

(No Model.)

J. BIRD.
CAR COUPLING.

No. 528,460.

Patented Oct. 30, 1894.

Fig. 1.

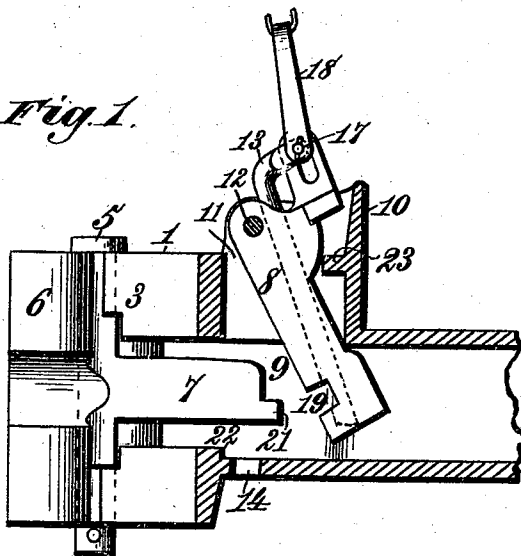


Fig. 2.

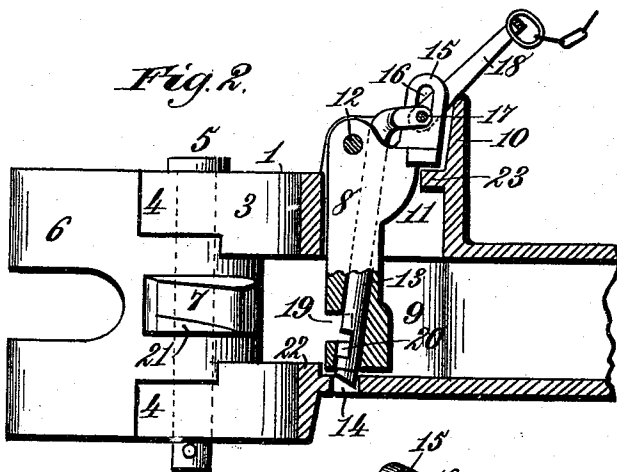


Fig. 3.

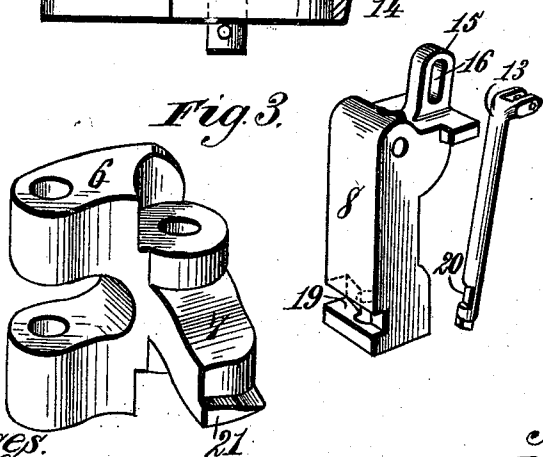
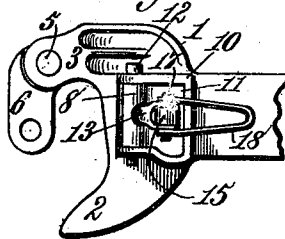


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES BIRD, OF TARRYTOWN, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 528,460, dated October 30, 1894.

Application filed June 7, 1894. Serial No. 513,798. (No model.)

To all whom it may concern:

Be it known that I, JAMES BIRD, a citizen of the United States, residing at Tarrytown, in the county of Westchester and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car couplings of that class in which each drawhead is provided with a laterally swinging hooked jaw adapted to be coupled with a corresponding jaw on another drawhead, each hooked jaw having a tail piece or projection that will press against a vertically swinging gravity latch supported in a slotted and recessed portion of the drawhead so that by first swinging said latch backward and upward the tail piece may then pass to one side of the latch and become interlocked therewith.

It is one of the objects of my invention to provide an improved form of gravity latch having an automatic locking pin, whereby the latch will be securely fastened and prevented from being jolted out of place; also, to provide the tail piece of the pivotal jaw with a device for automatically lifting said locking pin so as to permit the tail piece to swing back the gravity latch and become interlocked therewith at one side; also, to provide simple means for first disengaging the locking pin and then actuating the gravity latch, from the top or side of the car, in uncoupling; and, further, to improve the construction and arrangement of the several parts of a car-coupling in such manner as to render the same compact, durable and efficient and comply with all the standard requirements for an automatic coupler.

To these ends my invention consists in the features of construction and novel combinations of parts in a car coupling, as hereinafter described and claimed.

The invention is illustrated in the annexed drawings, in which—

Figure 1 is a vertical longitudinal section of the coupling, showing the gravity latch unlocked and swung backward. Fig. 2 is a similar view showing the latch in a vertical and normally locked position. Fig. 3 represents a detail view of the locking and uncoupling mechanism. Fig. 4 is a plan of the coupler.

The outer end of each drawhead 1 may be provided with lateral forward projecting horns 2 and 3, one of which, as 2, is short and flared somewhat outward while the other horn 3 is longer and extended more directly forward. On the end or the longer horn 3 are ears or bearings 4 to receive a vertical pivot 5 on which is fulcrumed a laterally swinging hooked jaw 6 having a rigid tail piece 7 projecting inwardly and substantially at a right angle from the pivotal portion of the jaw. This tail piece 7 is of such length that when swung backward, together with the jaw, it will extend to and bear against the front of a vertically swinging gravity latch, or dog 8 that is pivotally supported in the recessed portion 9 of the drawhead. In this manner the dog or latch 8 is swung rearward and upward a sufficient distance to permit the tail piece 7 to pass to one side of the latch so as to become locked in a rearwardly extended position when the latch again gravitates to its normal place in the drawhead. To facilitate swinging the latch 8 backward the rear face of the tail piece 7 may be rounded or beveled as shown. While the tail piece 7 is locked in its rearward position in the drawhead, at one side of the gravity latch 8, the hooked jaw 6 will project across the front of the drawhead and in advance thereof in such position as to be capable of coming in contact with the laterally projecting tail 7 on the unlocked and open pivotal jaw of the other drawhead. Should the opposite drawheads of adjacent cars be now brought together the locked jaw 6 of one drawhead will press against the tail piece 7 of the unlocked and open jaw on the other drawhead, thereby swinging the unlocked jaw of one drawhead into engagement with the locked jaw of the other drawhead, at the same time causing the tail piece 7 of the unlocked jaw to swing back the gravity latch 8 of that drawhead and pass into locking engagement with one side of said latch which will drop by gravity as soon as relieved from pressure. When the drawheads are thus coupled the horns 2 and 3 will prevent sufficient lateral movement to disengage the interlocked jaws, and yet the drawheads will have the requisite play upon each other for turning curves.

So far as already described my coupling is

very much the same as that shown in Patent No. 500,890, to Cornelius Halpin, dated July 4, 1893. I employ, however, a different form of gravity latch from that shown in said patent; my object being to provide a latch that will be automatically locked in position so that it cannot be jolted out of place and which will be automatically unlocked and swung backward by the action of an unlocking device on the tail piece of the pivotal jaw; the said latch being elongated vertically, instead of horizontally as shown in the patent above named, thus requiring less rearward swing or movement and permitting the parts of the coupling to be readily brought within the requirements of standard dimensions.

According to my invention a housing 10 is formed on the top of the drawhead around a rectangular opening 11 that communicates with the forward end of the recess or chamber 9 in the drawhead. This chamber 9 affords, on one side, sufficient space to receive the tail piece 7 when in its rearward position and the inner face of the horn 3 may be recessed continuously with the chambered portion of the drawhead so as to form a seat or housing for said tail piece when it is swung backward into locking engagement with the side of the gravity latch.

In bearings at the upper forward, or outer, portion of the housing 10 is supported a transversely arranged pivot pin 12 on which the vertically elongated gravity latch 8 is fulcrumed. The latch 8 is perforated longitudinally for passage of a locking pin 13 of such length that its lower end is adapted to extend below the latch and be received in a locking recess or opening 14 in the under side of the forward portion of the drawhead. At its upper end the locking pin 13 is curved rearwardly and provided with a bifurcation that embraces a lug 15 formed on the upper rear portion of the latch. In this lug 15 is a vertically elongated slot 16 through which passes a pin 17 that may connect, at its ends with a clevis 18 for attachment of a cord, chain or lever through which the locking pin 13 and gravity latch 8 may be actuated from either the top or side of a car, in uncoupling.

Near its lower end the front face of the gravity latch 8 is provided with a transverse groove 19 intersecting the longitudinal passage in said latch through which the locking pin 13 moves. In the pin 13 is a similar transverse groove or notch 20 which partly coincides with the groove 19 when the locking pin and latch are in a lowered position.

The end of the tail piece 7, on the pivotal hooked jaw 6, is provided with a beveled pin or lug 21 the smaller end of which is adapted to enter the grooves 19 and 20 and exert a lifting action on the locking pin 13 to disengage its lower end from the recess 14 and permit the tail 7 to swing the latch 8 backward and pass into locking engagement therewith in the act of coupling.

It will be seen that when the tail piece 7 is pressed backward, as by contact of the locked jaw on the drawhead of an adjacent car, the small or thin end of the beveled pin 21 will first enter the groove 19 in the vertically depending latch 8 and become engaged in the groove 20 of the locking pin 13; and as the rearward movement of the tail 7 is continued the beveled upper face of the pin 21 will lift the pin 13 and thus unlock the latch. By this time the rounded or beveled rear face of the tail piece 7 will be in contact with the latch 8 and will thus swing it slightly backward, or enough to allow the tail piece to pass to one side; and so soon as the latch is thus relieved from pressure it will drop by gravity into its former position, together with the locking pin 13, thus securing the hooked jaw 6 in its closed position. In these movements the drawheads of the two cars become interlocked and thus effect an automatic coupling.

When in its vertical or locked position the outer or forward face of the latch 8 may rest against one or more abutments 22 in the forward portion of the drawhead, and an abutting ledge 23 may be provided in the rear upper portion of the housing 10 for the flanged upper rear portion of the latch, if desired. The sides of the vertically elongated gravity latches 8 are preferably straight and smooth to afford firm bearings for the tail pieces of the pivotal hooked jaws and hold them in secure engagement when coupled.

By unlocking and raising either gravity latch 8, through the clevis 18, the drawheads may be at once uncoupled. It will be seen that in this unlocking of the latch 8 the elongated slot 16 and pin 17, through which the clevis 18, latch 8 and locking pin 13 are connected, will permit an unlocking or lifting movement of the pin 13 before exerting any action on the latch 8 to release the tail piece 7 of the coupling jaw.

The required movements of the vertically elongated gravity latch 8, in coupling and uncoupling, are very slight and it will, therefore, be obvious that the dimensions of the coupling can be readily kept within established standards without in any way impairing its efficient automatic action.

What I claim as my invention is—

1. In a car coupling, the combination with a recessed drawhead having a laterally swinging hooked jaw provided with a tail piece normally projecting across the front of the drawhead in position to be struck by the jaw on an adjacent drawhead, of a vertically elongated gravity latch pivotally supported in the drawhead and adapted to be pressed back by said tail piece to permit the tail piece to pass to one side of and in locking engagement with said gravity latch, and a gravity pin for locking and unlocking the gravity latch, substantially as described.

2. In a car coupling, the combination with a recessed drawhead having a laterally swinging hooked jaw provided with a tail piece

normally projecting across the front of the drawhead in position to be struck by the jaw on an adjacent drawhead, of a vertically elongated gravity latch pivotally supported in the drawhead and adapted to be pressed back by and engaged with said tail piece, a locking pin for locking said gravity latch in its normally vertical position, and means for automatically actuating the said locking pin to lock and unlock the gravity latch, substantially as described.

3. In a car coupling, the combination with a recessed drawhead having a laterally swinging hooked jaw provided with a tail piece projecting in position to be struck by the jaw on an adjacent drawhead, of a vertically elongated gravity latch pivotally supported in the drawhead and adapted to be pressed back by and engaged with said tail piece, a locking pin extended longitudinally through said latch to project below the same and normally engage a locking recess in the drawhead, and means for automatically lifting said pin, by the action of the tail piece, to unlock the latch and permit its latching engagement with said tail piece, substantially as described.

4. In a car coupling, the combination with a recessed drawhead having a laterally swinging hooked jaw provided with a tail piece projecting in position to be struck by the jaw on an adjacent drawhead, of a gravity latch pivotally supported in the drawhead and having on its upper end a lug provided with a vertically elongated slot, a locking pin extended through said latch to project below the same and normally engage a locking recess in the

drawhead, the upper curved end of said locking pin being provided with a bifurcation that embraces the slotted lug on the latch, a clevis connected with said bifurcation by a pin extended through the slotted lug, and means for lifting said pin to unlock the latch and permit its engagement with or disengagement from the tail piece of the laterally swinging jaw, substantially as described.

5. In a car coupling, the combination of a recessed drawhead, a gravity latch pivotally supported in the drawhead and having a transverse groove across the lower portion of its front face, a locking pin extended vertically through said latch and supported therein to project normally below the same and engage a locking recess in the drawhead, said pin provided with a transverse groove or notch adapted to coincide with the groove in the latch, and a laterally swinging hooked jaw having a tail piece projecting in position to be struck by the jaw on an adjacent drawhead and provided with a beveled pin or projection to engage the notches of the latch and pin to lift said pin, unlock the latch and swing it rearward to permit the said tail piece to pass to one side of and become engaged with the gravity latch, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JAMES BIRD. [L. S.]

Witnesses:

CLARENCE S. DAVISON,
WILLIAM G. GIVEN.