

(No Model.)

2 Sheets—Sheet 1.

H. BOYD & E. FRANTZ.  
CAR COUPLING.

No. 532,440.

Patented Jan. 15, 1895.

Fig: 1

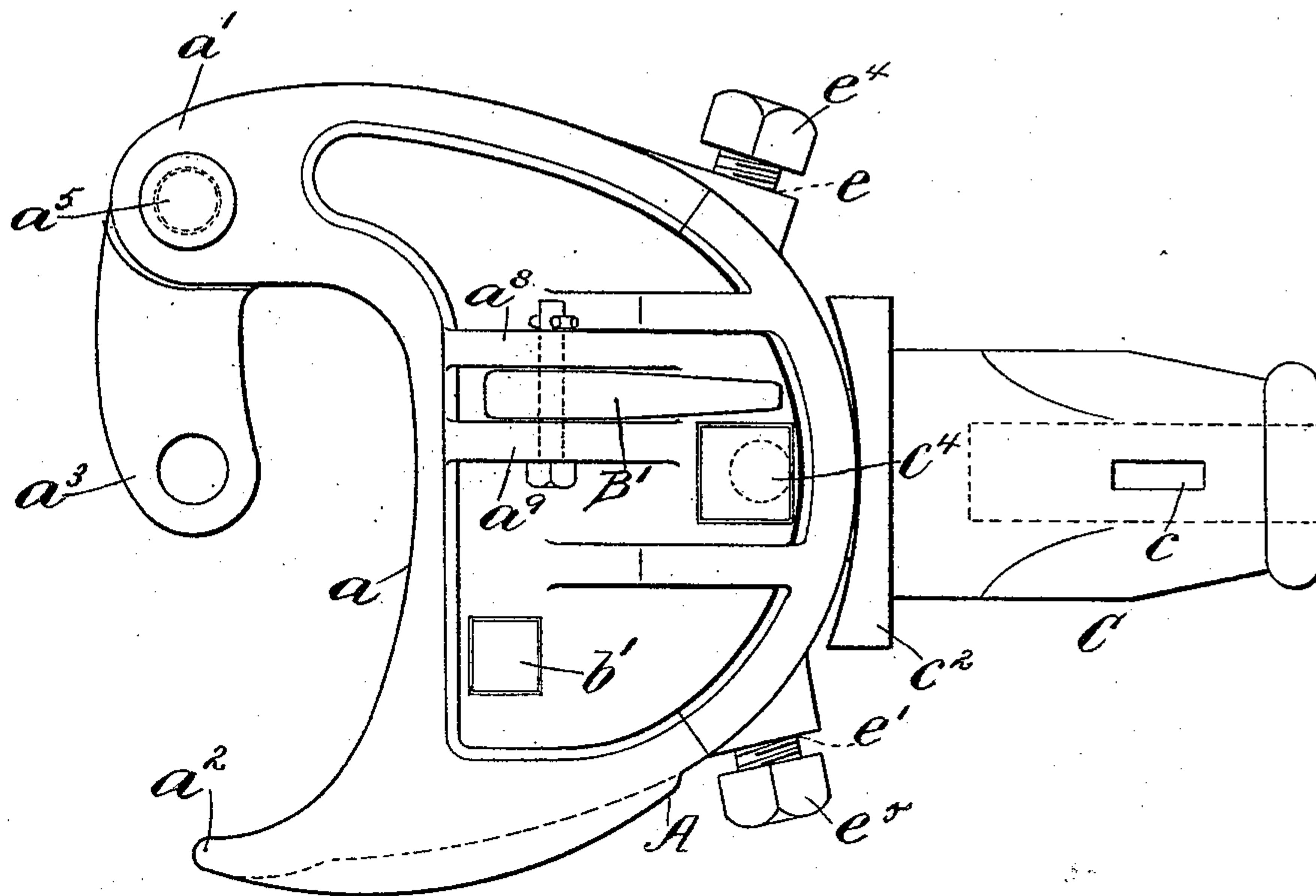
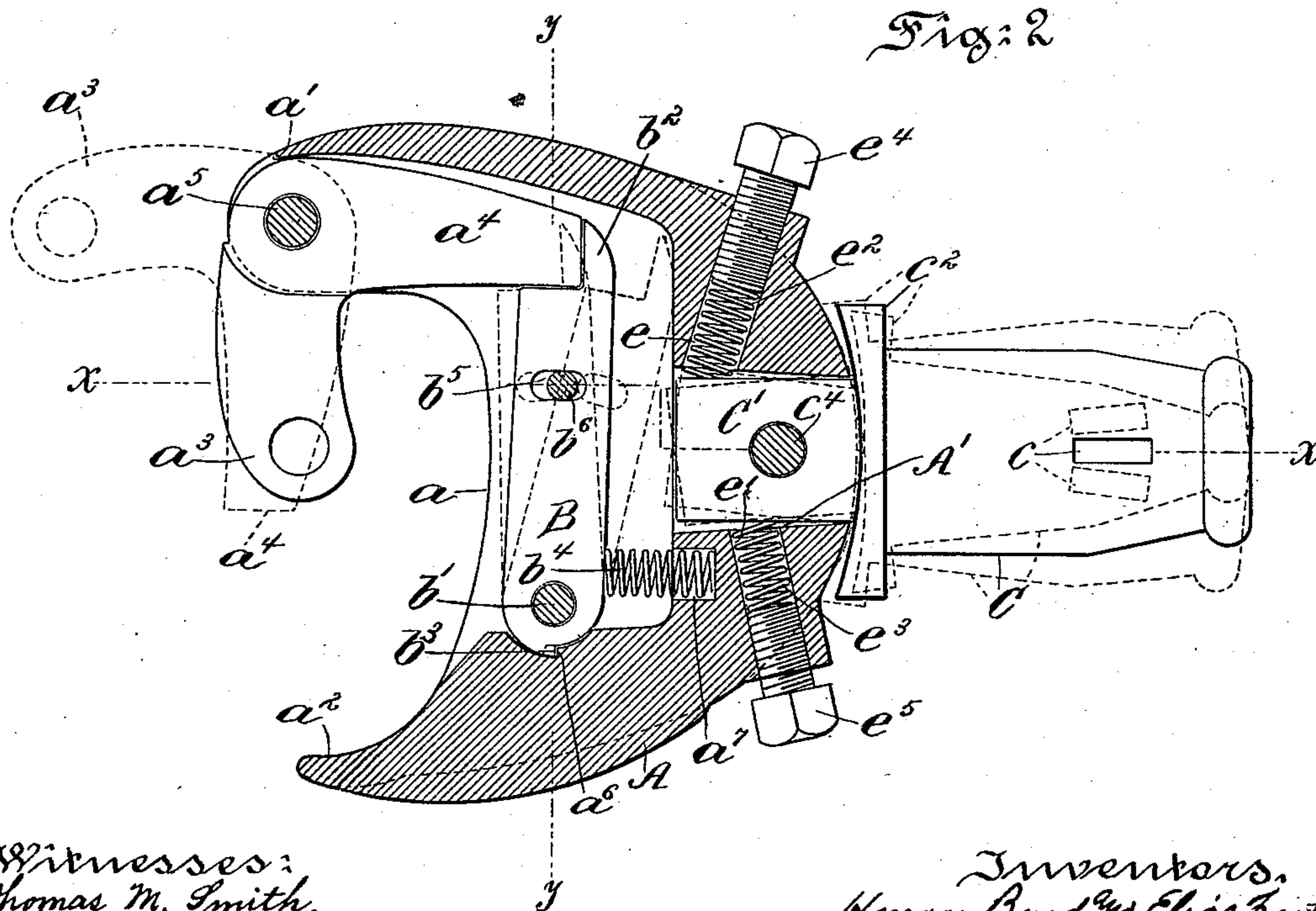


Fig: 2



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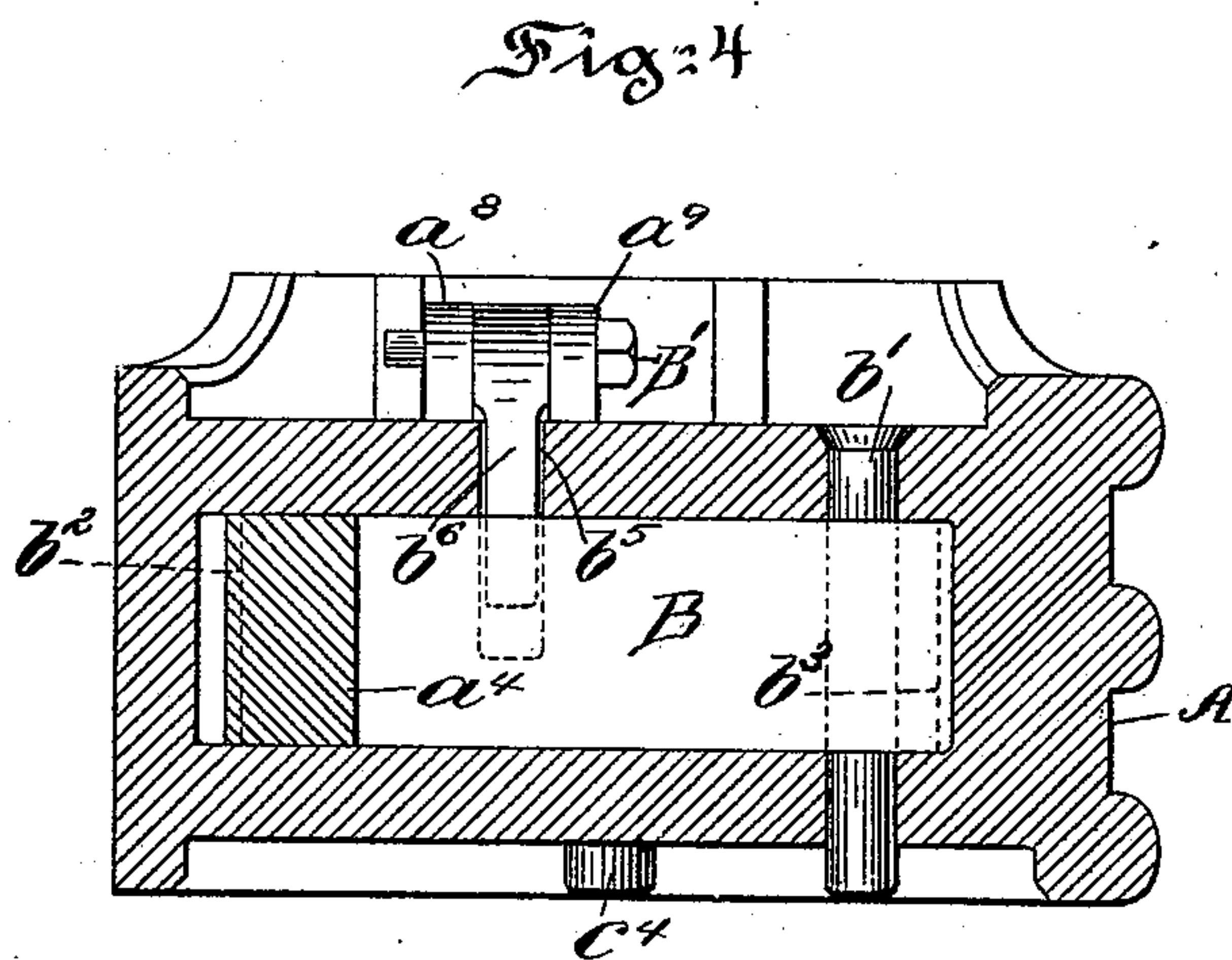
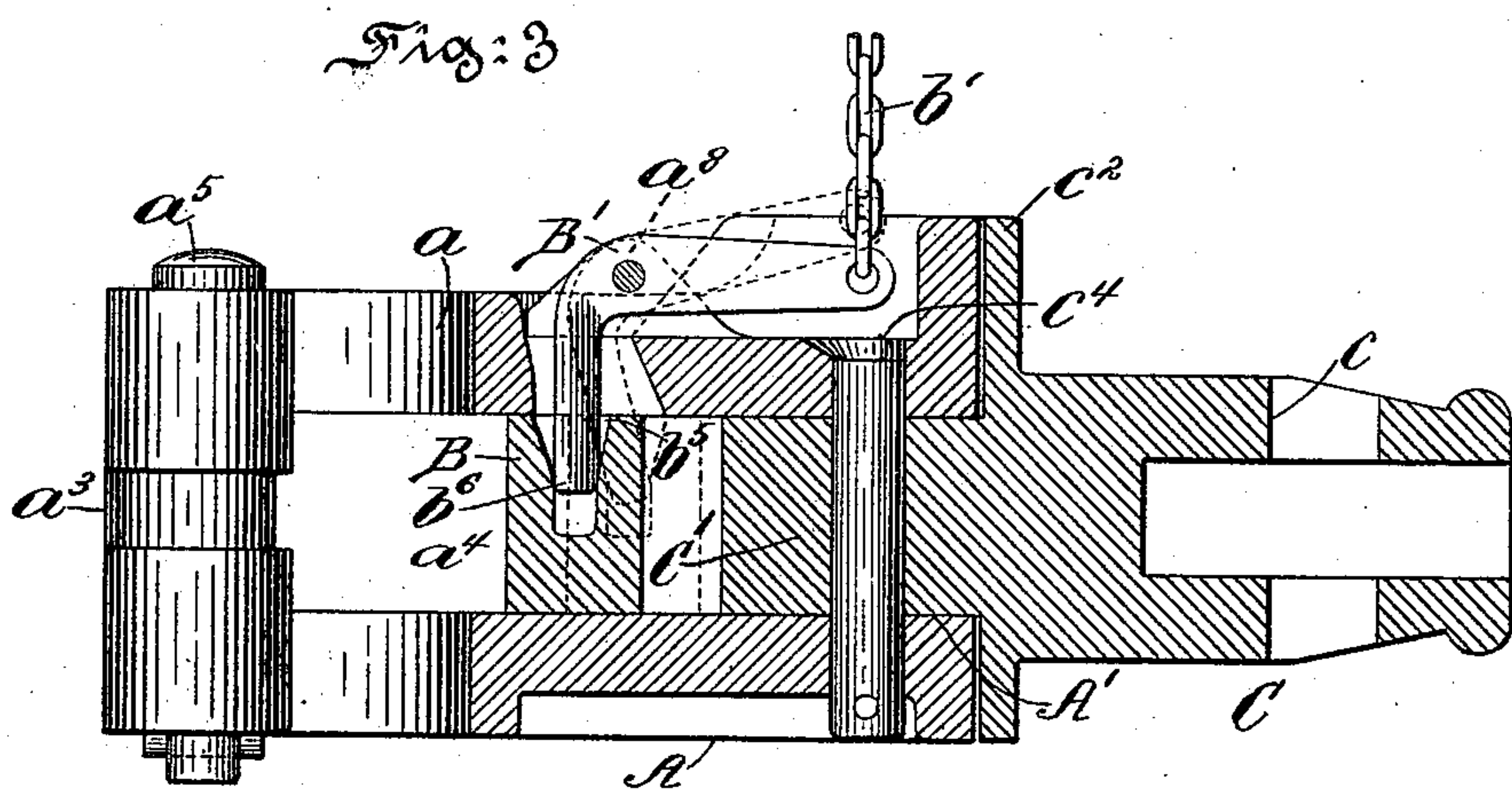
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

HORACE BOYD AND ELIAS FRANTZ, OF COPLAY, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 532,440, dated January 15, 1895.

Application filed September 24, 1894. Serial No. 523,868. (No model.)

*To all whom it may concern:*

Be it known that we, HORACE BOYD and ELIAS FRANTZ, both citizens of the United States, residing at Coplay, in the county of Lehigh and State of Pennsylvania, have jointly invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

Our invention has relation to that class of car couplers designated as twin jaw or vertical couplers; and in such connection it relates more particularly to the general construction and arrangement thereof.

The principal objects of our invention are, first, to provide a simple, strong or durable and efficient car coupler; second, to provide a twin-jaw car coupler arranged so that the jaws thereof are automatically locked to required position with each other and manually unlocked by the manipulation of a releasing device; third, to provide a car coupler having a draw-bar, neck or stem hinged or pivoted to the draw-head thereof so as to permit of the coupling of one car with another on any curved portion of a road; fifth, to provide a car coupler having a pivotal draw-bar, neck or stem with a friction-collar or yoke in normal engagement with the draw-head and springs under the control of set-screws or the like engaging said bar, stem or neck to permit of the coupling of one car with another with facility on a curve; sixth, to provide a coupler each member of which is provided with a pivotal jaw adapted to be engaged by an internal spring positioned locking device, whereby in the contact of the jaw of one member with that of the other a firm and solid connection is automatically established and by a manual manipulation of a device connected with the locking block of each member adapted to engage the coupling jaw, the same is released to enable one car to be parted from the other; seventh, to provide a car coupler with a hinged draw-bar or neck maintained in required position in the drawhead by means of springs under the control of set screws or the like, whereby coupling of cars on curved courses or roads is insured with certainty and safety; eighth, to provide a car coupler having a pivotal jaw adapted to be locked to the draw-head and released manually with perfect safety and without the pres-

ence of a person going between cars, and, ninth, to simplify the construction and arrangement of the parts of a car coupler and to so improve the operation thereof as that perfect safety and reliability in the coupling of cars irrespective of the conditions or curvature of the road-bed is absolutely insured.

Our invention stated in general terms, consists of a car coupler constructed, arranged and adapted for operation in substantially the manner hereinafter described and claimed.

The nature and general features of our invention will be more fully understood from the following description, taken in connection with the accompanying drawings forming part hereof, and in which—

Figure 1, is a top or plan view of a car coupler embodying the features of our invention, showing the jaw thereof in a locked or operative position in connection with the draw-head. Fig. 2, is a view partly in plan and partly in section, showing the internal construction and arrangement of the coupler together with the pivoted or hinged draw-bar or neck thereof. Fig. 3, is a longitudinal section through the coupler on the line  $x-x$ , of Fig. 2; and Fig. 4, is a cross-sectional view of the coupler on the line  $y-y$ , of Fig. 3.

Referring to the drawings A, is the draw-head of somewhat the type of a Janney coupler recessed in front at  $a$ , and with tapering or contracted projections  $a'$  and  $a^2$ , in one of which is mounted a knuckle or coupling hook or jaw  $a^3$ , provided with its tail piece  $a^4$ . This coupling hook, jaw or knuckle  $a^3$ , is pivoted at  $a^5$ , to the bottom and top walls of the projection  $a'$ , of the draw-head A.

In the body of the head A, is mounted the locking block B, which is pivoted at  $b'$ , to the walls of said head. This block at one end is recessed at  $b^2$ , and at the opposite end is formed with a notched projection or lug  $b^3$ , adapted to engage a complementary notch or recess  $a^6$ , in the side wall of the head A.

$b^4$ , is a coiled or other suitable spring set into an offset or pocket  $a^7$ , formed in the rear wall of the head A, and this spring normally engages the locking block B, as clearly illustrated in Fig. 2.

$b^5$ , is an oblong slot formed in the pivotally supported locking block B, and engaged by the



projecting pin  $b^6$ , of a releasing device  $B'$ , extending upward through the top of the head  $A$ , and pivoted to lugs  $a^8$  and  $a^9$ , formed preferably integral therewith, the rear extremity  
 5 of which device is engaged by a chain  $b^7$ , for releasing the recessed portion of said block  $B$ , from its engagement with the tail piece  $a^4$ , of the coupling hook, jaw or knuckle  $a^3$ , as will be readily understood from Figs. 1, 2 and 3,  
 10 of the drawings.

$C$ , is a draw-bar or hollow neck provided with a slot  $c$ , extending therethrough for securing the same to a bumper rod or bar located under the car in any well understood  
 15 manner. The draw-bar or neck  $C$ , has formed either integral therewith or secured to the forward portion of the same, a friction collar or yoke  $c^2$ , which normally engages the rear wall of the draw-head  $A$ , one face of which is  
 20 made dish-shape to contour with that of the head, for a purpose to be presently explained. The forward extremity portion of the draw-bar or hollow neck of the coupler is made solid and rectangular in form to constitute a  
 25 bearing tongue  $C'$ , as clearly illustrated in Figs. 2 and 3, and fits loosely in a complementary chamber  $A'$ , provided therefor in the rear of the head  $A$ , as clearly illustrated in Fig. 2, and which portion of the said bar  
 30 or neck is pivoted or hinged at  $c^4$ , to the top and bottom walls of the said head  $A$ . It may be here remarked that the chamber  $A'$ , is of greater area than the tongue in order to permit of ranges of movement therein.  $e$  and  
 35  $e'$ , are tapped chambers or openings provided in the rear solid portion of the draw-head  $A$ , as clearly illustrated in Fig. 2. At preferably an angle to a plane through the head and mounted therein are springs  $e^2$  and  $e^3$ , which  
 40 normally engage at one end with the tongue of said draw-bar or neck  $C$ , and at the opposite end with set screws  $e^4$  and  $e^5$ , for increasing or decreasing the bearing pressure of the springs against the said tongue and in order  
 45 to permit by the adjustment of the said screws of an increase or decrease of the range of curved movement of the draw-bar or neck  $C$ , in the chamber or bearing space  $A'$ , as clearly illustrated in dotted lines in Fig. 2,  
 50 of the drawings, for permitting of the coupling and uncoupling of one car from another on a curved roadway or course.

In Fig. 2, is shown in full lines the normal position of the knuckle or coupling jaw  $a^3$ , in  
 55 its engagement with the recessed end of the locking block  $B$ , and as well in dotted lines the unlocked or open position of the said knuckle or jaw and locking block, after the latter has been actuated by means of the releasing device  $B'$ , by the drawing in an upward direction of the chain as shown in Fig. 3, to cause the block  $B$ , to be shifted rearwardly and away from a position in engagement with the tail-piece  $a^4$ , of the knuckle or  
 60 coupling jaw  $a^3$ , as illustrated in Figs. 1 and 2.

It will be observed that the spiral spring

bearing normally against the locking block  $B$ , is adapted to maintain the latter in firm contact with the tail piece  $a^4$ , of said coupling  
 70 jaw  $a^3$ , when in engagement therewith, and the lug or projection at one end of the said block is adapted to limit the extent of movement of the block  $B$ , in one direction and it is maintained in that position in engagement  
 75 with the notch or recess in the side wall of the said head  $A$ , until in the movement vertically of the bell crank releasing device  $B'$ , by means of its chain, the locking block  $B$ , is shifted rearwardly from such position and so  
 80 as to free the coupling jaw  $a^3$ , as indicated in dotted lines in Fig. 2.

It may be here remarked that but one coupler has been shown in the drawings adapted for attachment in any suitable man-  
 85 ner to the right hand end of a car, but it is to be understood that one exactly like that illustrated but occupying a contrary or left hand position is attached to the other car at one end and in such manner as that the two  
 90 cars may be automatically coupled together.

It will be manifestly obvious that as to minor details in the arrangement of the parts of the coupler of our invention, modifications may be made and still be within the spirit  
 95 and scope of our invention.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A car coupler provided with a draw-head  
 100 having a chamber, a draw-bar or neck movably held in the chamber of said head and springs adjustably engaging said bar and neck so as to afford a range of movement of said bar or neck, substantially as and for the  
 105 purposes described.

2. A car coupler provided with a draw-head having a rear rectangular chamber, a draw-bar provided with a hollow slotted neck and with a solid tongue pivotally supported in  
 110 the chamber of said draw-head, springs engaging said tongue, and set screws, engaging said springs substantially as and for the purposes described.

3. A car coupler provided with a draw-head  
 115 having a knuckle jointed coupling jaw and a locking device maintained in position with the tail piece of said jaw by means of a spring, a device adapted to shift said locking block out of engagement with said coupling jaw, a  
 120 movable draw-bar or neck connected with said head under the tension of springs and set screws connected with said head and engaging said springs, substantially as and for the purposes described.  
 125

4. A car coupler provided with a draw-head having a pivotally supported coupling jaw and a locking device maintained in operative position therewith by means of a spring, a releasing appliance for shifting said device  
 130 out of engagement with said jaw, a draw-bar or hollow neck provided with a tongue pivoted in the rear wall of said draw-head and engaged by springs, and means for control-



ling the position thereof, substantially as and for the purposes described.

5. A car coupler provided with a draw-head having a pivotally supported coupling jaw, a locking device therefor held under spring tension in engagement therewith, a pivotally supported bell crank appliance for shifting said locking device, a draw-bar provided with a dish-shaped collar or yoke and a tongue pivotally supported in said draw-head and spring controlled means between said head and tongue, substantially as and for the purposes described.

6. A car coupler provided with a draw-head having a rear chamber, a draw-bar or neck

pivotally supported therein under spring tension, said bar or neck provided with a friction collar or yoke adapted to limit the range of movement of said bar or neck with respect to said head, substantially as and for the purposes described.

In testimony whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

HORACE BOYD.  
ELIAS FRANTZ.

Witnesses:

THOS. O. GINKINGER,  
THOS. F. DIEFENDERFER.