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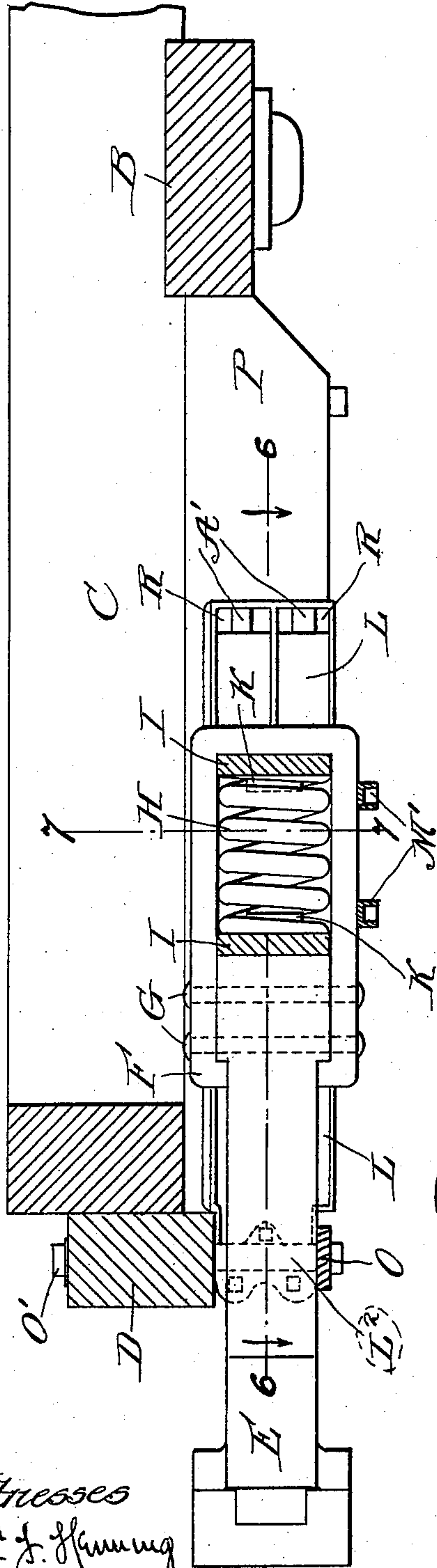
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W. H. STARK.  
DRAFT RIGGING FOR CARS.

No. 587,376.

Patented Aug. 3, 1897.

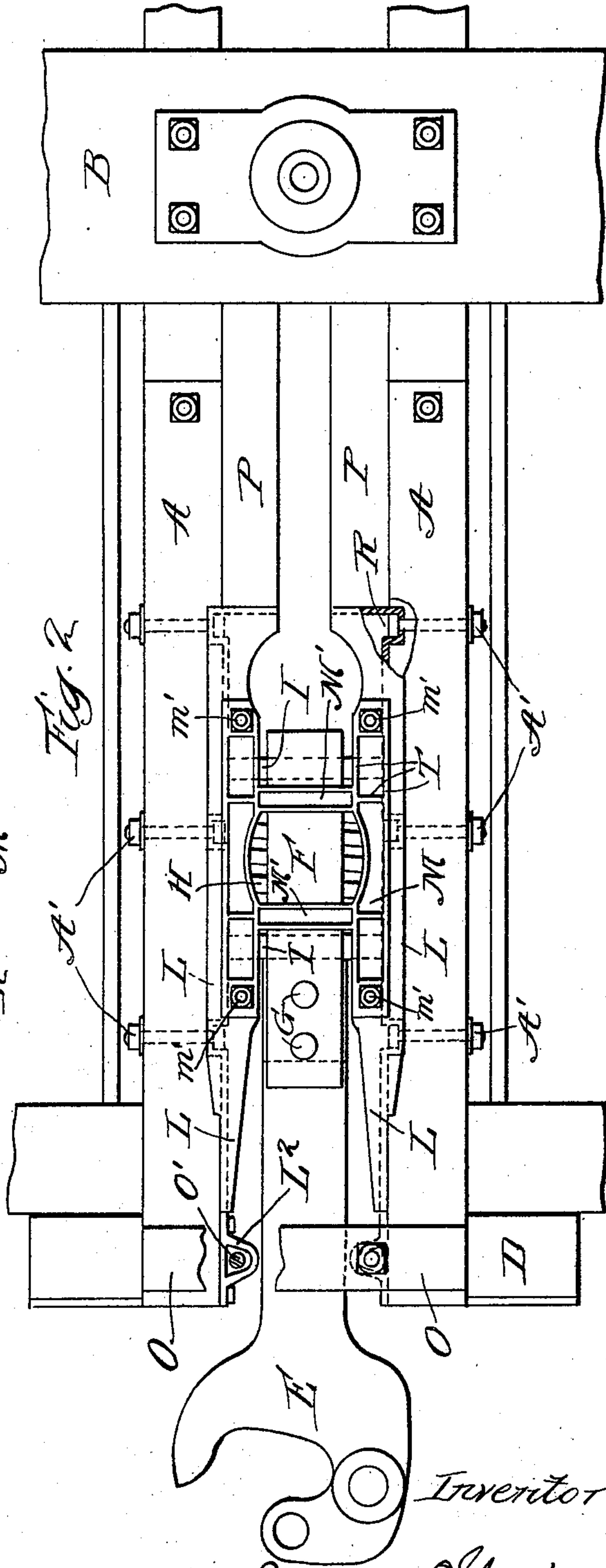
Fig. 1.



Witnesses  
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Fig. 2.



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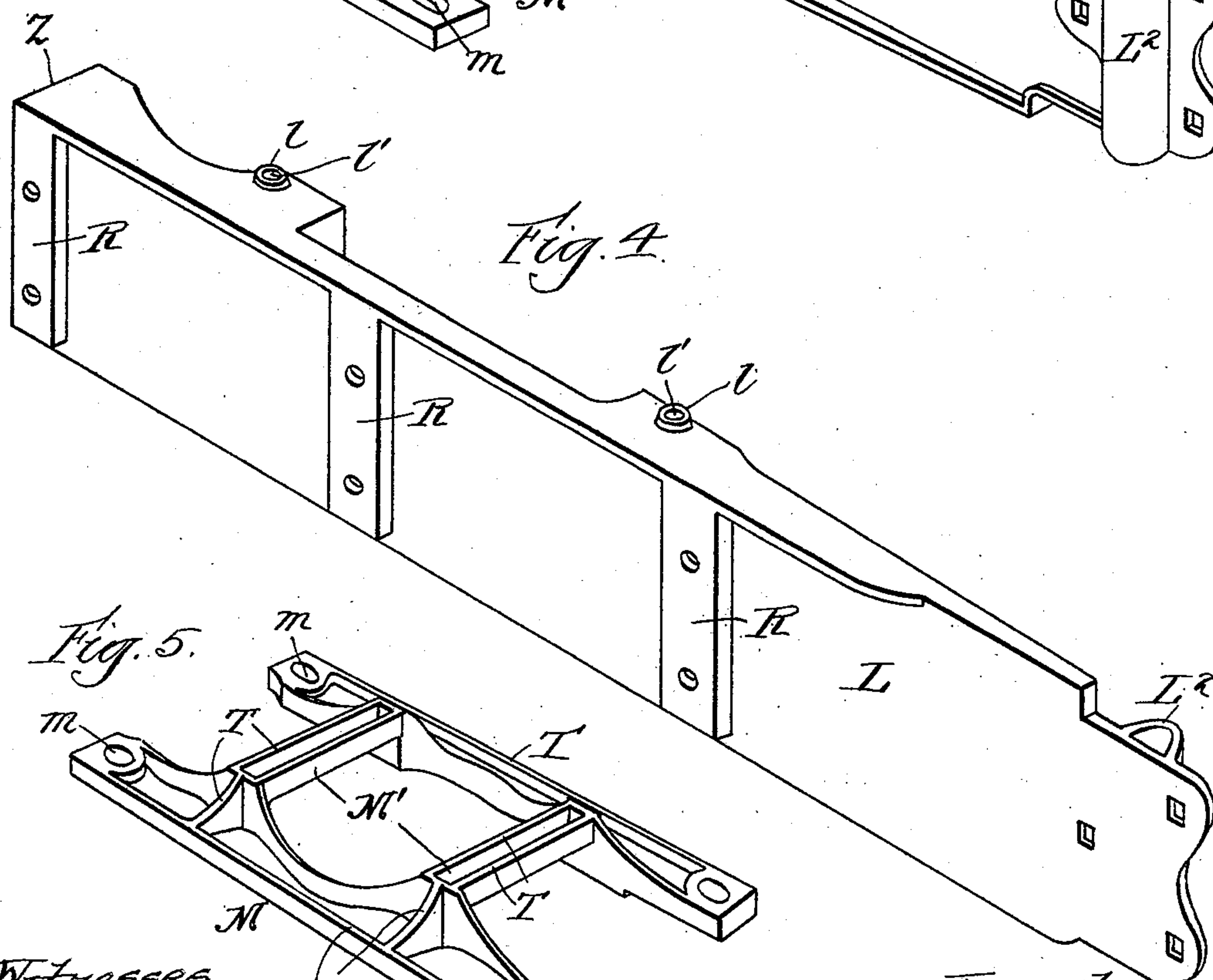
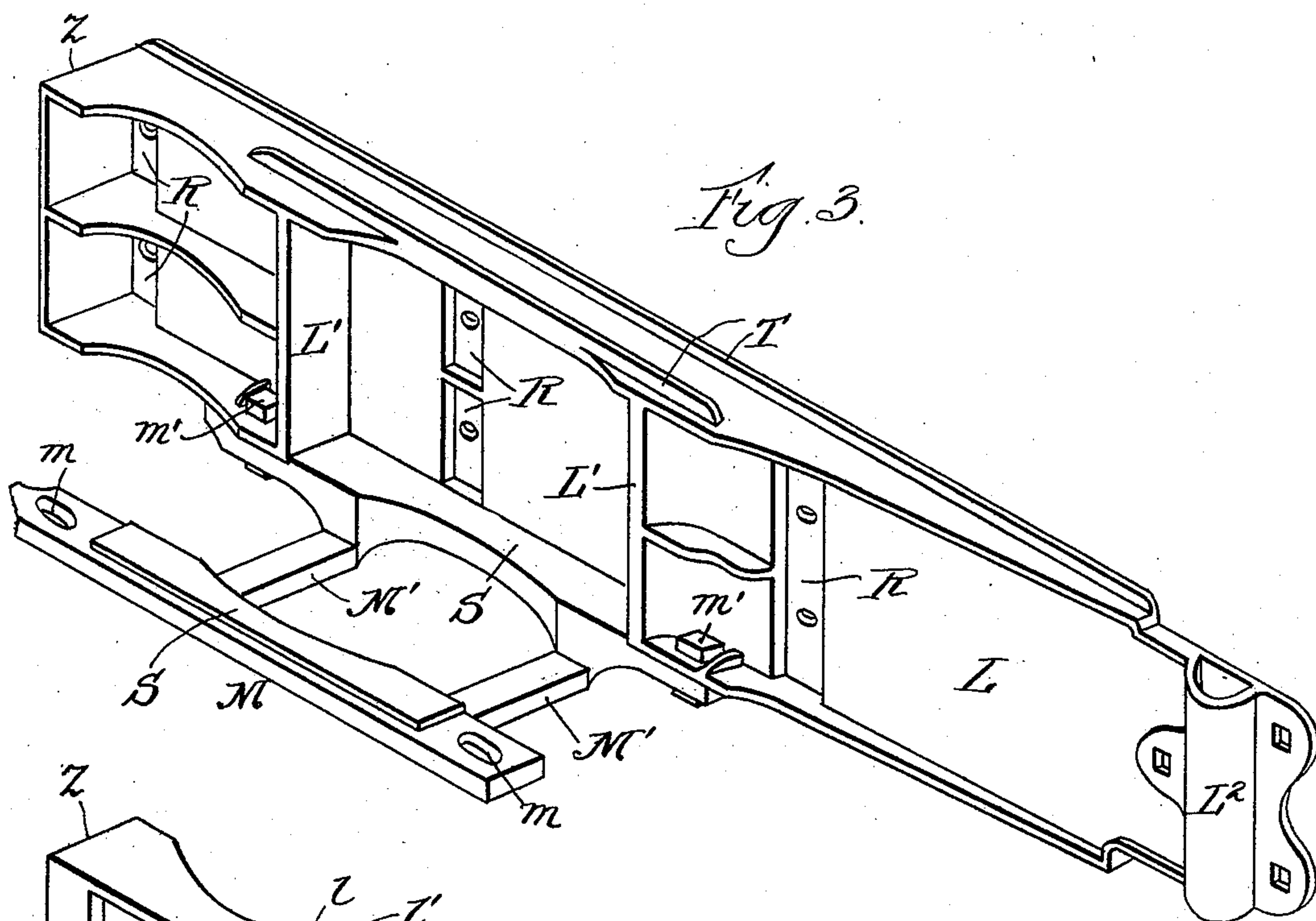
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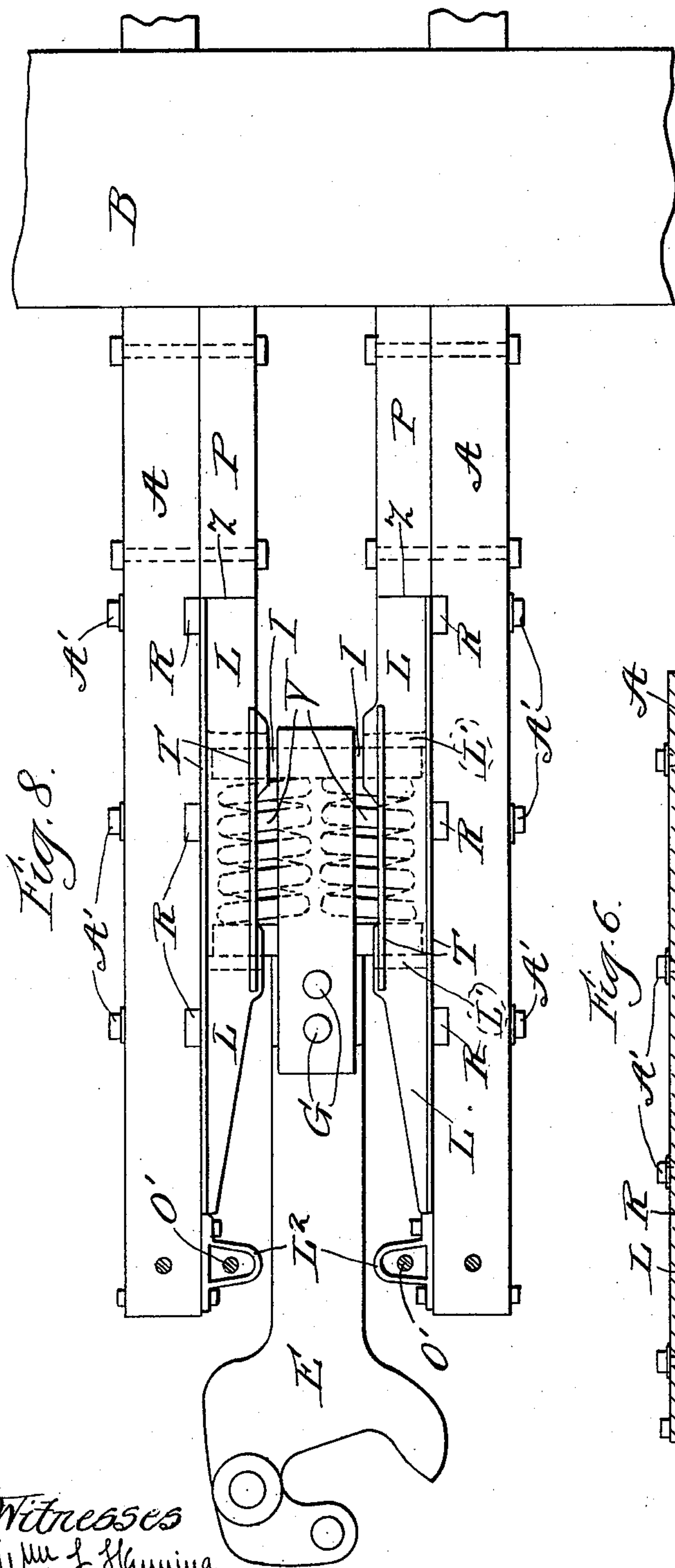
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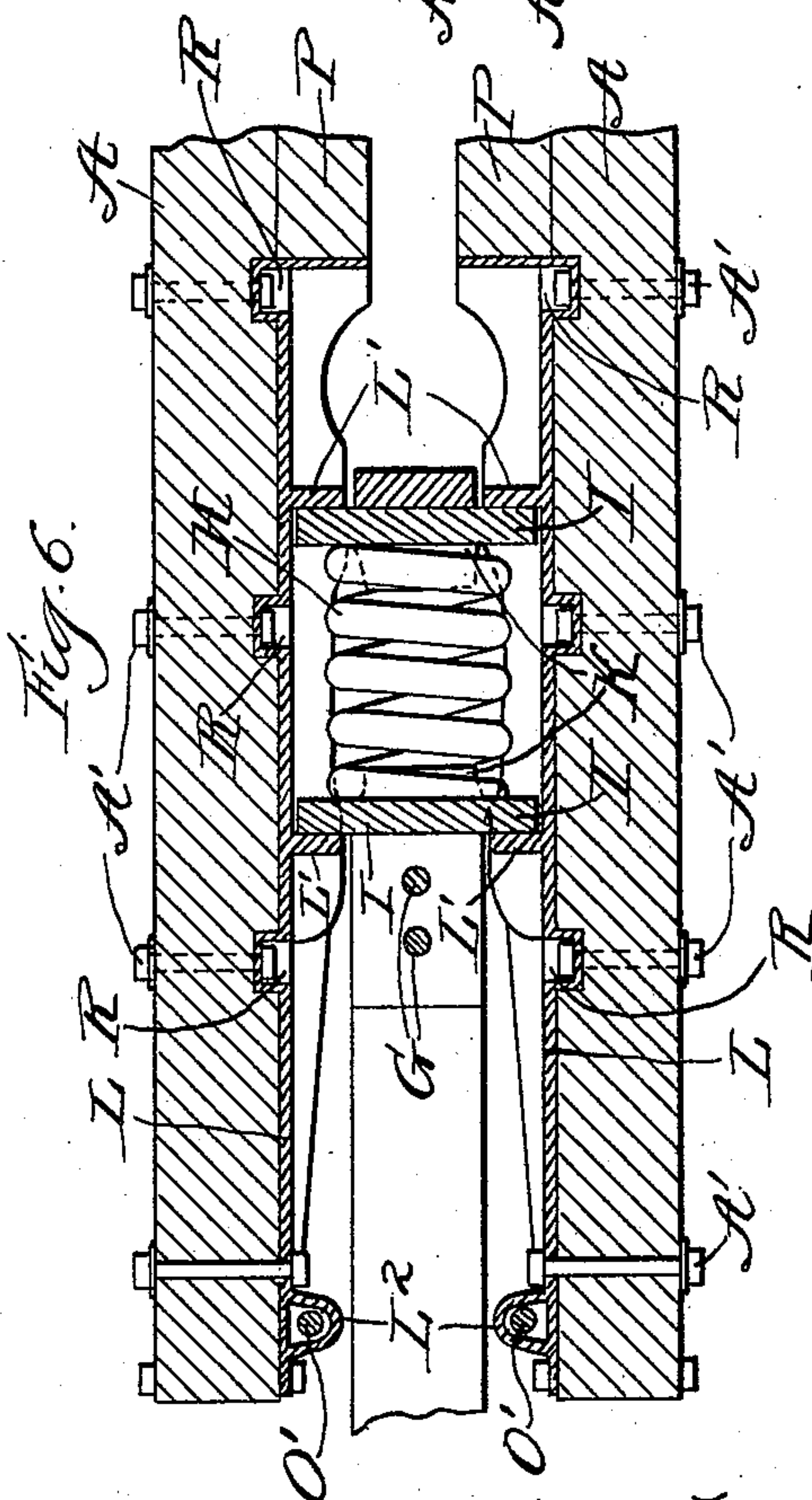
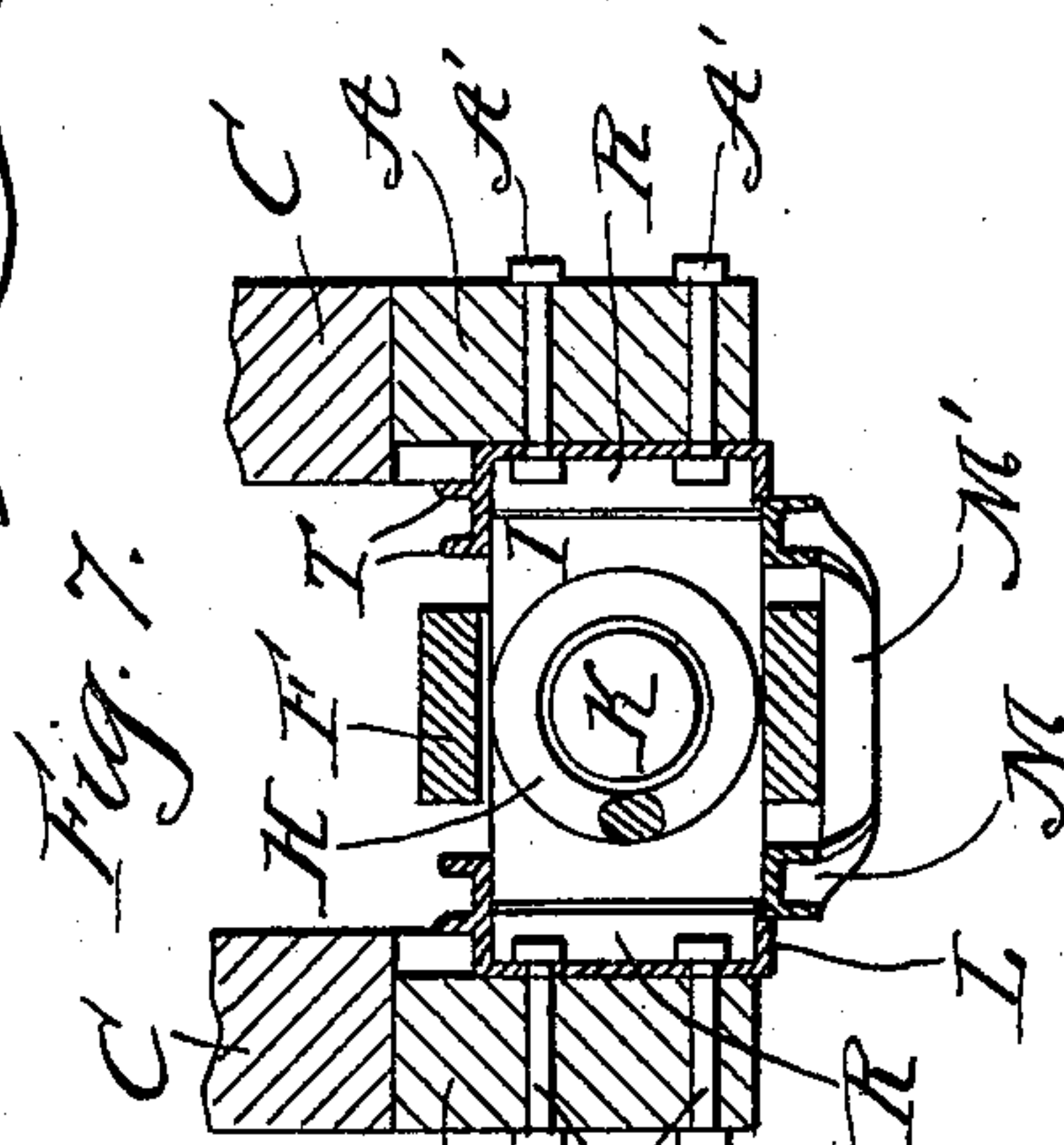
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No. 587,376.

Patented Aug. 3, 1897.



Witnesses  
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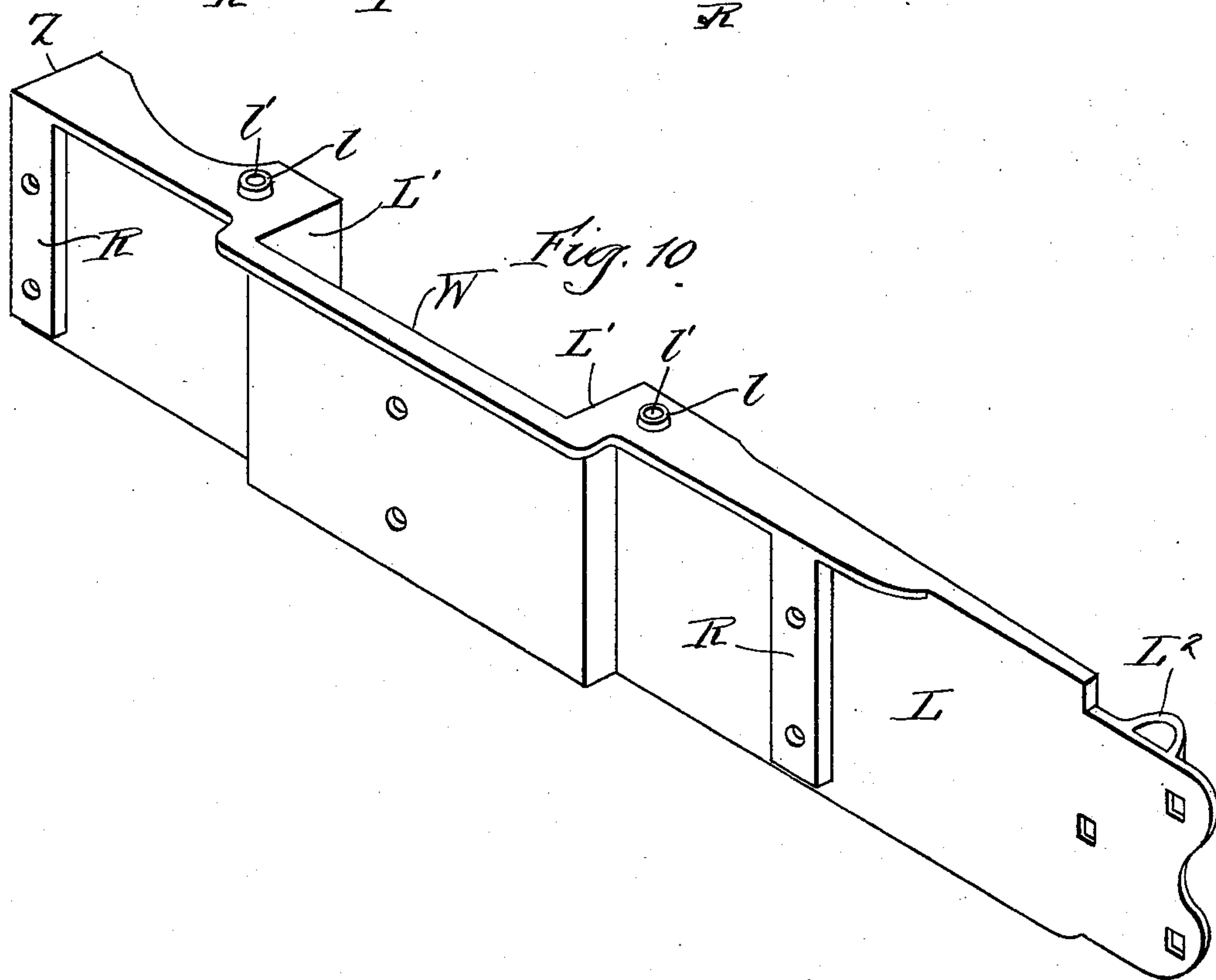
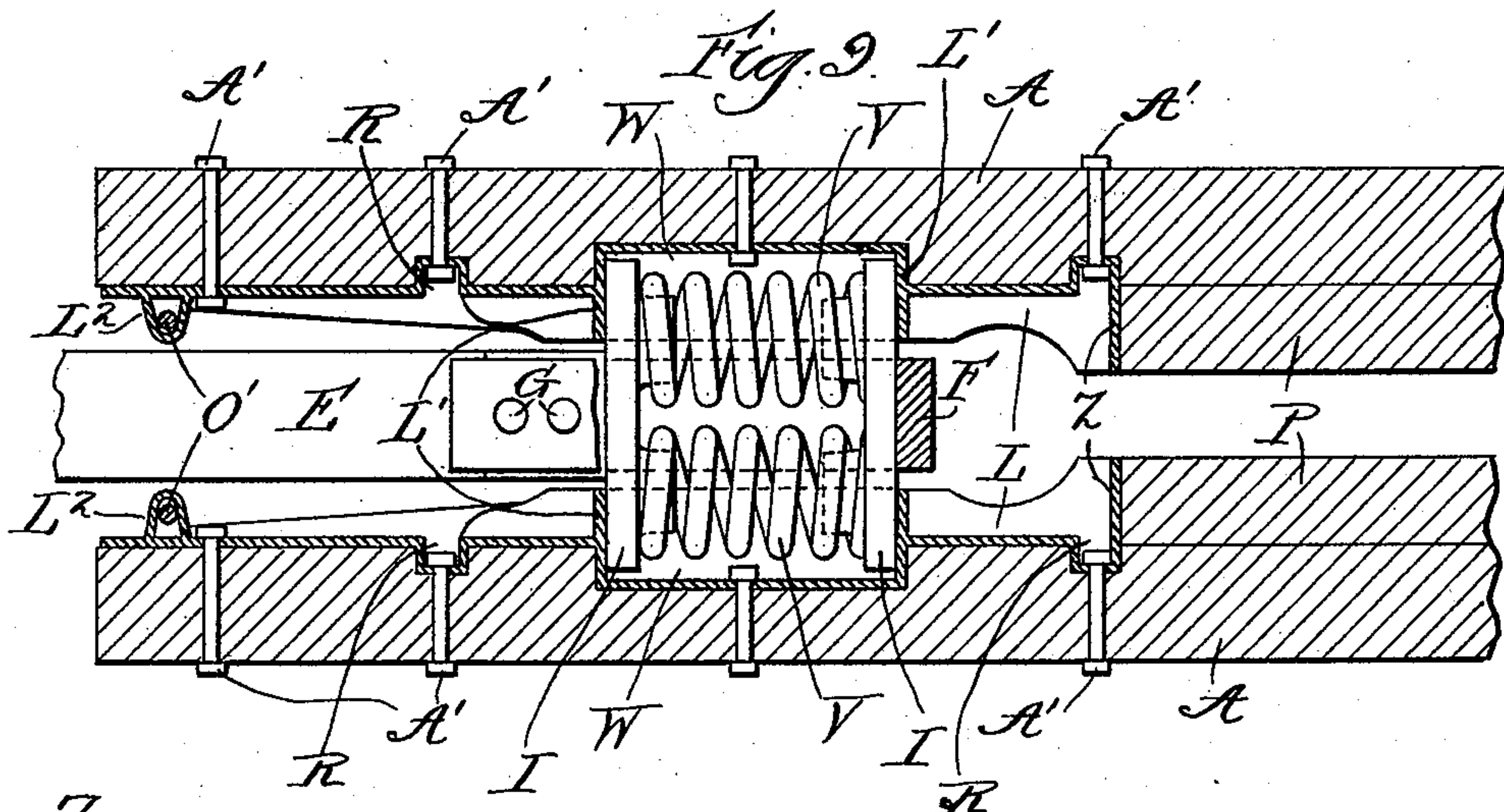
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W. H. STARK.  
DRAFT RIGGING FOR CARS.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. STARK, OF TOLEDO, OHIO.

## DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 587,376, dated August 3, 1897.

Application filed February 10, 1896. Serial No. 578,825. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. STARK, a citizen of the United States of America, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Draft-Rigging for Cars, of which the following is a description.

Referring to the accompanying drawings, wherein like reference-letters indicate like or corresponding parts, Figure 1 is a vertical section of my improvement; Fig. 2, an inverted plan of the same. Figs. 3, 4, and 5 are detail views. Fig. 6 is a horizontal section in line 6 6 of Fig. 1. Fig. 7 is a transverse section in line 7 7 of Fig. 1. Fig. 8 is a horizontal view, in partial section, of a modified form. Fig. 9 is a similar view of another modification, and Fig. 10 is a perspective view of one of the draft-guides of the same.

The essential requisites in a satisfactory draft-rigging are, first, the necessary strength and rigidity of the fixed parts without unnecessary weight, the parts being so constructed as to be easily and immovably secured to the framework of the car; second, the necessary elasticity of the draw-bar to cushion or deaden shocks and suitable connections between the fixed and movable parts, and, third, the necessary protection to the exposed parts to prevent their rapid wearing, the whole being so assembled and combined as to secure those qualities in a simple and economical manner.

The object of my invention is to provide a draft-rigging embracing the above-described features; and to this end it consists in the novel construction and combination of parts described and shown, and more particularly pointed out in the claims.

In the drawings, A A represent the draw-timbers located as is usual in cars and with the ordinary body-bolster B, sills C, and head-block D.

E represents the draw-bar secured to the draw-bar pocket by means of the bolts G G, or in any other preferred manner. The pocket is preferably composed of a strap F, Fig. 1, inclosing the spring H between the followers I I. Internally-extending bosses or lugs K K keep the spring in proper position at all times.

L L are the draw-bar guides, which are se-

curely tied together on their lower sides by the spider M, (see Figs. 2, 3, 4, and 5,) which consists of the lower follower-straps connected by bars which are integral therewith. This construction leaves the cushioning device visible to the inspector without disconnecting any of the parts. In the preferred construction a boss *l* is cast on the lower sides of the guides through which the bolt-hole *l'* is made and a corresponding recess *m* in the ends of the follower-straps fit the two parts snugly together. The bolt extending through the two firmly secures them in position, the boss *l* and recess *m* taking all severe transverse strain off the bolts. It is obvious that the position of the bosses and recesses may be reversed, if preferred.

The spring H and followers I I are on the sides inclosed between the guides L L, the stops L' L' marking the length of the pocket.

The several parts are assembled as follows: The draw-timbers, properly gained and shaped, are securely fastened in position to the car-frame, and the guides L L are securely bolted to them by the bolts A'. The filling-blocks P are closely fitted in between the enlarged or square ends of the guides L L and the bolster B and firmly bolted to the draw-timbers. The spring H and followers I I are then placed in position in the draw-bar pocket F, and the draw-bar E, with the pocket and contained parts, is lifted and placed between the guides L L with the cushioning device contained between the stops L' L'. The spider M is then secured by the bolts *m'* to the lower sides of the guides L, and the forward end of the draw-bar is supported in any suitable manner—as, for example, by the bearing-iron O, which is secured in place by the bolts O', the lower portion of said bolts being inclosed and protected by the guards L<sup>2</sup>, which are preferably cast integral with the guides, thus constituting chafing-irons to protect the bolts from wear and breakage and also to hold the draw-bar centrally between the guides.

The mode of operation is apparent. As the draw-bar E is drawn forward the forward follower I is prevented from moving outward by the forward stop L'. The spring H is thus compressed between the fixed follower at the front and the moving follower at the rear and the action of the draw-bar is thus cushioned.



When the draw-bar is pressed inwardly, the action is reversed and is cushioned in a similar manner.

The spider M binds the two draw-bar guides L L together at the bottom, preventing their spreading from any cause and thus preventing the disarrangement of the several parts and at the same time leaves the interior parts open to inspection at all times. The center ties or bars M' of the spider M are depressed, as shown, Figs. 3 and 5, to permit the pocket on the end of the draw-bar to pass backward and forward freely and without being impeded in any way except by the cushion-spring.

In constructing the draw-bar guides L L, I prefer to cast recess-pockets R R, the object being twofold: (a) The gaining of such recesses into the draw-bar timbers A A adds rigidity and strength to the union of the two and removes undue strain from the connecting-bolts; (b) I am also enabled to use shorter bolts, making a saving in cost without sacrificing strength.

The ends of the followers I I rest upon the straps S of the spider M, between the stops L' L' of the guides, thus being boxed in and preventing any displacement.

In the preferred construction the guard or chafing-iron L<sup>2</sup>, the stops L' L', the web connecting them at or near their tops and extending to the enlarged rear end of the guides, the recessed parts R, and the bosses I are cast integral with the guides L, which are also provided with an enlarged or squared rear end Z for a bearing against the filling-blocks.

The guides L L and spider M are preferably made of malleable iron, and to secure strength without undue weight I prefer to cast the parts with strengthening-ribs T, as shown, Figs. 3 and 5.

In some cases I prefer to use double cushion-springs, as shown in Figs. 8 and 9. In such cases the preferable way to arrange the

springs V is to place them side by side in a horizontal plane. In Fig. 8 I show the draw-timbers placed a sufficient distance apart to make room for the two springs, while in Fig. 9 I show the guides particularly constructed to form a pocket of sufficient capacity to inclose the springs and followers. Fig. 10 shows one of such guides, a recess W being formed to make room for the springs. The recess being gained into the timbers also allows the use of shorter bolts and serves a similar purpose to the shouldered recesses R in rigidly securing the guides to the timbers.

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

1. In a draft-rigging of the kind described, the guides, L, formed with an enlarged or squared rear end, Z, the filling-block or projection P and provided with the guard or chafing-iron, L<sup>2</sup>, stops, L', L', connected at their tops by a web, and one or more recessed parts, R, cast integral therewith; substantially as and for the purpose set forth.

2. In a draft-rigging of the kind described, the guide, L, formed with an enlarged or squared rear end, the filling-block or projection and provided with the guard or chafing-iron, L<sup>2</sup>, stops, L', L', connected at their tops by a web, one or more recessed parts, R, and bosses or recesses, l, cast integral therewith; substantially as and for the purposes set forth.

3. In a draft-rigging of the kind described, the guide, L, formed with an enlarged or square rear end, the filling-block or projection and provided with the guard or chafing-iron, L<sup>2</sup>, stops, L', L', connected at their tops by a web, one or more recessed parts, R, and a web connecting the recessed parts; substantially as and for the purpose set forth.

WILLIAM H. STARK.

Witnesses:

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CHARLES N. LONG.