(No Model.)

J. F. E. PHILLIPS.

CAR COUPLING.

No. 286,635. Patented Oct. 16, 1883.

Fig. 1.

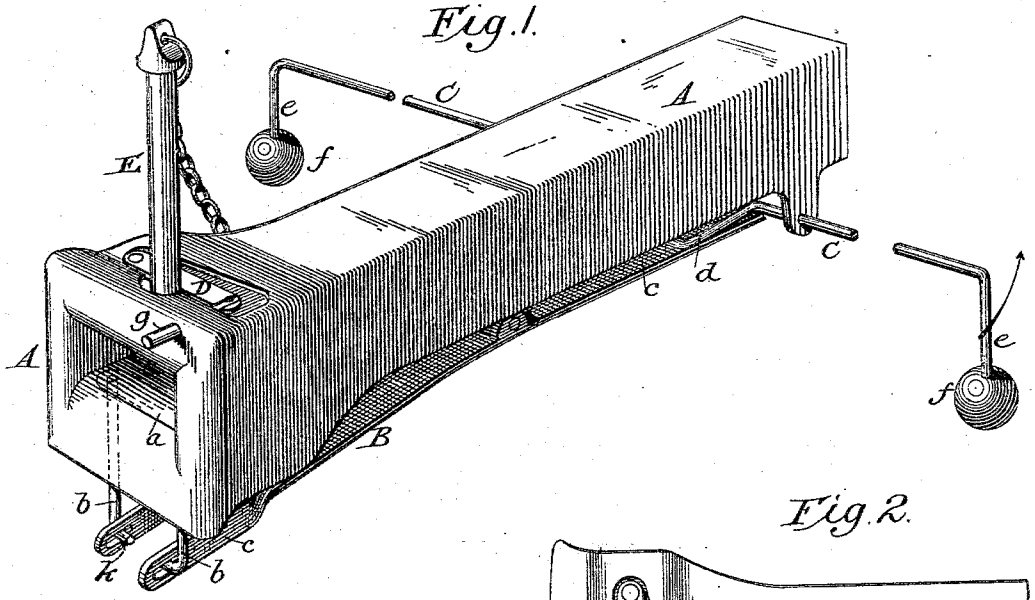


Fig. 2.

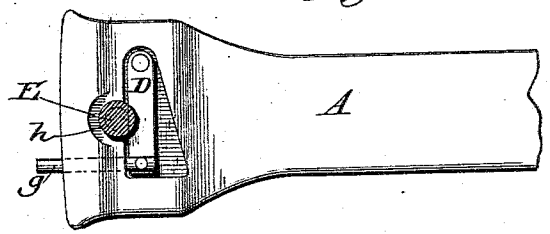
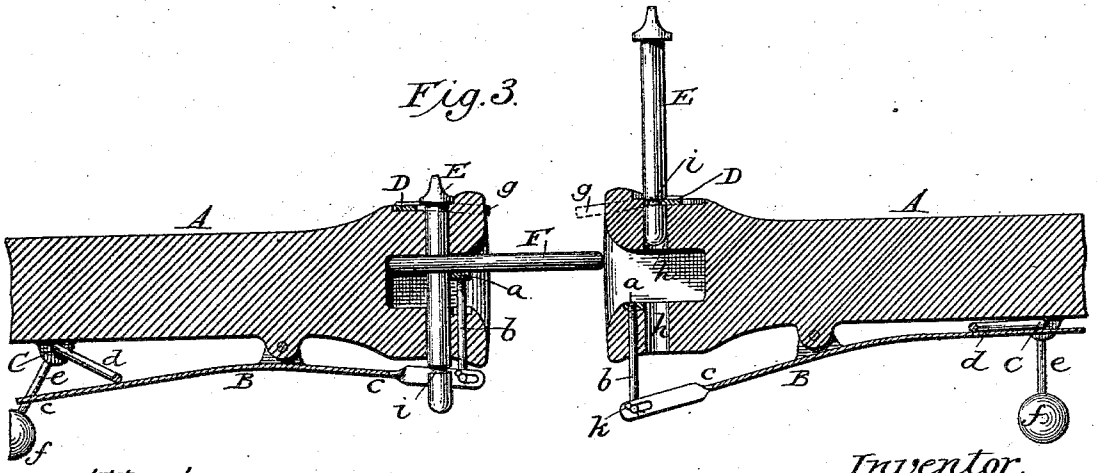


Fig. 3.



Attest.

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 286,635, dated October 16, 1883.

Application filed August 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. E. PHILLIPS, of Hannibal, in the county of Marion and State of Missouri, have invented certain Improvements in Car-Couplers, of which the following is a specification.

My invention relates to car-couplers; and it consists, first, in a link lifter and supporter to insure proper entrance into the draw-head; and, secondly, in a device for holding up the coupling-pin until the link is entered in the draw-head, and then automatically releasing said link and permitting it to fall.

In the accompanying drawings, Figure 1 is a perspective view of a draw-head furnished with my improvements; Fig. 2, a top plan view, and Fig. 3 a vertical central section, of a pair of draw-heads illustrating the operation of the devices mentioned.

As cars are commonly built, their draw-heads are at varying heights, and even when of the same height in the first instance a difference in the loading of the cars produces a difference in height; hence the openings of the draw-heads are made quite large or deep from the upper to the lower side. It follows from these causes that when a coupling-link is inserted into a draw-head of one car and the pin is inserted to retain the link, if the car bearing this draw-head and another car be run together, the outer end of the link is apt to fall below the mouth or opening of the second draw-head, and thus prevent the proper coupling of the cars. Men are therefore generally employed to hold the links in proper position to enter the draw-heads, the links being held by hand, and the attendant being commonly required, especially in the case of freight-cars, to stand between the two cars, at a great danger to his person and to the imminent risk of having his hand mashed. To avoid this danger I provide each draw-head with a lifting and holding device, as shown in the drawings, in which—

A represents a draw-head, and B the link-lifter, which latter consists of a cross-bar or plate, *a*, seated in a recess within and at the lower side of the opening of the draw-head, and carried by rods *b*, the arms of which pass up through perforations in the lower side of the draw-head, and which are in turn carried by a lever, *c*, pivoted to the under side of the draw-head, as shown. When the tail or rear end of the lever is depressed, its forward end is raised carrying with it the rods *b* and the cross-piece *a*, upon which latter the link rests, as shown in Fig. 3; hence by depressing the rear end of the lever *c* the link may be raised to any desired angle or elevation.

To enable the lever *c* to be operated from either side of the car and without the necessity of entering between them, I provide a rock-shaft, C, which extends from side to side of the car, passing beneath the draw-head, where it is formed with a bend or cranked portion, *d*, which stands normally in a horizontal position, resting upon the upper face of the lever, as indicated, the shaft being carried by suitable hangers and provided with radial arms *e* at each end, by which to rock the shaft. These arms may have their ends bent outward after the manner of a crank, but will preferably be furnished with metal knobs or weights *f*, to cause the arms *e* to maintain normally a vertical position, and thereby hold the cranked portion *d* in a horizontal position, to prevent the depression of the tail of lever *c* at an undesired time. By raising or swinging up the weighted arms, the cranked portion *d* will be caused to bear upon the tail of lever *c*, and thereby to raise the link, as mentioned.

The interior of the draw-head will, in practice, be recessed to permit the cross-piece *a* to seat itself flush with the lower wall of the opening, and the lever *c* will be pivoted to a lug cast or formed on the lower side of the draw-head; but when the parts are applied to draw-heads already in use the cross-piece may be made thin and beveled on its front edge, so that the link will freely ride over it in entering, and the lever *c* may be carried by a metal strap or band passing about the body of the draw-head.

It is necessary in order to fully secure the advantage of the foregoing devices that means be provided for holding up the coupling-pin until the link is entered in the draw-head, and permitting the same to instantly fall upon the coming together of the two draw-heads. For

this purpose I provide, at the upper side of the draw-head, a horizontally-moving latch or plate, D, pivoted at one end to the draw-head, and at its opposite end provided with a rod, *g*, which is loosely jointed to the latch, and, passing through a hole in draw-head, extends beyond the end or front face thereof, as plainly shown in Figs. 1 and 2. The latch is arranged to move partly over the hole or opening *h*, formed in the draw-head to receive the coupling-pin E, and of a thickness to enter a circumferential groove, *i*, formed in said pin a short distance from its lower end. The pin is raised to the position shown in the right-hand draw-head of Fig. 2, so that its lower end just clears the interior of the draw-head, in which position the groove comes into line with the latch. Said latch is then pressed into the groove, which holds the rod or pin in the position shown in Figs. 1 and 2. The link F being inserted into one draw-head, and the pin E of that head being dropped to retain the link, said link is raised by the lifter B to the proper elevation, and the cars being brought together, the pin or rod *g* is pressed back by contact with the opposite draw-head, and the coupling-pin E thereby permitted to fall before the rebound of one or the advance of the other car can occur, thus insuring the dropping of the pin through the link and the consequent coupling of the cars. A notch may be substituted for the groove *i*.

I am aware that it is not broadly new to provide means for raising the link, or for holding up the coupling-pin until released by the coming together of the draw-heads, and therefore I do not broadly make claim thereto; but I believe my construction to be peculiarly simple and efficient, and admirably adapted to draw-heads already in use as well as to new ones.

In order to cheapen the construction of the lifter and facilitate its application and removal, the rods *b* are threaded at their upper ends to screw into plate *a*, and are bent at right angles at their lower ends to pass through eyes in the forwardly-projecting arms *c'* of levers *c*, where they are secured by split keys *k*. Being thus secured they cannot accidentally withdraw from the plate *a*, but may be readily renewed when necessary. The arms *c'* of the lever *c* are formed by splitting the forward end of the lever and twisting said arms at right angles to the body, as shown.

Having thus described my invention, what I claim is—

1. In combination with draw-head A and link-lifter B, constructed and applied substantially as shown and described, rock-shaft C, provided with cranked portion *d*, and weighted arms *e*, for the purpose explained.

2. The combination, substantially as shown and described, of draw-head A, latch D, pivoted upon the upper side thereof, arranged to move in a horizontal plane, and provided with rod or pin *g*, and the coupling-pin E, provided with circumferential groove or notch *i*, all substantially as and for the purpose set forth.

3. In combination with draw-head A and lever *c*, plate *a*, and rods *b*, having their upper ends screwed into said plate and their lower ends bent and passed through the eyes in the lever *c*, and secured therein by keys *k*, substantially as shown.

4. In combination with a draw-head and a link-lifter, substantially such as described, an operating-lever for said lifter, having its end split and the two parts twisted at right angles to the body, as shown.

JOHN F. E. PHILLIPS.

Witnesses:
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