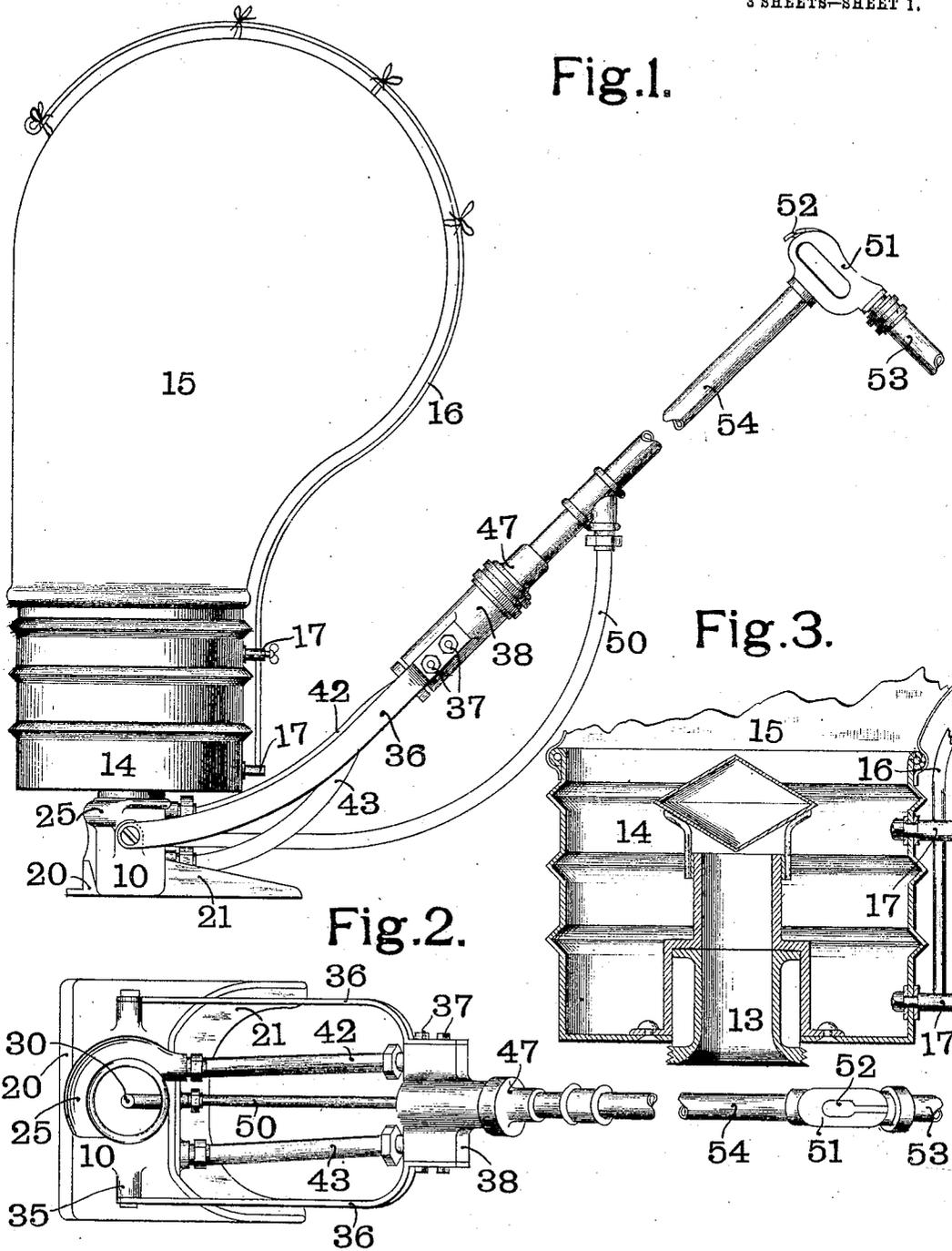


No. 870,325.

PATENTED NOV. 5, 1907.

J. S. THURMAN.
PNEUMATIC RENOVATOR.
APPLICATION FILED NOV. 5, 1904.

3 SHEETS-SHEET 1.



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3 SHEETS—SHEET 2.

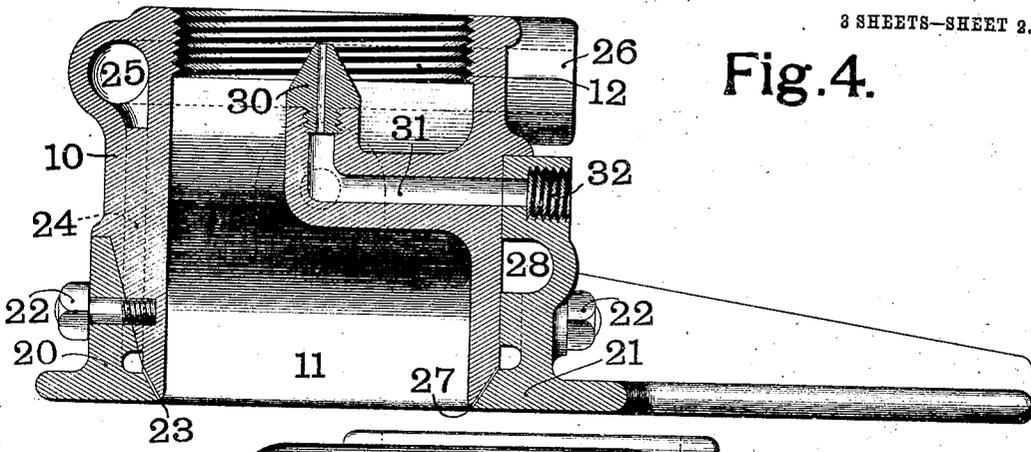


Fig. 4.

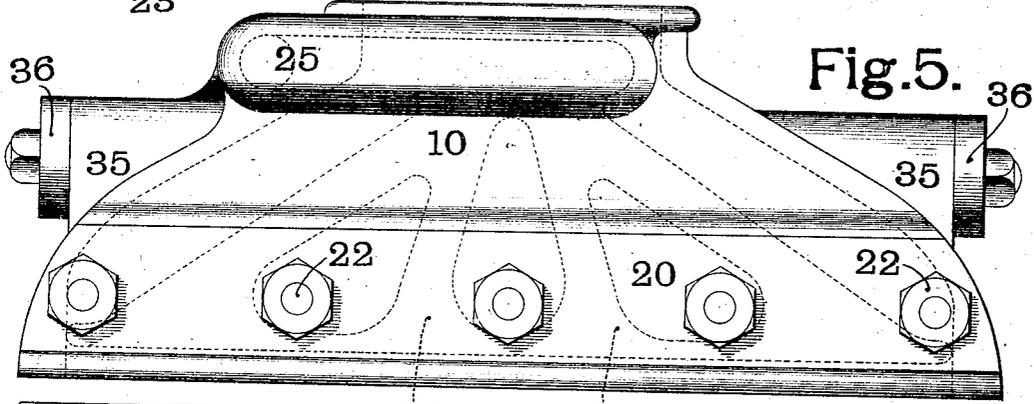


Fig. 5.

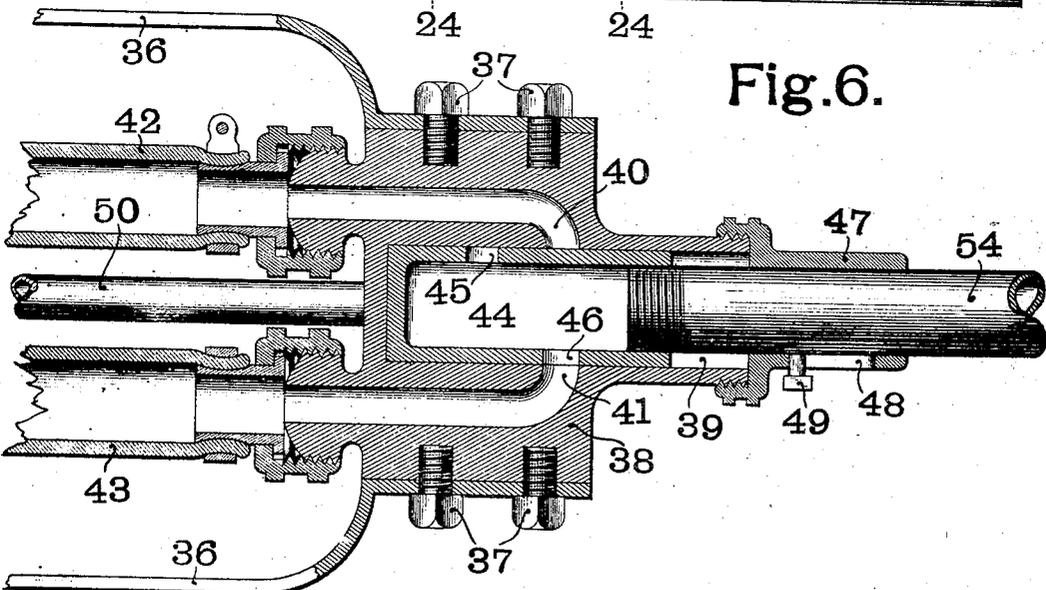


Fig. 6.

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3 SHEETS—SHEET 3.

Fig. 7.

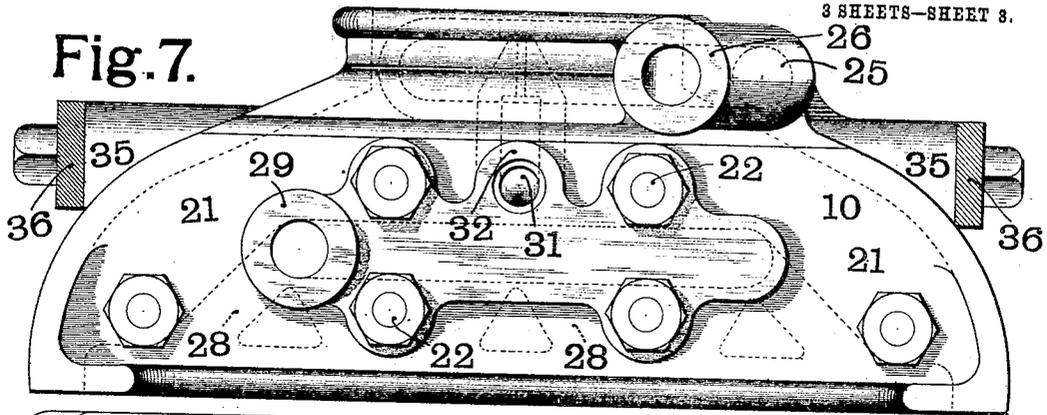
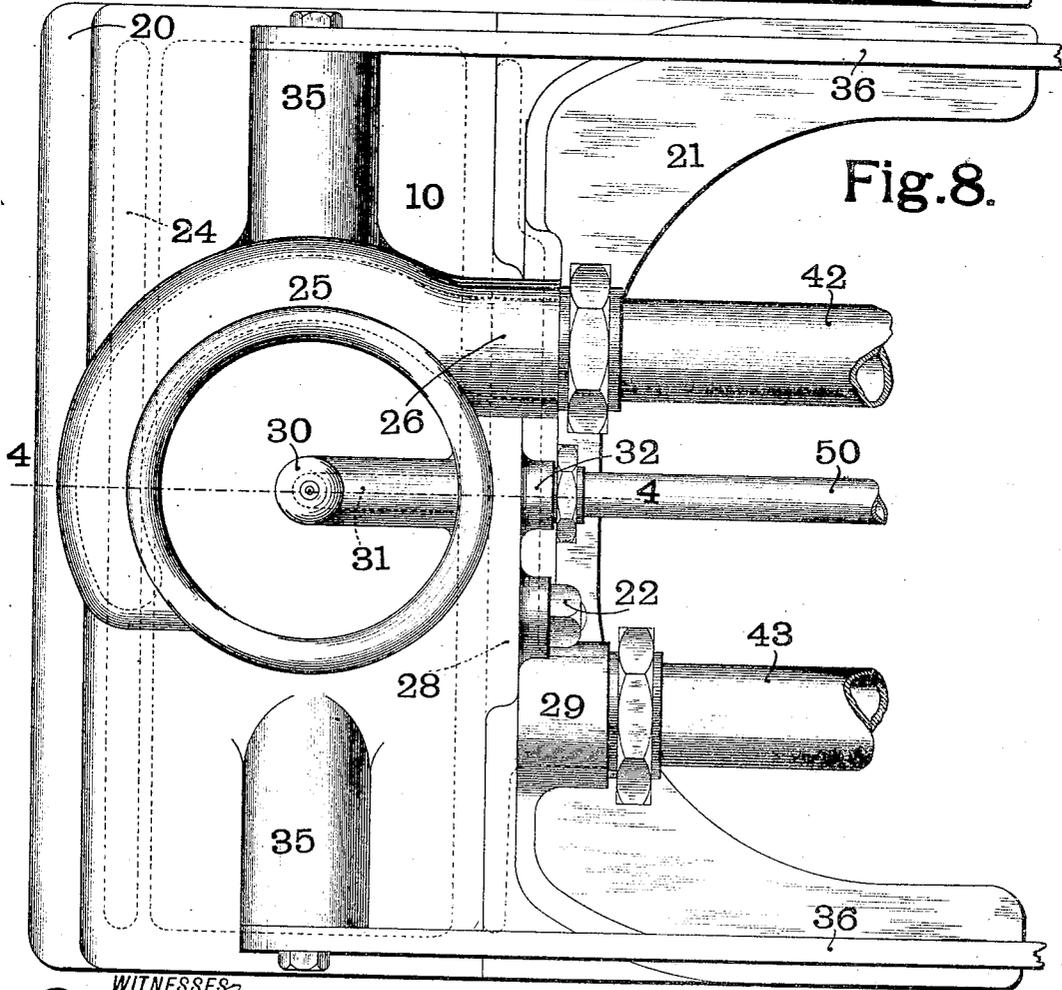


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN STROTHER THURMAN, OF ST. LOUIS, MISSOURI.

PNEUMATIC RENOVATOR.

No. 870,325.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed November 5, 1904. Serial No. 231,488.

To all whom it may concern:

Be it known that I, JOHN STROTHER THURMAN, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Pneumatic Renovator, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to pneumatic renovators for renovating carpets and the like and more particularly to that class of renovators which is provided with a plurality of blast nozzles, the air supply being shifted from one nozzle to another as the direction of the renovator is changed.

I have heretofore devised a renovator of the class above described, in which the shifting of the air from one nozzle to another was accomplished by a valve within the renovator casing. I have found, however, that with this construction considerable difficulty is experienced in making the valve sufficiently tight without causing too great friction between the valve and casing.

One of the main objects of my present invention is to provide valve mechanism for shifting the air supply from one nozzle to another, which will overcome the difficulties above referred to.

Another object of my invention is to simplify the construction of the casing, so that the casing as a whole will be very compact.

In the accompanying drawings which illustrate one form of renovator made in accordance with my invention, Figure 1 is a side elevation on a reduced scale; Fig. 2 is a top plan view, also on a reduced scale; Fig. 3 is a section through the dust collecting chamber; Fig. 4 is a vertical central section through the casing, taken on the line 4-4 of Fig. 8; Fig. 5 is a front elevation of the casing; Fig. 6 is a sectional view showing the valve mechanism for shifting the air supply from one nozzle to another; Fig. 7 is a rear elevation of the casing, and Fig. 8 is a top plan view of the casing.

Like marks of reference refer to similar parts in the several views of the drawings.

10 is the casing of the renovator. The casing 10 is provided with an internal chamber 11, which is open at its bottom. The outlet 12 is screw-threaded so as to receive an extension 13, over which the dust chamber 14 fits. The dust collecting chamber 14 is provided with the usual cloth bag 15, supported by a rod 16, carried in pins 17 on the said dust chamber 14.

The casing 10 is provided with a front plate 20 and a rear plate 21. These plates are secured in position by means of bolts 22. The front plate 20 forms, together with the front face of the casing 10, a nozzle 23, which is rearwardly inclined. This nozzle 23 commu-

nicates by means of passages 24 and a semi-circular passage 25 with a boss 26 on the rear face of the casing 10. This boss 26 is connected with the air supply, as will be hereinafter described. The rear plate 21 forms, together with the rear face of the casing 10, a blast nozzle 27, which is similar to the blast nozzle 23 hereinbefore described, except that it is inclined in the opposite direction. This nozzle 27 communicates by means of passages 28 with a boss 29 on the plate 21. This boss 29 is connected with the air supply, as will be hereinafter described. Within the chamber 11 is an internal nozzle 30, which discharges through the outlet of the casing so as to create a suction within the casing. Extending from this nozzle 30 is a passage 31 leading to an opening 32 in the rear face of the plate 21.

Pivoted to lugs 35 on the casing 10 are a pair of arms 36, which form the lower bifurcated end of the handle, by means of which the renovator is propelled. These arms 36 are secured by means of screws 37 to a block 38. Formed in this block 38 is a central opening 39 and a pair of ports 40 and 41. The port 40 is connected by means of a flexible tube 42 with the boss 26 on the rear face of the casing, and the port 41 is connected by means of a flexible tube 43 with the boss 29. Situated within the central opening 39 in the block 38 is a valve 44, which is secured to the lower end of the stem 54 of the handle. This valve 44 is provided with two ports 45 and 46. The port 45 is adapted to be brought into register with the port 40 in the block 38 when the handle is drawn to the rear, but when the handle is forced forward this port 45 is moved out of register with the port 40, and the port 46 is moved into register with the port 41, as shown in Fig. 6. The valve 44 is prevented from moving out of the block 38 by means of a cap 47. This cap 47 is also provided with a slot 48 receiving a pin 49 on the stem 54, so as to prevent rotation of the stem of the handle. 50 is a flexible tube, which connects the opening 32, hereinbefore described, with the hollow stem 54 at a point beyond the valve mechanism. Secured to the end of the stem 54 of the handle and forming part of said handle is a hand-piece, or grip, 51, containing the usual controlling valve for cutting off the supply of air from the renovator. This valve is operated by means of a finger-piece 52. The air supply is furnished to the handle through a flexible tube 53.

The operation of my renovator is as follows: When the renovator is moved forward, the thrust on the handle will move the valve 44 into position shown in Fig. 6. If the finger-piece 52 is now depressed to open the air supply, the air will pass down through the hollow stem 54 of the handle and through the ports 46 and 41 to the flexible pipe 43, and thence through the passages 28 to the rear blast nozzle 27, which is forwardly inclined. At the same time air will pass down through the flexible pipe 50 to the internal nozzle 30 to form a vacuum in the chamber 11, and thus cooper-

ate with the nozzle 27. If the renovator is moved to the rear the pull on the stem 54 of the handle will move the valve 44 to its rear position, thus cutting off air from the passage 41 and placing the port 45 in communication with the port 40, so that the air will pass down through the flexible tube 42 and through the passages 25 and 24 to the front blast nozzle 23. In this position the air will still be in communication with the internal nozzle 30, so that the said internal nozzle operates with both the blast nozzle 23 and the blast nozzle 27.

Having fully described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

15 1. In a pneumatic renovator, the combination with a casing, of a plurality of blast nozzles carried by said casing, and an extensible handle connected with said casing and provided with an air supply conduit, said handle having two members, one longitudinally movable relative to the other and said handle comprising a valve situated outside said casing, said valve being governed by the longitudinal movement of one of said members.

20 2. In a pneumatic renovator, the combination with a casing, of a plurality of blast nozzles carried by said casing, and a telescopic handle connected with said casing and provided with an air supply conduit, said handle having two members, one telescoping the other and said handle comprising a valve situated outside said casing, said valve being governed by the telescopic movement of one of said members.

30 3. In a pneumatic renovator, the combination with a casing, of a plurality of blast nozzles carried by said casing, a hollow member having ports communicating with said nozzles, and a second hollow member sliding in said first-named member and provided with ports adapted to successively register with the ports in said first-named member.

40 4. In a pneumatic renovator, the combination with a casing, of a plurality of blast nozzles carried by said casing, a hollow member pivotally mounted on said casing and provided with ports, flexible connections between said ports and said nozzles, and a second hollow member sliding in said first-named member and provided with ports adapted to register successively with the ports in said first-named member.

50 5. In a pneumatic renovator, the combination with a casing provided with an outlet, of a plurality of blast nozzles carried by said casing, an air supply conduit, a hollow handle connected with said conduit and comprising a controlling device for shifting the air supply from one of said nozzles to another, a nozzle discharging through the outlet of said casing, and a conduit extending from said latter named nozzle to said handle at a point beyond said controlling device.

55 6. In a pneumatic renovator, the combination with a casing provided with an outlet, of a plurality of blast nozzles carried by said casing, an air supply conduit, a

hollow handle connected with said conduit and provided with a hand piece and comprising a controlling device for shifting the supply of air from one of said nozzles to another, said controlling device being situated at a point intermediate said hand piece and said casing, a nozzle discharging through the outlet of said casing, and a conduit extending from said latter named nozzle to a point intermediate said hand piece and said controlling device.

7. In a carpet renovator, a casing having blast nozzles and air passages leading to said nozzles, a handle formed of two members, one of which is movable relative to the other, and an air valve controlling said passages and actuated by said movable member.

8. In a carpet renovator, a casing having blast nozzles and air passages leading to said nozzles, a handle formed of two members, one of which is movable relative to the other, an air valve controlling said passages and actuated by said movable member, and means for limiting the operative stroke of said movable member.

9. In a carpet renovator, a casing having blast nozzles and air passages leading to said nozzles, a handle formed of two members, one of which is movable relative to the other, an air valve controlling said passages and actuated by said movable member, and abutments for limiting the reciprocatory movement of said movable member and valve.

10. In a carpet renovator, a casing having blast nozzles, a handle consisting of two members, one of which is reciprocally mounted within the other, said renovator having an inlet-port and air passages extending from said port to said blast nozzles, and a valve connected to the reciprocatory member of said handle and arranged to control said air passages.

11. In a carpet renovator, the combination of a casing, a telescopic handle by which the casing is operated arranged to move telescopically when the direction of the movement of the casing is reversed, means in the casing controlling the delivery of the air blast against the carpet at one angle or another, and means controlled by the telescopic movements of the handle for causing the air to be discharged against the carpet in one direction when the casing is moved forward and in a different direction when it is moved backward, substantially as set forth.

12. In a carpet renovator, the combination of a casing, a telescopic handle connected thereto, blast nozzles mounted in the casing, a source of air supply, an air passage leading to each of said nozzles, and means arranged between the source of air supply and the air passages for the nozzles, operated by the telescopic handle for controlling the air to the said nozzles alternately, substantially as set forth.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

JOHN STROTHER THURMAN. [L. S.]

Witnesses:

JOHN BAKER,
GEORGE E. LIGHT.