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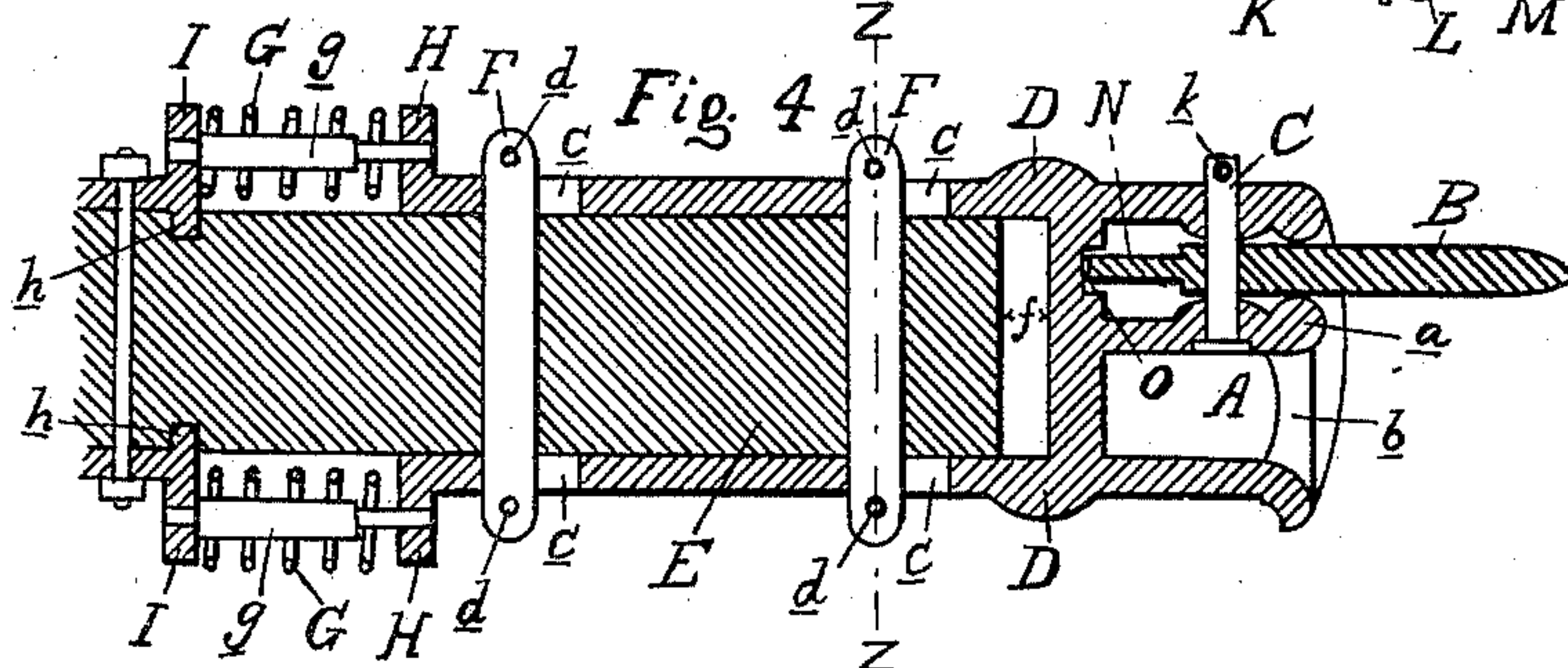
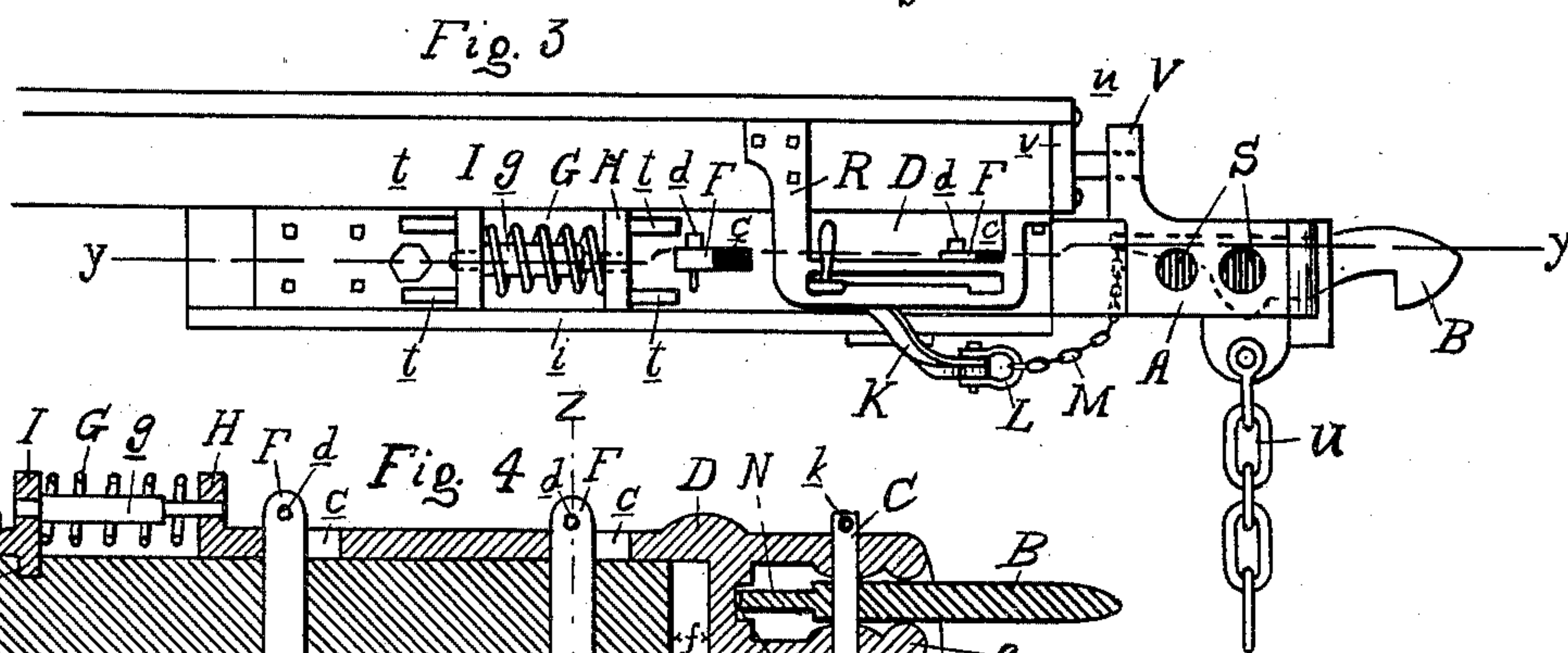
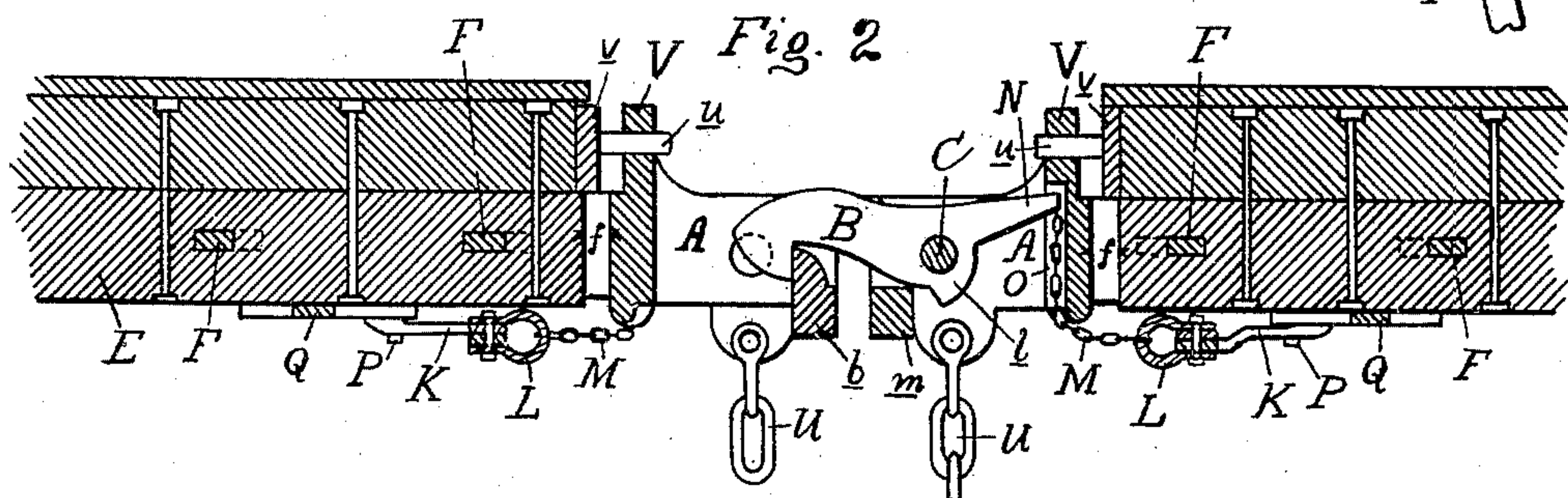
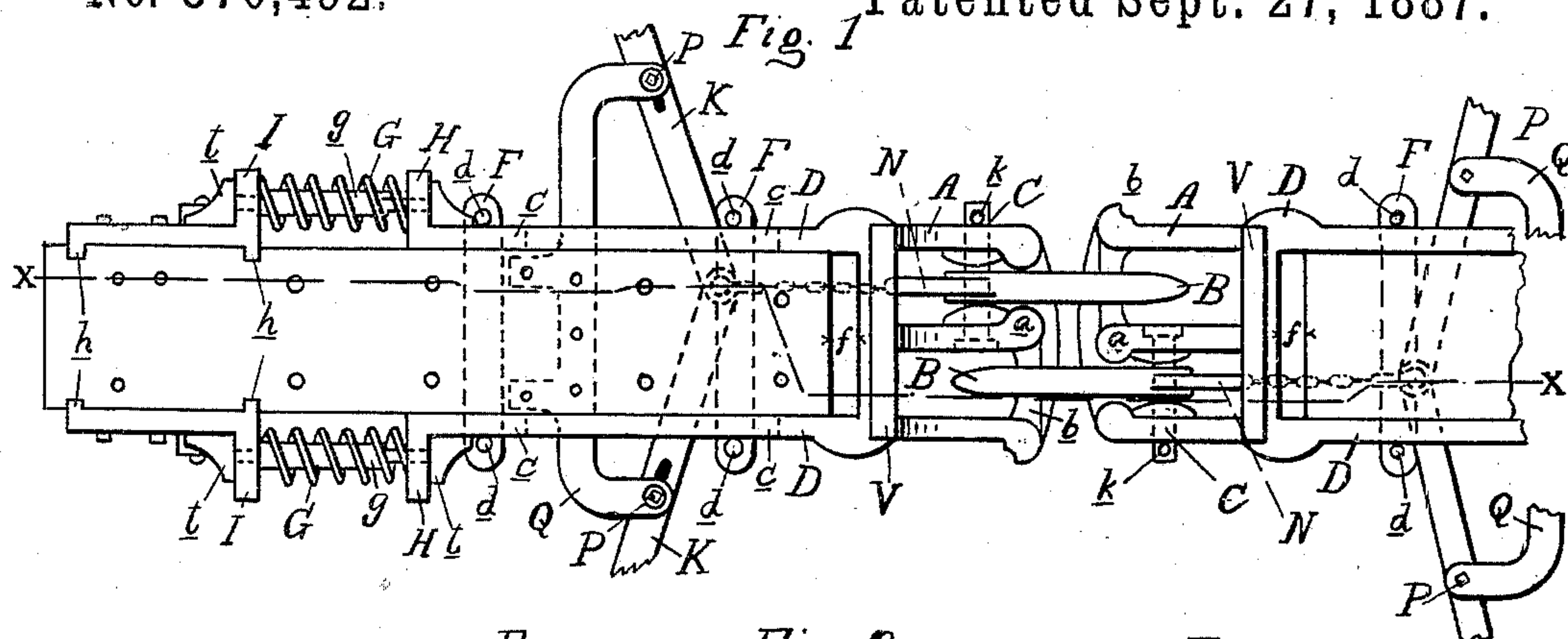
2 Sheets—Sheet 1.

M. PHILLIPS.

## CAR COUPLING.

No. 370,492.

Patented Sept. 27, 1887.



Witnesses:

P. M. Hulbert  
W. Sprague

*W. H. H. H. H.*

*Inventor:*

Morris Phillips  
By Adolph Barthel

By Adolph Barthel

Att'y.

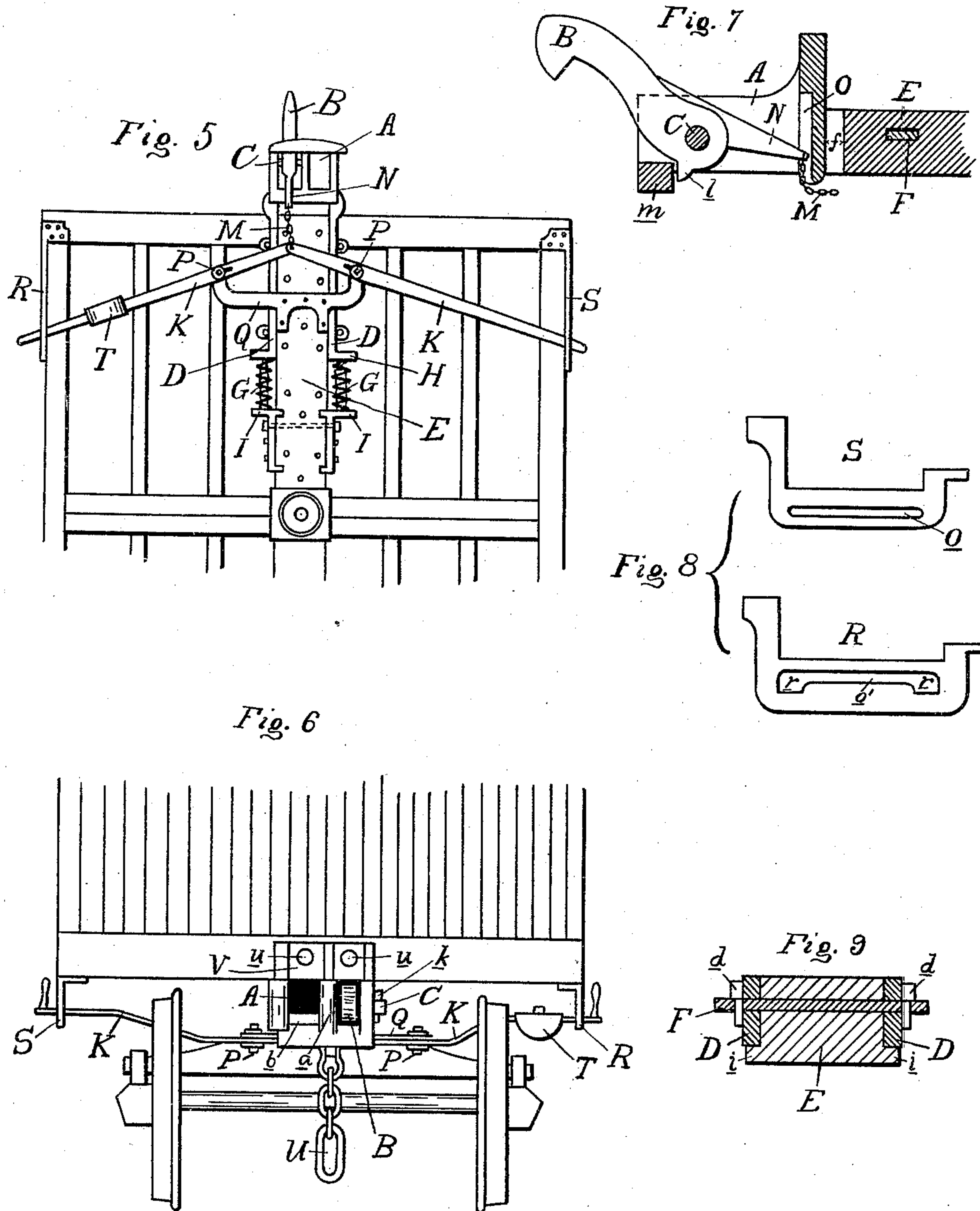
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*M. J. Fugue*

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# UNITED STATES PATENT OFFICE.

MORRIS PHILLIPS, OF DETROIT, MICHIGAN.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 370,492, dated September 27, 1887.

Application filed July 18, 1887. Serial No. 244,620. (No model.)

*To all whom it may concern:*

Be it known that I, MORRIS PHILLIPS, a citizen of Great Britain, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-couplings, and of that class known as "double-hook couplers."

The invention consists in the construction, arrangement, and combination of parts, all as more fully hereinafter described.

Figure 1 is a plan of two adjacent couplers connected together or in a coupled position. Fig. 2 is a vertical central section on line *x x*, Fig. 1. Fig. 3 is a side elevation of one of the couplings. Fig. 4 is a horizontal section on line *y y*, Fig. 3. Fig. 5 is a bottom plan. Fig. 6 is a rear elevation. Fig. 7 is a section through the head of the draw-bar. Fig. 8 are details. Fig. 9 is a cross-section on line *z z*, Fig. 4.

The draw-head A of the draw-bar is divided by a vertical partition, *a*, into two compartments. In one compartment the hook B is pivotally secured by a pin, C, and the other compartment forms the mouth into which the hook of the opposite coupling enters and hooks over the cross-bridge *b* at the mouth of the draw-bar.

Rearwardly extending from the sides of the draw-head are the two draw-bars D D, which embrace between them the draw-block E, which is rigidly and securely bolted to the under side of the car-body, and forms the means of supporting the draw-bars in position and transmitting the draft to the car. To this end two cross-bars, F, are placed crosswise through the draw-block and through slots *c* in the draw-bars, and are secured against lateral displacement by suitable keys, *d*, all so arranged that after removing the keys, and then the cross-bars F, the draw-head with the draw-bars may be removed. The draw-bars have a limited longitudinal play on the draw-block E to the amount of the distance, *f*, between the forward end of the draw-block and the rear sides of the draw-head, and the same amount of play is also provided by longitudinally en-

larging the slots *c*. This is for the purpose of bringing the buffer-springs G into action, of which there is a pair, one at the foot H of each draw-bar. Each buffer-spring is held in position by a guide-pin, *g*, which is stepped at the forward end into the foot of the draw-bar and at the opposite end into a stationary abutment, I, firmly bolted to the side of the draw-block, and, preferably, for increased strength, is provided with projections *h* let into the draw-bar. The pins *g* are suitably reduced at one end to permit of the free action of the buffer-springs under compression within the limit provided for. As an additional support for the draw-bar, the draw-block is provided with shoulders or ledges *i*, as shown in Fig. 9. The coupling-hook B is loosely secured upon its pin C, which latter is held removably in position by means of a suitable key, *k*, so that the hook may be quickly removed, if desired.

The hook is operated to couple and uncouple by means of a pair of levers, K—one for each side of the car—and the inner ends of these levers are pivotally secured together by means of a clevis, L, to which a chain, M, is secured, which fastens onto the rear extension, N, of the coupling-hook. This latter plays in a guide-groove, O, in the rear wall of the draw-head, as shown, so that by the actuation of either one of these levers the hook may be raised, and, if permitted to do so, fall by its own gravity, and at the same time to work automatically in hooking into an approaching draw-head.

A small projection or lip, *l*, prevents the hook, by striking against the cross-bar *m*, from being raised accidentally beyond the returning action of its gravity.

The levers K are fulcrumed at P to the ends of a cross-brace, Q, bolted to the under side of the draw-block, or in any other suitable manner, and one or both of these fulcrums are provided with the necessary play to permit the levers to work without binding. The outer ends of these levers pass through stirrups R and S, bolted to the sides of the car, one of which is provided with a straight slot, *o*, and the other with a notched slot, *o'*, the notches *r r* therein forming the points of adjustment for the lever in the coupled or uncoupled position.



of the hook, respectively, and to prevent any accidental disengagement of the levers one of them is provided with a weight, T, sufficient to hold it in its notch, and thereby lock both levers in place.

To provide for contingencies in meeting other cars unprovided with such a coupler, I secure a draft-chain, U, to the under side of each draw-head, which may be left hanging down or be looped up, as desired. The draw-head is upon one side suitably relieved from dead-weight by forming openings therein, which also admit of the easy removal of the pivot-pins of the draw-hooks, and suitable reinforcements, *t*, are formed upon the sides of the draw-bars and stationary abutments I, to counteract any breaking strain.

The rear wall of the draw-head projects vertically upward to near the height of the front cross-sill of the car, and said projection V is provided with openings for the supporting-pins *u*, which are secured upon a bed-plate, *v*, bolted to the front side of the car-sill, the necessary play for the operation of the buffer-springs being also provided between this bed-plate and the rear of the draw-heads.

What I claim as my invention is—

1. In a car-coupling, the combination, with a draw-block centrally secured to the car-body, of a draw-head supported at the front end of said draw-block by means of two draw-bars closely embracing the draw-block and forming parallel rear extensions of the sides of the draw-head, and of the means, substantially as described, connecting the draw-bars to the draw-block with a limited sliding end play, substantially as described.

2. In a car-coupling, the combination, with a draw-block centrally secured to the car-body, of a draw-head supported at the front end of said draw-block by means of two parallel draw-bars extending rearwardly from the sides of the draw-head, and guided thereby, and closely embracing the draw-block between them, and two or more cross-bars passing through the draw-block and through elongated slots in the draw-bars, substantially as described.

3. In a car-coupling, the combination, with the draw-block centrally secured to the car-body, of a draw-head having a rear wall arranged to form an abutment against the front end of the draw-block and against the front sill of the car-body, a dead-plate secured to said sill and provided with a supporting pin or pins for the draw-head, two parallel draw-bars forming rear extensions of the sides

of the draw-heads and embracing the draw-block, and means for supporting said draw-bars on the draw-block with a limited end play, substantially as described.

4. In a car-coupling, the combination, with a draw-block centrally secured to the car-body, of a draw-head having its sides rearwardly extended to form two parallel draw-bars embracing said draw-block and slidingly supported therein with a limited end play, fixed abutments secured to the sides of the draw-block in rear of the draw-bars, and buffer-springs interposed between said fixed abutment and the rear ends of the draw-bars, substantially as described.

5. In a car-coupling, the combination, with a draw-block centrally secured to the car-body, of a draw-head provided with two parallel draw-bars extending rearwardly from said draw-head along the sides of the said draw-block and secured thereto with a limited sliding end play, supporting ledges or shoulders for said draw-bars formed on the draw-block, and a dead-plate secured to the car-sill and provided with supporting-pins projecting into the draw-head, substantially as described.

6. In a car-coupling, a draw-head vertically divided into two compartments, a coupling-hook pivotally secured in one compartment and having a rear extension, a vertical guide-groove for said extension, formed in the rear wall of the draw-head, a pair of horizontally-fulcrumed levers having their inner ends pivotally secured together and their outer ends guided and supported in horizontally-slotted stirrups secured to the sides of the car-body, and a chain connecting the pivotal point of the levers with the rear extension of the coupling-hook, all combined to operate substantially as described.

7. In a car-coupling, the combination of the vertically-divided draw-head A, coupling-hook B, pivotally secured therein, draw-bars D, having elongated slots *c*, draw-block E, centrally secured to the car-body, the cross-bars F, having keys *d*, the stationary abutments I, buffer-springs G, levers K, and chain M, all arranged to operate substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 9th day of July, 1887.

MORRIS PHILLIPS.

Witnesses:

H. S. SPRAGUE,  
W. S. SPRAGUE.