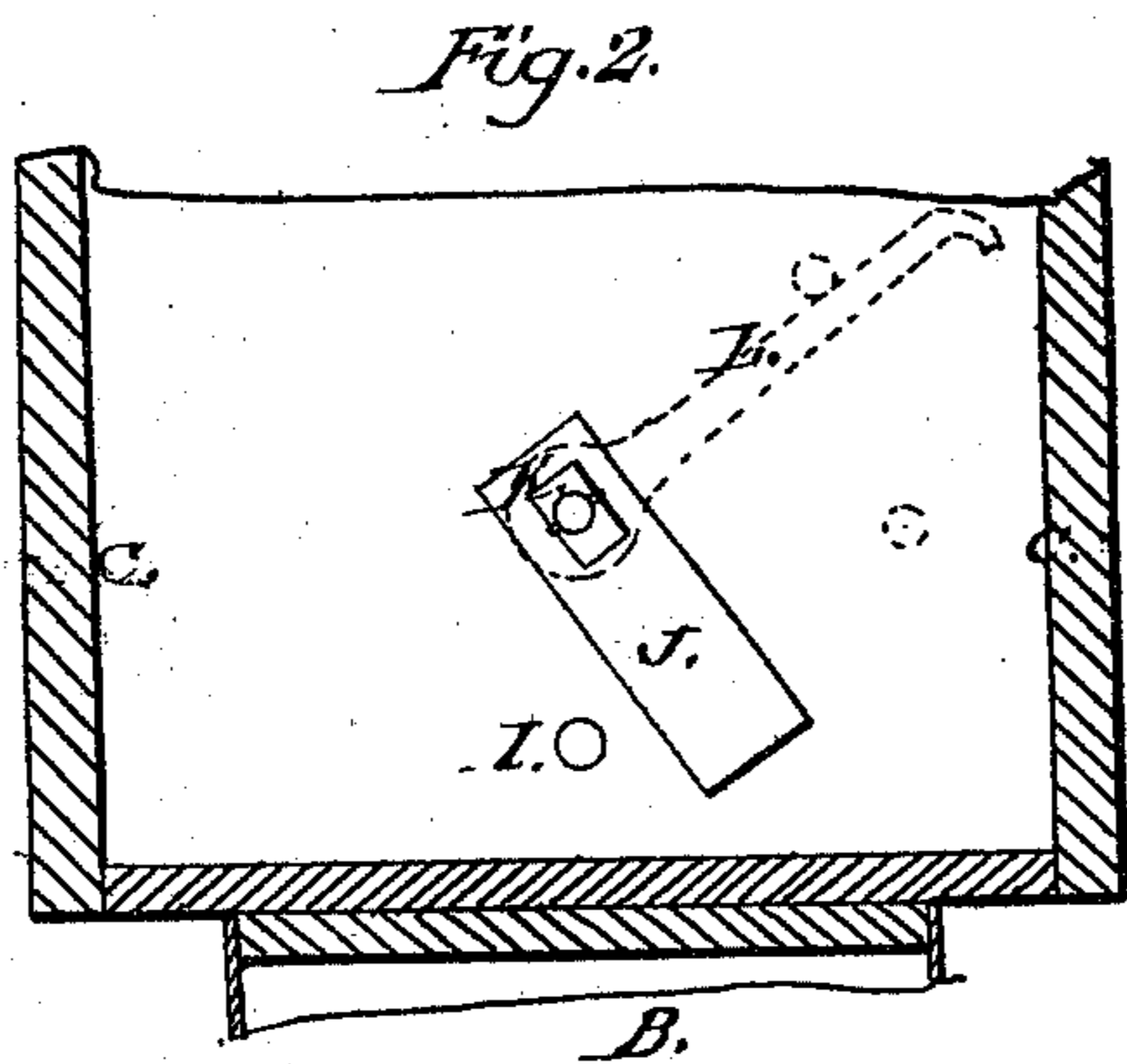
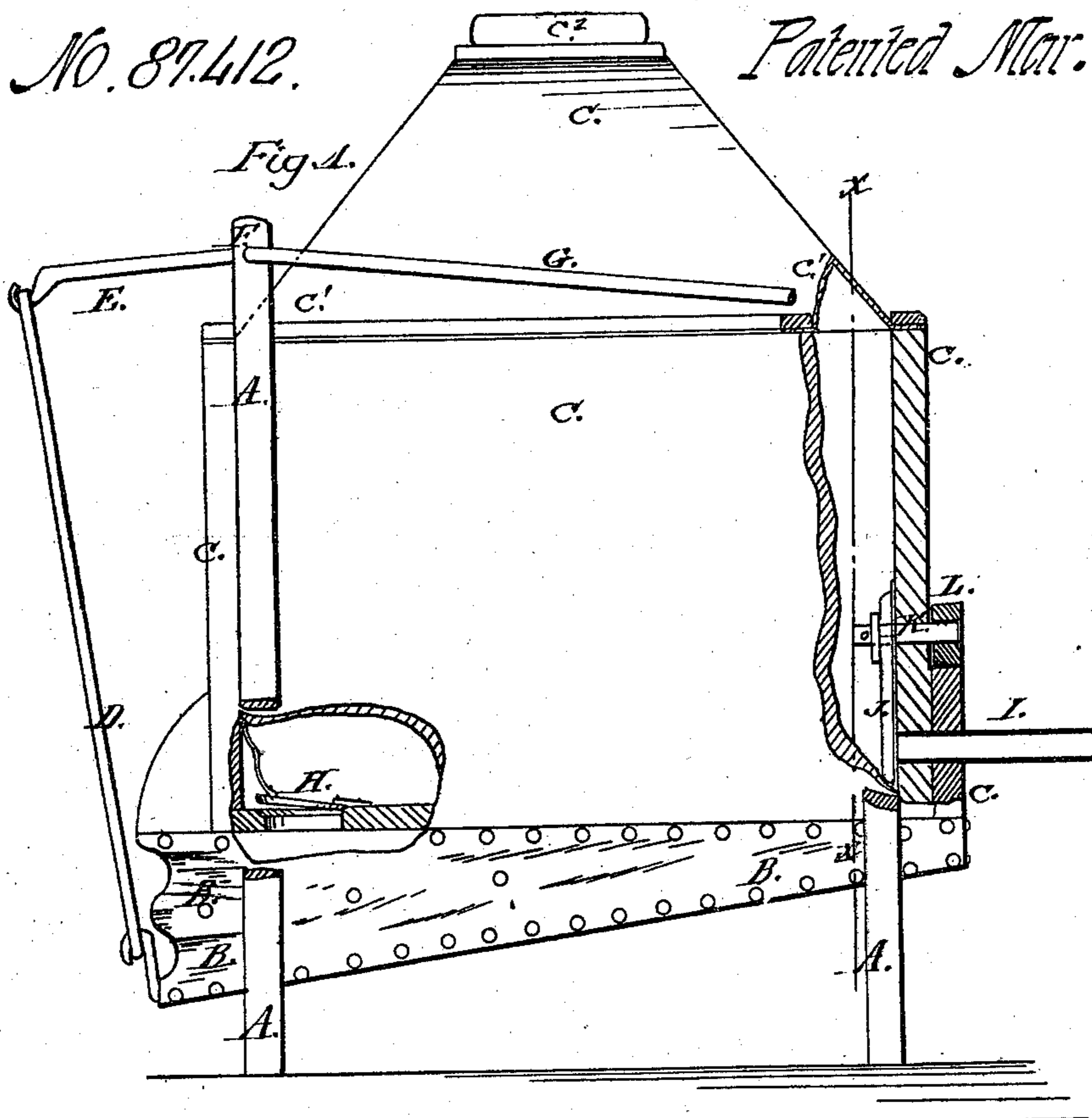


J. P. Hemmingsen,

Bellows.

No. 87,412.

Patented Mar. 2, 1869.



Witnesses:
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United States Patent Office.

J. P. HEMMINGSEN, OF MARSHALLTOWN, IOWA.

Letters Patent No. 87,412, dated March 2, 1869.

IMPROVEMENT IN SMITHS' BELLOWS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. P. HEMMINGSEN, of Marshalltown, in the county of Marshall, and State of Iowa, have invented a new and useful Improvement in Smiths' Bellows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my improved bellows, parts being broken away to show the construction.

Figure 2 is a detail sectional view of the same, taken through the line *x x*, fig. 1.

Similar letters of reference indicate like parts.

My invention has for its object to improve the construction of the ordinary smiths' bellows, so that it may receive and retain a supply of air, to be given off gradually, to keep up a blast upon the fire, to heat one piece of iron while the smith is working upon a piece previously heated, without the employment of a bellows-blower being necessary; and

It consists in the arrangement of parts, as will be hereafter more fully described.

A are the posts, which form the feet and frame of the apparatus.

B is an ordinary bellows, except that it is made without a nozzle.

The upper plate of the bellows B is stationary, and is securely attached to the bottom of the box C.

The lower or movable plate of the bellows B has the lower end of the connecting-rod D pivoted to its rear end, the upper end of which rod is pivoted to the end of the arm E, the other end of which is rigidly attached to the shaft F.

The shaft F works in bearings in the frame A, and to one of its ends is attached the end of the lever G, by which the bellows is worked.

The box-reservoir or chamber C is attached to the

frame A, and to its bottom is attached the top plate of the bellows B.

The top, *c'*, of the box C is made of flexible material, and in about the shape of the frustum of a pyramid, so that it may rise above or sink into the box C, according to the amount of air that may be in said box.

Upon the top of the flexible top or cover *c'* is placed a weight, *c''*, which, by its downward pressure, may force the air out of the box C in a steady stream.

A hole is formed through the bottom of the box C and the top plate of the bellows B, in which is placed a valve, H, opening upward, so that it may be opened by the inward pressure of air from the bellows B, and be closed by its own weight, or by the pressure of the air within said box C.

I is the nozzle or pipe, by which the air is conducted from the chamber C to the fire.

The inner orifice of the pipe or nozzle I is covered by the valve-plate *j*, attached to the inner end of the short shaft K, which passes out through the wall of the box C, and to its outer end is attached a lever or handle, L, by which the valve-plate J is operated, to open, close, or partially open or close the inner orifice of the nozzle or pipe I, to prevent or regulate the escape of the air through the said nozzle, as may be required.

Having thus described my invention,

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

The arrangement of the bellows B, having a fixed top plate, which forms the bottom of the air-chamber C, the weighted flexible cover *c'*, chamfered valve and seat H, nozzle I, valve-plate J, shaft K, and lever L, with each other, as herein described, for the purpose specified.

Witnesses:

J. P. HEMMINGSEN.

J. M. PARKER,
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H. KIME.