(No Model.) 2 Sheets—Sheet 1.

M. BURT.

DEVICE ACTUATED BY PASSING TRAINS FOR PUMPING WATER, &c.

No. 456,535. Patented July 21, 1891.

Fig. 1.

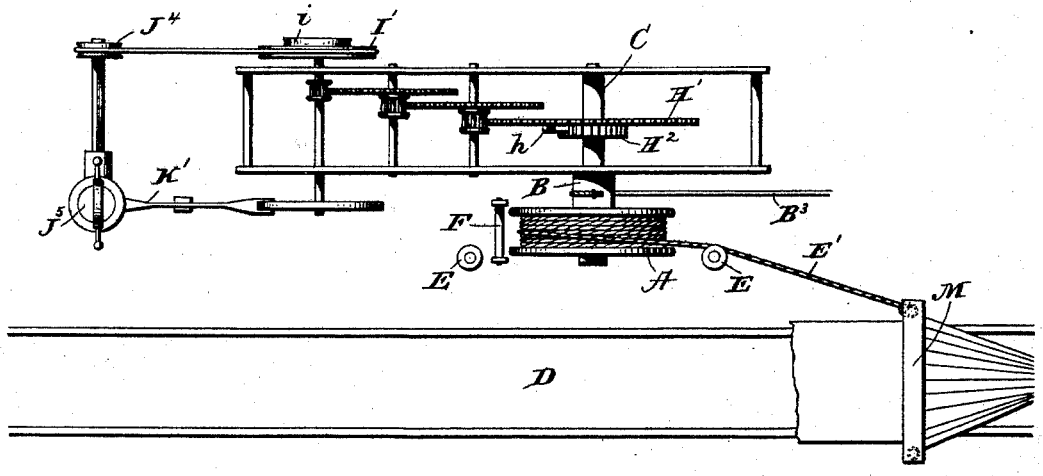
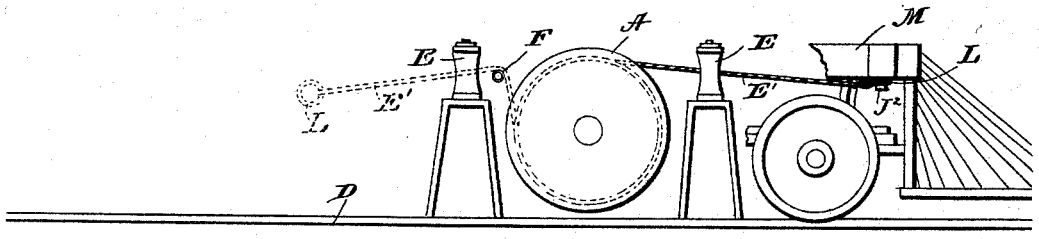


Fig. 2.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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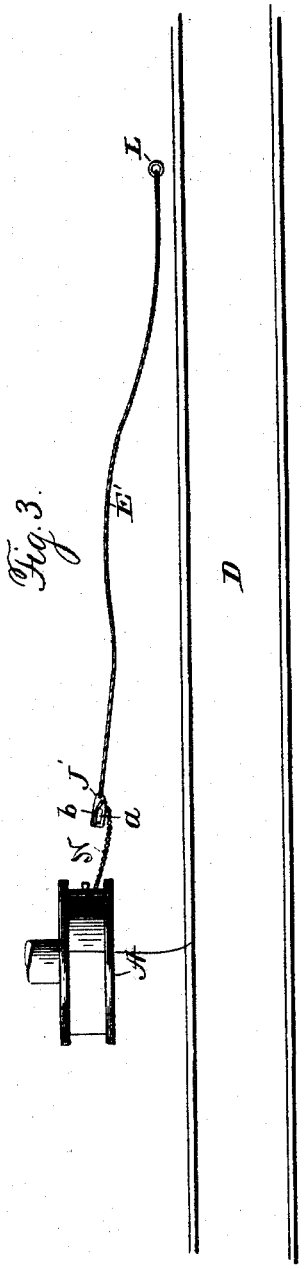

Fig. 3.

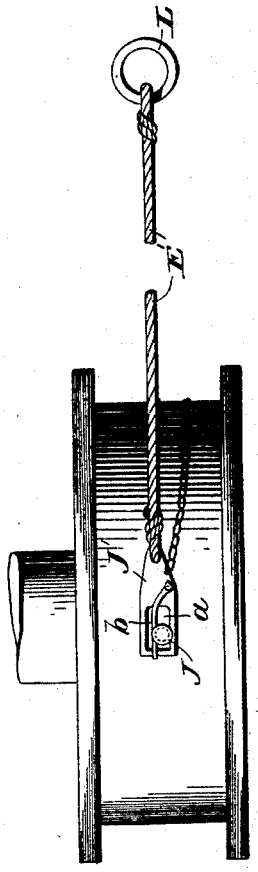

Fig. 4.

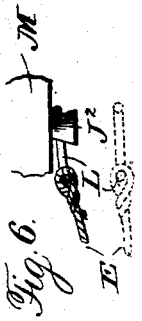

Fig. 6.

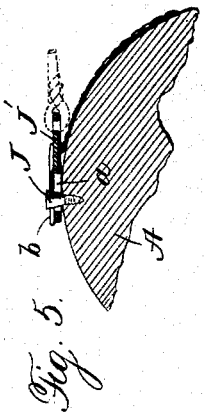

Fig. 5.

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UNITED STATES PATENT OFFICE.

MERRITT BURT, OF JACKSONVILLE, FLORIDA, ASSIGNOR TO THE RAILWAY WATER SUPPLY COMPANY, OF SAME PLACE.

DEVICE ACTUATED BY PASSING TRAINS FOR PUMPING WATER, &c.

SPECIFICATION forming part of Letters Patent No. 456,535, dated July 21, 1891.

Application filed April 4, 1891. Serial No. 387,643. (No model.)

To all whom it may concern:

Be it known that I, MERRITT BURT, of Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Devices Actuated by Passing Trains for Pumping Water, &c.; 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.

My invention relates to an improvement in devices adapted to be actuated by passing trains for pumping water or lifting heavy weights—such as water buckets or tanks, coal, &c.—and relates more particularly to devices adapted to be attached to a car or locomotive and be automatically released therefrom without stopping the car or train; and it consists in the parts and combinations of parts as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in plan showing my improved device applied to a pumping-plant. Fig. 2 is a view in side elevation of my improved apparatus, showing the operating-rope connected to a locomotive. Fig. 3 is a plan of the drum, showing the operating-rope thereon. Fig. 4 is an enlarged view in plan, showing the means for detachably securing the end of the operating-rope to the drum. Fig. 5 is a section of same, and Fig. 6 is a view showing the opposite end of the rope and the bell-crown pin on locomotive.

The present invention consists, primarily, in the operating-rope and the means employed for connecting it to the drum and to the locomotive, whereby it is automatically released from both at the proper time, and it is evident that it can be used for numerous purposes and with various arrangements of parts; but for the purposes of illustration I have shown it in connection with the pumping apparatus disclosed in United States Patent No. 301,420, granted July 1, 1884.

A represents a drum having side flanges, and preferably integral with a smaller drum B, located adjacent to and behind the drum A. Both drums are secured on a shaft C, supported in suitable bearings, and the outer or larger drum A is located preferably parallel with and adjacent to a section of railroad-track D.

Located on opposite sides of the drum A are the rollers E, suitably mounted to engage the rope E′, as it is unwound from and wound on the drum, and prevent it from leaving the drum, and to one side of the drum A is a horizontal roller F, over which the rope passes when being wound or unwound in one direction, the said horizontal roller being for the purpose of keeping the operating-rope well up from the ground. The rope E′ when being unwound by a train moving in one direction will leave the drum A at the top, as shown in full lines at the right of Fig. 2, and while being unwound from the opposite direction will leave the drum at the under side, as shown in dotted lines at the left of the same figure. In both instances, however, the unwinding of the rope operates to turn the drum in one direction, and the winding up of the rope on the drum turns it in the opposite direction.

The drum A is provided on its periphery with a bell-crown or tapering lug J, (clearly shown in Fig. 5,) adapted to be engaged by the catch-plate J′, secured to one end of the operating-rope E′. This catch-plate is provided with an elongated slot greater in width than the outer or larger end of lug J, and with a spring *b*, which latter normally rests across the slot and is secured at one end to said plate. This spring is sufficient to hold the catch-plate against displacement while the rope is being wound on the drum; but it will be seen at a glance that as soon as the rope has been uncoiled and is drawn taut the inclined surface of the lug J, acting against the spring, forces the latter laterally and permits the plate to leave the lug.

On the opposite end of the operating-rope E′ is a ring L, adapted to engage or be hooked over a bell-crowned or tapering lug J^2, (see Fig. 6,) carried, preferably, by the frame of the locomotive M. The operation of this part of the apparatus disclosed is as follows: The rope is first wound on the drum, enough slack being left at the end thereof carrying the ring L to enable the latter to be slipped or passed

over the lug J^2 on the locomotive. The ring is held in this position by an operator until the locomotive, by its movement away from the drum A, has taken up all the slack, when it is evident that the ring will be prevented by friction from leaving the lug J^2. As soon as rope E′ has been unwound the strain thereon causes the catch-plate J′ to leave the lug J. This causes a slack in the rope and of course relaxes the strain on the ring L, which at that instant is free to drop off from lug J^2. The strain on the rope and the friction of ring L on lug J^2 hold the ring on the lug. Hence it is evident that the instant the strain is relaxed the ring will drop off. In view of this the locomotive need not stop after running the length of the rope, as the rope will be automatically disengaged from the locomotive and from the drum at the proper time.

To prevent the end of the rope-carrying plate J′, after it has been disengaged from the drum, from falling on the track or under the passing train, I have provided a guard-chain N. (Shown clearly in Fig. 3.) This chain is attached at one end to the drum, near lug J, and at its other end to plate J′, and is of sufficient length to allow for the necessary slack after the plate leaves the lug.

The drum B can have thereon a rope B^3 for elevating a tank of water, or a bin or other receptacle containing coal. With such an arrangement it is evident that the act of lowering the vessel would rewind the rope E′ on the drum. Instead, however, of such an arrangement the rope can carry a weight which would be elevated by the passing train, and which would not only operate as it descended by gravity to rewind the rope on the drum, but also actuate the pumping mechanism here shown and now to be described.

H′ is a spur-gear, journaled on the shaft C, and provided with a pawl *h*, that engages the ratchet-wheel H^2, secured to the shaft C. The engagement of the pawl with the ratchet-wheel is such that the gear H′ is turned only in one direction—to wit., the direction given to the shaft C and attachments by the descending weight. When the said shaft is revolved in the opposite direction, as by a passing train, the gear H′, together with the entire train of gears, remains at rest. A belt from the pulley I′ drives the governor-pulley J^4 that actuates the governor J^5. The governor in turn actuates the lever K′, that is fulcrumed in the center, so that the right-hand end is a brake operating on the wheel *k*, and controls the motion of the gearing while the weight is descending.

A pump or other machine may be driven from the pulley *i* or from a crank or pulley applied to any of the shafts in the train. This train of gears may be increased, diminished, or modified according to circumstances, and as gearing and mechanism of this kind are well understood and as no invention is claimed on this part of the device, a further description is deemed unnecessary. Any of the ordinary ball governors would be suitable for controlling the motion, as aforesaid.

This apparatus is designed especially for pumping water for railway-stations, and is only operated by trains moving at a very slow motion.

It is evident that many slight changes may be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not confine myself to the exact construction herein shown and described, but reserve the right to make such slight alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a drum having a lug thereon, of an operating-rope having a slotted plate at one end for engagement with the lug on the drum, and a ring at its opposite end, the said ring adapted to engage a depending lug on a car or locomotive, the arrangement of parts being such that when the rope has been unwound from the drum the two ends thereof will be automatically released from the drum and car, respectively, substantially as set forth.

2. The combination, with a drum having a lug thereon, and means for turning the drum to wind up the operating-rope, of an operating-rope having a catch-plate at one end for detachably connecting the rope to the drum and a ring at its opposite end for engagement with a depending lug carried by a moving vehicle, substantially as set forth.

3. The combination, with a drum having a lug thereon, and means for turning the drum in one direction, of an actuating-rope having a slotted catch-plate at one end, a spring crossing said slot, and a ring at the opposite end of said rope, substantially as set forth.

4. The combination, with a drum having a lug thereon and means for turning the drum in one direction, two upright rollers located on opposite sides of the drum, and a horizontal roller located at one side thereof, of an actuating-rope having a catch-plate on one end for detachably connecting the rope to the lug on the drum and a ring on its opposite end, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MERRITT BURT.

Witnesses:
THOMAS P. DENHAM,
W. B. TURNBULL.