

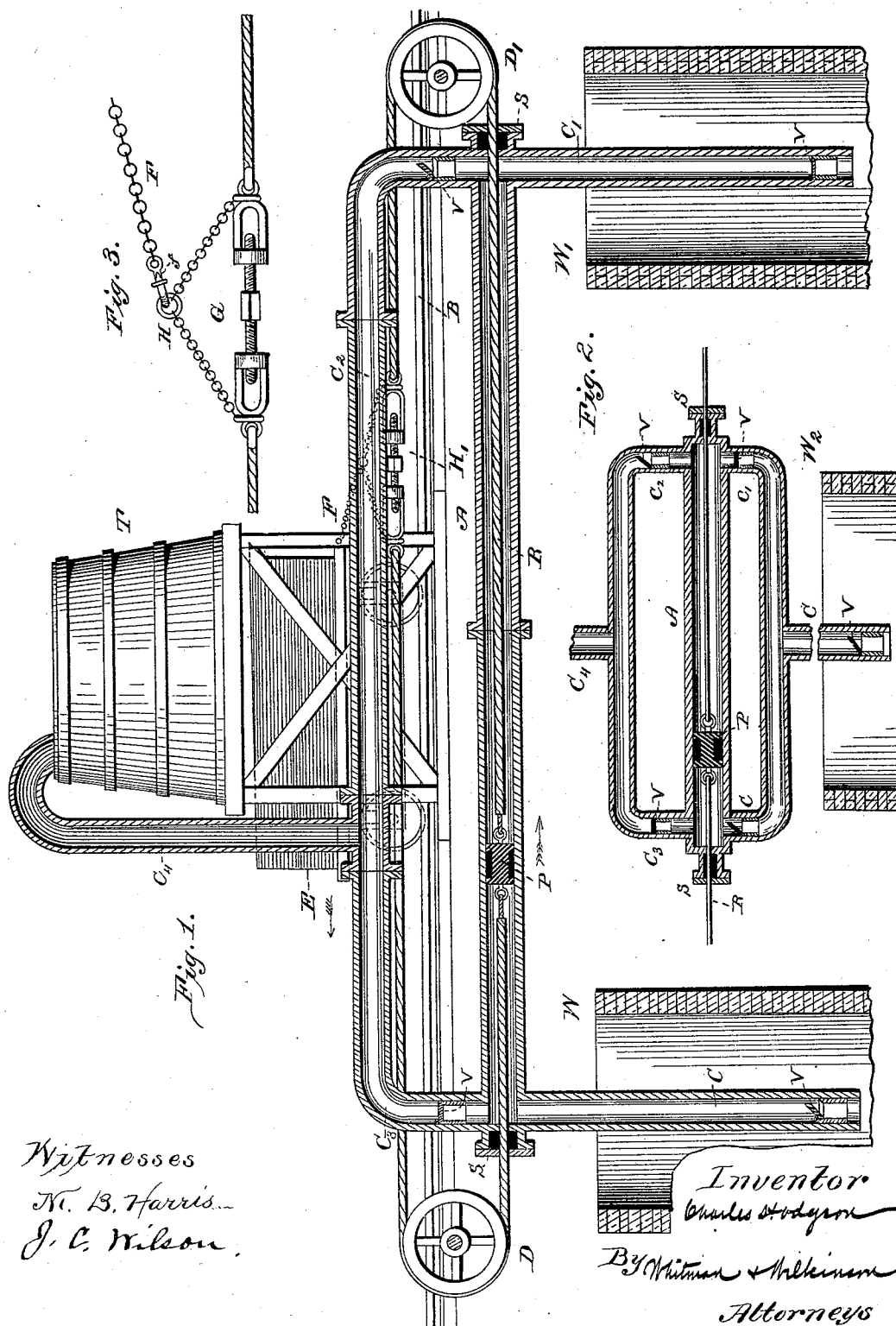
(No Model.)

C. HODGSON.

PUMP FOR RAISING WATER NEAR RAILROADS.

No. 464,361.

Patented Dec. 1, 1891.



UNITED STATES PATENT OFFICE.

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PUMP FOR RAISING WATER NEAR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 464,361, dated December 1, 1891.

Application filed February 18, 1891. Serial No. 382,002. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HODGSON, a British subject, residing at Jacksonville, in the county of Duval and State of Florida, have
5 invented certain new and useful Improvements in Pumps for Raising Water near Railroads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same.

My invention relates to pumping up water for filling tanks and for other purposes at railway-stations; and it consists of certain
15 novel devices whereby the locomotive moving on the rails furnishes the necessary power for pumping the water out of a well or underground reservoir into an overhead tank.

My invention consists of a long cylindrical
20 pump-barrel connected at each end to a suction-pipe leading to a well or underground reservoir, and also having at each end a discharge-pipe leading into the overhead tank. These various pipes are connected by suitable
25 lifting-valves, all opening upward. The long cylinder has a piston connected to an endless wire rope, which forms the piston-rod, and the pump is driven by the moving locomotive grappling the upper part of this end-
30 less wire piston-rod.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters.

Figure 1 represents a sectional view, partly
35 in profile, of one form of my device when two wells or underground reservoirs are used. Fig. 2 represents a modification of my device where only one reservoir is employed. Fig. 3 represents one method of connecting the
40 ends of the wire rope together and to a car.

W, W', and W² represent wells or underground reservoirs, and T the overhead tank.

A represents the pump-barrel, preferably laid horizontally beside the railroad B in a
45 trench at a somewhat lower level than the rails. This pump-barrel may be of any required dimensions, preferably from twelve to sixteen inches in diameter and from thirty to forty feet in length or upward, according as
50 it be desired to pump the water required by

several short movements of the locomotive or all at one long stroke as the locomotive is leaving the tank.

V V V represent the various valves, all of which open upward and close tightly at the
55 first downward pressure. The action of these valves will be apparent when we consider the motion of the piston P alternately from end to end of the pump-barrel. The said piston P fits snugly in the long pump-barrel and is
60 secured to the wire rope R, which thus forms a flexible piston-rod. The wire rope is "sewed" with hemp and passes through stuffing-boxes S at each end of the pump-barrel. This wire rope goes over sheaves or drums D
65 and D', and the two ends are connected by a turn-buckle or some other adjustable device at H', a point on the wire farthest removed from P. This turn-buckle not only furnishes
70 a means for adjusting the strain on the wire rope, which should always be kept taut, but also offers a convenient irregularity in the wire rope for grappling by the locomotive. This spot corresponding to the end of the piston-rod is also the proper place for attaching
75 the motive power.

E represents the locomotive-tender, from which the wire rope R is grappled or hooked on in any convenient way. I have shown a chain F, secured to the tender and securing
80 with a slip-hook f to the chain-bridle G at H; but this connection might be made in a number of ways. The attachment at H should preferably be made self-detaching at each end of the stroke of the piston, so that the engine,
85 having started from the tank, need not stop.

The operation of my device is as follows: The locomotive having grappled R at H is moving in the direction shown by the arrow. The piston P is moving in the opposite direc-
90 tion, closing the valves in C' and C³ and forcing the water before it up the pipes C² and C⁴ into the tank T. A vacuum is created behind the piston, closing the valve in C³ and sucking water up through C to fill the pump-
95 barrel behind the piston. It will be seen that as soon as the motion of P is stopped all the valves will close and the piston will remain full of water. When P has reached one end of its stroke, a car going in the opposite direc-
100

tion may perform the reverse stroke; but the same result may be effected by running the car backward and forward a number of times.

In Fig. 1 I have shown two reservoirs, one at each end of the pump-barrel, which shortens considerably the length of the pipe connections; but one reservoir will answer quite as well. The size of the various pipes may be equal to or less than the pump-barrel, as may be preferred.

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

1. In a pump for raising water near a railroad, the combination, with a pump-barrel connected to a reservoir, of a piston fitting in said barrel, a wire rope connected to both ends of said piston and forming a flexible piston-rod, and means for connecting said rope to a car on said railroad, substantially as described.

2. In a pump for raising water near a railroad, the combination, with a pump-barrel connected to a reservoir and discharging into a tank, of a piston fitting in said barrel, a wire rope connected to both ends of said piston, running over sheaves or drums, and forming an endless flexible piston-rod, and means for connecting said rope to a car on said railroad, substantially as described.

3. In a pump for raising water near a railroad, the combination, with a pump-barrel connected to a reservoir and discharging into a tank, of a piston fitting in said barrel, two wire ropes under tension, each secured at one end to the said piston, passing through stuffing-boxes in the opposite ends of said pump-barrel, running over drums, and secured together at their opposite ends with a turnbuckle, and means for connecting said rope to a car on said railroad, substantially as described.

4. In a pump for raising water near a railroad, the combination of the pump-barrel A, piston P, wire rope R, drums D and D', and pipes C, C', C², and C³, having valves V opening upward, substantially as described.

5. In a pump for raising water near a railroad, the combination of the pump-barrel A, piston P, wire rope R, stuffing-boxes S, turnbuckle H, drums D and D', and pipes C, C', C², and C³, having valves V opening upward, substantially as described.

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

CHARLES HODGSON.

Witnesses:

GEO. M. OSBORN,
C. M. ROBERT.