J. A. JOHNSON.

GRINDING GAGE.

APPLICATION FILED APR. 17, 1912.

1,040,687. Patented Oct. 8, 1912.

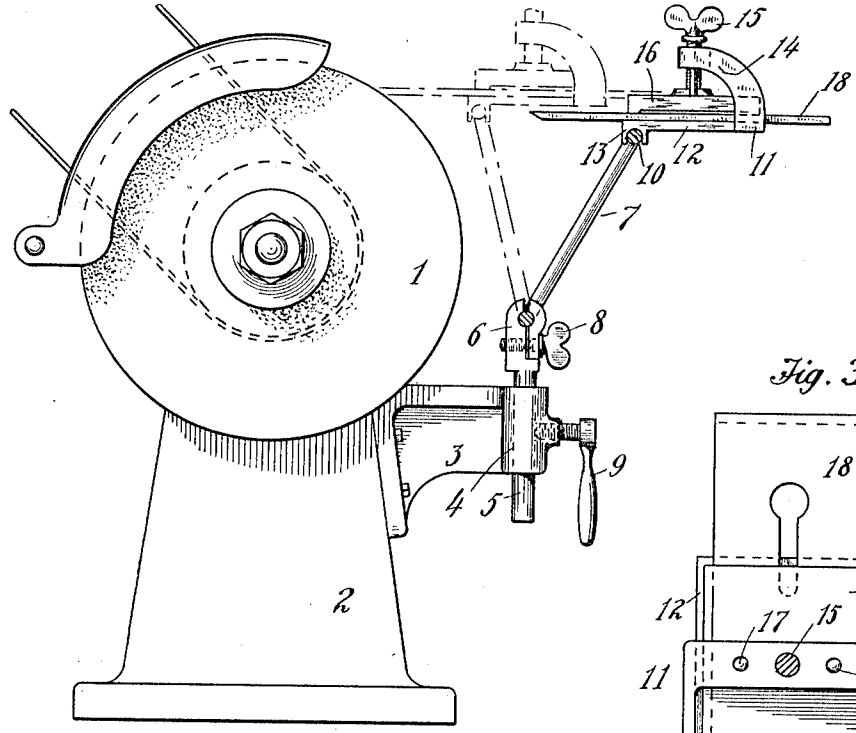
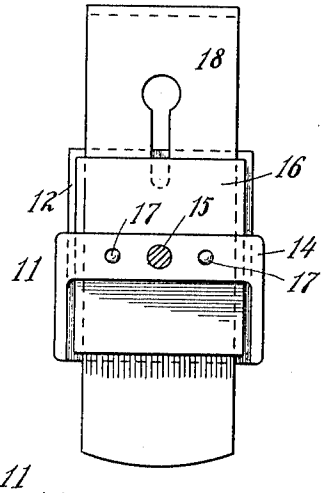


Fig. 1.

Fig. 3.



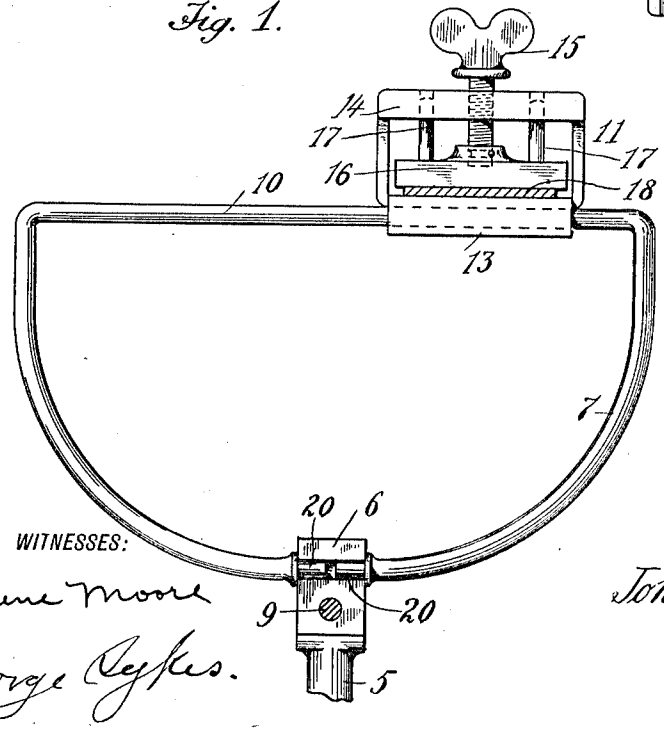


Fig. 2.

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GRINDING-GAGE.

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To all whom it may concern:

Be it known that I, JOHN A. JOHNSON, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Grinding-Gages, of which the following is a specification.

My invention relates to grinding machines, and has particular reference to means for guiding a cutting tool during the grinding operation.

The object of my invention is to provide a grinding attachment of simple and cheap construction, by means of which cutting tools may be quickly and correctly fed to the operating surface of a grinding machine, and which may be readily manipulated by any one versed in the art.

The combinations and features which coact to produce this result are clearly set forth in the following description, which is readily understood, especially if reference is had to the accompanying drawing, in which:

Figure 1 shows, in side elevation, a grinding machine embodying my invention, Fig. 2 is a front elevation of my device, shown detached from the machine, and Fig. 3 is a plan view of my device.

The grinding machine may be of any well known construction, and the one shown in Fig. 1 comprises a wheel 1, mounted for rotation on a base 2. Most machines of this type are made with a bracket or knee 3, perforated to receive a tool-rest, or if the knee is not perforated in this manner, a perforated bracket may readily be bolted on the knee, thus producing the same result. A post 5 is journaled in said perforation, and said post is at the top made with a clamping head 6, adapted to support a loop-shaped frame 7. A thumb-screw 8, extending through said clamping head, serves to clamp said frame 7 in adjusted position, and the post 5 is fixed in adjusted position by a handscrew 9. Frame 7 is made with a horizontal top member 10, which forms a track for a tool support 11. The latter comprises a plate 12, made on the bottom with a transversely grooved shoulder 13 registering with the rear edge of the plate and adapted to straddle the loop member 10. From the front edge of plate 12 rises a yoke 14, which bends rearwardly, extending substantially to the middle of the plate, and is made with a central perforation, threaded to receive a clamping screw 15. The end of said screw 15 is rotatably fixed in a block 16 approximately of the same size as the plate, and said block is by suitable guiding means, such as pins 17 slidably fitted in perforations of the yoke, retained in alinement with said plate.

The operation of my device is very simple. The tool to be ground, in this case the blade 18 of a carpenter's plane, is placed on the plate 12, whereupon the block 16, by means of the screw 15, is caused to clamp the said blade on to the plate. The tool support, thus carrying the blade, is next mounted on the loop 7, the latter is properly adjusted, substantially as indicated in dotted outline in Fig. 1, whereupon the screw 8 is operated to clamp the said loop securely in position. The post 5 is then turned until the cutting edge of the blade is correctly alined with the face of the wheel 1, and finally the said post is rigidly locked in position by means of the handscrew 9. The wheel is now started and the support caused to move back and forth transversely on the loop, the operator during said transverse motion exerting a very slight backward pressure on the support, and the movement is continued until the grinding operation is completed.

The particular shape of the yoke 14 of the tool support is important as it permits of clamping long articles transversely on the support without danger of the vertical portion of said yoke interfering with the positioning of said article.

Attention is called to the construction of loop 7, which terminates in shouldered studs 20, which engage the clamping head 6 of post 5. The loop is preferably made of resilient metal, and it is therefore readily detached when the pressure of said clamping head is relieved, and as readily re-attached, without disturbing the shape of the loop.

The horizontal member 10 of the loop, as shown in the drawing, forms a perfectly straight track, as required for grinding a tool like the blade 18, but it is obvious that this member may be curved where it is desired to grind a tool which carries a curved cutting edge.

I claim:

1. In a grinding attachment, the combination with a grinding wheel and a support for said wheel, and a support frame adjust-

able vertically, horizontally and circumferentially; of an independent tool-holder provided with means for clamping the tool to be ground in position; and means on said tool-holder and coöperating with said support frame for guiding said tool-holder during the grinding operation.

2. In a grinding attachment, in combination, an adjustable support mechanism having a horizontal guide rail, an independent tool frame made with a transverse groove for engagement with said guide rail, a yoke on said tool frame, a clamping member mounted for vertical movement in said yoke, and a screw mounted in the yoke for operating said clamping member.

3. In a grinding machine, the combination with a supporting swing bracket having a horizontal track; of an independent tool holder comprising a base having on the front edge a pendent groove adapted for engagement with said track, a yoke on the rear of said base, a clamping screw mounted in said yoke, said yoke offset so as to position said screw substantially in the center of the base, all for the purpose set forth.

In testimony whereof, I have hereunto affixed my signature in the presence of two witnesses.

JOHN A. JOHNSON.

Witnesses:
IRENE MOORE,
DAVID E. LOFGREN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."