No. 766,103. PATENTED JULY 26, 1904.

G. D. DENIO.

DISK OR COLTER SHARPENER.

APPLICATION FILED SEPT. 14, 1903.

NO MODEL.

FIG 1

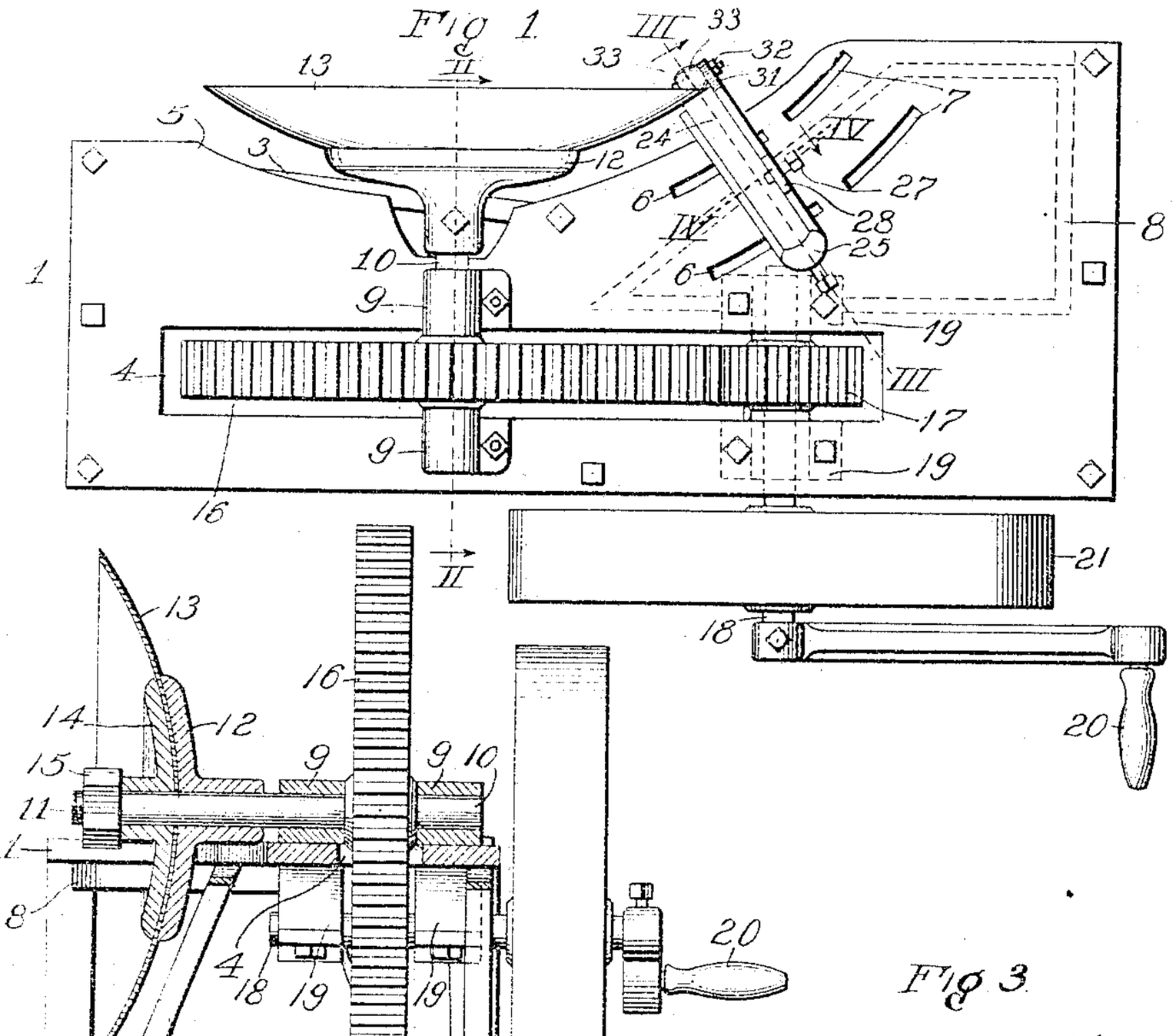


FIG 2

FIG 3

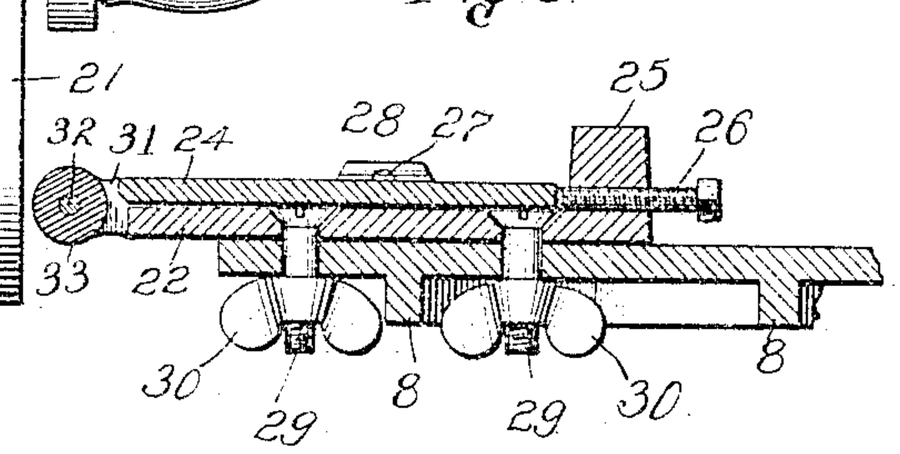
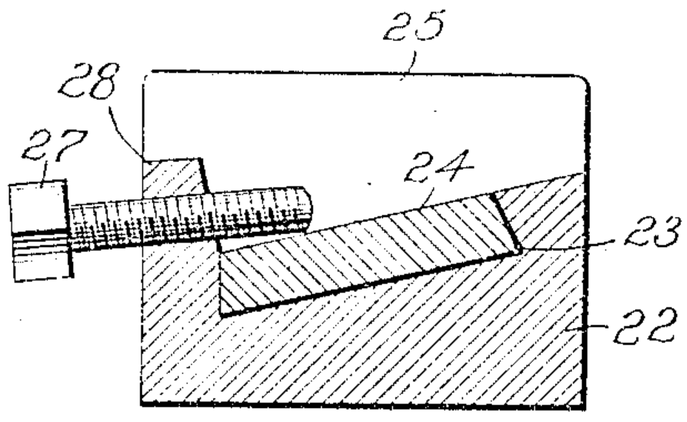


FIG 4



Witnesses
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No. 766,103. Patented July 26, 1904.

UNITED STATES PATENT OFFICE.

GEORGE D. DENIO, OF NILES, KANSAS.

DISK OR COLTER SHARPENER.

SPECIFICATION forming part of Letters Patent No. 766,103, dated July 26, 1904.

Application filed September 14, 1903. Serial No. 173,204. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. DENIO, a citizen of the United States, residing at Niles, in the county of Ottawa and State of Kansas, have invented certain new and useful Improvements in Disk or Colter Sharpeners, of which the following is a specification.

My invention relates to disk or colter sharpeners; and my object is to produce a machine of this character by which disks or colters of any ordinary size can be quickly, easily, and conveniently sharpened.

A further object is to produce a machine of this character of simple, strong, durable, and cheap construction.

To these ends, the invention consists in certain novel and peculiar features of construction and combination of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of a disk or colter sharpening machine embodying my invention. Fig. 2 is a vertical section on the line II II of Fig. 1. Fig. 3 is an enlarged section on the line III III of Fig. 1. Fig. 4 is a full-size section taken on the line IV IV of Fig. 1.

Referring to the drawings in detail, the table comprises the metallic top 1, the legs 2, and braces 3 between the legs and the top, it being understood, of course, that the legs may be braced in any other suitable manner, if desired, so that the table structure shall be strong and rigid. Near and parallel with its front margin, the table is provided with a longitudinal slot 4, and its rear margin is recessed or dished, as shown at 5, the left-hand end of the table also by preference being narrower than the opposite end, as shown clearly in Fig. 1. Near the right-hand end and approximately parallel concentric with the dished edge the table-top is provided with a set of segmental slots 6 and a set of segmental slots 7, and the top is strenghtened and rendered more rigid by a depending rib 8, a portion of which extends between said slots, as shown most clearly by dotted lines, Fig. 1.

9 designates bearings bolted rigidly upon the top at opposite sides of slot 4, and 10 is a shaft journaled in said bearings and having its rear end projecting beyond the dished edge of the top, which rear end is threaded, as at 11.

12 designates a boxing, keyed or otherwise rigidly secured on the shaft 10 and having its front face hollowed out to fit snugly against the back of the disk 13 to be sharpened, the shaft extending loosely through the hole or opening in the center of the disk.

14 designates a washer fitting loosely on the shaft and having its rear face convex to fit snugly against the hollow or front side of the disk, a clamping-nut 15 being screwed upon the threaded portion of the shaft to clamp the disk rigidly between the hollow boxing and the washer, as shown most clearly in Fig. 2.

To rotate the disk, a large cog-wheel 16 is secured rigidly on shaft 10 and is disposed within slot 4. Meshing with this cog-wheel is a cog-pinion 17, secured rigidly on a shaft 18, journaled in bearing-boxes 19, depending from the table-top, and said shaft may be operated by means of a rigid crank-handle 20, mounted thereon, or by the belt-wheel 21, the latter being preferably about the same diameter as the cog-wheel 16, though of course I do not restrict myself to a belt-wheel of this particular size.

22 designates a knife-holder resting upon the table-top and provided with an inclined longitudinal groove 23 to receive the knife 24, and at the inner end the knife-holder is provided with an upwardly-projecting lug 25, carrying a set-screw 26, adapted to bear against the rear end of the knife and force the sharp end of the knife against the periphery of the disk, as shown in Fig. 1, the knife being held reliably in the slot by means of the clamping-bolt 27, extending through lug 28 of the holder, formed laterally of the inclined groove 23 and bearing upon the knife, as shown most clearly in Figs. 1 and 4, the clamping-bolt preventing upward movement of the knife. To secure the holder at the proper point on the table and at the proper angle for the efficient operation of the knife on the disk, screw-bolts 29 extend down through slots 6 or 7, accordingly as a small

or large disk is being sharpened, and are engaged by clamping-nuts 30, which with a slight backward turn can be loosened sufficiently to permit the knife-holder to be adjusted longitudinally of said slots to accommodate a disk or colter of different size, as will be readily understood. The bolts 29 29 are received in apertures formed through the bottom of the knife-holder, which apertures are normally concealed by the knife.

For the purpose of eliminating any possibility of vibratory movement of the disk or colter while being sharpened the holder may be provided with an extension-arm 31, equipped with a bolt 32, carrying loosely a roller 33 to bear against the concave side of the periphery of the disk, as shown clearly in Fig. 1.

In practice after the disk is quickly and easily secured upon the shaft in the manner explained and the knife-holder has been adjusted until the knife engages the disk at the proper point and has been reliably secured in said position by clamping-nuts 30 the sharpening operation can be very quickly performed by either grasping the crank-handle and revolving the same at a suitable speed or by driving shaft 18, through the medium of a belt (not shown) engaged with belt-wheel 21.

When the disk or colter is sharpened sufficiently, it can be easily and quickly removed in an obvious manner.

From the above description it will be apparent that I have produced a disk or colter sharpening machine which embodies the features of advantage enumerated as desirable in the statement of invention, and while I have illustrated and described the preferred embodiment of the same it is to be understood that I reserve the right to make such changes in the form, proportion, detail construction, and arrangement of the parts as properly fall within its spirit and scope.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A disk or colter sharpening machine comprising a suitable support, a rotatable shaft mounted thereon and adapted to receive the article to be sharpened, the support having a plurality of series of slots formed therein concentric with the surface of the article and so located with reference to the shaft as to accommodate different sizes of articles to be sharpened, a sharpening member and means passing through one of the series of slots and engaging the sharpening member to retain it immovably in position.

2. In a machine of the character described, the combination with a suitable support provided with a shaft for retaining the article to be sharpened, of a sharpening member, the support provided with a series of slots, means passing through the slots and engaging the sharpening member and a strengthening-rib extending between the slots of each series to add stability to the support.

3. The combination with a slotted support, a rotatable shaft and means for rotating the same, of a sharpening member comprising a holder, means carried by the holder and passing through the slots in the support to retain the holder in position, a knife received in the holder, means for adjusting the knife longitudinally and removable means carried by the holder and engaging the knife to retain it against upward movement.

4. The combination with a support, a shaft carried thereby and means for operating the shaft, of a grooved holder adjustably secured to the support, a knife received in the holder, means carried by the holder for adjusting the knife longitudinally therein, a lug carried by the holder and means held by the lug and engaging the knife to prevent sidewise movement thereof.

5. The combination with a slotted support, a shaft mounted thereon and means for rotating the shaft, of a knife-holder provided with a wedge-shaped laterally-inclined groove extending longitudinally thereof, and provided with apertures passing through the bottom of the holder, means received in the apertures and projecting therethrough and through the slots in the support for securing the holder to the support, a knife received in the groove, means for adjusting the knife longitudinally, a lug located laterally of the groove and means removably received in the lug, one end of the last-named means engaging the knife to prevent sidewise movement thereof.

6. The combination with a slotted table, a rotary shaft mounted thereon and means for rotating the shaft, of a knife-holder adjustably secured on the table, the holder provided with a laterally-inclined groove, a knife received in the groove, a lug located beside the groove and a bolt passing through the lug and engaging the knife to retain it in position.

7. The combination with a suitable support, of a sharpening member mounted thereon, a shaft, means for actuating the shaft, a boxing keyed to the shaft and provided with a concave face, the shaft adapted to support the article to be sharpened which fits in the concave face of the boxing, a washer provided with a convex face which fits into the article being sharpened and means received on the shaft and engaging the washer to retain the article in close frictional contact with and between the convex and concave faces of the washer and boxing, respectively.

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

GEORGE D. DENIO.

Witnesses:
G. W. CARBAUGH,
WM. LITTLE.