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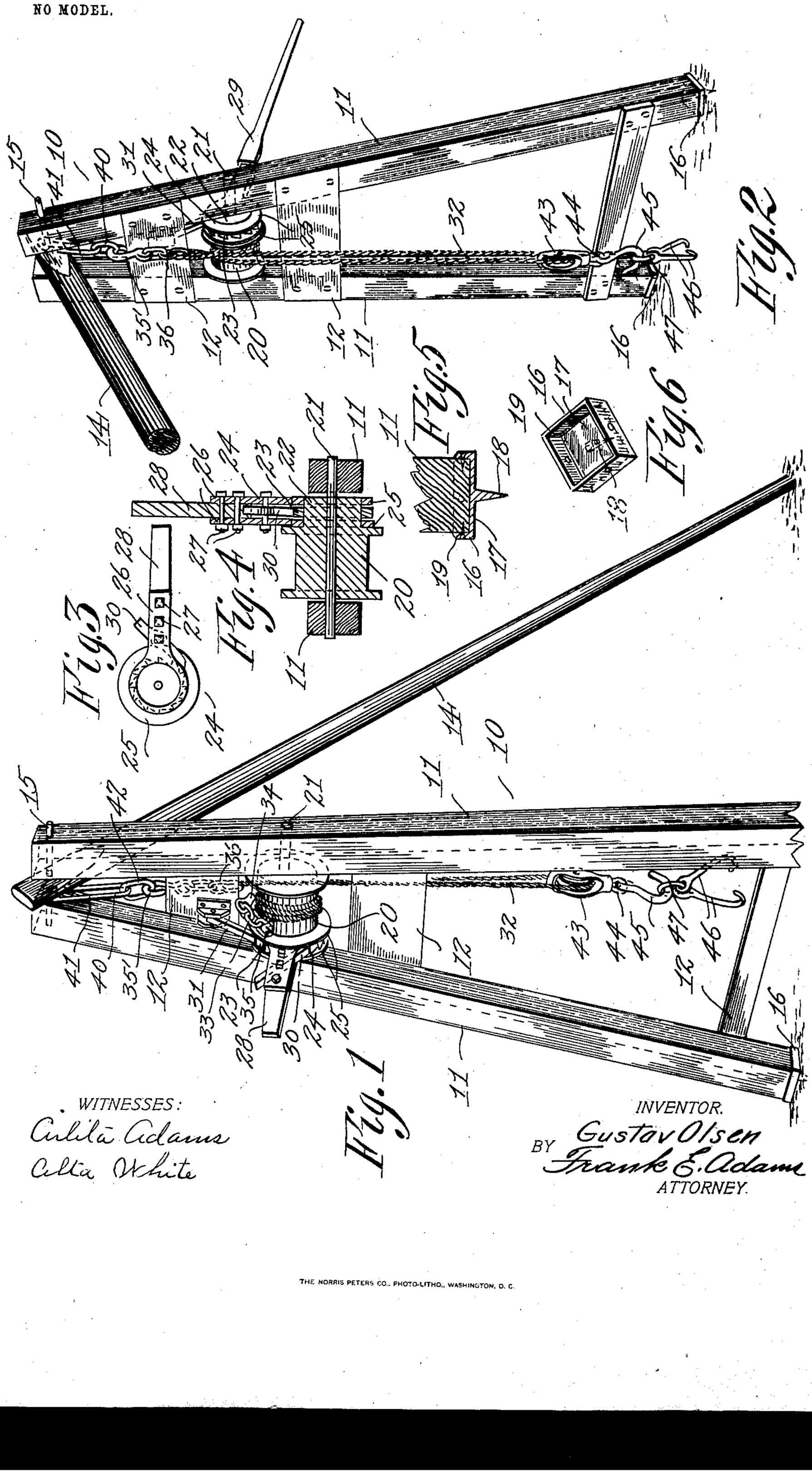
G. OLSEN.

GRUBBING MACHINE.

APPLICATION FILED MAY 4, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

GUSTAV OLSEN, OF PORT BLAKELEY, WASHINGTON.

GRUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 737,765, dated September 1, 1903.

Application filed May 4, 1903. Serial No. 155,661. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV OLSEN, a citizen of the United States of America, and a resident of the town of Port Blakeley, county of Kitsap, and State of Washington, have invented certain new and useful Improvements in Grubbing-Machines, of which the following is a specification.

My invention relates to manually-operative machines for extracting small stumps and grubs.

Among numerous objects attained by this invention and readily understood from the following specification and accompanying drawings, included as a part thereof, is the production of a simplified and inexpensive grubbing-machine embodying essential features of adaptability, utility, and general efficiency which renders the device easy to handle and operate, powerful and durable in use, and reliable and efficient in operation.

The above-mentioned and other desirable objects are attained by the constructions, combinations, and arrangements of parts, as disclosed on the drawings, set forth in this specification, and succinctly pointed out in the appended claims.

With reference to the drawings filed herewith and bearing like reference characters for corresponding parts throughout, Figure 1 is a view in perspective of my improved grubbing-machine, shown with the lower portion of one of the legs of the frame broken away and the handle removed. Fig. 2 is also a perspective view of the machine viewed from the opposite side to Fig. 1 and shows the machine with the lower portion of the steadier-leg broken away. Fig. 3 is a side view of the pawl-and-ratchet contrivance and drum removed from the machine. Fig. 4 is a view of the frame of the machine in horizontal section, taken at the axis of the drum and shows the drum and pawl-and-ratchet contrivance in like section. Fig. 5 is a view of the lower end of one of the legs of the frame, shown in vertical section with the shoe in place; and Fig. 6 is a perspective view of the shoe removed from the leg.

This invention includes a substantially A-shaped vertical frame 10, consisting of oppositely-disposed legs 11, preferably comprising rectangular sticks of timber, which converge upwardly and are connected by suitable ties, as cross-pieces 12, arranged at suitable points to brace the legs and give rigidity to the frame, and these legs are slightly separated from each other at the upper ends to receive therebetween one end of a steadier-leg 14, which is pivotally connected with the frame by a horizontally-disposed pivot pin or bolt, as 15, removably seated in suitable apertures formed in the legs adjacent their upper ends and passing through a suitable transversely-disposed aperture formed in one end portion of the steadier. This steadier-leg 14 is made considerably longer than the legs 11 of the frame and is formed round, so that it will afford a smooth surface for the grasp of the hands of the operator, and the upper end portion flattened at diametrically opposite points at right angles to the pivot-apertures therein to reduce the thickness of the leg, so that it will fit freely between the upper ends of the legs of the frame 10.

Upon the lower ends of the legs 11 are secured suitable metallic shoes 16, each of which consists of a rectangular sole-plate 17, having a downwardly-projecting barb 18, formed integral with the plate, and an upwardly-extending rib 19 about the marginal edge, which fits about the lower end of the leg and is provided with suitable transversely-disposed apertures through which screws or the like are passed into the leg to fasten the shoe in place. These shoes prevent wear of the legs when the machine is operated on stony ground, and the barbs thereon will readily enter the soil or work down between the stones, and thereby insure the frame from slipping, while the steadier-leg serves to hold the frame from falling and is used by the operator to move the frame from place to place by grasping the steadier and tipping the frame edgewise on one leg and then swinging it to advance the opposite leg and then planting the advanced leg and reversing the tilt. Furthermore, the pivotal connection of this steadier-leg with the frame allows the frame to be set at various inclines from the perpendicular, so that the periphery of the drum can be brought in line with the center of the load and the ends of the legs of the frame set clear of the roots of the stump or grub.

In the upper portion of the frame 10 is mounted a drum 20, which is rotatably supported between the legs 11 on a suitable axle, as a horizontally-disposed rod 21, conveniently seated in apertures formed in said legs. This drum is formed with a hub, as 22, at one side, affording a seat for a suitable ratchet-wheel, as 23, which is secured on the hub substantially midway its length, and a suitable pawl-carrier 24 is rotatably mounted on said hub and consists of oppositely-disposed annular pieces 25, arranged to embrace the ratchet-wheel and extending into laterally-projecting stems 26, which are clamped by bolts, as 27, upon opposite sides of an outwardly-projecting shank 28, to which a suitable socket-handle 29 is removably fitted. Between the stems of this carrier a gravity-pawl 30 is suitably pivotally mounted in coacting relations with the ratchet-wheel 23, so that reciprocal movement of the carrier serves to operate the drum intermittently, and a stop-pawl, as 31, is mounted on the frame at a suitable point to engage said ratchet and secure the drum from backlash.

Reference-numeral 32 indicates the draft-line, which preferably consists of a section of steel cable, one end of which is detachably connected with the drum 20 by means of a short section of chain 33, connected at one end with a suitable socket 34, fastened to one end of the draft-line and detachably engaged by the outer link with a laterally-projecting hook 35, secured on the periphery of the drum at one end thereof. This draft-line is detachably connected at the opposite end to the apex of frame 10 by means of hook 35′, which is connected to a short section of chain 36, to one link of which the line is fastened by looping it therethrough, and this hook is engaged with a suitable swing-hanger 40, consisting of an elongated link 41, through which the pivot-pin 15 is passed, and a second link 42, engaged with the elongated link and adapted for engagement of the hook of the draft-line. Upon the draft-line is placed an ordinary fall-block, as 43, having a swivel 44, to which a hook 45 is attached, and in ordinary grubbing a suitable grab consisting of oppositely-disposed grab-hooks 46, engaged with a ring 47, is attached by said ring to the hook of the fall-block.

By forming the frame substantially **A** shape, as shown, it will stand steady and can be more readily tilted in moving the machine step by step, and by pivotally connecting the steadier-leg at the apex thereof the frame can be readily inclined more or less from the perpendicular to bring the lifting-section of the draft-line plumb in lifting the load and allow the ends of the legs of the frame to be placed free of the roots of the grub or stump to be extracted, while the swing-hanger allows the upper end of the draft-line to swing clear of the drum as the frame stands at an incline and affords convenient means for engaging the hook of the draft-line with the frame, so that the power applied to the handle of the machine will be thereby multiplied.

To apply the machine to extract a grub offering extreme resistance, the frame 10 is placed close to the grub and almost perpendicular. The pawls are then disengaged from the ratchet-wheel and the draft-line drawn upon to unwind it from the drum until a sufficient length is played out to bring the fall-block into position to allow the hook thereon to be engaged with the grub, which has been previously engaged with the grub. The pawls are then thrown in, and the operator then grasps the handle of the machine and moves same to operate the drum and take up the draft-line until the grub is forced to leave its seat.

This invention is simple and inexpensive in construction, has few parts likely to get out of order, and is positive, powerful, and durable in action.

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

1. A grubbing-machine, comprising a substantially **A**-shaped frame, a steadier-leg pivotally connected with the frame adjacent the apex, a drum rotatably mounted on said frame between the legs thereof and having a hub at one end, a ratchet-wheel secured on said hub, a pawl-carrier rotatably engaged with said hub and having a laterally-projecting shank, a pawl mounted on said carrier, means to prevent backlash of the drum, a draft-line connected at one end with said drum and at the opposite end with said frame adjacent the apex thereof, and a fall-block on said line having a hook.

2. A grubbing-machine, comprising a substantially **A**-shaped frame, having the legs separated at the apex, a steadier-leg greater in length than the length of the said frame and pivotally connected therewith between the legs adjacent the apex, a swing-hanger pending from the frame at the apex, a drum rotatably mounted on the upper portion of the frame between the legs thereof and having a hub at one end, a ratchet secured on said hub, a pawl-carrier rotatably engaged with said hub, and having a laterally-projecting shank, a gravity-pawl mounted on said carrier, a stop-pawl mounted on said frame, a draft-line detachably connected by one end with said drum and detachably engaged with said swing-hanger at the opposite end, and a fall-block on said line carrying a hook.

3. A grubbing-machine, comprising a frame consisting of oppositely-disposed upwardly-converging legs separated at the upper ends and composed of timber, and cross-pieces secured to said legs, a horizontally-disposed pivot-pin removably seated in said leg adjacent the apex of the frame, a steadier-leg consisting of a round bar of greater length than the length of said frame and pivotally engaged with said pivot-pin between said legs, a swing-hanger pending from said pin, a me-

tallic shoe on the lower end of each of said legs comprising a sole-plate having a downwardly-projecting barb and an upwardly-extending flange fitting about the leg, a drum rotatably mounted on the upper portion of the frame between said legs and having a hub at one end, a ratchet-wheel secured on said hub, a pawl-carrier consisting of oppositely-disposed annular parts rotatably seated on said hub and embracing the ratchet and having laterally-extending stems, a shank secured to said stems, a gravity-pawl mounted on said carrier, a stop-pawl mounted on said frame, a draft-line detachably connected at one end with said drum and detachably engaged at the opposite end with said swing-hanger, and a fall-block on said line carrying a hook.

Signed at Seattle, Wáshington, this 2d day of April, 1903.

GUSTAV OLSEN.

Witnesses:
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