

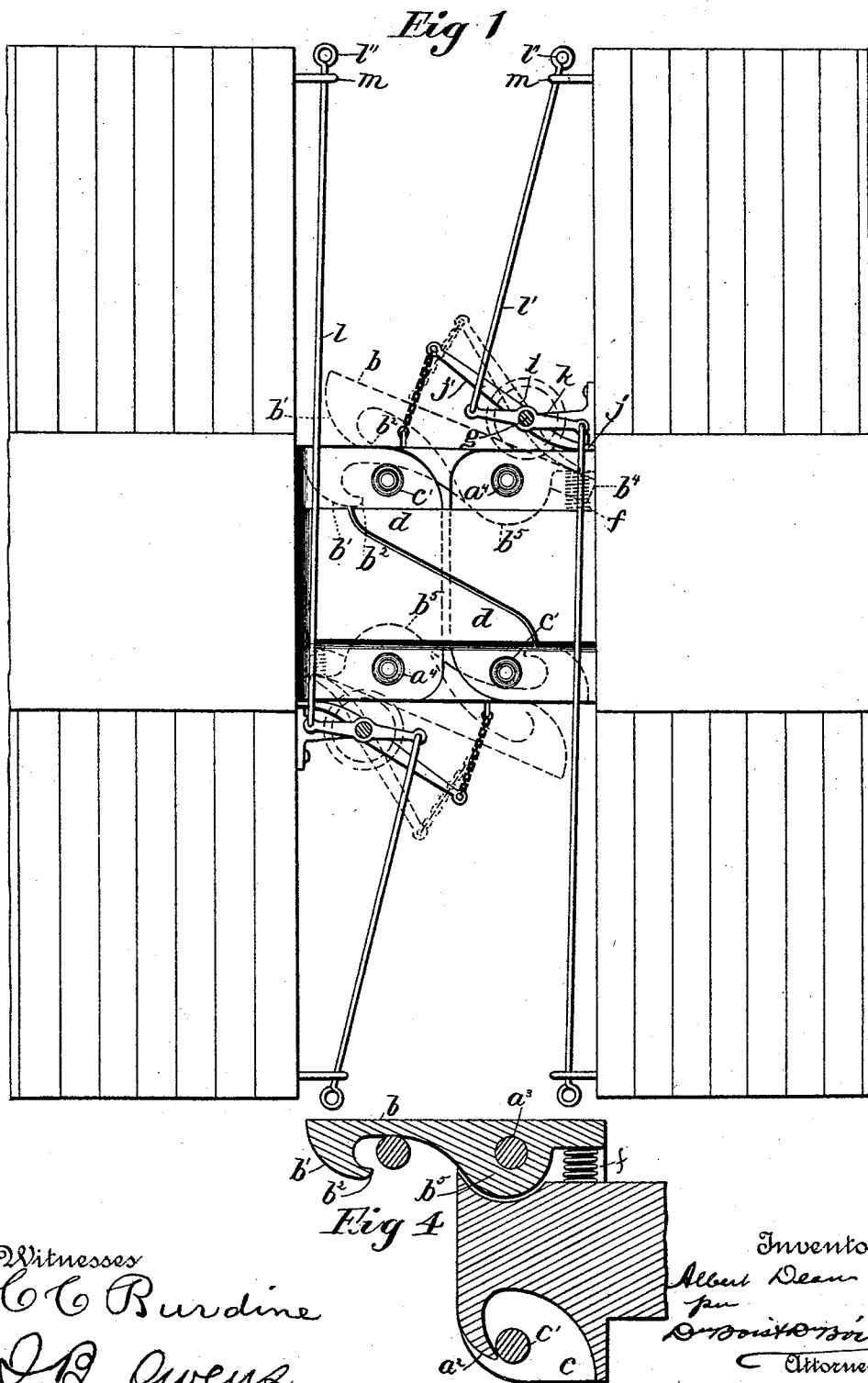
(No Model.)

2 Sheets—Sheet 1.

A. DEAN.
CAR COUPLING.

No. 495,150.

Patented Apr. 11, 1893.



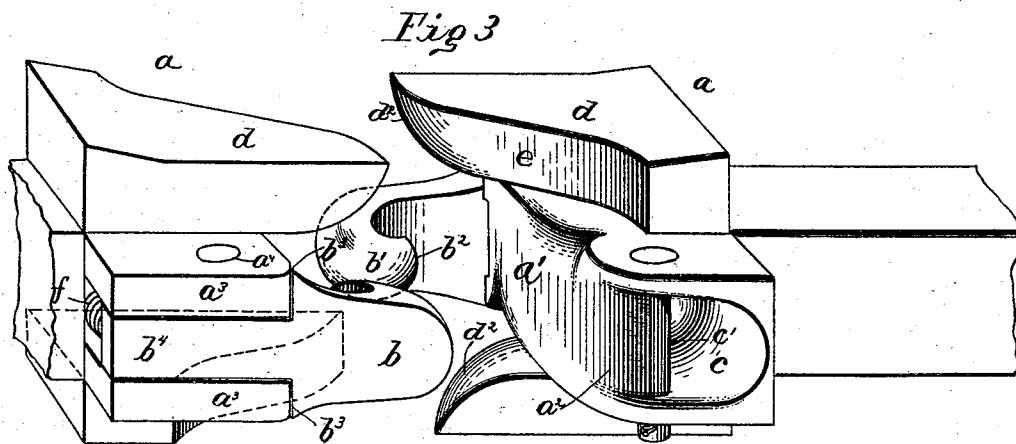
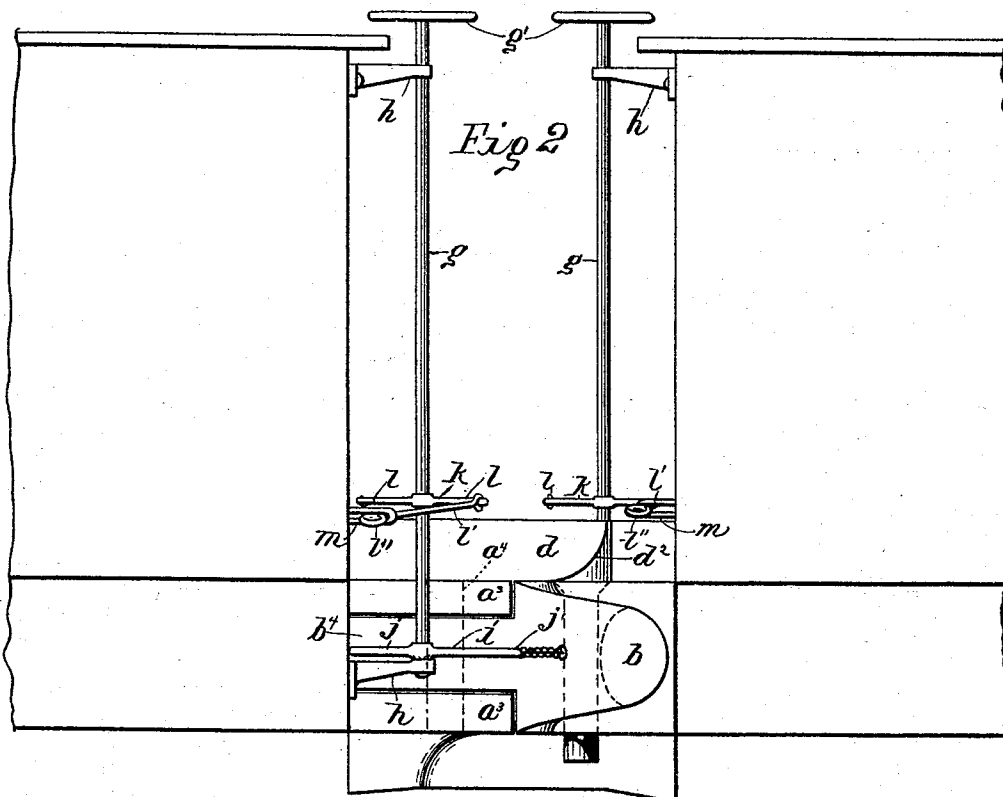
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Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT DEAN, OF OTTAWA, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 495,150, dated April 11, 1893.

Application filed January 25, 1893. Serial No. 459,712. (No model.)

To all whom it may concern:

Be it known that I, ALBERT DEAN, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented certain new and useful Improvements in Car-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has reference to that class of car couplers in which the draw-heads are twins and are each provided with a spring-actuated gripping hook adapted to overlap and automatically engage a catch upon the opposite draw-head. In couplings of this character heretofore used, a difficulty has been found to exist in getting the parts to couple when one draw-head happened to be higher or lower than the other, or when the heads were out of true alignment.

It is the purpose of my invention to overcome these difficulties by providing, in connection with the gripping hook, a pair of oppositely faced guide lugs, which when the draw-heads come together, will guide them to the right or left, or up or down so that the draw-heads will be brought into true alignment and the gripping hooks directed to their respective sockets or catches to effect a free, easy and automatic connection.

A further object of my invention is to provide a single, effective, strong and durable coupling applicable to all and any kinds of railroad cars. This I accomplish by the mechanism to be more fully described hereinafter and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a top view of my coupler applied to a freight car, and showing the draw-heads forced together in the position assumed by the parts before they are pulled farther apart by the engine. Dotted lines represent the gripping hooks pulled out of their sockets and away from their catches as in the operation of uncoupling. Fig. 2, represents a side elevation of the coupling; Fig. 3, a perspective view of the draw-heads in the act of approaching each other, and Fig. 4, a horizon-

tal section through one of the draw-heads, its gripping hook and the catch pin of the opposite head.

The coupling mechanism on one drawhead is necessarily a duplicate of the other so that a description of one will suffice for both. The draw-head proper is represented by the reference letter *a*, and it has upon one side, which for convenience will be termed its right side, a gripping hook *b*, and upon its opposite or left side a hook socket *c*. On the top and bottom of the draw-head and preferably cast integral therewith, are a pair of oppositely faced guide-lugs *d*, which engage corresponding lugs upon the opposite member of the coupling. These lugs are exactly alike in construction and the face *e* of each, which comes in sliding contact with its opposite lug is formed to lie in a plane oblique to its line of movement. The conformation of said face is similar in general outline to that of a reverse curve in order to permit the lugs to have a sliding movement upon each other as they come in contact, thereby guiding the heads laterally into their proper locking position. The inner sides of the points are given a bevel *d*² to form an outwardly flaring frictional surface which projects beyond the vertical impact surface *a'* of the draw-head, and guides the latter up or down, as the case may be, to bring the two members into horizontal alignment or on a level with each other. The peculiar form of these guide lugs is an important feature of my invention, for it is essential in preventing the ends of the gripping hooks from striking the wrong part of the opposite member of the coupling and thereby causing breakage or other injury. To still further overcome any liability of this objectionable kind, the inner face *b'* upon the head of the hook is curved to meet a curved surface *a*² upon the opposing draw-head. The socket *c*, is given a size which will receive the head of the hook so that its outer face will lie flush with the outer face of the draw-head and be entirely out of the way when the members are coupled together, as shown in Figs. 1 and 2. The fang *b*², of the hook extends backward a sufficient distance to securely embrace a pin *c'*, removably placed at the throat of the hook socket. The head portion of the gripping hook is substantially arrow-shaped

to form shoulders b^3 , and the hook shank b^4 is pivoted between a pair of lugs a^3 , by means of a vertical pivot a^4 . A coil spring f , interposed between the heel of the shank and the draw-head, normally holds the hook in locking position, and prevents it from jarring loose or becoming unfastened. It will automatically snap into the socket c when the draw-heads come together and the fang b^2 , passes the pin c' . Projecting from the inner side of the shank of the spring catch, is an enlargement b^5 , through which the pivot a^3 passes, and this enlargement enters a corresponding recess in the side of the draw-head and between the lugs.

The uncoupling mechanism.—This comprises means which will permit the uncoupling operation to be performed from the sides of the cars in order to avoid the necessity of going between them. The general principle of the mechanism I employ is not broadly new excepting in combination with other parts, and it consists of vertical spindles g located at the end of the cars and mounted in brackets h . The top of each spindle is provided with a wheel g' , by which it can be operated from the top of the car. To the lower end is fixed a horizontal lever i , the short arm j of which is curved to come in loose frictional contact with the outer face of the heel of the hook, while the outer end of the long arm j' is attached by a chain to the head end of the hook. Now when the spindle is turned in the right direction the short arm j presses inward on the heel of the hook, while the chain pulls outward on the head, and the hook is thereby withdrawn from its socket and liberated.

In order that one man can operate both hooks from one side of the car, there is fixed to the lower part of the spindle a cross-arm k , to the opposite ends of which are attached lateral rods l, l' extending out to the sides of the car where their looped ends l'', l''' are supported in brackets m . When the draw-heads are together and the rods l and l' are pulled outwardly both gripping hooks will be withdrawn from their sockets, and the cars may be uncoupled as shown in dotted lines in Fig. 1.

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

1. A car coupling provided with draw-heads having guide-lugs upon their top and bottom surfaces, in combination with automatic gripping hooks, substantially as described.

2. A car coupling having a draw-head provided with guide-lugs upon its top and bottom, said lugs having curved oblique frictional contact surfaces, in combination with a spring-actuated catch upon one side and a socket upon the opposite side, as set forth.

3. In combination with a draw-head, a pair of diagonally opposite guide-lugs located respectively upon opposite sides of the draw-head and projecting beyond the vertical face of the latter, a spring-actuated hook upon one side, and a hook socket upon the opposite side, substantially as described.

4. The combination with a solid draw-head, of a pair of diagonally opposite guide-lugs made integral therewith, said lugs having oblique faces and flaring ends projecting over the face of the draw-head, a spring-actuated hook provided with a head having a curved inner surface, a socket adapted to receive said head, and a removable pin located at the throat of the socket, all combined and adapted to operate as set forth.

5. In combination with a spring-actuated catch, a vertical spindle mounted in brackets secured to the end of the car, a horizontal lever fixed to turn with the spindle, and having one arm adapted to engage the heel of the catch, and the other connected by a flexible connection to the head of the catch, a cross-arm fixed to the spindle, and laterally extending rods attached to the opposite ends of the cross-arm, as and for the purpose set forth.

6. In a car coupling of the class described, a draw-head provided with a hook, a socket sunk in the side of the head and adapted to receive the hook, and a spring bearing upon the shank of said hook, in the manner and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT DEAN.

Witnesses:

R. G. DUBOIS,
I. B. OWENS.