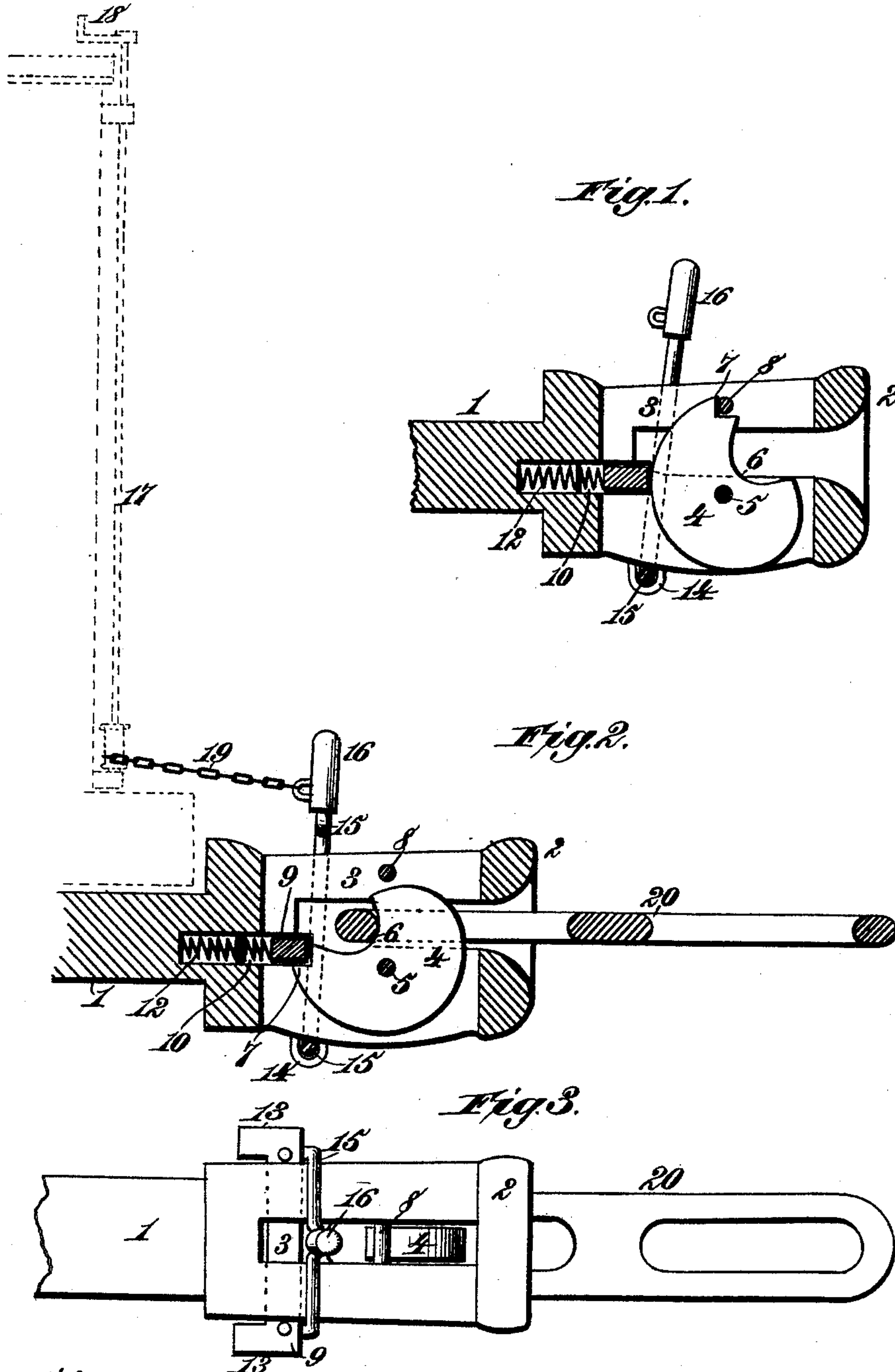


(No Model.)

W. J. McCAUL.
CAR COUPLING.

No. 435,852.

Patented Sept. 2, 1890.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM J. McCAUL, OF DICKSON, ASSIGNOR OF ONE-HALF TO JOHN N. SIMPSON, OF McEWEN, TENNESSEE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 435,852, dated September 2, 1890.

Application filed January 13, 1890. Serial No. 336,722. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. McCAUL, a citizen of the United States, residing at Dickson, in the county of Dickson and State of Tennessee, have invented new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to car-couplings, and the purpose thereof is to provide a simple automatic coupler consisting of the smallest possible number of parts, having easy and certain operation and possessing great strength and durability.

It is a further purpose of my invention to provide a coupler which shall be set in position to receive the coupling bar or link by the act of uncoupling and retain such position until the link enters and throws it into engagement with the locking device.

My invention also comprises an extremely simple construction and organization of parts whereby the coupling may be released and the cars permitted to draw apart by means of a spindle or stem rotated from the roof of the car, or from the car-platform if used upon a passenger-coach.

The invention consists to these ends in the several novel features of construction and new combinations of parts hereinafter set forth and claimed.

To enable others to make and use my invention, I will describe the same in detail, reference being made to the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a coupler embodying my invention, showing it in position for coupling. Fig. 2 is a similar section showing the position of the parts after the coupling is effected. Fig. 3 is a plan view of the same parts.

In the said drawings, the reference-numeral 1 denotes the draw-head or part of the same, upon the outer end of which is formed or mounted the coupling-head 2, which consists of a substantially rectangular oblong block, of suitable size and length and usually provided with a slightly-flared outer end. In this head is formed the opening for the link, which extends from the forward or outer end

of the coupler-head to a point not far from its rearward end, the length of the opening being such as to admit about one-half the length of the coupling-link. The form and dimensions of this opening are such as to freely admit the link and permit the necessary play therein, while at the same time it guides the link in entering and places it in proper relations to the device by which it is engaged. The mouth of the opening 2 is expanded or flared in the usual manner to engage the end of the link and direct it as the cars come together.

In the body portion of the coupler-head is formed an opening or recess 3, which may consist of a slot formed centrally, vertically, and longitudinally, and intersecting the central line of the opening 2. In this slot is pivoted a tumbler 4, having approximately a crescent shape and mounted on a pivot-pin 5, which crosses the slot or recess 3 below the link-opening 2. Forming part of the concave edge of this tumbler is a curved recess or notch 6, so constructed that when the tumbler is turned in one direction the forward curved end of the tumbler will lie toward the open end of the coupling-head and below the link-opening 2, while the other and remaining portion will lie in said opening and above the same. The pivotal movement of the tumbler is limited in this direction by means of a locking-shoulder 7 thereon, which strikes a cross-pin 8 lying in the slot 3 above the link-opening and arresting the tumbler in position for coupling. In this position the entering link passes into the recess or notch 6 of the tumbler, turning it upon its bearing until the curved or hooked end of the same passes into the opening of the link and engages the end thereof, while the other end of said tumbler turns rearward and downward until the shoulder 7 lies below the link-opening 2.

In the rearward part of the coupler-head is arranged a horizontal transverse bar 9, lying in an opening 10, cut entirely through the coupler-head just below the link-opening 2. The extremities of this bar project outside the head, as shown in Fig. 3, and it is nor-

mally pushed forward in the elongated opening 10 by means of a spiral or other spring or springs 12, lying in a recess in the coupler-head immediately in rear of the bar 9. As the link enters in the manner described, revolving the tumblers upon its bearing, its convex or cam edge impinges upon the central part of the bar 9, forcing it toward the rear and compressing the spring 12 until the shoulder 6 has passed below said bar, whereupon the spring throws it forward, causing said bar to pass above the shoulder and securely locking the tumbler in engagement with the link. The bar 9 may be of any preferred form; but I prefer to make the projecting ends wider than the body portion, forming extensions 13, which aid in guiding the bar and preserving its correct transverse position.

Pivotally mounted in eyes or staples 14 on the under side of the coupler-head is a yoke-frame 15, which incloses or surrounds the head, its ends meeting above the same, where a handle 16 is mounted upon them. By throwing this handle toward the rear the bar 9 will be retracted, the parallel arms of the yoke-frame pressing against its outwardly-projecting ends until said bar passes off the shoulder 6 and releases the tumbler, whereupon the link may easily be withdrawn. The action of withdrawing the link rotates the tumbler to the position shown in Fig. 1, in which it is left after the removal of the link, being arrested by the shoulder 6, which strikes the stop-pin 8, as already described. To insure its remaining in this position should the car be in motion, the curved forward end may be made somewhat heavier, or the pivotal bearing may be placed slightly to the rear of the center of gravity of the tumbler.

The coupler may be operated by the lever-handle 16 by a person standing or reaching between the cars, and it may also be operated from the roof by a spindle 17, similar to a brake-spindle, and operated by a crank 18 in like manner. This spindle is connected to the lever-handle or to the yoke-frame by a chain or cord 19. If desired, a horizontal spindle or rock-shaft may be mounted on the end of the car and connected with the lever in the manner just described, whereby it is never necessary to pass between the cars.

The link 20 may be provided with duplex openings, one in each end; but I may also use an open link of the usual form.

This coupler consists of few and simple parts, is always in order, is certain in action,

possesses great strength and durability, and is wholly automatic, requiring no setting in order to couple or engage the link.

What I claim is—

1. In a car-coupler, the combination, with a coupler-head having a link-opening and an intersecting vertical slot, of a tumbler arranged in the slot and having a pivotal bearing below the link-opening, a spring-pressed bar in rear of said tumbler retracted by the convex or cam edge of the tumbler, a link entering a recess in the forward edge of the tumbler and turning it until said bar springs over a shoulder thereon, and a yoke-frame pivotally mounted on the coupler-head and adapted to swing against the projecting ends of the bar and retract the same to release the tumbler, substantially as described.

2. In a car-coupler, the combination, with a coupler-head having a link-opening and a recess or slot intersecting the same, of a tumbler pivoted in said slot and having its pivotal point below the link-opening, said tumbler having a notch or recess for the link and a locking-shoulder in one edge and a convex or cam surface on the other edge, a spring-pressed bar moving in rear of said tumbler to engage the shoulder as said bar is retracted by the turning of the tumbler, a yoke-frame pivoted beneath and surrounding the head, its arms lying against the projecting ends of the bar, and a spindle on the end of the car and having a chain or cord connected with said yoke-frame, substantially as described.

3. In a car-coupler, the combination, with a coupler-head having the link-opening 2 and slot or recess 3, of a tumbler 4, having a pivotal bearing 5 below the opening 2, said tumbler being provided with a curved recess 6 for the link and a locking-shoulder 7, a cross-pin 8, arresting the rotation of the tumbler as the link is withdrawn, a spring-pressed bar 9, lying in an elongated opening 10 in rear of the tumbler, and a yoke-frame 15, pivoted on the coupler-head and having its arms bearing against the projecting ends of the bar 9, the ends of said frame being brought together and provided with a handle 16, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM J. MCCAUL.

Attest:

H. M. MCADOO,
J. M. MCADOO.