(No Model.)

G. B. BARNES.

GLOBE, CHIMNEY, &c.

No. 372,509. Patented Nov. 1, 1887.

Fig. 1.

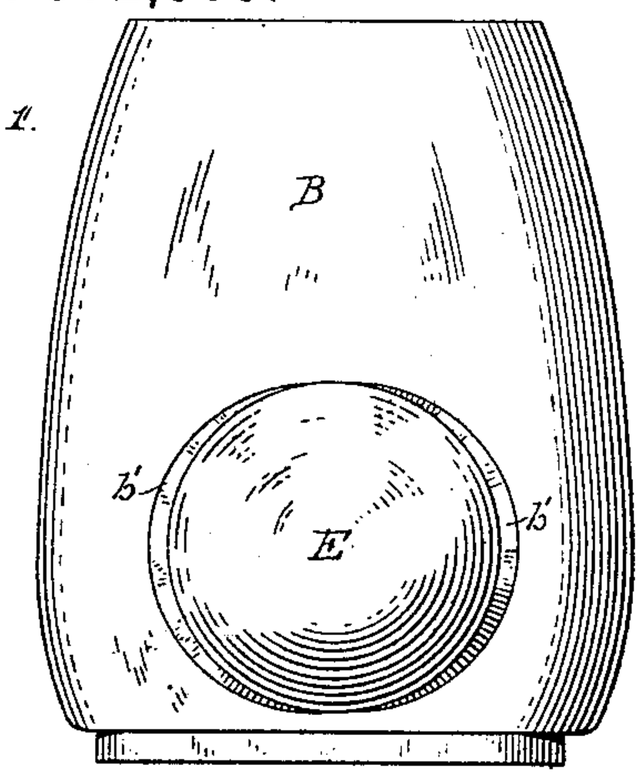


Fig. 2.

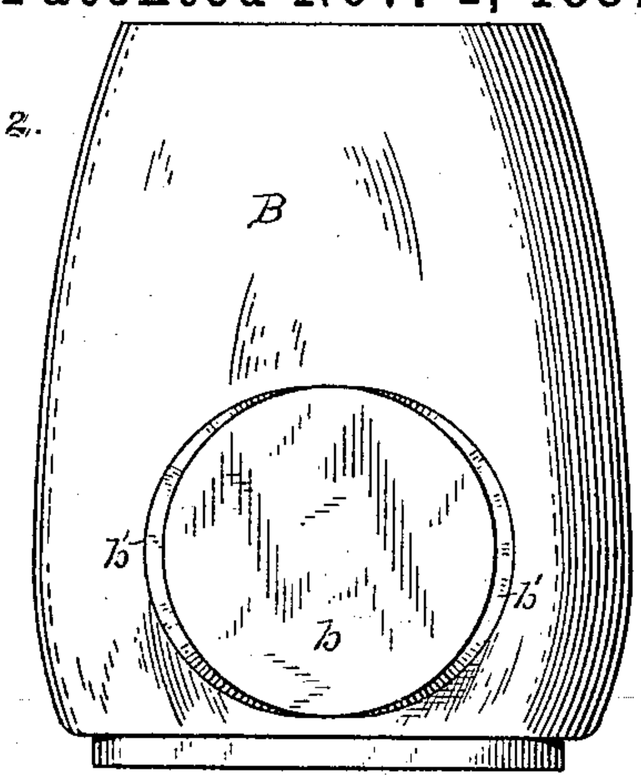


Fig. 3.

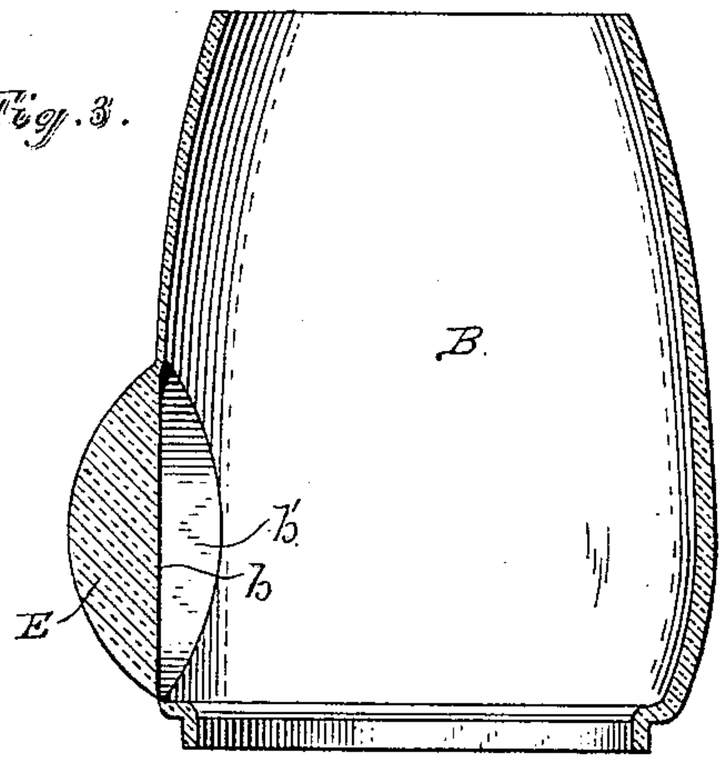


Fig. 4.

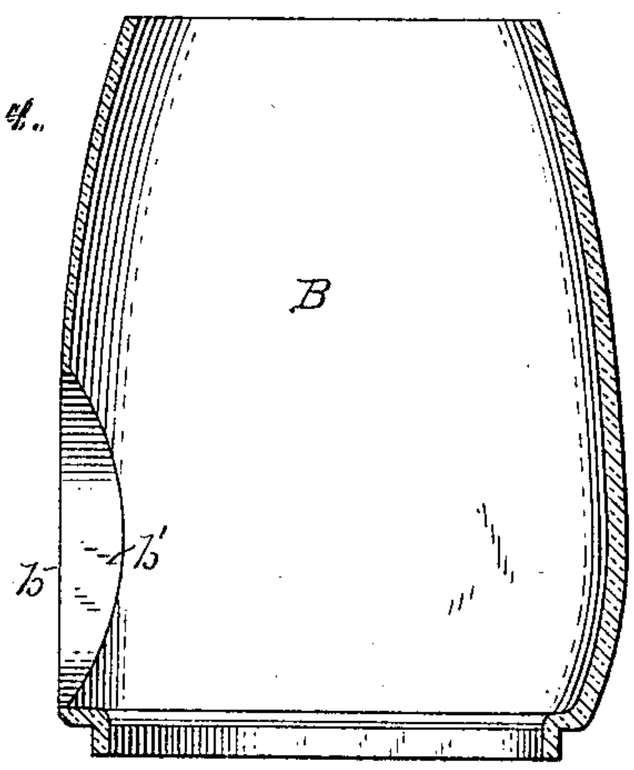


Fig. 5.

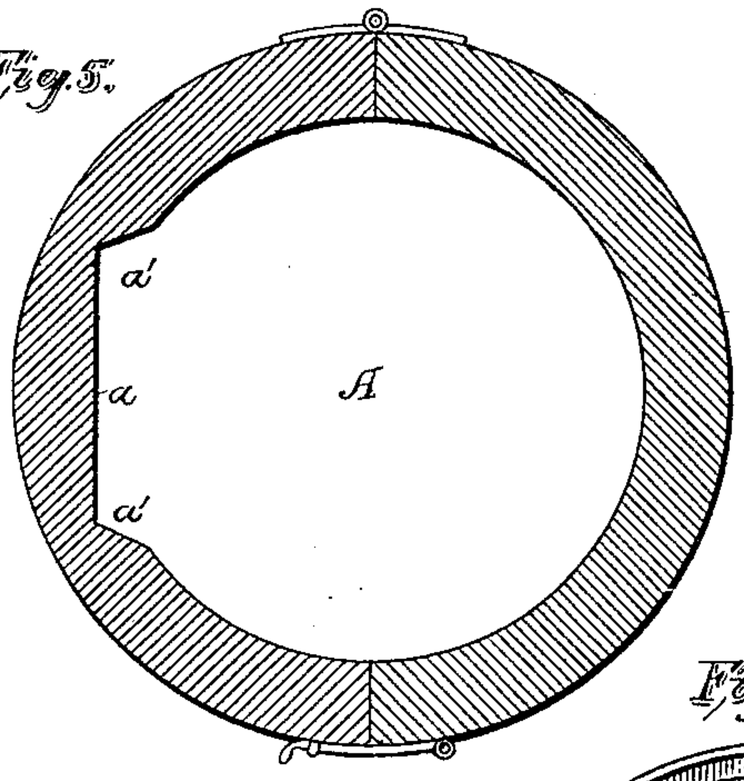


Fig. 6.

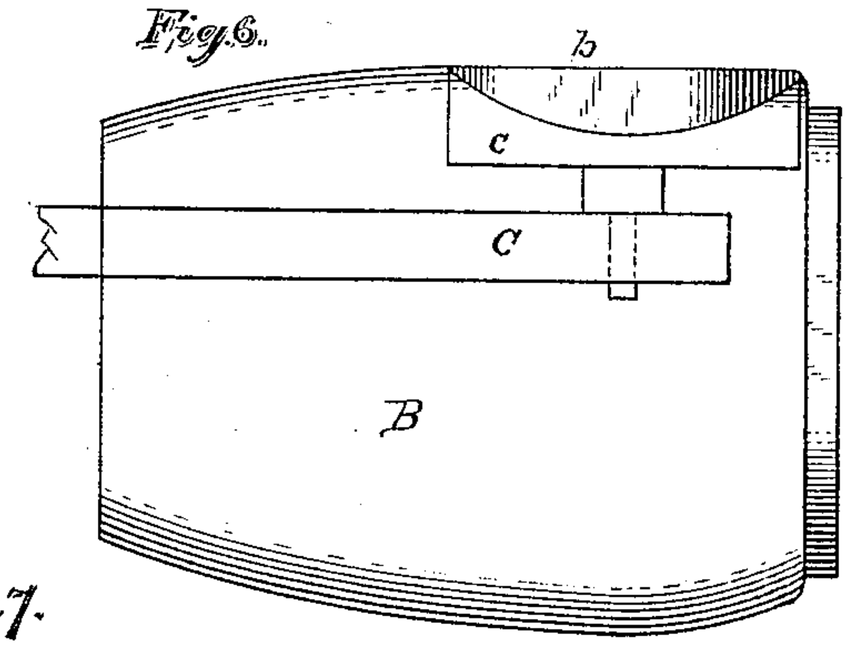
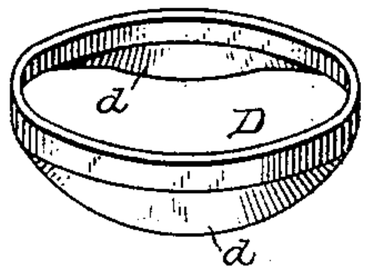


Fig. 7.



Witnesses.
Preston Phelps.
Frank L. Dyer

Inventor.
George B Barnes
by Geo W Dyer
Atty.

UNITED STATES PATENT OFFICE.

GEORGE B. BARNES, OF BELLAIRE, OHIO, ASSIGNOR TO THE LANTERN GLOBE COMPANY, OF SAME PLACE.

GLOBE, CHIMNEY, &c.

SPECIFICATION forming part of Letters Patent No. 372,509, dated November 1, 1887.

Application filed April 5, 1887. Serial No. 233,738. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BARNES, a citizen of the United States, residing at Bellaire, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Globes, Chimneys, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the manufacture of glass globes, chimneys, reflectors, and similar articles intended for use with lamps, lanterns, or other kinds of apparatus used in lighting, which may employ lenses as a means of concentrating the rays of light; and its novelty consists in the method of making and securing the lens to the glass article, and in the article itself as a new manufacture.

My improvement consists, essentially, in forming the lens upon the globe, chimney, or other article after it is made, and the method of doing the same, and the appearance of the article after the lens has been secured upon the same will be more clearly understood by the full description hereinafter given, and by the drawings for the same, for convenience a lantern-globe being selected, in which drawings—

Figure 1 is an elevation of the globe with the lens; Fig. 2, a similar view without the lens; Fig. 3, a vertical section through the center with the lens; Fig. 4, a similar view without the lens; Fig. 5, a horizontal section of the mold; Fig. 6, a broken portion of the supporting-arm with a globe upon it; and Fig. 7, a perspective view of the lens-ring, and in each similar letters are employed for corresponding parts.

The mold A, of usual construction, has within one of its side walls a recess of the form shown in outline in Fig. 5, having essentially a flat circular bottom surface, *a*, designed to form upon the globe the seat of the lens, preferably at its upper and lower portions, when the mold is vertical in line with the interior wall of the mold, but at its sides *a' a'* recessed inwardly in tapering lines. Molten glass is blown in the usual way into this mold and fills the recess mentioned, the tapering sides *a' a'* to the same assisting in filling the recess compactly. The globe B thus formed presents a flat circular seat, *b*, on a line in its center when the globe is vertical with the vertical center of the globe, but at the sides connected with the outside of the globe by shoulders *b' b'*, which, slanting at the top and bottom of the seat, meet by curved lines the walls of the globe at an angle thereto. This globe is taken hot from the mold and placed upon the supporting arm or standard C in a proper position to present the seat *b* directly under the press and holds it accurately. The arm or standard C has a projection, *c*, of the precise form and size to fit neatly into the recess formed in the globe by the lens-seat.

The lens-ring D, having on each side dependent flanges *d d*, corresponding with the shoulders *b' b'*, is placed directly over the seat *b* and retains its position by means of its flanges fitting upon the shoulders before mentioned. A sufficient quantity of molten glass being dropped into the ring, the plunger of the press formed with a suitable die drops upon the glass and forms the lens E, not only upon the globe, but by the pressure causing it at all points to be fused to and become essentially a part of the seat and of the globe itself.

The article thus made is distinguishable from all others by the shoulders to the lens-seat, by the absolute fusion of the lens to the seat, so that it is really integral therewith and cannot be separated without destruction of the globe, and by the absence of all scale between the globe and the lens, whereby the concentration of the light is more perfectly effected.

It will be perceived that this method is equally well adapted to chimneys, shades, reflectors, &c., the only change required being the adaptation of the arm C to hold and present the article accurately to the die or press, and that numerous lenses may be made upon the same article.

With this description and explanation of my improvement, what I claim to be new therein, and wish to secure by Letters Patent, is—

1. The method of making glass globes, chimneys, and analogous articles with an attached lens or lenses, which consists in blowing glass into a mold to form the article with a lens-seat

upon the same, then in putting the article while hot into proper relation to a press, placing and retaining molten glass upon the lens-seat, and forming by pressure upon such molten glass a lens upon the outside of the article and integral therewith, substantially as described.

2. As a new article of manufacture, a lantern-globe having a separate lens stamped and formed thereon, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE B. BARNES.

Witnesses:

MILLER BOOTH,

W. C. RANKIN.