L. JOHNSON.

TOOL SHARPENER.

APPLICATION FILED AUG. 3, 1911.

1,016,072. **Patented Jan. 30, 1912.**

Fig. 1.

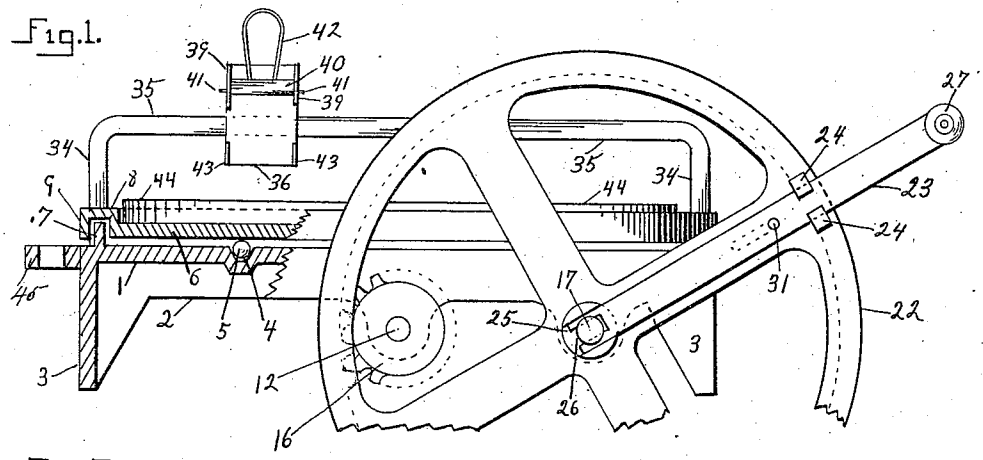


Fig. 2.

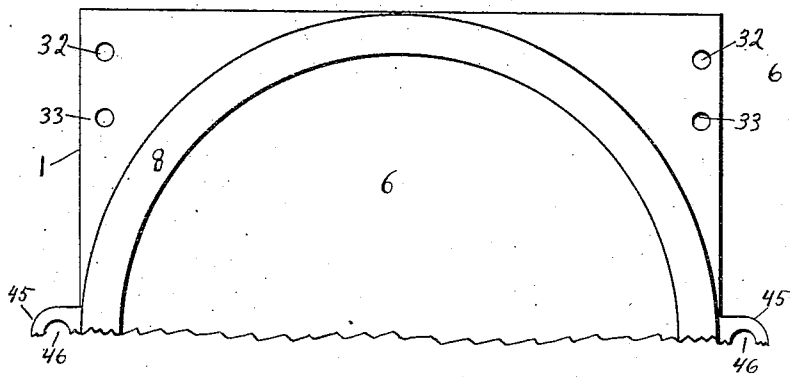


Fig. 4.

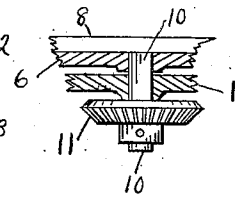


Fig. 5.

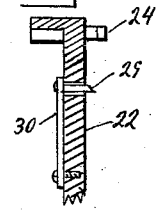


Fig. 3.

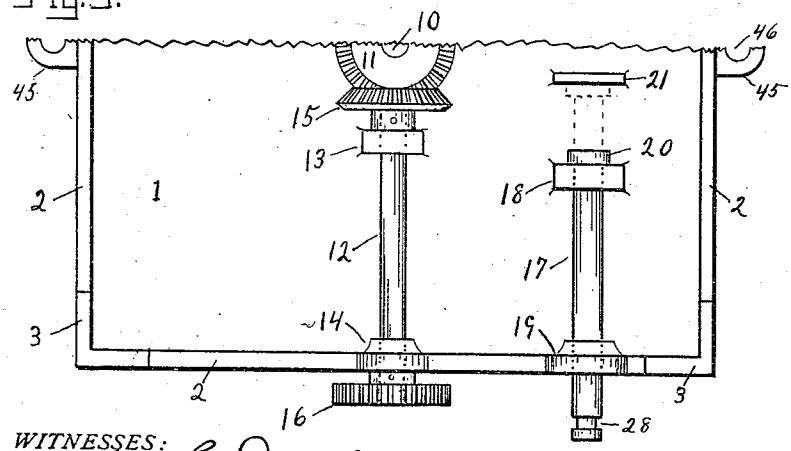
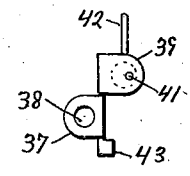


Fig. 6.



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TOOL-SHARPENER.

1,016,072. Specification of Letters Patent. Patented Jan. 30, 1912.

Application filed August 3, 1911. Serial No. 642,155.

To all whom it may concern:

Be it known that I, LORENZO JOHNSON, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Tool-Sharpeners, of which the following is a specification.

This invention relates to tool sharpeners, and has for an object the provision of means whereby tools, such as plane bits, chisels, scrapers, etc., that require to be sharpened at definite angles to give proper service, may be readily and accurately sharpened. Sharpening such tools by hand is a difficult operation, as it is practically impossible to hold them constantly at the same angle.

With the foregoing and other objects in view, my invention consists of the novel arrangement, and construction of parts set forth, and illustrated in the accompanying drawing which forms a part of this specification, in which is set forth an embodiment of my invention, but it is to be understood that changes, variations, and modifications may be resorted to that come within the scope of the appended claims.

In the drawings, in which like reference numerals indicate like parts in the different views; Figure 1, is a front elevation, partly is section. Fig. 2, is a plan, showing the rear half of the top of the machine. Fig. 3, is a bottom view of the front half of the machine, with the drive wheel removed. Fig. 4 is a central sectional detail through the stand and turntable. Fig. 5 is a sectional detail showing the method of holding the handle bar in position. Fig. 6, is a side elevation of the tool-holder.

Referring to the drawings, a table, 1, depending sides, 2, and legs, 3, constitute a stand. The table is provided with an annular runway, 4, in which are placed a number of balls, 5, to form a bearing for a turntable, 6. The table is further provided with an annular rib, 7. The turntable has a raised rim, 8, and a depending lip, 9, that extends over the rib 7. From the center of the turntable a stem, 10, extends down through the table 1 and has a bevel gear secured on the lower end thereof. A shaft, 12, mounted in bearings, 13 and 14, on the under side of the table, is provided on the inner end with a bevel gear, 15, adapted to mesh with the bevel gear 11, and on the outer end with a pinion, 16. A shaft, 17, mounted in bearings, 18 and 19, has a limited longitudinal motion therein, a head, 20, on the shaft limiting the outer movement, and a stop, 21, on the table limiting the inward motion. The shaft 17 projects beyond the stand for the purpose of receiving a drive wheel, 22, that is provided with internal gear teeth that are adapted to mesh with the pinion 16. The drive wheel 22 is removably mounted on the shaft 17 and is held thereon by handle bar, 23, provided with a bifurcation, 26, on its inner end. Near the perimeter of the drive wheel are recessed lugs, 24, and the hub of the wheel is provided with a slot, 25, for the reception of the handle bar. The handle bar passes between the recessed lugs 24, and into the slot 25, the bifurcation 26 engaging with an annular groove 28, on the end of the shaft 17, and serves to hold the drive wheel in place on the shaft. A pin, 29, held by a spring, 30, extends through a spoke of the wheel and engages in a perforation, 31, in the handle bar and serves to hold it against withdrawal. The table is provided with pairs of apertures, 32 and 33, for the reception of a work support, the vertical members 34, of which are adapted to be inserted therein. On the longitudinal member 35 of the support a work holder, 36, is adapted to slide. The work holder is provided with depending ears, 37, that have perforations, 38, to fit on the cross-piece 35, and upstanding ears, 39, between which a roll, 40, is eccentrically pivoted on pins, 41, a handle, 42, is attached to the roll. Lugs 43, are provided on the lower part of the work holder at the edges thereof. An abrasive disk, 44, of suitable composition is adapted to be held on the turntable, fitting within the rim 8. The table is provided with projecting ears, 45, having perforations, 46, through which screws may be passed to fasten the stand on a bench, or other support. The work support and drive wheel are adapted

to be removed from, and the shaft 17 slid in under, the stand to allow the sharpener to be packed in a small compass for facility of transportation.

In use the sharpener is placed on a bench, or other suitable support, and if desired secured in place by means of gimlet pointed hand screws passed through the holes in the ears 45. The drive wheel is placed on the shaft 17, and secured thereon by means of the handle bar 23. The work support is placed in one of the pairs of perforations 32 or 33, the selection of the perforations in which to place the support being governed by the angle at which it is desired to sharpen the tool. The closer the support is placed to the center of the table the more obtuse the angle will be at which the tool is sharpened. The handle 42 is then raised the tool placed under the roll 40 and pushed forward until it touches the abrasive disk 44 when the holder 36 is held in position to allow the tool to bear on the center of the abrasive disk, the handle is then pressed down and the roll 40, by reason of its eccentric mounting, clamps the tool in the holder. The disk is rotated, by means of the drive wheel, and the tool is moved back and forth across the face of the disk. As the tool is held rigidly in fixed relation to the disk it will be sharpened accurately, at the angle desired. And as the tool is moved from side to side of the disk, across the center, the wear thereon will be equally destributed.

Having described my invention so that any one may make and use the same I claim;—

1. In a tool sharpener, a stand, a ball-bearing turntable on said stand, an abrasive disk on said turntable, said stand, being provided with a plurality of perforations arranged on opposite sides of the turntable, a support spanning the turntable and removably positioned in said perforations, a tool holder reciprocably mounted on said support, and means for rotating said turntable.

2. In a tool sharpener, a stand, a turntable carrying an abrasive disk mounted thereon, said stand provided with a plurality of perforations on opposite sides of the turntable, a support formed of a single piece of wire, having a horizontal body portion and end portions bent at substantially right angles to the body portion, said end portions being adapted to be readily inserted in the aforesaid perforations, a tool-holder adapted to be reciprocably mounted on said support, and means for rotating the turntable.

3. In a tool sharpener, a stand, a runway thereon, balls in said runway, a turntable resting on said balls, an abrasive disk on said turntable, an annular rib on said stand, a lip on the turntable overhanging said rib, the top of the stand being provided with a row of perforations on opposite sides of the turntable, a support spanning the turntable and removably positioned in said perforations, a tool holder reciprocably mounted on said support, and means for rotating the turntable.

4. In a tool sharpener, a stand, a runway therein, balls in said runway, a turntable resting on said balls, said table being provided with a cup-like depression adapted to receive an abrasive disk and hold the same by frictional contact, an annular rib on said stand, a lip on the turntable overhanging said rib, and means for rotating said turntable.

5. A stand, a turntable provided with a cup-like depression adapted to receive an abrasive disk, means for rotating the turntable, said stand provided with a row of perforations on each side thereof, an annular rib on the stand, a lip on the turntable adapted to overhang the rib, a support provided with integral legs and adapted to be removably positioned in said perforations, and a toolholder reciprocably mounted on said support.

6. A stand, a turntable carrying an abrasive disk, means for rotating the turntable, the stand provided with a row of perforations on opposite sides of the turntable, a support spanning the turntable and removably positioned in said perforations, a toolholder comprising a body-plate having vertical and depending ears on each side thereof, the depending ears being provided with perforations adapted to embrace said support, and a roll eccentrically mounted in and between the vertical ears.

7. A stand, a turntable carrying an abrasive disk, means for rotating the turntable, a tool-holder comprising a body-plate having vertical, marginal ears, a roll eccentrically mounted in and between said ears, a handle on said roll, and means for reciprocably mounting said holder over the turntable.

8. A stand, a turntable, means for rotating the turntable, said stand provided with a row of perforations in the top thereof on opposite sides, a support spanning the turntable and removably positioned in said perforations, a tool-holder provided with a vertical marginal ear on each side at the upper end thereof, a roll mounted eccentrically between said ears, a depending marginal ear on each side provided with a perforation adapted to embrace said support, and a vertical marginal ear at the lower end thereof adapted to serve as a guide for the tool.

9. A stand, a turntable provided with a seat adapted to receive an abrasive disk, a support spanning the turntable, a tool-

holder comprising a body-plate provided with vertical marginal ears at the upper end thereof, a roll eccentrically mounted between said ears, depending marginal ears provided with means for engaging said support, vertical marginal lugs at the lower end of the plate adapted to serve as guides for the tool, and means for rotating the turn-table.

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Witnesses:
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