

(No Model.)

D. W. BRUNTON.
CAR COUPLING.

No. 515,419.

Patented Feb. 27, 1894.

Fig. 1

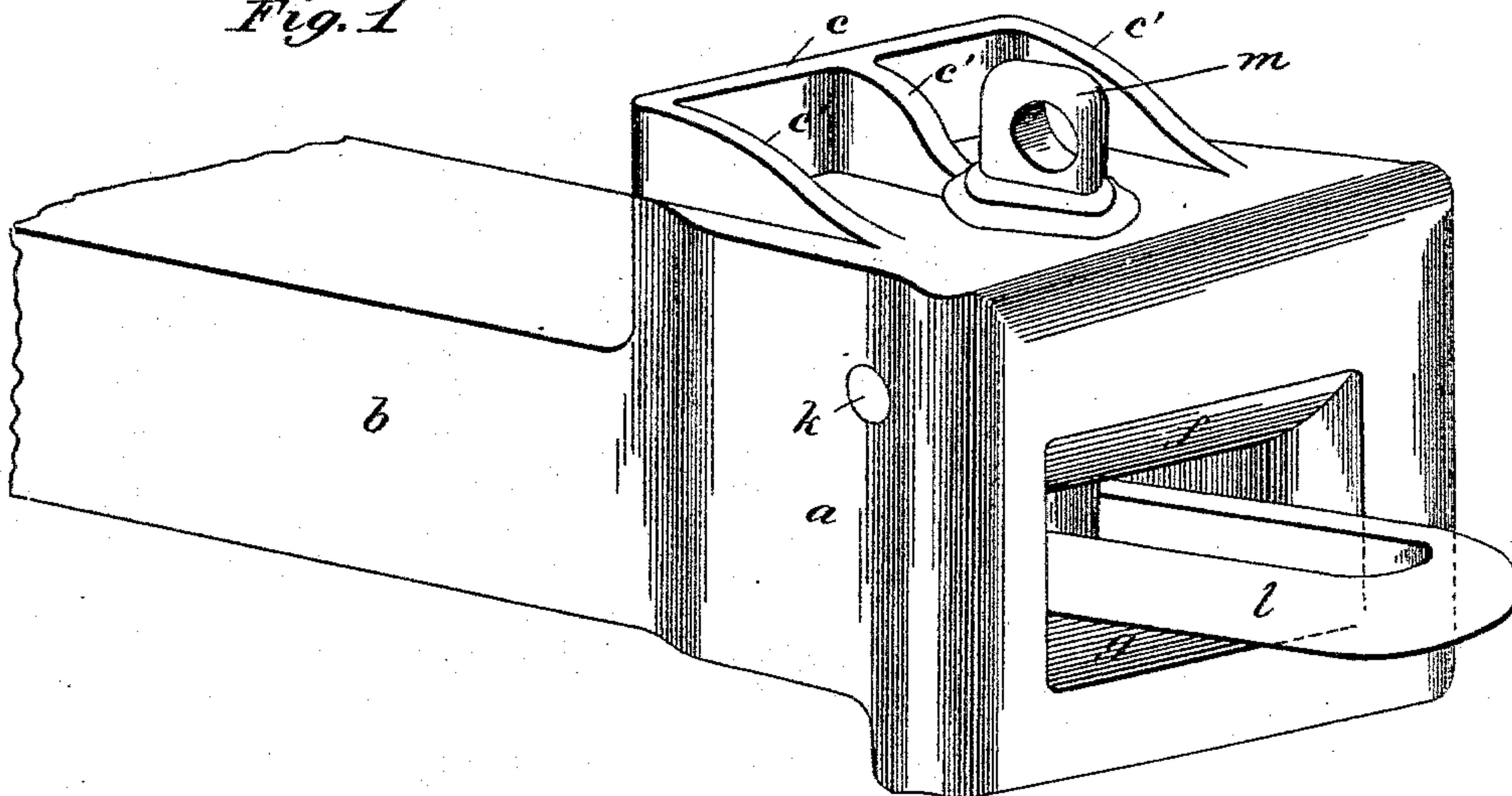


Fig. 2

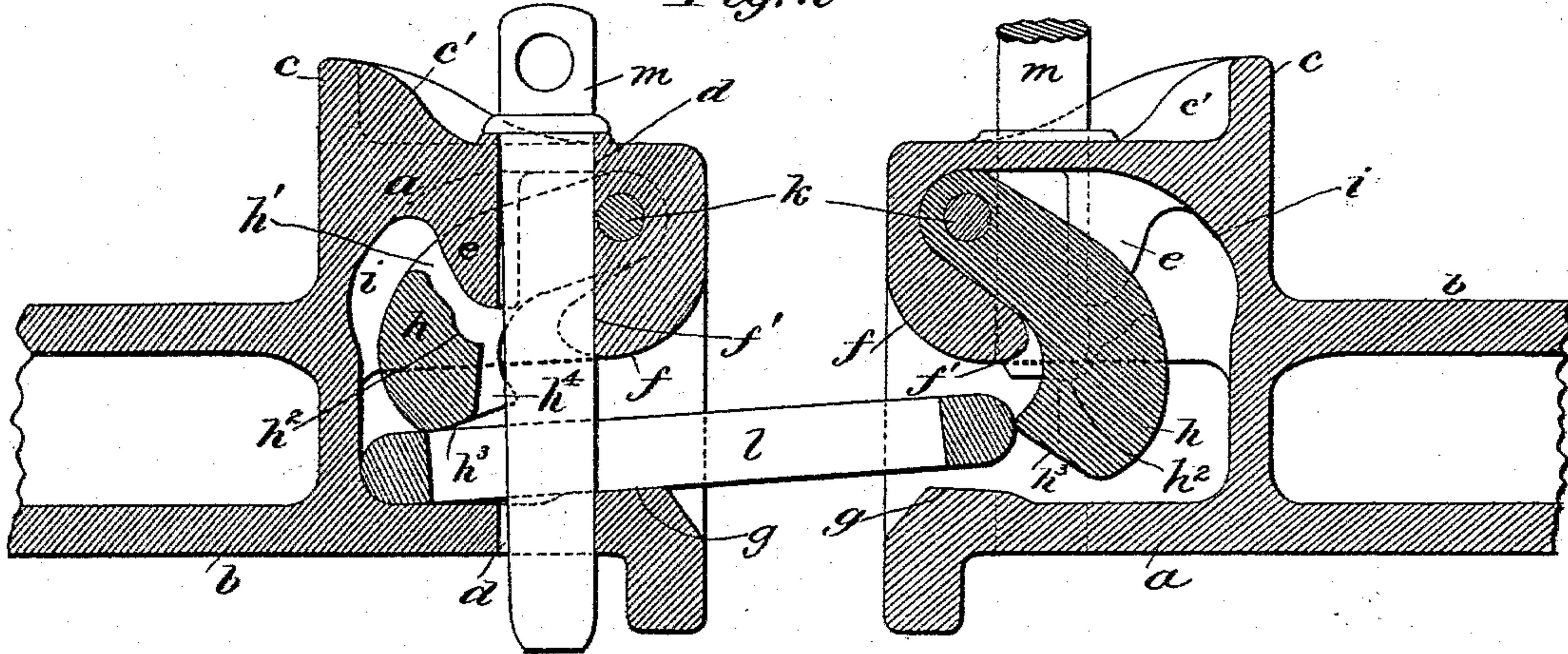


Fig. 3

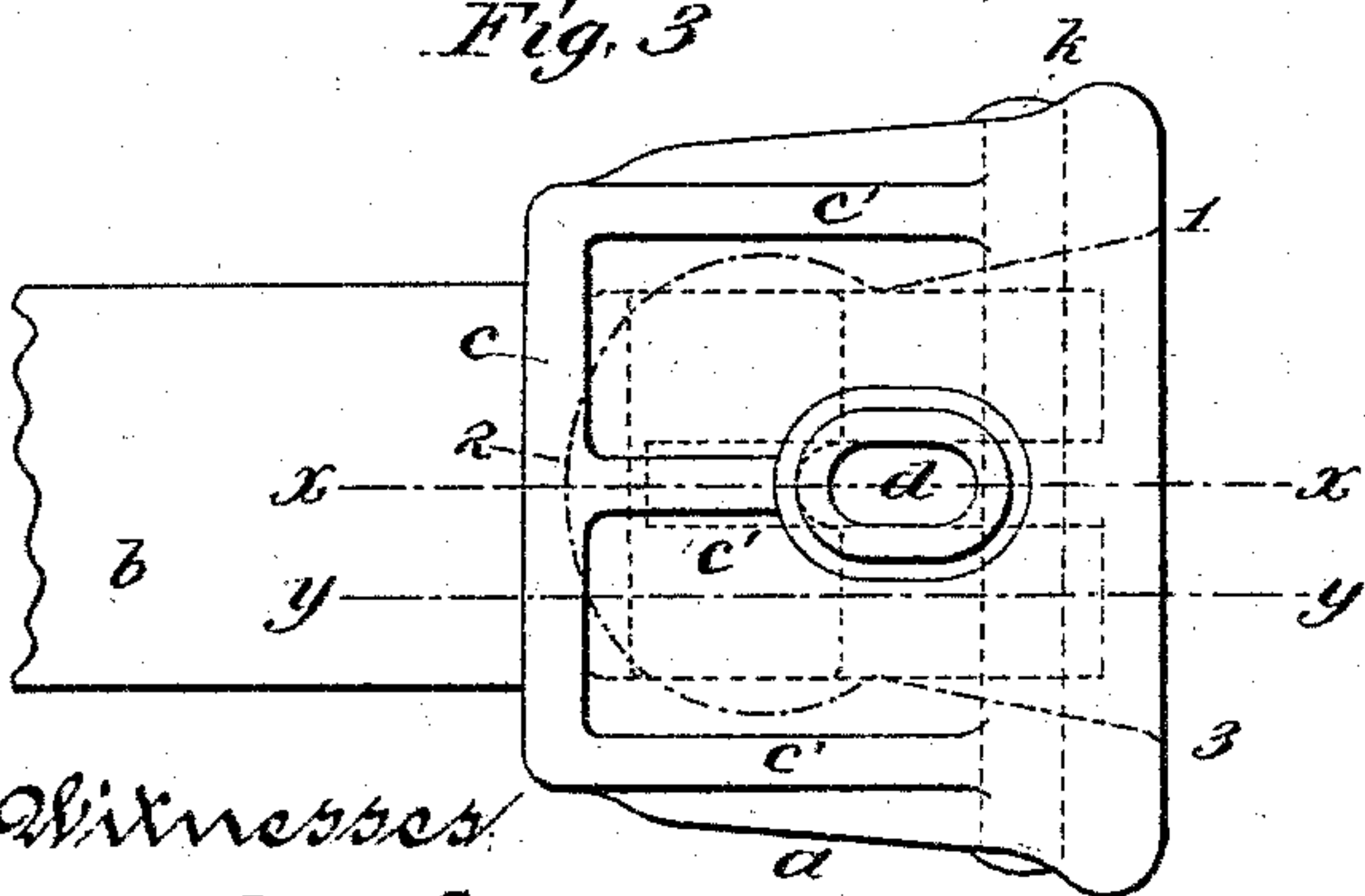
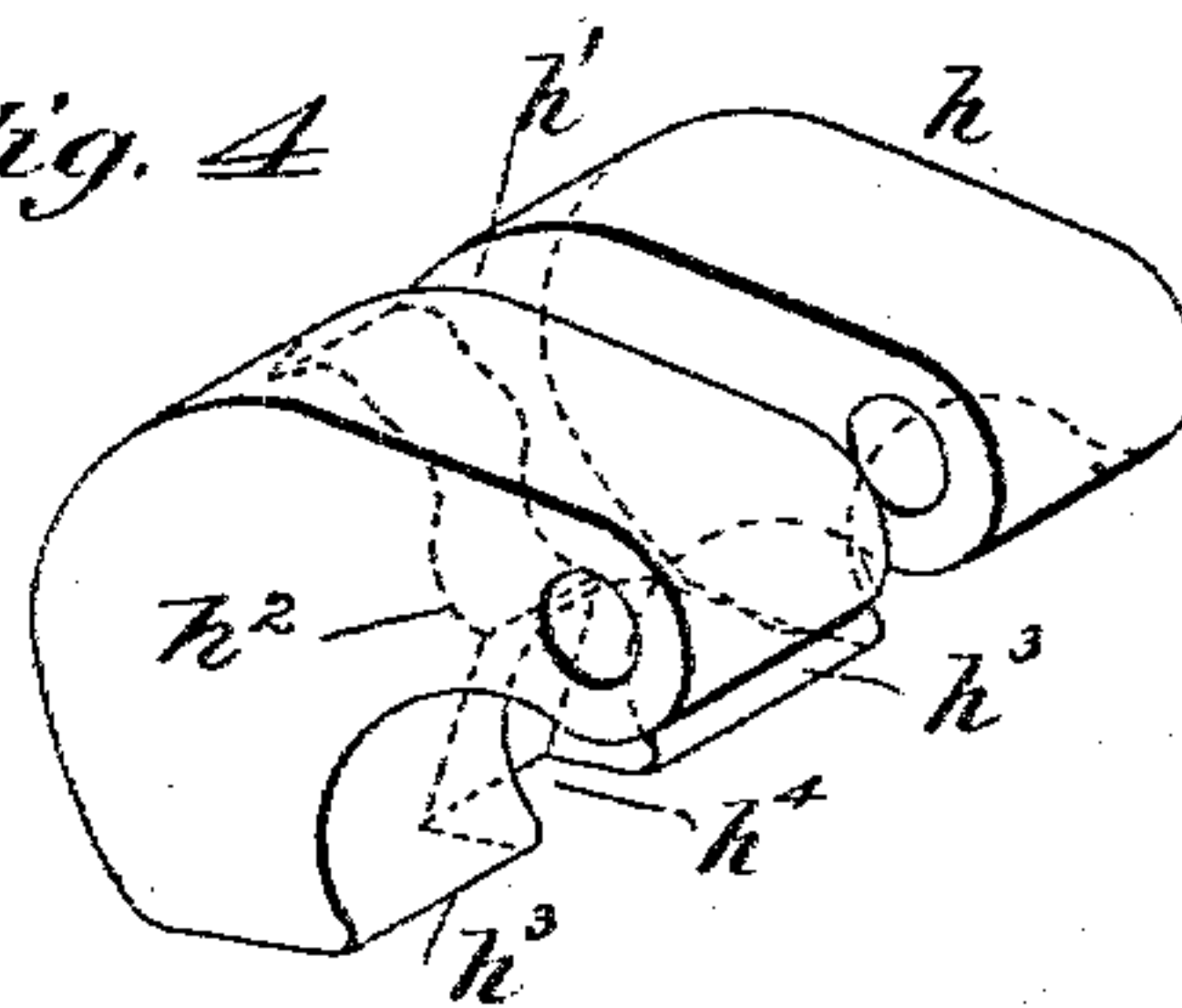


Fig. 4



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID W. BRUNTON, OF ASPEN, COLORADO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 515,419, dated February 27, 1894.

Application filed November 27, 1893. Serial No. 492,113. (No model.)

To all whom it may concern:

Be it known that I, DAVID W. BRUNTON, a subject of the Queen of Great Britain, residing at Aspen, Pitkin county, Colorado, having declared my intention to become a citizen of the United States, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

10 This invention relates more especially to that class of link and pin car couplers which are used upon freight cars, and the object of the invention is to render the operation of coupling entirely automatic and thereby eliminate the risk of life and limb incident to hand coupling as ordinarily practiced. Of course, I am well aware that this object has been attained with greater or less success by many prior inventors, and, hence, my invention consists not broadly in any and all means for accomplishing this object, but in the particular construction of drawhead whereby it is adapted to receive safely the shock of coupling and insure the descent of the suspended pin to engage the link; and in the construction and arrangement of a gravity-block which holds the link in position in one drawhead to enter an opposed drawhead in which a similar gravity-block supports the pin in position to enter such link, and also in other details, all as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view. Fig. 2 is a longitudinal section of a pair of my couplers in position to couple, the section of the left hand coupler being taken in the plane of line $x-x$, and the section of the right hand coupler being taken in the plane of line $y-y$, of Fig. 3. Fig. 3 is a top plan view, and Fig. 4 is a perspective view of the gravity-block detached.

45 The drawhead a may be made as a casting or forging, or in any other approved manner, and supplied with the drawbar b in like manner; and with the sill abutments c rising from its top, which are braced with braces c' , c' , but, of course, the invention is not limited to these details, and they may be varied as necessity or convenience suggests.

The drawhead is provided with the vertical pin-holes d, d , and from the upper wall or top of this drawhead a lug e depends in line with and in the rear of the upper pin-hole, for a purpose presently appearing. The upper portion of the mouth of the drawhead is made with a stout introverted lip f , which is notched at f' in line with the pin-holes, and the lower portion of such mouth is made with a plane lip or roll g raised above the level of the floor or bottom of the drawhead and inclined upwardly and outwardly to aid in supporting the link in the position shown in Fig. 2.

55 h is the gravity-block hereinbefore referred to. This block has somewhat the outline of the block letter J, and has its stem slitted at h' , and the bottom of this slit is provided with a seat or step h^2 , and its nose or end h^3 is notched at h^4 . The lower curved portion of the block adjacent to the nose is thickened so as to cause it to gravitate toward a vertical position. The outside face of this block is curved to conform to and fit over the inside face of the lip f , and the inside face of said block is curved to correspond with and fit the cavity i . The block is suspended within the drawhead by a pin k arranged in front of the coupling pin-hole and passed transversely through the block and the drawhead and extending outside the drawhead for facility of insertion and removal in case of necessity. It will be observed that inasmuch as the bulk of the weight of the gravity block is at its bottom and in the rear of the plane of its pivot, the tendency of the block is to swing forward toward the mouth of the drawhead, and this tendency is arrested by the block coming to rest upon the lip f , thus insuring the stability of the block as a pin-support when so used.

80 l is a link and m is a pin of any approved construction.

The operation is as follows:—A link is inserted in a drawhead and secured therein by the pin, as usual, but the link rests about midway of its length upon the lip g and its end within the mouth of the drawhead and in the rear of the pin is borne down upon by the gravity block as shown in the left hand coupler in Fig. 2, and, hence, since the floor of the drawhead is lower than its lip g , and

the block bears the inner end of the link down to the floor, the outer end of said link is elevated into a plane substantially coincident with the center of the mouth of a similar drawhead on an opposed car at equal or nearly equal height, and therefore the said link is in correct position to enter such opposed drawhead. If the opposed coupler, as is represented to be the case in the right hand side of Fig. 2, have its pin withdrawn until its point is in line with the slit h' of the gravity block, said gravity block will automatically swing forward until arrested by the lip f , and bring its pin-seat h^2 into line with the pin, and the pin may then be permitted to rest in said seat. With the parts in this position, and the opposite coupler having its link arranged as shown in the left hand side of Fig. 2, if the two couplers be at substantially equal height and be caused to approach, the link will enter the right hand coupler, strike the gravity-block on or near its point or nose and push it from beneath the pin and allow the pin to fall through the link in front of the gravity block and into the bottom pin-hole of the drawhead and so couple the two couplers. The shock upon the gravity block occasioned by the incoming link will be taken by the drawhead through its cavity i , and being thus distributed over a large surface in which no one point is more heavily taxed than another, and the pin k being relieved of the necessity of sustaining the whole of the shock, the liability of bursting or breaking the drawhead and distorting the pin k is very greatly reduced, if not wholly escaped. The lug e acts to prevent the bottom or point of the coupling pin from being carried backward into the drawhead by the gravity block and insures its escape from such block when a link is entering; and the lip f supports the coupling pin in proper position when under heavy strain, and prevents a crooked pin from binding in the slit in the gravity block. It is to be observed that the pin is supported upon the gravity block in such manner as to be sustained against accidental displacement, for it will be noticed that when the gravity block is arrested by the lip f , its weight continues to tend to impel it forward, and hence the pin is crowded against the lip and cannot escape in that direction; the lug e prevents the escape of the pin rearwardly and the lip and lug in conjunction with the arms of the gravity block formed by the slit h' , prevent it from escaping laterally. It will be noticed also that the notched outer end or nose of the gravity block embraces the pin and guides it into the lower pin-hole. The curved upper lip of the drawhead's mouth and the mouth itself are so shaped and of such proportions, substantially as shown, as to permit the gravity block to be readily inserted into and withdrawn from the drawhead, and without weakening the drawhead or impairing its usefulness by other and unnecessary openings which would admit rain, snow and sleet. The

space within the drawhead, as shown in Fig. 2 and by the dotted line 1, 2, 3, Fig. 3, is of such shape that the gravity block rests continuously on its bottom surface when the block is at its lowest position, and continuously along its upper surface when the block is in its highest position, thereby enabling it to withstand the strain which might be put upon it by a crooked link or otherwise. By the construction of drawhead and gravity block herein set forth, the forward end of the gravity block is inclosed and therefore the gravity block cannot be struck by an advancing link until the end of the link is already underneath the pin. Since the floor or bottom of the drawhead is level, any water coming into it will drain out through the lower pin-hole. I have thus produced a very simple, durable and efficient automatic coupler, well adapted for freight service and interchangeable with other link couplers in ordinary use.

The details of construction may be modified, as is obvious, without departing from the principle of my invention as hereinafter claimed, but I believe that an adherence to the lines set up in the drawings and herein described will achieve the best results.

What I claim is—

1. A car coupler of the pin and link variety, comprising a drawhead provided with an internal curvilinear cavity and having its mouth provided with an introverted upper lip, a lower lip elevated above its floor and bottom, vertical pin-holes, and a depending lug in the rear of the upper pin-hole, combined with a gravity block constructed to conform to the curvature of the cavity of the drawhead and suspended in said cavity and provided with a pin-supporting seat, substantially as described.

2. A car coupler of the pin and link variety, comprising a drawhead having its mouth provided with an introverted upper lip and a lower lip elevated above the floor or bottom of the drawhead and a depending lug in the rear of the upper pin-hole, combined with a gravity block suspended within the drawhead upon a removable pin passed transversely through both, and having a coupling pin seat, the said gravity block coming to rest upon the introverted lip and supporting the pin in position to be engaged with an incoming link, substantially as described.

3. In a car coupler of the pin and link variety, a drawhead having vertical pin-holes, an introverted lip at the upper portion of its mouth, notched adjacent to the pin-hole and extending on both sides of it, a lug arranged at the rear of the upper pin-hole and a gravity block suspended in said drawhead, in front of the pin-hole and above the lip, slitted longitudinally in the plane of the pin-hole and provided with a coupling pin seat, whereby the coupling pin may be supported in position for coupling and be sustained while so supported against displacement and its es-

cape from the block insured when the block is moved from beneath it by the entrance of an opposed link, substantially as described.

4. In a car coupler of the pin and link variety, a drawhead having vertical pin-holes, a mouth provided with an upper introverted lip, and an internal cavity of substantially the dimensions and shape shown, combined with a curvilinear gravity block having its pivot arranged forward of the coupling-pin-holes and adapted to support the coupling pin in position to be coupled and to hold the link in similar position, the gravity block being adapted to be inserted into the drawhead through its mouth, substantially as described.

5. In a car coupler of the pin and link variety, the drawhead having a mouth provided with an introverted upper lip and a curvilinear cavity in the rear thereof, combined with a pin and link-supporting gravity-block pivoted within the drawhead and curved on one side to fit to the inner face of the introverted lip and to rest thereupon and curved upon its other side to fit to and extend continuously of the curved cavity of the drawhead, substantially as described.

6. In a car coupler of the pin and link variety, the drawhead having a mouth provided with an introverted upper lip and a curvilinear cavity behind the same, combined with the gravity block pivoted in said cavity forward

ward of the coupling pin hole, whereby the forward end of said block is inclosed, slit for the passage of the pin, having a seat to support the pin in position for coupling and having its nose also notched to guide the coupling pin into the lower pin hole, whereby the said gravity block cannot be struck by an advancing link until the end of the link is already beneath the pin in position to receive it, substantially as described.

7. In a car coupler of the pin and link variety, a drawhead having a substantially level floor or bottom terminating at the mouth in an elevated roll or lip, and also having an introverted upper lip having a curved cavity behind it, combined with a gravity block of substantially the construction set forth, pivoted within the said cavity in the drawhead in front of the pin-holes, having the bulk of its weight in a plane in the rear of its axis, and adapted to impose its weight upon a link laid in the drawhead upon such roll or lip to hold up the outer end of such link in a position to enter a similar drawhead at a substantially equal elevation, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of November, A. D. 1893.
DAVID W. BRUNTON.

Witnesses:

WM. B. RAFF,
HARRY G. KOCH.