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PATENTED DEC. 4, 1906.

O. A. KLEITZ.
STUMP PULLER MECHANISM.
APPLICATION FILED JULY 23, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

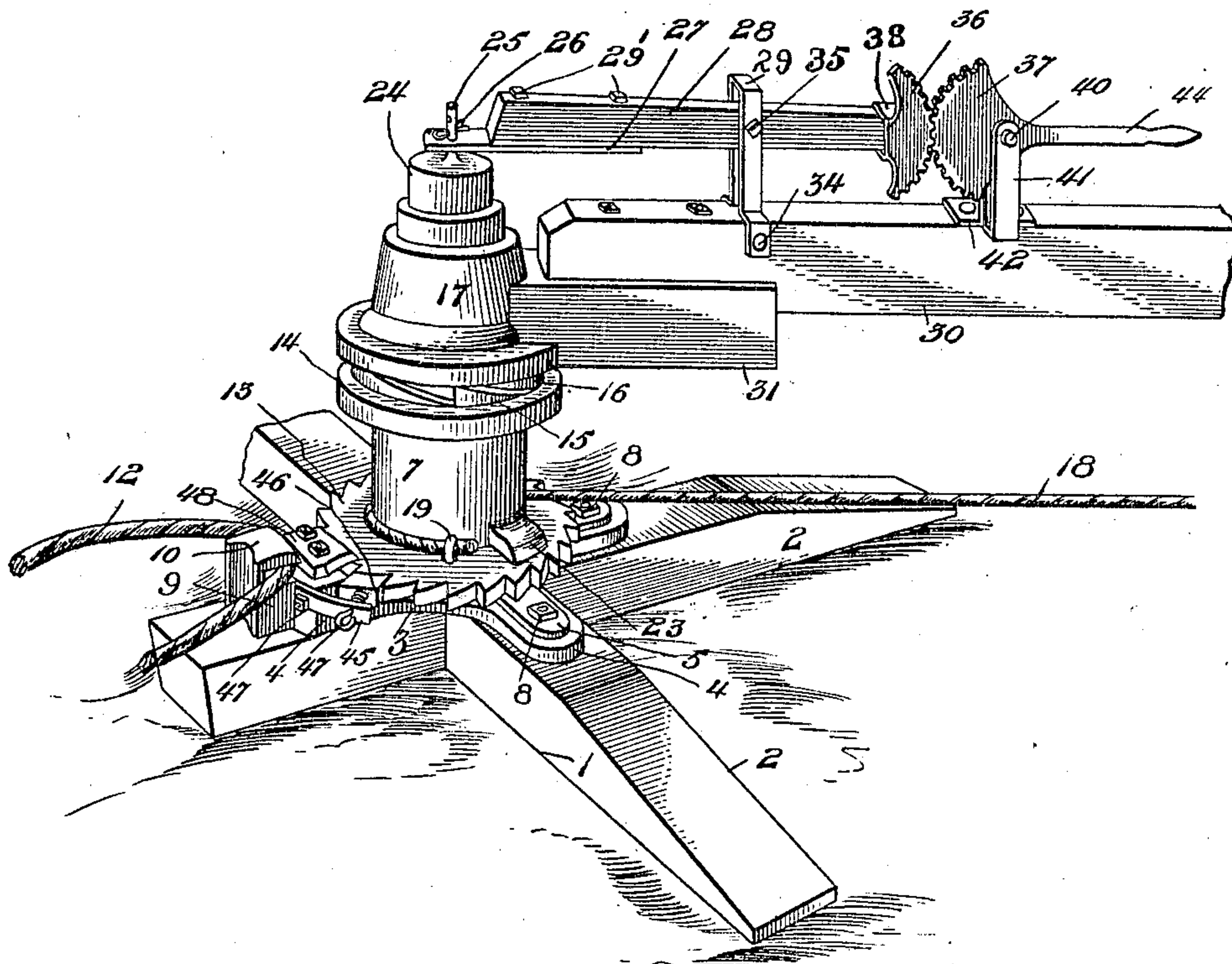
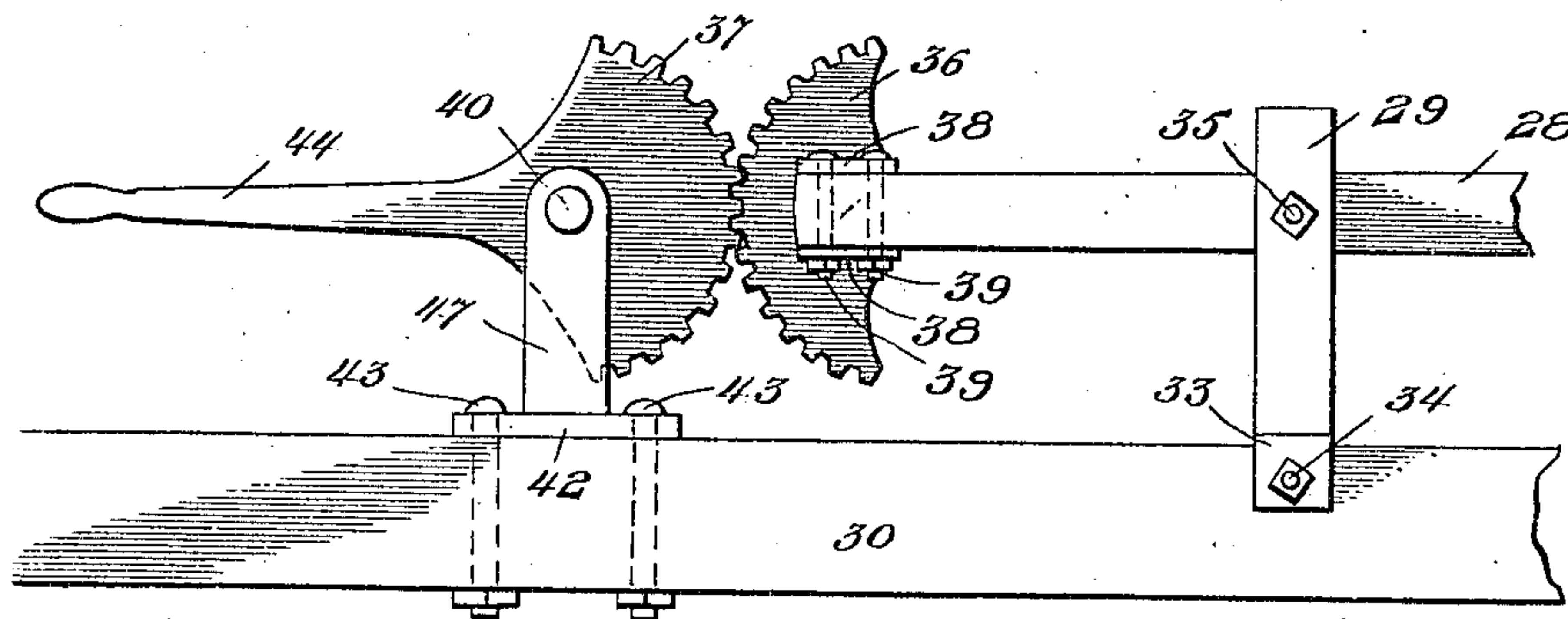


Fig. 3.



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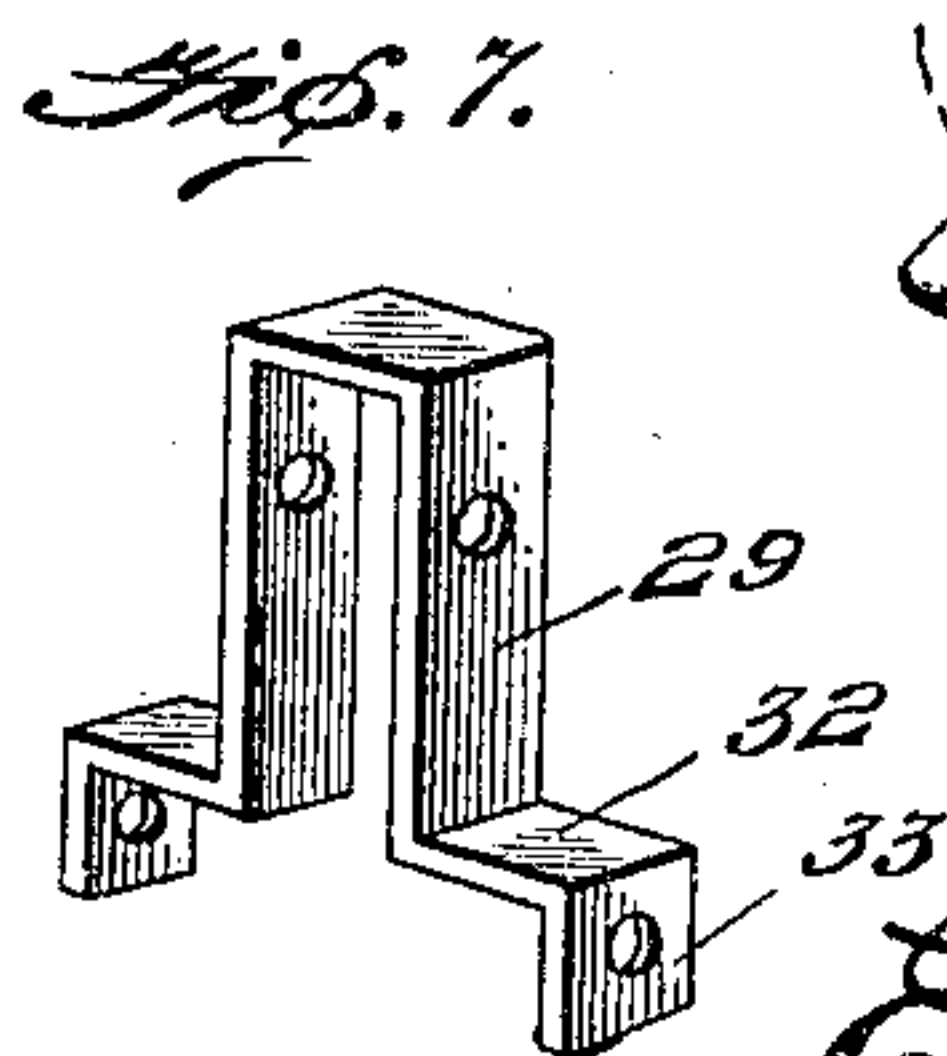
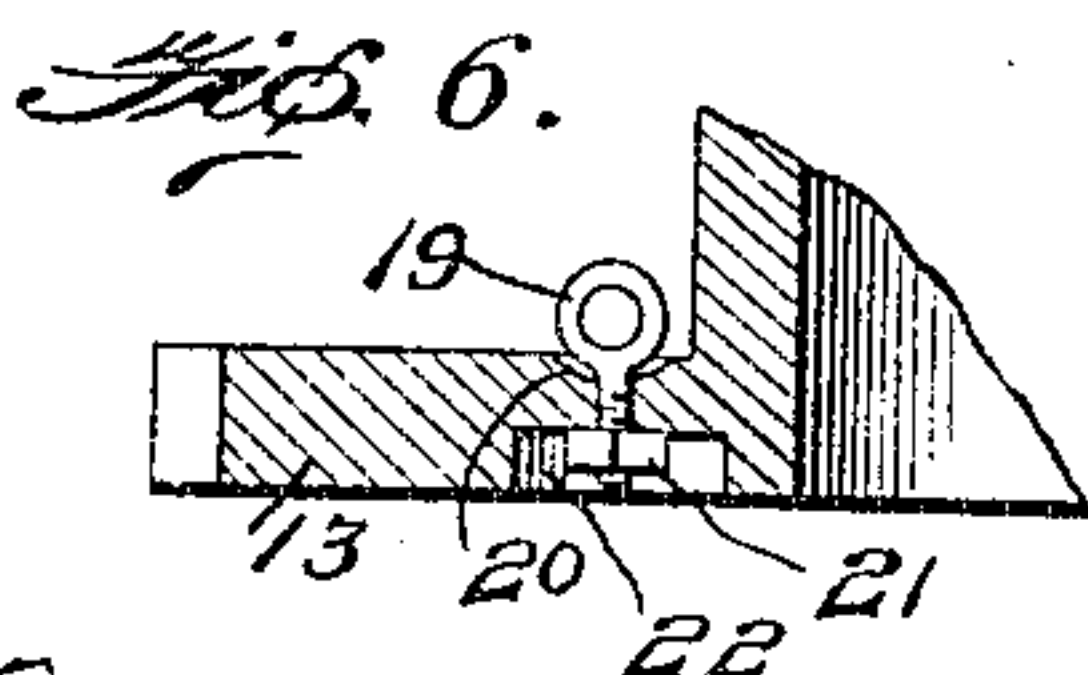
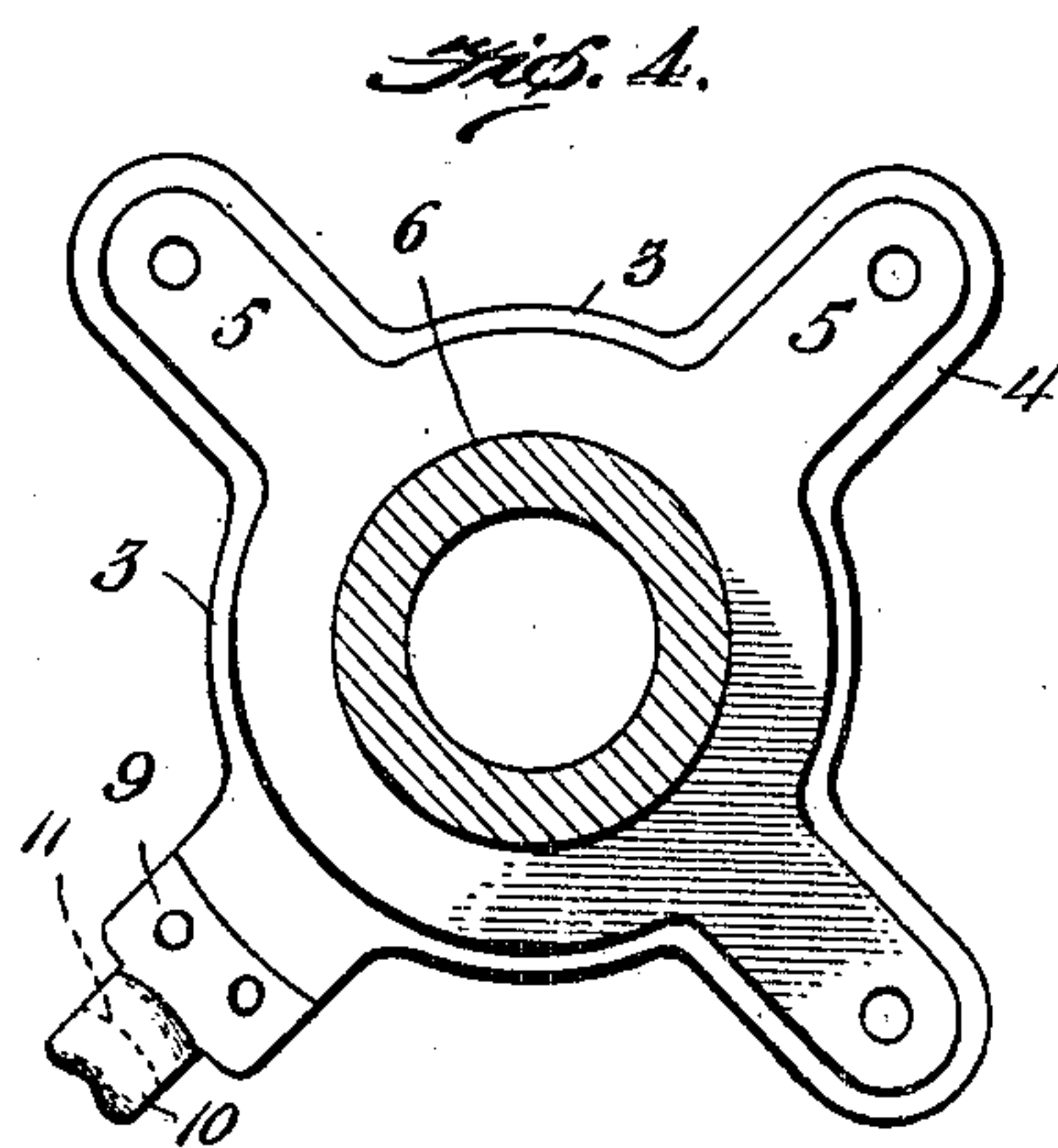
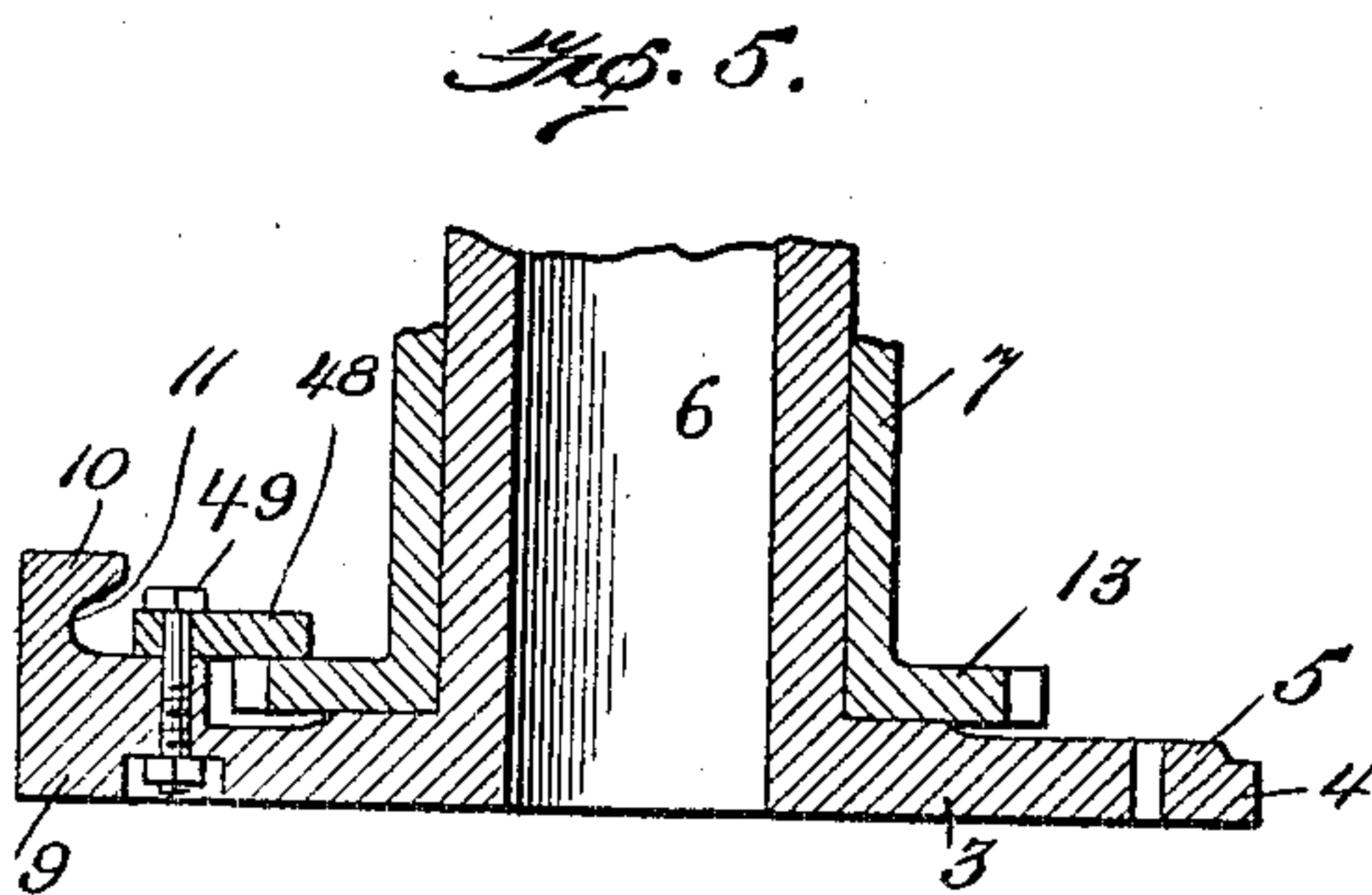
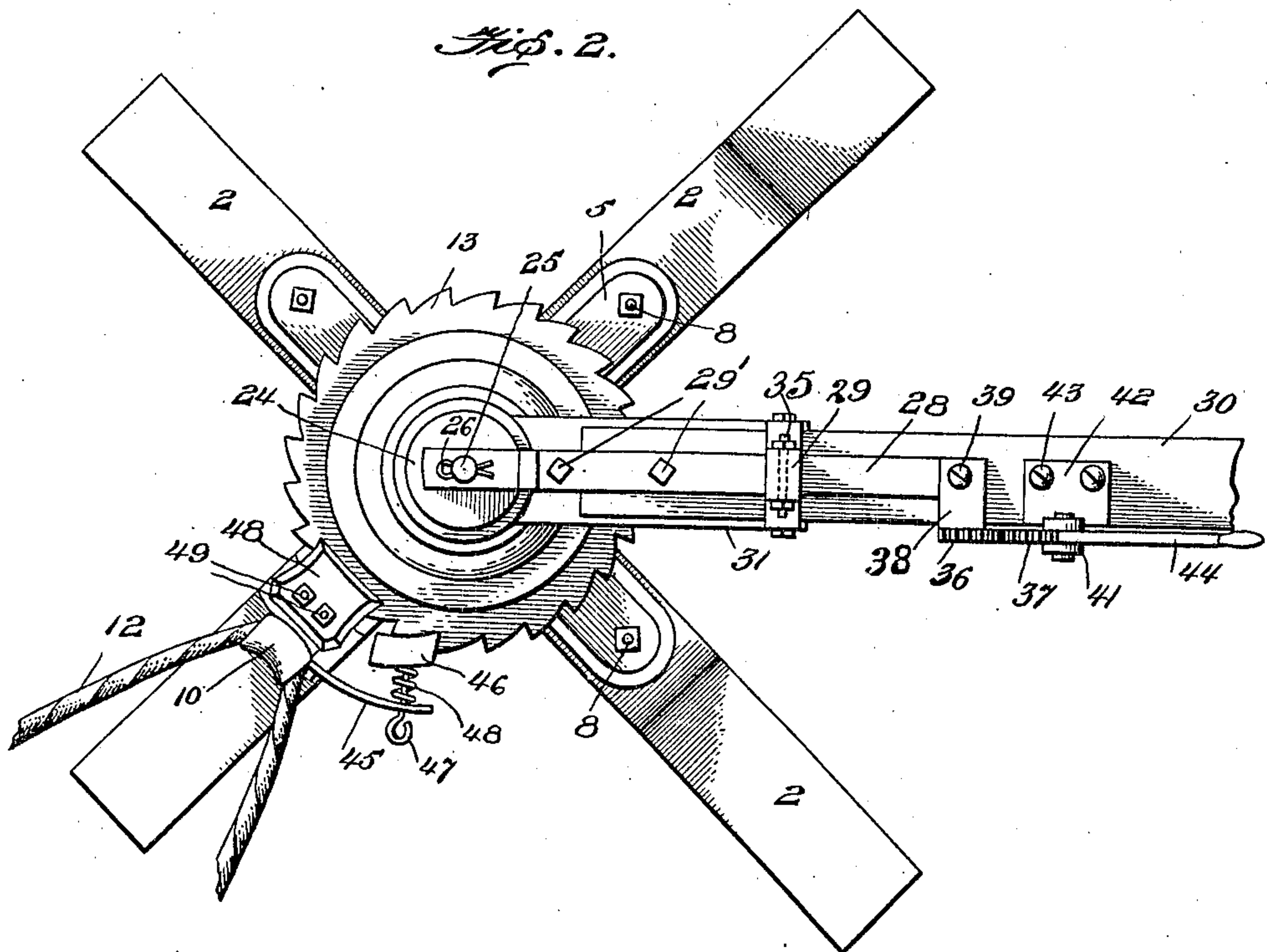
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

OSCAR A. KLEITZ, OF DAWN, MISSOURI.

STUMP-PULLER MECHANISM.

No. 837,305.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed July 23, 1906. Serial No. 327,342.

To all whom it may concern:

Be it known that I, OSCAR A. KLEITZ, a citizen of the United States, residing at Dawn, R. F. D. No. 2, in the county of Livingston and State of Missouri, have invented certain new and useful Improvements in Stump-Puller Mechanisms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in stump-puller mechanisms, and has for its object the provision of means for facilitating the removal of stumps, trees, or the like from the earth.

Another object of the invention is the provision of certain improvements upon the stump-puller mechanism disclosed in my Letters Patent No. 407,667, issued July 23, 1889.

With these and other objects in view the invention consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a perspective view of a mechanism constructed in accordance with the present invention. Fig. 2 is a top plan view of the structure depicted in Fig. 1. Fig. 3 is an enlarged detail view, in side elevation, of the adjusting device for the controlling-lever. Fig. 4 is a horizontal sectional view of the spindle with the drum removed. Fig. 5 is a fragmentary vertical sectional view of the auxiliary supporting-frame, spindle, and drum. Fig. 6 is a fragmentary sectional view of the drum, showing means for attaching the cable thereto. Fig. 7 is a perspective view of the inverted substantially U-shaped bracket carried by the draft-beam.

Referring to the drawings by numerals, 1 designates the primary supporting-frame, which is provided with a plurality of arms 2, 2, and 3 is the auxiliary supporting-frame.

The auxiliary supporting-frame is preferably provided with four arms 4, each of which arms 4 is provided with a reinforcing-rib 5. All of said arms 4 and ribs 5 are integral. The auxiliary frame 3 is integral with the vertical spindle 6. By reason of the reinforcing-ribs 5 the strength of the auxiliary frame 3 is greatly increased without producing a cumbersome structure. It will be noted that the arms 4 are preferably made short as compared with the arms 2 and the

width of the drum 7. The reinforced auxiliary supporting-frame 3 is secured to the primary supporting-frame 1, preferably by any suitable fastening means—as, for instance, bolts 8.

One of the arms 4 is provided with an enlarged body portion 9, Fig. 5. The body portion 9 is provided with a hook 10, which hook 10 is provided with a curved inner surface 11. Suitable fastening means, as cable 12, is attached to the hook 10 and suitably attached to any stationary support—as, for instance, a tree—when the mechanism is in operation. However, when it is desired to haul the mechanism over the ground it is only necessary to attach the draft-animal to the hook 10.

The drum 7 is provided at its lower end with an integral horizontal ratchet-collar 13 and at its upper end with a smooth integral horizontal collar 14. The upper end of the drum 7 is provided with a plurality of ratchet-teeth 15, Fig. 1, which teeth normally mesh with similarly-constructed teeth 16, formed upon the lower end of the vertically-adjustable clutch-drum 17. The hauling-cable 18 is attached to drum 7 by means of an eyebolt or staple 19, Fig. 6, the eye of which bolt 19 is seated in a socket 20, formed in the upper surface of the ratchet-collar 13. The shank of bolt 19 is passed through an aperture formed in said ratchet-collar 13, and the nut 21 is threaded upon said shank in a cut-out portion or recess 22. When the nut 21 is threaded upon the shank of the eyebolt 19 and if the cable 18 is positioned within the eye of said bolt, said cable will be clamped securely against the ratchet-collar 13 and is thereby fixedly secured to drum 7. By reason of the recess 22 and the attaching means for the cable 18 said cable is attached to said drum 7, and the attaching means does not interfere with the operation of the mechanism.

After the cable 18 (which is attached by any suitable means to the stump that is to be extracted when the mechanism is in operation) has been attached to the drum 7 and wound partly around the drum it is desirable to have the said cable automatically placed against the drum 7 above and in engagement with the first lap of the cable upon said drum. This is accomplished by my improved lug 23, which lug is formed integral with the drum *per se* and the ratchet-flange 13. The drum

is provided with a beveled upper surface, which facilitates the adjustment of the cable 18 upon the drum as said drum is revolved for winding said cable thereon.

5 The clutch-drum 17 is similar in structure to the drum in my Patent No. 407,667. The bearing-block 24 is provided with an integral vertical pin 25. The pin 25 is provided with apertures, within one of which is a spring-
10 cotter 26. The spring-cotter 26 retains the lever-plate 27 upon the bearing-block pin 25. The lever-plate 27 is secured to the controlling-lever 28 by a plurality of fastening means, as bolts 29' 29'. The lever 28 is piv-
15 otally mounted upon an inverted substantially U-shaped bracket 29, which bracket is secured to draft-beam 30. The draft-beam 30 is secured by any suitable means to the horizontal supporting-arm 31, which arm 31
20 is integral with the clutch-drum 17.

The supporting-bracket 29, Fig. 7, is provided with an inverted-U-shaped body, and each side of said body terminates in a horizontal integral portion 32, and each portion
25 32 is provided with a depending vertical apertured extension 33. These portions 32 and 33 constitute angular feet which overlap portions of the top and side of the draft-beam 30. Upon referring to Fig. 1 it will be noted
30 that the portions 32 of said bracket 29 bear against the upper surface of said draft-beam 30, and the portions 23 engage the sides of said beams. Any suitable means—as, for instance, bolt 34—is positioned within the ap-
35 ertures or portions 33 and extend transversely of the draft-beam 30 for securing said bracket in position thereon. A transverse bolt 35 extends through the sides of the bracket 29 and through the adjusting-lever
40 28, whereby said lever is pivotally mounted upon said bracket.

Referring particularly to Fig. 3, the means for adjusting the lever 28 upon the bracket 29 comprises a segmental gear-plate 36 and
45 a similarly-constructed gear-plate 37. The gear-plate 36 is provided with integral horizontal lugs 38 38, which lugs are positioned against the upper and lower surfaces of the adjusting-lever 28. The lugs 38 are pro-
50 vided with apertures, and said adjusting-lever 28 is also provided with apertures registering with the apertures formed in the lugs 38, whereby suitable fastening means—as, for instance, bolt 39—is positioned within
55 said registering aperture for securing said stationary gear-plate upon said lever. The gear-plate 37 is pivotally mounted, as at 40, upon a substantially U-shaped bracket 41, which bracket is fixedly secured to the draft-
60 beam 30 by means of an integral plate 42. The bracket 41 is provided with sides, one of which is integral with plate 42. The plate 42 is offset from the draft-beam 30 *per se* and constitutes a broad base therefor. The plate
65 or base 42 is provided with apertures, and

within these apertures are positioned fastening means—as, for instance, bolts 43—by which the bracket 41 is secured to the draft-beam. The actuating-arm 44 is integral with the movable gear-plate 37. By vertically ad-
70 justing the arm 44 the lever 28 will be swung upon its fulcrum or bracket 29. If the arm 44 is swung downwardly toward the draft-beam 30, the clutch-drum will be in an operative position with relation to the drum 7,
75 while if said arm 44 is swung upward or away from said draft-beam the clutch-drum will be in position for placing the mechanism out of gear.

If it is desired to throw the mechanism out
80 of operation—that is, permit the clutch-drum to be removed from in engagement with said drum 7, while the cable 18 is in a taut condition—this may be done, because I have provided on one of the reinforced arms
85 4 of the auxiliary supporting-frame 3 a removable curved horizontal plate 45, carrying a spring-pressed dog 46. The plate 45 is preferably attached at its inner end to the arm 4. An aperture is formed near the outer
90 end of said plate 45, and a slidable bolt 47 is positioned within said aperture. The outer end of said bolt is provided with a grip-loop which not only permits the operator to grasp bolt 47, but also prevents the bolt from being
95 displaced by any possible inward movement. The inner end of bolt 47 is fixedly secured to the dog 46, and interposed between the dog 46 and plate 45 is a spring 48, which is carried by said bolt. While the bolt 47 may be
100 drawn outwardly sufficient to disengage the dog 46 from the teeth of the ratchet-collar 13, it will be obvious that said dog can be entirely removed from the mechanism without removing bolt 47. However, as soon as the
105 operator releases the bolt 47 the spring will throw the dog 46 into engagement with the teeth of the ratchet-collar 13, and thereby prevent the drum 7 from unwinding the cable. While the mechanism is in operation
110 and the cable is taut if it is desired to drive the draft animal or animals over said cable without any strain on said animals the mechanism may be thrown out of gear and the cable held in a taut position by reason of the
115 locking device just described. However, the drum can be permitted to unwind by quickly disengaging the dog from the teeth of the ratchet.

Upon the enlarged body portion 9 is re-
120 movably secured a horizontal guide-plate 48, which is preferably secured to said body portion 9 by any suitable fastening means—as, for instance, vertical bolts 49. As the upper surface of the body portion 9 is formed in the
125 same horizontal plane with the upper surface of the ratchet-collar 13, it will be readily seen upon referring to Fig. 5 that the lower face of the guide-plate 48 is positioned above the ratchet-collar 13. The function of the guide-
130

plate 48 is to prevent vertical movement of drum 7 upon the spindle 6. The head of the bolts 49 are countersunk in body portion 9 for preventing the auxiliary supporting-frame to lie against the primary supporting-frame 1.

If it is desired, reference may be had to my prior Letters Patent, No. 407,667, for additional explanation.

What I claim is—

1. In a stump-puller mechanism, the combination with a supporting-frame, said supporting-frame provided with a plurality of arms, of an enlarged portion formed integral upon one of said arms, a hook integral with said enlarged portion, a spindle integral with said supporting-frame, a drum mounted upon said spindle, a ratchet-collar integral with the lower end of said drum, a guide-plate secured to said enlarged portion of said arm and overlapping a portion of said ratchet-collar for securing said drum upon said spindle, a removable, curved plate secured to said enlarged portion of said arm and extending horizontally therefrom, a bolt slidably mounted upon said curved plate, a dog fixedly secured to the inner end of said bolt, a spring interposed between said dog and said plate, the dog normally in engagement with said ratchet-collar, and means for imparting rotary movement to said drum.

2. In a stump-puller mechanism, the combination with a supporting-frame, said supporting-frame provided with a plurality of arms, of reinforcing-ribs integral with said arms, one of said arms provided with an enlarged body portion, a hook integral with said body portion, said hook provided with an inward, vertical, curved cable-engaging surface, a drum positioned above and in engagement with said supporting-frame, a collar integral with the lower portion of said drum, a plate in engagement with said enlarged body portion and overlapping a portion of said collar for retaining said drum upon said supporting-frame, and means for imparting rotary movement to said drum.

3. In a stump-puller mechanism, the combination with a supporting-frame, of a revolvable drum provided with a ratchet-collar, positioned above and in engagement with said supporting-frame, a plate secured to said supporting-frame, a bolt provided with a looped, outer end slidably mounted upon said plate, a dog fixedly secured to the inner end of said bolt, a spring mounted upon said bolt between said dog and said plate, and means for imparting rotary movement to said drum.

4. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, a drum journaled upon said spindle, of a collar integral with said drum, said collar provided with recesses formed upon its upper and lower faces and an aper-

ture connecting said recesses, an eyebolt positioned within said aperture, the eye of said bolt seated in the upper recess, a nut positioned within the lower recess and threaded upon said bolt, and means for imparting rotary movement to said drum.

5. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, a drum journaled upon said spindle, of a collar integral with said drum, a lug integral with said drum and collar, said lug curved upon its upper surface throughout its entire length, means for imparting rotary movement to said drum, and spring-pressed locking means for preventing rotary movement of said frame.

6. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, a drum journaled upon said spindle, a clutch-drum journaled upon said spindle and in engagement with said first-mentioned drum, of a bearing-block provided with an integral, vertical, apertured pin, positioned in the upper end of said spindle, a draft-beam supported upon said drum, a bracket carried by said draft-beam, a lever pivotally mounted upon said bracket, a lever-plate in engagement with said lever, removable fastening means securing said lever-plate to said lever, said lever-plate provided with an aperture, said pin positioned within the apertured portion of said lever-plate, a cotter-pin positioned within the aperture of said pin and securing said lever-plate thereon, and means for moving said lever upon said bracket.

7. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, a drum positioned upon said spindle, a clutch-drum positioned upon said spindle and in engagement with said first-mentioned drum, a draft-beam, means securing said draft-beam to said clutch-drum, a bearing-block in engagement with said spindle, of an inverted, substantially U-shaped bracket positioned upon said draft-beam, said bracket provided with horizontal portions formed upon the lower end of the body, depending, vertical portions formed upon the outer ends of said horizontal portions, means securing said bracket to said draft-beam, a lever pivotally mounted upon said bracket and in engagement with said bearing-block, and means for adjusting said lever upon said bracket.

8. In a stump-puller mechanism, the combination with a support, a spindle carried thereby, a clutch-drum journaled upon said spindle, a bearing-block engaging said spindle, a draft-beam, means connecting said draft-beam to said clutch-drum, a lever pivotally mounted upon said draft-beam, means connecting said lever to said bearing-block, of a gear-plate provided with a pair of laterally-extending lugs in engagement with said

lever, fastening means engaging said lugs and extending through said lever, a bracket comprising a U-shaped body and provided with a laterally-extending offset base-plate in engagement with said draft-beam, a gear-plate pivotally mounted upon said bracket, and in engagement with the gear-plate carried by said lever, and a handle secured to the gear-plate pivotally mounted upon said bracket.

9. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, drums carried by said spindle, a bearing-block in engagement with said spindle, a draft-beam, means connecting said draft-beam to one of said drums, a lever pivotally mounted upon said draft-beam, means connecting said lever to said bearing-block, of a gear-plate fixedly secured to said lever, and a pivotally-mounted gear-plate carried by said draft-beam and in engagement with said first-mentioned gear-plate.

10. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, drums journaled upon said spindle, a bearing-block in engagement with said spindle, a lever, means connecting said lever to said bearing-block, a draft-beam, means connecting said draft-beam to one of said drums, of a gear-plate or member secured to the outer end of said lever, and

means in engagement with said gear-plate and being capable of adjusting said lever.

11. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, drums journaled upon said spindle, a bearing-block in engagement with said spindle, a lever connected to said bearing-block, a support carried by one of said drums, of an adjusting device carried by said support, for controlling movement of said lever, said adjusting device comprising a member secured to said lever, and a movable member carried by said support and cooperating with said first-mentioned member.

12. In a stump-puller mechanism, the combination with a support, a spindle carried by said support, drums journaled upon said spindle, a bearing-block in engagement with said spindle, a lever, means connecting said lever to said bearing-block, a support carried by one of said drums, of an adjusting gear device carried by said support for controlling movement of said lever, said gear device comprising cooperating members.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

OSCAR A. KLEITZ.

Witnesses:

H. H. THOMAS,
W. E. CRAMPTON.