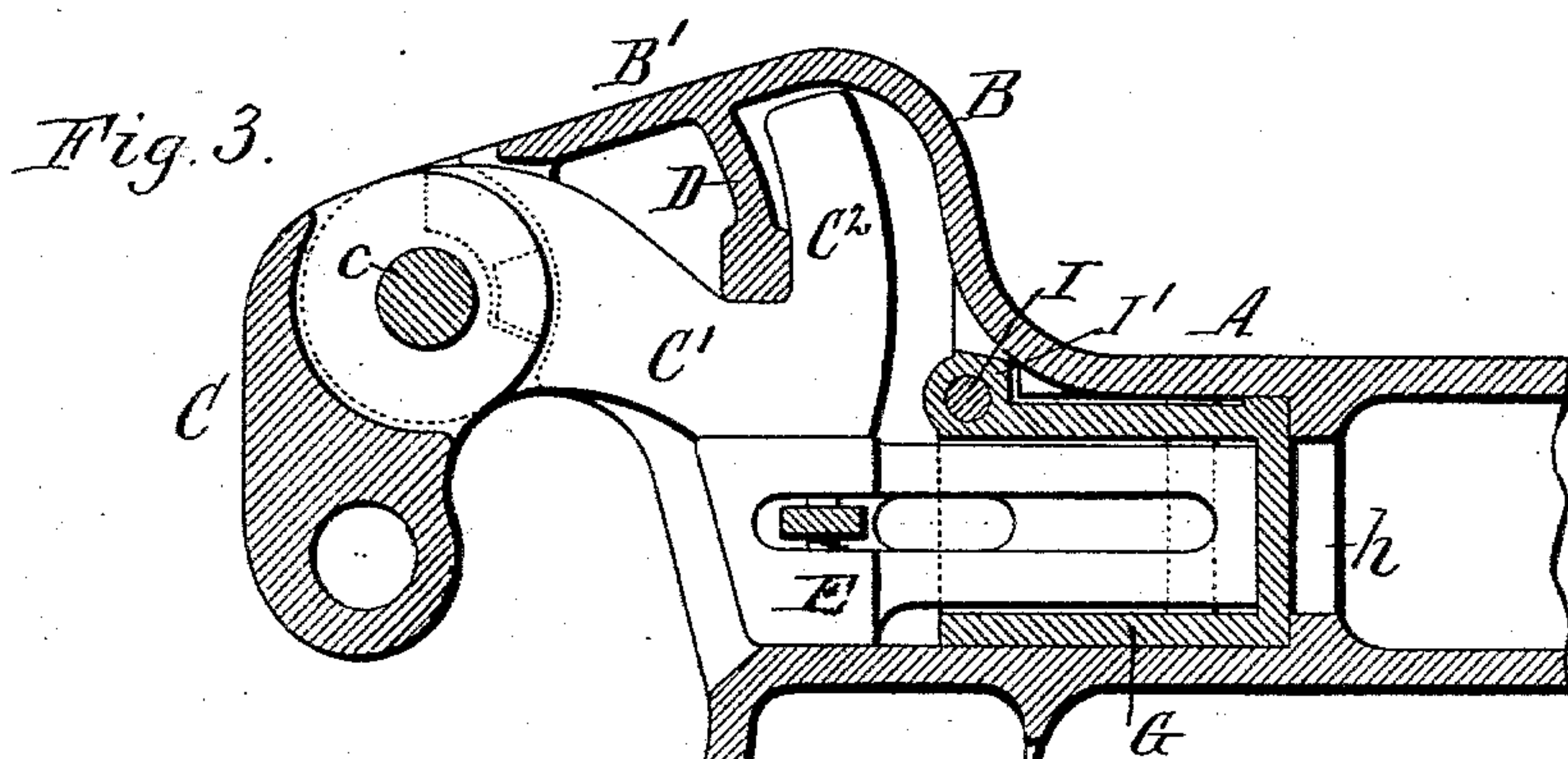
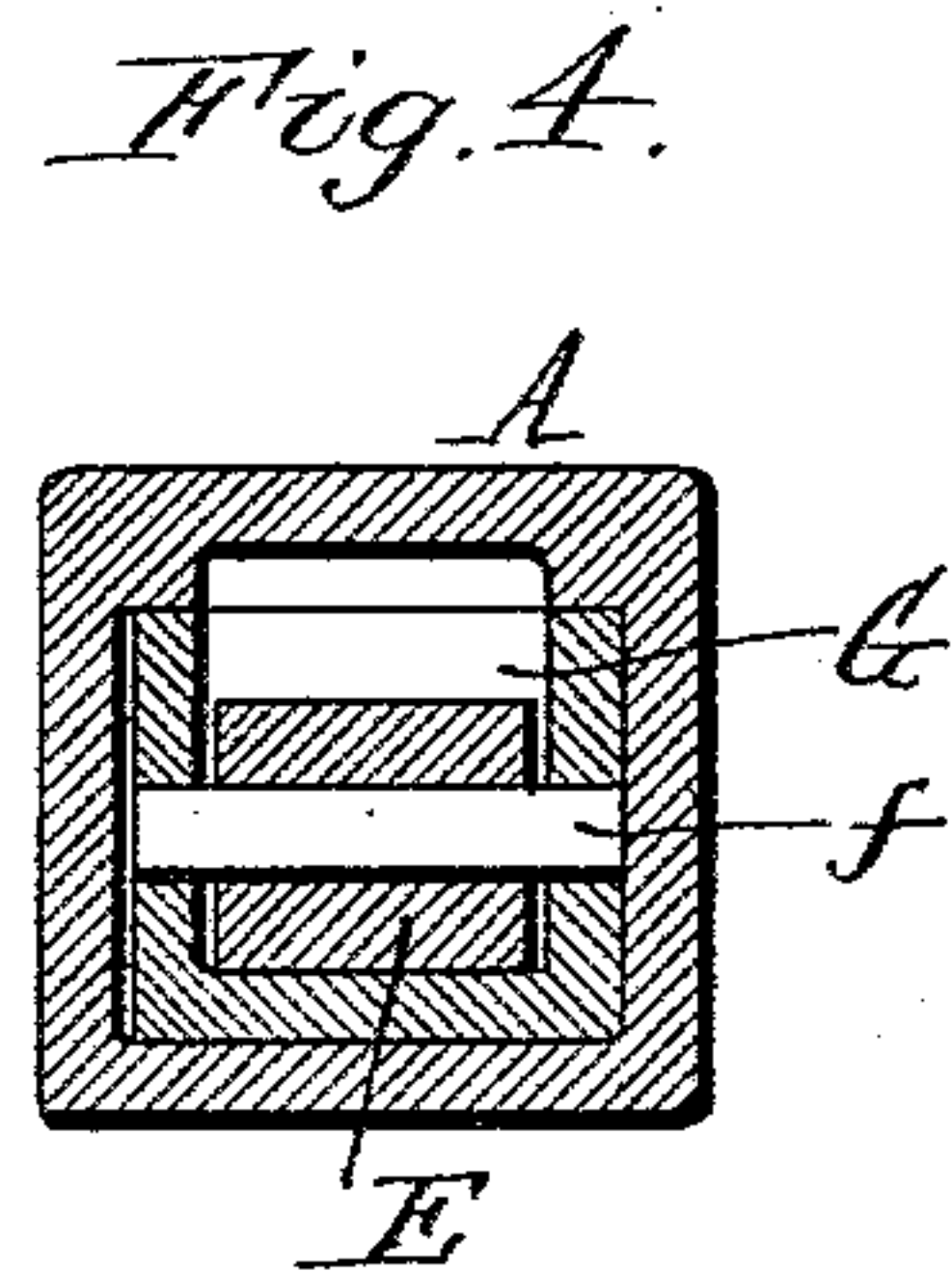
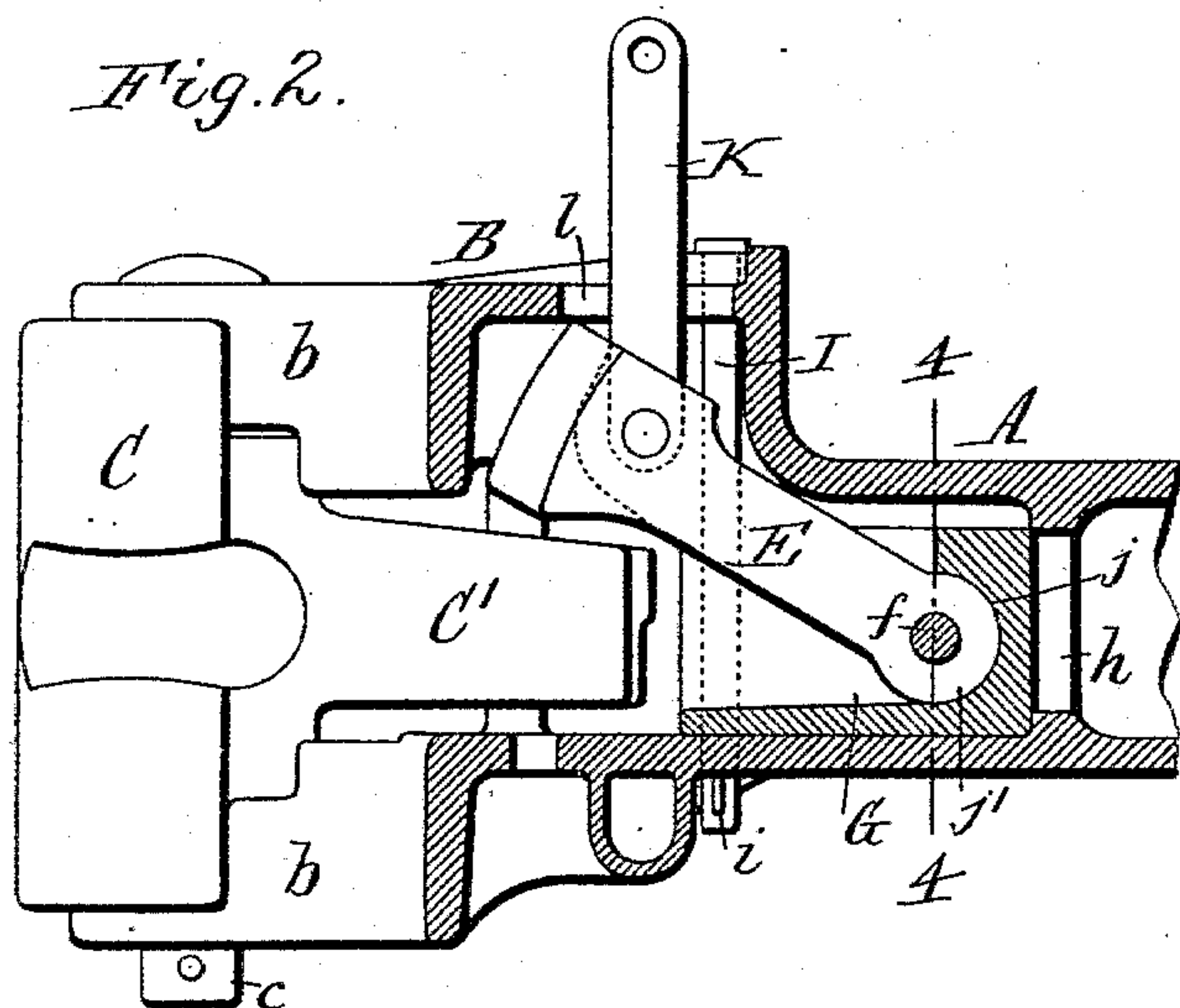
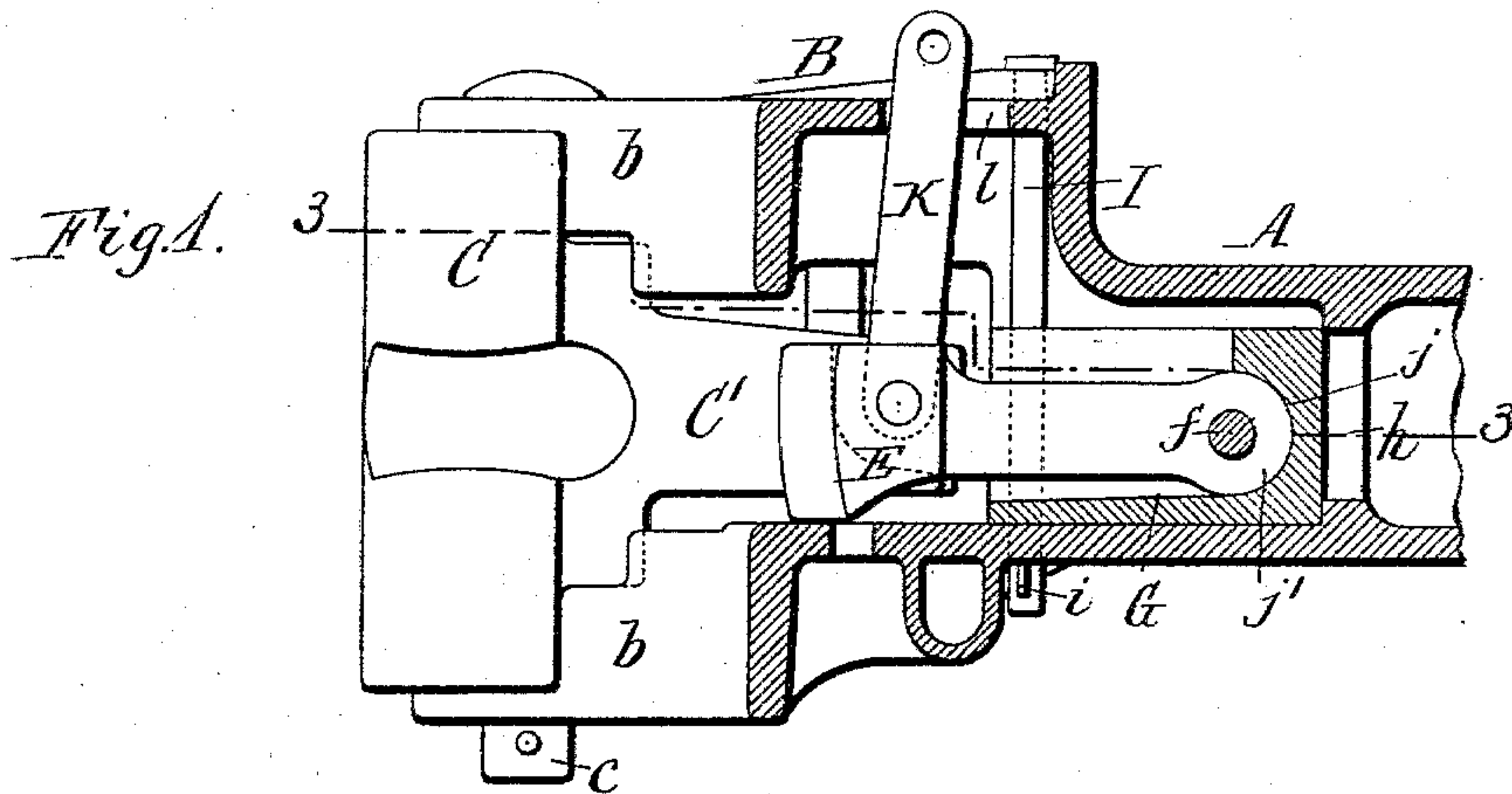


(No Model.)

W. F. RICHARDS.  
CAR COUPLING.

No. 562,916.

Patented June 30, 1896.



WITNESSES:

*Chas. F. Burkhardt.*  
*F. Gustav Wilhelm.*

*W. F. Richards* INVENTOR.  
*By Wilhelm P. Pomeroy*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO THE GOULD  
COUPLER COMPANY, OF NEW YORK, N. Y.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 562,916, dated June 30, 1896.

Application filed November 25, 1895. Serial No. 570,030. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to that class of twin-jaw car-couplings in which the coupling-jaw or knuckle is arranged to swing horizontally and retained in its closed or coupled position by a lock or latch which swings vertically in the draw-head.

One of the objects of my invention is to avoid perforating the side walls of the draw-bar for the reception of the horizontal pivot of the lock, so as to preserve the strength of the draw-bar, and at the same time to pivot the lock in the head in a reliable manner, so as to prevent displacement of the same by the jolting of the car.

The invention has the further object to facilitate the removal of the lock from the head for renewing it in case of breakage.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved car-coupling, showing the coupling-jaw locked. Fig. 2 is a similar view showing the jaw unlocked. Fig. 3 is a horizontal section in line 3 3, Fig. 1. Fig. 4 is a cross-section in line 4 4, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A represents the front portion of the draw-bar, which is hollow, as shown, and B is the chambered or recessed draw-head formed on the draw-bar and preferably constructed in accordance with the well-known standard lines.

C is the horizontally-swinging knuckle or coupling-jaw, pivoted by a vertical pin *c* to the forwardly-projecting lugs *b* of the draw-head in the usual manner.

C' is the locking-arm extending inwardly from the hub of the coupling-jaw, and C<sup>2</sup> the lateral extension formed at the inner end of the locking-arm. The adjacent wall B' of the draw-head is preferably provided on its inner side with a web or shoulder D, behind which the extension of the coupling-jaw engages when in its closed position, as shown in

Fig. 3, but this shoulder forms no part of my invention and may be omitted, if desired.

E is the vertically-swinging lock or latch whereby the coupling-jaw is retained in its closed position. This lock consists of a bar arranged lengthwise in the rear portion of the draw-head and the front portion of the draw-bar and pivoted at its rear end upon a transverse pin *f*, so that the front portion of the lock is free to swing vertically for engaging with or clearing the locking-arm of the coupling-jaw, as shown in Figs. 1 and 2. The pivot-pin *f* is mounted in a block or carrier G, which is removably seated in the hollow front portion of the draw-bar and which bears at its rear end against a shoulder or abutment *h*, formed on the inner side of the draw-bar, as shown in the drawings. The block is held against forward displacement by a vertical pin or bolt I, which passes through a perforated lug I', formed at the front end of the block on one side of the lock and through openings formed in the top and bottom of the draw-head, the pin being removably retained in its seat by a key or cotter *i*. Any other suitable means may be employed for removably securing the block G in the draw-head. The pivot-pin *f* does not penetrate the side walls of the hollow draw-bar, but is supported solely by the block or carrier, as clearly shown in Fig. 4. By this construction the weakening of the draw-bar which results when pivot-holes are formed in its sides for the passage of the lock-pivot is not only avoided, but the hollow shank is strengthened, as the block inserted therein serves also as a reinforcement. For this purpose the block is made of the proper size to fit snugly in the cavity of the draw-bar, as shown. The block is hollow or recessed and its front end and top are cut away to afford the requisite vertical play of the lock.

In order to relieve the pivot-pin *f* from the shocks and strains received by the lock and avoid bending of the pin, the rear end of the lock is arranged to bear against the rear wall of the block, said wall being preferably formed with a concave seat *j*, which receives a cylindrical or convex knuckle *j'*, formed at the inner end of the lock, as shown in Figs. 1 and 2.

Upon detaching the coupling-jaw from the



draw-head and removing the retaining-pin I of the block G, the latter with the lock carried by it can be easily withdrawn from the cavity of the draw-head. This is an important advantage, as it permits a broken lock to be readily removed from the draw-head and replaced by a new one without the inconvenience attending that operation when the pivot-pin passes through the walls of the draw-bar.

The front end of the block G terminates in rear of the locking-arm of the coupling-jaw in the closed position of the jaw, so as not to interfere with the movements of the locking-arm.

K is the usual link whereby the free end of the lock is raised for releasing the arm of the coupling-jaw. This link extends through an opening l in the top of the draw-head and is connected with the usual operating devices on the car.

In the operation of the coupling, when the coupling-jaw is in its open position and the lock is released, the lock rests upon the extension C<sup>2</sup> of the locking-arm in a manner well known in couplers of this type, and when the jaw is swung into its closed position, by contact with an opposing coupling, the lock drops in front of the locking-arm of the coupling-jaw, thus automatically locking the jaw.

I claim as my invention—

1. The combination with a draw-head and a coupling-jaw pivoted thereto, of a supporting block or carrier, independent of the draw-head and removably seated in the latter, and a swinging lock pivoted at its rear end to said separate block or carrier and arranged to interlock with the coupling-jaw or knuckle, the pivot of the lock being carried solely by said removable block, whereby the lock can be re-

moved by withdrawing said block from the draw-head and the necessity of perforating the walls of the draw-head is avoided, substantially as set forth.

2. The combination with a draw-head and a draw-bar provided with an internal shoulder or abutment, of a coupling-jaw pivoted to the draw-head, a block or carrier seated in the draw-head and abutting against the shoulder of the draw-bar, a horizontal pivot-pin carried by said block, and a swinging lock mounted on said pivot-pin and adapted to interlock with the coupling-jaw, substantially as set forth.

3. The combination with a draw-head and a draw-bar provided with an internal shoulder, of a coupling-jaw pivoted to the draw-head, a removable block seated in the draw-head abutting against the shoulder of the draw-bar and carrying a horizontal pivot-pin, a retaining-pin whereby said block is held against displacement, and a swinging lock mounted on said pivot-pin, substantially as set forth.

4. The combination with a draw-head and a draw-bar provided with an internal shoulder, of a coupling-jaw pivoted to the draw-head, a hollow or recessed block seated in the draw-head against said shoulder and provided in its rear wall with a concave seat, and a lock pivoted to said block and having at its rear end a convex knuckle which bears against said concave seat, substantially as set forth.

Witness my hand this 23d day of November, 1895.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,  
HENRY L. DECK.