

No. 620,374.

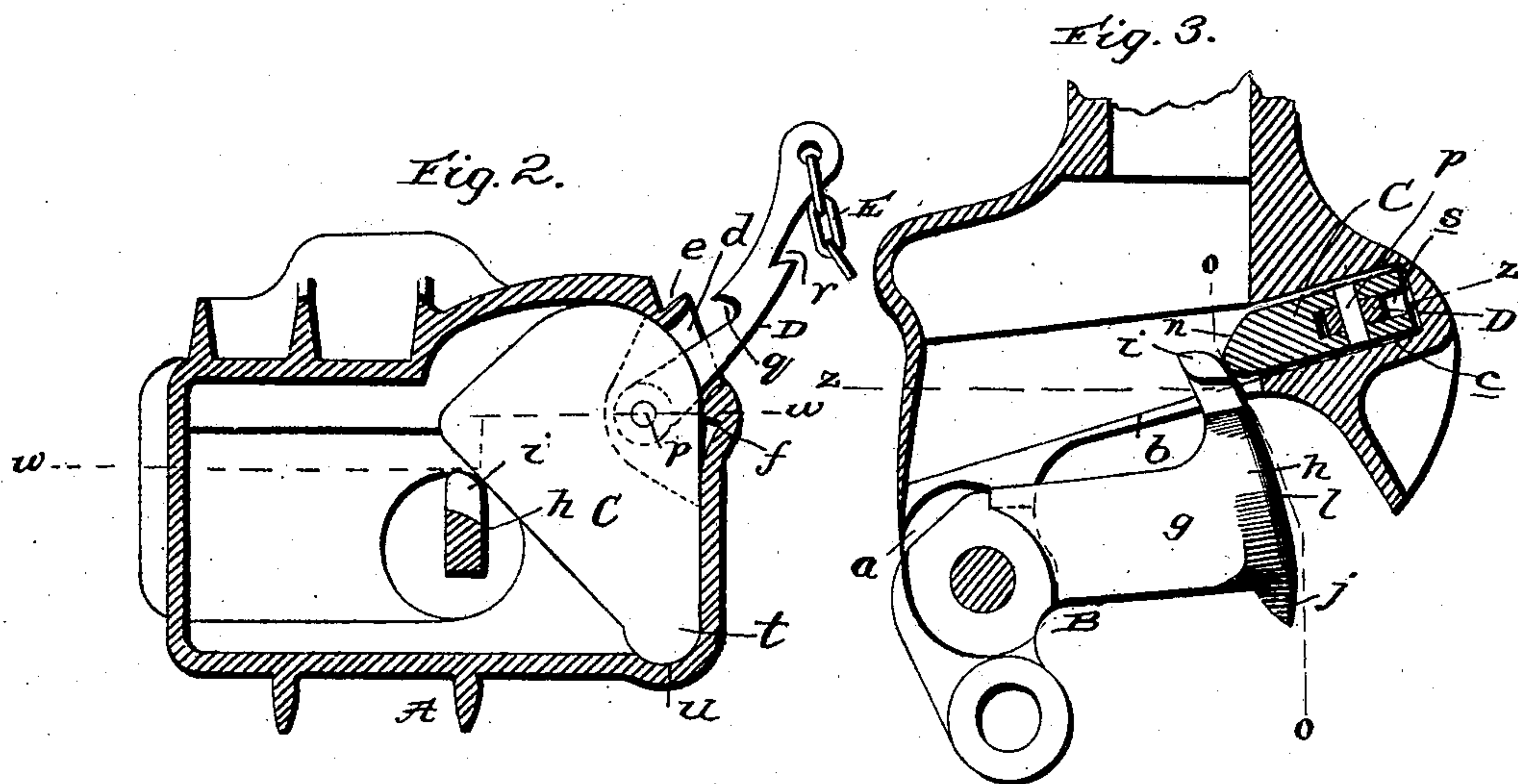
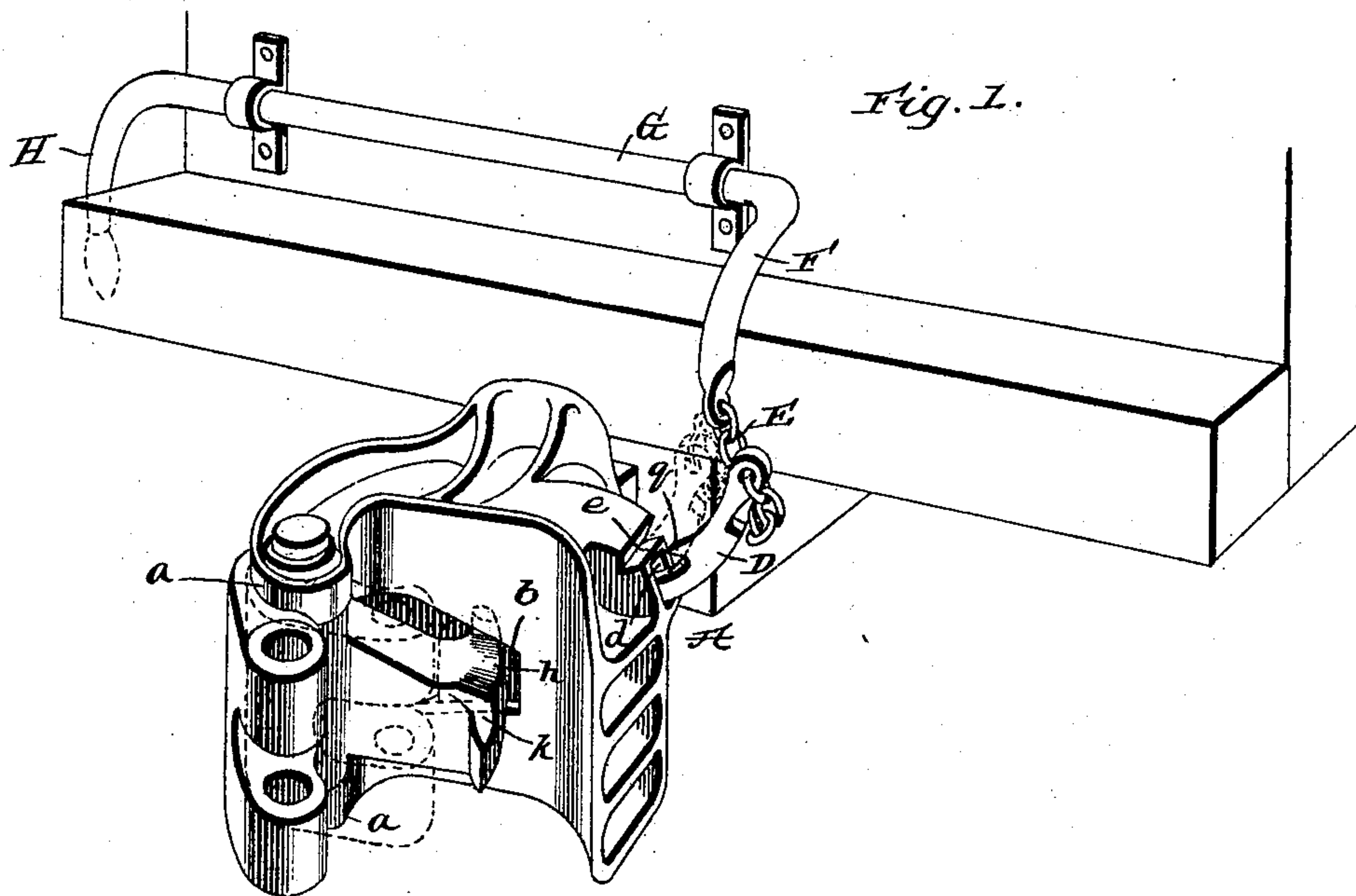
Patented Feb. 28, 1899.

F. H. STARK.
CAR COUPLING.

(Application filed Mar. 31, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
C. H. Raeder
J. G. Lerney

Inventor
F. H. Stark
By *James J. Sheehy*
Attorney

No. 620,374.

Patented Feb. 28, 1899.

F. H. STARK.
CAR COUPLING.

(Application filed Mar. 31, 1898.)

(No Model.)

2 Sheets—Sheet 2

Fig. 4.

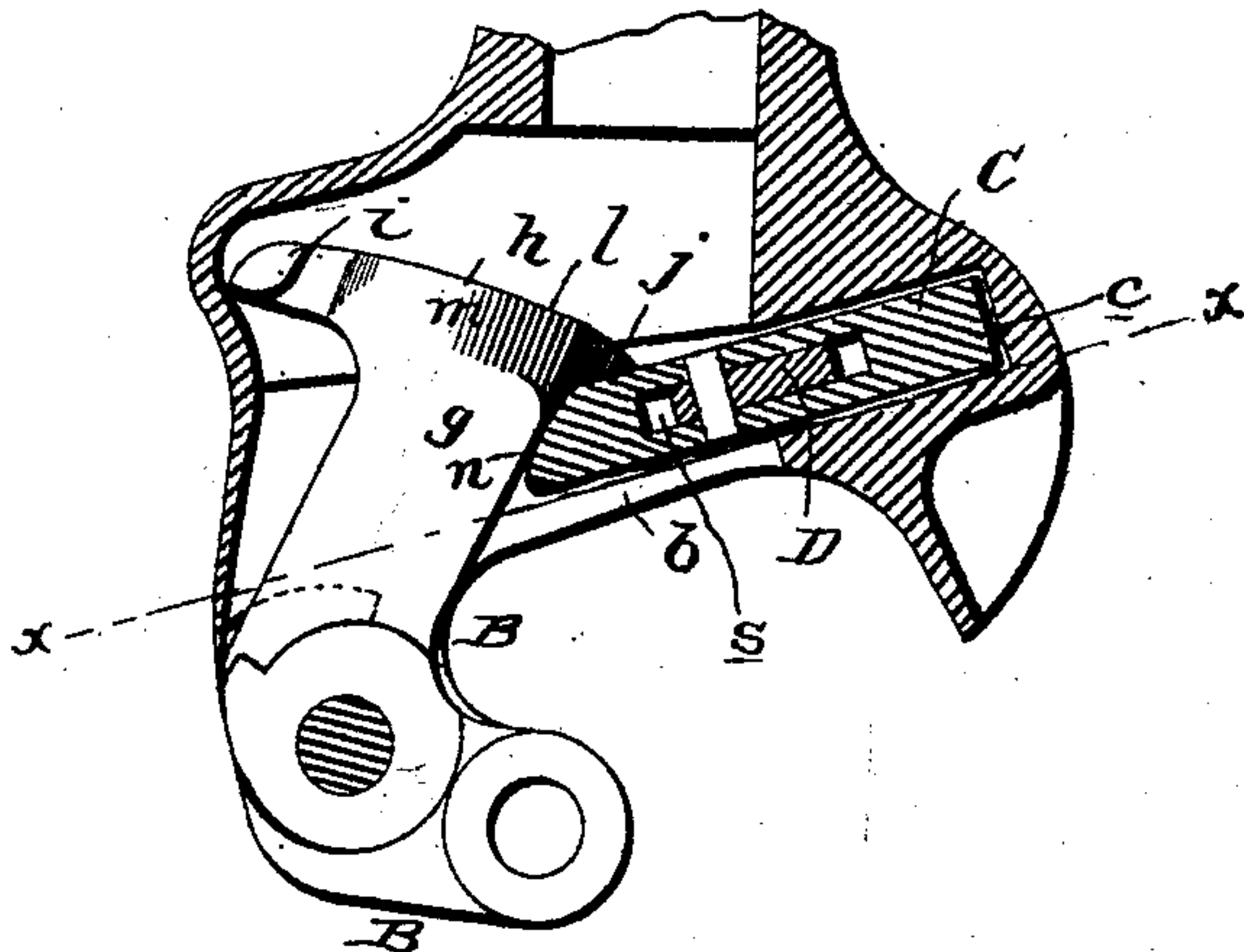


Fig. 5.

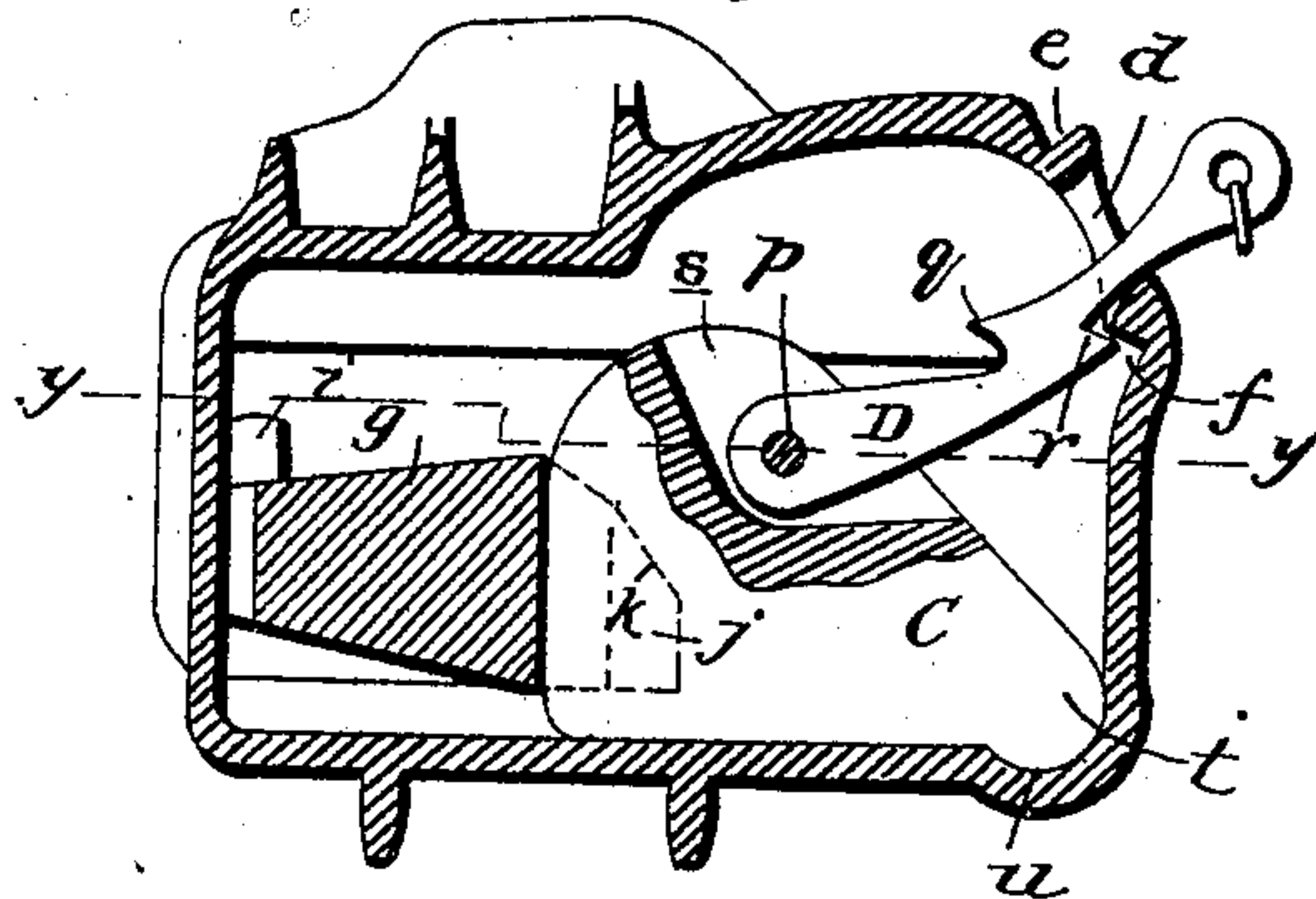


Fig. 6.

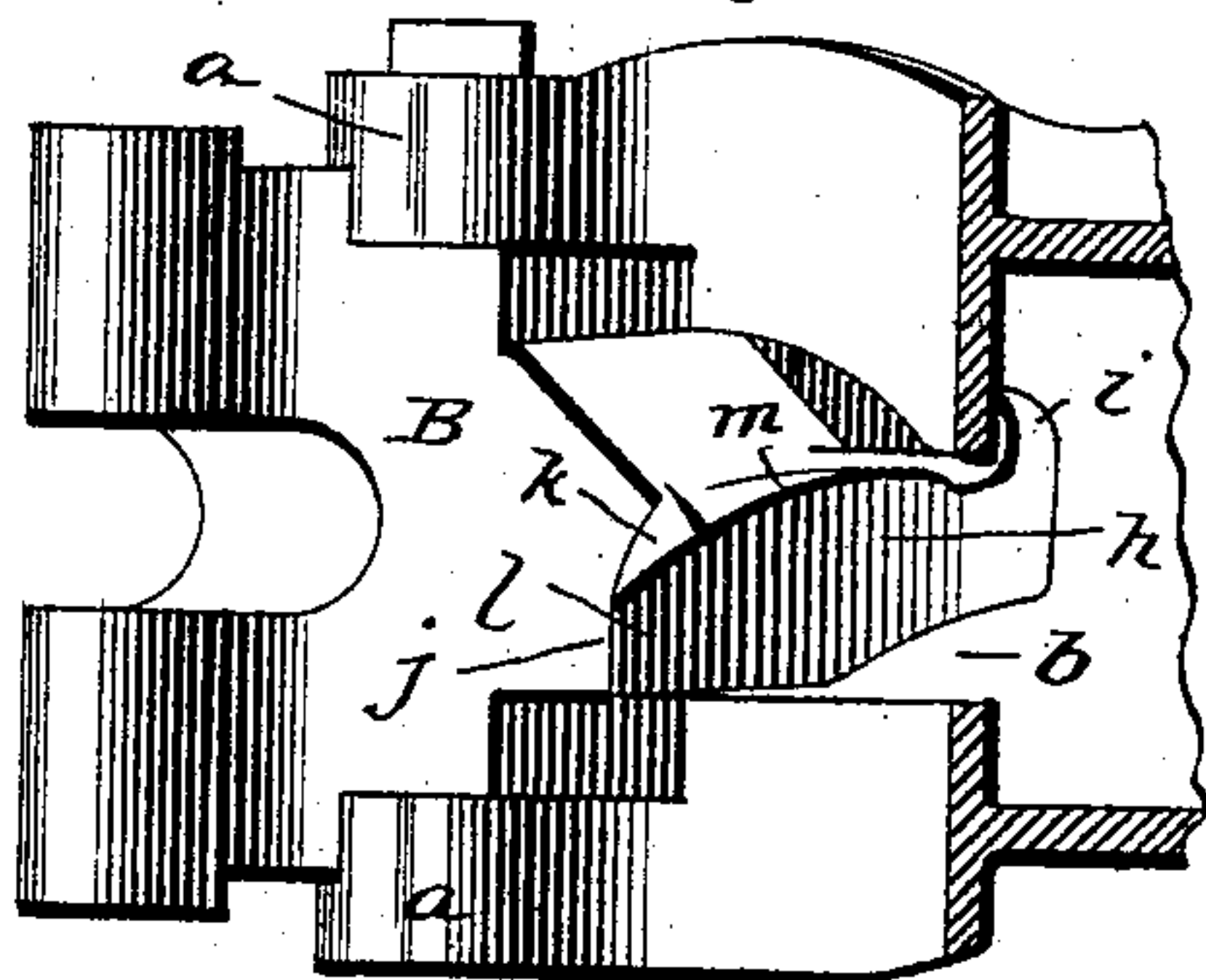
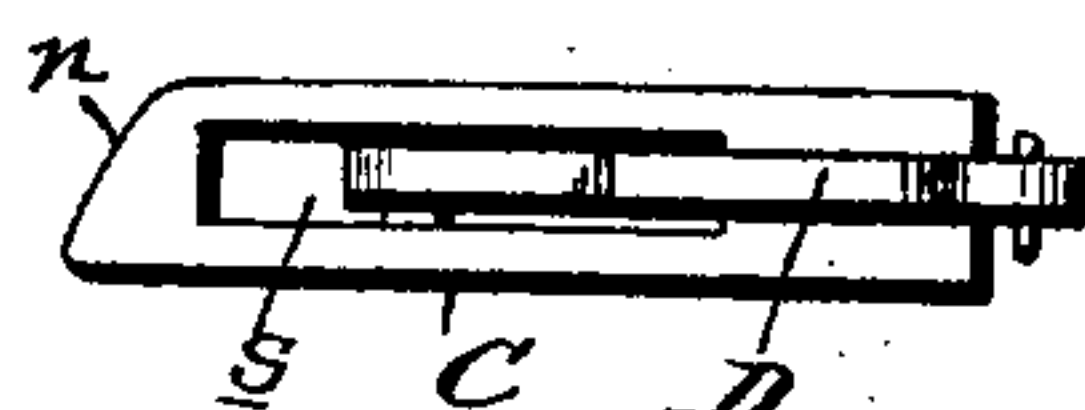


Fig. 7.



witnesses:

W. H. Paeder
J. H. Krone

Inventor

F. H. Stark
By *James Sheehy*
Attorney

UNITED STATES PATENT OFFICE.

FRANK H. STARK, OF ELYRIA, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 620,374, dated February 28, 1899.

Application filed March 31, 1898. Serial No. 675,966. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. STARK, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have
5 invented new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to improvements in automotic car-couplings, and more particularly to that class known as the "Janney"
10 type, in which a swinging hook or knuckle is pivoted to the draw-head and a key within the head engages the knuckle to lock it in proper position.

15 The prime object of my invention is to so improve such devices that no great care need be taken in the construction of the operating-shaft or the length of chain leading from said shaft to the locking-pin or latch and to render
20 the unlocking of the knuckle positive and certain.

A further object of the invention is to improve the knuckle-lock so that it can be operated with ease and facility and will positively hold the knuckle in locked position
25 and assist in closing the opening in the draw-head, so as to exclude rain, snow, dust, and the like.

A further object of the invention is to provide a latch for the knuckle-lock which will positively prevent said lock from casual disconnection or lifting from its seat by the jarring or jolting incident to rough travel, and to so construct the latch that it will retain
30 the lock in a raised position when desired to uncouple until the knuckle has been swung on its pivot so as to disconnect itself from the knuckle or draw-head of an abutting car.

A further object of the invention is to so construct the tail of the knuckle that it will positively unseat the latch in its outward or uncoupling motion, so that said latch will bear upon the tail of the knuckle after being unseated and will fall by gravity in front of the
45 tail or a shoulder thereon when the knuckle has been moved into a closed position.

Other objects and advantages will appear from the following description and claims when taken in conjunction with the annexed
50 drawings, in which—

Figure 1 is a perspective view of a draw-head, showing the same in an unlocked posi-

tion and applied to a part of the framework of a car. Fig. 2 is a sectional view taken in the plane indicated by the dotted line *z z* on
55 Fig. 3. Fig. 3 is a sectional view taken in the plane indicated by the dotted line *ww* on Fig. 2. Fig. 4 is a sectional view taken in the plane indicated by the dotted line *yy* on Fig. 5. Fig. 5 is a sectional view taken in the
60 plane indicated by the dotted line *xx* on Fig. 4. Fig. 6 is a sectional view taken in the plane indicated by the dotted line *oo* on Fig. 3, and Fig. 7 is a top plan view of the knuckle-lock and latch or lock-pin removed from the
65 draw-head.

Referring by letter to said drawings, A indicates the draw-head, which may be mainly of the ordinary construction, having pierced
70 lugs *a*, in which the knuckle is pivotally supported. This draw-head is provided in its face with a transverse slot *b* to receive the tail or arm of the knuckle and is preferably of a tapering form from its outer end to its
75 inner terminal, which may be slightly beyond its center, as shown. The draw-head is furthermore provided in one side with a slot *c*, which opens out of the head laterally, as shown at *d*, where it is notched or provided with a
80 seat *e*. This seat *e* is on the outer side of the head, and a notch *f* is provided on the inner side of said head and at a point opposite to that of the rest or notch *e*. The notch *f* is designed to receive a shoulder on the latch
85 or lock-pin, so as to keep the same depressed, and the notch or seat *e* is designed to receive a hook on said latch or pin to keep the same, and consequently the knuckle-lock, in an elevated position, the slot *d* being sufficiently
90 wide to permit the latch moving from one shoulder or notch to the other, as will be hereinafter more fully described.

B indicates the knuckle, which may be hinged or pivoted to the draw-head by the usual means. This knuckle has an arm or
95 tail *g*, which is of a peculiar construction and is designed to pass in and out of the slot *b* in the head, being limited in its outward movement by a stop or shoulder *i*, which engages the end wall of the face of the draw-head, as
100 better shown in Fig. 6 of the drawings. The inner end of this tail or arm *g* is provided with a heel *h*, on which the stop or shoulder *i* is mounted, and a toe *j*, which contacts with

the rear side of the knuckle-lock when the latter has fallen to its seat. This toe *j* is beveled on its upper side, as shown at *k*, and it is also beveled vertically on its inner side, as at *l*. The upper inner end of the toe has a rise or elevation *m*, which starts at the base of the bevel or incline *k* and extends a sufficient distance toward the heel *h*. The object of this bevel *k* is to permit the tail of the knuckle to pass beneath the lock, and the rise or elevation *m* serves to lift the lock sufficiently to unseat the hook of the latch from the notch or bearing *e* of the draw-head during the act of uncoupling.

The knuckle-lock *C* may comprise a plate of a form substantially as shown and is arranged in the slot *c* of the draw-head. This plate preferably has its inner vertical edge beveled on its rear side, as at *n*, so as to bear snugly against the tail of the knuckle and securely retain the same when in a coupled or closed position.

D indicates a latch or lock-pin. This latch may be slightly curved in a longitudinal plane, being pivoted at its lower end to the lock *C*, as shown at *p*, and is provided on its upper longitudinal edge with a hook *q* to engage the notch or seat *e* when the lock is to be held in an elevated position and it is desired to uncouple. This latch, which passes out through the slot *d* of the draw-head and is allowed a vertical play therein, is also provided on its under side or edge and at a point above the hook *q* with a shoulder *r*, designed to engage with the shoulder *f* when the latch *C* has been allowed to fall to its seat in the draw-head, and thereby prevent the latch from casually lifting or disengaging itself from the tail of the knuckle or the toe thereon. It will be observed that the pivotal connection between the knuckle-lock and its latch is such as to allow perfect freedom of movement, being preferably formed by slotting the plate, as at *s*, and inserting the pierced end of the latch therein and then connecting it by a pin *p*. It is also preferable to provide the lower outer corner of the lock with a rounded portion *t* and to seat the same in a correspondingly-shaped recess or depression *u*, as by such means the bearing or fulcrum point of the lock when raised will be reduced to a minimum, and when the latch has been disengaged at the hook *q* such latch will quickly fall into a locked position in front of the tail or arm of the knuckle. It will be seen that this lock in addition to performing its function of securing the knuckle in the draw-head will also aid in closing the opening through which the knuckle moves when the latter has been moved to a closed position.

While I have described very specifically and in detail the construction which I have shown, yet I do not wish to be understood as confining myself to the precise construction set forth, as I am aware that many of the parts can be changed or modified without departing from the spirit of my invention. The shape

of the knuckle-lock might be varied, for although the construction which I have shown is preferable, yet any lock which will fall by gravity in front of the tail or arm of the knuckle might answer for the purposes designed, and the shape and form of the latch might be changed. For instance, the hook might be made more or less pronounced, and the angle which it assumes in the draw-head might be varied.

Attached to the upper end of the latch may be a chain *E*, which in turn is usually connected with an angular arm *F*, extending from a rock-shaft *G*, journaled in suitable bearings on the car, and this rock-shaft has a handle at one end, as shown at *H*, whereby the latch, and consequently the lock, may be manipulated. The style of rock-shaft might be that at present employed or it might be of any approved pattern.

By reason of the latch moving laterally or laterally oblique and the lock having a similar direction of movement it will be seen that when the lock has raised the latch by the action of the knuckle to disengage the hook *q* from the seat *e* said latch will fall away from the seat, so as to bring the hook well into the plane of the slot *d*, which will prevent the hook from catching in the fall or descent of the lock. Another advantage in such a disposition of the devices is that when the latch has been placed in the notch or seat *e* it is not liable to become unseated by the cars coming together, as is the case where the latch has a horizontal or longitudinal movement or a straight up-and-down movement.

Having thus described my invention, what I claim is—

1. The combination with a draw-head; of a knuckle hinged or pivoted thereto, a gravitating lock for the knuckle movable laterally, and a latch for holding the lock in a raised and lowered position respectively.

2. The combination with a draw-head; of a knuckle hinged or pivoted thereto and having an arm or tail movable in the draw-head, a gravitating lock movable laterally, a latch pivoted to the lock and adapted to hold the same in a raised and lowered position respectively, the arm or tail of the knuckle being adapted to disengage the latch and allow the lock to move into a closed position, substantially as specified.

3. The combination of a draw-head, having the laterally-disposed slot *d* and the seat *e*, a laterally-movable gravitating lock, a latch connected to and movable with the lock and extending through the slot *d* of the draw-head and having a hook to engage with the seat *e* to hold the lock in its raised position, and a knuckle pivoted in the draw-head; the said knuckle being so arranged that when swung on its pivot to disconnect it from a complementary knuckle it will engage the lock and release the latch, substantially as specified.

4. The draw-head having the laterally-disposed slot *d* and the notch or seat *e* and also

having the inner shoulder *f*, in combination
with the gravitating lock, the pivoted latch
having the hook on one side and a notch or
shoulder on its opposite side, and a suitably
5 hinged or pivoted knuckle adapted to be en-
gaged by the lock, substantially as specified.
In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

FRANK H. STARK.

Witnesses:

J. A. GRAHAM,
A. T. PLATT.