

**A Marked Coincidence: The C.C.G.CO. Logo
of the Colorado City Glass Co. and Cream City Glass Co.
Part 1 – Colorado City Glass Co.**

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The Colorado City Glass Co. has been largely underappreciated in bottle research despite the fact that it was possibly the largest glass manufacturer west of the Mississippi River during the five years it was in business. This situation is likely due to two factors. First, the company's main production appears to have been unmarked bottles for mineral water. Second, there was another company, the Cream City Glass Co., operating at the same time that used the same maker's mark on its bottles and was better known to researchers.

This later fact is well illustrated by a publication on the analysis of bottles found at a camp site of Gustav Nordenskiöld, who conducted the first scientific exploration of Mesa Verde National Park (Scott 1972). Nordenskiöld passed through Denver in 1891 and provisioned himself for his exploration. Two packer bottles with maker's marks were recovered from one of his camp sites in Mesa Verde. Scott recognized that one bore the mark of the Colorado Glass Works out of Golden, Colorado, but attributed the other with a mark of C.C.G.Co. to the Cream City Glass Co., apparently unaware of the more local firm. Other misinformation that continues to be propagated about the company is that it closed because a destructive fire. While fire destroyed the main factory in 1892, it was rebuilt and operated for a season before being closed because it could not operate profitably.

History

Colorado City Glass Co., Colorado City, Colorado (1889-1893)

The Colorado City Glass Co. was incorporated on February 9, 1889 (State of Colorado 1889). According to the *Manitou Springs Journal* (8/10/1894), the main impetus for the establishment of the Colorado City Glass Co. was the need for containers by the highly successful Manitou Mineral Water Co. as bottles were the sole method for distributing the water.

In 1888, the Manitou Mineral Water Co. doubled the number of railcar loads of bottled water it shipped, leading to difficulty in acquiring bottles, which were expensive even before adding the high cost of shipping them in from eastern manufacturers (Hawley 1895). In addition, the numbers of bottles broken in transport appear to have severely impacted profitability (Roberts 1968). Further, all the materials needed for glass manufacturing were readily available in the area around Colorado City except soda ash, a flux necessary for glass manufacture that was imported from England by most if not all American glass manufacturers at the time (*Iris* 1891).¹

Of the six men associated with the founding of the Colorado City Glass Co., four were local business men who were also proprietors of the Manitou Mineral Water Co.: Jerome B. Wheeler, Louis R. Ehrich, Joel A. Hayes, and Gen. Charles Adams. Wheeler, the main investor and proponent of the Manitou Mineral Water Co. and Colorado City Glass Co., was an executive with the Macy's Department Store in New York City before moving west to Manitou Springs, Colorado and becoming involved in the economic development of the region that included interests in mining, railroads, banks, and hardware (Roberts 1968).

Two other men involved in the founding of Colorado City Glass Co. brought experience in glass manufacturing to the concern. The first was Adolphus Busch, the founder and engine behind the growth of the Anheuser-Busch Brewing Assoc. Like the Manitou Mineral Water Co., Anheuser-Busch was continually in need of more bottles to keep up with its increasing production, even leading to the import of bottles from Germany (*Colorado Springs Gazette* 1889; Lockhart et al. 2010).

To remedy the situation, Busch took an interest in bottle manufacture, investing in the Streator Bottle & Glass Co., possibly as early as 1881, buying the Belleville Glass Works in 1886, and building a glass plant bearing his name in St. Louis around 1892. The second man was Edward C. Modes, the son of William F. Modes, Superintendent of the Streator Glass and Bottle Co. and an investor in the Adolphus Busch glass factories. E.C. Modes learned the trade in his father's employment (Lockhart et al. 2010).

¹ The *Iris* was a Colorado City newspaper.

After incorporation, the Colorado City Glass Co. erected a number of buildings on the property on Race St. in the Calvert Heights addition, south side of the city (Figures 1 & 2).² The bottle glass factory was an imposing building two-and-a-half stories high with a 75-foot tall smoke stack costing between \$30,000 and \$40,000. The bottle glass factory had a stone foundation that appears to have included at least a partial basement. The main floor of the building was built of brick with a high ceiling, while the upper story was constructed of wood and corrugated steel (*Aspen*

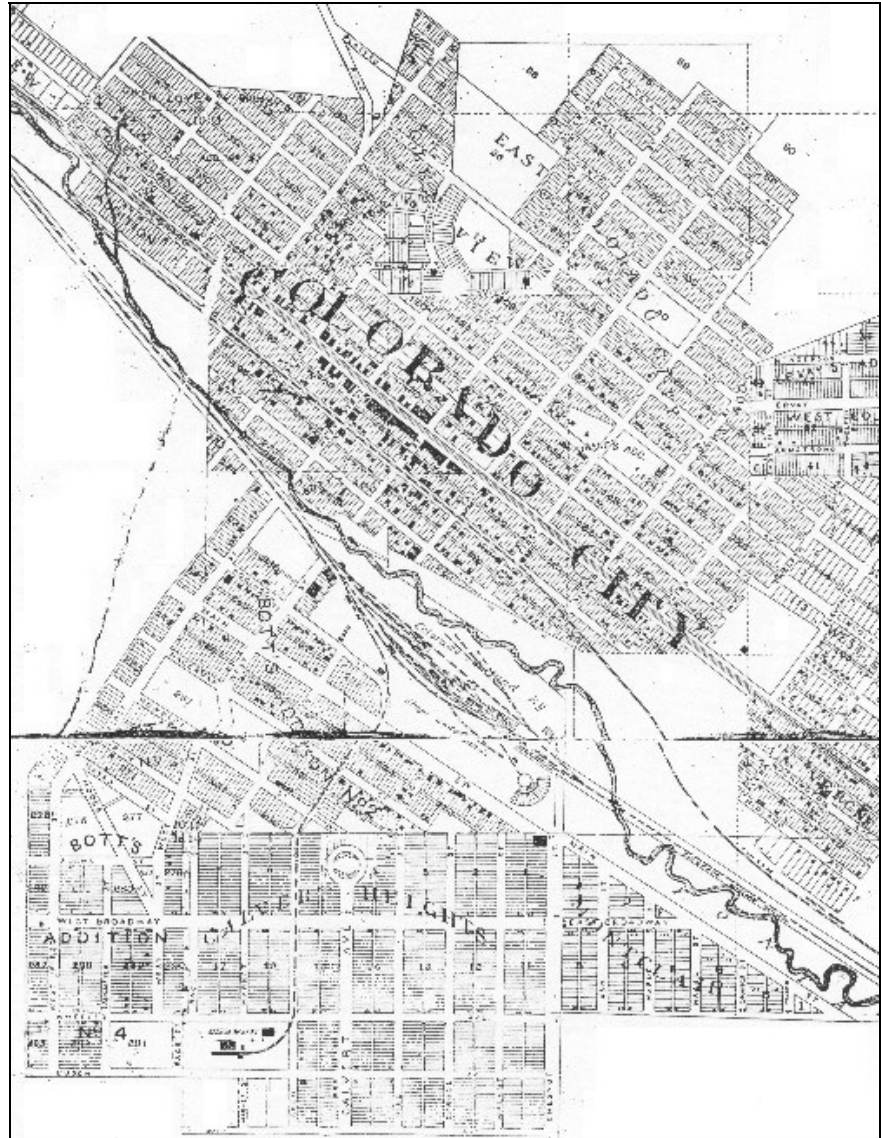


Figure 1 – Map of Colorado City (David Hughes)

Daily Chronicle 1889; *Colorado Springs Gazette* 1889; Hawley 1885).

² This is the Colorado City portion (left side) of the Map of Colorado Springs, Colorado City, and Vicinity, Revised and Corrected to Date by R.M. Cannon, November 1895. Cannon was a surveyor for Colorado Springs. We are unaware of any complete copy of this map. The Pikes Peak Library District Special Collections has a copy (SCHMAP 912.78856 C226C 1895) that is complete except it is missing the lower left corner that includes the glass factory. Col. David Hughes acquired a left center and lower left portion of the map showing the glass factory from a donor in 1976. We have reproduced the Hughes copy.

The interior of the building was largely open allowing for the movement of air and proper ventilation but also providing that “the whole process of making the bottles can be seen almost at a glance, as it is all done practically in one room.” A large coal gas generator was in the south end of the building which ran a large circular United Tank furnace located in the center of the building. The furnace stood 6 feet high and was made of fire brick (Figure 3). It was fed from the south end and had a small platform for the blowers at the north end. The shops of blowers would have been arrayed around the platform (*Colorado Springs Gazette* 1889).

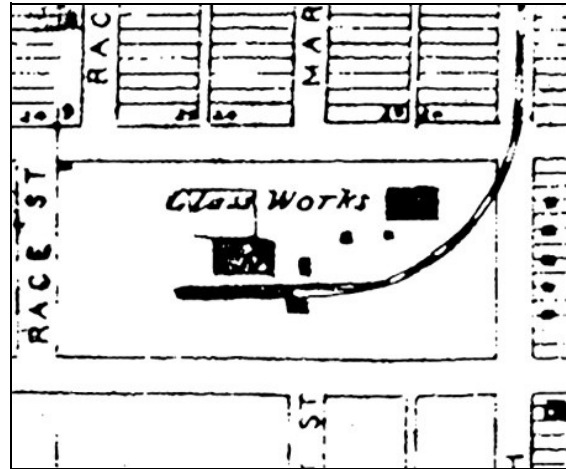


Figure 2 – Calvert Addition showing glass works (David Hughes)

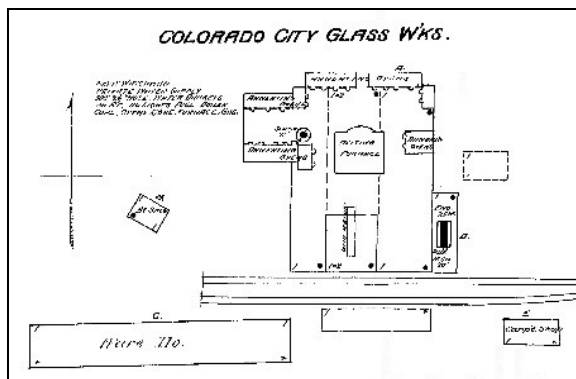


Figure 3 – Colorado City Glass Co. (Sanborn Fire Insurance Map, 1890)

Thirteen small chimneys were along the edge of the first story roof, which stuck out beyond the upper story. These chimneys indicated the location of the 24 annealing ovens that were located against the exterior walls in the northern end of the building (see Figure 3). Because the shops were typically paid by the finished piece, it seems likely that each shop used a separate annealing oven to keep its work separate from that of the other shops (*Colorado Springs Gazette* 1889).

In addition to the bottle factory, the company built housing for its workers. The firm erected a large boarding house just south of the factory and built 21 cottages to the east. Presumably, these cottages were built for men with families (Figure 4).³ In all, the resident population on the factory compound was around 200 people in 1892. Over the next year, a

³ This was an illustrated advertisement from the *Iris*, presumably looking toward the southwest – with the mountains idealized. The *Iris* printed the same illustration in multiple issues from January 13, 1892 to at least January 23.

number of sheds and shops were added to the compound including a carpenter shop for making boxes, a machine shop, and a blacksmith shop (*Aspen Daily Chronicle* 1889; *Colorado Springs Gazette* 1892a; Hawley 1985; *Iris* 1/13/1892).

The factory began production of fruit jars and bottles made of light green (aqua) glass on May 16, 1889, with an initial workforce of 52 glass blowers.

Despite an inaccuracy in reporting the location of work, these must be the men

referred to in a *Colorado Springs Weekly Gazette* article on May 4, 1889, that indicated General Charles Adams journeyed to La Salle, Illinois, and brought 52 German glass blowers from De Steiger to work in Denver (*Aspen Daily Chronicle* 1889; Hawley 1985; *Iris* 1/13/1891).⁴

A May 17, 1889, article in the *Colorado Spring Gazette* described the process of glass blowing on the factories first day of operation:

On the platform at the head of the furnace stand the glass blowers. Beside each is a small wooden rack and at his feet a mould which opens and shuts by means of a treadle. Each blower also has beside him a young man called a blower [*sic*]. In the furnace are small openings about six inches square. Into these the helpers first put the blow pipe, a cylinder of iron about four feet in length. The glass adheres to the end of the pipe and is then taken out. Instantly the blower puffs a breath of air through the pipe and the glass becomes hollow and pear shaped. Then the blower takes the pipe and shapes the bottle, finally putting it into the mould where it is gradually turned and blown until a perfect bottle is formed. Next a boy presents a sheet iron cylinder into which the bottle sits. It is then cut away from the blow pipe and stuck into the furnace where a bit of glass adheres.

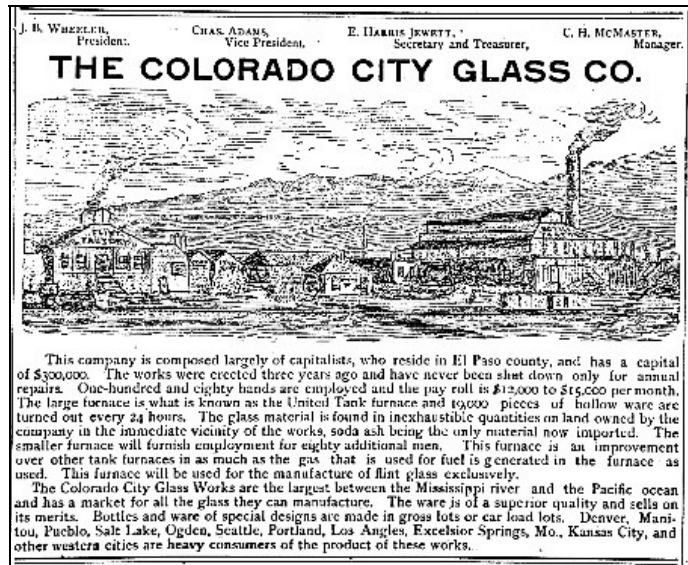


Figure 4 – Illustrated ad (*Iris* 1/13/1892)

⁴ The location, of course, was actually Colorado City.

From this the blower forms the head of the bottle. Next it is handed to the boy who places it in one of the annealing ovens. Here it is kept for three days under a slow fire to temper. If the bottle is perfect after being taken from the oven it is accepted and is then ready for the market.

The initial workforce was to be quickly increased to 125 glass blowers once the furnace stabilized, a matter of a few days. By 1891, the company employed 150 glass blowers capable of producing 18,000 pieces in a 24-hour period (*Aspen Daily Chronicle* 1889; *Iris* 1/13/1892). Roberts (1968) suggested that these men and later hires were Bohemians because of the construction of a Social Turner Hall in Colorado City after the glass factory opened. In addition to the glass blowers, the company employed a large number of “helpers, laborers, and apprentices” (*Aspen Daily Chronicle* 1889). According to the *Iris* (7/4/1891), the company operated for ten months every year with a two-month summer vacation in July and August.

By September of 1889, the *Castle Rock Journal* (9/18/1889) announced the company’s plans to double in size by adding a flint glass and window glass works. It is certain that the company built a flint glass factory in 1890. However, the plant seems to have been quickly idled or may not have even opened because of a strike or walk out of the flint glass blowers who had a separate union than the bottle glass blowers (*Castle Rock Journal* 1890).⁵ The flint glass plant must have been idled all of 1891 because C.H. McMaster, the manager of the company at that time, mentioned in an October 1891 interview the addition of the flint glass plant during 1890 and that the plant would open January 1, 1892, for the manufacture of prescription and bar bottles (*Iris* 1891).

Further, on September 26, 1891, the *Iris* referred to the idle plant stated, “Alterations and additions are being made in the small factory constructed last year but not yet put in operation.” The *Iris* (1/13/1892) also noted that the flint glass plant was outfitted with a smaller more fuel-efficient furnace and was expected to employ up to 80 glass blowers. This furnace appears to be the prototype of the advanced furnaces designed by Superintendent Otto Jensen, who succeeded Modes in 1891; it was first fired up in December 1891, according to the *Iris*

⁵ Disagreements between flint and green glass unions appear frequently in union documents. Generally, the “greens” made bottles, while the “flints” made tableware. Arguments sometimes arose when flints were making bottles.

(12/19/1891). While no other details are known about the flint glass building or workforce, it is shown as a two-story building much smaller than the bottle glass factory and located at the opposite end of the company's compound from the bottle glass factory (see Figure 4).

Despite the difficulty in getting the flint glass factory going, the *Iris* (8/1/1891) noted that the bottle factory was producing at capacity, and, at the annual meeting of the stockholders on July 27, 1891, it was decided to hold a meeting in August to vote on increasing the company's capital from \$100,000 to \$200,000 to raise money for improvements. The meeting was delayed but was held on October 23 with the stockholders approving the rise in capital (State of Colorado 1891). However, the *Iris* (1/13/1892) posted an advertisement in January 1892 indicated that the capital of the company was raised an additional \$100,000 to \$300,000.

When the bottle glass factory started up in September 1891 after the summer vacation, the *Iris* (9/26/1891) described a significant amount of new equipment:

An 80-horse power steel boiler is being put in and a new high speed engine of same capacity. A Sturtevant rotary mill for pulverizing rock and other materials, that is operated in connection with belt carriers, suction blowers and screens is also being put in. The mill will be run 1,200 revolutions per minute and the blower 2,500 revolutions per minute. A new No. 38 Sturtevant blower, with engine attached, has also been put in. This machine is the largest of its kind built in the United States, is ten feet high and is used to force air through the building and to the ovens.

Besides the new equipment added to the bottle glass and flint glass factories, the *Colorado Springs Gazette* (1/1/1892) described work that had begun on a \$10,000 experimental plant. The purpose of the plant was to reduce cryolite, a mineral containing sodium, for use in bottle production to alleviate the company's dependence on imported soda ash. By 1891, professor Rudolph Keck, a geologist, was working with the company to develop a process to replace the use of imported soda ash with the locally available cryolite. By September 1891, the company proclaimed its success in producing a bottle using all local material, indicating that the use of cryolite in their glass production process was feasible.

On September 2, 1891, the *Iris* described a “remarkable bottle”

on exhibition at the office of A. Bott, in this city. It is manufactured entirely from materials found in Colorado and is said to be the first bottle of color ever manufactured in America, without the use of foreign material. It is the result of experiments carried on by Professor Keck, C.H. McMaster, manager, and Otto Jenson, superintendent of the glassworks.

The experimental bottle was likely aqua (light green) in color, similar to those the company had been producing since its inception in 1889. However, the company’s intent was to use cryolite in all glass production, including flint glass. The flint glass factory was still idle at this time, so it was used to carry out the experiments.

In October 1891, the company manager, C.H. McMaster, indicated the firm would put in a plate glass factory if another company did not do so in the area (*Iris* 1891). The April 8, 1892, *Aspen Daily Chronicle* indicated that J.B. Wheeler had acquired the services of a man to start a department for manufacturing plate glass at the company compound. There is no indication that a new plant was built, and plate glass production requires a significant amount of specialized equipment, so it is likely that no actual flat glass was ever manufactured at the plant.

By January 1892, the glass works was one of the major engines of the Colorado City economy, employing over 180 men with a monthly payroll between \$12,000 and \$17,000 a month and a production rate of 19,000 items per 24 hours. The company’s success was largely due to the quality and strength of its bottles. According to the January 1, 1892, *Colorado Springs Gazette*:

The plant as at present arranged is devoted almost entirely to the manufacture of light green hollow ware such as bottles, fruit jars, flasks and pickle bottles. An important part of the industry is the manufacture of strong bottles for highly charged mineral waters. The Manitou bottling works use the bottles of this make exclusively, and they are so favorably known in the trade that the company is in receipt of letters of inquiry from mineral water bottling concerns in the far east who have seen the bottles and are attracted to their excellent quality.

In fact, the bottles were so durable that McMaster delighted in using them to hammer nails into posts for visitors to the plant. One newspaper editor from Northeastern Kansas, apparently a prohibition supporter, relates his experience:

The ware is very tough and the superintendent took pleasure in driving ten-penny nails clear in a hard wood post with any bottle the visitor might select. We presume the object of this was to show to beer drinkers how easy it is to "drive nails in their coffins" if they use Colorado bottled beer (*Colorado Springs Gazette* 1891).

The company's output was great enough to convince the Colorado Midland Railroad to put a spur line to the factory, apparently not a common practice at the time. Roberts (1968) reported that "As many as sixty carloads of bottles filled with mineral water could be seen at one time on a Colorado Midland Railroad freight train." Visitors to the plant during the summer of 1891 reported over 80 carloads of bottles ready to ship out to bottlers sitting in the company compound (*Colorado Springs Gazette* 1891).

The illustrated advertisement from 1892 (see Figure 4) gave an appreciation for the company's growth and success. By February 25, 1892, the *Colorado Springs Gazette* reported that the glass house had become the largest glass works in the west producing close to 20,000 bottles per day for customers stretching from the Mississippi River to the Pacific. For example, in early 1891, the company had orders from two companies, the Bartlette Springs Mineral Water Co. out of San Francisco and the Salt Lake Mineral Water Co. that were estimated to take four shops of blowers from March until the summer break in July to fill, plus an order from the Manitou Mineral Water Co. that was estimated to be the largest order for mineral water bottles ever from an American glass house. In addition, Hawley (1985) noted that, over the last three months of 1891, the company shipped 20 carloads of amber quart brandy bottles to San Francisco and 9,000 gross of quart bottles to Manitou for mineral water. R. Douglas & Co., one of the six great street houses on California Street in Denver that marketed china and glassware, sold \$20,000 of Colorado City Glass Co. ware, mostly fruit jars, during 1891 (*Buena Vista Democrat* 1892).

By the summer break of 1892, the *Iris* (8/13/1892) reported the firm's plans to expand its production. This venture involved dismantling the United Tank furnace in the bottle glass factory and installing two advanced 24-shop hot air and oil furnaces designed by Otto Jensen, the company superintendent. These furnaces were claimed to be revolutionary and would establish Jensen as the "Edison of the glass industry." The United Tank furnace was not efficient and so had to be worked continuously to make money. Only one type of glass could be made per season (presumably aqua/light green). The company claimed the new furnaces could be operated efficiently as needed, provide the capability to produce 36,000 bottles a day, and could be used to make more than one type of glass at a time (plans were to make amber and German green in addition to the aqua).

The furnace was fired up on September 1, and normal operations began the following day (Roberts 1968). Early on the morning of September 9, disaster struck. The *Iris* (9/9/1892) reported that a fire destroyed the bottle factory, a number of nearby buildings, and a few railcars full of product. Upon hearing the news of the fire, Wheeler, then in Denver, hurried back to the plant and announced that rebuilding would begin immediately.

The workers actually began clearing the debris from the fire on September 12, and it was discovered that the most expensive and critical equipment, the furnaces and boilers, were undamaged (Roberts 1968; *Colorado Springs Gazette* 1892b). The *Iris* (9/14/1892; 9/17/1892; 9/21/1892) described the activities of the following week. Some of the equipment to prepare raw materials was lost, but, in an ingenious move, the company began to collect all the old (discarded) and fire damaged glass lying around the plant and buying glass in Denver to resume production until the new equipment could be readied. A dizzying amount of men and materials were quickly mobilized, and rebuilding proceeded at a frantic pace. Experts like L.V. Smith, from Sturtevant Mill of Boston, were even rushed in by train to assist. By September 21, a temporary building was constructed around the intact equipment and, amazingly, production in the bottle glass factory resumed on September 24, 1892.

Apparently, only one Jensen furnace was completed before the fire. The *Iris* (11/12/1892), along with the *Aspen Daily Leader* (12/12/1892), reported that J.B. Wheeler ordered the erection of a second furnace – like the Jensen currently in operation – on November 11, 1892. Because only three carloads of finished glass were lost, and old glass was available

for use, only temporary shortages were expected to the glass works largest customer, the Manitou Mineral Water Co. Business appears to have returned to normal by the end of November because the Pike Peak Mineral Water Co. placed an order for sixteen railcars of bottles (*Rocky Mountain News* 1892). The 1893 Sanborn Fire Insurance Map showed the plans for the rebuilt factory (Figure 5).

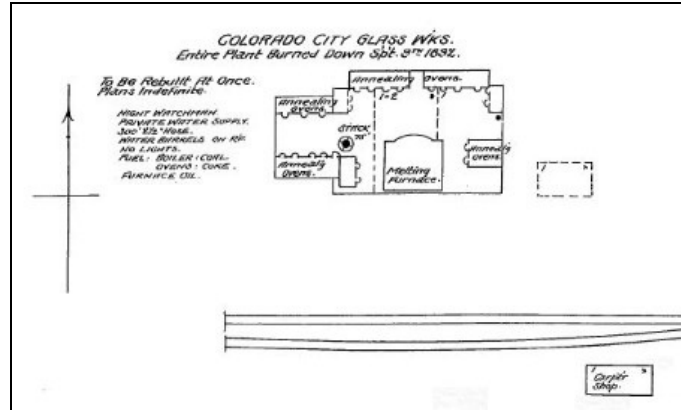


Figure 5 – Colorado City Glass Co. (Sanborn Fire Insurance Map, 1893)

Despite the outward appearance of success, all was not well with the company. It had been hemorrhaging money since it began operation. In October 1891, McMaster stated that “the works at Colorado City were started two years ago last May, and for the first fourteen months the company lost money, partly from mismanagement and partly for lack of demand for the product” (Roberts 1968). While demand for product increased and the company began to make profit after that point, the continual expenditure on capital improvements seems to have kept the company in the red. Additionally, McMaster noted the company had to produce more bottles than regional demand in order to make production economical; however, much of the surplus had to be disposed of at the cost of manufacture and transportation to business outside the region because of competition from eastern and west coast manufacturers (Roberts 1968).

Hawley (1985) provided financial data that indicates the company was running in the red during its final years (Table 1).

Table 1 – Income to Debt – Colorado City Glass Co.

Year	Debt	Receipts
1891	\$176,000	\$97,000
1892	\$198,000	not provided
1893	\$176,000	\$103,000

The financial situation of the company probably explains the turnover in superintendents and managers as described by the *Iris* (12/3/1892; 12/17/1892). By the beginning of September 1891, E.C. Modes had left and been replaced as the Superintendent by Otto Jensen. Jensen was an expert in glass bottling who learned the trade in Europe before moving to Pittsburgh. McMaster seems to have been replaced as manager in February of 1892 by Ward Hunt, who was a major stockholder and an elected vice president. Hunt served as manager only a short time before the company hired E.B. Collins who served as manager until December 1892, when he resigned to become manager of the DePaw American Plate Glass Co.⁶ of Alexander, Indiana. Olive C. Townsend of Pittsburgh replaced Collins in 1892.

The rebuilt factory was not operating efficiently enough to make money in part due to the plant location. On January 11, 1893, the *Colorado Springs Gazette* reported from an unnamed company source that “the site has been most unfavorable, as there was a constant wind blowing, it was difficult to get at the plant for hauling purposes, and it did not have a good water supply”; if rebuilt in Colorado City, the factory would be at a new location. A testament to the difficulties mentioned occurred in January 1890. The *Gazette* (2/1/1890) noted that a terrific windstorm had ravaged the annealing oven chimneys at the glass plant causing an estimated \$1000 of damage.

Rumors began in early 1893 that the company would close. On January 14, 1893, the rumors became reality. An interview with an unnamed director of the company confirmed that the rumors indicated the company could move to Denver and stated

that the Manitou bottling works had been able to secure bottles for the year at within a small fraction of what the Glass company can manufacture them, and as the present plant is far from satisfactory it was decided to close down. Whether the plant remains in Colorado City or not it will be entirely remodeled and rebuilt before the furnaces are again fired up (*Weekly Gazette* 1893).

⁶ Collins may have departed because the intended plate glass plant of 1891 never materialized.

The *Iris* (1/21/1893) reported that the employees were paid off with most departing east for jobs because the plant was to be closed for seven months. One furnace was to continue operating to manufacture stained glass, a product not previously mentioned. It is possible that this in some way referred to the plate glass process of 1891.

The closing of the glass works and loss of workers' wages fueling the Colorado City economy must have been quickly felt by the city's government and businesses. Apparently, some unkind words regarding Wheeler were circulating because, by the end of January, Wheeler felt compelled to pen an open letter to the citizens of Colorado City explaining his financial reasons for the plant's closing (*Iris* 1893). Despite the difficulties, Wheeler seemed to be committed to glass manufacture in Colorado City.

Western Glass Co., Colorado City, Colorado (1893)

A number of abrupt events that occurred in July 1893 were harbingers of the end of glass manufacture in Colorado City. The first was the apparent dissolution of the Colorado City Glass Co. Although the company continued to exist on paper, Wheeler allowed it to go into bankruptcy over debt to the Adolphus Bush Glass Mfg. Co., that eventually bought the Colorado City Glass Co. property at a sheriff's sale for \$1,628 in November 1893 (State of Colorado 1893a). During the same period, Wheeler incorporated a new glass company, the Western Glass Co., on July 5, 1893. The directors of the new company were listed as J.B. Wheeler, J.B. Glasser, Ward Hunt, O.C. Townsend, and C.B. Wider (State of Colorado 1893b). The group began construction of a new factory in 1893, and the plant was close to completion in 1894; however, the factory never opened and never fired the furnace or produced bottles.

While it is certain that the financial panic of 1893 impacted Wheelers fortune, this does not seem to be the primary reason for the failure of the Western Glass Co. Rather, Townsend indicated that it was the passage of the Wilson-Gorman Tariff on August 27, 1894, that effectively doomed the company. In a series of pieces in the *Iris* (8/22/1893; 8/29/1893; 9/5/1893), Will Epperson noted that reduced tariffs were responsible for the closing of over 60 glass factories across the country and argued convincingly that imported glass was indeed the reason that the Western Glass Co. never opened. At the heart of his claim, Mr. Epperson stated in the *Iris* (8/29/1893):

It is true the Colorado City glass works burned, but it is also true that they were rebuilt and in operation again in less than a month, and that they continued in operation until the annual glassblower vacation. During that summer the Western Glass company erected the big steel building, just west of Colorado City, but never completed it, for the reason that glass could be shipped in from abroad for less than it could be manufactured at the Colorado City works. The Western Glass company is a Colorado company, and is closely allied with the Manitou Mineral Water company, a concern which has used thousands of tons of bottles in the last six years, and it is not out of place to remark in this connection that a large percentage used since the repeal of the McKinley bill have been imported from Germany via Galveston and New Orleans.

The McKinley tariff was instituted in 1890 and significantly raised the duty on many foreign industrial products to protect U.S. industries (Wikipedia 2014a). The tariff was repealed and replaced by the Wilson-Gorman Tariff Act in 1894 (Wikipedia 2014b), opening the American markets to low cost imported goods. In making the point that imported glass from Germany was a major factor in the closing of the glass factory in Colorado City, Epperson noted:

As to the statement that no glass bottles has [*sic*] been bought in Germany we quote Mr. O.C. Townsend, superintendent of the Manitou Mineral Water company. In response to the question Mr. Townsend has informed us that his company imported 5000 gross of bottles (about fifty car loads) from Germany at less cost than they could be purchased in America, thanks to the tariff bill that W.J. Bryan helped to frame and pass (*Iris* 1896).

Wheeler and Townsend must have seen the coming difficulties that the lowering of tariffs by the Wilson-Gorman bill would produce because, on June 1, 1894, they sold the electric plant built to power the factory (*Iris* 1897). As the electric plant was initially meant to supply power to the glass factory, the selling of the unit suggests that they had given up on completing and opening the Western Glass plant. While the plant was certainly started, no building was shown on the property owned by the Western Glass Co. on the 1895 through 1902 maps of the city. The shell of the factory must have been near completion but must not have warranted inclusion on the Sanborn and other maps because it was never completed and occupied.

Containers and Marks

Although the Colorado City Glass Co. was only in business for about five years, it must have produced millions of bottles. The company's products were used by businesses throughout the western United States and shipped throughout the country. Unfortunately, no company records are known to exist, so we have little evidence of the full range of products made by the glass house. Further, another bottle producer, the Cream City Glass Co. of Wisconsin, existed during the same period of time and embossed the same initials on its products. However, the information presented below provides some measure of differentiating between the products of the two companies.

The most knowledgeable source on the bottles of the Colorado City Glass Co. was David K. Clint (1967), whose book *Colorado Historical Bottles & Etc., 1859-1915* was later updated by Glen Preble (1987). According to Clint (1976:42), the Colorado City Glass Co. produced bottles colored brown (actually amber), honey-amber, citron, aqua-green, and flint (colorless), although the colorless ones may solarize to an amethyst color. Based on the documentation noted above, there is no doubt that the majority of the bottles the company made were aqua or light green. All of the bottles from the company illustrated in Clint and Preble were in fact aqua colored.

The company certainly made amber bottles as well. However, we are unaware of any amber glass bottles that can definitely be attributed to the firm. It may be that the company made so few amber bottles that hardly any have survived. The same is probably true for citron-colored bottles if any were produced. While the company built a flint glass factory and presumably began operating it in 1892, there is no mention that flint glass bottles were ever produced, and none are known that are attributable to the company.

Clint (1976:42) noted that after the fire in 1892, the company ceased production of amber glass and planned to produce green tinted glass made with phonolite (also called German green).⁷ While it is certainly true that the company planned to make German green glass bottles,

⁷ This is an olive color, tending to be more green than American olive-colored bottles, although there was considerable variation in the glass made in both countries.

the only evidence that exists to indicate the plans were implemented before the company shut down in January 1893 is a piece of German green glass slag reportedly collected from the factory area on display at the Old Colorado City History Center.

During visits to the factory site, we noted a number of examples of aqua glass bases as well as a number of aqua glass fragments evidencing different bottles and bottle finishes produced by the company. Both post mold and cup mold bases were common. There was one base that appeared to be from a turn-mold bottle exhibiting linear rings around the heel and base with a nipple in the center of the slightly concave base, although this bottle may have been made by a different glass house and brought to the site. We found both tooled and applied finishes on the site, including wide-mouth external-thread, bead, blob, and whiskey finishes.



Figure 6 – Applied finish

Of the 33 bottles attributed to the Colorado City Glass Co. in Clint (1976) and Preble (1987), 22 were Hutchinson bottles, and the remainder were large beer/soda style bottles. While there were eight bottles with applied finishes (Figure 6), the majority of the



Figure 7 – Tooled finish

bottles had tooled finishes (Figure 7). Presumably, most of the large beer/soda bottles used some kind of cork stopper system, while most of the Hutchinson bottles used the Hutchinson style stopper. A few of each type of bottle were also made for the Baltimore loop seal.

In addition to Hutchinson and beer/soda bottles noted above, it is certain that the company made fruit jars, pickle jars, and amber quart brandy bottles. We found evidence for large pickle jars and fruit jars at the factory site. In addition, small round condiment jars, square horseradish jars, and two sizes of packers with the company's marks have been recovered from the basements of buildings and from excavations in yards in Colorado City.

C.C.G.Co. / C.C.G.CO. (1889-1893)

The “C.C.G.CO.” mark was used by the Colorado City Glass Co. – likely during its entire existence. However, the C.C.G.CO. mark was also used by the Cream City Glass Co. of Milwaukee, Wisconsin, from 1888 to 1894, almost the same time period as Colorado City Glass Co. (Kupferschmidt & Kupferschmidt 2003; Reilly 2004). The Cream City Glass Co. was the third in a series of glass houses in Milwaukee that began in 1880 with the Chase Valley Glass Co. Cream City Glass focused on the production of beer and soda bottles but later added fruit jars as well as flasks. Since Cream City produced soft drink and beer bottles and used the same mark, bottles from the two companies could easily be confused.

The “C.C.G.CO.” logo was typically embossed on the base, although Preble (1987:113) reported one bottle with the mark on the reverse heel. Preble’s bottle was embossed with a PHM monogram in a circular front plate along with a plus sign on the base (Figure 8).

Hutchbook (Fowler 2014) listed the same Hutchinson bottle as being used in Milwaukee and made by the Cream City Glass Co. The initials belonged to Philip H. Madlener, the operator of a Milwaukee bottlers’ supply house. Madlener shipped bottles and supplies all over the U.S. – including the west.⁸ Preble may have found one of these bottles in Colorado. Several eastern glass houses made the bottles, and the one with a “C.C.G.CO.” heelmark was almost certainly produced by the Cream City Glass Co.

There appears to be variation in punctuation and in the use of “CO.” verses “Co.” among bottles – although “CO” (capital “O”) was by far the most prevalent. The mark is found on packers, horseradish jars, small round condiment jars, Hutchinson bottles, and beer/soda bottles – with the vast majority on the latter two types. One example of the former types was a square, wide-mouth bottle with “C.C.G.CO.” embossed in an arch on the base (Figures 9 & 10).



Figure 8 – PHM monogram Hutchinson bottle (eBay)

⁸ For a discussion of Madlener, see Lockhart & Wood (2013).



Figure 9 – Square Colorado City Glass bottle

Clint (1976) and Preble (1987) illustrated the mark embossed horizontally across the center or in an arch on the base. Aqua-green base fragments with “C.C.G.Co.” or portions of the initials embossed in an arch were



Figure 10 – Base of square bottle

recovered from the former site of the Colorado City glass plant (Figure 11). Some of these were from post-mold bases, others from cup-mold bases. Another base had “C.C.G.Co.” (lower case “o”) in a horizontal line across

the center of a large post base from either a large jar or bottle (Figure 12).



Figure 11 – Base fragment from factory site

Hutchbook (Folwer 2014) listed 25 Hutchinson bottles with this logo on the base. The majority of these were used by Colorado bottlers (mostly Denver), although several lacked a city or state designation. Two of



Figure 12 – Horizontal C.C.G.Co. logo – note lower-case “o”

the bottles were used by Utah bottlers, two in Texas, one in New Mexico (discussed below), and one in Wyoming.

Although Fowler did not record the configuration of the marks, the two Utah bottles had arched logos on a post-bottom base, and one of the Texas bottles was similar. The others likely also had the arched format.

Of the bottles in Clint (1976) and Preble (1987), 15 Hutchinson and all of the beer/soda bottles were labeled with this mark. Four Hutchinson bottles had applied finishes and post mold bases with three of these exhibiting “C.C.G.CO.” in an arch on the base of the bottle while the

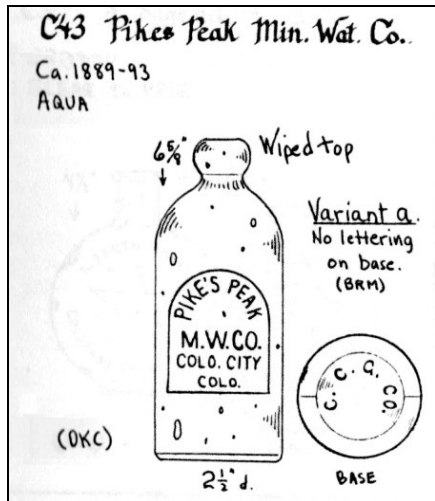


Figure 13 – Arched C.C.G.CO. logo (Clint 1976:108)

other had the mark placed horizontally on the reverse heel (although the heelmarked bottle was actually made in Milwaukee). Ten of the remaining Hutchinson bottles had tooled finishes, post mold bases, and “C.C.G.CO.” in an arch on the base (Figures 13 & 14). A lone Hutchinson had a tooled finish, a cup mold base, and “C.C.G.CO.” horizontally in the center of the base (Figures 15).



Figure 14 – Arched C.C.G.CO. logo

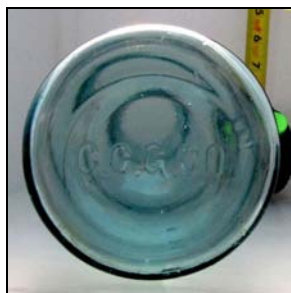


Figure 15 – Horizontal C.C.G.CO. logo

The eleven beer/soda bottles were more variable. Two bottles had applied finishes and “C.C.G.CO.” in an arch on the base of the bottle, but one had a cup-mold base while the other had a post-mold base (Figure 16). The bottle with the post-mold base had a variant with an applied top that included a recess in the throat for a Baltimore loop seal. Four of the remaining bottles had tooled finishes. Of these, three bottles had “C.C.G.CO. in an arch on the base of the bottle; two of these had post-mold bases and the other had a cup-mold base. The fourth bottle was embossed “C.C.G.CO.” horizontally in the center of the base and a cup mold-base (Figure 17). The final five bottles all had tooled finishes that included loop seals, “C.C.G.CO.” horizontally in the center of the base, and cup mold bases.

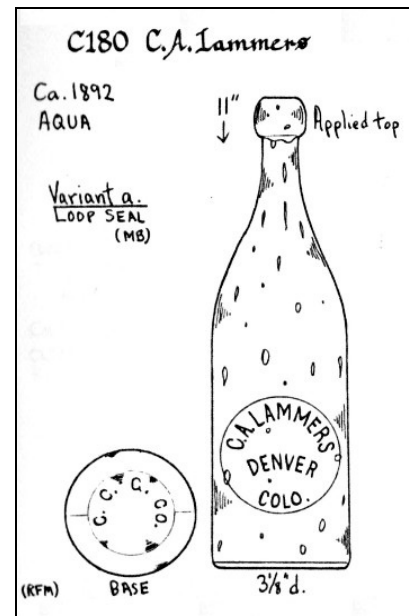


Figure 16 – C.C.G.CO. beer/soda bottle (Clint 1976:134)

Wood (1998) illustrated a Hutchinson bottle embossed with “HARSH’S / BOTTLING WORKS / ALBUQUERQUE / N.M.” in an oval plate on the front and “C.C.G.CO.” in an arch

on the base. He identified the mark as belonging to the Colorado City Glass Co., 1889-1893. Although there is a remote possibility that the mark indicated the Cream City Glass Co., the proximity to Denver makes the Colorado City attribution reasonably certain.

Wilson (1981:114) illustrated two variations of the mark as found at Fort Union, New Mexico. Both were embossed on the bases of beer bottles.

One variation appeared in an arch (virtually identical with the one shown in Wood); the other was in an inverted arch.

A single beer bottle found at Tucson, Arizona, at the Tucson Urban Renewal project, however, only revealed the inverted-arch variation. The finish was tooled and had one part. Lockhart found both styles at Fort Stanton, New Mexico (Lockhart 2011). As explained in the hypothesis section below, these beer bottles were probably made by the Cream City Glass Co.

Geographic proximity could be expected to help separate bottles made by the two glass houses. However, there is a possibility that bottles from both companies were distributed throughout the United States making such determinations problematic. In 1891, the manager of the Colorado firm indicated that it was selling bottles from Kansas City west to the Pacific coast (*Iris* 1891). In addition, there is the possibility that the company produced bottles for Anheuser-Busch that could have been distributed nationally – although none of the Anheuser-Busch sources reported bottles from the Colorado firm (see Lockhart et al. 2007; 2009). Cream City, located near Milwaukee, is known to have produced bottles for many of the Wisconsin breweries that were some of the first to ship their products nationally in export beer bottles.

Table 2 is a compilation of the C.C.G.CO. marks and variations found on bottles made by the two companies from Peters (1996), Clint (1976), and Preble (1987). Based on the information in the table, materials observed at the Colorado City Glass factory site, and documentary evidence, it is possible to propose some working hypotheses for differentiating the products of the two companies.

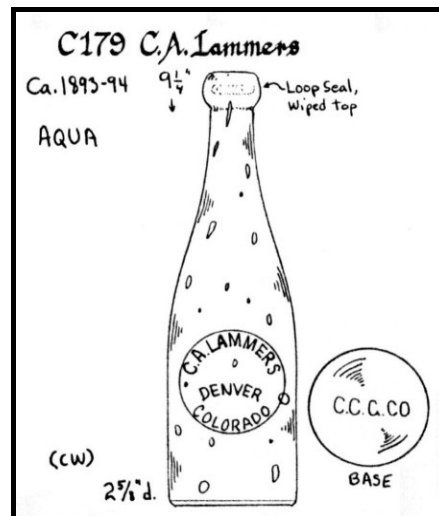


Figure 17 – C.C.G.CO. beer/soda bottle (Clint 1976:134)

1. Aqua-colored Hutchinson and beer/soda bottles with the C.C.G.CO. mark used by bottlers east of the Mississippi River, particularly from Wisconsin and surrounding states, were almost certainly the products of the Cream City Glass Co. Those from companies west of the Mississippi River, particularly from the Rocky Mountains and far west, were products of the Colorado City Glass Co.

2. Only the Colorado City Glass Co. appears to have used horseshoe shaped face plates (Figures 18 & 19).

3 Only Colorado City Glass appears to have embossed C.C.G.CO. horizontally across the base.

4. While heelmarks were relatively common on bottles made by the Cream City Glass Co., only one heelmark was recorded for a Colorado City Glass Co. bottle, that one was misidentified by Preble. Therefore, C.C.G.CO. heelmarks are an indicator of Cream City Glass Co. bottles.

5. Only Cream City Glass appears to have embossed bottles without faceplates.

6. Only the Cream City Glass Co. appears to have used the C.C.G.C. mark.

7. Only Cream City Glass appears to have embossed the mark in an inverted arch on the base.

8. While both companies made Hutchinson bottles, beer/soda bottles, and fruit jars, it seems likely that only Colorado City Glass produced a wide variety of bottles. Reilly (2004) suggested that Cream City Glass was cautious about expanding its product line because too much diversification was partly responsible for the failure of its predecessor. In 1888 it began by producing beer bottles exclusively, soon adding soda bottles, finally adding fruit jars and flasks by 1892 (see next entry).

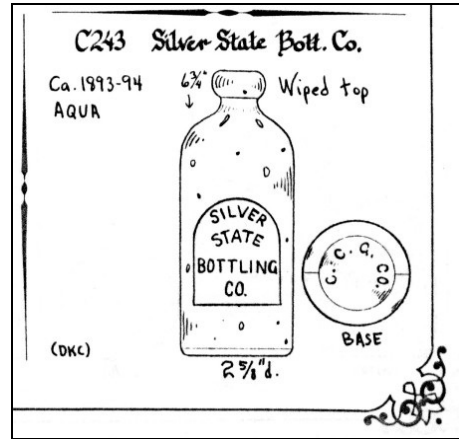


Figure 18 – Hutchinson bottle with horseshoe plate (Clint 1976:146)



Figure 19 – Horseshoe plate

9. Although not listed by any of the sources, the Cream City Glass Co. also made flasks. One eBay dealer offered an amber shoo-fly flask embossed “CCGCO” in an arch in a post-mold on the base (see the section on Cream City Glass for photos). Maas (2014) also included a photo of a green union (strap-sided) flask with an almost identical logo. The Maas bottles were found in Wisconsin, and – as discussed above – Colorado City Glass probably made no amber containers.

10. The Colorado City Glass Co. probably did not produce export beer bottles, particularly amber bottles, meaning that all the export beer bottles – whether amber or aqua glass – were likely produced by the Cream City Glass Co. This hypothesis is based on a number of observations. First, there is no evidence from the factory site, bottles from Colorado City, or those used by Colorado, New Mexico, Texas, or Utah companies that Colorado City Glass ever embossed letters or numbers – aside from the logos – on any of their bottle bases. Second, export beer bottles were predominantly amber with fewer of aqua color. Little amber glass was found at the Colorado City glass factory, and we know of no amber beer bottles with the C.C.G.CO. mark from Colorado or Utah bottlers.

Future research should focus on identifying differences among the bottles with the C.C.G.CO. mark. Attention to glass color, finishes, mold seams, etc., may provide clues to parse bottles from the two companies. It is certain that the Colorado City Glass Co. made primarily aqua-green glass. Comparisons between Colorado and Wisconsin bottles are important, although the similarities in date range make positive identification of the companies less relevant for dating purposes. Given the use of local material – including cryolite, alone or in conjunction with soda ash – it is possible that some form of non-destructive compositional analysis may be able to provide a means of differentiating the Colorado City Glass products from those of Cream City Glass.

Table 2: Comparison of Marks and Bottles

Basemark	Heelmark	Side Embossing	Bottle Type
C.C.G.CO. (arch)		Colo. or Utah (round plate)	Hutch, beer/soda
C.C.G.CO. (arch)		Colo. (horseshoe plate)	Hutch
C.C.G.CO. (horiz.)		Colo. (round plate)	Hutch, beer/soda
C.C.G.CO. (arch)		Wis. (round plate)	Hutch
C.C.G.CO. (arch)		Wis. (no plate)	Hutch
C.C.G.CO. (inv. arch)		Wis. (no plate)	Hutch
	C.C.G.CO.*	Wis. (round plate)	Hutch
C.C.G.C. (horiz.) / 2		Wis. (no plate)	Hutch
C.C.G.C. (horiz.) / NO. 1**		Wis. (no plate)	beer
C.C.G.Co. (horiz.) / # **		Wis. (round plate)	export beer
C.C.G.CO. (horiz.) / # **		none	export beer
C.C.G.Co. (arch) / # [fat letters] **†		none	export beer
C.C.G.CO. (inv. arch) / # **		none	export beer
C.C.G.CO. (arch) / # [thin letters] **		none	export beer
C.C.G.CO. (arch) **		none	flask

* Heelmarks are horizontal.

** All or some made in amber glass.

† The “O” in “Co” is slightly smaller than the other letters and is above a period or dot.

COLO. C.G.CO. (1889-1893)

This mark was definitely one of those used by the Colorado City Glass Co. Clint (1976) and Preble (1987) illustrated six bottles with this mark, all embossed on the base, except one that had the mark on the reverse heel (Figures 20-22). All were aqua Hutchinson bottles with cup-mold bases. Two of the bottles had applied finishes, one including a loop seal. The loop

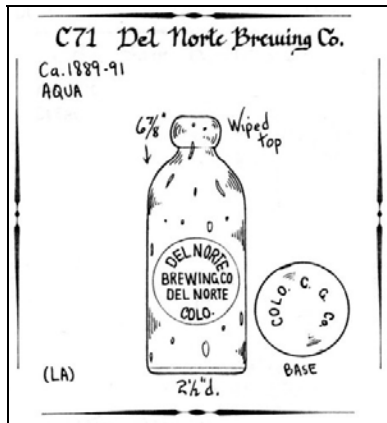


Figure 20 – COLO.C.G.CO. basemark (Clint 1976:113)

Hutchbook (Fowler 2014) also listed six Hutchinson bottles with this mark. Four were from Colorado bottlers, and the other two had no city or state designations. He did not note the configurations of the marks. Colorado City Glass only appears to have used heelmarks on bottles when a customer requested its own logo or initials on the base. In this case, the base was embossed with “K&F” in large letters (almost certainly the initials of the bottlers). Given that both applied and tooled finishes were represented with this mark, the mark appears to have been used contemporaneously with the “C.C.G.CO.” mark.

COLO. CITY. G.Co. (1889-1893)



Figure 23 – COLO.CITY G.CO. heelmark

Obviously, this mark was also one of those used by the Colorado City Glass Co. The logo seems to only occur on one aqua Hutchinson bottle used by A.A. Marsellis, a Denver soda bottler (Clint 1976; Preble 1987; Oppelt 2005; Fowler 2014). The mark was embossed on the heel – as in the above example because the A.A. Marsellis logo was applied to the base (Figures 23 & 24). Marsellis used at least four variations of the same bottle, mostly made by Colorado glass houses (Figure 25).

seal bottle had “COLO. C.G.CO.” embossed on the reverse heel while the others had “COLO. C.G.CO.” embossed in an arch on the base. The remaining four bottles had tooled finishes.



Figure 21 – COLO.C.G.CO. basemark



Figure 22 – Heelmark, COLO.C.G.CO. (eBay)



Figure 24 – Marsellis heel & base (Fowler 2014)

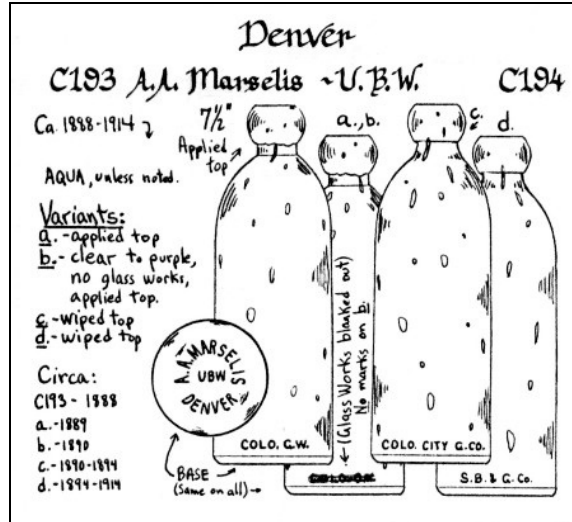


Figure 25 – Marsellis bottles (Clint 1976:137)

THE DENVER JAR

Roller (1983:101; 2011:161) discussed this green jar. Each jar was mouth blown and had a shoulder seal, zinc screw cap. While he was uncertain of the maker, he noted:

The Colorado Glass Works, Golden, Colorado (near Denver), in a February 28, 1887 letter to Charles Yockel (a Philadelphia moldmaker), ordered “Mason Fruit Jar Molds.” Since the Colorado firm’s letterhead listed fruit jars among its wares, they may well have made these jars.

Creswick (1987:43) illustrated the jar, showing “THE / DENVER JAR” (Figure 26). She discussed possible makers and also

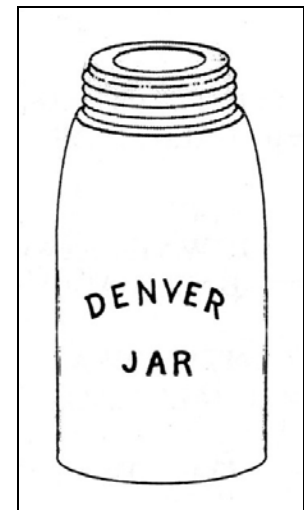


Figure 26 – The Denver Jar (Creswick 1987:43)

settled on the Colorado Glass Works, apparently unaware of the Colorado City Glass Co. The Creswick drawing is revealing. The jar was clearly a shoulder-seal Mason fruit jar with a different name on the front.

Mason Jars

While the Colorado Glass Works could certainly have made the Denver Jar, there is no doubt that Colorado City Glass Co. also produced fruit jars that were sold in Denver (*Buena Vista Democrat* 1892). Numerous shoulder seal Mason jar fragments were recovered from the location of the Colorado City Glass factory. Many of these fragments have portions of the “MASON'S PATENTED NOV 30 TH 1858” embossing common on Mason jars. Some base fragments also exhibit portions of the “PAT NOV 26 67” embossing.



Figure 27 – Rim fragment with blow-over glass

There is no doubt regarding Colorado City Glass making these jars as there are many jar fragments at the factory site with the distinctive Mason-shaped shoulders and threaded finishes that still have a continuous ribbon of glass around the rim indicating the jar was scrapped before the rim was ground after blowing (Figures 27 & 28). The “blow-over”

method of jar manufacture included blowing the glass until a bubble formed above the mold, then burst. The resulting extra glass was broken off, and the lid was ground on a wheel until the rim or lip was comparably flat. Consistent with mold-blown ware, the glass thickness of the jars fragments was noticeably variable. Finally, apple green (one of the colors of the Denver Jar) and German green slag have been recovered from the factory site.



Figure 28 – Side view of rim fragment

Roller (1987:233; 2011:352) discussed a jar embossed “MASON’S (arch) / “CC” (with the second “C” mirroring the first one) / GC (with the “C” again in mirror) / PATENT / NOV. 30TH / 1858 (all horizontal)” on the front. However, the later edition provides reasonable

evidence to show that the jar was made at the Cream City Glass Co. See the Cream City section for more discussion.

Manitou Table Water Bottles

Without doubt, the majority of Colorado City Glass Co. bottles were produced for the Manitou Mineral Water Co., whose Table Water and Ginger Champagne were distributed from coast to coast. According to the *Manitou Springs Journal* (6/21/1894), millions of these bottles were produced between 1889 and 1893. When we started this research, it was unclear what these bottles looked like or whether they were embossed with the company's mark because we had not been able to find a bottle from the Manitou Mineral Water Co. that exhibited the right technology to be old enough to have been made by the Colorado City Glass Co. After much searching, a few examples finally appeared and were only identified because the bottles still retained the paper label of the Manitou Mineral Water Co. Without the labels, the bottles could pass as the product of any glass house from the period as all examples that the authors have identified lacked the company manufacturer's mark.

What gives us confidence that these bottles were made by Colorado City Glass Co. is that we have seen exactly the same style of bottle, having the same labels, with both applied and tooled finishes. As discussed above, the Colorado City Glass Co. produced many types of bottles that had both applied and tooled finishes. Applied finishes were the older style, formed by applying a molten glob of glass to the bottleneck and using a tool to shape it into the finish. Tooled finishes were formed by using a tool to shape the bottleneck into the finish after the neck had been reheated.

When the company began, it was applying finishes to bottles, but the majority of bottles with tooled finishes indicates that blowers quickly adopted the new technique. Bottles used in Colorado – with Colorado City Glass Co. logos – exhibited both types of finishes, so it is certain that the company made this transition. Therefore, we would expect to find both types of bottles produced for the Manitou Mineral Water Co. as well. The bottles noted above bridged the transition and exhibited consistency in size, shape, color and glass attributes that suggest a manufacture by the same company – surely the Colorado City Glass Co.

Failed Applied Finishes



Figure 29 – Failed finish – top

We found one other unusual type of glass artifact at the Colorado City Glass factory site. These were “blob” finishes that apparently failed to adhere to the bottle necks (Figures 29 & 30). It is obvious that gobs of glass had been applied to the bottle necks, but the necks must have been insufficiently heated. As the worker tooled the finishes, these



Figure 30 – Failed finish – side

tops apparently fell off. We have not seen this discussed anywhere in the glass literature.

Discussion and Conclusions

The Colorado City Glass Co. was one of only a few glass manufacturers located between the Mississippi River and the West Coast prior to the 20th century. The company had a great deal of potential and an enterprising patron in J.B. Wheeler – both of which promised greatness for the firm and its home, Colorado City. Although the company had steady orders and was run by men knowledgeable in the glass industry, it struggled to be profitable. Despite the difficulty, the firm’s backers were dedicated to seeing the company succeed. Unfortunately, national economic forces beyond their control finally doomed the business.

The freezing up of credit during the crises of 1893 came just when the company was addressing productivity issues by building a new factory. The crises tied up the backers’ finances, stalling the project. Regardless of the 1893 crises, the Wilson-Gorman Tariff Act of 1894 would have probably caused the firm’s closing anyway, as it was cheaper to import bottles from Europe than make them locally.

Unlike many of Colorado City’s other early companies, tangible mementos of the Colorado City Glass Co. still survive in numbers such that the average citizen can actually

discover and hold a piece of the city's past. Some of the bottles even memorialize other local companies like the Pike's Peak Mineral Water Co. (see Figure 13). In addition, there is good reason to believe that the Colorado City Glass Co. was the first to produce bottles made with all-American ingredients, in this case all-Colorado, raw material. This little-known fact is a testament to the pioneering entrepreneurial spirit of the city's early industries and is a significant event worthy of pride.

The production of bottles from all local materials meant that much of the revenue earned by the company remained local. Only some transportation costs would have gone to rail companies from shipping the products outside the region. The 1894 Wilson-Gorman Act prevented the reopening of the company and led to the loss of much glass manufacturing in America, shifting it overseas much as has happened with manufacturing and service jobs over the last two decades as a result of legislation and treaties in the name of free trade.

There are potentially millions of bottles made by the Colorado City Glass Co. in existence today, although most of the – such as the ones made for the Manitou Mineral Water Co. – had no marks that identified the manufacturer. Unfortunately, the confusion caused by the use of the same logo by the Cream City Glass Co. of Wisconsin requires caution when considering the origin of bottles with the C.C.G.CO. mark. The hypothesis in the Containers and Marks section represent an initial beginning to differentiate the products of the two companies. If Cream City Glass only produced beer and soda bottles, flasks, and fruit jars, then all other hollowware would be from Colorado City Glass, and we only need to determine how to differentiate the former three products. Unfortunately, we know of no records from either company that describe customers. Given the documentary evidence and known bottles with company names and states of origin, it is possible to begin separating some of the bottles. Further, there are bottles that appear to have only been produced by one or the other. For example, bottles with horseshoe plates were almost certainly made by the Colorado City Glass Co., while the amber export beer bottles were likely only produced by Cream City Glass.

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Last updated 7/31/2014