W. E. BUSS.

AUTOMATIC CAR COUPLING.

APPLICATION FILED DEC. 8, 1919.

1,365,087. Patented Jan. 11, 1921.

FIG. 1

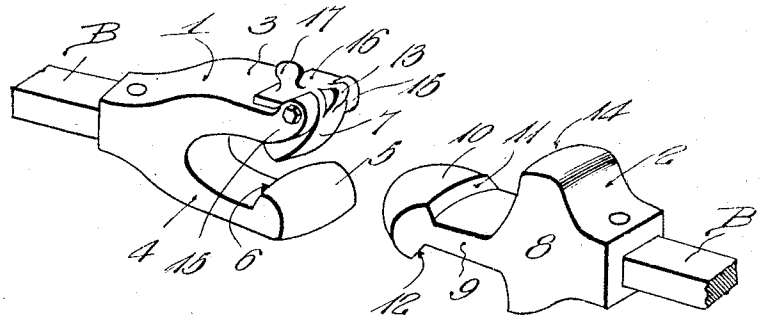


FIG. 2

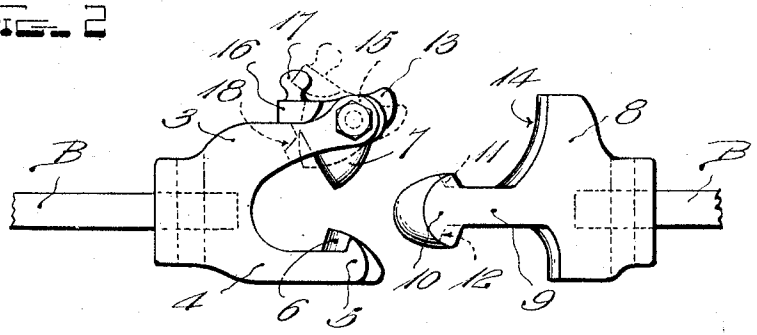


FIG. 3

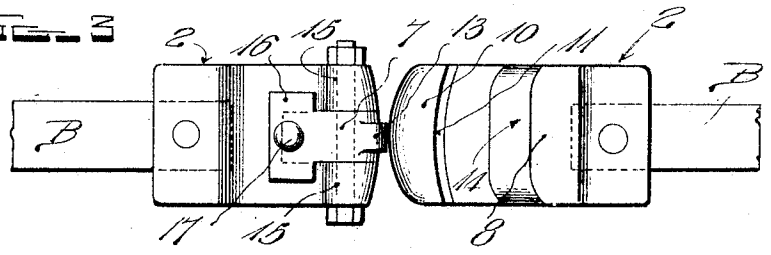
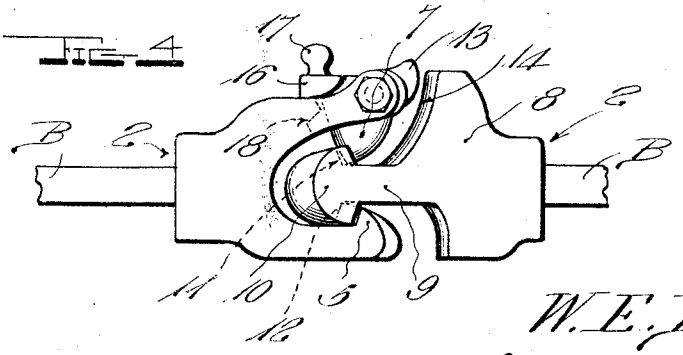


FIG. 4



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AUTOMATIC CAR-COUPLING.

1,365,087. Specification of Letters Patent. Patented Jan. 11, 1921.

Application filed December 8, 1919. Serial No. 343,220.

To all whom it may concern:

Be it known that I, WALTER E. BUSS, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented certain new and useful Improvements in Automatic 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.

This invention relates to improvements in car-couplers and has more particular reference to a coupler which is especially designed to be used on mine cars, although it is not to be restricted to such use.

The principal object of the invention is to provide a coupler of the above mentioned type which is of such construction and arrangement, that it will not easily uncouple or become broken when the cars turn around short curves, because of the relative lateral movement between the parts of the coupler.

Another object of the invention is to provide a coupler of the above mentioned type which is ever in coupling position, whether on curves or not, one in which there are no levers to operate, thus saving time and expense.

A further object of the invention is to provide a coupler which is exceedingly simple, one in which the parts may be removed and replaced with the greatest facility, one in which the operation is automatic and which has means incorporated therewith to serve as a buffer or bumper for the cars.

A still further object of the invention is to provide a coupler which has means incorporated therewith which will insure return of the latch to locking position.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view of a coupler constructed in accordance with my invention.

Fig. 2 is a side elevation thereof, the parts being shown in a position preparatory to being coupled.

Fig. 3 is a plan view of Fig. 2.

Fig. 4 is a view like Fig. 2, showing the coupler in locked or coupled position.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numerals 1 and 2 indicate a pair of coupling heads, the numeral 1 indicating the female member and the numeral 2 indicating the male member.

The coupling head 1 is substantially U-shaped and it includes upper and lower arms 3 and 4 respectively. Arm 4 is provided at its outer end with an enlargement 5 which forms in effect a shoulder, the rear face of which is rounded or convex as indicated at 6 and the forward face of which is tapered downwardly and forwardly as shown. The upper arm 3 is provided with a gravity actuated latch 7.

The coupling head 2 includes a body portion 8 which is provided with an extension 9 having an enlargement or head 10 at its free end. As is obvious, the extension 9 and head are adapted to be inserted between the arms 3 and 4, and when in this position the latch 7 drops behind the head 10 and retains the coupling heads in locked position, as shown in Fig. 4. The enlargement or head 10 is somewhat thicker than the extension 9 and a portion thereof extends above the upper face of the extension and a portion also extends below the opposite or lower face of the extension and this construction forms in effect a pair of shoulders, one of which is adapted to engage shoulder 5 of the coupler head 1, and the other of which the latch 7 engages, and retains the members in the position shown in Fig. 4. In order to permit lateral movement of the coupling heads when the cars make short turns around curves in the track, I make the rear faces of the head 10 curved as shown in 11 and 12, and the face 12 co-acts with the convex face 6 of the shoulder 5 and thus permits a rocking action of the head on the shoulder 5. On the other hand the curved face 11 co-acts with the rear face of the latch 7 which is also curved in a line similar to that indicated at 6, thus permitting these parts to have the same action as the contacting faces 12 and 6.

When the latch moves to the position indicated in dotted lines in Fig. 2, it sometimes has a tendency to stick, and naturally it will not drop to locking position very readily. To avoid this I provide a projection 13 on the forward or outer face of the latch 7, the projection being preferably disposed near the top of the latch, and being

adapted to be engaged by an inclined face of the body 8 of the coupling head 2, which I have here designated as an abutment 14. So, it will be seen that should the latch stick it will be returned to locking position when the coupling heads are brought together as the abutment 14 strikes the projection 13 and rocks the latch downward on its pivot.

The latch 7 may be mounted in any suitable manner, however, it will be seen that I prefer to bifurcate the upper arm 3 of the female member 1 to provide spaced ears 15 between which the latch is pivoted. Downward movement of the latch is limited by means of the stop 16 which is a part thereof and which is of a length greater than the space between the ears 15, so that it will span or extend across this space and limit the movement of the latch in a downward direction. A knob or handle 17 may be provided in order to permit the latch to be lifted whenever desired. As is usual the coupler heads will be secured to a car by the draw bars B which are carried on the opposite ends of the cars.

In operation it will be seen that the head 10, on the free end of the extension 9, will ride up and over the downward inclined face of the enlargement 5 and at the same time will engage the downward curved face of the latch and raise it to the position indicated in dotted lines, and when the head 10 is forced inwardly far enough the latch 7 will automatically drop by reason of its weight, behind the curved face 11 of the head 10 and retain the coupling heads in locked position. In the event that the latch should stick, as already set forth, the coupling heads may be jammed together enough to cause the abutment 14 to engage the projection 13 and thereby cause the latch to drop to locking position. Upward movement of the latch is limited by the engagement of its rear face with the rear wall 18 between the ears 15. Should the cars jam together, the coupling heads will also be forced together and the coupling head 1 will strike the inclined faces of the body 8 of the coupling head 2, which will serve as a bumper for the cars.

With a coupling of the foregoing construction it will be seen that the heads may be brought to coupling position on very short curves, and during the travel of the car around curves free relative lateral movement of the heads 1 and 2 will be permitted. It has very few parts and they are of such construction and arrangement that they may be readily repaired. As the coupling heads themselves act as bumpers, the space between the cars is practically the same at all times and insures safety for the brakeman, that is, accidental pushing together of the cars at the time they are being uncoupled is prevented to a great extent. No setting or opening of the jaws is necessary with the coupler of this construction, as it is positively automatic in its action. It will be seen that the brakeman will not have to use his hands to set the coupler as is generally customary, thereby preventing injury to the hands of the brakeman.

From the foregoing description taken in connection with the accompanying drawings it is believed that the operation and advantages of my coupler will be thoroughly understood, therefore, further description of the device is deemed unnecessary.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred form of the same, and that various minor changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

I claim:

An automatic car-coupler comprising a substantially U-shaped coupling head including upper and lower spaced arms, a gravity actuated latch pivotally mounted on said upper arm, said latch being provided on its forward face with a projection, a second coupling head including an extension with a head on its free end which is adapted to be inserted between said upper and lower arms and engaged by the latch, said last named coupling head being also provided with an abutment which is designed to engage the projection on the latch and insure return of the latter to locking position.

In testimony whereof I have hereunto set my hand.

WALTER E. BUSS.