

No. 652,379.

Patented June 26, 1900.

J. M. TRUBY & R. E. FOXWORTH.

FUMIGATOR.

(Application filed Nov. 2, 1899.)

(No Model.)

Fig. 1.

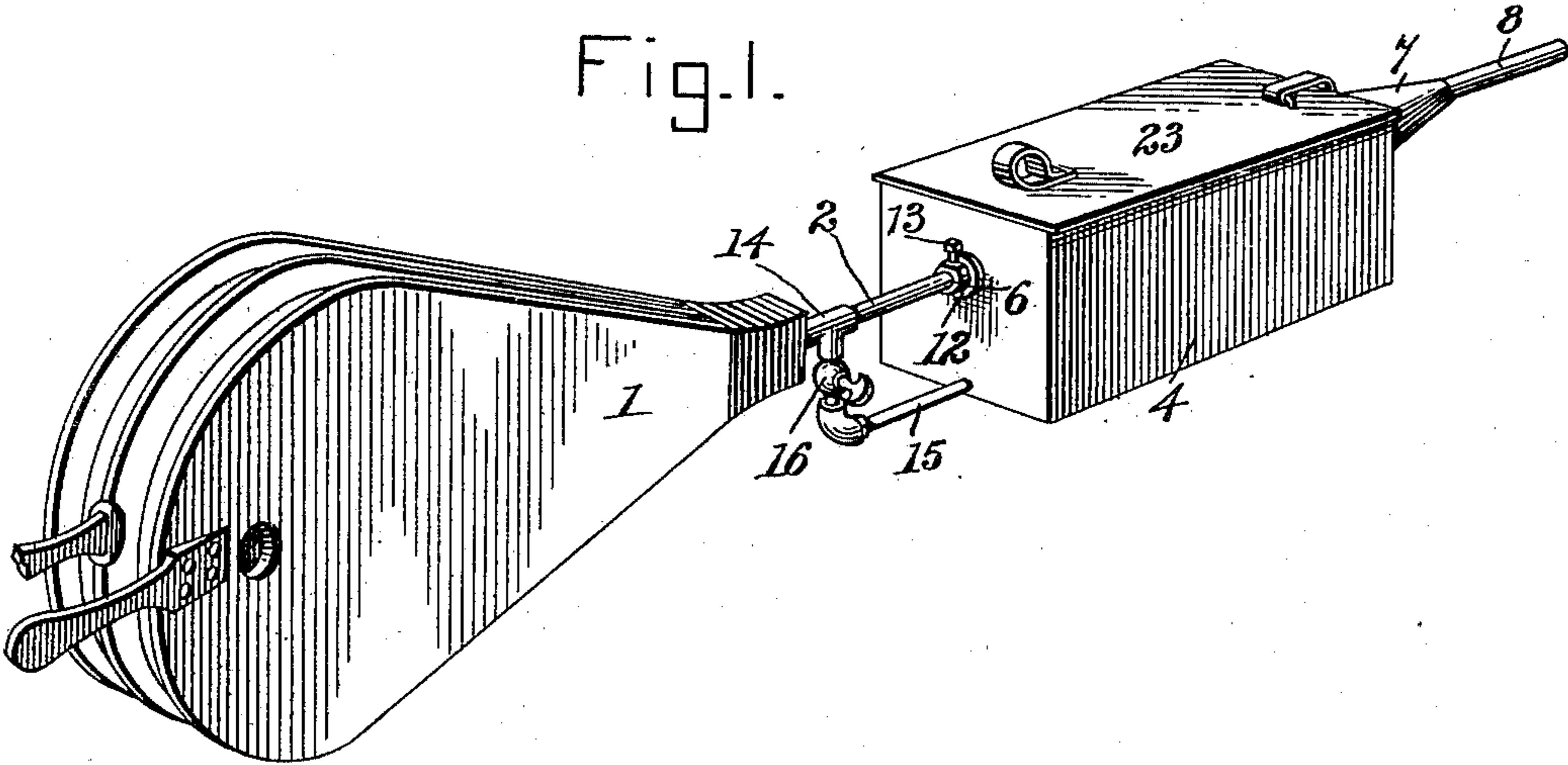


Fig. 2.

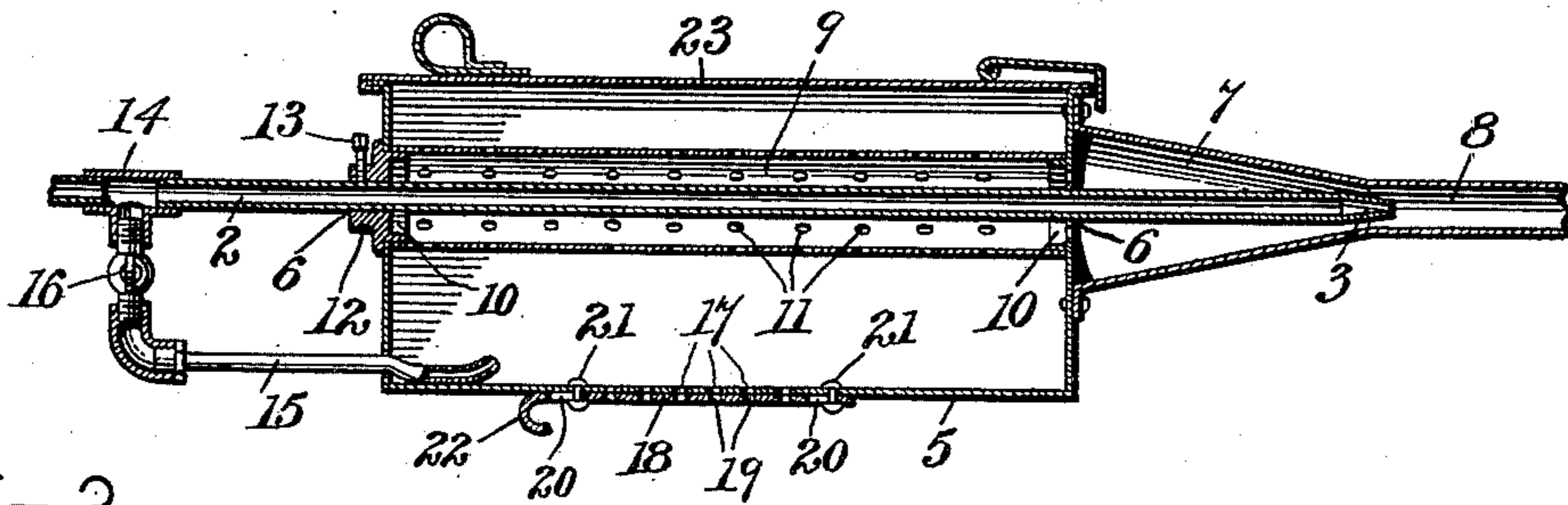


Fig. 3.

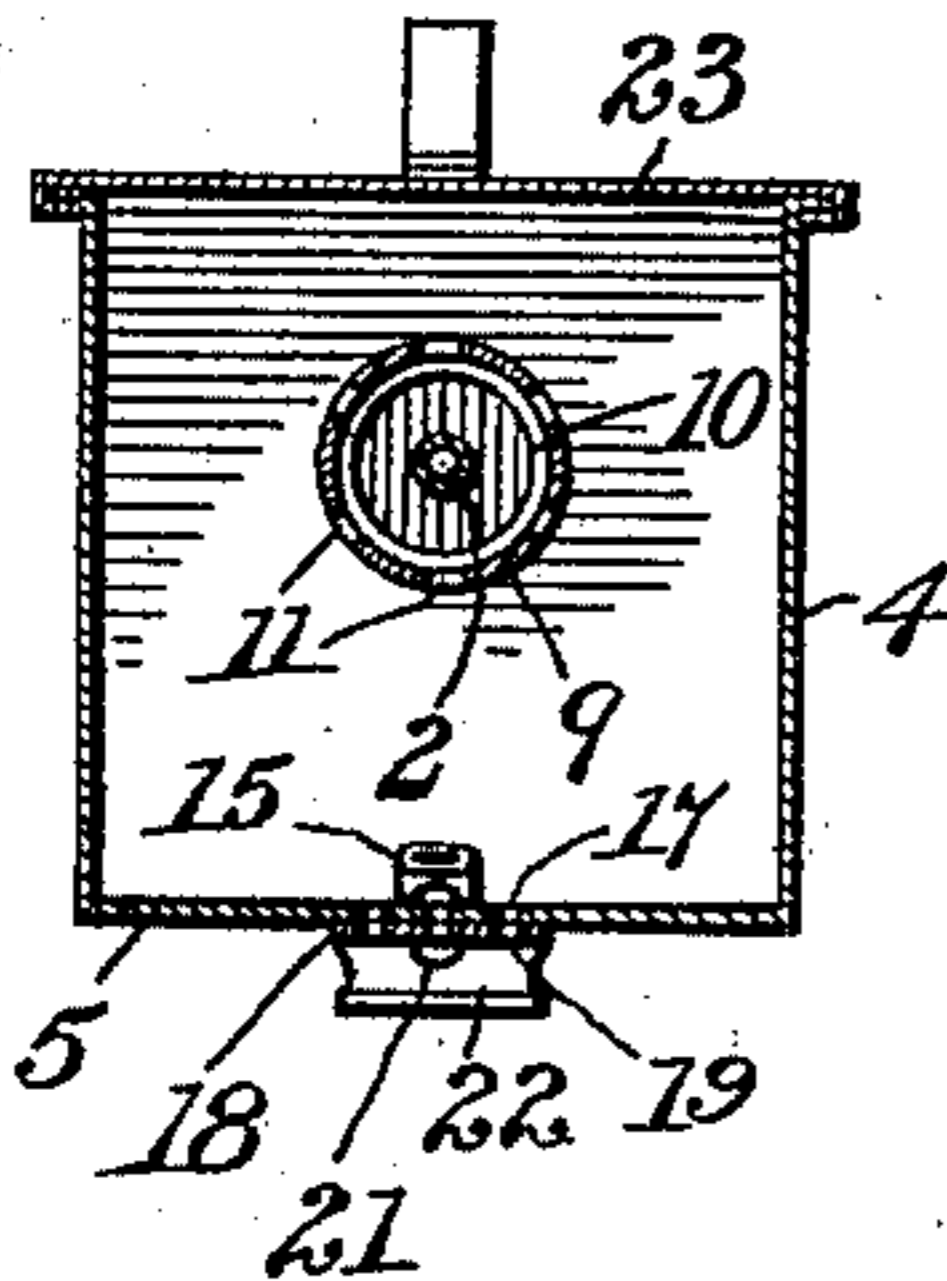
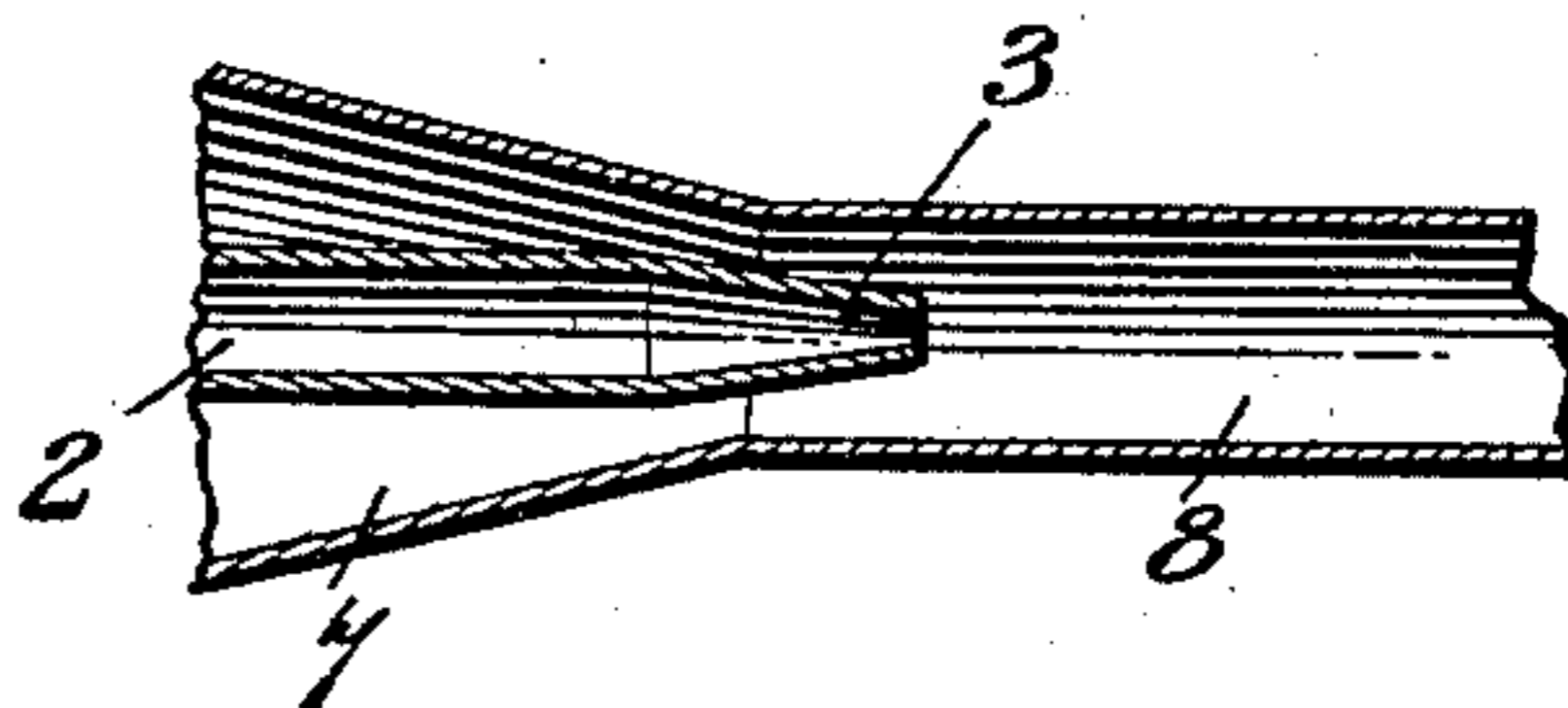


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JACOB M. TRUBY, OF STARKE, AND RICHARD E. FOXWORTH, OF BROOKLYN,
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FUMIGATOR.

SPECIFICATION forming part of Letters Patent No. 652,379, dated June 26, 1900.

Application filed November 2, 1899. Serial No. 735,620. (No model.)

To all whom it may concern:

Be it known that we, JACOB M. TRUBY, residing at Starke, in the county of Bradford, and RICHARD E. FOXWORTH, residing at Brooklyn, in the county of Clay, State of Florida, citizens of the United States, have invented a new and useful Fumigator, of which the following is a specification.

This invention relates to fumigators; and the object in view is to provide a device by means of which trees, plants, flowers, &c., may be thoroughly fumigated in such manner as to destroy bugs and other insect life without in any way damaging or injuring the blossoms and other parts of the plants. The apparatus is intended for hand use, and the discharge end of the device may be readily moved from place to place for directing a current of smoke from the fumigator upon the blossoms, leaves, or other portions of the plants.

The detailed objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in a fumigator embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a fumigator complete constructed in accordance with the present invention. Fig. 2 is a vertical longitudinal section through the same, omitting the bellows. Fig. 3 is a cross-section taken through the fire-box. Fig. 4 is a detail longitudinal section showing the relation of the contracted end of the blowpipe to the discharge-nozzle.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

The fumigator contemplated in this invention comprises a bellows 1 or other suitable hand device whereby a strong current of air may be developed for use in connection with the fumigating apparatus. This bellows may be constructed in any usual or preferred manner. Leading outward from the bellows is a blowpipe of suitable length, the extremity of which is contracted to form a conical discharge end or nipple 3. The blowpipe 2 passes

longitudinally through the fire-box 4, which for convenience is shown of rectangular form, but which may be constructed in any desired shape or size, according to requirements. It is, however, preferred to provide the fire-box with a flat bottom 5, upon which the apparatus may rest when out of use. The pipe 2 passes entirely through the fire-box, being received in openings 6 in the opposite ends thereof.

Connected to the outer end of the fire-box 4 is a conical spout or nozzle 7, the larger end of which is connected to the fire-box and the outer or reduced end of which has connected thereto a tubular extension 8, adapted to receive one or more additional lengths of pipe when the apparatus is to be used for fumigating trees of considerable height in order that the discharge end may be carried to an elevated point. The discharge end of the blowpipe is located in the reduced end of the nozzle and is of slightly-smaller size, so as to leave a surrounding annular space, through which the air and smoke from the fire-box are caused to pass by suction created by the current of air developed by the blowpipe and projected from the discharge end thereof. From the foregoing description it will be seen that the fire-box is supported upon the blowpipe, the latter being in turn supported by the bellows.

Within the fire-box and surrounding the blowpipe 2 is a perforated cylinder or tube 9. This perforated tube extends longitudinally the entire length of the fire-box, being supported at its ends upon annular collars or flanges 10, which project inward from the end walls of the fire-box. The diametrical size of the perforated tube is such as to leave an annular space between it and the blowpipe in order that the smoke and products of combustion may be sucked in through the openings 11 of the tube and caused to pass outward through the nozzle and discharge end of the tubular extension thereof. The perforated tube or cylinder also protects the blowpipe from the action of the products of combustion and tends to keep said blowpipe cool.

Projecting from the inner end of the fire-box is a sleeve or hollow boss 12, through which the blowpipe passes, and extending through said sleeve is a binding-screw 13,

which impinges against the blowpipe and serves to retain the fire-box thereon in a fixed position. By loosening said binding-screw the fire-box may be detached from the blow-
 5 pipe when it is necessary to clean or repair the apparatus or when it is desired to render the device more compact for transportation or storage.

The blowpipe 2 is provided at a suitable
 10 point between the bellows and fire-box with a T-shaped coupling or union 14, from which a draft-pipe 15 leads through the adjacent end of the fire-box into the bottom thereof, and the object of which is to enable a current
 15 of air to be forced from the bellows into the bottom of the fire-box for promoting combustion, especially when starting the apparatus. The draft-pipe is provided at a suitable point with a cock or controlling-valve 16, by means
 20 of which when the fire has been properly started said draft-pipe may be cut off and the full current developed by the bellows caused to pass through the blowpipe. The fire-box is also provided in its bottom with a
 25 plurality of openings 17, forming a grated surface, for enabling the fire to maintain itself after the draft-pipe has been cut off. The draft-openings in the bottom of the box are covered by means of a damper 18, having
 30 openings 19, similarly arranged and adapted to slide beneath the bottom of the fire-box. The damper is provided with slots 20, which work upon headed pins or studs 21 for guiding, steadying, and holding in place the dam-
 35 per. The damper is also provided with a suitable finger-grip 22, by means of which it may be turned for opening or closing the draft-openings in the bottom of the fire-box. The box is also provided with a suitable cover 23,
 40 which preferably has a tongue-and-groove sliding engagement therewith and which will tightly close the box and prevent the products of combustion from passing therefrom at points other than the discharge-nozzle.

In operation a fire is built in the fire-box, and any suitable fumigating substance may be used in building the fire or may be added to the fire after the same is kindled. The fumigating substance may consist of tobacco-
 50 stems or other material, the fumes of which are obnoxious or fatal to the particular insects upon which the fumes are to be directed. After the fire has been properly kindled and the cover placed on the box the bellows is
 55 operated and the draft-pipe left open, so that a current of air is directed to the bottom of the box. After combustion has been thoroughly promoted in this way the cut-off cock is shut, and thereafter the entire blast or
 60 current of air is directed through the blowpipe. By reason of the discharge end of the blowpipe being reduced to leave only a very small opening the force of the air passing through the reduced end of the discharge-
 65 nozzle is such as to create a suction in the nozzle, which results in drawing inward through the perforations of the tube or cylinder

within the box the products and fumes and forcing them from the discharge end of the apparatus against and upon the insects, to
 70 the destruction of the latter.

Any desired form of bellows or other apparatus may be employed to develop the necessary blast of air; but it is preferred to use an
 75 ordinary bellows, and preferably one with a continuous action, as this enables the apparatus to be manufactured as a portable fumigator and to be operated entirely by hand. The fire-box may also be of any de-
 80 sired size or shape, according to requirements or other conditions, and a discharge tube or pipe of the necessary length may be slipped upon the tubular extension of the nozzle in a manner that will be readily understood
 85 without illustration or further description.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described apparatus will be readily apparent to those skilled in the art
 90 without further description, and it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages
 95 of this invention.

Having thus described the invention, what is claimed is—

1. In a fumigator, a box in which the fumes are developed provided with a discharge-noz-
 100 zle, in combination with a blowpipe passing through said box and terminating in the nozzle, substantially as described.

2. In a fumigator, a fume-box having a contracted discharge-nozzle, in combination with
 105 a blowpipe extending through the box and having its discharge end contracted and located within the contracted end of the discharge-nozzle, substantially as described.

3. In a fumigator, a fume-box, and a con-
 110 ical discharge-nozzle therefor terminating in a tubular extension, in combination with a blowpipe extending through the fume-box into the nozzle and terminating in a contracted end which lies within the reduced end
 115 of the nozzle, and the external diameter of which is less than the internal diameter of the nozzle at its discharge end, substantially as described.

4. In a fumigator, a fume-box having a discharge-nozzle, a blowpipe passing through the
 120 box and terminating in the nozzle, and a draft-pipe leading from the blowpipe upon the exterior of the box into the bottom of the box, substantially as and for the purpose specified.

5. In a fumigator, a fume-box having a dis-
 125 charge-nozzle, in combination with a blowpipe leading through the box and terminating in the nozzle, and a valved draft-pipe leading from the blowpipe exteriorly of the box into the bottom of the box, substantially as and
 130 for the purpose specified.

6. In a fumigator, a fume-box having a discharge-nozzle, in combination with a blowpipe
 passing entirely through the fume-box and

terminating in the nozzle, and a perforated tube inclosing the blowpipe within the box and communicating at one end with the discharge-nozzle of the box, substantially as described.

5 7. In a fumigator, a fume-box having a discharge-nozzle, in combination with a blowpipe passing through the fume-box and terminating in the nozzle, and a protecting-tube surrounding the blowpipe within the box, said
10 tube having openings placing it in communication with the box, and also being in communication at one end with the discharge-nozzle of the box, substantially as described.

15 8. In a fumigator, the combination with a

blowpipe having a blast device at one end, of a fume-box having a discharge-nozzle at one end, the said box being mounted upon and supported by said pipe which passes through the box and terminates in the nozzle, substantially as described. 20

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JACOB M. TRUBY.

RICHARD E. FOXWORTH.

Witnesses:

W. E. WAINRIGHT,

CARLYLE PEEK.