Mar. 6, 1923. 1,447,765.

S. A. DOBYNE.

SHOE FINISHING MACHINE.

FILED AUG. 1, 1921.

Fig. 1.

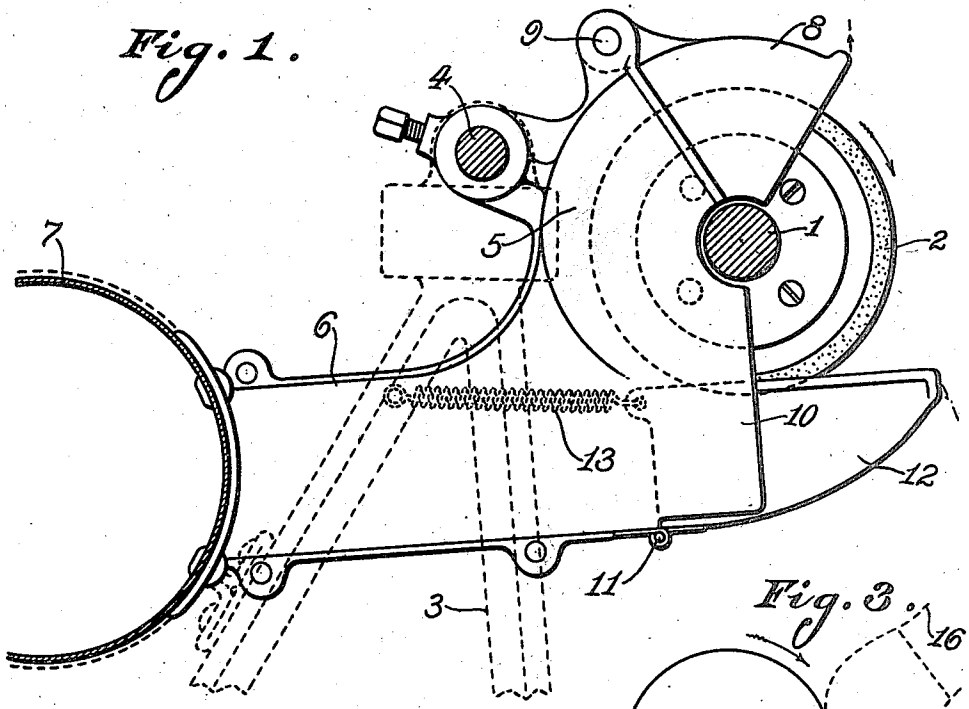


Fig. 2.

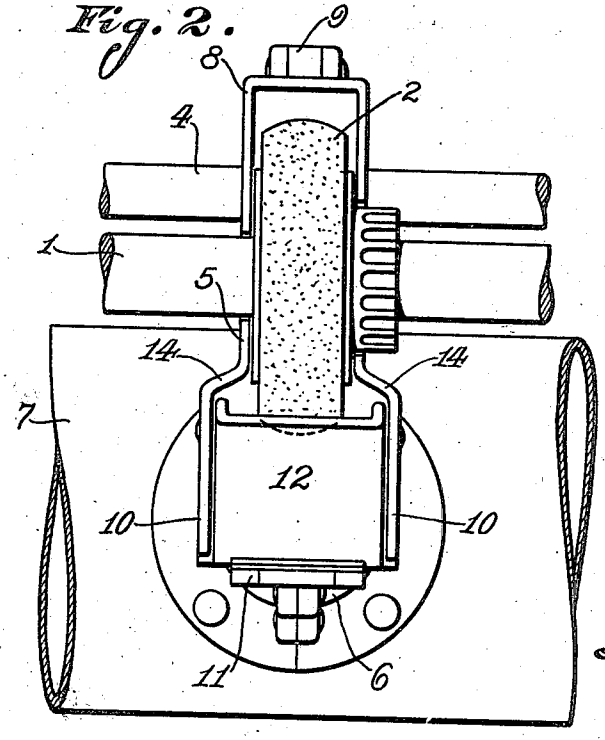


Fig. 3.

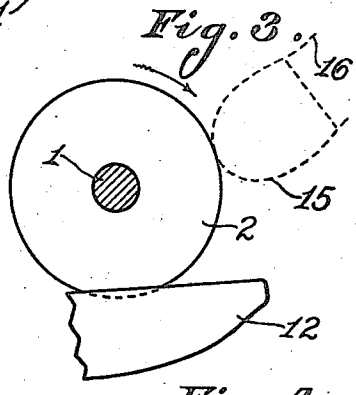
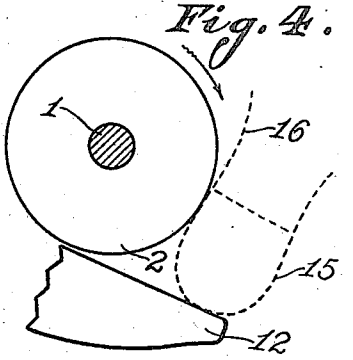


Fig. 4.



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His Attorney.

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UNITED STATES PATENT OFFICE.

STEPHEN A. DOBYNE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CHAMPION SHOE MACHINERY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

SHOE-FINISHING MACHINE.

Application filed August 1, 1921. Serial No. 488,996.

To all whom it may concern:

Be it known that I, STEPHEN A. DOBYNE, a citizen of the United States, and residing at St. Louis, Missouri, have invented the new and useful Improvement in Shoe-Finishing Machines, of which the following is a specification.

This invention relates to finishing machines, and more particularly to machines adapted for the finishing of the heels and soles of shoes.

In the finishing of shoes, more particularly the edges of the heels and soles, a sanding wheel is used. The sanding of the leather, however, produces considerable dust and this dust is objectionable in that it not only collects around the establishment, rendering the same unsanitary and causing danger of fire, but the flying particles cause discomfort and even endanger the health of the operator. The provision of a casing for the finishing element and exhaust means applied thereto does catch considerable of the dust but by no means all of it, or even a large part of it. This is because the sanding wheel must necessarily be exposed to permit contact by the shoe; moreover the required high speed causes the particles of dust to be thrown tangentially of the point of contact. Accordingly since during the actual operation of finishing a shoe heel, for instance, the point of contact moves progressively downward from near the top to near the bottom of the rapidly revolving finishing element, the casing cannot be so constructed as to catch all of the dust.

One of the objects of this invention, therefore, is to provide a finishing machine in which the dust will be caught without interfering with the operation of finishing.

Further objects will appear from the detail description taken in connection with the accompanying drawing, in which:

Figure 1 is a side elevation, partly in section, of the machine embodying this invention;

Figure 2 is a front elevation; and

Figures 3 and 4 are diagrams showing the operation.

Referring to the accompanying drawing 1 designates a driven shaft upon which is mounted the finishing element 2 of any suitable or usual construction. This shaft is mounted on frames, one of which is shown at 3, and receives power from any suitable source (not shown).

Mounted on a cross-bar 4 also on the frames 3 is a casing 5 which takes over and encloses part of the finishing element 2 and has an outlet 6 discharging into a pipe 7 which is connected with a suction fan (not shown) so as to create a suction draft in the casing. The casing may have a part 8 hinged at 9 so that this part 8 can be thrown back in order to expose the finishing element so as to permit ready removal and replacement of the sand paper or other finishing material with which the element 2 is provided.

The lower part of the casing at its forward end is cut away and is provided with a pair of downwardly and forwardly projecting cheeks 10 which terminate about centrally of the shaft 1. These cheeks have pivoted therebetween and at 11 a trough 12 which is normally held in elevated position by a spring 13 connecting the trough with the casing; this spring pulls the trough against shoulders 14 formed on the cheeks 10. The lower wall of the trough curves downwardly to merge into the bottom of the casing and the tip of the trough projects beyond the finishing element and in the path of the work being finished by the element.

In finishing a piece of work, such, for instance, as a shoe heel 15 on a shoe 16, the operator will place the heel edge at about the center of the back against the finishing element, as is shown in Figure 3. The operator will begin a turning movement of the heel at the same time moving it down to the bottom position, Figure 4. In thus moving the heel from its initial position to its final position, the heel will engage the tip of the trough and move it out of the way; the free movement of the work is, therefore, left unobstructed. During this finishing operation the dust is always directed into the trough; for while the point of contact in the initial position is comparatively high on the finishing element, the tip of the trough is in such a position as to catch the tangentially moving dust particles; as the point of contact moves downwardly along the finishing element, the trough will yield on contact with

the work and move out of the way while still being maintained in the path of the tangentially moving particles.

It is, of course, understood that the spring 13 tends to move the trough into normal position and that this spring yields as the trough is moved by the work; however, as soon as the work is removed the trough moves back to normal position. In actual operation the operator will first finish one half of the heel edge and then will reverse the shoe and finish the other half. During each operation the procedure is repeated. For very quick work, however, the operator can begin near the heel breast on one side and pass the point of contact completely around the heel by a continuous movement.

Although as illustrated in Figures 3 and 4, the operation is shown as performed upon a heel, it will be entirely obvious that in the finishing of a sole edge of a toe, the operation will be very similar. In the operation of finishing the sole edge at the toe, the operator will proceed to place the tip against the wheel and then move the toe downwardly along the wheel at the same time turning the shoe. The dust-receiving trough will be moved out of the way in the same manner as when operating on the heel. Similarly the operator can start along the side of the toe and complete the finishing operation on the entire toe by one continuous movement.

It will, therefore, be seen that the invention accomplishes its objects. The finishing element is left exposed a maximum amount to secure rapid operation in finishing the work. The trough or dust-receiving element, while it acts to always catch the flying particles of dust, nevertheless moves out of the way upon contact by the work and does not interfere with the finishing operation in any way. The dust particles as they are thrown into the trough will pass into the casing and hence into the pipe 7; if, however, these particles collect in the trough, the latter can be cleared at any time by simply moving it down and allowing it to snap back under the action of its spring, when the dust will be thrown into the casing and carried off.

It is obvious that various changes may be made in details of construction without departing from the spirit of this invention; it is, therefore, to be understood that this invention is not to be limited to the specific details shown and described.

Having thus described the invention, what is claimed is:

1. In a shoe finishing machine, the combination with a rotary finishing tool and its dust hood, of a supplemental dust catching device projecting beyond the hood and pivoted thereto to yield on contact by the work therewith, and means for automatically returning said device to normal position when released.

2. In a shoe finishing machine, the combination with a rotary finishing tool and its dust hood, of a supplemental dust catching trough arranged to form a continuation of said hood, projecting beyond said tool and mounted for movement to yield on contact by the work therewith, and means for returning said trough to normal position.

3. In a shoe finishing machine, the combination with a rotary finishing tool and its dust hood, of a supplemental dust catching trough arranged to form a continuation of said hood, projecting beyond said tool and mounted for movement to yield on contact by the work therewith, and a spring for returning said trough to normal position when released.

4. In a shoe finishing machine, the combination with a rotary finishing tool and its dust hood, of a supplemental dust catching trough pivoted on said hood below and arranged to project beyond said tool so as to yield on contact by the work therewith, and a spring for returning said trough to normal position when released.

In testimony whereof I affix my signature this 21st day of July 1921.

STEPHEN A. DOBYNE.