

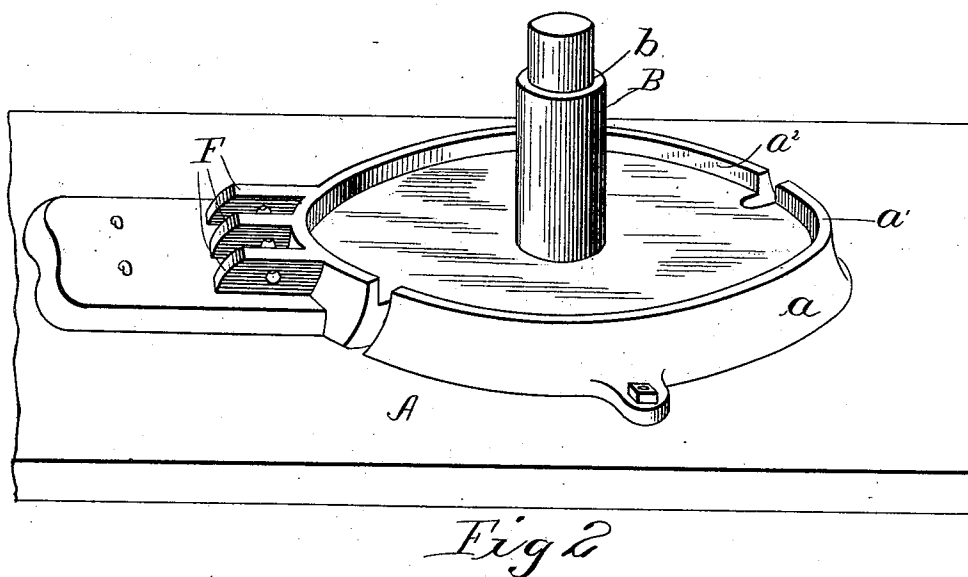
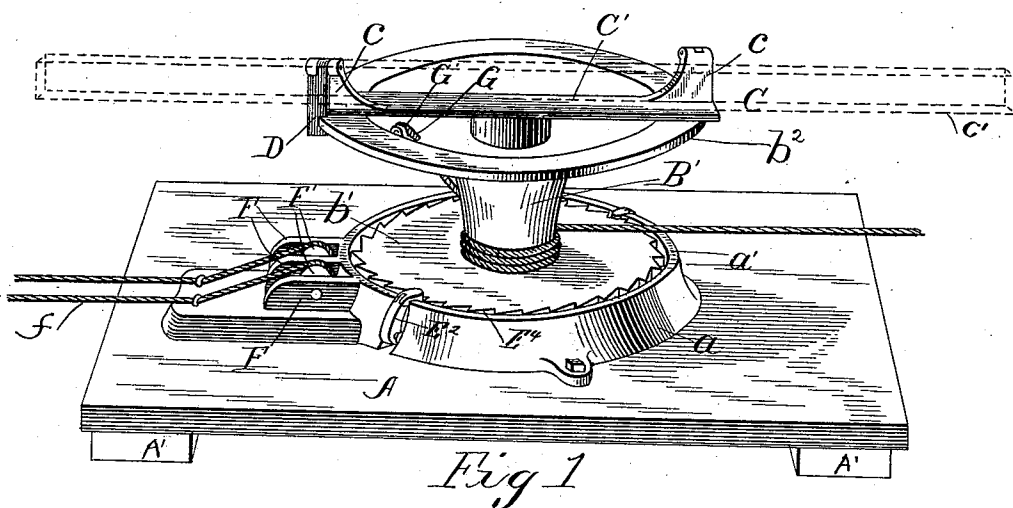
(No Model.)

2 Sheets—Sheet 1.

C. N. BLOOD.
STUMP EXTRACTOR.

No. 508,401.

Patented Nov. 14, 1893.



WITNESSES:

C. E. Burdine
J. B. Owens

INVENTOR

Charles N. Blood

BY

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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STUMP EXTRACTOR.

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Fig 4

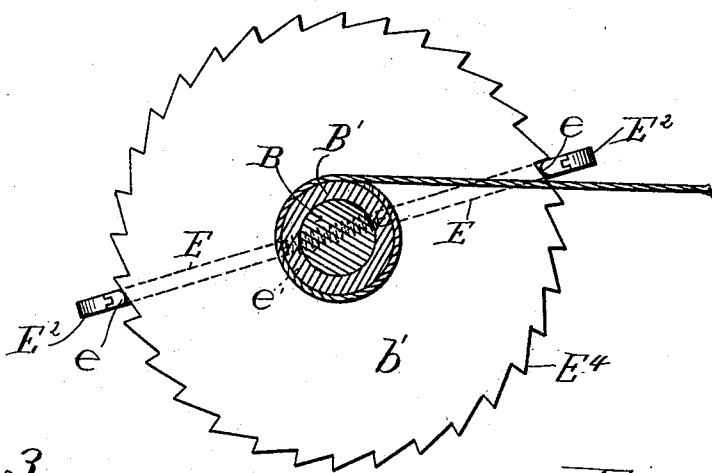


Fig 3

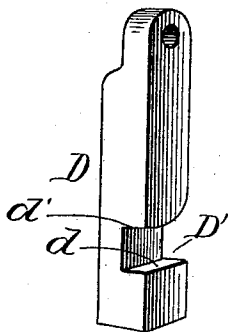


Fig 6

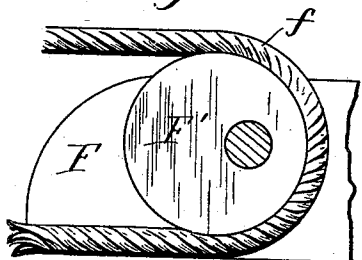
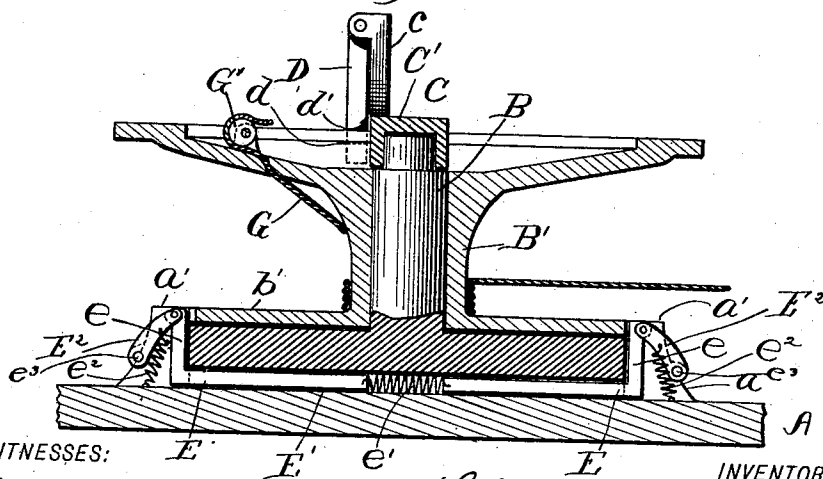


Fig 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES N. BLOOD, OF ANAMOSA, IOWA.

STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 508,401, dated November 14, 1893.

Application filed July 25, 1893. Serial No. 481,435. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. BLOOD, a citizen of the United States, residing at Anamosa, in the county of Jones and State of Iowa, have invented certain new and useful Improvements in Stump-Extractors; and I do declare the following be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in stump extractors, and it has for its object the production of a machine in which the power applied may be expended in the most advantageous manner thereby making a more effective machine; and to this end the invention consists of certain improvements in the construction and the arrangement of the capstan windlass whereby it is better adapted to the required work.

Referring to the accompanying drawings for a detailed description of my improvements, Figure 1 represents a perspective view of my invention complete; Fig. 2 a similar view of the base block of my machine with the remaining parts detached; Fig. 3 a detail of one of the grippers for the sweep; Fig. 4 a diagrammatical view showing the pawl and ratchet mechanism for the winding drum; Fig. 5 a longitudinal section, and Fig. 6 a detail perspective view of the mode of attaching the rope anchor to the machine.

The reference letter A, indicates the base or body of my machine which is preferably formed of wood and provided with beams A' secured firmly to its underside near the ends. Mounted upon and securely bolted to the body A, is the windlass base a , which is made of cast metal and has formed on its main portion the flange a' . The flange a' is provided on the inner side with a plane vertical face a^2 , thereby forming a circular depression in the base, in the center of which the vertical standard B, is located. This standard is formed integral with the base a , and has its upper end reduced at b , for the purpose that will hereinafter appear.

Arranged in the depression formed by the

flange a' is the windlass drum B' having a base and top flange b' and b^2 respectively. The drum B' is mounted upon the standard B which forms its axis, and its base flange b' is of such a size that it will fit snugly within the depression of the base a . Mounted so as to revolve upon the reduced end b , of the standard B, is the sweep frame C, which consists of an arm C' extending transversely across the flange b^2 of the drum B' and of a length slightly greater than the diameter of the said flange. Formed integral with the arm C' at each end thereof and at opposite sides are the studs c , between which the arm C' is arranged and securely bolted in place. The studs c , serve the double purpose of holding the sweep in place and supporting the grippers D. These are shown in detail in Fig. 3, and each consists of an elongated piece of metal hinged to the top of the studs c , on a horizontal plane extending parallel with the arm C', so that they will hang on the outer side of each of the studs, and are provided at their lower edges, next to the periphery of the flange b^2 , with a gripping notch D' which, receives the outer edge of the flange b^2 . The notch D' is formed with a plain lower edge d , while the upper edge is curved or inclined upwardly so as to form a point d' which is adapted to bind against the flange b^2 whenever the sweep is moved to the right, and when the direction is reversed they will release their hold and slide freely around the flange. By this means motion is transferred from the sweep frame C, to the drum B' when the sweep is moved in one direction, but when reversed the grippers cease to positively engage the flange b^2 and will slide idly around it.

The pawl and ratchet mechanism for preventing back motion of the drum B' will now be described. This is shown in detail by Figs. 4 and 5, and consists of two right angle bars E, the vertical arms e , of which are a distance apart not quite equal to that of the diameter of the flange a' , and the inner ends of the horizontal arms are connected to each other by means of the spring e' , which operates to draw the two bars together; the whole is arranged in a slot E' formed in the base a , for its reception. The arms e of the bars E project above the surface of the depression in

the base for a distance equal to the height of the flange a' . These bars E are arranged to co-operate with the ratcheted periphery E^4 of the base flange b' of the drum B' , and the two parts, the bars and ratchet, are so related to each other in size, that when one of the arms e , is in the lowest part of the ratchet the remaining arm will be at a point just midway the plane of the tooth directly opposite the first arm. This is shown in Fig. 5. Pivotal-ly secured to the vertical arms of the bars E , are the arms E^2 which have connected thereto the coil springs e^2 , and which are pivoted to the base plate at the point e^3 . These springs are so arranged in relation to the pivotal point e^3 of the arms E^2 that they will operate to normally keep the arms drawn toward the center of the drum, and when the arms are thrown back beyond their pivotal points the springs e^2 will operate to prevent their return.

From the foregoing it will be seen that a ratchet mechanism in which the teeth of the ratchet are practically in continuous engagement with one of the vertical arms of the bars E , which arms for all purposes constitute each a pawl, is provided, and that, by means of the arms E^2 and their springs e^2 , these pawls may be disengaged from the ratchet to allow the drum to be reversed and the rope unwound.

This construction will not, when the pawls are in engagement with the ratchet, allow any back motion of the drum B' whatever, by reason of the fact that when one pawl is disengaged the other is always engaged with its respective ratchet teeth.

Formed integral with the base a adjacent to the flange a' are three lugs F , provided with openings in which the trunnions of the eccentric rollers F' are journaled. Over these rollers the anchor rope f , passes, and when the rollers revolve, under the influence of the rope, their eccentric portion binds the rope down on the base, and thereby securely fastens it to the machine. By means of this

rope the machine is anchored or secured to some stationary object during its operation. The same principle is employed in connection with the winding rope fastening for the drum; an eccentric roller G' , being provided over which the rope G is wound, and upon applying pressure to the rope G , the roller will securely bind the rope against the drum flange.

In using my machine the rope F is passed over or in any other way secured to some convenient immovable object, and the winding rope G , is connected at its end to the stump to be extracted. The sweep c' is then operated, either by horse or manual power, and the rope G , wound upon the drum B' , which will draw out the stumps.

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

1. The combination of a winding drum, a ratchet connected thereto and revolving in unison therewith, a flange raised around the ratchet and having formed therein a slot extending under the ratchet and two pawls yieldingly connected to each other operating with the ratchet and arranged in the slot, substantially as described.

2. The combination of a winding drum having a top and a base flange, a sweep removably mounted adjacent to the top flange, a gripper on the sweep and operating with the top flange of the drum so that the sweep will be positively connected to the drum only when moving in one direction, a ratchet formed on the base flange, and two pawls operating with the ratchet and yieldingly connected to each other, substantially as described.

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

CHARLES N. BLOOD.

Witnesses:

JNO. Z. LULL,
J. S. STACY.