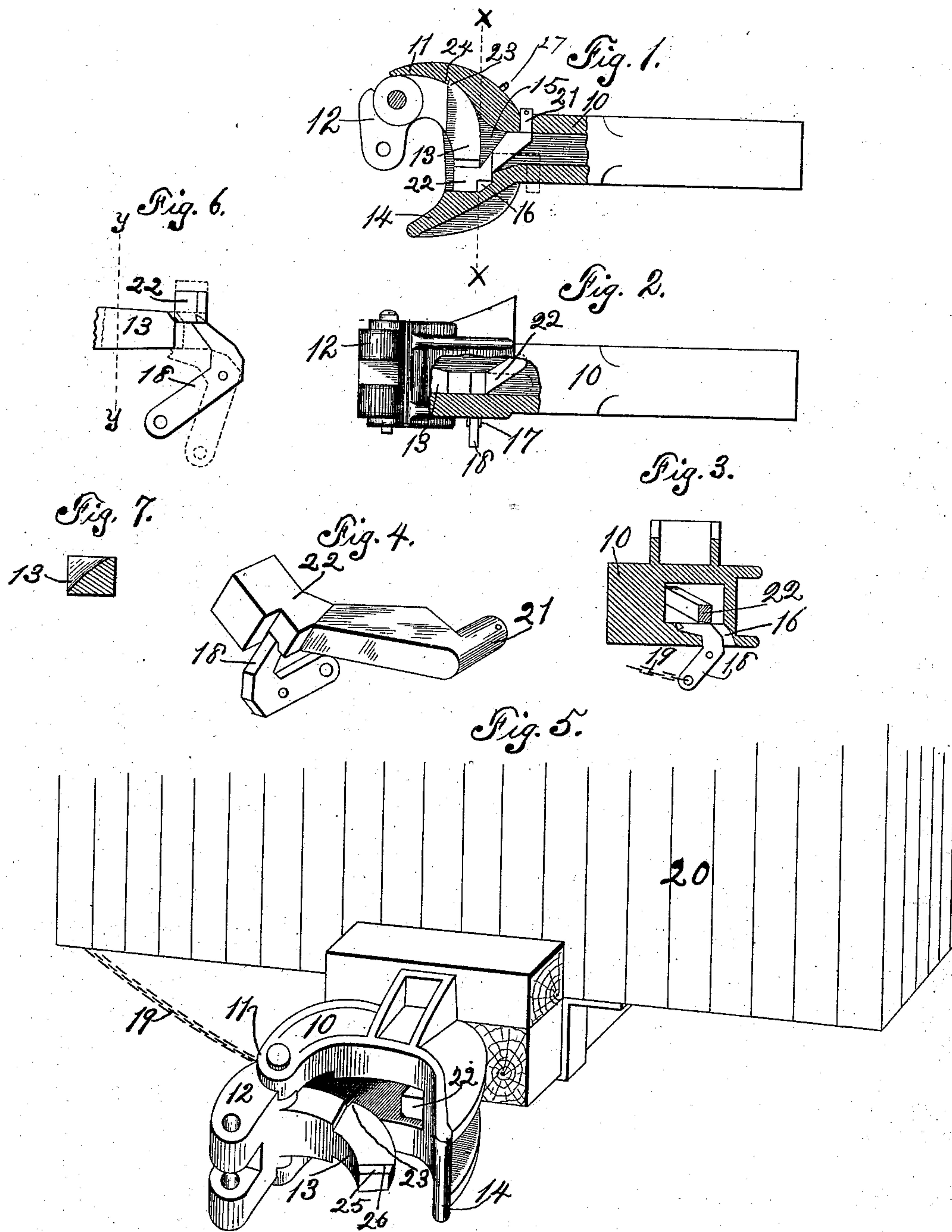


(No Model.)

C. A. BALLREICH.
CAR COUPLING.

No. 505,378.

Patented Sept. 19, 1893.



Witnesses:
A. O. Barnes
G. R. Green

Charles A. Ballreich,
by *J. H. Sweet*
his Atty.

UNITED STATES PATENT OFFICE.

CHARLES A. BALLREICH, OF DES MOINES, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 505,378, dated September 19, 1893.

Application filed December 8, 1892. Serial No. 454,550. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BALLREICH, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk, State of Iowa, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

The object of my invention is to provide a car coupling of the vertical plane type in which the knuckle is locked in an operative position by means of a locking block pivoted within the drawbar and extended longitudinally thereof, and provided with means manually operated for unlocking the same, together with means mechanically operated for automatically positioning the parts preparatory to a successive coupling.

To this end my invention consists in the combination of the drawbar of the vertical plane type and a knuckle pivoted thereon, of a locking block pivoted within the drawbar and extended longitudinally thereof to a point adjacent to the open mouth of said drawbar, a bell crank lever pivoted beneath the drawbar and forming a trigger, and means manually operated whereby said trigger is caused to act upon the locking block.

My invention consists further in the construction, arrangement and combination of parts hereinafter set forth, pointed out in my claims and illustrated by the accompanying drawings, in which—

Figure 1 is a plan view partly in section, of my improved coupling. Fig. 2 is a side elevation, partly in section, of the same. Fig. 3 is a sectional view on the line $x-x$ of Fig. 2. Fig. 4 is an enlarged detail perspective view of the locking block and trigger. Fig. 5 is a perspective view showing my device as applied for practical use. Fig. 6 is a diagram showing the relative positions assumed by the impact arm of the knuckle, the locking block, and the trigger. Fig. 7 is a transverse sectional view on the indicated line $y-y$ of Fig. 6.

In the construction of the device as shown, the numeral 10 designates the drawbar, having the forwardly extending arm 11, on which is pivoted the knuckle 12, carrying the impact arm 13.

Integrally formed on and extending forward from the drawbar opposite to the arm

11 is the guiding arm 14. A cavity 15 is formed in the interior of the drawbar 10, and a vertical slot 16 affords communication to said cavity from the bottom of the drawbar.

Formed on either side of the vertical slot 16 are ears, 17, 17, and pivoted upon a pin extending transversely through said ears is a trigger of bell-crank form, numbered 18, the upper portion of which trigger normally lies within the slot 16, and the lower end thereof is secured to the lower end of a chain 19, the other end of which chain is connected at one end of the car 20, on which the coupler is mounted.

Journaled in the side of the draw-bar 10 by means of a trunnion 21, is a locking block 22, on which locking block said trunnion is integrally formed, which locking block extends longitudinally of the said draw-bar to a point in front of the impact arm 13.

The dotted lines in Figs. 1 and 2 indicate modified positions assumed by the locking block 22, and also indicate modified forms of said locking block, the normal form and position of said block being indicated by the solid lines.

A notch is formed on the extreme upper end of the trigger 18, the purpose of which will hereinafter be made plain.

At the jointure of the knuckle 12 with the impact arm 13 a shoulder 23 is formed, which shoulder engages against a mating shoulder 24 on the arm 11 when the knuckle is closed.

The lower edge of the forward end of the locking block 22 is chamfered, and the rear side of the impact arm 13 is also chamfered. The forward end portion of the impact arm 13 is provided with a chamfer 25, and at the jointure of said chamfer with the rearwardly extending chamfer is formed a ridge 26.

In the operation of the coupler as shown and described, the impact of the approaching drawbars causes a rearward movement of the impact arm 13, which arm passes beneath the forward end of and elevates the locking block 22, and passing beyond said locking block permits the same to fall into the position shown in Fig. 1 and lock the impact arm. When it is desired to effect an uncoupling the train or yard man pulls the chain 19, thus rotating the trigger 18, and causing it to assume the position shown in

solid lines in Fig. 6, thus elevating the locking block 22, and causing said locking block to rest within the notch in the extreme upper end of said trigger, the parts thus positioned remaining as set until the drawbars are separated. Upon the separation of the drawbars the chamfer 25 on the impact arm 13 passes beneath the forward end portion the locking block 22, and the ridge 26 on said impact arm elevates the said locking block clear of the notch in the trigger 18, and permits said trigger to fall by gravity into the position shown in dotted lines in Fig. 6, and in the further traverse of said impact arm the locking block falls into the position shown in Fig. 5, preparatory to being again coupled. A hook 27 is formed on the side of the drawbar 10 adjacent to the chain 19, (Figs. 1 and 3,) and when it is desired to secure the locking block in an elevated position the said chain is drawn laterally and dropped within said hook, thus retaining the locking block in an inoperative position until further manually operated.

Having thus described my invention, what I claim as new therein, and desire to secure Letters Patent of the United States therefor, is—

1. In a car coupler of the class described the combination of the drawbar and the knuckle mounted thereon having a rearwardly extending arm extended within a cavity in the drawbar, a locking block pivoted at its rear end within the rear end of said cavity, the pivoted end of said locking block being in a horizontal plane above the plane of the other end thereof, and means manually operated, whereby said locking block is elevated.

2. In a car coupler of the class described the combination with the drawbar having a cavity therein, the knuckle mounted upon said drawbar, an impact arm formed on said knuckle and extended within said cavity, a locking

block pivoted at its rear end within the rear portion of the cavity in said drawbar, a trigger pivoted in the lower portion of said drawbar and transversely of said drawbar, and means whereby said trigger is manually operated to elevate said locking block.

3. In a car coupler of the class described, the combination with the drawbar, the locking block mounted within said drawbar, a trigger mounted within said drawbar and acting upon said locking block, a chain, forming a connection between said trigger and the car, and a hook mounted upon said drawbar and adapted to receive and hold said chain when desired.

4. In a car coupling of the class described the combination of the drawbar and the longitudinally extending locking block therein, of a trigger pivoted upon the lower portion of said drawbar and acting upon said locking block, a notch in the extreme upper portion of said trigger in which said locking block abnormally rests, and a chain, whereby said trigger is operated by manual force.

5. In a car coupler of the class described the combination of a drawbar, a knuckle mounted thereon, an impact arm formed on said knuckle, a rearwardly extending chamfer on said impact arm, a forwardly extending chamfer on the extreme outer end of said impact arm, a ridge formed by the jointure of said chamfers, a locking block pivoted at its rear end within said drawbar, a trigger beneath said locking block and adapted to act upon the same, a notch in the extreme upper end of said trigger in which said locking block abnormally rests, and a chain by means of which said trigger is manually operated.

CHARLES A. BALLREICH.

Witnesses:

S. C. SWEET,
G. R. GREEN.