

A. J. SANFORD.  
 BURNER FOR FIRE POLISHING GLASSWARE.  
 APPLICATION FILED JUNE 26, 1909.

962,862.

Patented June 28, 1910.

FIG. 2

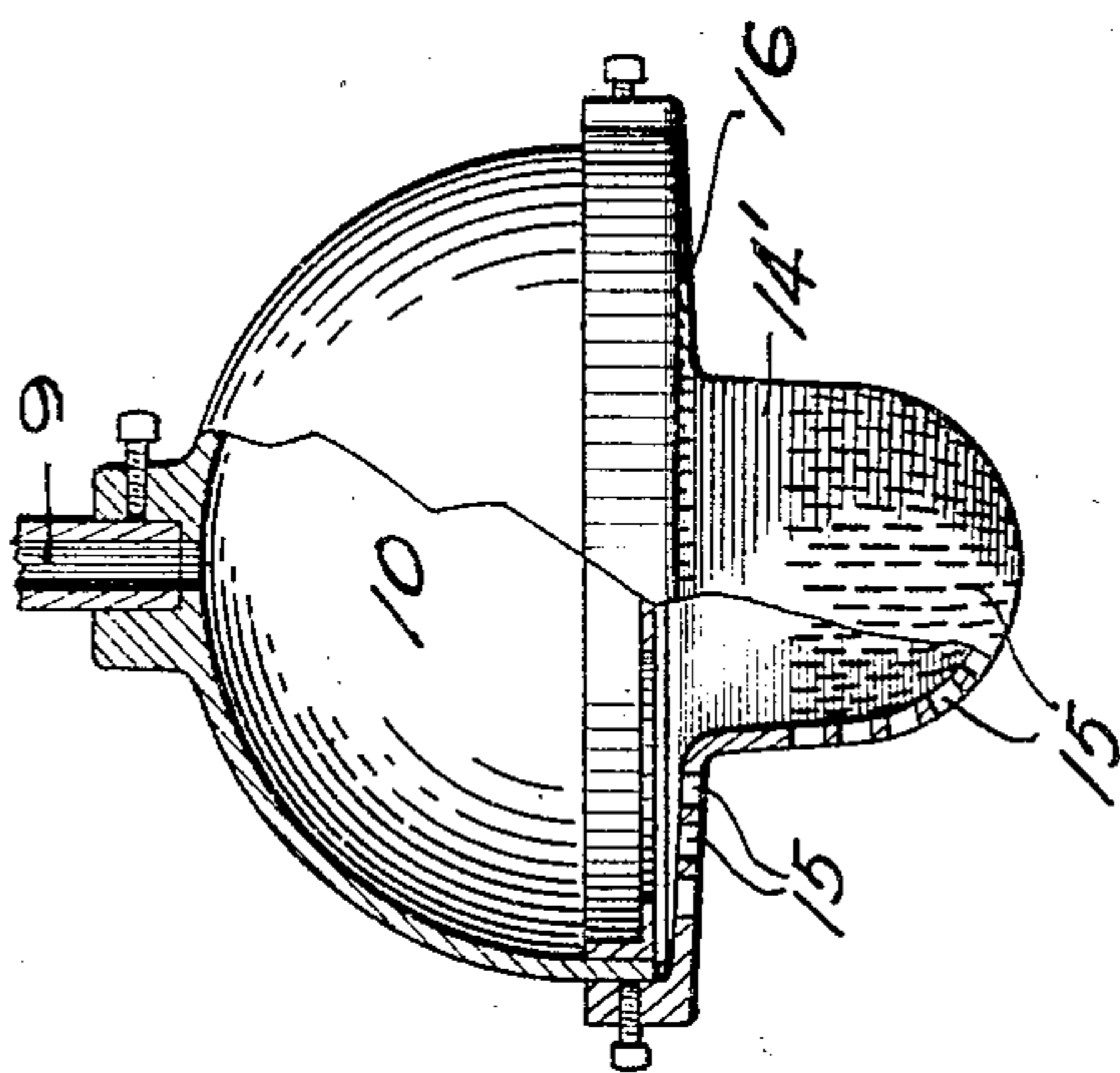
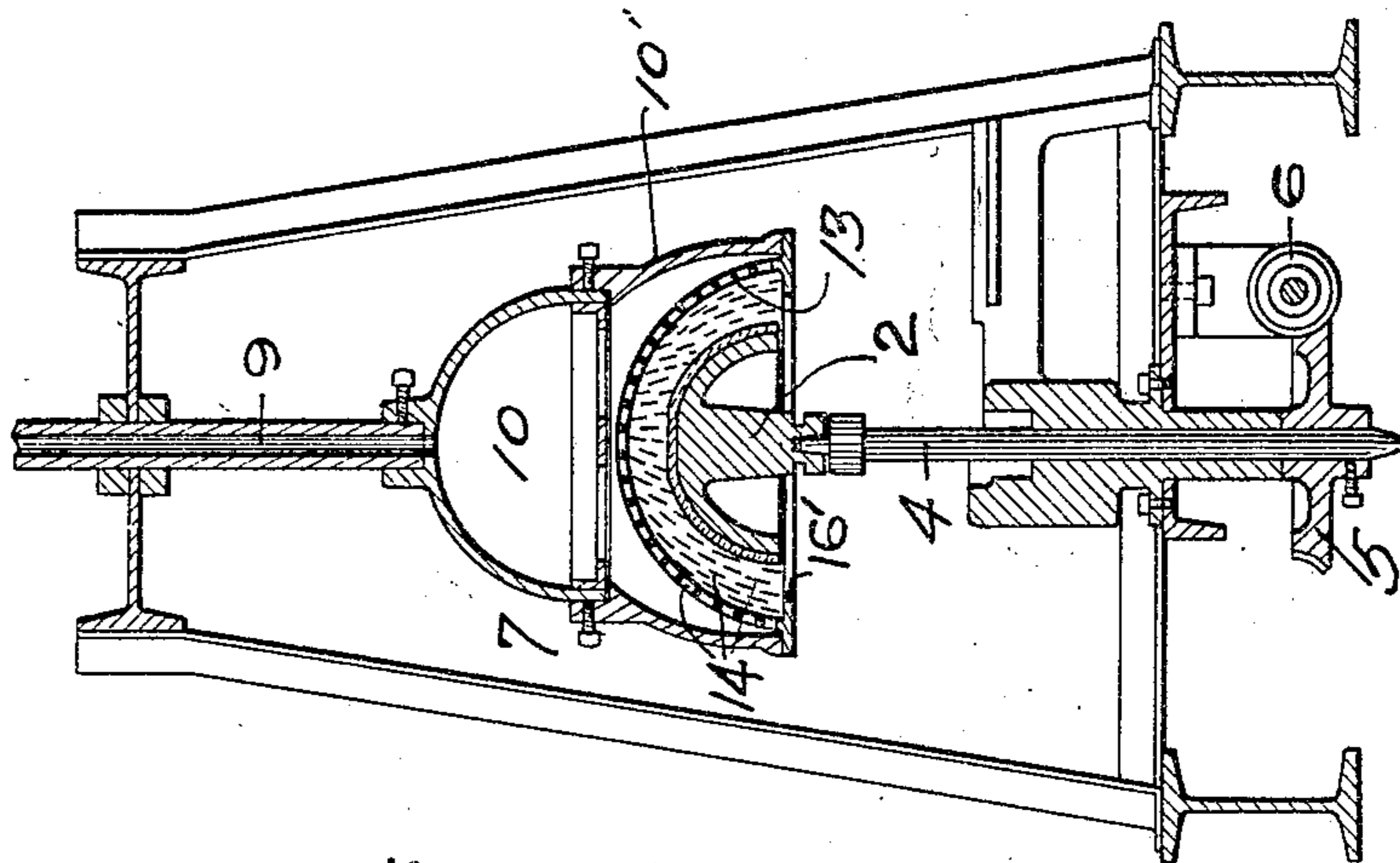
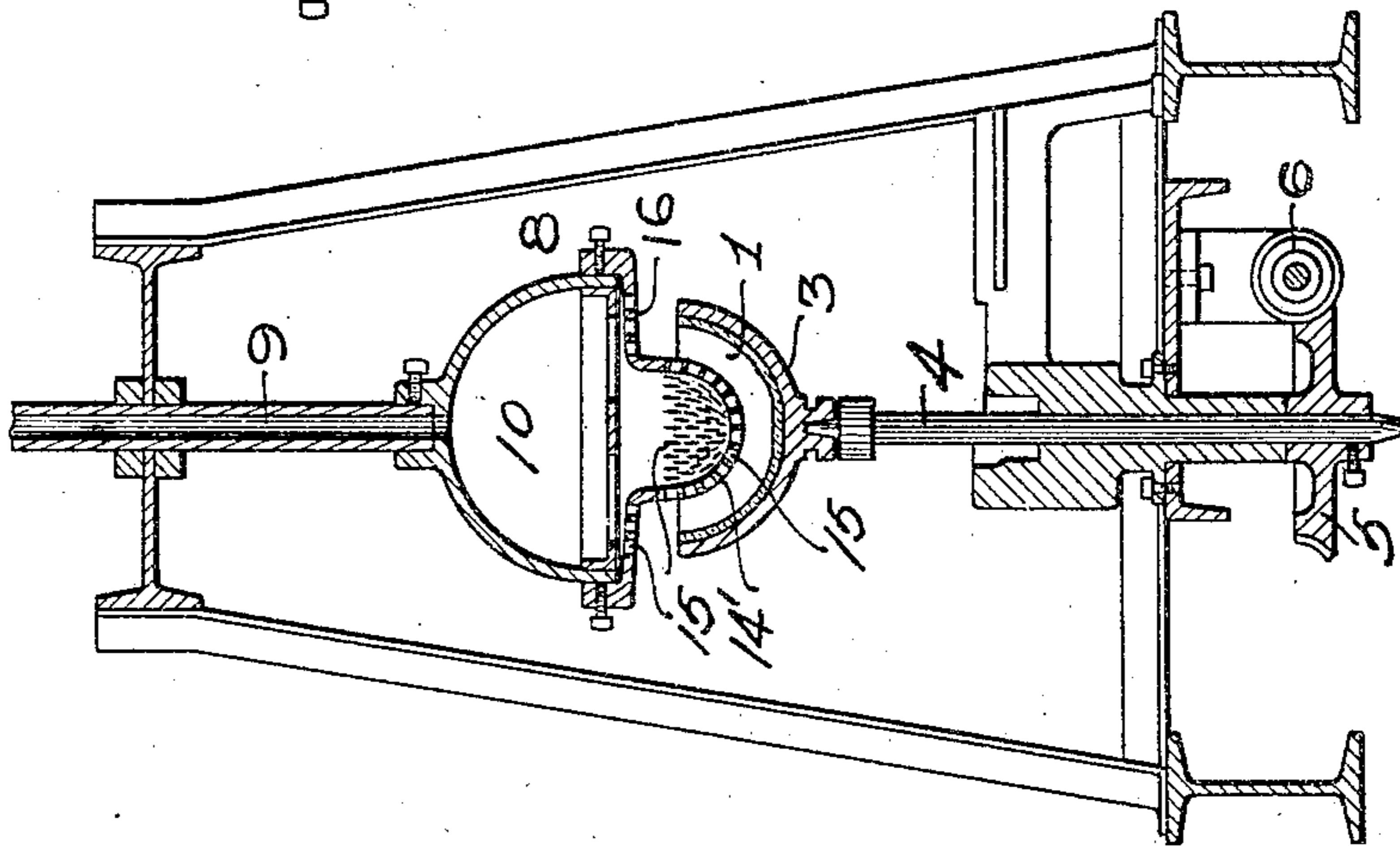


FIG. 3

FIG. 1



WITNESSES.

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 atty.

# UNITED STATES PATENT OFFICE.

ANDREW J. SANFORD, OF NEWARK, OHIO, ASSIGNOR TO A. H. HEISEY & CO., INC., OF NEWARK, OHIO, A CORPORATION OF WEST VIRGINIA.

BURNER FOR FIRE-POLISHING GLASSWARE.

962,862.

Specification of Letters Patent. Patented June 28, 1910.

Application filed June 26, 1909. Serial No. 504,551.

*To all whom it may concern:*

Be it known that I, ANDREW J. SANFORD, a resident of Newark, in the county of Licking and State of Ohio, have invented a new and useful Improvement in Burners for Fire-Polishing Glassware; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to apparatus for fire polishing glassware and more particularly to burners for such purpose, its object being to provide a flame surface on the burner which shall be practically continuous so as to operate on the surface of the article to be polished as it is rotated.

The burner is suitable for use in connection with certain methods of fire polishing as described in applications filed by me of even date herewith, Serial Nos. 504,552 and 504,553.

The burner of the present invention consists in a burner body having jet orifices of slit form formed in the body thereof for the escape of the gas and air, such slit openings providing for the formation of longitudinal flame jets overlapping each other and so providing for the positive contact of the flame jets with the entire surface of the article to be polished. It also includes the combination therewith of means for rotating the article so as to expose its entire surface to contact with such longitudinally extending jet flames, as well as other improvements as hereinafter set forth.

In the accompanying drawings Figure 1 is a section of fire polishing apparatus suitable for fire polishing the interior of a glass article; Fig. 2 is a like view suitable for polishing the exterior of the glass article; and Fig. 3 is a side view partly in section embodying the invention.

The invention is illustrated for use in connection with suitable apparatus to support the article to be fire polished. As shown the article 1 rests on a suitable support or holder 2 or 3 carried upon a vertically moving shaft 4, which in its raised position is adapted to be rotated by suitable power connections, for instance, a worm wheel 5 on said shaft 4 driven by a suitable worm 6. Two burners are shown in the drawings, one for exterior fire polishing, as at 7, and one for interior fire polishing as shown at 8. In each case

the burner is suspended from an air and gas pipe 9, through which air under pressure and gas are supplied in any suitable way.

As illustrated in Fig. 2 the burner consists of the mixing chamber 10 formed of a suitable casting to which the burner body is secured, the burner having the body portion 10' and the hollow jet face 13. This jet face is illustrated as formed of a suitable casting having thin walls and the jet openings are composed of suitable slits 14 running up and down and overlapping each other, as illustrated. These slit openings are of very small diameter but of sufficient length to overlap as above stated, so that when the article resting on the supporting holder 2 is rotated the longitudinally extending flame jets on the outer face of the burner lap and play over the surface of the article and complete contact of the fire polishing flame jets with the surface of the article is thus insured. The slit openings may be arranged in any desired way, the only requirement being that they shall lap each other and so produce a series of flame jets of such width of flame as shall insure contact between the flame jets and the entire surface of the article to be polished.

In Fig. 1 I have illustrated substantially the same construction except that it is applied to the fire polishing of the interior of the article, as described in application filed by me of even date herewith, Serial No. 504,552. In this case the jet orifices are formed on the projection or cone 14' of the burner and they overlap each other as above stated, the jet slits 15 extending over the base of the cone and up the side walls thereof, and if necessary, like slits being formed in the apron portion 16 of the burner.

In the exterior fire polishing of bowls as the flame in escaping from the burner naturally rises, and passes upwardly around the body of the burner, it is somewhat difficult to insure the projection of the same against the edge of the bowl, and to generate sufficient heat at this point to properly melt the edge, removing the fin and rounding the outer square edge thereon produced in the pressing operation. To overcome this difficulty I provide the burner for exterior fire polishing with an annular inwardly extend-

ing lip 16', such lip projecting in close to the blank or article when resting on its support 2, the article being raised as shown so as to enter within the burner as described in said application Serial No. 504,552. This inwardly extending lip forces the escaping flame and heat inwardly against the edge portion of the article and causes the same to play over the outer edge thereof and so insures the generation of sufficient heat at this point to melt and round such outer edge, producing a proper finish of the same.

What I claim is:

1. A burner for fire polishing glassware having a series of jet openings of slit form overlapping each other.

2. In apparatus for fire polishing glassware, the combination of a burner having a series of jet orifices of slit form overlapping each other, and a rotating support for the article to be polished.

3. A burner for fire polishing glassware having a concave jet face provided with jet

openings and at the base thereof an annular inwardly extending lip portion. 25

4. The combination of a burner for fire polishing glassware having a concave jet face provided with jet openings and at the base thereof an annular inwardly extending lip portion, and a support for the article entering within the concave burner. 30

5. The combination of a burner for fire polishing glassware having a concave jet face provided with jet openings and at the base thereof an annular inwardly extending lip portion, and a support for the article entering within the concave burner and supporting the edge of the article above such inwardly projecting lip. 35

In testimony whereof, I the said ANDREW J. SANFORD have hereunto set my hand. 40

ANDREW J. SANFORD

Witnesses:

E. J. MORATTE,  
J. E. SNELLING.