No. 776,156. PATENTED NOV. 29, 1904.

E. VENDERBUSH.

METAL GRINDING OR POLISHING MACHINE.

APPLICATION FILED JULY 25, 1904.

NO MODEL.

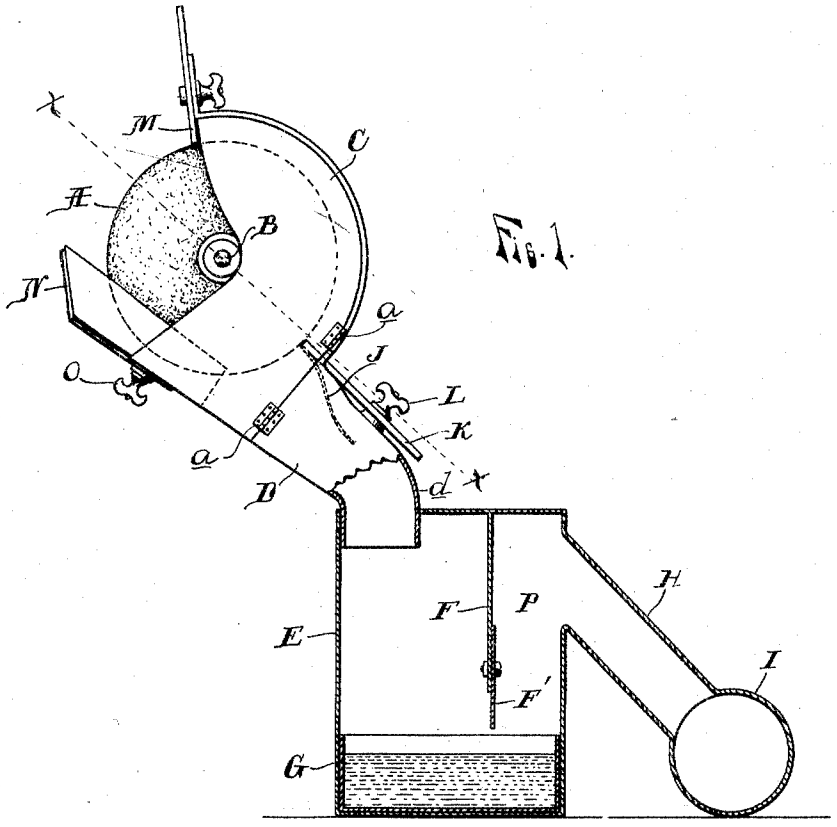


Fig. 1.

Fig. 2.

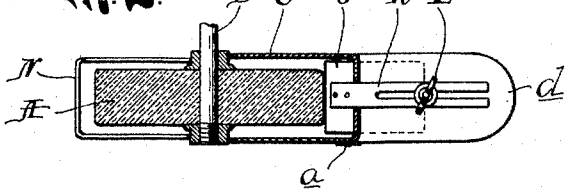
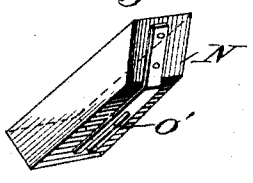


Fig. 3.



WITNESSES.

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No. 776,156. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

ENGELBERT VENDERBUSH, OF DETROIT, MICHIGAN.

METAL GRINDING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 776,156, dated November 29, 1904.

Application filed July 25, 1904. Serial No. 217,926. (No model.)

To all whom it may concern:

Be it known that I, ENGELBERT VENDERBUSH, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Metal Grinding or Polishing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to carry away the dust, grit, and particles of metal thrown off during the operation of grinding or polishing and at the same time to collect and save the particles of metal as much as possible by themselves instead of having them carried away with the lighter particles of dust and dirt.

To this end my invention consists in the construction, arrangement, and operation of parts, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of an emery-grinder to which my invention is applied. Fig. 2 is a section on line *x x*. Fig. 3 is a detail of the adjustable pan removed.

A represents an emery-wheel secured upon the rotating shaft B.

C is a circular hood of sheet metal inclosing the wheel except upon the front, where a sufficient portion of the wheel is left exposed to apply the work thereto, and the outer side of this hood is hinged at *a a* to the remaining portion to permit the removal of the grinding-wheel. The hood at its under side enlarges into a hopper-shaped discharge-trunk D, which extends rearwardly and downwardly and terminates in an elbow *d*, leading into the top of a vessel E, which forms a closed settling-chamber and is partially divided by a vertical partition F, depending from the top downward to within a distance from the bottom. Upon the bottom of this chamber is supported a pan G, removable through an opening in the side of the chamber and adapted to contain water. From near the top of this settling vessel a short trunk-flue H leads into the main suction-pipe I, which latter leads to an exhaust-fan. (Not shown.)

At the rearward junction of the discharge-trunk D with the hood is arranged a cut-off plate J, which is secured to the inner end of a slotted handle K, extending inwardly through a hole in the hood and held in position on the outside by a thumb-screw L, all in such manner as to make the cut-off plate slidingly adjustable. The cut-off plate J extends downwardly some distance in the trunk and forms a deflector for the particles of metal and grit thrown off from the emery-wheel. A similar cut-off plate M is carried on the top of the hood to prevent any particles of metal or grit which may have been carried past the cut-off J from being thrown into the face of the operator. The open front end of the discharge-trunk is lengthened out by a pan-shaped piece N, which will catch any particles of grit and dirt which might otherwise not be carried into the trunk. It is slidingly adjustably secured by a thumb-screw O, engaging the slotted bar O′, secured to the outer end of the pan N, so that it may be adjusted in or out as the size of the grinding-wheel will require or which may be taken off entirely if the nature of the work to be done will not admit of its use.

In practice the grit and particles of metal from the grinding operation are prevented by the cut-off J from being carried any distance by the wheel, and the air-current created by the fast-revolving wheel is also cut off from following the wheel and is directed through the discharge-trunk into the settling-chamber, where the heavier particles of metal are thrown into the pan of water, while the dust escapes through the opening below the partition F into the ascending flue P, which is of comparatively smaller cross-section, and

thence through the trunk H into the main suction-pipe.

My construction accomplishes the object of my invention to save only the good metal which is of value and let the dust and foreign matter escape, instead of collecting both in one worthless mass, as in the ordinary dust-collectors. For this reason the discharge-trunk leads from the under side of the grinding-wheel and is substantially tangential to that portion from which the particles of metal are thrown off. The particles are thus wholly carried in a downward direction from the wheel to the receiving water-pan by the impetus derived from the force of the momentum with which they fly off the wheel, assisted by their own gravity, by the air-current created by the wheel and deflected into the discharge-trunk, and by the current induced by the suction-fan. Thus four agencies combine to give enough force to the small particles to plunge them into the water through any layer of dust collecting thereon. If such a layer collects, the fine light dust will be prevented from coming into contact with the water and will be readily blown away and carried into the suction-pipe.

From a constructive point of view my invention has the advantages that it can be applied to any grinding-wheel of the type most in use, in which the grinding-wheel is supported upon a stand and is fastened to the overhanging end of a revolving spindle. It does not obstruct the foot-room of the operator, nor does it require any valuable floor-space. It is thus in the nature of an attachment to grinding and polishing wheels, and to adjust it to different height of stands I connect the elbow *d* adjustably with the chamber E.

The portion F′ of the partition F may be made adjustable up or down, and other obvious departures from the construction shown may be made within the scope of my invention.

Having thus fully described my invention, what I claim is—

1. In an attachment for grinding and polishing wheels, the combination of a hood, a discharge-trunk below the hood extending therefrom rearwardly and downwardly and substantially tangentially to the wheel, a settling-chamber having an inlet in the top into which the discharge-trunk leads, an outlet from the settling-chamber connected to a suction-fan, a partition in the settling-chamber between the inlet and outlet thereof and dividing the same into a downward passage and an upward passage of smaller cross-section and communicating therewith, a pan at the bottom of the settling-chamber, and an adjustable cut-off at the rear junction of the hood with the discharge-trunk.

2. In an attachment for grinding and polishing wheels, the combination of a hood, a discharge-trunk therefrom below the hood extending rearwardly and downwardly therefrom, an adjustable cut-off at the junction of the rear side of the trunk with the hood and forming a deflector within the trunk, a settling-chamber having an inlet into the top into which the discharge-trunk leads, an outlet from the settling-chamber leading to a suction-fan, a vertical partition in the settling-chamber between the inlet and outlet, a pan in the bottom of the settling-chamber below the partition and an adjustable pan-shaped shield in the open end of the discharge-trunk.

In testimony whereof I affix my signature in presence of two witnesses.

ENGELBERT VENDERBUSH.

Witnesses:
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THOMAS G. LONGSTAFF.