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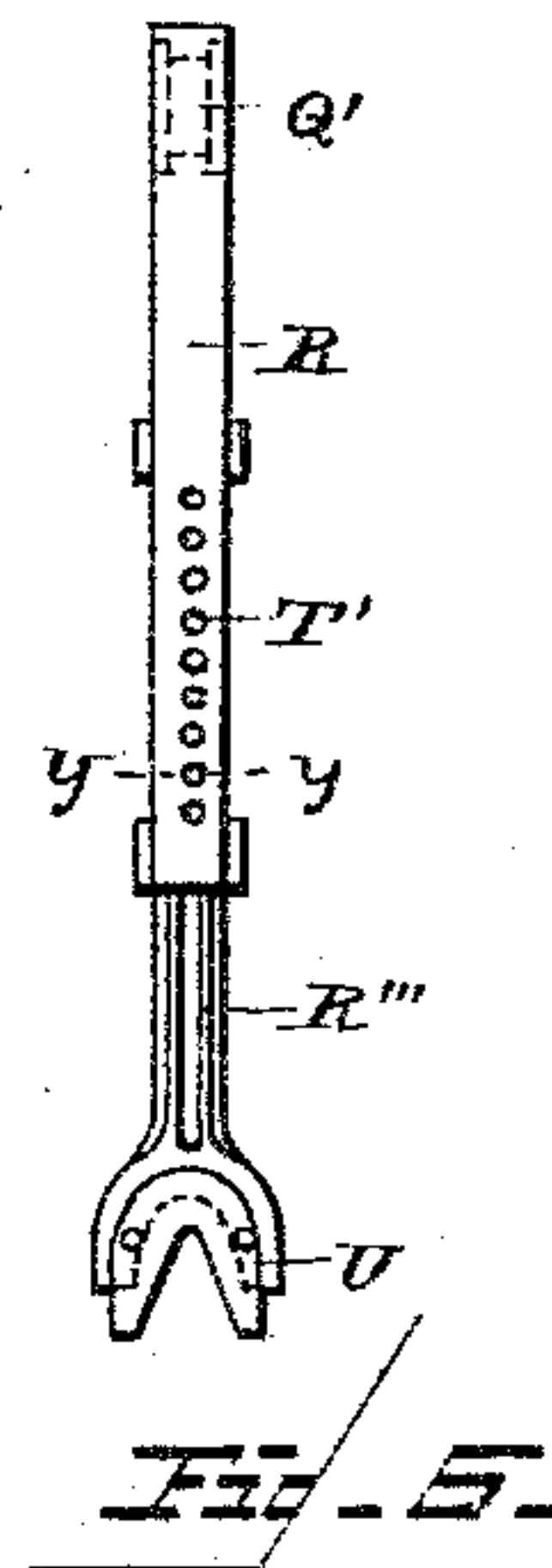
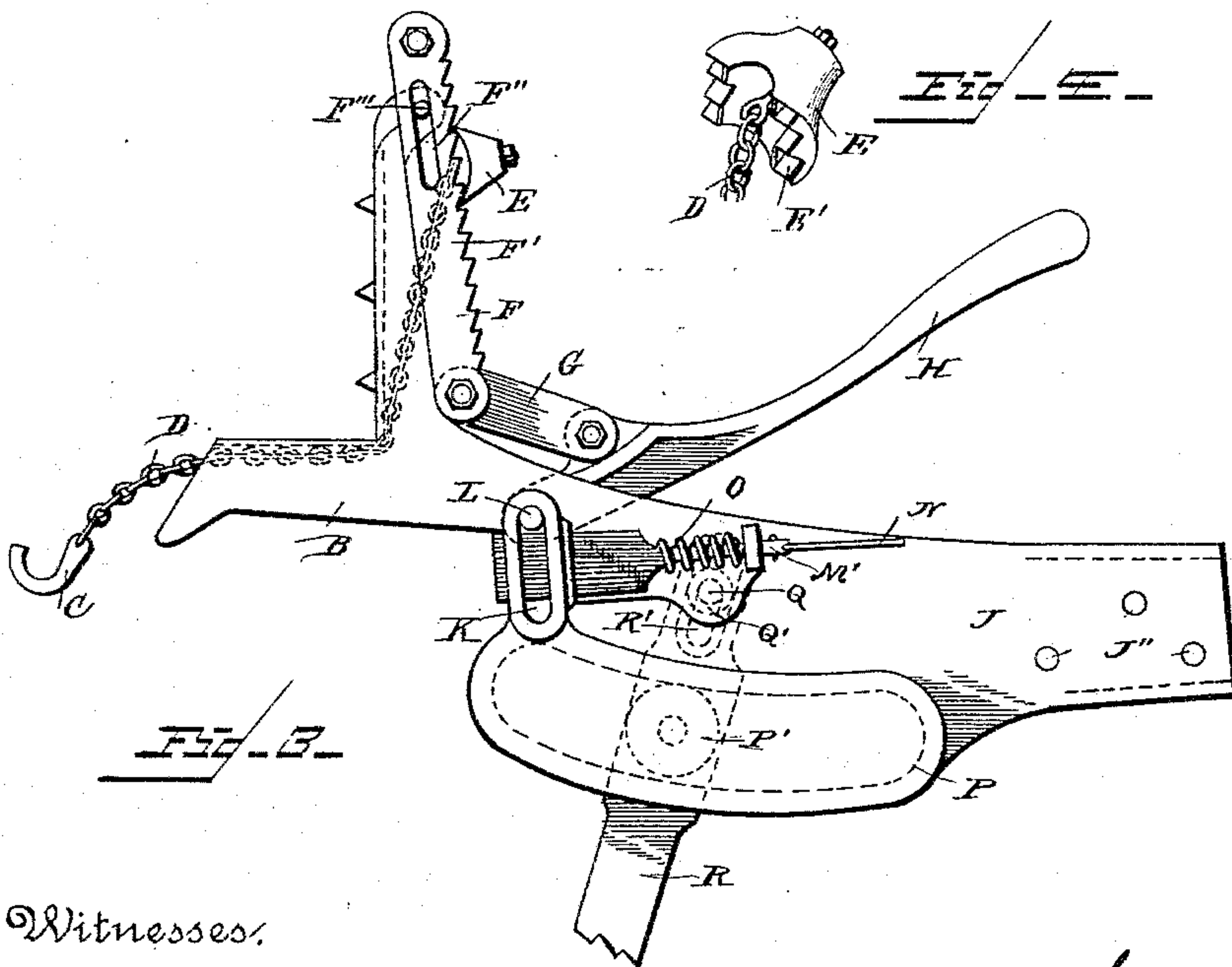
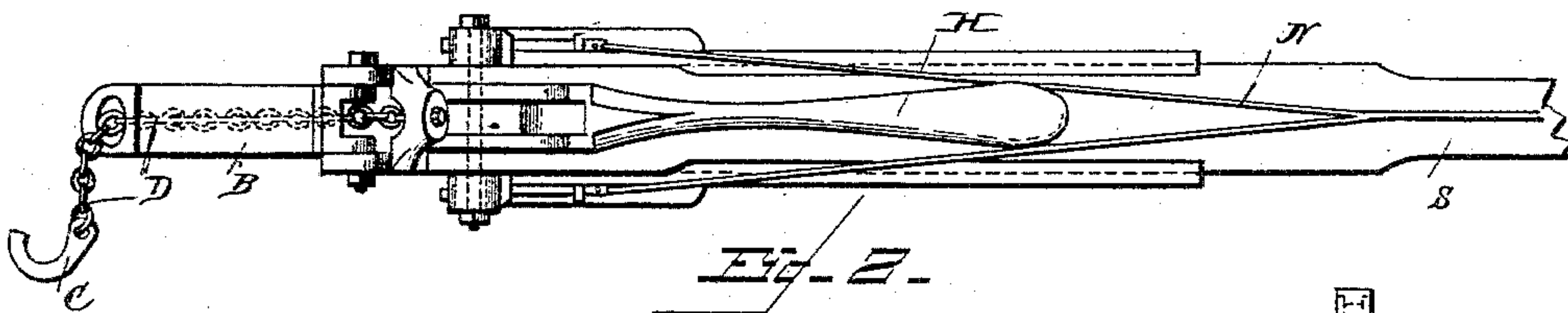
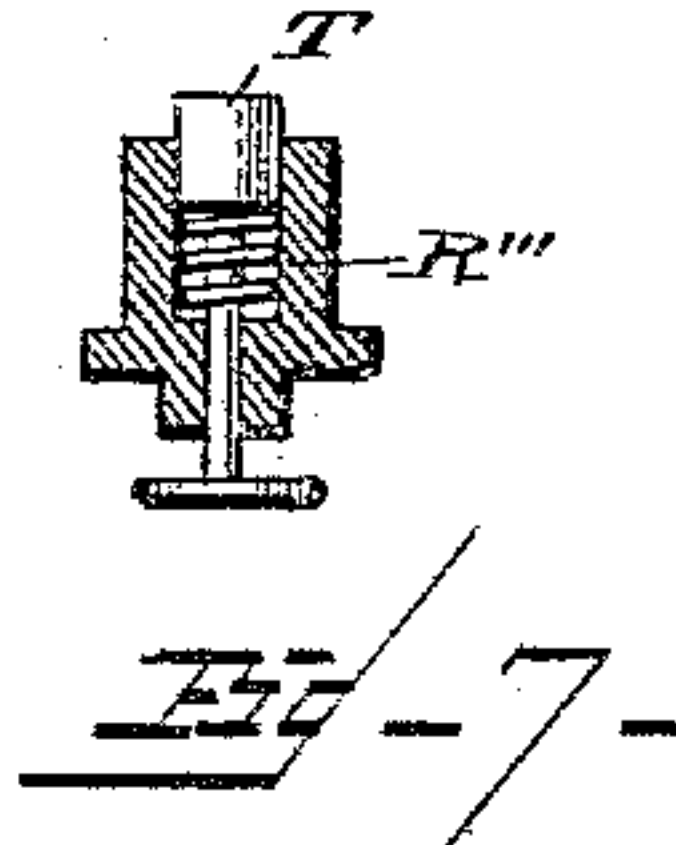
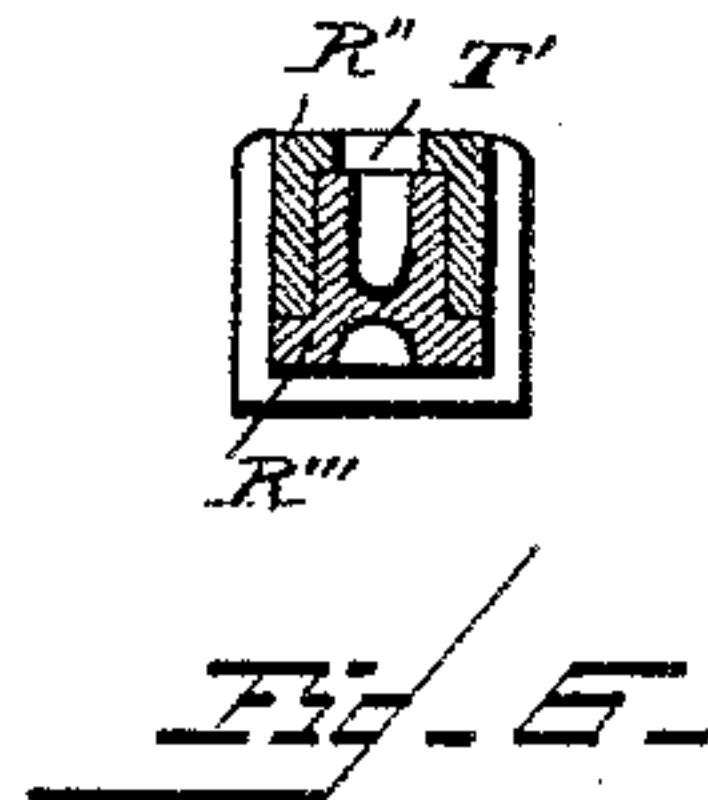
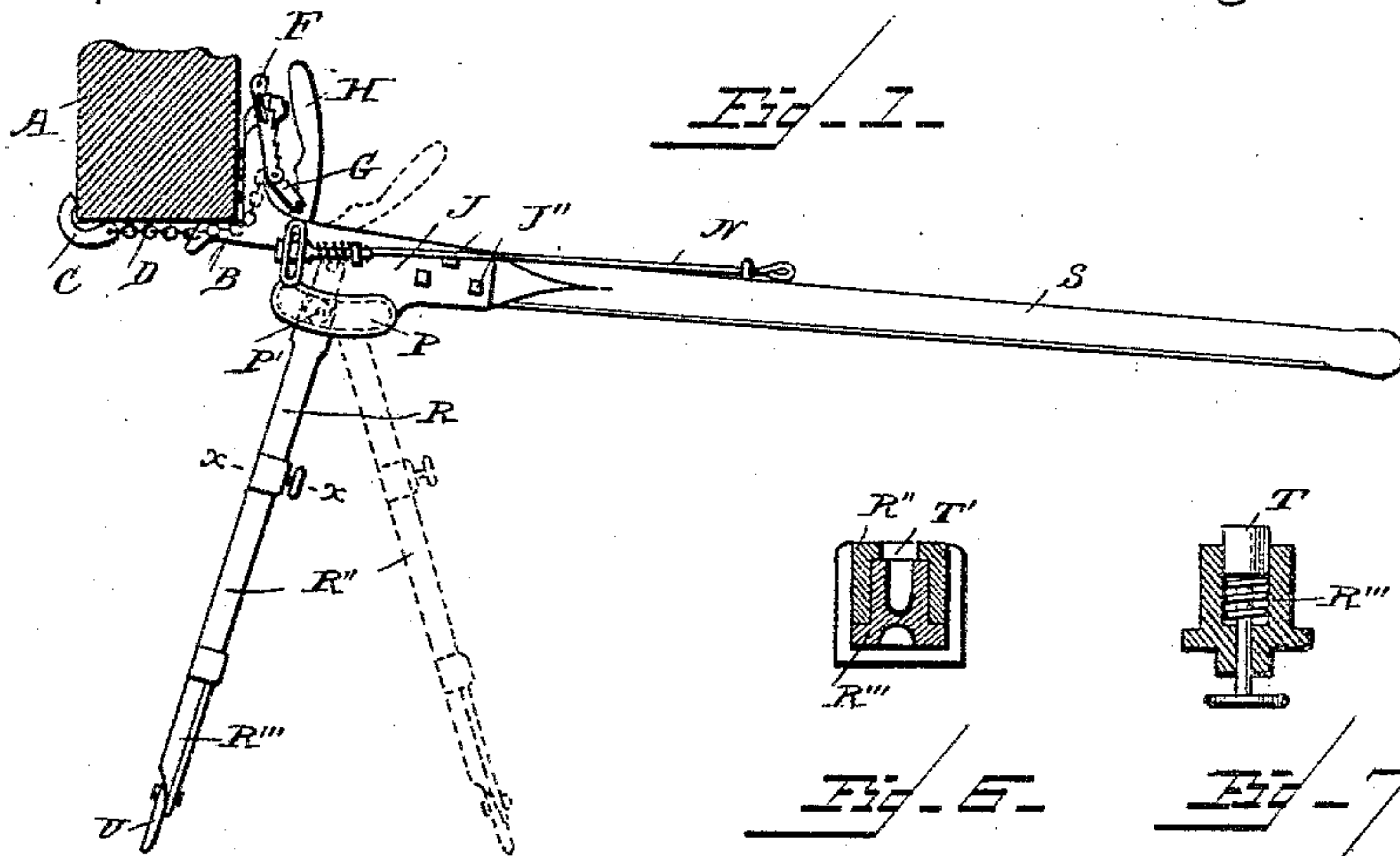
2 Sheets—Sheet 1.

L. B. GIFFORD.

CAR MOVER.

No. 387,871.

Patented Aug. 14, 1888.



Witnesses:

Albert Spidner.

Wm. Hunter, Meyers.

Inventor.

Lord B. Gifford.

By his Attorney William Webster.

(No Model.)

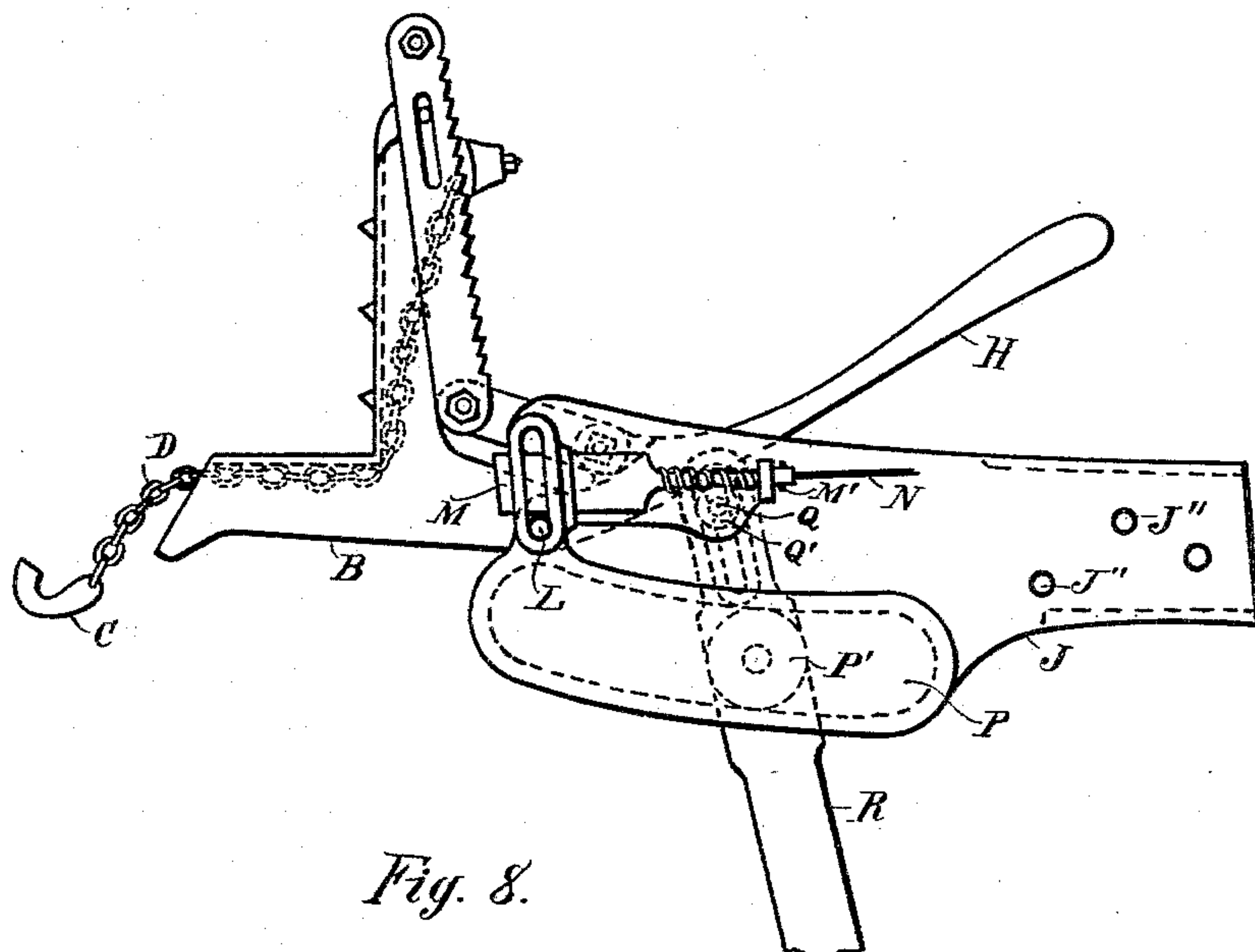
2 Sheets—Sheet 2.

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CAR MOVER.

No. 387,871.

Patented Aug. 14, 1888.



Witnesses.

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UNITED STATES PATENT OFFICE.

LORD B. GIFFORD, OF TOLEDO, OHIO.

CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 387,871, dated August 14, 1888.

Application filed February 4, 1888. Serial No. 263,027. (No model.)

To all whom it may concern:

Be it known that I, LORD B. GIFFORD, a citizen of the United States, residing in Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Car-Movers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 part of this specification.

My invention relates to car-movers of that class used in moving empty or loaded cars on sidings and around warehouses, elevators for grain, &c., and by which means one or more empty or loaded cars may be easily and quickly moved either forward by pulling or backward by pushing the same.

The object of my invention is to provide a machine for this purpose that is light, durable, as well having great power, and easily operated, and so arranged that it will act on the rail and against the sill or body of the car to start it and follow it as it moves along, and also arranged so that it may be easily adjusted so as to make either a push or a pull on a car, as may be desired or convenient.

In the drawings, Figure 1 is a side elevation of a complete machine, shown as engaged with a car. Fig. 2 is a plan view of a complete machine. Fig. 3 is a side view of one of the fulcrum-plates, showing the angled push-iron and the flexible connection for pulling the car, with the arrangement for tightening the same and a portion of the leg and the mechanism for varying the inclination of the same, this figure being drawn on an enlarged scale. Fig. 4 is a detail view of an adjustable chain-connection. Fig. 5 is a detail view of the longitudinally-adjustable leg. Fig. 6 is a cross-sectional view of the leg on lines *yy*, Fig. 5. Fig. 7 is a detail view of the spring-catch for holding the leg to any desired adjustment of length, taken on line *XX*, Fig. 1. Fig. 8 is a side view of one of the fulcrum-plates with the leg at an acute angle to lever *S*.

Like letters of reference indicate like parts in all the views.

A designates the under sill of a car, to which

the mover is attached by means of an angled push-plate, *B*, one angled portion of which is preferably formed with one or more spurs, (in the present instance three are shown,) which enter the wood and tend to hold the plate in fixed position. Hook *C* is engaged with the opposite side of the sill and drawn into close engagement therewith by means of chain *D*, attached thereto and passed through a recess formed in the lower angled portion of plate *B*, the other end of the chain being attached to a metal block, *E*, having serrations *E'* upon one side thereof, and being held in any desired adjustment by seating the serrations into corresponding serrations, *F'*, formed in plates *F*, said plates being adjustably secured to the upper angled portion of plate *B* by being formed with elongated slots *F''*, through which a stud, *F'''*, of the angled portion passes, the lower ends of plates *F* being pivotally connected with bars *G*, which are connected with a lever, *H*, pivotally joined to push-plate *B* by means of a bolt or rod, *L*, by which means the chain is brought centrally between said plate through the recess and between plates *F*, thereby causing the draft upon the chain when tension is applied by lever *H* to be central of the push-plate.

J designates fulcrum-plates connected with plate *B*, one on each side, by means of hangers *K*, formed integral therewith, and having an elongated slot through which bolt or rod *L* passes, the position of the fulcrum-plates upon plate *B* being determined by the position of two sliding bolts, *M*, having broad flat forward ends which rest normally between the bolt or rod *L* and transversely of and at the base of slots in hangers *K*, the opposite reduced end sliding in a keeper, *K'*, upon plate *J*, and said bolts *M* being urged forward by coiled springs *O*, bearing against a shoulder upon bolts *M* and the keeper, the bolts being withdrawn by means of wires or ropes *N*, connected therewith and extending to within convenient reach of the operator.

Upon the inner side of each fulcrum-plate is formed a curved track having an endless bearing-surface, this track being preferably formed by recessing the sides of the fulcrum-plates, as at *P*, to the required depth to form tracks of the desired width. Within the re-

cesses and bearing upon the upper and lower tracks is an anti-friction roller, P', journaled upon a leg, R, formed with an elongated slot, R', (shown in dotted lines, Fig. 3,) and being
5 pivoted to the frame by a transverse journal, Q, between the fulcrum-plates, and having an anti-friction roller, Q', bearing within slot R'.

Leg R is composed of two parts, an upper portion, R'', and a lower portion, R''', adapted
10 to slide telescopically within the upper portion, as shown in cross-section, Fig. 6, and be held to any desired adjustment of height by a spring locking-dog, T, secured to the lower portion and entering holes T' in the upper
15 portion. The foot of the lower portion is provided with a bifurcated inverted-V-shaped shoe, U, adapted to rest and impinge upon the rail. Leg R may be made of metal or wood provided with a metal shoe at the lower
20 portion.

S is a lever attached to plates J by means of bolts or rivets J'', passing through perforations J' in the plates.

In operation leg R is placed with the bifurcated shoe U upon the rail. Angle-plate B is
25 then placed so that the upper portion rests against the end of the car, the lower portion bearing against the under side of the sill. Lever H is lowered, as shown in Fig. 3, and hook C is engaged with the rear side of sill A. To
30 closely engage the hook with the sill by means of chain D, the serrations upon metal block E are engaged with serrations F' upon plates F at a height to draw the chain the desired amount
35 to engage the hook with the rear side of the sill, and the chain is drawn taut by moving lever H to a vertical position, as shown in Fig. 1, whereby plates F and bars G are raised, block E rising with the plates and tightening
40 the chain and the hook upon the sill, plates F and bars G being of a relative length to be locked from breaking joint when brought to a vertical position, thereby requiring no further attention to be given to lever H.

When it is desired to push the car, leg R is placed at an acute angle to lever S, as shown in dotted lines, Fig. 1. To adjust the leg to an acute angle, should the leg be at an obtuse angle, as shown in full lines, Figs. 1 and 3, the
45 operator pulls upon wires or ropes N, retracting sliding bolts M, the fulcrum-plates being then rocked upon pivots Q until the forward end is sufficiently raised to admit of bolts M passing between the upper side of rod or
50 bolt L and the lower side of the upper portion of hangers K, as shown in Fig. 8, where-

upon the leg assumes a position at an acute angle to lever S, when by working said lever the car or cars may be pushed to any desired location.

To arrange the parts for pulling a car or cars, the operation just described is reversed, bolts M being withdrawn and the hangers allowed to drop to a position shown in Fig. 3, and the bolts then passed below bolt or rod L,
60 whereupon leg R assumes a position at an obtuse angle to lever S, and by operating the lever the car or cars are pulled.

It will be seen that by the arrangement of chain-and-lever connection the hook can be easily and quickly adjusted in place, and that
70 by means of the ratchet-plates and metal block E any variation in size of sill can be readily compensated for.

It will also be seen that the change of position of leg R can be easily effected by means of the spring-bolts, and that any variation of height of cars is provided for in the arrangement of the telescopic section of the leg.

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

1. In a car-mover, an angle-plate, fulcrum-plates pivoted thereto by means of slotted hangers, being held in adjustment by movable bolts, and a leg pivoted to the fulcrum-plates and adapted to have the direction of its inclination changed by the different adjustments of the fulcrum-plates, as and for the purpose set forth.

2. In a car-mover, an angle-plate, movable serrated plates connected thereto, a hook connected by a flexible attachment to a block adjustable upon the serrated plates, and a lever pivoted to the angle-plate and connected with
95 the serrated plates, as and for the purpose set forth.

3. In a car-mover, an angle-plate, fulcrum-plates connected therewith, and a leg pivoted thereto, composed of an upper section provided with a spring locking-dog and a lower section sliding within the upper section and provided with perforations into which the locking-dog engages, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

LORD B. GIFFORD.

Witnesses:

WILLIAM WEBSTER,
JOHN W. SAVENE.