950,624.

E. LAAS.

WEED CUTTER.

APPLICATION FILED JAN. 29, 1907.

Patented Mar. 1, 1910.

3 SHEETS—SHEET 1.

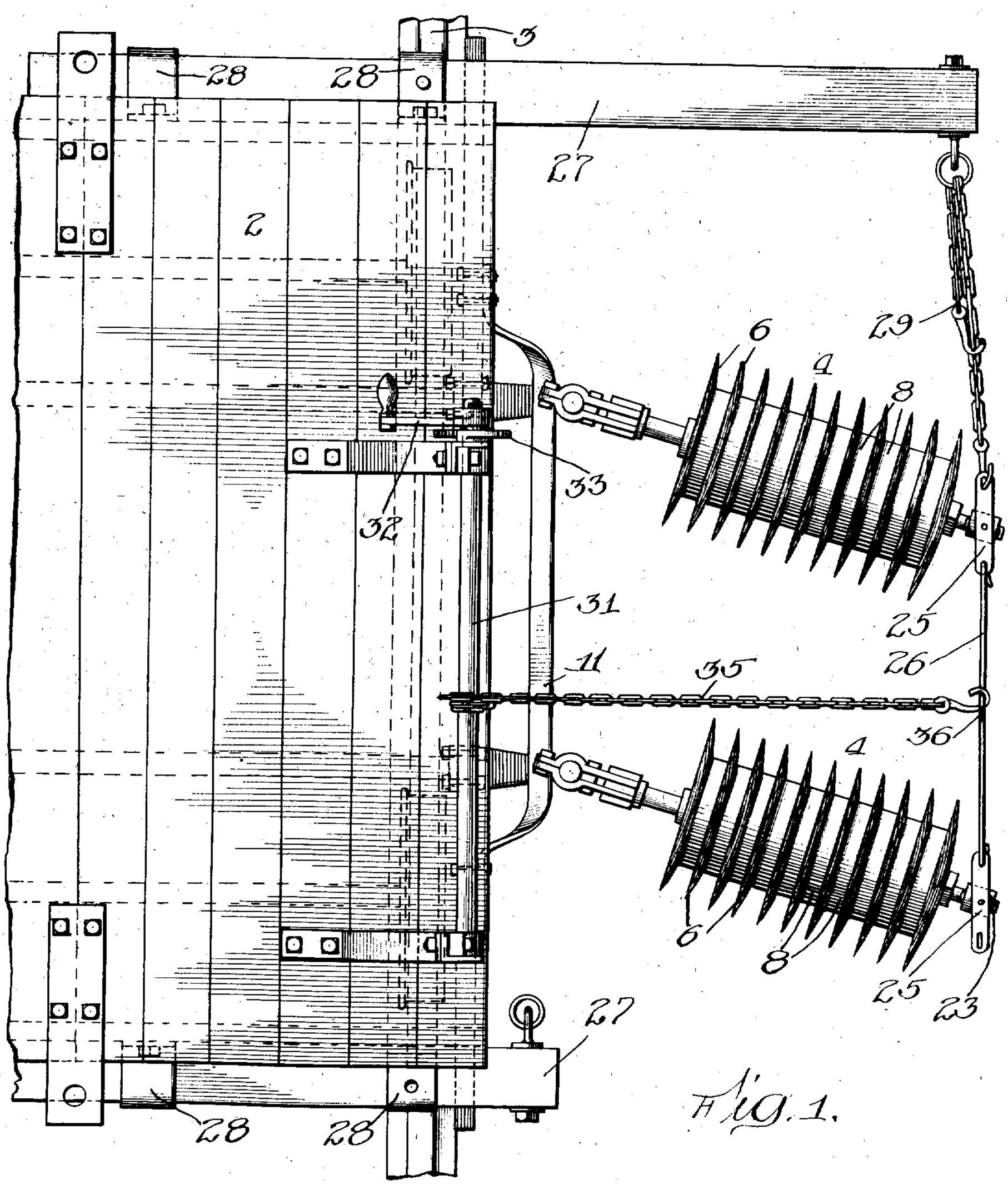


FIG. 1.

Witnesses:
Jas. D. Terry
L. V. Domans.

Inventor:
Edward Laas
By O. R. Barnett.
Atty.

950,624.

E. LAAS.

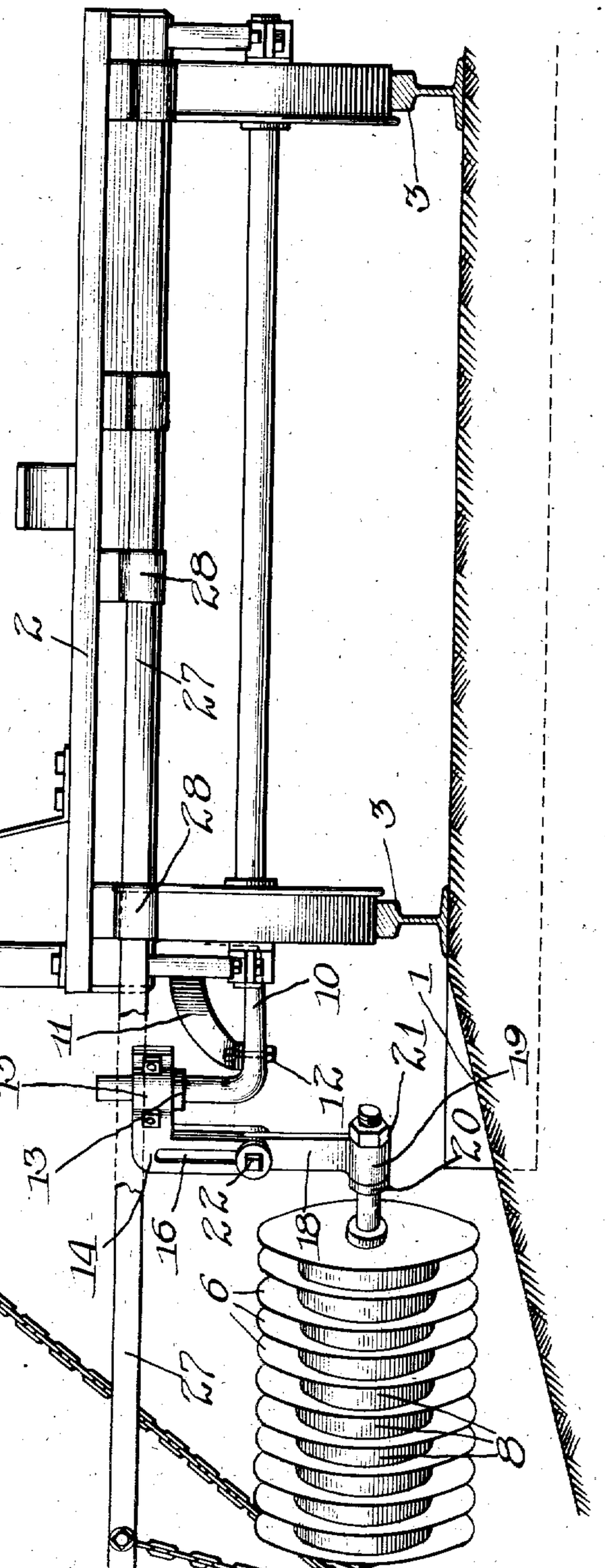
WEED CUTTER.

APPLICATION FILED JAN. 29, 1907.

Patented Mar. 1, 1910.

3 SHEETS—SHEET 2.

FIG. 2.



Witnesses:
Ira D. Perry
L. V. Domaruk.

Inventor:
E. Laas.
By O. R. Barnett
Atty.

E. LAAS.

WEED CUTTER.

APPLICATION FILED JAN. 29, 1907.

950,624.

Patented Mar. 1, 1910.

3 SHEETS—SHEET 3.

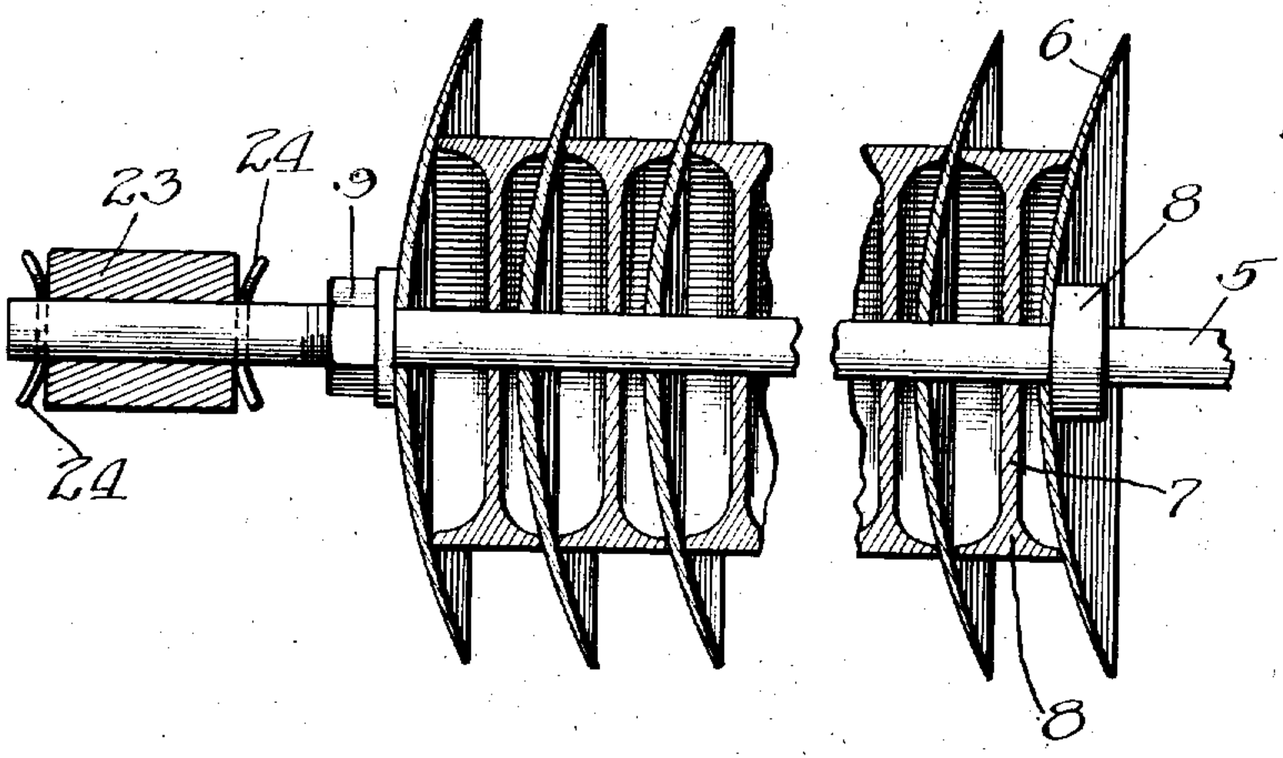


Fig. 3.

Fig. 4.

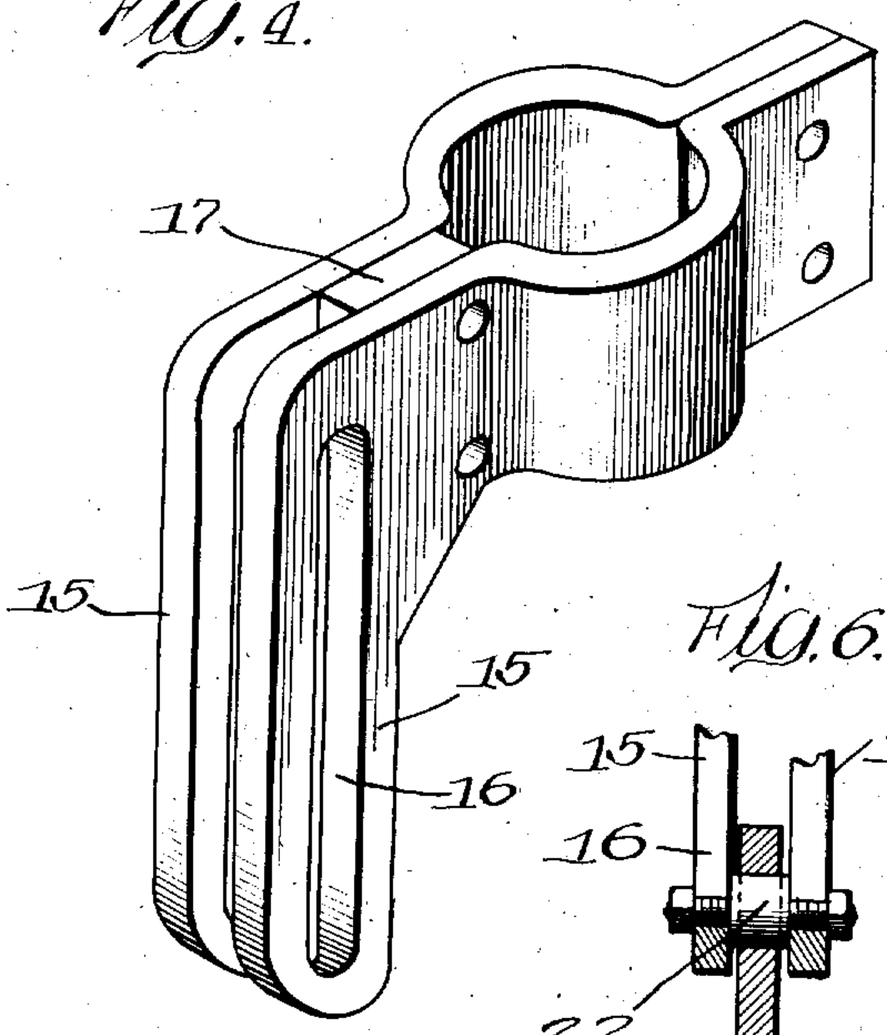
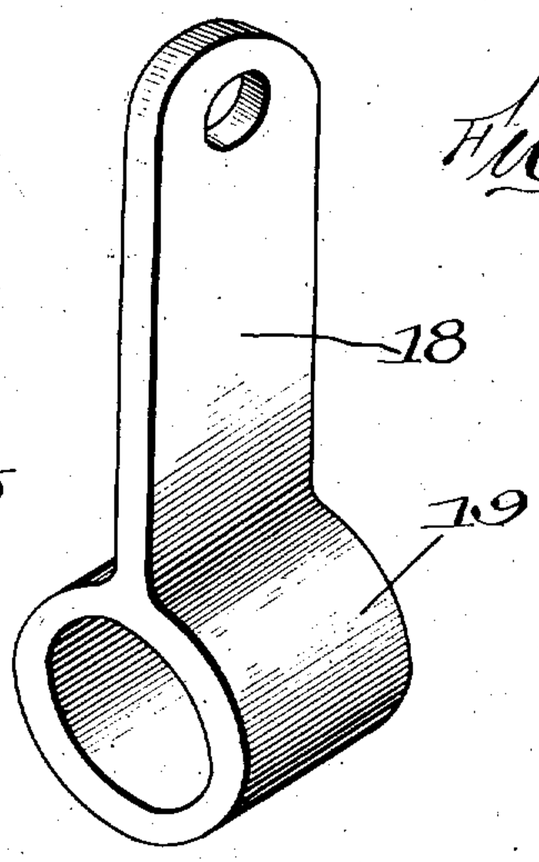


Fig. 6.

Fig. 5.



Witnesses:
Ira D. Perry
L. V. Dorsey.

Inventor:
Edward Laas
By C. R. Barnett,
Atty

UNITED STATES PATENT OFFICE.

EDWARD LAAS, OF CHICAGO, ILLINOIS.

WEED-CUTTER.

950,624. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed January 29, 1907. Serial No. 354,776.

To all whom it may concern:

Be it known that I, EDWARD LAAS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Weed-Cutters, of which the following is a specification.

My invention relates to devices which are especially intended and adapted for use in cutting, uprooting and destroying weeds on the railway right of way. The device might, however, be readily adapted to other uses.

More particularly the invention has for its object to provide a device which may be readily attached to an ordinary railway car or other suitable vehicle, and which shall be economical in construction, easily operated and readily adjustable to meet different roadbed requirements. This and such other objects as may hereafter appear are attained by my invention, convenient embodiments of which are illustrated in the accompanying drawings, in which,

Figure 1 is a plan view of a portion of an ordinary push car with the devices of my invention attached thereto. Fig. 2 is an end elevation of the same. Fig. 3 is a longitudinal section through one of the cutting devices. Fig. 4 is a perspective view of a movable mounting bracket. Fig. 5 is a perspective view of the pivoted shaft hanger; and Fig. 6 is a vertical section through the movable bracket with the hanger in place.

Like numerals of reference indicate the same parts in the several figures of the drawings.

Referring to the drawing, the roadbed is represented by the numeral 1.

2 is a push car of ordinary construction running on the rails 3, 3, and 4, 4 represent generally the cutting devices here shown as two in number. These cutting devices are suitably supported from the car and are adapted to rest freely upon the ground and to have sufficient vertical motion so they will ride over the inequalities thereof.

The cutters may be of any desired construction. A preferred form is shown in detail in Fig. 3. The cutter here consists of a shaft 5 and a number of disks 6, which are preferably dish-shaped in the manner of the ordinary disk harrow and separated by suitable spacers. The spacers here serve three purposes: first, to separate the disks, second, to supply sufficient weight to carry the disks into the ground, and third, to limit the depth of the cut. The spacers consist of central webs 7 provided with flanges 8 engaging with adjacent disks. The disks and spacers may be held upon the shaft by the collar 8 at one end and the nut 9 at the other.

The cutters are mounted on the car in such a way that their angular position may be varied at will, and also so that they may have free vertical movement. In my preferred manner of mounting the cutters, I provide brackets 10 secured to the side of the car and braced by the longitudinal brace 11, to which they may be secured by bolts 12. Each of these brackets has a collar 13, the portion above the collar forming a bearing for a swiveled bracket 14. The latter consists of two angle plates suitably secured together forming a bearing surrounding the end of the stationary bracket and terminating in two arms 15, 15 having slots 16. These arms are spaced by the spacer 17. Pivoted in the space between the arms 15 is a hanger 18, having a bearing 19 to receive the end of the cutter shaft 5, this shaft having a boss 20, the hanger being held against the boss by a nut 21. The hanger turns upon a bolt 22 having reduced ends, as shown in Fig. 6, extending through slots 16, whereby the hanger is capable of vertical adjustment on the bracket.

When more than one cutter is used, I prefer to couple the cutters together in such a way as to allow them independent, vertical movement and, to this end, on the shafts 5 are provided the blocks 23, which are loose and held in position by pins 24, 24. On these blocks are pivoted arms 25, the adjacent ends of the arms being connected by the connecting rod 26, on the ends of which are rings or loops extending through perforations in the arms. At each end of the car is a sliding beam 27 supported by stirrups 28 and from one or the other of these beams, according to the direction in which the car is running, a chain 29 extends to the arm on the adjacent cutter. By this means the horizontal swing of the cutters may be limited to any desired angle.

When it is desired to raise the cutters to avoid fences, cattle guards or other obstructions, or for any other purpose, this may be done through the capacity of the hangers to turn on their pivots. Any suitable hoisting device may be utilized; for example, I have shown a crab mounted on uprights 30 and consisting of a shaft 31 provided with a

crank 32, a ratchet 33 and a dog 34. A chain 35, hooking into a loop 36 in the connecting rod, winds upon the shaft 31.

I wish it to be understood that I do not desire to be limited to the exact devices and arrangements shown and described, as obvious modifications will occur to persons skilled in the art.

The operation of my device is as follows: The car is propelled along the track in any desired manner, the cutters preferably standing at an oblique angle to the car. The hangers will be adjusted vertically to bring the cutters to a proper height. The cutters will now be lowered until they run along freely on the ground beside the track, their weight being sufficient to carry them a proper distance into the ground. The connections between the outer ends of the cutters are flexible connections and, therefore, the cutters will be perfectly free to move vertically and so will follow the inequalities of the ground over which they pass. The disks will, of course, cut and destroy the weeds or other growth over which they pass. When an obstruction comes in sight, the operator will raise the free ends of the cutters by means of the crab, the beam to which the cutters are attached sliding inward toward the car, so that it clears the obstruction as well as the cutter.

I claim:

1. In apparatus of the character described, the combination of a railway car, with a cutter connected at one end with the car by pivotal connections, whereby it may be swung horizontally and vertically, a rigid projecting device slidably mounted on the car, a connection from the rigid projecting device to the outer end of the cutter, and means for raising and lowering the cutter.

2. In apparatus of the character described, the combination of a vehicle, with a pair of cutting devices each connected at one end with the vehicle by pivotal connections so as to swing vertically, the free ends of said cutters being connected with each other by a loose connection permitting independent movement of the cutters.

3. In apparatus of the character described, the combination of a vehicle, with a pair of cutting devices each connected at one end with the vehicle by pivotal connections so as to swing vertically and horizontally, the free ends of said cutters being connected with each other by a loose connection permitting independent vertical movement of the cutters, and means for limiting, without preventing, the horizontal swing of the cutters during operation.

4. In apparatus of the character described, the combination of a vehicle, stationary brackets on the side of said vehicle, pivoted brackets carried by the stationary brackets, pivoted hangers on the pivoted brackets, cutters supported at one end by the hangers, a loose connection between the other ends of the cutters, and a flexible connection from the free ends of the cutters to the vehicle.

5. In apparatus of the character described, the combination of a vehicle, stationary brackets on the side of said vehicle, pivoted brackets carried by the stationary brackets, pivoted hangers on the pivoted brackets, cutters comprising shafts and cutting blades, said shafts being supported at one end by the hangers, a loose connection between the free ends of the cutters, and a flexible connection from the free ends of the cutters to the vehicle comprising pivoted arms on the ends of the cutter shafts, a connecting rod connecting such pivoted arms, and a chain connecting the pivoted arm on the forward cutter shaft with the vehicle.

6. In apparatus of the character described, the combination with a railway car, of a rotary cutter extending sidewise from the car and loosely connected therewith so as to rest freely upon and travel over the ground by rolling movement, said cutter comprising a shaft adapted to be arranged obliquely to the travel of the car, cutting disks, and weights upon the shaft adapted to carry the disks into the ground the desired distance as the cutter is given forward movement.

7. In apparatus of the character described, the combination with a railway car, of a rotary cutter extending sidewise from the car and loosely connected therewith so as to rest freely upon and travel over the ground by rolling movement and to cut into the ground by its own weight, said cutter comprising a shaft adapted to be arranged obliquely to the travel of the car, cutting disks, and spaces interposed between the disks having circumferential flanges limiting the depth of the cut made by the disks.

8. In apparatus of the character described, the combination with a railway car, of a rotary cutter extending sidewise from the car and loosely connected therewith so as to rest freely upon and travel over the ground by rolling movement, said cutter comprising the shaft adapted to be arranged obliquely to the travel of the car, cutting disks, and weighted spacers interposed between the disks and adapted to carry the disks into the ground by their weight and to limit the depth of cut of said disks.

9. In apparatus of the character described, the combination of a vehicle, with a cutter comprising a shaft mounted at one end on the vehicle rotatably and by a universal joint, disks on the shaft, and weighted spacers between said disks adapted to carry the disks into the ground and to limit the depth of their cut, and connections from the free end of the cutter to the vehicle permitting the cutter to ride over inequalities of the ground.

10. In apparatus of the character described, the combination of a railway car, with a plurality of cutters consisting each of a shaft and cutting disks on the shaft, said cutters connected at one end with the car so as to be capable of movement horizontally and vertically, connections between said cutters, and connections from the free end of one of said cutters to the car, said connections permitting the cutters to ride over inequalities of the ground.

11. In apparatus of the character described, the combination of a railway car, with a rotary weed cutter extending from the car obliquely to the direction of travel of the same and adapted to rest freely upon the ground in operation and comprising cutting means arranged in successive positions longitudinally of the axis of the cutter, upon which the cutter is supported on the ground, said cutter being connected with the car so as to have free vertical movement.

12. In apparatus of the character described, the combination with a railway car, of a rotary weed cutter extending from the car obliquely to the direction of travel of the same and adapted to rest freely upon the ground in operation and comprising cutting means arranged in successive positions longitudinally of the axis of the cutter, upon which the cutter is supported on the ground, said cutter being connected with the car so as to have free vertical and horizontal movement, and means for limiting its horizontal movement.

13. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, and a hanger in which the shaft is mounted, said hanger being pivotally mounted so as to swing in a vertical plane.

14. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, a hanger in which the shaft is mounted, said hanger being mounted on the car by pivotal connections so as to swing vertically and horizontally.

15. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, a hanger to support the cutter shaft pivotally mounted so as to swing in a vertical plane, a bracket on which the hanger is mounted, said bracket being pivotally connected with the car so as to swing horizontally.

16. In a railway weed cutter, the combination with a railway car, of a plurality of cutting devices which are flexibly supported so as to have movement independent of each other, a rigid device movably connected with the car to which said cutters are attached, and a hoisting device by means of which the cutters may be raised to avoid obstructions.

17. In a railway weed cutter, the combination with a railway car, of a plurality of cutting devices comprising disks set obliquely to the travel of the car, which said cutting devices are flexibly supported so as to have movement independent of each other, a rigid device movably connected with the car, to which said cutters are attached, and a hoisting device by means of which the cutters may be raised to avoid obstructions.

EDWARD LAAS.

Witnesses:
G. Y. SKINNER,
PERCIVAL H. TRUMAN.

Correction in Letters Patent No. 950,624.

It is hereby certified that in Letters Patent No. 950,624, granted March 1, 1910, upon the application of Edward Laas, of Chicago, Illinois, for an improvement in "Weed-Cutters," an error appears in the printed specification requiring correction as follows: Page 2, line 105, the word "spaces" should read *spacers;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of March, A. D., 1910.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

10. In apparatus of the character described, the combination of a railway car, with a plurality of cutters consisting each of a shaft and cutting disks on the shaft, said cutters connected at one end with the car so as to be capable of movement horizontally and vertically, connections between said cutters, and connections from the free end of one of said cutters to the car, said connections permitting the cutters to ride over inequalities of the ground.

11. In apparatus of the character described, the combination of a railway car, with a rotary weed cutter extending from the car obliquely to the direction of travel of the same and adapted to rest freely upon the ground in operation and comprising cutting means arranged in successive positions longitudinally of the axis of the cutter, upon which the cutter is supported on the ground, said cutter being connected with the car so as to have free vertical movement.

12. In apparatus of the character described, the combination with a railway car, of a rotary weed cutter extending from the car obliquely to the direction of travel of the same and adapted to rest freely upon the ground in operation and comprising cutting means arranged in successive positions longitudinally of the axis of the cutter, upon which the cutter is supported on the ground, said cutter being connected with the car so as to have free vertical and horizontal movement, and means for limiting its horizontal movement.

13. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, and a hanger in which the shaft is mounted, said hanger being pivotally mounted so as to swing in a vertical plane.

14. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, a hanger in which the shaft is mounted, said hanger being mounted on the car by pivotal connections so as to swing vertically and horizontally.

15. In apparatus of the character described, the combination of a railway car, with a weed cutter comprising a shaft arranged obliquely to the direction of the travel of the car and a plurality of cutting blades spaced apart along said shaft, a hanger to support the cutter shaft pivotally mounted so as to swing in a vertical plane, a bracket on which the hanger is mounted, said bracket being pivotally connected with the car so as to swing horizontally.

16. In a railway weed cutter, the combination with a railway car, of a plurality of cutting devices which are flexibly supported so as to have movement independent of each other, a rigid device movably connected with the car to which said cutters are attached, and a hoisting device by means of which the cutters may be raised to avoid obstructions.

17. In a railway weed cutter, the combination with a railway car, of a plurality of cutting devices comprising disks set obliquely to the travel of the car, which said cutting devices are flexibly supported so as to have movement independent of each other, a rigid device movably connected with the car, to which said cutters are attached, and a hoisting device by means of which the cutters may be raised to avoid obstructions.

EDWARD LAAS.

Witnesses:
G. Y. SKINNER,
PERCIVAL H. TRUMAN.

Correction in Letters Patent No. 950,624.

It is hereby certified that in Letters Patent No. 950,624, granted March 1, 1910, upon the application of Edward Laas, of Chicago, Illinois, for an improvement in "Weed-Cutters," an error appears in the printed specification requiring correction as follows: Page 2, line 105, the word "spaces" should read *spacers;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of March, A. D., 1910.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

Correction in Letters Patent No. 950,624.

It is hereby certified that in Letters Patent No. 950,624, granted March 1, 1910, upon the application of Edward Laas, of Chicago, Illinois, for an improvement in "Weed-Cutters," an error appears in the printed specification requiring correction as follows: Page 2, line 105, the word "spaces" should read *spacers;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of March, A. D., 1910.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.