

(No Model.)

2 Sheets—Sheet 1.

A. C. FRENCH.
STUMP PULLER.

No. 486,248.

Patented Nov. 15, 1892.

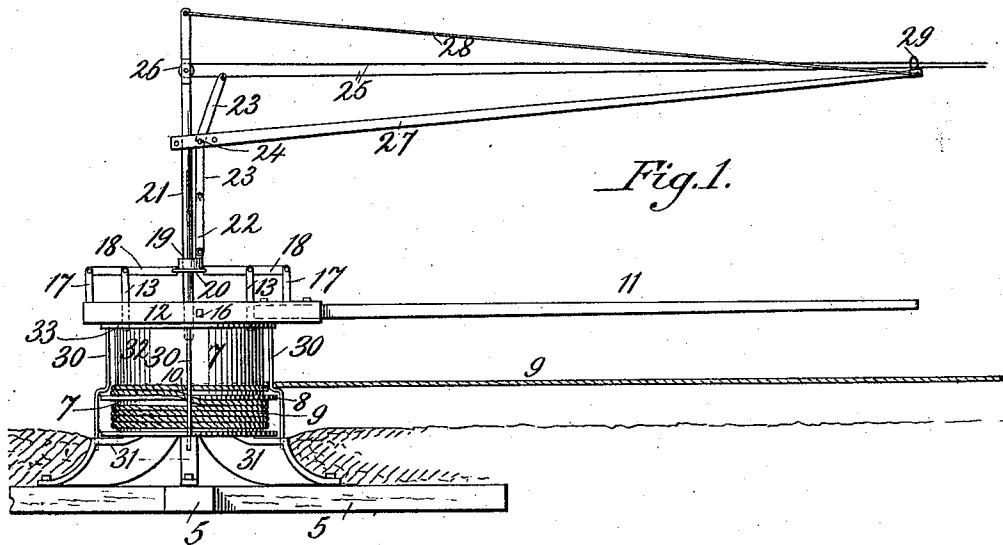


Fig. 1.

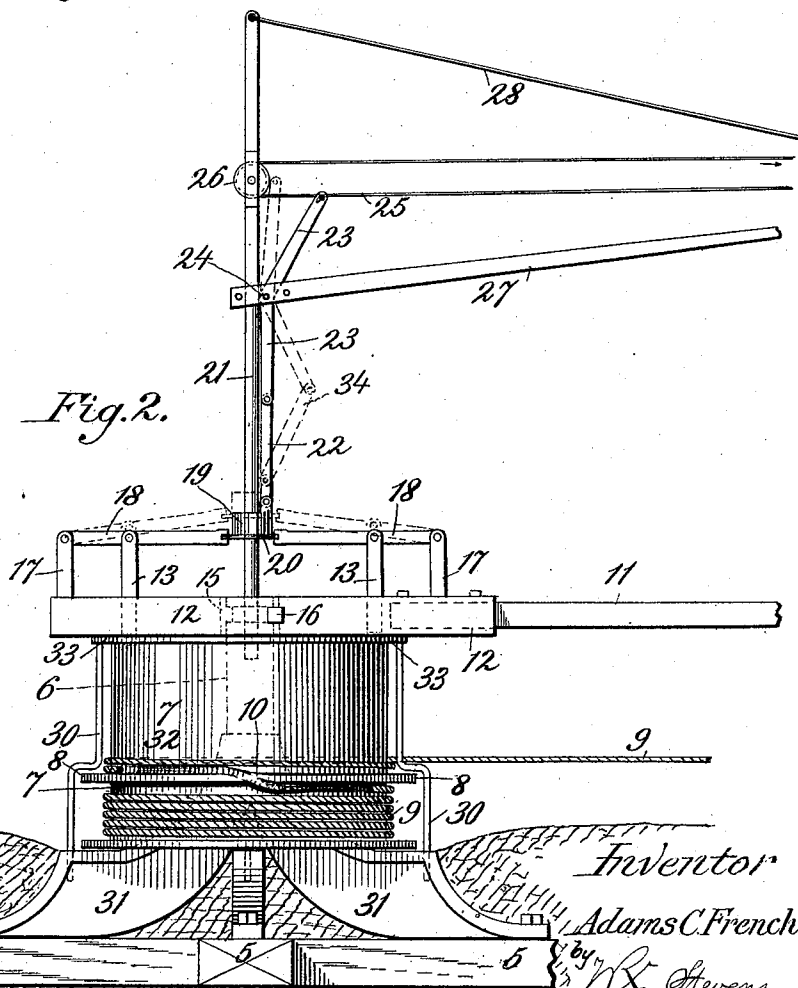


Fig. 2.

Attest:

J. H. Schott

M. C. Halliday

Inventor

Adams C. French

by N. X. Stevens

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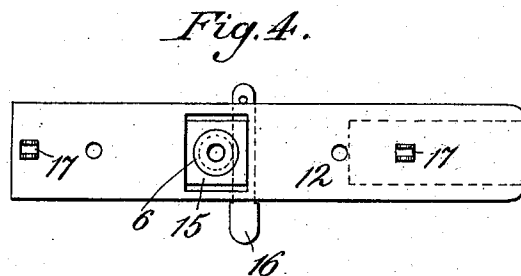
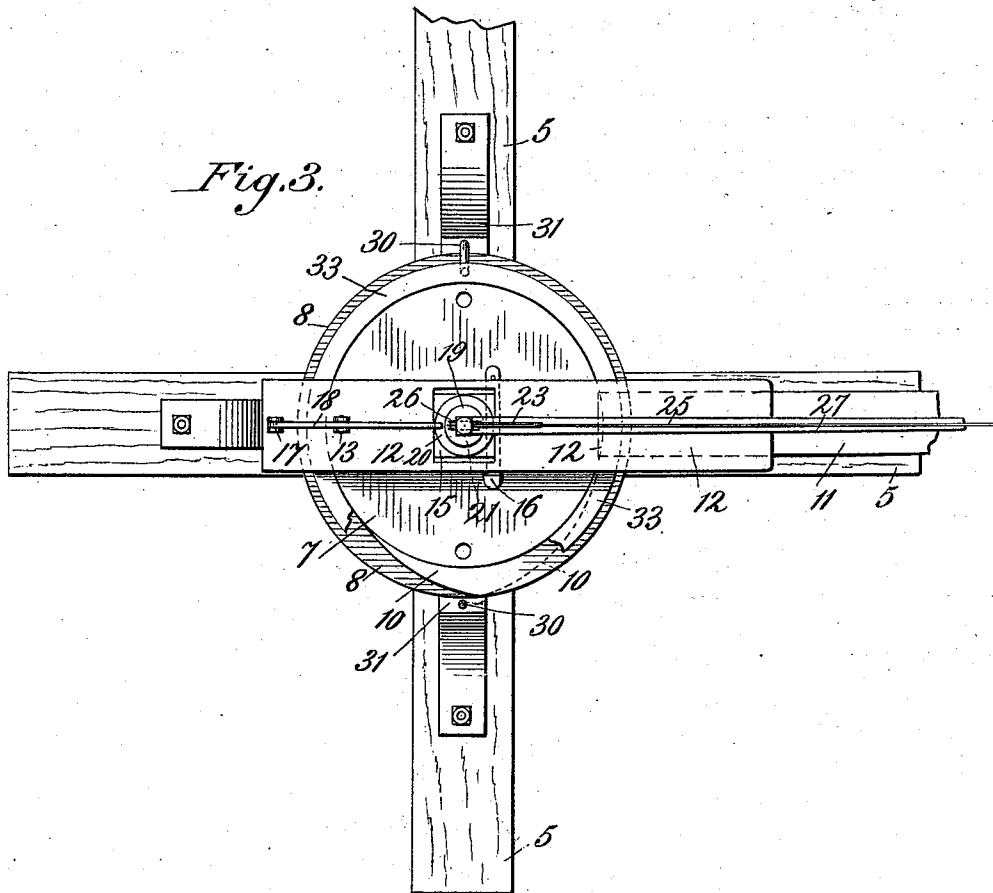
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Attest:

H. W. Schott
M. C. Hillyard

Inventor

Adams C. French
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UNITED STATES PATENT OFFICE.

ADAMS C. FRENCH, OF RAPID CITY, SOUTH DAKOTA.

STUMP-PULLER.

SPECIFICATION forming part of Letters Patent No. 486,248, dated November 15, 1892.

Application filed February 25, 1892. Serial No. 422,731. (No model.)

To all whom it may concern:

Be it known that I, ADAMS C. FRENCH, a citizen of the United States, residing at Rapid City, in the county of Pennington and State of South Dakota, have invented certain new and useful Improvements in Stump-Pullers; and I do hereby 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 relates to that class of stump-pullers in which horse-power is employed to revolve a fixed capstan to wind a rope or chain which is by some means hitched to the stump which is to be pulled.

The object of the invention is, first, to provide means for housing the rope or wire cable upon the winding-drum and protecting it from wet when not in service; second, means for winding from the housing portion of the drum onto the working portion so much of the cable as may be required for service and for leaving the rest on the housing portion; third, means for coupling and uncoupling the team-pole and drum by an operator out in the field at a distance from the capstan, so that the cable may be wound onto the drum by horses hitched to the pole, or the drum may be set free to permit the cable to be unwound while the horses stand still; fourth, means to prevent the rope from being wound upon itself on the drum, and, fifth, means for preventing the pole from bearing upon the fixed capstan-shaft, and thereby causing friction when the coupling-pins shall have become loose by wear.

To this end my invention consists in the construction and combination of parts forming a stump-puller, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a general side view of a stump-puller according to my invention. Fig. 2 is a side view, on a larger scale, of the capstan and its immediate connections. Fig. 3 is a top view of the parts shown in Fig. 2. Fig. 4 is a top view of the shank and socket of the team-pole.

5 represents the base, consisting of two or

more timbers framed together in any usual manner.

6 is a vertical stud fixed permanently to the base and serving as a shaft around and upon which the drum or capstan 7 is fitted to revolve. In service the base is to be buried as deeply as practicable in the ground to resist the strain of pulling upon stumps to uproot them.

8 is a flange projecting all around the drum, about midway thereof, and below this flange the cable 9 is to be wound when not in service to protect the latter from rain.

10 is a guideway extending from the body of the drum up one side of the flange, obliquely across the edge of the flange, and down the other side of the same to the body of the drum again, whereby the cable may be wound from one side of the flange to the other side with certainty and without being damaged.

11 is the team-pole, fixed at its shank end in a socket 12, which is freely mounted on top of the drum and adapted to be connected therewith by means of clutch-pins 13.

15 is a bearing-box for the socket 12, fitted to revolve neatly upon the shaft 6. The socket 12 is provided with an opening to receive the bearing-box, in which opening the latter has a neat sliding fit endwise, but in which the block may play to some distance to either side of center crosswise to permit the socket to apply its whole turning force directly upon the drum through the medium of the pins 13, even though they should become loose in their holes, and to avoid impeding the work by friction in prying against the shaft if the pins are loose.

16 is a key passing crosswise through the socket and through a groove in the side of the bearing-box to engage a circumferential groove in the shaft to keep the socket from being raised off from the shaft.

17 represents posts secured either in the socket or pole, and 18 represents levers pivoted at one end of each to one of the said posts and connected midway with the clutch-pins 13.

19 is a spool provided with a flange 20, which engages the levers 18 by slots therein.

21 is a light mast of iron or other suitable material fitted to revolve freely in the shaft 6.

22 is one member of a knuckle-jointed brace pivoted to the spool 19, which is fitted to slide up and down the mast 21.

23 is the other member of the brace, pivoted at 24 to a fixture of the mast and extending beyond the pivot to form a lever to be connected with a light hand-line 25, which passes over a pulley 26 and extends its two ends out into the field.

27 is a boom supported at one end upon the mast 21 and provided with a loop 29 at its other end adapted to support the line 25 above the horses' path, so that the horses and lines may not interfere with each other. The outer end of the boom 27 may be stayed up by any usual means, such as a chain or rope 28, extending from the said end to the mast.

30 represents guide-rods removably inserted in the base 31 of the shaft and curved to avoid the flange 8 and to come parallel with the working portion 32 of the drum 7 and near enough thereto to prevent the working rope from rising and piling onto itself while being wound. The upper ends of the guide-rods 30 may be stayed by a ring 33, which is supported by them free from the drum.

The operation is as follows: By pulling on the upper portion of the cords 25 the arm of lever 23 will be drawn to the mast and the knuckle-joint 22 23 will be swung out to the position shown in dotted lines 34, thereby raising the spool 19 and with it the levers 18 and the clutch-pins 13, thus liberating the drum, so that the cable may be drawn off from the storage portion out into the field. When a little more cable has been run out than is required for present service, the lower line 25 should be pulled to force the clutch-pins 13 home and then the horses started. Now while the cable is being rewound it may be directed to the guideway 10, whereby it will be guided over the flange 8 upon the working portion 32 of the drum, where it may be used for any length of time, and after service it may all be restored to the storage side of the drum by rewinding it thereon. This is a great saving of labor in avoiding unwinding, coiling up, and carrying the heavy cable to a storage-house.

It is a further advantage in keeping all the cable not required for use safely stored out of the way, and yet convenient to be put in service to any amount required at a moment's notice. The advantages of other portions of this device are sufficiently suggested in the foregoing description of their construction and operation; but it should be stated that the mast, with its attachments, being free to revolve in the drum-shaft enables the hand-cords to be extended to any quarter of the field whence it may be convenient to operate the clutch, and the boom always keeps the cords out of the path of the horses.

Having thus fully described my invention,

what I believe to be new, and desire to secure by Letters Patent, is the following:

1. The combination, in a stump-puller, of a winding-drum and means for revolving the same, the drum being provided with a circumferential flange midway its length and a guideway extending obliquely from the body of the drum up one side of said flange to its center and down the other side to the body of the drum, substantially as described, whereby a rope or cable may be guided from the drum at one side over the flange and down to the drum at the other side and rest upon the guideway.

2. A flanged winding-drum having an oblique guideway extending from the body of the drum up one side of the flange to the center of its edge and down the other side to the body of the drum across the flange, substantially as described.

3. The combination, in a stump-puller, of a winding-drum, a team-pole socket mounted thereon, clutch-pins connecting the said socket and drum, pin-levers pivotally mounted on the socket, a mast rising from the drum-shaft, a spool fitted to slide on the mast and having a flange connection with the said pin-levers, a knuckle-jointed brace upon the mast and connected with the spool, and means, substantially as described, for operating the brace.

4. The combination, in a stump-puller, of a winding-drum, a pole-socket, a clutch to connect them, a mast mounted on the drum-shaft, a spool to slide on the mast and connected with the said clutch, a knuckle-jointed brace connected with the mast and spool, a pulley upon the mast, and a cord passing around the pulley and connected with a lever of the said knuckle-jointed brace, substantially as described, whereby a pull upon one end of the cord will close the clutch and a pull upon the other end will open it.

5. The combination, in a stump-puller, of a drum, a pole-socket, a clutch thereon, a mast upon the drum-shaft, a shifting cord connected with the clutch, and a boom supported upon the mast and extending over the team path and having a loop or eye for supporting the said cord, substantially as described.

6. The combination, in a stump-puller, of a winding-drum mounted on a vertical shaft, means for rotating the drum, and a mast supporting a clutch-operating device and mounted to rotate freely upon the said shaft, substantially as described.

7. The combination, in a stump-puller, of a winding-drum mounted on a vertical shaft and a line-carrying boom mounted to revolve freely upon the same shaft above the drum, substantially as described.

8. The combination, in a stump-puller, of a winding-drum mounted on a shaft, a team-pole socket mounted upon the same shaft, a bearing-box for the socket to revolve upon the shaft and fitted to the socket with free

crosswise movement, and clutch-pins to connect the socket and drum, substantially as described.

9. The combination, in a stump-puller, of a
5 winding-drum mounted on a shaft, a team-
pole socket mounted on the same shaft and
having a clutch connection with the drum, a
box fitted to revolve upon the shaft and hav-
ing free crosswise play in the said socket, and
10 a key passing through the socket and box

and engaging a circumferential groove in the shaft, substantially as described, whereby the socket is retained upon the shaft.

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

ADAMS C. FRENCH.

Witnesses:

W. X. STEVENS,
M. C. HILLYARD.