

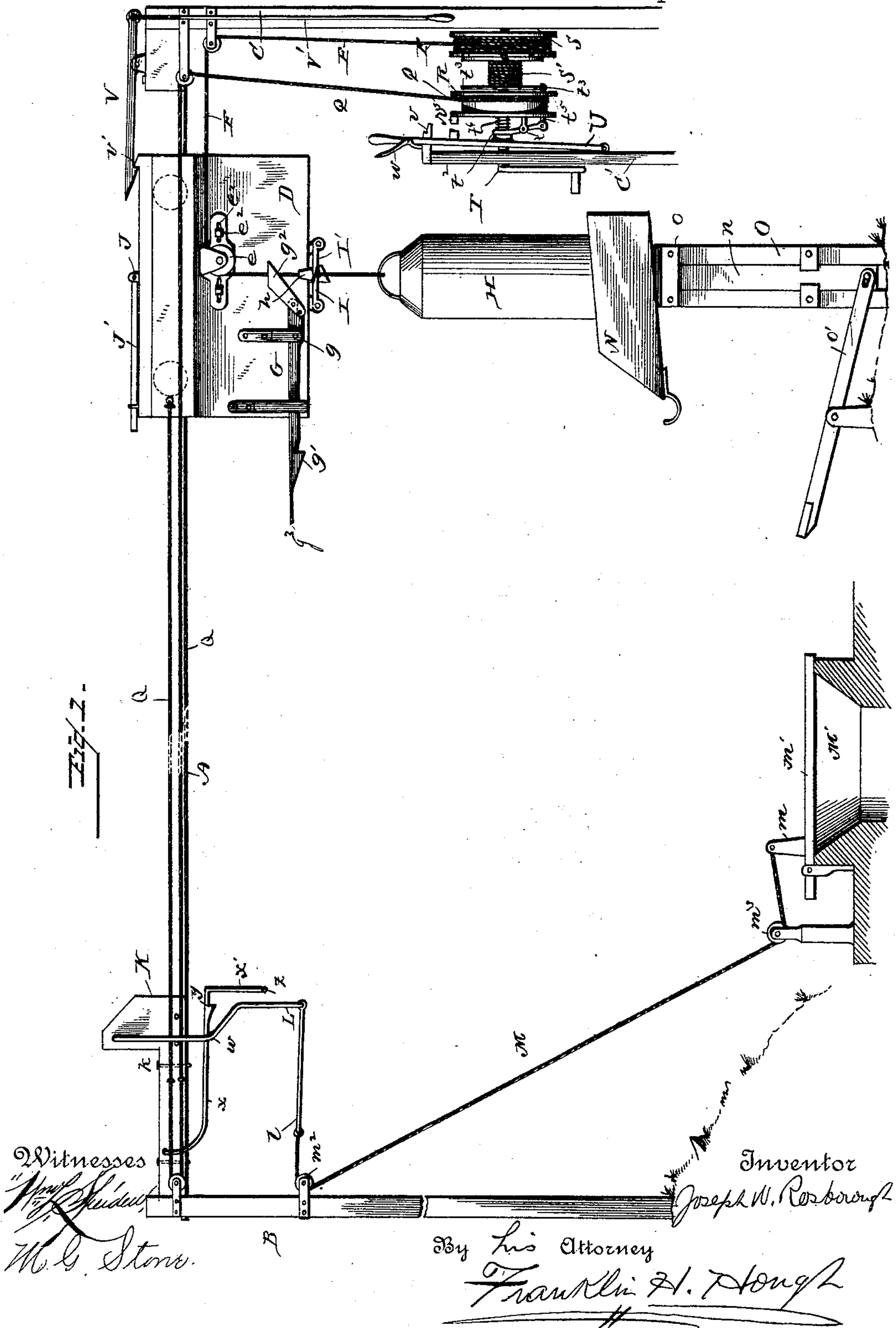
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3 Sheets—Sheet 1.

J. W. ROSBOROUGH.  
WATER ELEVATOR AND CARRIER.

No. 437,246.

Patented Sept. 30, 1890.



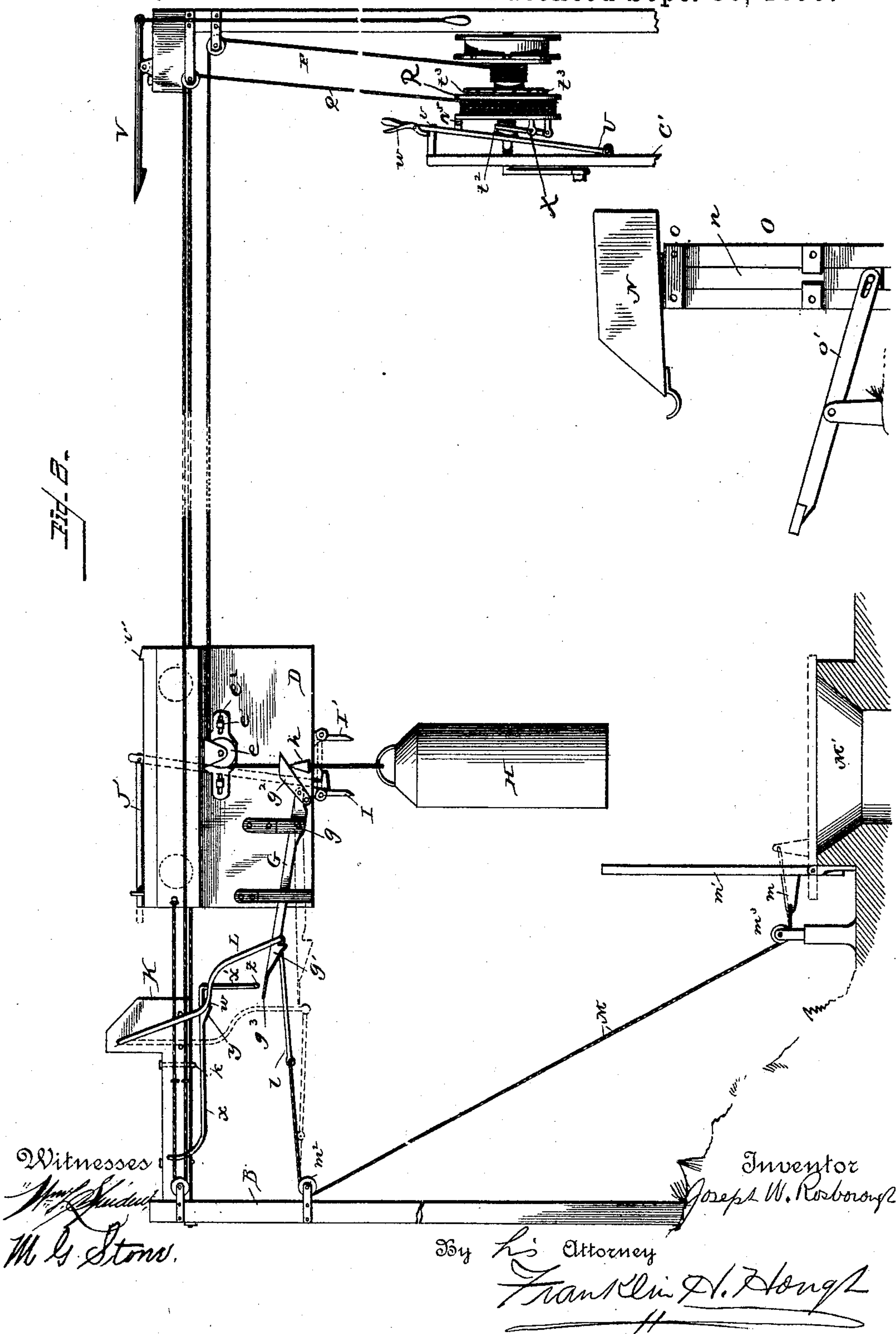
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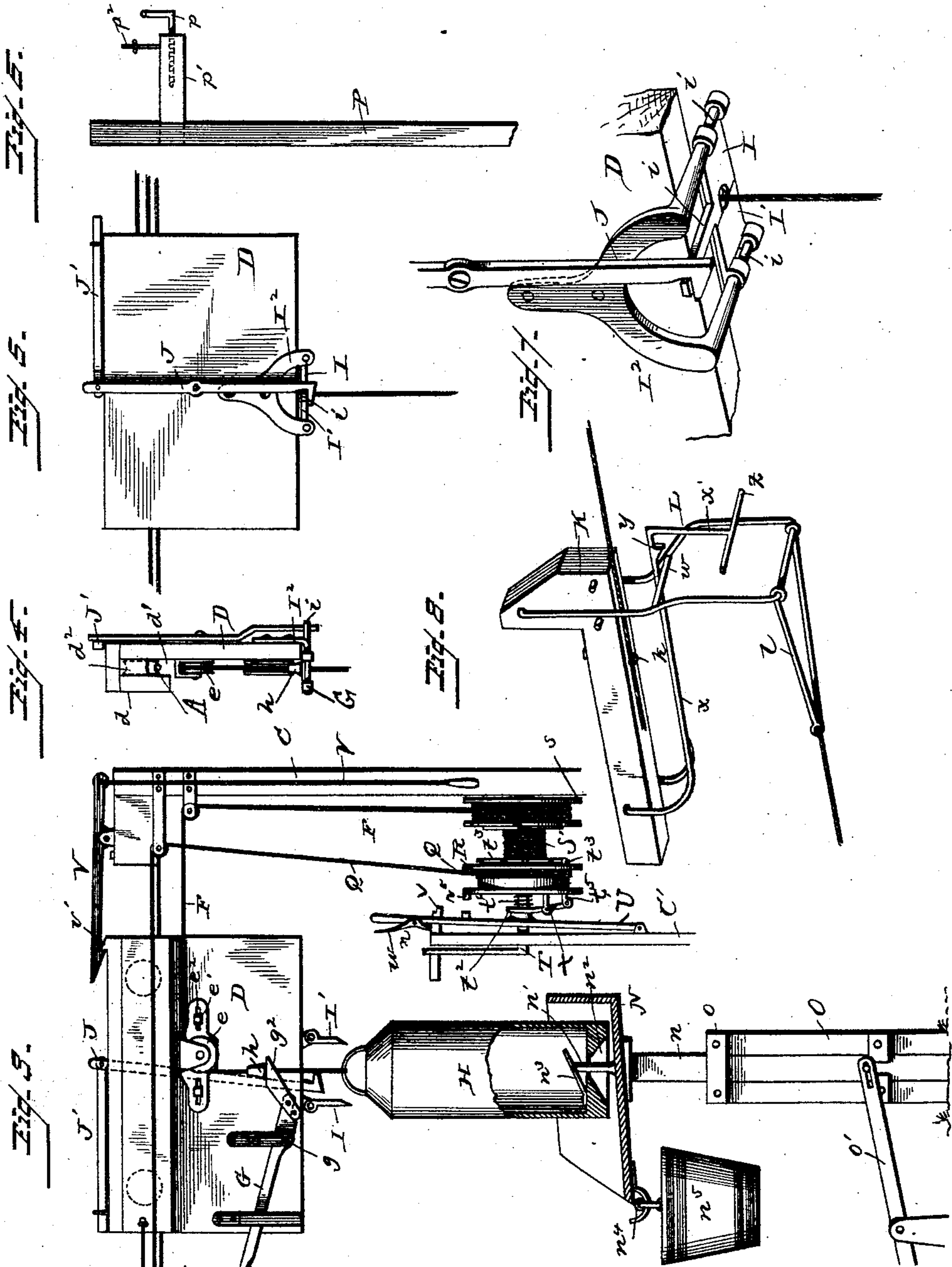
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Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSEPH W. ROSBOROUGH, OF NORMANDY, TENNESSEE.

## WATER ELEVATOR AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 437,246, dated September 30, 1890.

Application filed June 20, 1890. Serial No. 356,060. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH W. ROSBOROUGH, a citizen of the United States, residing at Normandy, in the county of Bedford and State of Tennessee, have invented certain new and useful Improvements in Water Elevators and Carriers; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to water elevators and carriers, and has for its object to provide a mechanism by means of which water may be readily and quickly drawn from a spring, well, or cistern located at a point distant from the operator, and which will quickly convey the water to the required place and empty the same into a pail or other vessel placed for its reception. The system embraces a suspended track-wire, which extends from the place of delivery, well, or cistern, a carriage mounted on the said track, a water bucket or carrier suspended from the carriage, and ropes connecting the water bucket or carrier and the carriage to suitable windlasses, whereby the carriage and bucket may be conveniently operated.

The improvement further consists in the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a side view of the invention, showing the carriage and water-bucket at the starting-point ready for a trip to the spring, well, or cistern. Fig. 2 is a view similar to Fig. 1, showing the carriage over the well or cistern, and the water bucket or carrier filled and ascending from the well and about to engage with and release the catch from the well-cover-operating devices. Fig. 3 is a detail view, partly in section, of the mechanism at the starting-point, showing the manner of emptying the bucket or water-carrier. Fig. 4 is an end view of the carriage. Fig. 5 is a rear view of the carriage. Fig. 6 is a side view of one of the intermediate track-supporting

posts. Fig. 7 is a detail perspective view of a portion of the carriage, showing the bucket-sustaining dogs and the lever for retaining the said dogs in an operative position. Fig. 8 is a detail perspective view of the stops and the bail which is connected with the well-cover.

The track wire or cable A is secured at its end to the posts B and C in any suitable manner. The post C is arranged at the starting-point or delivery end of the system, and the post B is located at the receiving end or near the spring, well, or cistern from which the water is taken.

The carriage D is provided at its upper side with an overhanging portion *d*, which receives the track-wire. Rollers *d*<sup>2</sup> are journaled in the overhanging portion *d* and project beyond the inner wall of the said channel *d*' to prevent contact thereof with the track-wire.

The pulley *e*, over which the hoisting-rope F passes, is journaled in the frame E, which is adjustably connected with the carriage, preferably by bolts *e*' passing through slots *e*<sup>2</sup> in the ends of the said frame E. By having the frame E adjustable with reference to the carriage the pulley *e* can be adjusted to adapt it to the grade of the track-wire. The catch G, pivoted to the carriage near its inner end at *g*, is provided with a hook *g*' at its outer end and with a pivoted dog *g*<sup>2</sup> at its inner end, that is adapted to tilt in an upward direction, but is limited in its downward movements with reference to the said catch G. The pivoted dog *g*<sup>2</sup> is forked at its free end, as shown in Fig. 4, and the hoisting-rope F passes between the members of the said forked end, whereby when the water bucket or carrier H is raised sufficiently high the stop *h* on the said hoisting-rope F will pass above the said dog *g*<sup>2</sup>, as shown in Fig. 2 of the drawings, when the weight of the filled bucket will be supported upon the dogs *g*<sup>2</sup>, thereby lifting the catch G from its engagement with the bail L and releasing the carriage.

The dogs I and I' are constructed to overlap at their meeting ends, which ends have corresponding notches to permit the free passage of the hoisting-rope, the dog I having an arm *i*, which is engaged by the hooked end of the lever J, which is pivoted midway of its



ends on the said carriage, and which is connected at its upper end with the releasing-bar J. The dogs I and I' are pivoted on arms *i i*, which project from the members of the crotched bracket I<sup>2</sup>. The dogs I I' are raised so that the arm *i* will engage with the lever J, when the bucket will be supported on the carriage.

The stop K, which is secured to the track-wire near the posts B in any desired manner, preferably by the hook-bolt *k*, has the swinging bail L connected therewith. The cord or rope M is connected at its upper end with the bail L by the V-link *l*, and is connected at its lower end with the standards *m* on the well-cover *m'*, passing over the guide-pulleys *m*<sup>2</sup> and under *m*<sup>3</sup>, as most clearly shown in Fig. 2. The cover *m'* is hinged near one end to the upper portion of the well, spring, or cistern M' in such a manner that it will be limited in its movement when opened, so that when released it will close automatically.

The spout or box N is mounted on an adjustable standard *n*, and is provided with a vertical pin *n'*, which extends from the bottom thereof, and which is adapted to project through the flaring opening *n*<sup>2</sup> in the bottom of the bucket H and unseat the valve *n*<sup>3</sup> and liberate the water in the said bucket. The bottom of the trough or box slants and is provided at its lower end with a hook *n*<sup>4</sup>, from which the pail or vessel *n*<sup>5</sup> is suspended. The standard *n* is held on the post O by keepers *o* in such a manner that it is free to be moved up or down to raise or lower the trough or box N as required, and is adjustable by means of the foot-lever O', which is pivotally supported between its ends, and which has its inner end connected with the standard *n*.

Where the distance from the receiving end to the delivery end of the cable is of any considerable length, intermediate posts, as P, are provided for supporting the track-wire, the same being secured to a screw-hook *p*, that is secured to a block *p'* on the side of the said post P. The pin *p*<sup>2</sup>, projecting from the block *p*, serves to separate the parallel portions of the carriage-operating rope Q from interference with each other and with the track-wire and the carriage.

The windlasses R and S are mounted on the same shaft T, which is journaled at its ends in the posts C and C'. The windlass S is keyed to revolve with the shaft T, and is provided on its inner side with a supplemental windlass S' of smaller diameter. This supplemental windlass, being of small diameter, permits a feeble or weak person using the invention, as the hoisting-rope can be shifted from the windlass S to the said windlass S', as most clearly shown in Figs. 2 and 3. The windlass S', being of less diameter, offers less resistance, and hence requires less power to operate it than would be required if the rope was wound on the windlass S. The windlass R is mounted loosely on the shaft T, so as to have an independent rotary motion thereon. The pin *t*<sup>5</sup>, passing transversely through the windlass

R, is pivotally connected with the lever *t*<sup>2</sup>, which is pivoted between its ends on a stud extending from the side of the said windlass R. The free end of the lever *t*<sup>2</sup> is forked and embraces the shaft T, and is acted on by a spring *t*<sup>6</sup>, which is mounted on the said shaft T, and which is held between the said lever and the side of the said windlass R. The lever V is pivoted at its lower end to the post C', is adapted to engage with the free end of the levers *t*<sup>2</sup>, and is provided at its upper end with the hand-lash *w*, which is constructed to engage with the notch-arm *v* and hold the pin *t*<sup>5</sup> out of the path of the pin *t*<sup>3</sup>, which project from the rim of a disk of the windlass S', thereby permitting the shaft T to turn freely within the windlass R. The lever V when pressed forward engages with a pin *r*<sup>5</sup> on the side of the windlass R and holds the same against rotary motion with the said shaft T.

The operation of the invention is as follows: The carriage D, being at the starting-point, as shown in Fig. 1, is held in position by the catch V, engaging with a stop *v'* on the carriage. The releasing-cord V', which is connected with the catch V, extends within convenient reach and is pulled upon to release the carriage prior to starting it to the receiving end of the track-wire. The water-bucket H is supported by the stop *h* on the hoisting-rope passing above the dogs I I', which dogs are held in place against the weight of the said bucket H. After the catch V is released from the stop *v'* the windlasses are rotated together by turning the shaft T in the proper direction to effect a moving of a carriage from the starting-point to the receiving end of the track-wire. It should be observed, first, that the hoisting and operating ropes are wound on their respective windlasses in a reverse direction, and, second, that the operating-rope Q passes over suitable guide-pulley on the posts B and C, and is connected at its upper end with the said carriage. The hoisting-rope also passes over a suitable guide-pulley on the post C. Bearing these points in mind, it will be readily seen that as the carriage approaches the spring, well, or cistern the operating-rope Q will be wound on the windlass R and the hoisting-rope will be unwound from the windlass S, and vice versa. As the carriage approaches the end of its travel it will pass over the spring, well, or cistern a sufficient distance to permit the engagement of the catch G with the bail L, and at the same time the releasing-rod J' will strike against the stop K and disengage the lever J from the arm *i* and liberate the bucket H, which, dropping, will cause the back motion of the said carriage and draw upon the bail L, and through the connections *l* M we will effect an opening of the cover *m'*. The parts are so adjusted that when the cover *m'* is opened the bucket H will be directly above the spring, well, or cistern. The lever U is now operated to effect a disengagement of the windlass R from the windlass S in the manner hereinbefore



specified, after which the windlass S is operated so as to lower the bucket into the well, spring, or cistern. After the bucket is filled it is elevated by winding the rope F on either  
 5 the windlass S' or S, as required. A weak person—such as a child, an aged or sickly person—will use the windlass S', in that very little power is required to effect a raising of the bucket. A strong individual will use the  
 10 windlass S. As the bucket reaches the limit of its upward movement the stop h on the hoisting-rope will pass above the pivoted dog g<sup>2</sup>, after which the windlass is turned backward, so that the weight of the bucket will  
 15 come under the dog g<sup>2</sup> and cause a disengagement of the catch G from the bail L and permit the cover m' to close over the well, spring, or cistern. The lever U is operated to project the pin i<sup>5</sup> and lock the windlasses R and  
 20 S, so that they will move in unison. By rotating, the hoisting-rope will be wound up and carriage-operating rope Q will be unwound, thereby causing the carriage to move toward the starting-point, where it will be  
 25 held by the catch V. The water is discharged from the bucket by pressing on the outer end of the foot-lever O, which causes an elevation of the spout or box N, the pin n' of which, engaging with the valve n<sup>3</sup>, unseats the same  
 30 and permits the water to escape into the said spout or box and from which it passes into the pail n<sup>5</sup>.

In the event of using the supplemental windlass S', the rope must be shifted from the  
 35 same to the windlass S after the bucket has become engaged with the pivoted dog g<sup>2</sup>. For this purpose the rim of the disk which is between the two windlasses is notched around its periphery, whereby the rope may be passed  
 40 from the windlass S' to the windlass S, as shown most clearly in Fig. 3. This construction is rendered necessary when it is remembered that one rope is wound up as the other rope unwinds and that both must move at the  
 45 same relative speed when the carriage is moving on the said track-wire.

To prevent the well-cover from closing when the bucket is in the well or is descending, in case the rope F should for any reason slacken  
 50 the stop K is provided with a catch x, which is provided at its front end with the vertical extension x', cross-bar z, and the stop y. The stop y engages with the cross-bar w on the bail L and the cross-bar z is adapted to be  
 55 struck by an extension g<sup>3</sup> of the catch G and disengage the catch x from the bail.

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

60 1. A water elevator and carrying apparatus comprising the following elements: a suspended track, a carriage adapted to travel on

the said track, bucket-sustaining devices on the carriage, a hoisting and an operating rope having connection with the said carriage, 65 windlasses having the said ropes wound in reverse directions thereon, provision for effecting an engagement between the said windlasses, a stop for releasing the bucket from said carriage, the well-cover, a catch for effecting an engagement between the said carriage and the connections of said cover, and a vertically-adjustable spout or box adapted to engage with the valve in the said bucket and liberate the water contained therein, substantially as set forth. 75

2. The combination, with the carriage, of the pivoted dogs I and I', constructed to have their meeting ends overlap, and an arm projecting from one of the dogs, a lever adapted 80 to engage with the said arms, and a releasing-bar connected with the said lever, substantially as set forth.

3. In a water elevating and carrying apparatus, the combination, with the swinging bail, 85 the pivoted cover, and the cord connecting said cover with the bail and the carriage, of a pivoted catch mounted on the carriage and adapted to engage with the said bail and the hoisting-rope adapted to engage with the said 90 catch and disengage it from the bail, substantially as set forth.

4. The combination, with the bail, the pivoted cover, and the cord connecting said cover with the bail and the carriage, of the catch 95 on the carriage adapted to engage with the bail, the dog pivotally connected with the catch and having a limited downward movement, and the bucket-hoisting rope adapted to engage with the said dog and disengage the 100 catch from the bail, substantially as described.

5. In a water elevating and carrying apparatus, the combination, with the well-cover, of the carriage, the link l, connected with the well-cover by the rope M, and the bail adapted 105 to engage with the carriage and effect an opening of the well-cover prior to the descent of the bucket, and a catch, as x, for holding the well-cover open, substantially as described.

6. In a water elevating and carrying apparatus, the combination, with the swinging bail 110 and the carriage, of a pivoted catch mounted on the carriage and adapted to engage with the said bail, the hoisting-rope adapted to engage with the said catch and discharge it 115 from the bail, and the catch x to engage with the bail and hold the well-cover open, substantially as set forth.

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

JOE. W. ROSBOROUGH.

Witnesses:

ROBERT S. BRANDON,  
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