

F. A. FISHER & W. H. DARBY.

Bellows for Carbureting Apparatus.

No. 148,603.

Patented March 17, 1874.

Fig. 1.

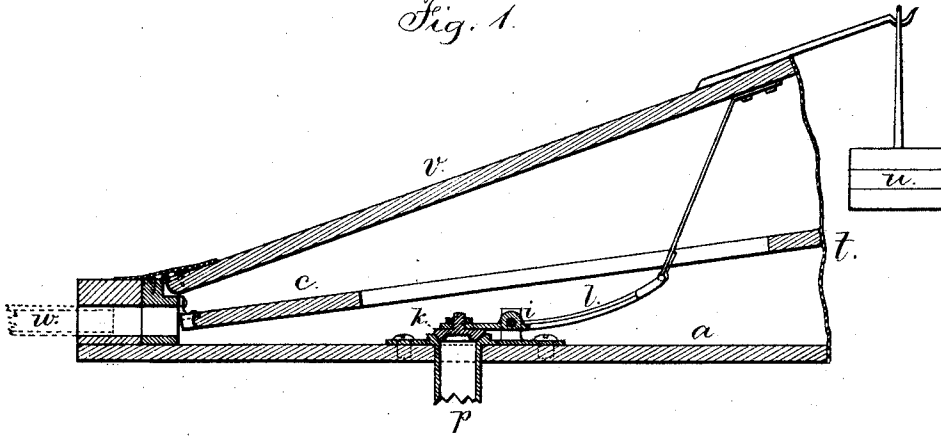
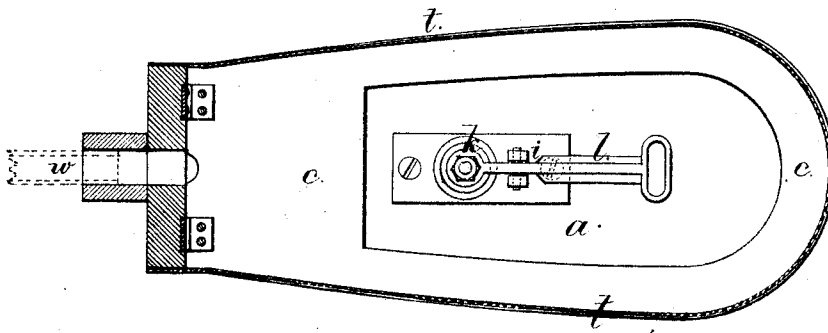


Fig. 2.



Witnesses,
Chas. H. Smith.
Harold Serrell.

Inventors.
Fisher Ames Fisher.
William H. Darby.
per Lemuel M. Serrell.
att'y

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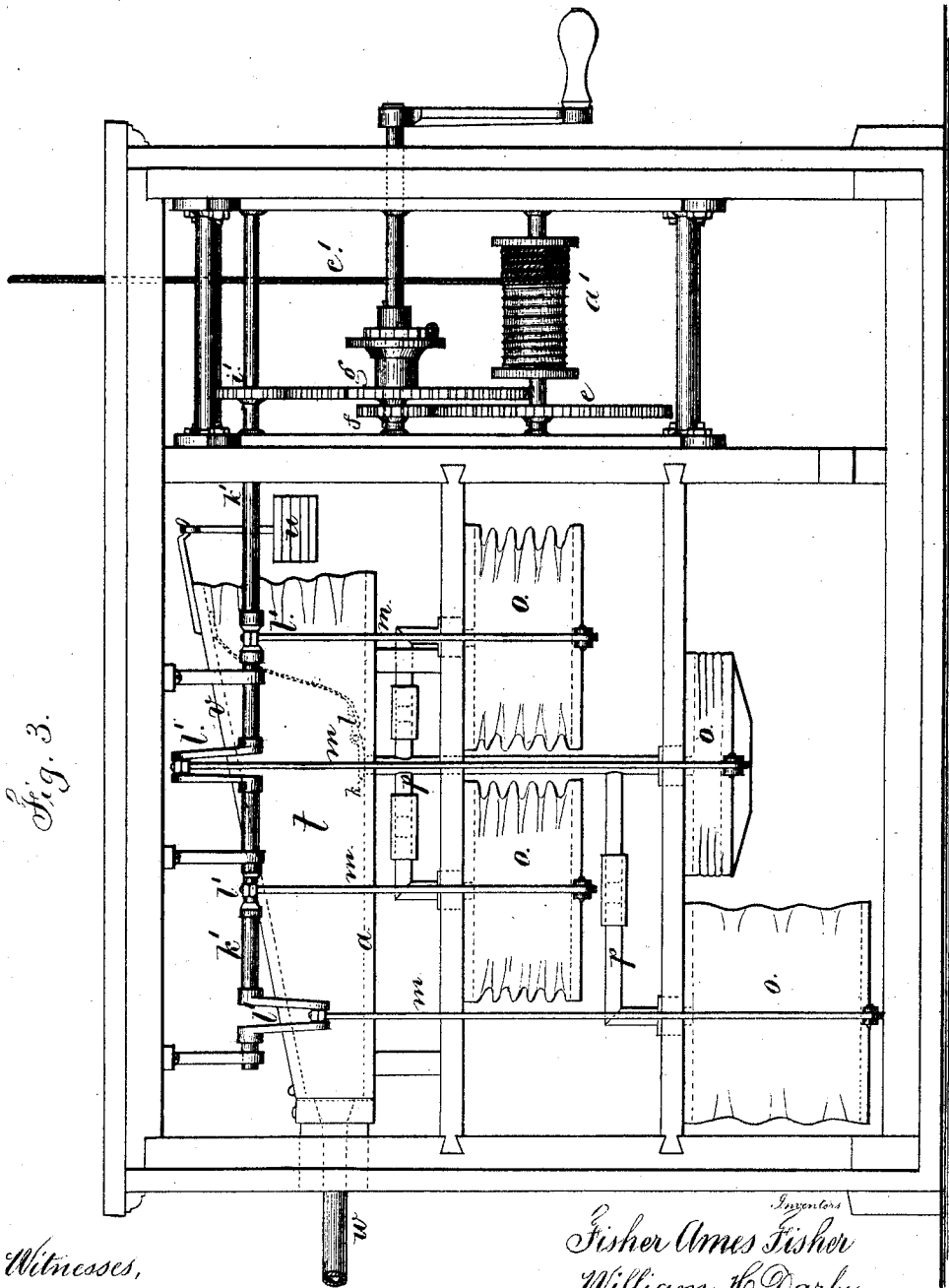


Fig. 3.

Witnesses,

Chas H. Smith
 Harold Serrell

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 Fisher Ames Fisher
 William H. Darby.
 per Lemuel W. Serrell
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UNITED STATES PATENT OFFICE.

FISHER AMES FISHER AND WILLIAM H. DARBY, OF ELIZABETH, NEW JERSEY, ASSIGNORS TO FISHER & TALLMAN, OF SAME PLACE.

IMPROVEMENT IN BELLOWS FOR CARBURETING APPARATUS.

Specification forming part of Letters Patent No. **148,603**, dated March 17, 1874; application filed October 14, 1873.

To all whom it may concern:

Be it known that we, FISHER AMES FISHER and WILLIAM H. DARBY, of Elizabeth, in the county of Union and State of New Jersey, have invented an Improvement in Bellows for Carbureting Apparatus and other uses, of which the following is a specification:

Difficulty has heretofore arisen in supplying atmosphere with regularity to carbureting apparatus, and preventing the flickering of the light by variations in pressure when the supply is open or when it is stopped. In other machines, where a constant supply of air is desirable, a similar difficulty arises, such as in organs, &c.

Our invention consists in a valve applied at the inlet-pipe of the reservoir-bellows, and connected to the moving board or diaphragm in such a manner that the pressure upon such diaphragm closes the valve by leverage, and arrests the further inlet of air without increased accumulation of pressure, the simple rising of such bellows-board effecting said object.

When this reservoir or storage bellows is used with pumping-bellows, and mechanism for actuating them, the movement of such bellows is either lessened or stopped, according to the resistance of such valve to the movement of the air.

In the drawing, Figure 1 is a vertical section of the said bellows, and Fig. 2 is a sectional plan of the same. Fig. 3 illustrates a series of bellows connected with the reservoir-bellows.

The bottom board *a*, top board *v* or diaphragm, and intermediate frame *c*, are of usual character, and receive the leather or other flexible covering or sides *t*. The exit nozzle or pipe is at *w*, and the inlet pipe or tube *p* is

connected to the bottom board *a*, and a valve, *k*, is fitted to a seat at the end of this pipe *p*. The lever *l* swings upon the fulcrum *i*, and is connected, at the longer end, to the diaphragm or top board *v*, so as to rise and fall with the same. The shorter end of the lever *l* operates upon the valve *k*, and closes the same, and prevents air passing in until the valve is partially relieved by air passing out of this reservoir or storage bellows, and the top or diaphragm *v* descends.

It is preferable to employ the weights *u* and arm to give uniformity of pressure to the contents of the bellows, whether the bellows is full, or only partially full.

We have shown in Fig. 3 an arrangement of four ordinary bellows, *o*, operated by the shaft *k'*, cranks *l'*, and rods *m*, successively, so that the supply through the pipes *p* will be constant; but when the valve *k* is closed, or partially closed, the shaft *k'* will move slowly or be stopped by the resistance of the bellows. The drum *a'*, cord *c'*, and weight acting through the gearing *e f g i'*, are shown for rotating this shaft *k'*.

We claim as our invention—

The lever *l*, connected at one end to the moving board or diaphragm of the reservoir-bellows, in combination with the valve *k*, applied to the inlet-pipe *p* to such bellows, and operated upon by the short end of such lever, as set forth.

Signed by us this 21st day of August, A. D. 1873.

FISHER AMES FISHER.
WILLIAM H. DARBY.

Witnesses:

WM. M. TALLMAN,
HOWARD RICHARDS.