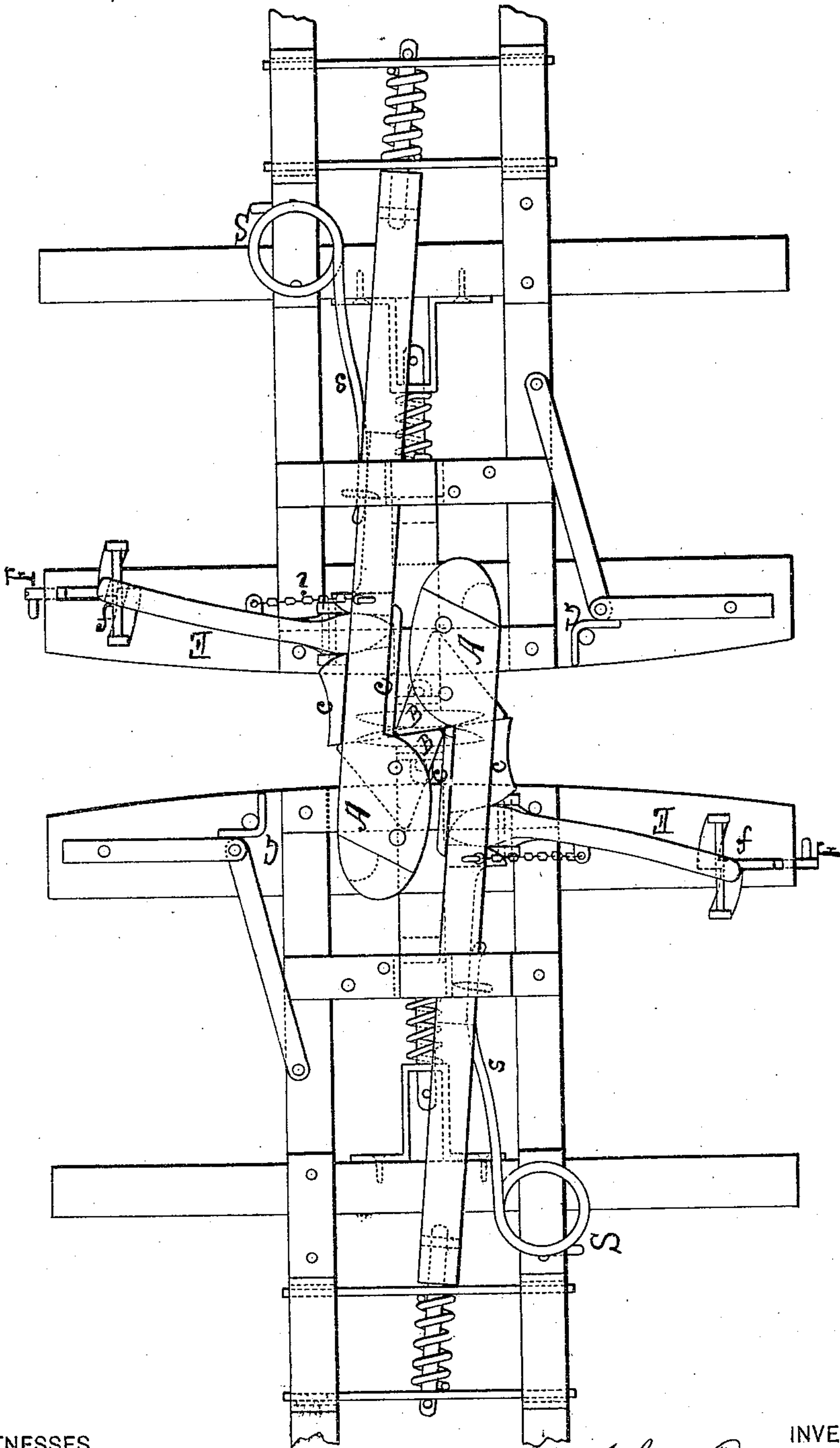


J. RANCEVAN.
Car-Couplings.

No. 153,609.

Patented July 28, 1874.

Fig. 1.



WITNESSES

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Fig 2

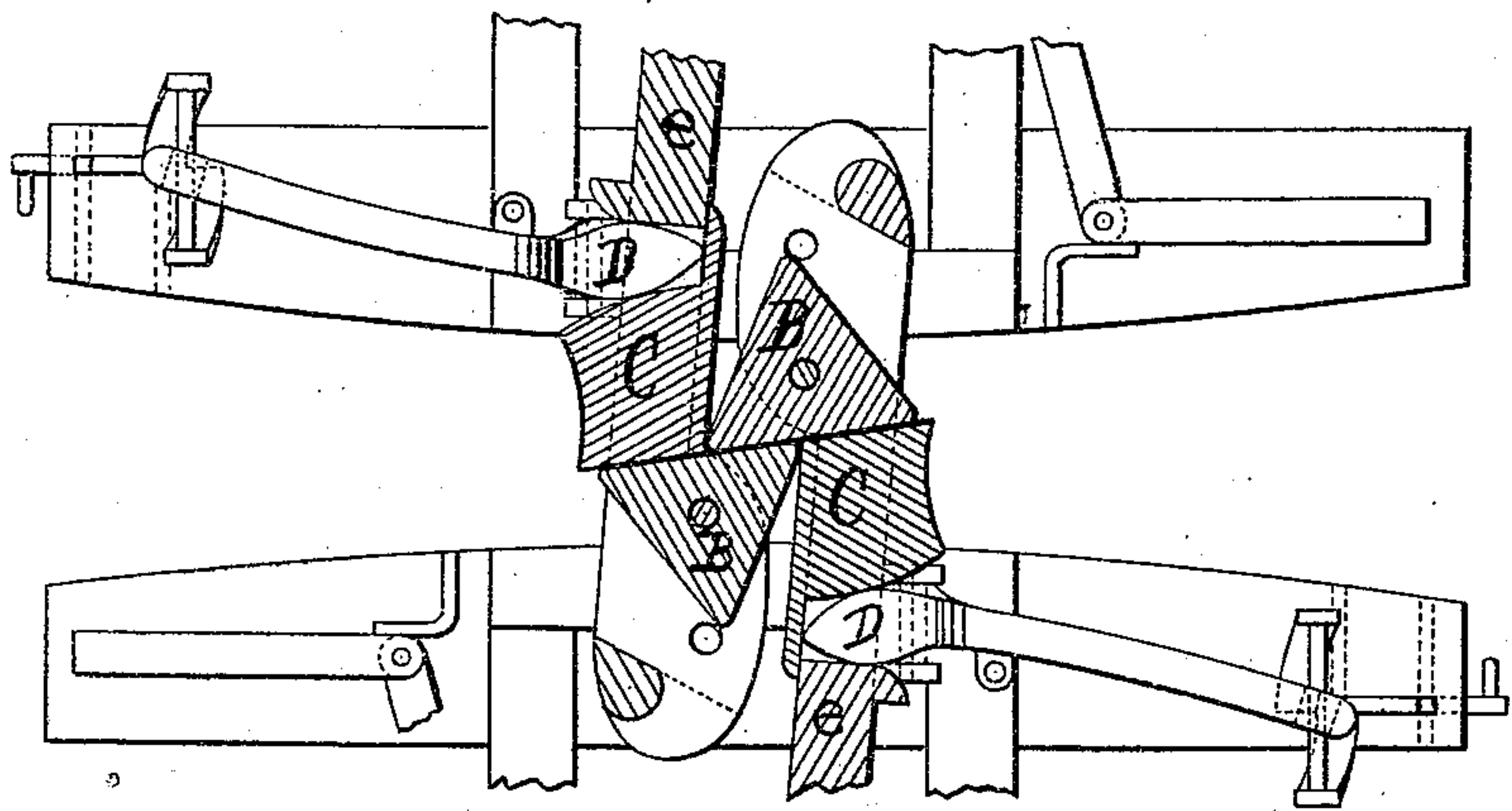


Fig 3

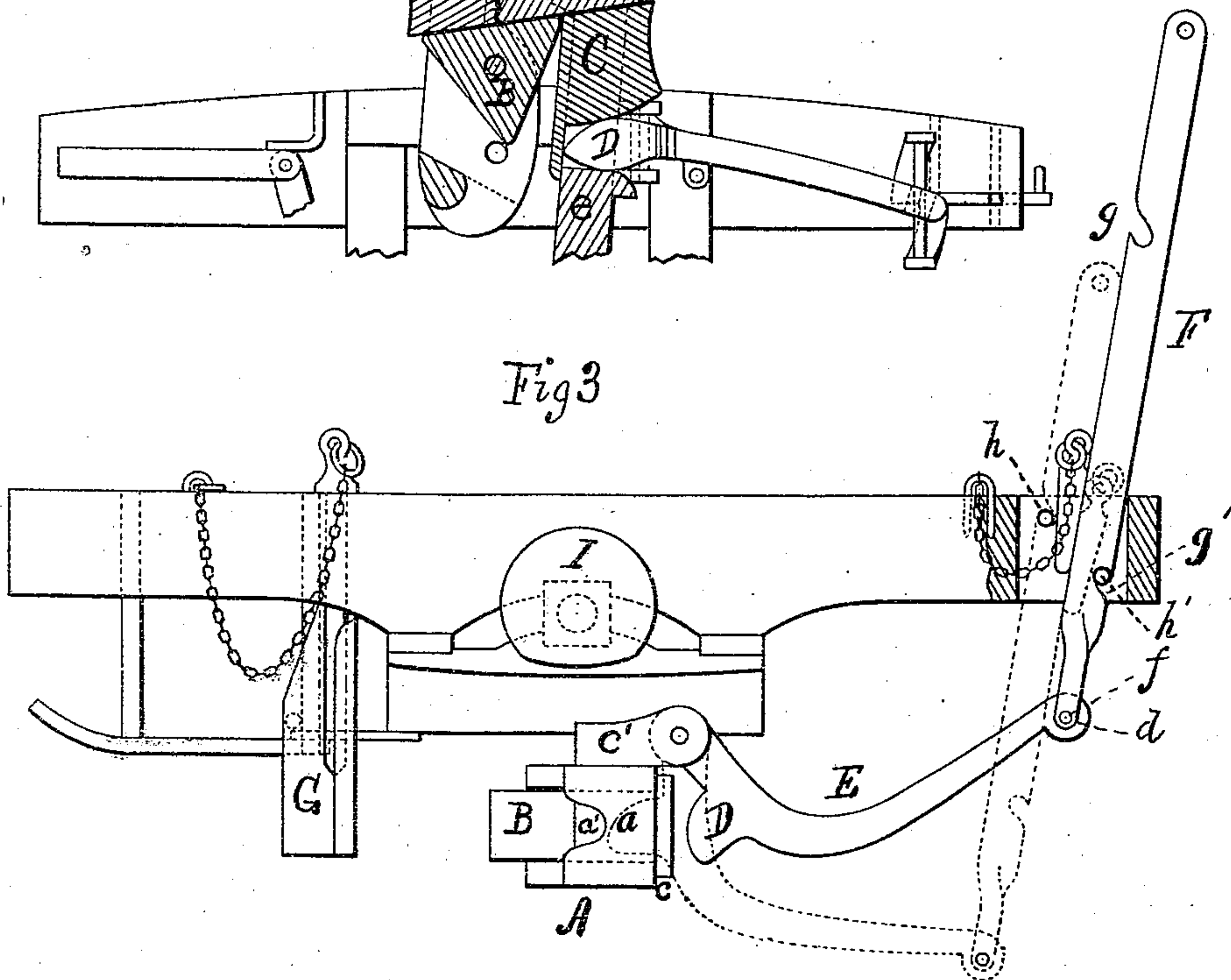


Fig 4

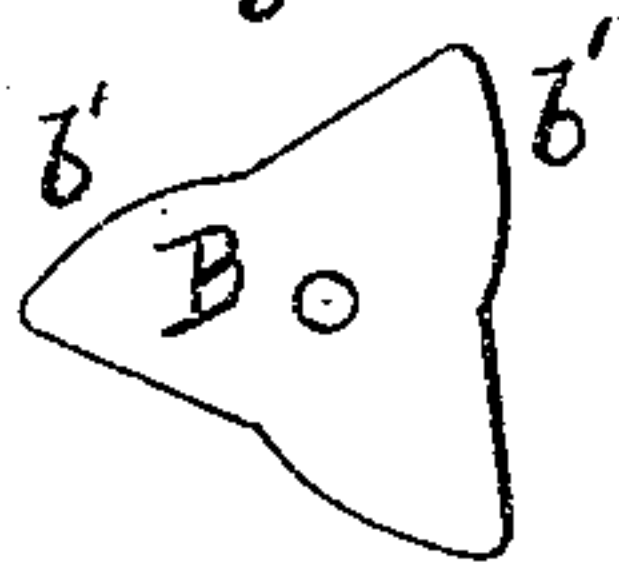


Fig 5

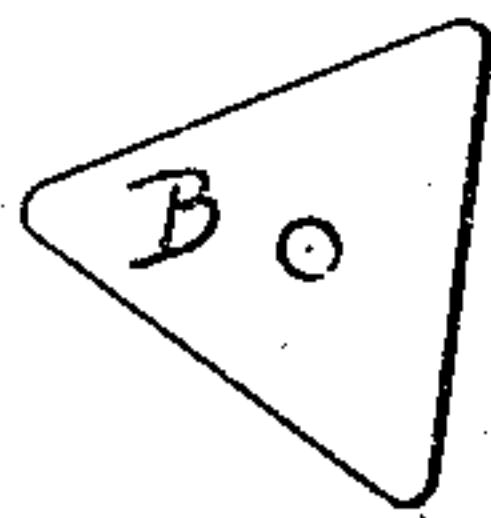
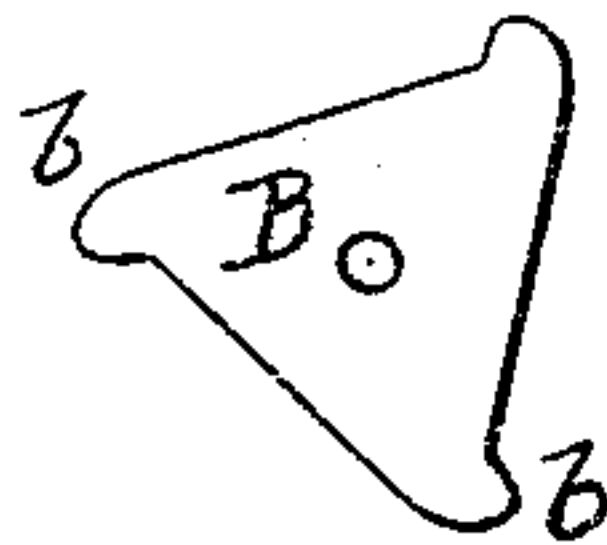


Fig 6



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UNITED STATES PATENT OFFICE.

JOHN RANCEVAN, OF CINCINNATI, OHIO.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **153,609**, dated July 28, 1874; application filed June 13, 1874.

To all whom it may concern:

Be it known that I, JOHN RANCEVAN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and valuable Improvement in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a plan view of my car-coupling, and Fig. 2 is a sectional view. Fig. 3 is an end view; and Figs. 4, 5, and 6 are detail views.

This invention has relation to automatic car-couplers, in which are employed hooking devices for effecting a coupling; and it consists in endwise-sliding blocks, applied between the upper and lower portions of the draw-bars, which blocks, when they are jammed against the hooking device at or near the front ends of draw-bars, will hold the said hooking parts in a proper position for permitting a coupling to be effected, and which, when they are released from contact with the said hooking devices, will permit them to move pivotally, and effect an uncoupling. It furthermore consists in locking devices, which, when they are forced between the slide-blocks and a partition between the upper and lower floors of a draw-bar, will cause the said slide to be forced against the hooking device, and cause it to be held in a proper position for effecting a coupling, and which will permit an uncoupling to be effected when it is withdrawn therefrom. It finally consists in a vertically-playing lever, operating the locking device, and attached to the draw-bar, which lever is actuated by a second lever, extending upwardly in a proper position to be used by a brakeman, whereby the hooking device may be set for coupling, or released to effect an uncoupling, at pleasure, all as will be hereinafter more fully explained.

In the annexed drawing, A designates a draw-bar, applied to a car in the usual well-known manner, of which the head is oval or rounding in shape, and which may be composed of an upper and lower wrought-metal plate, suitably connected together at their front

ends by means of a nose-piece, *a*, having in its front a groove, *a'*, to permit of the introduction into the draw-head of a common coupling-link, should a disarrangement of my improved coupler occur, perforations being made in the upper and lower plates of the draw-bar A, to permit of the introduction of a coupling-pin. B designates a triangular hooking part, of hardened iron or steel, which is applied between the upper and lower plates of the draw-bar, just in rear of the nose-piece *a*, in such a manner that it will be permitted a free horizontal, pivotal, or vibrating motion therein upon a pivot applied vertically through it and the said plates.

The hooking part B may be of the form shown in Fig. 2, having its upper and lower bearing-surfaces exactly triangular in form; but, if it prove desirable, I may cause lips *b* to be made along their vertical angular edges, as shown in Fig. 6; or I may have thickened portions *b'* constructed upon their hooking-surfaces, with a view to providing an additional surface, to compensate for the ordinary wear and tear.

C designates a metal slide applied between the upper and lower plates of the draw-bar A, so as to be allowed a free endwise movement therein, which slide is held against lateral displacement by flanges *c* constructed on both sides thereof. The rear end of the slide C is beveled to correspond with a beveled front edge of a wedge-block, D, which is of such a size and shape as to be capable of entering and leaving the space between the plates of the draw-bar A at a point between the rear end of the slide-block C and a stay-block, *e*, between the upper and lower plates of the draw-bar.

When the said wedge-block is forcibly thrust between the slide C and the stay-block *e*, the slide is brought firmly in contact with the hooking device B, and effectually deprives it of its pivotal motion, and sets the hook rigidly in position to effect a coupling. The hook is, however, released and its pivotal motion restored by a withdrawal of the wedge-block D.

E designates a curved lever having vertical play, which is rigidly secured to the wedge-block D, and which has its fulcrum in a bifurcated plate, *e'*, upon the upper plate of the

draw-bar, into which bifurcation it is suitably hinged. The free end of this lever is provided with an eye, *d*, through which is passed a pivot, *f*, by means of which it is connected to the widely-bifurcated end of a lever, *F*, which passes upward through a deep groove in the front beam of the platform of a car.

By means of the wide bifurcation upon the end of lever *F* and its cross-bar or pivot *f*, connecting thereto the free end of the lever *E*, the latter is permitted to slide upon the cross-bar *f* when the draw-bar *A* is thrust backward by the shock of the cars approaching to be coupled, whereby all danger of disarranging or otherwise injuring the various parts of the coupling devices is obviated.

g' g designate notches in the lever *F*, whereby the said lever is secured over pins *h h'*, passing transversely through the slot or groove in a front cross-beam of a platform of a car.

It being desired to effect a coupling between two cars, the lever *F* is thrust down through its slot or groove until it is in the position shown in dotted lines, Fig. 3, when the wedge-block *D* will be forcibly thrust between the slide *C* and stay-block *e*, causing the said slide to lock and prevent from pivoting the hooking part *B*, as shown in Fig. 2; and to maintain this set position I place the upper notch *g* over the upper transverse pin *h*. Both of the hooking devices of the cars to be coupled having been secured, as above described, they are then brought together, when the oval or rounding faces of both draw-heads will be brought in contact, and will slide over one another until the hooks *B* become engaged, and a perfect coupling is effected. To effect an uncoupling, I draw the lever *F* up into the position shown in full lines, Fig. 3, when the lever *E* will withdraw the wedge-block *D* from between the slide-block *C* and the stay-block *e*, whereby the said slide will be released from contact with the hooking part *B*, allowing it to turn, and an uncoupling may be effected by separating the cars.

In order to accurately direct the draw-heads so that they shall not fail to become coupled when it is desired, I make use of a guide, *G*, of suitable construction, which is attached to and extends downwardly from the front beam of the platform of a car, which guide also serves as a sheath for an ordinary coupling-pin, which is for convenience passed through a vertical perforation in the said cross-beam.

In order that the hooking portions of the two draw-bars may become surely engaged with each other, I have made use of a spring, *S*, which is rigidly secured to the bottom beams of the car, and which has an arm, *S*, running along the side of the draw-bar *A*, into a groove in the side of the stay block *e*.

It will be evident, that when the oval or rounding surfaces are brought in contact, a spreading movement will occur while the said

surfaces are passing over one another, and that, in consequence, a certain strain will be exerted upon the said springs, which strain, when removed by the engagement of the hooking parts *B*, will cause the spring *S* to reach and quickly produce an engagement or locking of the hooks *B*.

I designates a bunter, having a spring, *j*, coiled about its rear end, which is applied in the usual well-known manner to the platform and bottom beams of a car above the draw-bar. This bunter serves to soften and resist the shock caused by the contact of approaching cars in the act of making a coupling.

In practice, I may sometimes use the lever *F* to effect an uncoupling, when, from accident, the free working of the slide-block *C* has been so impaired as to prevent the hooking device *B* from turning about its axis. This is accomplished by thrusting the end of the lever *F* inward toward the center of the car, when the draw-bar will be drawn outward, the hooks *B* disengaged, and an uncoupling effected. In order that the draw-bar may not be twisted or tilted from its proper horizontal position, I have used a chain, *i*, to connect the lower surface of the draw-bar with the lever *E*, and thus divided the strain upon the said draw-bar equally between its upper and lower surfaces. In all the draw-bars, as at present used, the horizontal hooks are rigidly attached thereto, and can only be disengaged to effect an uncoupling by means of powerful leverage, which draws the draw-bar laterally outward, and when a train is passing upgrade, or is heavily laden, it is impossible, at times, to apply sufficient power to the lever to effect a disengagement; but having constructed my hooking devices so that they may be held against pivotal motion, or permitted to pivot at pleasure, I can, at all times, and under any circumstances, cause an uncoupling, as there is at no time any pressure exerted upon the wedge-block *D*, and a child can exert sufficient strength to cause it to operate.

What I claim as new, and desire to secure by Letters Patent, is—

1. A sliding block, *C*, in combination with a pivotal hooking portion, *B*, substantially as specified.

2. The wedge-block *D*, in combination with a locking slide-block, *C*, and a pivotal engaging-hook, substantially as specified.

3. The combination, with an engaging-hook, a slide-block, *C*, and a locking-block, *D*, of the levers *E F*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN RANCEVAN.

Witnesses:

THOS. W. HEFFERMAN,
HENRY HARMEYER.