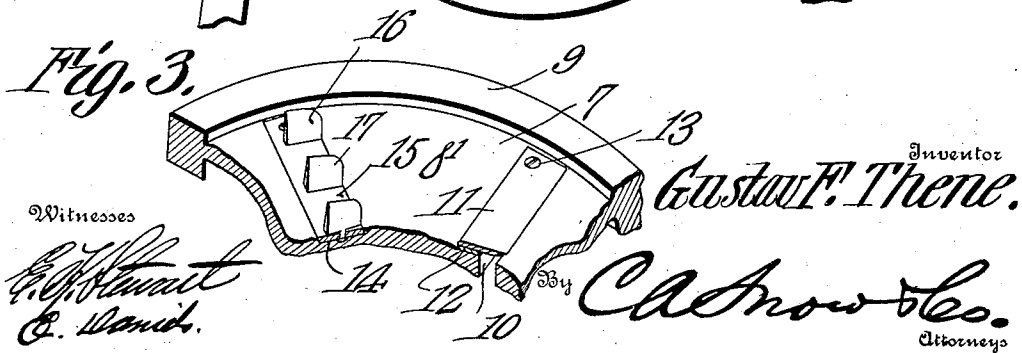
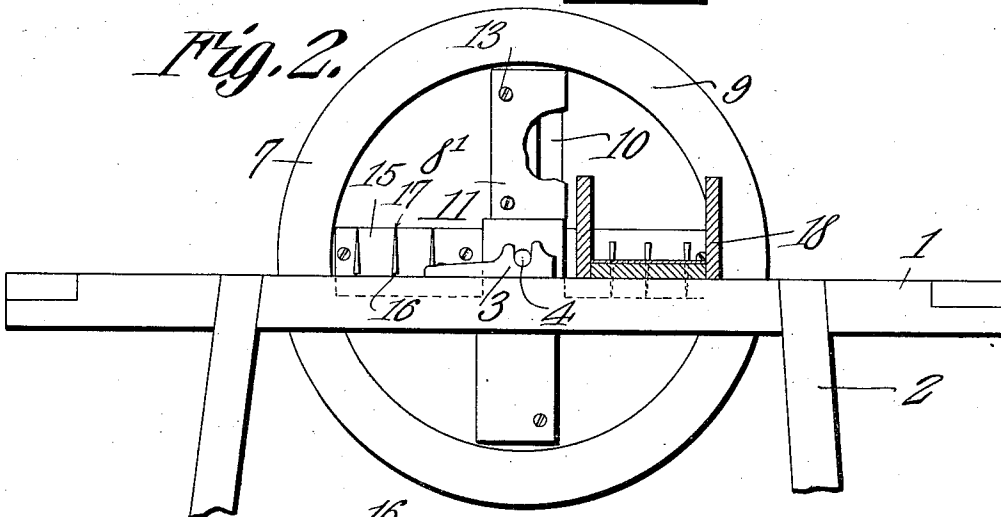
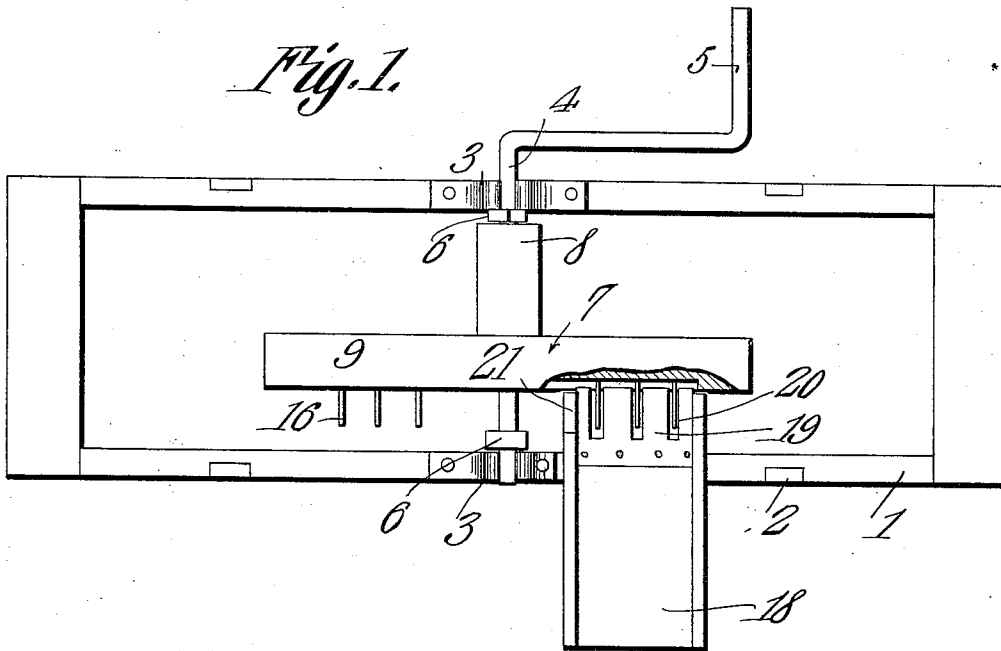


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 ROOT CUTTER AND SLICER.
 APPLICATION FILED MAR. 18, 1910.

1,023,973.

Patented Apr. 23, 1912.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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Application filed March 18, 1910. Serial No. 550,103.

To all whom it may concern:

Be it known that I, GUSTAV F. THENE, a citizen of the United States, residing at Gowanda, in the county of Cattaraugus and State of New York, have invented a new and useful Root Cutter and Slicer, of which the following is a specification.

This invention has relation to root cutters, and it consists in the novel construction and arrangement of its parts, as hereinafter shown, described and claimed.

The object of the invention is to provide a simple and an effective cutter, especially adapted to cut roots for feeding purpose.

With this object in view, the cutter includes a rotary member of peculiar configuration, mounted in a frame and carrying slicing and chopping knives. A feed trough is mounted upon the frame and is provided at its delivery end with a plate having incisions located therein, through which the chopping knives carried by the rotor may pass, and against the edge of which the slicing knives may operate.

In the accompanying drawings:—Figure 1 is a plan view of the cutter, with a part broken away. Fig. 2 is a side elevation of the cutter, with the feed trough shown in section, taken on the line X—X, Fig. 1. Fig. 3 is a perspective view of a portion of the rotor of the cutter.

The cutter consists of a frame 1, supported upon legs 2, and having upon its opposite sides U bearings 3. A shaft 4 is journaled in the bearings 3 and is provided at one end with a crank handle 5. Taps 6 are located upon the shaft 4 and are adapted to bear against the inner sides of the bearings 3 and hold the said shaft against longitudinal movement in the bearings 3. A rotor 7 is concentrically mounted upon the shaft 4 and consists of a hub 8, which projects beyond one side of the body or plane of the rotor 7. A relatively thin web 8' integrally joins with one end of the hub 8 and at its outer portion merges into a relatively thick rim 9, which, at its opposite side portions projects beyond the side of the web 8'. The web 8' is provided with elongated openings 10, located at opposite sides of the center of the rotor, and extending approximately from the hub 8 to the inner edge of the rim 9. Slicing knives 11 are located over the rear edges of the openings 10, and a strip of leather 12 or other cushioning means is interposed between the face of the

web 8' and the knives 11. Securing devices, as screws or bolts, 13, pass transversely through the end portions of the knives 11 and the web 8'. The knives 11 are held in inclined position with relation to the plane of the web 8', and the sharp edges of the knives project over the opposite edges of the openings 10 from those edges to which the knives are attached. By reason of the fact that the cushions 12 are interposed between the face of the web 8' and the knives, the said knives are not rigidly confined with relation to the web, but may have limited swing with relation to the web 8'.

Radially disposed recesses 14 are provided in the web 8' and are located at opposite sides of the center of the said web. Plates 15 fit snugly within the recesses 14 and extend approximately from the hub 8 to the inner edge of the rim 9. Chopping knives 16 are mounted upon the plates 15 in parallel relation, and are disposed at right angles to the faces of the plates 15. The chopping knives 16 have their entering corners 17 rounded to secure an initial shear cut.

A feed trough 18 is attached to one side of the frame 1, and is provided at its delivery end with a plate 19, having incisions located in the edge portion thereof nearest the rotor 7. One side of the trough 18 terminates in close proximity to the face of the rim 9 of the rotor 7, and the opposite side of the said trough 18 is cut away as at 21, in order that the inner knives 16 may clear the side of the trough as they approach the plate 19.

In operation, the roots are fed toward the rotor 7 through the trough 18, and, by turning the crank handle 5, the said rotor is rotated and the chopping knives 16 engage the roots as they pass upon the plate 19, and the slicing knives 11 engage the chopped roots at the edge of the plate 19 and carry the chopped and sliced portions down below the delivery end of the trough 18.

By reason of the fact that the slicing knives 11 are not rigidly mounted upon the web 8' of the rotor 7, the said knives may have a slight swing, and are not liable to break when they come in contact with particles of excessively tough roots.

By reason of the peculiar configuration of the rotor 7, it is possible to cast the same and use a minimum amount of material, and at the same time the structure is

so braced as to withstand the strain to which it is subjected. The web 8', which is of the least transverse thickness, is provided with the openings 10 and recesses 14, and is
5 bound by the relatively thick rim 9, which braces the said web and also serves in the nature of a fly-wheel when the rotor is in motion.

It will be seen that by reason of the fact
10 that one of the sides of the trough 18 terminates in close proximity to one of the sides of the rim 9, no space is provided at the end of the trough whereby particles of the roots may work or pass between the end of the
15 trough and the rim of the rotor without being operated upon by the slicing knives 11.

It frequently happens, during the cutting of roots, that a stone or snag is fed into the trough 18, along with the roots. The
20 presence of such an obstruction, endangers all of the knives, and particularly, the chopping knives 16. In the present invention, means is provided whereby the danger of injury to the knives 16, due to the presence
25 of such an obstruction, will be reduced to a minimum. In the first place, as clearly shown in Fig. 3, the extremities of the cutting edges of the blades 16 are rounded. Owing to this fact, if the obstruction is
30 encountered by the rounded edges of the blades 16, such obstruction will be slid rearwardly and outwardly, in the trough 18. If, however, such an obstruction is located so near to the inner end of the trough 18 that
35 the rounded edges of the blades 16 cannot crowd such obstruction outwardly, the

shaft 4 will rise at one end, out of one bearing 3, to-wit, out of that bearing which is adjacent the trough 18, it being noted that the bearings 3 are open. Moreover, owing
40 to the fact that the crank 5 is located upon that end of the shaft which is remote from the trough, the pressure exerted upon the crank, by the hand of the operator, will have a minimum effect in holding the shaft
45 in the bearing which is adjacent the trough 18, when the blades 16 strike the obstruction.

Having described my invention, what I claim as new, and desire to secure, by Letters Patent, is:—

A device of the class described comprising a frame; a vertically movable shaft journaled upon the frame; a rotor secured to the shaft; chopping blades outstanding
55 from the rotor and having the extremities of their cutting edges rounded to cause the vertical movement of said shaft when engaging an obstruction; a trough carried by the frame and having openings in its bottom, through which openings the rounded
60 edges of the knives pass; and operating means upon that end of the shaft which is remote from the trough.

In testimony that I claim the foregoing
65 as my own, I have hereto affixed my signature in the presence of two witnesses.

GUSTAV F. THENE.

Witnesses:

CLARENCE E. CLARK,
WILL T. MILLER.