

Hygeia Glass Corp. and the Hygeia Nursing Bottles

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The Hygeia Nursing Bottle Co. had a long history – from 1894 to ca. 1988. During that period, it commissioned a series of nursing bottles with several datable changes, growing from embossed bottles into ones with red Applied Color Lettering (ACL). Hygeia bought the Industrial Glass Co. at Lancaster, New York, in 1921 and operated the plant until its sale to the Hazel-Atlas Glass Co. in 1929. The Ball Mfg. Co. purchased the plant in 1953. The wide variety of nursing bottles plus the Hygeia Oval prescription bottle makes this an intriguing study.

Histories

The Hygeia Glass Corp. made nursing bottles for the Hygeia Nursing Bottle Co. The few researchers who have attempted to make sense of these firms have usually conflated them. The story, of course, is complex.

Hygeia Nursing Bottle Co., Buffalo, New York (ca. early 1890s-1988)

In a 1917 interview, Dr. William More Decker was asked the secret of his tremendous success with the Hygeia nursing bottle. He replied that there was “nothing spectacular in the success of Hygeia . . . it has simply survived bad management.” He went on to explain that he had invented his nursing bottle because his own child had colic, and he attributed the problem to the nursing bottles available at the time. Once the child was weaned, he forgot about it until a patient with a similar problem asked for a solution. The baby’s grandfather, a druggist (unnamed in the interview), saw the marketing potential and became Decker’s partner (McQuaig 1917:37).

Although the interview gave few useful dates, it did mention that Decker patented his original idea in 1894. He applied for the patent on September 28, 1893, and received Patent No. 521,773 for a “Nursing Bottle” on June 19, 1894. Decker also received Trademark No. 48,455 for the word “HYGEIA” to be used on nursing bottles. He claimed that the logo was first used on September 25, 1893 (Justia 2015).

Decker surmised that babies got colic because of the thin tubes connected to baby bottles at the time, so he devised “a rubber breast and nipple” to fit over a cup. The cup transformed into a longer, bottle with an open top. At the time, Decker was still a practicing physician at Kingston, New York (McQuaig 1917:37). Hygeia was the Greek goddess of health – an obvious reference to the contribution of the bottle to the baby’s physical condition.

At some point, Decker moved to Buffalo, New York, and had trouble setting up his practice there. At the same time, he and his partner had a falling out, and Decker assumed the full debt and inventory of the bottle business. With free time, Decker developed the business, began advertising, and the company grew (McQuaig 1917:37-38). The earliest ad we have found was in 1904. By that time, his firm was called the Hygeia Nursing Bottle Co. (Roller 1997).

As usually happens with successful inventions, other firms tried to take advantage of Decker’s success. Hygeia posted a notice in the December issue of the *National Druggist* (1910:29) that the firm had successfully sued DeWane B. Smith of the Yankee Co. (Utica, New York) for patent infringement with its SWEET BABEE nurser. Smith’s nursing bottle even embossed “HYG” on the nipple, where Decker’s firm used “HYGEIA.” Smith had not appealed.

Decker also sued the Western Bottle Mfg. Co., claiming its Justrite Nurser was also an infringement. Hygeia received the judgement, but Western Bottle had appealed at the time (*National Druggist* 1910:29). To maintain ammunition for these disputes, Decker kept up a running series of patents. After his initial patent in 1894, he or Howard H. Ganson – an inventive employee – received a new patent every 17 years (the duration of a patent) or less. His timing was close on the second patent – February 28, 1911 – just three and a half months shy of being out of protection. Succeeding patents – to at least the late 1940s – were more timely.

As often happens with internet research, there is little available on the later company. Roller (Archives n.d.) dated the firm as late as 1988, and we have found nothing more recent than that.

Hygeia Glass Corp., Lancaster, New York (1921-1929)

Decker formed the Hygeia Glass Corp. to make bottles for the Hygeia Nursing Bottle Co. The firm took over the older Industrial Glass Co., Lancaster, New York (founded in 1907) in 1921 (Dunn 1971:9; Glass Industry 1921:25; Taylor 1999:7). In 1927, the plant was listed as making “bottle specialties” at one continuous tank (*American Glass Review* 1929:135). According to a January 1928 ad (*Glass Container* 1928:28), the company produced “every type of prescription, beverage and food product, bottles and containers, up to 32-ounce capacity.” In 1929, William M. Decker was president and general manager, with Perry M. Wurst as vice president, Howard H. Ganson as secretary and plant manager, and Mrs. H.H. Ganson as treasurer. The plant made “flint prescription and proprietary ware, beverages, packers and preservers, bottle specialties” made by machine at one continuous tank with four rings (*American Glass Review* 1929:98-99).

As stated above, the Hygeia Glass Corp. advertised Hygeia Ovals in 1927 and quoted the ad as saying they were “clear, strong, distinguished looking, easy to pour from, hard to break” (Griffenhagen & Bogard 1999:100). They added that “the firm soon moved to Buffalo, New York, to specialize in nursing bottles.”

The *Courier Express* (Buffalo, New York) for January 26, 1930, announced the sale of Hygeia Glass to the Hazel-Atlas Glass Co. Hazel-Atlas apparently operated the firm as a subsidiary, using the Hygeia name, until ca. 1935, when it lost its individual identity. The Ball Corp. purchased the factory on November 2, 1953, renaming it the Drug Division of Consumer Products Division (Roller 1997). We have no solid evidence that Hazel-Atlas made Hygeia bottles, although that is likely until 1943, when the Owens-Illinois began making ACL bottles. Ball Corp. certainly made Hygeia bottles until at least the mid-1960s (see the Containers and Marks section below).

Patents

William M. Decker founded the Hygeia Nursing Bottle Co. and patented the original bottle as well as numerous follow-up patents. An employee (and secretary of the Hygeia Glass Corp.), Howard H. Ganson, also patented bottle improvements and assigned them to the

company. Both men also invented other items not listed here – including a baby carriage by Decker. We have only included minimal information about most of the patents, discussing more fully ones that are directly related to changes in or embossing on the bottles.

William M. Decker

June 19, 1894

William M. Decker applied for the patent on September 28, 1893, and received Patent No. 521,773 for a “Nursing Bottle” on June 19, 1894 (Figure 1). This was his initial patent, the one that launched the Hygeia Nursing Bottle Co. and changed his career.

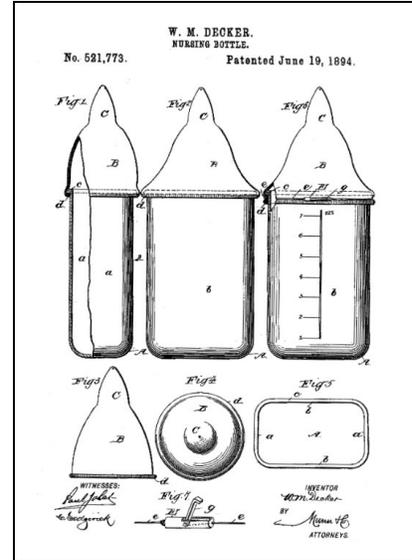


Figure 1 – Decker 1894 patent

January 10, 1911

Applied: September 29, 1909; Received: January 10, 1911, Patent No. 981,072 for a “Nursing-Nipple”

January 24, 1911

On August 11, 1909, Decker applied for a patent for a “Combined Breast and Nipple for Nursing Bottles.” He received Patent No. 982,776 on January 24, 1911. This patent date was embossed on the heel of a Hygeia bottle in advertisements that may have appeared as early as 1911 and extended until at least 1917 (Figure 2).

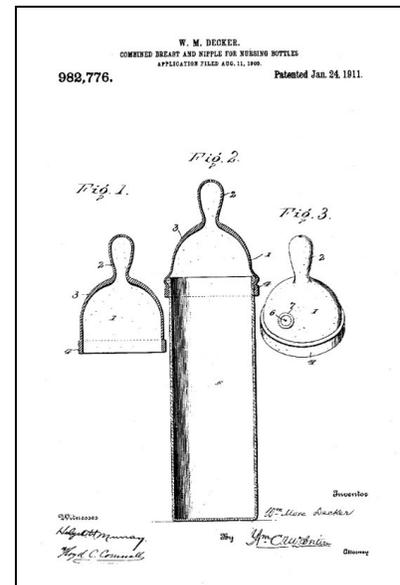


Figure 2 – Decker 1911 patent

February 28, 1911

Applied: May 4, 1909; Received: February 28, 1911, Patent No. 985,328 for a “Nursing Bottle”

June 2, 1914

Applied: May 26, 1911; Received: June 2, 1914, Patent No. 1,099,082 for a “Nursing Device”

Applied: June 11, 1913; Received: August 11, 1914, Patent No. 1,106,927 for a “Nursing Device”

December 5, 1916

Decker applied for another patent on December 28, 1915. He received Patent No. 1,207,377 for a “Nursing Bottle” on December 5, 1916 (Figure 3). This patent appeared on nursing bottles, probably beginning in 1917 – maybe even a year later, when the old molds wore out. Although the patent drawing showed a tapered bottle, there is no evidence that Hygeia actually used such a bottle until Ganson’s 1943 patent (see below).

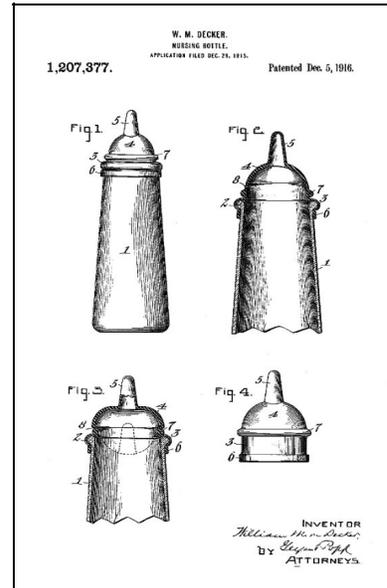


Figure 3 – Decker 1916 patent

August 7, 1917

Applied: October 20, 1916; Received: August 7, 1917, Design Patent No. 1,225,017 for a “Milk Bottle and Similar Receptacle”

August 31, 1920

Applied: December 6, 1918; Received: August 31, 1920, Patent No. 1,351,328 for a “Cap for Nursing Bottles and the Like”

June 9, 1925

Applied: May 14, 1923; Received: June 9, 1925, Patent No. 1,541,330 for a “Nursing Bottle”

October 29, 1929

Decker applied for this patent for a “Nursing Bottle” on March 3, 1927; and received Patent No. 1,733,184 on October 29, 1929. Although we have not seen this patent date on a bottle, it is important because this was the design that first used the double-ring finish – thereby establishing a date for that feature (Figure 4).

Howard H. Ganson

June 12, 1928

Applied: January 21, 1927; Received: June 12, 1928, Patent No. 1,673,190 for a “Nursing Nipple”

October 8, 1929

Applied: May 11, 1926; Received: October 8, 1929, Patent No. 1,730,845 for a “Nursing-Bottle Holder”

December 21, 1943

On May 18, 1942, Howard H. Ganson applied for a patent for a “Design for a Nursing Bottle.” He received Design Patent No. 136,888 on December 21, 1943 (Figure 5).

Although Decker had received a patent for a tapered bottle in 1929, Ganson’s 1943 patent was the number that was embossed on the actual tapered bottles.

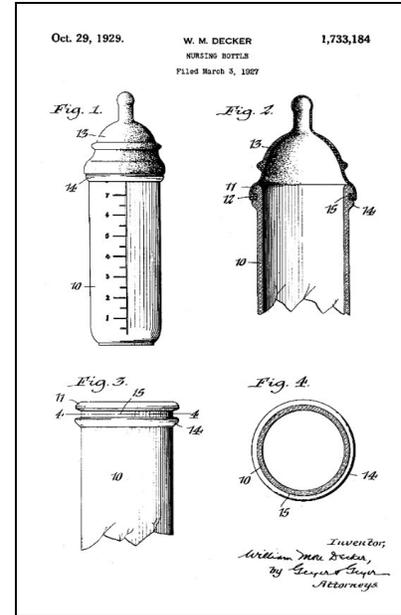


Figure 4 – Decker 1929 patent

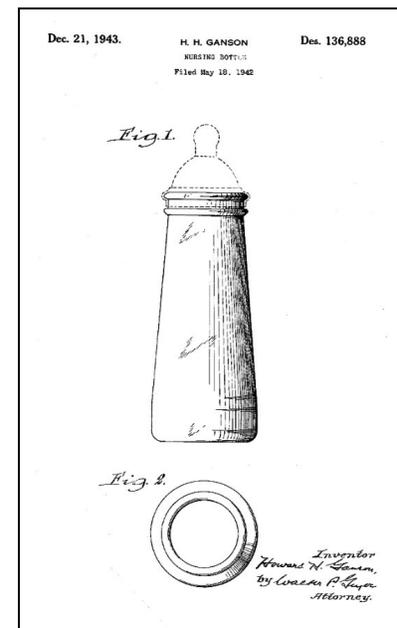


Figure 5 – Ganson 1943 patent

December 26, 1944

Ganson applied for another “Nursing Bottle” patent on August 26, 1941, and received Patent No. 2,365,947 on December 26, 1944. Ganson assigned this and all of his glass-related patents to Hygeia.

September 2, 1947

Ganson had one final patent relevant to this study. On June 23, 1944, he applied for a patent for a “Nursing Bottle” and received Patent No. 2,426,927 on September 2, 1947 (Figure 6). Ganson stated that one object of his patent was to “provide a nursing bottle using a screw cap.” Although screw bands had been used for decades on fruit jars, this was the first adaptation of screw bands – plastic in this case – and their corresponding continuous-thread finishes to nursing bottles.

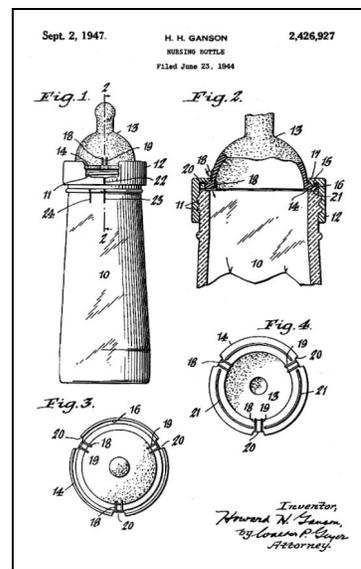


Figure 6– Ganson 1947 patent

Containers and Marks

It is likely that the Hygeia Glass Corp. used the “HYGEIA” logo on nursing and prescription bottle bases, and there is no doubt at all that “HYGEIA” was used by the Hygeia Nursing Bottle Co. on the fronts of bottles.

HYGEIA (at least 1921-1930s, embossed; 1930s-?, ACL)

At least four glass houses made bottles for the Hygeia Nursing Bottle Co. The bottles may be divided into two broad categories: embossed and Applied Color Lettering (ACL), although some embossed bottles were made after 1953 – at least a decade after the adoption of ACL bottles. Several other features help with dating: patent dates (heels), patent numbers (heels and bases), manufacturer’s logos, stippling and basal patterns, and finish type (double-ring or continuous-thread). With one exception, all bottles had graduations either embossed or in ACL on the reverse. The bottles fall into three distinct time periods:

1. Embossed period – 1894-ca. 1943
2. Owens-Illinois period – ca. 1943-1953
3. Ball period – 1953-at least 1960s

Embossed Period (1894-ca. 1943)

The earliest bottles used by the firm may have been generic, but they were embossed “HYGEIA” on the front by at least 1903 – as shown in a 1903 letterhead and the earliest ad (1904) we have found (Figures 7-9). The earliest embossed bottles had the 1894 patent date on their heels (Figure 10). Although we have never seen an example, a 1917 ad offered on eBay showed an

Just Like Mother

That's Why Baby Likes the Hygeia Nursing Bottle

The rubber part is so like the human breast in size and shape that in weaning or when natural supply is low, baby will go from breast to the Hygeia bottle without noticing the difference. The Hygeia is without a neck or angle; needs no funnel to fill, nor brush to clean the interior which is wiped out like a tumbler. The rubber breast is yielding, yet not collapsible; seamless can be turned inside out to clean thoroughly. It has no crack or crevice where dirt can gather or germs can propagate. The Hygeia is used and endorsed by every children's hospital in the country, because it fills every requirement of a perfect, ideal sanitary nursing bottle. If your druggist don't keep the Hygeia, send us his name and 38c. and we will mail you a bottle at once.

HYGEIA NURSING BOTTLE CO., Dept. P, Buffalo, N. Y.

Figure 8 – 1905 ad (Amazon.com)

The Hygeia Nursing Bottle Co.,
 TELEPHONE, BRYANT 668-R

OFFICE: 242 ASHLAND AVE.

PACKING AND STORE HOUSE: COR. ASHLAND AND W. UTICA ST.

Buffalo, N. Y., July 30th., 1903.

Figure 7 – 1903 letterhead (eBay)

embossed bottle with the 1911 patent date on its heel (Figure 11). As



Figure 9 – Embossed bottle

explained in the history section, Decker was careful to have new patents to protect the bottles before each older patent expired. The final patent date on the heels (and occasionally shoulders) of embossed bottles was December 5, 1916 (Figure 12), although there could be a variation embossed with the October 29, 1929, patent date – the patent for the double-ring finish. The patent number for 1927 was embossed on one variation of ACL bottles.



Figure 10 – 1894 heelcode (eBay)

We have no clue as to the producer of the early bottles. No producer was listed by the historical literature, and there are no manufacturer's marks on the early embossed bottles. At some point, the producer shifted from making mouth-blown bottles to machine-made ones, but we have no way to tell when that was. At this point,



Figure 12 – 1916 shoulder code (eBay)

all of the embossed bottles we have seen were machine made. It is possible that all embossed bottles were produced by machine, and the earlier containers were entirely generic. If so, the beginning date would likely be sometime between ca. 1900 and ca. 1920.

When Decker purchased the Industrial Glass Co. in 1921 (see below), the new Hygeia Glass Corp. almost certainly made the nursing bottles. Some of the bottles were embossed “HYGEIA” on the base, and these may have been made by the Hygeia Glass Corp. – although all embossed bottles (except the one by Ball) may have had the HYGEIA basal embossing. When Hazel-Atlas purchased the Hygeia plant in 1929, it apparently operated the factory under the Hygeia name – and almost certainly continued making the bottles with the “HYGEIA” basemark. HYGEIA on the base was embossed in mirror image to be read through the bottle rather than facing the base (Figure 13). A final embossed bottle is discussed in the Ball section below. See Table 1 for a chronology of the Embossed Period.



Figure 11– 1911 ad (Kat Magistri)

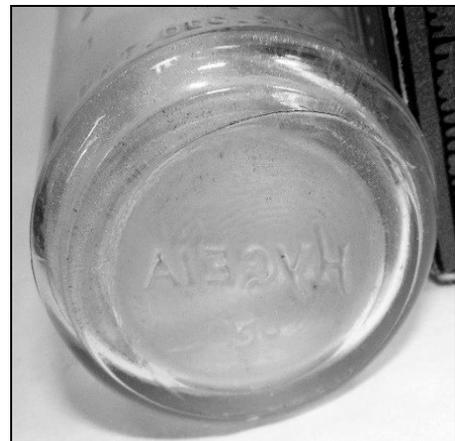


Figure 13 – HYGEIA in reverse (eBay)

Table 1 – HYGEIA Bottle Variations – Embossed Period

| Front (Medium) | Heel | Base | Mfg. Scar | Finish | Dates |
|----------------|------------|---------|-----------|--------|------------|
| HYGEIA (Emb) | Pat 1894 | HYGEIA | Unknown | 1-ring | 1894-1911* |
| HYGEIA (Emb) | None | Unknown | Unknown | 1-ring | ? |
| HYGEIA (Emb) | Pat 1911 | Unknown | Unknown | 1-ring | 1911-1916? |
| HYGEIA (Emb) | Pat 1916** | Unknown | Unknown | 1-ring | 1916?-1929 |
| HYGEIA (Emb) | Pat 1916 † | HYGEIA | Valve | 2-ring | 1929-1943 |
| HYGEIA (Emb) | Pat 1916 | HYGEIA | Owens | 2-ring | 1929-1943 |

* Embossed Hygeia bottles may only have begun ca. 1900 or later.

** This embossing *should* exist on a bottle with a single-ring finish, although we have not seen an actual example.

† The patent date on this bottle is on the shoulder rather than the heel. There may be another variation with the 1929 patent date – for the double-ring finish. The only example we have found, however, had the 1916 patent date.

Owens-Illinois Period (ca. 1943-1953)

About 1943, the Owens-Illinois Glass Co. made bottles with “HYGEIA” in red Applied Color Lettering (ACL) (Figure 14). Since the Hazel-Atlas Glass Co. owned the Hygeia Glass Corp. during this period, it seems odd that the Hygeia bottles would be made by the Owens-Illinois Glass Co. This seeming inconsistency is actually simple to explain. Owens-Illinois developed the ACL process and instituted it on bottles in 1934 – although the transition period of its use extended into the mid-1940s. The process was most popular on soda and milk bottles and was not extensively used on other bottle types until the late 1940s or even later. Rather than expand the Hygeia plant to use ACL, Hazel-Atlas likely opted out, and the Hygeia Nursing Bottle Co. farmed the contract to Owens-Illinois.



Figure 14 – ACL HYGEIA (eBay)

There were at least nine variations of these bottles, although none had the typical Owens-Illinois Diamond-and-OI logo. All but three of them had the Duraglas (cursive) logo, used by Owens-Illinois between 1940 and 1964. The beginning date, however, is set by “PAT. 136,188” – Howard H.



Figure 15 – 1943-patent bases



Figure 17 – Double-ring & threaded finishes



Figure 18 – Graduations on front (eBay)

Ganson’s 1943 design patent number – embossed on the bases (Figure 15). This patent (and date) instituted a different shape of bottle. Where the earlier bottles had “straight” sides (i.e., perpendicular to the

base), all but the earliest Owens-Illinois HYGEIA bottles were tapered from heel to finish (Figure 16). In 1945, another Ganson patent introduced continuous-thread finishes, and Owens-Illinois changed from the double-ring finish to one with a continuous thread at that time (Figure 17). Duraglas bottles were likely replaced when the Ball Corp. purchased the Hygeia Glass Corp. in 1953. Most of these bottles had graduations to measure the amount of formula on the reverse, but one of them had the graduations on the front (Figure 18). The latest examples had “HYGEIA / SCREW TOP / Duraglas” – one with “MADE IN U.S.A.” inserted (Figure 19).



Figure 16 – Tapered bottle (eBay)

The earliest three variations did not have the “Duraglas” logo on the base, and two of these had double-ring finishes (see Figure 15). To place this in perspective, “Duraglas” was a special glass formula to make bottles stronger. It began to be available ca. mid-1940, although a customer could also order bottles made with the standard formula. Thus, a bottle without “Duraglas” could have been made much later than 1940,

but bottles with the mark could not predate 1940. All three of these bottles had Ganson's 1943 patent number, so they could not have been made prior to that year. See Table 2 for a chronology of the Embossed Period.

Table 2 – HYGEIA Bottle Variations – Owens-Illinois Period

| Front (Medium) | Heel* | Base | Finish | Dates |
|--|------------------|------------------------|--------|-------------------|
| HYGEIA (ACL)** | prob. Pat # 1943 | Pat # 1943 | 2-ring | ca. 1943 |
| HYGEIA (ACL) | Pat # 1929 | Pat # 1943 | 2-ring | 1943-ca. 1945 |
| HYGEIA (ACL) | No patent # | Pat # 1943 | 2-ring | 1943-ca. 1945 |
| HYGEIA (ACL) | prob. Pat # 1943 | Pat # 1943 Duraglas | 2-ring | 1943-ca. 1945 |
| HYGEIA (ACL) / Duraglas | prob. Pat # 1943 | Pat # 1943 Duraglas | 2-ring | 1943-ca. 1945 |
| HYGEIA (ACL) | prob. Pat # 1943 | Pat # 1943 Duraglas | CT | ca. 1945-ca. 1948 |
| HYGEIA (ACL) † | prob. Pat # 1943 | Pat # 1943 Duraglas | CT | ca. 1945-ca. 1948 |
| HYGEIA / SCREW TOP (ACL) | prob. Pat # 1943 | Pat # 1943 Duraglas | CT | ca. 1948-ca. 1953 |
| HYGEIA / SCREW TOP / MADE IN U.S.A. / Duraglas (ACL) | prob. Pat # 1943 | Pat # 1943 Duraglas | CT | ca. 1948-ca. 1953 |

* Many of these had “MADE IN USA” on the heel.

** These were straight-sided; all others in the Owens-Illinois period were tapered.

† This variation had the graduations on the front as a background for “HYGEIA”; all others had graduations on the reverse.

A final glass attachment – apparently only available with ACL bottles – was a measuring cup, similar to the dose glasses offered by pharmacies. These came in at least two formats. One was embossed “HYGEIA / “STER-SEO” (their quotation marks)” on one side (to be read with the cup upside down – where it sat atop the bottle) and graduations on the other (to be read with the cup right-side up). The obvious purpose was to measure milk to make the proper formula (Figures 20). The other was embossed “MADE IN U.S.A. / HYGEIA” (also with the cup upside down) and the graduations on the reverse. These were apparently introduced at some point during the Owens-Illinois period and may have disappeared prior to the Ball period.



Figure 19 – Screw top (eBay)



Figure 20 – Glass covers (eBay)

Ball Period (1953-ca. mid-1960s)

The Ball Mfg. Co. produced a nostalgic embossed bottle, probably right after the firm purchased the Hygeia Glass Corp. in 1953. These were embossed “HYGEIA / BY / Ball” on the front, with the Ball logo that was used between 1933 and 1960 (Roller 1983:25). The base had the Gannon 1943 patent number (Figures 21 & 22). In an interesting reversion, the Ball bottles were straight sided rather than the tapered shape of the Owens-Illinois period. Nothing in the literature explained the change in shape. The Hygeia Nursing Bottle Co. may have retained this patent, although it is more likely that Ball or Hygeia no longer felt the need for the tapered design.



Figure 21– Ball embossed bottle (eBay)



Figure 22 – Ball embossed base (eBay)



Figure 24 – ACL base (eBay)

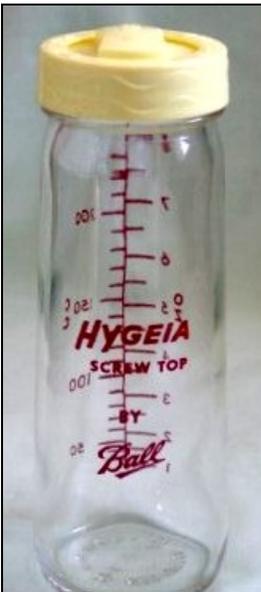


Figure 26 – Screw top by Ball (eBay)

An ACL bottle was very likely made by Ball, although it did not have the Ball logo. These had “HYGEIA / SCREW TOP” in red ACL on the front and the embossed basal pattern used by Ball (e.g., “PAT. 136,188 (arch) / 967 31 / MADE IN U.S.A.”) (Figures 23 & 24). Because of the basal pattern, these were almost certainly made by Ball. At least one of these had a “58” (1958) date code, and all of them were likely made between ca. 1955 and 1960. One unusual variation had red-outlined stars and the first verse of “Twinkle, Twinkle Little Star” on the front, along with “HYGEIA / SCREW TOP” (Figure 25) – probably made during the same 1955-1960 period. The final variation we have discovered had “HYGEIA / SCREW TOP / BY / Ball” (Ball logo used from 1960 to the present) in red ACL on the front, and the Ball embossing pattern on the base (Figure 26). See Table 3 for a chronology of the Embossed Period.

There are several distinctive features that separate the bases made by Owens-Illinois and those made by Ball – aside from the obvious “Duraglas” on Owens-Illinois bases and sides and “Ball” on the sides of Ball bottles. Owens-Illinois bases have smaller letters in the patent number (with one exception), and the stippling was stamped by hand. This is observable because the patent number and “Duraglas” (when present) were not engraved atop the stippling; the background under the embossing was smooth. In addition, the engravers stamped the tiny dots

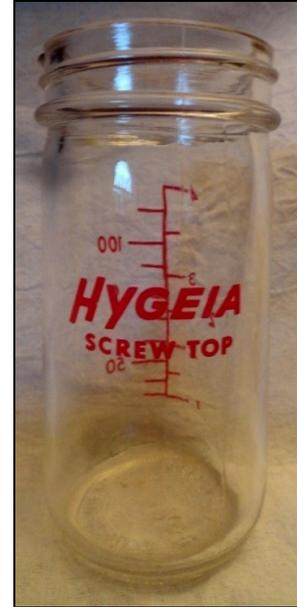


Figure 23 – ACL bottle (eBay)



Figure 25 – Twinkle bottle (eBay)

with hand tools that resulted in patterns that show straight lines of dots in some places and curved lines in other, and the bases have no additional numbers or letters. If the bottles had “MADE IN U.S.A.,” it was embossed on one heel or in red ACL on the front.

Table 3 – HYGEIA Bottle Variations – Ball Period*

| Front (Medium) | Heel | Base | Finish | Dates |
|---|-------------------|--------------------------------------|--------|----------------|
| HYGEIA / BY / Ball (Emb) | None | Pat # 1943; codes; MADE IN U.S.A. | CT | 1953-ca. 1955 |
| HYGEIA / SCREW TOP | MADE IN U.S.A. | Pat # 1943; codes; MADE IN U.S.A. | CT | ca. 1955-1960 |
| Star drawings / Twinkle, Twinkle . . . / HYGEIA / SCREW-TOP | Bare | Pat # 1943; codes; MADE IN U.S.A. | CT | ca. 1955-1960 |
| HYGEIA / SCREW TOP / BY / Ball | Bare | Pat # 1943; codes; MADE IN U.S.A. | CT | 1960-mid-1960s |

* Ball returned to bottles that were straight-sided or only slightly tapered.

The Ball bases were knurled (i.e., dots made by machines rather than hand stamped). This created a pattern of dots in the form of concentric circles that covered the entire base. The patent number and other embossing were placed directly on the knurling. The patent number was in an arch, with a complex number and/or letter code across the center, and “MADE IN U.S.A.” in an inverted arch at the bottom (see Figures 23 & 25). The codes could be quite complex, and letter sizes varied. On some bases, there was one more line of numbers in the center that included a two-digit date code.

Prescription Bottles (1927-early 1930s)

Griffenhagen & Bogard (1999:100) noted that the Hygeia Glass Corp. advertised Hygeia Ovals in 1927. We have only seen a single photo of these bottles on eBay, embossed “1 / HYGEIA” on the base (Figures 27 & 28). These were likely only made for a fairly short period of time, perhaps from 1927 to the early 1930s.

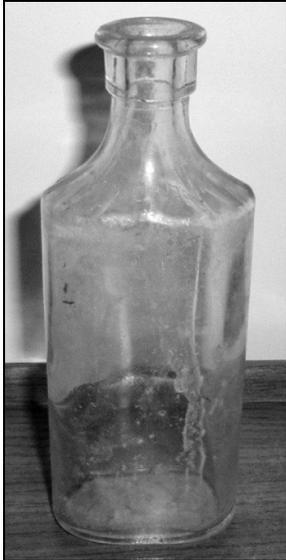


Figure 27 – Hygeia prescription bottle (eBay)

Unrelated Bottles

Numerous unrelated companies used the word, HYGEIA, as part of their names or as a brand name (e.g., Figures 29 & 30). The name may be embossed on soda, milk, or other bottles – but the only connection with the Hygeia Glass Corp. – that we can detect – is on nursing and prescription bottles.



Figure 28 – Hygeia prescription base (eBay)

Discussion and Conclusions

The Hygeia Glass Corp. probably embossed “HYGEIA” on the bases of Hygeia nursing bottles, although the basal embossing *could* have been mandated by the Hygeia Nursing Bottle Co. during the embossed period of its bottles. It seems probable that the “HYGEIA” embossing was connected to the *glass* firm rather than as a requirement of the *nursing bottle* company. The Hygeia Glass Corp. was almost certainly the firm that placed “HYGEIA” on the bases of the Hygeia Oval prescription bottle in virtually the identical font as that used on the Hygeia nursers. The same somewhat unusual font on both bottle types can hardly be a coincidence.



Figure 29 – Hygeia bottle (eBay)



Figure 30 – Hygeia bottle (eBay)

The Hygeia Nursing Bottle Co. used a variety of bottles between 1894 and the mid-1960s. These may be divided into three main temporal segments: the embossed period (1894-ca. 1943); the Owens-Illinois period (ca. 1943-1953); and the Ball period (1953-ca. mid-1960s). Each of these periods contained bottles with various characteristics that allow for finer dating as noted above. Future research should center around the collection of a greater sample of nursing bottles and more historical searching.

Machines

The early machines used to make early Hygeia bottles deserve some discussion. The dearth of photos available make any positive identification difficult. However, we have several clues. The *very* few photos we have of the early embossed bottles with single-ring finishes show a horizontal seam encircling the finish. This type of finish appeared on two semiautomatic machine types that we have researched. The earliest was the Ripley machine, leading to the Blue machine, first patented in 1894. However, the Blue machines – and most other early wide-mouth semiautomatics – used drop-down parison molds, which could only be used to make containers with relatively sharp shoulders. Since the Hygeia bottles had no discernable shoulder, the Blue machines are an unlikely choice (Lockhart & Bernas 2014).

About 1905 – and this is not yet well researched – someone devised an adaptation for milk bottles that was unique. The parison was in the shape of an inverted cone, and the mold was made in a single piece, crowned with a cap that made the top of the finish. The finish on these parisons could *only* be a single ring, and the parison was pushed out of the mold by an ejection rod. A set of tongs lifted the parison out and placed it in a two-piece blow mold. The operation left a circular ejection scar on the base. This type of machine *could* have been used to make the earliest bottles in our photo collection, possibly until the end of the Hygeia Glass Corp. period in 1929.

As wide-mouth bottle and jar machines improved, a valve was used in the base to relieve the pressure created by suction when the parison was removed from the parison mold. These left a scar that was identical to the ejection scar from the milk bottle machines. In this case, however, a more complex finish was created and used to lift out the parison and move it to the blow mold. Although we have no photos of bases of single-ring finished bottles embossed with

“HYGEIA” on the bases, such bottles may have valve scars on the bases that were made by the Hygeia Glass Corp. from 1921-1929.

Figure 31 shows a base and bottle with the double-ring finish and a valve scar – made by these machines – almost certainly used from 1929, when the Decker patent first instituted that finish. The Hazel-Atlas Glass Co. owned the Hygeia Glass Corp. by that time and probably used the old machines left from the Hygia Glass Company’s independent days (also see Figure 12 for the bottle).

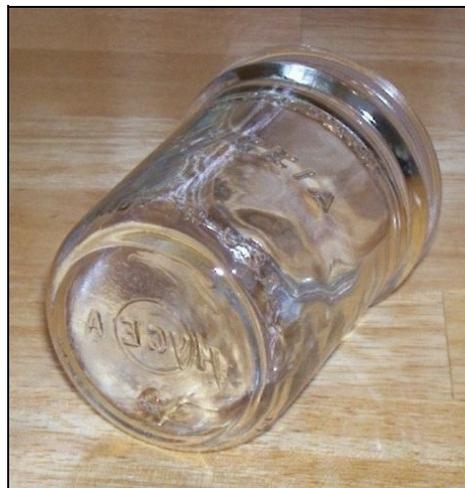


Figure 31 – Valve scar (eBay)

A final base photo (see Figure 13) showed an Owens machine scar. The Hazel-Atlas Glass Co. received the Owens license to make packers’ jars and bottles on May 20, 1909 (see the section on Hazel-Atlas for more information). Apparently, the license included nursing bottles, or Hazel-Atlas may have figured out that no other license specified that type of bottle. Hazel-Atlas probably began replacing the older machines with Owens automatics soon after it bought Hygeia Glass in 1929. In any event, Hazel-Atlas probably made embossed bottles with Owens machines until ca. 1943, when Hygeia adopted the Owens-Illinois bottles with red ACL labels.

This adds another level of dating data to the bottles. In summary, the embossed bottles (and the possibly generic bottles prior to machine manufacture) went through four manufacturing stages:

1894-ca. 1905 – Mouth blown (possibly with no embossing)

ca. 1905-1929+ – Unknown milk bottle machine

1929-ca. 1943 – Owens automatic machines

ca. 1943-1988 – Later automatic machines (including Individual Section machines)

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