No. 686,756. Patented Nov. 19, 1901.

W. A. PALMER.

CAR COUPLING.

(Application filed Jan. 31, 1901.)

(No Model.)

Fig. 1.

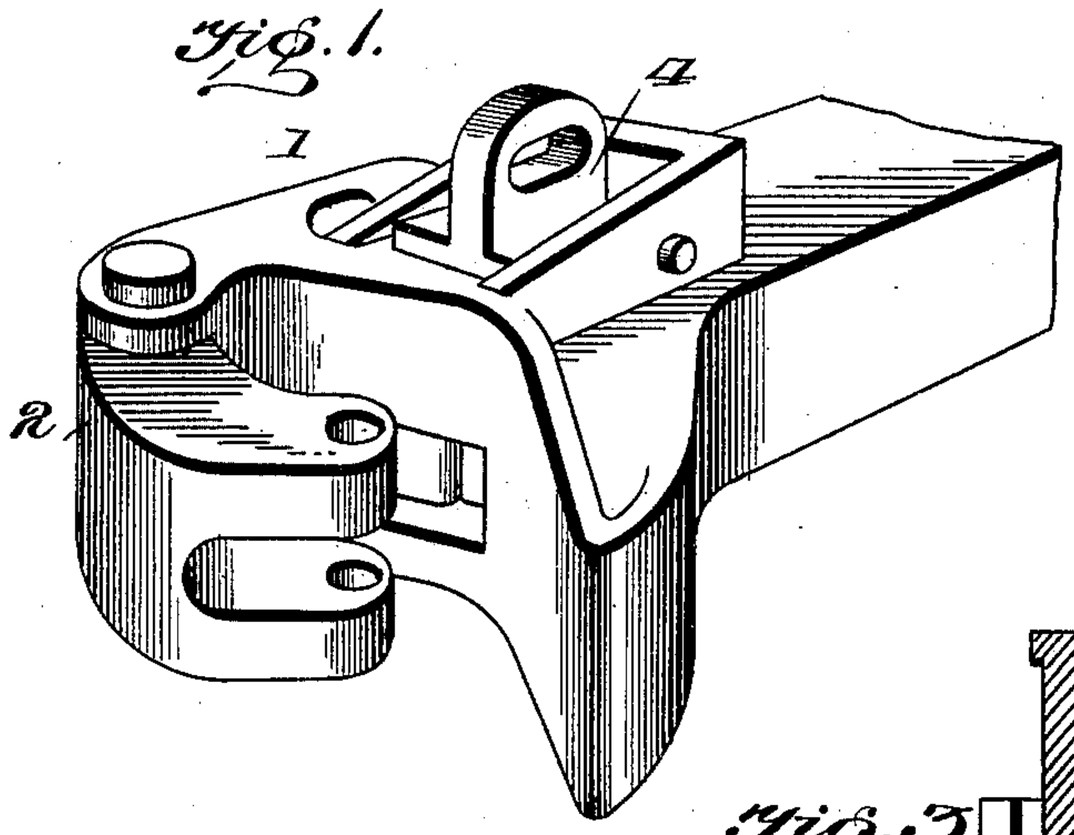


Fig. 2.

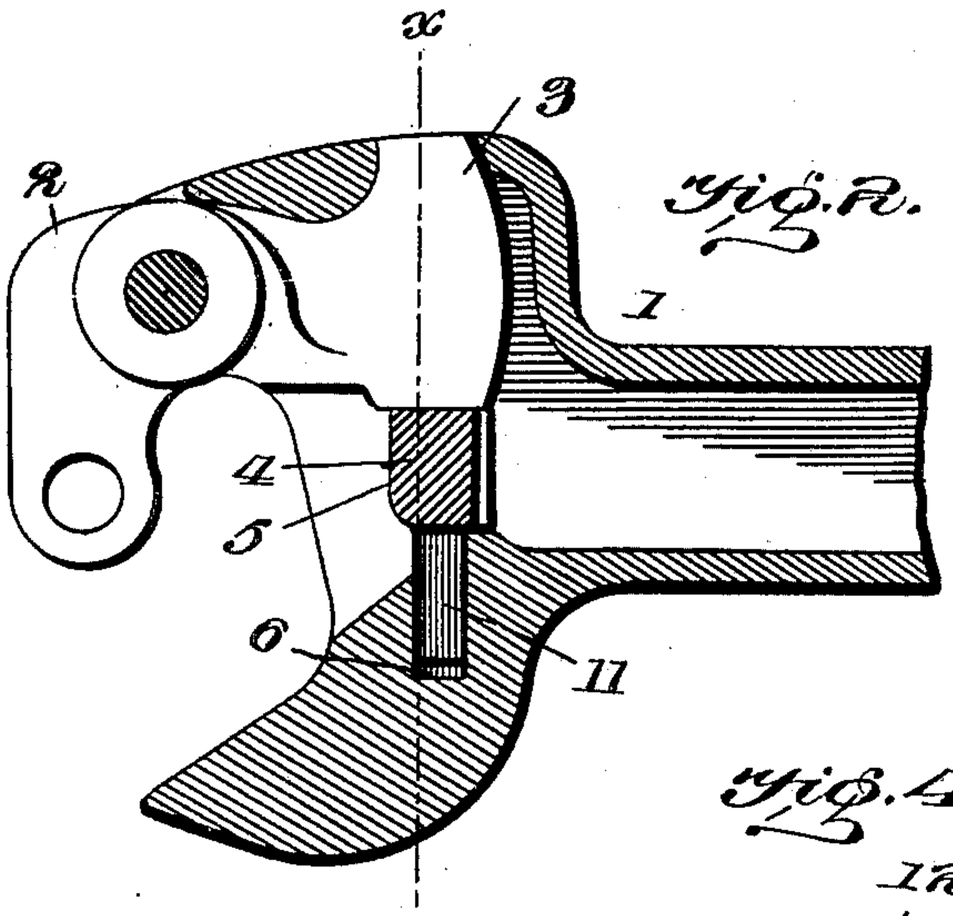


Fig. 3.

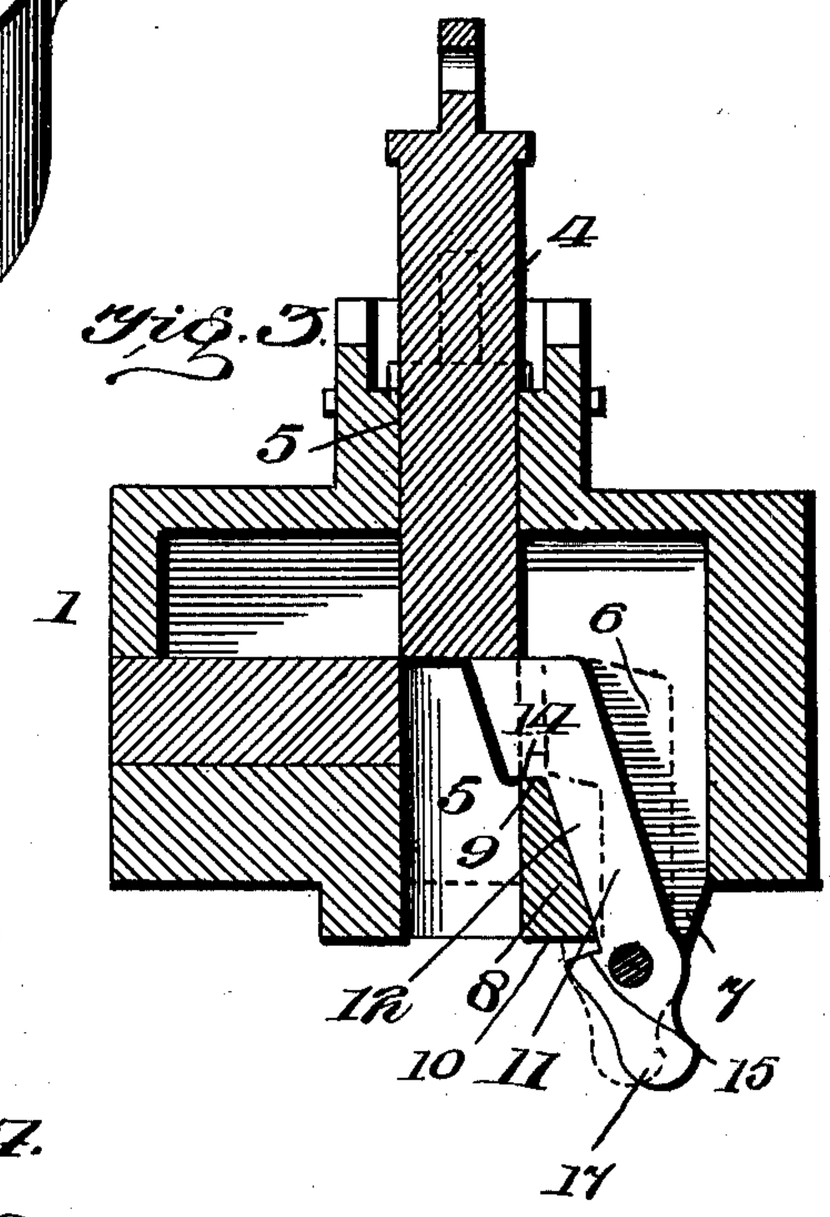
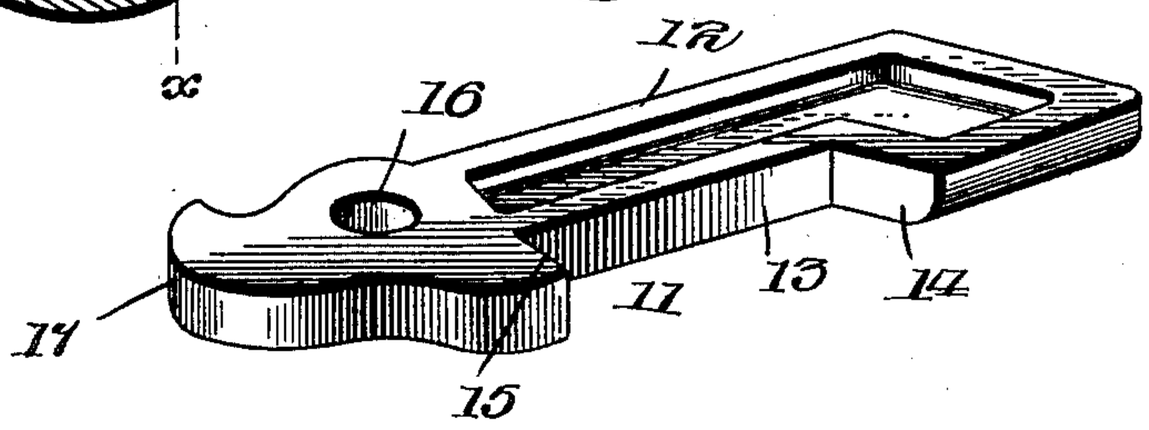


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM A. PALMER, OF ENSLEY, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 686,756, dated November 19, 1901.

Application filed January 31, 1901. Serial No. 45,506. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. PALMER, a citizen of the United States, residing at Ensley, in the county of Jefferson and State of Alabama, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to improvements in car-coupling devices, and has particular reference to that class of couplers known as the "Janney" type.

The invention has for its object the provision of a new and novel mechanism for holding the locking-pin elevated out of locking position and for limiting the movement of said holding mechanism, and is designed as an improvement on the coupling device shown and described in a patent granted to me on April 17, 1900, and numbered 647,667. In said patent a pivoted dog is employed which is arranged to drop beneath the locking-pin when the same is elevated, and thus support it. This dog is arranged to be moved out of operative relation by the movement of the knuckle during the coupling of the cars. In the construction set forth the dog is disposed within the coupler-head and has a free pivotal movement. There are certain objections to this arrangement in that it frequently occurs that the gravitating dog will not perform its office and drop into the path of the locking-pin when the latter is raised. This may happen because of the accumulation of dirt or rust or the combination of the two or because the dog is thrown so far back that it passes the center of gravity and will not return to its proper position. Another drawback to the construction resides in the fact that often after the locking-pin has been raised it is desirable to drop it again without uncoupling the cars, and under said construction this could only be accomplished by moving the cars to uncouple them and then bringing them together again.

The object of the present invention is to overcome all of the above objections by providing a suitable pin-supporter that can be operated manually as well as automatically and constructed so that its movement is limited to such an extent that it cannot pass its center of gravity and will therefore always automatically perform its function.

To this end the invention consists in combining with the swinging knuckle and locking-pin of a coupler a gravity-dog of novel construction having a portion projecting from the coupler-head, whereby it may be manually operated, and, furthermore, being so constructed that the swinging movement thereof is limited.

To the accomplishment of these several objects and advantages the construction shown in the accompanying drawings and described in the following specification is preferred; but it will be understood that this construction is open to slight change and modification within the scope of the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a coupling device of the well-known Janney type, to which my invention is designed to be applied. Fig. 2 is a horizontal sectional view of the coupler. Fig. 3 is a vertical section on the line $x\,x$ of Fig. 2, showing the relation of the improved gravitating dog when holding the pin in elevated position. Fig. 4 is a perspective view of the improved dog detached from the coupler.

Similar numerals of reference designate similar parts throughout the several figures of the drawings.

In the construction there is shown a coupler-head (designated 1) having pivoted thereto a knuckle 2, which is provided with the usual tailpiece or arm 3. Slidably mounted in the coupler-head is a vertically-disposed locking-pin 4, a suitable opening 5 being provided for this purpose, and said pin is arranged to drop in front of the tailpiece 3 when the knuckle is moved to its operative position, and thus lock the same. This is the usual and well-known construction and in itself forms no part of the present invention. Associated therewith is the improved pin-supporting dog, which is preferably constructed and arranged in the following manner:

The coupler-head is provided with a transverse opening 6, located at one side of the pin-orifice 5 and communicating therewith at its upper end, said opening 6 also passing through the bottom of the head, which is preferably provided at this point with depending hinge-ears, as 7, arranged on opposite sides thereof. This forms a partition 8, having flat

upper and lower faces 9 and 10. Pivotally mounted in the opening 6 is the improved supporting-dog 11. This dog, as clearly illustrated in Fig. 4, comprises a shank 12, having a notch or inset portion 13, forming a pair of shoulders 14 and 15 upon the same side of the dog. One end of the shank is provided with an opening 16 for the reception of the pivot-bolt, and, furthermore, has an arm extension 17. The supporting-dog is pivotally connected to the ears of the coupler-head, whereupon the partition 8 will be disposed in the cut-away portion 13 of the same and the extension 17 will project from the under side of said head. When, therefore, the locking-pin 4 is raised, the dog will drop beneath it, and the shoulder 14 will rest upon the face 9 of the partition. At the same time the backward movement of the dog is limited by the engagement of the shoulder 15 with the face 10 of the partition.

The operation of the coupler and supporting-dog is similar to that described in the above-mentioned patent. When the pin is raised, the gravity-dog drops beneath it and automatically holds it in raised position, and when the knuckle is coupled it is automatically moved from beneath the same to permit the pin to drop to its locking position. The dog, however, is limited in its swinging movement by its shoulders 14 and 15 engaging, respectively, the upper and under faces of the partition 8. It will therefore be seen that it cannot swing beyond its center of gravity, and will therefore always move to its supporting position when the locking-pin is raised sufficiently. Furthermore, when in the supporting position it rests directly upon the partition, thereby relieving the pivot of the strain. Should it become desirable for any reason to operate the device manually, it may be easily done by operating the projecting portions 17. For instance, should the wrong pin be raised the brakeman need only press against the projecting handle portion either with his hand or foot, it being especially convenient for this latter mode of operation, whereupon the dog will be moved out of its operative relation and the pin will drop back.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

1. In a car-coupler, the combination with a head having a pivoted knuckle, of a locking device for said knuckle, and a supporting-dog pivoted to the head and arranged to hold the locking device out of operative relation with the knuckle, said dog being provided with an offset portion arranged to engage the exterior portion of the head to limit the swinging movement of said dog.

2. In a car-coupler, the combination with a head having a pivoted knuckle, of a locking device for said knuckle, and a supporting-dog pivoted to the head and arranged to hold the locking device out of operative relation with the knuckle, said dog being provided with a handle extension projecting from the coupler-head and also having an offset portion arranged to engage an exterior portion of the head to limit the swinging movement of said dog.

3. In a car-coupler, the combination with the coupler-head having an interior chamber provided with a partition, of a knuckle pivoted within the chamber, a locking device for holding said knuckle, and a supporting-dog pivotally mounted within the chamber and arranged to hold the locking device out of operative relation with the knuckle, said dog having a pair of shoulders arranged to engage different portions of the partition to limit the swinging movement of the dog.

4. In a car-coupler, the combination with a coupler-head having an interior chamber provided with a partition, of a knuckle pivoted within the chamber, a locking device for holding the said knuckle, and a supporting-dog pivotally mounted within the chamber and arranged to hold the locking device out of operative relation with the knuckle, said dog having a cut-away portion in one side forming a pair of shoulders which are arranged to alternately engage the opposite edges of the partition to limit the swinging movement of the dog.

5. In a car-coupler, the combination with a coupling-head having an interior chamber provided with a vertically-disposed partition, of a knuckle pivoted within the chamber, a locking device for holding said knuckle, a supporting-dog pivotally secured at the lower side of and arranged within the head, said dog being adapted to support the locking device in its inoperative position and having a cut-away portion in one side forming a pair of shoulders which are arranged to alternately engage the upper and lower edges of the partition, and an extension arranged upon the lower end of the dog and projecting from the under side of the head to form an operating-handle.

In testimony that I claim the forgoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM A. PALMER.

Witnesses:
E. L. BOONE,
W. D. COX.