

No. 700,441.

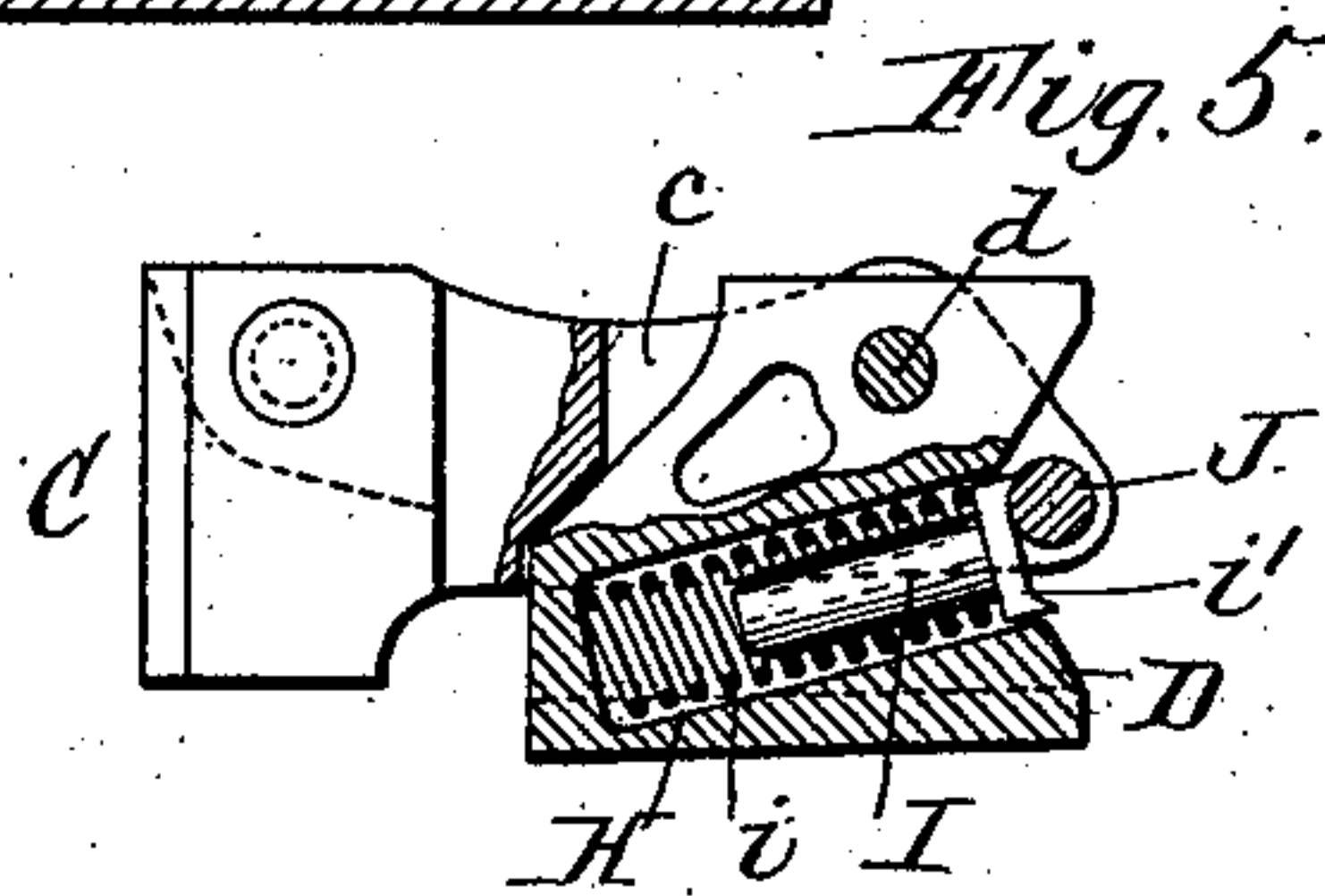
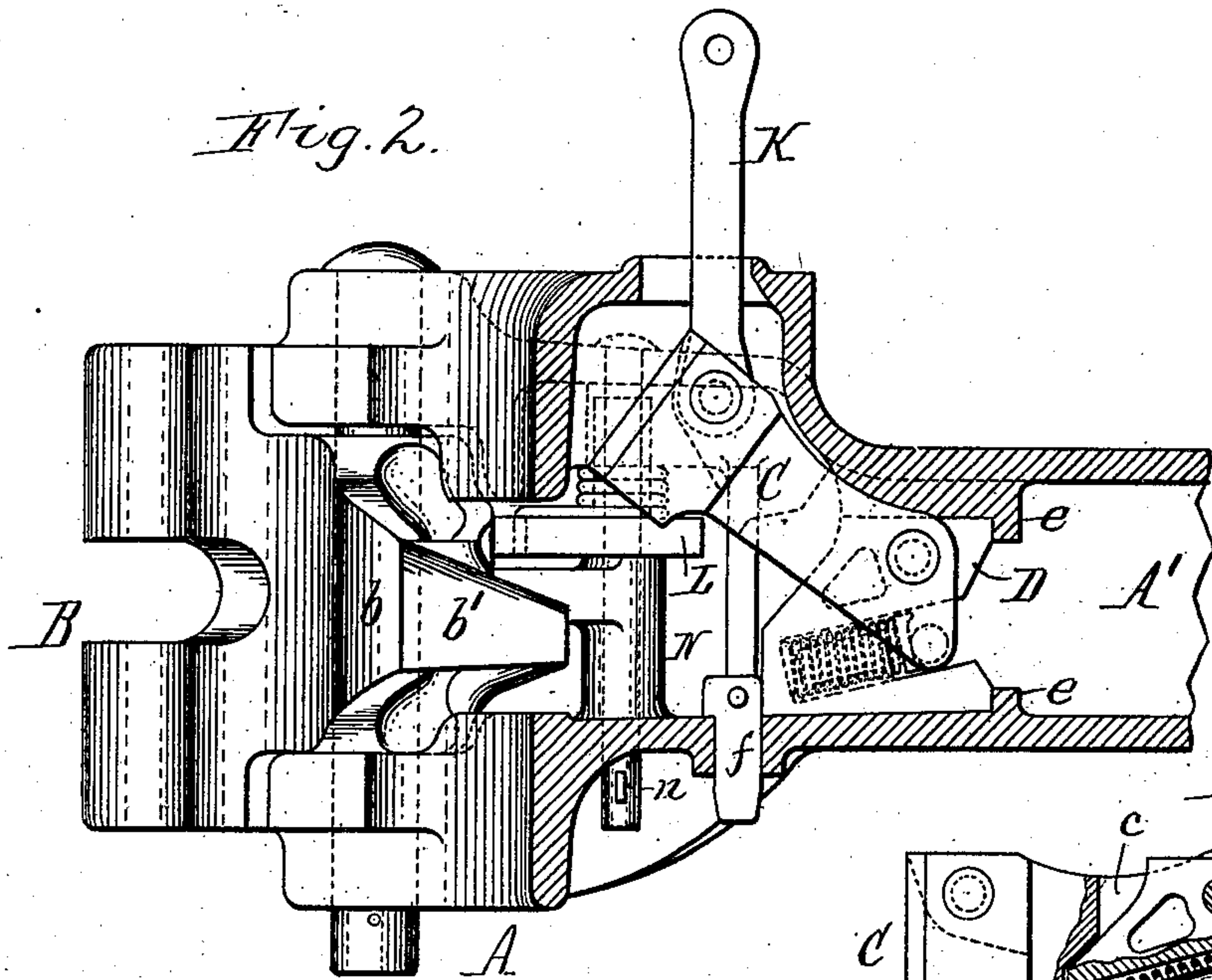
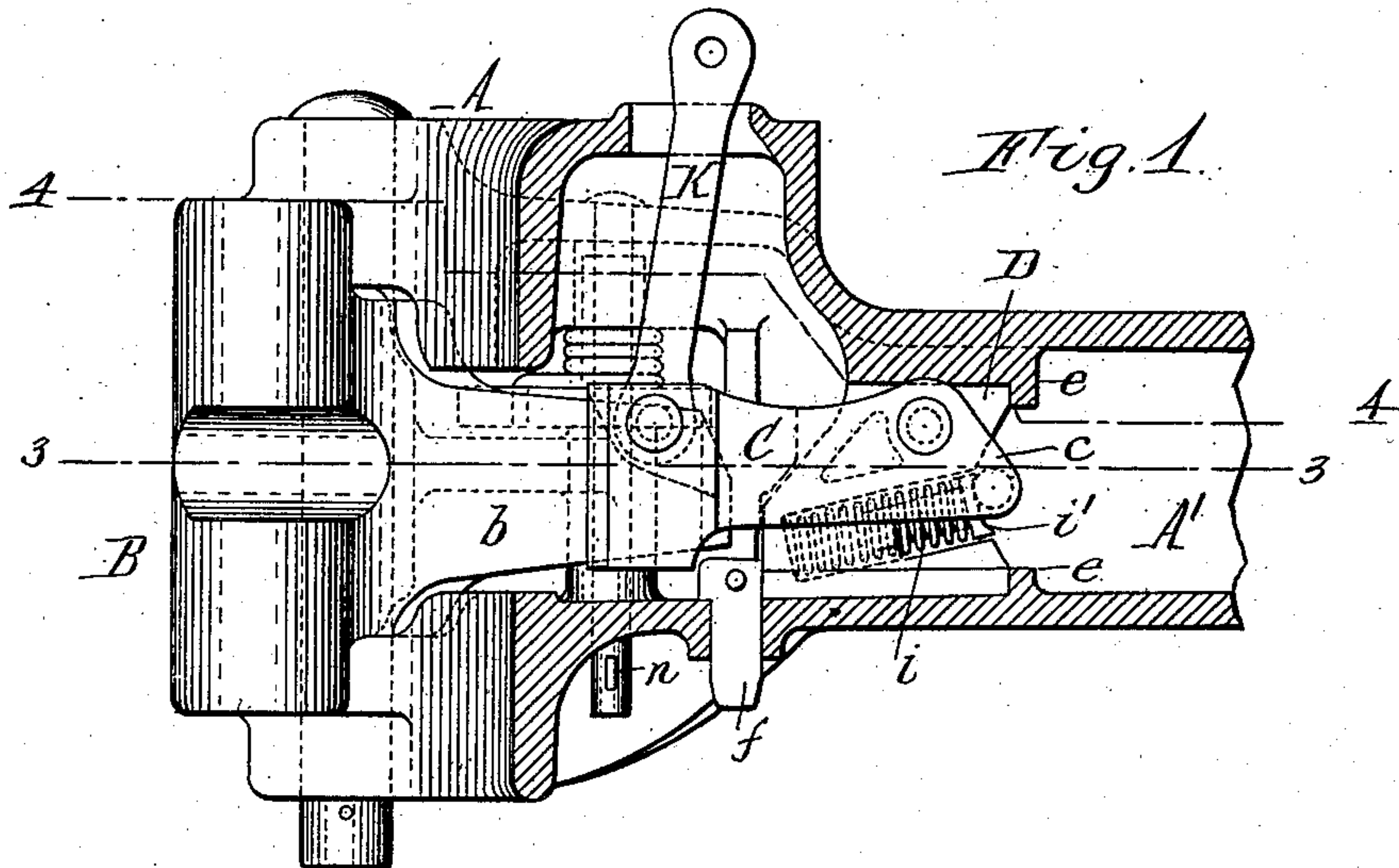
Patented May 20, 1902.

W. F. RICHARDS.
CAR COUPLING.

(Application filed Nov. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

E. A. Volk.

F. J. Schuyler

W. F. Richards Inventor.

By Wilhelm H. B. H. H.

Attorneys.

No. 700,441.

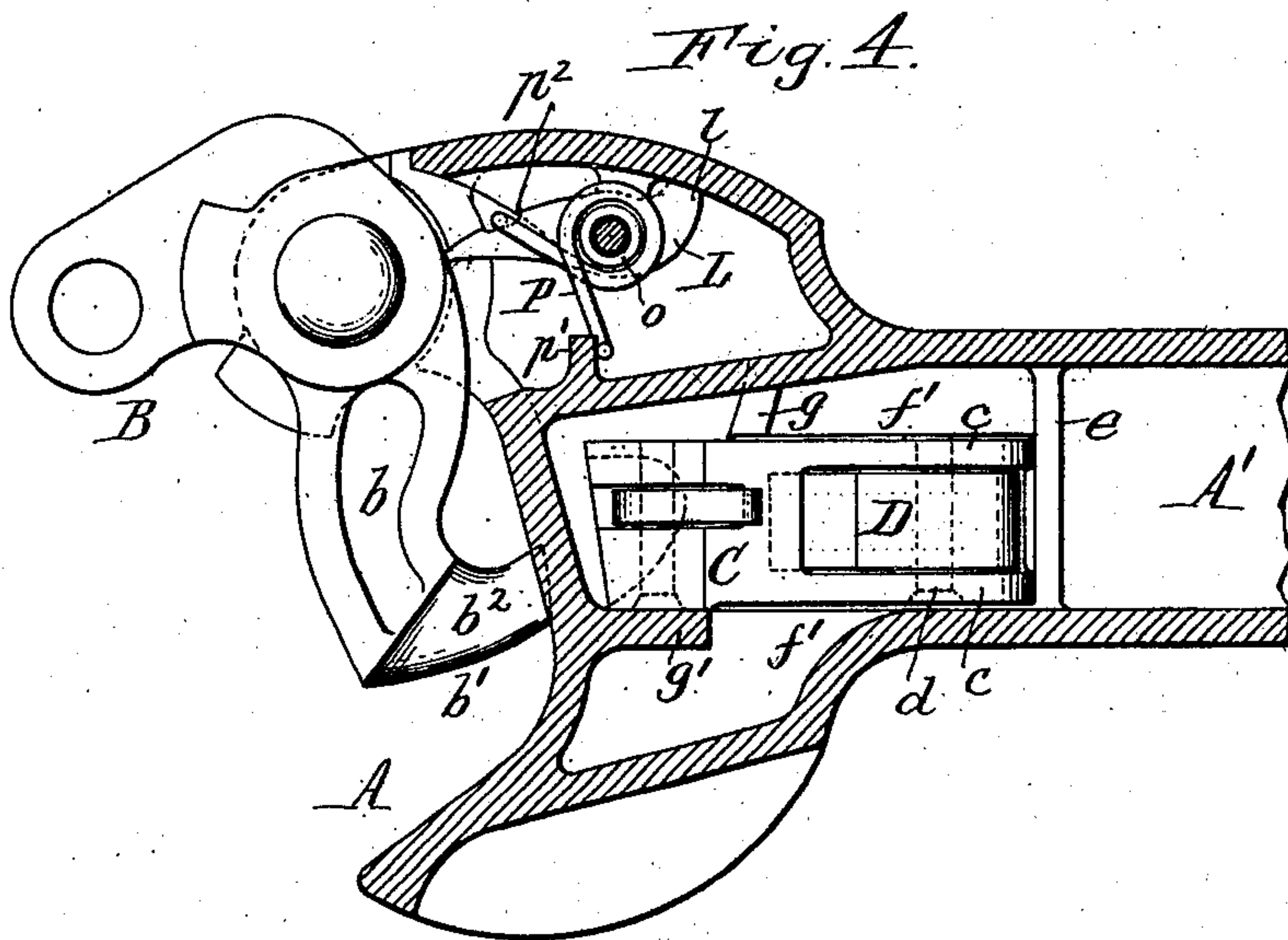
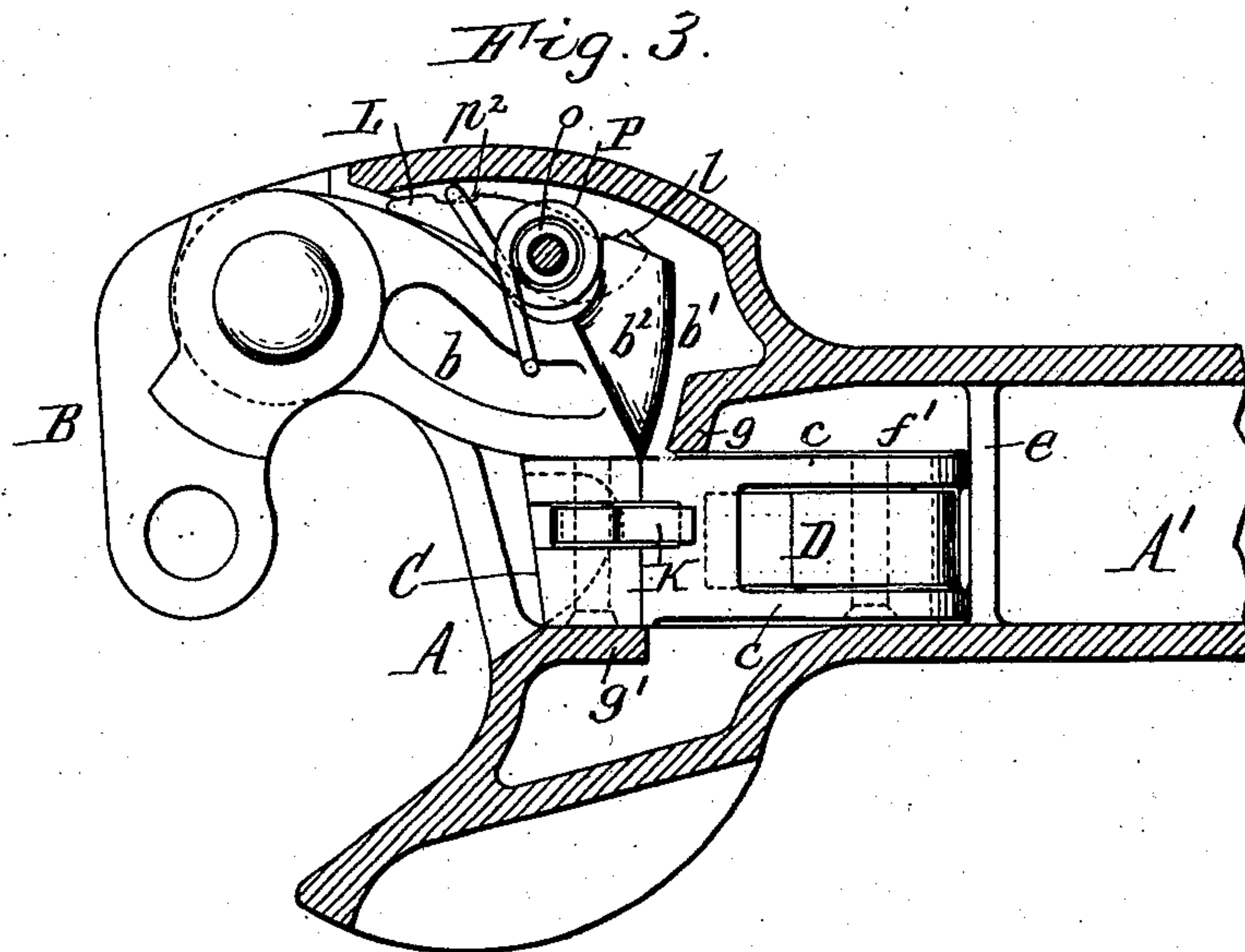
Patented May 20, 1902.

W. F. RICHARDS.
CAR COUPLING.

(Application filed Nov. 18, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

E. A. Volk

F. F. Schuyler

W. F. Richards Inventor
By Wilhelm Bornert
Attorneys.

UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO GOULD COUPLER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 700,441, dated May 20, 1902.

Application filed November 18, 1901. Serial No. 82,668. (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 twin-jaw car-couplings of the Master Car-Builders' type, in which the coupling-knuckle is locked by a vertically-swinging lock arranged lengthwise in the draw-head and in which the tailpiece of the knuckle is provided with an incline which automatically raises the free end of the lock when the knuckle is closed, the lock dropping in front of the tailpiece to lock the knuckle when the tailpiece clears the lock and is held down by means of a spring.

This invention is an improvement upon the car-coupling shown and described in Letters Patent No. 658,073, issued to me September 18, 1900.

One of the objects of my present invention is to so construct and arrange the removable support for the lock and the lock-operating spring that the same will not project back into the draw-bar to any considerable extent.

Another object is to provide the coupling with a kicker for automatically opening the knuckle when unlocked and which is so arranged that its pivot-support forms a shoulder adapted to prevent the disengagement of the knuckle from the head in the event of the knuckle-pivot breaking.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal vertical sectional elevation of my improved car-coupling, showing the knuckle locked. Fig. 2 is a similar view showing the knuckle unlocked and swung open. Fig. 3 is a horizontal sectional view on the line 3-3, Fig. 1, with the knuckle and lock in elevation. Fig. 4 is a similar view on the line 4-4, Fig. 1, showing the knuckle open. Fig. 5 is a sectional elevation of the lock and its supporting-block removed from the draw-head.

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

A is the chambered draw-head, constructed upon the well-known lines, and A' the hollow draw-bar.

B is the usual pivoted knuckle, and *b* its tailpiece, having the lateral extension *b'*, provided with an inclined upper face *b²*.

C is the vertically-swinging lock, arranged longitudinally in the rear portion of the draw-head and the front portion of the draw-bar and having its rear end pivoted to a block or carrier D, so that the front portion of the lock is free to swing for clearing the tailpiece of the knuckle or locking the same. The rear end of the lock is preferably bifurcated to provide separated arms *c*, which straddle the block D and are pivoted thereto by the transverse horizontal pivot-pin *d*. The block is removably seated in the draw-bar into which it is adapted to be slipped through the opening in the front of the draw-head and bears at its rear side against upper and lower shoulders or abutments *e*, formed in the interior of the draw-bar, which prevent rearward displacement of the block. A removable stop-pin *f*, which is inserted in a hole in the bottom of the draw-head and projects up in front of the block, holds the same from forward displacement. Longitudinal shoulders *f'* on opposite sides of the base portion of the block prevent the lateral displacement thereof. The forward portion of the lock is guided in its vertical movement and held from lateral play preferably by a vertical inwardly-projecting rib *g* on one side wall of the lock-cavity and by a vertical rib *g'*, projecting rearwardly from the front wall of the draw-head.

The block or carrier D is provided in its rear face with a forwardly-extending cavity or pocket H, in which is located a plunger I, and a spring *i*, which tends to project the plunger rearwardly or out of the pocket. The plunger is preferably provided with a rear head *i'* and a forwardly-extending reduced shank, which is surrounded by the spring *i*, which bears at its rear end against the head and at its forward end against the forward end or bottom of the pocket. The pivot-arms *c* at their rear portions extend rear-

wardly and downwardly beyond the pivotal connection of the lock with the block, and these portions are connected by a cross bar or pin J, which is located opposite the mouth of the pocket and against which the plunger-head is held by its spring. The spring-pressed plunger tends to move the bar or pin J rearwardly and upwardly, and so throws the forward end of the lock down and holds it down.

With the parts constructed and arranged as described it will be seen that the operating-spring for the lock is located forwardly of the rear end of the lock and does not project back into the draw-bar any farther than the block itself, which is desirable or essential in certain forms of couplings.

K is the usual link, connected at its lower end to the lock and extending up through an opening in the top of the draw-head for lifting the lock to release the knuckle.

L is the kicker-lever, which is pivoted intermediate of its ends on an upright pivot which extends down through a hole in the top of the draw-head into an upright pivot-post N, formed in the bottom of the draw-head. The pivot-post N is arranged adjacent to one side of the draw-head and extends upwardly in front of the lateral extension *b'* on the tail of the knuckle when the latter is in a closed position. The arrangement of the post N is such that it affords a shoulder for the tailpiece extension when the knuckle is closed, and thereby prevents the disengagement of the knuckle from the draw-head if the knuckle-pivot should break. The pivot-pin preferably extends down through the bottom of the draw-head and is provided with a cotter-pin *n* to prevent its accidental displacement. The kicker-lever rests on the top of the pivot-post and is preferably provided with an upwardly-extending perforated bearing lug or sleeve *o*, through which the pivot-pin passes in order to provide an extended bearing for the kicker-lever.

P indicates a spring coiled around the sleeve *o* and having one end engaging a fixed lug *p'* on the draw-head, while the other end is provided with a downturned hook, which engages in a notch *p''* on the outer side of the forwardly-extending arm of the kicker-lever. The spring holds the forward end of the kicker-lever against the side of the tailpiece and throws the knuckle out when it is released by the lifting of the lock. The rear end of the kicker-lever is provided with an outturned stop portion *l*, adapted to engage the adjacent side wall of the draw-head and to limit the inward movement of the front end of the kicker-lever, so as to prevent the same from swinging into a position in which it could be injured by the tailpiece in the use of the coupling.

I claim as my invention—

1. The combination with the draw-head, and the knuckle, of a pivoted lock arranged lengthwise of the draw-head, a pivot-block to which said lock is pivoted, means for holding said block against displacement, and a spring carried by said block and acting rearwardly against the rear portion of said lock, substantially as set forth.

2. The combination with the draw-head, and the knuckle, of a pivoted lock arranged lengthwise of the draw-head, a pivot-block to which said lock is pivoted, means for holding said block against displacement, and a spring carried by said block and arranged in front of the rear end of the lock and acting to hold the front end of the lock in locking position, substantially as set forth.

3. The combination with the draw-head and the knuckle, of a pivoted lock arranged lengthwise of the draw-head, and a pivot-block to which said lock is pivoted and which has a recess extending thereinto adjacent to said lock-pivot, means for holding said block against displacement, and a spring arranged in the recess in said block and acting against a part of said lock which is arranged adjacent to said recess, substantially as set forth.

4. The combination with the draw-head, and the knuckle, of a pivoted lock arranged lengthwise of the draw-head, a pivot-block to which said lock is pivoted and which has a recess extending thereinto forwardly from its rear portion, means for holding said block against displacement, and a spring located in the recess in said block and acting against a part of said lock which is arranged opposite to said recess, substantially as set forth.

5. The combination with the draw-head, and the knuckle having a tailpiece provided with a lateral extension, of a horizontally-swinging kicker-lever for opening the knuckle, and a pivotal support for said kicker-lever arranged adjacent to one side of the draw-head to form a shoulder in front of the lateral extension of the tailpiece when the knuckle is closed, substantially as set forth.

6. The combination with the draw-head, and the knuckle having a tailpiece provided with a lateral extension, of a horizontally-swinging kicker-lever for opening the knuckle, a pivot for the kicker-lever, and a post for the said pivot adjacent to one side of the draw-head and arranged to form a shoulder in front of the lateral extension of the tailpiece when the knuckle is closed, substantially as set forth.

Witness my hand this 15th day of October, 1901.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,

CLAUDIA M. BENTLEY.