

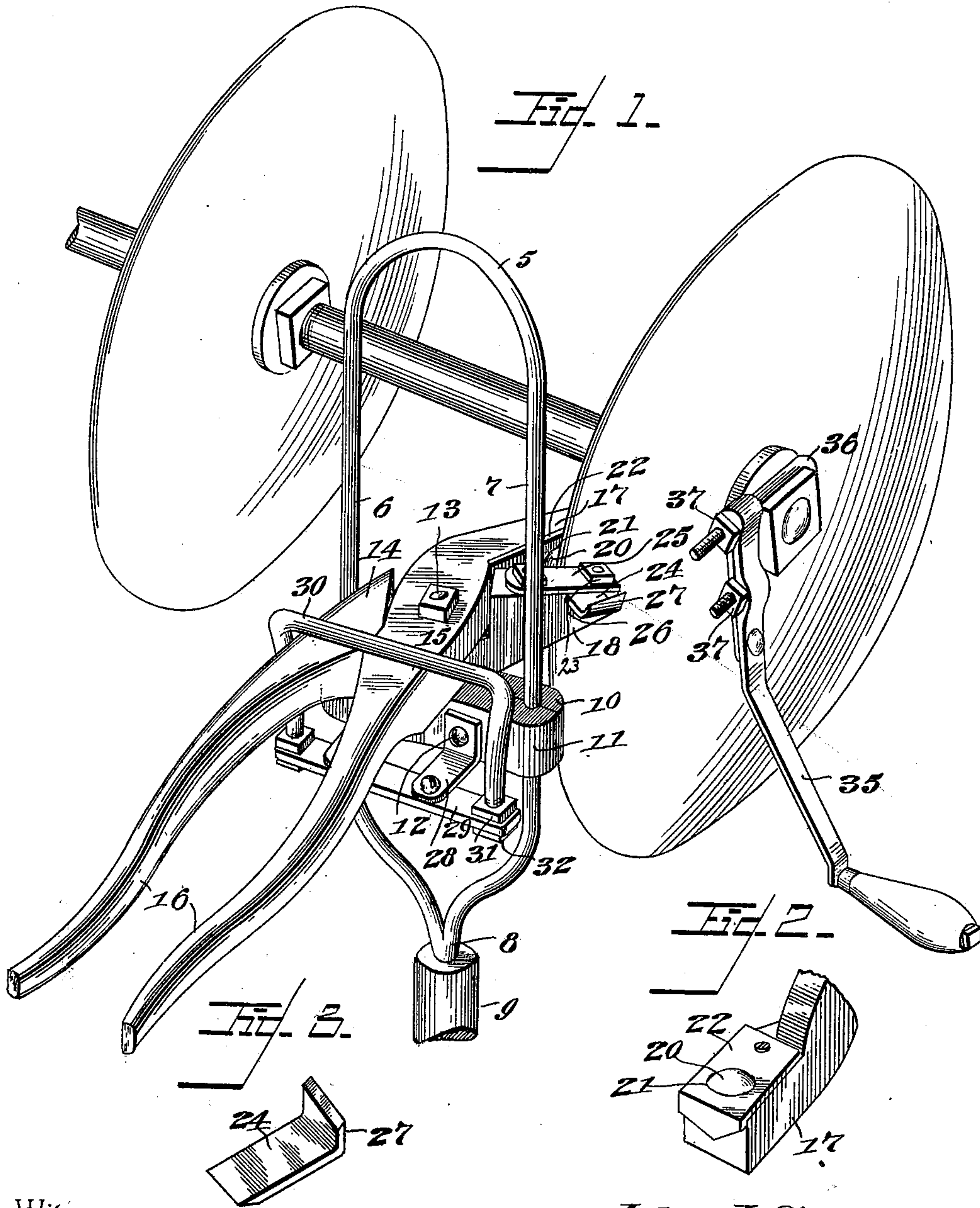
No. 652,815.

Patented July 3, 1900.

J. J. SMITH.
DISK SHARPENER.

(Application filed Oct. 21, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN J. SMITH, OF DWIGHT, ILLINOIS.

DISK-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 652,815, dated July 3, 1900.

Application filed October 21, 1899. Serial No. 734,393. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. SMITH, a citizen of the United States, residing at Dwight, in the county of Livingston and State of Illinois, have invented a new and useful Disk-Sharpener, of which the following is a specification.

This invention relates to disk-sharpeners, and more particularly to that class employed in the sharpening of the disks of harrows; and it has for its object to provide a simple and efficient construction which will be portable and which may be employed for removing the rust from the cutting edge and for sharpening the cutting edge and to so secure the parts that they may be adjustable to operate at different angles and elevations.

In the drawings forming a portion of this specification, and in which similar numerals of reference designate like and corresponding parts in the several views, Figure 1 is a perspective view showing the sharpener in its operative position with respect to a disk and illustrating the method of rotating the disk. Fig. 2 is a detail perspective showing the arrangement of the ball-bearings upon one of the jaws of the cutter. Fig. 3 is a detail perspective view of the cutting-blade.

Referring now to the drawings, the sharpener comprises a frame 5, comprising parallel uprights 6 and 7, having an arc-shaped connecting-web at one end, the opposite ends of the uprights being brought together to form a stem 8, which is secured to a suitable support 9, adapted to be placed upon the ground. Upon the frame 5 is slidably disposed a cross-head comprising two plates 10 and 11, having recesses in their faces to receive the uprights 6 and 7. These plates 10 and 11 are clamped together through the medium of bolts 12. The plates 10 and 11 have also additional recesses in their adjacent faces, through which is passed a bolt 13, which forms the pivot-bolt for a pair of tongs comprising members 14 and 15, having handles 16 and jaws 17 and 18. With this construction it will be seen that the members 14 and 15 not only have pivotal movement with respect to each other, but also have a rocking movement upon the cross-head.

In the jaw 17 and in the inner face thereof

is formed a depression in which is disposed a ball 20, which projects outwardly through a circular opening 21 in a plate 22, which is fixed upon the inner face of the jaw. This ball is adapted to receive direct pressure of the disk during the sharpening operation.

In the upper surface of the jaw 18 is a transverse recess 23, in which is disposed a cutting-blade 24, which is slidably and reversibly disposed and which is adapted to be clamped in place through the medium of a plate 25, held by clamping-bolts 26. As shown in Fig. 3 of the drawings, the cutting-blade 24 has parallel sides, and one end of the blade is turned upwardly at right angles to the body portion, as shown at 27, and this upturned portion is slanted transversely and is beveled rearwardly at its edge. The opposite end of the cutting-blade is beveled on its under side or on the side opposite to the upturned portion 27.

In order to hold the tongs against rocking movement in a vertical plane, angle-irons 28 are secured to the outer face of the plate 11 through the medium of the bolts 12 above described, and fastened to the outer ends of these angle-irons is a plate 29, which lies below the handles of the tongs. In the ends of the plate 29 are perforations, in which are engaged the extremities of the legs of a U-shaped guide-bar 30, said bar being held in position through the medium of nuts 31 and 32, engaged with the legs of the bar at opposite sides of the plate 29. The web of the bar 30 lies upon the upper surfaces of the members 14 and 15 and holds them against upward swinging movement.

In practice the lower end of the support 9 is firmly embedded in the ground, and after the harrow, which includes the disks, has been inverted a disk is moved to lie between the jaws of the tongs, as shown in the drawings. The cutting-blade is then adjusted with its straight edge against the disk and the disk is rotated, the jaws being gripped through the medium of the handles 16 to bring the ball 20 against one side of the disk and the cutting-blade against the opposite side, with the result that the rust and other accumulations are removed. The blade is then reversed to bring the edge of the up-

turned end against the disk, and the previous operation is repeated to cut away the material of the disk and sharpen it.

In order to rotate the disk, there is provided a handle or crank 35, comprising a bar having one end bent upon itself to form transverse recesses or perforations. With these perforations are engaged the ends of a U-shaped bar 36, having clamping-nuts 37. This bar 36 is disposed over the nut upon the end of the disk-shaft and is secured thereon by manipulation of the nuts 37, and as the crank is rotated the shaft, with the disks, is correspondingly moved.

It will of course be understood that in practice any specific construction of the support 9 may be employed and that the structure and arrangement shown may be varied without departing from the spirit of the invention.

What is claimed is—

1. In a disk-sharpener, the combination with a frame and a support, of plates clamped upon the frame and adapted for vertical adjustment thereon, tongs passed through the frame and having a pivot-bolt engaged with the plates, said tongs being adapted to receive the disk to be operated upon, a cutting-blade carried by one member of the tongs, a bearing upon the opposite member of the tongs, and means for gripping the blade and the bearing against the disk.

2. The combination with a frame having a support, of a separable cross-head mounted upon the frame and adjustable vertically thereof, tongs passed through the frame and pivoted upon the cross-head, a cutting-blade

carried by one member of the tongs, a bearing upon the other member of the tongs, and means for clamping the blade and the bearing against the disk.

3. A disk-sharpener, comprising a frame, a cross-head adjustably mounted upon the frame, tongs pivotally mounted upon the cross-head, a bearing carried by one member of the tongs, a cutting-blade carried by the other member of the tongs, and a guide-rod connected with the cross-head and lying in a plane rearwardly thereof, and in contact with the members of the tongs.

4. A disk-sharpener, comprising a frame, a cross-head comprising plates having recesses engaging the frame, means for clamping the plates in different positions with respect to the frame, tongs pivoted upon the cross-head, angle-irons secured to the cross-head, a guide-bar secured to the angle-iron and lying upon the members of the tongs, a recess in one jaw of the tongs, a ball within the recess, a plate disposed over the recess and having an opening through which the ball projects, a recess in the opposite jaw, a cutting-blade within the last-named recess, a plate covering the recess and engaging the blade, and clamping-bolts for said plate.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN J. SMITH.

Witnesses:

LEONARD F. HORNBERGER,
JOHN C. W. SMITH.