R. R. DAMOUDE.

WEED DIGGER.

APPLICATION FILED JAN. 27, 1912.

1,036,578.

Patented Aug. 27, 1912.

3 SHEETS—SHEET 1.

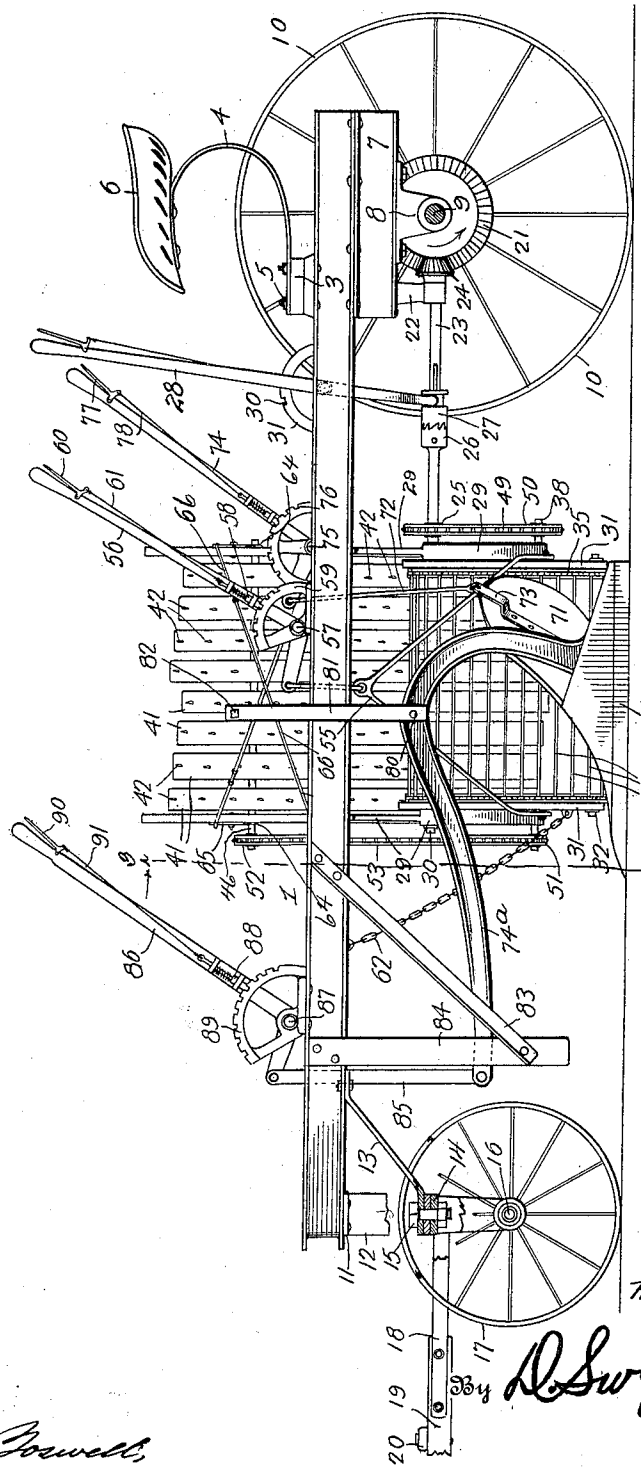

Fig. 1.

Witnesses

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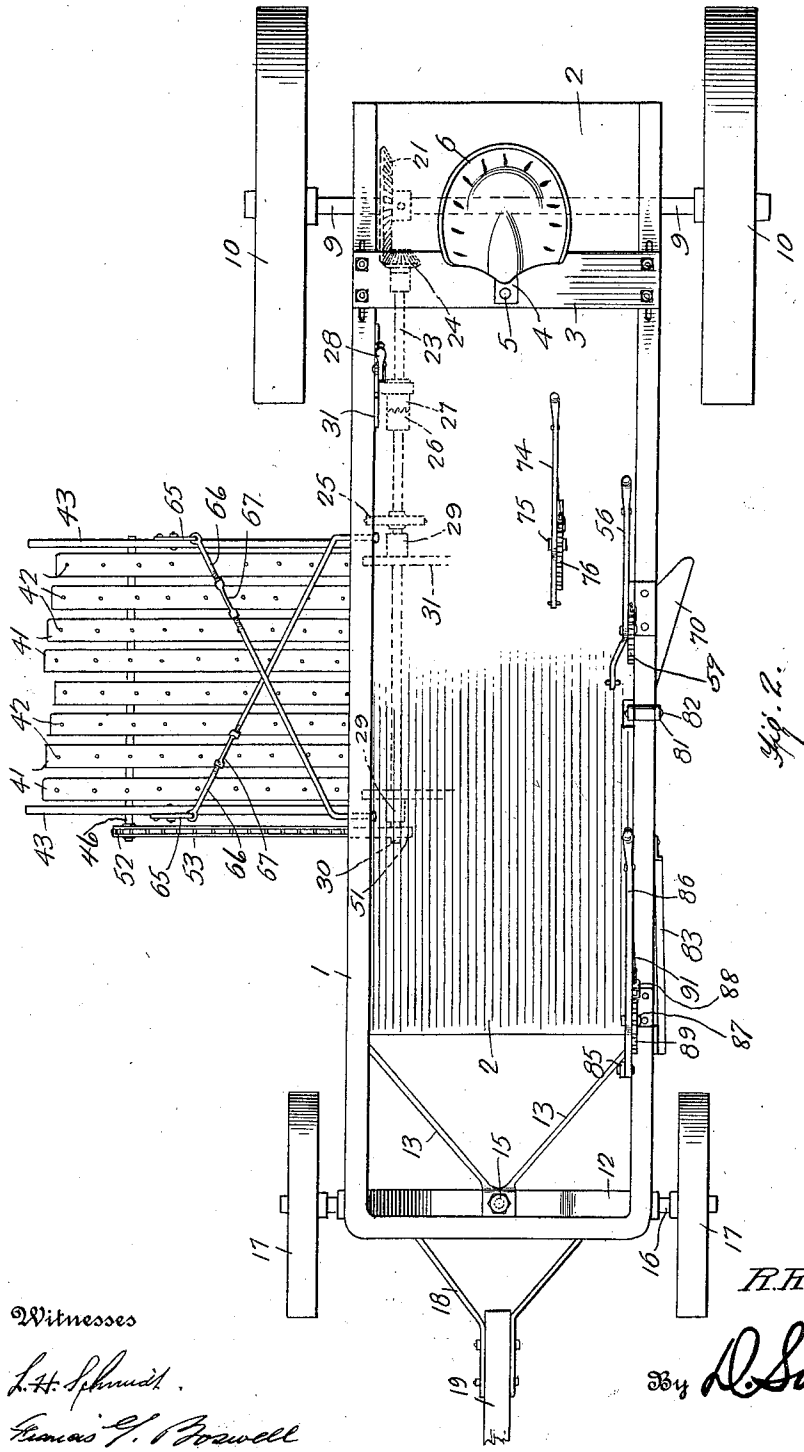

Fig. 2.

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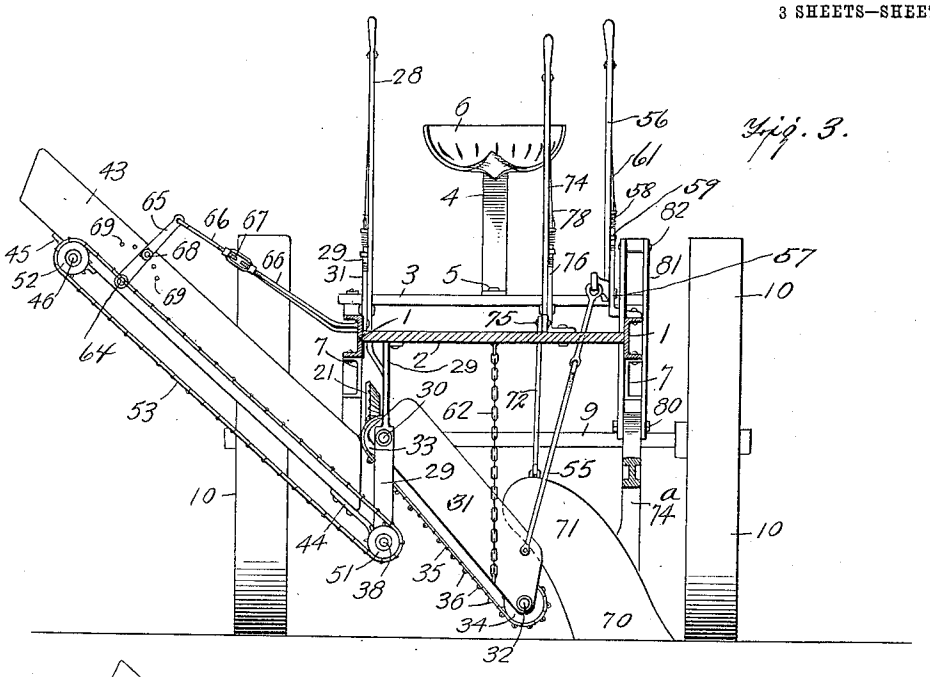

Fig. 3.

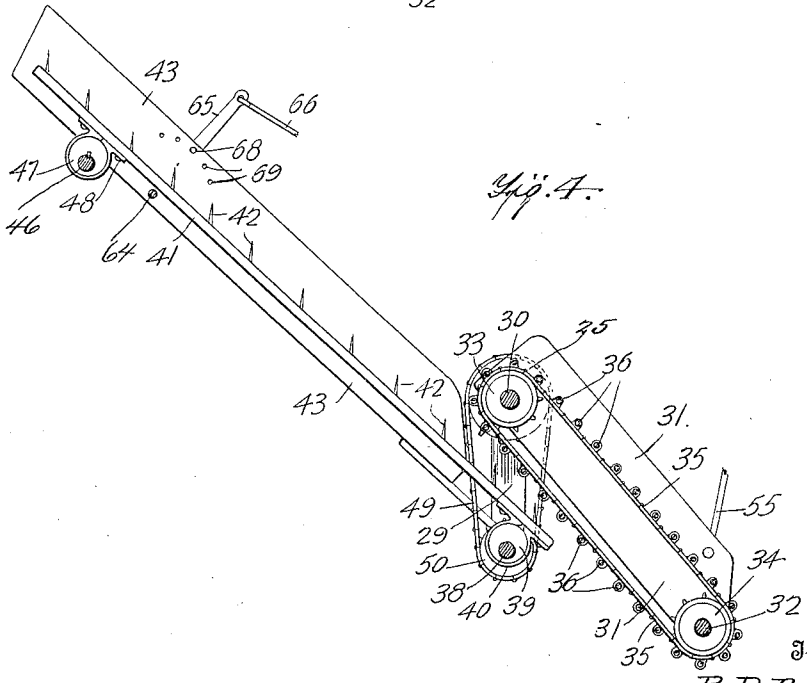

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD R. DAMOUDE, OF PLAINVIEW, MINNESOTA.

WEED-DIGGER.

1,036,578. Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed January 27, 1912. Serial No. 673,904.

To all whom it may concern:

Be it known that I, RICHARD R. DAMOUDE, a citizen of the United States, residing at Plainview, in the county of Wabasha and State of Minnesota, have invented a new and useful Weed-Digger; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a new and useful machine for digging and separating weeds, grass, roots and the like from the soil.

The primary object of the invention is to improve and simplify the structure shown, set forth and claimed in the Patent No. 943,817, issued Dec. 21, 1909, and to produce a machine of this design, in which more desirable features of construction are involved, whereby the work may be more efficiently and practically executed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—Figure 1 is a view in side elevation of the improved digging and separating machine, the same being constructed in accordance with the invention. Fig. 2 is a plan view. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is a sectional view through the elevator or conveyer and through the series of vibrating bars 41.

Referring to the drawings 1 designates an elongated steel frame, constructed preferably of steel beams U-shaped in cross section.

2 designates the platform, which is secured to the frame in any suitable manner.

Extending transversely of the frame and slidable thereon is a transverse member 3, to which the spring strap 4 is secured, as at 5. This strap supports the operator's seat 6.

Secured to the frame, one on each side thereof at the rear are the beams 7, from which the bearings 8 for the rear axle 9 project. Mounted on the axle 9 are the drive wheels 10. Secured to the forward end of the frame is a transverse plate 11, to which is fastened the downwardly extending strap 12. This strap 12 is braced relative to the frame by the bars 13. Passing through the strap 12 and the strap 14 is a kingbolt 15, so as to permit the strap 14 and the axle 16 (which is mounted in bearings of the strap 14) to oscillate under the frame. The forward wheels 17 of the machine are mounted on the axle 16. Secured to the strap 14 by the bars 18 is the usual form of tongue 19, to which the ordinary equalizer 20 is connected.

Mounted on and rotatable with the drive axle 9 is a bevel gear 21. Mounted in downwardly projecting bearings 22 of the frame is a shaft 23, on one end of which a bevel gear 24 (which meshes with the bevel gear 21) is fixed, while on the other end of the shaft 23 a sprocket 25 is loosely carried. This sprocket 25 is formed with a clutch sleeve 26, with which the clutch member 27 coöperates, for throwing the sprocket 25 in and out of gear with the shaft 23. This clutch member is keyed in the usual manner, to rotate with the shaft 23, but slidable thereon. To shift the clutch member 27 a lever 28 is provided. This lever 28 carries a dog 29, designed to coact with the teeth 30 of the rack 31, for holding the lever in adjusted position, which in turn holds the clutch member 27 in and out of coöperation with the clutch sleeve of the sprocket 25. Also projecting downwardly from the frame is a pair of extensions 29, in bearings of which the shaft 30 is mounted. Pivoted on the shaft are the plates 31, in the lower ends of which the shaft 32 is mounted. The shaft 30 is an extension of the shaft 23. Fixed to the shafts 30 and 32 are the sprockets 33 and 34, about which the chains 35 travel. Connecting the chains 35 is a plurality of rods 36, which rods and chains constitute an elevator or conveyer for elevating the weeds, grass, roots and the like upwardly and laterally.

Mounted in the lower ends of the extensions 29 is a shaft 38, revoluble with which is a plurality of eccentrics 39, which coöperate with the straps 40, which are fixed to the under surface of the vibrating bars 41 at their lower ends. The bars 41 are equally spaced apart, as shown, and are provided with substantially upwardly extending pegs 42. As the bars vibrate the pegs hold the weeds, the grass, roots and the like from falling therefrom. The shaft 38 passes through bearings 44 of the boards 43, from the upper portions of which bearings 45 project. Mounted in the bearings 45 is a shaft 46. This shaft is provided with a plurality of eccentrics 47, which operate in the straps 48 of the vibrating bars

41, so as to impart a vibrating motion to the upper ends thereof. As the bars 41 vibrate the weeds, grass and the like tend to feed upwardly thereon. A sprocket chain 49 passes about the sprocket wheel 25 and the sprocket wheel 50, which sprocket wheel 50 is fixed to rotate with one end of the shaft 38. The other end of the shaft 38 is provided with a sprocket wheel 51. Traveling about the sprocket wheel 51 and the sprocket wheel 52 of the shaft 46 is a chain 53. By the sprocket chains 49 and 53, the shafts 38 and 46 are rotated, which in turn vibrate the bars 41. Connected to one of the plates 31 is a rod 55, the upper end of which is connected to the short arm of the bell crank lever 56, pivoted at 57 in suitable bearings. The long arm of the bell crank lever is provided with a slidable dog 58, to coöperate with the teeth of the rack 59, so as to hold the lever in various positions, which in turn supports the lower end of the conveyer or elevator in adjusted position. The usual hand grip 60 and connecting link 61 are provided on the lever 56, for operating the dog 58. A chain 62 connects between the frame of the machine and the lower end of the conveyer or elevator, so as to limit the same in its downward movement.

The upper ends of the boards 43 have a rock rod 64 passing through them, on each end of which an arm 65 is fixed. Connecting between the arms 65 and the side of the frame of the machine are the supporting tie rods 66, which cross one another. These tie rods 66 consist of two sections, which are connected by the turn buckle 67. By adjusting the turn buckles one way or the other, the tie rods 66 may be lengthened or shortened, thereby constituting means for raising and lowering the upper lateral end of the side boards 43. Another method for raising and lowering the upper lateral ends of the boards 43 is that the pins 68 which penetrate the arms 65 into any one of the apertures 69 of the boards 43 may be removed, and readjusted.

The usual form of plow 70 is provided, which is arranged in such wise relative to the lower end of the conveyer or elevator, as to cause the weeds, grass, roots, the soil and the like to be deflected on the elevator, by means of the mold board 71 of the plow. The plow is suspended from a rod 72, the lower end of which connects to a plate 73 of the mold board, while the upper end is connected to the short arm of a bell crank lever 74, pivoted at 75 to the frame of the machine. This lever 74 is provided with the usual slidable dog to engage any one of the teeth of the rack 76, there being a suitable hand grip 77 and rod 78 for operating the dog. By virtue of the lever 74 the rear portion of the plow may be raised or lowered, so as to regulate its depth in the soil. The plow beam 74^a has connected to it at 80 two straps 81, between which one side portion of the frame of the machine is arranged. The upper ends of the straps 81 are connected together by the bolt 82. The straps 81 constitute means for guiding the plow when raised. Beyond the straps 81 are the guides 83 and 84, between which the forward ends of the plow beam is guided. Pivotally connected to the forward extremity of the plow beam is a link 85, the upper end of which connects to the short arm of the bell crank lever 86, pivoted at 87 in suitable bearings. The lever 86 is supplied with a dog 88 (which co-acts with the teeth of the rack 89 for holding the lever in adjusted positions) and the hand grip 90 and the connecting rod 91 for actuating the dog. The forward end of the plow beam is raised or lowered by the lever 86. Both the forward end of the plow beam and the rear end of the plow may be raised or lowered simultaneously.

As the machine advances, the weeds, grass, roots and the like are plowed up, which together with the soil are deflected by the mold board on the conveyer or elevator, which in turn transmits them to the vibrating bars. The action of these bars separates the weeds, grass, roots and the like from the soil, which weeds, grass, roots and the like are removed from the bars in any suitable manner, and the dirt or soil deposits back in the field.

The invention having been set forth, what is claimed as new and useful is:—

1. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, a conveyer disposed transversely of the frame and pivoted to the upper shaft and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame.

2. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, a conveyer disposed transversely of the frame and pivoted to the upper shaft and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame, means connecting between the upper end of the vibrating mechanism and the frame for raising and lowering the upper end of the vibrating mechanism.

3. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, a conveyer disposed transversely of the frame, and pivoted to the upper shaft

and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame, tie rods having turn buckles and connecting between the frame and the vibrating mechanism for raising and lowering the upper end thereof.

4. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, a conveyer disposed transversely of the frame and pivoted to the upper shaft and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame, and means for raising and lowering the lower end of the conveyer.

5. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, sprocket chain connection between the two shafts, a conveyer disposed transversely of the frame and pivoted to the upper shaft and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame, means for raising and lowering the lower end of the conveyer, and tie rods having turn buckles connecting between the frame and the upper end of the vibrating mechanism for raising and lowering the same.

6. In a weed digger, a frame having downwardly extending extension bearings, a pair of shafts mounted therein one above and one below, means for driving the upper shaft, a conveyer disposed transversely of the frame and pivoted to the upper shaft and driven thereby, a vibrating mechanism pivoted to the lower shaft and extending upwardly and laterally of the frame, the upper end of the vibrating mechanism having a rock rod extending transversely thereof, with an arm fixed on each end, means coacting with the arms for holding the rock rod in adjusted positions, and tie rods having turn buckles connecting between the frames and the arms for raising and lowering the upper end of the vibrating mechanism, the rock rod and the arms acting as additional means for raising and lowering the upper end of the vibrating mechanism.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD R. DAMOUDE.

Witnesses:
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G. A. STOLTZ.