

(No Model.)

T. COURSER.
CAR COUPLING.

No. 486,693.

Patented Nov. 22, 1892.

Fig 1

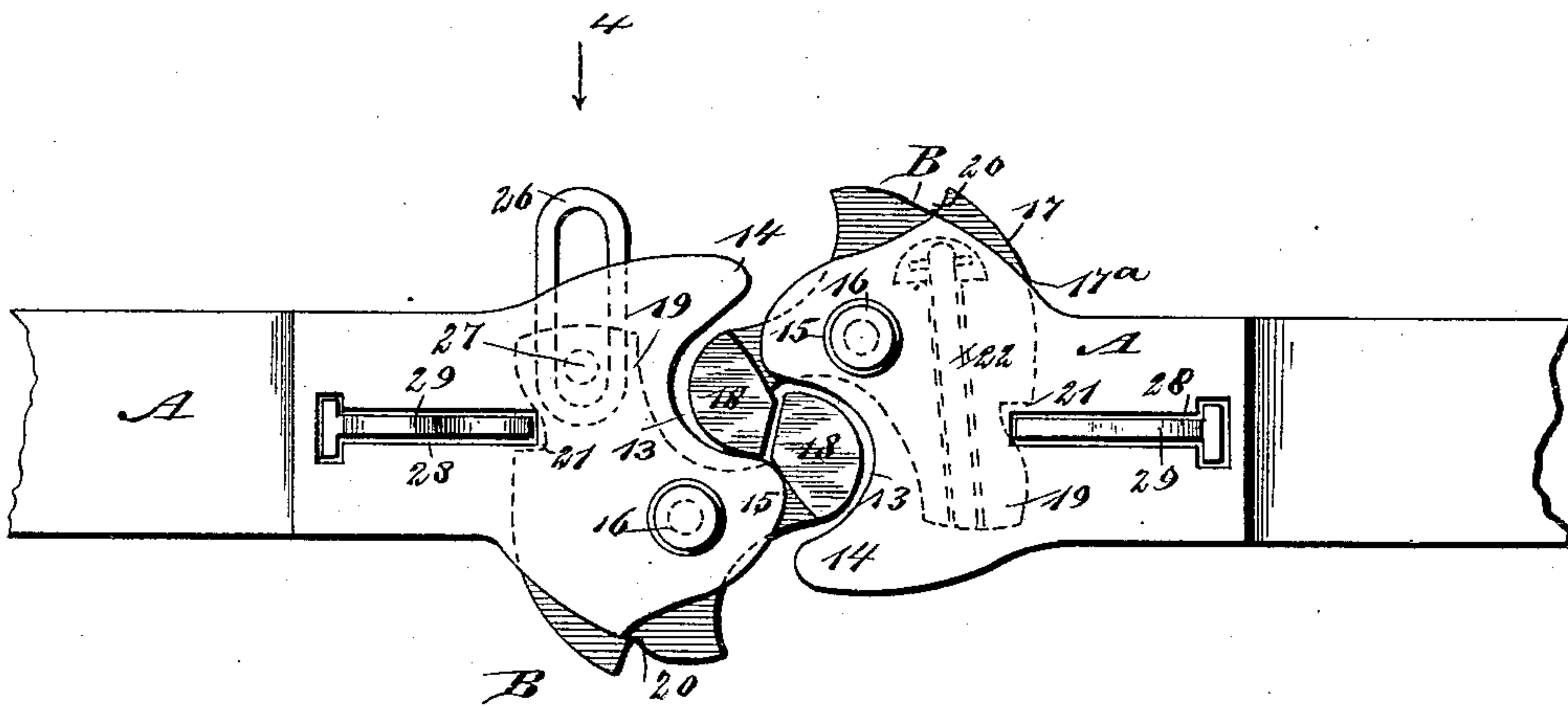


Fig 2

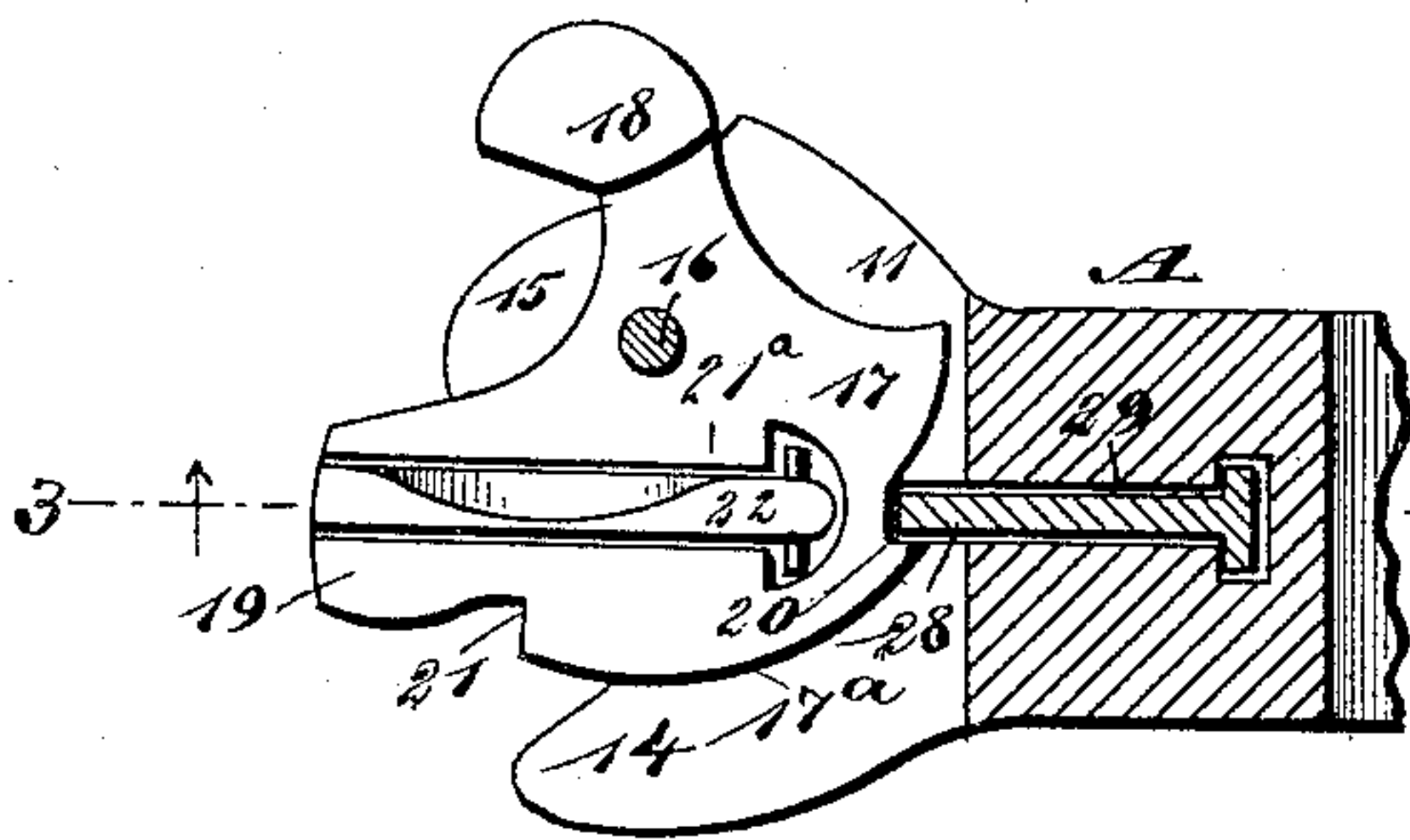


Fig 3

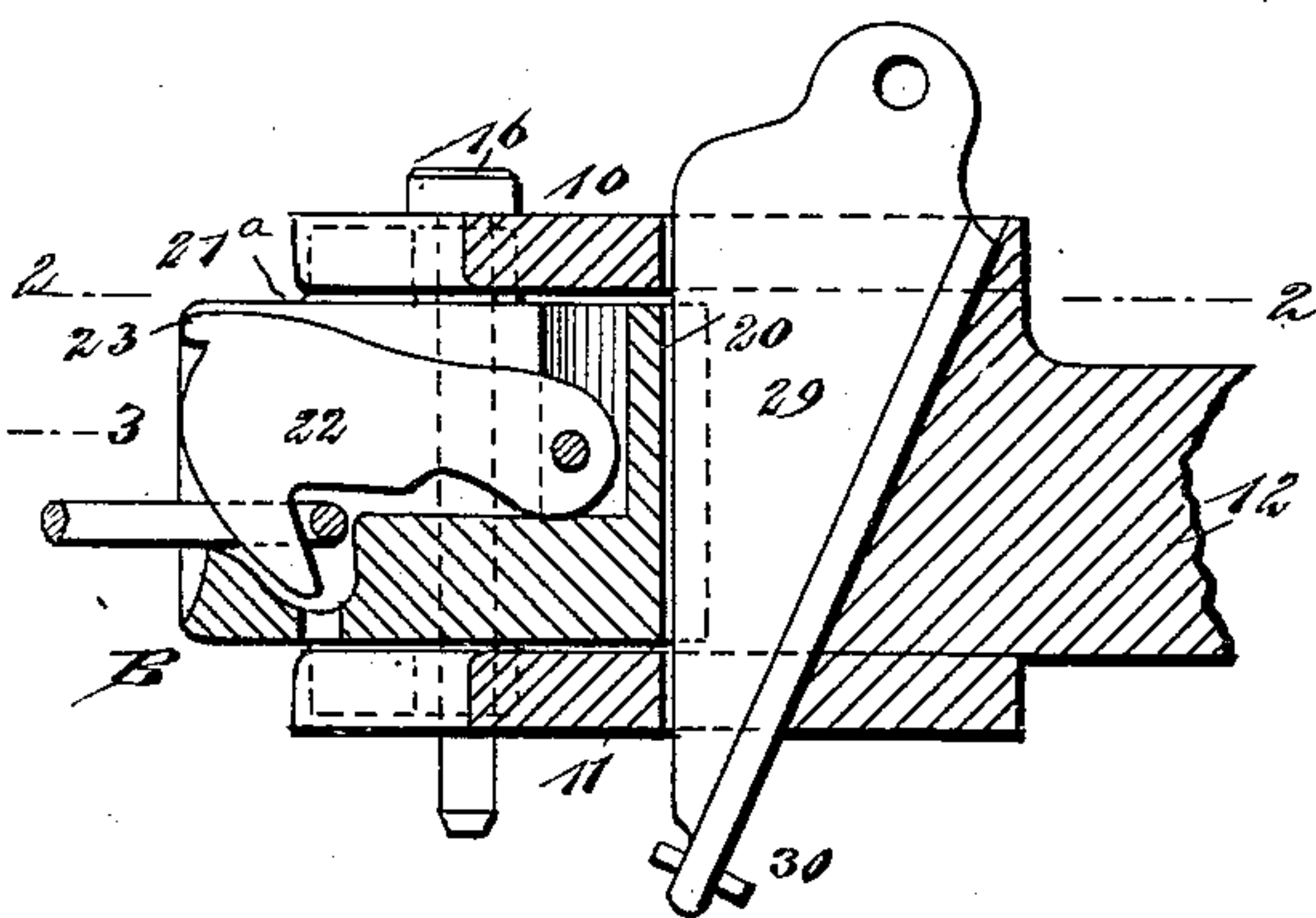
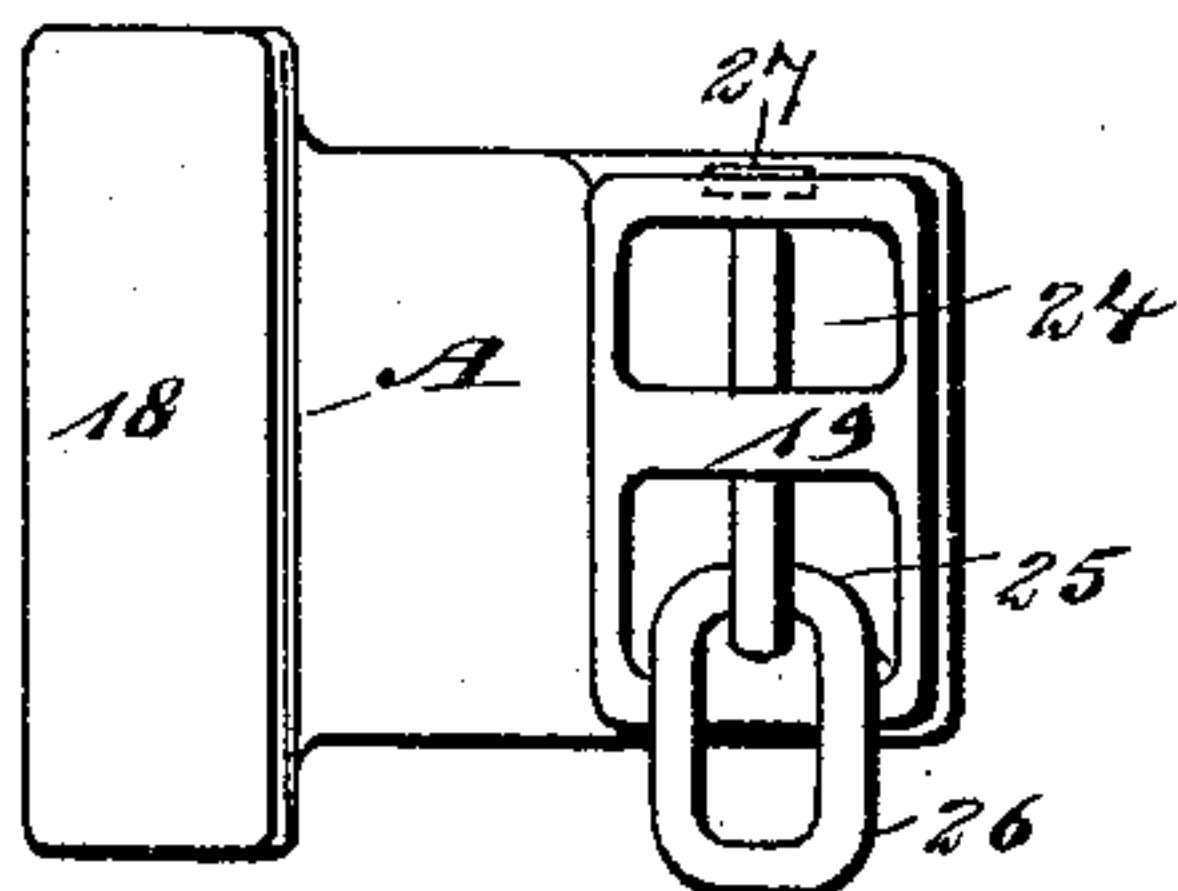


Fig 4



WITNESSES:

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THOMAS COURSER, OF LAKE CITY, FLORIDA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 486,693, dated November 22, 1892.

Application filed April 16, 1892. Serial No. 429,383. (No model.)

To all whom it may concern:

Be it known that I, THOMAS COURSER, of Lake City, in the county of Columbia and State of Florida, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a coupler capable of use either as a knuckle-coupler or as a link-and-pin coupler.

Another object of the invention is to so construct the draw-head that the knuckle adapted for use in coupling may be employed in the same manner in which such coupling devices are ordinarily used, yet wherein the knuckle will also carry an auxiliary coupling device which may be used in connection with an opposing draw-head of the link-and-pin type, or which may also be used should any accident happen to the hook of the knuckle.

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 two draw-heads provided with the improvements, the draw-heads being shown in a coupled position. Fig. 2 is a horizontal section through a draw-head, illustrating the knuckle in plan view, the section being taken practically on the line 2 2 of Fig. 3. Fig. 3 is a vertical section taken practically on the line 3 3 of Fig. 2; and Fig. 4 is an end view of one of the knuckles, looking in the direction of the arrow 4 in Fig. 1.

The draw-head A is provided with an opening to receive the knuckle B, the opening extending through both of the sides of the draw-head, and the front is also open. In fact, the front of the draw-head may be said to consist of two plates 10 and 11, projected from a body-bar 12 horizontally, one above the other. These plates are of like shape and have produced in their front faces at one side of their centers a semicircular recess 13, forming a

horn 14 thereby at one side of the draw-head and a second horn 15 near the center of the draw-head.

The knuckle B is pivoted between the plates 10 and 11 of the draw-head, the pivot-pin 16 of the knuckle being located at one side of the center of the head opposite the inner horn 15 thereof. The knuckle consists of a body portion 17, which body portion is provided with a rear semicircular face 17^a, as shown best in Fig. 1, and a hook 18, emanating from the outside of the body and adapted for engagement with the hook of an opposing knuckle when a coupling is to be effected. The hook-section 18 at its outer end is much thicker than the body 17 of the knuckle, as the body is adapted to turn between the plates 10 and 11, while the hook, which is located outside of the plates, is of such length or thickness that the top and bottom portions thereof are essentially flush with the corresponding surfaces of the draw-head.

At one end of the body, which for convenience I designate the "inner" end and indicate it by the reference-numeral 19, an auxiliary coupling device is located, and between this end and the hook 18 the surface of the knuckle is more or less concave, while in the inner or cylindrical face of the body of the knuckle two vertical channels or recesses 20 and 21 are made for a purpose to be hereinafter described, these recesses or channels having one straight wall and one beveled wall, as indicated best in Fig. 1.

The auxiliary coupling device above referred to as carried by the knuckle differs somewhat in character in the knuckles located at opposite ends of the car. In the knuckle at one end of the car and in the end 19 of the knuckle a chamber 21^a is produced, in which chamber the coupling-hook 22 is pivoted, as shown best in Figs. 2 and 3, the said hook being provided at its outer end with a lip 23, through the medium of which it may be elevated when occasion may demand, and in the base wall of the chamber 21^a a recess is produced, which when the hook 22 is in its coupling position receives the pointed or lower end thereof.

In the end 19 of the knuckle, at the oppo-

site end of the car preferably, two openings 24 and 25 are made, as shown best in Fig. 4, the openings being adapted to receive a link 26—that is, the link may be placed in either 5 the upper or lower opening, according to the character of the opposing draw-head with which a coupling is to be made, and the link is removably held in either one of the openings by means of a pin 27 passing through 10 the knuckle and through the link. In the draw-head a keyhole-slot 28 is made, the front wall of which is straight, while the rear wall inclines downward and forward. This opening 28 extends through from top to bottom of 15 the draw-head and is consequently wedge-shaped, and the opening is adapted to receive a locking-pin 29, which in cross-section conforms to the cross-sectional contour of the opening. This locking-pin is provided with 20 a head which extends above the upper surface of the draw-head, and its lower end extends below the under face of the draw-head and is provided with a key 30, which serves to limit the upward movement of the pin. 25 The rear edge of the pin 29 is wider than its front portion and moves in the wider portion or head of the slot 28. By this construction of the pin and shape of the opening receiving the pin, the latter has guided movement, 30 yet is capable of being readily raised and lowered, and the forward edge of the locking-pin 29, when the pin is fully seated, is adapted to enter whichever channel 20 or 21 may be presented to it, and when the pin enters one of these channels the knuckle is held 35 substantially as a fixture, but is capable of a sliding lateral movement.

In the operation of coupling, when the opposing couplers are to be united by the hooks 40 of the knuckles, the knuckles are turned as shown in Fig. 1, the pins 29 having been raised until the channels 21 in the knuckles are presented to the pins 29, whereupon the pins 29 are dropped and enter said channels, 45 holding the knuckles practically in a fixed position. In coupling the hook end of the knuckles of draw-bars one knuckle is held stationary by its locking-pin 29. The pin of the opposing coupler, however, is raised sufficiently to permit the knuckle therein to swing 50 laterally. When the hook of the fixed knuckle passes the hook of the swinging knuckle, the hook of the fixed knuckle will strike the concaved surface of the swinging knuckle, and 55 by this means the hooks of both knuckles are brought into interlocking engagement, as shown in Fig. 1, and at this time the pin is dropped and the knuckle that was formerly free to swing is also prevented from having 60 movement. It is impossible for the hooks of the knuckles to disengage by reason of lateral movement on the part of the draw-heads, as the hooks on the knuckles fit somewhat snugly in the recesses 13 of the draw-heads, and they 65 cannot move to any great extent in direction

of either side by reason of the horns 14 and 15 upon the draw-heads.

In the event that anything should happen to the hook of a knuckle, rendering it at that point useless for the purpose of coupling, by 70 raising the locking-pin controlling that knuckle the knuckle may be swung around and its inner end 19 be brought out beyond the front of the draw-bar, as shown in Figs. 2 and 3, and the knuckle will be held in this 75 position by the locking-pin 29 entering the channel 20 of the knuckle. The knuckle in the opposing draw-head is also turned or reversed, bringing its inner end to the front, and when the draw-heads come together the 80 links 26, carried by one knuckle, will enter the chamber 21^a in the opposing knuckle and will be engaged by the hook 22. This latter position of the knuckles may also be assumed when it is desired to couple with a car car- 85 rying an ordinary link-coupler.

It will be observed that this car-coupler is exceedingly simple, that it is practical and is capable of ready manipulation, and that it provides effectually for a proper coupling 90 should anything happen to the knuckle.

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

1. A car-coupler provided with a knuckle, 95 the said knuckle having a coupling-hook connected therewith and provided, also, with an auxiliary pivoted coupling-hook, the auxiliary coupling-hook being concealed when the main hook is in use, as and for the purpose speci- 100 fied.

2. In a car-coupler, the combination, with the draw-head, of a knuckle pivoted in the draw-head, the said knuckle having a cylindrical back provided with channels and pro- 105 vided at its front with a hook adapted for coupling with an opposing hook and at one end with an auxiliary coupling device, and a locking-pin adapted to enter the channels in the knuckle, as and for the purpose set forth. 110

3. The combination, with a draw-head of the knuckle type, of a knuckle pivoted in the draw-head, the said knuckle having a cylindrical rear channeled surface and provided with a coupling-hook projecting from its body 115 portion in a forward or outward direction, one end of the body being chambered and provided with a coupling device for use in connection with a draw-head of the pin-and-link-coupling type, and a sliding pin located in the 120 draw-head and adapted to enter channels in the knuckle, whereby the knuckle may be held firmly in the head either with its end carrying the auxiliary device outward or the hook of the knuckle in an outer position, substantially as and for the purpose set forth. 125

4. In a car-coupler, the combination, with a draw-head provided with a horn at one side and a second horn near the center and an inclined pin opening at the rear of its forward 130

edge, of a knuckle pivoted within the draw-
head opposite the inner horn, the said knuckle
being provided with an outwardly-extending
hook emanating from the body of the knuckle,
5 the rear surface of the body of the knuckle
being cylindrical in shape and channeled and
one end of the body of the knuckle being pro-
vided with an auxiliary coupling device, and a
pin held to slide in the inclined pin opening
and adapted, also, to enter on occasion the 10
channels in the knuckles, as and for the pur-
pose specified.

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Witnesses:

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