W. D. GLEASON.

PRUNING MACHINE.

APPLICATION FILED MAR. 16, 1920.

1,382,350.

Patented June 21, 1921.

2 SHEETS—SHEET 1.

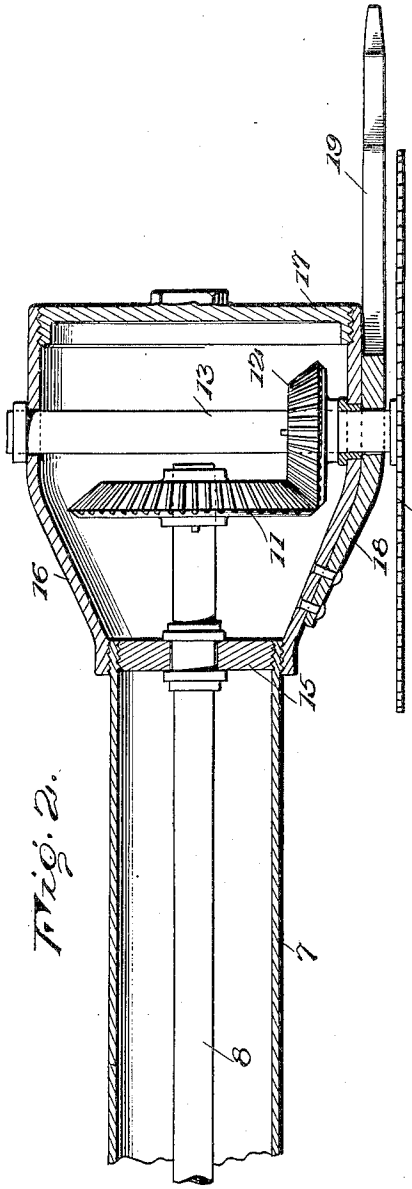


Fig. 2.

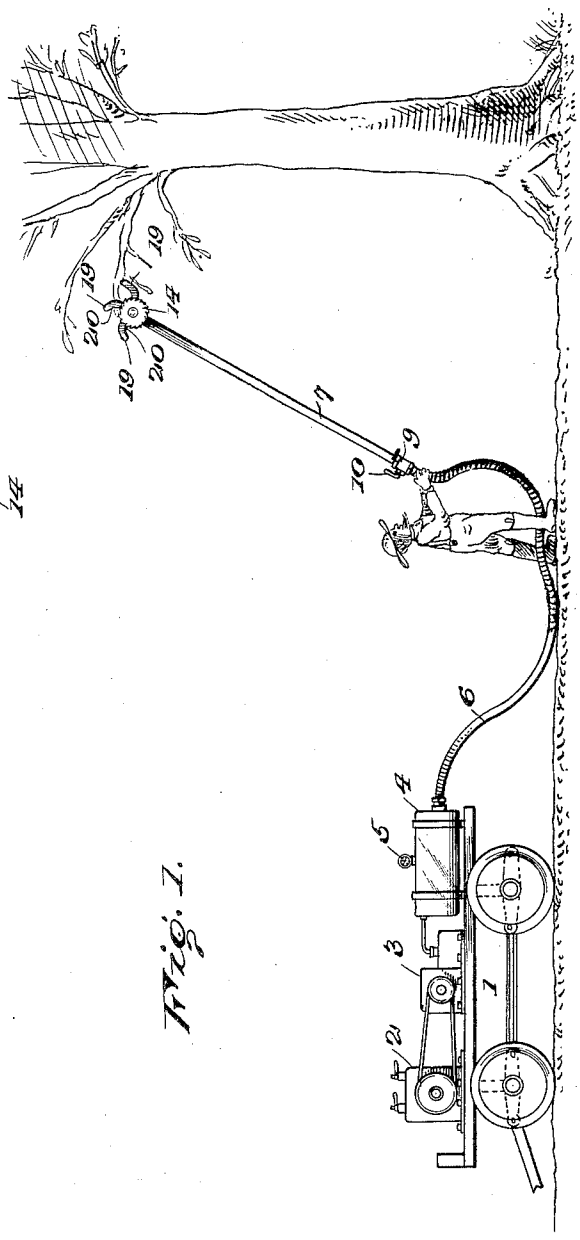


Fig. 1.

W. D. Gleason. INVENTOR.

BY

Lacey & Lacey.

ATTORNEYS

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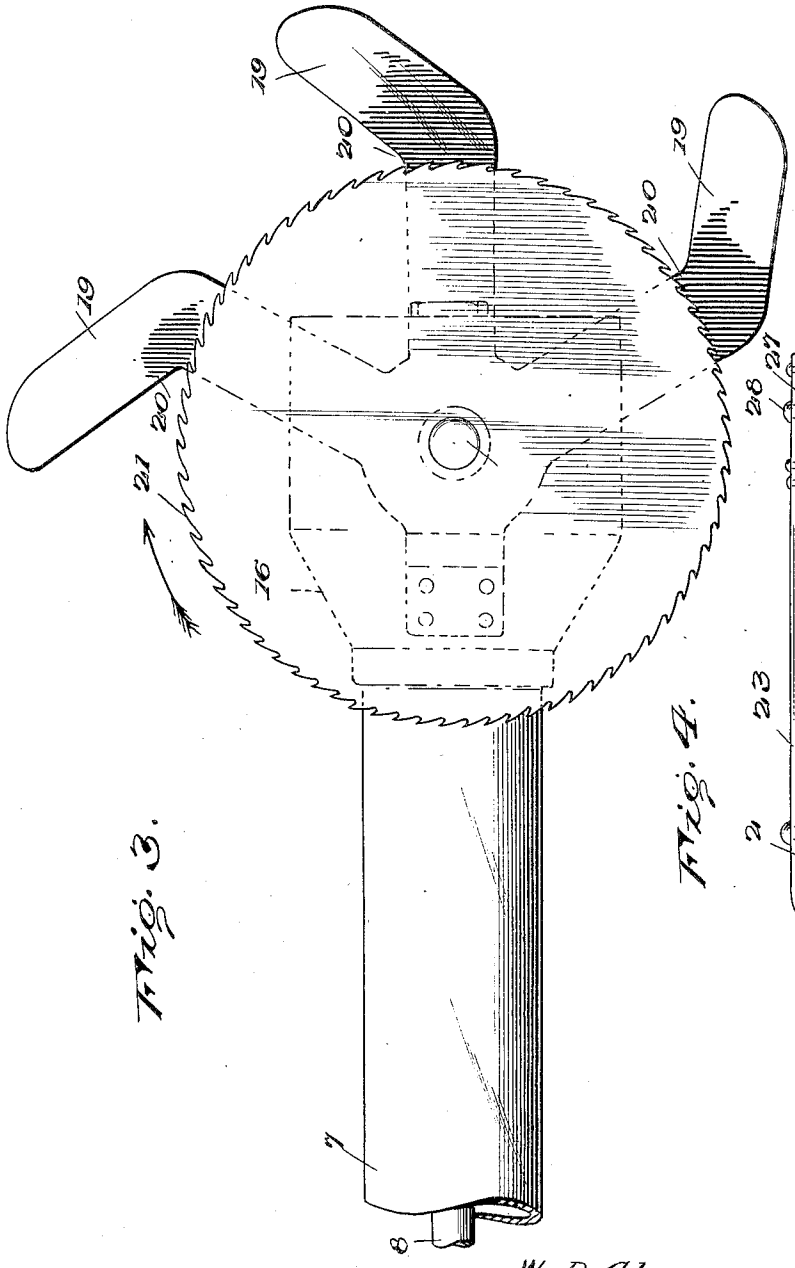



Fig. 3.

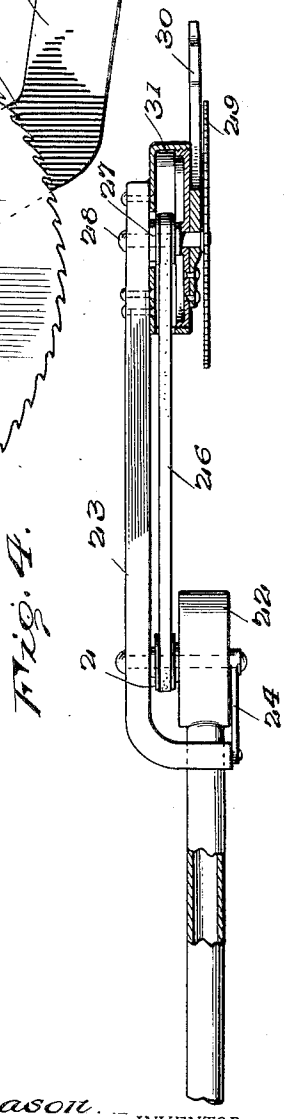



Fig. 4.

W. D. Gleason. INVENTOR.

BY

Lacey & Lacey, ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM D. GLEASON, OF CENTRAL POINT, OREGON, ASSIGNOR OF ONE-HALF TO EDWARD H. DAVIS, OF CENTRAL POINT, OREGON.

## PRUNING-MACHINE.

1,382,350. Specification of Letters Patent. Patented June 21, 1921.

Application filed March 16, 1920. Serial No. 366,252.

*To all whom it may concern:*

Be it known that I, WILLIAM D. GLEASON, citizen of the United States, residing at Central Point, in the county of Jackson and State of Oregon, have invented certain new and useful Improvements in Pruning-Machines, of which the following is a specification.

This invention relates to means for pruning trees and has for its object the provision of a simple and efficient device which may be actuated by power generated in a portable power plant and which may be readily controlled by an operator upon the ground. A further object of the invention is to provide means whereby the twigs and branches to be cut will be held to the cutter and prevented from bounding away from the same.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of one embodiment of my invention;

Fig. 2 is a sectional elevation, somewhat enlarged, of the cutter and the parts immediately adjacent the same;

Fig. 3 is an enlarged plan of the cutter and the guard;

Fig. 4 is a view showing another embodiment of the invention.

In carrying out my invention, I employ a truck 1 which may be drawn over the field by draft animals or may be propelled by its own power. Upon this truck is mounted an engine 2, preferably of the internal combustion type and illustrated in a conventional manner only. This engine is operatively connected with an air compressor 3 so as to drive the same and the air compressor is in communication with a storage tank 4 all of which parts may be of any well-known construction and are illustrated in a more or less conventional manner. It will be readily understood that the air compressed in the compressor 3 is fed into the storage tank 4 and is withdrawn therefrom to operate a pneumatic motor which is suitably geared to the cutter. A pressure gage 5, of course, is provided upon the storage tank so that the pressure in the tank may be readily noted and the operation of the engine stopped whenever desirable. From the tank 4 a hose or other flexible conduit 6 leads to a pole 7 which may be of any desired length and is illustrated in Figs. 2 and 3 as a hollow casing for a shaft or tumbling rod 8. In such embodiment of the invention, a pneumatic or fluid pressure motor 9 is mounted in the lower end of the pole and controlled by a throttle 10 so that the flow of fluid may be arrested when the cutter is not to operate, as when shifting from branch to branch or from tree to tree. The valve and the motor may, of course, be of any well-known construction and the details of the same are not illustrated as they form no part of my present invention. The shaft 8 of the motor is equipped at its upper end with a beveled pinion 11 meshing with a beveled pinion 12 which is secured to the shaft 13 of the cutter or saw 14 so that the rotation of the motor shaft 8 will be transmitted directly to the saw as will be readily understood. A partition or plate 15 at the upper end of the pole provides a bearing for the shaft 8 and a bowl or casing 16 is secured on the end of the pole to house the gearing, the saw shaft 13 being journaled in the sides of the bowl, as shown in Fig. 2. The upper end of the bowl is closed by a cap 17 so that lubricant may be retained in the bowl and dust and dirt excluded. Between the saw and the bowl, I mount upon the bowl a guard or keeper consisting of a base 18, secured rigidly to the bowl, and fingers or guards 19 extending radially from the base and having their extremities bent, as shown at 20, to form hooks or claws which are adapted to engage against the twigs or branches of the tree to be cut and hold the same to the cutter. Upon reference to Fig. 2, it will be noted that the fingers 19 lie close to one face of the cutter and the cutter is preferably in the form of a saw having teeth 21 so disposed that their points extend toward the concave surfaces of the hooks or claws 20.

The operation is thought to be clear from the foregoing description, taken in connection with the accompanying drawings. The pole 7 is held by an operator, as indicated in Fig. 1, so that the cutter will be in position to engage the twig or branch to be pruned and the device is so disposed that the claws or hooks 20 will engage behind the twig or branch, after which the throttle is opened to permit the motor to operate so that the saw will be rotated and the teeth 21 of the same will engage against that side of the twig or branch remote from the side engaged by the claws or hooks so that the

pressure of the saw will cause the twig to ride inwardly upon the concave surface of the claw and consequently move directly into the path of the teeth or cutting edge. The saw is thus prevented from bounding away from the twig and the twig is also prevented from bounding away from the saw so that a clean sharp cut will be made. It is obvious that the work of pruning may be performed more expeditiously with my improved apparatus than is possible with the common hand-operated knives now generally used and the work of pruning an orchard may be very rapidly accomplished. Moreover, the work will be done better than is now possible inasmuch as the operator is not required to manually manipulate the cutter and has only to support the pole and guide the cutter into proper position to act upon the twig or branch to be cut. The pole may be of any material which will possess the requisite strength and rigidity without undue weight and may be a mere skeleton provided it has the necessary strength to support the parts mounted thereon.

In the embodiment of the invention illustrated in Fig. 4, the motor 22 is shown at the outer or upper end of the pole which may be utilized as a conduit to convey fluid thereto.

It will be noted that in this arrangement, the motor 22 is mounted directly upon the end of the pole and the motor shaft is supported by a bracket or arm 23 extending longitudinally from the pole and by a keeper plate 24 secured to the extremity of the said bracket and to the side of the motor casing. Upon the motor shaft is secured a pulley 25 around which is trained a belt 26 extending to and around a second pulley 27 mounted upon the saw shaft 28 at the outer extremity of the arm 23. The cutter or saw 29 is fixed on said shaft so as to rotate therewith and the guard 30 is secured to the casing 31 which incloses the pulley 37.

Having thus described the invention, what is claimed as new is:

1. In a pruning machine, the combination of a rotary saw having its teeth disposed at an angle to its radius, and a non-rotatable guard mounted against one side of the saw and having fingers projecting radially beyond the edge of the saw, the extremities of said fingers being formed into hooks having concave surfaces presented to the points of the teeth of the saw.

2. In a pruning machine, the combination of a support, a shaft extending longitudinally through the support, means for rotating said shaft, a bowl carried by the upper end of the support, a shaft journaled in the sides of the bowl and having one end projecting through the same, gearing connecting said shafts, the bowl completely inclosing said shafts and said gearing, a cutter on the extended end of the second-mentioned shaft, and a guard secured to the side of the bowl adjacent the cutter and having a plurality of fingers extending radially of the cutter, the extremities of the fingers being disposed at an angle to the radius of the cutter and the guard and facing the direction of rotation of the cutter.

In testimony whereof I affix my signature.

WILLIAM D. GLEASON.