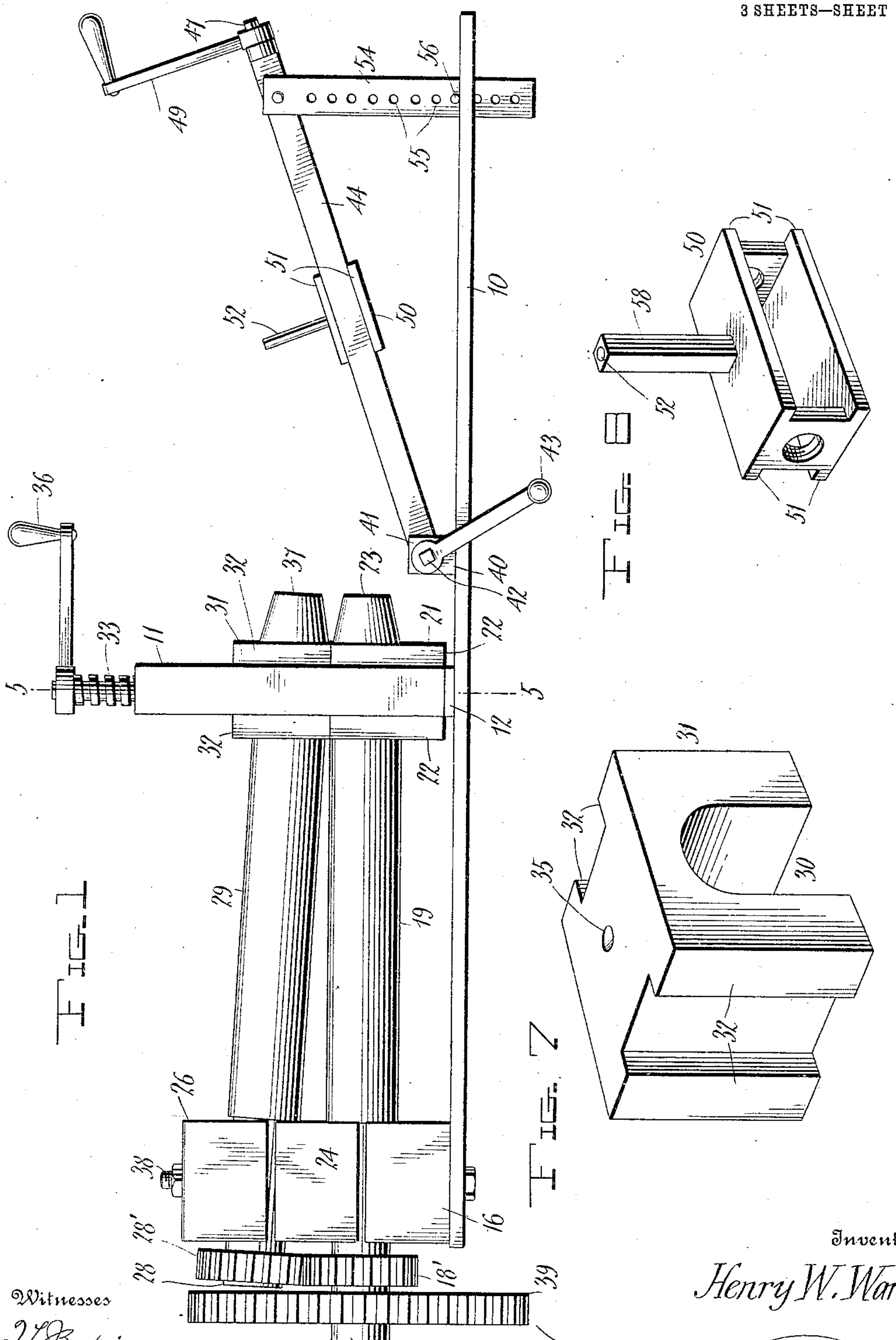
H. W. WARE.

DISK ROLLER SHARPENER.

APPLICATION FILED JUNE 4, 1908.

929,904. Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.



Witnesses

[signature]

[signature]

Inventor

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By [signature]

Attorneys

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3 SHEETS—SHEET 2.

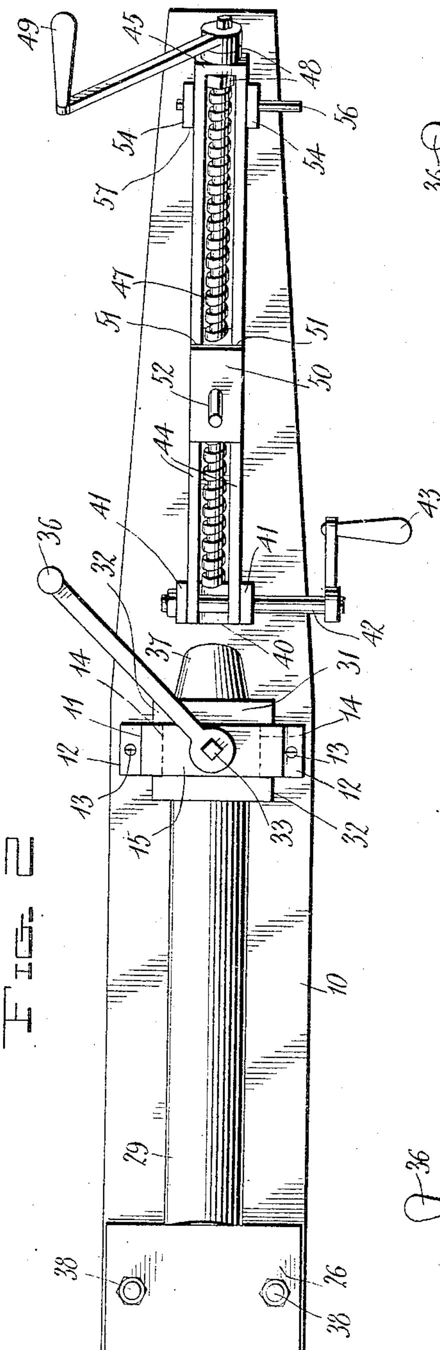

Fig. 2

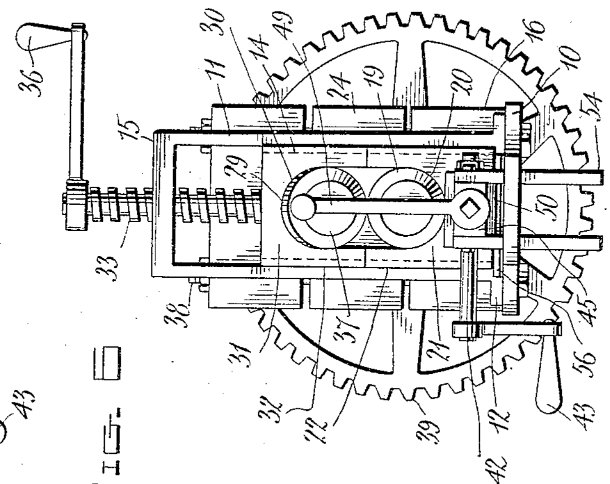

Fig. 6

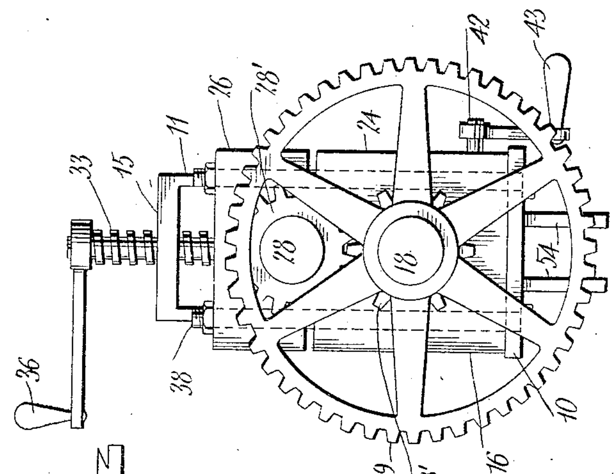

Fig. 3

Witnesses

[illegible]

[illegible]

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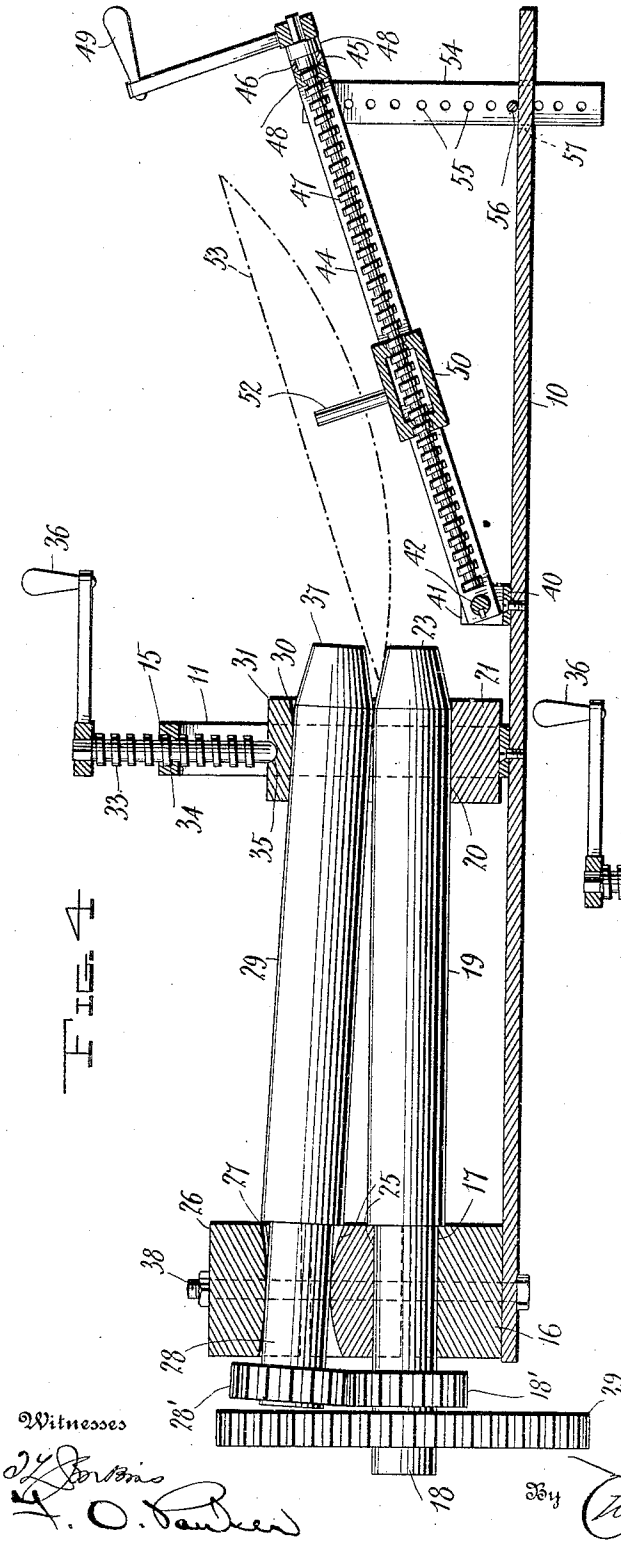

FIG. 4

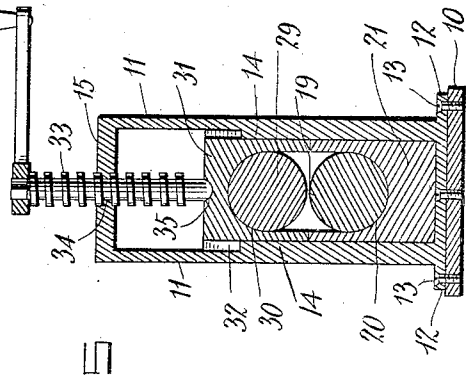

FIG. 5

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY W. WARE, OF HENSHAW, KENTUCKY, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO J. A. BALLARD, OF HENSHAW, KENTUCKY.

DISK-ROLLER SHARPENER.

No. 929,904. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed June 4, 1908. Serial No. 436,734.

To all whom it may concern:

Be it known that I, HENRY W. WARE, a citizen of the United States, residing at Henshaw, in the county of Union, State of Kentucky, have invented certain new and useful Improvements in Disk-Roller Sharpeners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a machine for sharpening disks and more particularly adapted for sharpening cultivator and harrow disks.

The primary object of the invention is the provision of a machine for sharpening disks and having superposed coöperative rollers between the extremities of which is interposed the edge of a disk mounted upon an adjustable support so that the metal of the disk will be rolled by the action of the rollers to present a sharpened peripheral edge on the disk.

Another object of the invention is the provision of a machine for sharpening disks such as cultivator or harrow disks and includes coöperative presser rollers adapted to act upon the peripheral edge of the disk whereby the metal of the disk at its peripheral edge will be rolled or thinned out thereby sharpening the edge by the action of the roller and manually operable means for adjusting one of the rollers with respect to the other whereby the said rollers will be brought in close relation to each other.

With these and other objects in view, the invention, for example, consists in the construction, combination and arrangement of parts, which will be hereinafter more fully described in detail and as illustrated in the accompanying drawings which disclose the preferred embodiment of the invention, however, changes, variations and modifications may be made such as come properly within the scope of the claims hereunto appended, without departing from the spirit of the invention.

In the drawings:—Figure 1 is a side view of the invention. Fig. 2 is a top plan view. Fig. 3 is a rear end view. Fig. 4 is a vertical longitudinal sectional view of the machine. Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 1. Fig. 6 is a front end view of the machine. Fig. 7 is a perspective view of the front top bearing block or boxing. Fig. 8 is a perspective view of the disk carrying block.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings, the numeral 10 designates a base of any desirable shape and material and having near the front end thereof an inverted U-shaped guide frame or boxing 11 having lower right angular extensions 12 secured by bolt fasteners 13 to the upper face of the base 10 and on the inner face of the opposite side arms of the frame or boxing 11 are guides 14 terminating a distance removed from the cross connecting piece 15 of the said frame. Upon the base 10 at its rear end is mounted a bearing block 16 having in its upper face centrally thereof a groove 17 into which is mounted the reduced extremity 18 of a presser roller 19, the opposite extremity of which is journaled in a groove 20 in the upper face of a boxing 21 which latter has oppositely disposed side extensions 22 for sliding engagement and adapted to lie on opposite sides of the guides 14 of the frame near the front end of the base. This presser roller 19 has its front end projecting beyond the box 21 and terminates in a beveled reduced extremity 23. Superimposed upon the bearing block 16 is a block 24 having in opposed faces grooves 25 the lower one of which partially surrounds the reduced extremity 18 of the lower presser roller 19 to hold the same in operative position. Mounted upon the block 24 is a bearing block 26, the latter having a groove 27 and into which latter and the groove 25 is journaled the reduced extremity 28 of an upper presser roller 29 which has its opposite end normally resting upon the lower presser roller 19 and mounted in a groove 30 formed in the under face of a sliding block 31 having extensions 32 engaging opposite sides of the guides 14 so that said block can be moved in the frame. To move the sliding block 31 there is provided a screw threaded stem or member 33 working in a threaded opening 34 in the cross connecting piece 15 of the frame and the lower end of which stem or member 33 is adapted to engage a countersink 35 centrally in the top of the said slidable block while the opposite end of said stem receives a detachable crank handle 36 whereby the stem may be actuated to limit the upward movement of

the upper presser roller 29 with respect to the lower presser roller. The front end of the upper presser roller 29 is beveled as at 37 so as to form a coöperative working extremity with the beveled extremity 23 of the lower roller.

Passing through the superimposed bearing blocks at the rear end of the base 10 are bolt connecting rods 38 whereby the said blocks are securely held upon the base. On the reduced extremity 18 of the lower presser roller 19 is secured a driving gear 39 which may receive its motion from any suitable power and is adapted to actuate or rotate the lower presser roller and which imparts motion from gear 18′ to the enmeshing gear 28′ to the upper presser roller.

Upon the base 10 in advance of the beveled extremities of the presser rollers is secured a bracket 40 having spaced upwardly extending ears 41 into which is journaled a shaft 42 having a manually operable crank 43 at one end thereof and fixed to the said shaft between the ears is an adjustable support including spaced arms 44 united at their opposite extremities by a cross piece 45 having a central opening 46 which receives a threaded advance screw 47 which latter is adapted for rotation and prevented against longitudinal movement in the support by collars 48 surrounding the screw on opposite sides of the cross piece 45 and upon the end of the advance screw 47 is a hand crank 49 whereby the said screw may be rotated. Between the arms 44 is a slidable member 50 in threaded engagement with the advance screw 47 and which member has spaced oppositely disposed flanges 51 for engaging opposite edges of the arms 44 and guided thereby during the sliding movement of the member. Projecting upwardly from the member 50 is a stud or pin 52 upon which is mounted the ordinary disk 53 used on plows, cultivators and the like, the peripheral edge of which is adapted to be brought into a position between the beveled extremities 23 and 37 which latter will roll or thin out the metal of the disk at its peripheral edge so as to sharpen the same. It is of course understood that during the rotation of the presser rollers while the peripheral edge of the disk 53 is in operative position between the beveled extremities of said rollers the said disk will be caused to rotate on the pin or stud 53 whereas, the metal of the disk will be rolled or thinned in a uniform manner while being acted upon by the presser rollers. The crank 43 is actuated when it is desired to raise or lower the adjustable support so as to change its angular position. The said crank 43 is fixed to the end of the shaft 42, which latter is journaled in the ears 41 and has fixed thereto the support for the plow disk so that upon turning the shaft 42 in one direction it will lift the opposite end of the support to the desired angle with respect to the base of the machine.

For maintaining the support in an angular adjusted position there is pivotally connected to the arms depending legs or straps 54 having a plurality of openings 55 for receiving a locking pin 56 and said legs pass through openings 57 in the base 10.

To accommodate different styles of disks such as are provided with squared central openings there is provided a squared sleeve or die which is adapted to be removably fitted onto the pin or stud 52 to support said disk.

What is claimed is—

1. In a machine of the class described, a base, superimposed bearing blocks mounted upon the base at the rear end thereof, a frame mounted upon the base a considerable distance removed from the bearing blocks and having vertical guides on opposite inner faces thereof terminating a distance removed from the top of said frame, a removable box engaging the guides and arranged in the lower end of the frame and containing a bearing seat, a vertically slidable bearing block mounted in said frame above the box, the said slidable bearing block being provided with a bearing seat in register with the bearing seat in the box, a lower presser roller horizontally disposed above the base and having one end journaled between a pair of the bearing blocks at the rear end of the base and its forward portion resting in said box, an upper presser roller having one end journaled in the bearing blocks at the rear of the base to permit slightly vertical swinging movement and the other end normally resting upon the lower presser roller and within the bearing seat of the slidable bearing block, and an adjustable screw mounted in the frame to limit the sliding movement of the said slidable bearing block.

2. The combination with a disk roller sharpener, having a base, of an adjustable support having its lower end pivotally connected to the base, legs depending from said support, a locking pin engaging said legs and the base to maintain the same in adjusted position, and a hand crank connected to the pivoted end of the support to permit raising and lowering of the latter.

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

HENRY W. WARE.

Witnesses:
E. A. ALLEN,
CHAS. JOHNS.