E. F. PENDEXTER.

CAR COUPLING.

APPLICATION FILED MAR. 22, 1912.

1,038,786.

Patented Sept. 17, 1912.

Fig. 1.

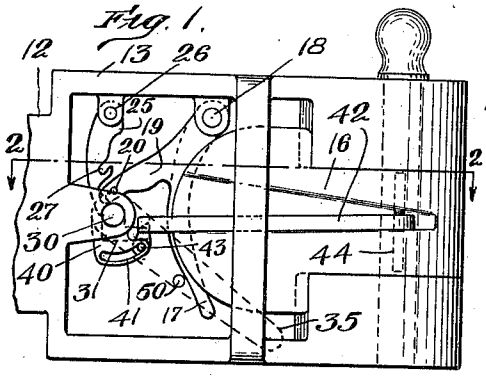
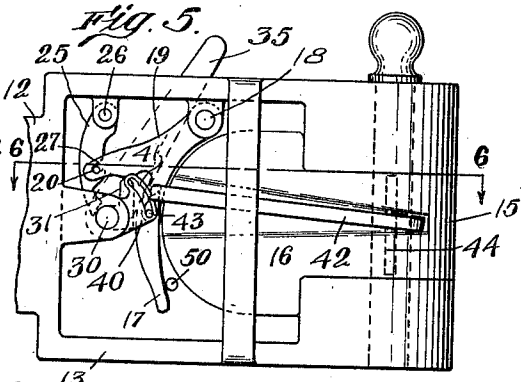


Fig. 5.



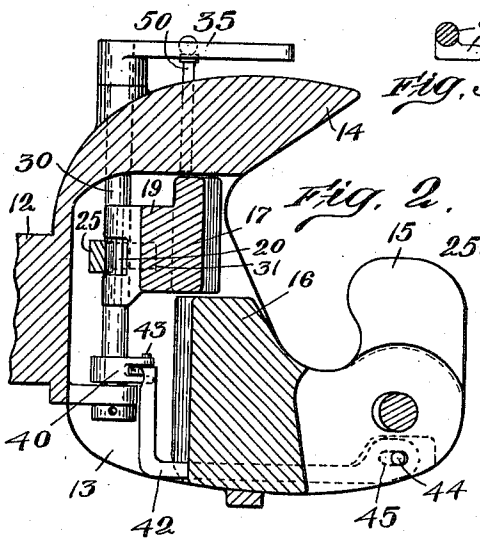
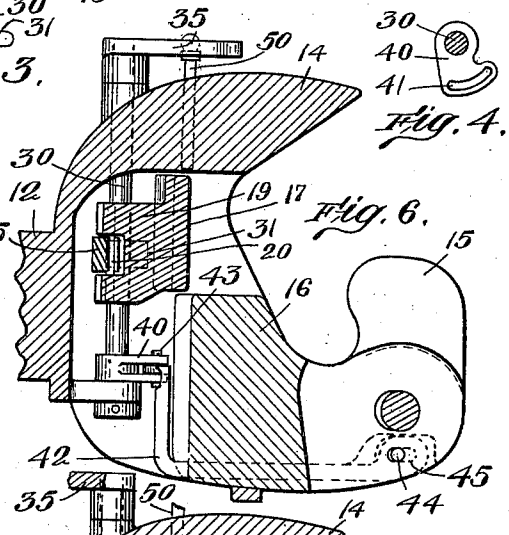


Fig. 3.

Fig. 2.

Fig. 4.

Fig. 6.



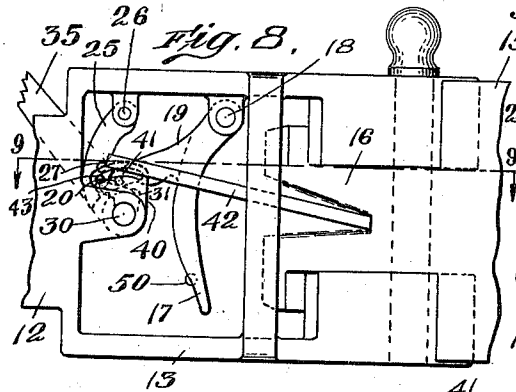


Fig. 8.

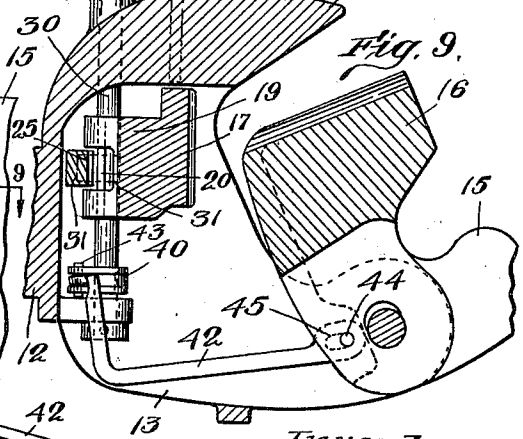


Fig. 9.

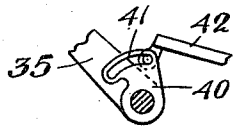


Fig. 7.

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

1,038,786. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed March 22, 1912. Serial No. 685,430.

To all whom it may concern:

Be it known that I, EDWARD F. PENDEXTER, a citizen of the United States, residing at Milford, in the county of Worcester and State of Massachusetts, have invented an Improvement in Car-Couplings, of which the following is a specification.

This invention relates to car-couplings of the knuckle type, and has for its object to provide a gravitating latch to lock the knuckle, and improved latch-setting or locking means into engagement with which said gravitating latch is movable, said means holding the latch in its unlocked position so that the knuckle may be opened by a pull upon it, and said means being constructed and arranged so that it may be moved by the knuckle upon an outward or opening movement thereof to disengage the knuckle-latch from it, in order that said latch may resume its normal position upon an inward or closing movement of the knuckle, and said means being also constructed so as to be operated manually to positively open the knuckle, if desired, when moved in the same direction in which it is moved to lock the latch.

The invention also has for its object the provision of a pin adapted to be projected into the side of the drawhead to hold the gravitating knuckle-latch in its rearward position with the knuckle free to be moved on its pivot.

Figure 1 is a side elevation of a car-coupling embodying this invention. Fig. 2 is a horizontal section of the same taken on the dotted line 2—2. Figs. 3 and 4 are transverse sectional details of the oscillating-shaft, to be referred to. Fig. 5 is a view similar to Fig. 1, the knuckle-latch being locked. Fig. 6 is a horizontal section taken on the dotted line 6—6, Fig. 5. Fig. 7 is a detail illustrating the position of the ear on the oscillating-shaft when said shaft is turned manually to open the knuckle. Fig. 8 is a side elevation illustrating the unlocking of the knuckle-latch by the opening of the knuckle. Fig. 9 is a horizontal section taken on the dotted line 9—9, Fig. 8.

12 represents the draw-bar, and 13 the draw-head having the usual guard 14, and 15 the pivoted knuckle having a latch-engaging portion 16.

17 represents the gravitating latch which is contained in the recess in the head, and is adapted to occupy a position at one side of the latch-engaging portion 16 of the knuckle, when in locking position, see Figs. 1 and 2. The knuckle-latch is pivoted at 18, and, as here shown, is curved longitudinally, and has on its rear side a projection 19, formed with a bifurcated end which has a bar 20 extended transversely across the opening in said end for engagement with latch-setting means by which its position is controlled.

The latch-setting means comprises a retaining-latch 25 for the knuckle-latch, an oscillating-shaft 30 having a cam 31, and means to oscillate said shaft manually, and means to connect said shaft with the knuckle, whereby it may be oscillated by the knuckle. The retaining-latch, represented at 25, is arranged in the recess in the head and is pivoted at 26, and normally assumes substantially a vertical position by gravity, being suspended from its pivot. It extends downward and its lower end terminates at the oscillating-shaft 30, and normally bears against said shaft, see Fig. 1. It has formed on its front side a recess 27 to receive the bar 20 on the projection on the knuckle-latch, thereby to hold the knuckle-latch in its rearward or "set" position, in which position the knuckle is free to swing on its pivot. The oscillating-shaft, represented at 30 extends transversely across the head, and the cam 31 thereon, see Fig. 3, is arranged beneath the projection 19 on the knuckle-latch, so that as the shaft is oscillated said knuckle-latch will be moved on its pivot in the rearward direction, into its "set" position, and its bar 20 will be engaged by the retaining-latch. Such position of the shaft is represented in Figs. 5 and 6, wherein it will be observed that the knuckle-latch is locked in its rearward or "set" position and the knuckle is free. As a means to manually oscillate said shaft 30 a hand lever 35 may be secured to it, of a length whereby it is conveniently accessible. As a means to control said shaft by the knuckle said shaft is here shown as having on it an ear 40, see Fig. 4, formed with a curved slot 41, and a link 42 connects said ear with the knuckle. Said link is bent intermediate its length or offset to admit of thus connecting the ear with the knuckle, as best shown in Fig. 2, and it has a pin 43 at one end which enters and moves along in the slot 41 in the ear, and its opposite end is slotted as at 45 to receive a pin 44 by which it is loosely con-

nected with the knuckle. The ear extends radially from the shaft and is so disposed thereon that as the shaft is turned to cause its cam to move the knuckle-latch rearwardly, the pin 43 will move along in the slot in the ear until said pin reaches the opposite end of the slot, and such movement of the oscillating-shaft is sufficient for its cam to move the knuckle-latch into its "set" position and to engage it with the retaining-latch. With the parts in this position, as represented in Figs. 5 and 6, the knuckle is free to be moved on its pivot to open. The knuckle may be moved by a pull upon it of its fellow knuckle, or it may be moved by a manual operation, and, as here shown, further movement of the oscillating-shaft in the same direction as aforesaid is permitted; which may be accomplished manually by a hand-lever for the purpose of opening the knuckle, or it may be accomplished by the knuckle when opened by a movement of its fellow knuckle, through the medium of the link. In case it is moved by the hand-lever its ear will be correspondingly moved and the link drawn rearward to thus move and open the knuckle, the ear at such time occupying the position shown in Fig. 7. In case it is moved by the knuckle its ear will be moved by a rearward thrust of the link, as represented in Figs. 8 and 9. Such further movement of the oscillating-shaft in a rearward direction is utilized to unlock the knuckle-latch, and thereby admit of its resuming its normal position, and, as here shown, the cam 31 on the shaft is moved rearward in the same direction with and by the shaft and its nose engages the lower end of the retaining-latch and moves said latch on its pivot far enough to disengage the bar 20, and thereby permit the knuckle-latch to fall by gravity. Said knuckle-latch, however, will not at this moment resume its normal position, as its bar 20 will fall into engagement with the edge of the cam 31, yet it is free to resume its normal position upon the return of the oscillating-shaft. The oscillating-shaft is returned to normal position by an inward or closing movement of the knuckle, such return movement of the shaft being accomplished by the forward movement of the link as the knuckle resumes its normal position. Forward movement of the link acts to move the ear to which it is connected in a forward direction and thereby correspondingly turn the shaft. As the shaft is thus returned to normal position its cam 31 is moved with it, and, as said cam passes from beneath the projection 19 of the knuckle-latch, the latter will be permitted to resume its normal position by gravity, and to enter the space at the end of the latch-engaging portion of the knuckle, thereby to prevent said knuckle from turning on its pivot. Herein a pin 50 is arranged to be projected into a hole in the side of the draw-head for the purpose of holding the knuckle-latch in its rearward or "set" position with the knuckle free.

I claim:—

In a car-coupling, a pivoted knuckle on the draw-head having a latch-engaging portion, a pivotally supported gravitating latch for said knuckle having a rearward projection provided with engaging-means, a pivotally supported gravitating retaining-latch having means to engage said engaging-means on the rearward projection of said knuckle-latch, an oscillating-shaft having a cam to move said knuckle-latch into engagement with said retaining-latch and upon further movement in the same direction to disengage the retaining-latch from the knuckle-latch, and means to oscillate said shaft, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

EDWARD F. PENDEXTER.

Witnesses:

CLIFFORD A. COOK,

ELMER W. ADAMS.

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