

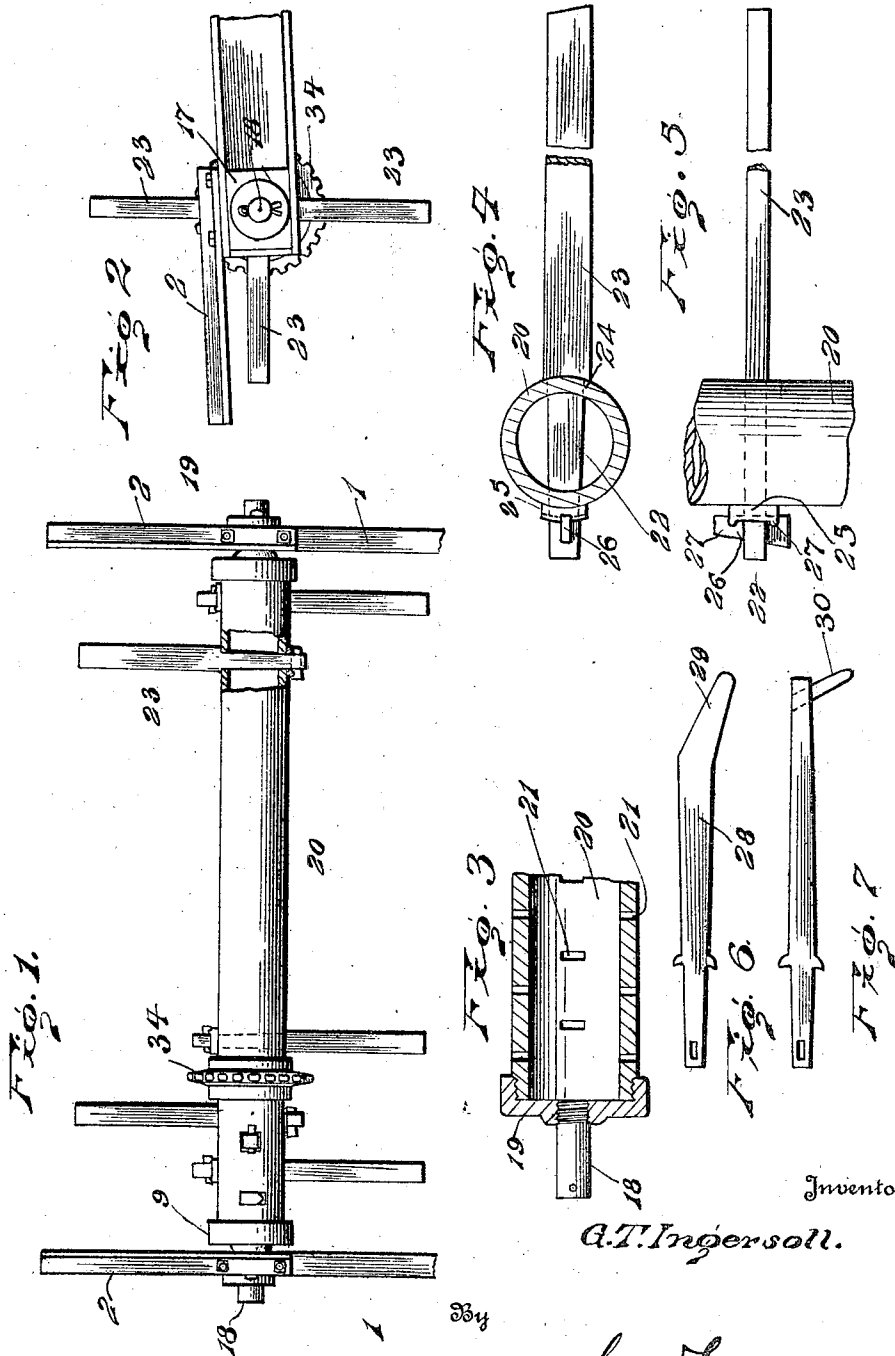
Jan. 13, 1925.

G. T. INGERSOLL

1,523,072

CULTIVATOR

Original Filed July 26, 1922



Inventor

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UNITED STATES PATENT OFFICE.

GEORGE T. INGERSOLL, OF LONG BEACH, CALIFORNIA.

CULTIVATOR.

Original application filed July 26, 1922, Serial No. 577,621. Divided and this application filed March 7, 1923. Serial No. 623,489.

To all whom it may concern:

Be it known that I, GEORGE T. INGERSOLL, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

This invention is a division of an application filed by me July 26, 1922, Serial No. 577,621.

The present invention relates to rotary tilling implements and has special reference to the means for securing the ground-engaging teeth or blades to the central rotating body or axle.

In the accompanying drawing:

Figure 1 is a plan view, partly broken away, of a structure embodying the invention;

Fig. 2 is an end elevation of the same;

Fig. 3 is a detail longitudinal section of one end of the cylinder or drum which constitutes the body of the device;

Fig. 4 is a detail sectional elevation showing one form of tooth secured in the drum;

Fig. 5 is a plan view of the same, and

Figs. 6 and 7 are detail elevations of different forms of teeth.

Referring more particularly to the drawing, the numeral 1 indicates a portion of a supporting frame, and 2 indicates an arm projecting from the frame to aid in supporting a cover or hood whereby the cultivator teeth will be protected from possible damage due to heavy objects falling thereon, the operator will be protected from injurious contact with the teeth, and dirt which may be taken up by the teeth will be prevented from being thrown onto the operator. To the rear end of the supporting frame are secured bearings 17. These bearings 17 are engaged upon studs or pins 18 which project outwardly from caps 19 which form the end closures for the drum or cylinder 20 of the ground-engaging instrumentality. The drum or cylinder 20 is conveniently a tube having its ends threaded into the caps 19 so that it will be disposed between and supported by the rear ends of the frame bars. The cylinder is provided with diametrically opposite openings 21 therethrough arranged in series around the cylinder and receiving the reduced shanks 22 of teeth 23. As shown most clearly in

Fig. 4, the shanks are tapered and shoulders 24 are provided at the bases of the shanks which fit closely against the outer circumference of the cylinder so that, when a binding member is applied to the free end of a shank, the corresponding tooth will be firmly secured in the cylinder. Upon referring to Figs. 4 and 5 more particularly, it will be noted that the tapered form of the shank effects a wedging engagement of the shank with the openings through the cylinder, and the width of the shank is greater than its thickness so that, when engaged through correspondingly shaped openings, relative rotation of the shank and the tooth will be positively prevented. A holding and spacing block 25 is fitted about the free end of the shank and against the surface of the cylinder, and this block is provided with a central groove to receive a wedge-shaped key 26 which is inserted through an opening provided therefor in the end of the shank, the block 25 being provided at its ends with lugs or projections 27 which reinforce the block and aid in preventing bending or distortion of the locking wedge-shaped key. It will be readily understood that the engagement of the key 26 in the groove of the block 25 guides the key through the opening in the shank of the tooth and supports it while it is being driven home. After it is driven home, the end of the key may, obviously, be bent or deflected so that it cannot be accidentally released. The tooth 23 may be of any form most suitable for the particular soil in which it is to work or the operation which is to be performed. In Fig. 4, I have shown a tooth which has substantially parallel front and rear sides and is tapered from its rear to its front side so as to produce an edge which will readily cut through the soil and the end of the tooth is inclined from its cutting edge toward its back and towards the cylinder. In this form of the tooth, the front and rear edges thereof are the same distance apart throughout the length of the tooth so that the tooth will merely cut through and loosen the soil. It may sometimes be desirable to not only cut through the soil but to take up portions thereof and turn the same over so that it will be more thoroughly broken up, and in such an instance the tooth shown in Fig. 6 may be employed. In this form of tooth, the front and rear edges of the tooth

diverge outwardly, as indicated at 28, and the free extremity of the tooth is disposed at an angle to the length of the tooth, as shown at 29, so that the tooth will have a partial
5 scooping action upon the soil. In Fig. 7 is shown a tooth which extends substantially in a straight line from its shank to its free end but at its free end is equipped with a pin or blade 30 which projects sharply from the
10 forward side of the tooth so that it will dig into the ground and is especially adapted for working in heavy or hard soil. It is to be understood that, in the foregoing description, the terms "front" and "rear" are used
15 as indicating the relative portions of the teeth in the direction of rotation of the drum or cylinder.

The drum is shown equipped with a sprocket wheel 34, around which a chain may
20 be trained whereby to operatively connect the drum with a source of power on the supporting frame.

By my machine, the soil may be penetrated to any desired depth, and it will, of course,

be understood that the driving gearing may
25 be arranged to effect rotation of the cylinder in either direction compared with the direction of travel over the field.

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

Tilling means comprising a cylinder having diametrically opposite openings through
35 its wall, a tooth having a tapered shank fitted through said openings and having shoulders at the base of the shank abutting the exterior of the cylinder at one side
40 thereof, a block fitted around the shank and bearing against the exterior of the cylinder diametrically opposite the shoulders at the base of the shank, said block having a central groove in its outer face and having reinforcing
45 lugs at the ends of said base, and a tapered clamping key engaged in said groove and through the shank to bear against the block and secure the tooth in the cylinder.

In testimony whereof I affix my signature.

GEORGE T. INGERSOLL. [L. S.]