

(No Model.)

W. T. WILSON.
CAR COUPLING.

No. 600,995.

Patented Mar. 22, 1898.

Fig. 1.

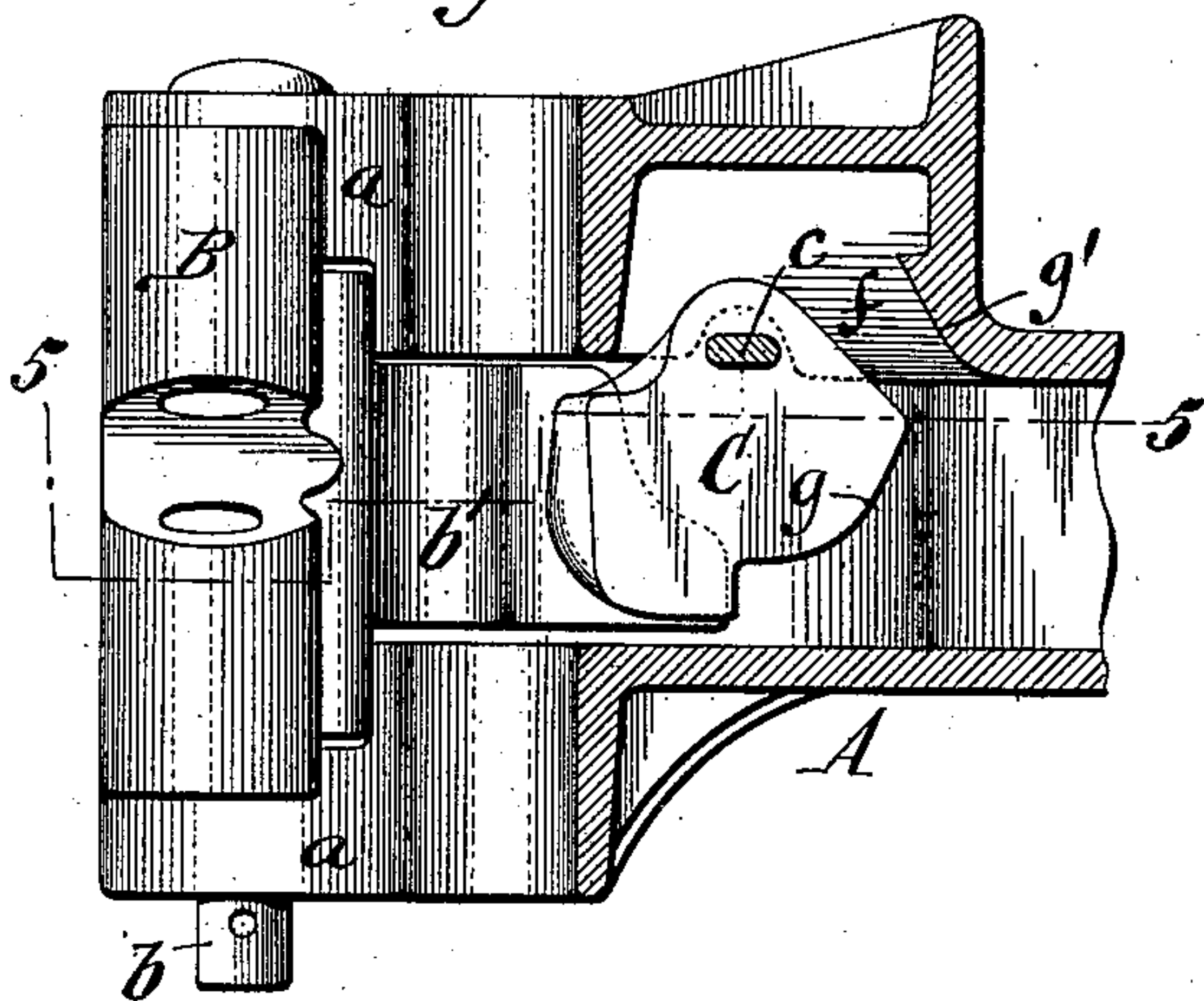


Fig. 2.

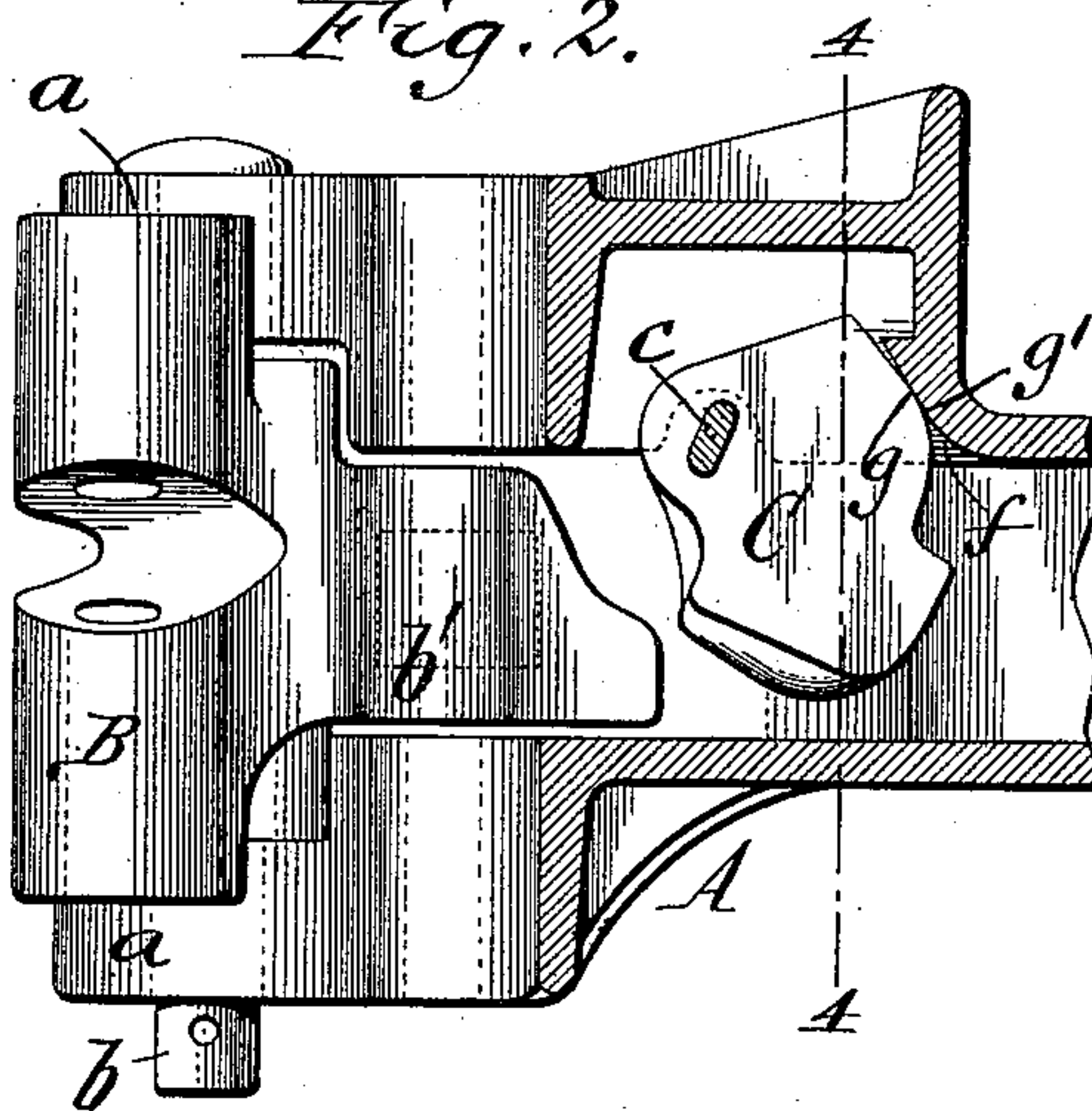


Fig. 3.

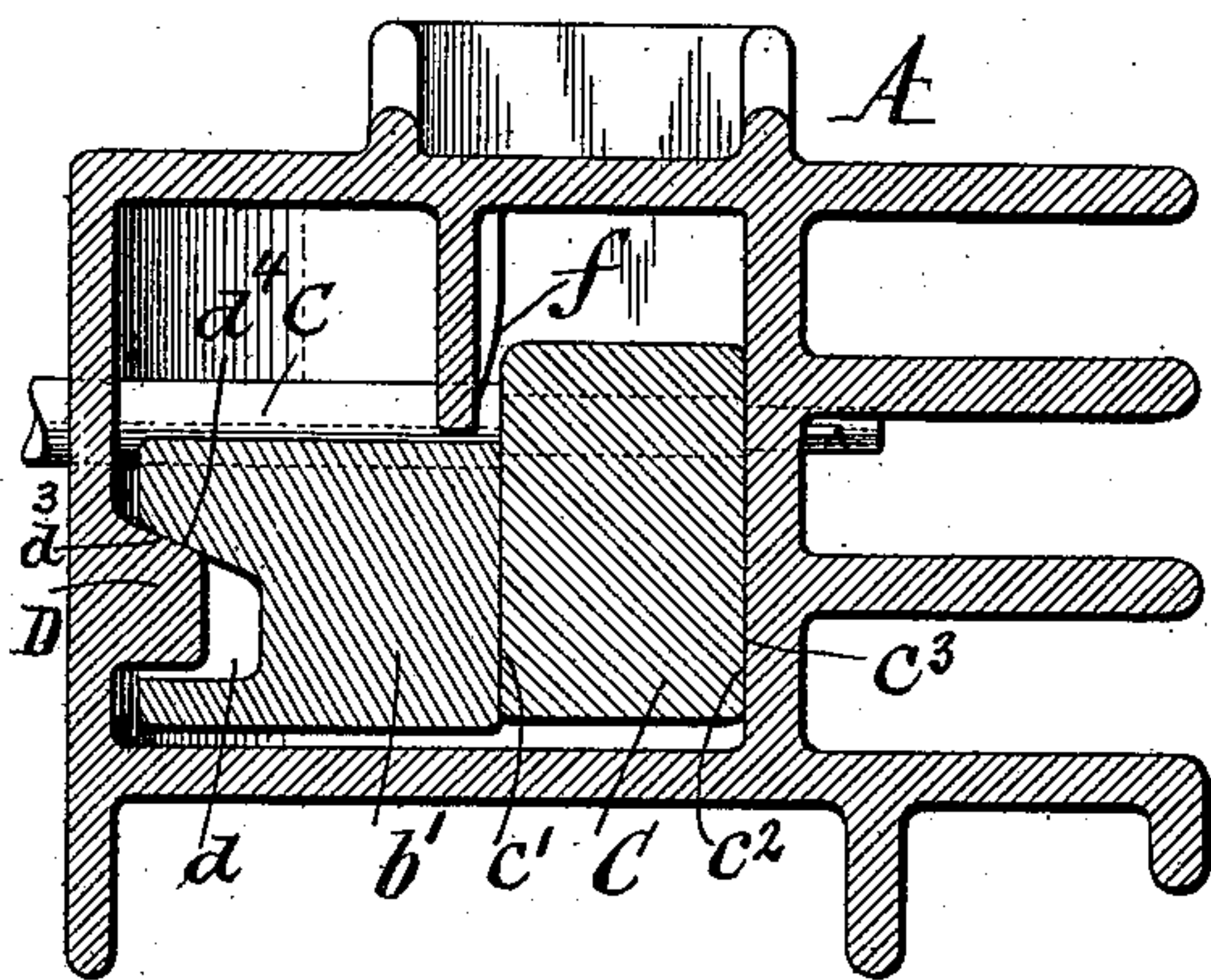


Fig. 4.

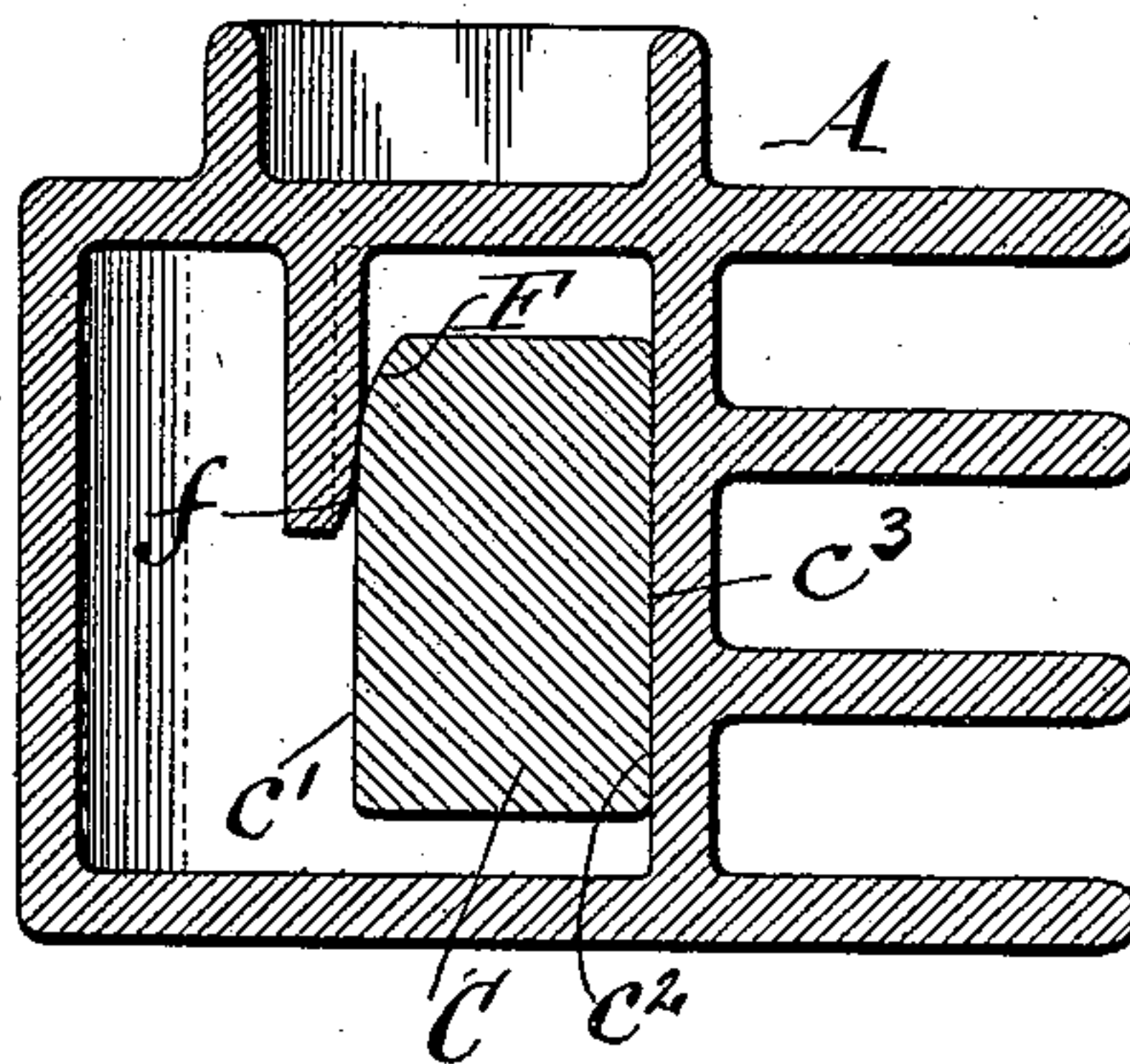


Fig. 5.

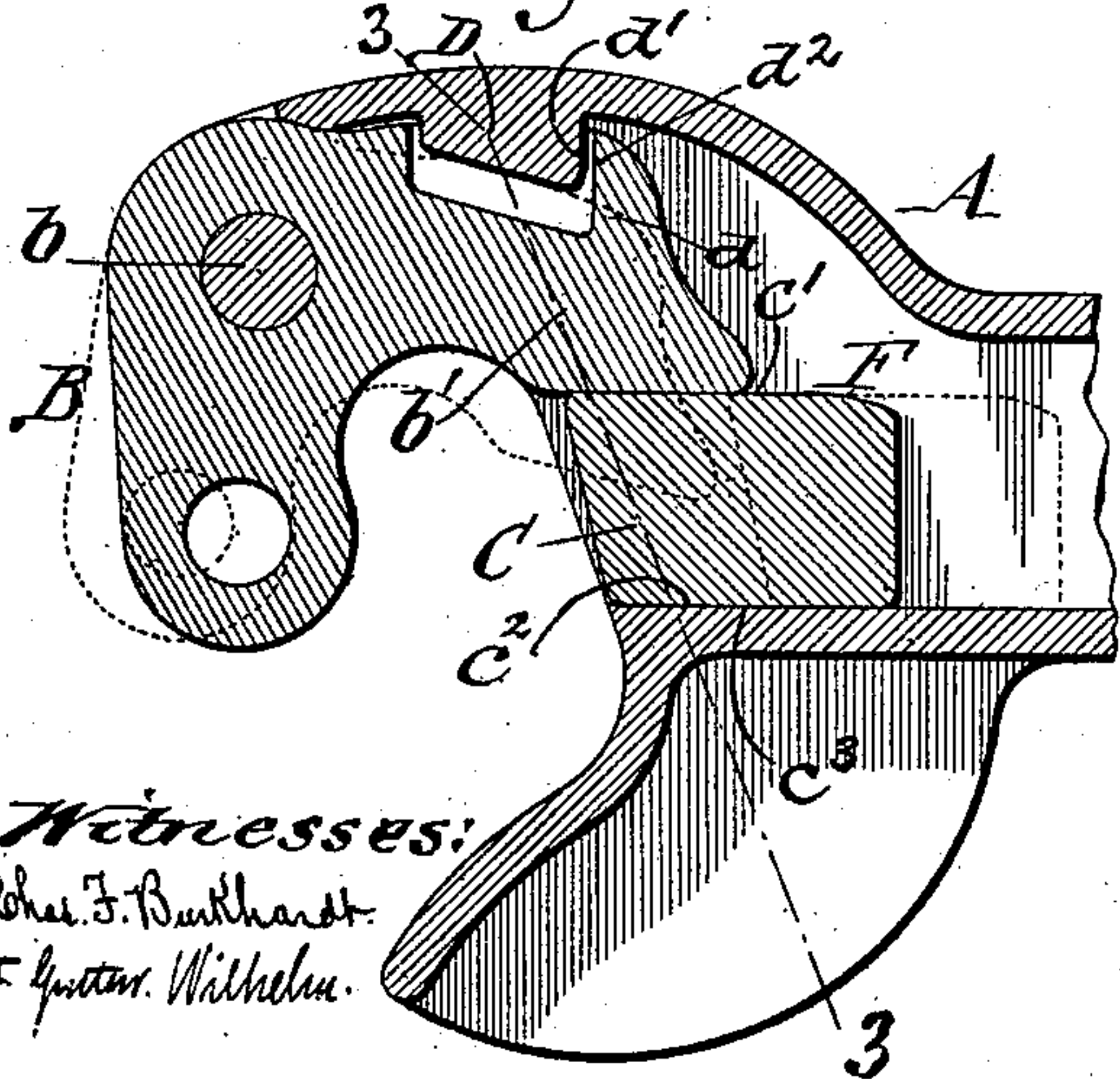
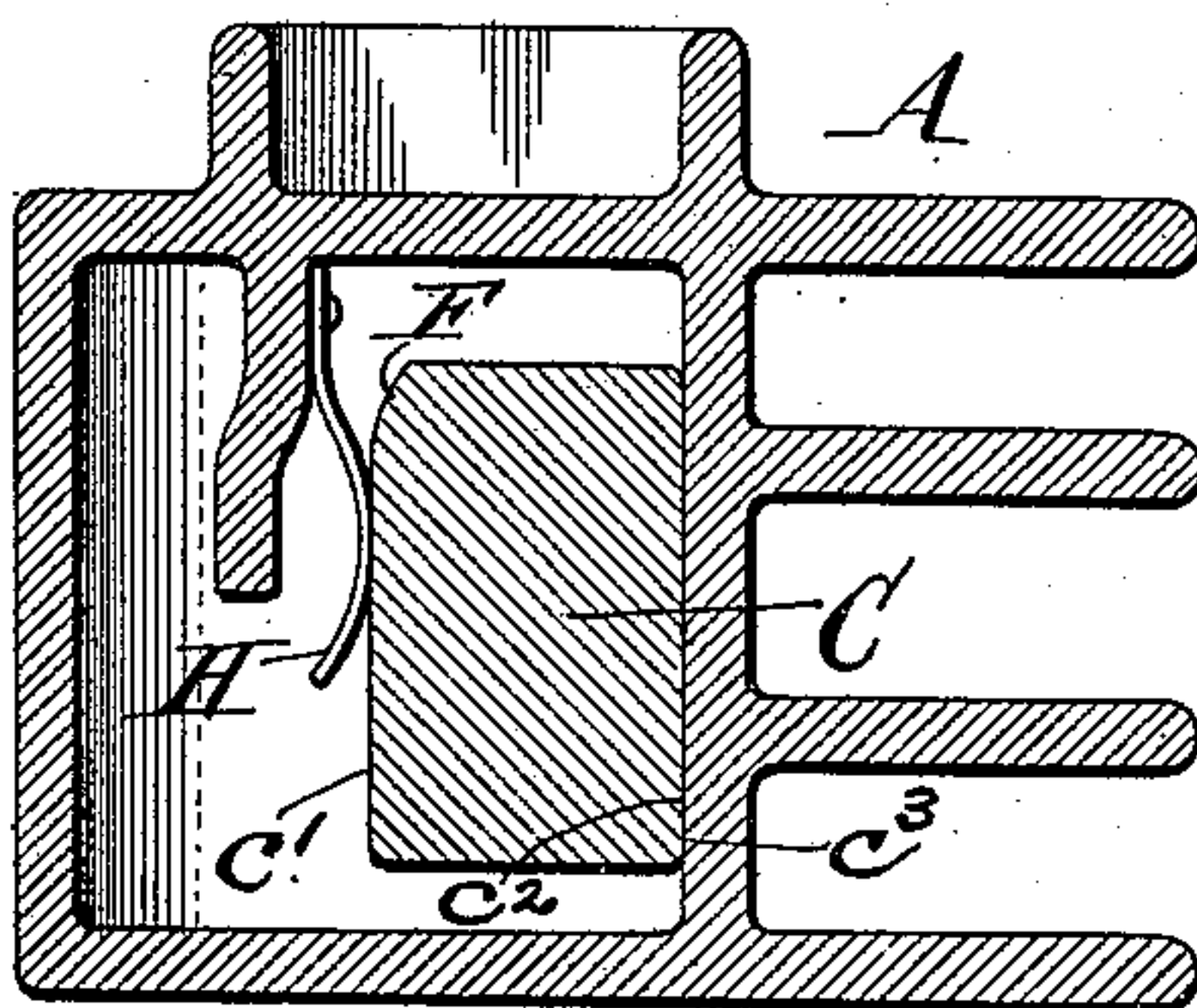


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 600,995, dated March 22, 1898.

Application filed March 5, 1897. Serial No. 625,954. (No model.)

To all whom it may concern:

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

This invention relates to that class of car-couplers which are commonly known as "twin couplers," and which consist, essentially, of a draw-head, a coupling jaw or knuckle pivoted to the draw-head, and a lock or pawl for holding the jaw or knuckle in its coupled position.

One of the objects of my invention is to provide a simple means for holding the lock temporarily in a retracted position when it is desired to cut one car from another without positively securing the lock in its open position.

My invention has the further objects to improve the means whereby the initial opening movement of the knuckle is effected, and to prevent the latter from becoming detached from the draw-head when the pivot-pin of the knuckle becomes broken or is maliciously removed.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved coupling, showing the coupling jaw or knuckle in its closed or locked position. Fig. 2 is a similar view showing the locking-pawl swung rearwardly for releasing the knuckle. Figs. 3 and 4 are vertical transverse sections in lines 3-3 and 4-4, Figs. 5 and 2, respectively. Fig. 5 is a horizontal section in line 5-5, Fig. 1. Fig. 6 is a vertical transverse section similar to Fig. 4, showing a modification of one feature of my invention.

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

A represents the draw-head, having in its front end the usual chamber or cavity in which the working parts of the coupler are arranged; B, the coupling jaw or knuckle pivoted to the forwardly-projecting bifurcated arm *a* of the draw-head by a vertical pin *b* and having the usual locking arm or tongue *b'*, and C the movable lock or pawl which controls the jaw. The lock is preferably operated by a horizontal rock-shaft *c*, to which the pawl is secured with its upper end. This

shaft is journaled transversely in the side walls of the draw-head and provided at its outer end with any suitable and well-known means for turning the same.

In the normal locked or operative position of the parts the jaw or knuckle projects transversely inward, its arm projects rearwardly, and the pawl hangs vertically, with its longitudinal locking-face *c'* in engagement with the front side of the locking-arm and with its opposite longitudinal or abutting face *c''* in engagement with the adjacent abutment-wall *c'''* of the draw-head, as represented in Figs. 1, 3, and 5. Upon turning the rock-shaft so as to swing the lower end of the pawl rearwardly and upwardly the latter clears the locking-arm of the jaw, as shown in Fig. 2, thereby permitting the latter to be opened.

D represents a lug formed on the inner side of the draw-head in rear of the knuckle-pivot and adapted to project into a recess *d*, formed in the back of the locking-arm when the parts are in their normal coupled position. If the pivot-pin of the knuckle should be broken or be removed while the locking-arm is held in its coupled position by the pawl, the rear side *d'* of the lug will engage with the rear side *d''* of the recess in the locking-arm and prevent the knuckle from opening or becoming detached from the draw-head. The upper side of the lug is inclined from its back toward its front end, as shown at *d'''*, Fig. 3, and is adapted to engage with the correspondingly-inclined upper side *d''''* of the recess in the locking-arm. Upon swinging the knuckle inwardly into its locked position the locking-arm during the last portion of this movement rides with the inclined portion of its recess upon the inclined top side of the lug D, which causes the knuckle and locking-arm to be slightly raised. As the locking-arm passes with its front side beyond the locking-face of the pawl, the latter drops by gravity in front of the arm and holds the same in its elevated position on the incline of the lug. Upon moving the pawl rearwardly so that it clears the locking-arm the latter, owing to its weight and that of the knuckle, slides down the incline of the lug until the knuckle strikes the bottom of the draw-head, during which movement the knuckle and locking-arm are turned

on the pivot-pin sufficiently to bring the end of the locking-arm in front of the locking-pawl, as represented in dotted lines, Fig. 5. The knuckle can now be opened fully by giving the pawl an outward movement, so that it engages with the end of the locking-arm and forces the arm and knuckle into an open position, this movement being imparted to the pawl by reversing the movement of the rock-shaft. If desired, the incline on either the lug of the draw-head or the recess of the locking-arm may be omitted. This arrangement and construction of the lug on the draw-head and the recess in the locking-arm enables these parts to serve the double purpose of holding the knuckle in its operative position when the pivot-pin is broken or stolen and also effects the initial opening movement of the knuckle and locking-arm to permit the same to be fully opened by the subsequent forward movement of the locking-pawl.

In order to permit the pawl to be temporarily held in an open position in a simple manner while cutting one car from another, the parts are constructed as follows:

F represents an incline formed on the locking side of the pawl, and *f* is a corresponding incline formed on the longitudinal side of a web arranged in the draw-head adjacent to the locking-face of the pawl. Upon continuing to swing the lower end of the pawl rearward and upward after the locking-arm has been released the incline on the locking side of the pawl comes into engagement with the incline *f* on the draw-head, whereby the pawl is wedged between the incline *f* and the abutment-wall of the draw-head, thereby holding the latter open by friction and permitting the knuckle to open for uncoupling the cars whenever the latter are pulled apart. After the cars have been uncoupled the pawl can be easily restored to its normal depending position by giving the rock-shaft a forward turn sufficient to overcome the friction of the inclines *F f*. If the operator fails to lower the pawl after the cars have been uncoupled, the jar or blow which is brought against the draw-head in the act of coupling with another car is sufficient to liberate the pawl and permit the same to drop automatically into its operative position. If desired, the rear or free end of the pawl may also be provided with an inclined face *g*, which is adapted to engage with a corresponding incline *g'* on the back portion of the draw-head, as shown in Fig. 2, for the purpose of increasing the frictional contact between the draw-head and pawl.

Instead of holding the pawl open temporarily by means of cooperating inclined faces on the pawl and draw-head the same effect may be produced by means of a spring *H*, secured at one end to the draw-head and adapted to engage with the side of the pawl when the latter is swung into its rearmost position, as represented in Fig. 6.

In cutting one car from another it has been

the practice heretofore to hold the pawl open by a catch, so that the cars could be parted; but this is objectionable in many cases, because the pawl must be again released from the catch by hand in order to restore the parts to the proper position in readiness for effecting an automatic coupling with another car. If circumstances required the pawl to be held open only a short time, this has usually been done by hand without engaging the catch with the pawl-operating mechanism. This is also objectionable, inasmuch as only two cars can be uncoupled at one time by one operator. By retaining the pawl open by friction a number of cars can be cut one from the other without requiring an attendant at each coupling for holding the pawl open temporarily and without requiring an attendant to release the pawl from the catch, which otherwise would be necessary if the same were held open by a positive retaining device.

When the locking-pawl has been swung into its rearmost position, and is held in this position by the friction-surfaces, the pawl is clear of the path of the locking-arm on the jaw. If the jaw is accidentally closed while the locking-pawl is held in its retracted position, the jaw upon being released will be opened again partly by the inclines, thereby preventing the jaw from being locked accidentally in its closed position.

I claim as my invention—

1. The combination with the draw-head, the coupling-jaw having a horizontally-swinging and a rising-and-falling movement on the pivot-pin which connects the same with the draw-head, of a locking-arm formed on the coupling-jaw and provided on its rear side with a recess, a locking-pawl engaging with the front side of the locking-arm, and a lug arranged on the inner side of the draw-head and engaging with its upper side against the upper side of said recess, one or both of the cooperating sides of the lug and recess being inclined, whereby the coupling-jaw is prevented from becoming detached from the draw-head if the pivot-pin is removed or broken and the coupling-jaw is also raised during the last portion of its closing movement so that the first portion of the subsequent movement of the jaw is effected automatically upon withdrawing the locking-pawl, substantially as set forth.

2. The combination with the draw-head, the coupling-jaw having a locking-arm and a horizontally-swinging and a vertical movement on said head, of an incline adapted to raise the jaw during the last portion of its closing movement so that upon releasing the jaw the same will slide down the incline and effect the first portion of its forward movement, and a depending locking-pawl pivoted transversely at its upper end so as to be capable of swinging rearwardly and upwardly with its lower end out of the path of the locking-arm and having a friction-face which is adapted to bind against an adjacent friction-face of the draw-

head for holding the latter out of the path of the locking-arm, substantially as set forth.

3. The combination of the draw-head, the coupling-jaw and the locking-pawl adapted to engage with its side against the adjacent side of the draw-head, one or both of said cooperating sides being inclined, substantially as set forth.

4. The combination with the draw-head provided on one of the longitudinal sides of its cavity with an abutment, on the opposite longitudinal side with an incline and on its back side with an incline, of a coupling-jaw pivoted on the draw-head and a locking-pawl pivoted on the draw-head and provided on

one of its longitudinal sides with an abutting face adapted to engage with said abutment, on its opposite longitudinal side with an incline adapted to engage with the incline on the longitudinal side of the draw-head and on its end with an incline adapted to engage with the inclined back of the draw-head, substantially as set forth.

Witness my hand this 27th day of February, 1897.

WILLIAM T. WILSON.

Witnesses:

THEO. L. POPP,
KATHRYN ELMORE.