Nov. 10, 1925. 1,560,697

C. KNOWLES

DRESSING ATTACHMENT FOR VERTICAL SURFACE GRINDERS

Filed Oct. 24, 1922

Fig. 1.

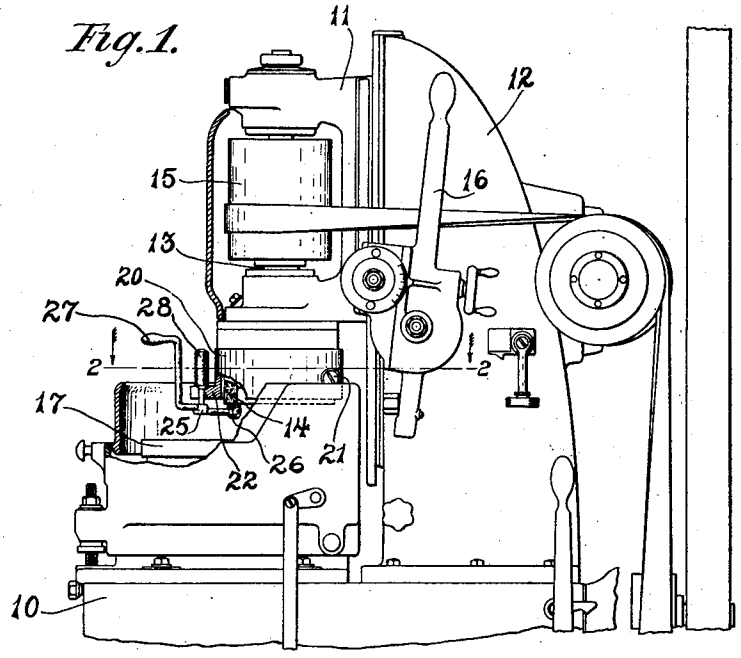


Fig. 2.

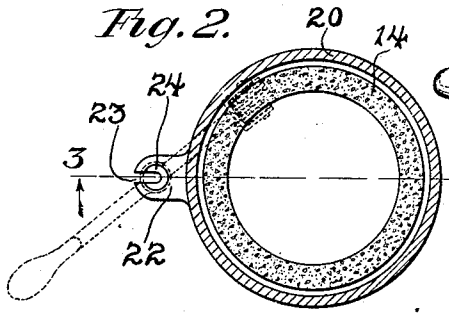


Fig. 3.

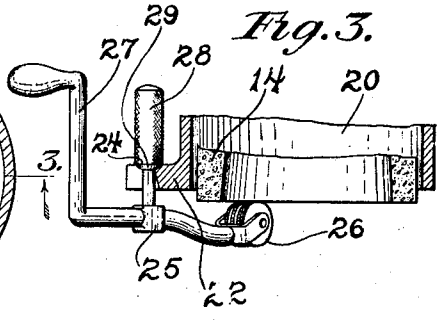
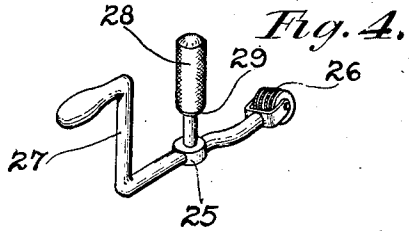


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DRESSING ATTACHMENT FOR VERTICAL-SURFACE GRINDERS.

Application filed October 24, 1922. Serial No. 596,664.

To all whom it may concern:

Be it known that I, CARROLL KNOWLES, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dressing Attachments for Vertical-Surface Grinders, of which the following is a specification.

This invention relates to a tool adapted to dress the work engaging surface of an abrasive wheel. More particularly, the invention relates to a hand tool to facilitate the operation of dressing the abrasive wheel of a vertical surface grinding machine.

An object of the present invention is to provide a simple, inexpensive dressing tool which may be conveniently supported from the wheel head or other part of a vertical surface grinder and adapted to be manually moved about in contact with the abrasive wheel.

One feature which enables me to accomplish the above object is that I provide a support for the dressing tool having a seat forming a portion of a spherical surface, this seat preferably being formed in the guard surrounding the wheel. Adapted to be suspended from said seat so as to be movable in all directions is the dressing tool forming a part of the present invention.

Another feature which is advantageous is that the dressing tool is provided with a convenient handle whereby it may be readily moved about in contact with the abrasive wheel and is also provided with a supplemental handle at an angle to the first handle having a portion of a spherical surface adapted to contact with the spherical seat on the guard from which the tool is suspended.

Another feature which is advantageous is that the tool may be quickly placed in operative position when it is desired to dress the wheel by simply placing the supplemental handle in contact with the spherical seat, and, when the dressing operation has been completed, the tool may be quickly removed.

With these and other objects in view, my invention consists in the features of construction and operation set forth in the accompanying specification and illustrated in the accompanying drawing.

In the accompanying drawing annexed hereto and forming a part of this specification, I have shown my invention embodied in a vertical surface grinder, the wheel head of which is adapted to be moved vertically toward and from a fixed table. It will be understood, however, that the invention can be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing:

Figure 1 is a side elevation of a portion of a vertical surface grinder, parts being broken away to show the dressing tool in operative position thereon.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

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

Fig. 4 is a perspective view of the dressing tool.

Briefly, my invention in its broadest aspect comprises: A tool adapted for use with a surface grinder such as the one shown in side elevation in Fig. 1. This may include a wheel rotatably mounted upon a vertical axis within a vertically movable head. Below the wheel is a table upon which work may be mounted, the table shown in Fig. 1 being rotary. A support upon a portion of the wheel head adjacent the wheel is provided to pivotally support a dressing tool having parts such as steel disks adapted to contact with the work engaging surface of the wheel. On this dressing tool is a handle so that the tool may be moved about while in contact with the wheel. Preferably a supplemental handle is provided having a portion of a spherical surface forming a means on the tool engaging the support on the wheel head.

Referring more in detail to the figures of the drawing, at 10 I show the base of a vertical surface grinding machine having a movable tool head 11 adapted to be raised or lowered upon suitable ways on a housing 12. Within the head 11 is rotatably mounted a wheel spindle 13 carrying an abrasive wheel 14 at its lower end. A pulley 15 fastened to the spindle 13 provides means for rapidly rotating the spindle and wheel. A lever 16 is provided by means of which the wheel head 11 and the wheel

14 may be raised or lowered. Below the wheel 14 is a table 17 which may be of any desired form, suitable means being provided to rotate or reciprocate it in accordance with the type of table used. As these parts are the usual and principal parts of a surface grinding machine, they will not be more particularly described.

Mounted on the head 11 adjacent the wheel 14 is an annular guard member 20 which closely surrounds the abrasive wheel 14 and is secured in position thereon by means of the clamping screw 21. This guard 20 may be of any preferred type, the one shown in the figure being merely for illustrative purposes. On this guard 20 is an outstanding projection 22 either formed integral or suitably fastened thereto which is provided with a slot 23. Surrounding the slot 23 is a circular depression forming a portion of a spherical surface shown at 24. This surface 24 provides the bearing member of a ball and socket for the tool presently to be described.

Adapted to be supported by means of the projection 22 is the dressing tool shown generally at 25. This at one end is provided with tool contacting and dressing means in the form of hardened steel disks 26 formed in the usual manner to cut away the work engaging surface of the wheel during the dressing operation. At the oppositely extended portion of the tool 25 is a handle 27 of any preferred form, that shown in Fig. 4 being preferred. In addition to the handle 27 a supplemental handle 28 is provided which preferably extends at right angles to the main portion of the tool 25 and is provided with a portion of a spherical surface 29 corresponding exactly in diameter to the surface 24.

In order to dress the work engaging surface of the wheel 14, it is only necessary to position the supplemental handle 29 upon the projection 22 in such a manner that the surface 29 on the dressing tool 25 engages the surface 24 on the projection 22. With the dressing tool 25 in this position, it may be moved about in any direction so that the disk 26 will contact with the wheel 14. By manually moving the tool 25 about by means of the handles 27 and 28, the surface of the wheel 14 may be suitably and evenly dressed.

What I claim is:

1. A dressing tool for grinding wheels comprising, a surfacing member adapted to engage and dress the work engaging surface of a wheel, a handle on said tool, a second handle thereon positioned at an intermediate point of said tool, and means on said second handle to suspend said tool adjacent said wheel whereby it may be moved about in all directions in contact with the wheel.

2. A dressing tool for grinding wheels comprising, a surfacing member adapted to engage and dress the work engaging surface of a wheel, a handle on said tool, and means comprising a supplementary handle positioned at an intermediate point of said tool and having a portion of a spherical surface thereon to suspend said tool adjacent said wheel whereby it may be moved about in all directions in contact with the wheel.

3. A dressing tool for grinding wheels comprising, a surfacing member adapted to engage and dress the work engaging surface of a wheel, a handle on said tool, a second handle thereon positioned at an intermediate point of said tool and angularly disposed relative to the first handle, and means on said second handle to suspend said tool adjacent said wheel whereby it may be moved about in all directions in contact with the wheel.

4. A dressing tool for grinding wheels comprising, a surfacing member adapted to engage and dress the work engaging surface of a wheel, a handle on said tool at the end of the tool opposite the surfacing member and offset therefrom, a second handle thereon positioned at an intermediate point of said tool, and means on said second handle adapted to engage supplementary means adjacent the wheel to suspend said tool whereby it may be moved about in all directions in contact with the wheel.

In testimony whereof, I hereto affix my signature.

CARROLL KNOWLES.