

# American Glass Works – Richmond and Paden City

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*AUTHORS' NOTE: Occasionally, we discover that the same mark was used by two (or more) glass houses – usually at different time periods. In this case, not only the initials – but the actual name – was identical: the American Glass Works. One firm was located in Pennsylvania, the other in Virginia and West Virginia. The AGW mark appears to have been used by both firms, although the slightly longer logo (AGWL) was used exclusively by the Pittsburgh plant.*

## Histories

*Southern Glass Co, Richmond, Virginia (ca. 1900-ca. 1908)*

The American Glass Works, Inc., grew out of the Southern Glass Co. at Richmond, Virginia. Southern Glass was listed at least as early as 1900, making bottles at a single 12-ton tank. The plant made liquor, proprietary and packers' ware by at least 1904. By 1908, the plant was no longer listed, replaced by the American Glass Works, Inc. (Grant 1989:88-89; Roller 1998).

*American Glass Works, Inc., Richmond, Virginia (1908-1925)*

Formed in 1908, the American Glass Works, Inc., made "bottles by the thousands," including extract bottles for another company owned by C.F. Sauer, the president of the corporation.[1] Initially, the plant produced mouth-blown bottles at the continuous tank (with nine rings) that the firm had acquired from Southern Glass. The plant was listed in 1913 as using one continuous tank with 10 rings to make a general line of bottles and was making bottles by both hand and machine processes at one tank with 10 rings by 1916 (Grant 1989:88-89; Journal of Industrial and Engineering Chemistry 1913:954; Roller 1998a).

The plant produced beer, soda, wine and brandy bottles in 1921. By 1923, however, the factory made

prescription, panel, patent and proprietary medicine bottles, milk bottles, and soda bottles – all at the same 10-ring tank. The factory burned in 1925 and was never rebuilt (Grant 1989:88-89; Roller 1998a; Thomas Publishing Co. 1921:782).

*American Glass Works, Inc., Paden City, West Virginia (1919-ca. 1935)*

About 1919, the American Glass Works, Inc., bought out the Duquesne Glass Co. at Paden City, West Virginia. The plant made pharmaceutical bottles as well as liquor bottles, flasks and soda bottles (Six 1993:6). After the Richmond plant burned in 1925, the Paden City factory was the only production unit. The factory made "flint prescriptions, sodas, vials, patent, proprietary, liquors and flasks," all by machine, at two continuous tanks with six rings (American Glass Review 1927:125).

Sauer (2006) claimed that the destruction of the Richmond plant caused the owner, C.F. Sauer, to sell the Paden factory. If so, he must have had trouble finding a buyer. It was not until March 15, 1929, that the company was being reorganized. David S. Fisher was the new president with William J. Ready as vice president.[2] The new firm changed the production output to prescription, druggists' and proprietary ware, made at two continuous tanks with four machines. The plant added a fifth machine in 1931 and included "flint specialties" in the listing, although that changed to "flint beverages and specialties" in 1933. In 1936, the company was "in hands of court;" it was listed as "idle" in 1938 and had disappeared from the 1939 listing (American Glass Review 1929:93; 1930:85; 1931:79; 1933:61; 1936:87; 1938:73; Roller 1998b).

## Containers and Marks

According to Roller (1998a), the

American Glass Works, Inc., registered a trademark for "Big Boy" on glass bottles on March 17, 1925. The firm claimed first use of the logo on January 1, 1924. This was probably not actually embossed on any bottles.

## Circle-A

Toulouse (1971:42) noted that the American Glass Works was "reported to have used an 'A' in a circle as a trade-mark . . . undocumented as yet." We have observed several small, colorless, pumpkinseed flasks embossed with a Circle-A on their bases (Figure 1). None of these had any embossing on the sides of the flasks. All were mouth blown.

We also observed and photographed a colorless medicinal bottle at the University of Wyoming (Laramie), embossed on the base with a Circle-A logo (Figure 2). Note especially the apparent rough place at the joint of the heel and the base, just below the Circle-A logo in the photo. The bottle was mouth blown with a crude, one-part finish. Finish, neck and overall appearance are very similar to the Sauer's Extract bottle discussed in the Medicine Bottle



Figure 1 – Circle-A on the base of a pumpkinseed flask



Figure 2 – Circle-A on a medicinal base (University of Wyoming collection)

[1] The C.F. Sauer Co. was founded in Richmond, Virginia, on October 13, 1887, and remains in business today. The American Glass Works, Inc. made Sauer's Extract bottles and possibly other containers for the firm.

[2] According to Roller (1998) and Six (1993:6), the name changed to the American Glass Co. in 1919, but that is not supported by other sources.



**Figure 3 – Medicine bottle  
(Circle-A)**

(University of Wyoming collection)

section below (Figure 3). Although we do not know what types of bottles were initially made by American Glass, the preceding company, the Southern Glass Co., made liquor ware and American Glass made “brandy” bottles. Thus, the Circle-A may have been the initial mark used by American Glass.

Wilson and Caperton (1994:58) listed a ½ pint “ShooFly” flask excavated at Fort Selden. They reported the flask embossed on the base (Figure 4) with:

C 6A;



**Figure 4 – Notation from Wilson & Caperton (1994:58)**



**Figure 5 – Pepsi-Cola  
base with A.G.W. logo  
(eBay)**



**Figure 6 – Pepsi-Cola bottle with A.G.W. basemark  
(eBay)**

The fort was occupied from December 1880 to May 1888 (with a small detachment remaining until 1890), indicating that the flask was probably made during that period. Wilson and Caperton did not mention any post-military occupation of the fort until the 1940s. This somewhat cryptic notation may question the use of the Circle-A logo by American Glass (see Discussion and Conclusions). *AGW (1908-1935)*

Toulouse (1971:42) stated that “this mark has been claimed for the Richmond Company but without documentation. [Bottles] would be machine-made for the most part.” Although the mark was also used by the American Glass Works at Pittsburgh (the subject of another article), there is no question that it was also used by the American Glass Works, Inc., of Richmond and Paden City.

Soda Bottles (1908-ca. 1916 by

hand; ca. 1916-1929 by machine)

Porter (1995:5) noted that this mark appeared on straight-sided Coca-Cola bottles (made before the world-famous hobble-skirt design became popular in 1917). He attributed the mark to the American Glass Works, Ltd. of Pittsburgh. However, he also observed the mark on a hobble-skirt bottle. The A.G.W. logo has been reported on straight-sided Coca-Cola and Pepsi-Cola bottles auctioned at eBay as well as hobble-skirt Coke bottles (Figures 5 & 6).

Numerous examples of crown-finished soda bottles with A.G.W. basemarks have been offered for sale on eBay. By far, the majority of these were used by soda bottlers in the American South. There is little question that these bottles were made by the American Glass Works, Inc., Richmond and Paden City. The mark almost always contains punctuation.





Figure 7 – Example of a Richmond-made, mouth-blown soda bottle base (eBay)

American Glass apparently used a numerical code system similar to the one used by D.O. Cunningham (see Cunningham family glass companies section) and some other soda bottle makers. In all cases we have discovered, each mouth-blown container had two- or three-digit numbers embossed below the A.G.W. logo (e.g., A.G.W. / 133). Some of these had double-stamped bases (Figure 7). A single example (a Pepsi-Cola bottle used in Newport News, Virginia) had no accompanying number. Another mouth-blown example (amber, used by a bottler in Pittsburgh) had an A.G.W. heelmark. Machine-made bottles were embossed with a one- or two-digit number, a dash, then a single-digit number, beneath the mark (e.g., AGW / 67-5 – Figure 8).

Mouth-blown bottles were made from the inception of the company in 1908 to at least 1916, although probably not long after that. The general transition from mouth to machine, at glass houses that specialized in soda bottles, took place between ca. 1913 and ca. 1920, with most using machines by ca. 1916 or earlier. The first listing we have for machine manufacture is 1916, although it could have occurred slightly earlier. Soda bottle production almost certainly ceased in 1929, and listings as early as 1927 were only for “flint” bottles. Although some soda bottles were made again from 1933 to ca. 1935, these, too, were colorless. Dr. Hostetter’s Stomach Bitters



Figure 8 – Example of a Richmond machine-made soda bottle base (eBay)

Ring (1980:255) noted an AGW / B mark on the bases of some bottles of Dr. J. Hostetter’s Stomach Bitters. S. McKee made the first embossed Hostetter’s bottle in 1858, and the embossed containers continued in production by various glass houses until at least 1912. The Hostetter family reduced the potency of the product to 25% alcohol after the Pure Food & Drug Act of 1906, although the alcoholic content increased again at the end of Prohibition. The name was changed to Hostetter Tonic until it was discontinued in 1958 (Fike 1989:36; Lindsey 2011; Wilson & Wilson 1969:34-38).

Several of these bottles have been offered at eBay auctions. Each was embossed with the AGW mark horizontally across the center of the base, usually without visible punctuation (although one had distinct periods after each letter). Although a single example had the logo alone, most were accompanied by a letter below the mark. Along with Ring’s example of “B,” we have seen “D,” “K,” and “X” (Figure 9). It is likely that all letters were represented.

Many AGW Hostetter’s bottles have double-stamped logos. This phenomenon is associated with the period between ca. 1895 and ca. 1915. Although some photos were unclear, all bottles appeared to have tooled finishes. Richard Siri (personal communication 2/13/2010) stated that all Hostettters with AGW mark had



Figure 9 – Hostetter’s base with AGW logo (eBay)

Sept. 27, 1927. W. J. READY  
GLASS BOTTLE  
Filed March 27, 1926  
Des. 73,540

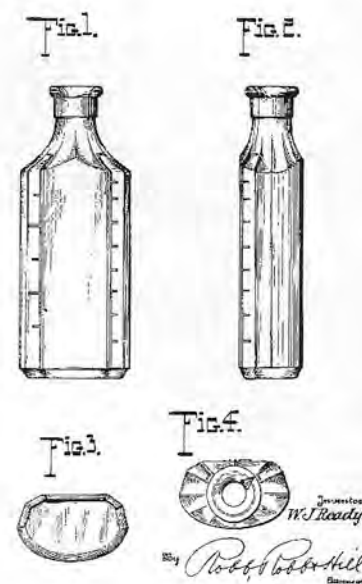


Figure 10 – William J. Ready’s 1927 patent

tooled finishes, and many have double-stamped bases.

Jay Hawkins (personal communication, 2/6/2010) stated that Hostetter’s bottles with the AGW mark were dug by collectors at Pittsburgh in contexts “(ca. 1865-1875) with earlier pontiled bottles and other Pittsburgh-marked Hostettters.” Unless these are very disturbed contexts, this does not fit with the manufacturing techniques (e.g., tooled finishes and double-stamped bases) observed on the bottles. While noting Hawkins’ concern, we maintain that the Richmond company made the bottles

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### Medicine Bottles

Griffenhagen and Bogard (1999:45) agreed that the mark was used by the Richmond factory on pharmacy bottles:

A design for a graduated oval prescription bottle was patented by William J. Ready of Richmond, Virginia, on 27 September 1927, and assigned to the American Glass Works in Richmond. The machine-made bottles were marked Patd 73540 in the base. After the expiration of the seven-year design patent, the bottles were marked A.G.W.

The authors were correct about the patent (filed March 30, 1926). Note that the firm was still incorporated in Virginia, even though that factory had burned and not been rebuilt. The actual bottle may not have been made by the company until after the 1929 reorganization, when Ready became vice president (Figure 10). This patent number may be the only way to determine any of the later bottles made by the Paden City factory.

Griffenhagen and Bogard were probably incorrect, however, about the use of the A.G.W. mark after the patent expiration. All examples we have seen on medicinal bottles were on mouth-blown – not machine-made – containers. Any bottles made after 1927 (probably earlier) were certainly machine-made. It is, of course, possible that we have not discovered any that were machine manufactured.

### Sauer's Extracts

As noted in the Histories section, the American Glass Works was originally formed to manufacture Sauer's Extract bottles. Embossed bottles went through at least four manufacturing stages at the American Glass Works, at least two styles produced by the Owens Bottle Co., and finally evolved into a generic bottle, only identified by the paper label. I have identified these below as Types I - VII.

Type I is actually the bottle

described in the Circle-A section (see Figures 2 & 3). We have included it here because it may have been the original Sauer's bottle. See the Discussion and Conclusions section for our reasoning. The main characteristics are a tooled, one-part "packer" finish (squared top & bottom); a distinct lean to the neck; panels with no indentations; and the Circle-A logo on the base.

All but one of the Sauer's bottles (that were likely made by the American Glass Works) we have examined – regardless of type – have two characteristics on the base that are very diagnostic. One characteristic is a fin – a small protrusion of glass at the joint of the base and heel – always on the same side of the bottle (Figure 11). The second is a very faint oval on the base that is pulled out of shape toward the fin (Figure 12). See Discussion and Conclusions for a more thorough explanation.

We have two examples of this bottle type (II). The bottles were somewhat crudely mouth-blown into a two-leaf mold. The bottles were rectangular in cross-section, with sunken panels on three sides. The side panels were indented at a slant (Figure 13), and both were embossed "SAUER'S EXTRACTS" with somewhat crude letters (Figure 14). One base in our sample was embossed "A.G.W. / Y-3" and had vent marks on all four corners of the base and the shoulders; the other had no manufacturer's mark or codes.

Note in Figure 15 the fin just below the "Y-3" – where the heel joins the base. Each of these bottles has both the diagnostic fin and faint oval. Each bottle was topped with a squared, one-part "packer" finish and was so poorly made that the neck listed to one side (Figure 16). The bottles ranged in color from a solarized light amethyst to a smoky hue.

Type III was actually a major change in style – to ball-neck panel bottles (Figure 17). The "ball" was an embossed ring around the neck set about a quarter of the way up between



Figure 11 – Fin at the intersection of the base and heel



Figure 12 – Faint oval on base



Figure 13 – Slanted side panels



Figure 14 – SAUER'S EXTRACT side panel (sunken)



Figure 15 – A.G.W. / Y-3 on Sauer's Extract base



Figure 16 – Comparison of Type I Circle-A bottle (left) and Type II A.G.W. bottle (right)





Figure 17 – Sauer's ball-neck panel bottle (Type III)



Figure 19 – Type IV A.G.W. bottle



Figure 20 – SAUER'S EXTRACT – side panel (not sunken)



Figure 22 – Body of 1926 bottle, showing finish



Figure 24 – Body of 1927 bottle, showing finish



Figure 18 – Sauer's ball-neck panel base without the fin

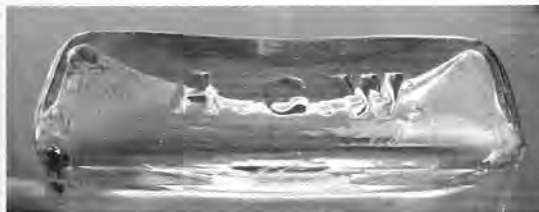


Figure 21 – Base of later Sauer's bottle – A.G.W.



Figure 23 – Base of 1926 Owens-Illinois bottle for Sauer's

the shoulder and finish. All four faces had sunken panels,[3] and the two side panels were still slanted – although the “SAUER'S EXTRACTS” embossing was much higher in quality. The bottles were still topped with the tooled “packer” finish, although the lower edge was now rounded. Two bottles in our sample had slightly slanted necks – a product of continued hand manufacture in two-leaf molds.

The bottles were colorless, although some had solarized to a light amethyst hue. Although most of these bottles exhibited the same basal characteristics (fin and faint oval), a single example did not have the fin (Figure 18). In this example, the oval was not drawn to the fin side of the base (see explanation in the Discussion and Conclusions section). A major change was in the embossing,

which consisted of a letter and a number, sometimes with a hyphen in between. Examples include “F 7,” “M 7,” “O-6,” and “O 1.”

This variation (Type IV) was also a ball-neck panel bottle, mouth-blown into a two-leaf mold – but this bottle had a two-part (double-ring) finish (Figure 19). The side panels, both embossed “SAUER'S EXTRACTS,” were not sunken – thus the lettering stands out to form a hand grip (Figure 20). The manufacture was less crude, although the fin and faint oval were still present. The base was only embossed “A.G.W.” – no letter or number (Figure 21).

By at least 1936, Sauer bought bottles from the Owens-Illinois Glass Co. – possibly because the Paden City plant was now closed. This example (Type V) is a ball-neck

bottle with four sunken panels and a packer finish (Figure 22). Each side panel is sunken on the lower edge only (forming a slope instead of a complete indentation) and is embossed “SAUER'S EXTRACTS.” The base is embossed “4 <O> 6”[4] – although the “6” appears to have been drilled and re-engraved, suggesting that the mold was also used earlier – probably in 1935 (Figure 23).

The final bottle (Type VI) in our sample was also made by Owens-Illinois. It is another ball-neck bottle with only the front panel slightly sunken (Figure 24). The Sauer's embossing on the side panels stands out and forms a good gripping surface because the panels are not recessed. The finish is a double ring, but the lower ring is larger, looking more like a shrunken reinforcing ring on a crown

[3] These panel bottles were a real rip off to the customers. Notice in the internal silhouette of Figure 11 that the panels pressed together so closely that there was hardly any room for the actual liquid inside. The outside shape of the bottles was incredibly deceiving. The bottles only held a half ounce of liquid.

[4] The <O> symbol represents the I-in-an-oval-superimposed-over-an-elongated-diamond logo used by the Owens-Illinois Glass Co. between 1929 and ca. 1960.



**Figure 25 – Souder’s Flavoring Extracts – a Sauer’s spinoff [10-28 Fourth Shoot]**

finish. The base is embossed “2 <0> 7 5 (with the “5” sideways)” – and the “7” (1937) again appears to have been drilled and redone.

Type VII: At some point, Sauer began using generic bottles with paper labels. We have not discovered when the change occurred, although it must have been after 1937. A second change may have occurred simultaneously – the replacement of the cork with a screw cap. Although used as much as 70 years earlier on wide-mouth bottles and jars, the continuous-thread finish began to appear on small-mouth bottles in 1925 and became fairly common by the end of the 1920s. Because of this industry change, Sauer may have switched to both generic bottles and screw-top caps at the same time.

### Sauer’s Spinoffs



**Figure 26 – Edison Ink bottle (eBay)**

As with many other successful products, Sauer had at least one imitator. The bottle was colorless, oval in cross-section, and mouth-blown into a two-leaf mold. It had a ball neck with a flattened panel on the back side and a sunken panel on the front. The front panel was embossed “SOUDERS / FLAVORING / EXTRACTS / DAYTON / OHIO” (Figure 25) At least one eBay seller did not read the label well and sold imitation bottles as being from Sauer. Other Bottles

Although other listings were more specific as to product, the 1913 study stated that the American Glass Works made a general line of bottles. Although there is little question that soda and medicinal bottles were the main products from the factory, we have found two other container types (aside from Hostetter’s bottles) that were virtually certainly manufactured by American Glass.

One eBay auction featured a colorless ink bottle embossed “ACW / 230” on the base and “EDISON / FOUNTAIN PEN INK / PETERSBURG, VA.” on the side (Figure 26). Although the base logo used a “C” instead of a “G,” the Virginia location of the company, coupled with the typical mark/code configuration, suggests that the basemark was an engraver’s error (Figure 27). The second bottle was a colorless Warranted Flask embossed “AGW / 158” in a double-stamped



**Figure 27 – Base of Edison Ink bottle (eBay)**

basemark. Neither set of photos showed any sign of machine scars on the bases or horizontal seams on the finishes. Thus, the bottles were probably mouth-blown.

### Discussion and Conclusions

Virtually every aspect about identifying logos and applying dates related to this company requires explanations. Both logos identified with this company were also used by at least one other glass house. However, in both cases, there are distinguishing features that make the identification of bottles made by this American Glass Works virtually certain. Each mark needs to be discussed separately.

### Circle A

The Circle-A mark is best known for its use by the Armstrong Cork Co. after Armstrong purchased the Whitall Tatum Co. in 1938. All of those bottles were machine-made. The Toulouse reference that American Glass was “reported to have used” the Circle-A mark at least suggests that someone, probably in the Virginia area, made the connection during the period when Toulouse gathered his information.

The only actual evidence that the American Glass Works used the Circle-A mark is the strong similarity between the medicinal bottle we photographed at the University of Wyoming (UW) and the Sauer’s



Extracts Type II bottle (embossed A.G.W. / Y-3) that was certainly made by American Glass. Both the UW medicinal panel bottle and the pumpkinseed flasks were crudely made and mouth-blown.

Probably the best evidence for the use of the Circle-A logo by American Glass is the fin of glass protruding from the center of the joint where the heel meets the base just below the logo. This fin is present on all but one of current sample of these bottles and varies in size. The fin can be easily felt with a finger and is visible on the photos of the medicine bottle with the Circle-A mark and others in our sample – including two with the A.G.W. logo. In all but one case, the fin is in exactly the same place (Figure 28).

These fins are fairly common, especially when molds were used too long and began to wear out. They are especially common at shoulders and side seams of bottles, although only bottles that are rectangular in cross-section appear to have the fins on cup-bottom seams (such as the Sauer examples). On his “Bottle Body Characteristics & Mold Seams” sub-page, Lindsey (2011) described the process:

Bottles blown in loose fitting molds can result in glass being forced or extruded into the mold seams. This is evidenced on a bottle by distinctly thickened mold seams or mold seams that project distinctly outward from the body of the bottle. Extreme examples of these glass extrusions usually broke off with handling leaving a rough edge to the mold seam. This feature is observed typically near the base on the lower sides of a bottle or at the junction area between the shoulder and neck. Bottles with this feature are virtually always mouth-blown.

According to Russ Hoenig, the fins on rectangular bottles at the base-heel junction stem from the hinge pins or mold arms. A loose or worn pin, for example, can cause one mold half to ride up over the edge of the baseplate. This friction, of course, wears away the metal over time, creating the conditions described above. Repairs



Figure 28 – Comparison of fins on bases

for this type of issue were difficult, so American Glass probably ignored the problem as long as it could.[5]

In each of these bottles, there is also an unusual mark in the center of the base – a faint oval (see Figure 12). This is not a machine scar; each of these bottles was mouth-blown into a two-leaf mold. In all but one case, this oval was stretched in the direction of the fin.

To understand these markings requires a review of the process whereby a bottle is blown into a two-leaf mold. This process consists of two parts. First, the blower (or his assistant) goes to the pot inside the furnace and gathers a small gob of glass on the end of his blowpipe. He blows a puff of air to expand the gob, then rolls it on a marver (a steel table) to form a cylinder. This is called the parison or blank.

The blower then places the parison inside the open mold and either closes it with a foot pedal, or a mold boy closes the mold for him. He then blows the bottle into its final shape, allows the gaffer to attach a snap-case, and breaks off the blowpipe. The gaffer reheats the neck and forms the finish (also called “lip” or “top”) of the bottle with a special tool.

Since the blowpipe is long, and the mold is small, placing the parison in the center of the mold could be a problem. One solution, apparently used by these blowers, was to lower the parison until it rested on the baseplate of the mold prior to closing

the two leaves (sides) around it. Placing the parison on the baseplate flattened the bottom of the parison. Since the mold was slightly colder than the glass, it also “set” the circular flat bottom a bit – creating a circular scar or mark.

When the blower added the final puff of air, the parison inflated into the rectangular mold forcing the glass to expand toward the sides farthest away from the center – elongating the circular “scar” into an oval. Since the opening that created the fin acted as a vent, it drew the side of the oval toward the protrusion that would become the fin in the completed bottle.

In addition, the oldest bottles (including the one with the Circle-A logo on the base) had necks that tilt to one side. This was probably caused by excessive heat or pulling the finishing tool to one side. In any event, the relative consistency becomes another diagnostic characteristic.

These bottles were not made in the same mold. As noted in above, these bottles were at least four distinct types, and at least four different sizes were represented. The only logical explanation is that the technique for making these molds, coupled with the process used by the blower, created both the fins and the oval marks on the bases. It makes sense that the same machine shop would make all of the molds for the American Glass Works at Richmond (and possibly Paden City) – and the blowers would use the same (or at least similar) manufacturing processes. In addition, it is reasonable to assume that the gaffers would use similar finishing techniques – creating the leaning neck.

The designation is somewhat questioned by the “ShooFly” flask with a Circle-A mark, excavated at Fort Selden. The fort was occupied from December 1880 to May 1888 (with a small group continuing until 1891), indicating that the flask was probably made during that period. However, the designation on the listing (“C 6A;” over a Circle-A) is cryptic at best. We do not consider

[5] Both Russ Hoenig and Phil Perry explained other technical issues that could cause the creating of the fins, but those are beyond the scope of this article.



this sufficient to seriously question the idea that the Circle-A logo was used by the American Glass Works or Richmond – as its earliest mark.

A final interesting point is that all the Sauer's Extract bottles we have examined, prior to the ones made by the Owens Bottle Co., were mouth-blown into a two-leaf mold. Either we are missing a large sample of the bottles; or, the American Glass Works made generic bottles for Sauer after the plants achieved machine capacity; or, all the Sauer's bottles were only produced by hand methods.

The Richmond factory had machine capacity by at least 1913, although it continued to make bottles by both hand and machine methods until the plant burned in 1925. The early listings for the Paden City, factory, however, listed prescription and patent medicines as products but only noted machine production. This suggests that all the mouth-blown bottles we have currently examined were made in Richmond between 1908 and 1925.

These observations bring up more questions than they answer and should guide the direction of future research into these fascinating bottles. What we need is a larger sample of Sauer's Extract bottles. One anonymous collector noted that Sauer's bottles were so common at Richmond that diggers threw them back in the holes. If Richmond production of the bottles ceased at 1925, and the next bottles we find (in our current sample) start in 1936, what happened during the intervening period? Did Sauer, indeed, use generic bottles with paper labels for the next decade? Only future research at Richmond will tell.

## AGW

The AGW logo is even more contentious than the Circle-A mark. AGW was used by at least three glass houses in the U.S. and one in British Isles. Toulouse (1971:41) noted that the Alloa Glass Works of Scotland used the A.G.W. mark on glass containers from 1900 to at least

1971. However, we have not seen any bottles, either in person or on eBay, that could be matched to such a venue.

We have observed a single example of a flask from the ca. 1870s era, with an applied finish and "AGW" embossed on the base. This was most likely made by the Arsenal Glass Works (1865-1868) or Aetna Glass Works (1869-1870). These bottles should be easy to distinguish from those used by other factories by the applied finish and post-bottom base. See Lockhart 2010 for more information about these earlier glass houses.

At this point, the only bottles with the A.G.W. mark that can be attributed to the American Glass Works at Pittsburgh are on the heels (occasionally bases) of Hutchinson bottles – but these were used all over the U.S. Numbers or letters embossed below the logo almost certainly indicate a manufacture at Richmond or Paden City; these numbers/letters are not found on the Pittsburgh bottles. Other recognizable traits are crown finishes, machine-made bottles, and generally the logo on any non-Hutchinson bottles.

## Acknowledgments

Special thanks to Russ Hoenig, now retired from Owens-Illinois Glass Co. and Phil Perry – who still works there – for their repeated help on this and other projects.

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