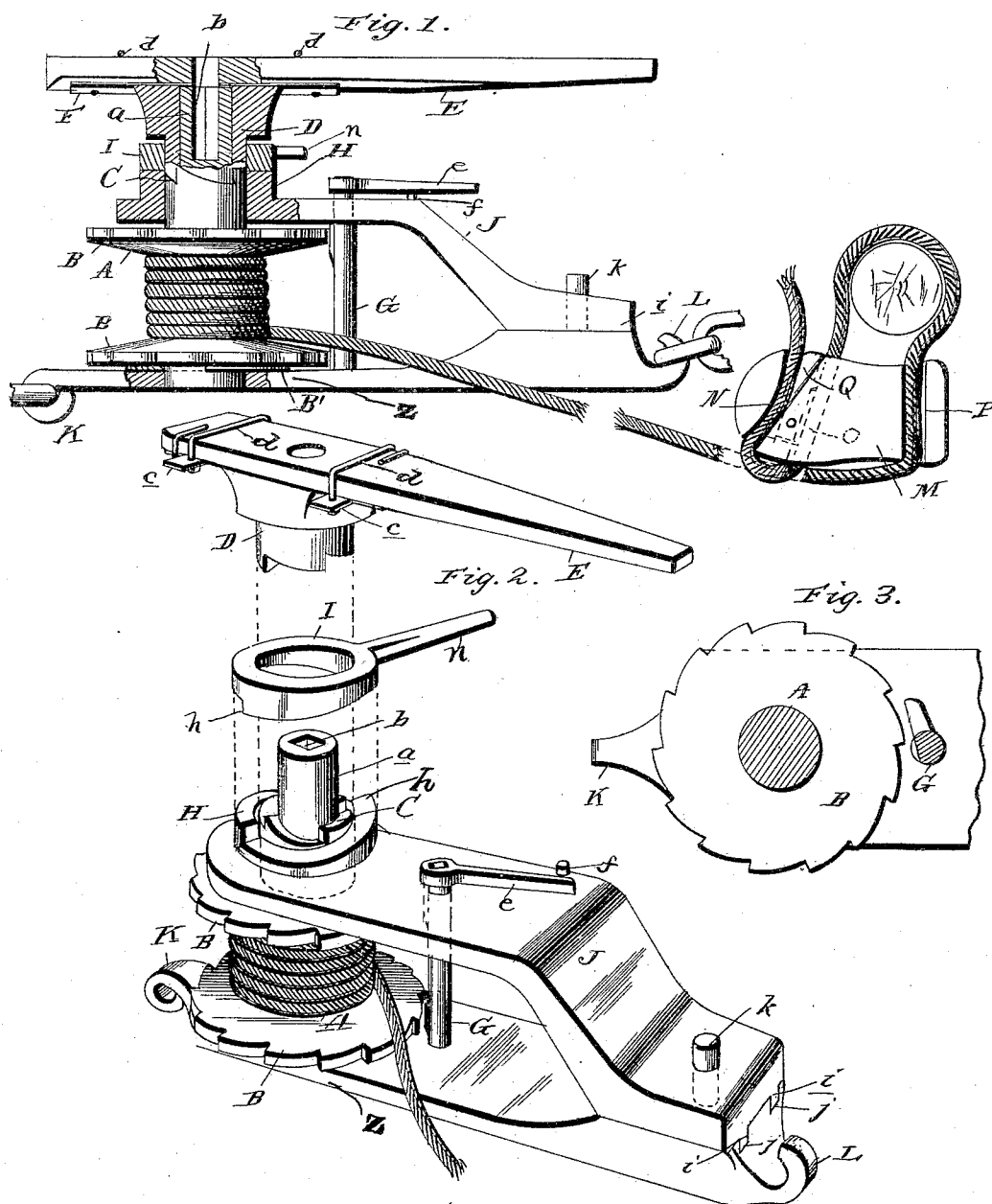


(No Model.)

C. H. MOHLAND & L. KERBER.
GRUBBING MACHINE.

No. 444,843.

Patented Jan. 20, 1891.

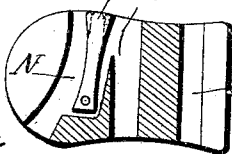


Witnesses:

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Fig. 4. Q O



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CHARLES H. MOHLAND AND LEOPOLD KERBER, OF SIGOURNEY, IOWA.

GRUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,843, dated January 20, 1891.

Application filed July 5, 1890. Serial No. 357,807. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. MOHLAND and LEOPOLD KERBER, citizens of the United States, residing at Sigourney, in the county of Keokuk and State of Iowa, have invented certain new and useful Improvements in Grubbing-Machines; and we do declare the following to 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.

This invention has relation to improvements in stump-pullers; and it consists in the construction, novel combination, and adaptation of devices hereinafter described and claimed, and particularly pointed out in the claims hereto annexed.

In the accompanying drawings, Figure 1 is a side elevation of our improved stump-puller complete, showing parts in vertical section and the take-up binding-block in position upon the cable. Fig. 2 is a perspective view of the machine, illustrating the several parts in a position ready to be applied, and Fig. 3 is a top plan view of the winding-drum and the pawl for engaging the upper ratchet thereof, the shafts of both reel and pawl being in transverse section. Fig. 4 is a top plan view of the take-up binding-block with parts broken away to show the cable in position in the slots thereof.

In carrying out our invention it is obvious that the most suitable material may be employed in the construction of the several elements and that the form of the various parts may be varied to better perform their functions without departing from the spirit of our invention.

The winding drum or reel A has on its upper and lower ends integral flanges B, provided on their periphery with teeth, designed to be engaged and locked by a pawl, presently to be described, whereby the reel is prevented from backward movement. This reel is provided on its upper and lower sides with integral trunnion shafts or journals which take into bearings formed in the upper and lower frame-sections of the machine, and upon the lower flange of the reel we form an integral shouldered disk B', which bears upon the lower section Z of the frame and prevents frictional wear of the lower reel-flange. The

upper trunnion or shaft of the reel is reduced or shouldered, as illustrated, and this shouldered portion is provided with ratchet-teeth C, which are engaged by corresponding teeth upon the lower end of the sleeve D, which is turned by the draft-lever E, and which serves to turn the drum and wind the cable thereon. The reduced upwardly-extending portion a of the upper trunnion of the drum is provided with a central rectangular opening b, of sufficient length to receive a suitable key, and it will be seen that by this construction when the clutch or ratchet faces of the respective sleeves have been disengaged, as will be presently described, the cable may be wound upon the drum through the medium of the key, which may be provided with a suitable crank, if desired. The sleeve D, which is enlarged at its upper portion, as illustrated, is connected by bolts to a metallic plate F, which is of a suitable length and is designed to be attached in turn to the draft-lever. This plate F is provided at suitable points with ears c, which are perforated, as illustrated, to receive suitable stirrup-bolts d, which straddle the draft-lever and serve to secure the same to the plate.

As an auxiliary means of attaching the lever to the plate, we provide upon the opposite longitudinal sides thereof two oppositely-directed metallic branches which take over the edges of the draft-lever and prevent lateral displacement thereof. The upright pawl-shaft G, which is journaled in the upper and lower sections, respectively, of the frame adjacent to the periphery of the flanges of the drum, is provided at points in its height on the same plane as the flanges with pawls which are adapted to be thrown in and out of engagement with the teeth of the flanges to lock and release the drum when desired, and are adapted, when desired, to engage the ratchet-teeth of the flanges and prevent backward movement of the reel, and consequently a slacking of the rope. The pawl-shaft extends above the upper section of the frame, where it is keyed to receive an operating-lever e, the movement of which is limited by a stop f, as illustrated, and the said stop may be employed, when desired, to lock the lever in a position of engagement with the teeth of the flanges.

Upon the upper side of the upper section of frame and surrounding the journal-opening of the upper trunnion we secure or form integral therewith a collar portion II, the upper face of which is provided with a ratchet *h*, as shown.

I indicates an annulus of an analogous diameter to the collar II, and which is provided with a ratchet *h* on its lower side, which rests upon and engages with the clutch of the fixed disk. The ratchet-face annulus I is also provided with a handle *n* for its ready manipulation, and it will be seen that when said annulus is turned in one direction, so as to raise its teeth upon those of the fixed collar, the sleeve D, the shouldered portion of which bears upon the annulus, will be lifted from engagement with the ratchet C of the drum-shaft, and when this is accomplished by simply inserting the key-crank in the opening *b* of the drum-trunnion the cable may be quickly wound upon the drum.

The upper section J of the frame, which is of the preferable form illustrated, is provided adjacent to its forward end and upon its under side with two ledges *i*, which take into two coinciding slots *j*, cut in the lower section, and by this construction, in addition to the fastening-pin *k*, which takes through the sections, it will be seen that lateral displacement of the sections with respect to each other is obviated.

K indicates a clevis which is secured to the lower section of the frame at one end thereof, and this clevis is adapted for the attachment of a team when it is desired to move the device. L indicates a clevis at the other end, which is designed to receive an anchor-chain which is attached to a stake or to a tree, and which serves to anchor the machine when in operation.

M indicates our improved take-up-cable binding-block, through which the rope is passed before and after being looped about the stump, and which binds the same and prevents slipping thereof. This binding-block, which performs the function of a pulley-block, is provided on one side and adjacent to one end with an oblique slot N, as illustrated, which is enlarged or flared at its inner end, and into this slot N leads a tunnel-opening O, cut across the block, and adjacent to its opposite end the block is provided with a transverse slot P, through which the rope passes before being looped about a stump. Adjacent to the point where the tunnel opening in the block intersects the ob-

lique slot thereof we pivot a tongue Q, which binds upon the rope and prevents the same from slipping.

In operation the cable from the drum is first passed through the transverse slot P, and after being looped around the stump to be pulled it is passed through the tunnel-opening O at one side of the tongue Q, and is then looped and seated in the oblique slot on the other side of the tongue. Now it will be seen that when draft is applied to the cable by the drum and operating mechanism the tongue Q will bind the cable against one side of the slot N, and thus thoroughly prevent the same from slipping or giving during the operation of pulling the stump.

Having described our invention, what we claim is—

1. The main frame composed of the lower section having a hook or clevis at each end, and the upper removable section J, each provided with vertically-disposed aligned holes, in combination with the double pawl G, journaled in said holes, the handle on the upper end of said pawl, the drum having flanges at opposite ends provided with teeth, and also having its upper shaft provided with inclined teeth, the ratchet-ring secured to the upper face of the upper section J, the collar having a handle and having teeth adapted to engage those on said section, the draft-beam having a plain block on its under side, and a toothed clutch-section depending from said block and adapted to engage the teeth upon the shaft of the drum, substantially as specified.

2. In a stump-puller, the combination, with a supporting-frame, of the winding-drum having the upper and lower toothed flanges B, and the shaft of said drum having a reduced portion at its upper end and a ratchet-face at the base of said reduced portion, a flange surrounding the shaft of the drum on the upper side of the frame and having inclined teeth, the ratchet-faced collar, the draft-beam journaled on the shaft of the drum and having a toothed depending portion to engage the teeth of the drum-shaft, and the pawl G, adapted to engage the toothed flanges B, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

CHAS. H. MOHLAND.
LEOPOLD KERBER.

Witnesses:

WM. A. BELL,
WM. PFAMSBECCKER.