

No. 815,586.

PATENTED MAR. 20, 1906.

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STUMP PULLER.

APPLICATION FILED OCT. 27, 1905.

Fig. 1.

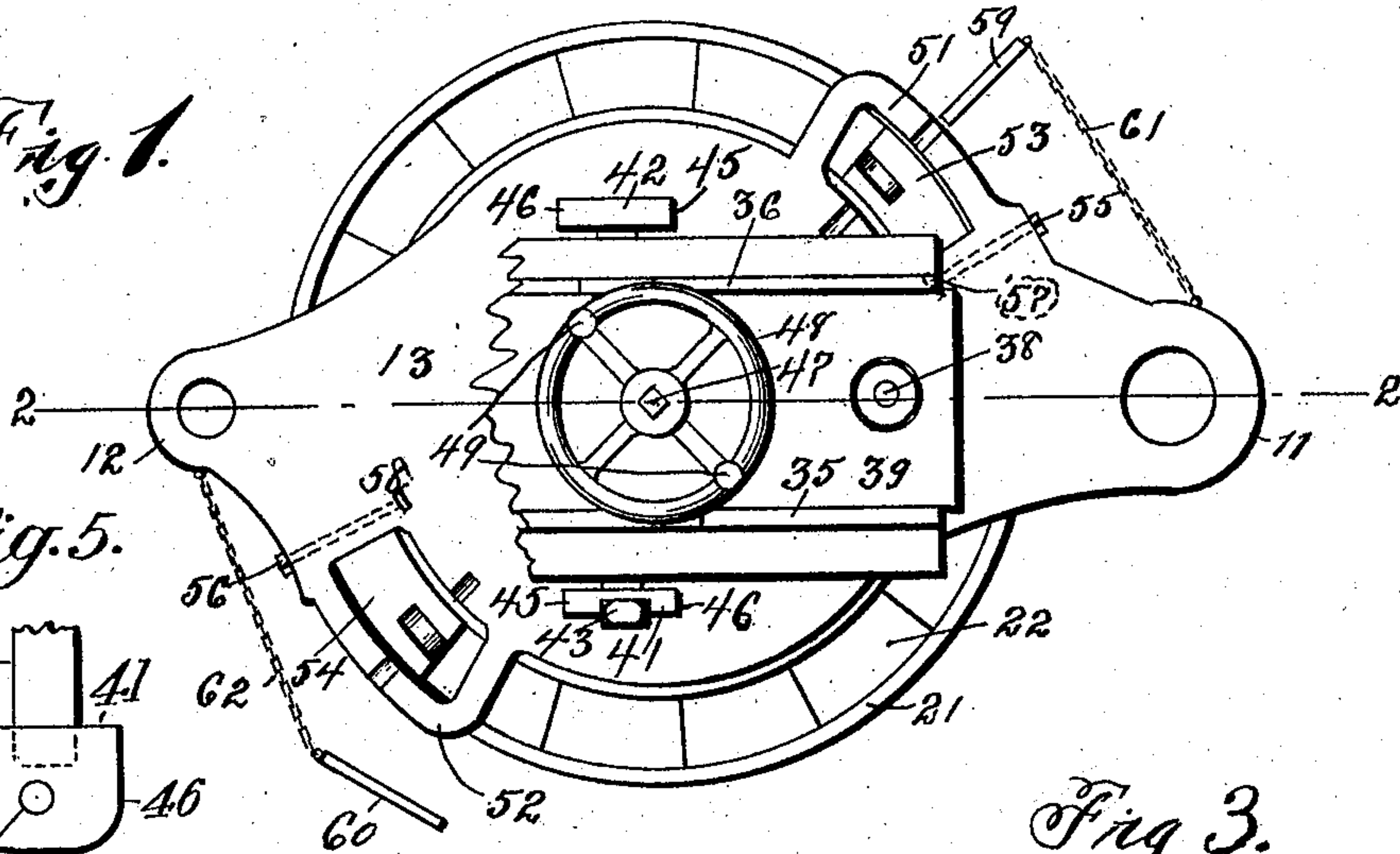


Fig. 5.

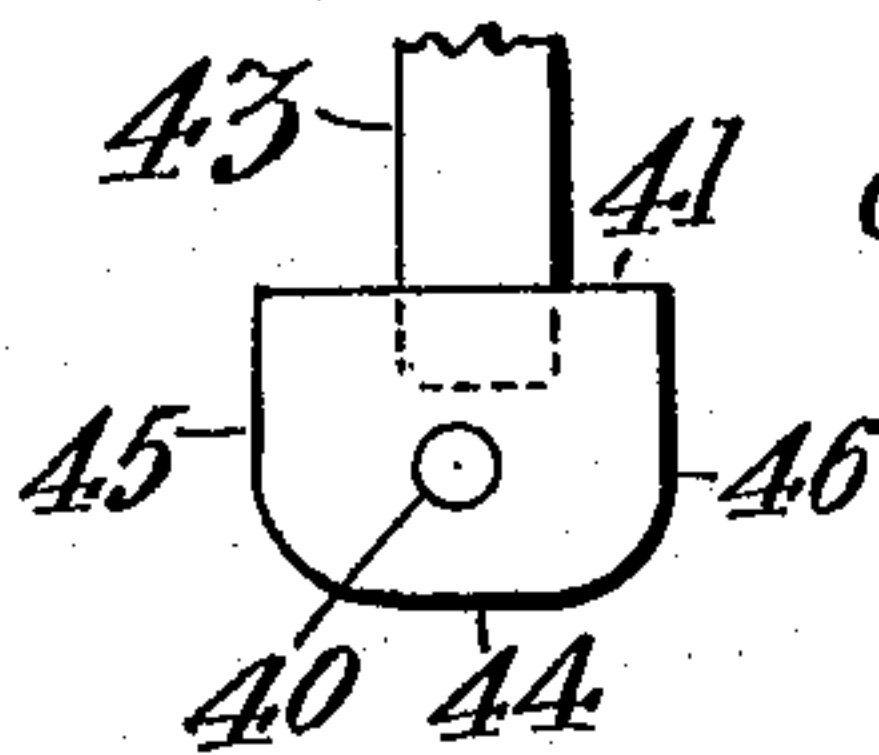


Fig. 2.

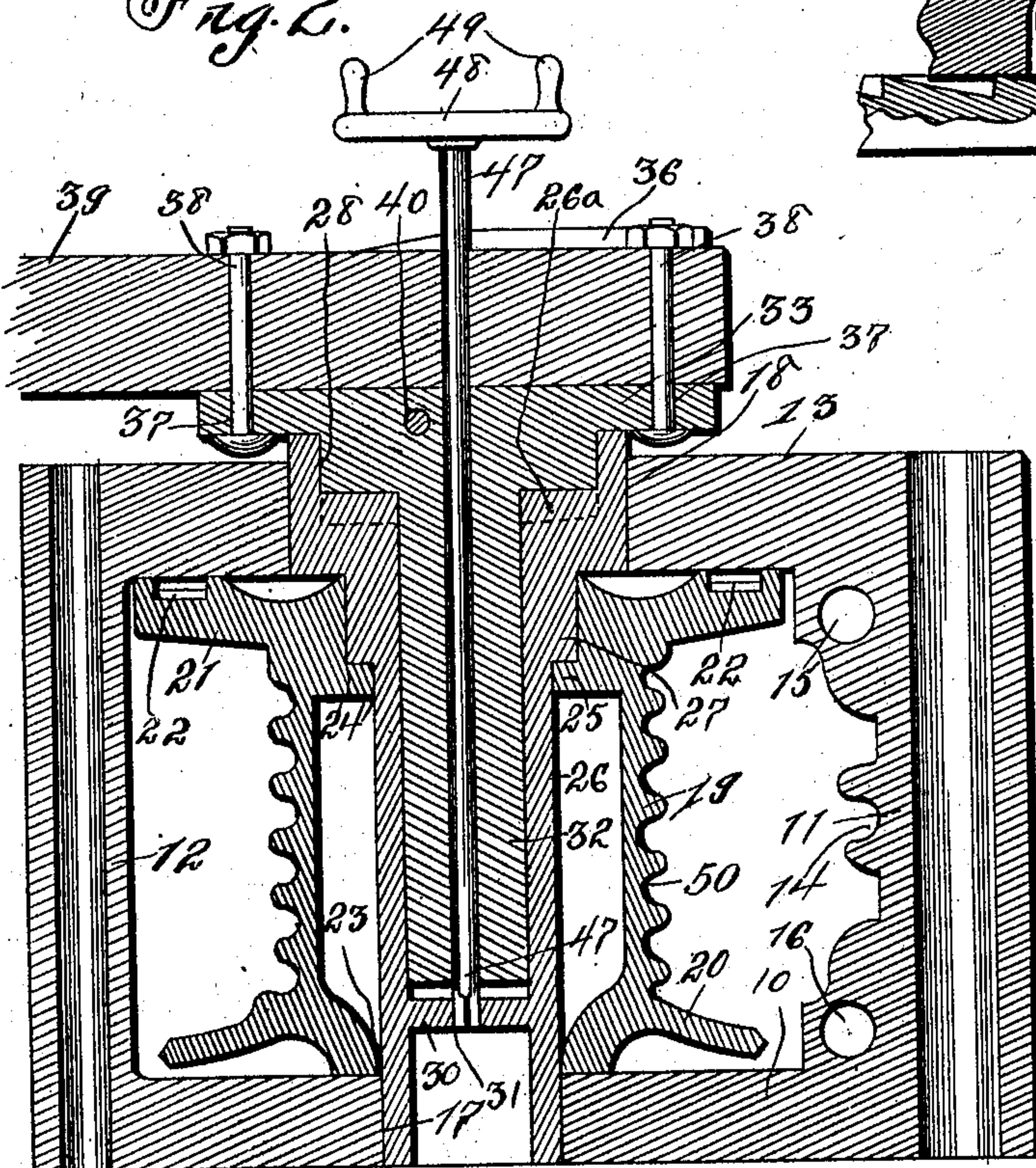


Fig. 3.

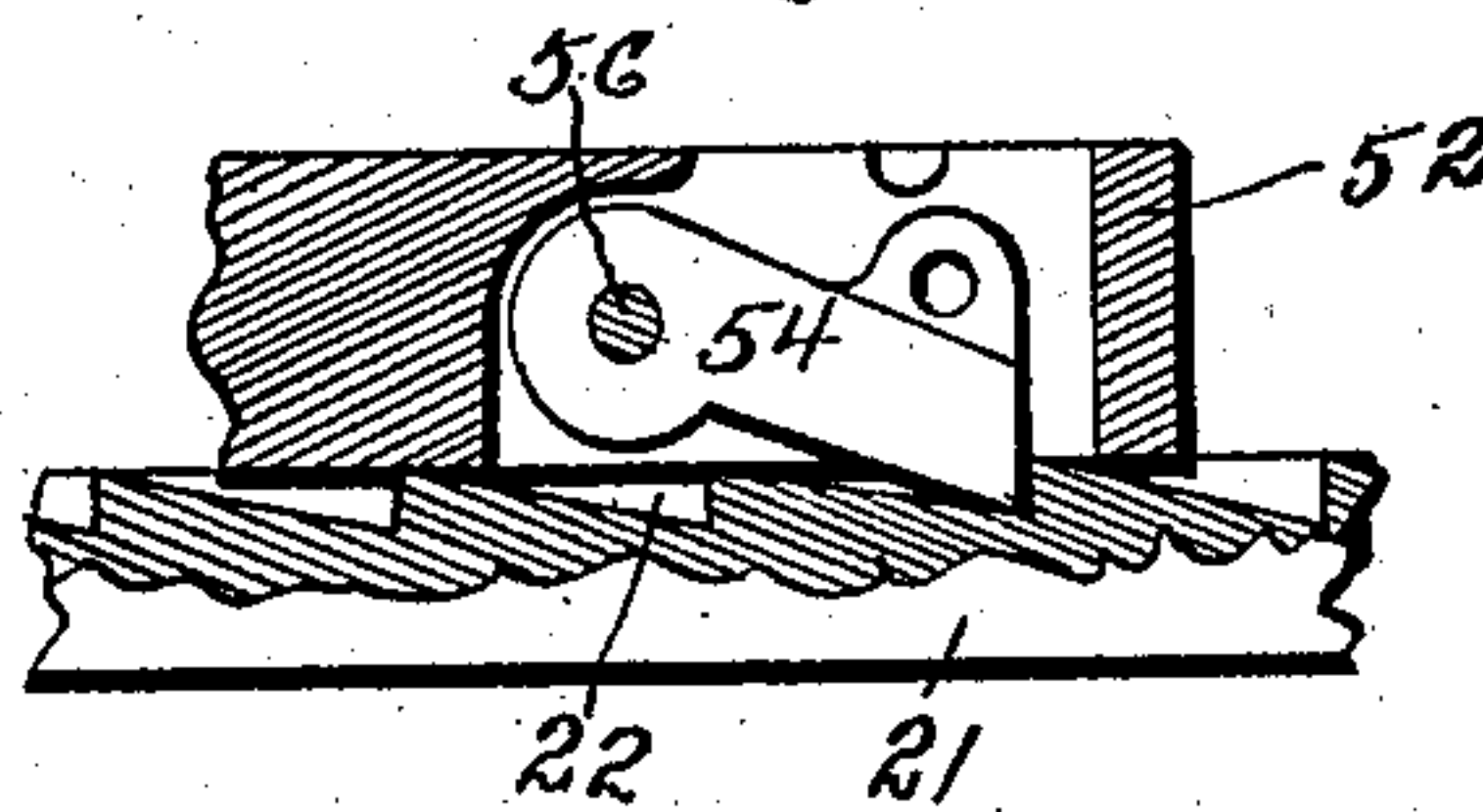
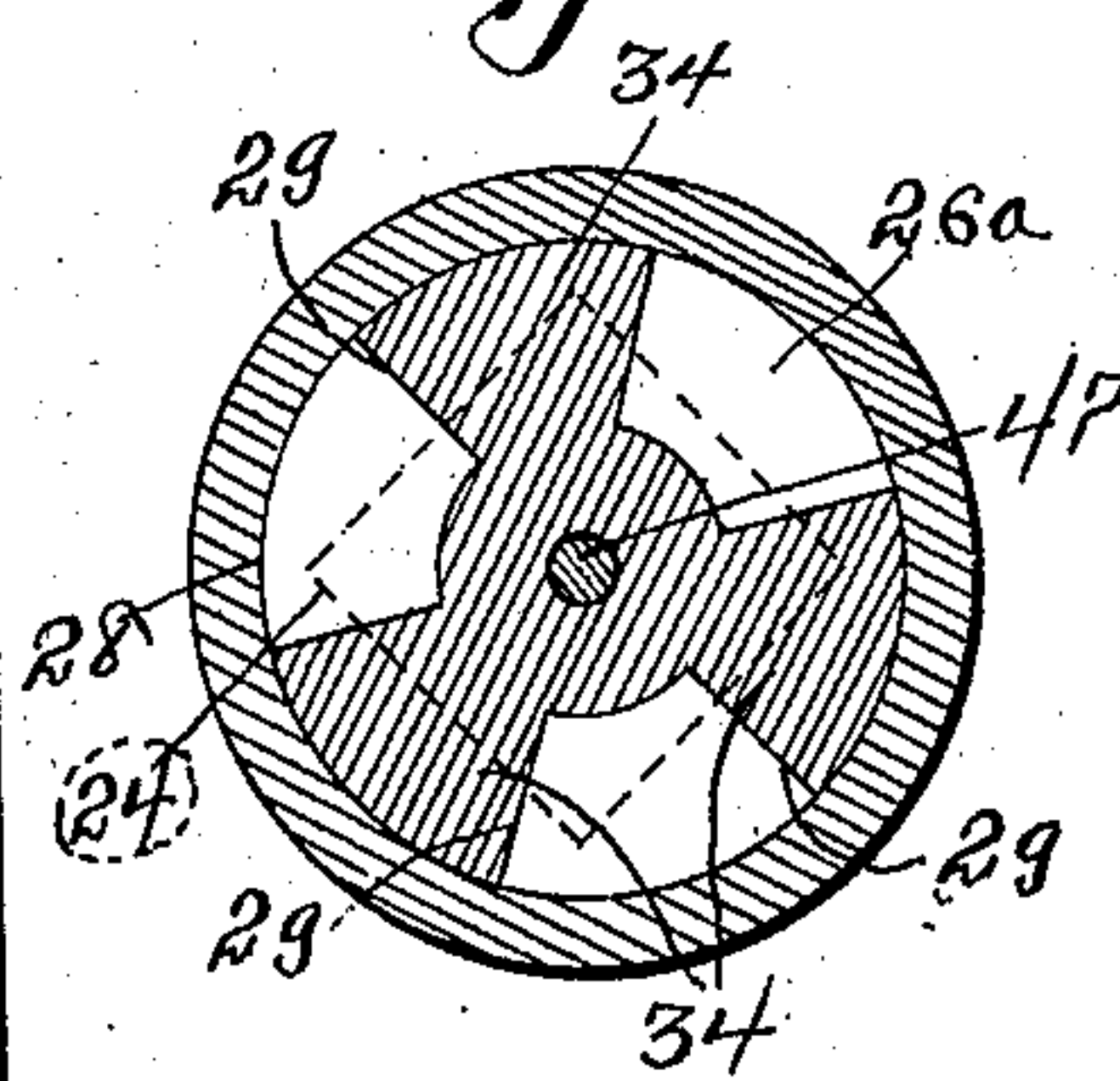


Fig. 4.



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UNITED STATES PATENT OFFICE.

BERNARD A. FULLER AND MILES BATEMAN, OF CENTERVILLE, IOWA.

STUMP-PULLER.

No. 815,586.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed October 27, 1905. Serial No. 285,227.

To all whom it may concern:

Be it known that we, BERNARD A. FULLER and MILES BATEMAN, citizens of the United States of America, and residents of Centerville, Appanoose county, Iowa, have invented a new and useful Stump-Puller, of which the following is a specification.

The object of this invention is to provide improved means for pulling stumps.

10 A further object of this invention is to provide an improved windlass.

A further object of this invention is to provide an improved construction for cable and drum windlasses.

15 A further object of this invention is to provide improved means for taking up the slack of a cable.

A further object of this invention is to provide improved means for clutching the 20 power mechanism to the drum device of a windlass.

A further object of this invention is to provide improved means for unclutching or detaching the power mechanism from the drum 25 device of a windlass.

A further object of this invention is to provide improved means for unclutching a power mechanism from a drum device and improved means for rotating said drum device to take up slack of a cable while said 30 drum device is disengaged from the power mechanism.

A further object of this invention is to provide improved means for disconnecting the 35 drum device from the machine-frame in order that a cable on said drum device may be paid out to reach an object to which strain is to be applied.

Our invention consists in the construction, 40 arrangement, and combination of elements hereinafter set forth, pointed out in our claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan of the machine, a portion of 45 the sweep being broken away. Fig. 2 is a central vertical section of the machine on the indicated line 2 2 of Fig. 1. Fig. 3 is detail view illustrating one of the ratchet-dogs employed to connect the drum device to the machine-frame and showing the means employed to 50 hold said dog out of engagement with the drum device. Fig. 4 is a detail plan illustrating the triple clutch employed to connect the sweep-post to the drum device. Fig. 5 is a detail view of the means employed to 55 raise and lower the sweep and sweep-post.

In the construction of the machine as shown the numeral 10 designates the base, 11 12 the standards, and 13 the top plate of a frame, which frame preferably is formed in 60 one piece by molding. The standard 11 is formed with a groove 14 at the center of its inner face to maintain a central location of anchoring-cable (not shown) wrapped around 65 said standard. Holes 15 16 are provided at the top and bottom of the standard 11 and are adapted to receive the anchoring-cable at times when it is desired to anchor the frame other than at its center. A circular 70 hole 17 is formed in the base 10, and a circular hole 18 of materially greater diameter is formed in the top plate 13, the centers of said holes being in alinement.

A spool 19 or drum device is mounted in the frame with its lower end resting on the 75 base 10. The spool 19 preferably is formed in one piece by molding and has a lower peripheral flange 20 and an upper peripheral flange 21, the latter flange formed with a ratchet 22 on its upper face. The spool 19 is 80 formed with a circular hole 23 in its lower end and a square hole 24 in its upper end, the centers of said holes coincident with the axis of the spool. A shoulder 25 is formed in the 85 hole 24 in the spool.

A tubular center post 26, generally circular in cross-section, is mounted through the 90 holes 18 and 17 of the frame and is formed with a portion 27 intermediate of its ends square in cross-section and extending through and fitted to the hole 24 in the spool and 95 normally resting on the shoulder 25. By means of the center post 26 the spool 19 is mounted for rotation in the frame, said post being journaled in said frame. The center 100 post 26 is enlarged at its upper end to form a hub 26^a, and said hub is formed with a circular depression 28 in its upper surface and three angular clutch-seats 29, opening upwardly to said depression. The center post 105 26 also is formed with a flange or plate 30 across near its lower end portion, and a square hole 31 is formed in said flange.

A tubular sweep-post 32 is mounted loosely in the bore of the center post 26 with its 110 lower end above the flange 30. A hub 33 is formed on the upper end portion of the sweep-post 32 and fits within the circular depression 28 of the center-post hub 26^a. Three clutch-lugs 34 are formed on the lower face of the hub 33 and fit to the clutch-seats 29 in the 115 hub 26^a. Sweep-flanges 35 36 are formed on

and extend upward parallel with each other from the hub 33, and holes 37 in said hub receive bolts 38, whereby a sweep 39 is attached thereto. A rock-shaft 40 is journaled in and extends across the hub 33 and is formed with square ends engaging in square holes in cams 41 42. The cam 41 is formed with a handle-socket adapted to receive a handle 43; but the other cam has no such socket. Each cam 41 42 is formed with an end face 44, normally just clearing the top plate 13 of the frame, and side faces 45 46 at right angles to the end face and connected thereto by round corners. The distance between the axis of the rock-shaft 40 and either of the side faces 45 46 surpasses the distance between said axis and the end face by more than the depth of the clutch-seats 29 in order that in an oscillation of the rock-shaft sufficient to bring either face 45 46 in contact with the top plate 13 the hub 33 and sweep-post 32 will be raised to the extent necessary to disengage the clutch-lugs 34 from said seats. Such raising and disengagement of the sweep-post permit rotation of the center post and spool independent of the sweep-post for a purpose and by means hereinafter set forth. The rock-shaft may be oscillated in either direction by manual actuation of the lever 43, according to the convenience of the operator standing on either side of the frame and insures the conjunctive oscillation of the cams 41 42. The side faces 45 46 of the cams are made flat to insure normal retention of the cams in the position assumed thereby when normally actuated. A hole is formed in the sweep 39, and a rod 47 is mounted through said hole and through the bore of the sweep-post and is formed with a square end fitting to the square hole 31 of the flange 30. A wheel 48 is mounted rigidly on the upper end of the rod 47 and is provided with integral upwardly-projecting lugs 49, to which a hand stick or lever (not shown) may be applied in a conventional way to rotate the wheel, rod, center post, and spool when the sweep-post is raised out of engagement with the center post. Such manual rotation of the spool is desirable and advantageous at times in that it permits taking up or paying out cable on or from the drum and avoids the (otherwise) necessity of moving the frame in making a shorter or longer hitch. The spool 19 is formed with a spiral groove 50 in its periphery to receive a draft-cable. (Not shown.) Loops 51 52 are formed on the top plate 13 adjacent the standards 11 12, and ratchet-dogs 53 54 are pivoted therein on bolts 55 56, which bolts extend horizontally through the loop and dogs and are screwed into nuts 57 58, molded in the top plate. The ratchet-dogs 53 54 normally engage the ratchet 22 on the flange 21 at diametrically opposite points and prevent reverse movement of the spool in use. At times when the spool is to be re-

versely moved to pay out cable therefrom the ratchet-dogs 53 54 are raised out of engagement with the ratchet 22 and are sustained by pins 59 60, removably placed in coinciding notches in the loops 51 52 and the top plate and through holes in the dogs. The pins 59 60 normally are attached to the top plate to prevent misplacing and loss by chains 61 62.

It will be observed that the anchoring end (standard 11) of the frame is made materially stronger than the other end, since it receives the greater strain.

We claim as our invention—

1. In a stump-puller, a frame, a spool therein formed with an angular hole in its upper portion, a tubular center post formed with an angular portion removably mounted in said angular hole whereby said center post is clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post.

2. In a stump-puller, a frame, a spool therein and formed with an angular hole in its upper portion, a center post journaled in the frame and formed with an angular portion removably mounted in said angular hole, whereby the center post is clutched to the spool, and also formed with a clutch-seat in its upper end, a sweep-post formed with a clutch member removably mounted in said clutch-seat, whereby the sweep-post is clutched to the center post, and manually-actuated cam devices for raising the clutch member from the clutch-seat and thereby disengaging the sweep-post from the center post.

3. In a stump-puller, a frame, a spool therein, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post, which means comprise a rock-shaft in the sweep-post, cams on said rock-shaft adapted to engage said frame and a handle on one of said cams.

4. In a stump-puller, a frame, a spool therein, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post, which means comprise a rock-shaft in the sweep-post, cams on said rock-shaft formed with flat side faces adapted to engage said frame and a handle on one of said cams.

5. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center

post, and means for disengaging the sweep-post from the center post.

6. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, 5 ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, 10 a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, means for disengaging the sweep-post from the center post, a rod mounted through said sweep-post, and means for connecting 15 said rod to the center post whereby the center post and spool may be rotated independent of the sweep-post.

7. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, 20 ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, 25 a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, means for disengaging the sweep-post from the center post, a rod mounted through said sweep-post, a manually-operated wheel 30 on said rod, and means for connecting said rod to the center post whereby the center post and spool may be rotated independent of the sweep-post.

8. In a stump-puller, a frame comprising 35 a base, standards and top plate integrally connected, one of said standards formed with a groove at the center of its inner face, a tubular center post journaled in and extending through the central portion of said base and 40 top plates, a spool mounted within said frame and surrounding said center post, clutch connections between said spool and center post, a sweep-post mounted within said center post, clutch connections between 45 said center post and sweep-post, ratchet-and-dog connections between said top plate and spool, and manually-operated cam devices on the sweep-post and adapted to engage said top plate, whereby said sweep-post 50 may be raised and disengaged from the center post.

9. In a stump-puller, a frame comprising a base, standards and top plate integrally connected, one of said standards formed with 55 a groove at the center of its inner face and

holes at its ends, a tubular center post journaled in and extending through the central portion of the base and top plates, a spool mounted within said frame and surrounding said center post, said spool formed with an 60 angular cavity, the center post formed with an angular portion fitting said angular cavity, a sweep-post mounted within said center post, said center post formed with a circular cavity and clutch-seats within said cavity, 65 said sweep-post formed with a circular hub fitting said circular cavity and clutch-lugs fitting said clutch-seats, ratchet-and-dog connections between said top plate and spool, and means for raising and lowering 70 said sweep-post in respect of said center post.

10. In a stump-puller, a frame, a tubular center post journaled therein, a drum-spool mounted on and clutched to said center post, 75 ratchet-and-dog connections between said spool and frame, a tubular sweep-post mounted for longitudinal adjustment in and clutched to said center post, manually-actuated cam devices composed of a rock-shaft in 80 said sweep-post, cams on said rock-shaft and a handle on one of said cams, for raising and unclutching said sweep-post, and manually-actuated rotating devices for rotating the center post and spool conjunctively inde- 85 pendent of the sweep-post.

11. In a stump-puller, a frame, a tubular center post journaled therein, a drum-spool mounted on and clutched to said center post, 90 suspensible ratchet-and-dog connections between said spool and frame, comprising a ratchet-flange on the spool, dogs pivoted in the frame, and pins adapted to engage with and support said dogs, a tubular sweep-post mounted for longitudinal adjustment in and 95 clutched to said center post, manually-actuated cam devices composed of a rock-shaft in the sweep-post, cams on said rock-shaft, and a handle on one of said cams, for raising and unclutching said sweep-post, and manually-actuated rotating devices for rotating 100 the center post and spool conjunctively in either direction independent of the sweep-post.

Signed by us, at Centerville, Iowa, this 29th day of April, 1905.

BERNARD A. FULLER.
MILES BATEMAN.

Witnesses:

R. M. HICKS,
J. I. ONG.