E. P. KNAPE.

DITCHING MACHINE.

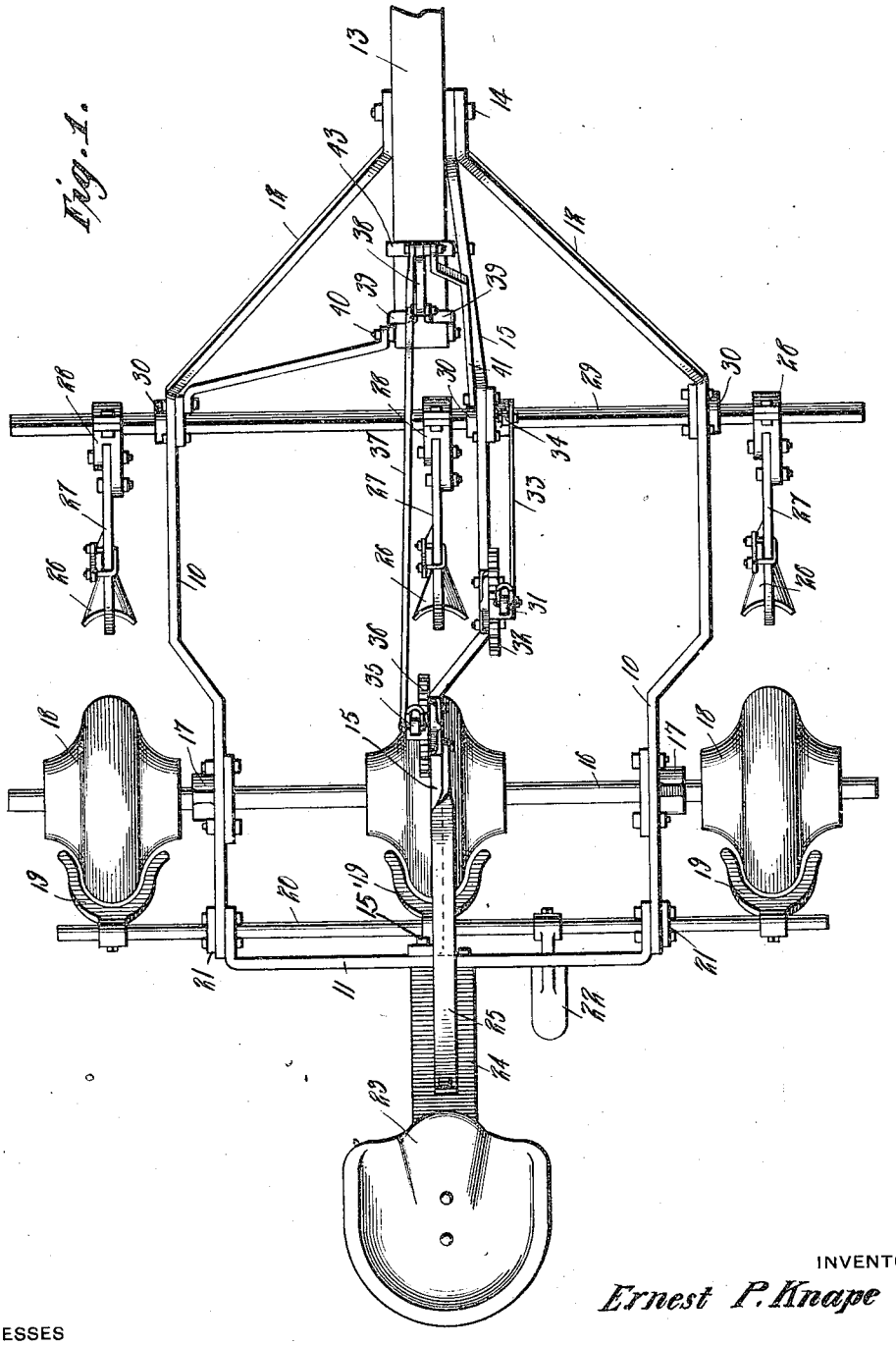
APPLICATION FILED JULY 19, 1916.

1,243,306.

Patented Oct. 16, 1917.

2 SHEETS—SHEET 1.

Fig. 1.



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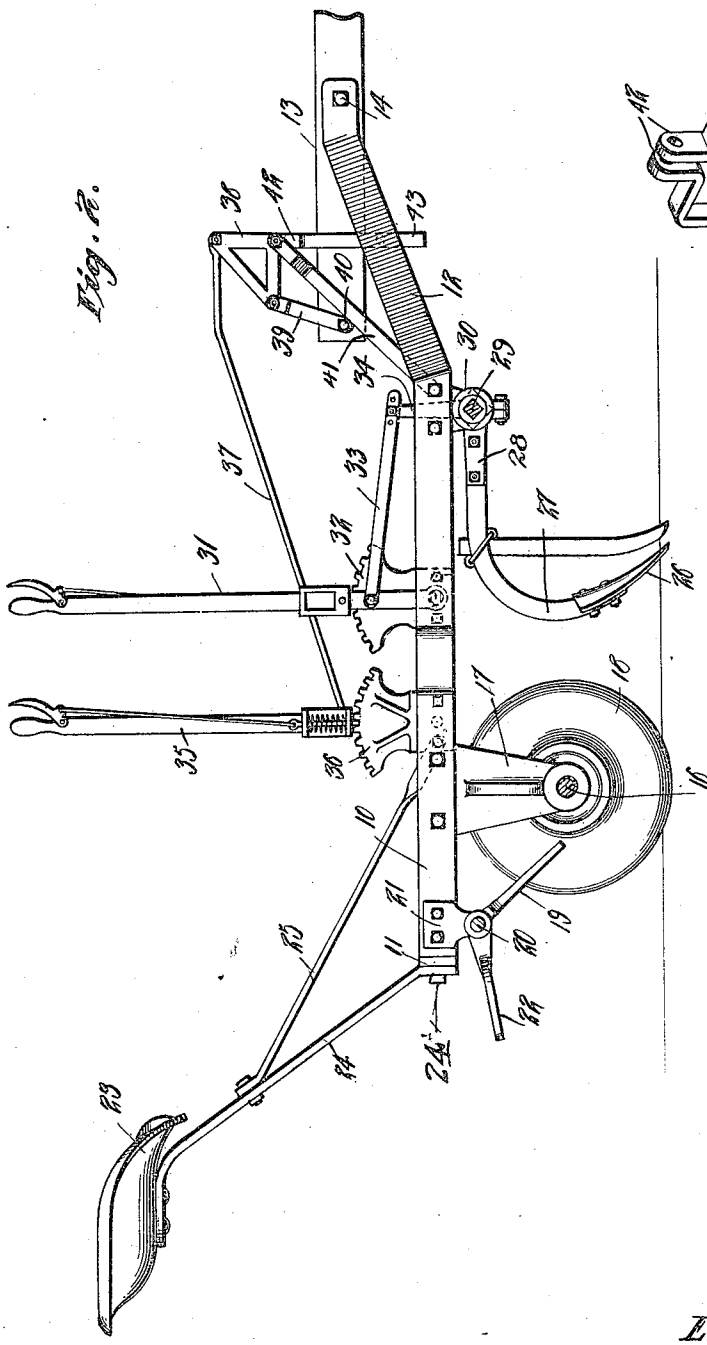


Fig. 2.

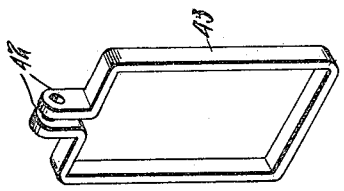


Fig. 5.

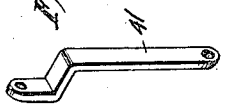


Fig. 4.

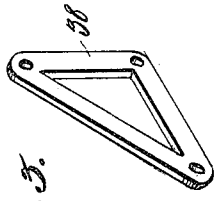


Fig. 3.

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ERNEST P. KNAPE, OF TWIN FALLS, IDAHO.

DITCHING-MACHINE.

1,243,306. Specification of Letters Patent. Patented Oct. 16, 1917.

Application filed July 19, 1916. Serial No. 110,161.

To all whom it may concern:

Be it known that I, ERNEST P. KNAPE, a citizen of the United States, residing at Twin Falls, in the county of Twin Falls and State of Idaho, have invented certain new and useful Improvements in Ditching-Machines, of which the following is a specification.

This invention relates to an improved ditching machine and the principal object of the invention is to provide a machine of the character described having an improved frame construction, so constructed that the frame may be vertically adjusted through the medium of a latch lever and pivoted links and to further provide improved cutting blades and mounting for the same.

Another object of the invention is to provide improved wheel scrapers and improved wheels so constructed that they will form ditches when moving through the dirt loosened by the cutting blades.

Another object of the invention is to provide a machine of the character described which will be comparatively simple in construction and which will be very simple to operate.

This invention is illustrated in the accompanying drawings:—

Figure 1 is a top plan view of the improved machine with the outer portion of the tongue removed.

Fig. 2 is a side elevation of the improved machine disclosed in Fig. 1.

Fig. 3 is a perspective view of a rocker forming part of the adjusting means for the frame.

Fig. 4 is a perspective view of a link forming part of the adjusting means.

Fig. 5 is a perspective view of a yoke which limits the swinging movement of the rocker in one direction by engagement with the rear end portion of the tongue.

The frame is provided with side bars 10 which are connected at their rear ends by the cross bar 11 and have their forward end portions 12 extending in converging relation and connected with the top 13 by means of the bolt 14. An intermediate longitudinally extending bar 15 extends from the cross bar 11 and has its forward end connected with the tongue 13 by the bolt 14 between the tongue and one of the side bars and its rear end connected with the cross bar 11 by bolt 16′, as clearly shown in Fig. 1. The axle 16 is journaled in the bearings 17 carried by the side bars 10 and carries the wheels 18 which have their tread portions rounded as shown in Figs. 1 and 2 and are provided with heavy tapered hubs. These hubs merge into the tread portions of the wheels and therefore when in use these wheels will form ditches. Scrapers 19 which are forked to conform to the contour of the wheels are connected with the rocker shaft 20 journaled in the bearings 21 carried by the side bars 10. By placing the foot upon the treadle 22, the scrapers may be brought into engagement with the wheels and earth adhering to the wheels thus removed. This treadle is positioned adjacent the driver's seat 23 which has its standard 24 connected with the cross bar by bolts 16′ and 24′ and braced by the bracing arm 25 connected with the center bar 15 and therefore this treadle can be easily reached when desired.

The cutting blades or shovels 26 are provided with standards 27 similar to plow beams which are connected with the brackets 28 mounted upon the rocker shaft 29 which shaft is journaled in the bearings 30 carried by the side bars 10 and center bar 15. A latch lever 31 is pivotally connected with the rack 32 carried by the center bar 15 and is provided with a draw bar or link 33 which is connected with the lever 34 extending upwardly from the rocker shaft 29. It will thus be seen that by moving the latch lever, the shovels 26 may be brought into and out of engagement with the ground.

In order to adjust the frame there is provided a latch lever 35 which is pivotally carried by the rack 36 secured to the center bar 15 to the rear of the latch lever 31. A draw bar or rod 37 extends forwardly from this latch lever 35 and is connected with the triangular rocker plate 38 pivotally connected with the upper end portions of the links 39 which in their turn are pivotally connected with the rear end portion of the tongue 13 by means of the bolt 40. The rocker plate 38 has one corner portion pivotally connected with the link 41 and arms 42 of the yoke 43 and it will be seen that when the latch lever is moved to swing the rocker plate 38 rearwardly, the forward end portion of the frame will be swung upwardly and the rear end portion of the tongue 13 will be swung downwardly. The yoke 43 acts as an abutment or stop to limit the rearward swinging movement of this plate 38,

Therefore the frame cannot be swung upwardly beyond a desired amount and there will be no danger whatever of the plate 38 swinging rearwardly to such an extent that further movement would cause a downward movement of the frame.

In the operation of this machine, it will be drawn along a road or field in which it is desired to form the ditches and the levers 31 and 35 will be adjusted so that the shovels 26 will cut into the ground the proper distance and at the proper angle. As the machine is moved along the road, the shovels will cut into the ground and thus loosen the earth. The rollers will follow in the tracks made by these shovels and the loose dirt will be compressed by the rollers thus forming the ditches. By regulating the depth to which the shovels cut, the depth of the ditches can be easily controlled and thus the ditches will not be formed too deep. When it is no longer desired to cut the earth, the levers can be adjusted to swing the shovels out of engagement with the ground and the machine can then be drawn over the road or field without cutting into the ground.

What is claimed is:—

1. A ditching machine including a frame having side bars and a center bar, a tongue having its rear portions pivotally connected with said bar, an axle connected with said side bars, supporting wheels mounted upon said axle, links pivotally connected with the rear end portion of said tongue, a substantially triangular rocker plate having its rear base portion pivotally connected with said links, a yoke extending about the rear end portion of said tongue, a link pivotally connected with the center bar, said yoke and last mentioned link being pivotally connected with the forward base portion of said rocker plate, and a latch lever connected with the center bar and provided with an actuating rod connected with the upper portion of said rocker plate for swinging said rocker plate to vertically adjust the frame and releasably hold the frame in the vertically adjusted position.

2. A ditching machine including a frame, a tongue having its rear portion pivotally connected with said frame, an axle connected with said frame, supporting wheels mounted upon said axle, links pivotally connected with the rear portion of said tongue, a rocker plate having its rear base portion pivotally connected with said links, a yoke extending about the rear end portion of said tongue, a link pivotally connected with said frame, said yoke and last mentioned link being pivotally connected with the forward base portion of said rocker plate, and means connected with the upper portion of said rocker plate for swinging the rocker plate to vertically adjust the frame and releasably hold the frame in the vertically adjusted position.

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

ERNEST P. KNAPE.

Witnesses:
VIOLET KARIS,
ARTHUR B. WILSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."