R. G. HEMINGRAY.

Cleaning Glass from the ends of Blow-Pipes.

No. 196,092. Patented Oct. 16, 1877.

FIG. 1

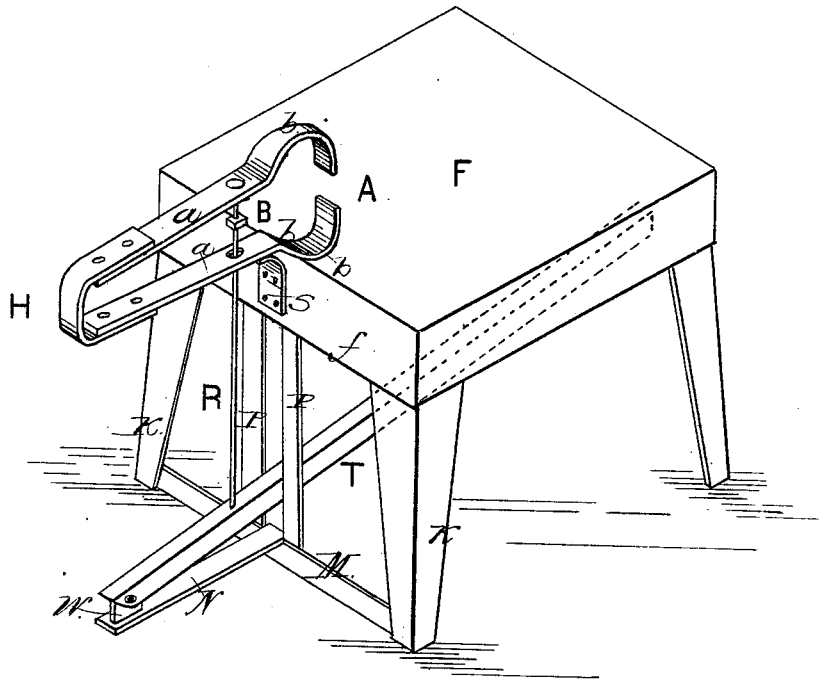
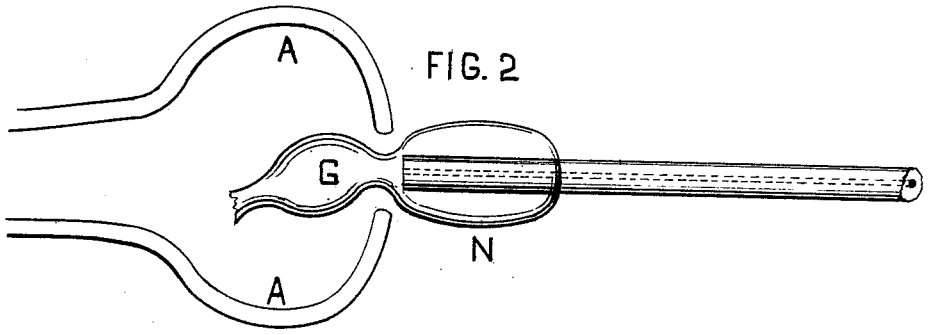


FIG. 2



ATTEST

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IMPROVEMENT IN CLEANING GLASS FROM THE ENDS OF BLOW-PIPES.

Specification forming part of Letters Patent No. **196,092**, dated October 16, 1877; application filed March 12, 1877.

To all whom it may concern:

Be it known that I, RALPH G. HEMINGRAY, of the city of Covington, State of Kentucky, have invented certain new and useful Improvements in the Art of Cleaning the Ends of Blow-Pipes after the formation of glass articles, of which the following is a specification:

After the blow-pipe has been used in blowing any article, considerable glass remains on the sides and end of the pipe. That portion of the glass remaining on the end forms a nub or neck and requires to be removed, because it soon fouls; and, secondly, for the more important reason that, if allowed to remain, it would be so increased in size, after a number of articles were blown, as to interfere with the manipulation of the blow-pipe.

My invention is practiced, preferably, by the use of a pair of pinchers or jaws, properly supported, and so constructed as to be made to close upon each other by means of a treadle or other equivalent mechanism, and to automatically open whenever the force employed by the operator to close them has been withdrawn, an essential element of my invention being that the said nub or neck of glass is removed, not by the shearing or cutting action of a shears, but by the retraction of the pipe in a direct line from the pinchers, thus drawing off the nub or neck, instead of cutting it off.

The advantages of my invention will be better understood after the device and the mode of operating it have been fully described.

In the accompanying drawings, Figure 1 is a view of the devices for carrying into effect my invention; and Fig. 2 is a side view of the pinching ends of the pinchers, showing how they aid the operator in removing said neck or nub.

A heavy bench, F, provided with legs K, is a convenient foundation to which the devices which carry out my invention may be attached.

Each half of the pinchers A consists of an arch, *b*, and a shank, *a*. These halves are united, preferably, as shown at H. The arch is made so large that when the pinchers meet the space formed by the two arches shall have ample room for the superfluous nub of glass to be placed therein without interfering with the pinching action of the pinchers. The portion H is usually so stiff and so tempered as to retain its position to act as a spring and keep the ends of the pinchers, when not acted upon by outside force, sufficiently apart to allow of the introduction of the superfluous neck or nub between them. The pinchers, including the portion H, preferably consist of one continuous piece of metal. They are secured to the side of the bench by a strip of iron, S, screwed to the side *f* of the bench, and fastened to the under side of the lower shank *a*, so as to bring the arch *b* of the lower pincher over the bench.

A rod, R, attached to the upper shank a little in the rear of the upper arch *b*, passes through a hole in the lower shank, the hole being large enough to allow for the necessary play of the rod when drawn up and down by the treadle T. The latter is fulcrumed at W, preferably, as here, to the end of an arm, N, whose other end is attached to brace M, between the legs K. This method of fixing the fulcrum allows of the bench and all the accompanying devices to be moved from place to place, as desired.

The treadle T is so attached to rod R as to be so far above the floor that when depressed the pinchers shall be closed before the descent of the treadle is arrested by the arm N. A nut or adjustable stud, B, is located on rod R, above lower shank *a*, so that when the pinchers meet the nut shall strike said lower shank *a*, and receive any further pressure of the treadle, and thus prevent such additional pressure from bending the upper shank *a* or injuring the pinching-edges of the pinchers. The foot end of the treadle preferably projects beyond the edge of the bench, and is long enough to enable the operator to keep his foot thereon, and at the same time easily draw off the said neck or nub from the blow-pipe. Vertical guides P P, one on each side of the lever T, extend between the brace M and the bench, for preventing the treadle from moving out of the vertical when operated.

In operating the aforesaid device the operator stands directly in front of the pinchers—viz., at the side *g* of the bench—and, holding a blow-pipe just used, places the said nub or neck G thereof within the pinchers, and, pressing down the treadle, pinches the red-hot glass between the nub G and the pipe B, and quite

close to the latter. He then draws the pipe toward himself, and thereby frees the rod from the nub, leaving the latter in the grasp of the pinchers. The residue of glass remaining on the end of the rod is so little that it in no wise interferes with the immediate dipping of the blow-pipe in the furnace to obtain a fresh supply of glass. The glass around the sides of the end of the tube is not removed by the pinchers, and hence saves recoating same. The operator, as soon as the nub is drawn off the pipe, as aforementioned, removes his foot from the treadle, and the pinchers automatically, by means of the spring H, open, the nub falls to the ground, and the pinchers are ready for a second like operation.

The advantages of removing the nub or neck by means of and in the manner of my invention are these: The slight residue of glass on the end of the rod is in straight line with the latter; also, the hole originally made through the same is preserved, and thus the operation of again blowing through the pipe is not interfered with.

I am aware that there is a device secured by Letters Patent which shears off the nub or neck of glass; but the objection to such shearing process is, that it has a tendency to drag the glass down over the nose of the pipe, throw the glass out of line, and seal up the hole in the pipe.

If preferred, portion H may consist of a separate piece of spring metal, and be riveted to the shanks *a*, as shown in the drawing; or the pinchers may be hinged at H, and a spring or elastic material be placed between the shanks *a* of the pinchers, without taking the device from under the scope of my invention.

Obviously my invention covers any arrangement or device whereby two pieces or jaws of metal are made to close upon each other, and hold the red-hot nub while the operator draws same off the blow-pipe, by means of a treadle or equivalent mechanism, and are separated automatically when the force exerted to close them has ceased. For example, the upper or lower jaw, or both of them, may run in grooves, and their separation be caused by weight and pulley instead of a spring. So, also, one or both of the jaws might be pivoted at one end, and worked as aforementioned, in which case the jaws must be so formed that no shearing action shall be permitted.

What I claim as new, and desire to secure by Letters Patent, is—

The mode herein described of freeing blow-pipes from the nub of glass remaining on the end after blowing an article—that is to say, seizing the nub while hot between pinchers, and separating it by an endwise pull.

RALPH G. HEMINGRAY.

Attest:

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