

R. Lapham,

Bellows,

No 28,758,

Patented June 19, 1860.

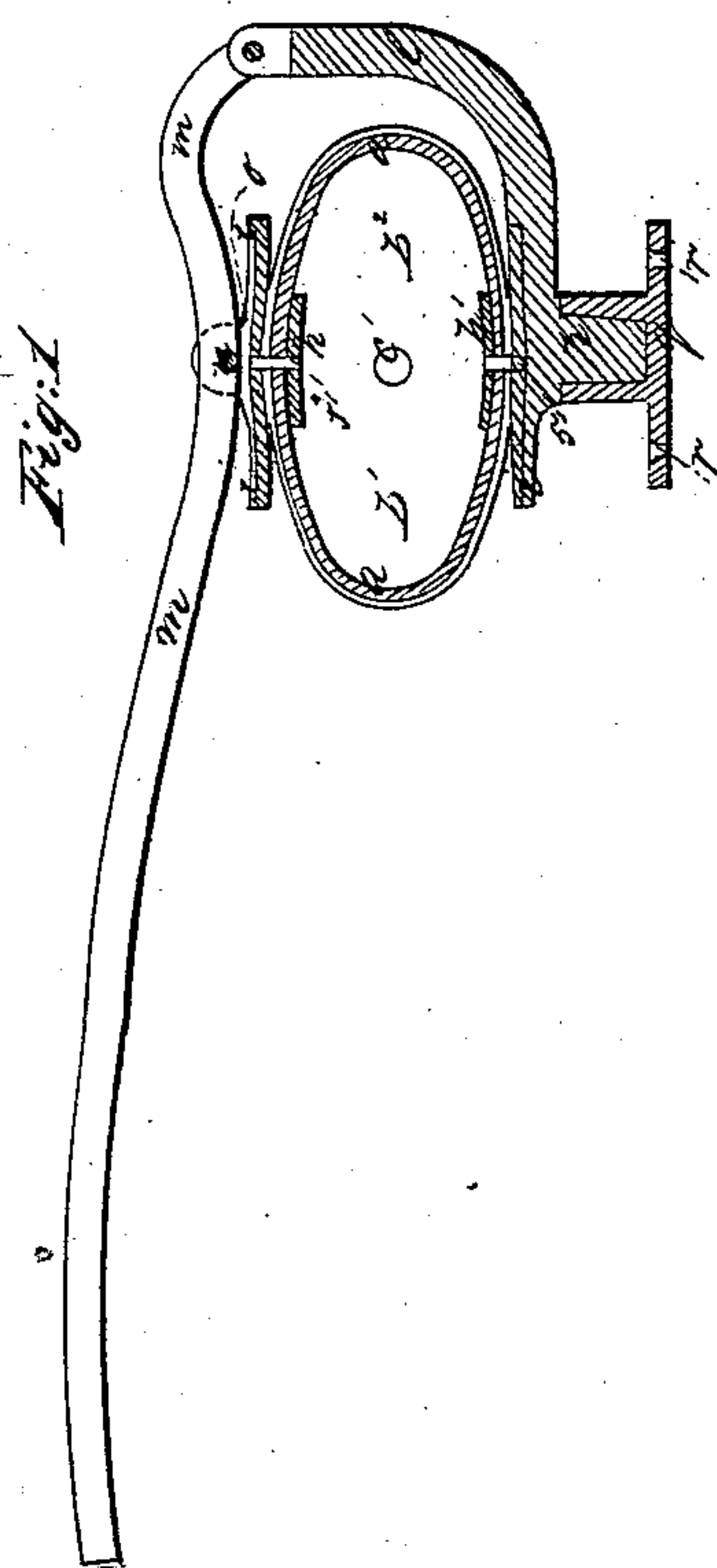
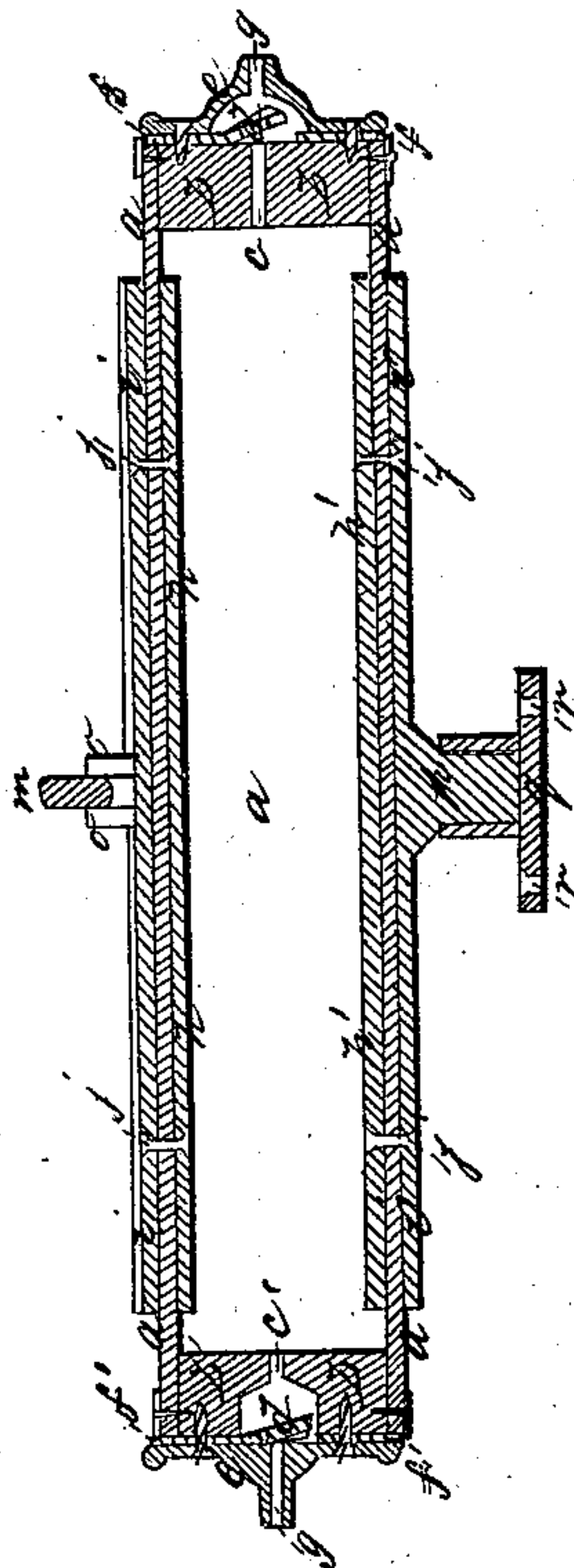


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

RUFUS LAPHAM, OF NEW YORK, N. Y.

BLOWER.

Specification of Letters Patent No. 28,758, dated June 19, 1860.

To all whom it may concern:

Be it known that I, RUFUS LAPHAM, of the city of New York, in the State of New York, have invented a new and useful Improvement in Blowers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, represents a longitudinal, vertical cross section, and Fig. 2, another vertical, central section at right angles to the one represented in Fig. 1.

Similar letters of reference in each of the figures indicate corresponding parts.

The nature of my invention consists in the application of an india rubber or flexible tube closed at both ends elliptically, and held and operated upon by plates and a lever, in such a manner as to produce a simple, effective and durable blower, not liable to get out of order and especially adapted to household purposes.

a, is a section of a tube made of rubber or other flexible airtight material. The cross section of the tube *a*, is elliptic made by having both ends of the tube inserted in or fastened around plates *b*, *b'*, of an elliptic outline.

The plate *b* is provided with a hole *c*, in its center, closed by a valve *d* opening outside, and plate *b'*, is made with a similar central hole *c'* closed by a valve *d'*, opening inside.

A head plate, *e'*, is screwed on to plate *b'*, suitable packing *f'*, being placed between the two plates so as to make the connection between the plates *e'*, *b'*, air tight and allow the air to communicate with the interior of tube *a*, only through the mouth, *g'*, in the center of headplate *e'*, and through the valve opening *c'*.

A headplate *e* (similarly constructed with the exception only that the mouth *g* has a funnel shaped extension at its inner end, to allow the valve, *d*, to play) is fastened to plate *b* in a manner similar to the one above described. Thus air is allowed to enter the interior of tube *a* through mouth *g'* of headplate *e'*, and valve hole *c'* and to escape through valve hole *c* and mouth *g* of headplate *e*.

Two long and narrow curved plates *h*, *h'*,

are placed inside of tube *a*, one against the top and the other against the bottom surface of the interior of the tube, and are fastened to two corresponding outside plates *i*, *i'*, by means of rivets *j*, so as to clamp the top and bottom part of the tube *a*, between a pair of plates *h*, *i*, and *h'*, *i'*, respectively. The inner plates sink into the curvature of the outer one, so as to leave no space between the tube and the plates when brought together.

The length of each of the outside plates *i*, *i'*, is equal to or greater than of the inside plates *h*, *h'*, but the outside plates *i*, *i'*, are made broader than the inner plates. The object of this is to confine the tube (while being compressed) between them and thus prevent the tube from expanding at both sides of the plates *i*, *i'*; as would be the case if the tube were compressed between the inner and outer plates of equal width.

An arm *l* extending from the plate *i'*, serves as a fulcrum for a hand lever *m*, the shorter end of which hand lever is pivoted to the top plate *i* at *n*, the plate, *i*, being provided with a bracket or brackets *o*, *o*, for the purpose.

It will be seen that, on operating the outer end of the hand lever, the upper (movable) pair of plates *i*, *h*, can be moved to and from the lower (stationary) plates *i'*, *h'*, so that, during this reciprocating motion, the air will alternately be drawn in through mouth, *g'*, and valve hole *c'*, and expelled through valve hole *c*, and mouth *g*, as set forth in the above specification. The lower plate *i'*, is also provided with a central tenon *p*, fitting into a suitable step or box *q*, which may be fastened in any suitable place, by means of screws *r*. This attachment (by means of a separate step or box) is very cheap and far more convenient than any with which I am familiar.

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

The application of an india rubber or flexible tube closed at both ends, elliptically, and held and operated upon by plates and a lever substantially as and for the purposes set forth.

RUFUS LAPHAM.

Witnesses:

R. W. FENWICK,
G. YORKE AT LEE.