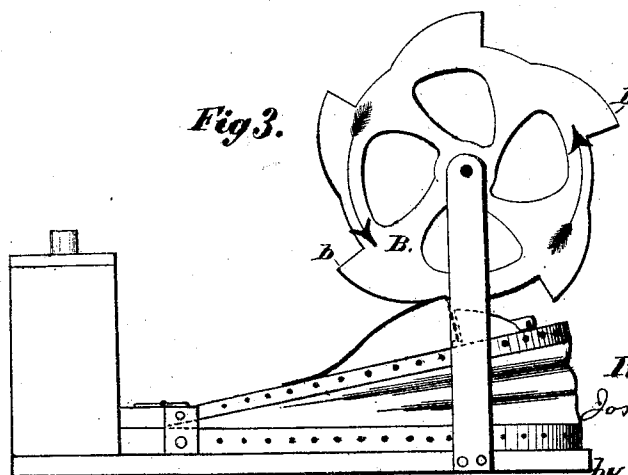
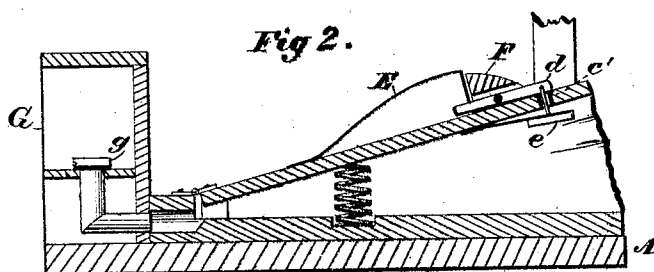
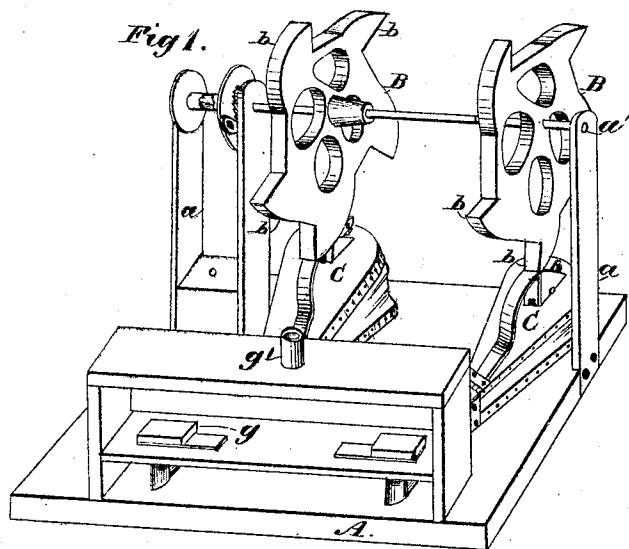


J. H. BEAN.
Blowers for Gas-Engines.

No. 140,397.

Patented July 1, 1873.



Witnesses;
Samuel G. Clark
R. H. Dyer.

Inventor.
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UNITED STATES PATENT OFFICE.

JOSEPH H. BEAN, OF CINCINNATI, OHIO.

IMPROVEMENT IN BLOWERS FOR GAS-ENGINES.

Specification forming part of Letters Patent No. **140,397**, dated July 1, 1873; application filed April 21, 1873.

To all whom it may concern:

Be it known that I, JOSEPH H. BEAN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Blowers for Gas-Engines; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

This invention is a blower for gas-machines, which, by means of its peculiar construction, is adapted to give a steady blast of air to the machine, and thus avoid the flicker incidental to the ordinary means employed for the purpose.

In the drawings, Figure 1 represents a perspective view of my improved machine; Fig. 2, a central sectional elevation of one of the bellows; and Fig. 3, a side elevation of the complete machine.

To enable others skilled in the art to make and use my invention I will now proceed to fully describe its construction.

A represents any suitable base, from which rise the standards *a a*, supporting the shaft *a'*. B B represent wheels properly located upon the shaft *a'*, which are provided on their peripheries, at regular intervals, with the cams *b b*, as shown. C C represent bellows of identical construction, which are located in line below the cam-wheels, as shown. The bellows in general form resemble those of ordinary construction, but have novel features, as follows: *c* represents a hinged valve within the bellows, which is adapted, by means of an elastic covering, to close the tube *c'* of the valve-opening, the tube being provided with a knife-edge, which is embedded in the soft or elastic substance when the valve is closed, by which means the passage of air is effectually prevented. *d* represents a pivoted lever located on top of the bellows, one end of which is attached, by means of a connecting-rod, to the valve, as shown, the other end resting in a recess in the free end of spring E, as shown. F represents a cam-block, the vertical end of which is placed next to the bent end of the spring E, as shown. G represents an air-chamber, to which air is supplied from the bellows through proper openings, provided with stop-valves *g g*, as shown. *g'* represents the opening through which the air is discharged to the machine.

The operation of my improved machine is as follows: Motion being communicated to the main shaft in any proper manner, the cam-wheels are caused to revolve and actuate the bellows, each cam in its turn striking the spring E and pressing it down, and with it also the bellows, by which means the air is forced into the air-chamber. The depression of the spring causes it, by means of its recess, to force down the end of the lever, by which means the valve is drawn close to its seat, while the bellows is collapsing, so that the escape of air through the valve is made impossible. By means of the cam-block the return of the bellows to its expanded condition is made gradual and easy, so that no sudden shock is caused to give a flicker to the air. When the cam moves away from the spring the valve is free to open to admit the air. The cam-wheels are so arranged that each bellows is worked alternately, by which means a steady stream of air is driven into the air-chamber. The stop-valves in the air-chamber effectually prevent the return of air.

If desired, the air-chamber may be made elastic, in which case it would act as an air-meter. If desired also, the cams may be provided with friction-rollers. If desired also, the air may be heated in the air-chamber in any manner.

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

1. In a blowing-machine of substantially the described construction, the combination of the cam-wheels, the spring, and the lever controlling the valve, substantially as described.

2. In a blowing-machine of substantially the described construction, the combination of the cam-wheels and regulating cam-block, substantially as described.

3. In a blowing-machine of substantially the described construction, the combination of cam-wheels, spring-lever controlling the valve, and cam-block, as described.

This specification signed and witnessed this 16th day of April, 1873.

J. H. BEAN.

Witnesses:

A. V. STEWART,
R. N. DYER.