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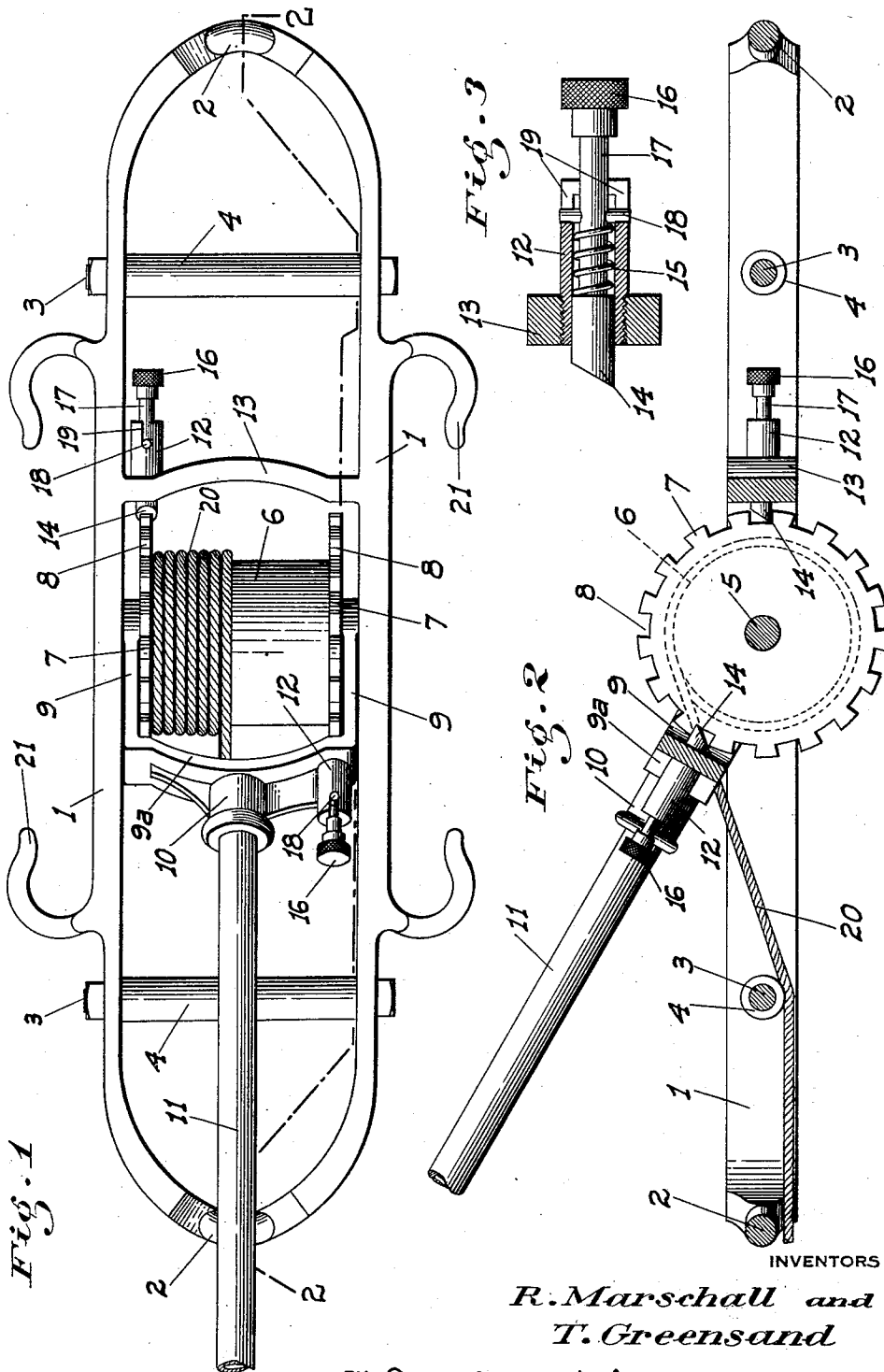
R. MARSHALL ET AL

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COMBINATION HOIST AND WIRE STRETCHER

Filed Nov. 26, 1929

2 Sheets-Sheet 1



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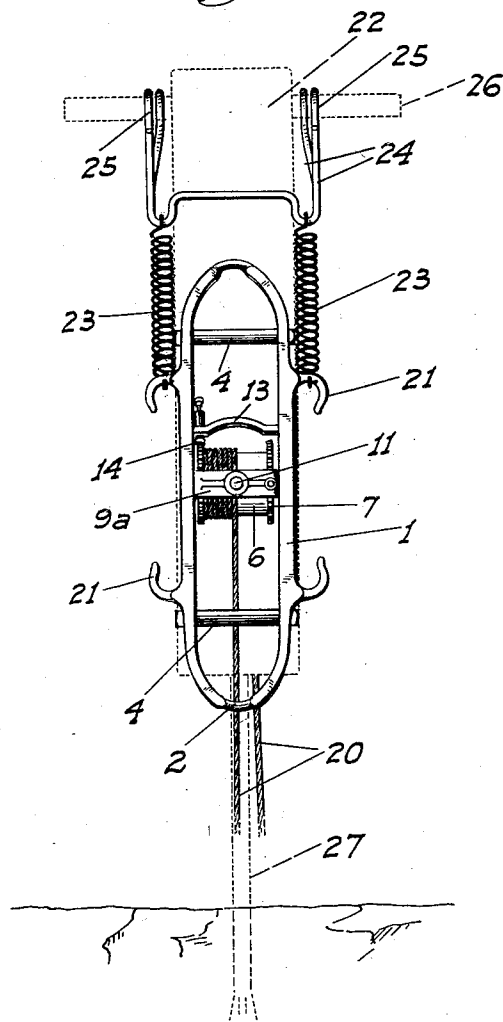
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Fig. 4



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COMBINATION HOIST AND WIRE STRETCHER

Application filed November 26, 1929. Serial No. 409,827.

This invention relates to a combination hoisting or pulling and wire stretching implement, one of the objects of the invention being to provide a device of this general character so constructed that any power or pressure from a few pounds to a ton or more can be easily exerted by the operator with a minimum of physical effort.

A further object is to provide an implement of this character whose range of service and utility is not limited to any particular field, but which besides serving as a means for stretching wires of different kinds will be of general use in machine shops, garages, warehouses, and like places in lifting loads of different kinds; on the road in aiding to pull cars out of the ditch or to right them if upset; in the building industry to line up walls etc., as well as in other lines of industry. The implement is also very useful as a labor saving device in connection with the pneumatic rock drills or jack hammers used in road work and dam building construction, since it can be readily attached to such a hammer so that the bit of the latter will be automatically lowered into the hole as the latter is formed without any attention on the part of the operator being necessary for some time.

A single operator may therefore take care of a battery of such hammers, all working at the same time, when they are attached to their implements.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a front elevation of our improved implement.

Fig. 2 is a longitudinal section of the same taken substantially on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged longitudinal section of a reversible ratchet or pawl.

Fig. 4 is a front elevation of the implement as mounted in connection with a jack hammer.

Referring now more particularly to the characters of reference on the drawings, the implement comprises a continuous frame having rigid and spaced side members 1, which at their ends converge to form relatively narrow portions 2 rounded in cross section which serve as cable guides or cleats to which the ends of cables may be attached. Intermediate their ends the side members are held spaced by bolts 3 about which tubular spacers 4 are disposed which also serve as cable guides or rollers. Turnable on a transverse spindle 5 mounted in the frame centrally between its ends is a cable drum 6 having side flanges 7 provided with substantially rectangular notches 8 all about the same. Also turnable on the spindle between the drum flanges and the sides 1 are the arms 9 of a yoke whose cross web 9a clears the drum a certain distance, and is provided with an outwardly projecting radially disposed socket 10 to removably receive a handle-bar 11 of any desirable length and which may be a solid member or a piece of pipe.

Transversely alined with the drum flanges are sleeves 12, one of which is mounted on the yoke web 9a and the other on a cross bar 13 provided with the frame a short distance from the drum. Slidable and turnable in each sleeve is a ratchet shaped pawl 14 to engage the corresponding flange notches, a spring 15 engaging the pawl yieldably holding the same thus engaged. The pawl is provided with a hand operating knob 16 disposed beyond the outer end of the sleeve, a stem 17 connecting said knob and pawl. The pawl is normally prevented from rotation in the sleeve by a cross pin 18 in the stem slidably engaging opposed slots 19 cut lengthwise in the sleeve from the outer end of the same. This arrangement causes the pawl to remain facing in any certain direction in which it has been once set, but enables the same to be reversed in position whenever desired by the operator. This may be done by pulling out on the knob until the pin clears the slots and then turning the knob and pawl through a half revolution.

tion before allowing the pin to again ride in the slots. The pawl will then be reversed in position and will exert a holding power on the drum to prevent rotation thereof in the opposite direction from that formerly permitted; the double functioning of the pawl being possible on account of the rectangular or parallel sided shape of the notches with which it engages.

A cable 20 is wound on the drum and fixed thereon at one end and extends thence about either one of the spacers 4 and then beyond the adjacent end of the implement to whatever member it may be desired to attach the cable and which may be either an anchor or the part to be pulled or lifted.

Opposed pairs of hooks 21 are formed on and project outwardly from the frame members 1 on opposite sides thereof in longitudinally spaced and symmetrical relation with the drum spindle, the hooks on the same side facing each other. These hooks are provided as additional means for attaching the part to be pulled, or anchor cables or similar members. The frame and the various parts mounted thereon being all symmetrically disposed relative to the drum, and the cable 20 being capable of extending in either direction from the drum, it is immaterial in which direction the device is placed relative to the part to be acted on, as will be evident.

In operation the cable is attached to the part to be pulled and the frame at its opposite end (or the adjacent hooks) is attached to the anchor cable or the like (or vice versa), and the drum is rotated to wind the cable thereon by reciprocating the bar 11 through its permissible or limited arc. Both pawls are set so that while the movable yoke pawl is causing the drum to rotate with the yoke in one direction, the relatively fixed pawl prevents retractive rotation of the drum when the yoke is retracted. A great pulling pressure may thus be easily placed on the cable 20, as will be obvious.

If it is desired at any time to permit the cable to pay out freely both pawls are withdrawn from their respective notches and the nobs are turned so that the pins rest on the outer ends of the sleeves, or said pawls may be reversed in position and allowed to reengage the notches, as previously explained. If it is desired to control the pay out, or slack off the cable, by means of the handle-bar, the relatively fixed pawl is first reversed without disturbing the yoke pawl so as to permit the yoke to turn with the retracting rotation of the drum; and then the fixed pawl is returned to its original position while the yoke pawl is released to enable the yoke to be turned about the drum to a new position, when the yoke pawl is again permitted to engage a notch. These movements or manipulations of the pawls are repeated until the cable is

perfectly slack or its tension has been reduced to the desired extent.

To more definitely illustrate one important use to which the device may be put, I have shown the same as mounted in connection with a pneumatic jack hammer or rock drill, as shown in Fig. 4. In this arrangement a pair of the devices are used, disposed on opposite sides of and at downwardly diverging angles to the body 22 of the drill. The cable 20 extends downwardly from the drum of each device to a suitable anchor means, while a pair of heavy tension springs 23 are connected at one end to those hooks 21 which are then disposed toward the upper end of the device. The upper ends of these springs are connected to the lower end of a substantially U-shaped and rigid bar 24 which at its upper ends is provided with hooks 25. These hooks engage the cross handle-bar 26 of the drill on opposite sides of the body, and the downward movement of these handles controls the feeding of the drill bit 27 of the tool.

In operation the cable is wound onto the drum until the springs have been stretched to a considerable extent. The springs then exert a constant pressure on the handles to cause the bit to be advanced as long as the springs are under tension, or so that said bit may advance at least several inches without another adjustment of the pulling devices and a consequent stretching of the springs being necessary. It is therefore possible for one man to control the operation of a battery of drills, since he only has to maintain the springs of the various control devices under tension, which he can easily and quickly do by a few movements of the drum rotating handle-bar of each such device.

In case more power is needed it can be obtained by a direct pressure on the handle. This can be increased to almost any degree by running the cable 20 through a single, double or other multiple block.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such details may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described our invention what we claim as new and useful and desire to secure by Letters Patent is:

1. A device for hoisting or like operations including a portable frame having spaced side members, a drum turnably mounted between said members intermediate their ends, a cable secured at one end to the drum and adapted to extend thence beyond either end of the frame for connection to a part to be pulled, means for rotating the drum to cause

the cable to be wound thereon, and opposed pairs of hooks projecting outwardly from the side members of the frame toward both ends thereof; the hooks on each side facing each other.

5 2. A device for hoisting or like operations including a portable frame, having spaced side members, a drum turnably mounted between said members centrally between their
10 ends, a cable secured at one end to the drum and adapted to extend thence beyond either end of the frame for connection to an anchor member, transversely spaced tension springs
15 extending lengthwise from the end of the frame opposite to the direction in which the cable extends, means connecting said springs at one end to the frame toward said end of the same, a bar to which the opposite ends of the springs are secured, and hooks on the
20 outer ends of said bar for engagement with the cross-handle of a jack-hammer drill.

In testimony whereof we affix our signatures.

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