No. 711,514. Patented Oct. 21, 1902.

H. MAY & C. KUNZ.

CAR COUPLING.

(Application filed Feb. 13, 1902.)

(No Model.)

Fig. 1.

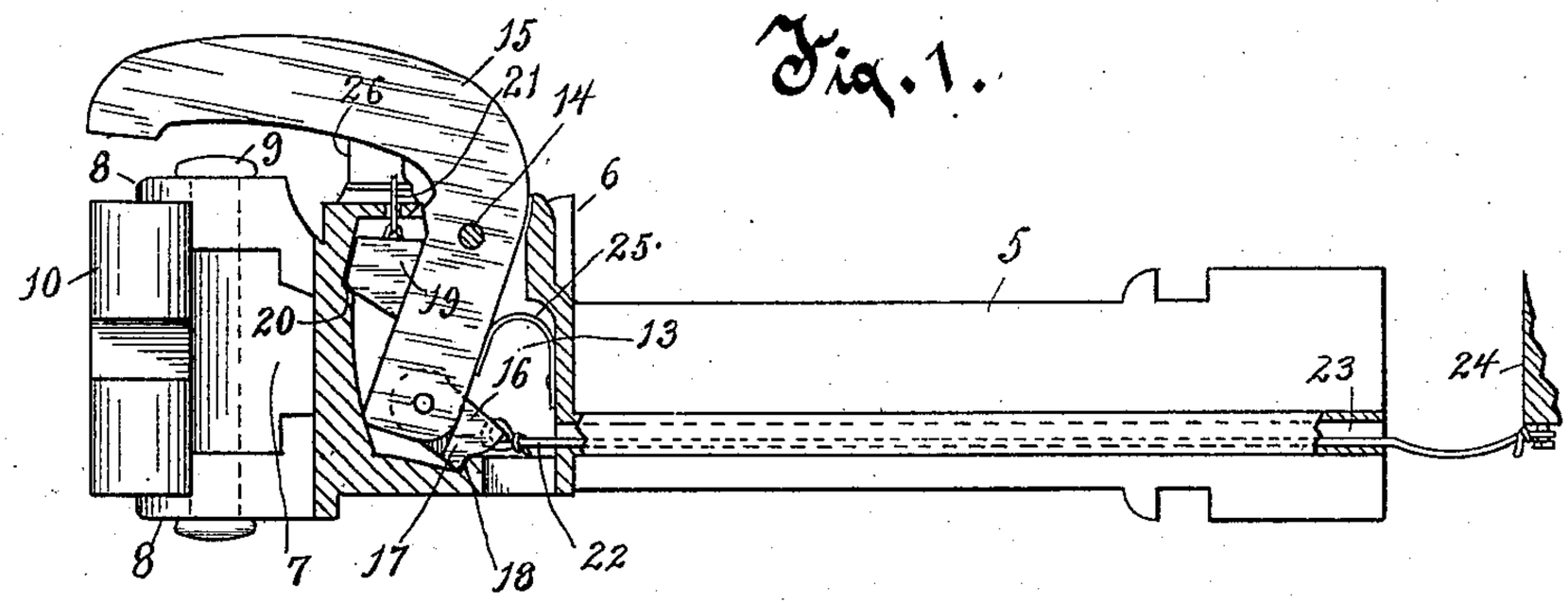


Fig. 2.

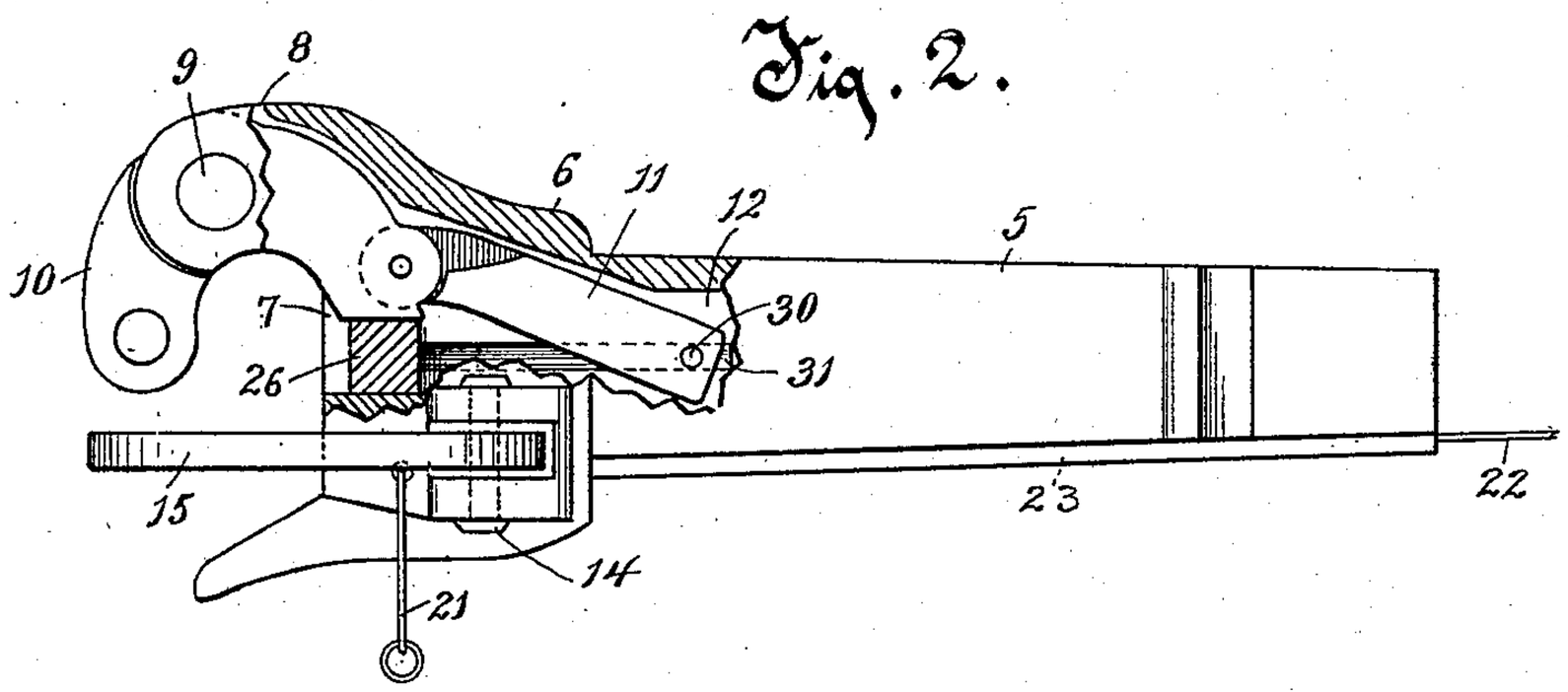


Fig. 3.

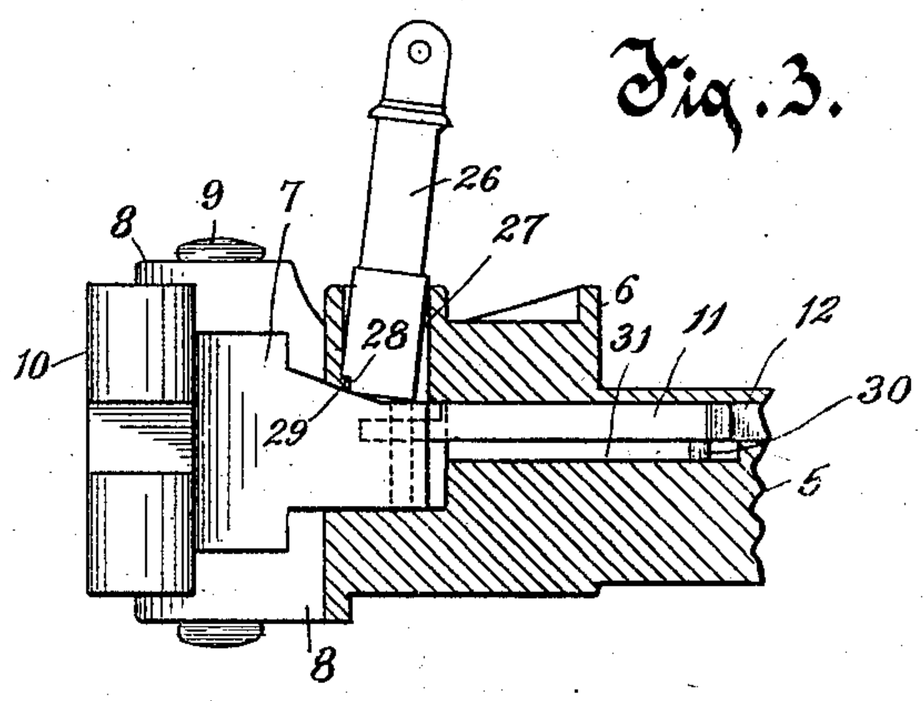
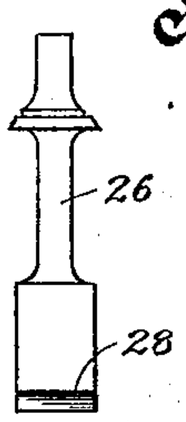


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY MAY, OF JANESVILLE, AND CHARLES KUNZ, OF FORT ATKINSON, WISCONSIN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 711,514, dated October 21, 1902.

Application filed February 13, 1902. Serial No. 93,868. (No model.)

To all whom it may concern:

Be it known that we, HENRY MAY, residing at Janesville, in the county of Rock, and CHARLES KUNZ, residing at Fort Atkinson, in the county of Jefferson, State of Wisconsin, have invented a new and useful Improvement in Car-Couplings, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

Our invention has relation to improvements in car-couplings.

In car-couplings as now usually constructed, and particularly those of the so-called "Janney" type, should the draw-bar break away from the car to which it is attached the coupling device or jaw carried in the draw-head at the outer end of said draw-bar will become detached from the coupling device or jaw of the draw-head of the opposite car, and consequently the entire draw-bar and its correlated parts will drop to the ground, resulting in the inconvenience of the loss or breakage thereof.

It is therefore the primary object of our invention to provide an improved construction of such character that should the draw-bar become disconnected from the car, as above set forth, the coupling mechanism thereof will still remain coupled to the complementary coupling mechanism of the other car, and hence the loss or breakage of said draw-bar thereby prevented.

With the above primary and other incidental objects in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the invention with parts in section and broken away. Fig. 2 is a plan view. Fig. 3 is a fragmentary side elevation, part in section, and showing the means for supporting the coupling-pin; and Fig. 4 is a detail view of the coupling-pin.

Referring to the drawings, the numeral 5 indicates the draw-bar, which is of the usual and well-known form of construction and extends beneath the end of the car and is secured by means of bolts or other securing means usually employed for that purpose. At the outer end of this draw-bar is provided the draw-head 6, having the interior chamber 7.

Disposed between projecting ears 8 8 and turnable on a vertical bolt 9 is an angular coupling-jaw 10, the inner arm of which when the jaw is in locking position is adapted to extend into the chamber 7. Pivoted to the inner end of this inner arm of the jaw is a tailpiece 11, which is adapted to extend rearwardly into an extension 12 from the main chamber 7. The draw-head is also provided in one side with a chamber 13, and in this chamber is pivoted on a pivot-pin 14 a bell-crank lever 15. The upper arm of this bell-crank lever is outside of the chamber and extends forwardly for a desired distance, as shown clearly in Figs. 1 and 2. To the lower end of the inner arm of the bell-crank lever is pivoted a dog 16, said dog being provided with a shoulder 17, which normally engages a shoulder 18, formed in the bottom of the chamber 13, and holds the bell-crank at the position shown in the drawings. The said bell-crank lever is locked in this position by means of a block 19, the outer lower corner of said block normally resting on a shoulder 20 in the upper portion of the front wall of the chamber 13. To the upper side of this block is connected the end of a small chain or cord 21, which extends through an opening therefor in the top of the chamber and thence down along the outer side of the draw-head in convenient position to be grasped and pulled. A cord 22 is also attached to the inner end of the dog 16, and this cord extends inwardly through a passage 23, formed therefor in the side of the draw-bar, and its inner end is connected to a portion, as 24, of the car. A bent spring 25 is preferably arranged in the chamber 13, and the free end of this spring is adapted to bear against the rear edge of the bell-crank lever 15.

The numeral 26 indicates the coupling-pin, which is adapted to work in a vertical passage 27 in the draw-head. The lower outer corner of this pin is provided with a shoulder 28, which when the pin is raised to the posi-

tion shown in Fig. 3 is adapted to engage a shoulder 29, formed on the front wall of the passage 27.

In a position of the parts shown in the drawings with the coupling-pin 26 in its raised position if the jaw 10 is turned outwardly the coupling is then adjusted to position to effect a locking engagement with a corresponding coupling carried by another car. When the two cars are brought together, the inner arm of the coupling-jaw of one coupling will strike against the inner arm of the coupling-jaw of the other coupling, and the two couplings will thereby be turned, so as to cause the inner arms of the jaws to be thrust into the chamber 7, while the outer arms of said jaws will be in interlocked engagement. As the inner arm of each coupling-jaw is thus turned inwardly into the chamber 7 its upper edge will contact with the lower end of the coupling-pin 26, and this will cause the disengagement of the shoulder 28 of said coupling-pin from the shoulder 29, and hence said coupling-pin will drop down across the inner side edge of the inner arm of the coupling-jaw, as clearly shown in Fig. 2, and hence said coupling-jaw is securely locked in this coupling position. The same effect, of course, is produced on the coupling-jaw of the coupling of the other car.

As stated at the outset of the specification, one of the primary objects of our invention is to provide an improved construction whereby should the draw-bar become disconnected from the car to which it is attached said draw-bar is prevented from falling to the ground, and thereby becoming lost or damaged. This function is accomplished by means of the provision of the bell-crank lever 15 and allied mechanism. When the draw-bar becomes detached, the slack in the cord 22 is necessarily taken up and said cord drawn taut, and the shoulder 17 of the dog 16 is thereby brought out of engagement with the shoulder 18 in the bottom of the chamber 13, and with continued pull on said cord the bell-crank lever 15 is turned on its pivot and the upper arm thereof thereby brought farther downwardly, while the inner arm is drawn inwardly, and consequently the block 19 is thereby caused to disengage from the shoulder 20 and drop down below said shoulder in the space between the forward edge of the inner arm of the bell-crank lever and the front wall of the chamber 13. The block being thus wedged in, the lever 15 is necessarily locked in this position, and when so locked in said position the coupling is absolutely prevented from being disengaged from the coupling of the other car, and with continued pull on the cord 22 said cord is broken or released from engagement with the part 24 of the car, and the coupling is left engaged with the other coupling and held upwardly in a horizontal position. When it is desired to return the parts to their normal positions, as illustrated in the drawings, all that is necessary to be done is to grasp the chain 21 and pull upwardly thereon, and this of course will raise the block 19 to such a position as to permit said block to again engage the shoulder 20, and when the block is so raised the spring 25 will act on the lever 15 to return it to its normal position and the shoulder of the dog 16 thereof again brought into engagement with the shoulder 18.

From Fig. 3 of the drawings it will be seen that in our improved construction the coupling-pin is held in its raised position by means of the engagement of the shoulder 28 thereof with the shoulder 29. Under many forms of construction when it is desired to turn a locking-jaw outwardly it is necessary for an operator to grasp the coupling-pin and pull it upwardly and hold it in its raised position while the jaw is so turned outwardly, inasmuch as in said constructions the coupling-pin is supported by the inner arm or the tailpiece of the coupling-jaw, and consequently when the coupling-jaw is turned outwardly there is no longer any support afforded by the inner arm of the coupling-jaw or by the tailpiece thereof. This obviously entails considerable trouble and loss of time on the operator. By our improved means, however, all that is necessary for the operator to do is to raise the coupling-pin to the forwardly-tilted position shown in Fig. 3, and the shoulder 28 thereof will then seat itself upon the shoulder 29, and said coupling-pin will be thereby held in this raised position during the time the coupling-jaw is swung outwardly and held in this outwardly-swung position, and when said coupling-jaw is subsequently swung inwardly the upper surface of the inner arm of said jaw will act upon the lower end of the coupling-pin, and thereby cause said pin to automatically drop to locking position. On the outward swing of the coupling-jaw the pin is not unseated, inasmuch as the coupling-jaw, or the tailpiece thereof, bears against the lower end of the coupling-pin and tends to hold the shoulder 28 into engagement with the shoulder 29. On the inward swing of the coupling-jaw, however, the tailpiece thereof acts on the lower end of the tilted pin and necessarily tends to force said pin from its tilted position to a straight perpendicular position, and in doing so of course releases the shoulder 28 from engagement with the shoulder 29, and hence the pin is permitted to drop into locking position.

While we prefer to employ the spring 25, yet this spring is not absolutely essential, and may, if desired, be omitted.

We prefer to provide the tailpiece 11 with a projecting lug 30, which fits in a groove 31 in the draw-bar, whereby a guide is formed for the movement of the tailpiece and swinging jaw.

What we claim as our invention is—

1. In a car-coupling, the combination of a draw-bar secured to the car, a coupling device carried thereby, a forwardly-extending lever

projecting over the coupling mechanism and pivoted at its rear end on a horizontal pivot-pin and adapted to have an up-and-down swinging movement on said pin, means for holding the forward end of the lever normally raised, means, when the draw-bar becomes detached from the car, for releasing the lever and permitting the same to turn on its pivot and thereby lower the forward end thereof to a position to engage over the coupling mechanism, and means for releasably locking the lever in the latter position.

2. In a car-coupling, the combination of a draw-bar secured to the car, a coupling device carried thereby, a bell-crank lever pivoted at the outer end of said draw-bar, the upper arm of the bell-crank lever projecting over the coupling mechanism, means for holding the upper arm of the bell-crank lever normally in a raised position, means when the draw-bar becomes detached from the car for releasing said upper arm so as to permit it to lower to a position to engage over the coupling mechanism, and a cord connected to the lower arm of the bell-crank lever and having its rear end connected to a fixed portion of the car, said cord adapted, when the draw-bar becomes detached from the car, to turn the bell-crank lever and lower the upper arm thereof to the position stated.

3. In a car-coupling, the combination of a draw-bar secured to the car, a coupling device carried thereby, a bell-crank lever pivoted at the outer end of the draw-bar, the upper arm of said bell-crank lever projecting over the coupling mechanism, means for holding the upper arm of the bell-crank lever normally in a raised position, means when the draw-bar becomes detached from the car, for releasing said upper arm so as to permit it to lower to a position to engage over the coupling mechanism, a dog pivoted to the lower arm of the bell-crank lever and normally engaging the draw-bar so as to hold the bell-crank lever in such position that its upper arm is raised, and a cord connected to the dog and having its rear end connected to a fixed portion of the car, said cord adapted, when the draw-bar becomes detached from the car, to turn the dog and release the same and permit the bell-crank lever to turn and thereby lower the upper arm thereof to the position stated.

4. In a car-coupling, the combination of a draw-bar secured to the car, a coupling device carried thereby, a bell-crank lever pivoted at the outer end of the draw-bar, the upper arm of said bell-crank lever projecting over the coupling mechanism, and the lower arm of said bell-crank lever being disposed in a chamber in the draw-bar, a block interposed between the outer edge of the lower arm of the bell-crank lever and the opposed wall of the chamber and normally resting on a shoulder formed on the upper portion of said wall of the chamber, means adapted, when the draw-bar becomes detached from the car, for turning the bell-crank lever on its pivot and thereby permitting the block to drop into the lower portion of the space between the outer edge of the lower arm of the bell-crank lever and the wall of the chamber, and the upper arm of said bell-crank lever to be lowered and thereby brought to a position to engage over the coupling mechanism, the changed position of the block locking said upper arm of the bell-crank lever in this position, and means for raising the block.

5. In a car-coupling, the combination of a draw-bar provided at its outer end with a chambered draw-head, and with a longitudinal guideway extending inwardly from said chamber, of a swinging coupling-jaw disposed in the chamber of the draw-head, and a rearwardly-extending tailpiece pivoted to the coupling-jaw, said tailpiece having a lug extending therefrom which is adapted to fit the guideway.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY MAY.
CHARLES KUNZ.

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FRANCIS E. RYAN,
J. H. MCCAFFREY.
Witnesses to Charles Kunz's signature:
A. L. MORSELL,
ANNA V. FAUST.