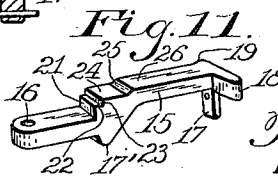
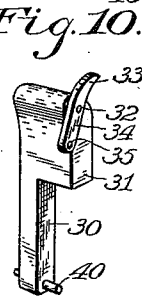
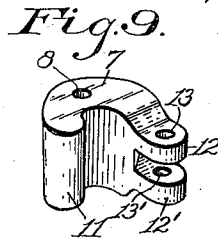
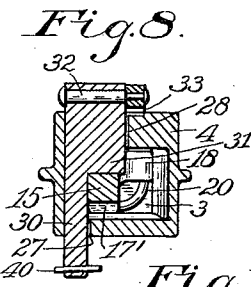
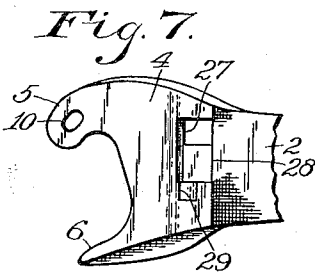
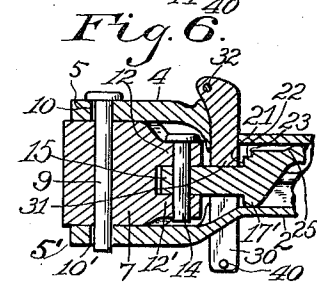
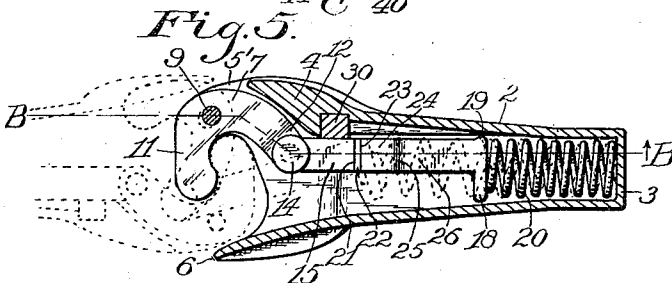
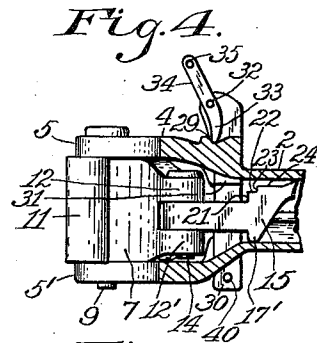
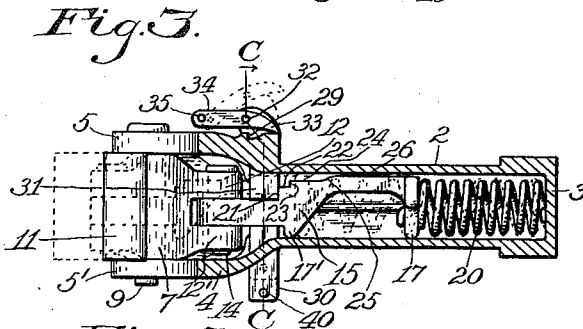
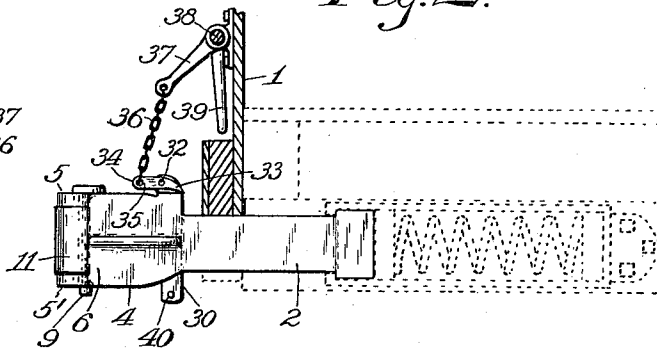
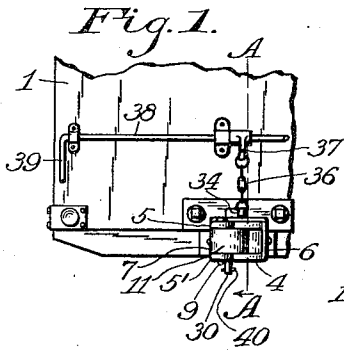


P. C. BROWN.
AUTOMATIC CAR COUPLING.
APPLICATION FILED SEPT. 17, 1910.

1,031,618.

Patented July 2, 1912.



WITNESSES:

J. H. Gardner.
H. R. Woddell.

INVENTOR:

Philip C. Brown,
BY
E. T. Silvius,
ATTORNEY.

UNITED STATES PATENT OFFICE.

PHILIP C. BROWN, OF NEW ALBANY, INDIANA.

AUTOMATIC CAR-COUPLING.

1,031,618.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed September 17, 1910. Serial No. 582,465.

To all whom it may concern:

Be it known that I, PHILIP C. BROWN, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented certain new and useful Improvements in Automatic Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to the class of couplers with which railway cars are equipped for coupling the cars together in trains, the invention having reference particularly to automatic car couplers that are adapted to interchange with the standard type of car couplers commonly in use.

The object of the invention is to provide an automatic car coupler having standard contours that will permit pulling strains to be exerted along substantially straight lines or in vertical planes parallel to the longitudinal middle plane of the cars, in order to obviate the possibility of couplers becoming disconnected in case of a breakage of knuckle pins due to buffing strains; a specific object being to provide means for positively connecting the knuckle to the main part of the coupler so that the knuckle may be relied on for pulling purposes independently of the knuckle-pin whereby the knuckle is pivoted to the main part.

Another object of the invention is to provide an automatic car coupler that will be adapted to permit coupling of cars to be made easily on curves of the track; a still further object being to provide a freight car coupler that will be adapted to be easily and cheaply repaired when incapacitated through natural wear of the knuckle.

The invention consists in an improved car coupler comprising a main part, a knuckle mounted in the main part to move longitudinally therein and also to swing pivotally and provided with means for detachably connecting the knuckle to the main part for sustaining draft strains independently of the pivoting means; and the invention consists further in the novel parts and combinations and arrangements of parts as hereinafter particularly described and claimed.

Referring to the drawings Figure 1 is a fragmentary end elevation of a car body to which the improved coupler is applied; Fig.

2, a side elevation of the coupler shown in its relation to the car body and draft rigging; Fig. 3, a vertical section of the coupler approximately on the line A A in Fig. 1; Fig. 4, a fragmentary reproduction of the preceding figure with parts thereof in different positions; Fig. 5, a horizontal sectional plan view of the coupler; Fig. 6, a fragmentary vertical section approximately on the line B B in Fig. 5; Fig. 7, a fragmentary plan of the main part of the coupler; Fig. 8, a transverse section approximately on the line C C in Fig. 3; Fig. 9, a perspective view of the improved knuckle; Fig. 10, a perspective view of the improved locking-pin or dog; and Fig. 11, a perspective view of the draft-bar with which the improved knuckle is provided.

Similar reference characters refer to similar parts throughout the various figures of the drawings.

As clearly illustrating the character of the coupler it is shown in connection with a freight car body 1; and the main part of the coupler comprises a hollow body 2 having a plate 3 in its rear end and a head 4 on its opposite or forward end, the head having two pivot ears 5 and 5' thereon and a guard arm 6 opposite the ears. A knuckle comprising a main part 7 is adapted to fit closely between the two ears and has a pivot hole 8 therein into which a knuckle-pin 9 is removably inserted, the pin closely fitting into the hole and extending therethrough and also through two slots 10 and 10' that are formed in the ears 5 and 5', respectively, the slots extending at oblique angles to the line of draft so that the knuckle can move slightly forward or rearward and also along the oblique angle, as well as pivotally. The knuckle has a nose 11 conforming to the standard contour, and the rear or tail end of the knuckle has two ears 12 and 12' thereon in which pivot holes 13 and 13' are formed, respectively, and which receive a hinge-pin 14 to which is connected a draft-bar 15 provided with a pivot hole 16 in one end thereof to receive the hinge-pin. The draft-bar extends longitudinally into the body 2 substantially at right angles to the nose 11, so that when pulling strains are exerted on the nose the force is exerted on the draft-bar longitudinally thereof and substantially in a straight line through the nose of the knuckle, as will further appear. The draft-bar does not fill the hollow body

2 but is arranged adjacent to one of the vertical walls thereof and its rear or inner end has a guide-finger 17 on its under side and preferably also another guide-finger 17' near its forward end, to ride on the bottom of the body part, the rear end having also a laterally extending finger 18 to be guided against one side wall of the body and a relatively short guide-finger 19 adapted to slide against the opposite wall of the body, for guiding the inner end of the draft-bar. A coil-spring 20 is placed in the inner end portion of the body 2 and is seated against the plate 3 and suitably connected to the inner end of the draft-bar, for pushing it outward forwardly in order to open the knuckle when unlocked.

The draft-bar has a forwardly facing shoulder 21 on its upper side from which a step 22 extends rearward to another forwardly facing shoulder 23 formed rearward of the shoulder 21, and from the shoulder 23 another step 24 extends over to a forwardly facing incline 25 formed at a suitable distance from the shoulder 23 and extending upward to the top 26 of the draft-bar. The hollow head 4 has a vertical guideway 27 in its bottom and a relatively broader guideway 28 in its top, the upper side of the top being provided with a rearwardly facing shoulder 29 adjacent to the guideway 28. A locking-pin comprises a shank 30 which is movable vertically in the guideway 27 and a relatively broader head or dog 31 that is movable vertically in the guideway 28, the shank being at one side of the draft-bar and the dog extending across the top of the draft-bar against the shoulder 21. The dog is provided with a pivot 32 on which is mounted a device for temporarily supporting the locking-pin when raised to release the draft-bar, and it comprises a prop 33 adapted to be moved so as to operate as a cam for raising the draft-pin until stopped against the shoulder 29, the prop being provided with an operating arm 34 having an aperture 35 with which is connected a chain 36 that is connected to an arm 37 secured to the shaft 38 which is mounted rotatively on the end of the car-body 1 and provided with an operating handle 39. The lower end portion of the shank 30 preferably is provided with a retaining pin 40 or similar device for preventing the accidental removal of the locking-pin.

In practical use, when a car is being drawn by means of the knuckle, the shoulder 21 is in contact with the dog 31 and the knuckle-pin 9 is moved slightly forward but not entirely to the forward ends of the slots, so that the draft strains are not resisted by the knuckle-pin but are transferred to the draft-bar and the locking-pin. When cars are pushed with the knuckles

closed the pin 9 is in contact with the rearward ends of the slots. In order to connect two couplers together the handle 39 is moved forward so as to operate the prop 33 and move it to the position shown in Fig. 4, which permits the spring 20 to swing the knuckle to open position illustrated by broken lines in Fig. 5, in which a companion coupler is also indicated by broken lines in coupled position. After propping up the locking-pin the attendant may leave and attend to other matters, since the draft-bar 15 pushing the knuckle open advances until the incline 25 comes in contact with the dog 31 and further raises the dog onto the top 26 of the draft-bar, which is sufficient to lift the prop 33 clear of the top of the head 4 and permit it to swing by gravity to the position as indicated by broken lines in Fig. 3, the locking-pin being then supported by the draft-bar so that when the draft-bar is pushed rearward the dog is carried down by gravity forward of the shoulders 23 and 21. When one coupler is pushed against another with one or both knuckles open the open knuckle or knuckles interlock as usual, the spring 20 being compressed by the force exerted in closing the knuckles. If the cars are on a straight track the draft-bar is pushed back until the dog 31 can drop down forward of the shoulder 21. In case the coupling is made on a curved track so that the knuckles can not be forced back entirely to normal position, the draft-bar may be pushed rearward only sufficiently far to permit the dog 31 to drop down onto the step 22 at the front of the shoulder 23, but this locks the draft-bar so that the knuckle can not swing open and the car may be drawn until straight track is reached, and when the pulling strains are somewhat diminished the knuckle is pushed around farther so that the draft-bar is also pushed rearward until the dog falls in front of the shoulder 21.

Having thus described the invention, what is claimed as new, is—

1. A coupler including a main part, a knuckle guided pivotally in the main part, a locking-pin mounted to move vertically in the main part, a gravity prop for temporarily holding the locking-pin in elevated position, and a draft-bar hinged to the knuckle and having a shoulder and also an incline portion thereon facing toward the knuckle, the incline portion on forward movement engaging the locking-pin when propped and relieving the prop in supporting the locking-pin.

2. In a car coupler, the combination of a hollow main part, a spring seated in the main part, a draft-bar in contact with the spring and normally forced forward longitudinally thereby, the draft-bar having a shoulder thereon facing forwardly, a lock-

ing-pin mounted movably in the main part
opposite the shoulder and normally hold-
ing the spring under compression, a knuckle
hinged to the draft-bar and movable longi-
tudinally and pivotally in the main part,
and means cooperating with the knuckle
and the main part guiding the knuckle longi-
tudinally and pivotally.

3. In a car coupler, the combination of a
hollow main part having a guideway in its
bottom and a relatively broader guideway
transversely in its top, the top having a
recess in its upper side adjacent the guide-
way, a locking-pin movable in the guide-
ways and having a relatively broader upper
portion filling said broader guideway, a

prop pivoted between its ends to the broader
portion of the locking-pin above the recess,
a draft-bar movable in the main part under
said broader portion of the locking-pin
and having a forwardly-facing shoulder
thereon normally opposed to said broader
portion, and a knuckle in the hollow main
part hinged to the draft-bar and pivotally
connected to the main part.

In testimony whereof, I affix my signa-
ture in presence of two witnesses.

PHILIP C. BROWN.

Witnesses:

C. H. MILLER,
SAM P. VOGT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."