

J. I. DEPEW.
DISK SHARPENER.

APPLICATION FILED APR. 29, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

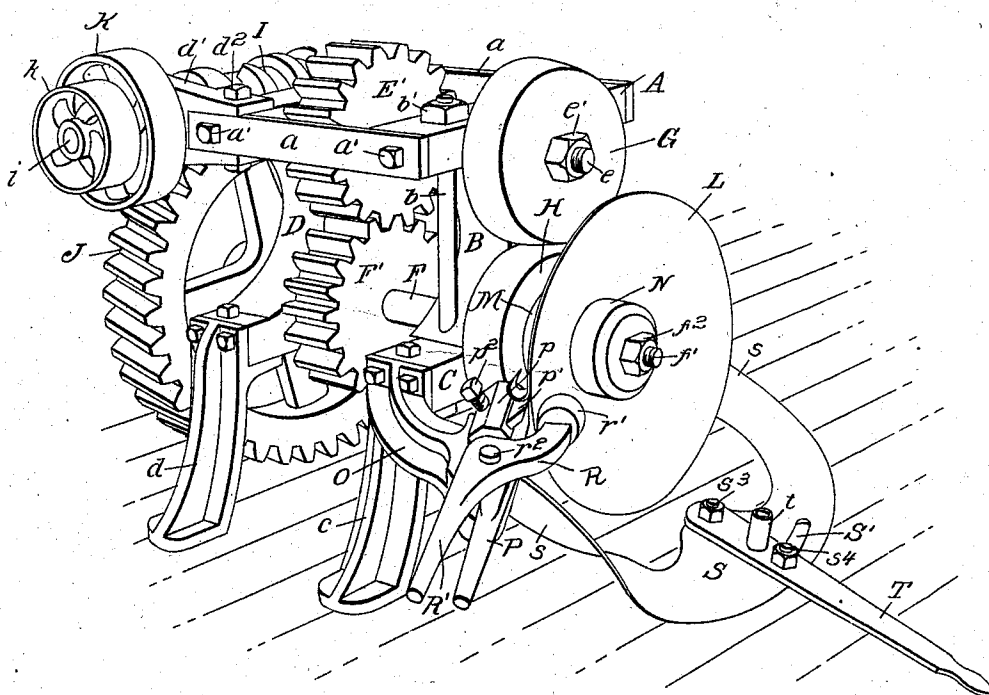
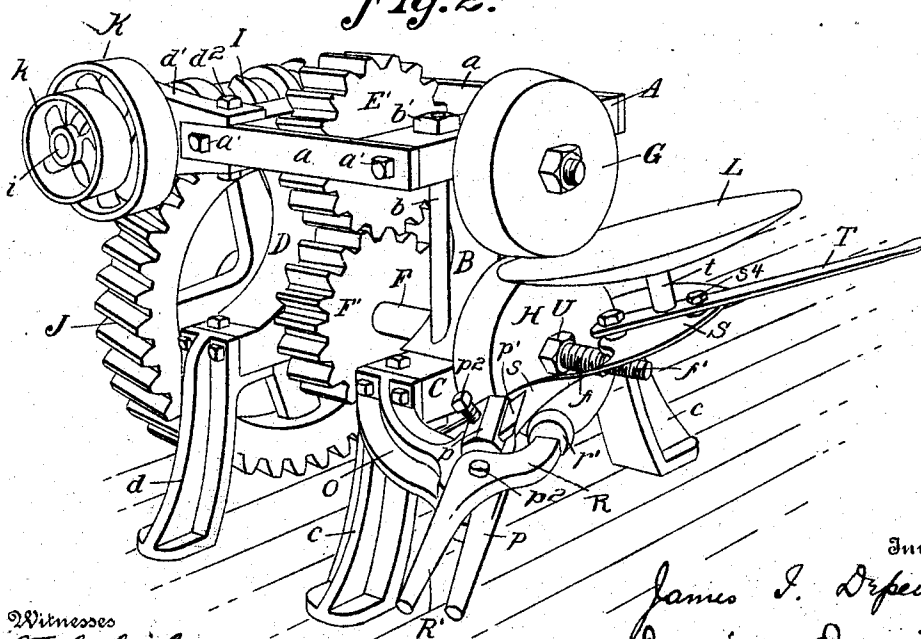


Fig. 2.



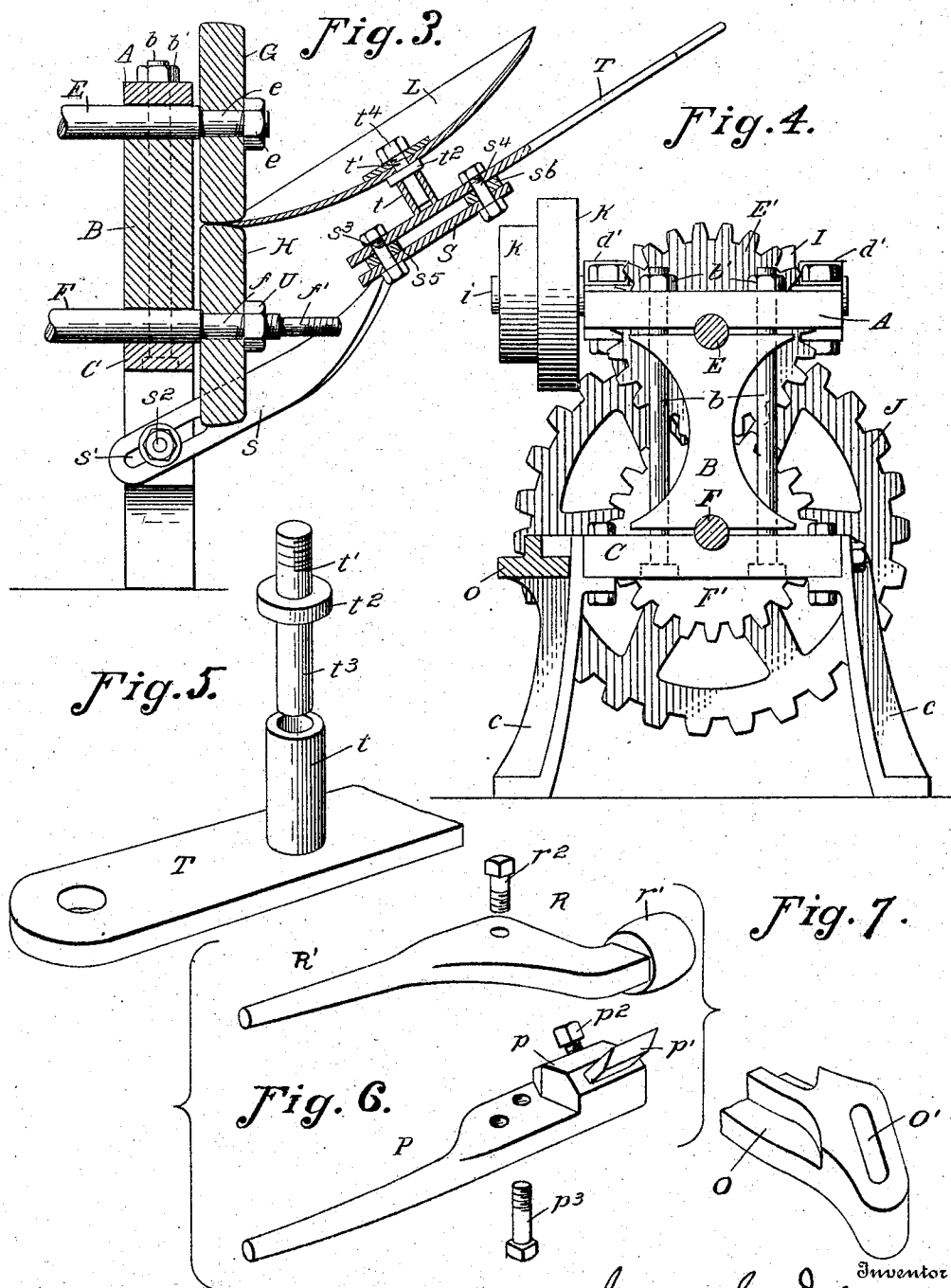
Witnesses
F. C. Gibson.
Letitia A. Langille

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UNITED STATES PATENT OFFICE.

JAMES I. DEPEW, OF LOUP CITY, NEBRASKA.

DISK-SHARPENER.

No. 806,244.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed April 29, 1905. Serial No. 258,065.

To all whom it may concern:

Be it known that I, JAMES I. DEPEW, a citizen of the United States of America, and a resident of Loup City, county of Sherman, State of Nebraska, have invented certain new and useful Improvements in Disk-Sharpeners, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of my machine, showing it in the act of sharpening a disk by shaving down its edge on the convex side of the disk. Fig. 2 is a perspective view showing a disk being sharpened by having its
15 edge swaged down; Fig. 3, a detail vertical section showing the disk as it appears while being rolled to an edge; Fig. 4, a vertical section, and Figs. 5, 6, and 7 perspective views of details hereinafter described.

20 The object of this invention is to provide a simple apparatus for sharpening concave metal disks commonly used in several types of agricultural implements.

To the accomplishment of this object and
25 such others as may hereinafter appear the invention consists of the parts and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters designate like parts throughout the several views.

Referring to the drawings by reference
35 characters, A designates the front upper beam of the machine-frame; D, the rear upright of the frame, which is secured to the front beam A by side bars *a* by means of bolts *a'*. The rear pedestal D is supported by suitable legs
40 *d*. The front bar A is supported by a front pedestal or distance-piece B, which is bolted down to a lower cross-bar C by means of long bolts *b*, which are passed up through the cross-bar C, the projecting ends of pedestal B,
45 and through beam A and are provided with nuts *b'* on their upper ends. The front bar C is supported on legs *c*. Journaled in the frame thus constructed are two shafts E and F, supported one above the other and arranged in parallel relation. The upper shaft
50 is provided with a gear E' and the lower shaft with a gear F', these two gears being of the same size and being adapted to intermesh. The forward ends of these shafts are journaled, respectively, between the upper cross-bar A and the upper end of the distance-

piece B and the lower end of distance-piece B and the lower cross-beam C, space being left between the ends of the distance-piece and the cross-beams for a purpose hereinafter set
60 forth.

On the rear end shaft F is mounted a large worm-gear J, and meshing with this worm-gear is a worm I, which is journaled in brackets *d'*, bolted to the top of frame D by bolts
65 *d''*. On one end of the shaft *i* of the worm is fixed the driving step-pulley K.

The forward reduced end *e* of the shaft E projects in front of the frame and carries a beveled steel roll G, this roll being rigidly
70 clamped against the shoulder on the shaft by a nut *e'*. A similar beveled roll H is clamped on the reduced end *f* of the lower shaft F, these two rolls being of the same size and adapted to receive between them the edge of
75 the disk to be rolled. A nut U, as shown in Figs. 2 and 5, serves to clamp the lower roll against its shoulder when the rolls are in action.

Referring to Figs. 2 and 3 particularly, it
80 will be observed that the disk L, which is to be sharpened, is mounted rotatably in an up-standing tubular socket *t*, the disk being clamped down on an annular shoulder *t'* of journal-pin *t'*, whose lower end *t''* is rotatably
85 mounted in said socket, a nut *t'''* being screwed on the upper end of the journal-pin to clamp the disk in place. This socket *t* is rigidly mounted on a lever T, which is pivotally attached at its inner end by a bolt *s*³ to a
90 plate S, a suitable distance-washer *s*⁵ being interposed between the lever and the plate. This lever has a limited vibratory movement on the pivot-bolt *s*³, its arc of movement being limited by a curved slot S' described from
95 the center of pivot-bolt *s*³, the lever carrying a bolt *s*⁴, which passes up through said slot S' and the lever, a distance-washer *s*⁶ being interposed between the lever and the plate
100 S. A nut is screwed on the upper end of the bolt *s*⁴, whereby the lever may be clamped in its adjusted positions.

The plate S is carried by a pair of arms *s*, which extend inward between the supports
105 *c* of the frame and are pivotally bolted thereto by horizontal bolts *s*², lying at right angles to the axes of the shafts E and F and in a vertical plane back of the rollers G and H. The inner ends of the arms *s* are longitudinally slotted at *s'*, through which slots the
110 bolts *s*² pass, whereby the plate *s* may be adjusted inward and outward at will.

When the disk is on the journal-pin, as described, all that is necessary to bring its edge between the rolls is to raise the lever T and slide the frame *s* inward or outward, as may be required by the diameter of the disk. The shortening of the distance-piece B, which holds its ends out of contact with the beams A and C, insures the peripheries of the rolls coming into contact and permits wear on the journals to be compensated for. The degree or width of bevel desired may be obtained by adjusting the lever T laterally.

Should it be desired to turn off the edge of the disk before rolling it, this may be done by means of a cutting-tool *p'*, which is adjustably mounted in a socket *p*, being held in its adjusted position by means of a set-screw *p*². This socket is carried at the inner end of a lever P, which is pivotally mounted on a bracket O by means of a depending pin *p*³, which works in a slot *o'*, formed in said bracket. The bracket is bolted to one side of the frame, and the arm curves forwardly far enough to support the tool-carrying lever back of the edge of the disk, so that by pressing backward on the handle of lever *p* the tool will be brought against the rear convex edge of the disk, the necessary pressure being obtained by pressing backward on the lever. The tool *p'* inclines upwardly and outwardly, so as to take into the metal of the disk at the proper angle to shave it off with the least degree of friction. The slot *o'* permits the tool to be adjusted to accommodate disks of various sizes. The pivot-bolt *p*³ is passed up loosely through slot *o'* and screwed into the lever, so that by simply removing this bolt the lever may be removed. When this cutting device is employed, the disk is mounted on the shaft F, and in order to support it in proper relation to the tool the nut U is removed and washer M slipped over the projecting threaded end *f*, this washer being concaved for the reception of the convex surface of the disk. The outer end of shaft F is further reduced at *f'*. The washer *n* is slipped on this extension *f'* and is clamped against the disk by means of a nut *f*², whereby the disk is rigidly held while rotating.

To support the edge of the disk where it is being cut by the tool, I employ a roller *r'*, which bears upon the edge of the disk opposite the point of engagement of the tool, this

roller being journaled on a pin *r*, carried by a lever R. This lever R is pivoted on the lever P where it crosses the same by a vertical bolt *r*², and its handle portion R' is extended forwardly and outwardly, so as to lie adjacent to the handle P, on the opposite side from the roller *r'*, whereby the operator may by grasping the two handles and pressing them together cause a clamping action between the tool and the roller *r'*.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the exact arrangement and construction shown.

What I claim, and desire to secure by Letters Patent, is—

1. In a machine of the class described, the combination of a frame, a pair of shafts and means for driving them, said shafts carrying a pair of beveled rolls, a plate S provided with a pair of arms *s* which extend inward under the rolls and are provided with slots, bolts slidingly and pivotally connecting these arms to adjacent parts of the frame, a lever pivoted at its inner end to said plate and carrying a socket, a clamp-bolt carried by the lever and working through an arcuate slot in said plate, and a journal-pin working in said socket and adapted to carry the disk to be sharpened, substantially as set forth.

2. In a machine of the class set forth, the combination of a frame, embracing an upper cross-beam, a lower cross-beam, a distance-piece or pedestal mounted between the same, long bolts clamping the upper cross-beam and the lower cross-beam and the intermediate distance-piece together, a pair of shafts and means for rotating them, said shafts having their front ends journaled between the respective upper and lower ends of the distance-piece and the adjacent cross-beams, these shafts serving to separate the ends of the distance-piece from the respective cross-beams, and a pair of beveled rolls carried by the shafts, for the purpose set forth.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 25th day of April, 1905.

JAMES I. DEPEW.

Witnesses:

B. NIGHTINGALE,
R. J. NIGHTINGALE.