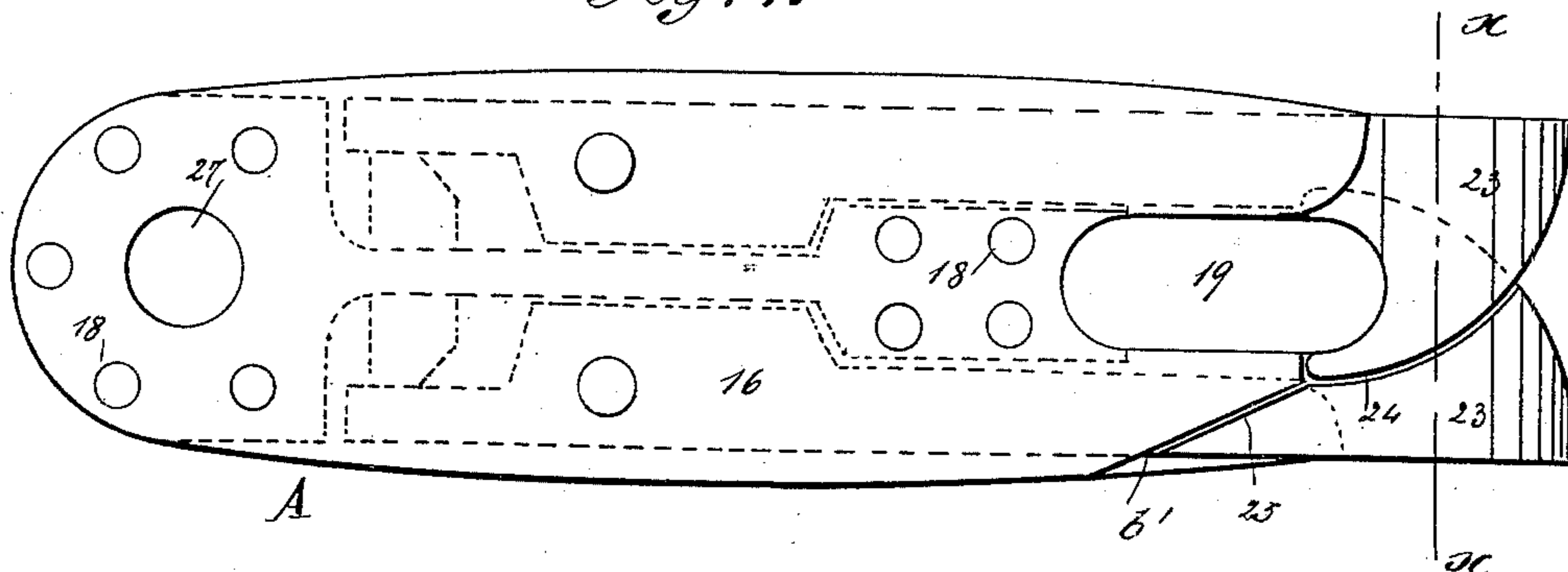


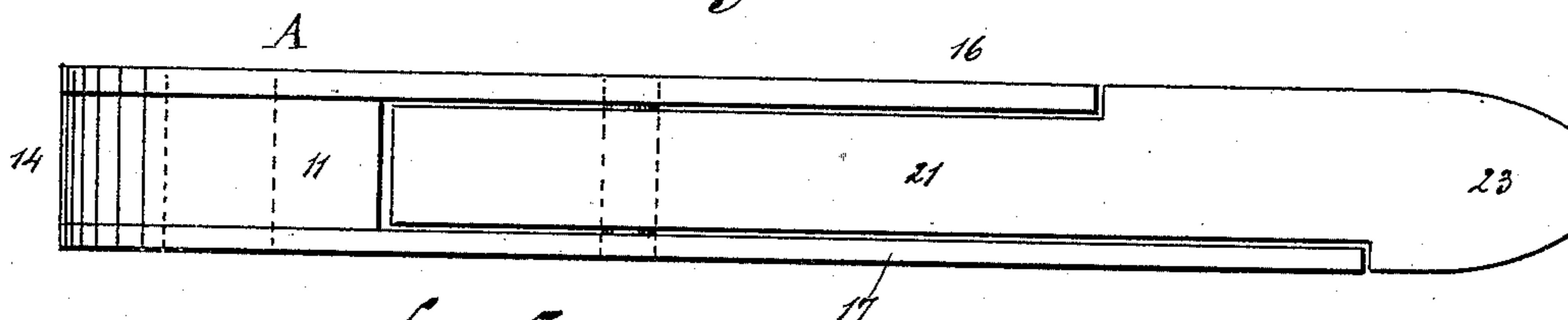
H. ACKERMAN.  
CAR COUPLING LINK.

Patented Feb. 25, 1890.

*Fig: 1.*



*Fig: 2.*



*Fig: 5.*

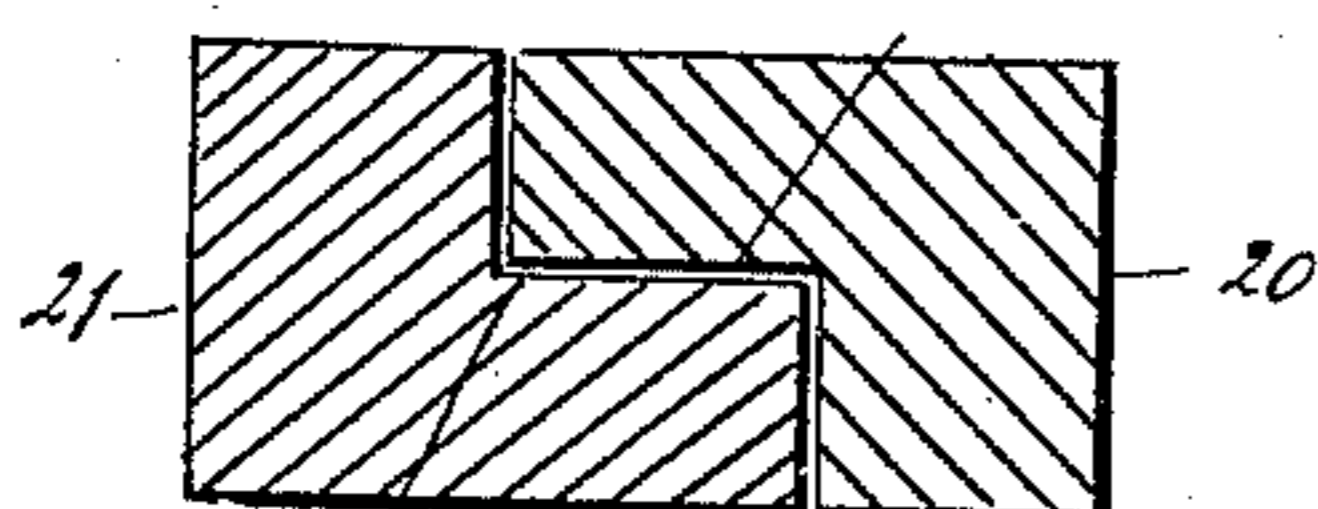
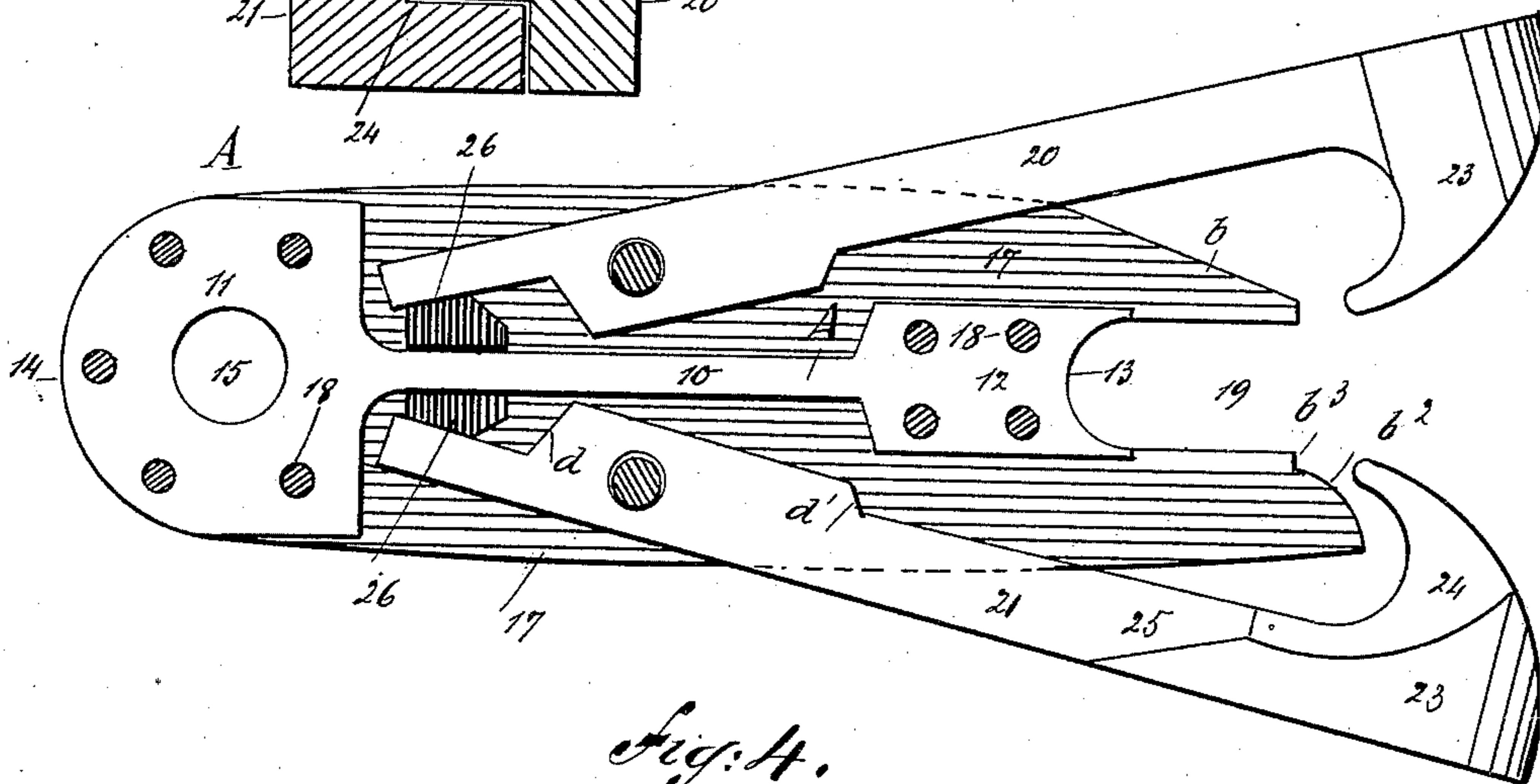
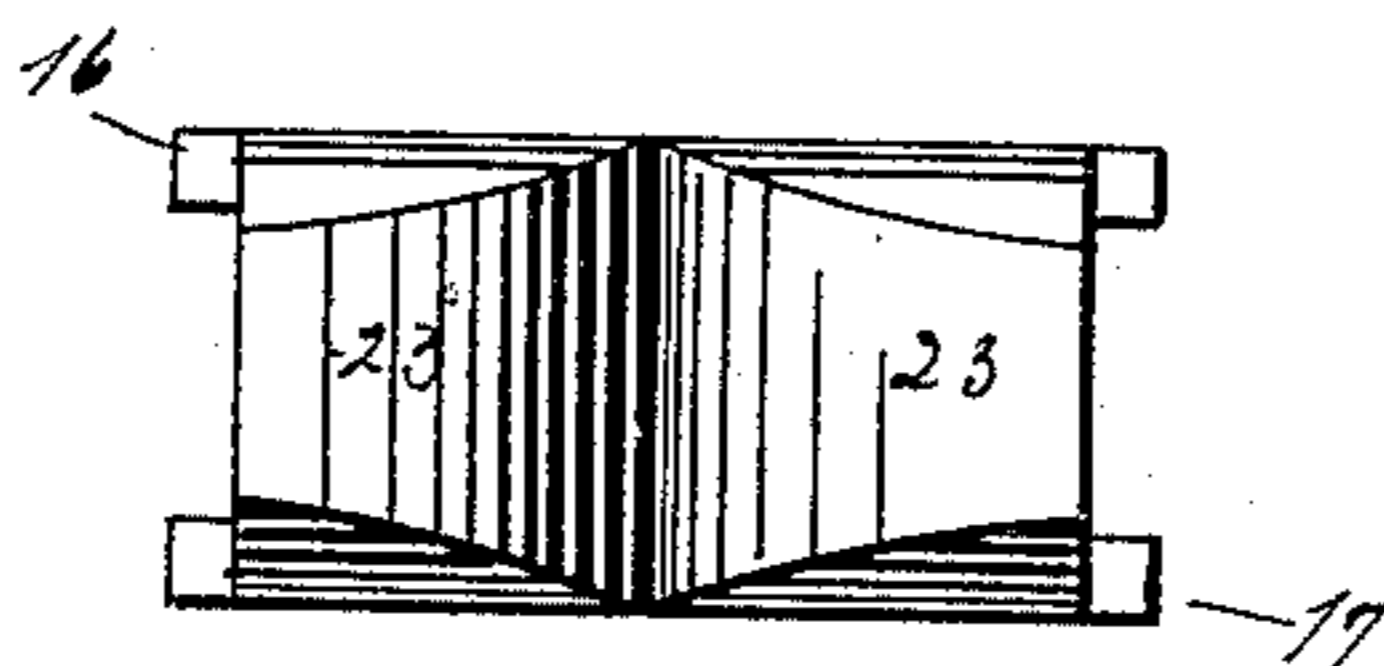


Fig: 3.



*Fig: 4.*



WITNESSES:

WITNESSES:  
Chas. Nide.  
to Bedford

*INVENTOR:*

H. Sherman  
BY  
Munn & Co  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

HARRY ACKERMAN, OF JERSEY CITY, NEW JERSEY.

## CAR-COUPLING LINK.

SPECIFICATION forming part of Letters Patent No. 422,105, dated February 25, 1890.

Application filed December 26, 1889. Serial No. 335,085. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY ACKERMAN, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Coupling-Links, of which the following is a full, clear, and exact description.

My invention relates to an improvement in coupling-links, and has for its object to provide a link capable of use with any draw-head and which will obviate the necessity of the brakeman going between the cars to guide the link or manipulate the pin.

A further object of the invention is to provide a link of simple and durable construction, which, when attached to a draw-head, will automatically couple with the pin located in an opposed and approaching draw-head.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the link. Fig. 2 is a side elevation. Fig. 3 is a plan view of the link with one of the plates removed, illustrating the arms as carried out to their farthest position. Fig. 4 is a front elevation of the link with the arms thereof closed, as shown in Fig. 1; and Fig. 5 is a transverse section through the heads of the arms, taken on line  $x x$  of Fig. 1.

In carrying out the invention the body of the link consists of a casting or forging A, constructed with a rib-like central section 10, integral with and connecting two blocks 11 and 12. The block 12 at the forward end of the rib is practically rectangular and is made narrower than the opposed block 11. It is provided with a flat top and bottom surface and a concavity 13 at the forward extremity. The block 11 is also practically rectangular. The outer end 14, however, is rounded off or curved, as best shown in Fig. 3. The top and bottom surfaces of the block 11 are flat, and in said surfaces an opening 15 is produced of

sufficient diameter to receive an ordinary coupling-pin.

The body of the link is held between a top plate 16 and a bottom plate 17, the attachment being effected by passing rivets 18 through the plates and the body-blocks 11 and 12. In the forward edge of each plate 16 and 17 a slot 19 is produced, the back wall of which slots is made to register with and conform to the cavity in the forward body-block 12. The left-hand side of one plate is beveled at its forward end, as illustrated at  $b$ , and the right-hand side of the other plate is similarly beveled, as shown at  $b'$  in Fig. 1. The beveled side of each plate is of the same length; but the said beveled sides are shorter than the opposed sides. These longer sides are provided with a convex end surface  $b^2$  and a shoulder  $b^3$  in the same horizontal plane with the extremity of the beveled side, as best shown in Fig. 3. Between the plates 16 and 17, at each side of the rib-section of the body, a latch-arm 20 and 21 is respectively pivoted, the pivotal points of said arms being near their inner ends. The inner end of each arm is of less width than the body thereof, and at the pivotal point of each arm the width thereof is greater than at any other point except the head, and this increased width produces shoulders  $d$  and  $d'$ . The object of increasing the width is to permit the arms when in their closed position to closely hug, near their pivotal point, the rib-section 10 of the body.

The arms 20 and 21 are provided with inwardly extending or approaching hook-like heads 23, the said heads being adapted to interlock when closed, as shown in Fig. 5. Upon opposite sides of the arms 20 and 21 a recess 24 is produced in the heads, which materially lessens the inner or hook-like portion of the head in thickness, whereby, when both arms are carried into the locked position illustrated in Fig. 1, the hook portion of one head will interlock with or fit or slide beneath the hook portion of the opposite head, and upon opposite sides of the body of the arms 20 and 21 a diagonal shoulder 25 is formed, the shoulders of the said arms being adapted to contact with the beveled side surfaces  $b$  and  $b'$  of the top and bottom plates and limit

the inward movement of each arm, the outward movement of the arms being limited by the extremity of the hook-section of said arms engaging with the convex end surface  $b^2$  of the plates at the shoulders  $b^3$ .

As the plates are secured to the body-section by means of rivets, and as the rivets are also utilized as pivotal pins for the arms, the upper and lower faces of the completed link are perfectly smooth. The top and bottom surfaces of the heads of the arms 20 and 21 are also smooth and preferably made of sufficient thickness to extend upward and downward practically flush with the upper and lower plates 16 and 17.

The two arms 20 and 21 are held in their locked or closed position through the medium of springs 26, preferably of rubber, located between the rib 10 of the body and the opposed reduced inner extremities of the arms. I desire it, however, to be distinctly understood that I do not confine myself to the exact form of spring illustrated.

The plates 16 and 17 are made of the same shape at their ends as the end of the body-block 11, and each plate is provided with an opening 27, registering with the opening 15 in said block.

It will be observed by reference to Fig. 1 that when the arms 20 and 21 are in their locked position they, together with the recessed or slotted ends of the plates 16 and 17, form an inclosed elongated opening, which opening is adapted for the reception of the pin of the opposed draw-head.

In operation the link is passed into any form of draw-head and a pin passed through the said draw-head through the rear pin-openings 15 and 27 of the link. When a car containing the link is to be coupled with another car, the car with which the coupling is to be effected is provided with a coupling-pin placed in the usual manner within its draw-head. The pin having been placed in position, one car is made to approach the other, and in so doing the link enters the draw-head containing the pin, striking the said pin upon the cylindrical end surfaces of the heads of the arms 20 and 21, whereupon the said arms are forced outward in opposite direc-

tions, as shown in Fig. 3, and a passage is thereby created, through which the pin enters the slots 19 of the plates 16 and 17 and contacts with the concave surface 13 of the body-block 12. As soon as the pin enters the slots 19 of the link the arms are automatically carried to the closed position by the springs 26, and the two draw-heads are effectually connected. To uncouple, the arms 20 and 21 are forced outward, either by hand or in any other approved manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As an improved article of manufacture, a link consisting of a casing slotted at its forward end and provided with a pin opening at its rear end, and arms pivoted in said casing, provided with heads adapted to interlock in front of the forward casing-slot, substantially as shown and described.

2. As an improved article of manufacture, a coupling-link consisting of a casing provided with a slot in its forward end and a pin opening in its rear end, and two spring-pressed arms pivoted in said casing, the said arms being provided with hook-like heads adapted to interlock in front of the forward slot of the casing, substantially as and for the purpose specified.

3. In a coupling-link, the combination, with a body comprising a shank-section and blocks at each end of the same, the rear block being provided with a vertical bore and the forward block with a concave end surface, and plates secured to the body-section, provided with openings registering with the bore of the rear body-block, and a slot in the forward end registering with the concavity of the forward body-block, of spring-actuated arms pivoted between the plates, one at each side of the body-rib, the said arms being provided with opposed hook-like heads recessed to interlock in front of the slotted forward portion of the plates, substantially as shown and described.

HARRY ACKERMAN.

Witnesses:

J. F. ACKER, Jr.,  
C. SEDGWICK.