

F. A. MARASCIO.
DUST COLLECTOR.
APPLICATION FILED FEB. 14, 1918.

1,272,489.

Patented July 16, 1918.

2 SHEETS—SHEET 1.

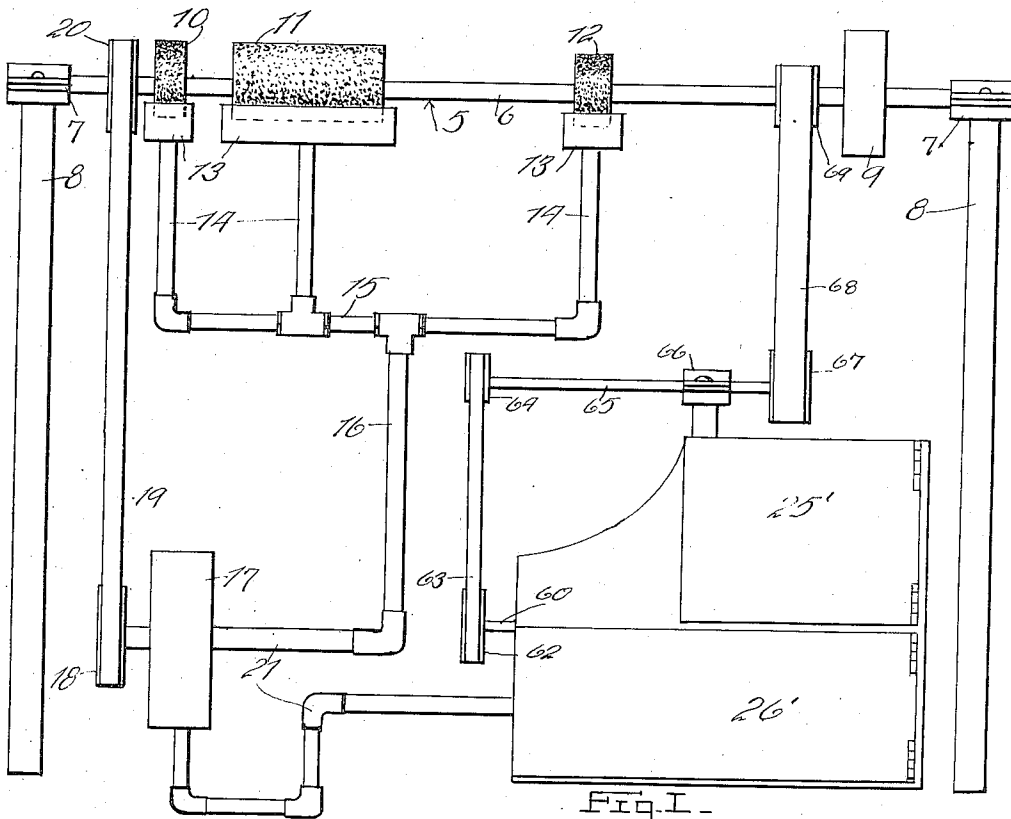


FIG. I.

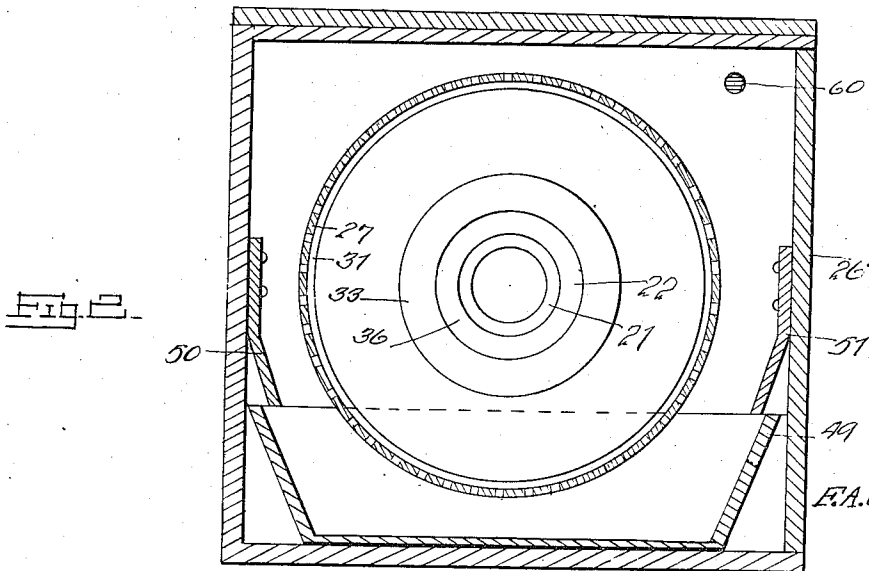


FIG. 2.

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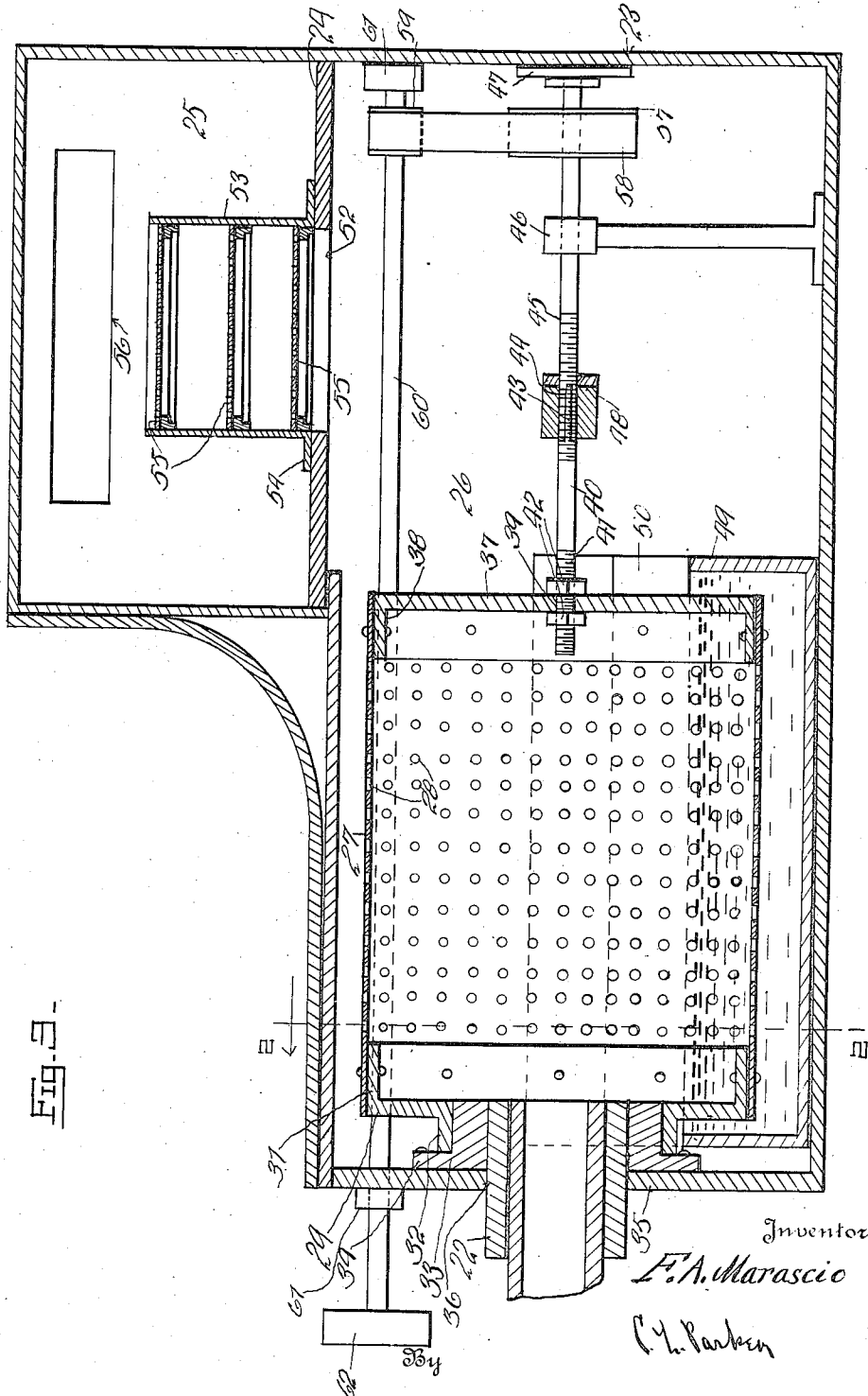


Fig. 3-

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UNITED STATES PATENT OFFICE.

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DUST-COLLECTOR.

1,272,489.

Specification of Letters Patent.

Patented July 16, 1918.

Application filed February 14, 1918. Serial No. 217,124.

To all whom it may concern:

Be it known that I, FRANK A. MARASCIO, a subject of the King of Italy, residing at Phillipsburg, in the county of Warren and State of New Jersey, have invented certain new and useful Improvements in Dust-Collectors, of which the following is a specification.

My invention relates to apparatus for collecting the dust from shoe or leather finishing machines, in a manner whereby the same may be handled in a highly convenient and expeditious manner.

An important object of the invention is to provide apparatus of the above mentioned character, formed of few and simple parts, and which is convenient to operate.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of the apparatus, showing the same connected with a shoe or leather finishing machine,

Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 3, and,

Fig. 3 is a central longitudinal sectional view through the apparatus.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates a shoe or leather finishing machine as a whole, including a horizontal shaft 6, the ends of which are journaled in stationary bearings 7, secured to the upper ends of up-rights 8. The shaft 6 receives its rotation from a pulley 9, rigidly secured thereto, and rotated by any suitable means. Secured to the shaft 6 for rotation therewith are rolls 10, 11 and 12, having their peripheries covered with sand paper, emery paper or other grinding or polishing material, adapted to grind or polish the soles of shoes, particularly the edges of the soles. It is obvious that the grinding action of these elements upon the leather produces a dust, containing fine particles of the leather and the grinding material, and for this reason suction elements or nozzles 13 are arranged preferably beneath the rolls and receive a portion thereof. These nozzles have connection with pipes 14, connected with a transverse pipe

15, having connection with a longitudinal pipe 16, which leads into the intake end of a rotary blower or fan 17. This blower is driven by a pulley 18, engaged by a belt 19, extending upwardly to engage a pulley 20, rigidly secured to the shaft 6. Connected with the discharge end of the rotary blower or fan 17 is a pipe 21, which extends into the outer end of a coupling 22, included in my dust collecting apparatus.

My apparatus comprises a casing 23, formed of any suitable material, and having a horizontal partition 24, which divides the same into an upper chamber 25 and a lower chamber 26, as clearly shown in Fig. 3.

The chamber 25 is closed by a door 25', while the chamber 26 is closed by a door 26', as shown.

The numeral 27 designates a horizontal rotatable drum, preferably formed of sheet metal, and having its periphery provided with apertures 28, of suitable size, and which are preferably uniformly distributed over the entire area thereof. The rotatable drum 27 is located in the forward end of the chamber 26, as shown. Arranged inwardly of and at the forward end of the drum 27, is a head or ring 29, having an annular flange 31, which is rigidly attached to the inner surface of the drum. The ring 29 is provided at its inner edge with an annular flange 32, which is rotatable upon a stationary annular or tubular bearing 33, having a flange 34, rigidly attached to the end wall 35 of the casing 23. The end wall 35 has an opening 36 formed therein for the reception of the tubular coupling 22, which projects into the interior of the stationary annular bearing 33, as shown. At the opposite end of the drum, 27, and interiorly thereof, is disposed an imperforate head 37, provided at its periphery with an annular flange 38, rigidly attached to the drum. From the foregoing description it is obvious that the air laden with dust, enters one end of the drum, and can only discharge therefrom through the apertures 28 in its periphery.

The head 37 is provided centrally thereof with an opening 39, for the reception of a rod 40, the end of which is screw-threaded, as shown at 41, but the opening 39 is slightly larger than this screw-threaded portion, and therefore permits of the rod 40 being moved longitudinally thereof without screw-thread-

ed engagement therewith. The rod 40 carries clamping nuts 42 upon the screw-threaded portion 41 thereof, and these nuts serve to lock the rod 40 to the head 37, as is obvious. At its free end, the rod 40 has a reduced portion or tongue 43, to enter a longitudinal opening or groove 44, formed in the end of a horizontal drive shaft 45, journaled through stationary bearings 46 and 47. The tongue and grooved portions of the rods 40 and 45 interfit to form in effect a continuous rod, and the same is screw-threaded to receive a sleeve or nut 48, which is adapted to span the tongue and groove, thereby securely locking the shafts 40 and 45 together. It is obvious that by proper rotation of the sleeve 48, the same will travel to the right to uncover the tongue and groove portions, thereby enabling the rod 40 to be disconnected from the rod 45. When this disconnection is effected the flange 32 may be removed from the annular bearing 33, and the drum 27 removed from the chamber 26, to be cleaned or the like.

The lower portion of the drum 27 operates within a pan or receptacle 49, which is partly or wholly filled with water or other liquid, to be applied to the revolving drum. As clearly shown in Fig. 2, a guard-plate 50 is secured to the wall of the chamber 26 and arranged upon one side of the pan or receptacle 49, while a coacting guard-plate 51, is disposed near the opposite side of the pan, and is attached to the door 26'. The purpose of these guard-plates is to prevent splashing of the water, by centrifugal force, upon the sides of the chamber 26, and to return the water into the pan. The pan 49 may be removed when the drum 27 is removed.

The horizontal partition 24, separating chambers 25 and 26, has an opening 52, and this opening leads into a vertical shell 53, provided at its lower end with a flange 54, rigidly attached to the horizontal partition. The shell 53 has both ends open and holds a plurality of perforated plates 55, arranged therein, as shown. The function of these plates is to somewhat retard the discharge of air from the chamber 26, as this has been found advantageous, but the invention is in no sense restricted to this operation, as satisfactory results are obtainable by dispensing with these perforated plates. Above the shell 53, the chamber 25 has an air outlet opening 56, leading to the atmosphere.

The shaft 45 is rotated by a pulley 57, engaged by a belt 58, engaging a pulley 59, rigidly secured to a horizontal shaft 60, journaled through bearings 61. The shaft 60 carries a pulley 62, rigidly secured thereto, and this pulley is engaged by a belt 63, engaging a pulley 64, rigidly secured to a horizontal shaft 65. This shaft is journaled through a stationary bearing 66, and carries a pulley 67, rigidly secured thereto, and en-

gaged by a belt 68, extending upwardly to engage a pulley 69, rigidly secured to the shaft 6, to be driven thereby.

The operation of the apparatus is as follows:

The dust, consisting of fine particles of the leather and the grinding material from the rolls, is caught by the section nozzles 13, and passes through the several pipes to the intake end of the blower 17. The air laden with this dust is discharged through the pipe 21 and passes into the rotating drum 27. This drum revolves in contact with the water in the tray or pan 49, and its periphery is permanently covered with a film of water, spanning the apertures thereof. As the air laden with dust passes through these apertures, the dust contacts with the water and is thereby separated from the air, such water containing the dust being returned to the pan 49. After a suitable amount of the dust has accumulated in the tray and rotatable drum they may be removed for cleaning.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. Apparatus of the character described, comprising a casing provided with an opening, a door for said opening, a water pan within the casing and removable through the opening, a tubular bearing within the casing and connected with one end thereof in proximity to the end of the water pan, a supply pipe for the dust laden air having one end thereof extending into the tubular bearing, a horizontal perforated rotatable drum within the casing and operating in contact with the water within the pan and adapted to be passed through the said opening, a ring connected with one end of the drum and rotatably mounted upon the tubular bearing, a head connected with the opposite end of the drum, a sectional shaft rigidly connected with the said head, a stationary bearing near the opposite end of the drum and having the sectional shaft journaled therein, and means to rotate the sectional shaft.

2. Apparatus of the character described, comprising a casing provided with an opening, a door for said opening, a water pan within the said casing and removable through the opening, a guard plate secured to the closed side of the casing and inclined downwardly toward the pan to conduct water into the same, a coacting guard plate connected with the inner side of the door and inclined downwardly toward the pan to con-

duct water into the same, a tubular bearing
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near the opposite end of the casing and hav-
ing the sectional shaft journaled therein, and
means to rotate the sectional shaft.

In testimony whereof I affix my signature.

FRANK A. MARASCIO.