C. H. McCAUGHEY.

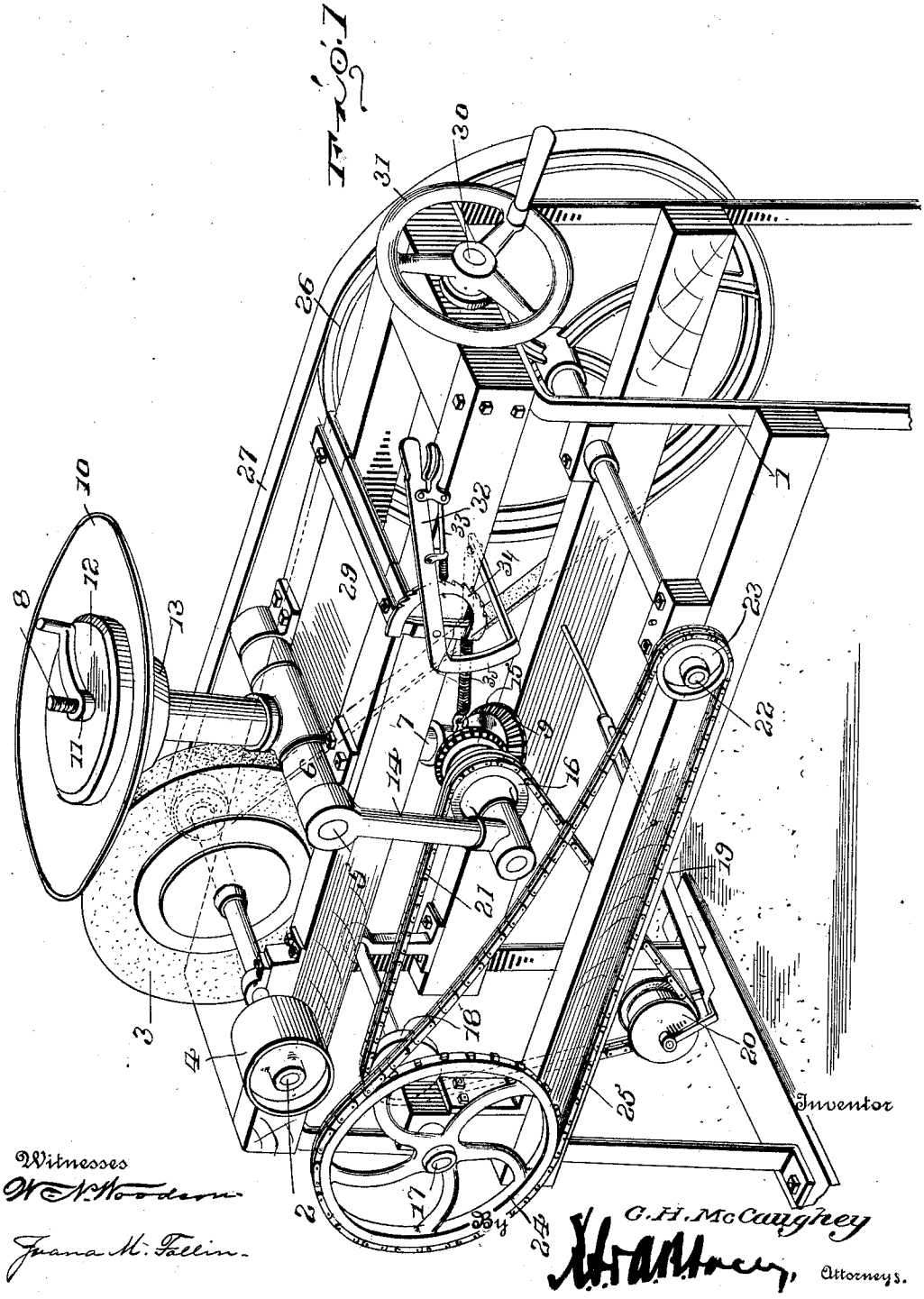
DISK GRINDING MACHINE.

APPLICATION FILED MAY 23, 1911.

1,003,631.

Patented Sept. 19, 1911.

3 SHEETS—SHEET 1.



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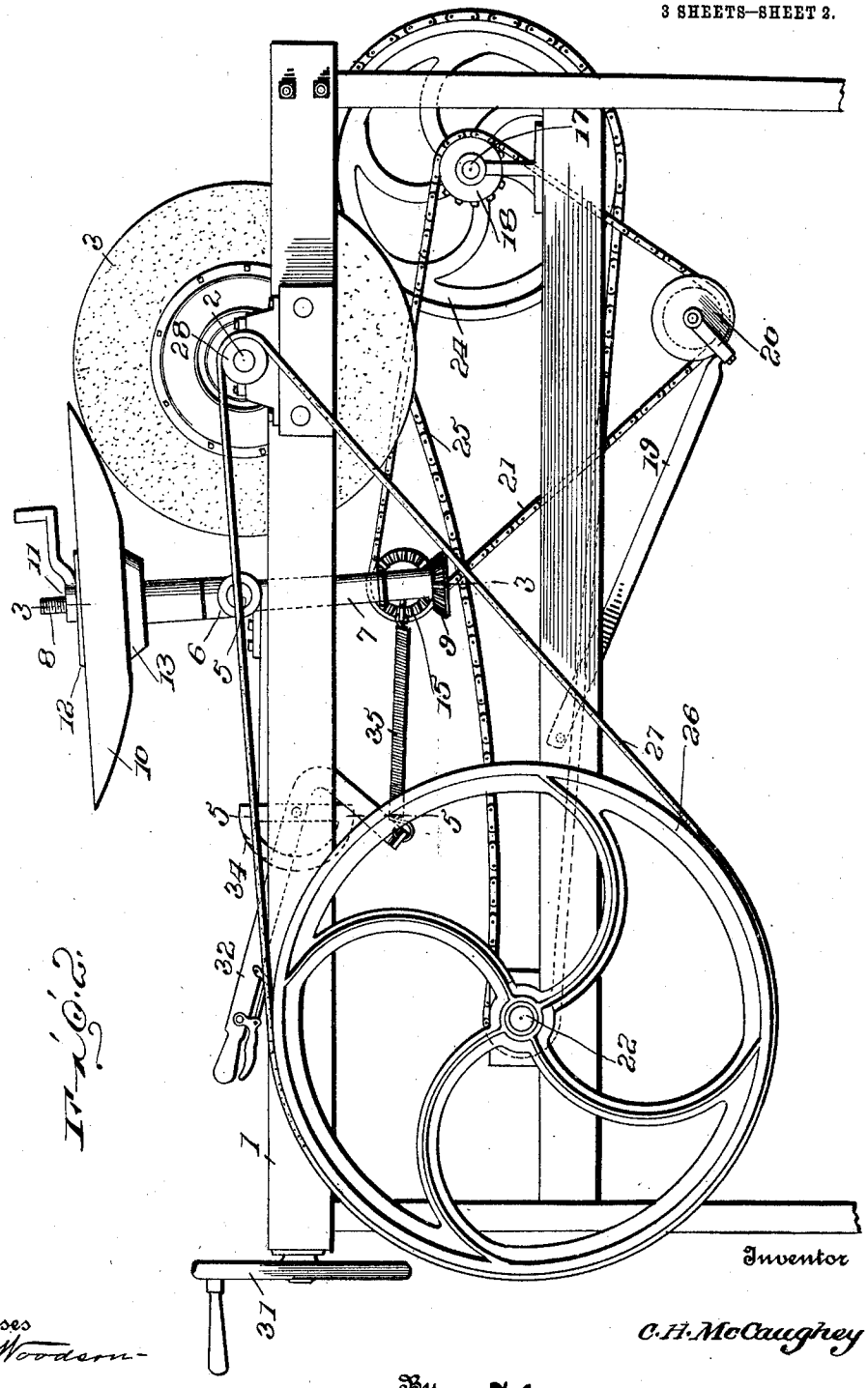

Fig. 2.

Witnesses

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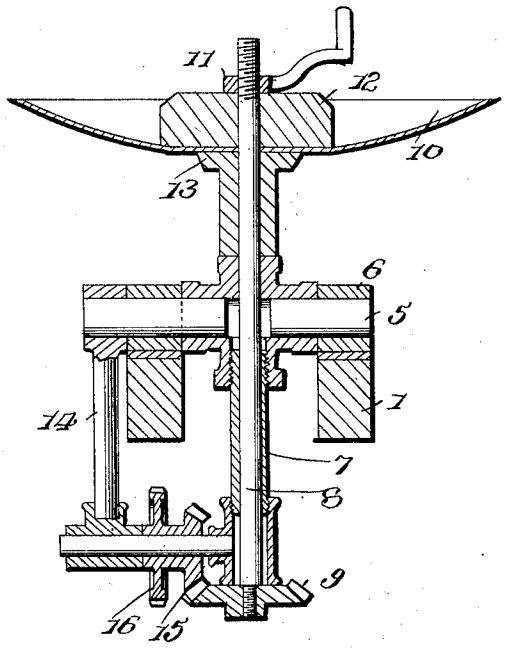

Fig. 3.

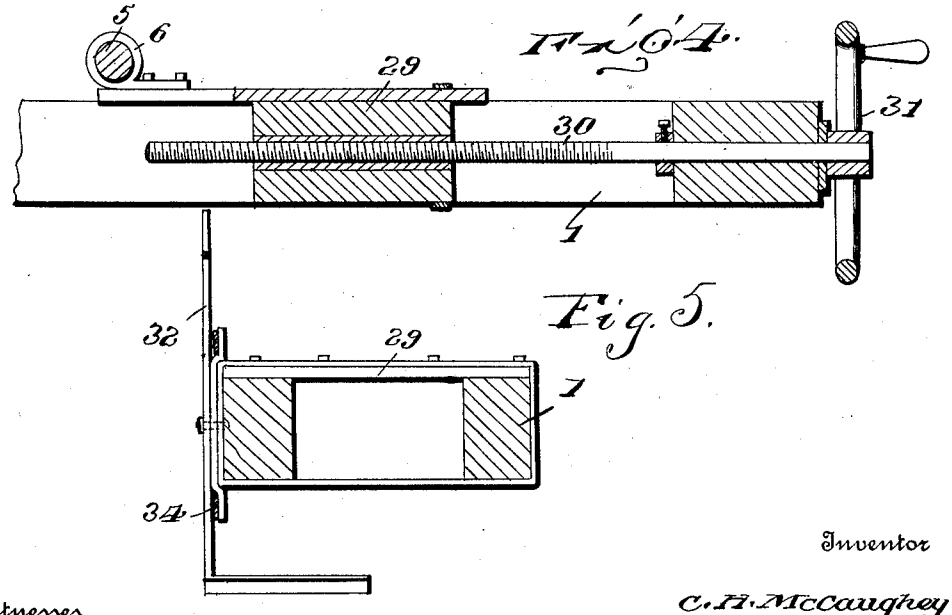

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

CLARENCE H. McCAUGHEY, OF ROCK RAPIDS, IOWA, ASSIGNOR OF ONE-HALF TO JAY A. ROTH, OF ROCK RAPIDS, IOWA.

DISK-GRINDING MACHINE.

1,003,631. Specification of Letters Patent. **Patented Sept. 19, 1911.**

Application filed May 23, 1911. Serial No. 629,070.

To all whom it may concern:

Be it known that I, CLARENCE H. McCAUGHEY, citizen of the United States, residing at Rock Rapids, in the county of Lyon and State of Iowa, have invented certain new and useful Improvements in Disk-Grinding Machines, of which the following is a specification.

This invention relates to machines for grinding disks, and has for its object to provide a simple structure easily operated for grinding out the irregularities in agricultural disks, whereby the said disks are made of uniform thickness throughout and are properly sharpened at their edges. With this object in view the machine includes a frame upon which a grinding wheel is journaled for rotation. A rotatable disk carrier is pivoted upon the frame in the plane of the grinding wheel and is arranged to swing toward and away from the said wheel. A tension means is provided for holding the said disk carrier in proper position with relation to the wheel.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of the machine; Fig. 2 is a side elevation of the same; Fig. 3 is a transverse sectional view of a portion of the same, cut on the line 3—3 of Fig. 2; Fig. 4 is a longitudinal sectional view of an end portion of the same; Fig. 5 is a transverse sectional view of a portion of the same, cut on the line 5—5 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings.

The disk grinding machine consists of a frame 1 upon which is journaled a shaft 2. A grinding wheel 3 is mounted upon the shaft 2 as is also a belt pulley 4. A shaft 5 is journaled in bearings 6 provided upon the frame 1, and a tubular member 7 is mounted upon the intermediate portion of the shaft 5. The shafts 2 and 5 are parallel and the tubular member 7 is at a right angle to the axis of the shaft 5. A spindle 8 is journaled in the tubular member 7 and is provided at its lower end with a beveled gear wheel 9. The said spindle 8 may be of any desired pattern and is adapted to carry the disk which is to be sharpened and which is indicated at 10 in the drawings. A tail nut 11 is screw threaded upon the upper end of the spindle 8 and is adapted to bear against a block 12 positioned upon the upper side of the disk 10 which serves as means for clamping the disk in position against a shoulder 13 carried by the spindle 8.

An arm 14 is fixed to the end of the shaft 5, and a beveled gear wheel 15 is journaled at the lower end of arm 14. The wheel 15 meshes with the wheel 9, and a sprocket wheel 16 is arranged to rotate in unison with the gear wheel 15.

A shaft 17 is journaled upon the frame 1 and carries a sprocket wheel 18. An arm 19 is pivoted upon the frame 1 and carries an idler 20. A sprocket chain 21 is trained around the sprocket wheels 16 and 18 and the idler rests upon the lower run of the said sprocket chain and serves as a slack absorber for the same. A shaft 22 is journaled upon the frame 1 and is provided at one end with a sprocket wheel 23. A sprocket wheel 24 is fixed to the end of the shaft 17, and a sprocket chain 25 is trained around the sprocket wheels 23 and 24. A belt 27 is trained around the power wheel 26 and a pulley 28 mounted upon the shaft 2.

Hereinbefore it was stated that the bearings 6 were mounted upon the frame 1. These bearings, however, are not fixed to the frame 1 but are fixed to a block 29 which is slidably mounted in the upper portion of the said frame. A screw 30 is journaled in one end of the frame 1 and engages a threaded opening in the block 29. The said screw is restrained against longitudinal movement with relation to the frame but is free to be rotated and is provided at its outer end with a wheel 31. Thus it will be seen that by turning the wheel 31 the screw 30 will move the block 29 longitudinally in the frame 1, whereby the spindle 8 is moved toward or away from the periphery of the wheel 3 and the disk 10 carried by the said spindle may have any part of its side positioned over the wheel.

A lever 32 is fulcrumed upon the frame 1 and is provided with a pawl 33 adapted to engage a segment 34 mounted upon the said frame, whereby the lever is held in an adjusted position. A spring 35 is connected at one end with the working end of

the lever 32 and at its other end with the lower portion of the tubular member 7, and the said spring and lever serve as means for holding the disk upon the periphery of the wheel at a predetermined or desired degree of tension.

From the above description it will be seen that the wheel 3 rotates in a vertical plane, while the disk 10 rotates in an approximately horizontal plane so that the spindle 8 may be swung or tilted so that any part of the convex or concave side of the disk may be positioned upon the periphery of the wheel. Also the spindle 8 may be so swung that the wheel will operate upon and sharpen the edge of the disk.

Having thus described the invention, what is claimed as new is:

1. A disk grinding machine comprising a frame, a grinding wheel journaled upon the frame, a carrier slidably mounted upon the frame, a spindle journaled upon the carrier and pivotally mounted at a point between its ends to swing in a plane parallel with the plane of the grinding wheel, means for supporting a disk at the upper end of the spindle, means for resiliently holding the lower end of the spindle away from the grinding wheel, and means for rotating the grinding wheel and spindle simultaneously.

2. A disk grinding machine comprising a frame, a grinding wheel journaled thereon, a carrier slidably mounted thereon, a spindle journaled upon the carrier and pivotally supported at a point intermediate its ends to swing in a plane parallel with the plane of the grinding wheel, means carried at the upper end of the spindle for supporting a disk, a lever fulcrumed upon the frame, a spring connecting the working end of said lever with the lower portion of the spindle, and means for rotating the grinding wheel and spindle simultaneously.

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

CLARENCE H. McCAUGHEY. [L. S.]

Witnesses:
CHAS. W. BRODLEY,
MAUD McLEAN.