

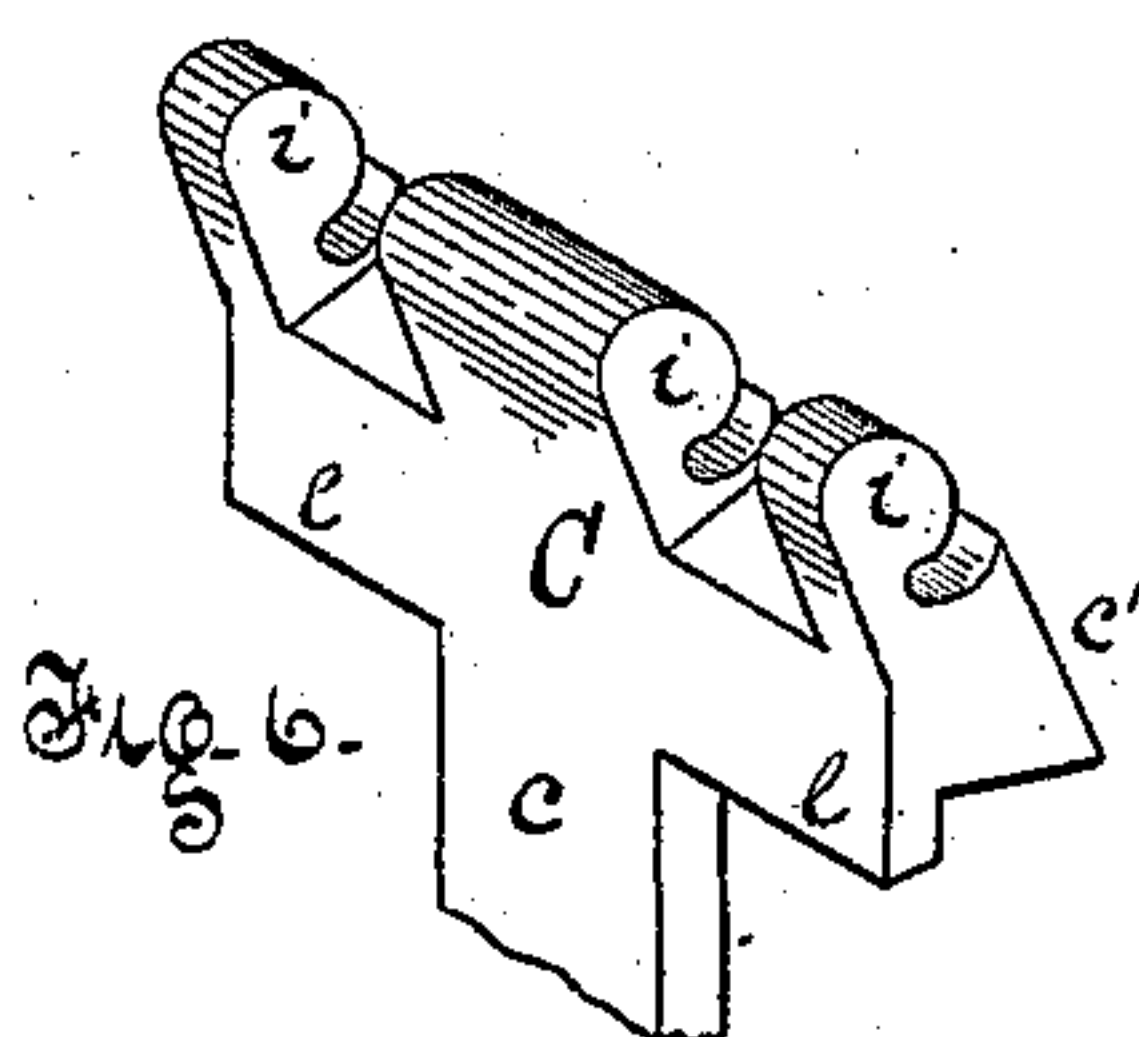
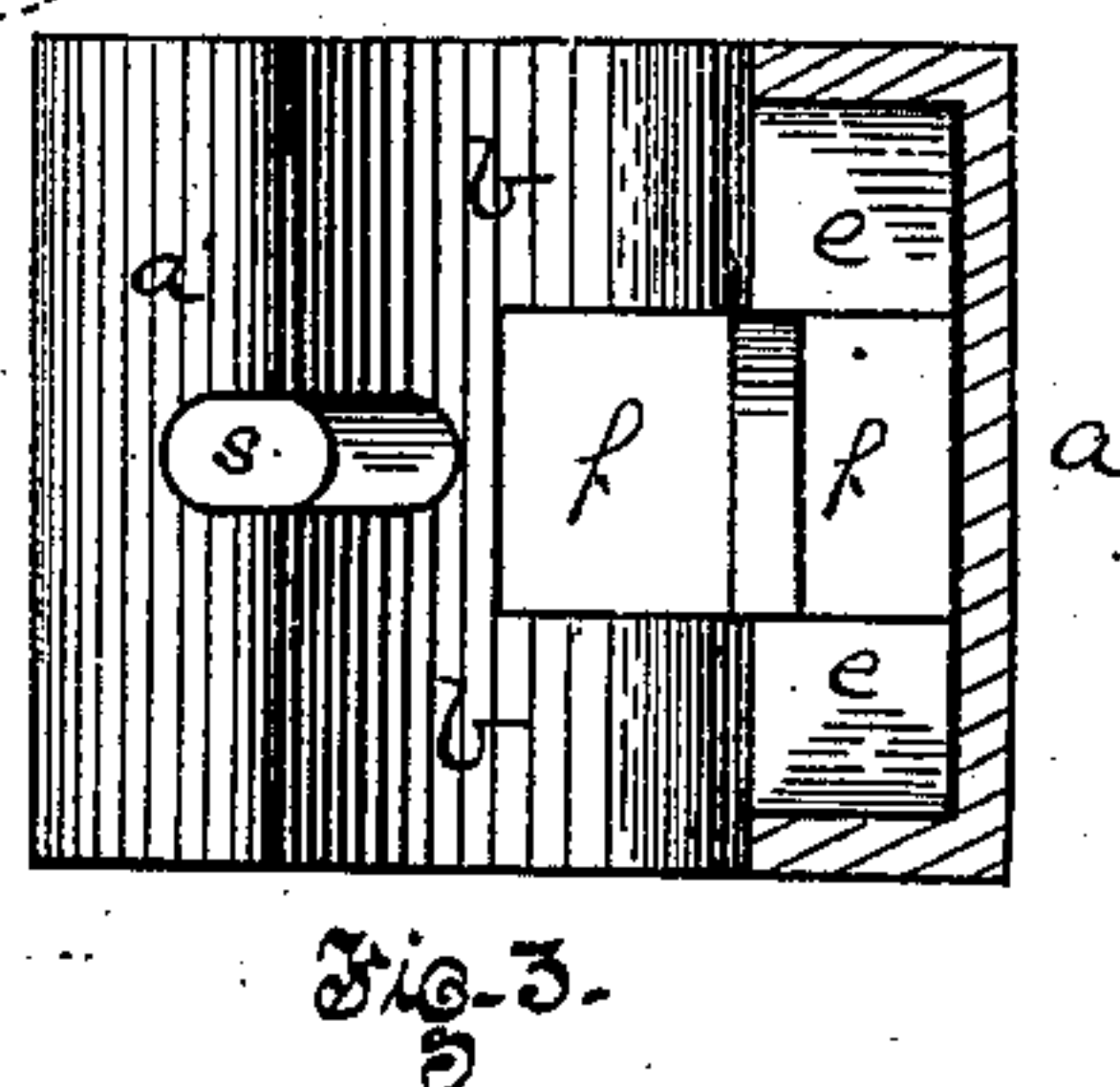
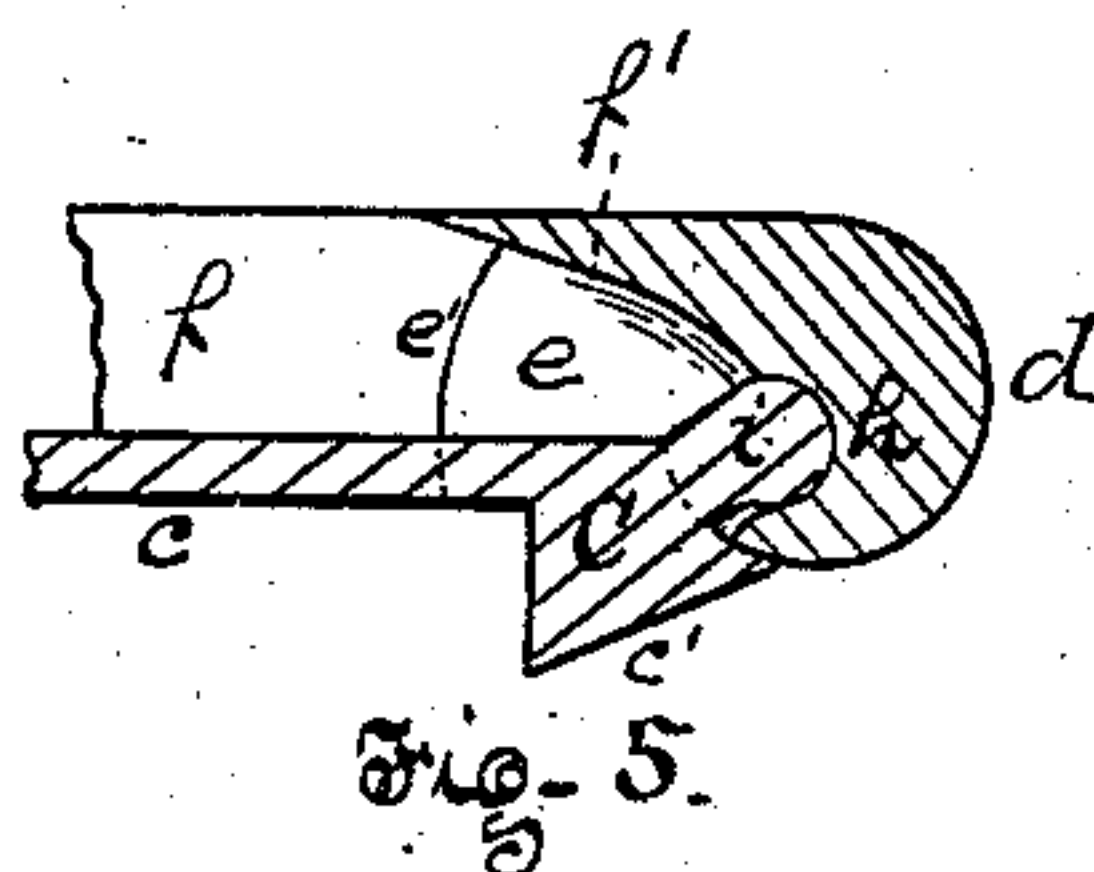
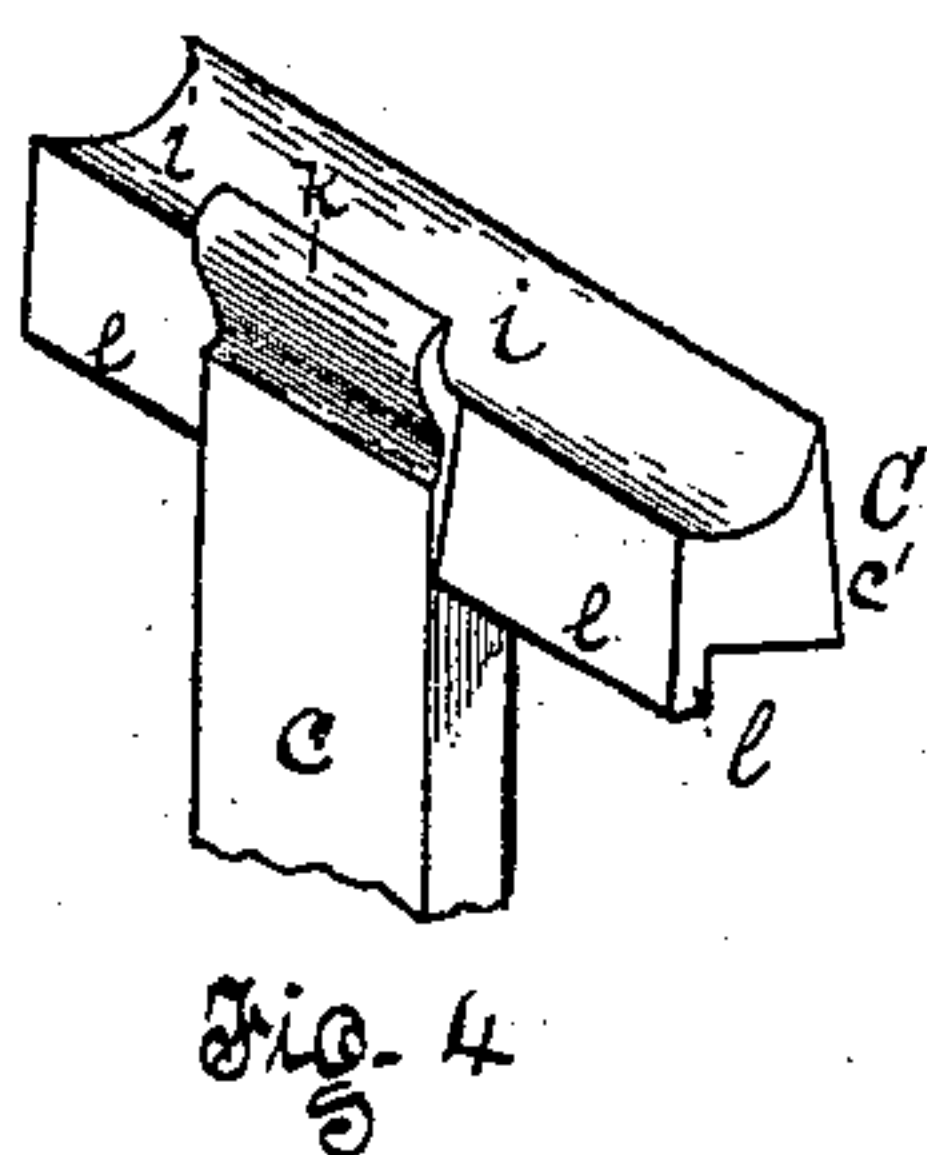
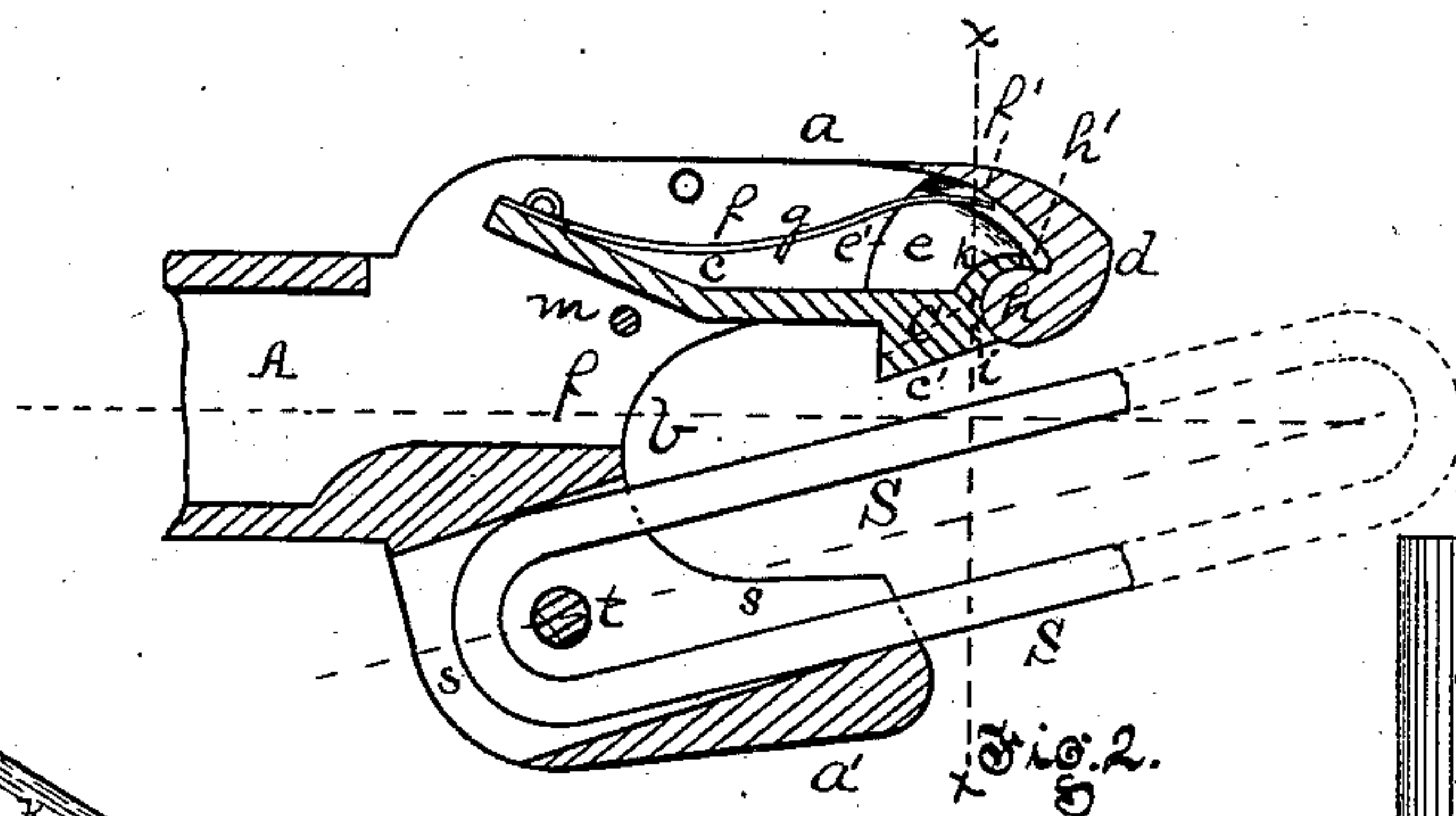
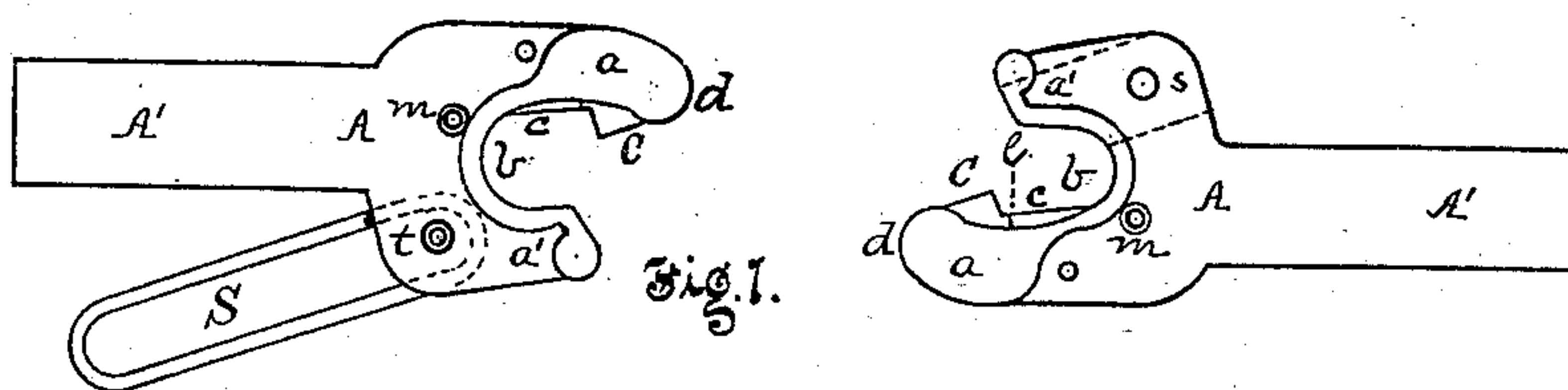
(No Model.)

C. BROWNING.

CAR COUPLING.

No. 273,343.

Patented Mar. 6, 1883.



Witnesses  
J. G. Hay  
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Inventor.  
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# UNITED STATES PATENT OFFICE.

CLINTON BROWNING, OF SHOUSETOWN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JAMES H. LINDSAY, TRUSTEE, OF ALLEGHENY CITY, PA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 273,343, dated March 6, 1883.

Application filed October 30, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CLINTON BROWNING, of Shousetown, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the couplings employed in connecting railroad-cars, and has special reference to automatic couplings employed for this purpose.

The car-couplings heretofore constructed for coupling without links have usually been formed of bifurcated or double-jawed draw-heads, in which one jaw of one draw-head entered between the jaws of the opposite draw-head, and was held therein by means of the clasping-jaw and locking devices of different construction, the usual device being a hook or locking-lever pivoted in the end of one of the jaws. These hooks were so mounted in the jaws that they received the blows or jars at the base of the recess between the jaws, or that the pins on which the hooks or levers were mounted were liable to be bent out of shape by the blows or jars in coupling, or by the drawing strain or jar which comes entirely on these pivoting-pins. The couplings were also more expensive and difficult to manufacture on account of the hooks and levers being pivoted in the draw-heads by means of these pins.

The principal object of my invention is to form a coupling in which the locking hook and lever is protected from injury, and in which the hook or lever is journaled or mounted in the draw-head without the employment of this pivoting-pin.

It consists, essentially, in a bifurcated or double-jawed draw-head having the jaw carrying the locking hook or lever provided with a solid end and a recess back of the solid end, in combination with a locking-lever working within said recess, and having a journal-face adapted to work against or within one face of the recess.

It also consists in certain improvements in the construction of the draw-head and locking-lever.

To enable others skilled in the art to make

and use my invention, I will describe its construction and operation, referring to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of two couplings ready to couple. Fig. 2 is an enlarged central section of one coupling. Fig. 3 is a cross-section of the draw-head on the line  $xx$ , Fig. 2, the locking-lever being removed. Fig. 4 is a perspective view of the locking-lever. Fig. 5 is a longitudinal section of the jaw carrying the locking-lever, showing another form of recess. Fig. 6 is a perspective view of the locking-lever employed therewith.

Like letters of reference indicate like parts in each.

In the drawings,  $A$  represents the draw-head, having the jaws  $a$   $a'$  and recess  $b$  between them for the reception of the jaw of the opposite draw-head. The draw-head has the extension  $A'$ , by which it is mounted at the end of the car in the usual manner. The forward end of the clasping-jaw  $a'$  is curved outwardly to act as a guide for the entering jaw of the opposite coupling. The jaw  $a$ , carrying the locking lever or hook  $C$ , extends beyond the jaw  $a'$ , and is adapted to enter the recess  $b$  of the opposite coupling. The end of this jaw is formed with the solid face  $d$ , which is thus made strong enough to withstand the blows received from the clasping-jaw, and the base of the recess  $b$  in the opposite draw-head to protect the locking hook or lever therefrom and to take the drawing strain from the hook or lever. Back of this solid end or face  $d$  is the recess  $e$ , for the reception of the locking lever, and to strengthen the solid end  $d$  the sides of the jaw extend above and below this recess, thus forming a strong and compact jaw to take the blows in coupling. Extending back from this recess is the slot  $f$ , for the reception of the operating-arm  $e$  of the locking-lever, and in the rear of the recess is the inclined face  $f'$ , against which the spring  $g$ , secured to the back of the arm  $e$ , presses to throw out the locking-lever, as described in my application for Letters Patent filed July 17, 1882. The locking-lever  $C$  is shown journaled in the jaw without a pivoting-pin, and two



different constructions are illustrated—one in which the journaling-face of the lever is concave and fits around a convex face in the jaw, back of its solid end, as shown in Figs. 2 to 4, and one in which the locking-lever has one or more convex faces or projections fitting into one or more corresponding concave faces or recesses in the solid-ended jaw, as shown in Figs. 5 and 6. The first construction will be particularly described, and in it the jaw has the convex face *h*, which forms one side of the recess *e*, and against and around which the concave journaling-face *i* of the lever fits and moves, the lever having a lip, *k*, beyond its concave face, fitting into a recess, *h'*, back of the convex face *h* in the jaw.

Opposite the face *h* of the recess is the curved face *e'*, the curve of the face being substantially part of a circle drawn from the center of movement of the lever at a distance equal to that of the locking-shoulder of the lever therefrom, so that the shoulder can be drawn within the recess.

Extending out on either side of the arm *c* of the lever is the rib or lug *l*, these lugs being the same distance from the center of motion of the locking-lever as the shoulder thereof, so that when fitting in the recess their ends bear against the curved face *e'* thereof and hold the journal-face *i* up against the face *h* of the jaw. These ribs or lugs also prevent the lever from being withdrawn from the recess, except when the operating-arm *c* is thrown sufficiently forward to draw the ribs or lugs *l* out of the recess, and the lugs thus hold the lever within the recess when it is in its operative position. The ribs or lugs *l* may extend entirely across the lever from the operating-arm *c*, as shown, or only part way across, and the base of the recess *e* be grooved for their reception, thus leaving more metal to strengthen the jaw; but when the solid end of the jaw is supported by the back walls and side walls it can be made sufficiently strong in the form shown.

The operating-arm *c* is bent backward about midway of its length, and the slot *f* is sufficiently long to permit this arm to swing forward far enough to draw the ribs or lugs out of the recess *e*, and thus permit the withdrawal of the lever from the jaw, and a pin or stop, *m*, extends across or partially across this slot, to limit the movement of the operating-arm, and so hold the lever within the jaw. The face *e'* of the lever is inclined and extends out from the jaw back of the solid end *d*, so that it is not liable to be injured by blows in coupling.

In Figs. 5 and 6 the locking-lever is provided with one or more convex faces or extensions, *i*, fitting into one or more corresponding concave faces or recesses, *h*, in the jaw, back of the solid end *d*, and the lever is held in the recess *e* by the ribs or lugs *l* and stop or pin *m*, as above described.

The locking-lever is withdrawn to uncouple by means of a lever on the car connected to the

end of the operating-arm *c*, as described in my former application.

In order to connect the coupling with a common draw-head by means of a link and pin, I form in the clasp-jaw *a'* a slot, *s*, and secure therein the link *S* by means of the pin *t*. As it is desirable to have the end of the link which couples with the ordinary draw-head at the center of the line of draft, the slot *s* extends through the jaw diagonally to the line of draft, as shown in Fig. 2, so that the link can extend from the side of the bifurcated draw-head to the center of the common draw-head and the coupling with these common draw-heads thus be facilitated.

The operation of my improved coupling is as follows: When the coupling is to be made, the locking hooks or levers are released, so as to be in locking position, the operating-levers on the body of the cars being released when an automatic coupling such as that shown is employed, and thus permitting the springs to throw out the locking-levers. When the cars come together, the jaws *a* of the draw-head, carrying the hooks or levers, enter the recesses *b* of the couplings and strike against the clasp-jaws *a'* in entering, and the base of the recesses, and take the jars or blows in coupling. As these jaws *a* have solid ends, they are much stronger than the ordinary jaws, weakened by the recesses formed in them for the reception of the pivoting-leaves of the hooks or levers, and the couplings are consequently not so liable to injury from these blows or jars. As the faces of the locking-levers come in contact they press each other back into the recesses formed for their reception, and the journaling-faces of the levers move across or within the faces or seats in the jaws back of the solid ends, and as soon as they pass each other the springs within the heads throw them out, so that they interlock and form the coupling. The forward movement of the locking-lever is limited by the pin *m*, which prevents the ribs or lugs *l* of the lever from swinging out of the recesses, and to withdraw the lever it is necessary to remove this pin, when the arm *c* may swing farther forward in the slot, withdrawing the lugs *l* from the recess and permitting the withdrawal of the lever. The drawing strain on the coupling is communicated from the locking-levers to the solid and strongly-braced ends of the jaws, instead of two pivotal pins extending through the levers and jaws, so that a much stronger support for the drawing strain is obtained, and there is no liability of the coupling being rendered inoperative by the bending of the pivotal pins.

The coupling is formed of few parts, which require but little finishing after being cast to shape, and can be manufactured almost as cheaply as the common draw-head, and it forms a stronger and more efficient automatic coupling than has heretofore been made.

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



1. In car-couplings, the combination, with the double-jawed draw-head having a solid-ended entering jaw and a recess in said jaw, back of the solid end, of a locking-lever working in said recess, and having a journal-face adapted to work against or within one face thereof, substantially as and for the purposes set forth.

2. In car-couplings, the combination, with the double-jawed draw-head having a solid-ended entering jaw and a recess in said jaw, back of the solid end, of a locking-lever working in said recess and having a journal-face adapted to work against one face thereof, and ribs or lugs to hold the lever within the recess, substantially as set forth.

3. In car-couplings, the combination, with the double-jawed draw-head having the solid-ended entering jaw, convex face *h*, and recess *e*, back of said jaw, of the locking-lever *C*, having the concave journaling-face *i* and lip *k*, substantially as and for the purposes set forth.

4. In car-couplings, the combination, with the double-jawed draw-head having the solid-

ended entering jaw, recess *e*, back of said jaw, and slot *f*, of the locking-lever journaled within said recess, and having the operating-arm *c* fitting within said slot, and the pin or stop *m*, substantially as and for the purposes set forth.

5. In car-couplings, the combination, with the double-jawed draw-head having the solid-ended entering jaw, recess *e*, and slot *f*, of the locking-lever working in said recess, and having the journal-face *i* and ribs or lugs *l*, and operating-arm *c*, and the pin or stop *m*, substantially as and for the purposes set forth.

6. In car-couplings, a double-jawed draw-head having the clasp-jaw provided with a slot, *s*, extending through said jaw diagonally to the line of draft, for the reception of a coupling-link, substantially as and for the purposes set forth.

In testimony whereof I, the said CLINTON BROWNING, have hereunto set my hand.

CLINTON BROWNING.

Witnesses:

F. G. KAY,  
JAMES I. KAY.