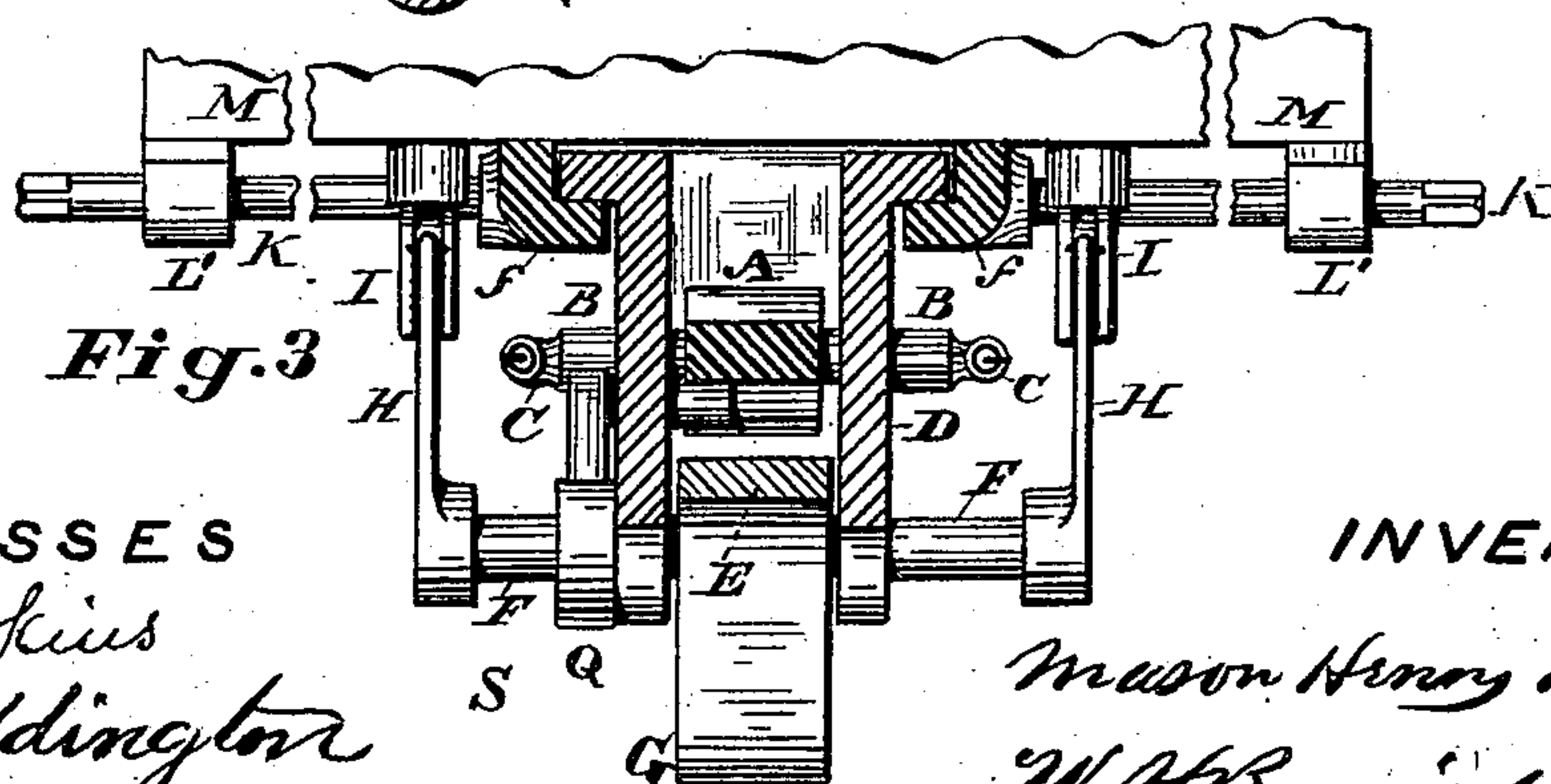
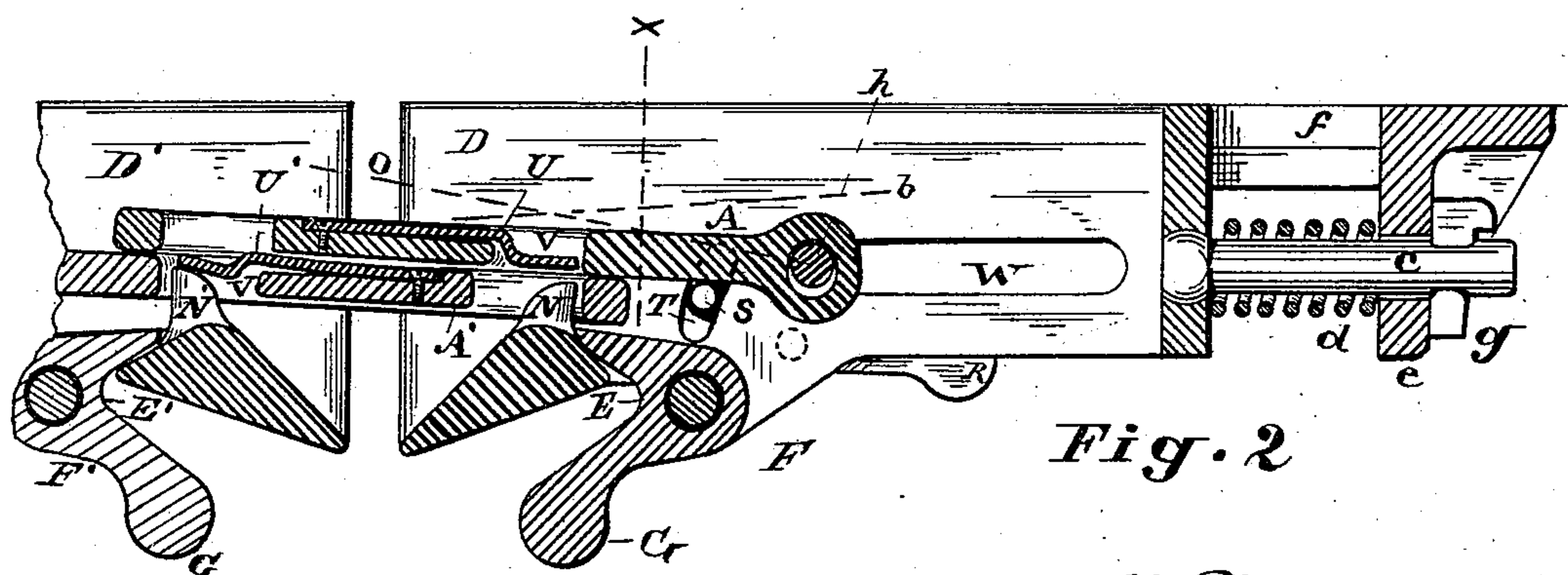
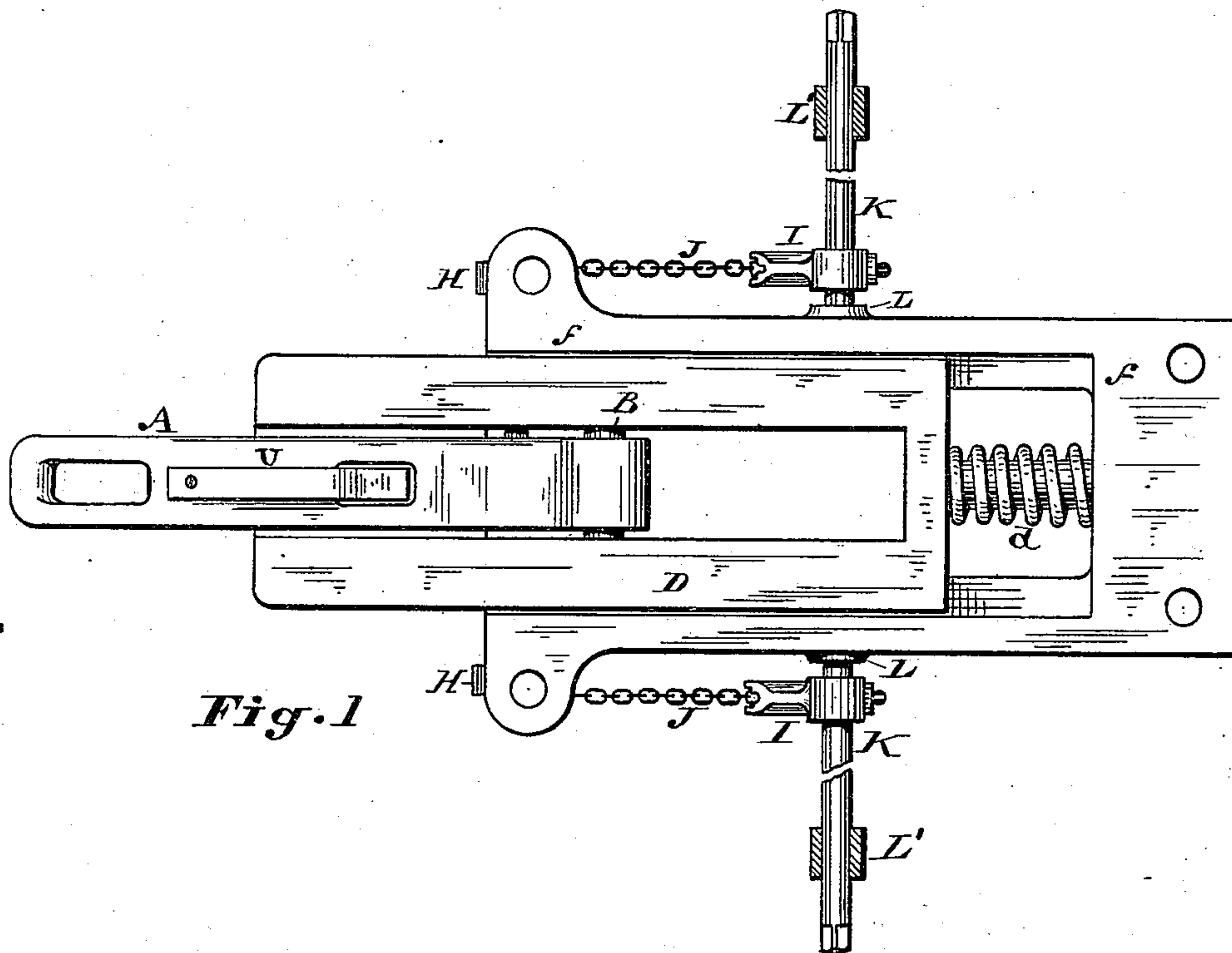


2 Sheets—Sheet 1.

CAR COUPLING.

Patented July 13, 1886.



WITNESSES

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L. Coddington

INVENTOR

Mason Henry Kern
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(No Model.)

2 Sheets—Sheet 2.

M. H. KERN.

CAR COUPLING.

No. 345,308.

Patented July 13, 1886.

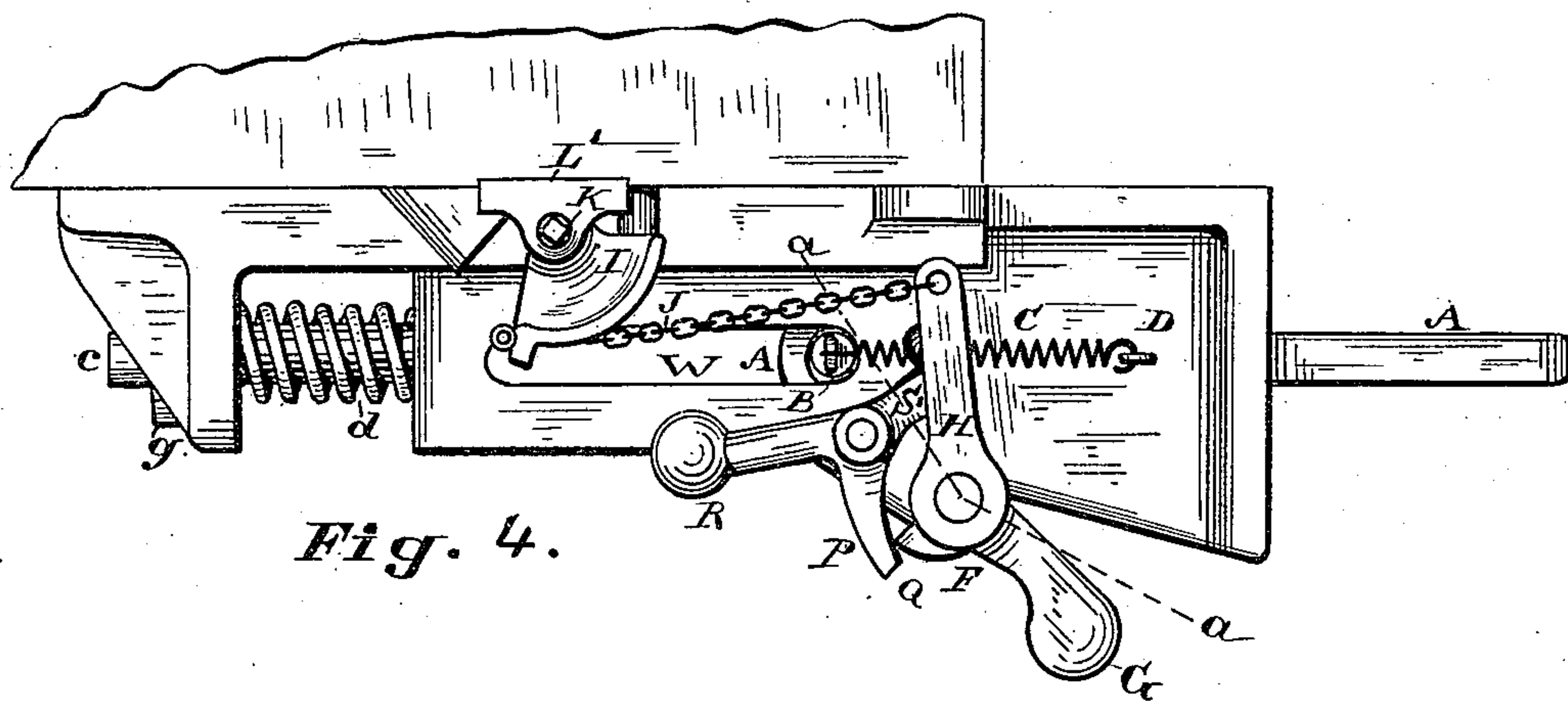


Fig. 4.

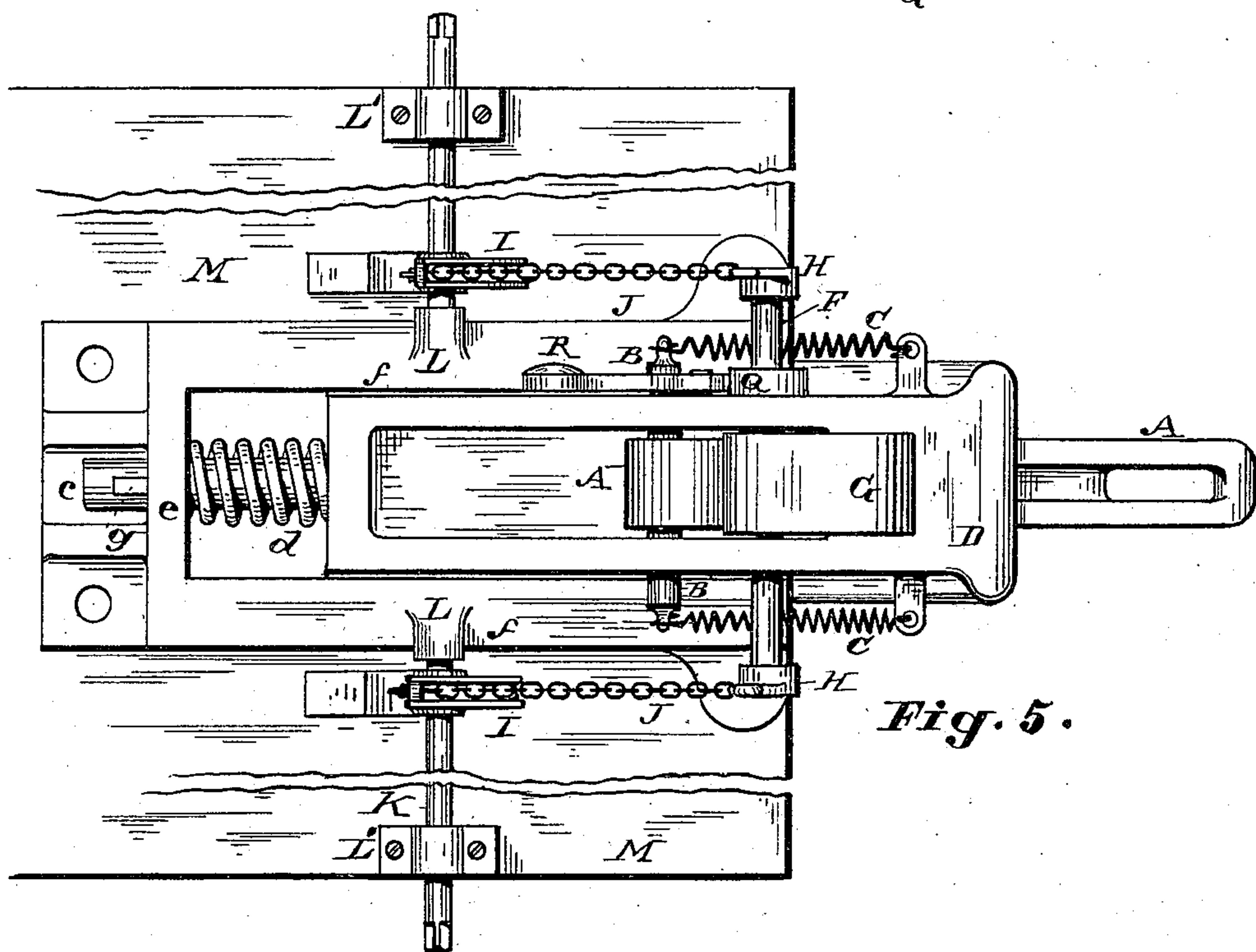


Fig. 5.

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UNITED STATES PATENT OFFICE.

MASON HENRY KERN, OF BELLEVUE, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 345,308, dated July 13, 1886.

Application filed April 16, 1886. Serial No. 199,108. (No model.)

To all whom it may concern:

Be it known that I, MASON HENRY KERN, of Bellevue, in the county of Sandusky and State of Ohio, have invented a certain new and Improved Railway-Car Coupling; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my invention consists in such an arrangement of the mechanism thereof as to render it not only a self-coupler, but enable it to be uncoupled without going between the cars for this purpose, thereby avoiding the danger and casualties which occur in coupling and uncoupling cars.

In the following description of the construction and operation of the said improved railway-car coupling reference will be had to the annexed drawings, making part of the specification thereof.

The couplings or coupling on each car are alike in arrangement and operation, hence the description of one coupling will embrace both.

Sufficient reference will be made to both couplings to set forth the conjoint action and use thereof.

Figure 1 is a top view of a coupling separated from the frame-work of the car, Plate 1. Fig. 2 is a vertical section of Fig. 1, with a section of the adjoining coupling. Fig. 3 is a front end view of Fig. 1, partly in section, indicated by the line *x* in Fig. 2. Fig. 4, Plate 2, is a side view; and Fig. 5, a view of the under side.

Like letters denote like parts in the drawings, in which—

A, Figs. 1 and 2, is the link, provided with a hub at the rear end, by which it is hinged to the bar B, as seen in the drawings. To each end of the bar is attached a spring, C C, Figs. 3, 4, and 5. The opposite ends of the springs are connected to a bracket or loop projecting from the buffer D, as seen in Figs. 4 and 5.

Directly under the link A is a lifter, E, attached to the shaft F, which is journaled in the sides of the buffer, as seen in Figs. 3 and 5. Connected with the lifter E is a counter-weight, G. At each end of the shaft F is keyed an arm or lever, H H, to which arms are connected the segments I by the chains J, or the equivalents thereof. These segmental levers

I are attached to the shaft K, which shaft is journaled at L and at L' in boxes at a part of the lower frame-work, M, of the car, as shown in the drawings at Figs. 3 and 5, as the ends of the shaft K extend beyond the sides of the car sufficiently for the attachment of a lever for operating it, the action of which on the shaft in uncoupling is transmitted (by the intermediate connections described) to the lifter E, which raises the link A' from off the lug N, thereby uncoupling cars.

In raising the link A', connected with the buffer D', the link A in the buffer D is also raised in direction of the line O, Fig. 2. This action of raising the link from off the lug N to uncouple cars causes the arms H H and counter-weight G to be moved in the direction of *a*, Fig. 4, which admits of the pawl P engaging the catch Q, the hub of which is keyed to the shaft F, Figs. 3, 4, and 5. This engagement of the pawl P with the catch Q will effectually hold until relieved, as herein presently shown. This movement transmitted to the arms H and lifter E raises the link, as stated, off the coupling-lug. If the coupling is by the link A' and lug N, then the lifter E will uncouple the cars; but if the coupling is made by the link A and lug N' then the uncoupling will be by the lifter E', in connection with mechanism the same as described and shown in Figs. 4 and 5. When the lifter E is raised to uncouple the cars, and the engagement of the pawl P and catch is made as described, the counter-weight R, Figs. 2 and 4, of the pawl P will hold the engagement until the link A' is drawn from the buffer on separating the cars. As soon as this is done then the link A moves down from about the line O to its position seen in Fig. 2. This movement of the link A presses down upon the pin S, Fig. 2, and by its weight detaches the pawl from the catch Q, whereby the lifter moves back with the arms H from the line *a*, Fig. 1, to its former position by the action of the counter-weight G. The pin S, referred to, is attached to the arm S', and extends from the arm through the slot T in the side of the buffer, Fig. 2. In each link is a groove or depression, in which is fastened at one end a spring, U, Figs. 1 and 2, the free ends of which are bent down into a slot, V, respectively, in

each link, the purpose of which is to prevent the ends of the links, when coupling the cars, from striking or abutting against the mouth of the buffer. As an example, it will be supposed that the cars are now uncoupled, and that the link A' is to be coupled on the lug N of an adjoining buffer, and as the position of the link A' in coupling stands in about the line *b* before coupling it follows that were it not for the spring U' in the link A' the link A would be raised up above the line O, which is prevented by the spring in the link A'; hence it follows that as the link A' enters the buffer D, to couple onto the lug N, the link A is raised to allow of this, but as the link A is above the link A' the weight of it presses down the link A'; hence there is a depression of the link A' by the yielding of the spring U' to the pressure or weight of the link A above, so that the cars are coupled by the link A' on the lug N. The force of the spring U' is not sufficient upon the lug N' to raise the link A' from off the lug N, and it is held there from being jolted or jarred off and uncoupled by the weight of the link A above. It will make no difference, so far as this mode or manner of coupling is concerned, which of the links is used, as the principle of operation in coupling with either link is the same. In case the link A is used, then the coupling would be with the lug N', in the same manner as that described and shown relative to the link A'. The mechanism and mode of coupling and uncoupling are the same in both cases. The bar B, to which the link is hinged, is supported at each end in the sides of the buffer and passes through an elongated slot, W, Figs. 2 and 4. This slot permits the shaft B and link to slide longitudinally therein to relieve the link-coupling mechanism from any undue strain in making up the train of cars, and the springs C C by their action permit the said coupling devices to be relieved from such strain, while in case the links are forced back in coupling or otherwise the springs C C will by their resiliency move back the link and bar B to the normal position, thereby preventing breakage or undue strain in the coupling in making up the train. From the rear end of the buffer, and connected with it, is a stem, *c*, surrounded by a spiral spring, *d*, Figs. 2 and 4. One end of the spring is in contact with the end of the buffer and the other presses against cross-piece *e* of the slide *f*. The stem on the outside of the cross-piece *e* is fitted with a key, *g*, to

prevent the buffer from being drawn out of position. The slide *f* and the spring *d* aid in relieving the buffer from the jars and strains of coupling and in the movements of the train, and to adjust the buffer and coupling appendages to the motions and jars of a train it is fitted to the slide *f*, which is connected and secured to the frame-work of the car-base, so that the buffer, with its coupling and uncoupling devices, has longitudinal movements, aside from the movement of link referred to, in the slot W, for the relief of the coupling from the great strain and jar to which they are subjected. The eye *h* in the hub of the draw bar or link is elongated at right angles to the link, as seen in Fig. 2, to assist in the adjustment of the link in coupling, so that the links will tip or turn to make the connection with either of the lugs, according to which link is used in coupling.

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

1. In a car-coupling, the coupling-link hinged upon the cross-bar B and having a longitudinal movement in the slot W of the buffer, and provided with a spring, U, in combination with lug N, springs C C, and lifter E, having a counter-balance, arranged substantially as and for the purpose set forth.

2. The journaled shaft K, segments I, connected with the arms H, in combination with the pawl P, catch Q, arm S', and pin S, with a counter-weight to said pawl, arranged as and for the purpose set forth.

3. A railway-car coupling consisting of a buffer attached to the base of the car-frame by the slide *f* and rear stem surrounded by a coiled spring, *d*, in combination with a link provided with a spring, U, and hinged to a sliding cross-bar, B, and a lifter, E, and its counter-weight, arranged substantially as and for the purpose set forth.

4. In combination with a railway-car coupling, a shaft, F, having the arms H H, actuated by a connection with the segments I I of a lifter, E, on said shaft within the buffer, under the link, with counter-weight below connected with said lifter, arranged substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

MASON HENRY KERN.

Witnesses:

I. W. HOOVER,
C. L. BURRIDGE.