

Patented Sept. 28, 1880.

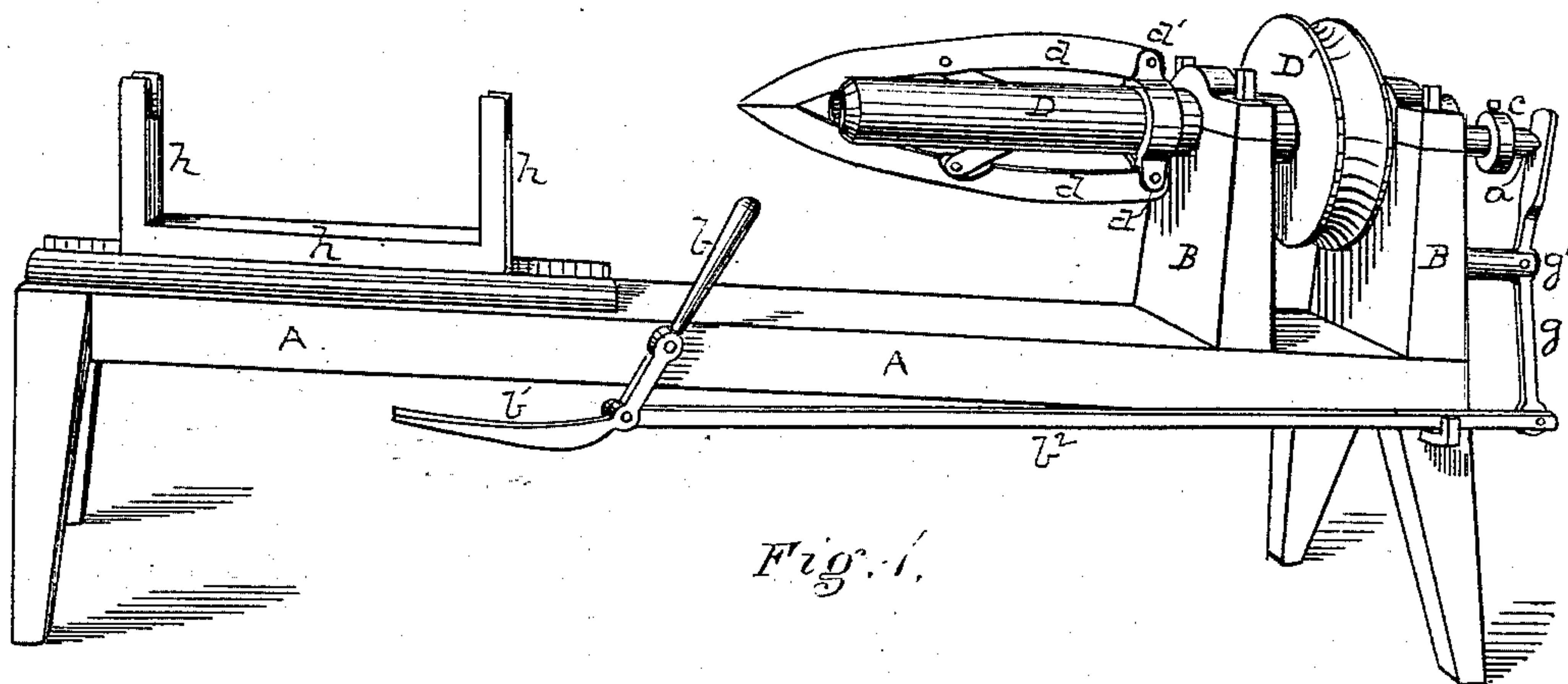


Fig. 1.

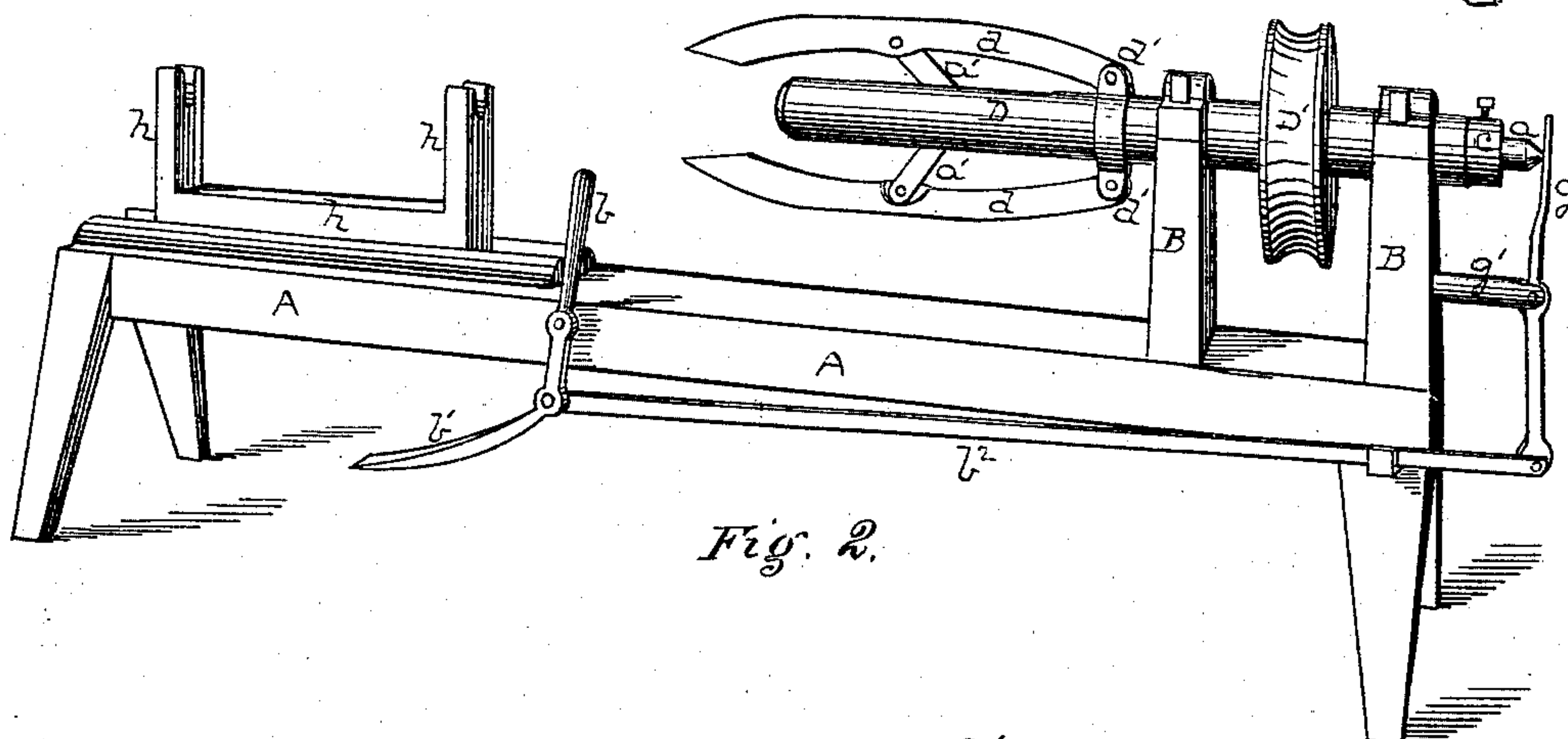


Fig. 2.

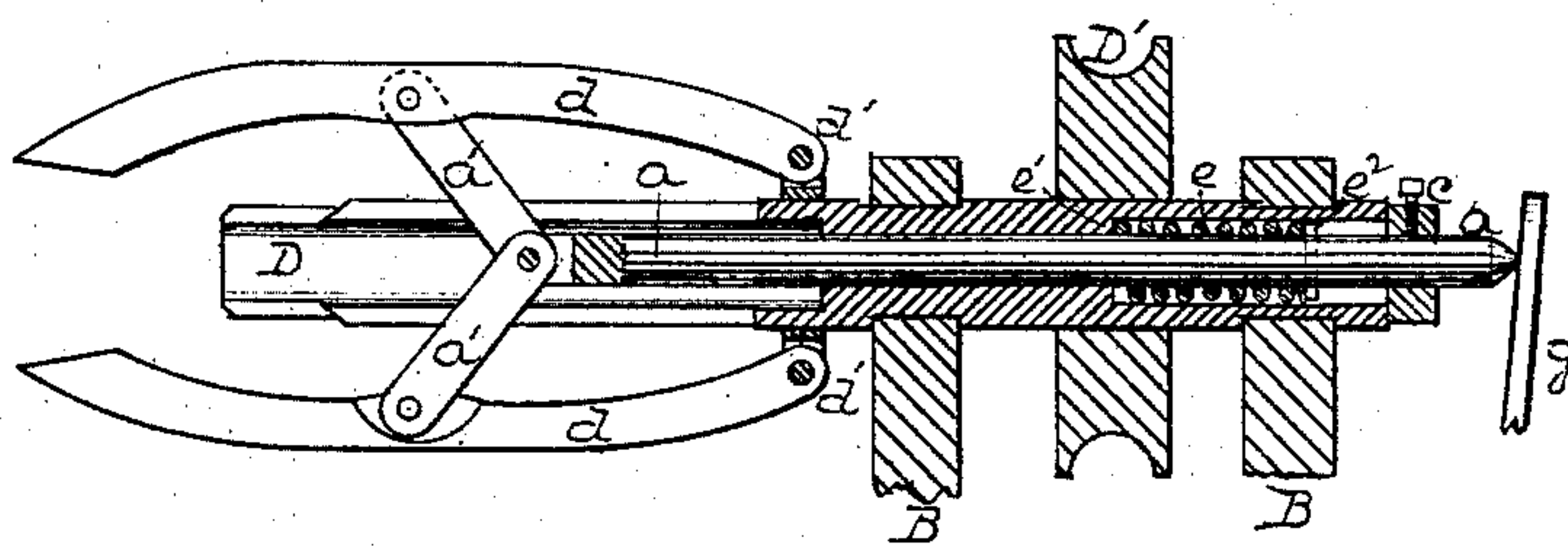


Fig. 3.

Witnesses
O L Parker
John Merceer

Inventor Joseph Adams
By Attorney George H. Christy

UNITED STATES PATENT OFFICE.

JOSEPH ADAMS, OF LOWER ST. CLAIR TOWNSHIP, ALLEGHENY COUNTY,
ASSIGNOR TO DAVID EVANS, DAVID CHALLINOR, AND JOHN LOWERY,
ALL OF PITTSBURG, PENNSYLVANIA.

MECHANISM FOR OPENING THE BASE OF LAMP-CHIMNEYS.

SPECIFICATION forming part of Letters Patent No. 232,625, dated September 28, 1880.

Application filed August 2, 1878.

To all whom it may concern:

Be it known that I, JOSEPH ADAMS, of Lower St. Clair Township, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Method and Mechanism for Opening the Base of Lamp-Chimneys and other Hollow Articles of Glassware; 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 is a view, in perspective, of my improved mechanism, showing the opening-blades closed. Fig. 2 shows the same mechanism, but with the opening-blades open or distended. Fig. 3 is a detached sectional view of a portion of the operative devices of Fig. 1.

My improvement is particularly designed for opening out and finishing the inside of bases of lamp-chimneys, though it will be within my invention to use the same mechanism for opening and finishing either or both the ends of other tubular articles made of glass.

The partly-formed chimney on which I especially design to employ my invention is such as is shown and described in patent to D. Challinor, of January 8, 1878; but I do not limit myself in this regard, but claim it for the use or uses designated, without regard to the manner of making the chimney or to its shape, provided only that it have an open end large enough for the insertion of the points of the opening-blades.

On any suitable frame-work A, I mount the plummer-blocks B, which carry a hollow shaft, D, which latter may be rotated by any convenient mechanism, as by a belt running on the wheel D'. To lugs *d'* on the forward end of the shaft I pivot a pair of opening-blades, *d*, and the projecting end of the shaft is preferably slotted, as shown in Fig. 3, so that the pointed forward ends of the blades *d* may be brought together, as in Fig. 1. Inside the shaft I arrange a longitudinally-moving stem, *a*, and the forward end of such stem is connected with the blades *d* by means of links *a'*, in such manner that the forward move-

ment of the stem will cause the blades to open, and a reverse movement will close them. Such forward movement of the stem may be effected by a hand-lever, *b*, or a foot-lever, *b'*, from which, at the operator's stand, a connecting-rod, *b²*, extends to a lever, *g*, fulcrumed to a post, *g'*, in such manner that its upper end shall engage the stem *a* and thrust it forward.

An adjustable collar, *c*, is arranged on the stem, by which to limit the range of forward motion, but other suitable stop may be substituted therefor.

A reverse motion may be secured by a spring, *e*, bearing at one end against a shoulder, *e'*, in the hollow of the shaft, and at its other end against a pin, *e²*.

A rack-rest, *h*, is provided, on which to rest the snap while presenting the article to the action of the blades *d*.

The shape of the exterior edges or surfaces of the blades *d* is such as to effect the shaping desired. For the particular use designated, they are preferably made tapering for a short distance back from their points, so as to operate somewhat like a wedge or cone in opening out the end of the glass article, and from that point for a little distance they have the shape which it is desired to give to the inside of the glass article. In their use with the bases of lamp-chimneys such parts should be straight, or nearly so.

In operation the article is caught in a snap, and the opening in its base is presented to the united points of the blades *d*, the latter being caused to rotate with some rapidity. As the points of such blades enter such opening the article is fed forward and the blades *d* are caused to open until, in the position of Figs. 2 and 3, they are at the proper adjustment for fully opening and finishing the inside of the article. A few revolutions suffice for this purpose, after which the article is removed, another put in place, and the operation is repeated.

It will be observed that no external pressure is applied to the glass, and as a consequence there is no liability of twisting or distorting the article during the shaping process.

If so preferred, the longitudinal motion de-

scribed may be given to the shaft instead of to the stem. Other connections between stem and blades may be substituted for that described, provided only substantially the same motions be preserved.

The number of the blades may be increased at pleasure, and other modes of pivoting their base ends may be employed, such as a bow or U spring, extending from one to the other. Also, under the term "blades," as herein used, I include, generally, such shaping-tools as may be substituted for the blades and perform a like function.

I claim herein as my invention—

1. In a machine for opening or finishing, or for opening and finishing, the interior faces of tubular articles, the combination of two or more blades pivoted at their inner ends, and free to open toward and from each other at their outer ends, and mechanism for effecting the rotation of the blades, as also their motion toward and from each other, substantially as set forth.

2. Two or more mechanically-driven blades, *d d*, having exterior working-faces adapted to open and finish the open ends of tubular glass

articles, connected, at their inner ends, by a pivot or equivalent joint, to the shaft, through which their rotation is effected, and at their forward ends shifted toward or from each other by a mechanical connection which is within reach of the hand or foot of the operator, substantially as set forth.

3. The blades *d d*, in combination with shaft and stem, one of which rotates and the other moves longitudinally when in operation, and in further combination with a stop to limit the range of outward movement of the blades, substantially as set forth.

4. The method herein described of opening and shaping glassware, consisting in pressing it over or upon an expansible or expanding former without external pressure, either the article or former, or both, being rotated, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

JOSEPH ADAMS.

Witnesses:

JAMES H. PORTE,

CLAUDIUS L. PARKER.