Jan. 6, 1931. G. H. SHEARD 1,788,360

WEEDER

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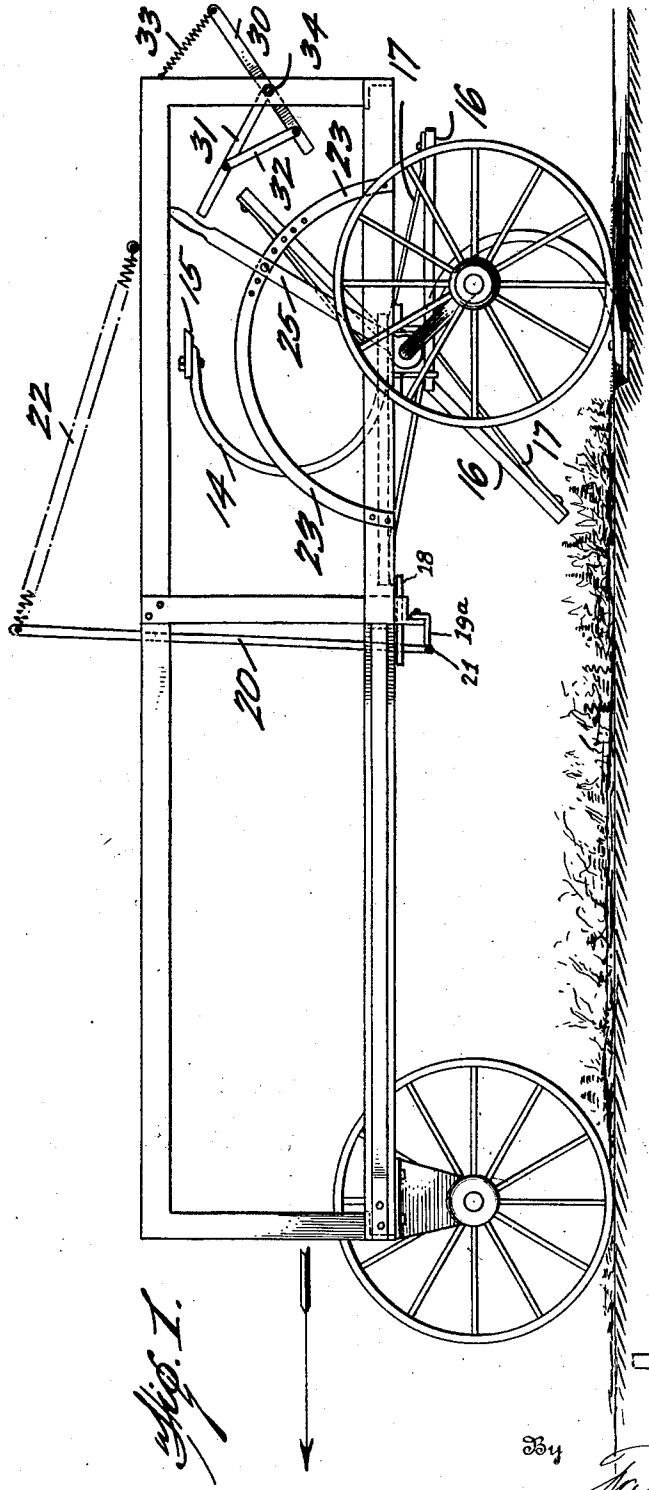


Fig. 1.

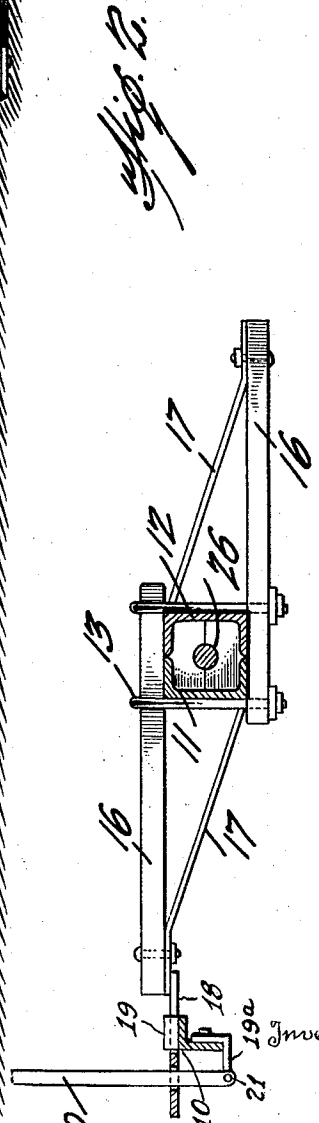


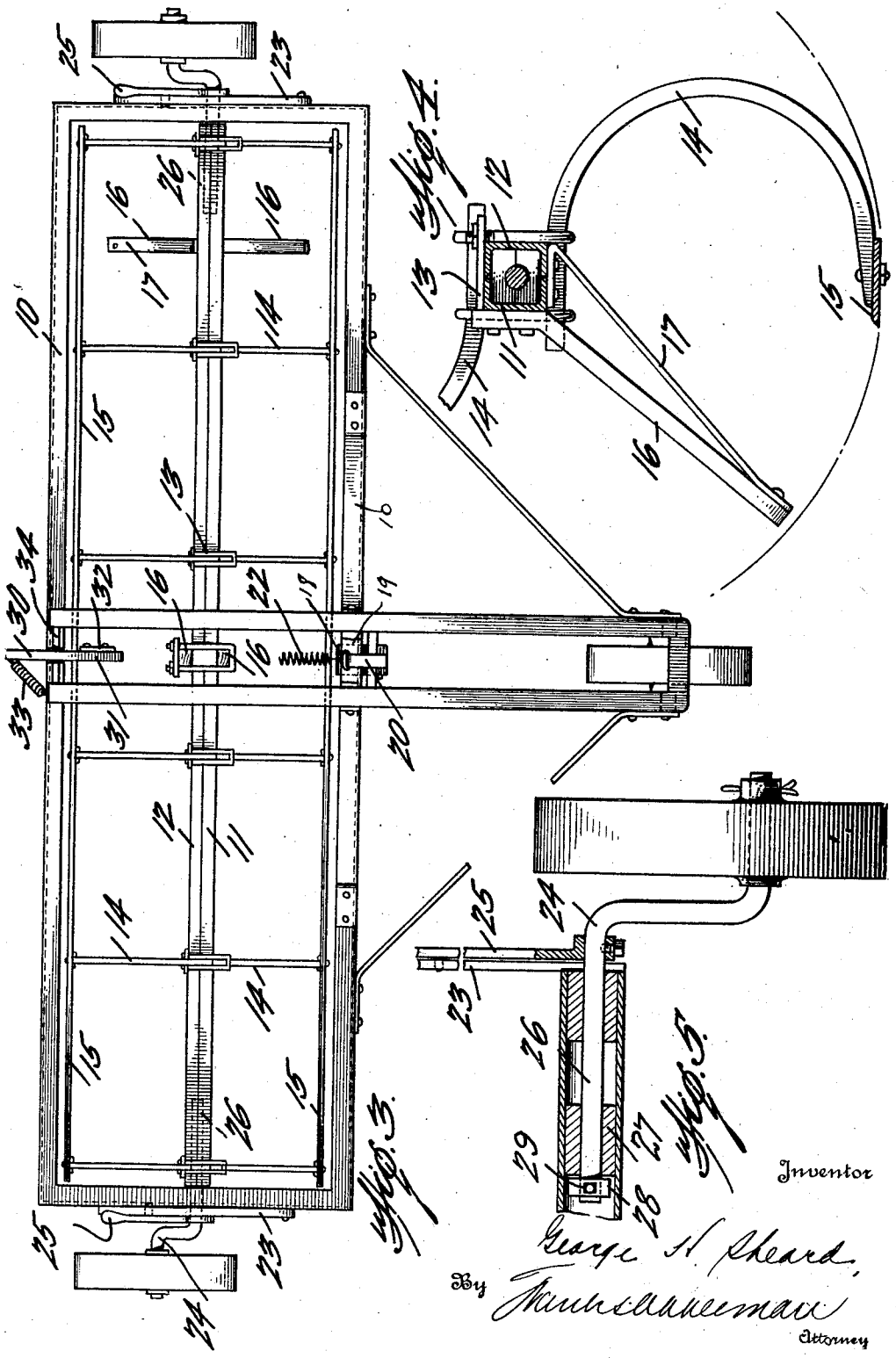
Fig. 2.

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UNITED STATES PATENT OFFICE

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WEEDER

Application filed January 14, 1930. Serial No. 420,764.

This invention relates to weeders or cultivators, and has for an object the provision of novel means whereby weeder blades are mounted on a rotary element arranged to successively present and hold the blades in operative relation to the soil being cultivated. When the machine is used and one set of blades is operating, the said blades will become fouled through the accumulation of vegetation, such as weeds, or the like. When the foregoing condition occurs, means are provided for partially rotating the blade carriers in order that blades just in use and the function impaired by fouling will be lifted out of operative position and another blade or set of blades moved into operative position, it being understood that means are provided for holding the rotating member carrying the blades at different positions of adjustment, whereby the rotating member is released when the positions of the blades are to be changed.

It is a further object of this invention to provide novel means whereby the rotative member is moved to change the positions of the different blades; and it is furthermore an object to provide novel means whereby the fouled blades are vibrated through their being struck by what may be termed a "kicker", as the positions of the blades are being shifted.

It is a still further object of this invention to provide novel means whereby the frame of the machine is held at different positions with relation to the axle in order that the elevation of the frame may be regulated.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this application, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in side elevation of a machine embodying the invention;

Figure 2 illustrates a detailed view, showing the means for holding the blades at different positions;

Figure 3 illustrates a plan view of the machine;

Figure 4 illustrates a sectional view thereof, omitting parts of the frame and the traction wheels; and

Figure 5 illustrates a view in elevation, partly in section, showing the details of the axle.

In these drawings, 10 denotes a rectangular frame which is supported by a main beam which, in the present embodiment, is formed by two channel irons 11 and 12 having the edges of their flanges abutting and secured by suitable clamps, generally identified by the numeral 13, which clamps also, in the present embodiment of the invention act to secure the arms 14 of the blades 15 to the said beam.

The beam also has secured to it a plurality of arms 16 having braces 17 attached to the beam and to the said arms and these constitute what may be termed "walkers", in that their ends are intended to engage the ground and, as the machine is moved, they cause the rotation of the beam for changing the positions of the blades for the purposes heretofore set forth. The arms are successively or selectively engaged by a latch plate 18 which is slidable in a guide 19 secured to the frame in any appropriate way and the latch may be moved into and out of the zone of movement of the arms through the manipulation of a lever 20 connected to the said latch and mounted on a pivot 21, supported by an arm 19*a*. The lever is under control of a spring 22 suitably anchored to hold the lever in one position of adjustment, it being understood that the lever shall be manually operated against the action of the spring when the position of the latch is to be changed with relation to the path of travel of the arms.

The frame is provided with a segmental apertured plate 23, and a crank shaft or wheel spindle 24 carries an apertured arm 25 whose aperture is intended to register with any one of the apertures of the plate 23 for the reception of a pin for holding the arms at different adjustments with relation to the

plate. By this means the angle of the wheel spindle may be adjusted with relation to the beam for holding the frame in a more or less elevated position, according to the desires of the user. By this means the ends of the "walkers" are properly positioned with relation to the ground on which the traction wheels are running. It is shown in the drawing that an extension 26 of the member 24 projects into the beam and the interior of the beam may be provided with filling blocks or the like, as shown at 27, for receiving the end 26 of the member 24, and the parts may be held assembled by a collar 28 on the said extension 26 held by a suitable set screw 29.

In order that the blades may be successively struck and vibrated for the purpose of dislodging deposits from them, a "kicker" is mounted in operative relation to the said blades. In the present embodiment of the said "kicker", three metallic plates 30, 31 and 32 are connected together, the plate 32 acting as a brace between the member 30, which is in the nature of a lever, and the member 31, which acts as an arm or striker, for a purpose to be presently explained. A spring 33 is connected to the outer end of the member 30 and it is suitably anchored to the frame. The spring is intended to operate to exert a pull on the outer end of the member 30. The relation of parts of the "kicker" to the rotating blades is such that as the blade leaves the ground and is revolved toward the elevated position, the blade will engage the inner end of the member 30 and elevate it against the action of the spring 33 and, as the blade continues to move upwardly, the tension of the spring 33 is increased. Hence, when the blade has lifted the inner end of the member 30 and traveled a predetermined distance, the inner end of the member 30 will be disengaged and the action of the spring will then cause the "kicker" to rotate on its pivot 34 so that the inner end of the plate 31 moves downwardly and strikes the blade with such force as to dislodge accumulated dirt or other substances from the blade. The violence of the shock imparted by the stroke of the member 31 on the blade may be determined by the strength of the spring 33.

As a description of the functions of the several parts of the device has been stated in connection with a description of the said parts and their relation to other parts, a descriptive résumé of the operation of the machine as a whole is believed unnecessary for an understanding of the invention by one skilled in the art.

I claim:

1. In a weeder, a transversely mounted beam, wheels carrying the beam, arms mounted on opposite sides of the beam, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, means for holding the beam in its different positions, and means for striking the blades successively for removing deposits therefrom.

2. In a weeder, a transversely mounted beam, wheels carrying the beam, arms mounted on opposite sides of the beam, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, a latch for engaging the walker-arms successively for holding the beam in its different positions, and means for striking the blades successively for removing deposits therefrom.

3. In a weeder, a transversely mounted beam, wheels carrying the beam, arms mounted on opposite sides of the beam, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, means for holding the beam in its different positions, means for adjusting the height of beam with respect to the ground, and means for striking the blades successively for removing deposits therefrom.

4. In a weeder, a transversely mounted beam, wheels carrying the beam, arms mounted on opposite sides of the beam, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, means for holding the beam in its different positions, a member oscillatively mounted to be engaged by the blades successively, an element on the member projecting in the path of travel of the blades adapted to strike the blades successively for removing deposits therefrom, and means for exerting force on the said member and element for causing the element to strike the blades for dislodging deposits.

5. In a weeder, a transversely mounted beam, wheels carrying the beam, arms mounted on opposite sides of the beam, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, means for holding the beam in its different positions, a plate oscillatively mounted to be engaged by the blades successively, a plate on the first mentioned plate projecting in the path of travel of the blades and adapted to strike the blades successively for removing deposits therefrom, and means for exerting force on the said plates for causing the second mentioned plate to strike the blades for dislodging deposits.

6. In a weeder, a transversely mounted beam, said beam comprising channel irons

having the edges of their flanges abutting, arms mounted on opposite sides of the beam, clamps for holding the sections of the beam and the arms assembled, blades on said arms, walker-arms on the beam adapted to successively engage ground being cultivated for intermittently turning the beam to cause the blades to successively assume operative positions, means for holding the beam in its different positions, and means for striking the blades successively for removing deposits therefrom.

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