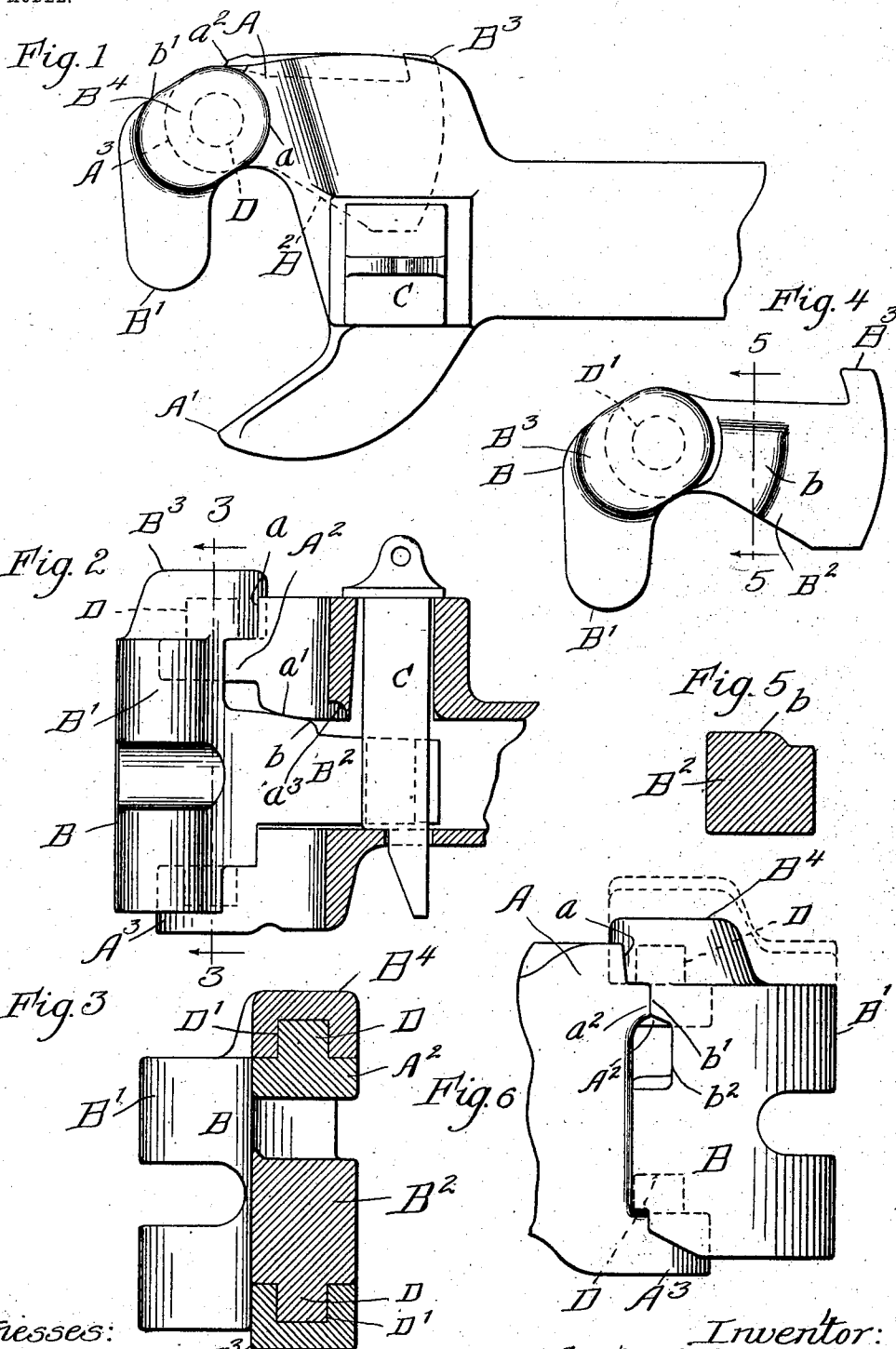


G. A. HERMANSON.
CAR COUPLING.

APPLICATION FILED MAY 1, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

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To all whom it may concern:

Be it known that I, GUSTAF A. HERMANSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car-couplers of the kind commonly known as "M. C. B." or "Master Car-Builders'" couplers, and having a forked draw-head, a pivoted knuckle, and a gravity-lock. Car-couplers of this class have heretofore generally been constructed with a knuckle, through which a pivot-pin extends, and with pivot arms or lugs on the drawhead, likewise having holes through which a pivot-pin extends. The pivot-holes through the pivot arms or lugs of the draw-head and through the knuckle materially weaken these parts and render the coupler liable to be broken at these points, and the couplers are also objectionable, in that the pivot-pins are liable to be taken out and lost.

The object of my invention is to overcome these objections or difficulties and provide a car-coupler of a much stronger construction than those heretofore in use and composed of fewer parts.

My invention consists in the means I employ to accomplish this object or result—that is to say, it consists in providing the forked draw-head and its pivotal knuckle with upper and lower interengaging integral short pivot studs and sockets, the knuckle being provided with an integral pivot-cap fitting above the upper pivot-lug of the draw-head. Preferably the lower pivot-lug of the draw-head is provided with a pivot-socket, extending, however, but part way through said pivot-lug, so as not to materially weaken the same, and the knuckle is provided with an integral pivot-stud fitting in such pivot-socket, and the upper pivot-lug of the draw-head is provided with an integral upwardly-projecting pivot-stud, which fits in the corresponding pivot-socket formed in the pivot-cap of the knuckle which fits above the upper pivot-lug of the draw-head. The inner arm of the knuckle is also provided, or preferably pro-

vided, with an inclined projection or raised portion on its upper side, which when the knuckle is closed prevents any up-and-down play of the knuckle in the draw-head, while permitting the knuckle when it is swung open to be partially raised, in which partially-raised position the interengaging shoulders, which limit the opening movement of the knuckle, are so shaped as to permit its then swinging slightly farther open, in which outward limit of its opening movement the knuckle is adapted to be still farther raised to disengage the interengaging pivot studs and sockets on the knuckle and draw-head by reason of a recess formed for this purpose in the upper wall of the draw-head.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of a car-coupler embodying my invention. Fig. 2 is a central vertical longitudinal section. Fig. 3 is a cross-section on line 3 3 of Fig. 4. Fig. 4 is a detail plan view of the knuckle. Fig. 5 is a cross-section on line 5 5 of Fig. 4, and Fig. 6 is a back view of the coupler.

In the drawings, A represents the draw-head of an ordinary Master Car-Builders' car-coupler, the same having the customary guard-arm A' and upper and lower pivot arms or lugs A² A³.

B is the knuckle, the same having the customary nose or front arm B' and inner or operating arm B², which engages the gravity-lock C and toe or hook B³ to engage the draw-head when the knuckle is closed. The knuckle B is provided with an integral pivot-cap B⁴, which fits over the upper pivot arm or lug A² of the draw-head. The knuckle and draw-head are provided with interengaging integral pivot studs and sockets D D' and D D'. The lower pivot-stud D is preferably formed on or made integral with the knuckle, and the lower pivot-socket D' is formed in the lower pivot arm or lug A³ of the draw-head, while the upper pivot-stud D is formed integral with the upper pivot arm or lug A²

of the draw-head, while the upper pivot-socket D' is formed in the pivot-cap B⁴ of the knuckle, which fits above the upper pivot-arm A² of the draw-head, although this arrangement may be reversed, if desired, or if desired both pivot-lugs may be formed on the draw-head and both pivot-sockets in the knuckle, or vice versa. The construction shown in the drawings, however, is preferred, as it leaves the upper pivot arm or lug of the draw-head solid, while at the same time it leaves the body or middle portion of the knuckle solid and of the full strength without any socket or cavity therein. The draw-head has a curved shoulder *a* to receive and afford bearing for the circular periphery of the pivot-cap B⁴. To prevent the knuckle from any up-and-down play in the draw-head when it is closed, it is provided on the upper face of the inner arm with a projection or raised portion *b*, which engages the upper wall *a'* of the draw-head when the knuckle is closed and prevents any up-and-down movement of the knuckle in the draw-head. The knuckle and draw-head are provided with interengaging shoulders *b'* *a*², which limit the normal opening movement of the knuckle. When swung open into the position limited by these interengaging shoulders, the knuckle may be partially lifted, so that said shoulder *a*² on the draw-head will come opposite the enlarged shoulder or recess *b*² on the knuckle, and thus permit the knuckle to swing slightly farther open, and thus enable the knuckle to be still farther lifted by reason of the toe B³ of the knuckle fitting in the notch or recess *a*³ in the upper wall of the draw-head which is provided for this purpose, thus enabling the interengaging pivot studs and sockets D D' to be entirely disengaged from each other and the knuckle in this way removed or put in place.

I claim—

1. In a car-coupler, the combination with a forked draw-head having upper and lower pivot arms or lugs, of a pivotal or swinging knuckle having an integral pivot-cap fitting over the upper pivot arm or lug of the draw-head, the knuckle and the pivot lugs or arms of the draw-head having a pair of interengaging pivot studs and sockets, substantially as specified.

2. In a car-coupler, the combination with a forked draw-head having upper and lower pivot arms or lugs, of a pivotal or swinging knuckle having an integral pivot-cap fitting over the upper pivot arm or lug of the draw-head, the knuckle and the pivot lugs or arms of the draw-head having a pair of interengaging pivot studs and sockets, the inner arm of the knuckle being provided with a projection engaging the draw-head to prevent vertical movement or play of the knuckle in the

draw-head when the knuckle is closed, substantially as specified.

3. In a car-coupler, the combination with a forked draw-head having upper and lower pivot arms or lugs, of a pivotal or swinging knuckle having an integral pivot-cap fitting over the upper pivot arm or lug of the draw-head, the knuckle and the pivot lugs or arms of the draw-head having a pair of interengaging pivot studs and sockets, the inner arm of the knuckle being provided with a projection engaging the draw-head to prevent vertical movement or play of the knuckle in the draw-head when the knuckle is closed, and the upper wall of the draw-head having a notch or recess to receive the toe of the knuckle and permit the knuckle to be sufficiently raised in the draw-head when the knuckle is open to disengage the pivot studs and sockets of the knuckle and draw-head, substantially as specified.

4. In a car-coupler, the combination with a forked draw-head having upper and lower pivot arms or lugs, of a pivotal or swinging knuckle having an integral pivot-cap fitting over the upper pivot arm or lug of the draw-head, the knuckle and the pivot lugs or arms of the draw-head having a pair of interengaging pivot studs or sockets, the inner arm of the knuckle being provided with a projection engaging the draw-head to prevent vertical movement or play of the knuckle in the draw-head when the knuckle is closed, and the upper wall of the draw-head having a notch or recess to receive the toe of the knuckle and permit the knuckle to be sufficiently raised in the draw-head when the knuckle is open to disengage the pivot studs and sockets of the knuckle and draw-head, said knuckle and draw-head having interengaging shoulders to limit the normal outward or opening movement of the knuckle, and the knuckle having a notch or recess to permit a slight farther outward or opening movement of the knuckle when the knuckle is partially lifted, substantially as specified.

5. In a car-coupler, the combination with a forked draw-head having upper and lower pivot-arms, the former furnished with an integral pivot-stud and the latter with a pivot-socket extending partially through the same, of a pivotal or swinging knuckle having an integral pivot-cap provided with a pivot-socket to receive the pivot-stud on the upper pivot-arm of the draw-head, and provided with an integral pivot-stud fitting in the pivot-socket in the lower pivot-arm of the draw-head, substantially as specified.

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