M. H. Collins,

Tool for Glass Manufacture.

No. 68,416. Patented Sep. 3, 1867.

Fig. 4.

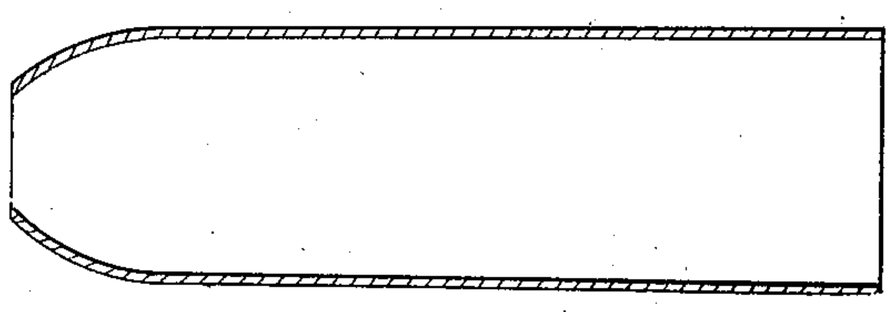


Fig. 3.

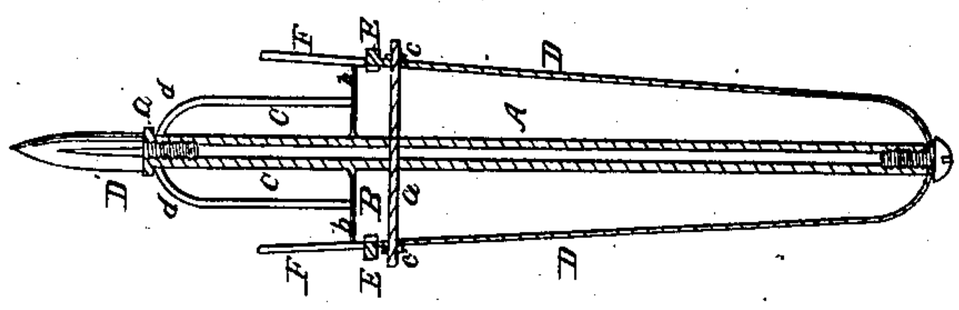
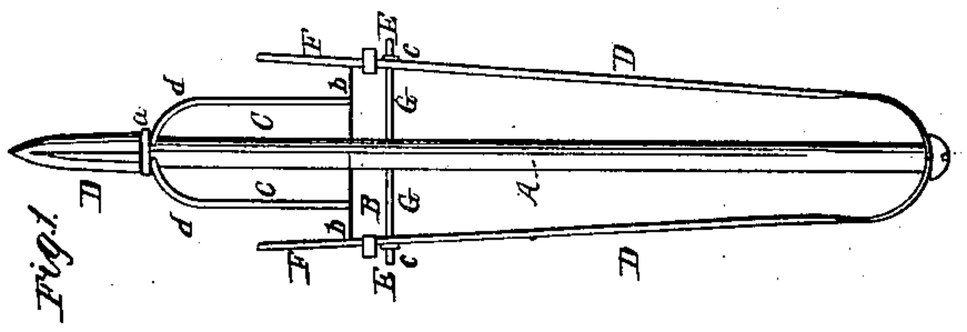


Fig. 2.

Fig. 1.



Witnesses.
Samuel N. Piper
G. H. Andrews.

Inventor.
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R. M. Eddy.

United States Patent Office.

M. H. COLLINS, OF CHELSEA, MASSACHUSETTS.

Letters Patent No. 68,416, *dated September* 3, 1867.

IMPROVEMENT IN FORMING GLASS CHIMNEYS FOR LAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that I, M. H. COLLINS, of Chelsea, in the county of Suffolk, and State of Massachusetts, have made a new and useful invention or implement to be employed in making Glass Chimneys for Lamps, such implement being also useful in the manufacture of various other articles of glass; and I do hereby declare the said invention to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a side elevation.

Figure 2 an end view, and

Figure 3 a longitudinal section of it.

The particular purpose of it is to enable a glass-blower, without the aid of a mould, to make any number of glass lamp-chimneys, each of which shall be cylindrical at and above its base, and there be of one uniform size in diameter, a chimney of such character being represented in longitudinal section in Figure 4 of the drawings.

In carrying out my invention I affix concentrically upon and at right angles with a metallic rod, A, a thin head or disk, B. The said disk I arrange at a sufficient distance from one end of the rod, and I also attach to the disk a skeleton frame or series of wires, C C C C, arranged parallel to the rod, each wire being fixed at one end of it to the disk, and at its other end to the rod, the wire being bent, as shown at *d*, in order to enable it to be fixed to the end of the rod, or a head, *a*, formed thereon. The said wires are to be disposed at equal distances apart, and fastened to the disk at a short distance from its periphery, that is, as shown at *b b*. A pointed blade or piercer, D′, is to screw into and project from that end of the rod to which the wires are fastened. Furthermore, to the other end of the rod A, I fix two springs, D D, so that they may embrace the rod on its opposite sides in manner as shown in fig. 1. To the end of each spring I affix a head or metallic bar, E, from which I project two prongs or wires, F F, so that they may stand with reference to the wires C C in manner as represented in the drawings. In order to prevent the springs from spreading too far apart, wires, G G, are extended from the rod A through holes in the springs, and are provided with stops, *c c*, for the springs to bring up against.

The above constitutes the apparatus or implement as invented by me for the purpose hereinbefore specified. In using it, a workman, after having blown and formed to a proper shape a mass of glass on the end of a tube, is to employ the piercer D′ to stab and open the end of the mass while the mass may be in the act of being revolved. This having been done, he is to crowd the series of wires C C C C into the opening, still keeping the mass of glass in revolution. The wires will cause the interior of the mass to be cylindrical. When it may be desirable to form the cylindrical part of the mass with a lip or flange projecting from its open end, this may be done by forcing the part *b* of the disk B against the end of the mass, the said end part being spread a little by the workman. The disk may be curved a little, so as to aid in turning the lip outward. By compressing the springs D D so as to bring the prongs F F in contact with the glass while it may be in revolution, it will be forced toward and kept in contact with the wires C C C C, and by the combined action of the prongs and wires the glass will be made cylindrical both externally and internally. It may afterward be tapered down at its other end by a process well known to glass-blowers, the chimney, when finished, having the form shown in section in fig. 4. Every chimney made by means of the implement will be cylindrical, or of the same diameter or size at bottom. Were a solid cylinder used in the place of the wires C the glass would be chilled and cracked in many places.

I claim the combination and arrangement of the skeleton frame or series of wires C, with the rod A, or such rod and the disk B, such being for use in manner as set forth.

I also claim the combination and arrangement of the piercer D′ with the rod A and skeleton frame or wires C, (or such and the disk B.)

I also claim the combination and arrangement of one or more springs D and prongs F with the rod A and the skeleton frame or series of wires C.

I also claim the combination of the piercer D′, the rod A, and one or more springs D and prongs F.

I also claim the combination of the prongs F with each of the springs D, the whole being arranged substantially as specified.

M. H. COLLINS.

Witnesses:

R. H. EDDY,

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