bulbous, applied finish. Although these were intended to provide an anchor for wired-down corks, some were used for Lightning-style finishes. See Lockhart (2006) for a discussion of Lightning fasteners.

Farnsworth and Walthall (2011:25) described and illustrated three variations of the finishes that collectors call blob top. The earliest of these (prior to 1853 in the Illinois study) consisted of a single part with sharp edges and a notable taper from base to rim of the finish. The second variation (after 1853) was similar except that the edges were more rounded. The final finish was very rounded, more of a true “blob” (Figure 15). The authors noted that the later styles were used during the 1860s and 1870s. In contrast, von Mechow (2013) presented a much more complex and overlapping classification system for finishes (also called lips).



Figure 17 – A&DHC heelmark (Farnsworth & Walthall 2011:709)

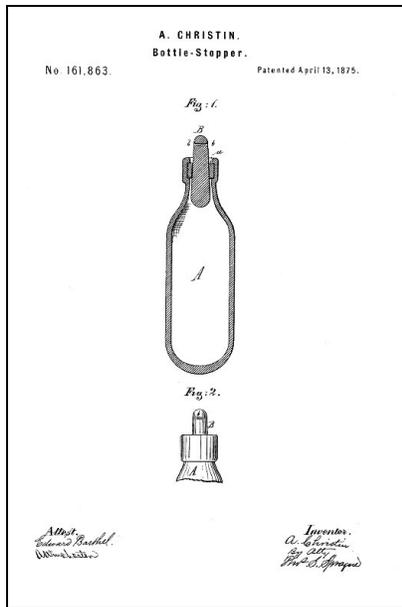


Figure 18 – Arthur Christin’s 1875 patent

mark on the heel or lower body was almost always evenly spaced and was probably used from the early 1860s to 1880s on soft drink bottles (Figures 16 & 17). Ken Farnsworth and John Walthall (personal communication 12/8/2011) noted a pontiled blob-top soda bottle embossed with the A&DHC logo on the heel from an 1858-1860 St. Louis context.²

Arthur Christin Finishes (1875-ca. 1884)

Arthur Christin received Patent No. 161,863 for an “Improvement in Bottle Stoppers” on April 13, 1875 (Figure 18). At least six soda bottles with these unusual stoppers were made by the Chambers

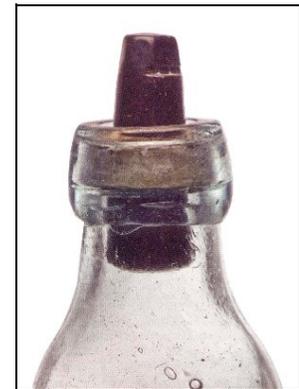


Figure 19 – Christin stopper (Farnsworth & Walthall 2011:218)

plant, all embossed with the A&DHC mark. At least two other Christin bottles were made by D.O. Cunningham and Cunningham & Co. (Fowler 2013), but it is likely that the Chambers’ factory made most of the Christin bottles.



Figure 21 – Christin bottle - El Paso (Lockhart 2010)

Bottles for the Christin stopper had a wide groove debossed inside the throat of the bottle for a soft, rubber grommet. The stopper, itself, consisted of a hard rubber cone with two grooves near the top (Figure 19). The stopper was inserted into the bottle, then the grommet was installed. After the bottle was filled with soda, a wire tool was inserted into the bottle to grasp the grooves in the stopper and pull it



Figure 20 – Christin finish (Lockhart 2010)

² This is one of the few instances that challenges our suggested early date of ca. 1865.

upward until it seated against the grommet at the top of the bottle (Figure 20). Like the Hutchinson stopper, it was held in place by the force of the pressure created by the carbonation, and the bottle was opened by striking the top of the stopper downward, driving it into the bottle.

Clint (1976:144) noted a bottle with a Christin finish and “A&DHC / PAT. APR. 13TH 1875” embossed on the back heel. He dated the bottle between 1875 and 1877. A similar bottle with a Christin finish and identical embossing on the reverse heel was used at El Paso, Texas, in 1881. The front heel was embossed “ARTHUR CHRISTIN” (Lockhart 2000; 2010). The El Paso bottle was only used during 1881, although von Mechow dated the style between 1875 and 1881 (Figure 21). Farnsworth & Walthall (2011:219; 349-355; 554-555) listed five examples, four of which were embossed with the A&DHC logo. The other had no maker’s mark.

Kelley Gravitating Stoppers (1878-1880s)

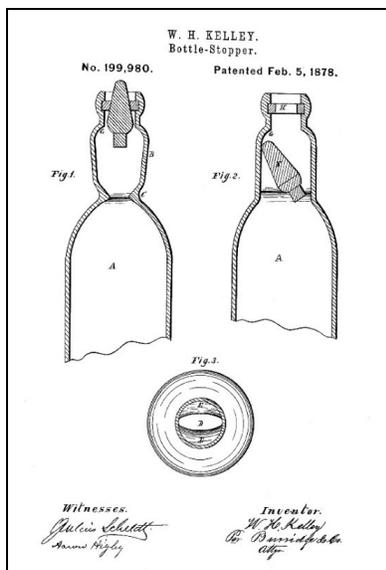


Figure 22 – Kelley’s 1878 patent

William H. Kelley of Cleveland, Ohio, applied for a patent for an “Improvement in Bottle-Stoppers” on May 17, 1877. He received Patent No. 199,980 on February 5, 1878 (Figure 22). The closure was described by von Mechow as “a glass teardrop shaped stopper that sealed against a rubber washer in the neck of the bottle. The bottle is accentuated by having a square neck” (Figure 23) The bottle was opened by striking the tip of the stopper and driving it into the neck of the bottle. The neck was constructed with a partial restriction at its base to

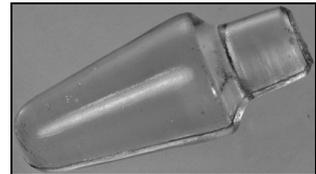


Figure 23 – Kelley stopper (Farnsworth and Walthall (2011:282)

hold the stopper within the neck – rather than allowing it to fall

into the bottom (as both the Matthews gravitating stopper and the Christin stopper did).

The Chambers brothers may have specialized in unusual stoppers. At least three examples of bottles using the Kelley gravitating stopper were made by the Chambers plant for soda bottlers in Illinois. One was used by William A. Hausburg of Chicago (Figures 24 & 25).

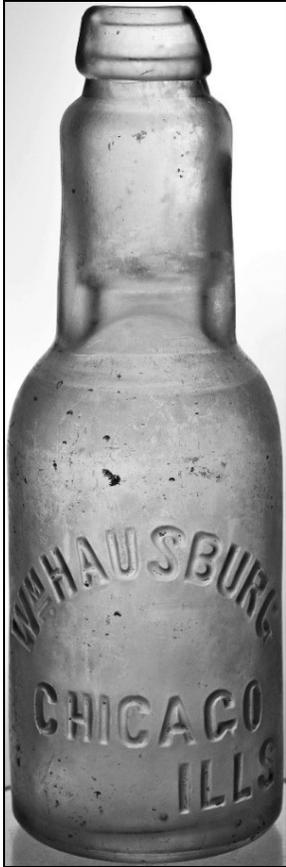


Figure 24 – Hausburg’s Kelley-stoppered bottle (Farnsworth and Walthall (2011:282))

Hausburg was originally in business with his brother, Charles C. Hausburg, but the pair parted company in 1879, and William continued in business alone. Although Hausburg remained in business until 1889, Farnsworth and Walthall (2011:282-283) noted that the Kelley bottles were only used during the first couple of years (ca. 1878-early 1880s).



Figure 25 – A&DHC on Hausburg bottle heel (Farnsworth and Walthall (2011:282))

Kelley bottles were also used by Frederick C. Lang (also of Chicago). In an odd similarity, Lang also separated from his brother, William, in 1878 and continued in business until 1884 – providing a very solid range for his use of the bottle. The final example – Gottlieb Wurster & Co., also of Chicago – was in business from 1869 to 1880, although he could not have used the Kelly bottles prior to 1878



Figure 26 – Base of Hausburg bottle (Farnsworth and Walthall (2011:282))

(Farnsworth & Walthall 2013:49, 460). All of these examples had the Kelley patent date embossed on the bases (Figure 26). Tod von Mechow (2013) added one more example from E.L. Billings of Sacramento, California. This bottle, too, had the A&DHC heelmark and the Kelley patent on the base.

Hutchinson Soda Bottles (1880-1884)

Charles G. Hutchinson, of Chicago, Illinois, received Patent No. 213, 992 for an “Improvement in Bottle-Stoppers” on April 8, 1879. The stopper was a “disk of rubber” attached to a “laterally-yielding spring” in the shape of a figure-8, open at the bottom, where the stopper attached. When the top of the wire spring was pulled upward, the stopper sealed the bottle. To open the bottle, the spring was forced downward (Figure 27). For about 20 years – from the early 1880s to early 1900s – the Hutchinson stopper was the industry standard for soda

bottles, although some continued in use until 1929 (Fowler 2012; Lindsey 2013; Lockhart et al. 2011; von Mechow 2013).

Clint (1976:124) illustrated a single Hutchinson bottle with A&DHC embossed on the back heel. He dated the bottle between 1881 and 1883. Hutchbook (Fowler 2012) listed 66 examples of Hutchinson beer and soda bottles embossed with the A&DHC logo. On these bottles, the mark was usually embossed on the reverse side at or near the heel. Although the logo was sometimes on the front, also at or near the heel, Hutchbook included no examples with the mark on the base, possibly to leave room for bottlers' initials – a common practice on soda bottles.

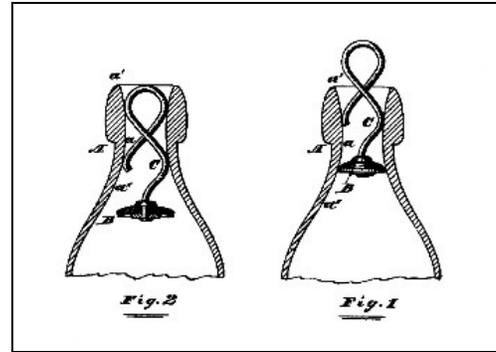


Figure 27 – 1879 Hutchinson patent

Bitters Bottles (ca. 1860-1880s)

Wilson and Wilson (1969:40) showed the A&DHC mark on the bases of two Hostetter's Stomach Bitters bottles. In both cases, the mark was embossed in an arch around the edge of the concave post-bottom of the base with a single-digit number in the center (Figures 28). The Wilsons (1969:34) noted that S. McKee made the first embossed Hostetter's bottles in 1859, so



Figure 28 – Hostetter's Bitters bottles (eBay)



Figure 29 – Arched A&DHC on Hostetter's base (eBay)

containers produced

by other makers should be dated after that time. Fike (1987:36) also noted that Hostetter's bottles were made by Chambers but did not specifically address the mark. Siri (2005:60) illustrated a Hostetter's base with an arched variation of the mark along with the letter "N" in the center, and we have seen a "B" on a similar base at an eBay auction. On Hostetter's bottles, the logo could appear in either an arch (Figure 29) or an inverted arch (Figure 30).

Ring (393, 445) recorded the mark on Red Cloud Bitters and Strassburger Krauter Bitters bottles, but we have not found an actual example. Ken Farnsworth (personal communication 2/11/2013) noted that Red Cloud bitters were initially manufactured in Chicago (later in New York City), but the researchers were not able to find an Illinois example of the bottle to photograph and document in detail. However, Farnsworth and Walthall (2011:496) documented another A&DHC bitters bottle – Key-Stone Tonic Bitters – used by the McLain Bros. at Forreston, Illinois.



Figure 30 – A&DHC - inverted arch on Hostetter’s base (eBay)

Medicinal and Other Bottles (ca. 1860-1884)

On Warner’s Safe Nervine bottles, the logo was embossed in a circular format in the central circle formed by the post bottom (Figure 31), and the circular theme was also followed on square ink bottles, such as the one for the



Figure 31 – A&DHC on Warner’s Safe Nervine bottle (Lindsey 2013)

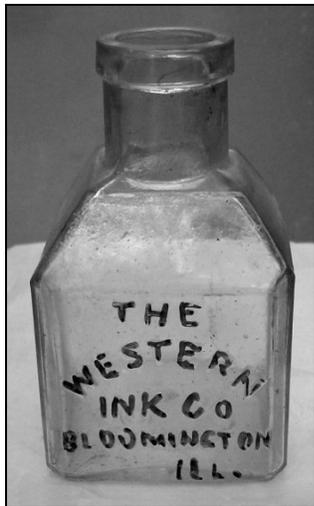


Figure 32 – Bloomington Ink Co. bottle (eBay)

Western Ink Co., Bloomington, Illinois (Figure 32 & 33).

Western Ink was operated by a series of companies, all headed by Samuel A. Maxwell. The

bottles were likely used from ca. 1870 until 1879, when the operation

moved to Chicago (Farnsworth & Walthall 2011:132-133). A Dr. McLean’s Strengthening Cordial Blood Purifier bottle had “A.&D.H” horizontally embossed inside the circular post bottom, with the “C”

outside on the mold line between the two halves! Other medicinal flasks

followed the patterns described on whiskey flasks above.

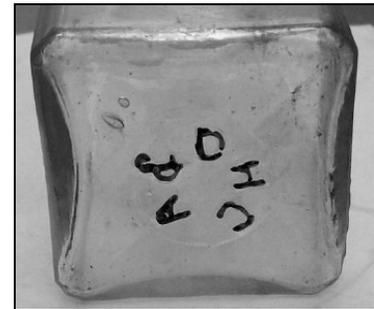


Figure 33 – Base of Bloomington Ink Co. bottle (eBay)

According to the study on Illinois bottles between 1840 and 1880 (Farnsworth & Walthall 2011:57), the A&DHC logo was “rarely seen on medicinal products . . . or on other bottle styles across the state.” The researchers only found the mark on two medicine bottles – on the base of a Wakefield’s Blackberry Balsam bottle from Cyrenius Wakefield & Co., Bloomington, Illinois, and A&DHC in a



Figure 35 – Gillett’s Bluing base (Farnsworth and Walthall 2011:57)

a circular format in a post-bottom on the base of a Warner’s White Wine and Tar Syrup from Chicago (Farnsworth & Walthall 2011:137, 446).

Farnsworth and Walthall (2011:265-266) also illustrated A&DHC logos on two bottles – one ink and one bluing – from Gillett’s Chemical Works at Chicago. The

firm was apparently known as the Gillet Chemical Works (note single “t” at end) from 1867 to 1880, with a second “t” added to the name from 1880 to 1904. The bluing bottle (Figures 34 & 35) was

therefore likely made during the earlier period, while the ink bottle (Figures 36 & 37) was from the latter era. Both bottles had post-mold bases, but the bluing container used the horizontal mark, while the ink bottle had a tightly arched logo.



Figure 37 – Gillett’s Chemical Works ink bottle base (Farnsworth and Walthall 2011:57)

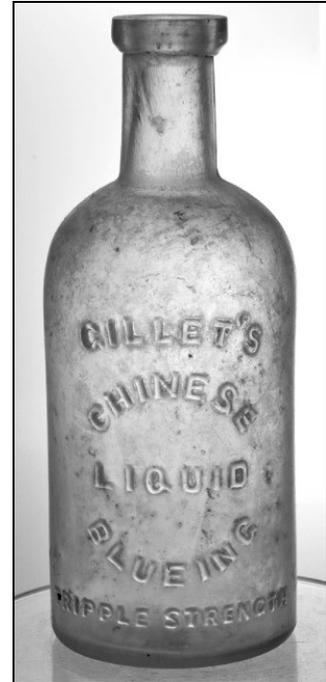


Figure 34 – Gillett’s Chinese Liquid Bluing (Farnsworth and Walthall 2011:57)

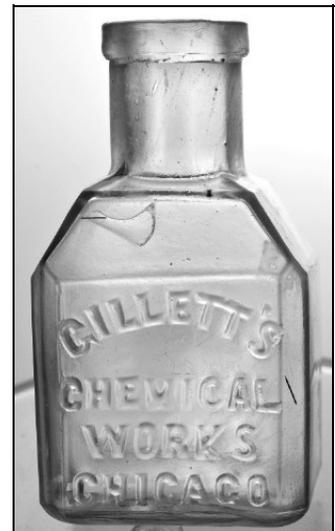


Figure 36 – Gillett’s Chemical Works ink bottle (Farnsworth and Walthall 2011:57)

The Reservoir – Fruit Jars (1873-ca. 1880)

Most fruit jars produced by the firm were embossed on the bases with the full company name. An unusual fruit jar, THE RESERVOIR, however, was also made by Chambers. These jars were embossed on the base with the A&DHC logo and had three lugs positioned inside the throat to take an internal stopper (Figure 38). Ella G. Haller received Patent No. 136,240 (Figure 39) for this type of jar/stopper combination on February 25, 1873 (Creswick 1987a:184; Roller 1983:306). Creswick (1987:184) illustrated the jar (Figure 40).



Figure 38 – Lugs in The Reservoir fruit jar (North American Glass)

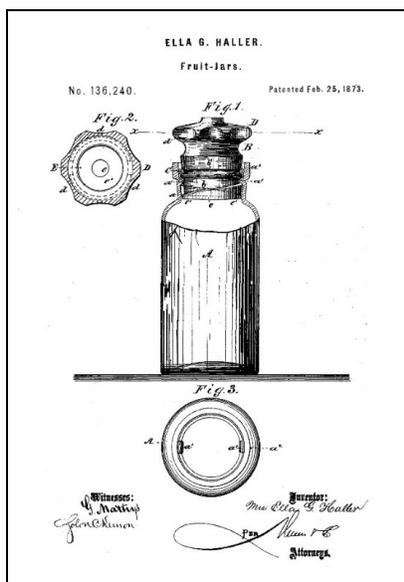


Figure 39 – Haller's 1873 patent

Both William Frank & Sons and Cunningham & Ihmsen also made versions of the Reservoir jar, each embossed THE RESERVOIR on the side. Only the Chambers' version, however, was embossed "TO OPEN ADMIT AIR BY INSERTING A PENKNIFE BLADE BETWEEN THE RUBBER AND GLASS" on the reverse face. The stopper was hollow with a hole in the bottom and three inclined grooves on the side to engage the three lugs inside the jar neck. The reservoir in the stopper was intended to be filled with hot syrup that filled the empty space that formed when the contents of the jar cooled. This was again different from the Frank and Cunningham & Ihmsen jars – each of which only had two grooves and two lugs (Roller 1983:305-306).

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Figure 40 – The Reservoir fruit jar (Creswick 1987:184)

The Roller revision (2011:448) suggested that the Reservoir jars were made by the Chambers factory during the 1870s. This date was probably influenced by both the patent date (1873) and a variation (also with three lugs) that was embossed “RESERVOIR / JAR / 1876.” Although the manufacturer of the jar is unknown, embossing on the base identified Charles Yockle, a Philadelphia mold maker. The jars were sold as souvenirs of the 1876 Centennial Exposition at Philadelphia.

ALDHC

Toulouse (1971:37) noted this mark as an engraver’s error as reported by Knittle (1927:441). Unfortunately, Knittle did not specify the shape of the mark or type of bottle, although she was generally discussing flasks. Hawkins (2009:125) listed the mark as “A.&L.D.H.C.” but also gave no description of the bottle. The ampersand was probably a typographical error. No original source except Knittle ever mentioned this mark.

A.&D.H.Co.

This logo was listed in Griffenhagen and Bogard (1999:212) as used from 1860 to 1886. The authors probably obtained their information from Ring (1980:320) or Ring and Ham (1998:375), who noted it on the base of a bottle of Mansfield’s New Style Highland Stomach Bitters. We have never seen this mark nor found it in any other source. Since the last word in the firm’s name was “Chambers” instead of “Company,” this was likely a typographical error on the part of Ring (copied by Ring & Ham, then Griffenhagen and Bogard) or an engraver’s error on the bottle.

A&DH CHAMBERS PITTSBURGH PA.

Cylinder Whiskey Bottles (ca. 1865-late 1870s)

Wilson (1981:114) illustrated this mark on two slightly different base styles, both almost certainly from cylinder whiskey bottles (see Figure 9). Each bottle base was embossed “A&DHCHAMBERS PITTSBURGH PA.” in a circle around the edge (Figure 41). This mark was used in one of the early Rickett’s mold bottle types.

Patented in England in 1821, the Ricketts mold was the first known to have used a separate, ring-shaped plate around the outer edge of the base (Jones & Sullivan 1989:48-49). The Chambers bottle used the same style of embossed baseplate mold. Although Jones and Sullivan cited an 1867 patent as the “official” stating date for plate mold use in the United States, American use of the style likely predated that year. The Chambers’ bottles, however, were probably not made until ca. 1865. Use of this style had probably ceased about the time the earliest export beer bottles were in production in 1873.

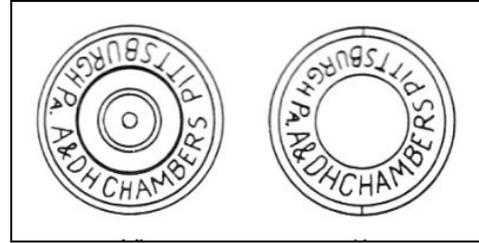


Figure 41 – A&DHCHAMBERS - whiskey bottle bases (Wilson 1981:114)

One base style shown in Wilson almost certainly indicates a stepped push-up in the base. Push-ups are generally associated with wine bottles but are also present in both concave and stepped configuration (see below) on cylinder whiskey bottles. The first base style shown in Wilson included what is probably a dot (or very small mamelon) at the apex of the push up.

Although the Rickett’s mold bottle was typically made in three pieces plus the baseplate, the second style illustrated by Wilson appears to be made in either a two-piece or four-piece mold – likely the latter. This was probably a bottle with a concave base (see below), made between ca. 1870 and ca. 1880 (Table 1).

Table 1 – Cylinder Whiskey Bottles made by A.&D.H. Chambers

Logo	Base Style	Date Range
A&DHCHAMBERS PITTSBURGH PA.	Stepped	ca. 1865-ca. 1870
A&DHCHAMBERS PITTSBURGH PA.	Concave	ca. 1870-late 1870s
A&DHC	Sunken or Indented	late 1870s-ca. 1884

As noted in the A&DHC section, Lindsey (2013) dated cylinder whiskey bottles as mostly made between the 1870s and the early 20th century. He added, however, that these bottles – with applied finishes – were most common in the 1870s-1880s. Although he was speaking of the earlier “Patent” style cylinder whiskey bottles, Lindsey also dated bottles with Rickett’s type

of mold as “commonly manufactured and used between 1844 and 1880, with most appearing to date between the 1850s and 1870s.” Lockhart et al. (2012:7-8) dated cylinder whiskey bottles from 1860-1875 contexts at Fort Riley. Taking these ranges into consideration, we suggest



Figure 42 – Hyman Frank stopper (Farnsworth and Walthall 2011:214)

a reasonable date range for the “A&D H CHAMBERS PITTSBURGH PA.” logo on cylinder whiskey bottles was likely between ca. 1865 and the mid-1870s.



Figure 43 – Whiskey bottle - Frank patent (Farnsworth and Walthall 2011:454)

At least one style of a whiskey bottle was embossed on the base with the full company name and “PAT AUG 6 72” as well as the same date on the stopper (Figure 42). The patent date is for the internal stopper developed by Hyman Frank (Hawkins 2009:124).³ Hawkins also noted that these bottles are extremely rare. See the section on William Frank & Sons for more information this stopper.

The study of Illinois bottles between 1840 and 1880 (Farnsworth & Walthall 2011:57, 455) only



Figure 44 – Base - Frank 1873 patent (Jay Hawkins; Farnsworth and Walthall 2011:454)

disclosed a single whiskey bottle with the entire name embossed on the base, and it included the Frank patent date on the base (Figures 43 & 44). The firm using the bottle – Jacob A. Wolford – was listed in the city directories as a liquor dealer from 1871 to 1876.

³ According to David Frank Hoehstetter (personal communication, 12/4/2012), a descendant of the Frank family, the name of William Frank’s son was Hyman, even though the patent documents misspelled it as Himan.

Rickett's-Style Bases on Whiskey Bottles

Thomas (2002:viii) used profile drawings to address different base styles on whiskey bottles. Although Thomas was specifically addressing base types for side-embossed, cylinder whiskey bottles, he included two illustrations that were representative of the Rickett's-style bases. As noted above, Rickett was the first to patent a circular or donut-shaped plate that fit into the base of a dip mold and allowed raised letters to be embossed on a bottle despite the scarring caused by the use of a pontil. We have added three other styles. At least one of those may have only appeared on generic or "slick-sided" (i.e., no side embossing) whiskey bottles (Figure 45 and Table 2).

Table 2 – Base Styles on Cylinder Whiskey Bottles with Rickett's-Type Baseplates

Type	Kick-Up*	Pontil	Plate	Date Range
Early Pontil	Deep Concave	Yes	Sloped	1820-1850
Late Pontil / Early Smooth	Deep Concave	Yes	Flat	1850-1870
Stepped	Two Steps	No	Sloped or Flat	1860-1870
Concave	Shallow Concave	No	Flat	1870-1905
Sunken or Indented	Indented	No	Flat	1880-1890

* Each type may or may not have an embossed dot or mamelon at the apex of the kick-up.

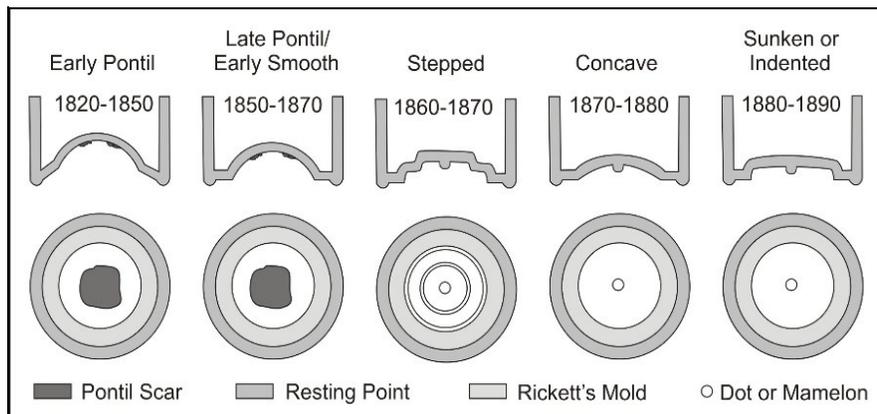


Figure 45 – Whiskey bottle base shapes with Rickett's-style molds

Early Pontil Base

The earliest style – with a pontil scar in the center – was probably used from the 1820s to the 1850s by some of the earliest glass houses, such as the New England Glass Bottle Co. These had the Rickett’s plate inside the resting point (where the bottle sits on the table). The plates on these bottles sloped in toward the center of the base. The push-up was concave and fairly deep. Along with the pontil scar, some of these had a small dot or mamelon in the center (Lindsey 2013). In all of these styles, a dot could be present or absent.



Figure 46 – Second style pontil base – Dyottville Glass Works (Glassworks Auctions)

Late-Pontil/Early Smooth-Base

The second type spanned the period when the snap-case was invented. Thus, some bottles with this base style had pontil scars, while others did not. This type was virtually identical to the earlier configuration, except that the Rickett’s plate was no longer sloped. The plates on these bottles were flat – parallel to the resting point. These were used from the 1850s to ca. 1870 by early manufacturers, such as the Dyottville Glass Works at Philadelphia (Figure 46).



Figure 47 – Stepped base – William McCully & Co. (Jay Hawkins)

Stepped Base

A very unusual style spanned the 1860-1870 period. This was the Stepped Base, with two steps sunken into the base. As usual, the resting point was at the outside, followed by the Rickett’s plate. The plate could be either sloped or flat (Figure 47). The two levels of the center sometimes had concave sides or more step-like sides. These were often bordered by one or more embossed rings and had a small dot or mamelon in the center (Figure 48).



Figure 48 – Stepped base – William McCully & Co. (Fort Laramie collection)



Figure 49 – Concave base – William McCully & Co. (Jay Hawkins)

Concave Base

The fourth style was very similar to the second one but without the pontil scar (Figure 49). These were made during the 1870-1880 period

according to Thomas (2002:viii).



Figure 50 – Indented base – Ellenville Glass Works (on left – concave base on right) (Glassworks Auctions)

Sunken or Indented Base

The final style was more indented or sunken than concave, with relatively straight sides in the indent (Figure 50). These were made between ca. 1880 and ca. 1890 (Thomas 2002:viii).

Fruit Jars (1860s-1880s)

Toulouse (1969:312) noted a UNION FRUIT JAR with “A&DH CHAMBERS / UNION (both arched) / FRUIT JAR / PITTSBURGH PA (both inverted arches)” embossed on the base along with “a figure for mold identification . . . center bottom” (Figures 51 & 52). He dated the grooved-ring, wax-sealer fruit jars ca. 1860-1870. As noted in the history section, Chambers included the Union Fruit Jar in the 1872 price list, although it was not listed in 1866.



Figure 52 – Base of wax-sealer jar (Hawkins 2009:121)

Roller (1983:84) described the same jar as well as tin lids for the jars that were embossed “★ A.& D.H. CHAMBERS (arch) / ★ PITTSBURGH (inverted arch)” around a star (Figure 53). He agreed with the ca. 1860s-1870s date



Figure 51 – Grooved-ring wax-sealer fruit jar (North American Glass)



Figure 53 – Cap for wax-sealer jar (North American Glass)

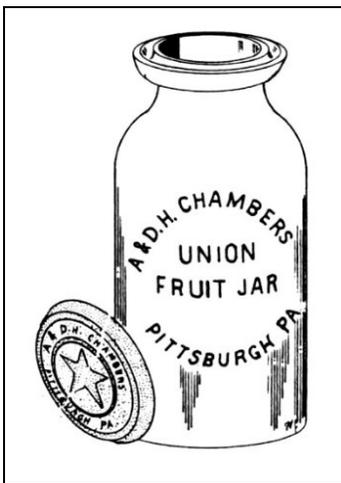


Figure 55 – Side-embossed wax-sealer (Creswick 1987:28)



Figure 58 – Base of wax-sealer (North American Glass)

range. Creswick (1987:28) described and illustrated the jar, including a slight variation (Figure 54). The one noted by Toulouse had “PA” for the state; Creswick included “PA” as well. Although she noted the dates for the *firm*, she declined to date the jars. Roller (2011:129) noted that “the jar comes in two distinct forms, the common tapered neck (with rounded jar heel) and a rounded shoulder ending in a short (about ½ inch) straight neck (with squared off jar heel).” Dating, however, remained the same. Hawkins (2009:125) also described the jar.

Roller (1983:84) noted a variation that was embossed with the same configuration, except that the embossing was on the body. He noted that the jars used the same embossed lid during the same 1860s-1870s period.

Creswick (1987:28) also illustrated and discussed this style along with the lid (Figures 55-57). Roller (2011:129) discussed the same jar and same dating period but added a variation with “A.&D.H.C.” embossed on the base instead of the full designation. Some bases also included a single number (Figure 58).

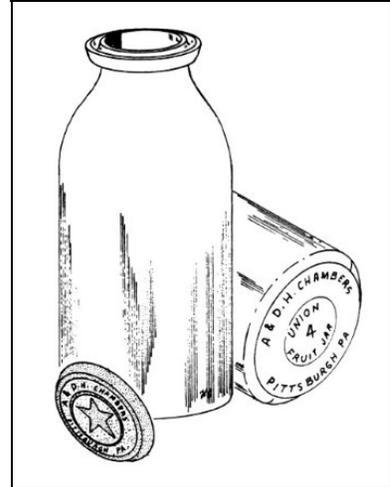


Figure 54 – Chambers wax-sealer (Creswick 1987:28)

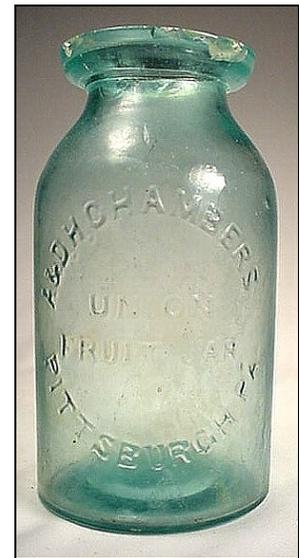


Figure 56 – Side-embossed wax-sealer (eBay)



Figure 57 – Finish of wax-sealer (North American Glass)



Figure 59 – Mason jar - Chambers' name on base (eBay)

Roller (1983:241; 2011:363) described a jar embossed “MASON’S (arch) / PATENT / NOV. 30TH / 1858 (all horizontal)” on the front, with the CFJCo monogram on the reverse and “MADE BY (arch) / A&DH CHAMBERS (slight arch) / PITTSBURG” embossed on the base (Figures 59-61). The monogram indicates that the jar was made for the Consolidated Fruit Jar Co., open from 1872 to 1882 (see Consolidated Fruit Jar section for more information). Several glass houses



Figure 60 – Back of Chambers Mason jar - CFJCo monogram (eBay)

made containers for the Consolidated Fruit Jar Co. – obviously including the Chambers family. Creswick (1987a:141) illustrated the jar (Figure 62), and Hawkins (2009:125) discussed it.

C

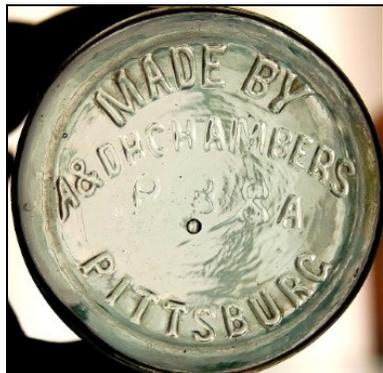


Figure 61 – Base of Chambers Mason jar (Hawkins 2009:123)

According to Hawkins (2009:125, “some authors have hinted that some bottles marked with just a C may be attributable to Chambers. It is more likely that this mark represents Cunningham & Co.” Although we had missed this notation by Hawkins when we studied the bottles

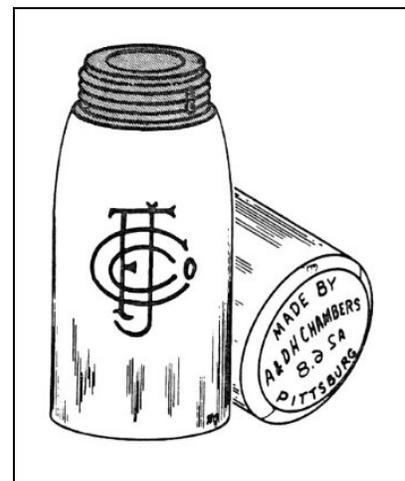


Figure 62 – Chambers Mason jar (Creswick 1987:141)

excavated from the Fort Riley hospital privy (Lockhart et al. 2012:19-21), we came to the same conclusion. The “C” logo will be covered in the Cunningham factories section.

Unmarked Containers

By at least 1866, the Chambers family advertised “Chambers’ Improved Fruit Jars [and] Lyman’s Patent Fruit Jars.” While none of the fruit jar sources mention the Chambers’ Improved jars, containers made to the Lyman patent are fairly common. Toulouse (1969:190-191) described four variations of the Lyman-patent jars but had no idea who made them. Roller (1983:198-199; 2011:303-304) noted an 1867 ad for the jars by William McCully & Co. as well as an undated ad from McCully, claiming to be “Exclusive Manufacturers [of the Lyman jars] For The West Country.” He further noted that the jars were distributed by the Meriden Britannia Co. of West Meriden, Connecticut, and that William W. Lyman was an officer of the firm.

Creswick (1987:108-110) listed 48 variations of the jars – none of which included manufacturer’s marks – and she noted several patents held by or assigned to Lyman (Figure 63). She noted that “Wm. W. Lyman did not manufacture jars himself” and added John Moore & Co. as another possible maker – as well as other glass houses. The lack of any Lyman-patent jars with A&DHC logos *may* be an indication that Chambers did not use the initials logo until after 1866. The Chambers firm may also have been the manufacturer of the jar for the eastern region.

The 1872 the Chambers price list included the Chambers Improved Jar. Although none of the jar sources used the words, “Chambers Improved,” Roller (1983:164) described a jar embossed “IMPROVED” below a keystone with a Mason-style screw band and glass lid closure. He suggested the Mason Fruit Jar Co. as a possible manufacturer. Creswick (1987:89) illustrated two other jars with Mason-style, shoulder-seal, continuous-thread finishes and screw caps that were only embossed “IMPROVED” on the lower



Figure 63 – Lyman-patent jar (Creswick 1987:109)

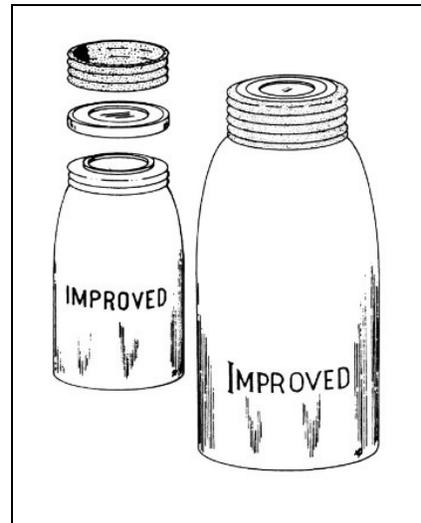


Figure 64 – Improved jar (Creswick 1987:89)

half of the front (Figure 64). Unfortunately, none had a manufacturer's mark. The updated Roller volume (2011:253) described the Improved jar but added no information.

Chambers & McKee Glass Co., Pittsburgh (1888-1889)

Chambers & McKee Glass Co., Jeannette, PA (1888-1892)

Operated by James A. Chambers and H. (Henry) Sellers McKee, this company was the outgrowth of A.&D.H. Chambers. The firm operated the Pittsburgh plant for only a single year before closing it in 1889 to move all operations to the new factory built at Jeanette, Pennsylvania, in 1888. The firm made window glass and was renamed the McKee Glass Co. when James Chambers declared bankruptcy in 1892. The plant finally became part of the American Window Glass Co. in 1899. See Hawkins (2009:127-131) for a complete history.

Chambers Glass Co., New Kensington, Pennsylvania (1892-1899)

Martha J. Chambers, William G. McCandless, Alexander C. Howard, John S. Ferguson, William J. Patton, George W. Moore, and Edward G. Ferguson incorporated the Chambers Glass Co. at New Kensington (ca. six miles north of Pittsburgh) in December 1891. Construction of the plant was delayed by cold weather, and the operation did not commence production until October 1892. James Chambers had become president of the firm by 1894. The plant apparently only made window glass at two continuous tanks until at least 1899, when it was listed at Arnold, Pennsylvania. The firm was one of the 41 plants that formed the American Window Glass Co. in 1899, with James A. Chambers as corporate president (Hawkins 2009:129-130; Roller 1997).

Containers and Marks

Although Hawkins (2009:129) noted that James Chambers announced the intention to build a green glass plant in 1892, there is no evidence that the factory was actually assembled. The only marks associated with the firm were a flying eagle clutching a blowpipe and "a double-lined capital C with CHAMBERS written in the upper part and one, two, or three stars inside the C." A single star indicated third quality, while two stars showed the second grade. Only the highest grade window glass received three stars (Figure 65).

Discussion and Conclusion

None of the sources suggested any reason to believe that either of the earlier firms (Anderson, Chambers & Co. or Chambers, Agnew & Co.) used manufacturer's marks of any kind. Despite their relatively long span in business (at least 47 years), the Chambers brothers used only two distinct types of marks with two variations of the initials logo. These, however, had numerous slight differences, especially in punctuation.

It is probable that the A&DHCHAMBERS PITTSBURGH PA. mark was used concurrently with the A&DHC logo from ca. 1865 to the mid-1870s. The logo comprising the initials, however, almost certainly continued to be used into the 1880s.



Figure 65 – Chambers Glass Co. marks (Hawkins 2009:129)

There are essentially two variations of the A&DHC logo: an arched variation and a horizontal one. A possible third variation completed the circle. This, however, was likely only a tighter arch because of a smaller post bottom. Indeed, much of the variation may have been either the mold maker's whim or governed by the bottle style. If either variation had a temporal connection, we have not been able to discover it.

There may be a temporal context for the variations on export beer bottles, however. Although the evidence is sparse, the horizontal initials may have preceded the arched variation – but only with beer bottles. Evidence from beer bottles may also suggest that bottle production at the Chambers factory declined about 1884. That was the last year when beer bottles were advertised in the *Western Brewer* and was also the year of the Great Flood of the Monongahela River that completely submerged the Chambers plant. Most sources (e.g., McKearin & Wilson, Roller, and Creswick – see above) indicated that bottles with either full-name or initial logos were made during the 1865-1870s period.

The Bottle Research Group has examined collections of bottles, especially export beer bottles, at Fort Bowie, Arizona, Fort Stanton, New Mexico, Fort Laramie, Wyoming, and Fort Riley, Kansas. In each case, the collection contained very few beer bottles from A&DH Chambers. Future research needs to locate a collection with a larger number of beer bottles from the Chambers factory in datable contexts. In fact, future research should concentrate on datable contexts in archaeological excavations for the marks on all forms of bottles and jars used by the firm.

Acknowledgments

We want to thank Doug Leybourne for allowing us to use the drawings from the Alice Creswick books. Often, these are the only illustrations available for some jar types. Thanks also to Greg Spurgeon for granting us permission to use the North American Glass photos. These are some of the best jar photos available. Further thanks to Wanda Wakkinen for proofreading this and other BRG publications. Finally, our gratitude to the numerous eBay sellers, who have posted high-quality photos on their auctions. The eBay auctions can be an excellent resource venue for glass studies.

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