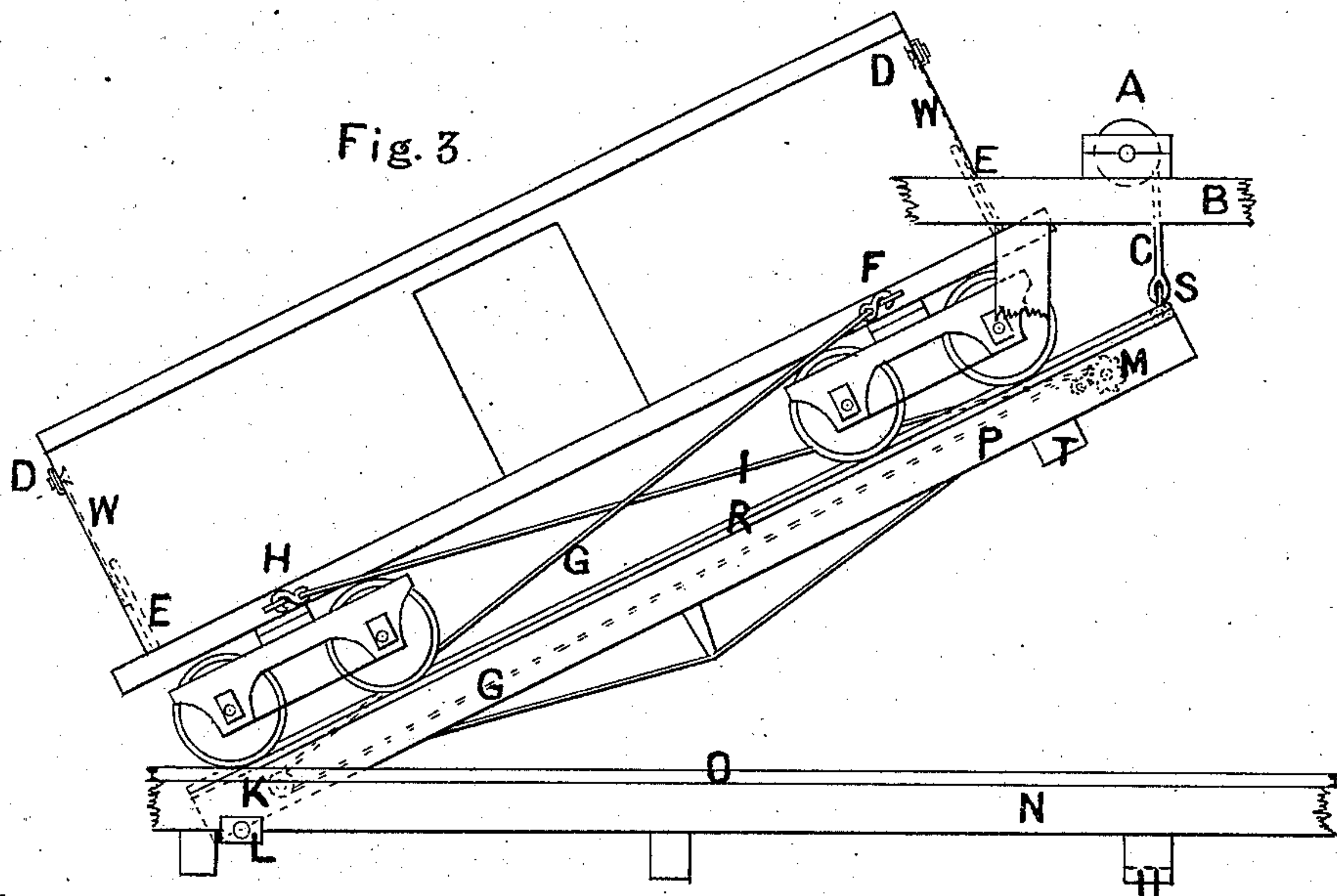
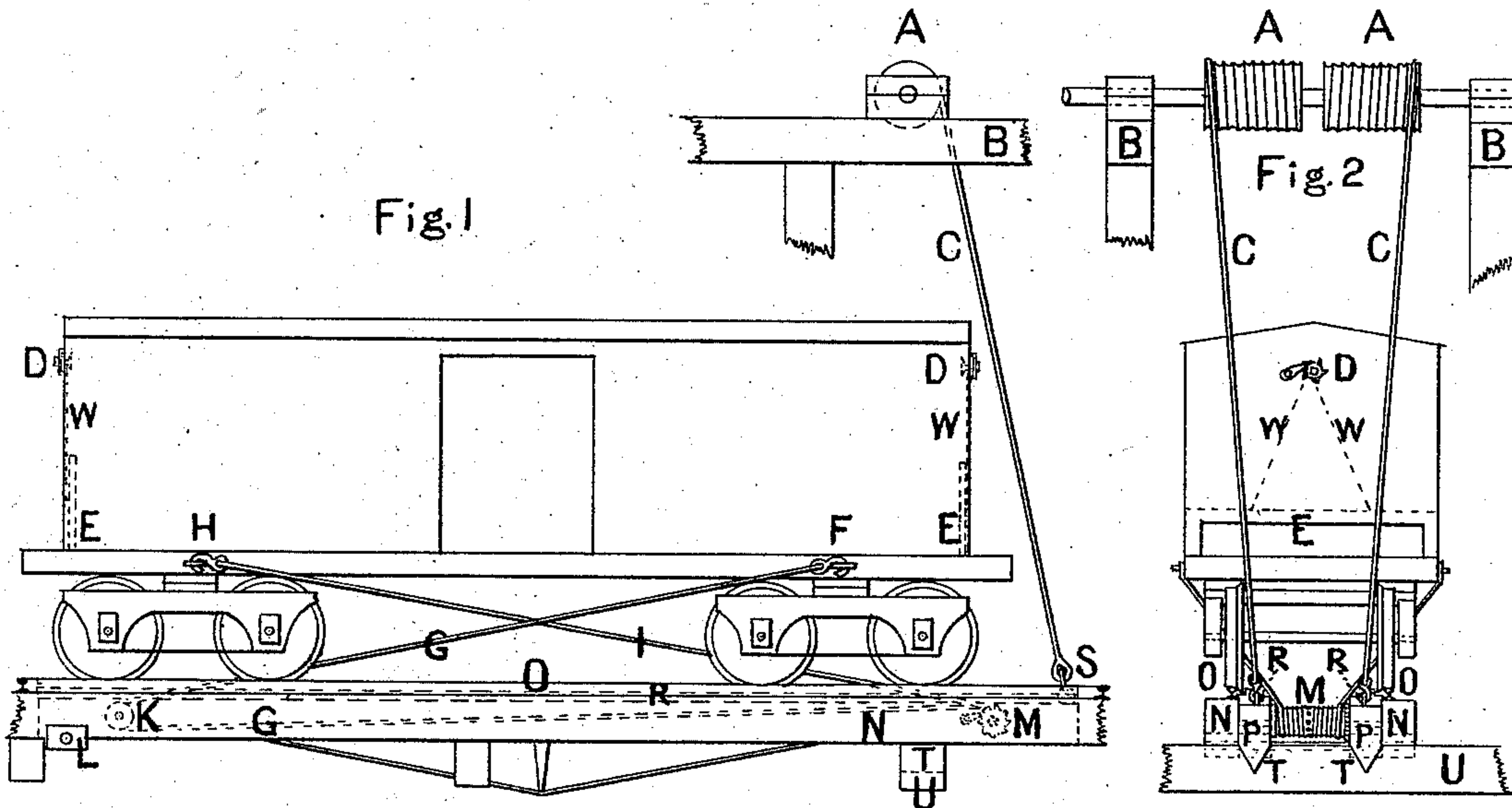


**T. S. BISHOP.**  
**Devices for Dumping-Cars.**

No. 155,487.

Patented Sept. 29, 1874.



Witnesses

*D. M. Mearns*  
*W. Hutchinson,*

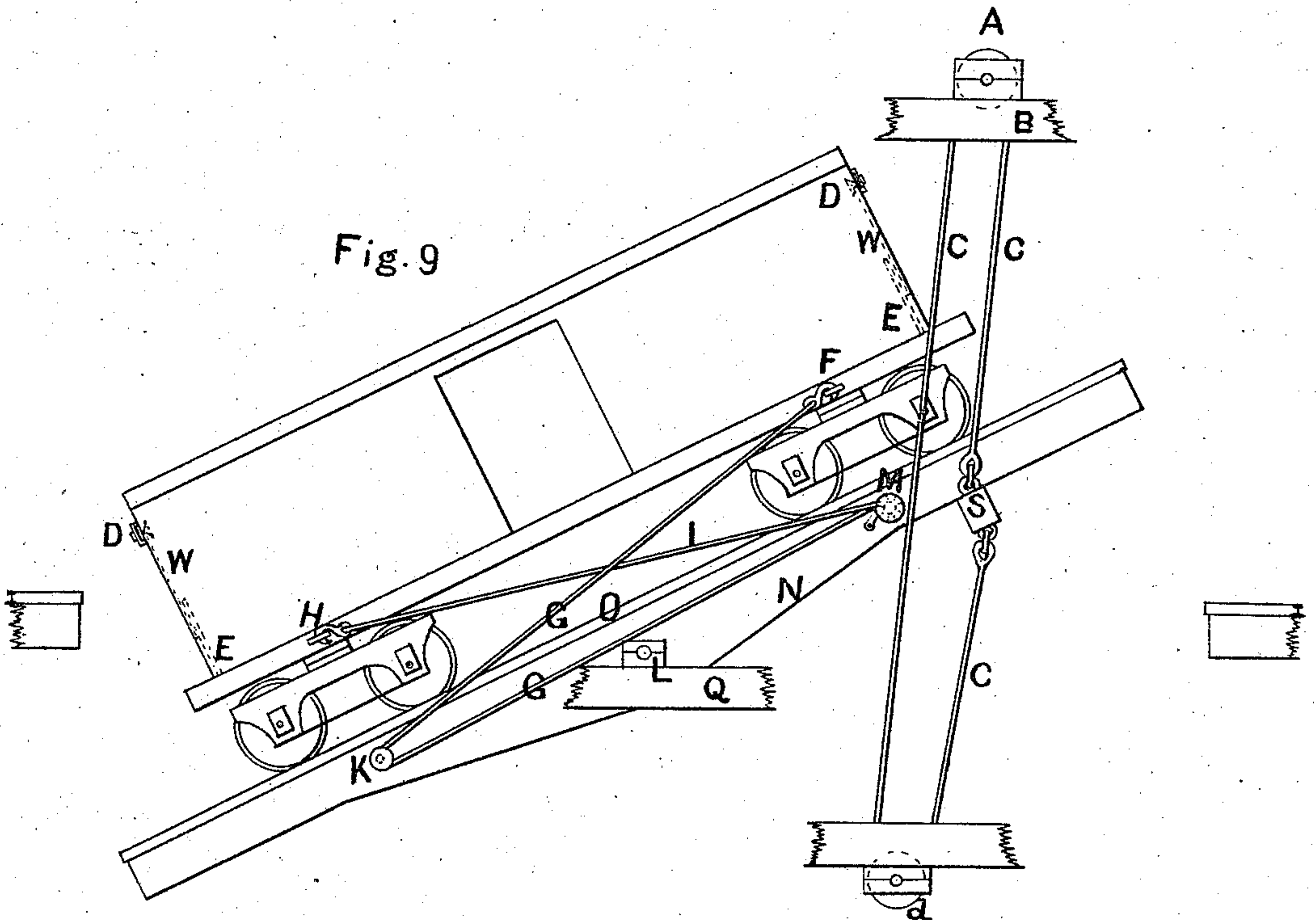
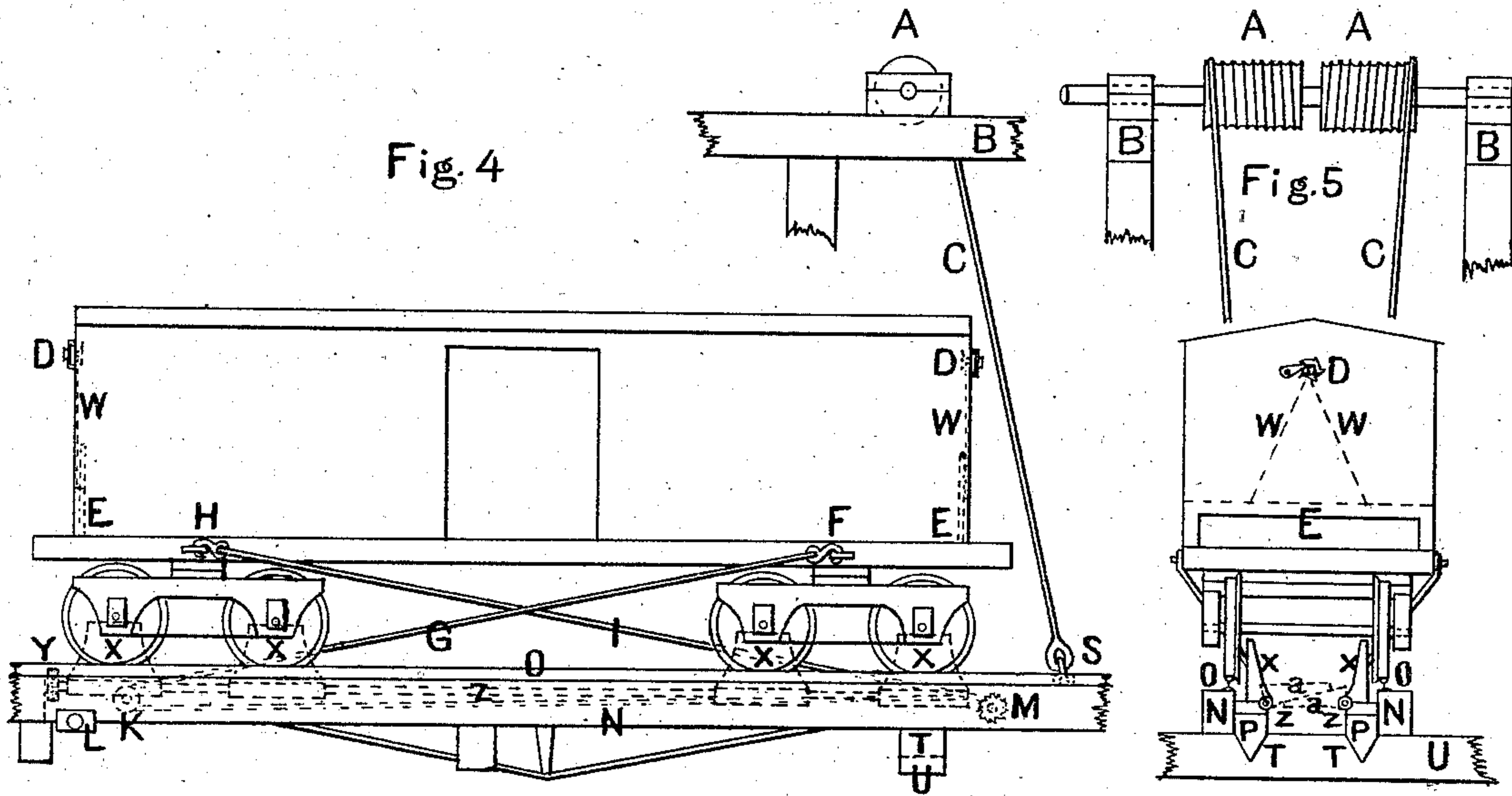
Inventor

*Thos Sparks Bishop*

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Witnesses  
D. M. Allen  
W. B. Dickinson

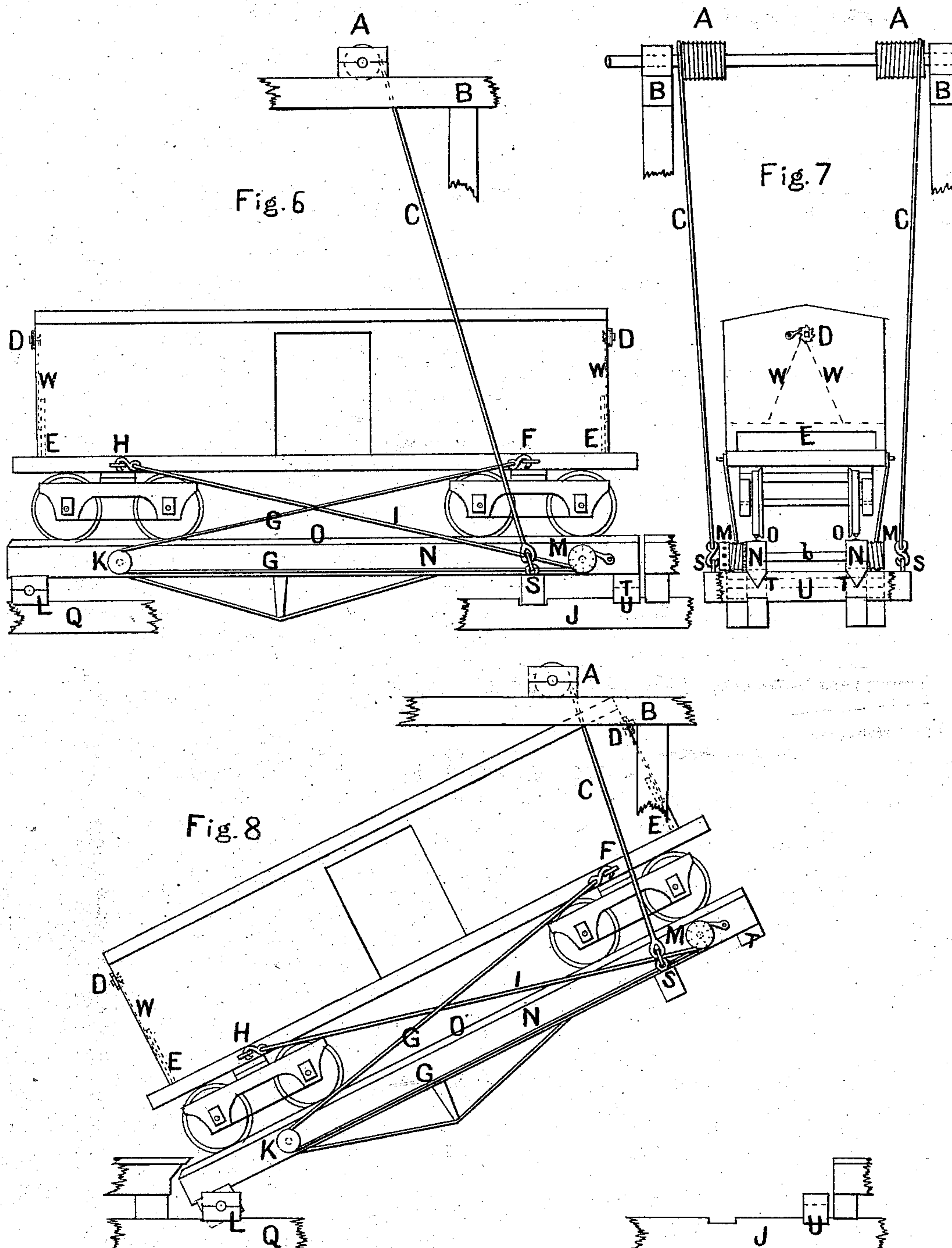
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# UNITED STATES PATENT OFFICE.

THOMAS SPARKS BISHOP, OF BORDENTOWN, NEW JERSEY.

## IMPROVEMENT IN DEVICES FOR DUMPING CARS.

Specification forming part of Letters Patent No. **155,487**, dated September 29, 1874; application filed May 27, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS SPARKS BISHOP, of Bordentown, county of Burlington, in the State of New Jersey, have invented a new and useful Improvement in Apparatus for Unloading Cars, of which the following is a specification:

This invention relates to means for unloading or dumping "long cars" on railways by tilting the same longitudinally or laterally to discharge grain and analogous cargoes.

Owing to the length and great weight of these cars, any handling thereof requires strong and powerful apparatus, peculiarly designed therefor.

The present invention consists in improved apparatus for this purpose, as hereinafter set forth.

The car is tilted, oscillated, or partially revolved vertically on a pivoted frame or table, which may be constructed inside or outside of the track, or may form a section of the track, by means of power applied from some point or points overhead, so that no excavation is necessarily required to accommodate the apparatus, and the requisite power is readily and directly applied by a slow and steady movement, so as to control the unloading or dumping operation in a perfect manner.

The car is centered or brought to its proper position on the tilting frame, and firmly secured by ropes, chains, or cables fastened to a drum or drums in or on the tilting frame. When the drum or drums are revolved the ends of the ropes or chains attached to the car are pulled in opposite directions until the car is drawn to its exact position. The drums are then secured by keys or ratchets, and the car is tilted or dumped to discharge its load through its doors.

The improved apparatus is hereinafter described in four distinct forms or modifications, each of which embodies, by preference, both parts of the invention, as above briefly stated.

In the accompanying drawings, similar letters of reference are used to indicate corresponding parts.

Figure 1 is a side elevation of a long car standing on its track, and centered and se-

cured in place on a tilting frame or table inside of the track, illustrating this invention in a preferred form. Fig. 2 is an end elevation of the same. Fig. 3 is a side elevation of the same apparatus, showing the tilting frame and the car thereon in elevated position, or in the act of discharging a load. Figs. 4 and 5 are side and end elevations of the apparatus in a different or modified form. Figs. 6 and 7 are side and end elevations of another form of the apparatus in standing or normal condition. Fig. 8 is a side elevation of the same, illustrating the act of discharging a load thereby. Fig. 9 is a view similar to Fig. 8, illustrating another modification.

Referring to the several figures of the drawing, the car is centered and secured by ropes or chains I, fastened to a ratchet-drum, M, and attached to the car at H, and ropes or chains G, passing from the drum M, around sheaves K, to the car at F. The elevating or tilting power is communicated from hoisting drums or windlasses A above the roadway to the stringers of the tilting frame at S by ropes, cables, or chains C. These are attached directly to the drums in the illustrations, but they may pass over intermediate pulleys in some cases. The elevated hoisting drums or windlasses are securely supported in framework B, and are driven, through suitable gearing, by steam, hand, or other power.

Instead of drums and ropes or chains, pulling-screws, driven through gearing, or any other equivalent mechanical power, may be employed, if preferred.

The tilting frame works on a horizontal axis or pivot, L, which is transverse in the illustrations, but may be longitudinal in some cases with reference to the rails O and stringers N, which constitute the track.

The tilting frame is made sufficiently strong by longitudinal and transverse trusses to enable it to resist all ordinary strains to which it may be subjected.

When the tilting frame is revolved on the axis L in the illustrations one end of the car is lifted, as shown in Figs. 3, 8, and 9, and the load is discharged through a door, E, in the opposite end of the car. Then, by a reverse motion of the hoisting drum or windlass A,



the frame is allowed to return to its bed, and the car is again left standing in line with the extended track.

The doors E in the ends of the car are operated by means of ropes or chains W passing around ratchet-axles D, actuated by hand-levers or wrenches. The load is discharged in a chute or other receptacle.

The preferred form of the apparatus is illustrated in Figs. 1, 2, and 3. The tilting frame in this form is separate from the track and arranged between the rails, being composed of strong longitudinal stringers, P, with framing and trussing accessories. The stringers P have metallic shoes or rails R on top, working closely to the inner sides of the rails of the track when the frame is tilted, and having upwardly-projecting longitudinal flanges, the outer edges of which are gaged to the flanges of the wheels inside. The flanges of the wheels rest on the shoes or rails R, and the car is lifted from the track to discharge the load.

In this general form of the apparatus the pivot or axis L is necessarily transverse, and arranged at one end, at which the chute or receptacle is located, the opposite end of the frame and the car thereon being always elevated to discharge the load. The frame is brought to its exact alignment when descending by V-shaped projections T on the bottoms of the stringers P, fitting in corresponding seats in a cross-cap, U.

The arrangement illustrated in Figs. 4 and 5 is the same as that shown in Figs. 1, 2, and 3, except that metallic shoes or rails are omitted from the tops of the inside stringers P, and folding standards X are employed in their place. The standards X are hinged on a long axis, Z, with a capstan or ratchet-head, Y, and are made to fold over toward the middle of the frame, as shown at a by dotted lines in Fig. 5, so that the cars, engines, &c., can pass over them unobstructed when they are not in use. When the car is in its proper position, the standards are turned up by a lever inserted in the capstan or ratchet-head Y. The axis of the standards on one side of the frame is connected with the axis of those on the other side by an endless chain or other gearing, so that by a single motion of the lever all the standards can be brought to their proper vertical or horizontal position, as may be required. When the frame is elevated, the tops of the standards engage with the axles near the wheels, and the car is thereby raised to discharge the load.

Instead of folding standards, as described, fixed standards can be used by allowing the frame to which they are attached to rest on its bed sufficiently below the rails of the track to allow engines and cars to pass over unobstructed.

In the modification illustrated in Figs. 6, 7, and 8, a section of the track, consisting of rails N, stringers O, and suitable framing and trussing, constitutes the tilting frame, and the pivot or axis L is supported by supplemental stringers Q. In the illustration the axis is arranged transversely at one end, and the provision is for the other end of the frame to be elevated, the projections T, to insure proper alignment, being applied to the track-stringers N. The hoisting ropes or chains C are attached to a cross-beam, S, applied beneath the track-stringers. The operation of raising, unloading, and lowering the car on the section of track is similar to the case where the car is supported on an inside tilting frame, as previously described. The cross-beam at S and the cap U rest on longitudinal stringers J. The drums M and sheave K of the centering ropes or chains are shown on the outside of the track-stringers N in these figures, but they may be put inside, if preferred.

Instead of the car and section of track being raised above the level of the roadway, they can be lowered by a slight modification of the timbers, &c., below the track, if in any case it should be desired; or, in this form of the apparatus, the track-section may tilt on a longitudinal pivot.

Fig. 9 illustrates a section of track constituting the tilting frame, and having the car secured to it, as in the other cases, with a transverse axis, L, at or near the middle. The ropes or chains C, in this case attached to the cross-beam at S, pass around the hoisting drums or windlasses A, and also around sheaves d below the roadway. This arrangement allows the car and track to be revolved in either direction, and the load discharged accordingly. The section of track can be brought to its proper level and alignment, and secured there by any ordinary contrivance not necessary to be described.

The employment of a tilting frame, broadly considered, is not claimed as new, nor the provision of ropes, cables, or chains for securing a car thereon.

The following is claimed as new, namely:

1. The ropes or chains G I, sheaves K, and drum or drums M, in combination with a tilting frame, for centering and securing a car thereon, substantially as set forth.
2. The overhead hoisting drums or windlasses A and connecting ropes or chains C, in combination with a tilting frame, for dumping a car, substantially as set forth.

THOS. SPARKS BISHOP.

Witnesses:

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