

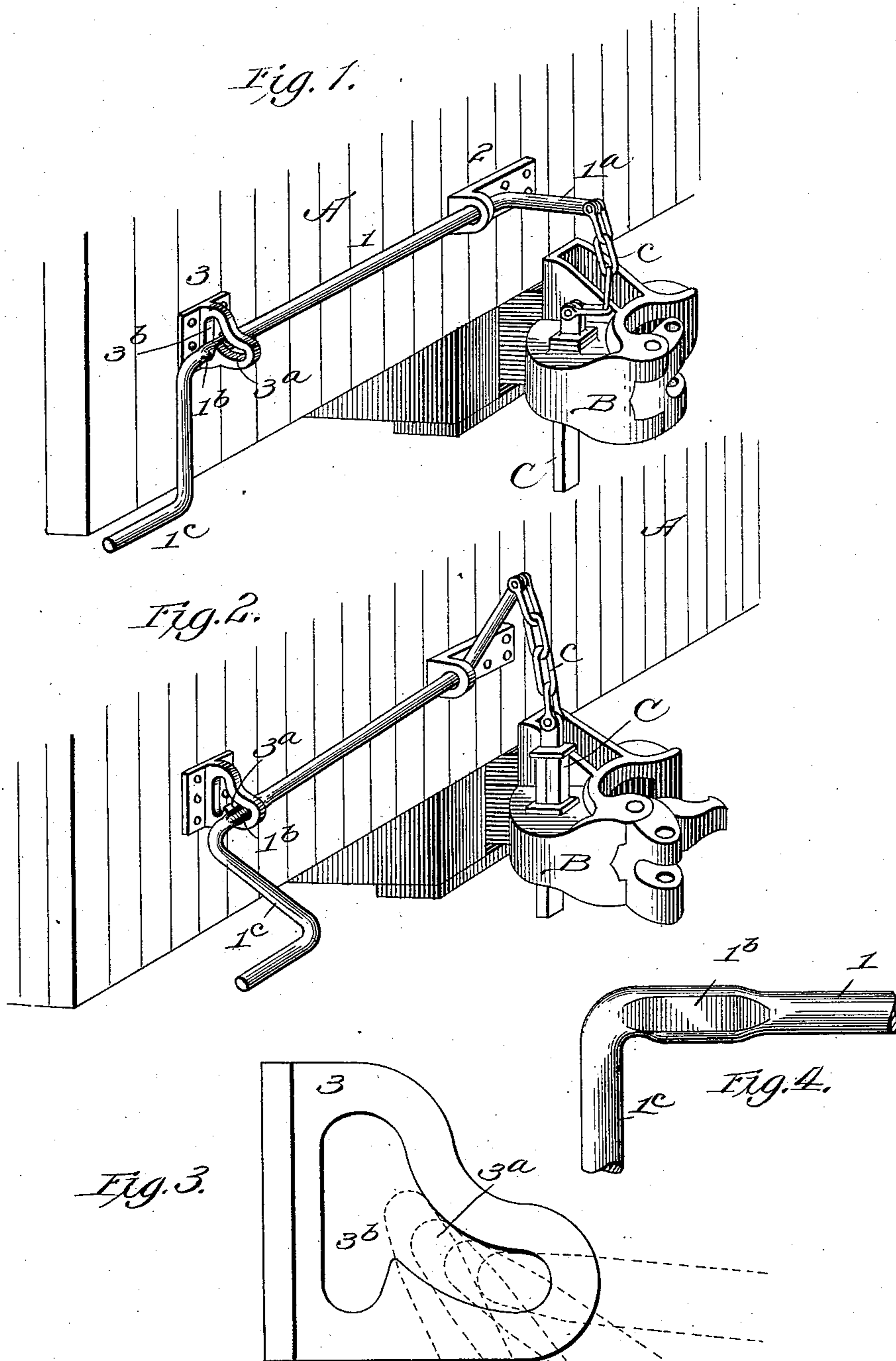
(No Model.)

W. KELSO.

UNCOUPLING LEVER AND LEVER LOCK FOR CAR COUPLINGS.

No. 601,020.

Patented Mar. 22, 1898.



Witnesses:

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UNITED STATES PATENT OFFICE.

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UNCOUPLING-LEVER AND LEVER-LOCK FOR CAR-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 601,020, dated March 22, 1898.

Application filed November 12, 1897. Serial No. 658,326. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KELSO, a citizen of the United States, residing at Pittsburg, in the county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Uncoupling-Levers and Lever-Locks for Car-Couplings; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the end sill of a car and a vertical or Janney type of car-coupler having applied thereto an unlocking-lever and lever-lock embodying my invention, the parts being in the position they occupy when the locking-pin is down. Fig. 2 is a similar view showing the parts in the position they occupy when the locking-pin is raised, as for uncoupling, the unlocking-lever being shown at the extreme of its movement, as when there is an excess of slack in the flexible connection between the lever and pin. Fig. 3 is a detached enlarged side elevation of the bracket in which the locking-slot is formed, the locked position of the lever at several points intermediate of its minimum and maximum travel being indicated in dotted lines. Fig. 4 is an enlarged side elevation of a portion of the outer end of the unlocking lever or shaft, showing the flat or cam surface which engages in the arc-shaped locking-slot.

Like symbols refer to like parts wherever they occur.

My invention relates to that class of safety devices generally termed "unlocking-levers" or "release-rigging" for car-couplings employed for manipulating the locking-pin or locking-block of the vertical or Janney type of car-couplings, or, if desired, the pin of the ordinary link-coupling in coupling and uncoupling cars, having for their object to enable the operator to manipulate the locking-pin or locking-block without entering between the cars or otherwise exposing himself to injury in the operation.

As is well understood, car-couplings as commonly constructed are connected to the car by draft and buffing springs, which allow of considerable longitudinal movement of the

coupler under pulling and buffing strains, and as the release-rigging or unlocking-lever is commonly mounted on or supported from the car-body or end sill thereof any devices which are to prove efficient in service must be so constructed as to allow for such slack, which will necessarily vary through a range of several inches, or else the connections between unlocking-lever and locking-pin, which were properly adjusted when applied, will become disorganized and inoperative under the above-noted conditions incident to service.

So far as I am aware mechanism of this character as heretofore devised and applied has been deficient in two particulars—viz., first, by reason of the limited range of movement of the unlocking-lever, whereby if the connection between the unlocking-lever be or become from any cause too short either the lever cannot be locked up or will not allow the locking block or pin to assume the proper locking position, or if the connection between the lever and locking block or pin be too long the lever when raised to its highest position will fail to sufficiently withdraw the locking block or pin to effect an uncoupling, and, second, in lack of provision for locking the unlocking-lever at any point in its movement which may be demanded by the length of connection between the lever and locking block or pin.

The object of my present invention is, first, to so increase the range of movement of the unlocking-lever as to compensate for any excess of slack in the lever and locking block or pin connections, and, second, to so construct the devices that the unlocking-lever may be locked or held at any point within its movement that the said connections may require.

To this end my invention, generally stated, embraces the combination with an unlocking-lever of an arc-shaped locking-slot preferably extending downward and outward below the plane of rotation of the unlocking-lever (said unlocking-lever provided with a cam-surface which engages in the arc-shaped locking-slot, whereby the outer end of the lever will remain fixed at any point in the arc slot traversed thereby.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the end sill or body of a car, and B the coupling connected thereto in the usual manner, said coupling having a suitable locking-pin C, which is to be operated by the mechanism hereinafter described.

In the present instance the usual Janney freight-coupling has been shown, but as the same forms no part of the present invention and is used simply for purposes of illustration it is to be understood that any form of vertical or Janney type of coupler may be substituted, and the term "locking-pin" or "locking-block" wherever hereinafter used is intended to include any form of lock adapted to be operated by the mechanism which embodies my invention.

Attached to the car-body or end sill A are two brackets for the support of a shaft or unlocking-lever, the inner of said brackets 2 being of any character which will permit of the rotation and pivotal movement of the inner end of shaft or lever 1, while the outer or lock bracket 3, arranged in line therewith, will have an arc-shaped locking-slot 3^a, which may be downwardly curved and outwardly extending, the extent of which slot is preferably such as to permit the lifting-finger 1^a on the inner end of shaft 1 to move through about ninety (90°) degrees when the outer end of the shaft is traveling from the inner to the outer end of said slot 3^a. In addition to said downwardly and outwardly curved slot 3^a the bracket 3 may be provided with a vertical inner slot 3^b, with which the inner and upper end of slot 3^a connects, so that the shaft 1 may be passed back and forth between the slots in the movements of shaft 1 necessary to actuate the locking-pin or locking-block.

The shaft or unlocking-lever has at or adjacent to its inner end a projecting arm or lifting-finger 1^a, with which the locking-pin or locking-block C of the coupling B is connected by a chain c or in other suitable manner, so as to move responsive to the movements of shaft 1, and said shaft is also provided with a flat or cam surface 1^b at the point of its passage through bracket 3, whereby the outer end of shaft 1 may be caused to pass into and lock at any point in the arc-shaped locking-slot 3^a of bracket 3. The outer end of shaft 1 may be provided with a handle or crank-arm 1^c to facilitate the rotation of shaft 1 in lifting the locking-pin or locking-block and unlocking the coupler.

The upper part of the vertical slot 3^b of bracket 3 or the arc-shaped slot 3^a where it unites therewith should be of sufficient width to permit of the passage and rotation therein of shaft or lever 1, while the lower end of said slot 3^b, as well as the arc-shaped slot 3^a, may

and will be of less width than shaft 1 or of such width that the flat portion 1^b of shaft 1 or its equivalent may traverse the arc-shaped slot without permitting the rotation of shaft 1.

The construction of the devices being substantially such as hereinbefore pointed out, they will operate as follows: Assuming the devices to be in the position shown in Fig. 1 of the drawings—that is to say, the locking-pin or locking-block C in the lower or locked position, the lifting-finger 1^a horizontally extended, and the outer end of the unlocking lever or shaft 1 resting in the bottom of vertical slot 3^b—the outer end of unlocking-lever 1 is first raised into the upper part of recess 3^b, where it can be rotated, and is then rotated to raise the lifting-finger vertically until the flat or cam surface 1^b of shaft 1 can be entered in the inner end of arc-shaped locking-slot 3^a. If this operation of the lever 1 has been sufficient to take up all the slack in the connection c between lever-finger 1^a and the locking-block and to draw the locking-block out of engagement with the tail-piece of the knuckle of the coupling, the outer end of the lever need be moved no farther, but owing to the weight thereon and its flat surface (or equivalent) will be locked in position as soon as entered in arc slot 3^a, and so remain holding the locking-block out of engagement with the tailpiece of the knuckle; but if owing to excessive slack in the connection c between lifting-finger 1^a of shaft 1 and the locking-block the locking block or pin has not been moved the required distance the outer end of the unlocking lever or shaft 1 is made to traverse the arc-shaped slot 3^a downward and outward, (without rotation,) which will carry the inner or pivotal end of the shaft or unlocking-lever and the finger 1^a backward and upward and farther withdraw the locking-pin. This is continued until the locking block or pin has been moved the required distance, when it will be found that at whatever point the outer end of unlocking lever or shaft 1 has reached in the arc-shaped slot 3^a it will, owing to the form of the slot and the flat or cam surface 1^b of the lever, remain locked in said position, the shaft 1 not being capable of rotation in the arc slot.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In unlocking mechanism for car-couplings, the combination, with an unlocking lever or shaft having its inner end pivotally supported, of a support for the outer end of said shaft said support having an arc-shaped locking-slot, said unlocking lever provided with a cam-surface which engages in the arc-shaped locking-slot, substantially as and for the purposes specified.

2. In unlocking mechanism for car-couplings, the combination with an unlocking shaft or lever, of supports therefor, one of

5 said supports provided with a downwardly and outwarly extending arc-shaped locking-slot, said unlocking-lever provided with a cam-surface which engages in the arc-shaped locking-slot, substantially as and for the purposes specified.

10 3. In unlocking mechanism for car-couplings, the combination with an unlocking lever or shaft, of supports therefor, one of said supports having a vertical lever-slot and an arc-shaped locking-slot leading from the vertical slot, substantially as and for the purposes specified.

15 4. In unlocking mechanism for car-couplings, the combination with an unlocking lever or shaft, of supports therefor, one of said supports having a vertical lever-slot and a downwardly and outwardly extending locking-slot which connects with the vertical slot,

substantially as and for the purposes specified. 20

5. In unlocking mechanism for car-couplers, the combination with an unlocking shaft or lever having its inner end pivotally supported, and provided with a flattened or cam 25 surface distant from the pivotal support, of a second support having a vertical lever-slot and a downwardly and outwardly extending arc-shaped locking-slot for said lever or shaft; substantially as and for the purposes specified. 30

In testimony whereof I affix my signature, in presence of two witnesses, this 11th day of November, 1897.

WILLIAM KELSO.

Witnesses:

LEES ARMBURCEN,
F. D. ECKER.