A. H. WIESE & J. E. RODER

Bellows.

No. 217,661. Patented July 15, 1879.

Fig. 1.

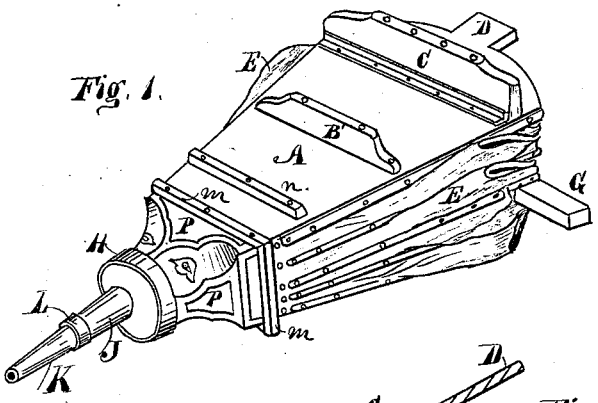


Fig. 2.

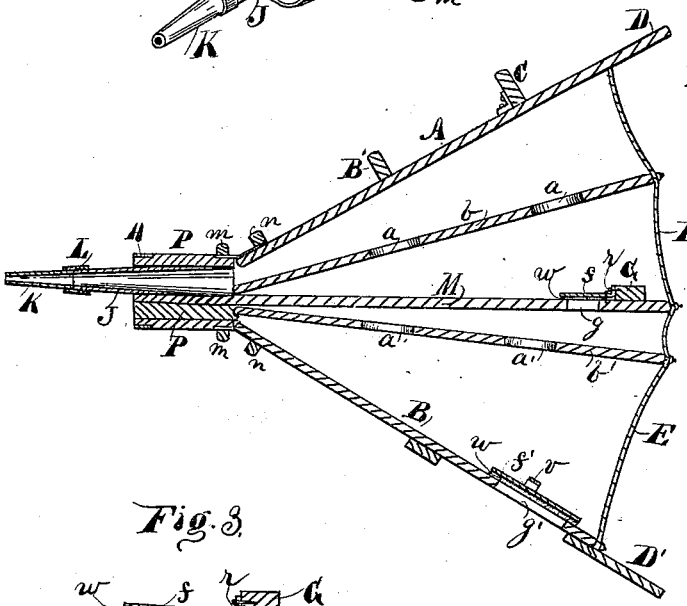


Fig. 3.

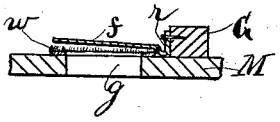
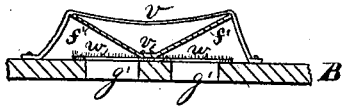


Fig. 4.



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UNITED STATES PATENT OFFICE.

ANTON H. WIESE AND JOHANNES E. RODER, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN BELLOWS.

Specification forming part of Letters Patent No. **217,661**, dated July 15, 1879; application filed May 13, 1879.

To all whom it may concern:

Be it known that we, ANTON H. WIESE and JOHANNES E. RODER, of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Bellows, of which the following is a description, reference being had to the accompanying drawings.

Our invention relates to certain improvements in the valve-seats, the nozzle-head, and the nozzle of bellows or air-pumps.

The object of our invention is to provide a bellows or air-pump with improved valve-seats and discharge-nozzle, by means of which air is readily admitted into the bellows and discharged at the nozzle without leakage at the valves; also, the discharge end of the nozzle is adapted to be removed when burned or otherwise damaged and a new one substituted therefor; also, to permit the bellows to be located at any desired place, and the nozzle extended, without interfering with the steady discharge of compressed air.

Our invention consists, mainly, in the new construction and arrangement of the valve-seats and the nozzle-head; also, in the new combination of elements, all of which are deemed essential in our newly-organized bellows or air-pump, whereby new and useful results are produced, as will be hereinafter fully described in the specification, and set forth in the claims.

In the accompanying drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a perspective view of our improved bellows or air-pump. Fig. 2 is a longitudinal sectional view of the same, taken vertically through the center. Fig. 3 is an enlarged view of the middle valve and a portion of the central partition; and Fig. 4 is a cross-section of the lower side of the bellows, taken through the center of the inlet-valves.

Referring now to the drawings, A represents the upper, and B the lower, side of the bellows. P represents the nozzle-head; E, the outer covering of leather; *b b'*, the partition with air-holes *a a'*; M, the central partition; J K L, the nozzle; *f f'*, the valves; *w w*, the valve-seats; G, the rear supporting-bar; D D', the handles; *m*, *n*, B', and C, the cleats; *g*, the air-passage in the central partition, and *g' g'* inlet air-openings in the bottom of the bellows.

The general construction of the bellows is similar to that of the ordinary kind, except the valve-seats, the nozzle, the nozzle-head, and the location of the supporting-bar G. The head P is made solid from three or more pieces of wood. Thus the front end of the central partition, M, forms a central portion of the head, and is built up on both sides, the upper part having a hole in it to receive the nozzle J, and all firmly secured together by the band H. The nozzle is formed tapering or conical, as shown, and composed of three pieces—to wit, the part J, which is secured in the head, the conical end piece, K, and the coupling L. The end piece, K, is designed to be removed from the piece J when it becomes burned or otherwise damaged and a new piece substituted.

Should it be desired to locate the bellows at a distance from a furnace or other device to which the compressed air is to be applied, the end K is removed, and a connecting-pipe of the desired length screwed or coupled onto the piece J, and the nozzle K screwed or attached to the other end of the connecting-pipe.

The upper and lower sides of the head P are united to the top and bottom A B of the bellows by leather hinges, in the usual manner, the cleats *m* and *n*, above and below, holding the hinges firm. The leather sides of the bellows are secured to the top and bottom A B and to the partitions M *b b'*, and the leather is worked at the sides, so as to fold outward as the instrument is closed up, while at the rear end of the bellows the leather is worked so as to fold inward, thus preventing the lifting-rod (not shown) that is attached to the handle D' from rubbing and wearing out the leather at the end.

The supporting-bar G is located near the rear end of the bellows and firmly secured on top of the central partition, M, thereby giving a better support to the bellows.

The partition M is provided with a square opening, *g*, above, all around which are securely glued strips of fur, *w*, with the hair above.

The valve *f* is of the ordinary kind, made of leather, and is securely fastened at *r* to the top of the partition M and to the bar G, as shown in Figs. 2 and 3.

The inlet-openings *g' g'* in the bottom B are each provided with valve-seats made of fur, in the same manner as the one in the partition M. The valves *f' f'* are secured to the top of the bottom B, and prevented from rising too high by the flexible band *v*, which extends across both valves, and is secured to the bottom B at each side of the openings *g' g'*, as shown in Fig. 4. The cleats B' C are designed to strengthen the top and prevent it from splitting.

It will be seen from the foregoing that the valves *f f' f'* have seats in fur, and that they make no noise in opening or closing when the bellows are operated, which is very annoying in the ordinary bellows; also, that when the valves are closed the joints are more perfect and less liable to leak than those of the ordinary construction; also, that the head P requires no covering, and is perfectly tight; also, that the nozzle can be removed when damaged, and a new one substituted, which is of great importance, especially when the nozzle is used in close proximity to a tuyere-iron.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a bellows or air-pump, the fur valve-seats *w*, as and for the purpose specified.

2. The air-passages *g g'*, having strips of fur, *w*, secured around their upper edges, combined with the valves *f*, as and for the purpose specified.

3. The solid head P, formed from three or more pieces of wood, and firmly secured together by the band H, combined with the nozzle J K L, as and for the purpose specified.

4. In combination with a bellows, the cross-bar G, said bar being located near the rear end of the bellows, as and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ANTON H. WIESE.
JOHANNES E. RODER.

Witnesses:
E. O. FRINK,
G. A. RENNETT.