

No. 799,573.

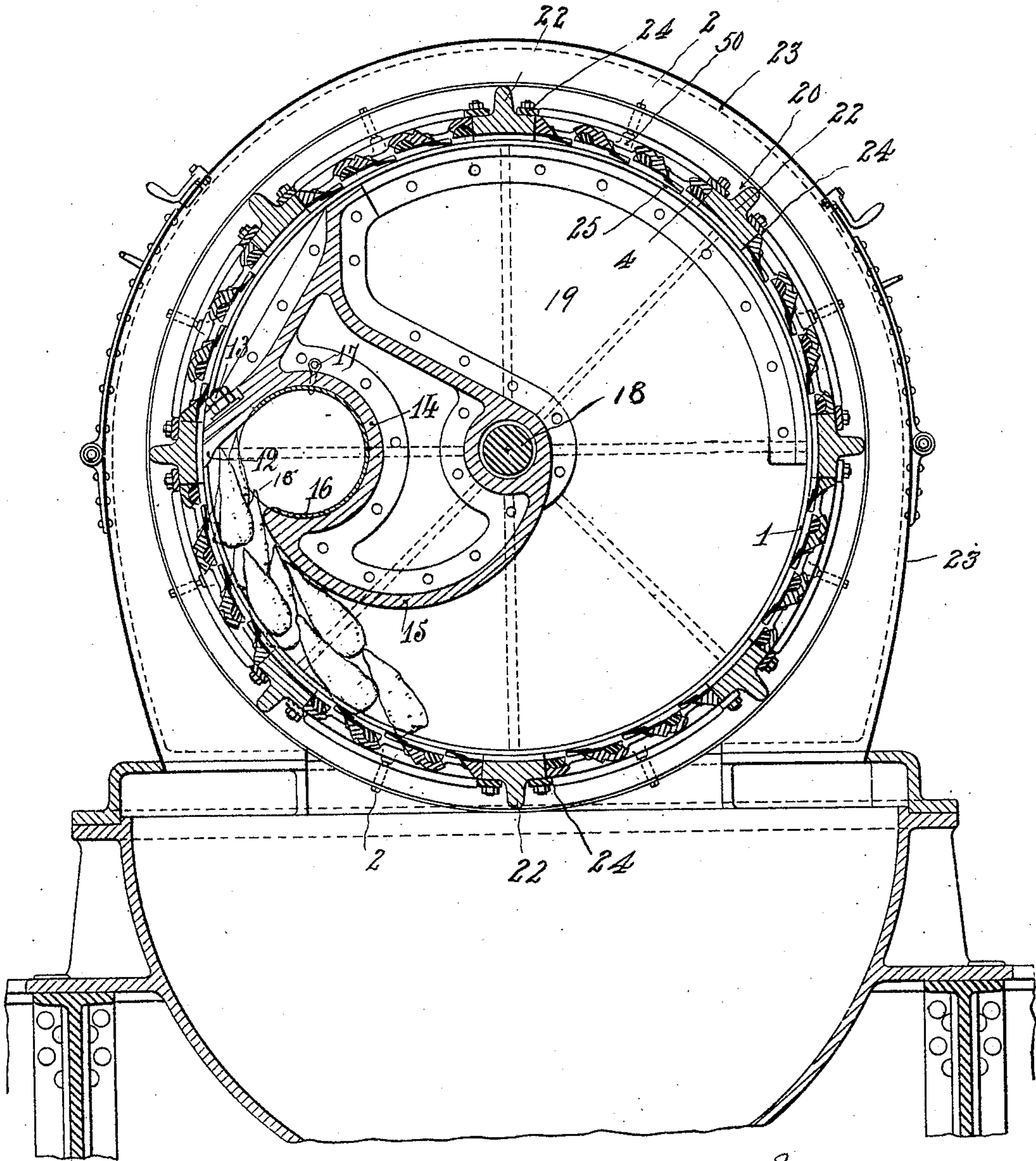
PATENTED SEPT. 12, 1905.

A. MAGUIN.
ROOT CUTTER.

APPLICATION FILED OCT. 27, 1902.

4 SHEETS—SHEET 1.

Fig. 1



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4 SHEETS—SHEET 2.

Fig. 2.

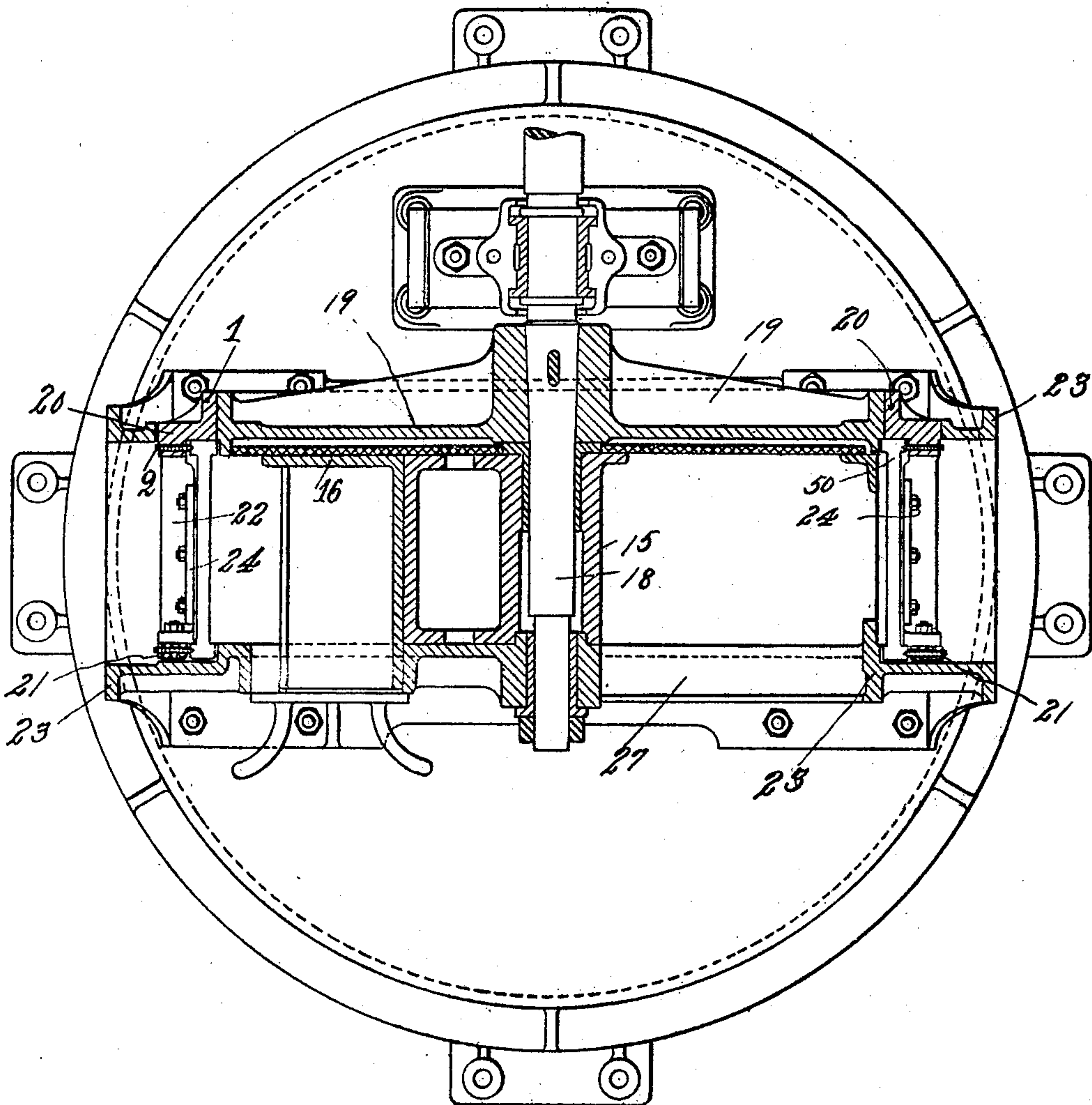
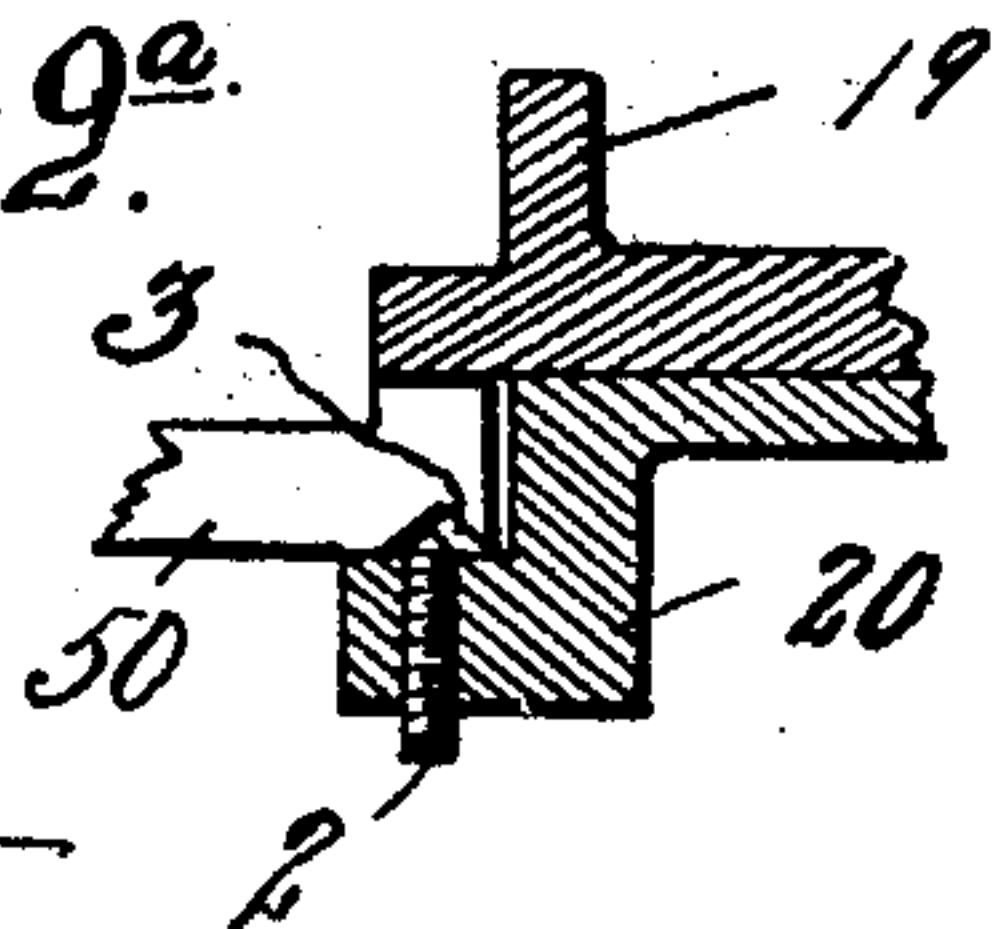


Fig. 2^a.



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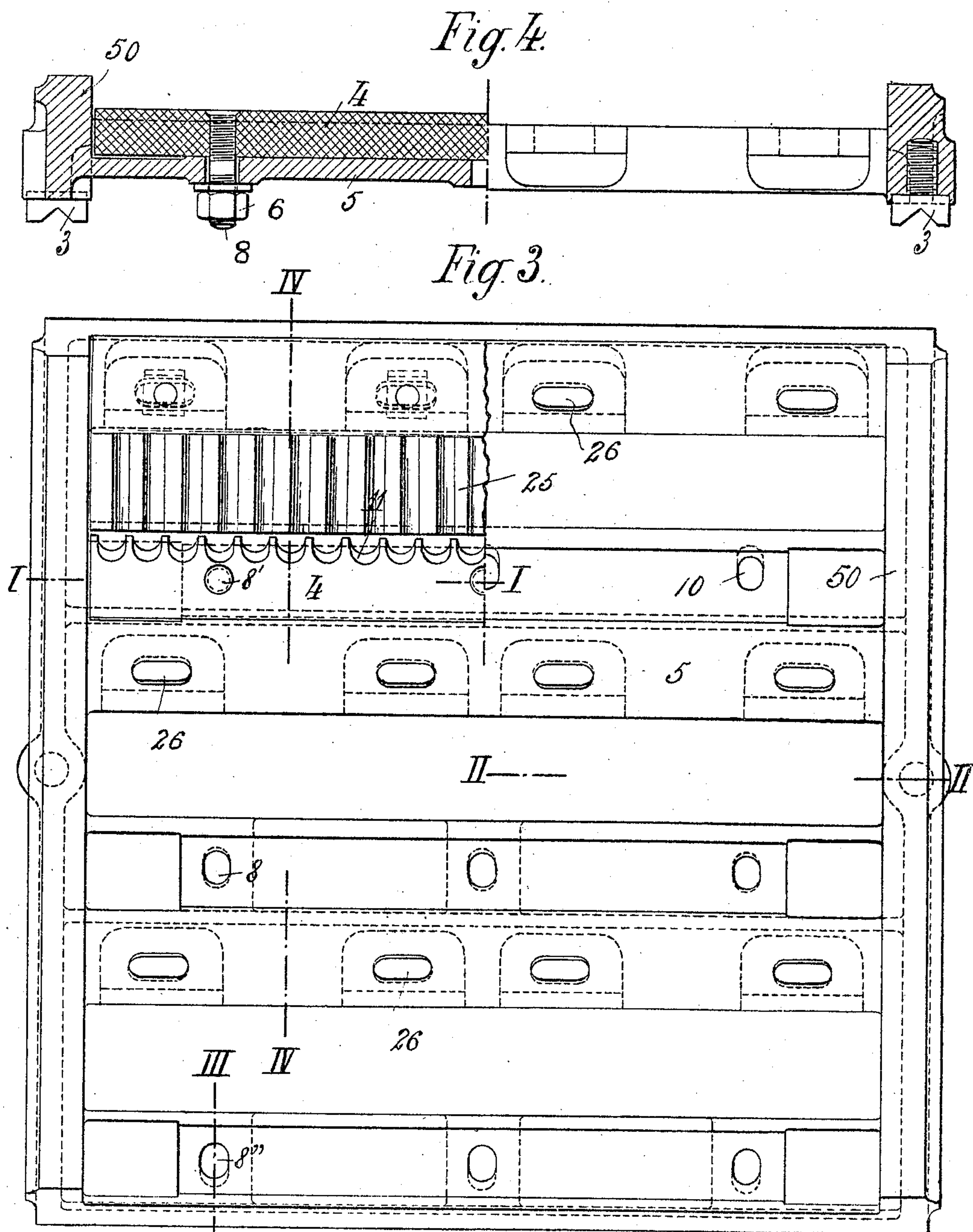
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ROOT CUTTER.

APPLICATION FILED OCT. 27, 1902.

4 SHEETS—SHEET 3.



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APPLICATION FILED OCT. 27, 1902.

4 SHEETS—SHEET 4.

Fig. 6.

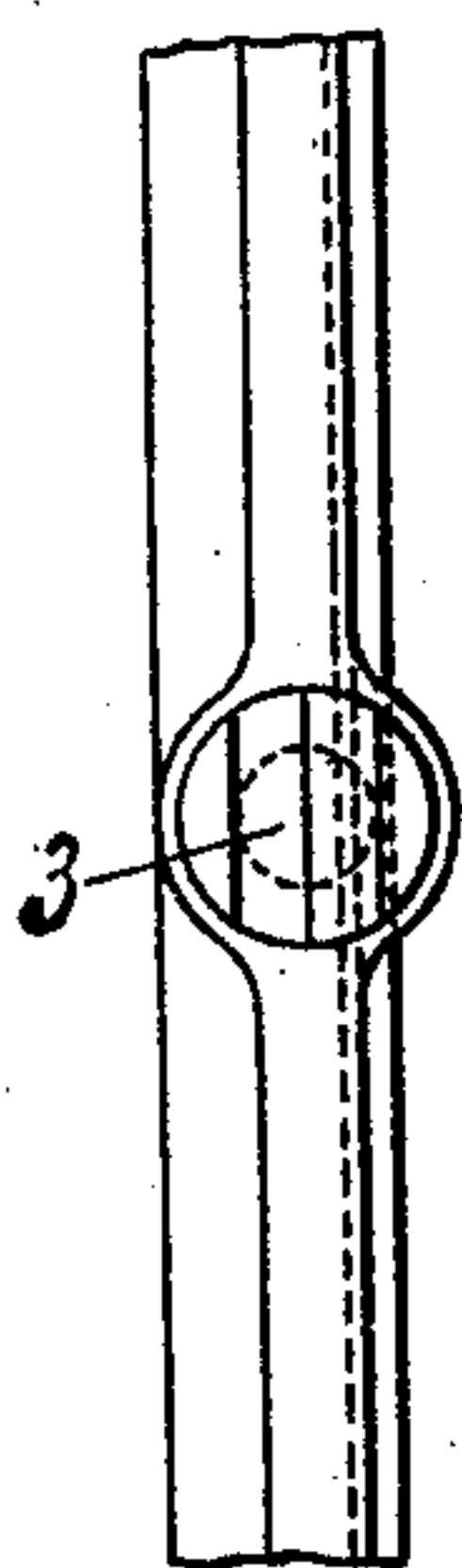
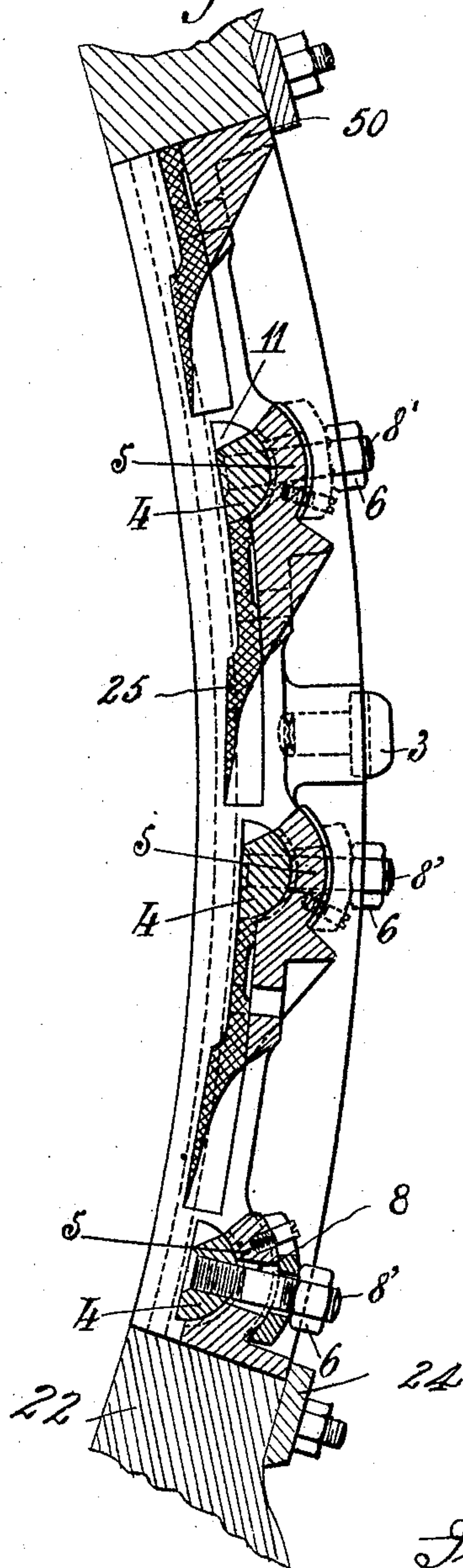


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALFRED MAGUIN, OF CHARMES, FRANCE.

ROOT-CUTTER.

No. 799,573.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed October 27, 1902. Serial No. 128,933.

To all whom it may concern:

Be it known that I, ALFRED MAGUIN, constructing engineer, of Charmes, near La Fère, Aisne, France, have invented new and useful
5 Improvements in and Connected with Root-Cutters, which improvements are fully set forth in the following specification.

This invention relates to improvements in root-cutters in which the cutters are mounted
10 on the periphery of a drum turning on a horizontal axis. Such a root-cutter is represented in the accompanying drawings, which illustrate one embodiment of the inventive idea, in which—

15 Figure 1 is a vertical sectional view of my improved device; Fig. 2, a horizontal transverse section. Fig. 2^a is a detail; Fig. 3, an inverted plan view of a cutter-holder with three cutters; Fig. 4, a section of the cutter-
20 holder along lines I I, II II, Fig. 3; Fig. 5, a longitudinal section along lines III III, IV IV, Fig. 3; and Fig. 6, a detail plan view.

Referring to the drawings, on the rotating shaft 18 is keyed a disk or plate 19, carrying
25 on its periphery a drum 1, formed of two rings 20 21, connected by a series of transverse rods 22 parallel to the axis of rotation of the drum. This rotating drum turns in the interior of a metal casing 23, which is
30 entirely closed with the exception of orifices for the introduction of the beet-root and the removal of the slices thereof, as will be hereinafter explained.

The cutters or blades 25, which act on the
35 root, are fixed to cutter-holders 50 in groups of three or more. These cutter-holders are curved following the line of the drum 1, and their ends converge toward the center of the drum, Fig. 5. They are introduced into the
40 drum through the open side of the latter and slide between the equally-inclined converging faces of transverse bars 22, so that any displacement of the cutter-holders toward the center is impossible. Plates 24, suitably
45 secured to drum 1, extend partially under the outer periphery of the cutter-holders, thus supporting and preventing outward movement thereof. To introduce the cutter-holders in place, it suffices to slide them between
50 bars 22 and plates 24. Once in place these cutter-holders are fixed in position by means of a pointed screw 2 passing through the drum, the point of which screw engages against the inclined plane of a triangular
55 notch formed in the head of a screw 3, one screw being fixed on each end of the cutter-

holder. To remove the cutter-holders, it is necessary only to loosen screws 2 and withdraw the cutter-holders.

The cutting-blades 25, which have the ap- 60
pearance of a series of joined V's, so as to cut the beet-root into slices of V shape, are fixed on the inner side of each transverse bar 5 of the cutter-holder by means of screws fixed to the blades 25 and passing through elongated 65
perforations 26 in the said bars 5, so that the angles of all the blades of the same cutter-holder may be exactly fixed in the same circular line.

Behind each blade 25 in the transverse bars 70
5 is formed a cylindrical groove in which engages a gage-plate 4 for regulating the depth of cut. This latter is of semicylindrical form having cut-away portions 11 and can be rotated to and fixed in any desired posi- 75
tion. This is effected by means of screws 8', secured to the center of said bars 4 and passing through elongated slots 8 of the transverse pieces 5 and filed after the gage bars or plates have been rotated to the desired po- 80
sition by the nuts 6.

The thickness of the slices of beet-root—that is to say, the quantity of material cut each time by a blade—depends upon the space between the edge of one blade and the 85
bar 4 in front thereof. The thickness of the slice can therefore be regulated at will by turning the bar 4 in its bearing, and in order that the cutting operation may produce regular slices of the desired V shape it is necessary 90
that the points of all the blades or cutters turn exactly in the same plane perpendicularly to the rotary axis of the drum—that is to say, in a series of parallel planes. This result may be accomplished by means of the 95
screws 2, which by reason of the bearing which they have upon the inclined faces of the notches 3 act when properly adjusted to slightly move the cutter-holder transversely to the drum, the direction of the movement 100
being determined by the tightening or loosening action of the respective screws, as will be understood from an inspection of Figs. 1 and 4.

In the interior of the drum 1 is a stationary 105
metal portion 15, mounted on the shaft 17, said stationary portion being provided with an abutment 12, which closely approaches the rotating cutting-blades. The position of this abutment 12 can be regulated by hand 110
by a screw 13 to compensate for wear. This part 15 is also provided with a cylindrical

bearing 14, in which a hollow cylinder 16 is lodged, said cylinder being supplied with an opening 16' and fixed in position by a pin 17.

The operation of the device is as follows:

- 5 The rotation of the drum forces the beet-root into the confined space between the interior face of the drum and the part 15, and when the movement of the beet-root is arrested by reason of its being crowded into this
- 10 confined space the blades of the cutters act to cut the same into V-shaped slices which pass between the cutting-blades and fall into the casing 23, from whence they are led off by suitable conduits (not shown) or otherwise removed, said beet-root having been introduced into the drum at the opening 27, formed in the front face of the casing 23. If stones or other hard bodies are mixed with the beet-root, they are carried along by the
- 15 blades, (since they meet with no resistance to arrest their movement,) and without injury to the blades they are diverted by the abutment 12 into the cylinder 16 through the openings 16'. Very small stones are
- 25 liable to pass between the abutment 12 and the interior face of the drum, and these escape through the cut-away portions 11, formed on the bars 4.

I do not specifically claim herein the cutting-blades 25 and the means for adjusting same, the specific construction of the carriers therefor, or the specific construction of plate 4 and the adjusting means therefor, as a separate application, Serial No. 196,707, covering same, was filed on March 4, 1904.

What is claimed is—

1. In a root-cutter, the combination of a cylindrical drum, a cutter-holder mounted in the drum, a plurality of cutting-blades
- 40 mounted on and extending transversely across the cutter-holder, and means for effecting the transverse adjustment of said cutter-holder.

2. In a root-cutter, the combination of a
- 45 cylindrical drum, a cutter-holder arranged in said drum and provided with a plurality of cutters, an inclined surface arranged on said cutter-holder and means engaging said inclined surface to effect the transverse adjustment of said cutter-holder.
- 50

3. In a root-cutter, the combination of a cylindrical drum, a cutter-holder arranged in said drum and provided with a plurality of cutters, an inclined surface arranged at each
- 55 end of said cutter-holder and means engag-

ing said inclined surfaces to effect the transverse adjustment of said cutter-holder.

4. In a root-cutter, the combination of a cylindrical drum rotating around a horizontal axis, a plurality of cutters secured to each
- 60 cutter-holder, a notch arranged in each end of each cutter-holder and a pin engaging the inclined surfaces of said notches to effect the lateral adjustment of said cutter-holders.

5. In a root-cutter, the combination of a
- 65 cylindrical drum, a plurality of cutter-holders carried by said drum, a plurality of cutters or blades, means for adjusting said blades transversely, a gage-plate having a curved surface mounted in concave bearings in front
- 70 of each cutter or blade and adapted to be rotated to a determined position to effect the desired depth of cut to be made by said cutter or blade, and means for adjusting said plate.
- 75

6. In a root-cutter, the combination of a cylindrical drum, a fixed part arranged within said drum, a cylinder carried by said fixed part and a projection on said fixed part for guiding hard substances into said cylinder.
- 80

7. In a root-cutter, the combination of a cylindrical drum, a fixed part arranged within said drum, a cylinder carried by said fixed part and an adjustable projection on said fixed part for guiding hard substances into
- 85 said cylinder.

8. In a root-cutter, the combination of a cylindrical drum, a fixed part arranged within said drum, a bearing arranged in said fixed part, a removable cylinder engaging in said
- 90 bearing, a perforation in said cylinder and an adjustable abutment adapted to deflect hard substances through said opening into the cylinder.

9. In a root-cutter, the combination of a
- 95 cylindrical drum rotating around a horizontal axis, a fixed part mounted on said axis, a bearing arranged in said fixed part, a removable cylinder engaging in said bearing, a perforation in said cylinder and an adjustable
- 100 abutment adapted to deflect hard substances through said opening into the cylinder.

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

ALFRED MAGUIN.

Witnesses:

DOMINIQUE CASABONZA,
EDWARD P. MACLEAN.