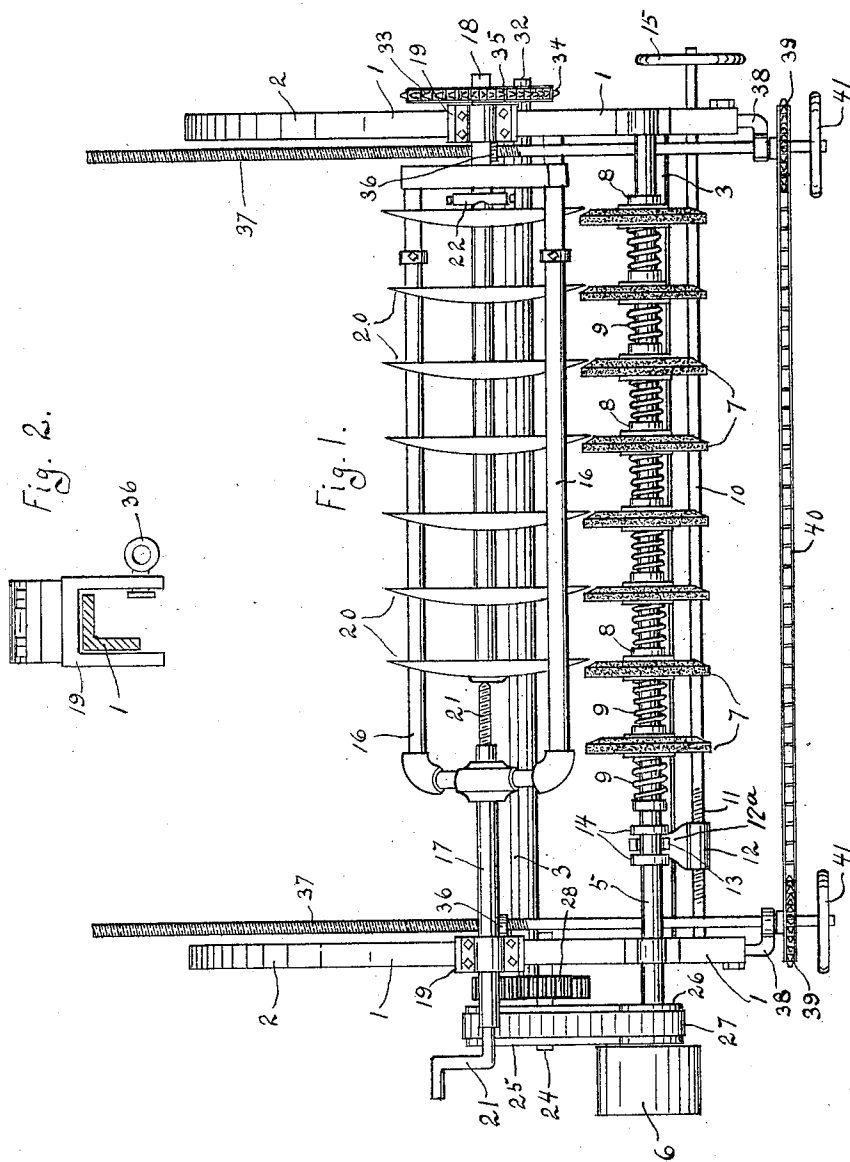


993,325.

2 SHEETS—SHEET 1.



Witnesses
Franklin Haskell
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UNITED STATES PATENT OFFICE.

FRED H. KLENKE, OF ASHTON, ILLINOIS.

DISK-SHARPENING MACHINE.

993,325.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed February 23, 1909. Serial No. 479,644.

To all whom it may concern:

Be it known that I, FRED H. KLENKE, a citizen of the United States, residing at Ashton, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Disk-Sharpening Machines, of which the following is a specification.

My invention relates to machines for sharpening the disks of disk cultivators, and embodies certain improvements on a similar device for which application for Letters Patent of the United States was filed by me April 27, 1908, Serial Number 429,414.

Such improvements consist chiefly in providing convenient means for raising the gang of disks into the machine, in position to be sharpened, and in removing them therefrom after the operation.

In the drawings: Figure 1 is a plan view of my invention. Fig. 2 is an enlarged detail, showing one of the carriers in end view. Fig. 3 is an end view of the machine. Fig. 4 is a rear elevation thereof, with some of the parts omitted.

Similar numbers refer to similar parts throughout the several figures.

1—1 represent the end pieces of the frame, provided with a segmental extension 2, and united by cross-frames 3—3, all of said frames being preferably formed of angle-plates of suitable strength. The cross-frames are reinforced at the corners with corner-plates 4—4.

Supported on the frames 1 is a rotary shaft 5, provided on one end with a pulley 6, to which power may be applied to operate the machine. Slidably mounted on the shaft 5 is a series of grinding disks 7—7, held from movement in one direction by collars 8—8, fixed on the shaft 5, and permitted a limited movement in the opposite direction by means of coiled springs 9, interposed between the grinders and collars.

Rotatably mounted in the rear frame 3 is a rod 10, having a threaded portion 11, on which is held a correspondingly threaded sleeve 12 integral with which is a plate 12², loosely connected with a lever 13, (connection not shown) forked at its upper end to engage the shaft 5 between a pair of collars 14 fixed thereon. The rod 10 is provided at one end with a hand-wheel 15, and by rotation of such rod the lever 13 is actuated to move the shaft 5 longitudinally in either direction, as desired.

16 is a frame, supported at one end by a pipe 17, and at the other end by a short shaft 18, such pipe and shaft being journaled on carriers 19, slidably mounted on the frames 1.

20—20 represent a gang of disks, supported in the frame 16 by means of a hand-screw 21 held in the pipe 17, and a chuck 22 on the inner end of the shaft 18.

23 is a cross-plate, upon which is journaled a shaft 24, on which is fixed a pulley 25, actuated by a pulley 26 on the shaft 5, by means of a belt 27. A gear-wheel 28 is also secured on the shaft 24, movement being imparted therefrom to a gear-wheel 29 on a short shaft 30, journaled on the lower side of the plate 23, the wheel 29 also meshing with a gear-wheel 31 on a shaft 32, journaled in the lower part of the frame, rotation being thus imparted to the shaft 32 from the shaft 5, but in a direction contrary thereto. On the outer end of the shaft 18 is a sprocket-wheel 33, driven from a sprocket-wheel 34 on the end of the shaft 32 by means of a chain 35.

In the inner plate of each of the carriers 19 is pivoted a sleeve 36, interiorly threaded to accommodate the threaded portion of a screw-rod 37. Such rods are supported at their rear ends by brackets 38, pivotally attached to the frames 1 by means of bolts 38^a, (Fig. 3). Each of said rods is provided with a sprocket-wheel 39, connected by a sprocket chain 40, whereby said rods may be coincidentally operated. Each of said rods is also provided at its rear end with a hand-wheel 41.

In operation the rods 37 are actuated to move the carriers 19 rearwardly upon the frames 1 until they pass downwardly over the curved portions 2 thereof, into the position shown in broken lines in Fig. 3. The gang of disks can then be easily lifted into the frame 16, and secured in place therein. The movement of the screw-rods is then reversed, gradually raising the disks to a position in proximity to the grinding wheels 7. The shaft 5 is then moved to bring the grinders into contact with the disks, and the operation of sharpening such disks is performed. The rods 37 are then again actuated to lower the frame 16, carrying the disk-gang again to a position from which it can be conveniently removed from the frame.

The shaft 32 is located at a point which is

substantially the center of a circle of which the curved portion 2 forms an arc, so that in the movement of the carriers upon the frame the relative position of the wheels 33 and 34 is not changed.

A gang of disks of the kind designed to be sharpened in the machine shown herein possesses considerable weight, and it is obvious that the elevation thereof to a point in the machine where it can be operated on by the grinders is attended with some difficulty, and that the same can be easily accomplished by the use of the mechanism herein shown and described.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is:

1. In a device of the class named, a pair of end frames, provided with downwardly curved extensions; a pair of carriers slidably mounted on said frames; means for supporting a gang of disks upon said carriers, and means for simultaneously moving said carriers upon said frames, substantially as described.

2. In a device of the class named, a pair of suitably supported end frames, provided with downwardly curved extensions; a pair of carriers, slidably supported on said frames; a frame, supported by said carriers; means for supporting a gang of disks in said frame; means for rotating said gang of disks while supported therein; and means for moving said carriers coincidently upon said end frames, substantially as shown and described.

3. In a device of the class named, a pair of suitably supported end frames, provided with downwardly curved extensions; a pair of carriers, slidably mounted on said frames; a pair of interiorly threaded sleeves, pivotally supported by said carriers; a pair of screw-rods, engaging said sleeves and hingedly supported at their rear ends; means for simultaneously actuating said rods, to move said carriers upon said end-frames, in one direction or the other, as desired; and means for supporting a gang of disks upon said carriers, substantially as shown and described.

4. A device of the class named, compris-

ing a pair of end frames; having downwardly curved extensions, describing the arc of a circle; cross-frames supporting said end frames; a rotary shaft supported on said end frames; a series of grinding wheels, supported thereon at distances corresponding to the spacing of the disks of a disk-gang; a pair of carriers, slidably mounted on said end frames; means for moving said carriers coincidently upon said end frames; a shaft, journaled on one of said carriers, and provided on its inner end with a chuck adapted to support one end of a disk gang; a hollow shaft, journaled on the other carrier, and provided with means for supporting the opposite end of a disk gang; a frame, supported by said last-named shafts; a rotary shaft, supported in the lower part of said end-frames, at a point which is substantially the center of a circle of which said frame extensions form an arc; means for imparting rotation to said shaft from said grinding wheel shaft, but in a direction contrary thereto; and means for imparting the rotation of said lower shaft to said disk-gang shaft, to cause the rotation of the disks supported thereby, substantially as set forth.

5. A device of the class named, comprising a pair of end frames, provided with downwardly curved extensions; cross-frames supporting said end frames; a pair of carriers, slidably mounted on said end frames; means for supporting a gang of disks upon said carriers; a rotary shaft, mounted on said frames; a series of grinding wheels supported on said shaft; means for permitting said wheels a limited movement in one direction; means for giving a limited longitudinal movement to said shaft; means for actuating said carriers, to move said disk-gang toward or away from said grinding wheels; and means for rotating said disk-gang in a direction contrary to the rotation of said grinders, substantially as shown and for the purpose mentioned.

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

FRED H. KLENKE.

Witnesses:

W. N. HASKELL,
F. D. RILEY.