

W. C. KING.  
 Manufacture of Smoke-Bells.

No. 214,779.

Patented April 29, 1879.

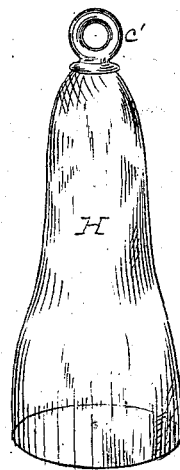
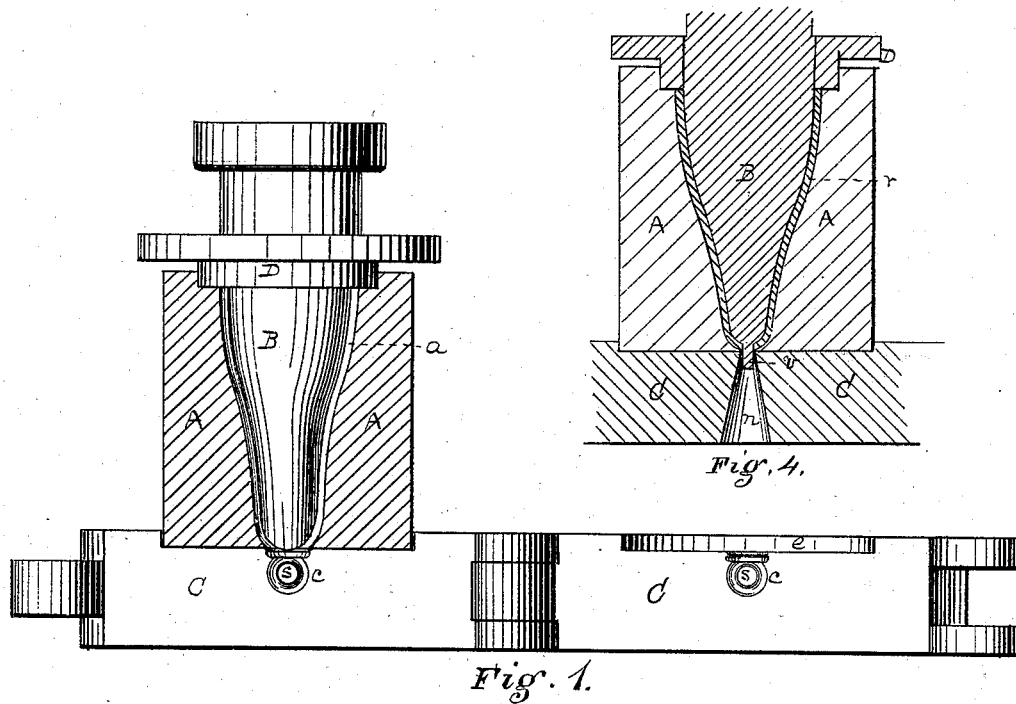


Fig. 2.

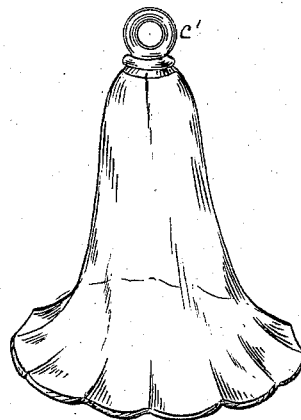


Fig. 3.

Witnesses  
 Robt. Knut  
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Inventor William C. King,  
 By Attorney George H. Christy

# UNITED STATES PATENT OFFICE

WILLIAM C. KING, OF UNION TOWNSHIP, ALLEGHENY COUNTY, PA.

## IMPROVEMENT IN THE MANUFACTURE OF SMOKE-BELLS.

Specification forming part of Letters Patent No. **214,779**, dated April 29, 1879; application filed December 18, 1876.

### *To all whom it may concern:*

Be it known that I, WILLIAM C. KING, of Union township, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in the Manufacture of Smoke-Bells; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 represents a vertical section of the mold in which my improved smoke-bell blank is pressed, with the ring-plate and plunger in elevation and the jointed two-part base opened out. Fig. 2 represents my improved smoke-bell blank as pressed in the mold. Fig. 3 shows a smoke-bell complete as made from such blank; and Fig. 4 represents a modification of the mold and plunger of Fig. 1.

My present improvement relates to the manufacture of that class of glass articles known as "smoke-bells." These articles have heretofore been made by blowing the body of the smoke-bell and afterward "sticking" on a loop or adding other means of attachment, and finishing the article in the way still practiced.

By my improvement I first press in the mold A a blank, H, having a loop, *c'*, pressed thereon at the same time and by the same operation by which the body of the blank is pressed. This blank H is then flared and crimped, as in Fig. 3, or shaped as desired by the well-known methods of working in glass.

A, Fig. 1, represents the body of the mold employed; *a*, the cavity for pressing the body of the article or blank; C, the base of the mold, which is in two parts, jointed in the usual way, and made with a cavity, *c*, therein for pressing or forming the loop *c'* of the blank. B is the plunger, and D the ring-plate. A recess or seat, *e*, is made in the base C, to receive the body A of the mold. By this means the proper relative position of the two parts is secured and a suitable connection made.

When the two parts of the base are closed, the two cavities *c c* unite to form an open ring about the center pin *s*. This ring-cavity opens into the cavity *a*, so as to make any desired form of connection between the loop and body of the blank.

The form of the cavity *a* is slightly bell-shaped or flaring toward the top of the cavity, both for ease in removing the blank, and also as it gives the blank approximately the desired shape of the finished article, and this approximation in the form of the blank to that of the finished article may be more or less complete, as desired.

The process of manufacture is substantially as follows: The parts of the base C being closed and secured in the usual way, and the body A placed in the recess or seat *e*, a suitable quantity of molten glass is placed in the cavity *a*, the ring D placed upon the mouth of the mold, and the plunger B forced into the cavity *a* in the usual way. The plunger causes the molten glass to fill the space between it and the walls of the cavity, and also to flow into and fill the cavity *c* about the pin *s*. To remove the blank when thus pressed, the plunger B and ring D are removed, the base C opened out, and the body A inverted in the usual way.

The blank H thus made is shown in Fig. 2. The loop *c'* is pressed upon the blank, as described, and preferably the upper part of the blank next the loop is pressed in the form, or near the form, desired in the finished article.

A blank thus pressed I believe to be new. In order to shape it to the form desired, it is caught on a snap, reheated to the desired degree, and then flared and crimped, as shown in Fig. 3, by methods well known in the art, or finished in any other desired manner and form.

Instead of pressing the loop *c'* upon the blank, as described, the blank may be pressed without it, the main feature of my invention being the pressing of the body H of the blank, as distinguished from other methods of manufacture, either with a pressed-glass loop or with suitable means for the attachment of a metallic loop, by which its suspension may be effected.

I have shown in Fig. 4 a suitable mold for pressing my blank, with provision for conveniently securing such metallic loop.

A is the body of the mold; *r*, a section of the blank within the mold-cavity; B, the plunger; D, the ring-plate, and C the base, which, in this case, may be solid. Upon the end of the plunger B is a mandrel, *v*, which enters

and fills, or nearly fills, a hole in the base of the mold, as shown at *n*.

A hole may thus be made or pressed in the top of the blank, and by means of it a loop may be attached to the blank, or other suitable means of suspension provided.

By the means described I can press a glass or porcelain smoke-bell blank without seam or fin, and produce the finished article at a much less cost than has heretofore been possible.

Another material advantage attained by pressing the blank consists in the fact that any desired style of ornamentation—such as scroll or leaf work, corrugations, figures, designs, &c.—may be made thereon in the operation of pressing, the pattern of the same having been previously cut, engraved, or cast in or on the mold or plunger-face. With blown blanks such effects can be secured only by subsequent grinding or other hand manipulation.

I am aware that, broadly considered, it is

not new to form the eye or loop of a smoke-bell by projections on the inside of the mold, which, when the latter is closed, extend across the forming-cavity, and hence I make no claim thereto.

I claim herein as my invention—

1. The pressing-mold A C, having the loop-cavity *c* and the flaring pressing-cavity *a*, in combination with plunger B, the same being adapted to the manufacture of both the loop and the flaring body simultaneously by a single stroke of the plunger, substantially as set forth.

2. A pressed-glass bell-blank provided with means of suspension in the operation of pressing, substantially as set forth.

In testimony whereof I have hereunto set my hand.

WILLIAM C. KING.

Witnesses:

J. J. McCORMICK,  
CLAUDIUS L. PARKER.