



'Robert Hemengree is head of this household.'

GRAY & HEMINGRAY REVISITED

One can almost hear the Gaelic accent of Irish-born Ann Gray, wife of glassblower Ralph Gray, that *may* have influenced assistant marshal Blackburn's phonetic spelling of the surname "Hemengree" (glass manufacturer Robert Hemingray) entered on page 999 of the 1850 Federal Population Census in Cincinnati's ninth ward. Located about ten blocks northeast of Gray's and Hemingray's new glassworks, the residence of Robert and Mary (Carroll) Hemingray also housed Ralph and Ann Gray, Ralph's younger brother Anthony (a glassblower) and Anthony's wife Susan (Carroll) Gray, sister of Mary Hemingray. Adding the five Hemingray children and Susan Finley from Ireland, persons living there numbered twelve. [Cover pen and ink drawing by author David Dale.]

But sometime before the 1850 census was taken, the Gray and Hemingray families resided in a dwelling on Sycamore Street, between Third and Fourth Streets, a half-block east of the glassworks. *Williams' Cincinnati Directory and Advertiser, 1849-50* (printed in 1849) lists Samuel J. Hemingray, Robert's older brother, as a boarder there. Later city directories list the Gray and Hemingray families living in other dwellings in Cincinnati before finally settling in Covington, Kentucky, in 1853.

The 1850 Federal Population Census lists Ralph Gray as glassblower, born in England; Anthony Gray as glassblower, born in Pennsylvania; Robert Hemingray as glass manufacturer, born in Pennsylvania. The following is a sketch, found in the June 6, 1892 edition of the *Muncie Daily Times*, of Robert and Ann Hemingray's marriage in Pittsburgh and Robert's entry into his chosen profession:

Just fifty years ago [1842] in the then small village of Pittsburgh, Pa. [1840 Federal Population Census placed

Pittsburgh population at 35,478], Mr. Robert Hemingray and Miss Mary Carroll were united in marriage. Since that happy event Mr. Hemingray has constantly been engaged in the manufacture of glass. For the past forty years [since 1852] Mr. Hemingray has conducted a flint glass factory at Covington, Ky., where he has resided until a few months ago when he moved to the Magic city [Muncie, Indiana] of the [natural] gas belt. Mr. Hemingray is one of the oldest and probably the best known glass manufacturers in the United States...

Both the Grays and Hemingrays had strong ties to Pittsburgh and it is probable that they came directly from there to Cincinnati. While little has been published concerning their early glassmaking experience, their rapid growth and success suggests that they were "practical glass men."

"What hath God wrought," was the first message that Samuel F. B. Morse transmitted May 24, 1844, from the U.S. Supreme Courthouse in Washington, D.C. to associate Alfred L. Vail at the B & O Railroad station in Baltimore, Maryland. And in 1848, the same year that the Gray and Hemingray Glassworks was established in Cincinnati, telegraph communications opened between New York City and Chicago. As railroads connected major cities and towns in the U.S. and in foreign countries, more telegraph lines were strung. Constant demand for glass insulators for those lines and later for telephone and power lines, continued well into the twentieth century.

Production of glass insulators for communication and lightning rod installations began early at Gray & Hemingray. Letters of U.S. patent issued between 1850

and 1873 to Cincinnati inventors and manufacturers of both telegraph and lightning rod products include J. Spratt, V. Schrage, W.W. Smith, G. Floyd, and J.H. Weston. (Figure 1.)



(Figure 1.) A variety of lightning rod insulators. (Collection of Glenn Drummond, photograph by David Dale)

By 1850, the population of Cincinnati had grown to 115,438 and had exceeded the size of Pittsburgh, her "Sister City." But long before an attempt was made in 1815 to launch the Cincinnati Glass Works by Hough, Rees & Co., glass had been made in Pittsburgh in great quantities. And though window glass and hollowware produced in Cincinnati was advertised in newspapers and peddled by commission merchants in several towns in the middle and lower Ohio Valley, the glassworks would close.

Englishman David Thomas reports on his journey through the American Middle West during the summer of 1816 in *Travels Through the Western Country*, page 107:

Works for green glass have lately gone into operation; but some of the articles produced are very imperfect. "We can sympathize [sic] with the proprietors of the new establishment..."

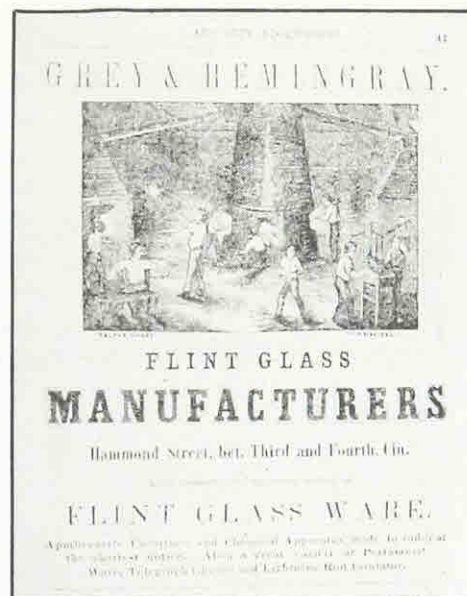
Removed thirty miles upstream from the small village of Moscow, Ohio, equipment from the Cincinnati Glass Works was put back into operation in July 1823 by its former workmen but under the new ownership of Pugh & Teeter. The factory would remain in operation there until 1830 when it was moved to Wheeling, Virginia (now West Virginia) by Henry Teeter who had become sole proprietor. (See Everts, Louis H., *History of Clermont County, Ohio...1880*, p. 373)

Those were times when only the wealthy or most frugal manufacturers would survive. Recent military conflicts and a glut of cheap foreign imports had soured local commerce and had brought much of American industry to a halt. It would be three decades before other glassworks would take hold in Cincinnati.

On April 1, 1848, Ralph Gray and Robert Hemingray signed a five-year lease with George Garretson for the "...use of part of lot number 6 [Ward 1] in

Cincinnati...fronted on Hammond Street between Third and Fourth Streets...between Main and Sycamore Streets [beside the Woodruff Hotel]...." Over the next two years, they would negotiate two additional leases to expand their operations. The manufacture of glass at Hammond Street and at two other locations would continue for 85 years under names "Gray & Hemingray" [1845-1856]; "Gray, Hemingray and Brothers" [1857-1861]; "Gray, Hemingray & Brother" [1861-1864]; "Hemingray, Brothers & Company" [1865-1867]; "R. Hemingray & Company" [1867-1869]; "Hemingray Glass Company, Inc." [1870-1933]. After Owens-Illinois purchased the Muncie, Indiana, plant in 1933, it was operated for another 39 years until closing July 15, 1972.

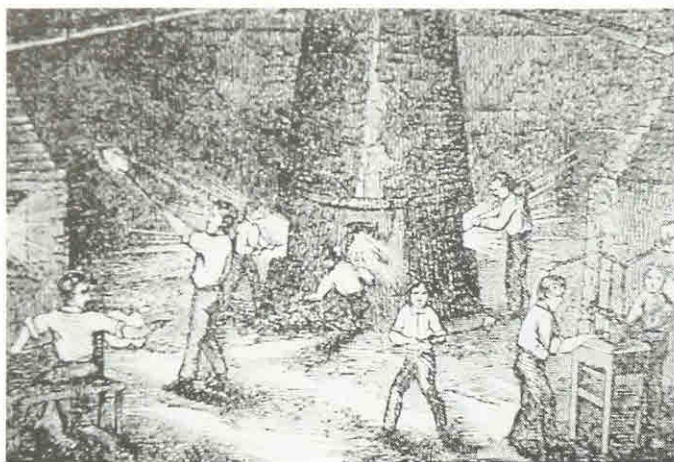
On a card on page 41 of 1851-1852 *Gray's Cincinnati Business Mirror & City Advertiser*, readers can see first-hand a crude but fascinating woodcut of the interior of the Hammond Street glassworks. (Figure 2.)



(Figure 2.) Gray & Hemingray's Hammond Street glassworks as pictured in 1851-1852 *Gray's Cincinnati Business Mirror & City Advertiser*. (Courtesy of Cincinnati Historical Society)

Shown are nine workers (Figure 3.) engaged in a variety of activities. At openings around the central furnace and smokestack, gatherers are busy drawing molten "metal" on blowrods; in the right foreground a team of three workers conducts glass-pressing operations; near them is either a kiln-shaped specialty furnace or annealing oven; opposite the press operation sits a gaffer at his workbench tooling a large globe attached to his punty-rod; behind him, at another small furnace or oven, stands a worker facing into its bright opening; a central figure elevates his blowrod with attached vessel taking shape.

The lesser furnaces (or ovens) have vents that angle overhead into the central smokestack; the glassworks structure looks to be 50 feet square and has an



(Figure 3.) Interior of Hemingray's Hammond Street glassworks. (Courtesy of Cincinnati Historical Society)

exposed gable ceiling that vaults up 20 feet to a single peak; heavy exposed wood timbers support a corrugated iron roof, while pole-barn construction holds either corrugated iron or wood slat walls in place; the floor is brick.

It is possible that another glassworks was already established in Cincinnati before that of Gray and Hemingray. Federal population census data indicates that two of Englishman and glass manufacturer John Jukes' children were born in Ohio. Based on their birth dates, it is possible that Jukes and two older sons, who were glassblowers, manufactured glass in Cincinnati in 1844. John Jukes' Cincinnati Flint Glass Works (company named by other historians but yet to be verified through extant records by author) and Gray & Hemingray Glassware are the two Cincinnati glassworks listed on the 1850 Federal Non-population Census. Abstracted from that document are these statistics:

(Page 1) John Jukes [Cincinnati Flint Glass Works]
Glass Manufacturer

Capital Investment:	\$1,000
Value of 43,820	
Pieces of glassware	
(104,000 lb.) produced:	\$6,240
Value of raw materials	
(including fuel):	\$3,120
Average monthly wage	
(for 8 male hands):	\$ 120

(Page 6) Gray & Hemingray [sic] Glassware

Capital Investment:	\$3,000
Value of 77,500 lots	
of glassware (78,000 lbs):	\$8,500
Value of raw materials	
including fuel:	\$2,340
Average monthly wage	
for 14 male hands:	\$ 952

John Jukes' Cincinnati Flint Glassworks was

located nine blocks east and north of Gray and Hemingray. The latter establishment was in the heart of the commission merchant district, but lacked convenient shipping and receiving accommodations (which would be later remedied). Jukes' glassworks fronted on Lock Street between Fifth and Sixth Streets near the Miami Canal that emptied into the Ohio River, near the Little Miami Railroad and train depot.

To date, it is not known what products were made at Cincinnati Flint Glassworks. The company name suggests hollowware, even window glass. And provided Jukes had a glass press, insulators may have been produced there.

But writer and "Queen City" booster Charles Cist, though never naming Cincinnati Flint Glassworks, stated that the "other" glassworks in town was smaller than Gray & Hemingray. In *Sketches of Cincinnati in 1851*, Cist reports:

...Gray and Hemingray is on a scale so much inferior in magnitude to those [glassworks] in Pittsburgh, that the statistics given, would conclude this subject, but for the conviction which this writer entertains, that Cincinnati will hereafter lead Pittsburgh in ...glass manufacturers, as we do in everything else...Gray & Hemingray, make tumblers, decanters, packing bottles, lamp glasses, apothecary shop furniture, and generally, most articles manufactured in Pittsburgh. A greater variety of perfumery glass is manufactured in these works...Operations attended here are flint glass, except for insulators, which are made for lightning rods and for telegraph lines, here, and at Pittsburgh; which [the latter] place is entirely supplied from this point.

In the Volume 7, No. 5., 1904 issue of *Telephony*, Hemingray Glass Company reflects on their success in the manufacture of Hemingray insulators:

...When it is taken into consideration that the Hemingray Company was established in 1848--more than half a century ago, beginning the manufacture of glass insulators at that time--it can be readily understood why the product of this concern is so well known throughout the country...At the present time the claim is made that Hemingray Glass Company is not alone the largest establishment of its kind in the world, but that its yearly output and sales are more than those of all the other insulator manufacturing industries combined....

Early success of Gray & Hemingray can be attributed to having produced and marketed a broad base of products that included commercial and domestic hollowware--both blown and pressed--of almost every description. Until the turn of the century, the fruit jar rivaled the production of insulators, as evidenced by directions given by Gray and Hemingray in *The Indianapolis Journal*, July 25, 1855, which discussed their "self-

sealing bottles for preserving fruits, etc.;" and later, in the July 17, 1869 edition of the *Covington Journal* where it was reported that "...[R. Hemingray & Co.] makes 10,000 fruit jars per day."

The company name would be changed in 1857 when Anthony Gray and Samuel Hemingray joined the business partnership. On page 296, in *Sketches and Statistics of Cincinnati in 1859*, Cist reports that:

Gray, Hemingray & Bros., employ eighty hands; value of product, one hundred thousand dollars...To communicate the principal [products] only, would be to furnish a general and extensive catalog, many of these are peculiar to their works; such as glass milk pans, atmospheric fruit jars, etc.

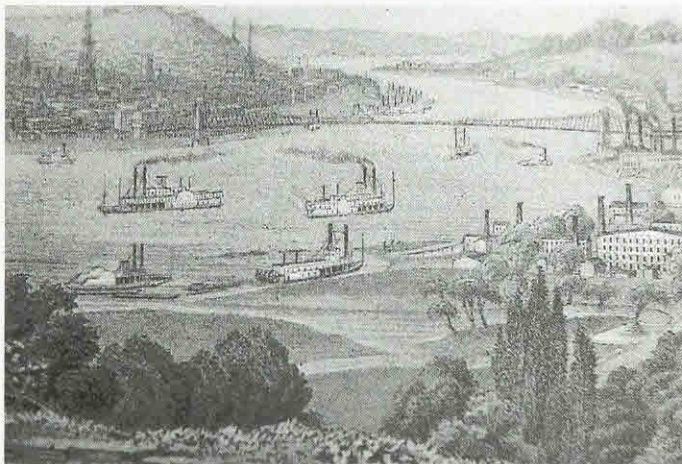
Every description of flint glassware, apothecary's furniture, and chemical apparatus made to order on short notice, perfumer's ware, telegraph glasses and lightning rod insulators. Patent self-adjusting lanterns for railroads, steamboats, and for general purposes...

In Cist's 1859 *Sketches Of Cincinnati* is illustrated a birdseye view of Cincinnati from Covington, Kentucky that features a completed bridge that, at that time, was really still under construction. Once completed, it would be hailed by engineering societies world-wide as an architectural wonder. Known as the "Covington and Cincinnati Suspension Bridge," it would also serve as the prototype of the famed Brooklyn Bridge.

Included in the illustration of the bridge stands Gray, Hemingray & Brothers' glassworks on the riverbank (nearest the bridge) in Covington.

Construction of the bridge (Figure 4.), based on designs submitted in 1846 by engineer John A. Robeling of Trenton, New Jersey, commenced in 1856. But obstacles posed by the riverbed, flooding and complex currents--further complicated by economic depression and inflation--delayed its completion. It was not until after the Civil War ended that the bridge was completed in November of 1866.

Bridge commerce and maintenance was controlled by the Covington and Cincinnati Bridge Co. under lead-



(Figure 4.) *Gray, Hemingray' & Brothers, Covington, Kentucky, glassworks is shown in Cist's 1859 Cincinnati Directory & Advertiser. (Courtesy of Indiana Historical Society)*

erships of Amos C. Shinkle and his son Bradford; the latter of whom married Mintie Hemingray, Robert Hemingray's daughter. Amos Shinkle would become one of the original incorporators of the glassworks named "Hemingray Glass Co."

Having orchestrated terms of three Cincinnati leases to expire on the same date (five years after the first lease was signed), and having purchased property directly across the Ohio River in the smaller, picturesque town of Covington, Kentucky, one year before the Cincinnati leases expired, it is not difficult to see that Messrs. Gray and Hemingray had a plan.

Covington had a railroad system in place; the glassworks shipping and receiving facilities would be situated directly on a road and waterway; their showroom and warehouse would remain at Hammond Street until about 1851, when it would be relocated in Cincinnati at 14 Main Street, then to 68 Walnut (Circa 1870) before being removed to Covington in 1881.

According to the February 1, 1881 edition of the *Covington Daily Commonwealth*:

The new Hemingray Glassworks building on Second Street is completed and the store of the firm heretofore on Walnut Street, in Cincinnati, will be removed to the new and commodious building adjoining the facility in this city.

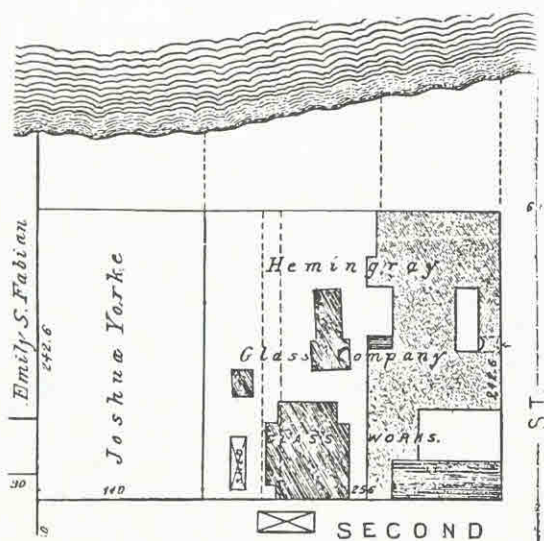
Before moving their glassworks to Covington, Messrs. Gray and Hemingray sought legal advice concerning their unencumbered access to convenient river docking and wharfage. While railroads had become the practical mode of inland exportation, it was still the river barges that delivered the coal and many raw manufacturing materials to their receiving docks. Only after they had obtained from Covington attorney William Benbow a favorable (but incorrect) opinion concerning water access rights, did they purchase the first of several lots for the glassworks on October 19, 1851.

One of the first properties purchased was at one time owned by proprietors of Bakewell, Page, and Bakewell, an early Pittsburgh glass manufactory (nothing yet suggests that a glassworks was located on that site before Gray & Hemingray). Among other properties acquired, a pottery was purchased by Hemingray, Brothers & Co. in 1865 from William and Susanna Bromley, of considerable size that included "buildings...fixtures...certainty of houses, chimney stacks [and] pottery manufactory...except for molds, crockery [etc.]" It is believed to have been used in conjunction with their glassworks. (Figure 5.)

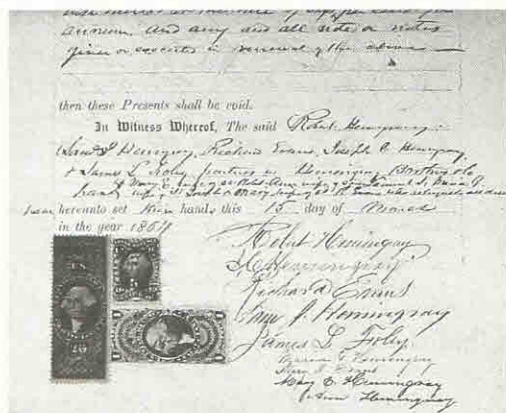
Dating from 1851 to 1880, ten deeds of purchase relating to properties for the Covington facility have been documented. (Figure 6.) These do not include the April 19, 1864 mortgage deed from the newly organized Hemingray Brothers & Co. to Ralph Gray's executor, following the death of Ralph Gray on April 19, 1864. The mortgage deed was devised to settle Ralph's estate. (Figure 7.)



(Figure 5.) Looking across the Ohio River to Hemingray's Covington glassworks. (Courtesy of Kenton County Public Library)



(Figure 6.) The 1877 City Atlas of Covington, Kentucky, picturing the Hemingray Glass Company. (Courtesy of Glenn Drummond)

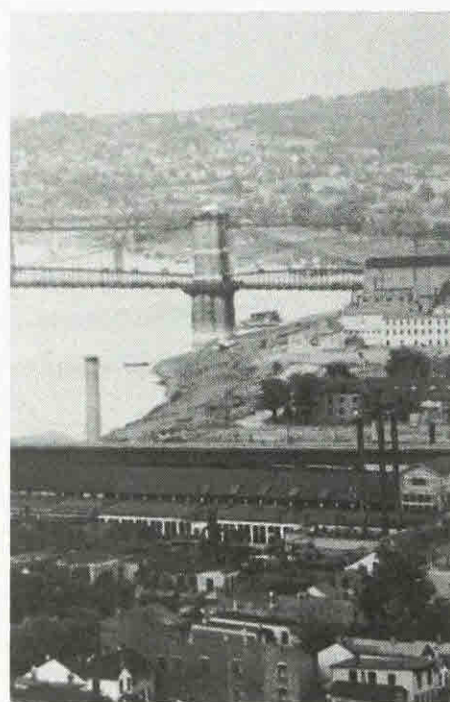


(Figure 7.) Signatures of Hemingray, Brothers & Co. principals on mortgage deed to settle the estate of Ralph Gray. (Courtesy of David Dale)

Members of Hemingray, Brothers & Co. included Robert and Mary Hemingray (husband and wife); Leavenworth, Kansas, attorney and banker Joseph Conway Hemingray (younger brother of Robert and Samuel) and wife Maria G.; Samuel J. and Ann Hemingray (husband and wife); Richard and Mary J. (Hemingray) Evans (sister of Robert and Samuel); and Covington attorney James L. Foley.

Officers of the new company were Robert Hemingray, president; James L. Foley, vice president; Richard Evans, secretary.

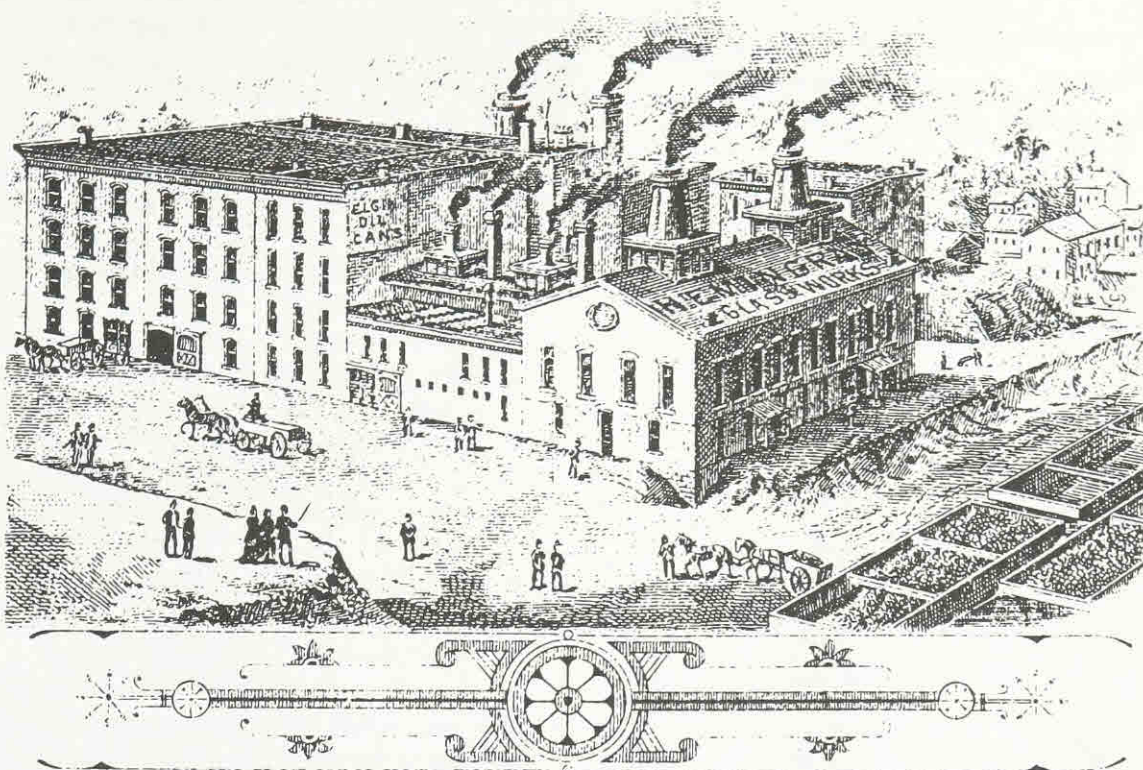
The Covington glassworks site, located just west of the Covington and Cincinnati Suspension Bridge, consumed nearly a full city block. It was bordered on the north by Front Street and the Ohio River; Madison Street on the east; Second Street on the south; and Washington Street on the west. (Figure 8.)



(Figure 8.) View of Hemingray glassworks near the suspension bridge in Covington, Kentucky (Courtesy of Kenton County Public Library)

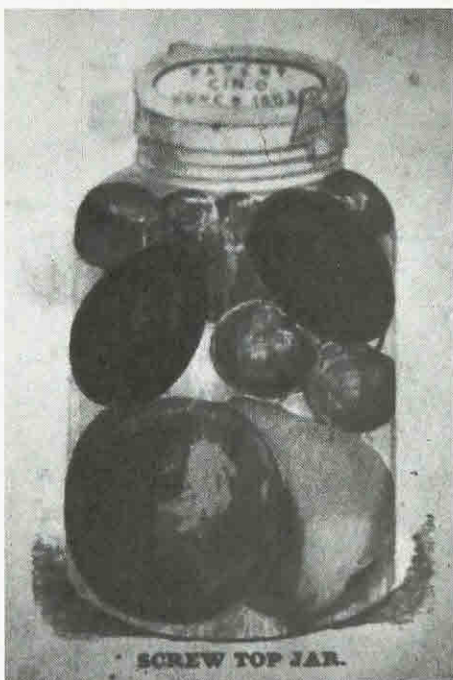
A rare Hemingray Glass Company letterhead, dated March 21, 1885, includes an engraving of the exterior perspective of the glassworks as if viewing it from the northeast. The scene depicts the glassworks fully developed and in various modes of operation, with bystanders attired in the dress code of the day. (Figure 9.) With the scene placing the factory so close to the river, one can understand why it was often damaged during spring floods.

Technological contributions of Gray & Hemingray to the glass industry and to consumers are well documented by U.S. letters of patent. The first, issued to Robert Hemingray on Patent No. 30,063, Sept. 18, 1860, *Mold For Glass Jars*, presented an innovative method



(Figure 9.) Rare 1885 Hemingray Glass Company letterhead. (Courtesy of David Dale)

of manufacturing packing and fruit jars with an “annular groove” (wax sealer) reservoir in a single uninterrupted hand operation. It would permit production of wax sealing-type fruit jars faster than other methods employed at that time. (Figure 10.)



(Figure 10.) Trade card showing the “Celebrated Hemingray Screw-Top Fruit Jar.” (Courtesy of Bill Dudley collection, Xenia, Ohio; photograph by David Dale)

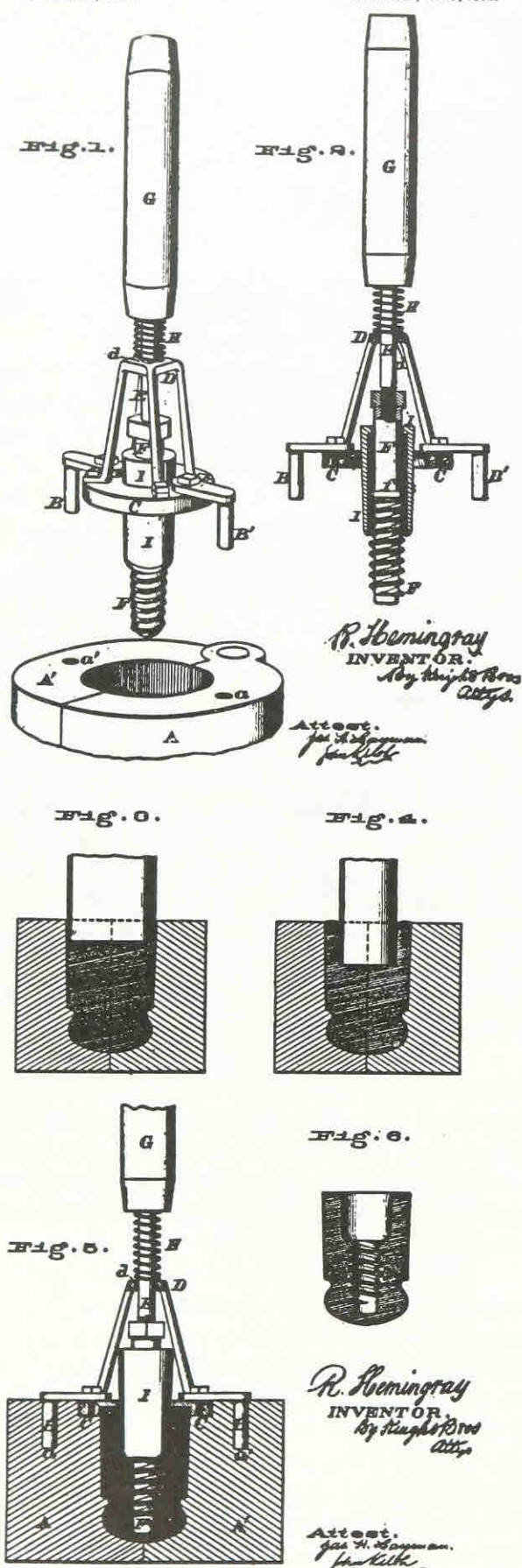
Just short of six months before Ralph Gray’s death, he and Robert Hemingray were issued letter of Patent No. 38,820, June 9, 1863, for *Cap For Fruit Jars*. This screw cap, made in both tin and cast pot metal, was produced for several years and was called the “Celebrated Hemingray Screw-Top Fruit Jar.” (Figure 10.)

Letter of Patent No. 122,015, issued to Robert Hemingray December 19, 1871, for *Moulding Glass Telegraph Insulators*, helped revolutionize the manufacture of screw-type insulators. (Figure 11.)

While contention for patent rights between Robert Hemingray and another inventor, Homer Brooke, is legendary, it is also academic; for both were issued letters of patent under different categories. And, from that day forward, Robert Hemingray and his glassworks would set standards for the insulator industry and would remain the leading contender in that market.

Retirements and deaths of partners would cause the name of the Covington operation to undergo five name changes. Anthony Gray would be retired by 1861 and would die in 1865. Samuel Hemingray died the following year. Banker Joseph C. Hemingray, who was associated only with Hemingray, Brothers and Co., withdrew when the mortgage deed was paid off to Ann Gray, which settled Ralph Gray’s estate and ended the Grays’ interest in the businesses ownership. However, John C. and Ralph Gray, sons of Anthony Gray, would continue to work many years for the company.

Principals associated with the Covington operation after it was incorporated under the name “Hemingray



(Figure 11.) Robert Hemingray's December 19, 1871 patent for "Moulding Glass Telegraph Insulators"

Glass Company" March 21, 1870--with a capital investment of \$200,000--are Robert Hemingray and his son Ralph Gray Hemingray; Robert's brother-in-law Richard Evans and Evans's son Edward W.; Amos C. Shinkle; and James C. Foley. While the factory would be entirely removed to Munice, Indiana, before 1900, Covington offices would be manned in some capacity for almost two more decades.

On numerous occasions, Covington city officials attempted to revoke Gray & Hemingray's private access to the river for the purpose of public wharfage. And in 1865, the city sued the glassworks owners to "recover possession from the defendants the ground north of Front Street, extending from a point 100 feet west of Madison Street to the east of Washington Street...."

Robert Hemingray and codefendants fought the suit for ten years but lost. The ruling determined that proprietors of Hemingray Glass Company must eventually surrender possession of the disputed property to the city and pay wharfage fees.

Severe hard times followed the Civil War, and labor disputes which closed mining operations and halted railroad transportation, crippled American industry.

During the 1870's unionism among glassworkers throughout the upper and middle Ohio Valley took hold. The January 30, 1877 issue of the *Covington Ticket* reports:

The young boys employed at the [Hemingray] Glass House as "tenders," became indignant at the proposed reduction of ten cents a day on their wages, yesterday, and concluded to strike. They threw down their tools and refused to work until they got their price, which is thirty-five cents a turn. Mr. Hemingray very wisely let them go, and today he is busily engaged employing others who are glad to get the chance to work at the reduced price. The blowers will be delayed one or two days, in consequence of the strike.

Labor problems continued. The March 9, 1878 issue of the *Covington Journal* reads as follows:

The Boys at Hemingray's Glass Works struck this morning for higher wages. They want the same price paid last spring. They threatened destruction of property, etc. until Marshal Bolan talked to them, when the greater number took heed to his advise and resumed work.

Yet it appears that Hemingray Glass Company and the Knights of Labor (K of L), predecessor of the American Flint Glass Workers Union, coexisted remarkably well. A talented glass designer and long-time Hemingray employee, James C. Gill, was an active unionist who in 1887 assigned letters of patent (Figure 12.) to his employer for the design of a glass match safe and match strike, a miniature of a blacksmith's anvil (side-embossed with "K of L" initials) resting on a tree stump, one of the

recognized symbols of Knights of Labor. (Figure 13.)

Gill, who received several letters of patent for container and insulator designs and glassmaking machinery, may be best known for his "Signers Platter," patented in 1875 and assigned to Gillinder & Sons glassworks in Philadelphia.

Born in 1852 in Wheeling, Virginia (now West Virginia), Gill was an active labor organizer and was involved in union affairs until his death in Muncie, Indiana, in 1902.



(Figure 12.) James C. Gill patent for paperweight and match safe. (Courtesy of David Dale)



(Figure 13.) Photo of "K of L" glass match safe and match strike. (Courtesy of Graydon Human Collection, Muncie, Indiana; photograph by David Dale)

During the late 1870's and early 1880's, continual spring flooding, labor disputes and short fuel supplies, coupled with the prospect of city wharfage fees and snarled river traffic, would, in 1888, make an offer from a small Hoosier community located 100 miles northwest, worth considering.

In 1886, beneath a network of railroads, drillers

struck natural gas while boring through trenton rock in the small village of Eaton located in northern Delaware County in East-Central Indiana.

Trenton is a thin convex-shaped limestone strata, which once encapsulated the largest known gas deposit in North America.

The "bubble's" center, located near county lines dividing Delaware and Jay Counties, stretched northwest through Blackford, Grant and Tipton Counties; south by southwest through Madison, Henry, Rush, Hancock, and Hamilton Counties, and east through Randolph County, into western Ohio.

Natural gas proved to be a cheap, even-burning fuel, particularly suitable for the glass industry, thanks to successful experiments by John Baptist Ford, the first person to melt the "batch" (mixed chemical compounds, which when heated, become molten glass) with the clean, hot, flame of natural gas. Ford conducted experiments at New York Plate Glass Company (known today as Pittsburgh Plate Glass Co.) in Creighton, Pennsylvania, in the early 1880's shortly after abandoning the Jeffersonville (Indiana) Plate Glass Company.

Equally as significant to the discovery of natural gas for that region's rapid growth and prosperity was the 40-year evolution of Indiana's centralized railroad system that preceded the gas boom. Communities that promised free gas--and "title-free" land (situated alongside established railroads)--were the first to secure the new glass factories.

The following are excerpts from the September 20, 1886 issue of the *Indianapolis Journal*:

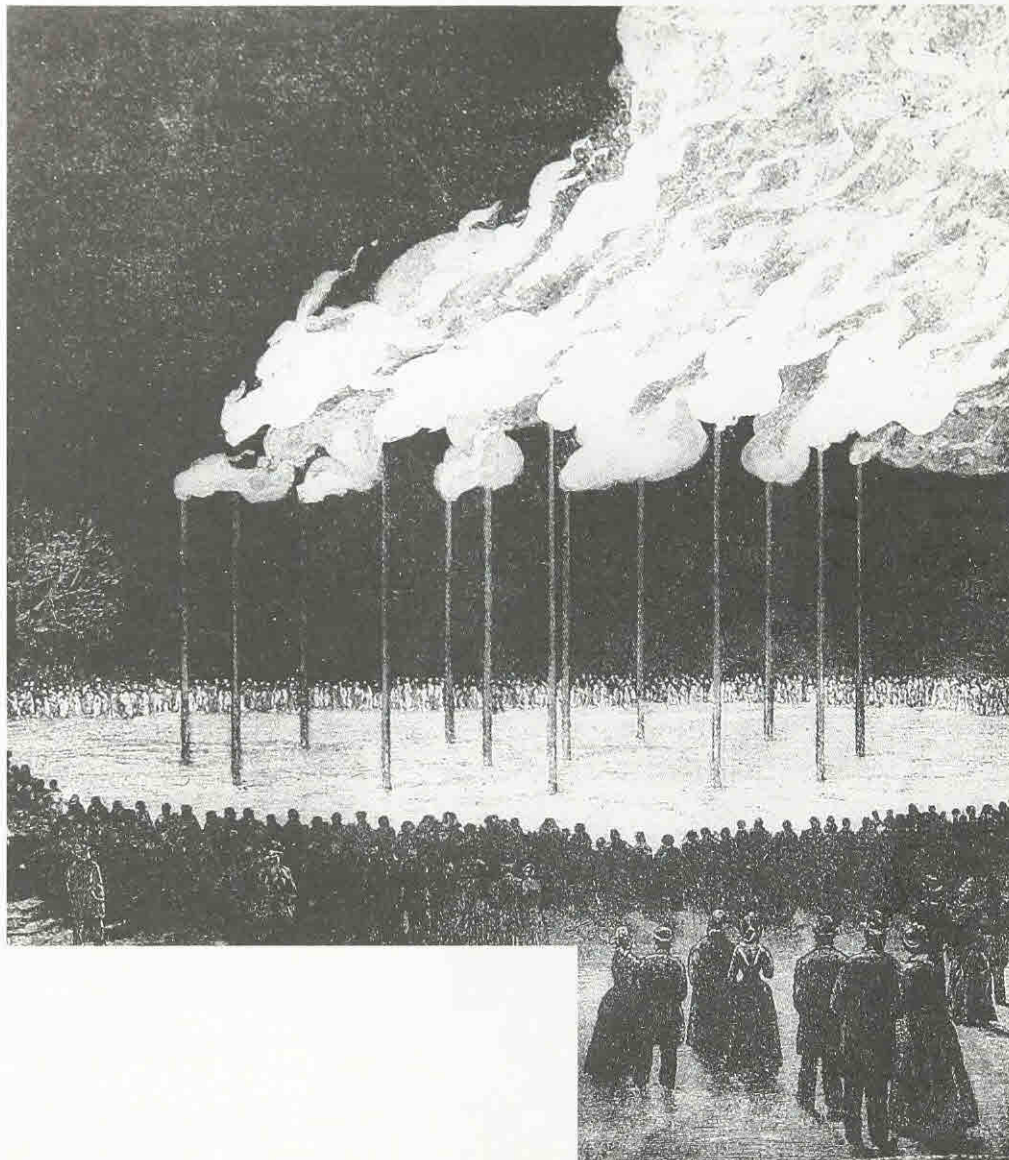
Successful Gas Well at Eaton...Muncie, Dept. -

The gas well at Eaton has been more fully developed in the last two days [than when first uncapped], and it is now determined that the supply of gas is amply sufficient to be of practical benefit. A pipe was placed in the well today, and a telephone message was received tonight stating that the flame extends seventy feet into the air and illuminates the country for a great distance around. Persons on top of buildings in this city are enabled to see the light from here, although the distance is eleven miles. The pressure is said to be as good as that of the best wells at Findlay, Ohio.

The Eaton discovery proved to be Indiana's first practical gas well. (Figure 14.) And Muncie entrepreneurs-like industrialist and leading Muncie booster James Boyce--were quick to attract new manufacturing interest to that small community. (Figure 15.)

It was Boyce who-- "himself contributed \$12,000" to a fund "that swelled to \$120,000" -- to attract new industries and who spearheaded successful appeals to several glass manufacturers to relocate in Muncie; the first was Ball Brothers Glass Works Company, Buffalo, New York; and the second was Hemingray Glass Company.

(Figure 14.) Like many sightseers, the Hemingrays may have stood in awe at the spectacle of fiery skies caused by the uncapping of the natural gas well in the Eaton area. Originally drilled in 1876 when driller George W. Carter was looking for coal, the well was capped and not reopened (and further developed) until mid-September, 1886. This drawing was from the Natural Gas Display in the Indiana Gas Fields and was provided courtesy of Indiana State Library. The wells were allowed to burn and actually wasted millions of cubic feet of nature's precious fuel; a supply that many (incorrectly) thought would last forever.



(Figure 15.) James Boyce, early Muncie industrialist, was responsible for contacting Robert Hemingray and persuading Hemingray to move to Muncie, Indiana. (Courtesy of David Galliher, great-grandson of James Boyce)

Front page headlines from the January 5, 1888 edition of *Muncie Daily Times* read:

**ANOTHER IMMENSE GLASS FACTORY COMING
AN AGREEMENT SIGNED AND THEY LOCATE THEIR
COVINGTON FACTORY IN MUNCIE**

Extracted from the original Muncie Contract, it reads as follows:

Muncie Contract:

*Muncie Dec. 10th 1887
To Hemingray Glass Co.
Covington, Ky.*

Gentlemen,

Appreciating the importance of your Manufacturing interests, and the advantage it would be to our city, to have you to remove said interests. We make you the following offer.

First. We will give you free gas, either a well, or connection with some other well near, as may be mutually agreed upon, for any additional furnaces and for all uses connected with your factory.

Second. Eight acres of land, situated upon the Goshorn Syndicate lands, at or near S.W. Corner. Guaranteeing railroad facilities, switch to your factory.

Thirdly. Ten Thousand (\$10,000) dollars in cash to be paid out of the treasury of the Manufacturers Guarantee Fund Association who have a bonafide subscription of lands and cash appraised at Thirty-eight thousand and five hundred (\$38,500) dollars to be paid as follows:

Twenty-five hundred (\$2,500) dollars when building is under roof and Twenty-five hundred (\$2,500) dollars when glass is melted and ready for work and one hundred hands or less are employed. Twenty-five hundred (\$2,500) dollars (nine months) from date of first payment. Twenty-five hundred (\$2,500) dollars one year from date of first payment. Notes of the Manufacturers Guarantee Fund Ass. to be executed for said payments bearing the Conditions aforesaid on their face respectively, and deposited and payable at the Citizens National Bank of Muncie, Indiana. Said payments to be made upon the fulfillment by you of the following conditions. Viz:

First. You shall erect upon the ground thus indicated and to be donated. A factory for the Manufacture of Glass Ware, having a capacity of fourteen (14) pots and other appurtenances and fixtures for the prosecution of said business.

Second. You hereby agree that it is the spirit and intent

of this agreement that it contemplates the removal of your whole Manufacturing business now carried on or at Covington, Ky. to this place as soon and as rapidly as the true welfare and good of said business and circumstances will permit. Should above prove acceptable to you kindly sign the subjoined and return one copy to us and oblige.

*Respectfully,
Manufacturers Fund Ass.
Chas. E. Tuthill
Genl. Mangr.*

With these stipulations, Robert Hemingray signed the contract:

We accept the foregoing imposition, provided the location is suitable and hereby pledge ourselves, to the fulfillment of its terms and Conditions, so far as the same is obligatory upon our part.

R. Hemingray
Presd.

On January 13, 1888, the *Muncie Daily Times* reports:

COVINGTON'S LOSS

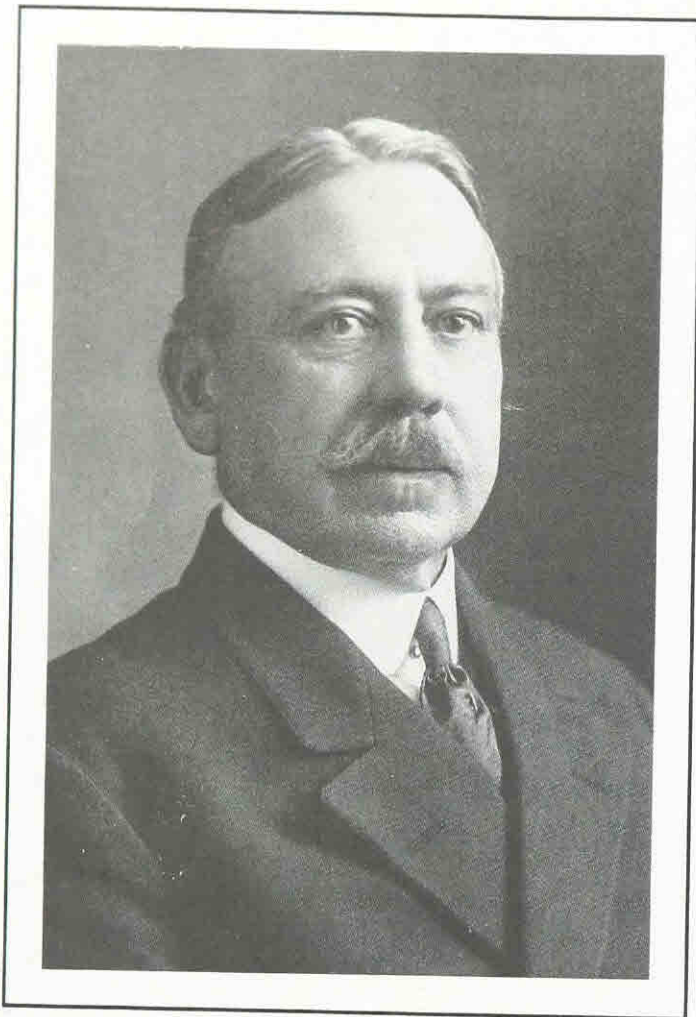
The Hemingray Glass Company Moving to Muncie

Covington is about to lose one of its largest establishments, the Hemingray Glass Company. Messrs; Hemingray, Sr. and his son Ralph are in Pittsburgh, contracting for the building of a glass furnace in Muncie, Ind.

They expect to get started about the middle of April, and will only make bottles at the start. About one hundred hands will be employed. The manufacture of their patent ware and lamps will still be in Covington, as at present, and it will likely be a year before the factory will all be removed to Muncie, as their present plant is an expansive one...Mr. Ralph Hemingray will manage the new concern at present.

Muncie was not the only city that bid for these works. Toledo, O., made a liberal bid, as did Minneapolis, which offered them \$50,000 in cash, a [parcel] of land and gas fuel free for three years, and at the end of that time at a cost of one-half the price Pittsburgh manufacturers paid for gas. The Hemingray plant in Covington covers several acres of land and the main building is three stories high. They employ several hundred men, and their payroll averages about \$12,000 a month, when the factory is in full operation...ten months in the year....

Born in 1852, and named after his father's close friend and business associate, Ralph Gray Hemingray (Figure 16.) grew up in the family business. It is evident that he had become a practical glass man with issuance of

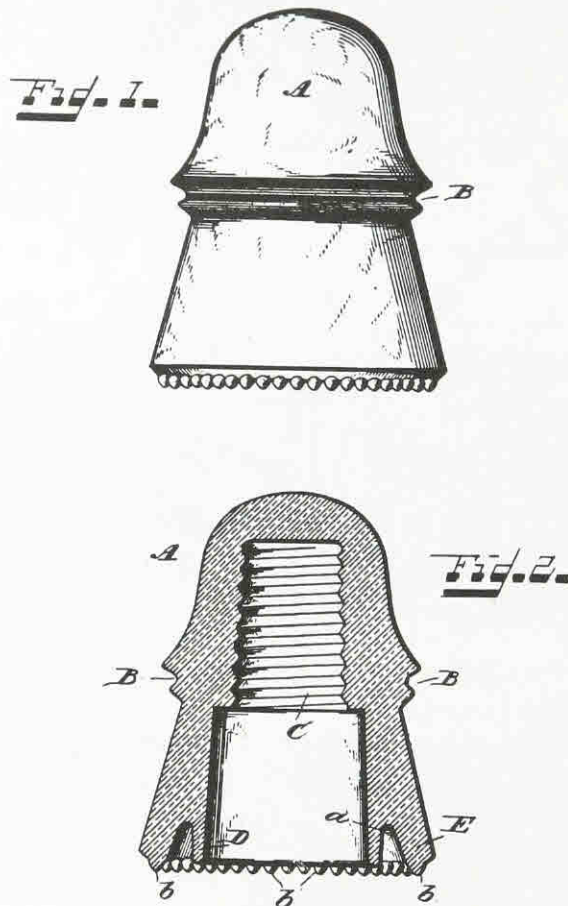


(Figure 16.) *Ralph Gray Hemingray. Born March 31, 1852. Died May 11, 1920. (From "A Book of Indiana", 1929)*

B. G. HEMINGRAY & J. C. GILL.
INSULATOR FOR TELEGRAPH WIRES.

No. 496,652.

Patented May 2, 1893.



Witnesses:
Thomas Cross
George Aidman

Inventors:
Ralph G. Hemingray
James C. Gill
By Steu. Allen
Attorneys.

(Figure 17.) *The May 2, 1893 patent of Ralph G. Hemingray and James C. Gill which provided for drip points which would draw moisture off the surface of the insulators. (Courtesy David Dale)*

general builder.

It was Robert Morgan who rebuilt the Muncie factory after a devastating fire in 1892. According to information found in the June 18, 1892 issue of *Muncie Daily News*, it was believed that the fire was caused by sparks from a switch engine that ignited packing straw near a side-rail that burned the Hemingray and C. H. Over Glass Companies to the ground, causing an estimated \$250,000 damage.

John Morgan recalls his father telling him that his grandfather "salvaged enough unburned boards to build themselves a shed [at home]."

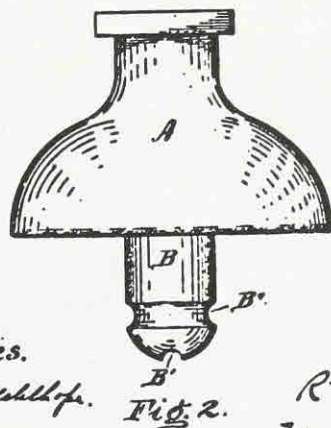
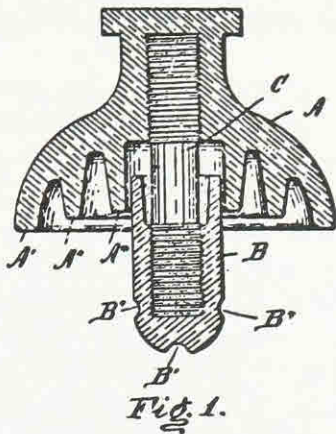
William Morgan would laugh many times as he told his son about watching Ralph Hemingray roll cigarettes, striking a match and lighting them, using just one hand, a feat that one Sunday morning landed him in jail. Early "Blue Laws" were strictly enforced in Muncie

his first letter of U.S. Patent No. 196,092, dated October 16, 1877, for "Improvement In Cleaning Glass Ends of Blowpipe." Over the years, Ralph would receive letters of patents which include No. 290,771, Dec. 25, 1883, For **Glass Batch Mixer**; No. 496,652, May 2, 1893 (co-authorship with James C. Gill), for [drip point] **Insulator For Telegraph Wires** (Figure 17.); No. 588,795, Aug 24, 1897, for [Multiple] **Glass Press**; No. 686,609, Nov. 12, 1901, for **Insulating-support for Electric Wires** (Figure 18.); No. 909,595, Jan. 12, 1909 and reissued (No. 131,661) Dec. 23, 1913 (coauthorship with Charles Hawk), for **Screw Press to Form Insulators**.

Serving as vice president of Hemingray Glass Company for several years, Ralph would run the company under that title until his father's death December 27, 1898 in Covington. At that time, he would be named president and would continue in that capacity until his death May 11, 1920.

According to Muncie resident (and uncle of the author) John Morgan, his father William Morgan and grandfather Robert Morgan (both long deceased), "migrated from Covington to Muncie" with the Hemingrays. William was a glassblower and Robert was a cooper and

R. G. HEMINGRAY.
INSULATING SUPPORT FOR ELECTRIC WIRES.
(Application filed Mar. 11, 1901.)



Witnesses.
Charles E. Muhlhofer.
George Kidman

Inventor.
Ralph G. Hemingray
by Arthur H. ...
Attorney.

(Figure 18.) The November 12, 1901 patent of Ralph G. Hemingray for an insulator design which could be mounted to the underside of a crossarm and provide protection from rain and moisture. (Courtesy David Dale)

and smoking in public on the Sabbath was forbidden.

Legend has it that Ralph paid the dollar fine and tossed down another dollar, saying, "This is for the other cigarette that I'm about to smoke. If you don't like it, I'll take my factory someplace else!"

Except for the devastating fire in 1892, smallpox epidemics, natural gas shortages and infrequent strikes, the Muncie plant would run consistently under the Hemingray name for over a half-century, either blowing or pressing the "Globe Fruit Jar," lantern glasses, battery beakers, paperweights and bottles of numerous descriptions. But it would be the many pintype insulators that would dominate production for many years. (Figure 19.)

The factory was erected on the southeast side of Muncie on the east side of South Macedonia Avenue with the office facing east, directly across the street from Ball Brothers Glass Works Company (known now as "Ball Corporation".)

"The boys came up from Covington and built the factory," said lifelong Muncie resident Bert McCarthy. "My dad rode his bike the whole way up from Cincinnati. He used to get rowed back and forth across the river to work at the [Covington] glassworks." According to McCarthy, the workers pitched tents and lived on the site while the Muncie plant was built.

It is not clear if the new glassworks had been fired-up when the 1889 Sanborn Perry Fire Insurance Map was published. The labeled overview on map number 8 depicts Hemingray Glass Company structures that include an office fronting Macedonia; a central factory complex that includes one furnace, four glory holes, two ovens, two tempering ovens and a hall that leads to grinding and packing operations. North of the central manufacturing facility is an elongated building labeled warehouse and boxed stock. North of the warehouse is a switch track that separates the Hemingray property from C.H. Over Glass Co. To the rear of the property is a blacksmith shop. A switch track runs between the main factory and the mixing room and pot shed on the south side of the property.

NO ALLOWANCE FOR BREAKAGE. ALL CLAIMS FOR DEDUCTIONS MUST BE MADE WITHIN FIVE DAYS AFTER RECEIPT OF GOODS. {Remittances to be made direct to us in Funds at Par in Cincinnati or New York. No shipments to Agents will be accepted unless authorized by our special written Instructions.

· FACTORIES ·
MUNCIE, IND.



GENERAL OFFICE,
COVINGTON, KY.

ESTABLISHED 1846

INCORPORATED 1870

R. HEMINGRAY, PRESIDENT
P. G. HEMINGRAY, VICE PRES.
EVANS, SECY & TREAS.

(Figure 19.) A Hemingray Glass Co. transmittal form dating from 1896. (Courtesy of J. Dennis Donovan, Muncie, Indiana)

In a letter penned by Daniel Carroll Hemingray dated August 13, 1891, he writes: "...The Factory starts tonight. They have been running her easy on a/c of new Bench and new Pots...."

If not their first firing, perhaps he was referring to a start-up run after summer vacation and repairs.

Vol. XXIV, No. 1, January 7, 1899 edition of *Western Electrician* reports the passing of Robert Hemingray:

Robert Hemingray, a pioneer glass manufacturer died Tuesday, December 27th [1898, at age 77] at his home in Covington, Ky. Mr. Hemingray had been ill for three weeks with heart trouble, but it was not of a serious nature until his death. He is said to be the oldest glassware manufacturer in the country. He leaves a wife, three sons--Ralph, Robert and Daniel C.--and two daughters--Mrs. Bradford Shinkle of Covington and Mrs. W. H. Felix of Lexington... Of late years he retired from active business, leaving his large interests in manufacture to his sons. He was born in Johnstown, Pa....

Leaving a large estate for his wife and children, much of Robert's investments were in the glassworks. In his will he stated that "...I have long been contemplating selling my stock in the glassworks known as Hemingray Glass Company at Covington, Ky., and Muncie, Indiana, to my sons, but if said stock shall not be sold by me, it is my wish that my stock in the company shall be held by said trustees as an investment...My wish [is] that anyone who may desire or may be compelled to sell it, shall offer said stock to others of my family...before offering it to a stranger...My objective in this request being to keep my family together as much as possible by joining their interests."

Robert Carroll Hemingray (Robert Hemingray Sr.'s son), who had served as vice president of the company and whose sons Conway and Robin ran a Hemingray sales office in St. Louis, Missouri, died after an extended illness July 26, 1901, leaving brothers Ralph and Daniel to make the decision to either leave or stay in Muncie. With the failure of gas wells, many manufacturers were leaving the area.

In the May 6, 1901 issue of *The Muncie Daily Star* it was reported:

**HEMINGRAY TO STAY HERE
They Will Manufacture Producer
Gas [vitrified coal]...**

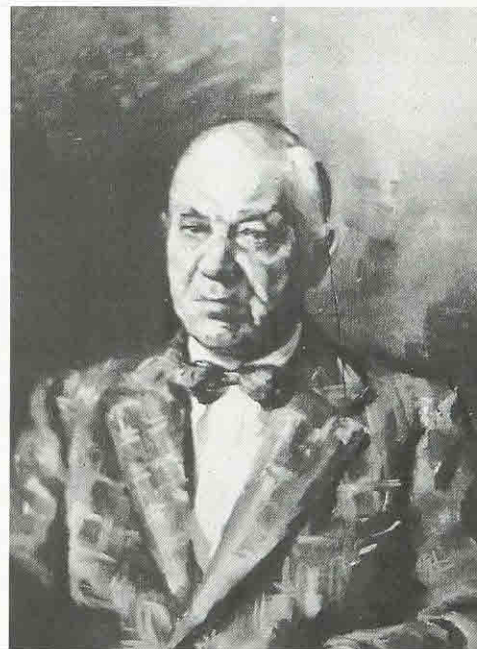
The Hemingray Glass Company has contracted for the construction of a tank and gas producer, which will exceed in capacity the natural gas tank now in use. It will be built just east of the present continuous tank, and will be kept in reserve until such a time as the supply of natural gas in this plant shall have failed.

J.O. Janson, a representative of a company which builds gas producer tanks, is in the city preparing

to construct the furnace for the Hemingray Glass Company. The method used is one of the latest triumphs of the producer gas trade, and is said to be both economical and effective. Some time ago there was talk of the removal of the Hemingray plant from Muncie. This action would seem to dispel all doubts as to their permanency....

Daniel Carroll Hemingray, youngest son of Robert Hemingray, Sr., was a classmate of President Taft and attended the Massachusetts Institute of Technology. While serving as secretary-treasurer of Hemingray Glass Company, he died at the Queen City Club in Cincinnati, December 14, 1911.

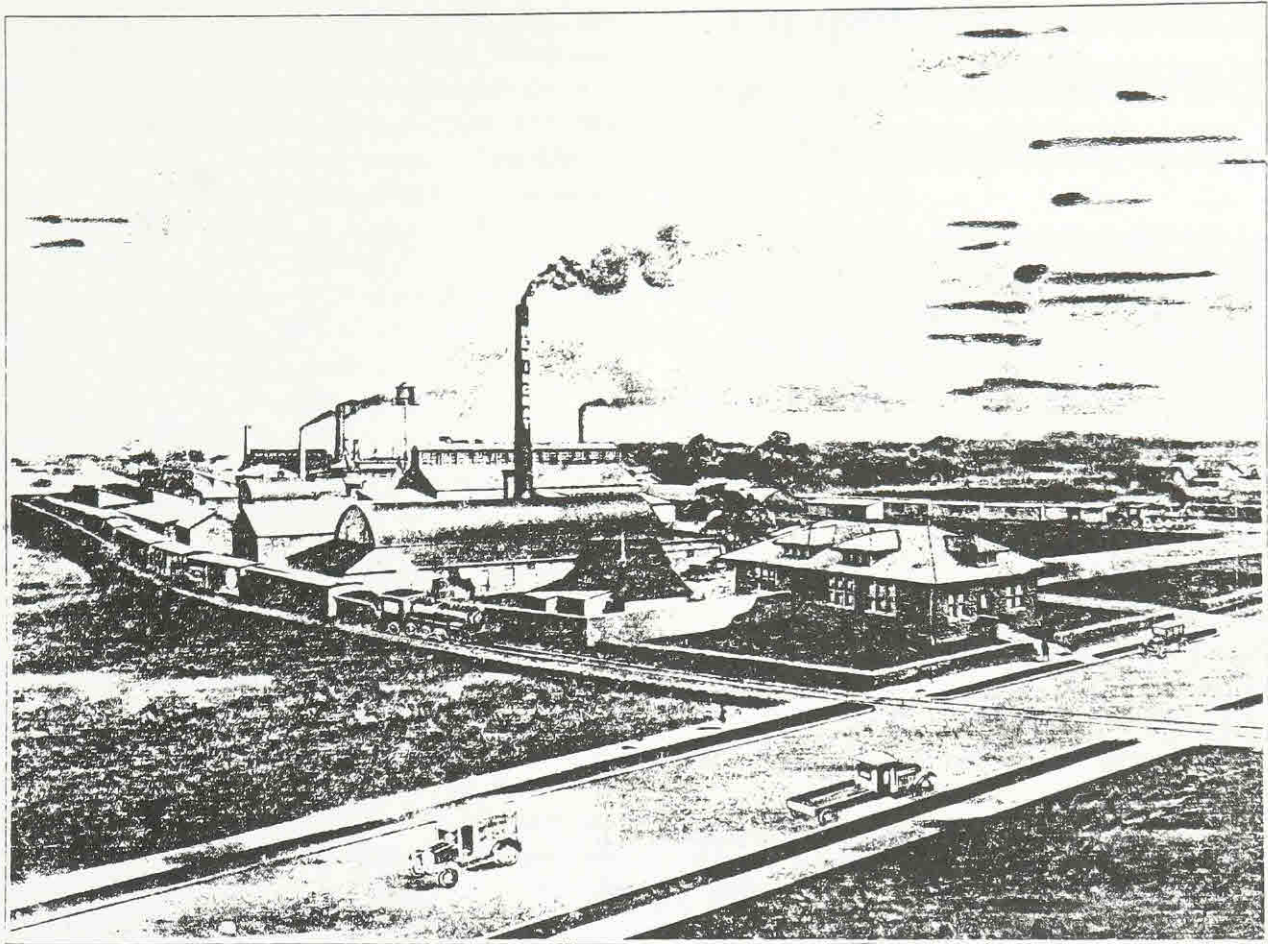
Phillip W. McAbee, son-in-law of Ralph Hemingray, who was a general contractor, had served in the military and had attained rank of lieutenant colonel by the close of World War I. According to the July 26, 1926 edition of the *Muncie Evening Press*, "...McAbee answered questions direct, almost curt...." (Figure 20.)



(Figure 20.) *Portrait of Philip McAbee painted by Hill Sharp, Muncie, Indiana.* (Courtesy of the artist)

Such was the demeanor of McAbee who ran operations at Hemingray Glass Company under title of general manager after Ralph Gray Hemingray died May 11, 1920. Under his leadership and that of A.C. Shinkle, vice-president; W.P. Zimmerman, secretary-treasurer, the factory and equipment were modernized to expand insulator production. At the time of McAbee's joining the company, employment was at 250. By 1929, personnel peaked at 750, but due to reduced demand for insulators, employment dropped to about 275 in 1932.

Just before Owens-Illinois (O.I.) purchased the Hemingray plant in 1933, it had returned to older product lines, such as beverage and water bottles, that could be



Hemingray Glass Co. in Muncie c. 1924. (Courtesy of David Dale)

produced more competitively than before. O.I. would continue to produce Hemingray products, augmented with the manufacture of glass building blocks. Manufacture of insulators was dropped in the late 1960's due to poor sales. General hollowware and television faceplates were produced at the Muncie plant until its closing in July 1972.

"Gray and Hemingray Revisited" was researched and written by Muncie, Indiana-based artist and free lance writer David Dale. Dale is a student of the early glassmakers that first located in the American Middle West. A designer of historic exhibits and corporate interiors, Dale is also a public speaker on a variety of subjects including glass craft histories, industrial archeology, fine art, and a neurological disorder named neurofibromatosis (NF). Past president of the Indiana Chapter of the National NF Foundation, Dale and his wife Ann coedited *Indiana NF News*. They continue to be information sources on NF and to raise funds for medical research to combat NF, which took the life of their eldest son, Tom.

It is interesting to note that glass insulators--embossed with the name "HEMINGRAY" -- were still being manufactured at the O.I. Macedonia Avenue plant after all other manufacturers had discontinued Muncie glassmaking operations; making the name "Hemingray" legendary in that community.

Mr. Dale states, "Search for glass craft histories--particularly in the American Middle West--has helped this writer to appreciate the dedication and good will displayed by fellow researchers, by hobbyists, and by keepers of public records. It is through them that historic information is discovered, preserved and shared. Persons and institutions helping with Gray and Hemingray research over the years are numerous. Special thank-you's for direct assistance on this project are expressed to Dwight Brooks, Ann Dale, Glenn Drummond, and Dick Hakes."

NAMES SYNONYMOUS WITH THE HEMINGRAY GLASS COMPANY

Over the course of the production years at Hemingray, there are several names which have been closely associated with the products of that company.

In the 1904 Volume 7, No. 5 issue of *Telephony*, it states, "One of the leading insulators manufactured by this company is the "PROVO" -- its standard type for voltages of from 10,000 to 50,000. It is furnished in several types. The "PROVO" insulators were named after Provo City, Utah, where the main generating station and offices of the Utah Department of The Telluride Power Company are located and where the insulators were first used."

The "**PROVO**" name can be found as a "NO. O" (CD 249), "NO. 1" (CD 282), a "NO. 2" (CD 283), a "NO. 4" (CD 303.5) . To date, a Provo Type insulator with the "NO. 3" has not been located.

The patent covering the design of the PROVO type insulator was issued to Vernon G. Converse and assigned to the Hemingray Glass Company. The embossing which appears on the insulators is "PATENTED APRIL 25, 1899."

Listed as power plants with the highest voltage using the PROVO insulators were the Telluride Power Company, Logan Power Company, and the Kalamazoo Valley Electric Company, all of which operated at more than 40,000 volts.

The *Telephony* article goes on to say, "Another insulator of still greater voltage carrying capacity is the [M.H.] Gerry 55,000-volt type, known also as the 9-inch MUNCIE type. This insulator is used on the high voltage transmission between Canyon Ferry and Butte, Montana. It is all glass, non-cemented, and it is claimed for it that it has carried as high as 57,000 volts."

The name "**MUNCIE TYPE**" appears on two different insulators, CD 302 and CD 303. The latter is designed to be used in conjunction with the CD 310 sleeve. The CD 304 and its CD 310 sleeve are similar to the CD303 and its sleeve, however, is not embossed "MUNCIE TYPE." It is nicknamed "Coolie Hat" and also saw extensive installation in Montana.

HEMINGRAY INSULATORS

World standard since 1870

Two early United States glass companies were the Owens Bottle Company and the Illinois Glass Company. Owens built their bottle production on the 1903 invention of an automatic blowing machine for glass bottles. Illinois Glass was involved in the researching of the utilitarian

services to which glass could be put. Their merger in 1929 resulted in the Owens-Illinois Glass Company.

With the sale of Hemingray Glass Company to Owens-Illinois Glass Company in 1933, insulator production was bound to take on a "new" look. During the Hemingray years of operation, insulators produced were marked with the name "Hemingray", or "H.G.CO." or with the familiar patent dates of "December 19, 1871", and "May 2, 1893". Hemingray also used its style number on many of the units which were copied by other glass manufacturers as a standard way of describing the style of the insulator units.

More than ninety styles of insulators were manufactured by Hemingray during their insulator production years. The post-1933 "look" saw the use of a lot of clear glass as well as various shades of amber glass. Mold numbers and year of the mold's use were found as part of the embossing on many of the units. The CDs 106, 110, 112, 145, 154, 160, 190/191 and 214 were all manufactured in a clear glass. A newer style "toll" (CD 122) with a new style No. 17 was made to replace the No. 16. An improved design, the CD 155, was developed to replace the older CD 154 Hemingray 42 which had been the most prolific and successful double petticoat communication insulator style since its introduction in 1922. The square groove of the CD 155 was made to support the wire more efficiently than the CD 154.

The CD 128 and 129 were developed for telephone long distance carrier circuits. These were mounted on special steel pins cushioned by a lead sleeve which screwed into the insulator. Also introduced was the CD 197 Hemingray 53, a one-piece transposition insulator for long distance telephone lines. The CD 203 Hemingray 56, a smaller and lighter weight style of transposition, was installed on rural telephone circuits.

Even the prolific CD 162 Hemingray 19 signal underwent a design change in the early 1940's when the new CD 163 began production.

Other styles which were introduced after 1933 were units that bear the name "**LOWEX**". LOWEX was the result of exhaustive research by the Hemingray Division of Owens-Illinois. Research library papers stated it was "a material that has a consistency of composition that when made up into high voltage insulators produces a homogeneous product that will stand the dielectric and mechanical stresses to a degree not obtained by other similar materials." The term LOWEX stood for "Low Expansion - Low Expense."

Quite simply it meant the glass was resistant to shocks sustained in a flashover, resisted breakage, reduced the noise level in radio interference and losses in carrying high frequency, molded easily into any desired insulator style, provided smooth surfaces which resisted dirt accumulation, and provided a maximum strength pinhole for use on either wood or lead thread pins.

Previous experimentation to develop this new product had resulted in improved insulator design but at a considerable increase in cost. In the spring of 1938, it was decided to try a mixture of materials which it was feared

would not mechanically form a workable glass. Excellent results following testing saw the development of a full line of LOWEX-marked insulators for use by power companies.

Research and development papers state that, "A quantity of brown pintype insulators were made and submitted to a large operating group for test. This material worked out so favorably with them, that at the present time they are using it exclusively for their distribution insulators. Thus it was that in January, 1939, we had developed a material which, when all of the factors were taken into consideration, was superior to anything else on the market for insulating purposes."

LOWEX insulators include: CD 137 (D-990); CD 168 (D-510); CD 230 and 230.1 (D-512); CD 232 and 232.1 (D-513); CD 238 (D-514). Others include CD's 219, 220, 221, 233, 237, and 252.

OWENS-ILLINOIS

GENERAL OFFICES ① TOLEDO 1, OHIO

Manufactured during the Owens-Illinois years of production, one insulator style (CD 167) in clear glass is embossed with only the Owens-Illinois logo:



KIMBLE GLASS COMPANY

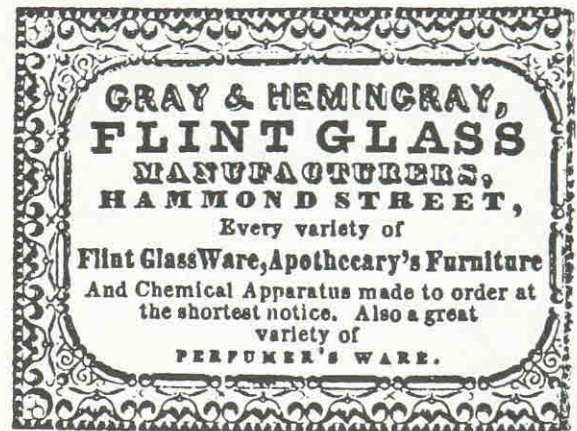
Toledo 1, Ohio—Subsidiary of Owens-Illinois Glass Company

On January 1, 1952, the Hemingray Insulator sales headquarters were transferred to Toledo, Ohio. Orders were no longer processed in Muncie and were handled by Kimble Glass Company, also a subsidiary of Owens-Illinois of Toledo. Although there were still insulators being manufactured with the Hemingray name, the name "KIMBLE" also began to be used on four insulator styles.

The CD 231 and 231.2 were two styles of Kimble 820 used on 6,600 volt lines. The CD 239 Kimble 830 was designed for use on 13,500 volt lines. To date, the authors (John and Carol McDougald) have not been able to photograph the Kimble 850 style which does exist and has already received a CD 239.2 identification.

"Names Synonymous With Hemingray Glass Company" was made possible with the assistance of Hemingray papers made available from the files of Tom Moulton, David Dale, and John and Carol McDougald.

HEMINGRAY ADVERTISING THROUGH THE YEARS



Williams' Cincinnati Directory and Business Advertiser for 1849-50 (Printed 1849) (Courtesy of David Dale)

GRAY & HEMINGRAY,
Flint Glass Manufacturers,---Hammond Street, between Third & Fourth Cincinnati, keep constantly on hand every variety of
Flint Glassware,
Apothecary's furniture, and Chemical Apparatus made to order at the shortest notice.
ALSO,—A great variety of Perfumers' Ware, Telegraph Glasses and lightning rod insulators.

Friday, July 8, 1853 (p. 3, col. 5), The Indiana American, Brookville, County, Indiana (Courtesy of David Dale)

R. HEMINGRAY & CO.,
No. 68 Walnut St., Cincinnati, O.,
MANUFACTURERS OF
FLINT, GREEN & BLACK GLASS,
CONSISTING OF
Fruit Jars, Lamps, Lanterns, Chimneys, Brandies, Neck Wines, Demi-Johns, Screw Cap Flasks, Tumblers, and a general variety of Table Ware. Also, Philosophical Apparatus, and Round & Oval Shades for Artificial Flowers and Statuettes. Solar, Sun and Comet Burners on hand in large quantities.

N. B.—Our PATENT FRUIT JARS, manufactured exclusively by us, stand unrivaled for preserving qualities, and have the best reputation of any jar in the West.

LIBERAL DISCOUNT TO THE COUNTRY TRADE.

Williams' Cincinnati Directory and Business Advertiser of 1867 (Courtesy of Glenn Drummond)

GLASS WORKS.
B. HEMINGRAY & CO.,
 Manufacturers of
Flint and Green Glass,
 Mainroom No. 68 Walnut Street,
CINCINNATI, O.
 Manufactory Covington, Ky.

Keeps constantly on hand every variety of Flint Glassware; also, a complete assortment of Coal Oil Lamps, Lanterns, Chimneys, Burners, and all the latest styles of Glass Fruit Jars, Telegraph Glasses and Lightning Rod Insulators made to order.

Monday, October 25, 1869 *T.L.L.* (p. 5, col. 6).
 (Courtesy of David Dale)

HEMINGRAY GLASS CO.
 Flint, Green, Black and Col Glass Manufacturers.



Plain and Decorated Oval Shades, Lamps,
 Kerosene Shades, Lantern Globes,
 Founts, Beer and Brandy Bottles,
 Fruit Jars, Molasses Cans,
 Candy Jars and Electric Globes

NOTE—The patent oil spout on the "Emperor Can" enables you to fill your lamp without DANGER or ANNOYANCE of an OVERFLOW. In pouring, insert the end of the spout to the level the oil should rise to the lamp. The flow CEASES the instant the oil covers the mouth of the small air tube. Accidents are impossible.

OFFICE AND FACTORY'S
COVINGTON, KY.

American Potter & Illuminator, April 1886.
 (Courtesy of David Dale)

R. HEMINGRAY, President. R. EVANS, Vice-President. E. D. SWASEY, Sec'y and Treas.

Hemingray Glass Co.,
 MANUFACTURERS OF
Lamp Chimneys, & Table Ware,
 Sand Blast, Cut, Gas & Kerosene Globes and Shades,
 Opal Globes and Cone Shades for Gas and Kerosene; Smoke
 Bells; Specie, Squat and Bing Jars; Bar Bottles, Syrup
 Bottles, Jelly Tumblers, Aquariums and Fish Globes;
Druggists' Shop Furniture and Show Jars.
 Cake-Covers, Sample-Bottles, Flint and Green Flasks,
 Demijohns, Brandy, Wine, Mineral, and Ale Bottles.

The Celebrated "Royal" Improved Screw-Top Porcelain-Lined
 Self-sealing Fruit Jars. Wire-Top Fruit Jars for Wax.

Salesroom, 68 Walnut Street,
 Factories cor. Second & Madison Sts.,
COVINGTON, Ky. CINCINNATI, Ohio.

AGENTS: JOHN A. DOBSON & CO., 31 South Charles Street, Baltimore.
 BOTSFOORD & WHIPPLE, 13 Park Place, New York.

June 15, 1876 *Crockery & Glass Journal* (p. 24)
 (Courtesy of David Dale)

PATENT DRIP PETTICOATS.

— ESTABLISHED 1848. —

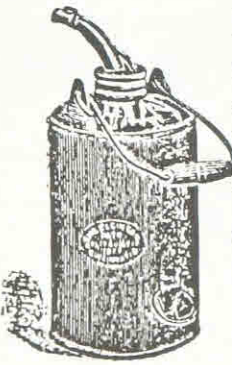
CATALOGUE OF
Screw Glass Insulators,
 Battery Jars,
 Electric Light Globes, Etc.

MANUFACTURED BY
HEMINGRAY GLASS CO.
(INCORPORATED)
 General Office: COVINGTON, KY. Factory: MUNCIE, IND.

MAY 1, 1903.

1903 Hemingray Catalog.
 (Courtesy of Mike Sovereign;
 restored by Clarice Gordon)

HEMINGRAY
GLASS CO.,
 No. 68 WALNUT STREET, CINCINNATI, O.



Lamps, Lanterns, Fruit Jars, Shop Furniture, Demijohns, Brandies, Flasks, Hock Wines, Beer Bottles, Mineral Water Bottles, Candy Jars, Carboys, Fish Globes, Etc.

SOLE MANUFACTURERS OF THE
"ELGIN OIL CAN."

Covington City Directory, 1878
 (Courtesy of Clarice Gordon)

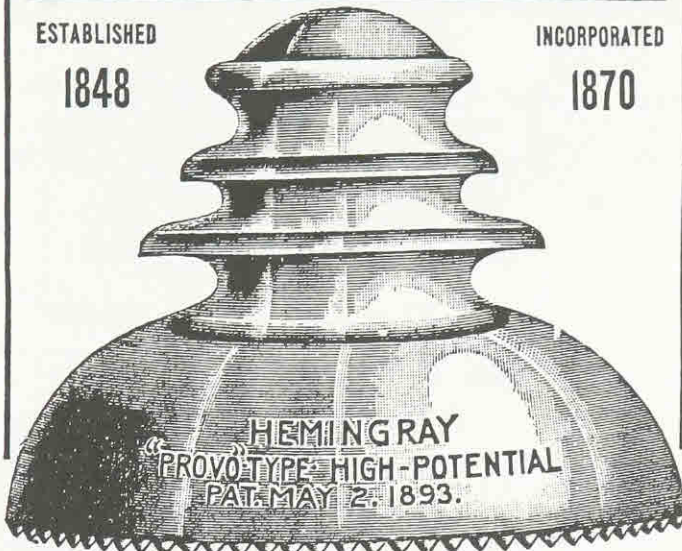


Hemingray salesman's sample. They are a miniature CD 154 style with "HEMINGRAY" embossed on the front skirt. Original production runs were made of clear, light aqua and golden amber glass. (It should be noted that the original molds were reused in the early 1970's and produced units do not have the same quality of embossing as the originals. They were made in clear and light cobalt glass.)

**PROVO TRIPLE PETTICOAT INSULATORS
GUARANTEED
TO DO THE WORK**

ESTABLISHED
1848

INCORPORATED
1870



PROVO TYPE High Potential, Guarantee 40,000 Volts

THE HEMINGRAY GLASS CO.
OFFICE, COVINGTON, KY., U. S. A. (1) FACTORIES, MUNCIE, IND.

**“HEMINGRAY”
STANDARD
Screw Glass Insulators**



Two-Piece
Transposition.



All with the
**“Patent Drip
Petticoats.”**



The Hemingray Glass Co.

Office, Covington, Ky.

Factory, Muncie, Ind.

ESTABLISHED 1848

(Top Left) June 29, 1901 *Electrical World and Engineer*; (Top Right) May 23, 1903 *Electrical Review*; (Bottom Left) March 1904 *The Electrical Age*; (Bottom Right) April 14, 1906 *Electrical Review*. (Courtesy of Elton Gish)

STANDARD HEMINGRAY STANDARD

WE MANUFACTURE
**STANDARD
SCREW GLASS
INSULATORS**

FOR ALL PURPOSES

2 IN. MUNCIE TYPE
Guarantee 40,000 Volts

DEEP GROOVE DOUBLE PETTICOAT

STREET RAILWAY INSULATORS

No. 0 PROVO TYPE
Guarantee 50,000 Volts

No. 1 HIGH VOLTAGE
Guarantee 10,000 Volts

POWER INSULATORS FROM
10,000 to 60,000 VOLTS

**ESTABLISHED 1848
THE
HEMINGRAY GLASS CO.**
OFFICE: COVINGTON, KY.

Factories,
Muncie, Ind.

STANDARD

**Screw Glass
Insulators**
For All Purposes

We've made glass insulators so long and so successfully
that you can be absolutely certain that the goods are right.

All with the "PATENT DRIP PETTICOATS"
**SEE THE TEATS
ON THE PETTICOAT**

They take all the moisture from the
inner and outer surface of the in-
sulator and keep the pin dry.

Hemingray Glass Co.
Covington, Ky.

FACTORIES: MUNCIE, IND. ESTABLISHED 1848

"HEMINGRAY"

STANDARD SCREW GLASS INSULATORS

The Best for All Purposes

ABSOLUTELY
MOISTURE-PROOF



ALL WITH THE
"Patent
Drip
Petticoats"

They take all the moisture from
the inner and outer surface
of the insulator and
keep the pin dry

Telegraph, Telephone, Railway,
Power

Hemingray Glass Co.

ESTABLISHED 1848

Factories: Muncie, Ind.

Office: Covington, Ky.

HEMINGRAY
HIGH EFFICIENCY INSULATORS

You may not know it, but it is a fact that these are the most successful high efficiency insulators yet devised. See the Tests on the Petticoat they prevent creeping of moisture.

HEMINGRAY GLASS CO., Covington, Ky., and Muncie, Ind.

(Top Left) May 16, 1908 *Electrical Review*; (Top Right) December 23, 1909 *Electrical World*; (Bottom Left) c. 1907; (Bottom Right) June 17, 1909 *Electrical World*.
(Courtesy of Elton Gish)

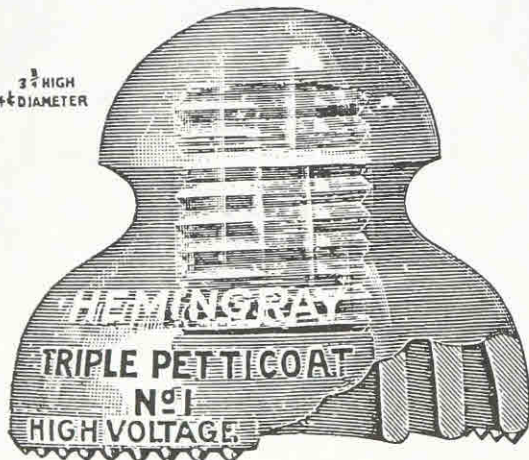
The biggest success

so far achieved by high potential

Insulators:

See the tests on the petticoat

3 1/8 HIGH
4 1/4 DIAMETER



The teats on the petticoat attract water on the outer and inner surfaces into drops, preventing creeping of moisture, on insulators and pins.

The line's complete. Catalog tells all.

HEMINGRAY GLASS CO.

General Office:
Covington, Ky.

Factory:
Muncie, Ind.

3 7/8 HIGH
4 1/4 DIAM.




See the tests on the petticoat

THE WORLD'S STANDARD

Hemingray Insulators have been on the market for many years—they're kept in the van of improvement. Our high voltage types with patent drip petticoats are particularly worthy of notice. All in catalog—get it.

HEMINGRAY GLASS CO.,
Covington, Ky. Muncie, Ind.

Hemingray Glass Co.
Covington, Ky. Muncie, Ind.



The teats on the Petticoat Prevent Moisture Creeping on the Pin.

TRIPLE PETTICOAT
N°1
HIGH VOLTAGE
ASK FOR CATALOGUE


CABLE
The Standard for 62 Years

Howland Card Reference, Copyright 1913 by The Howland Pub. Co., 6 Church St., N. Y.


HEMINGRAY GLASS COMPANY
(INCORPORATED 1870)
COVINGTON, KENTUCKY

GLASS INSULATORS
of
ALL KINDS for ALL SERVICES

"See the Teats on the Petticoats"



The front and reverse side of a Hemingray trade card from June 1913. (Courtesy of Kevin Lawless)



**GET HEMINGRAY
GLASS INSULATORS**

For Best Transmission

The teats on the petticoat, an exclusive feature of Hemingray Insulators, prevent water running to pins and causing grounds.

Hemingray Insulators are all insulation and are unusually free from breakage.

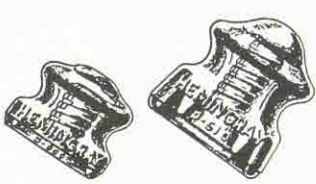
Write for Prices

Hemingray Glass Co.
Covington, Ky.

Factories: Muncie, Ind.

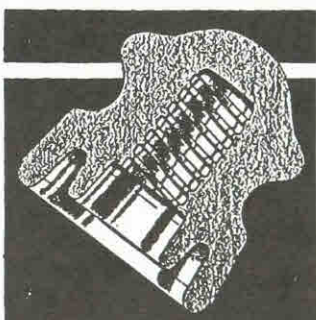
**No Breakage Difficulties Because of
GREAT STRENGTH OF THE
NEW
HEMINGRAY
GLASS**

*These Insulators are
Highly Economical
for Primary and Secondary
Distribution Needs*



TOUGHER transparent glass—proper shape and thickness of body and petticoats—elimination of square corners—even distribution of mass in the body of the insulators—specialized process of manufacture—the heat shock test—now give you glass insulators that withstand rough abuse, and offer long-service life.

With ratings up to 6900 volts this improved Hemingray line embraces styles for all primary and secondary distribution needs.



HEMINGRAY PIN TYPE INSULATORS
HEMINGRAY GLASS COMPANY, MUNCIE, IND.

June 29, 1912 *Telephony* ad. (Courtesy of Elton Gish)

A post-1939 Graybar Bulletin D-1 which advertises the LOWEX line being produced by Hemingray. (Courtesy of Tom Moulton)