No. 778,151. PATENTED DEC. 20, 1904.

N. K. SKOW.

MACHINE FOR SHARPENING ROTARY CUTTERS.

APPLICATION FILED JAN. 9, 1904.

NO MODEL.

Fig. 1.

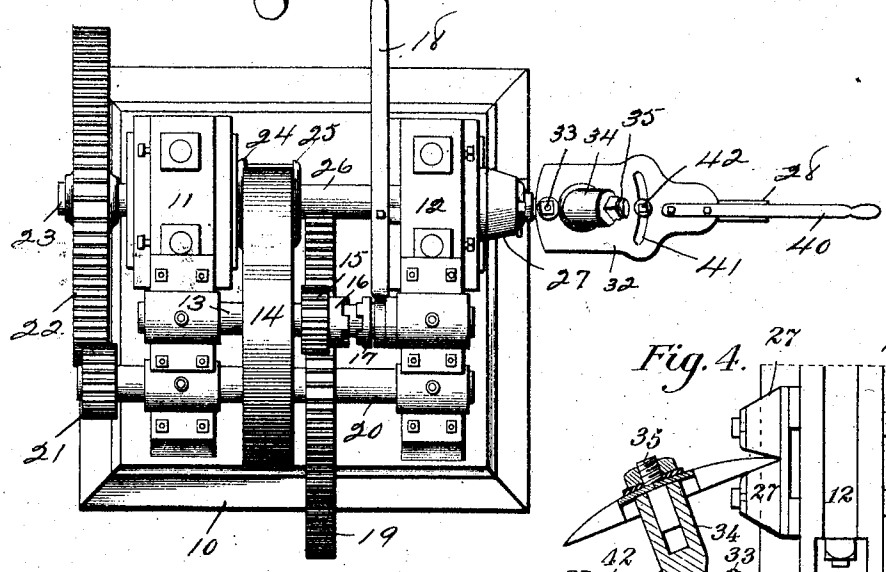


Fig. 4.

Fig. 2.

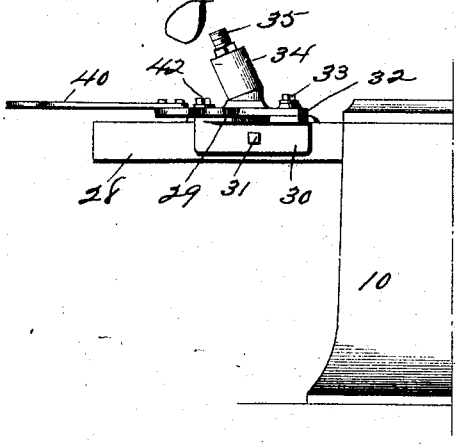
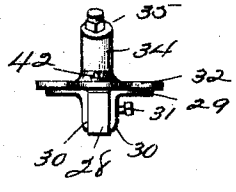


Fig. 3.



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No. 778,151. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

NIELS K. SKOW, OF NEWTON, IOWA.

MACHINE FOR SHARPENING ROTARY CUTTERS.

SPECIFICATION forming part of Letters Patent No. 778,151, dated December 20, 1904.

Application filed January 9, 1904. Serial No. 188,307.

To all whom it may concern:

Be it known that I, NIELS K. SKOW, a citizen of the United States of America, and a resident of Newton, Jasper county, Iowa, have invented a new and useful Machine for Sharpening Rotary Cutters, of which the following is a specification.

The object of this invention is to provide improved means for supporting and adjusting rotary cutters or disks.

My invention consists of the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan of the complete machine. Fig. 2 is a side elevation of the improved portion of the machine. Fig. 3 is a front elevation of the improved portion of the machine. Fig. 4 is a vertical section of portions of the mechanism, illustrating the proper relation of the disk to the swaging-rolls.

The present machine is an improvement on or a modification of the machine for which Letters Patent of the United States No. 628,496 were granted to me July 11, 1899, and this machine employs the same driving-gear, clutches, and reducing-rolls that are illustrated and described in the patent. There is this distinction, however, that while the patent shows a table hinged for vertical oscillation on the frame of the machine and arranged to support and swivel a disk while the same is sharpened my present invention relates to a table or support arranged for reciprocating relative to the machine in a given horizontal plane.

In the construction of the machine as shown the numeral 10 designates a base or stand on which the operating parts of the machine are mounted. Machine-heads 11 12 are fixed to and rise from the base 10, parallel with each other. A main shaft 13 is mounted for rotation in bearings fixed to the upper ends of the heads 11 12, and a main driving-wheel 14 is fixed to said shaft and arranged to be driven by belting from a prime mover. (Not shown.) A pinion 15 is mounted loosely on the shaft 13 adjacent to the driving-wheel 14 and is provided with a clutch member 16 concentric with said shaft. A clutch 17 is slidingly mounted on and keyed to shaft 13 and is manually controlled through a lever 18, fulcrumed on the machine-head 12, to engage or disengage the clutch member 16. The pinion 15 meshes with a spur-gear 19 of materially greater diameter, mounted rigidly on a counter-shaft 20, which counter-shaft is journaled in bearings on the machine-heads. A pinion 21 is mounted on one end of the shaft 20 and meshes with a spur-gear 22 of materially greater diameter, fixed to one end of a lower roll-shaft 23, which roll-shaft is journaled in bearings in the machine-heads and projects at both ends from said bearings. A spur-gear 24 is mounted rigidly on the central portion of the lower roll-shaft 23 and meshes with a pinion 25 of the same diameter, rigidly mounted on the central portion of an upper roll-shaft 26, which upper roll-shaft is journaled in bearings in the machine-heads and projects at both ends from said bearings. The roll-shafts 23 26 are parallel with and adjacent to each other, but may be in divergent planes relative to each other. Frustum-shaped rolls 27, one only of which is shown, are mounted on the extremities of the shafts 23 26 opposite to the spur-gear 22 and are keyed thereto. The perimeters of the bases of the rolls 27 27 travel in contact with each other and in opposite directions. A bar 28 is fixed to and projects horizontally from the machine-head 12 below and in vertical alinement with the rolls 27.

A table 29 is provided and formed with flanges 30 30, parallel with each other. The table 29 is mounted on and may be adjusted longitudinally of the bar 28 to and from the machine-head 12. The flanges 30 30 contact with and on opposite sides of the bar 28 and, together with the table 29, constitute a slide bearing on said bar. A set-screw 31 may be mounted in one of the flanges 30 and arranged for engagement with one face of the bar 28, whereby the table and its flanges may be fixed at any point of adjustment in the length of said bar. A swivel-stand 32 is provided and rests on the upper surface of the table 29. A bolt 33 extends through the inner portion of the swivel-stand 32 and is seated in the table

29, whereby said stand is pivoted to said table and arranged for oscillation or adjustment on a vertical axis. A swivel-socket 34 is formed on and extends upwardly from the center of the swivel-stand 32 and is inclined outwardly relative to the vertical plane of the machine-head 12. A swivel-stem 35 is mounted loosely and for rotation in the swivel-socket 34 and is reduced at its upper end portion to form a shoulder or seat and a journal, on which a disk (not shown) may be mounted for revolution. The upper extremity of the swivel-stem 35 is screw-threaded to receive a nut, (not shown,) whereby the disk may be locked to the stem. A lever or handle 40 is fixed to and extends horizontally outwardly from the swivel-stand 32. A segmental slot 41 is formed in the forward portion of the swivel-stand 32 concentric with the axis of the bolt 33, and a locking-screw 42 extends through said slot and is seated in the table 29. By means of the locking-screw 42 the swivel-stand 32 may be locked in any position into which it may be adjusted on the table 29.

In the operation of the machine herein described the rolls are driven through the reducing-train of gearing connected by the clutches 16 17, and the edge or marginal portion of the disk mounted on the stem 35 may be engaged and swaged by said rolls. The swivel-stand 32 may be swung laterally by manual force applied through the lever or handle 40, to the end of moving the swivel-stem and disk through an arc across or away from the vertical line of the axes of the rolls, thereby changing the degree or extent of the bevel or swaging of the margin of the disk. The degree of feed or penetration of the disk between the rolls may be adjusted by moving the table 29 longitudinally of the bar 28, and such movement also may be effected by manual force applied to the handle 40 after the disk is mounted on the swivel-stem and before the set-screw 31 is fixed in an engagement with the bar. When the set-screw 31 is not employed, the feed, as well as the swage or bevel of the disk, is under the control of the operator grasping the handle or lever 40 and may be altered at will.

I claim as my invention—

1. A machine for sharpening rotary cutters, comprising a frame, rolls mounted for rotation in said frame, a bar mounted rigidly on and projecting horizontally from said frame beneath and beyond said rolls, a table mounted on and arranged for adjustment longitudinally of said bar, means for locking said table in any desired position between the ends of said bar, a swivel-stand mounted on and parallel with the upper face of said table, a bolt pivotally connecting the inner portion of the swivel-stand to said table, a handle extending rearwardly from said swivel-stand, a stem mounted on and extending upward from said swivel-stand and also extending outward relative to said rolls, and means for securing a disk on said stem.

2. A machine for sharpening rotary cutters, comprising a frame, rolls mounted for rotation in said frame, a bar mounted rigidly on and projecting from said frame horizontally beneath and beyond said rolls, a table mounted on and arranged for adjustment longitudinally of said bar, a stand pivotally mounted on said table and arranged to be swung laterally across the line of said rolls, a stem mounted in inclined position on said stand, and means for locking a disk to said stem.

Signed by me at Newton, Iowa, this 26th day of August, 1903.

NIELS K. SKOW.

Witnesses:
E. J. SALMON,
G. W. WHARTON.