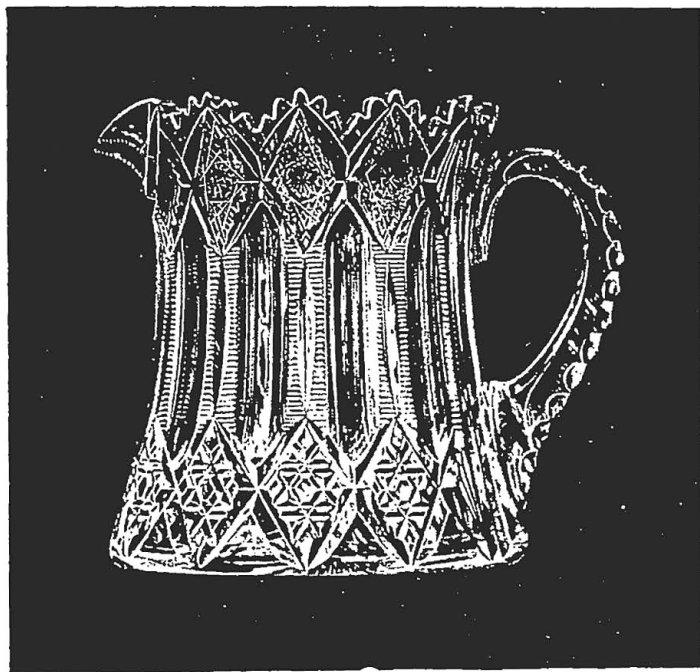


is given to a "smoother," who follows the roughed lines, carefully smoothing them out with a "Craigleith," "Blue Mitre" or other kinds of stone wheels, on the edge of which water constantly drips.

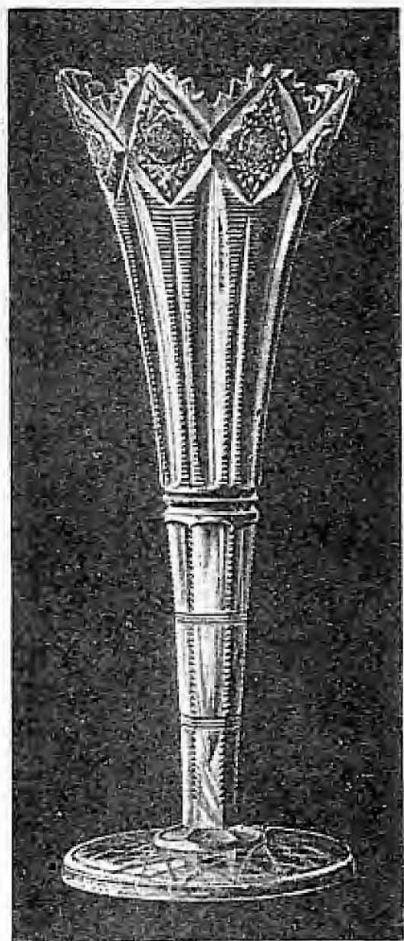


Jug. "Brunswick."

These wheels must frequently be trued and sharpened with a piece of flint. Otherwise the cuts will be coarse, and fail to bring out the lustre and other beauty of the pattern. The smallest portions of the design, such as the silver diamonds and the tops of stars, are cut entirely by stone wheels without previous roughing.

Among the things a glass cutter must continually guard against is the presence of even the tiniest of pebbles in the sand with which his wheel is fed. Otherwise the piece may in an instant be cut entirely through. And so sensitive must be his touch that he shall feel to what depth his wheel is penetrating, whether it be a full half

inch into a thick glass bowl or a hair's depth into the side of a champagne glass. And a little lack of care may cause the friction to overheat and so fracture his glass, wasting the labor bestowed upon it.



Vase. "Brunswick."

After the smoothing, begins the polishing, in which are first used wooden wheels fed with a mixture of pumice, rotten stone, and water. Then brush wheels moistened with the same preparation are used. Next the piece is "brushed" with "putty powder," made from tin and lead. The final polishing of the cuts is then done with a wooden or cork wheel and moistened putty powder. Sometimes thick felt wheels are used on the flat surfaces.

Lapidary cutting, as seen on the stoppers for bottles, is done by first roughing the glass on an iron wheel fed with sand and water. Then the piece is smoothed on a stone wheel fed with water, and finally polished on a lead wheel moistened with water. "Lapping" is done on the sides of the various wheels moistened in the manners indicated before. Here



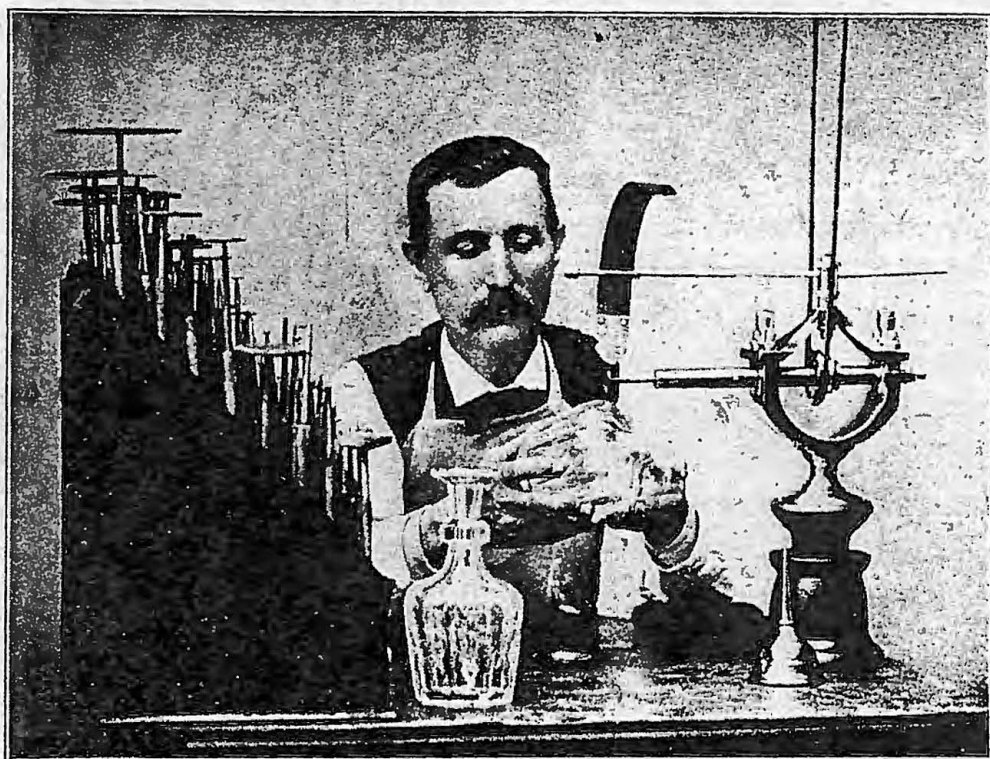
Sugar and Cream. "Lorraine."

the workman is able to see the cutting as it progresses, a matter of importance when working by eye without the guidance of a marked pattern.

Engraving upon glass differs from the usual cutting rather in the pattern and the kind of cut than in the process by which it is done. Its results resemble the ancient intaglio and cameo cutting of gems and crystals. Instead of the geometric lines and patterns of the usual cutting, the engraver is free to cut away and model curving surfaces, producing figures, flowers, or any form of freely playing ornament. The engraver uses copper wheels or discs of diameters from the size of a pin head up to six inches, as thin as a hair or a quarter of an inch thick. This wheel is attached to the end of a steel rod, fastened in a lathe, where it is rapidly revolved, receiving from time to time a drop of oil and emery powder. When the engraver desires to outline the design he may do so with a white ink-like mixture applied with a steel pen. But

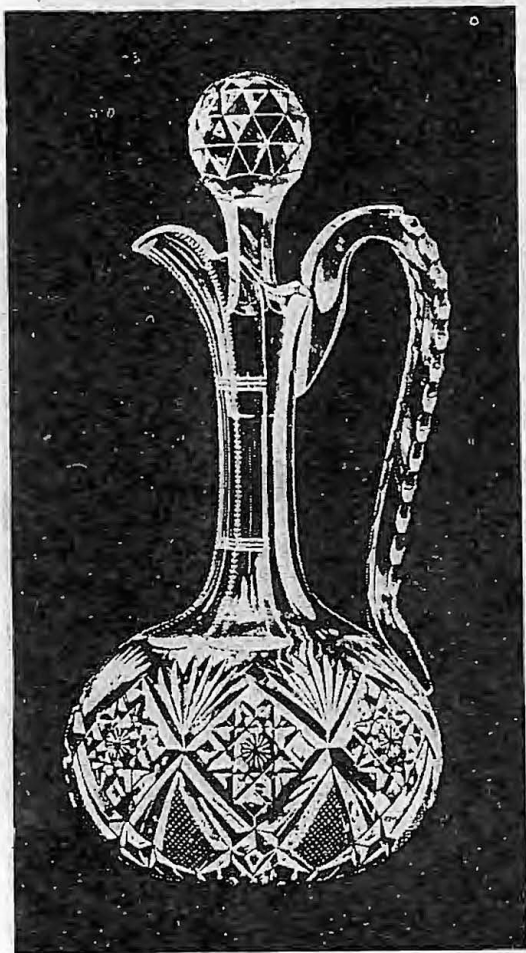
HAWKES CUT GLASS.

often he starts directly with the wheel, developing the pattern as the wheel plays over the piece, changing from time to time to a finer or a coarser tool to suit the design. Here is the field of the artist engraver, well-trained, patient, clear of eye, firm of hand and steady of nerve. The subject in hand admitting of any degree of elaborating as with the Painter Artist. Engraved designs may be highly polished also by using similar small wheels. The term used to designate this work is "Rock Crystal Engraving," which is rendered more and more costly by the unusual labor put upon it.



There are many qualities of cut glass, and many persons are puzzled to distinguish the good from the inferior until after they have made a few direct comparisons, when the lesson is learned never to be forgotten. A piece of fine cut glass transmits light colorless as a crystal. Inferior glass usually shows a tint, yellowish or greenish, and its surfaces are apt to look smoky as you hold the

piece between your eye and the light. Then you will notice that in fine glass the pattern is not only better designed, but truer in execution, that the cuttings are sharp and polished with perfect evenness. In the inferior glass you will



Claret Decanter. "Gladys."



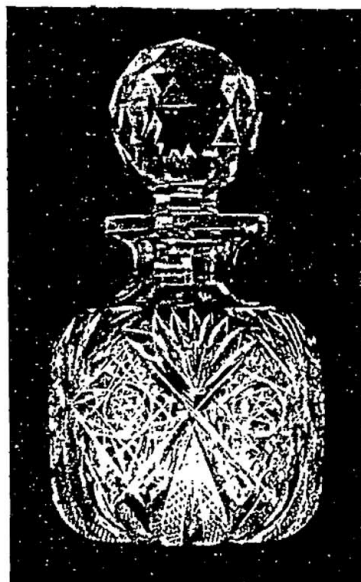
Claret. "Gladys."



Loving Cup. "Rock Crystal."

find by comparison all sorts of irregularities. Until you have mastered these differences you will not be a connoisseur of fine cut glass, and will not understand why the collector is willing to pay the necessary difference in price between good glass artistically designed and cut and inferior glass made cheaply for competition.

In the making of "Hawkes' Cut Glass" every piece is subjected to the most careful examination. Inspectors often reject pieces for almost invisible flaws, and return to the workmen others in which some fault can be remedied. Only those pieces which attain a fixed standard of technical skill are allowed to leave the works. This care stimulates the entire staff of workmen to the best efforts toward perfection of workmanship of which they are capable, discouraging any tendency to be careless and irregular. This is but a part of the painstaking which they find necessary in every step attending the making of fine glass. In the color and the brilliancy of the ware itself, in the artistic beauty of design, in the crispness and sparkle of the cutting, and the finish of workmanship, "Hawkes' Cut Glass" has a reputation in which its makers take too much just pride to permit them to tolerate any but the highest standard. Starting with a few hands in 1880 this



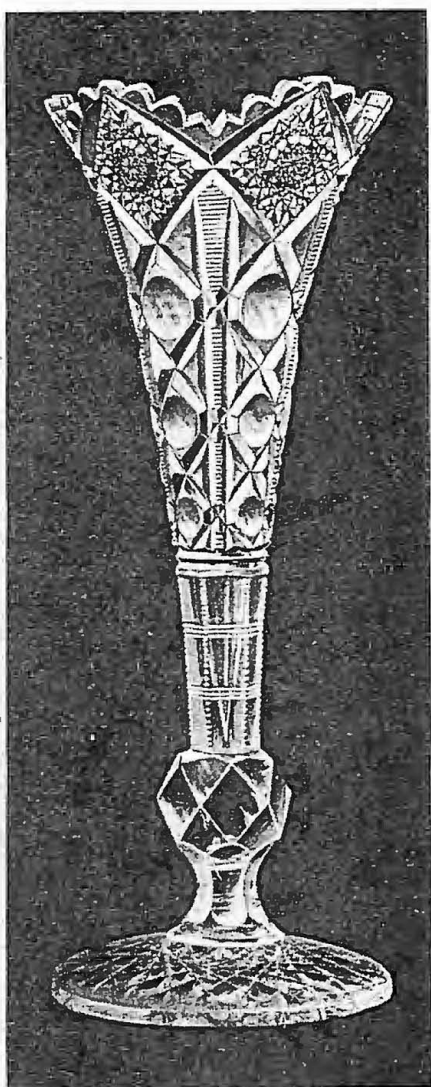
Cologne. "Glencoe."

HAWKES CUT GLASS.

factory has in the ensuing years increased its product until to-day it is the largest business of the kind. The awarding to it of the much coveted Grand Prize at the

Paris Exposition of 1889 gave to "Hawkes' Cut Glass" a rank among the world's industrial art products, gratifying to all who are interested in the artistic development of our country alike, a revelation to them, and to competing nations, an object lesson showing its resources and capabilities.

Following is a list of some of the principal designs of T. G. Hawkes & Co.'s cuttings. Many of these are protected by letters patent, making them the exclusive property of this factory :



Vase. "Navarre."

Argyle,	Empress,
Berkshire,	Fancy Prisms,
Brazilian,	Festoon,
Brunswick,	Gladys,
Cambridge,	Glencoe,
Chrysanthemum,	Hobnail,
Cyprus,	Holland,
Devonshire,	Kensington,