

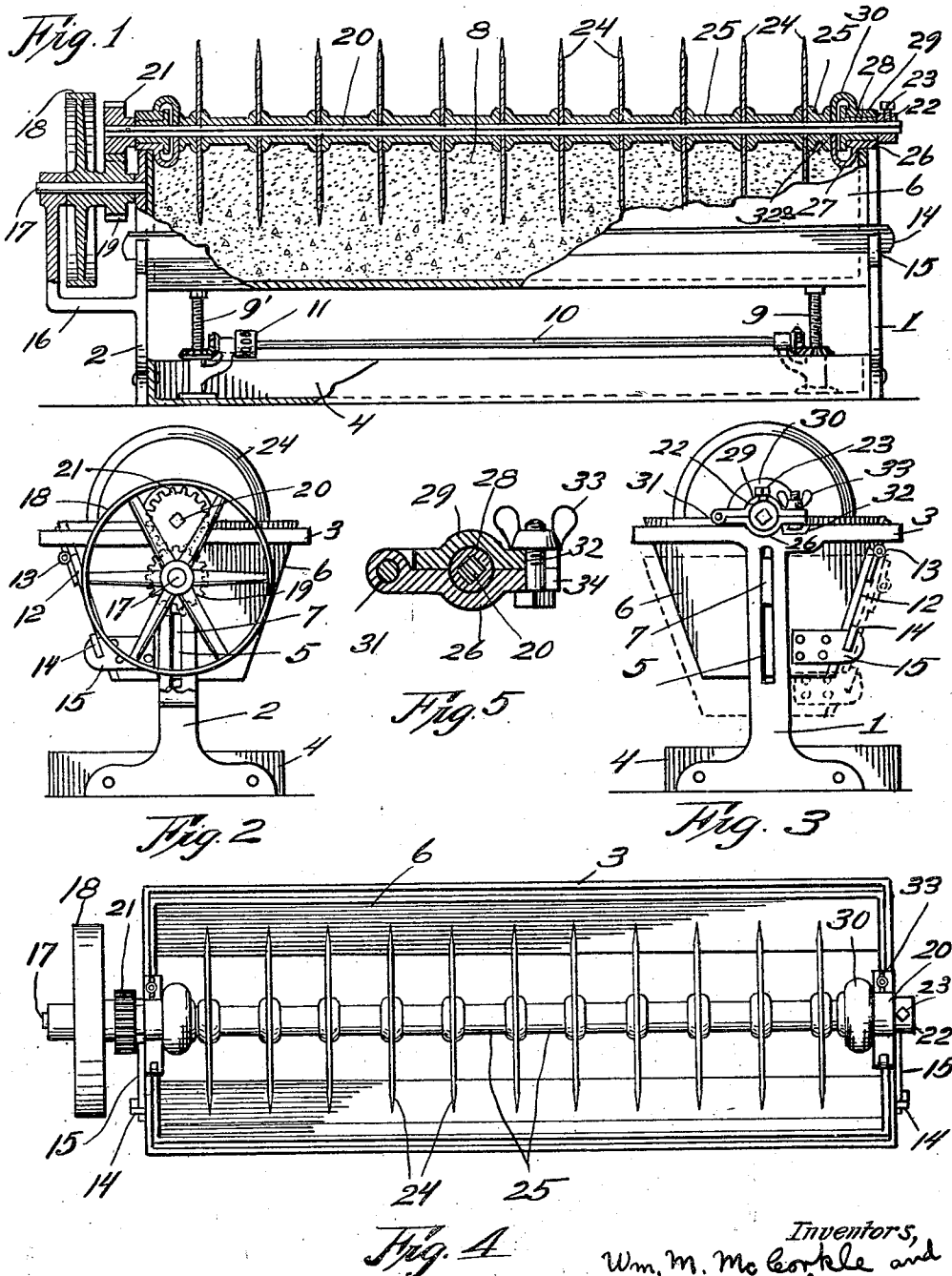
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DISK SCOURING AND POLISHING APPARATUS

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Witness:

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UNITED STATES PATENT OFFICE.

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DISK SCOURING AND POLISHING APPARATUS.

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To all whom it may concern:

Be it known that we, WILLIAM M. McCORKLE and WILLIAM H. WILSON, citizens of the United States, and residents of Nashua, Clay County, State of Missouri, have invented a certain new and useful Improvement in Disk Scouring and Polishing Apparatus, of which the following is a complete specification.

This invention relates to disk cleaning, scouring and polishing machines and has for one of its objects to produce a construction whereby circular articles such as disk plows, coulters, harrows and the like, may be readily cleaned and polished.

Another object is to produce a device of the character mentioned in which the cleaning box is so mounted that the working load may be gradually imposed on the operative parts of the machine.

A still further object is to provide protective housings for the bearings of the machine and to make possible the quick and easy removal of the shaft.

With the objects named in view the invention consists in certain novel and useful features of the construction and organization of parts as hereinafter described and claimed: and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:—

Figure 1 is a side view, partly broken away and in section, of a machine embodying the invention.

Figure 2 is an end view of the same.

Figure 3 is a view of the opposite end of the machine from that of Figure 2.

Figure 4 is a top plan view of the machine.

Figure 5 is an enlarged central vertical section taken through one of the split bearings of the invention.

In the said drawing, where like reference characters identify corresponding parts in all of the figures, 1 and 2 respectively indicate end standards which rest on the ground or other suitable support and are connected together at their upper ends by a rectangular frame 3, and at their lower ends are secured together by means of a rectangular mixture catching receptacle 4, hereinafter referred to.

Each of the standards 1 and 2 is formed with a vertically extending slot 5 to provide guides for a cleaning box 6, provided at its opposite ends with ears 7 received within the slots 5, and adapted to be filled with a

mixture of coarse sand, grit, gravel or the like, and water. As the cleaning box, when full, is quite heavy and as the contents thereof imposes a large frictional load on the driving mechanism of the machine when the disks to be scoured are embedded therein, we have provided means for elevating the box gradually so as to gradually impose the load on the machine. The elevating means, as illustrated, consists of a pair of jacks 9 resting on the bottom of the receptacle 4, and abutting the bottom of the cleaning box at their upper ends.

The jacks 9 are adapted for simultaneous operation by means of a longitudinally extending gear-wheel-equipped operating shaft 10 provided with an operating collar 11 of any suitable sort. It will be apparent from the construction just described that upon the operation of the shaft 10, the jacks 9 will be simultaneously operated to lift the cleaning box.

In order to provide means for conveniently removing the contents of the cleaning box, one of its sides is provided with a door 12 hinged at 13, and held in closed position by means of a longitudinal bar 14 engaged at its opposite ends in notched arms 15 extending from the ends of the box, as illustrated. It will be apparent from the drawing that upon the removal of the bar, the door 12 will immediately swing open under the impetus of the weight of the cleaning material, and permit the box to empty itself into the receptacle 4.

The end standard 2 is formed with a projecting right-angle shaped arm 16 providing a supporting structure for a shaft 17 provided at its opposite end with a bearing in the standard 2. Journaled on the shaft 17 is an operating belt wheel 18, and formed integrally therewith is a gear wheel 19.

Journaled near its opposite ends in the upper extremities of the standards is a square shaft 20, and pinned on one end of said shaft is a gear wheel 21 in mesh with the gear wheel 19, the opposite end of the shaft being secured in position by means of a collar 22 held fixed by means of a set screw 23. The shaft 20 is adapted to receive a series of disks 24, provided with square central openings, and each of the disks is spaced from its neighbors by means of spacing sleeves 25.

The end bearing structure for the shaft 20 consists of a split bearing portion 26 se-

cured to the top of the standards, and formed at its inner end and within the box when same is in elevated position with a guard housing 27. Secured on the square shaft 20 is a bushing 28 adapted to rotate on the bearing portion 26, said bushing being formed at its inner end with a flange received within the housing 27. The other half of the bearing consists of a bearing portion 29 provided at its inner end with the other half 30 of the guard housing said portion 29 being pivotally secured to the portion 26, as at 31 (see Figure 5). The free end of the bearing portion 29 is clamped down in position over the bushing 28 by means of a bolt 32, equipped with a winged clamping nut 33 and received within the bifurcated ends of the bearings, as illustrated. In this connection it will be understood that the shaft opening 32^a in the guard housing is circular to permit the shaft 20 to rotate freely.

The operation of the machine is as follows: The split bearings are opened and the shaft is removed. The set collar 22 is now removed from the end of the shaft together with the bushing 28. The disks 24 and the spacing collars 25 are now threaded on the shaft, the bushing 28 returned to position, and the shaft is remounted on its bearings, and secured by the repositioning of the set collar 22. Power is now applied to the belt wheel 18 to rotate the shaft 20 and its disks. The cleaning box 6 having been filled and in its lowermost position, is now slowly elevated through application of power to operate the jacks, the disks 24 thus being gradually embedded in the mixture, and the load created by the friction between the disks and mixture is consequently gradually imposed on the source of power.

It will be apparent that pending the cleaning operation, the housings 27 and 30 will efficiently prevent the entry of sand or grit into the bearings. After the termination of the cleaning operation, the cleaning box is again lowered, so that the shaft and disks may be readily removed from position

without having to overcome the friction between the disks and cleaning mixture.

From the above description, it will be apparent that we have produced a machine of the character described which possesses all of the features of advantage set forth as desirable, and while we have described and claimed the preferred embodiment of the same, we reserve the right to make all changes properly falling within the spirit and scope of the appended claims.

We claim:—

1. In a polishing machine, the combination with a pair of standards, each formed with a vertical slot, a rectangular frame connecting the upper ends of said standards, split bearings carried by said frame in substantial alinement with the vertical axes of said standards, a horizontal shaft journaled in said bearings, driving means secured to one end of said shaft, and a polishing box provided with ears engaged in the slots of the standards and adapted to be adjusted vertically and in its uppermost position having its upper edge received within said rectangular frame.

2. In a polishing machine, the combination with a pair of standards each formed with a vertical slot, a rectangular frame connecting the upper ends of said standards, split bearings carried by said frame in substantial alinement with the vertical axes of said standards, guards formed integrally with said bearings and projecting within said rectangular frame, a horizontal shaft journaled in said bearings, driving means secured to one end of said shaft, and a polishing box provided with ears engaged in the slots of the standards and adapted to be adjusted vertically and in its uppermost position having its upper edge received within said rectangular frame.

In witness whereof we hereunto affix our signatures.

WILLIAM M. McCORKLE.
WILLIAM H. WILSON.