(No Model.) 3 Sheets—Sheet 1.

N. POULSON.

BLOWER AND HEAT REGULATOR.

No. 339,465. Fig. 1. Patented Apr. 6, 1886.

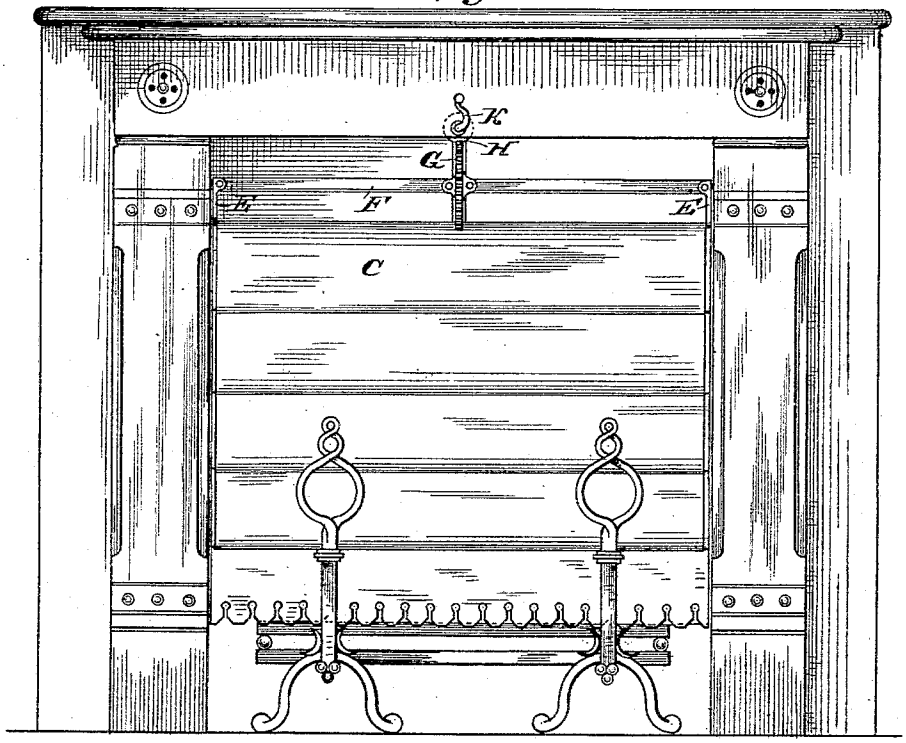
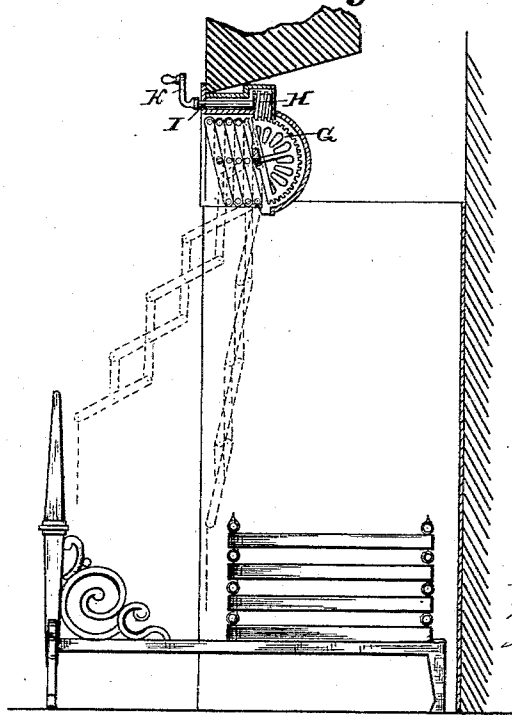


Fig. 2.



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(No Model.) 3 Sheets—Sheet 2.

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BLOWER AND HEAT REGULATOR.

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Fig. 3.

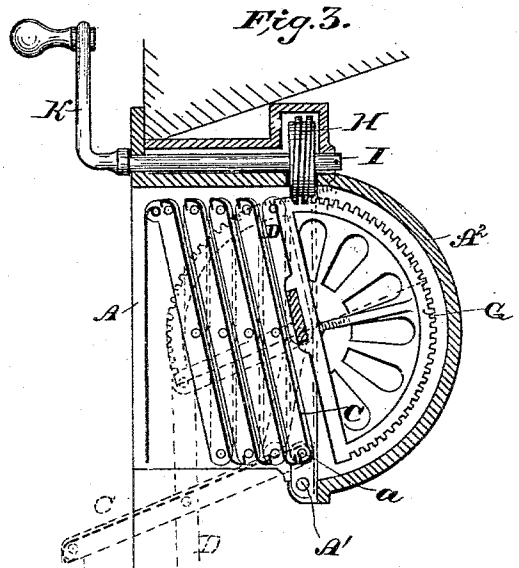
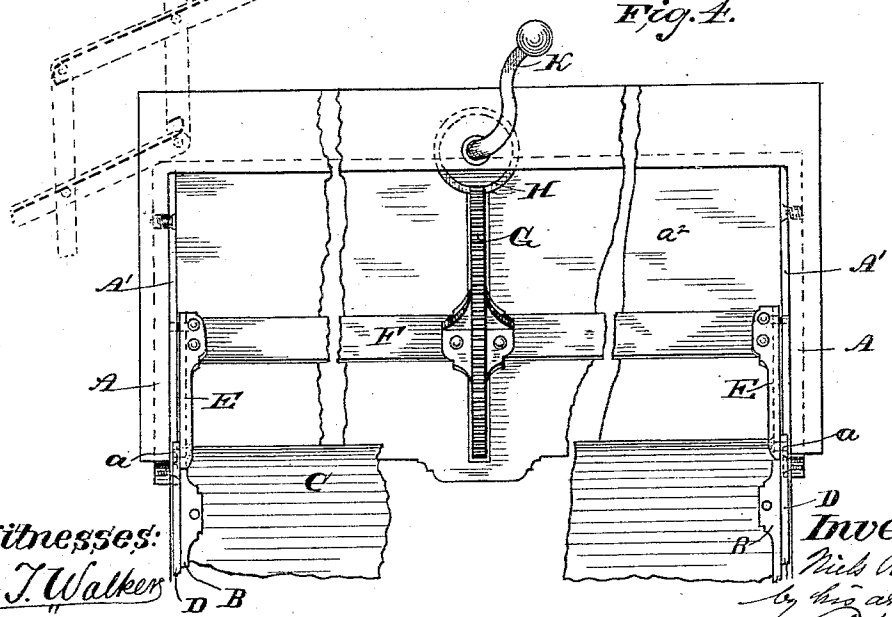


Fig. 4.



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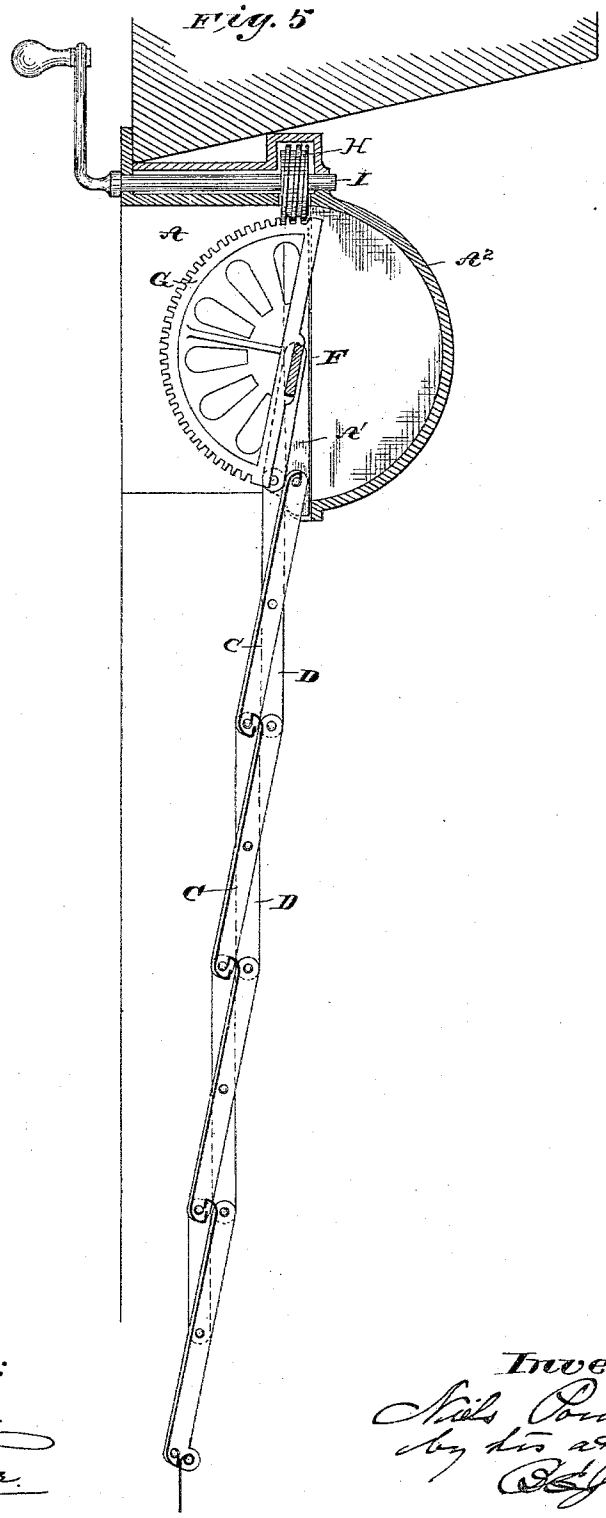
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BLOWER AND HEAT REGULATOR.

No. 339,465. Patented Apr. 6, 1886.

Fig. 5



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UNITED STATES PATENT OFFICE.

NIELS POULSON, OF BROOKLYN, NEW YORK.

BLOWER AND HEAT-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 339,465, dated April 6, 1886.

Application filed July 30, 1885. Serial No. 173,070. (No model.)

To all whom it may concern:

Be it known that I, NIELS POULSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Blowers and Heat-Regulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to combined blowers and heat-regulators, such as described in my United States Patent No. 309,799.

My improvement consists of certain features, specifically pointed out in the claims at the close of this specification, whereby the entire mechanism of the blower may be mounted on a case, so that the blower may be readily applied to any fire-place the front of which is capable of receiving the said case, the counter-weights described in my aforesaid patent being dispensed with and worm-gearing used, by preference, for folding and unfolding the blower.

In order that my invention may be clearly understood, I have illustrated in the annexed drawings, and will proceed to describe a practical form thereof.

Figure 1 represents a front elevation of a fire-place provided with my improved blower. Fig. 2 represents a vertical transverse section thereof, the dotted lines indicating different positions of the parts when the blower is unfolded either partially or wholly. Fig. 3 represents a vertical transverse section of the blower detached. Fig. 4 represents a front elevation of the upper portion of the blower in its unfolded condition. Fig. 5 represents a vertical transverse section of the blower detached, the blower being shown in its distended condition. Figs. 3, 4, and 5 are drawn on a larger scale than Figs. 1 and 2.

The same letters of reference indicate identical parts in all the figures.

The folding blower proper, which is constructed on the lazy-tongs principle, in substantial accordance with the blower described in my aforesaid United States patent, is attached to a case, A, which has an open front and an open bottom, so that the blower may be folded into and unfolded from it. The case A is made of a size to fit the opening of any given fire-place, and may be constructed with flanges, as shown, for convenience of securing it by screws against the fire-place front.

For convenience of construction the blower is attached to case A through the intervention of a pair of vertical bars, A′ A′. The levers B B, which carry what is the upper plate, C, of the blower when unfolded, are pivoted at *a a* to the lower ends of these bars A′, while the levers D D, centrally fulcrumed at the center of levers B B, are pivoted at their outer ends to lever-arms E E on a rock-bar, F, which is journaled at its ends in the bars A′ A′. After the blower has been attached to the bars A′ A′ in the manner shown and described, the said bars A′ A′ are secured in the case to the respective ends and close up to the rear side thereof. The lever-arms E are equal in length to one of the arms of any one of the lazy-tongs levers, and the distance from the pivots *a* to the axis of the rock-bar F is also equal to the length of one arm of the lazy-tongs lever. Rock-bar F is provided with a segmental worm-gear, G, which is engaged by the screw H on a cross-shaft, I, journaled in suitable bearimgs on the upper side of the case. A handle, K, may be applied to the front end of the shaft I for turning it. A well, A^2, may be formed on the rear side of the case A to cover the worm-gear G.

From the foregoing description it will be readily observed that the blower proper may be folded into the case and unfolded therefrom by the worm-gearing, and that said worm-gearing will firmly hold the blower in any position to which it may be adjusted thereby. I have shown the worm-gearing as applied at about the mid-length of rock-bar F, which I consider the most advantageous arrangement; but it is obvious that it may be applied at either end of the rock-bar. It is also obvious that the rock-bar may be operated by well-known mechanical means other than worm-gearing, although I prefer to use the latter. I prefer to use a separate case for the blower, because it facilitates its application to a fire-place; but the case may be omitted and the blower mounted directly on a suitably-constructed fire-place front.

I claim as my invention—

1. The combination, substantially as before

set forth, of the rock-bar provided with lever-arms, and the lazy-tongs blower, which is by two of its upper levers suspended from the fire-place and by its other two upper levers pivoted to the said lever-arms.

2. The combination, substantially as before set forth, of the rock-bar provided with lever-arms, the worm-gearing for operating the rock-bar, and the lazy-tongs blower, which is by two of its upper levers suspended from the fire-place and by its other two upper levers pivoted to the said lever arms.

3. The combination, substantially as before set forth, of the case, the rock-bar provided with lever-arms, and the lazy-tongs blower, which is by two of its upper levers pivoted to said case and by its other two upper levers pivoted to said lever-arms.

4. The combination, substantially as before set forth, of the case, the rock-bar provided with lever-arms, the worm-gearing for operating the rock-bar, and the lazy-tongs blower, which is by two of its upper levers pivoted to said case and by its other two upper levers pivoted to said lever-arms.

In testimony whereof I affix my signature in presence of two witnesses.

N. POULSON.

Witnesses:
C. M. EGER,
B. E. J. EILS.