No. 786,216. PATENTED MAR. 28, 1905.

W. H. HORNER.

WIRE STRINGER.

APPLICATION FILED JAN. 15, 1904.

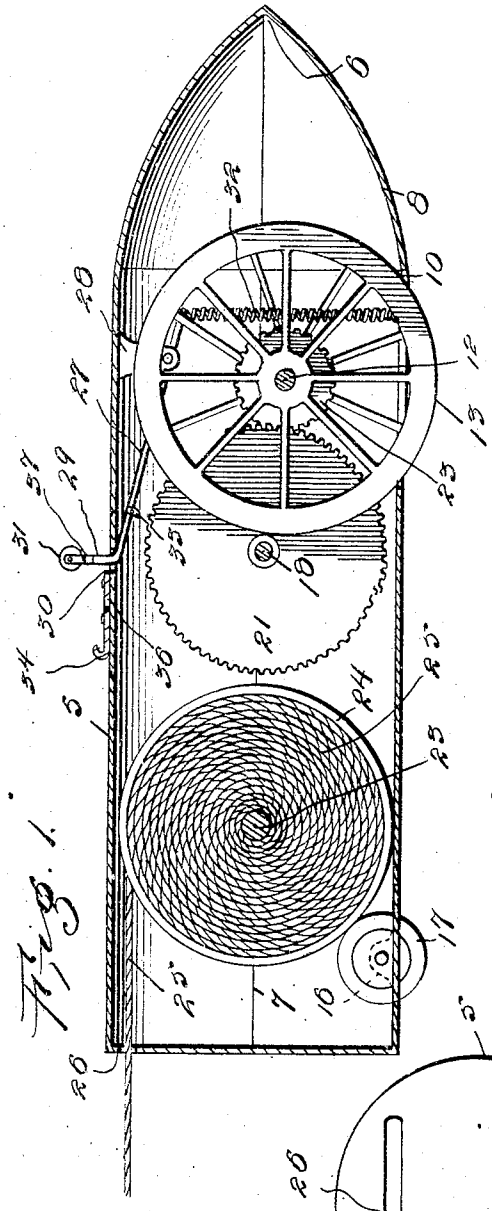


Fig. 1.

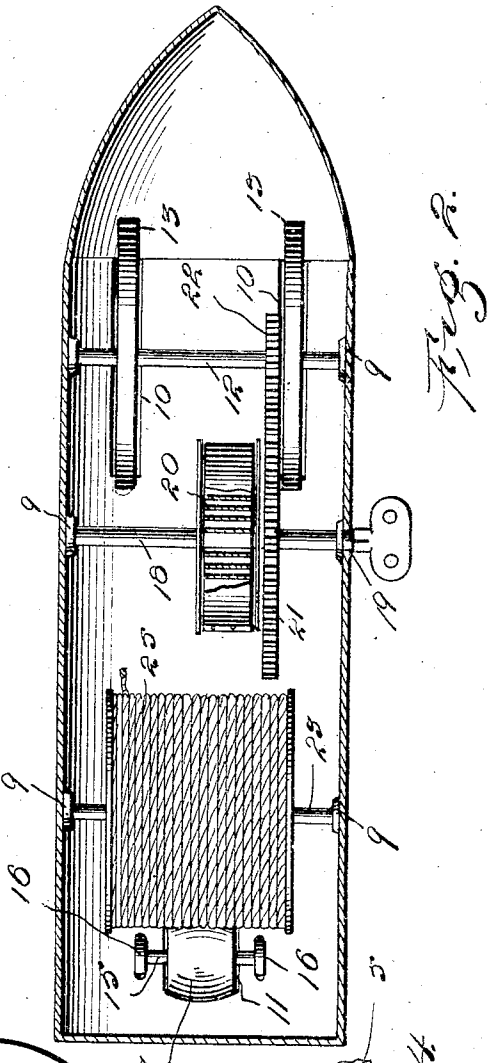


Fig. 2.

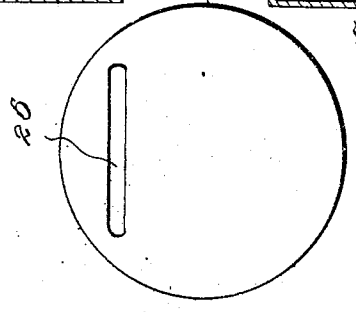


Fig. 3.

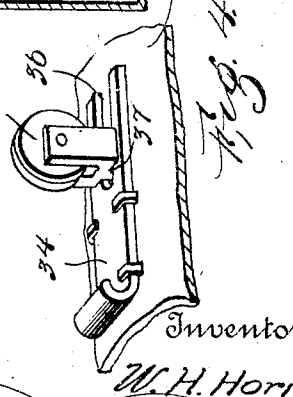


Fig. 4.

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UNITED STATES PATENT OFFICE.

WALTER H. HORNER, OF SEATTLE, WASHINGTON.

WIRE-STRINGER.

SPECIFICATION forming part of Letters Patent No. 786,216, dated March 28, 1905.

Application filed January 15, 1904. Serial No. 189,135.

To all whom it may concern:

Be it known that I, WALTER H. HORNER, a citizen of the United States, residing at Seattle, in the county of King, State of Washington, have invented certain new and useful Improvements in Wire-Stringers; 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 devices for stringing wires through conduits and similar passages, and has for its object to provide a device of this nature which will be simple and cheap of manufacture, which will be self-propelling, and which will be so arranged that the mechanism within the device may be stopped and started as desired.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation of the complete device. Fig. 2 is a longitudinal section of Fig. 1. Fig. 3 is a rear end view of Fig. 1, and Fig. 4 is a detail perspective view of the trolley.

Referring now to the drawings, the present invention comprises a cylindrical body 5, which is pointed at one of its ends, as shown at 6, so that the device is given what may be termed a "cartridge" shape. In the present invention the device is shown constructed of a strip of tin or similar material soldered together at its edges, as shown at 7, to form the cylindrical portion of the body, to which the pointed end portion 8 is soldered or otherwise secured. At opposite points upon the inner face of the body of the casing are secured blocks 9, having recesses therein for the reception of the ends of the spindles, which will be hereinafter described.

In the casing of the body 5 are a pair of parallel slots 10, adjacent to the ends 6 thereof, and adjacent to the rearward end there is a third slot 11. Above the slots 10, transversely of the casing, there is journaled a spindle 12, the ends of which are disposed in a pair of the blocks 9 mentioned above, and to this spindle there are attached a pair of wheels 13, which may be provided with rubber or other suitable tires, if desired, and which are of a size to project through the slots 10, and in the rearward end of the casing there is journaled a similar spindle 15, the ends of which are disposed in bearing-blocks 16, attached to the inner face of the casing. This spindle carries a wheel 17, which projects through the slot 11, as shown. Rearwardly of the spindle 12 there is journaled a third spindle 18, having its ends disposed in a pair of the blocks 9 mentioned above, one of which has its opening continued therethrough and alining with an opening 19 in the side of the casing, and through this opening 19 one end of the spindle 18 projects and is provided with an angular portion for the reception of a winding-key.

Attached at one end to the spindle 18 is a coil-spring 20, the remaining end of which is secured to the inner face of the casing, and mounted upon the spindle 18 at one side of the spring there is a gear-wheel 21, which meshes with a smaller gear-wheel 22, carried by the spindle 12. It will thus be seen if the spring be wound upon the spindle 18 its tension will operate the spindle 12 through the medium of the gears 21 and 22 and will turn the wheels 13.

Between the spindles 15 and 18 there is disposed a spindle 23, which carries a reel 24, upon which is wound a cord or wire 25, which passes outwardly through a slot 26 in the rear end of the casing.

The entire device is of a size to easily enter a conduit, and in order to insure sufficient traction between the wheels 13 and the bottom thereof there is provided what may be termed a "trolley" 27. This trolley is journaled in a hanger 28, which is secured to the top of the casing, and has an angular end 29, which projects upwardly through a slot 30 in the top of the casing, and which has journaled in its end a wheel 31. To the opposite end of the trolley there is secured a helical spring 32, which is also secured to the bottom of the casing to hold the end 29 of the trolley normally projected through the slot. When the device is placed within a conduit, the wheel 31 under

tension of the spring 32 is forced against the top of the conduit, and sufficient traction is thus insured.

The trolley 27 besides its function mentioned above is also provided with means for stopping and starting the mechanism within the casing. As shown, there is pivoted to the trolley 27 a dog 33, which is beveled upon one of its sides and which is of a size to engage the teeth of the gear-wheel 21. It will thus be apparent that if sufficient pressure be placed upon the angular end 29 of the trolley the dog 33 will be forced downwardly until it engages the teeth of the gear-wheel and will prevent rotation of the gear-wheel in one direction, though permitting of its rotation in the opposite direction. In order to hold the trolley and dog in such position, a slide 34 is provided, which may be moved in guides 35, which are attached to the casing, and this slide has a slot 36 therein which embraces the angular end 29 of the trolley. The portions of the slide at the sides of the slot lie in grooves 37, as shown. In this position the dog 33 is held in engagement with the teeth of the gear-wheel, and the device is held against operation, although the spindle 18 may be revolved by means of the winding-key to wind the spring 20 thereon.

In operation the device is placed in a conduit and the free end of the cord 25 is attached to the end of the cable or wire to be drawn through the passage. The mechanism is then released and the device is allowed to pass through the conduit of the next manhole, when the cord is drawn through in any desired manner to place the cable or wire in position.

In practice modifications of the specific construction shown may be made, and any suitable materials and proportions may be used without departing from the spirit of the invention.

What is claimed is—

1. In a wire-stringer for use in conduits, the combination with a wheeled casing, of a motor disposed therein and connected with the wheels for operation thereof, a tension-arm pivoted on the casing and arranged to bear against the inner face of the conduit, means connected with the tension-arm for stopping the motor when the tension-arm is moved in one direction and flexible connections attached to the casing.

2. A wire-stringing device for use in conduits, comprising a self-propelled car, a tension-arm pivoted in the casing and adapted to bear at one end against the inner face of the conduit, means connected with the tension-arm to stop the propelling mechanism when the arm is moved upon its pivot, means for holding the arm at times in position to stop the propelling means, and flexible connections attached to the car.

3. In a wire-stringing device, the combination with a wheeled casing, of a motor disposed within the casing for operation of the wheels, a lever pivoted in the casing for movement into and out of position to engage the top of a conduit to hold the wheels against the bottom thereof, and means for holding the lever yieldably in such position, said lever having a projection arranged for engagement of the motor to stop the latter when the lever is moved against the action of the last-named means.

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

WALTER H. HORNER.

Witnesses:

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