S. G. MILTON.

PULLING MACHINE.

APPLICATION FILED APR. 22, 1908.

963,237. Patented July 5, 1910.

3 SHEETS—SHEET 1.

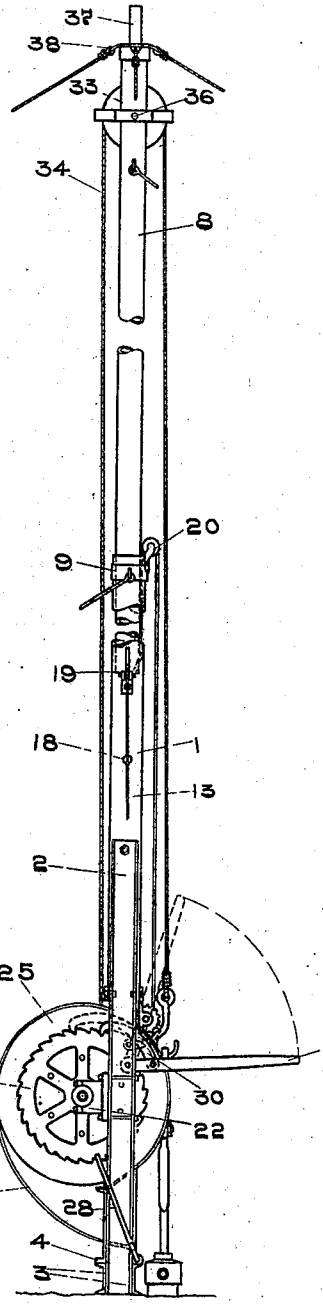

FIG. 1.

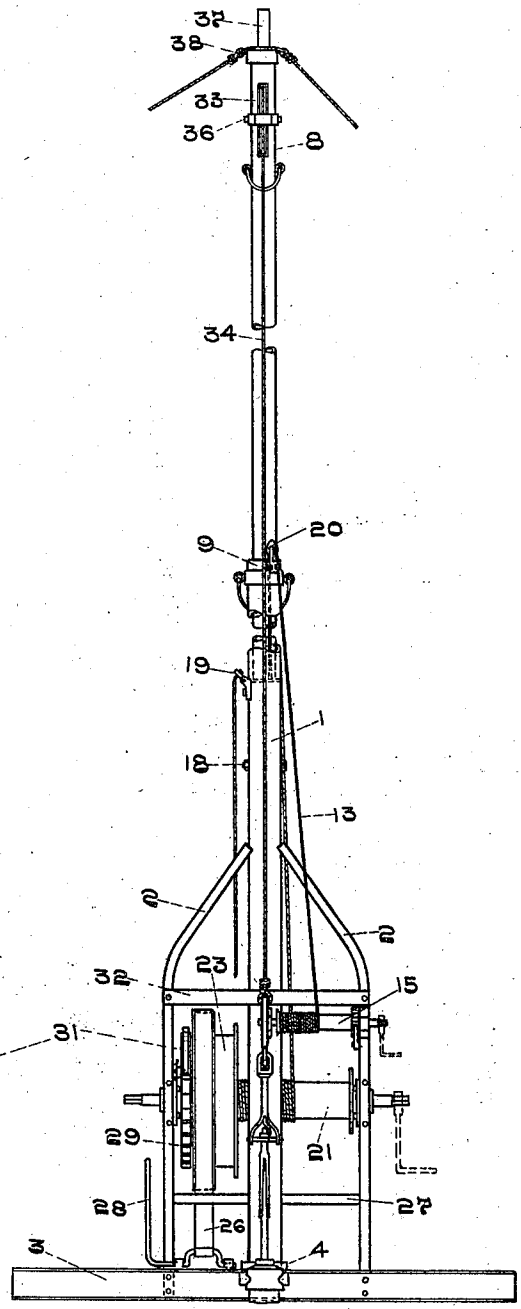

FIG. 2.

WITNESSES

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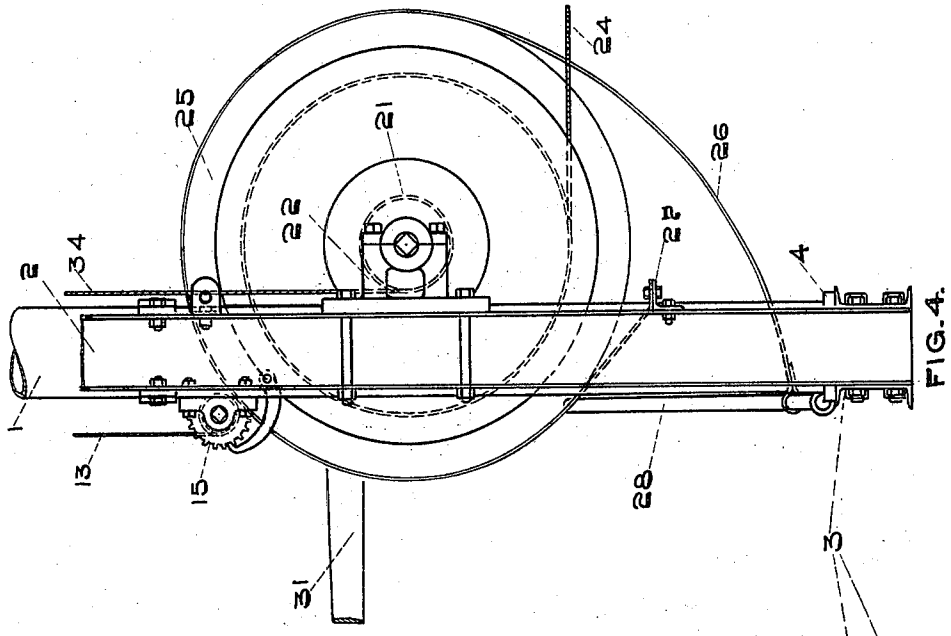

FIG. 4.

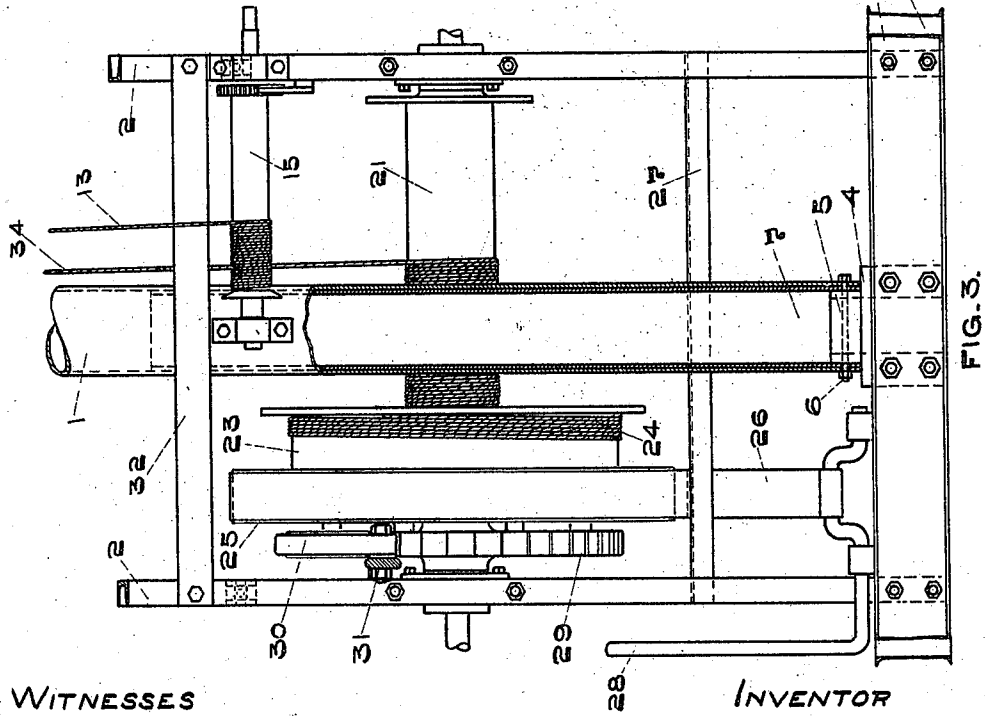

FIG. 3.

WITNESSES

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3 SHEETS—SHEET 3.

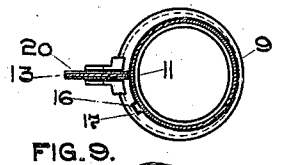

FIG. 9.

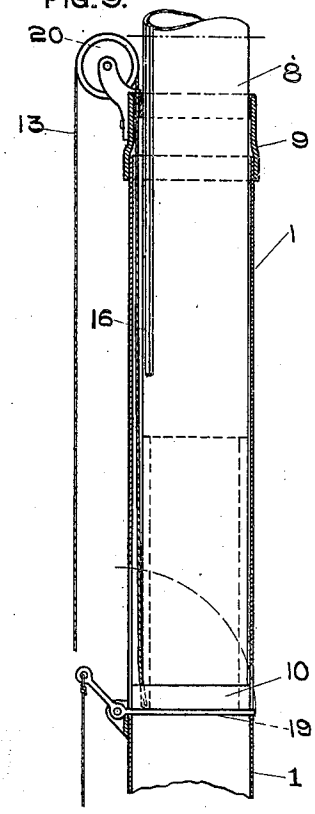

FIG. 6.

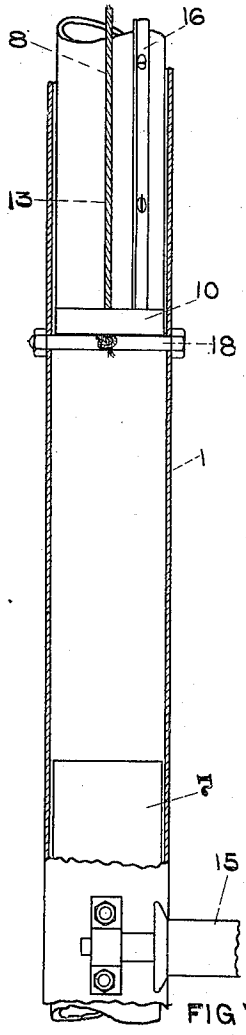

FIG. 7.

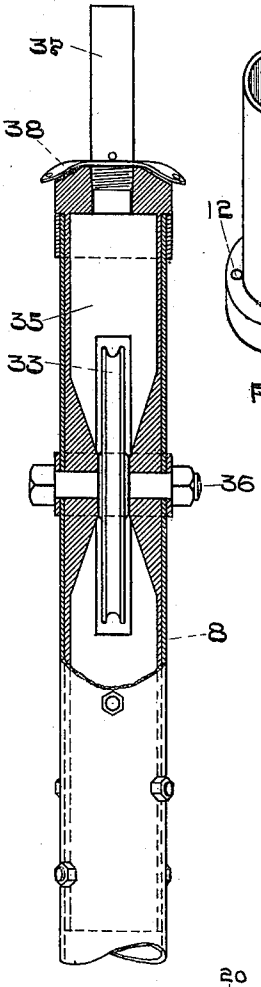

FIG. 8.

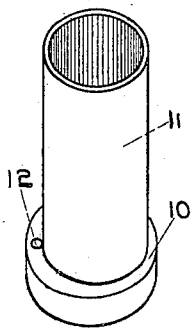

FIG. 10.

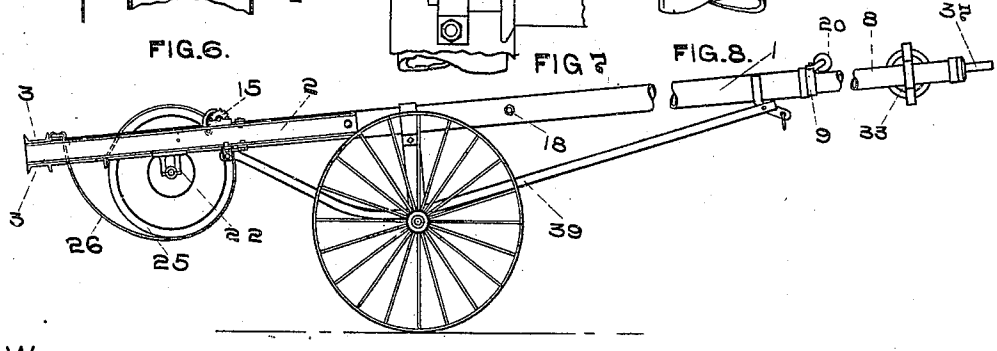

FIG. 5.

WITNESSES

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Thos. C. Thomgate

INVENTOR

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THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SENECA G. MILTON, OF FRANKLIN, PENNSYLVANIA.

PULLING-MACHINE.

963,237. Specification of Letters Patent. Patented July 5, 1910.

Application filed April 22, 1908. Serial No. 428,667.

To all whom it may concern:

Be it known that I, SENECA G. MILTON, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Pulling-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

The object, construction and operation of my invention are herein fully set forth, reference being had to the accompanying drawings which form a part hereof and in which:—

Figure 1 is a side elevation of my improved pulling machine. Fig. 2 is a front elevation thereof. Fig. 3 is an enlarged, front elevation of the base and lower portion of my machine. Fig. 4 is a side elevation of Fig. 3. Fig. 5 is a side elevation of my machine in the portable position. Figs. 6, 7, 8, 9 and 10 are details.

The object of my invention is to provide a machine especially for use around oil wells, for the purpose of pulling rods, tubing, etc., but it may be used for any purpose where a gin-pole may be needed.

My improved pulling machine consists essentially of a tubular mast, composed of a stationary and a telescoping section, each of which sections are suitably reinforced, as will be hereinafter pointed out; a suitable steel frame by means of which said mast is supported and upon which a suitable winding drum is mounted, also an auxiliary drum by means of which the telescoping section of the mast is raised and lowered.

My invention resides especially in the details of construction which I employ, which details will be particularly described in the specification and concisely defined in the claims.

The construction of my improved pulling machine is substantially as follows: The stationary section 1 of the tubular mast, is rigidly mounted in a frame which is composed of the upright side-pieces 2, 2, which, preferably, are steel channels, positioned upon opposite sides of said mast section. Said side pieces are attached together at the lower end by a suitable base composed of the channels 3, 3. Between said channels 3, and intermediate the uprights, 2, 2, is securely attached a foot-block 4 having a suitable tenon 5 which enters the lower portion of the mast 1: Said mast is secured to said tenon by means of the bolt 6. The lower portion of mast 1 is preferably reinforced by placing inside of same a piece of casing 7 which sits closely within the same. The upper end of each of the side pieces 2, 2, converge or are carried inward and their extremities are rigidly attached to the mast section 1 at opposite sides thereof, as shown in Fig. 2, thus forming a rigid and firm construction.

The manner in which the respective sections 1 and 8 of my machine are constructed and assembled, constitutes one of the particular features of my invention, which construction and assembly are substantially as follows:—Upon the upper end of section 1 is placed a cap 9,—a plan view of which is shown in Fig. 9—; in said cap is an eccentrically-located hole for the reception of the telescoping section 8. In the lower end of said section 8, is placed a sleeve,—Fig. 10—having an eccentric, annular head 10 upon one end thereof. The tubular portion 11 of said sleeve is inserted in the lower end of section 8 of the mast, in which it fits closely. The outside diameter of head 10 nearly equals the inside diameter of mast 1, and fits closely therein, and is free to move longitudinally in said section 1.

By reason of the eccentric construction above set forth, the space between the periphery of section 8 and the inner wall of section 1, is considerably greater at one point than it is at the point opposite thereto,—as will be clearly seen by a reference to Fig. 9. Through the wider portion of head 10,—as defined by the eccentricity thereof—I drill a hole 12 in which is secured one end of a rope or wire cable 13, which is positioned in the wider portion of the space aforesaid, and passes upward over pulley 20 thence down to the auxiliary drum 15, around which said cable is wound and by means of which mast section 8 is raised and lowered.

It is desirable to prevent section 8 from turning, and for this purpose I attach to the periphery thereof a longitudinally-disposed key or feather 16, and in cap 9 I form a seat 17 through which said key is free to slide; this construction effectually prevents the rotation of section 8. When section 8 is telescoped within section 1 of the mast, the lower end of said section 8 rests upon the upper end of the reinforcing section 7, and a bolt 18 is passed through both of said sec-

tions for the purpose of securing section 8 in the telescoped position, when the pulling machine is being moved from place to place. Bolt 18 is also adapted to perform the office of supporting section 8 in a partially elevated position, as shown in Fig. 7, in which case, the lower end of section 8 rests upon said bolt: When said section 8 is fully elevated it rests upon the latch 19, as shown in Fig. 6.

The main hoisting drum is mounted in suitable bearings 22, 22, which are attached respectively to the side pieces 2, 2 of the frame: Said drum is provided, approximate to one end thereof, with a larger power drum 23 around which the power cable 24 is wound, and to which power is applied for the purpose of operating the drum. A brake-head 25 is also provided upon drum 21, around which a brake-band 26 passes, one end of said band being attached to the cross-piece 27 and the other end thereof to the lever 28, by means of which the band is operated and caused to grip the brake head 25 for the purpose of stopping and holding the drum 21. A ratchet-wheel 29 is rigidly mounted upon the drum shaft, and a pawl 30, which is attached to lever 31, is adapted to engage the teeth upon said wheel, by which means drum 21 may be operated when it is desired to raise or lower, for a short distance only, the weight which is attached to the hoisting rope 34. If it is desired to hold the drum by means of the ratchet-wheel and lever instead of by the brake, said lever is adapted to stop and rest against the cross piece 32, as shown in dotted lines in Fig. 1. Section 8 of the mast is provided at its upper end with a pulley-wheel or sheave 33, over which the hoisting rope 34 passes from the drum 21, thence down to the object to be raised.

Sheave 33 is mounted in mast 8 in the following manner: I construct a sleeve 35, and adapt the same to fit closely inside the upper end of said section 8, and in opposite sides of said sleeve are formed the rectangular slots for the reception of the sheave 33; the mast section is also provided with corresponding, registering slots, for the same purpose; sleeve 35 is provided with a reinforced bearing for the journal of said sheave, which is preferably a bolt 36, which passes through both the mast and sleeve. Sleeve 35 preferably extends for some distance into section 8 of the mast, and thus materially reinforces the same. Said sleeve is provided at the top with a head into which is rigidly secured a smaller section of pipe 37, which is adapted to enter the ring of a neck-yoke, when the machine is being moved. Suitable eyes 38 are provided at the top of section 8 for the attachment of guy ropes.

I provide a suitable carriage 39 by means of which my pulling machine may be easily and conveniently transported from place to place. This carriage, however, may be of any suitable construction, and is not a particular feature of my invention, therefore, the same need not be here described in detail.

What I claim and desire to secure by Letters Patent is:

1. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, a smaller, extensible mast section telescoping within the aforesaid section and positioned eccentrically therein, means whereby said eccentricity is maintained, means whereby said telescoping section is raised, and means for supporting the same in the raised position.

2. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, a smaller section telescoping within said mast section and positioned eccentrically therein, means whereby said eccentricity is maintained, means whereby said telescoping section is prevented from turning, a cable attached at one end to the lower portion of said telescoping section and positioned in the wider portion of the space between the walls of said sections as defined by the eccentricity thereof, thence passing out through the top of said first mentioned section and adapted to the purpose of raising said telescoping section.

3. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, an extensible mast section telescoping within the aforesaid section and eccentrically located therein, means upon the lower end of said extensible section for maintaining said eccentricity, a cap attached to the upper end of said first mentioned section, there being an eccentric opening in said cap adapted to the slidable reception of said extensible section and for the maintenance of said eccentricity, means for raising said extensible section, and means for supporting same in a raised position.

4. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section extending through said frame, a smaller mast section telescoping within the aforesaid section, and positioned eccentrically therein, means whereby said eccentricity is maintained, means whereby said telescoping section is raised and means for supporting said section in a raised position.

5. In a pulling machine for the purpose set forth, the combination with a tubular mast section of a supporting frame therefor consisting of side pieces composed of structural steel channels positioned upon opposite sides of the lower portion of said mast

section, a base composed of structural steel channels which are positioned transversely to said side pieces and unite same at the lower end thereof, a foot-block rigidly attached to the lower end of said mast section and to said base intermediate said side pieces, the upper end of said side pieces being converged and rigidly secured at their respective upper extremities to said mast section.

6. In a pulling machine for the purpose set forth, a mast-supporting frame composed of structural steel elements, in combination with a tubular mast section extending through said frame and rigidly attached thereto at several points, the lower portion of said mast being provided with an interior reinforcing member.

7. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, and an extensible mast section telescoping within the aforesaid section and positioned eccentrically therein, a reinforcing member located upon the interior of said telescoping member approximate to the upper end thereof, a sheave mounted in said reinforcing member, means whereby said telescoping member is raised and means for supporting same in a raised position.

8. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, a smaller mast section telescoping within the aforesaid section and positioned eccentrically therein, means for securing said telescoping section in the telescoped position, said last-mentioned means being also adapted as means for securing said telescoping section in a semi-extended position.

9. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast-section extending therethrough, a hoisting drum revolubly mounted upon said frame, a ratchet-wheel rigidly attached to said drum, a lever positioned approximate to said ratchet-wheel and having one end thereof swingingly attached to said frame, a pawl mounted upon said lever and adapted to engage said ratchet for the purpose specified.

10. In a pulling machine for the purpose set forth, the combination of a mast-supporting frame composed of structural steel elements, a tubular mast-section extending through said frame and rigidly attached thereto at several points, a drum revolubly mounted upon said frame, a ratchet-wheel rigidly affixed to said drum, a lever having one end thereof pivoted to said frame approximate to said ratchet, means upon said lever adapted to engage said ratchet for the purpose of operating said drum, and a brake adapted to arrest the movement of said drum.

11. In a pulling machine for the purpose set forth, the combination with a supporting frame of a tubular mast extending through said frame and an extensible mast section telescoping within said first mentioned section and positioned eccentrically therein, there being means upon the interior of said telescoping section reinforcing the same.

12. In a pulling machine for the purpose set forth, the combination of a supporting frame, a tubular mast section secured therein, a smaller section telescoping within said mast section and positioned eccentrically therein, means whereby said eccentricity is maintained, means whereby said telescoping section is prevented from turning, a cable attached at one end to the lower portion of said telescoping section and positioned in the wider portion of the space between the walls of said sections as defined by the eccentricity thereof, thence passing out through the top of said first mentioned section, and adapted to the purpose of raising and lowering said telescoping section, a hoisting drum mounted upon said supporting frame and adapted to the reception and operation of a hoisting cable, and means for operating said drum.

13. In a pulling machine for the purpose set forth, the combination with a supporting frame of a tubular mast section extending through said frame, an extensible mast section telescoping within said first-mentioned section and positioned eccentrically therein, and means at the upper end of said telescoping section adapted for the attachment of guy ropes.

14. In a pulling machine for the purpose set forth, the combination with a supporting frame of a tubular mast section extending through said frame, an extensible mast section telescoping within said first-mentioned section and positioned eccentrically therein, a sheave secured in the upper end of said extensible section, and means at the upper end of said extensible section for the attachment of guy ropes.

15. In a pulling machine for the purpose set forth, the combination with a supporting frame of a tubular mast section extending through said frame, an extensible section telescoping within said first-mentioned section and positioned eccentrically therein, a re-inforcing member secured within the upper end of said extensible member, a sheave mounted in said mast and positioned in said re-inforcing member, and means at the upper end of said extensible member for the attachment of guy ropes.

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

SENECA G. MILTON.

Witnesses:

GILSON SHAFFER,

EDWARD R. INMAN.