(No Model.) 2 Sheets—Sheet 1.

W. W. SWANK.

CAR COUPLING.

No. 491,612. Patented Feb. 14, 1893.

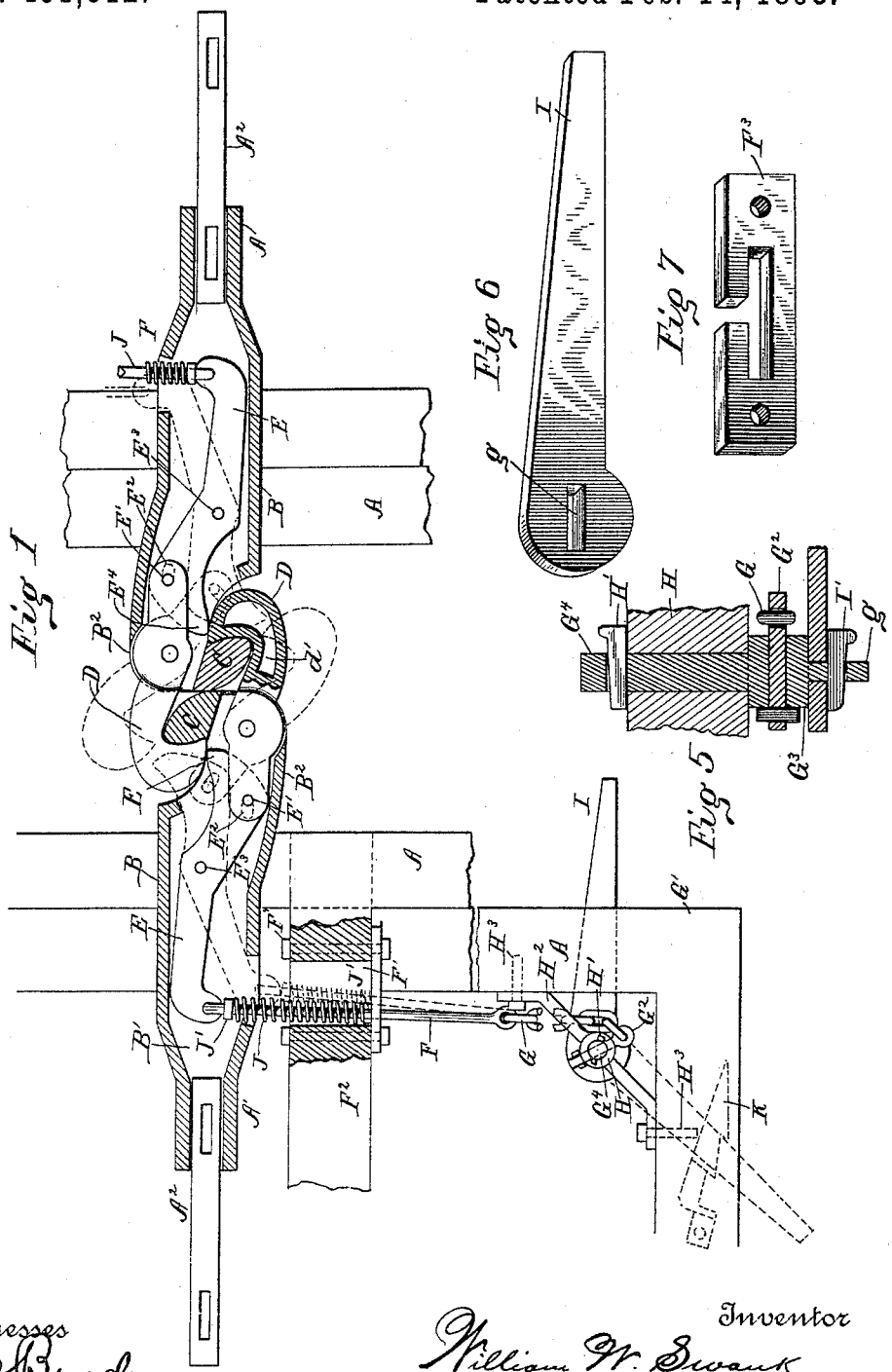

Fig 1

Fig 6

Fig 7

Fig 5

Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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Fig 2

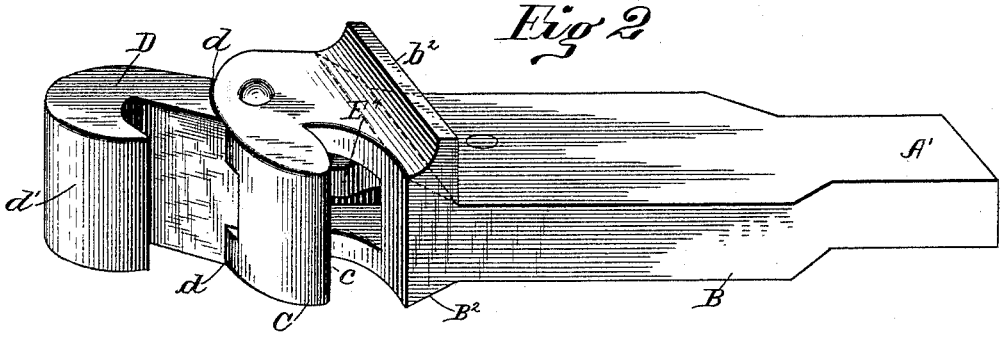


Fig 3

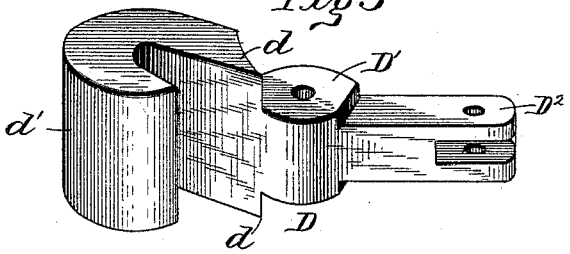
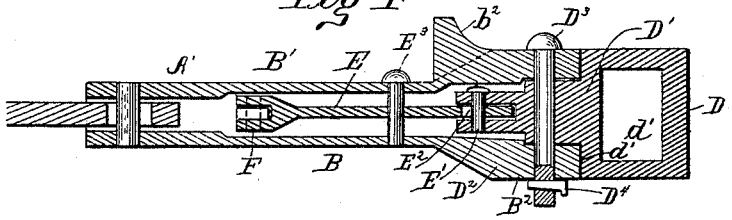


Fig 4



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM W. SWANK, OF SEATTLE, WASHINGTON.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 491,612, dated February 14, 1893.

Application filed November 29, 1892. Serial No. 453,549. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SWANK, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a description of the same in such full, clear, and exact terms that any person skilled in the art to which it appertains can make and use the same.

My invention relates to an improvement in car couplers, and particularly to those in which a hook on one car operates to engage a catch on the other or vice versa, and it has for its object to produce a coupler that will be perfectly automatic and more easily uncoupled and efficient than those hitherto known.

A further object is to provide a coupler that may be operated in every way from the sides of the cars and not between them thereby avoiding or decreasing the liability to accident.

To these ends my invention consists of certain novel features of construction and combinations of parts more fully described hereinafter and pointed out in the claims.

Referring to the accompanying drawings which illustrate a coupler embodying the essential features of my invention, Figure 1, represents a plan view thereof showing the head or jaws partly in section, Fig. 2, a perspective view of one of the jaws showing a hook in place, Fig. 3, a view in perspective of one of the hooks detached from its allied parts, Fig. 4 a sectional view of a jaw, including its hook and the lever for operating it, Fig. 5 a sectional detail view, Fig. 6, a perspective view of the operating lever, and Fig. 7, a detail view in perspective.

The reference letter A, indicates the frame work of the car, to which my improvements are applied, having the jaw B, fitted therein, as usual. To the end A′ of the jaw B, is fixed by any suitable means, preferably by a slot and pin, the draw-bar A^2. The draw heads B are formed hollow, as heretofore, and are reduced in size at B′ where the draw-bar A^2 is received. The end B^2 as shown in Fig. 2, has formed on it the hook C, and openings B^4 and B^3 the use of which will be described later.

Pivoted in opening B^4 of hook C, is the swinging hook D, provided with the reduced portion D′ and bifurcated arm D^2. The hook is pivoted in its place by means of a pin D^3, passing through hook C, and the reduced portion of hook D, in which position it is held by means of a key D^4. The shoulders *d*—*d*, formed by the reduced portion of D′ are made to conform exactly to the shape of the outer edges of the two parts of hook C and it, the hook D, is therefore of the same depth as the hook C. The hooks D are each cast or formed integral and the portion *d*′ is preferably formed hollow, as shown in Figs. 1 and 4, to reduce its weight and cost, although if desired it may be made solid.

Pivotally connected to the bifurcated arm D^2 by means of the pin E′ and seat E^2 is an operating lever E, fulcrumed in the draw heads B by pin E^3 and having its free or long arm attached to the rod F. Formed on the inner end of the lever E and projecting outwardly is a nose E^4 whose end is adapted to extend just to the crotch of the hook C, and project out of the opening B^3, where it will engage the hook D of the car adjoining the one to which its draw head is attached for a purpose that will hereinafter appear. The rod F, which connects to the long arm of lever E, extends through an opening F′ made in the draft beam F^2. This opening is faced on the outer side of the beam by a slotted plate F^3 (see Fig. 7) held in place by means of the bolts F^4. The rod F extends a short distance beyond the beam F^2 where its end is connected to a chain G. This chain extends to the side of the car just under the sill G′ where it is connected by means of the pin G^2 to the enlarged portion G^3 of the spindle G^4, which spindle projects upwardly through the bearing H and is held in place by spring key H′. The bearing H, is formed of the box H′ having formed integral therewith the supporting arms H^2 which are in turn securely fastened to the car sill by bolts H^3. The end *g* of the spindle G^4 is flattened or squared just below the enlarged portion G^3 and is received by a corresponding slot *g*′ in the hand lever I, the lever being held in place by means of a key I′. The slot *g*′ of lever I is slightly longer than the end *g* to admit of limited vertical movement thereon. The normal position of the lever I is swung around parallel with the

line of cars, it being held in such a position by reason of the spring tendency on the rod F and chain G. Interposed between the long end of the lever E and the plate F^3 is an open coil spring J bearing against semi-spherical washers J'. By this spring the before mentioned tendency of the rod F is established and maintained. Fixed to the under side of the car sill on the outer edge is a ratchet hook K. This hook is designed to hold the lever I, open or in a position that will open or disengage the couplers, as shown in dotted lines in Fig. 1.

In the drawings the jaws B are shown with a shoulder b^2 adapted to bear against the dead wood of the car. This arrangement is only intended for use in connection with freight cars and when the coupler is applied to passenger cars it should be left off the jaw as shown by dotted lines in Figs. 2 and 4. It will also be necessary when the coupler is applied to a passenger car to supplement the lever I for one which can be operated from the car platform.

The mechanism for operating the coupler, rod F, chain G, lever I &c., is shown in the drawings as applied to only one of the draw heads, but in practice it will of course be necessary to apply both, as the influence of spring J is essential to the effective operation of the coupler, which, however, will be more fully explained hereinafter.

By reference to Fig. 4 it will be seen that the interiors of the draw heads B, are made to conform to the shape of the hook D but this is not absolutely essential and may be varied at will or to suit such conditions that may exist at the time.

The preferred construction of my invention having now been set forth I will proceed to describe its use and mode of operation, reference being had to the drawings.

The normal position of the coupler is shown by Figs. 1 and 2 of the drawings, in which position it will remain until the hook D comes into engagement with the hook C of the opposite jaw, whereupon it will be glanced to the right a distance sufficient to allow the hook C to come into engagement with the hook D, of the opposite jaw. This last movement is effected by means of the spring J, which gives hooks D a spring tendency inward and holds them in engagement with hooks C, allowing them to swing out to the right only when their power is overcome. Thus it will be seen that the operation of the coupling is entirely automatic and requires no attendant until it is desired to disengage the couplers. This is done by swinging the lever I from position shown in Fig. 1 around until it comes into engagement with the hook K, which movement pulls on the chain G, and the rod F, whereupon the lever E is moved on its fulcrum swinging the short arm or hook D inward, and the hook proper out of engagement with its companion hook C. Simultaneous with this operation the nose E^4 of lever E operating through the opening B^3 in the draw head B, engages the point of the hook D of the opposite jaw and forces it outward and out of engagement with its companion. All of this is shown by the dotted lines in Fig. 1.

When it is desired to couple the cars again the lever I is disengaged from the hook K, whereupon it will by reason of the tendency of spring J swing around to its normal condition, at this stage the hereinbefore described coupling operation is repeated.

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

1. In a car coupler the combination of two draw heads a stationary and swinging hook attached to each, a spring actuated lever connected to and operating each of the swinging hooks and means connected with the lever by which it may be operated.

2. In a car coupler the combination of a pair of draw heads a stationary hook attached to each a swinging hook connected to each of the jaws levers pivotally attached to the swinging hook, rods connected to the levers, springs for actuating the lever and hence the swinging hook, and a second lever connected to the rod by which the coupler is operated, substantially as described.

3. In a car coupling the combination of a pair of drawheads, a swinging and stationary hook attached to each, means on each drawhead for operating the swinging hook attached thereto and a lever arranged to engage the end of the swinging hook on the opposite drawhead.

4. In a car coupler the combination of a pair of drawheads, a swinging and stationary hook attached to each, a lever fulcrumed on each drawhead and by which the swinging hook attached thereto is operated, the free end of said lever being adapted to engage the end of the swinging hook of the opposite drawhead and when so operated, to throw said hook out of engagement with its stationary companion.

5. In a car coupler the combination of a pair of drawheads, a stationary and swinging hook attached to each, and a lever on each drawhead by which the swinging hook may be operated to uncouple the cars.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM W. SWANK.

Witnesses:
GEO. H. KING,
THEO. J. DE PUY.