(No Model.) 2 Sheets—Sheet 1.

R. ZINSMAIER & M. BURT.

MECHANISM FOR RAISING WATER BY PASSING TRAINS.

No. 301,420. Patented July 1, 1884.

Fig. 1.

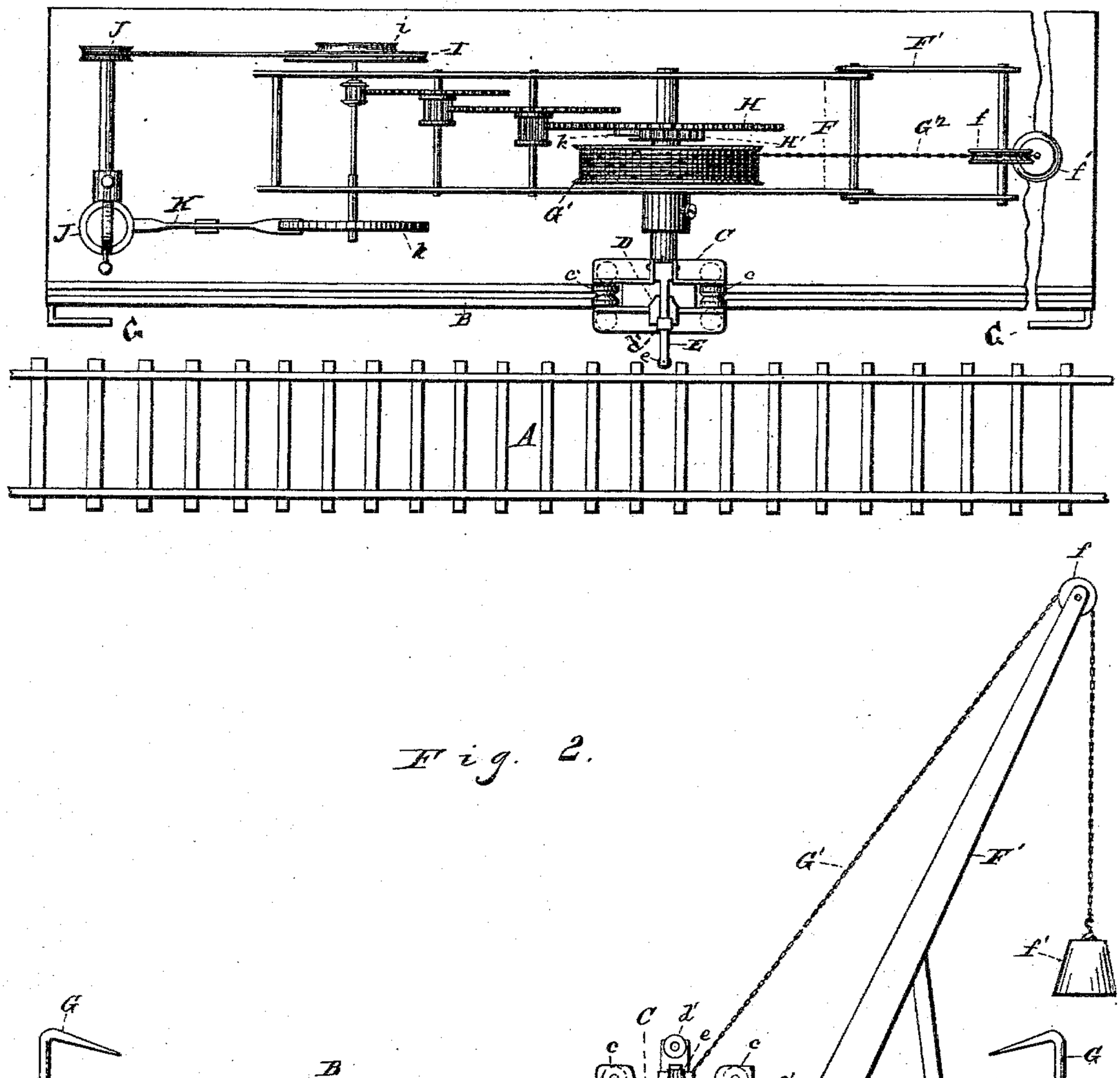

Fig. 2.

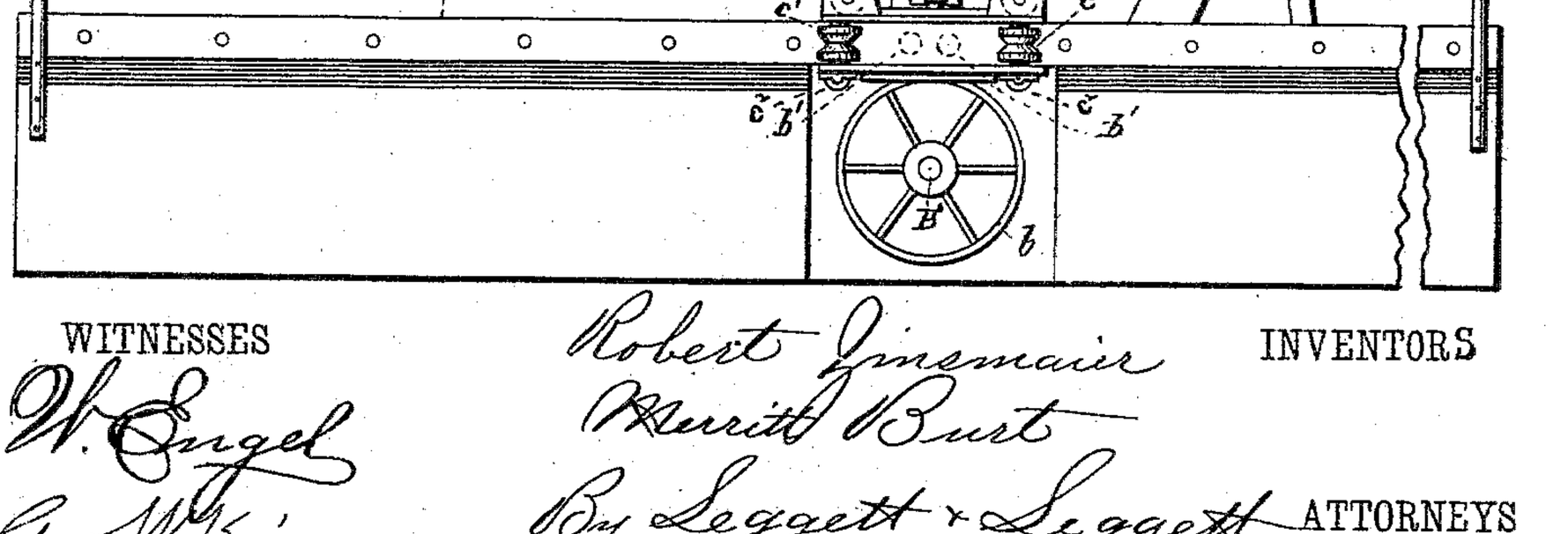

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Fig. 3.

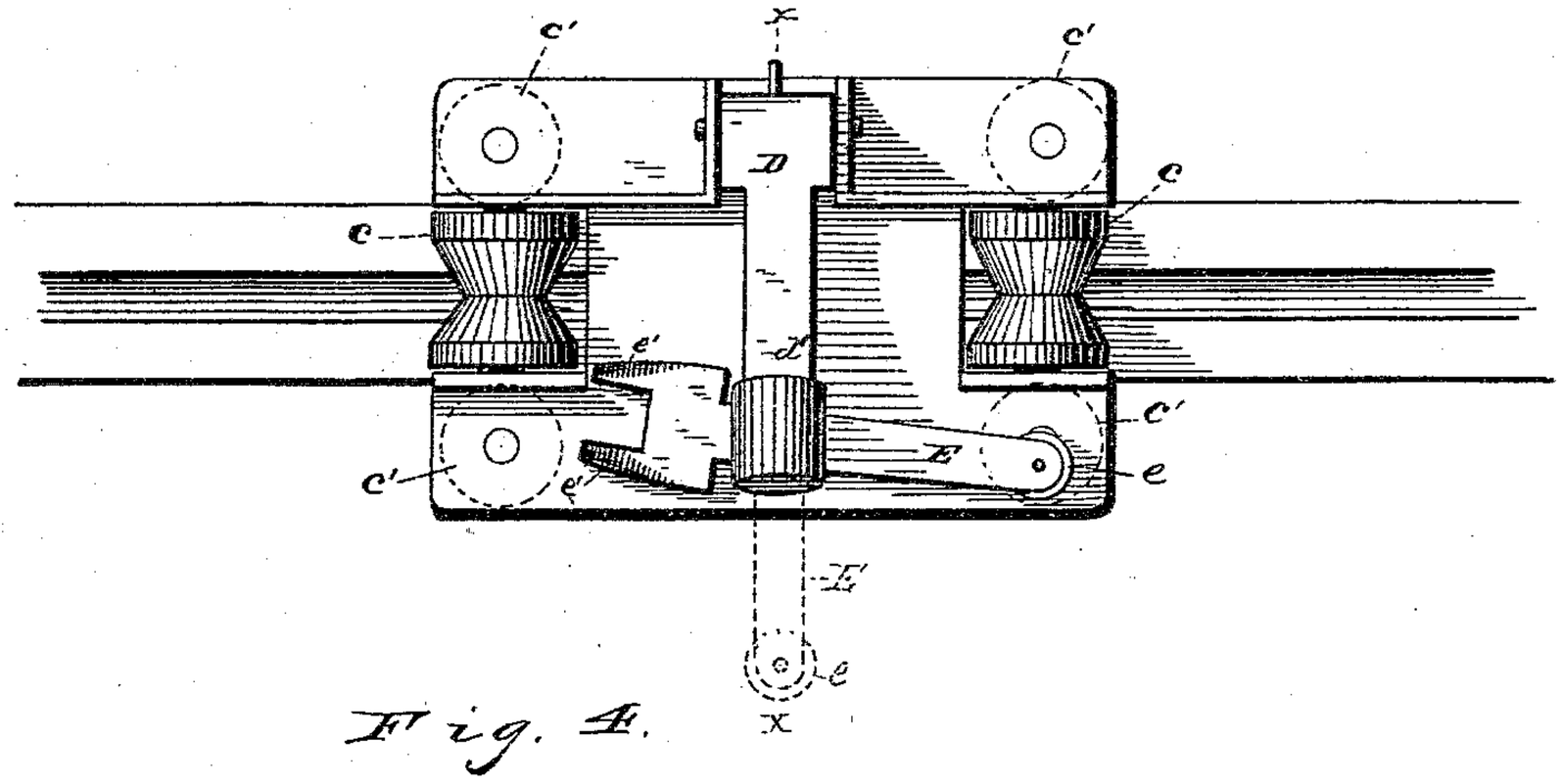
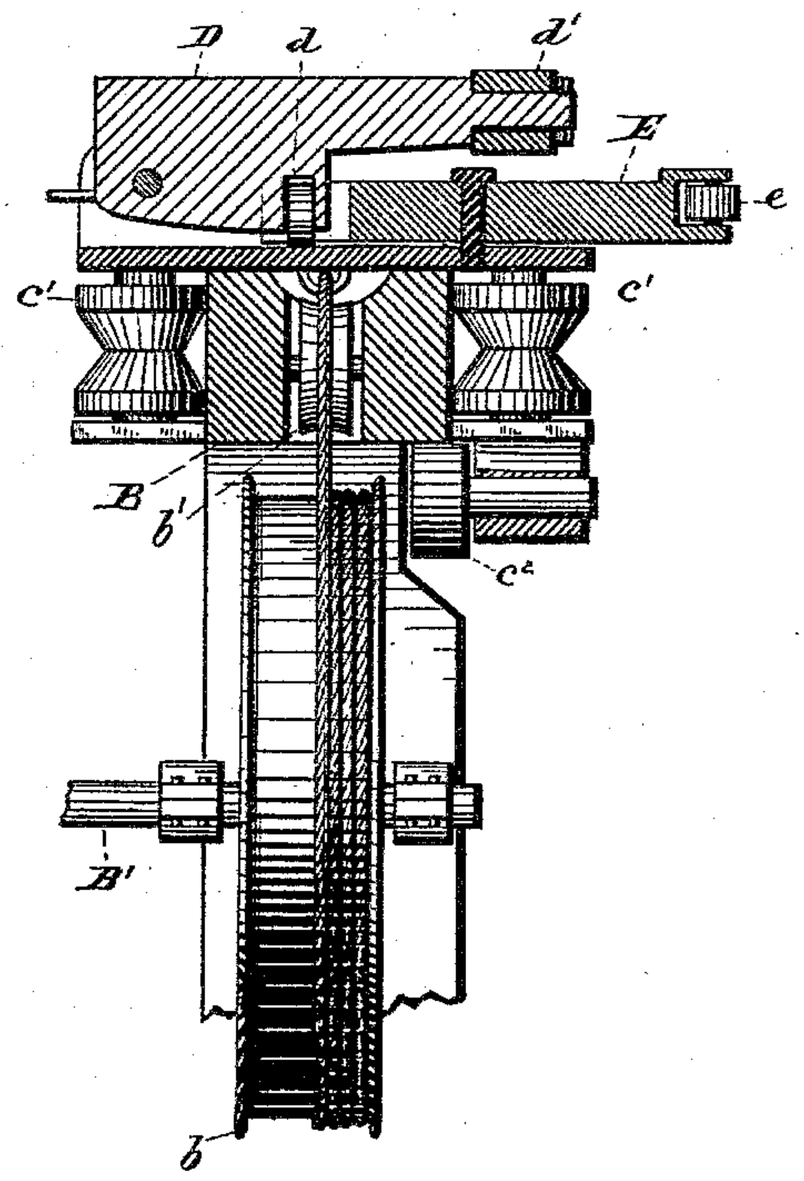


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT ZINSMAIER AND MERRITT BURT, OF GALION, OHIO.

MECHANISM FOR RAISING WATER BY PASSING TRAINS.

SPECIFICATION forming part of Letters Patent No. 301,420, dated July 1, 1884.

Application filed October 4, 1883. (No model.)

To all whom it may concern:

Be it known that we, ROBERT ZINSMAIER and MERRITT BURT, of Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Mechanism for Raising Water by Passing Trains; and we 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 pertains to make and use the same.

Our invention relates to improvements in mechanism for raising water by passing trains; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a plan view, and Fig. 2 a side elevation, of a combination of mechanism embodying our invention. Fig. 3 is an enlarged plan view in detail of a tramway and carriage. Fig. 4 is a vertical transverse section on the line *x x* of Fig. 3.

A represents a railroad-track, and B a tramway or guiding device parallel with and near to the said track on which operates the carriage C. The supports of the tramway also have attached boxes that support one end of the shaft B′, to which is attached the drum *b*. The tramway has also the guide-rollers *b′*. The carriage C is provided with the supporting-rollers *c* and the guiding-rollers *c′* and *c²*.

D is an arm extending crosswise of the carriage C, and fulcrumed at the back end, so that the front end may be actuated vertically. The arm is provided with the friction-rollers *d* and *d′*.

E is a lever fulcrumed in the central part to the carriage C, so that it may turn horizontally in either direction. The lever is provided at one end with the friction-roller *e*, while the other end is enlarged and slotted, so that it has the appearance of an open-ended wrench. The inner walls of the slot are vertical, while the outer edges at *e′* slope upward, respectively, from either direction, forming inclines for the passage of the roller *d*. When the lever E is turned from the position shown in Fig. 3 toward the position shown in dotted lines, and shown also in Fig. 4, the said incline at *e′* engages the roller *d*, and causes the roller and its supporting-arm to rise and pass over this part of the lever; and when the lever is brought to the position shown in the dotted lines the roller *d* and the contiguous part of the arm D drops into the said slot and locks the lever, so that it will not turn in either direction. When in this position, extending at right angles with the carriage, the lever is designed to engage the bumper or other parts of an engine or cars passing in either direction, and by means of which the carriage C is carried along with the passing train until near the end of the tramway, when the pulley *d′* engages the top surface of one of the irons, G, and near the point thereof, and, passing up the inclined surface of the said iron, the arm D is raised out of the slot in the end of the lever E, leaving the said lever free to turn on its fulcrum and disengage itself from the passing train. To the under side of the carriage is attached a rope that passes between the guiding-rollers *b′* and is wound around and fastened to the drum *b*. As the carriage is moved from the center of the tramway in either direction, it will draw upon the rope and cause the drum *b* to revolve always in the same direction. The back end of the shaft B′ is supported in the frame F, that also supports the train of gears shown, and supports also the upright frame F′. The said shaft is provided with the drum G′, around which is wound the rope G², that passes over the sheave *f* and supports the weight *f′*. The rope is wound around the drum G′ in the opposite direction from that in which the rope is wound around the drum *b*, so that when the carriage C is moved toward either end of the tramway it unwinds the rope from the drum *b* and winds up the rope on the drum G′ and elevates the weight *f′*. When the said carriage is disengaged in the manner aforesaid from the passing train, the weight *f′* revolves the said drums and shaft in the opposite direction, which winds up the rope on the drum *b* and draws the carriage C back again to the center of the tramway.

H is a spur-gear journaled on the shaft B, and provided with a pawl, *h*, that engages the ratchet-wheel H′, secured to the shaft B. 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 B and attachments by the descending

weight *f'*. 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, remain at rest. A belt from the pulley I drives the governor-pulley J, that actuates the governor J'. 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 *f'* 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.

We do not confine ourselves to the construction shown in the tramway and carriage. Any sliding frame on suitable ways would answer the purposes, although we prefer the carriage and rollers, as they may be operated with less friction.

In place of ropes attached to the said drums, chains, cables, or other connecting devices may be used.

What we claim is—

1. A carriage or sliding frame operated on a tramway or other suitable guiding device contiguous to and parallel with a railroad-track, and provided with a lever that may be extended from the carriage, so as to engage a passing train, and provided with an arm adapted to lock the lever in the said extended position, in combination with inclines located near the ends of the tramway or guiding device, and so arranged as to engage and raise the locking-arm and release the said lever from its extended position and contact with the train, substantially as described.

2. A carriage or sliding frame operating on a tramway or guiding device, and provided with a rope attached to the carriage, and a portion of the rope wound around and attached to a drum, the rope passing through guiding-pulleys that are intermediate between the carriage and drum, so that when the carriage is moved from the central part of the tramway in either direction the drum will be revolved, but always in the same direction, substantially as shown and described.

3. The combination, with a carriage and tramway and drum, and shaft for transmitting the motion of the drum, of a second drum attached to the said shaft, and provided with a rope wound around the second drum, but in an opposite direction from that in which the rope is wound around the first drum, and leading over an elevated sheave, and attached to and supporting a weight, so that the weight is raised when the said carriage is moved in either direction from the center of the tramway, substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 29th day of September, 1883.

ROBERT ZINSMAIER.
MERRITT BURT.

Witnesses:
HAL B. SMITH,
C. C. ANDERSON.