

No. 751,590.

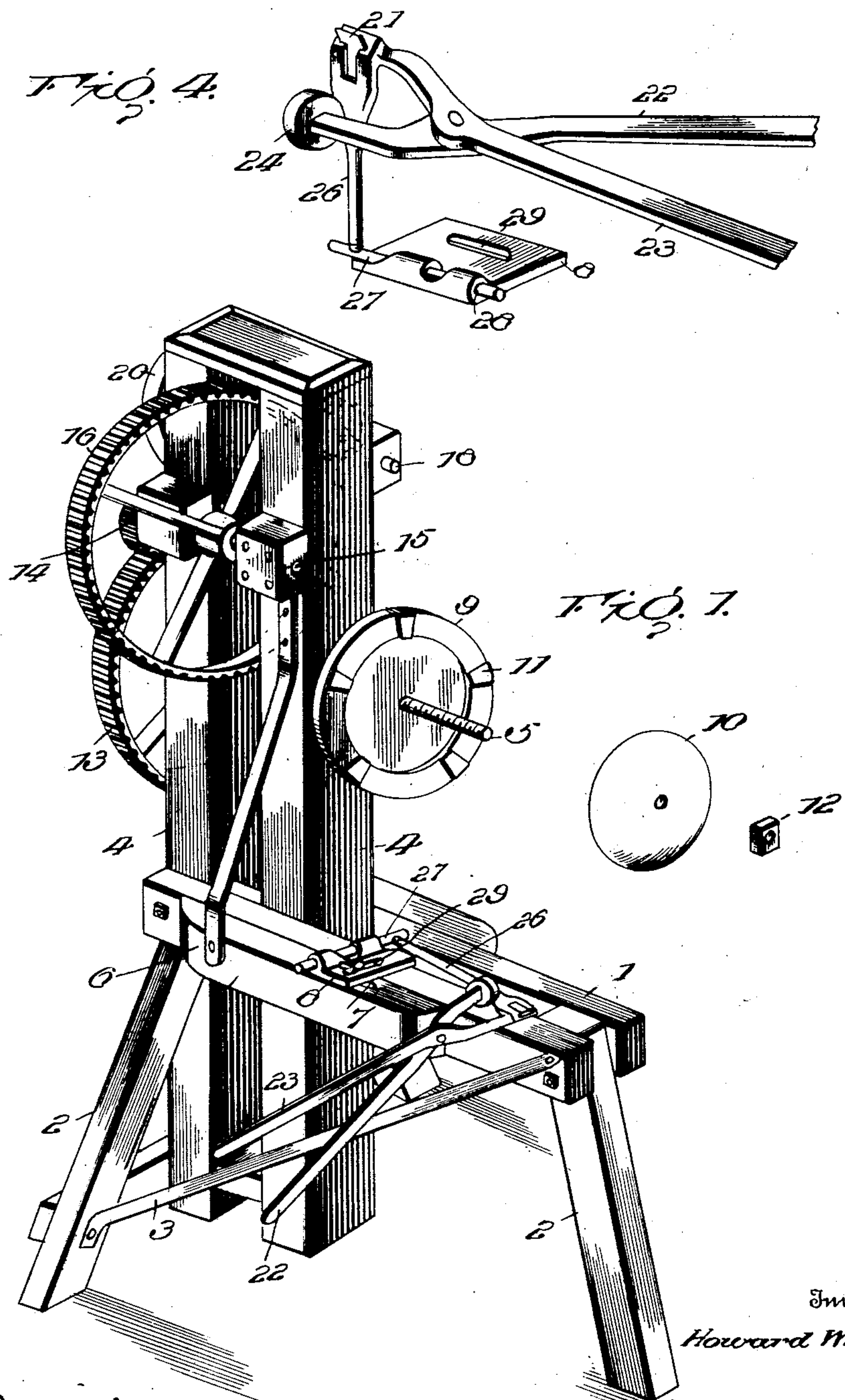
PATENTED FEB. 9, 1904.

H. WHITE.
DISK SHARPENER.

APPLICATION FILED JUNE 24, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

In Memory
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UNITED STATES PATENT OFFICE.

HOWARD WHITE, OF CRAWFORDSVILLE, IOWA, ASSIGNOR OF TWO-THIRDS TO C. M. STRAIN AND W. P. & E. J. DAVIDSON, OF CRAWFORDSVILLE, IOWA.

DISK-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 751,590, dated February 9, 1904.

Application filed June 24, 1903. Serial No. 162,935. (No model.)

To all whom it may concern:

Be it known that I, HOWARD WHITE, a citizen of the United States, residing at Crawfordsville, in the county of Washington and State of Iowa, have invented certain new and useful Improvements in Disk-Sharpener, of which the following is a specification.

This invention has relation to machines for sharpening rotary colters and disk cutters of any form designed for harrows, plows, or agricultural machinery of any kind, the purpose being to devise a mechanism which will facilitate the work and reduce the labor to the smallest amount possible.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine embodying the invention, the outer member of the disk-clamp being removed from the mandrel. Fig. 2 is a side elevation of the machine. Fig. 3 is a top plan view of the machine. Fig. 4 is a perspective view of the tool-holder. Fig. 5 is a detail perspective view of the bit and the end portion of the member of the tool-holder constructed to receive the bit, the parts being separated and illustrated on a larger scale.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The framework for supporting the operating parts may be of any approved construction, and, as illustrated, the same consists of the bed 1, legs 2, braces 3, and spaced up- rights 4, the latter receiving at their upper ends the driving-gear by means of which rotary motion is imparted to the mandrel 5, to which the disk or other work is clamped.

The bed 1 comprises spaced longitudinal tim- bers between which are received the uprights 4. A block 6 projects laterally from the bed and has a longitudinal slot 7 to admit of lon- gitudinal adjustment of the plate 8, support- ing the tool-holder.

The mandrel 5 is provided upon one end 55 with a work-clamp consisting of plates or members 9 and 10, having their meeting faces of a shape to conform approximately to the concavo-convex form of the ordinary rolling colter or disk, such as commonly employed in agricultural machinery. The plate or mem- ber 9 is preferably fixed upon the mandrel and is provided at intervals with grips 11, consisting of fibrous material, such as wooden blocks fitted into recesses or openings formed in the plate or member 9. The clamp plate or member 10 preferably fits the threaded end of the mandrel loose, so as to slip thereon, and is forced toward the member 9, so as to grip the work by the clamp-nut 12, which is adapt- ed to be turned by a spanner, wrench, or kindred tool. The opposite end of the mandrel 5 is provided with a gear-wheel 13, which is in mesh with a pinion 14, secured to shaft 15, journaled in the uprights 4, parallel with the mandrel 5, which is mounted in said uprights in any approved way. A gear-wheel 16, se- cured to the shaft 15, is in mesh with a pinion 17, applied to shaft 18, to which power is ap- plied for operating the train of gearing by means of which motion is transmitted to the disk or work 19. As shown, a band-pulley 20 is applied to one end of the shaft 18, and power is applied thereto from a suitable source by means of a drive-belt (not shown) in the ac- customed manner.

The bit or cutting-tool is indicated at 21 and comprises a shank and a cutter portion, the latter being deflected and provided with a chisel edge by means of which the cutting is effected in the operation of the machine. The bit or cutter may be of any structural form and material best adapted for the particular work in hand and is removably fitted to the tool-holder, so as to be substituted or replaced by a different tool when required.

The tool-holder comprises pivoted members 22 and 23, crossed at their pivotal point and having their short arms constructed to receive the tool and the rotary support 24. One of the members, as 23, is adapted to receive the tool or cutter 21 and for this purpose is formed with a socket 25, into which the shank of the tool is adapted to slip. The corresponding end of the member 22 is constructed to receive the wheel forming the rotary support 24, which in the operation of the machine sustains the disk or work 19 against the pressure and action of the tool when removing a portion of the disk 19, as in the operation of sharpening the same.

The tool-holder support consists of the post 26, rod 27, and the plate 8, provided with socket 28 to receive the rod 27, journaled and slidable therein, whereby the tool may be moved laterally and advanced along the work toward and from the mandrel. The post 26 may be an integral part of the tool-holder or may be secured thereto in any substantial way, and, as shown, it consists of an extension of the short arm of the member 23 and arranged so as to sustain the perpendicular strain imposed upon the tool when the machine is in operation. The plate 8 has a longitudinal slot 29, through which and the longitudinal slot 7 of the block 6 passes the clamp-bolt 30, by means of which the plate 8 is secured in an adjusted position. The plate 8 is adjustable longitudinally, laterally, and angularly with reference to the bed 1, thereby admitting of properly positioning the tool with reference to the work when the machine is adjusted to sharpen a disk of given size and dish.

In the operation of the machine the disk or work 19 is slipped upon the mandrel 5 and is clamped thereto between the members 9 and 10 and is rotated by imparting motion to the shaft 18. The tool-holder is moved so as to occupy a position about as shown in Figs. 2 and 4—that is, with the post 26 upright and the members 22 and 23 horizontal, the rotary support 24 being upon the concave side of the disk and the bit or tool 21 upon the convex

side. By pressing the outer ends of the pivoted members 22 and 23 together the cutter 21 is caused to bite into the disk 19 and remove a portion of the metal, the lateral strain of the cutter being sustained by the rotary support 24 in the manner well understood. A longitudinal movement of the rod or part 27 in the socket 28 admits of shifting the cutter 21 along the disk 19 toward and from the center. The tool-holder may be turned down out of the way, as indicated in Fig. 1, by rotating the rod 27 in the socket or bearing 28, as will be readily comprehended.

Having thus described the invention, what is claimed as new is—

1. In combination, pivoted members, a post projected from one of said members and out of line with the pivotal connection therebetween, a plate, and means pivotally connecting the said post with the said plate to admit of its lateral swinging, substantially as set forth.

2. In combination, pivoted members, a post projected from one of said members, a plate, and a bar forming a part of said post and rotatably and slidably mounted upon the plate, substantially as set forth.

3. The herein-described machine comprising a mandrel, a work-clamp fitted to said mandrel, a train of gearing for transmitting motion to the mandrel, a plate having longitudinal, lateral and angular adjustment and provided with a socket constituting a bearing, a rod rotatably and slidably mounted in the bearing of said plate, a post projected from said rod, a tool-holder carried by said post and comprising pivoted members, one of the members having a socket, a tool removably fitted in said socket, and a rotary support applied to the other member of the tool-holder, substantially as set forth.

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

HOWARD WHITE. [L. s.]

Witnesses:

N. J. LEASE,

T. E. MAXWELL.