(No Model.) 3 Sheets—Sheet 1.

A. G. NEVILLE.

APPARATUS FOR FORMING CENTRAL DRAFT LAMPS FROM GLASS.

No. 457,867. Patented Aug. 18, 1891.

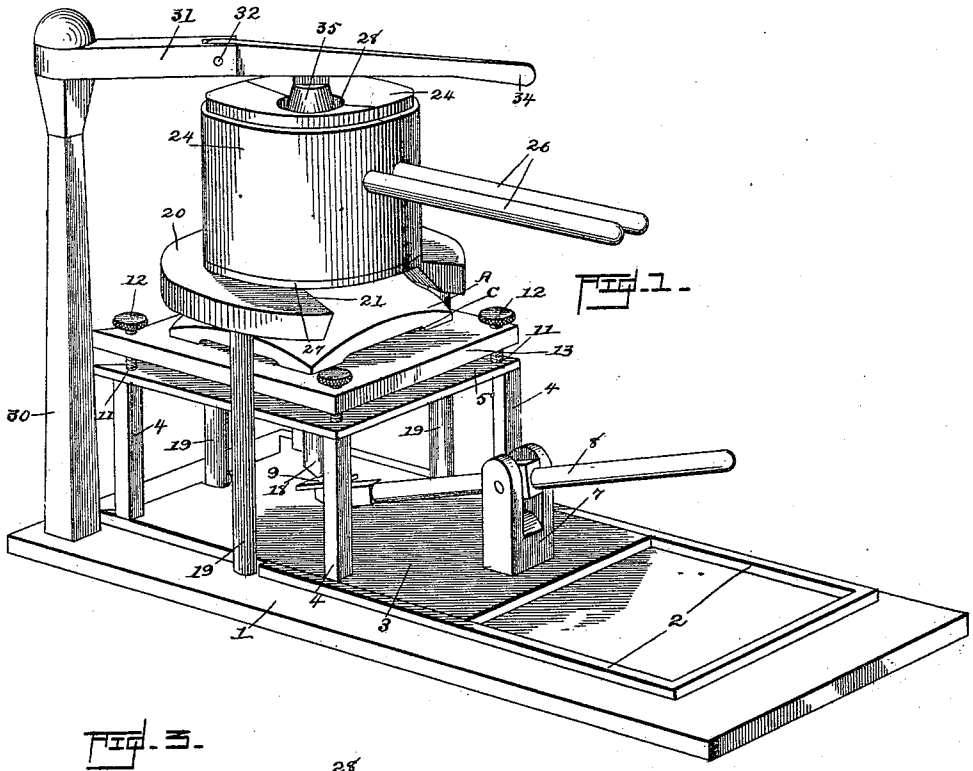


Fig. 1.

Fig. 3.

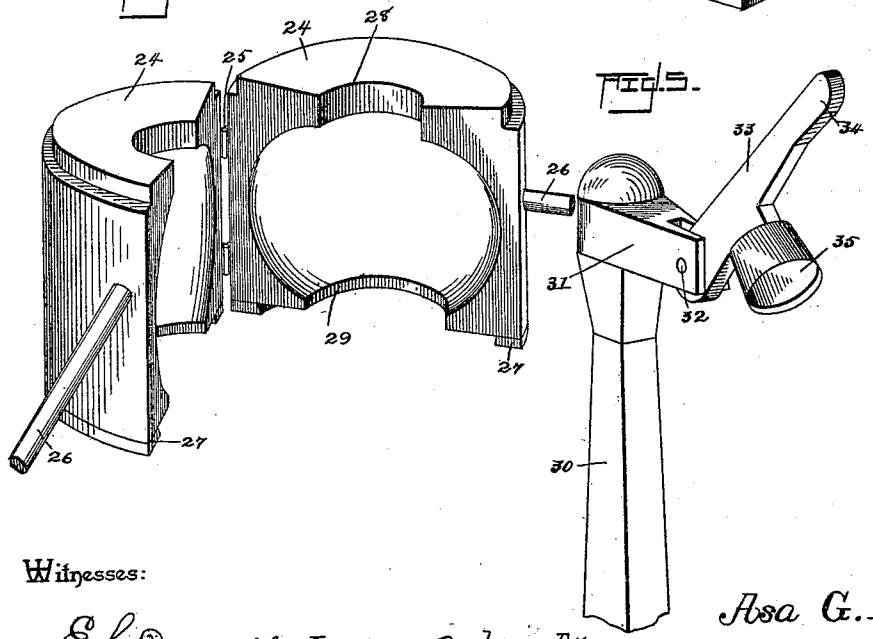


Fig. 5.

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(No Model.) 3 Sheets—Sheet 2.

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APPARATUS FOR FORMING CENTRAL DRAFT LAMPS FROM GLASS.

No. 457,867. Patented Aug. 18, 1891.

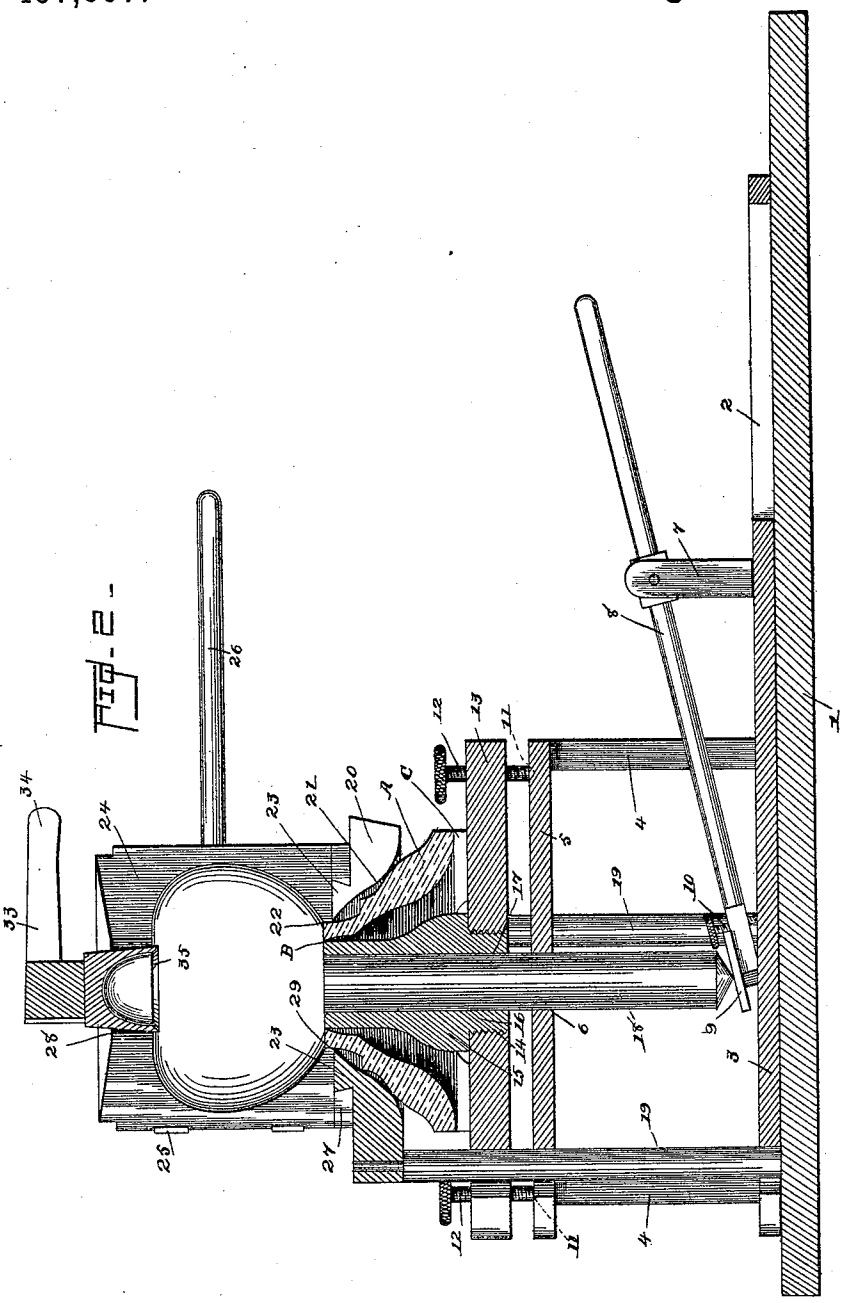


Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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FIG. 4.

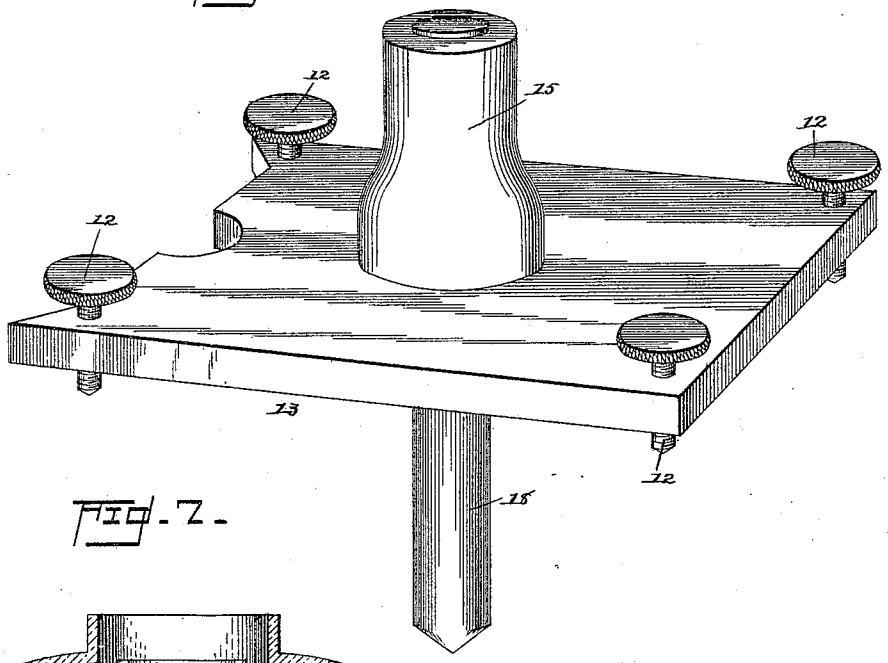


FIG. 7.

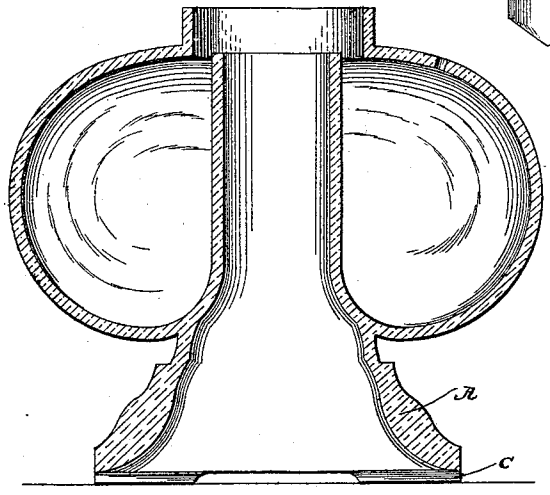
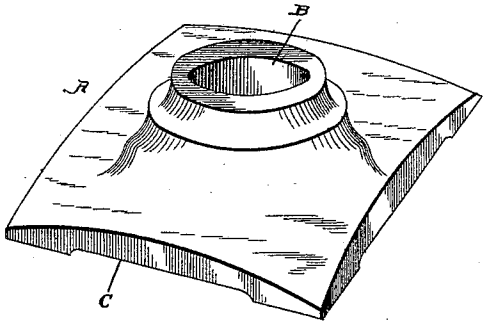


FIG. 6.



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UNITED STATES PATENT OFFICE.

ASA G. NEVILLE, OF BLAIRSVILLE, PENNSYLVANIA.

APPARATUS FOR FORMING CENTRAL-DRAFT LAMPS FROM GLASS.

SPECIFICATION forming part of Letters Patent No. 457,867, dated August 18, 1891.

Application filed February 26, 1891. Serial No. 382,862. (No model.)

To all whom it may concern:

Be it known that I, ASA G. NEVILLE, a citizen of the United States, residing at Blairsville, in the county of Indiana and State of Pennsylvania, have invented a new and useful Apparatus for Forming Central-Draft Lamps from Glass, of which the following is a specification.

This invention relates to a method and apparatus for making central-draft lamps from glass.

The objects of the invention are to manufacture from glass central-draft lamps, thereby avoiding joints hitherto existing and, by reason of their liability to leak, endangering the efficiency of the lamp, and, furthermore, to accomplish the same in an expeditious, cheap, and simple manner.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a lamp-mold constructed in accordance with and adapted to practice my invention. Fig. 2 is a longitudinal section. Fig. 3 is a detail in perspective of the lamp-mold. Fig. 4 is a detail in perspective of the lamp-foot molding support or table. Fig. 5 is a detail of the swinging cut-off. Fig. 6 is a detail of the foot of the lamp previous to joining or molding the bowl. Fig. 7 is a vertical longitudinal section of the completed lamp.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates an ordinary base or table, upon which the apparatus hereinafter described is mounted. The base is provided with a pair of longitudinal track-bars 2, and between the same there is located and adapted to reciprocate a platform or carriage 3, from which rise standards 4, supporting a table 5, having a central perforation or opening 6. A bifurcated standard 7 is located at the front end of the carriage 3, and fulcrumed in the standard is a lever 8, terminating at its front end in a suitable handle and at its rear end provided with a plate 9, made adjustable by means of a screw 10.

The upper surface of the table 5 is provided at its four corners with countersunk recesses 11, in which are seated the four adjustable set-screws 12, which constitute adjustable supports for the foot-supporting table 13. The table 13 is provided with a central opening 14, which is vertically opposite the opening 6 of the table 5, and the former opening is provided with screw-threads.

15 designates a foot-core, and the same may be given any external shape as will adapt it to approximate the internal shape or draft-opening of the foot of the lamp to be manufactured. The lower end of the core is provided with a reduced threaded portion 16, and said core is also provided with an internal bore 17, extending throughout its length. The reduced threaded lower end of the core is threaded in the threaded opening 14 of the table 13, and is therefore adjustable in height and adapted to receive lamp-feet of various heights.

In the bore 17 there is mounted for reciprocation a plunger 18, the lower end of which rests upon the adjustable plate 9 of the lever 8, and by operating said lever the plunger may be raised and lowered. By adjusting the plate 8 by means of its screw 9 it may be adapted for a longer and shorter stroke between the table or platform 5 and the carriage, and in this manner the length of movement of the plunger also is regulated, and, as will be hereinafter apparent, thus designed to regulate the length of the central draft-tube of the lamp-bowl.

From the base 1, at opposite sides and the rear end of the same and the table 5, there rise three standards 19, which extend some distance above the supporting-table 13, and upon their upper ends there is mounted for support a mold-supporting head 20. The mold-supporting head 20 is circular in plan and is provided at its front with an opening 21, through which the core 15 may pass when the carriage 3 and the tables 5 and 13 are drawn along in the ways or track 2. The center of the head is provided with an opening 22, which is surrounded on all sides except opposite the opening 21 by a dovetailed flange 23, formed upon the upper side of the head. The under side of the head is cut away or concaved, so as to approximate the contour or configuration of the external surface of the lamp-foot.

The mold for molding the bowl of the lamp consists of a pair of semi-cylindrical sections

24, the same combining to form a mold, and provided with an internal recess or chamber of the shape of the desired lamp-bowl. These mold-sections are hinged at one of their meeting edges, as at 25, and at their opposite sides are provided with a pair of operating-handles 26, designed to be grasped by the operator and serving as a means for opening and closing the mold-sections for the purpose of removing the article after its formation. Upon its under side the mold is provided with an annular ring or flange 27, which takes over the flange 22 of the support. The opposite ends or heads of the mold are provided with central openings 28 and 29, respectively, at the upper and lower ends thereof. The wall of the lower opening 29 is slightly flared, so as to fit the dovetailed exterior of the flange 22.

From the rear corner of the base 1 and to one side of the structure just described is a standard 30, at the upper end of which there is swiveled thereon a swinging arm 31, to the outer end of which there is pivotally connected, as at 32, a lever 33, terminating at its extremity in a handle 34, and upon its under side, in front of its handle, provided with an annular knife or cutter 35, adapted to pass through the upper opening 28 of the mold, for a purpose hereinafter specified.

Referring to Fig. 6 of the drawings, A designates the foot of a proposed lamp, said foot being formed of glass and having the central opening B, which communicates with the outer atmosphere by side air-openings C, formed in the under side of the foot. This foot is formed by the usual process well known among glass-workers and requires no specific description other than as to its general structure. The opening B, when the foot is first formed, is, as is well known, closed at its upper end and the same is knocked off, so as to open the opening, as shown in Fig. 6. The foot thus formed is mounted over the core 15 of the table 13, previous to which the carriage 3 is, by drawing upon the lever 8, withdrawn from the mold and its support to the front of the base A to permit of the insertion of the foot. This being accomplished, the carriage is moved to the rear under the mold, which latter is closed by means of its handles. The blower now introduces his blow-pipe into the upper opening 28 under the mold, and he proceeds to blow and form the bowl or reservoir of the lamp. The operation of blowing is continued until the bowl is formed as to its exterior, when the attendant or assistant presses upon the lever 8 at its outer end, which causes a vertical movement or ascension of the plunger 18. This vertical movement of the plunger takes the surplus of glass that encircles the core 15 and forms the same into a tube extending up through the middle and interior of the bowl. It now simply remains to remove the blow-pipe, swing the arm 15 with its lever 33 and cutter 35 over the opening 28 of the mold, and depress said lever until the cutter comes in contact with the glass that covers the upper end of the plunger 18. The pressure upon the lever 33 is sufficient to fracture or partially cut the glass opposite the end of the plunger, and after such operation the lever and cutter are raised and swung with the arm 31 out of the way or to one side. The attendant now opens the molds by the levers 26 and draws the carriage 3, together with the parts it supports and the completed lamp, from the mold. A wire passed up through the foot of the lever, its opening, and into the tube may be employed to knock the upper end of the tube therefrom, so that a continuous tube is formed from the foot through the bowl.

It will be understood that the bowl has been made integral with the foot, and that the bore of the foot is integral with the tube.

In the above manner it will be apparent that central-draft lamps may be readily formed of glass, and, while possessing all of the well-known advantageous qualities of such lamps heretofore usually formed of metal, it also has the advantage of permitting constant inspection by reason of its transparency, so that the supply of oil can at all times be observed.

Having described my invention, what I claim is—

1. The combination, with the base, the table, and the centrally-bored core, of the mold supported above the core, the plunger mounted for reciprocation in the core, and a lever fulcrumed upon the base and having one end terminating under and supporting the plunger, substantially as specified.

2. The combination, with the base, the table mounted thereon, and the bored core for receiving the foot mounted on the table, of the mold supported above the core, the plunger mounted for reciprocation in the core, the lever for operating the plunger fulcrumed on the base, and a plate mounted on the end of the lever and provided with adjusting means and serving as a support for the plunger, substantially as specified.

3. The combination, with the base, and the table having the central perforation provided with a thread, of a core adapted to receive the foot of a lamp, centrally bored and provided with a reduced threaded lower end mounted in the perforation of the table, the reciprocating plunger, means for operating the same, and the mold supported above the core, substantially as specified.

4. The combination, with the base, a platform supported thereon, and a mold supported above the platform, of an adjustable table mounted upon the platform below the mold, a foot-receiving core mounted on the table, and a plunger and means for operating the same, said plunger being mounted in the core, substantially as specified.

5. In an apparatus of the class described, the combination, with the base having ways,

a carriage mounted for sliding in the ways, a table mounted on the carriage, and a hollow foot-receiving core mounted on the table, of a plunger mounted in the core, a lever fulcrumed on the carrrage and at its outer end supporting the plunger, a platform supported above the core and partially embracing the same, and a mold formed of opposite hinged sections or halves supported on the platform, substantially as specified.

6. The combination, with the base having ways, the carriage mounted thereon, the standards rising from the carriage, the platform supported on the carriage, the table adjustably supported on the platform, and the core adjustably mounted on the table, of the plunger mounted in the core, the lever for operating the plunger mounted on the carriage, the standards rising from the base, the encircling frame 20, having the opening 21 and the central flange-opening 22, the mold-sections hinged, as at 25, and having the upper and lower openings 28 and 29 and the lower ring 27 and handles 26, the standard 30, the arm 31, pivoted on the upper end of the same, and the lever 33, pivoted to the arm and provided upon its under side with the annular cutter 35, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ASA G. NEVILLE.

Witnesses:
WILLIAM A. YOUNG,
WM. H. MEACHAM.