

WILLIAM W. PITMAN.

Improvement in Car-Couplings.

No. 127,188.

Patented May 28, 1872.

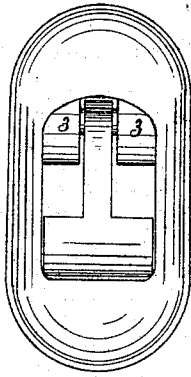


Fig 1

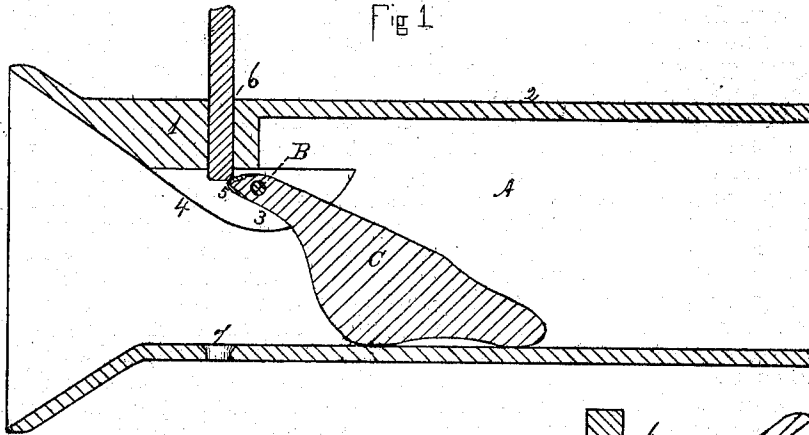


Fig 2

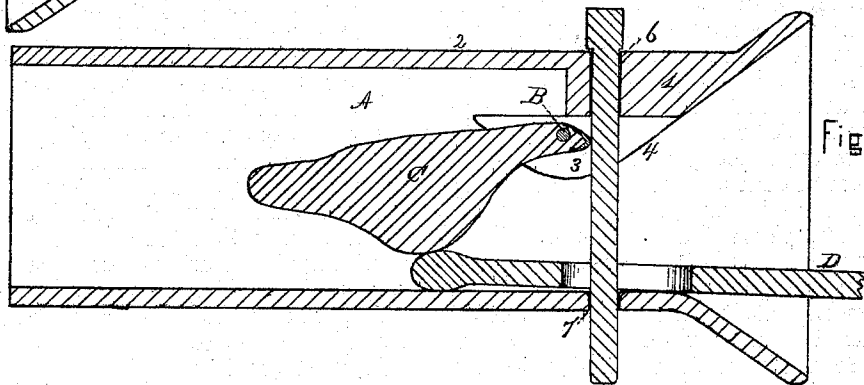


Fig 3

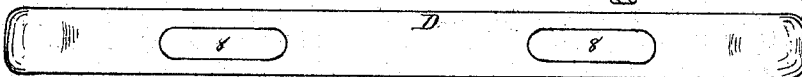


Fig 4

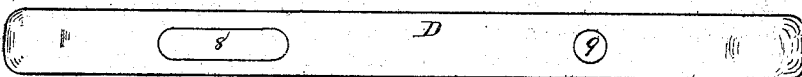


Fig 5

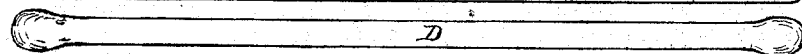


Fig 6

Witnesses { *A. C. Caswell,*
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UNITED STATES PATENT OFFICE.

WILLIAM WILSON PITMAN, OF FREEHOLD, NEW JERSEY.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 127,188, dated May 28, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, WILLIAM WILSON PITMAN, of Freehold, in the county of Monmouth and State of New Jersey, have invented certain Improvements in Car-Couplings; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

Figure 1 is a front end view of a car-coupling having my improvements applied thereto. Fig. 2 is a longitudinal vertical section of the same with the coupling-pin in position ready to drop and hold the link-bar. Fig. 3 is a similar longitudinal section with the link-bar in place and held by the pin. Figs. 4 and 5 are plan views of two different styles of my improved link-bar; and Fig. 6 is an edge view.

A is the box, which in its general outline features is of any ordinary construction, and having the usual flaring mouth. I make the part 1 as seen, somewhat thicker or deeper than the remainder 2 of the top, in order to afford greater certainty of a vertical support and position to the coupling-pin, and also provide side projections 3 3 for purposes hereinafter stated. These projections have an upward incline or curvature at their front edges, as seen at 4. A bolt, B, passes through the box and through the projections 3 3, which thus serve as bearings, as seen, and also through the upper end of a gravitating trip-lever, C, which is hung between the projections, and is formed substantially in the shape shown in the drawing, the weight and leverage of its lower arm extending, as it does, almost wholly to the rear of its axis or fulcrum, being sufficient to prevent it from accidentally swinging upward and permitting it to rise to let the bolt drop when and only when positively lifted by the coupling-bar. This lever, when in the position shown in Fig. 2, rests upon the bottom of the box, but so hung that a link or other body being pushed under it from the front it is at liberty to swing backward and upward. Appropriate washers or separators are placed between the lever and the projections 3 3. Its upper and forward end 5 reaches to the front sufficiently to come slightly beneath the rear portion of the hole 6 provided for the coup-

ling-bolt, and so as to sustain the bolt in vertical position ready to drop when and only when the bottom of the lever has been pushed or swung back, as above stated. The end 5 is appropriately shaped, also, to permit the bolt freely to drop without impediment when the lever is so swung back. A hole, 7, directly in vertical line with the bolt-hole 6, is provided to receive the lower end of the bolt when the coupling is effected. The side projections 3 at their extreme forward ends extend beyond the extreme forward tip of the lever, so as to form guards or protections to prevent any possibility of its being struck or injured by the coupling link-bar, and their downward inclinations or curvatures afford a guide or way to insure the end of the coupling-bar or link being directed with perfect certainty to the under side of the lever, in case it enters in an upward direction, when two cars come together to be coupled. The curve at the front of the lever subserves also the same purpose, and this curve is continued, but in the reverse direction, as seen, down to and under the weighted bottom of the lever. This bottom part is also made broader than its tongue part, so as to fill nearly the whole breadth of the open space of the box. The tip 5 of the gravitating-lever may, if desired, be case-hardened or tipped with steel, to render it more durable. D represents my improved solid coupling-bar, not made in the form of a mere link, open from end to end, as is customary, but solid throughout, with the exception of two short slots, 8 8, each about equally distant from the center of the bar. This peculiarity of construction has especial value and importance in connection with the apparatus above described, and for which I was led to devise it.

It will be seen from the preceding description that my bar D, being placed upon one car which is being moved up to be automatically coupled to another, cannot well, because of its short slots and the ready dropping of the coupling-bolt as the bar lifts the lever, be forcibly or accidentally pushed in far enough for the slot to pass the bolt; but if, perchance, it should so pass, then the end of the bolt would rest but an instant on the solid part of the bar, and the recoil of the car would the next instant draw back the bar, and the bolt would drop to place and effect the coupling. It will

also be seen that when in position in the draw-head or box A the bar always lies in equipoise in a horizontal position, without the need of any recess cut expressly in such draw-head or of any other contrivance to receive its inner end and prevent its forward end from drooping. The construction of the bar itself insures its lying horizontally ready for self-coupling, however it may be jostled or shifted. If its holes were not placed as they are, relatively to its center, this could not be, nor could it if one end were materially heavier than the other. A swell may be made at each end of the bar, and this also insures a lifting of the lever high enough at the moment of the dropping of the bolt to clear it from contact with the tip of the lever. It also aids in keeping the rod in position.

As a modification of this bar I sometimes make it with a bolt-hole, 9, at one end, instead of a slot, the slot, however, being at the other end, as above described, and the hole being relatively situated with regard to the center of the bar, substantially equi-distant with the slot from such center. This is useful to avoid in certain cases too much play, and it will be understood that the slotted end is to project from the car to which it is attached, and that it operates as heretofore set forth. This hole in the bar might be used for the bolt of any ordinary coupling, and the bolt itself would thus positively preclude any possibility of the drooping of the forward or slotted end, so as to prevent its properly entering the flange or mouth of the coupling.

My bars can be connected with any car-hook or any bolt-coupling. The mouth or flange of the coupling-box may be cast separate from the box, if desired.

The advantages due to my improvement are in part as follows: All springs or complicated contrivances are dispensed with in the construction. With the exception of the bolt and link-bar there is but a single working piece, and that is a trip and weighted lever all in one, and they move coincidentally and simultaneously, because they are one. There is absolutely nothing likely to get out of order; but if by extraordinary accident the lever should be broken it can in a moment be replaced by a duplicate one.

Another advantage, which I deem an important one, is that the entire construction is

such, by reason of its simplicity and arrangement and the fewness of the parts, that there is nothing to prevent the use of ordinary links whenever desired without any other change whatever in the apparatus, and whether the lever be left in or not is in such case immaterial. In such case it would be equally as effective as couplings of ordinary construction, but would not bring into active use my improvements. This adaptation of it without the need of any alteration whatever, and without any of my novel features being in the way in such case, has great value, as many improvements in this class of inventions are of such a nature that they are useless or worse than useless, except with all the appliances appertaining to such special improvements.

The construction of the connecting-bar D and the position of the weight of the trip-lever C, when holding the bar beneath it, are such that the bar always, by necessity, assumes when at rest a horizontal position, so as to be always ready to enter the mouth or flange of a coupling-box, and yet the hold of the lever is such and so gentle that it is always free to permit its outer or free end to be deflected upward or downward, as the exigencies may demand. When in the act of coupling it enters the mouth or flange of the other car's coupling-box, such box, as is well understood, being sometimes higher and sometimes lower, dependent upon whether the car be empty or loaded. At once, however, upon entering such box having therein my improvements, and assuming its proper position, it is guided to and resumes its horizontal position.

Claims.

1. In combination with the trip-lever C, constructed and operating as described, I claim the coupling-bar D, constructed as described, and having its enlarged ends, as and for the purpose set forth.

2. I claim the coupling-box, constructed with its deep part 1 and side guides 3 integral therewith and with the vertical hole 6 through such part 1, in combination with the trip-lever C, coupling-bar D, and coupling-pin, the whole operating as described.

WILLIAM W. PITMAN.

Witnesses:

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