(No Model.)

J. VAN EPS.

Bellows.

No. 229,563. Patented July 6, 1880.

Fig. 1.

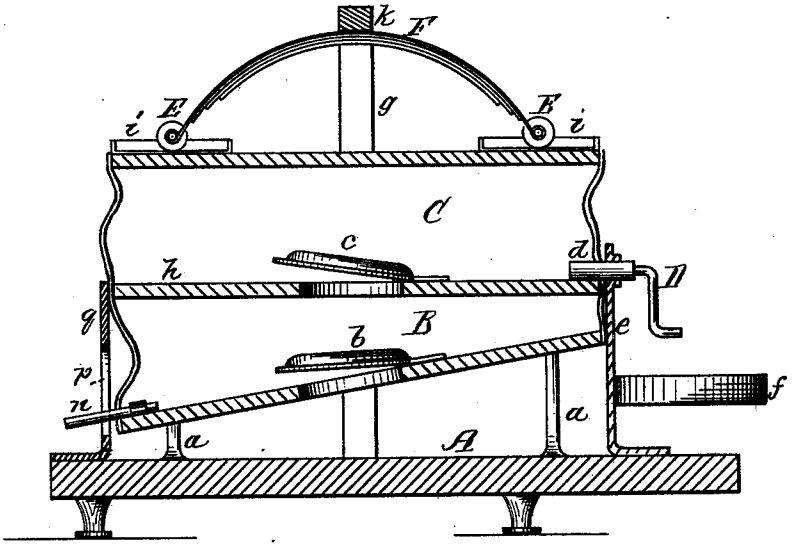
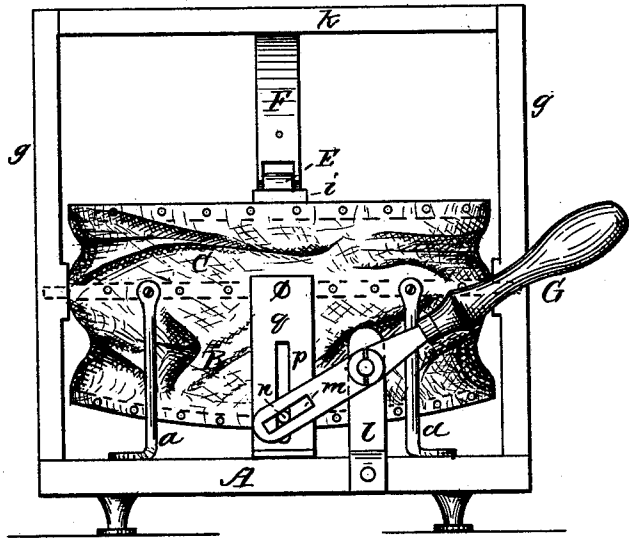


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN VAN EPS, OF SOMERVILLE, NEW JERSEY.

BELLOWS.

SPECIFICATION forming part of Letters Patent No. 229,563, dated July 6, 1880.

Application filed April 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN VAN EPS, a citizen of the United States, residing at Somerville, in the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Bellows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a longitudinal section of my invention, and Fig. 2 is an end view of the same.

This invention has relation to certain new and useful improvements in that class of bellows used in connection with a blow-pipe to force a current of air through the same in order to direct a flame and concentrate its heat at a particular spot.

The particular construction of the device, as illustrated in the drawings, will be hereinafter described, and subsequently pointed out in the claims.

In the accompanying drawings, A represents a suitable base or support, to which is connected, by brace-rods *a*, the receiving air-chamber B, provided with ingress-valve *b*, and above this the discharge air-chamber C, having a valve, *c*. To this chamber C is adjustably connected the blow-pipe D by passing through a coupling-tube, *d*, said tube being supported by a standard, *e*, and communicating with the interior of the chamber C, the standard also supporting a spring-hoop, *f*, for holding a suitable lamp.

The base A has connected to it two uprights, *g*, to which is rigidly secured the central partition, *h*, which divides the bellows into the two air-chambers B C.

To the top of the air-chamber C are secured flanged plates *i*, to receive anti-friction rollers E upon the ends of a flat bow-spring, F, the upper surface bearing against the cross-piece *k*.

The rollers E take away a considerable amount of friction and insure a more perfect operation of the spring while expanding to press down upon the top of the chamber C and force the air out through the pipe D.

It should be noticed that by the employment of the bow-spring pressure is obtained equally upon the top of the chamber C at two different points and at opposite ends thereof, which is deemed of great importance to insure an equal pressure and force the air out with uniformity of speed. This could not be accomplished with the ordinary spiral or coiled spring, as it would only press at a single point, therefore requiring greater power, while at the same time the current of air would be forced out irregularly.

The plates *i*, with their flanges, serve as guides for the rollers E, the end flanges acting as stops to prevent the spring F from being forced down too far or beyond the ends of the top of the air-chamber C.

The air-chambers B C are operated by hand or other power G, pivoted to a standard, *l*, said lever having an elongated slot, *m*, to receive the end of a short rod, *n*. This rod is connected to the bottom of the air-chamber B, and passes through an elongated slot, *p*, in a plate, *q*, the plate being secured to the base A and to the central partition, *h*, so that in operating the lever G it will cause the rod *n* to move up and down in the slot *p*.

The blow-pipe D is made adjustable by connecting it with a coupling-tube, *d*, so that by shifting it a little in a lateral direction the direct force of the current of air from the bellows, as it passes out of the pipe, will spread and cause the flame to assume a blunt shape, which is frequently required to accommodate the flame to all classes of work.

The device is not only simple in construction, but very effective, and is admirably adapted to the uses of the watchmaker and jeweler, as it enables him to do all kinds of hard or soft soldering without damage to the lungs or any inconvenience whatever, the bellows being operated by hand, foot, or other power.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the chambers B C, having valves *b c*, and pipe D, of the slotted lever G, slotted standard *q*, and rod *n*, connected to the under side of the air-chamber

B, substantially as and for the purpose described.

2. The air-chambers B C, with valves *b c*, and the flanged plates *i*, in combination with the flat bow-spring F, having upon its ends rollers E, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN VAN EPS.

Witnesses:
HENRY VAN DOREN,
A. P. SUTPHEN.