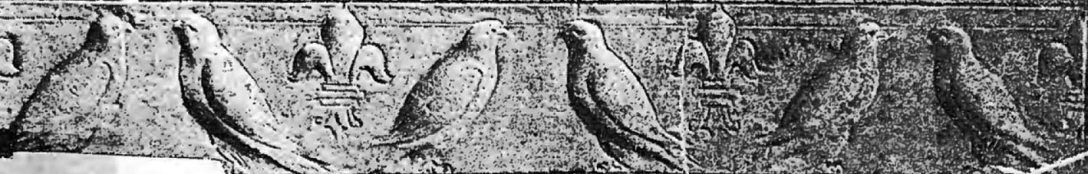


HAWKES

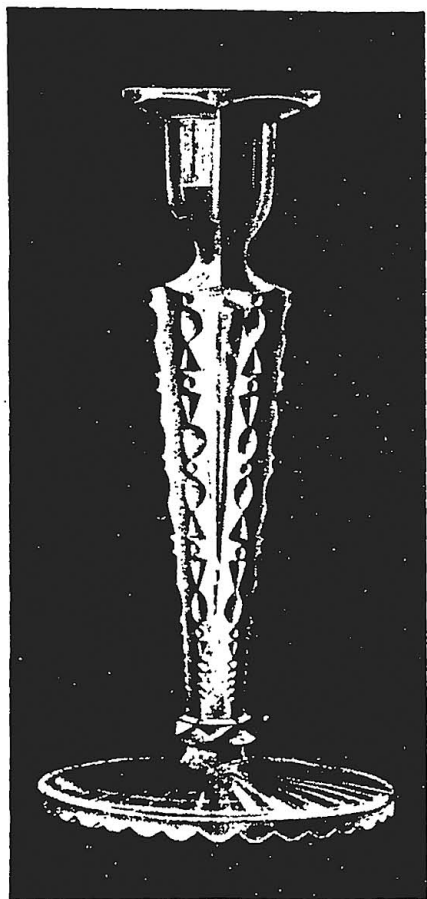
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Hawkes Cut Glass.



Hawkes Cut Glass.



Candlestick "Fancy Prisms."

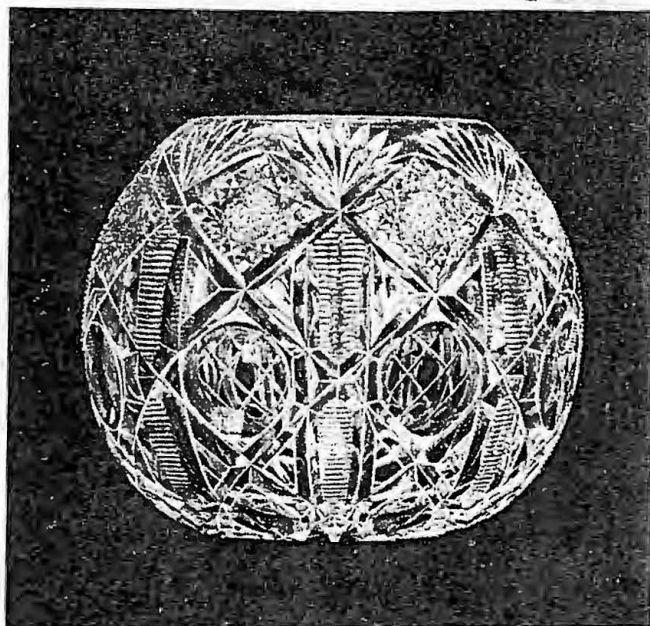
there was little or none until about two hundred years ago. Really deep cutting was made practicable by the invention of the steam engine in the early part of the nineteenth century.

Glass to the popular mind means little more than a transparent, colorless, hard, and brittle substance, capable

ANCIENT though the art of making glass is, as one may see in the Egyptian, Assyrian and Phoenician collections in our museums, it is a curious fact that the manner in which glass is now made and handled is essentially the same as thousands of years ago. When unusual success has been attained it has been the result of exceptional care in the selection of ingredients and skill in manipulation. The Venetians were great glass workers, but appear not to have been glass cutters. The Romans engraved cameo glass, as they engraved gems, but of glass cutting as we know it,

HAWKES CUT GLASS.

when in a molten state of ready manipulation into various forms, whether of vessels or of sheets for glazing. At no previous time have its uses been so many, and its varieties so numerous. While the common glass is cheap beyond precedent, the finer glass, made from the best materials and highly wrought by hand, has



Rose Globe. "Navarre."

exquisite beauties to which the world's markets attach high values. In this inflexible material the ingenuity of man is now able to attain almost any charm of color, as well as the luminous brilliancy of colorless crystal, made by skillful cuttings to spar-

gle with white light or prismatic color. The pure cut glass with its innumerable glittering facets, awakes in us a feeling not unlike that of the Japanese toward the prized sphere of rock crystal—symbol of purity.

The bases used in the manufacture of glass are chiefly soda, potash, lime, alumina, and oxide of lead; the quality of the product depending on the nature and amount of

HAWKES CUT GLASS.



Tumbler. "Gladys."

Water Bottle. "Gladys."

the basic material united with the silica or sand. Potash and soda render the glass more fusible; alumina diminishes its fusibility; lime makes it harder; lead gives lustre, fusibility and high refractory power. The combination of a simple alkaline base, soda or potash, with silica, is water-glass (soluble in water). The addition of an alkaline earth, or of a metallic oxide, is needed to produce what is ordinarily understood as glass. In making bottles, the cheapest glass, lime is added to the potash, or soda and silicate. The medicine bottle, of better glass, has more potash. Window glass contains both potash and