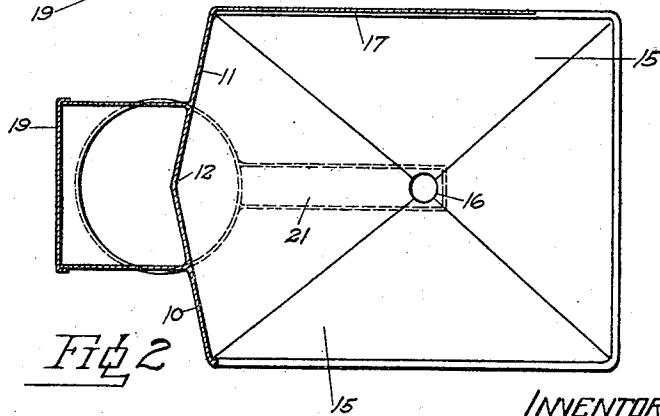
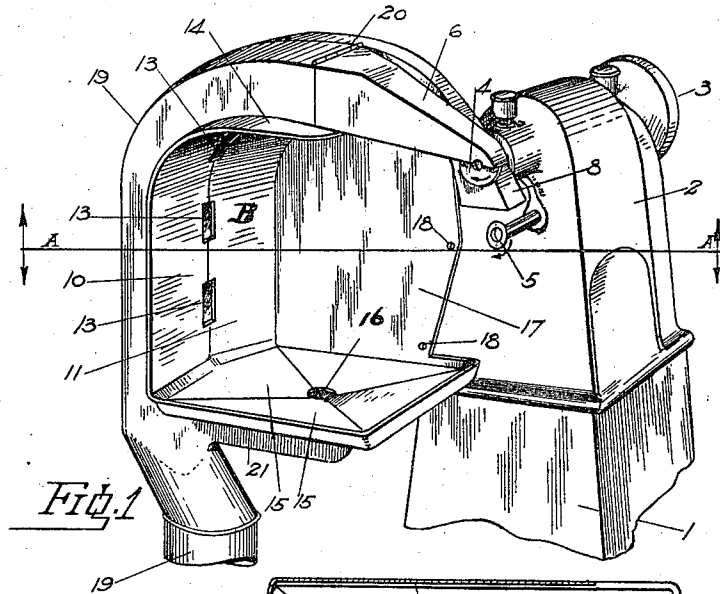


965,223.



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UNITED STATES PATENT OFFICE.

THOMAS G. PLANT, OF BOSTON, MASSACHUSETTS.

DUST-GATHERER FOR ABRADING-MACHINES.

965,223.

Specification of Letters Patent.

Patented July 26, 1910.

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To all whom it may concern:

Be it known that I, THOMAS G. PLANT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Dust-Gatherers for Abrading-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The invention to be hereinafter described relates to dust gatherers for abrading machines, and more especially such devices as applied to machines for abrading, trimming or scouring portions of boots and shoes, such as the sole edges, bottoms, or heels.

In machines of the general type indicated, it is essential that the abrading, scouring, or trimming tool be rotated at high speed and that the operative have free access to the abrading, scouring, or trimming tool not only at the acting edge thereof but at the disk end or side of the tool. As well known by those skilled in the art, such machines create a large amount of dust of varying fineness which not only subjects the operative to much distress and annoyance, but gathers about the machine, on the floor, and finally gets into the shaft bearings which it soon destroys. Attempts have been made to overcome these and other objections arising from the cause stated, by providing such machines with various forms of dust hoods connected to an air exhaust, but in all such cases the tools have been either so completely covered by a close fitting shield that only a part of the dust has been carried away, or the hood has been formed so that it greatly interfered with the proper manipulation of the shoe, and in either case the exhaust air currents have not been caused to act upon the dust properly, so that much dust and dirt has heretofore accumulated about the machine with the consequent objections noted.

In the present invention the aim has been to provide a dust gatherer in connection with a tool hood and to so dispose the parts and the suction air currents that all dust shall be entirely carried away either by passing directly into the tool hood or by being gathered as it is discharged rearward by the tool and then carried into suitable dust openings, all as will best be understood from the accompanying drawing and following description of one form of the invention.

In the drawings:—Figure 1 is a perspective view of a boot and shoe machine, more particularly designed for treating the edges of shoe soles and provided with the present invention for eliminating all dust as it is created; Fig. 2 is a section on the line A—A, Fig. 1, looking downward; and Fig. 3 is a section on the line A—A, Fig. 1, looking upward.

In the illustrated form of the invention a column 1 is provided, surmounted by a head 2 carrying the actuating means for the tools which are designed to treat the soles or heels of boots and shoes. Said actuating means being not of the present invention is not herein shown and described in detail, but is typified by a pulley 3 secured to the shaft of the tool 4, by which said tool 4 may be given rapid rotation in the direction of the arrow, as indicated in Fig. 1. The tool 5, preferably disposed below the tool 4, is likewise suitably driven, preferably by connections with the shaft of the tool 4, not shown, so that both of said tools are rotated in the direction as indicated by the arrows, Fig. 1.

In treating the edge portions of boots and shoes it is desirable to have two tools 4 and 5, one, as 4, being provided with an abrading material of suitable character and preferably employed for treating the sole edge around the forepart, while the tool 5, likewise provided with a suitable abrading material, is more especially designed for treating the shank edge portion of the sole.

Disposed adjacent the tool 4 is a dust hood 6 having an opening 7, Fig. 3, which partially embraces the rotating tool 4. Likewise disposed closely adjacent the tool 5 is a dust hood 8 having an opening 9 disposed directly above the tool 5, the construction in each case being such that if a blast of air be drawn through the dust hoods 6 and 8, the dust and other particles created by the tools 4 and 5 will tend to be drawn into the openings 7 and 9 of the dust hoods. Since, however, the tools 4 and 5 rotate at high speed, many of the particles of dust or dirt will be thrown from the tools and escape the influence of the air currents passing into the openings 7 and 9 of the dust hoods, and to intercept these particles thus escaping from the tools 4 and 5 the present invention further provides the dust gatherer, which as a whole may be indicated in Fig. 1 by the letter B.

The gatherer B is disposed back of the tools 4 and 5 in such position that it will intercept and gather all dust particles thrown from these tools and not passing into the openings 7 and 9 of the dust hoods. In the present form of the invention the dust gatherer B comprises a casing, four of whose sides are closed, leaving one side open so that the shoe presented to the tools 4 and 5 may be conveniently manipulated with respect to said tools without interference from the dust gatherer.

The dust gatherer B preferably comprises the two backwardly converging rear walls 10 and 11, their inclination to each other being such, as indicated in the drawings, that particles of dust or dirt striking at either side of the center 12 of said rear wall will be deflected toward the center thereof and into suitable openings 13 disposed at the central portion 12 of the rear wall.

It will be noted that the rear wall of the dust gatherer B is carried upwardly and bent over to form the top 14 of the dust gatherer, said top 14 being preferably disposed above the plane of the tools 4 and 5, so that any particles of dust thrown from said tools in an upward direction and failing to enter the openings 7 or 9 of the dust hoods 6 and 8 will strike the top wall 14 of the dust gatherer and either be drawn into one of the central openings 13, the top one, Fig. 1, for instance, or said particles will travel backward and impinge against the rear wall of the dust gatherer and there be directed into the openings 13, as already described.

The bottom portion of the dust gatherer B is preferably formed as indicated in Fig. 1, wherein it comprises a rectangular member having the downwardly converging bottom plates 15 which meet at the central opening 16 thereof, said bottom plates 15 thus being inclined to direct any particles dropping thereon toward the opening 16 for a purpose that will presently appear. The back bottom plate 15 connects directly with the back wall of the dust gatherer, as indicated in Fig. 1.

One side of the dust gatherer B is closed by a plate 17 which may be secured, as at 18, to the head 2 of the machine, or otherwise held in place as desired. The plate 17 effectively directs all dust particles passing from the tools toward the rear wall of the dust gatherer and prevents sidewise escapement thereof.

Extending from a suitable air suction means, which may be of any usual or desired type and is consequently not shown, is a dust trunk or flue 19, Fig. 1, which, in the present illustration, extends upward and at the rear of the dust gatherer B to which it is connected by the openings 13 centrally of the back wall of said gatherer. The dust

trunk 19 extends over the top of the dust gatherer B, as indicated, and communicates with the dust gatherer by the upper opening 13 which, as indicated, is at the central back and top portions of the dust gatherer. To the terminal edge portion of the dust trunk 19 the hood 6 is hinged, as at 20, so that said hood may be lifted when desired to enable access to be had to the tool 4. The hood 8 is preferably not hinged, but communicates with the dust trunk 19, as indicated in Fig. 3.

Extending from the dust trunk 19 below the bottom of the dust gatherer B is a pipe or flue 21 which communicates with the opening 16 in the bottom of the dust gatherer.

From the construction herein described as one embodiment of the present invention, it will be noted that particles of dirt or dust detached from the shoe by the tools 4 or 5 are either carried directly into the hoods 6 or 8, the openings 7 and 9 of which are closely adjacent said tools, or are thrown forcibly backward toward the rear wall of the dust gatherer. Such particles of dust thrown backward from the tools will impinge against the converging rear walls 10 and 11 in a manner such that they will be deflected toward the central portion 12 of said rear wall and consequently be drawn into one of the openings 13 into which air is being constantly drawn by the suction means connected to the dust trunk 19. Any particles failing to be drawn into the openings 13 or into the hoods, as hereinbefore described, will fall upon the downwardly converging bottom plates 15 of the dust gatherer and be drawn into the opening 16 from whence they will pass into the dust trunk 19.

It will be noted that the dust gatherer has a plurality of openings 13 extending at the central converged portion 12 of the rear wall, and that it has another opening 13 which extends from the rear vertical portion of said rear wall over the top of the dust gatherer, as indicated in Fig. 3, and that these openings, Fig. 3, are disposed relatively to the hoods 6 and 8 to be substantially midway between them so that particles thrown from either tool 4 or 5 will readily find their way into one of the openings 13 either at the top or at the rear portion of the dust gatherer, and failing in this will drop upon the bottom of the dust gatherer and be drawn through the opening 16.

What is claimed is:

1. In a machine for treating boots and shoes, a dust hood having an opening for carrying away dust, a dust gatherer back of said hood to catch dust failing to enter the dust hood on its way thereto, and a dust trunk or suction flue, said dust gatherer and

dust trunk having a plurality of communicating openings disposed at different heights in the back wall of the dust gatherer.

2. In a machine for treating boots and shoes, a dust hood having an opening for receiving dust particles, a dust gatherer comprising a casing disposed back of said dust hood and having a top and back portion extending continuously from said dust hood, and a dust trunk or suction flue, said dust trunk and dust gatherer having a plurality of communicating openings disposed at different vertical heights in the back wall of said dust gatherer.
3. In a machine for treating boots and shoes, a dust trunk, a dust hood in communication with the dust trunk and having an opening to carry away dust, and a dust gatherer comprising an enlarged casing disposed back of the dust hood to intercept and gather particles of dust which fail to enter the dust trunk through the dust hood, said dust gatherer having communication with the dust trunk.
4. In a machine for treating boots and shoes, a dust trunk, a dust hood in communication with the dust trunk and having an opening through which much of the dust passes, and a dust gatherer for catching dust particles that fail to enter the dust hood and comprising an enlarged casing having a rearwardly converging rear wall and provided with openings communicating with the dust trunk.
5. In a machine for treating boots and shoes, a dust trunk, a dust hood in communi-

cation with the dust trunk and having an opening through which much of the dust passes, a dust gatherer comprising an enlarged casing having a rearwardly converging rear wall, and a top wall extending to the dust hood, and provided with openings communicating with the dust trunk.

6. In a machine for treating boots and shoes, a dust trunk, a dust hood communicating with the dust trunk and having an opening through which much of the dust passes, and a dust gatherer for gathering or intercepting particles that fail to go into the dust hood, having a rearwardly converging rear wall, a top wall, and a downwardly converging bottom wall, said rear, top, and bottom walls having openings communicating with the dust trunk.

7. In a machine for treating boots and shoes, a dust trunk, a dust hood communicating with the dust trunk and having an opening through which dust passes and a dust gatherer for gathering or intercepting particles that fail to go into the dust hood, having a rearwardly converging rear wall, a top wall, one inclosing side wall, and a downwardly converging bottom wall, said rear, top, and bottom walls having openings communicating with the dust trunk.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

THOMAS G. PLANT.

Witnesses:

A. L. HAGGERTY,
ALFRED H. HANDLEY.