

FLUTED IVORY VASE.

BY GEORGE CALVERT CLARKE.

(For Illustration, see Lithograph Supplement.)

THE journal of the Amateur Mechanical Society contained a wood cut of the vase which we here illustrate by a photo-lithograph. General Clarke thus describes the method he adopted in making this graceful specimen of ornamental turnery.

The vase, of which an engraving is given here, seemed to meet with the approbation of many of the members of our society, who were present at the annual dinner; and perhaps some details connected with it may be useful to those who have not yet had much experience in turning.

The general outline is taken from an engraving of a cup in possession of the Corporation of Lynn, said by tradition, though no doubt erroneously, to have been presented to the town by King John. The engraving may be found in a work, published in 1851, by Cundall and Addey, Old Bond Street, called, "Choice Examples of Art Workmanship." My ivory vase, with its mere formal geometric ornamentation, is, of course, a very humble imitation of this beautiful cup, with its rich enamels, and its form moulded and chiselled by a skilful goldsmith; but still it bears some resemblance, though less than I could have wished, to the general shape of the original.

Having taken a tracing from the engraving, I examined my stock of ivory, to see on how large a scale I could attempt to produce my vase; for no doubt the larger such things can be made, the more effective is the result. Having ascertained the largest diameter I could give to the widest part of the vase, namely, the base or foot, I arranged a pair of proportional compasses in such a manner that, while the larger opening of the compasses gave me that diameter, the smaller opening agreed with the diameter of the corresponding part on my tracing. I then made, on paper, a kind of sectional elevation of the vase, to serve as a working drawing—measuring the diameter and height of each portion on the tracing with the smaller opening of the compasses, and by means of the larger opening, transferring the measurements on an enlarged scale to my working drawing. It mattered little that my working drawing had nothing artistic about it—all I wanted was such an outline as would enable me to see exactly the size of each portion of my work, and then, by using callipers for the diameter and a turning square or compasses for the length (making due allowance for the additional length required for the male screws to connect the various pieces), I could be sure of having everything in right proportion. And here I may remark how necessary it is, in executing any work composed of many pieces, to make a drawing, however rough, before commencing the work, and then to measure with instruments each piece while on the lathe, and not to trust to the eye, or the result will never be satisfactory. In this vase, as I made it, there are 27 pieces—22 in the cup, stem, foot, etc., and five in the cover. The various parts all screw into one another.

A few remarks about certain portions of the work may not be out of place. The foot is formed by cutting away circular discs, or portions of discs, from the ivory, which has been previously brought to shape and polished on the lathe, by means of the eccentric cutting frame, with a tool of this shape, which may be easily filed up from a suitable piece of flat bar steel, and tempered in the fire or in a

spirit lamp. With such a tool, firmly fixed in a strong eccentric cutting frame, it is easy to cut through ivory of a quarter of an inch in thickness, but of course the tool must be advanced with care and not too rapidly, and must be allowed to penetrate until the point comes right through to the underside of the ivory, when the waste piece will drop quietly out.

The upper and lower portions of the enlarged bulb on the stem were both formed with a female screw, so that each in turn might take its place on the same chuck, in order that both might be cut with the same setting of the slide-rest, so as to be precisely similar. They were then connected by a short piece of boxwood, having a male screw cut on the whole of its length, the flat disc, with projecting teeth, being inserted between them. Of course the disc has a hole in its centre, through which the piece of boxwood passes.

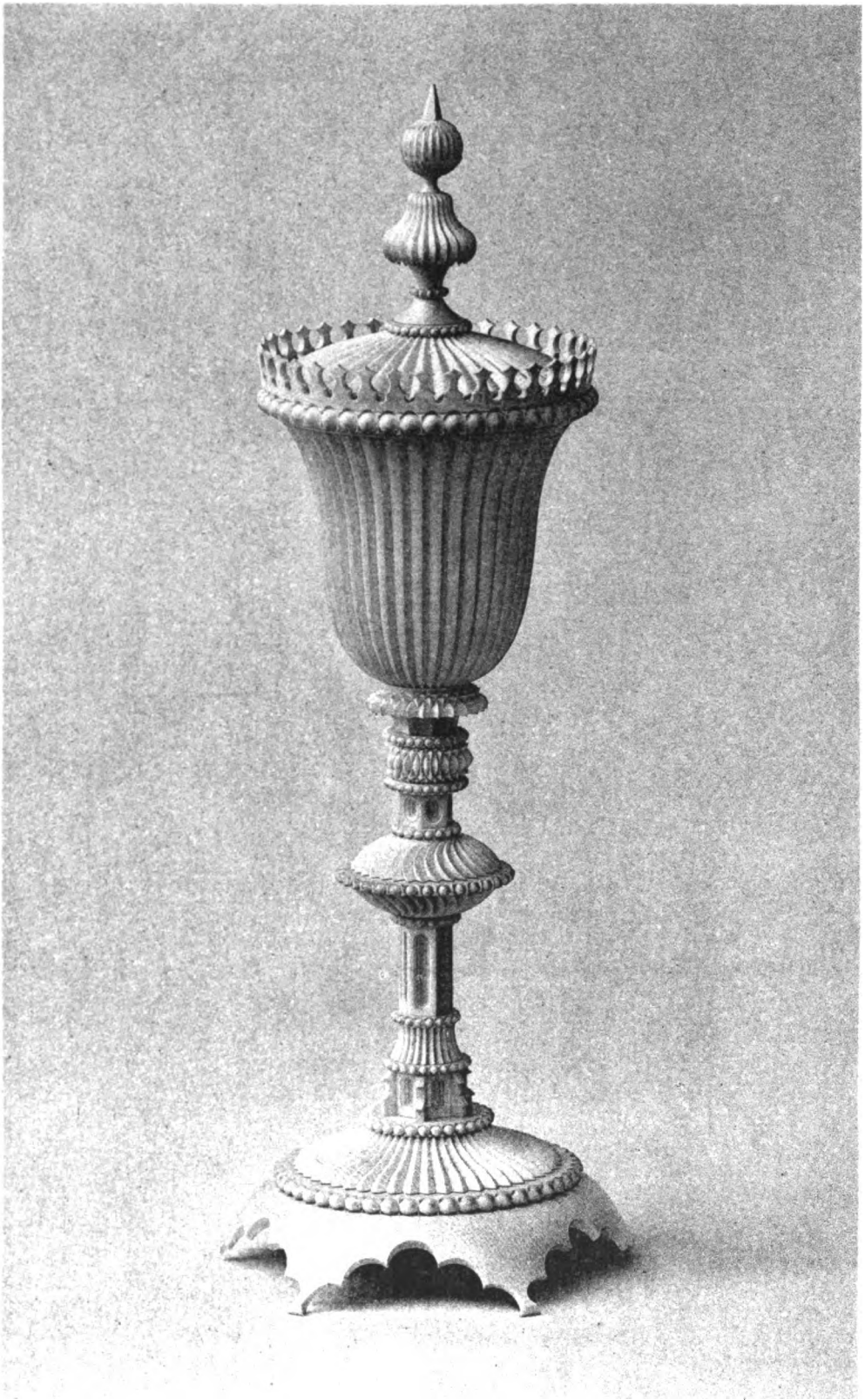
The body of the cup itself was shaped and fluted by means of the "curvilinear apparatus," that is, a template, or sharper plate of stout sheet brass, fixed on standards above the slide-rest, against the edge of which a rubber, rising from the movable slide of the slide-rest, is forcibly pressed by means of the lever, while the tool or cutter is traversed along by a handle on the slide-rest screw. The tool, or cutter, moves in a path corresponding to the particular curve given to the edge of the template, instead of in a straight line, as in ordinary fluting.

One important point must be attended to in forming these templates. The rubber, or at least that portion of it which presses against the template, is the rounded edge of a piece of steel, perhaps the tenth of an inch, or less, in thickness, and may be considered as a mere point; and if the cutting portion of the tool is of the same shape, it will reproduce on the profile of the work the same curve as that of the template; but, in fluting with a flying cutter, working horizontally, it must be remembered that the revolving tool describes a circle of perhaps an inch in diameter, and, though the centre of that circle follows the same path as the rubbing point, its circumference is moving in a different curve altogether.

Probably the best way to overcome this difficulty is to use as a rubber, instead of a mere point, a small revolving horizontal wheel, of the same diameter as the circle described by the flying cutter, but if this cannot be conveniently had, the form of the template must be modified.

There is, however, still another point to be attended to. In my vase, the portion we are now considering is first brought nearly to the required form on the lathe, and finally shaped by a series of deep cuts, or flutes, produced by the flying cutter, whose point is of this pattern, these cuts being placed, by the dividing plate of the mandrel, at such a distance apart, that, at the widest portion of the work, they will just cut away the original surface of the material operated upon; but these cuts, as they approach the small end of the work, will be closer together, and cut away more of the material than required, and so cause the outline of the work, when completed, to be smaller than it should be towards its lower extremity. This, in fact, has been the case with my vase, in which the lower extremity of the cup itself is smaller in proportion than in the original drawing. This may be avoided by placing the template at an angle, with its right-hand end brought more forward towards the operator than the left. This will gradually withdraw the point of the cutter as it proceeds from left to right, and cause it to cut less deeply.

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