June 16, 1931. J. ABRAMOWITZ 1,809,922

DUST COLLECTOR

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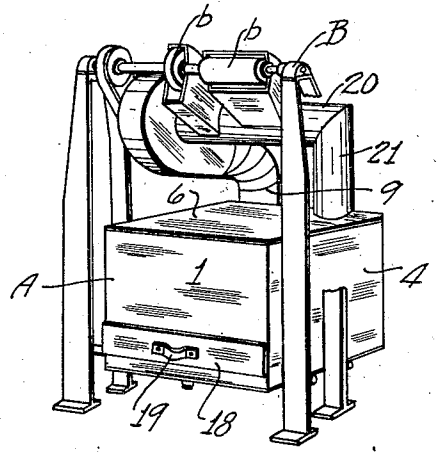


Fig. 1.

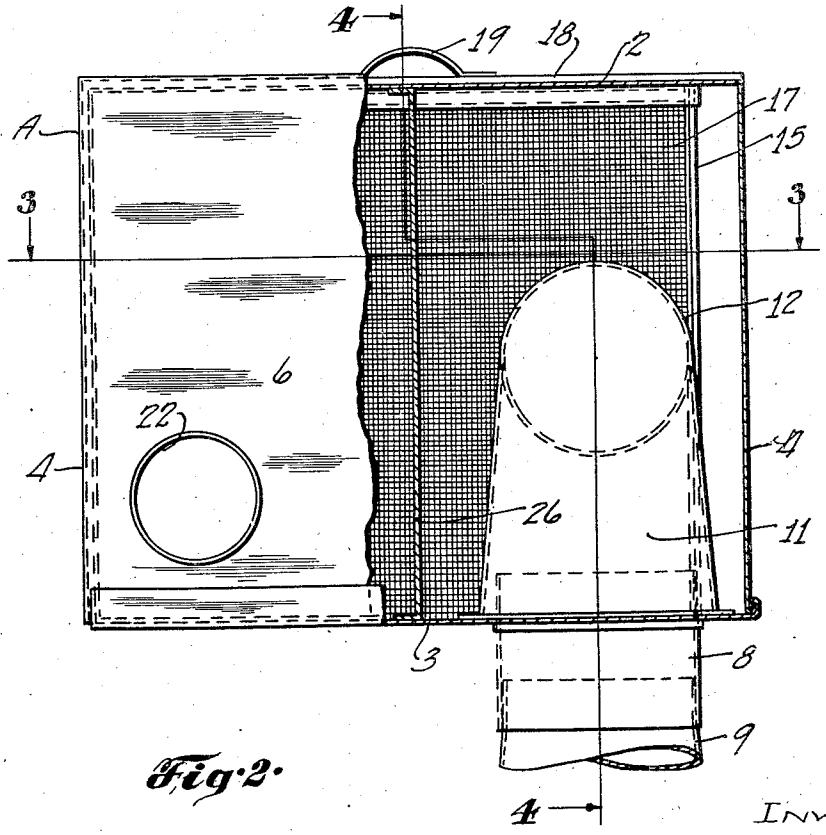


Fig. 2.

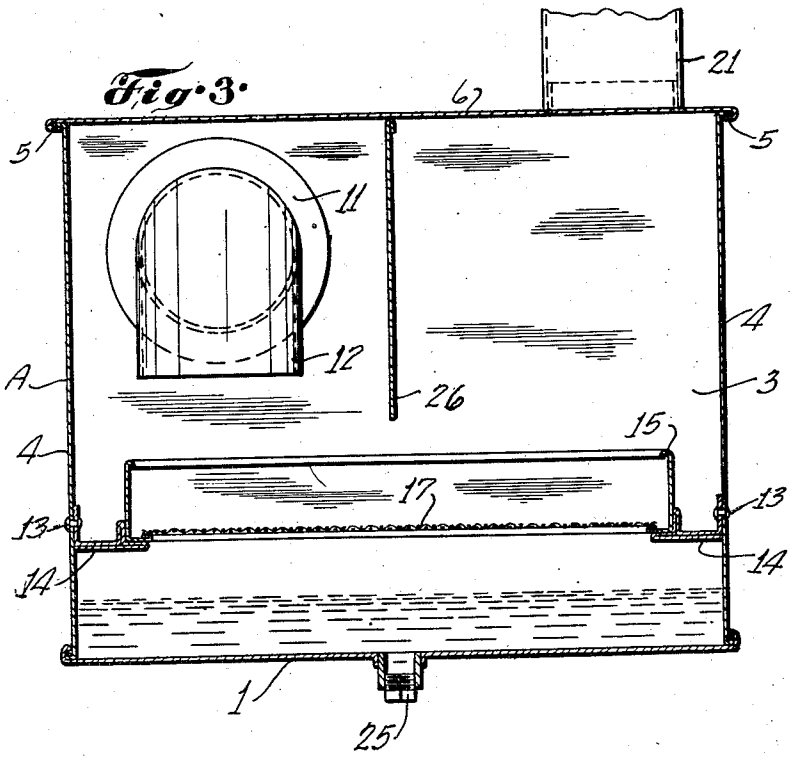
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Fig. 3.



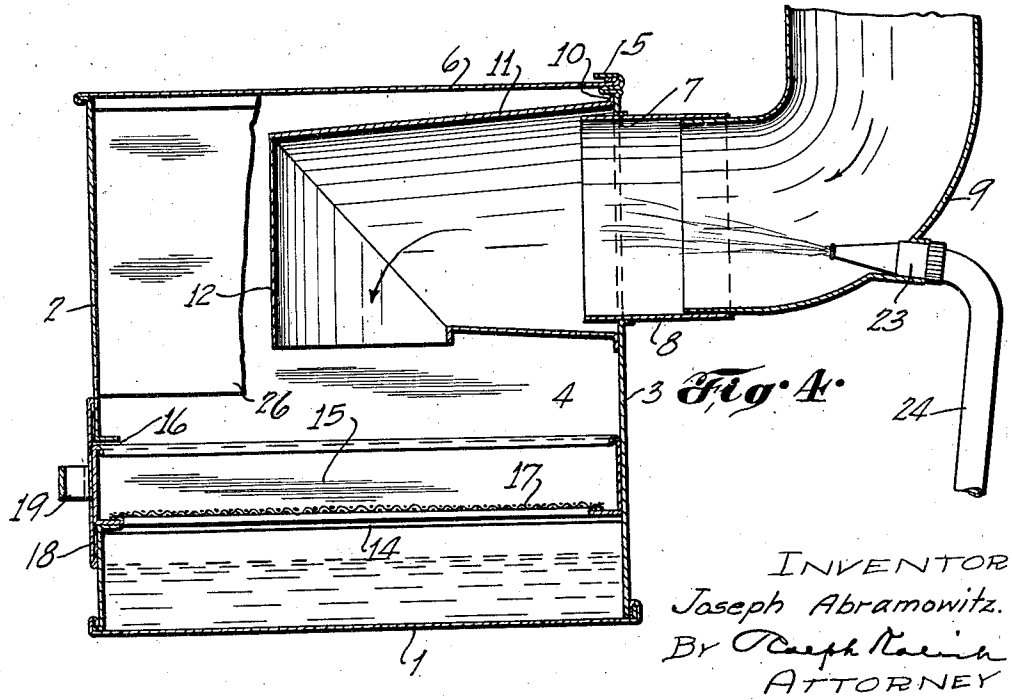


Fig. 4.

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Patented June 16, 1931 1,809,922

UNITED STATES PATENT OFFICE

JOSEPH ABRAMOWITZ, OF MADISON, ILLINOIS, ASSIGNOR OF THIRTY-FIVE PER CENT TO AMANDA E. KING, OF MADISON, ILLINOIS

DUST-COLLECTOR

Application filed August 20, 1928. Serial No. 300,731.

This invention relates generally to dust-collectors and, more particularly, to a certain new and useful improvement in dust-collectors especially adapted for use in connection with shoe-finishing machines and the like.

Modern day practice requires, from the standpoint of health and fire prevention, that machines, such as shoe-finishers and analogous structures, be equipped with dust-collectors, and my present invention has for its object the provision of a dust-collector especially adapted for the purpose, the dust-collector being of inexpensive construction, readily and conveniently installed in connection with the machine, and efficient in the performance of its intended functions.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts hereinafter described and pointed out in the claims.

In the accompanying drawings, (two sheets)—

Figure 1 is a reduced perspective view of a shoe-finishing machine equipped with a dust-collector embodying my invention;

Figure 2 is an enlarged plan view, partly broken away and in section, of the dust-collector; and

Figures 3 and 4 are sectional views of the dust-collector taken, respectively, on the lines 3—3 and 4—4, Figure 2.

Referring now more in detail and by reference characters to the drawings, which illustrate a preferred embodiment of my invention, A designates the dust-collector, which is preferably in the form of a box-like shell or casing of suitable sheet metal, shell A comprising a base or bottom wall 1, a front wall 2, a rear wall 3, and side walls 4, 4, suitably crimped or clinched or otherwise permanently joined together in operative relation.

At their upper margin, the rear wall 3 and side walls 4 are bent upon themselves, as at 5, to provide a slide or guide-way for a preferably shiftable closure top wall or lid 6.

Adjacent its upper margin, the rear wall 3 is formed with a preferably circular opening, as at 7, in which is disposed a tubular-connection 8 for the discharge end of a dust-conveying conduit 9. Disposed within the shell A and suitably fixed at one end, as at 10, to the rear wall 3, is a tubular-member or flue 11, which at its said fixed end 10 encircles the projecting inner end of, and communicates with, the pipe-section 8. From said rear wall 3, the flue 11 extends forwardly into the shell A, tapering somewhat in diameter from its rearward to its forward end, and at its forward end is provided with a relatively short downwardly presented extension 12.

Dispose within the shell A and suitably fixed, as at 13, to and upon its opposite side walls 4, are registering shelves 14, 14, providing a support for a shiftable tray 15 slidably removable relatively to the shell A through an opening 16 provided for the purpose in the shell front wall 2. The tray 15 is substantially in the form of a frame having its walls disposed parallel with the upstanding walls of the shell, the bottom wall 17 of the tray being of mesh material or otherwise formed with a multiplicity of perforations. The shelves 14 are so located within the shell that the tray 15 is disposed normally in a plane intermediate the discharge end of the flue-extension 12 and the shell bottom wall 1, the frame of the tray being provided at its forward end with a plate-section 18 adapted to form a closure for the shell front-wall-opening 16, and which is preferably equipped with a handle 19 for facilitating removal and replacement of the tray.

My new dust-collector is, as I have stated, especially adapted for use in connection with shoe-finishing machines and the like, B designating a shoe-finishing machine of standard construction. Leading from the machine B, is the dust-conveying conduit 9, which connects and communicates at its lower end with the pipe-connection 8, a suction-fan or the like, not shown, being suitably associated with the conduit 9, for purposes shortly appearing. Communicating at one end with the conduit 9 and having communication intermediate its ends, as shown, with the several buffing and grinding devices b of the machine B, is a pipe or flue 20 provided with an

extension 21, which, in turn, communicates at its lower end with the shell A through an exhaust-opening 22 provided for the purpose in preferably the shell top wall 6.

Disposed in the conduit 9 preferably adjacent the connection 8, is a spray-nozzle 23 having communication through a preferably flexible hose or the like 24 with a suitable source of water-supply.

The dust-collector shell A being installed as described in connection with the machine B, the dust or the like created by the devices *b* will be sucked from the pipe 20 and blown through the pipes or conduits 9 and 8 into the shell, the extension 12 deflecting the same downwardly on to the tray 15. At the same time, the spray from nozzle 23 dampens or wets down the incoming dust particles and the like, thereby not only preventing combustion, but settling the dust particles upon the mesh-bottom of the tray 15, surplus water finding escape through the tray mesh-bottom 17 into the shell A, from which it may be suitably removed through a drain 25. The incoming dust-laden air is thus freed of its carried dust-particles and the like, the purified air finding escape through the opening 22 and pipes 21 and 20 back to the conduit 9 for further utilization, and the tray 15 being readily shiftable from the shell A at suitable intervals for removal of accumulated matter. A baffle 26 depending within the shell A facilitates exhaust of incoming air through the opening 22 and into the conduit 21.

My new dust-collector thus functions hand-in-hand with the machine and accomplishes as described the objects and purposes stated.

It is to be understood that changes in the form, construction, arrangement, and combination of the several parts of my dust-collector may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In combination, a dust-collecting shell having an opening in a wall thereof, a flue disposed and fixed at one end within the shell and at its inlet end surrounding said opening, a discharging extension disposed at an angle to and presented downwardly from the flue, a dust-conveying conduit having communication at its discharge end through said opening with the flue, means for spraying and wetting down the incoming dust, and a receptacle within the shell for receiving the matter discharging from said extension.

2. In combination, a dust-collecting shell having an opening in a wall thereof, a flue disposed and fixed at an end within the shell and at its inlet end surrounding said opening, a discharging extension disposed at an angle to and presented downwardly from the flue, a dust-conveying conduit having communication at its discharge end through said opening with the flue, a nozzle disposed in said conduit adjacent said opening for spraying and wetting down the incoming dust, and a receptacle within the shell for receiving the matter discharging from said extension.

3. In combination, a dust-collecting shell having an opening in a wall thereof, a flue disposed and fixed at an end within the shell and at its inlet end surrounding said opening, a discharging extension disposed at an angle to and presented downwardly from the flue, a dust-conveying conduit having its discharge end projecting through said opening and into said flue, a nozzle disposed in said conduit adjacent said opening for spraying and wetting down the incoming dust, and a mesh-bottom tray supported within the shell for receiving the wetted down dust discharging from said extension.

4. In a dust-collector, a shell having an opening in a wall thereof for communication with a dust-conveying conduit, a flue disposed within the shell and having its inlet end in communication with said opening, an extension upon the flue having its discharge-end presented downwardly from and at an angle to the flue, and a shiftable mesh-bottom tray removably supported within the shell intermediate the bottom wall thereof and the discharge end of said flue-extension.

5. In a dust-collector, a shell having first and second openings in its walls, the first opening being adapted for communication with a dust-conveying and spray conduit, a flue fixed within the shell and having its inlet end in communication with said opening, a shiftable mesh-bottom tray removably supported within the shell for removal through said opening, the bottom of the tray being spaced from the bottom wall of the shell, an extension fixed upon and disposed at an angle to the flue, said extension having its discharge-end presented downwardly for delivering the incoming matter upon the mesh-bottom of the tray, the shell having an air-exhausting opening in a wall thereof, and a member on the tray for closing said opening.

In testimony whereof, I have signed my name to this specification.

JOSEPH ABRAMOWITZ.