

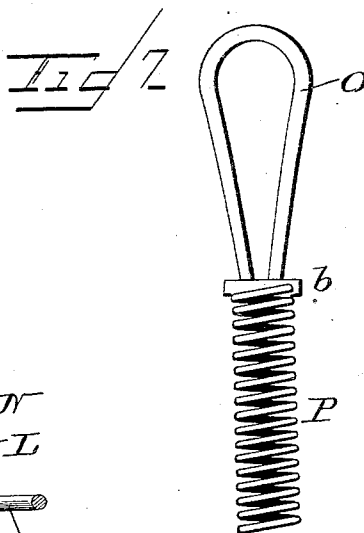
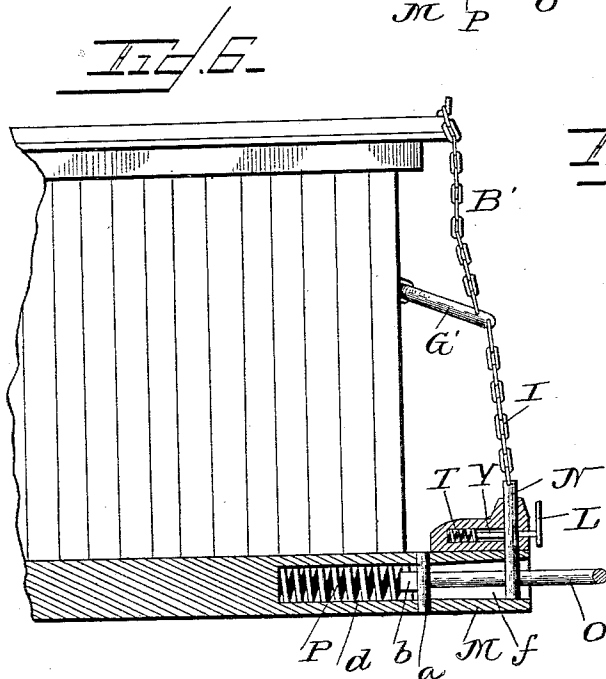
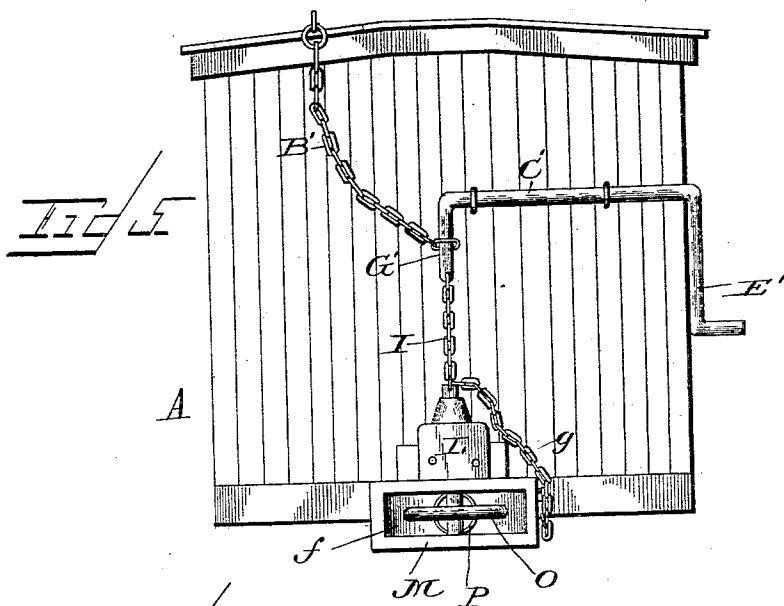
(No Model.)

3 Sheets—Sheet 3.

J. D. YOUNG.
CAR COUPLING.

No. 476,351.

Patented June 7, 1892.



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UNITED STATES PATENT OFFICE.

JAMES D. YOUNG, OF ELGIN, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 476,351, dated June 7, 1892.

Application filed July 20, 1891. Serial No. 400,168. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. YOUNG, residing at Elgin, in the county of Bastrop and State of Texas, have invented certain new and useful Improvements in Automatic Car-Couplers; and I do hereby 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, construct, and use the same.

The coupling of cars, and especially freight-cars, has heretofore been attended with great inconvenience and loss of time, and serious and often fatal accidents result from negligence or inattention on the part of the brakeman or other employé, or by reason of the inaccessible or complicated or inefficient forms of couplers used. More or less danger is incurred when the employé is compelled to get between the cars when coupling in order to properly manipulate the coupling devices. In order to avoid this defect, my invention contemplates the provision of devices whereby the coupling can be effected automatically and without the necessity of the employé getting between the cars. Valuable time is often wasted and delays are occasioned by reason of the brakeman or other employé having to descend frequently from the top of the car in order to effect the coupling. This objection is removed by employing devices manipulated from the top or side of the car. Serious delay and expense is incurred by reason of the breakage of the parts, and especially in those automatic couplers where the coupling-pin support is operated by the thrust of the link. If the pin-support fails to yield readily or binds in its guides the whole force of the collision is received by the link, which is not sufficiently strong to resist such force, and consequently breaks off, choking up the mouth-pieces of the draw-bars and causes delay and inconvenience. Moreover, it frequently happens by some mistake or accident that the coupling-pin drops down into place before the link has entered the mouth of the draw-bar, thus obstructing the free passage of the link into the mouth of the draw-bar. In such case, when the cars collide in making the coupling the force of the collision is received either by the link or by the pin, which are not strong enough to withstand the shock, the

result being that one or both are broken. In order to obviate these defects, my invention contemplates the provision of devices whereby the pin-support is operated not by the links but by the impact of the cars themselves and of a yielding link. Frequently when carrying heavy loads or when ascending a grade serious accidents occur by reason of the fact that the force of the whole load is transmitted to a single pin in each draw-head and a single link connecting such pins. The single pins and link not being strong enough to sustain the force of the load, these parts break, thus causing an uncoupling of the car. It is one of the objects of my invention to avoid this by providing two pins and a link in each draw-head, thus providing a doubly-strong connection. It often happens that after a coupling is properly effected the pins are worked out of the links by the jerks and jolts of the cars, or by the vibrations of the links on account of the irregular motion of the cars. This has been found to be a serious defect, causing great inconvenience, delay, and frequently fatal accidents. In order to obviate this grave defect, my invention comprises an arrangement whereby the vibrations of the links are not transmitted to the pins.

My invention further contemplates various details of construction and arrangement of parts, all as hereinafter more fully described and claimed.

Referring to the drawings, Figure 1 is a perspective view of one end of a car with my improvements attached thereto. Fig. 2 is an end view of a car, showing my improvement attached. Fig. 3 is a side view, partly in section, showing two cars coupled in accordance with my invention. Fig. 4 is a detached horizontal sectional view of the pin-support, showing the arrangement of the pin-support in its keeper. Fig. 5 is an end view of a car with a slightly - modified form of my invention attached thereto. Fig. 6 is a side view, partly in section, of the devices shown in Fig. 5. Fig. 7 is a detail of the link and its spring and lug.

Similar letters of reference refer to similar parts throughout the several views.

A represents the car-body, to which is attached the usual draw-bar M, from the open mouth of which projects link O. To the rear

end of link O is attached a lug *b*, which when the link is projected to its fullest extent from the mouth *f* of the draw-bar bears against pin *a*, secured in the draw-bar. The slot *d*, extending rearwardly in the draw-bar from its mouth *f* and forming a continuation of said mouth, receives a stout spring P, the rear end of which bears against the rear wall of said slot and the front end of which is attached to or bears against the lug *b* on the link. This slot *d* also serves as a guide for the lug. Thus while the draw-bar is held rigidly to the car the link is permitted to yield. The advantages of this construction are obvious and many. It is always desirable to maintain a rigid connection between the car-body and draw-bar, as any movement of the draw-bar tends to throw the pin or link out of order. This tendency is obviated by my construction.

On top of the forwardly-projecting end of draw-bar M is a box or keeper S for the yielding pin-support Y. This pin-support Y consists of a flat plate, slotted, as at Q, forming two forwardly-projecting arms R. The box or keeper S is provided with a recess *e* to receive said plate Y, and to the front ends of the arms R, projecting beyond the face of said keeper, is attached a bumper or buffer plate L. The plate Y is provided with a rearwardly-extending reduced part U, about which is coiled a strong spring T, bearing at one end against the rear wall of the recess and at the other end against the shoulders *h*, formed on the said sliding plate. The action of the spring is to normally keep the plate, and consequently the buffer or bumper L, pressed outwardly. The outward movement of the plate is limited by stops V, engaging shoulders *i* on the plate. The coupling-pin N is carried in an upwardly-extending boss K on top of the box or keeper S, and its lower end rests normally on the spring-pressed plate Y, but in a position to drop down through the slot Q therein when said plate is pressed back, as herein more fully explained. The pin N is provided with a shoulder W on its upper end, which rests upon the top of the boss when the pin is allowed to fall down into place. In the upper end of pin N is a ring Z for connecting said pin by means of chain I to a similar ring H in the cranked end G of a lever-shaft C, supported in boxes D on the end of the car, the outer end E of said cranked lever-shaft extending beyond the side of the car in a convenient position to be operated, and thus operating the pin without getting between the cars. The pin may also be operated from the top of the car by means of a rod B, attached at F to the arm G of lever-shaft C.

In the slightly-modified form shown in Figs. 5 and 6 I replace rod B by a chain B', and I provide a differently-constructed cranked lever-shaft C', the arms E' and G' of which extend normally down from the main portion C', thus preventing the movements of the car

from operating said shaft and uncoupling the cars.

As shown in Fig. 3, the lug *b* on the rear end of link O is arranged vertically, but in order to prevent the said link from vibrating against the pin when said pin is down into engagement with the said link, I prefer to arrange said lug horizontally, as shown in Figs. 6 and 7, or in a plane with said link, in which case the vibrations of the link are vertical, and hence there is no contact between said link and pin.

The operation is as follows: The pin is elevated by means of either rod B or lever-shaft C until plate Y is pressed out by means of the spring T, when said pin will be supported. Two cars are then brought together. The link of each car enters the mouth *f* of the draw-bar on the other car. No obstruction is offered to the free entry of said links. When the cars approach each other sufficiently for buffers L to strike each other, each will, on account of the spring T, yield, and hence force back the sliding pin-supports Y, permitting the pins to drop down into place, as one pin is shown in place in Fig. 3. Should, however, the pin not be previously withdrawn the links O upon striking the pins N will yield on account of springs P, and thus prevent breakage.

I wish it to be distinctly understood that I do not limit myself to spiral springs in draw-head M and box S; but any spring or resilient material may be employed. Nor do I desire to confine myself to the specific construction shown, as many modifications may be resorted to without departing from the spirit or scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic car-coupler, the combination of a lever-shaft having two ends projecting downwardly, a connection between one end of said shaft and a coupling-pin, a draw-head, and a link, substantially as described.

2. In an automatic car-coupler, a link provided with a lug, in combination with a recessed draw-bar, a spring located in said recess and bearing against said lug, and a pin to limit the outward movement of said link.

3. The combination of a link yieldingly held in a recessed draw-bar, a pin normally held out of engagement with said link, and a yieldingly-held plate normally supporting said pin, substantially as described.

4. The combination of a rod extending to the top of a car, a coupling-pin, a connection between said pin and rod, a yielding support for said pin operated by a similar support on another car, a draw-head, and a link yieldingly held in a recess in said draw-head, as and for the purpose described.

5. In an automatic car-coupler, the combination of a draw-head, a link carried thereby, a pin, a pin-support consisting of a slotted plate carrying a buffer and provided with shoulders, pins limiting the outward move-

ment of said plate by engaging said shoulders, and a spring for normally forcing said plate and buffer outward, substantially as described.

- 5 6. In an automatic car-coupler, the combination of a recessed draw-head, a pin located in said head, a link provided with a lug, a spring located in said recess and normally pressing said lug into engagement with said
10 pin, a box or keeper, a spring-pressed plate carried therein, a coupling-pin supported by said plate and adapted to fall into engagement with said link when said plate is re-

tracted, said plate adapted to be operated by a buffer on another car, and means for withdrawing said pin from engagement with the link operated from either top or the side of the car, all substantially as described, and for the purpose specified. 15

In testimony whereof I affix my signature in presence of witnesses. 20

JAS. D. YOUNG.

Witnesses:

JEFF. F. MEEKS,
TOM SCOTT,
THOS. P. BISHOP.