

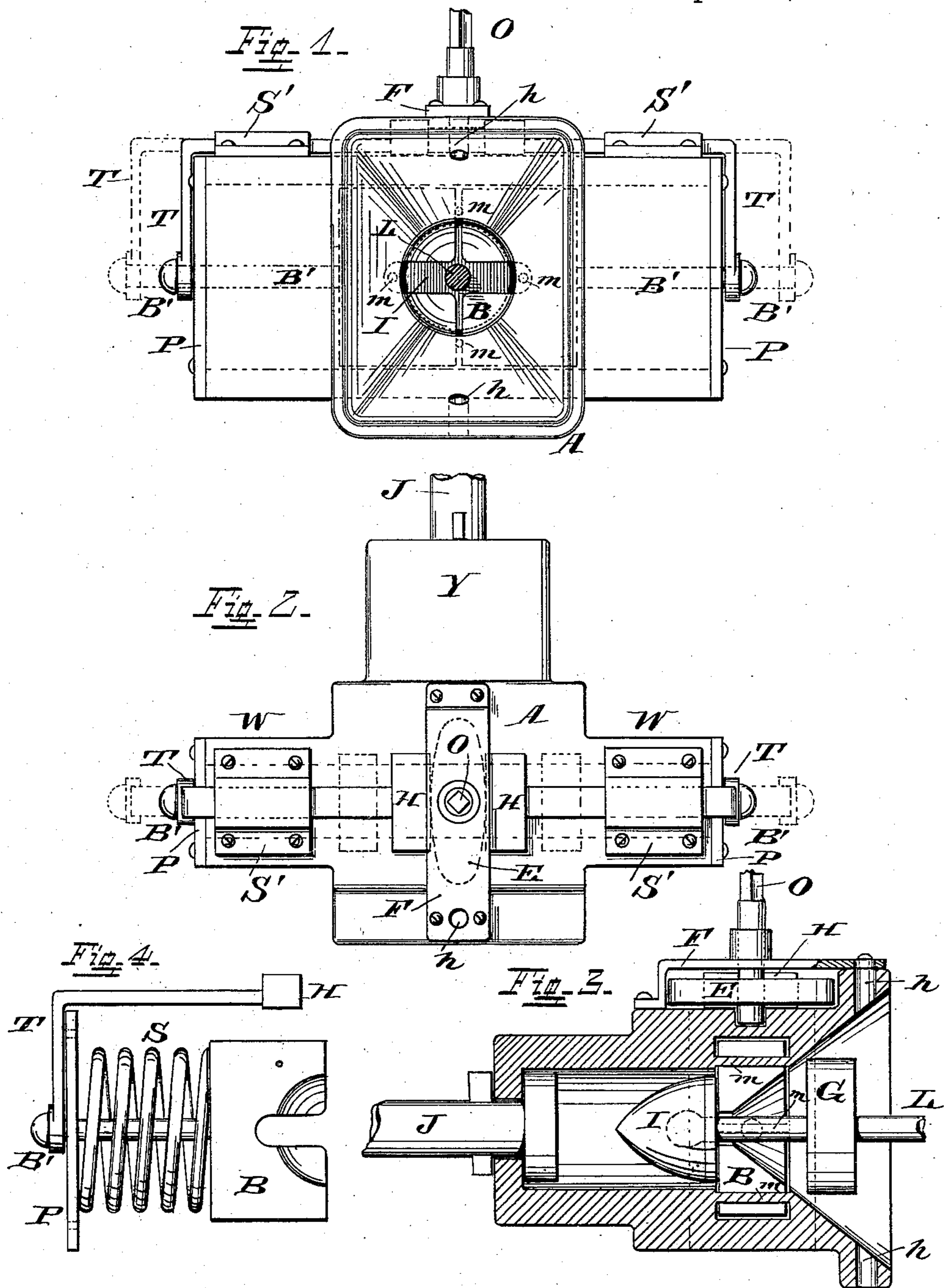
(No Model.)

E. J. MILLER.

CAR COUPLER.

No. 389,525.

Patented Sept. 11, 1888.



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CAR-COUPLER.

SPECIFICATION forming part of Letters Patent No. 389,525, dated September 11, 1888.

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To all whom it may concern:

Be it known that I, EDWARD J. MILLER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a specification.

The object of my invention is to provide a car-coupler which will perform its work in an effective manner, which is simple in construction and mode of operation, and which will obviate the danger of injuries so common at the present time when the coupling and uncoupling is being effected. These features and the advantages thereof will be understood from the description which I will now give, and by reference to the accompanying drawings, forming part of my application, in which—

Figure 1 is a front view of a draw-head containing the mechanism which locks or releases the link, the link itself being in section and shown as grasped. Fig. 2 is a plan or top view of same. Fig. 3 is a central longitudinal section through the draw-head and shows the link held in position. Fig. 4 is a detached and enlarged view of one of the retaining-jaws and its connected parts.

The letter A indicates the draw-head proper, which is provided with integral hollow side wings, W W. Within these wings are placed the jaws B, which are held in position by means of springs S, situated between the jaws and retaining-plates P, the said springs embracing the connecting-rods B'. The jaws B are slotted about in the middle to allow the link some play while the cars are in motion. They are also somewhat tapered or dished out, to enable the conical head of my link to gradually and without shock gain an entrance. Properly attached to the connecting-rods are throw-outs T, which on their free ends are provided with heads H, as shown. These operating parts are held in position by the retaining-plates P, as before stated, with the aid of cross-plates S', by screws, the cross-plates S' embracing the throw-outs in such manner as to permit of their working back and forth.

O is the key-spindle fastened in a proper bearing, as seen more clearly in Fig. 3. United to this spindle is an oblong cam, E, which is

for the purpose of actuating or throwing out the heads H when required.

F is a cross-plate, through which the spindle O projects, and is designed as a protector to the oblong cam E, as well as assisting to keep it and the spindle in proper position.

L is my link, provided on each end with a conical head, I. They are united in the form of a swiveled or universal joint, so as to allow for the twistings and turnings which a train of cars makes when in motion.

G is a disk, made of rubber or any other elastic material, and is used as a guide to keep the link L in a direct line with the mouth of the draw-head.

J is the ordinary draw-bar, fastened to the draw-head in the customary manner, while *m* are ribs to keep the heads of the link in a straight line and guide their ingress to and egress from the draw-head and prevent their dropping and catching at any point.

Having detailed the various parts of my coupling mechanism, I will now describe their operation: We will suppose that a train of cars is to be made up. One of the heads of the link L is inserted in the draw-head. While the insertion is being made the jaws will be forced apart until complete entry has been made, when the springs S immediately force them together again. The base of the head thus rests against the inner portion of the jaws, so that withdrawal is impossible. Now, then, another car is backed up against that end of the car which contains my link, and is forced up against it, when the same mode of action as has just been described takes place, so that the coupling is automatically made. This mode of operation may be pursued till the desired number of cars is obtained and attached together. The link in the first instance may be inserted in the draw-head of a car that is moving, so as to catch one that is standing still; or it may be placed in the draw-head of a car which is at rest and the moving car brought up and automatically secured. The order in which the coupling is made can be followed at pleasure. Now, then, should it be necessary to uncouple one or more of the cars, the spindle O is turned by a proper key. This will have the effect of distending the throw-outs by reason of the oblong cam com-

ing into contact with the heads H. The distending of the throw-outs will cause the jaws to separate. There then being no impediment, the link can be withdrawn from the desired car, thus effecting the desired result, after which the key can be turned so as to bring the parts back to their normal positions. It will be observed that while the entry of the conical head is being made the throw-outs remain stationary and immovable. They only act when the key is applied to operate the spindle O and its affixed oblong cam; but while the coupling is being made the connecting-bars B' and their affixed jaws distend, and after the base of the conical head has passed the jaws are immediately, through the springs S, brought back again to their closed and normal positions.

The solid lines in Figs. 1 and 2 indicate the position of the parts when the jaws B are closed and the dotted lines when they are distended. The interior sides of the mouth of the draw-head are inclined, as shown, for the purpose of guiding the head of the link to its destination, as well as allowing for the inequality in the heights of different cars.

As before stated, in order to prevent the conical heads from being caught or in any way impede their progress when being drawn out, I provide ribs or guide-wings *m m*, extending from the mouth of the draw-head to the socket Y, which wings are flush with the surfaces of the mouth and said socket. This will prevent the heads from falling into the intervening space and accomplish the purpose desired.

It will readily be seen that by using a coupling such as I have shown and described a speedy, sure, and durable union is effected without danger, while the uncoupling is easily done from an accessible point.

Where some cars are provided with my coupling device and others are not, but use the old link and pin, they can be operated together by forming pin-holes *h* in the top and bottom of the mouth of my draw-head. This will permit the ordinary coupling-pin to be inserted and hold the ordinary link, thus securing the coupling.

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

1. The draw-head A, provided with a mouth whose sides are inclined, and hollow side wings, W, in combination with throw-outs T, connecting-rods B', their affixed jaws B, and springs S, the said throw-outs being actuated

by a cam, E, and spindle O, substantially as shown and described, and for the purposes noted.

2. The guide-ribs *m*, arranged substantially as shown and described, and for the purpose specified.

3. In a car-coupler, the slotted and dished jaws B, springs S, and headed throw-outs T, the same being suitably and operatively secured in the wings of the draw-head, in combination with link L, provided on each end with a conical head which is capable of adapting itself to the twistings and turnings of the cars, substantially as shown and described, and for the purposes noted.

4. In a car-coupler, the draw-head A, provided with guide-ribs *m*, an inclined mouth, and pin-holes *h*, in combination with jaws B, throw-outs T, connecting-rods B', and intermediate spring, S, all arranged substantially as shown and described, and for the purposes noted.

5. The draw-head A, provided with side wings, W, containing jaws B, connecting-rods B', and springs S, in combination with headed throw-outs T and retaining-plate P, substantially as shown and described, and for the purposes specified.

6. In a car-coupler, the draw-head A, provided with throw-outs T T, actuating-spindle O, and its affixed oblong cam held in place by plate F, in combination with jaws B, springs S, and connecting-rods B', substantially as shown and described, and for the purposes noted.

7. In a car-coupler, the draw-head A, its side wings, W, throw-outs T, held in position by plates S', jaws B, connecting-rods B', and spring S, the same being operated through the medium of cam E and spindle O, substantially as shown and described.

8. In a car-coupler, the connecting-link L, provided with loosely-connected conical heads I, which are held or released by the slotted and dished jaws B, connected and operated substantially as shown and described.

9. In a car-coupler, the connecting-link L, provided with loosely-connected heads I, which are held or released by the jaws B, in combination with elastic disks G, substantially as shown and described, and for the purpose specified.

EDWARD J. MILLER.

Witnesses:

L. J. FEHR,

W. ELLWOOD WYNNE.