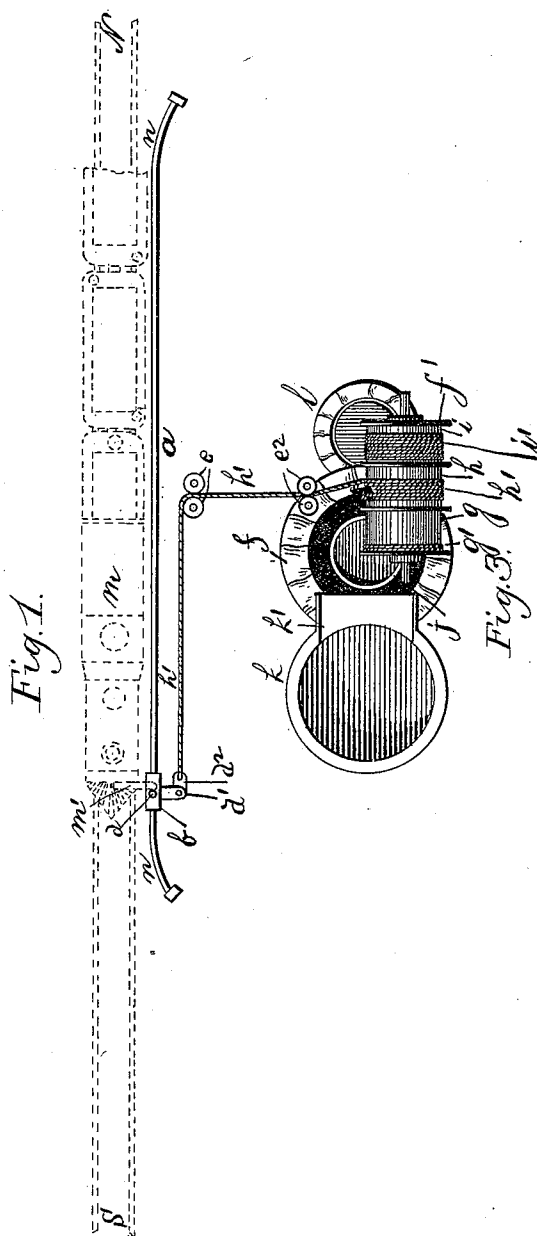
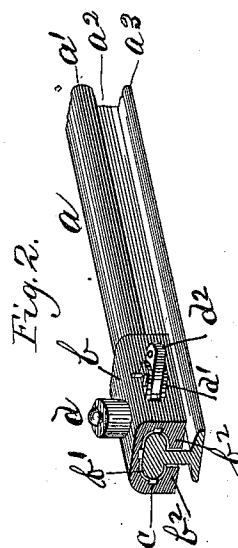


(No Model.)

H. D. LAYMAN & C. E. RICE.
TRANSMITTING MOTOR.

No. 438,552.

Patented Oct. 14, 1890.



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UNITED STATES PATENT OFFICE.

HIRAM D. LAYMAN AND CHARLES E. RICE, OF LITTLE ROCK, ARKANSAS.

TRANSMITTING-MOTOR.

SPECIFICATION forming part of Letters Patent No. 438,552, dated October 14, 1890.

Application filed January 29, 1890. Serial No. 338,461. (No model.)

To all whom it may concern:

Be it known that we, HIRAM D. LAYMAN and CHARLES E. RICE, citizens of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Transmitting-Motors; and we 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.

Our invention has relation to transmitting-motors—that is, it is an invention by which the lost power from a passing engine or car of any kind is transmitted to a driving-shaft, which in turn is operated by a weight or spring, and the motion and power thus given to said shaft may be used to operate any kind of machinery; but in our invention, as illustrated in the accompanying drawings, we use it to draw water from a reservoir or well and carry it to a water-tank that it may be used for steam-engines.

In the accompanying drawings, Figure 1 is a top plan view of our invention. Fig. 2 is a perspective view of part of the guide-rail with the sleeve-carriage working on the same. Fig. 3 is a perspective view of the shaft when constructed for multiplying power or speed.

Our invention is described as follows:

Along the side of a railway-track and parallel thereto we lay on the extended ends of the cross-ties or mount on a proper frame or posts a guide-rail *a*, having its ends *n* curved outwardly or downwardly. The length of said rail depends on the depth of the well, herein-after mentioned, or the amount of power we wish to store away. The said rail is preferably the usual T-rail, having the oval head *a'*, depressions *a''*, and flanged base *a'''*. On this rail is mounted a sleeve-carriage *b*, having an oval opening *b'*, which exactly but loosely fits over the oval head of said guide-rail, with flanges *b''*, that nearly fill the depressions *a''*. The said oval opening is lined with small friction-rollers *c*. On the top of said sleeve-carriage is an arm *d*, and extending from that side of said sleeve-carriage next the well is an

arm *d'*, having swiveled in its outer end a rope-carrier *d''*, so that as the carriage runs back and forth said rope-carrier turns upon its pivot and thereby saves the rope from being cut. About equidistant from each end of said guide-rail are journaled on a substantial frame-work and in suitable bearings grooved friction-pulleys *e*—one on each side of the rope *h'*—and just wide enough apart to allow the said rope to run between the same, and on or near the edge of the well and not far distant from the shaft are journaled on a substantial frame-work and in suitable bearings grooved friction-pulleys *e''*, and over the top of a well *f* is journaled on a substantial frame-work and in suitable bearings a shaft *f'*. Said shaft is divided into three parts—part *g*, for carrying a rope *g'*; part *h*, for carrying the rope *h'*, and part *i*, for carrying the rope *i'*—and said parts are separated by flanges to keep the said ropes from impinging against one another. One end of the rope *g'* is securely attached to the division *g* of said shaft and is long enough to reach from said shaft over a pulley above the top of the tank to the bottom of the well *f*, and to its lower end is attached a bucket *j*. Said bucket is provided with a bottom that opens when it strikes the water, so that it may immediately fill, and near or any distance from said well and sufficiently close to the railroad-track is erected a water-tank *k*, and from said well to said tank is a trough *k'* to conduct the water that is poured from the said bucket *j* into the said trough, and said bucket and said trough are so arranged that when the bucket is drawn up to a sufficient height it immediately empties its contents into the trough. To division *h* of said shaft is secured one end of a rope *h'*, the other end of which is conducted between the pulleys *e* and *e''* and secured to the rope-carrier *d''*. To division *i* of said shaft is secured one end of a rope *i'*, and to the other end of said rope is secured a weight *l*. These ropes are so arranged in respect to one another that when the bucket is up the weight is down and that when the weight is down all of the slack of rope *h'* is wound around the said shaft *f*.

The operation of our invention may be described as follows, and for the purposes of said

description we will suppose that the sleeve-carrier *b* is immediately opposite the pulleys *e*, and that all the slack of the rope *h'* is wound around the shaft, and that the slack of the rope *i'* is unwound and the weight *l* is down and that the bucket is up, and that a locomotive-engine *m*, provided with a drop-bar *m'*, approaches from the north, and the engineer throws the drop-bar out, which is arranged to catch against the arm *d* of the sleeve-carriage *b*. This pushes the said carriage along the guide-rail southwardly, and consequently unwinds the ropes *h'* and *g'* and winds up the rope *i'*, thereby winding up the weight and letting the bucket down into the well; but as soon as the said sleeve-carriage *b* reaches the south curve *n* of the guide-rail it turns out and is released from the arm *m'* and is immediately drawn back to its former position opposite the pulley *e* by the weight *l* running down, and which by the same operation draws up the bucket *j* and empties its contents into the trough *h'*, whence it is conveyed to the tank, and the device by this action sets itself to hoist another bucket of water when another train passes, whether it be going north or south, the operation being identically the same.

In describing and illustrating our invention we have confined our description to mechanism adapted to hoist water from a well and convey it to a tank for the use of steam-engines, and we have illustrated the shaft *f'* as being the same size its entire length; but we claim that our invention may be adapted to run any kind of machinery, inasmuch as we have the rotary motion of the shaft. We can convert it into any other kind of motion and attach it to any known gearing or such like mechanism for running machinery, and by using a ratchet-wheel and pawl we can store away a given quantity of power by every passing train to be used at will, and by varying the sizes of the divisions on the shaft *f'* we can multiply our power or our speed.

Instead of having the pivoted arm *m'* attached to the cow-catcher, we may sometimes construct the sleeve-carrier with the arm *m'*, pivoted in the arm *d*², so that the same arm *m'* may be thrown in or out of the way of the passing train, as desired.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the guide-rail *a*, hav-

ing the curved ends *n* secured parallel to a railway-track, the sleeve-carriage *b*, having the opening *b'* lined with small rollers and adapted to fit on and to be driven up or down said guide-rail, rope *h'*, one end secured to said sleeve-carriage and the other to the shaft *f'*, said rope passing between suitable pulleys, rope *i'*, one end secured to said shaft, and weight *l*, secured to the other end of said rope, said weight *l*, ropes *i'* and *h'*, sleeve-carriage *b*, and guide-rail *a* being adapted to rotate said shaft in the manner, for the purposes, and by the means substantially as shown and described.

2. The combination of a guide-rail *a*, having its ends curved outwardly, secured parallel to a railway-track, a sleeve-carriage *b*, provided with a fixed vertical arm *d* and having an opening *b'* lined with small rollers *c* and adapted to fit on said guide-rail and to be driven up or down said rail by a passing train, a rope *h'*, one end secured to said sleeve-carriage and the other to a shaft *f'*, said rope passing between suitable pulleys *e* and *e*², a rope *i'*, one end secured to said shaft, and a weight *l*, secured to the other end of said rope, said weight *l*, ropes *i'* and *h'*, sleeve-carriage *b*, and guide-rail being adapted to rotate said shaft in the manner, for the purposes, and by the means substantially as shown and described.

3. The combination of the guide-rail *a*, having the curved ends *n* secured parallel to a railway-track, the sleeve-carriage *b*, working on said guide-rail and adapted to be driven up or down said rail by a passing train, rope *h'*, one end secured to said sleeve-carriage and said rope running between suitable pulleys and its other end secured to the shaft *f'*, rope *i'*, one end secured to said shaft *f'*, and weight *l*, secured to the other end of said rope, rope *g'*, one end secured to said shaft and the other to the bucket *j*, said weight, ropes, bucket, shaft, sleeve-carriage, and guide-rail being adapted to raise a bucket of water in the manner and by the means substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

HIRAM D. LAYMAN.
CHARLES E. RICE.

Witnesses:

S. A. TERRY,
J. H. RIGGLES.