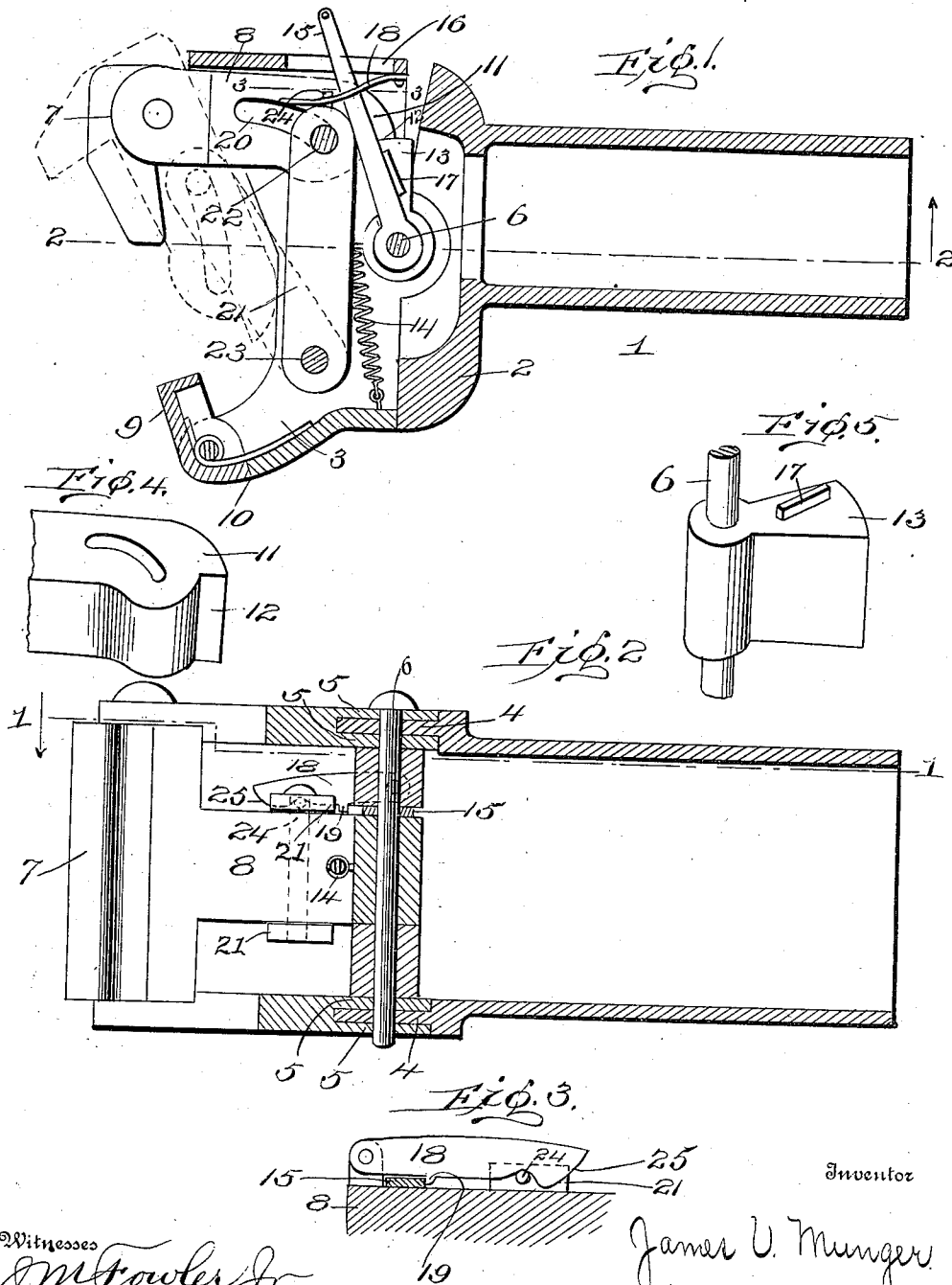


J. V. MUNGER.
CAR COUPLING.

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1,043,453.

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CAR-COUPLING.

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To all whom it may concern:

Be it known that I, JAMES V. MUNGER, a citizen of the United States, residing at Portland, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in car couplers, and the object in view is the improvement of the lock set thereof for increasing the efficiency and decreasing the liability of breakage.

The invention comprises certain novel detail features of construction, combinations and arrangements of parts as will be hereinafter fully specified and claimed.

In the accompanying drawing:—Figure 1 is a horizontal section taken on the plane indicated by line 1, 1 of Fig. 2, and looking downwardly. Fig. 2 is a longitudinal, vertical section taken on the plane indicated by line 2, 2 of Fig. 1, and looking in the direction indicated by the arrow. Fig. 3 is an enlarged, detail sectional view of the pawl taken adjacent line 3—3 of Fig. 1 but not cutting the lug. Fig. 4 is a detail view of the tail of the locking knuckle. Fig. 5 is a detail view of the block employed to engage and lock the tail piece.

Referring to the drawing by numerals, 1 indicates a portion of any suitable draw bar to which is rigidly connected a portion 2 of a coupler head, the remainder of the coupler head consisting of a pivoted portion 3. The rigid portion 2 is formed with circular extensions 4, 4 underlapped and overlapped by similar extensions 5, 5 from the pivoted portion 3, and a pivot pin 6 extends through all of said lapping portions. To the pivoted portion 3 is pivotally connected a knuckle 7 having a tail piece 8 extending into the coupler head. Pivoted to the opposite side of the coupler head is a locking block 9 retained in its outermost position normally by a spring 10. The tail piece 8 is formed at its inner end with a lateral extension lug 11 having a shoulder 12, and a locking block 13 is pivoted to the bolt or pin 6 and adapted to swing to a position with its outer end fitting in the corner between the extension 11 and shoulder 12, so

as to lock the tail piece 8 against outward movement, and consequently lock the knuckle 7 against uncoupling. A spring 14 of any suitable type engages the block 13 and exerts a pull thereon in an outward direction, that is a direction for causing the outer end of the locking block to move toward the extension 11 of the tail piece 8. A lever 15 is pivoted to the bolt 6 and extends through a slot 16 in the side of the coupler head, and the locking block 13 is provided with a lug or upwardly projecting extension 17 extending in the rear of and disposed in the path of movement of the lever 15, so that when the lever 15 is swung rearwardly or in a direction toward the car of which the coupler is a part, the block 13 will be forced rearwardly out of engagement with the shoulder 12, and thus free the tail piece 8 so as to permit the same to swing outwardly. In order to retain the lever 15 in its released position, a pawl 18 is pivoted to the pivoted portion of the coupler head and overhangs the lever 15 and is provided with a shoulder 19 adapted to drop in front of the lever 15 when in its rearmost or released position.

The tail piece 8 is formed with a longitudinal slot 20, and a pair of links 21 is arranged with one link above and the other link below the tail piece, the said links being connected by a bolt 22 passed through the slot 20. The opposite ends of the links 21 are pivotally connected by a bolt or pin 23 to the pivoted portion 3 of the coupler head. Thus when the knuckle 7 is open and the tail piece 8 swings outwardly, the links 21 will also be swung outwardly to the dotted position indicated in Fig. 1, and when an approaching coupler strikes the said links the tail piece 8 will be thrown inwardly thereby for causing the knuckle 7 to assume the closed or coupled position.

The upper link 21 is provided with a longitudinal extension 24 at that end engaged by bolt 22, the said extension 24 projecting past a cam 25 formed at the outer end of the pawl 18. Thus whenever the links 21 are moved inwardly, the extension 24 moves in past the cam 25 and striking the same elevates the pawl 18 to a position with the shoulder or projection 19 out of engagement with the lever 15, and whenever the links 21 are moved outwardly the engagement of the extension 24 with the cam 25 will produce the same operation. Whereby it becomes

obvious that with each operation of the links 21 from or to the inner position, the lever 15 will be released from the pawl 18, and the locking block 13 will be permitted to become effectual in its locking operation.

It is to be observed that when the knuckle is moved to the open position and the pawl 18 is thus elevated for releasing the lever 15, the said lever will be swung forwardly or outwardly to the outer end of the slot through which it projects by reason of the pressure of the spring 14, and the wall at the outer end of said slot serves as a stop for the said lever, and thus through the lug 17 prevents the locking block 13 from swinging further outwardly. When the knuckle is again swung to the coupling position, the tail piece in its inward movement strikes the locking block 13, and forces the same inwardly or rearwardly until the main portion of the tail piece has passed the block, whereupon the block moves outwardly or forwardly again under the action of spring 14 until the free end of the block rests in engagement with the shoulder 12 and extension 11.

What I claim is:—

1. In a car coupler, the combination with a coupler head, of a knuckle pivotally connected thereto and having a tail piece, a pivotally mounted locking block adapted to be disposed at times in the path of movement of the tail piece for locking the knuckle against opening, a lever engaging said locking block and adapted to move the same out of the path of movement of the tail piece, a pawl disposed for engaging said lever for retaining the same in the position maintaining the locking block out of the path of the tail piece, a link pivotally mounted in said head and pivotally and slidably engaging said tail piece, and means on said link adapted to engage said pawl for releasing the engagement thereof with said lever.

2. In a car coupler, the combination with a coupler head, of a knuckle pivotally connected thereto and having a tail piece, a locking block pivotally mounted in said head and adapted to be moved into the path of the tail piece for locking the knuckle against movement, means for moving said locking block out of engagement with the tail piece, a detent for retaining the locking block moving means in the position with the locking block out of the path of movement of the tail piece, a pivotally mounted link pivotally and slidably engaging said tail piece, and means extending from said link adapted to engage said detent for releasing the same.

3. In a car coupler, the combination with a coupler head, of a knuckle pivotally connected thereto and having a tail piece, a spring pressed locking block carried by said

head and adapted to be pressed by its spring normally into the path of movement of the tail piece and adapted to engage the same for locking the tail piece against movement, means for pressing said locking block out of engagement with the tail piece for releasing the same, means adapted to engage said releasing means for retaining the same in a released condition, a link pivotally mounted in said head and engaging said tail piece, and means connected therewith adapted to engage said engaging means for releasing the engagement thereof.

4. In a car coupler, the combination with a coupler head, of a knuckle pivotally connected thereto and having a tail piece, a link connected with said knuckle and adapted to move therewith, a locking block adapted to engage the tail piece for locking the same against movement, means normally pressing the locking block to a locking position, a lever adapted to move the locking block to a released position out of engagement with the tail piece, a pawl formed with a shoulder adapted to engage said lever for retaining the same in the released position, a cam on said pawl, and a projection on said link adapted to strike the pawl when the link is moved for disengaging the connection between the pawl and the lever.

5. In a car coupler, the combination with a coupler head and a knuckle pivotally connected therewith, of a link pivotally mounted in said head and adapted to be struck by a portion of an approaching coupler and moved thereby, means for locking the said knuckle, a lever for releasing said locking means, a pawl engaging said lever for retaining the same in the released condition, and means actuated by the link for disconnecting the engagement between the pawl and the lever for releasing the lever and permitting the locking means to re-assume the locking position.

6. The combination of a coupler-head formed with a cavity; a knuckle having a tailpiece mounted free to swing therein; knuckle-locking means mounted free to swing horizontally in said cavity and arranged to move into and out of interlocking engagement with said tailpiece; a releasing device operable by the trainhand for throwing said means out of interlocking engagement with said tailpiece into lock-set position; a lock-setting device arranged to interlock with said releasing device and thereby to hold said means in lock-set position; and mechanism which is carried by said tailpiece and which actuates said lock-setting device.

7. The combination of a coupler-head formed with a cavity; a knuckle having a tailpiece mounted free to swing therein; automatically-acting knuckle-locking means

mounted free to swing in said cavity and arranged to move into and out of interlocking engagement with said tailpiece; a releasing device operable by the trainhand for throwing said means out of interlocking engagement with said tailpiece into lock-set position; a lock-setting device arranged to interlock with said releasing device and thereby to hold said means in lock-set position; and mechanism which is slidably connected with said tailpiece and moves therewith and which actuates said lock-setting device.

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

JAMES V. MUNGER.

Witnesses:

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