

(No Model.)

3 Sheets—Sheet 1.

H. C. BUHOUP.
CAR COUPLING.

No. 569,954.

Patented Oct. 20, 1896.

Fig. 1.

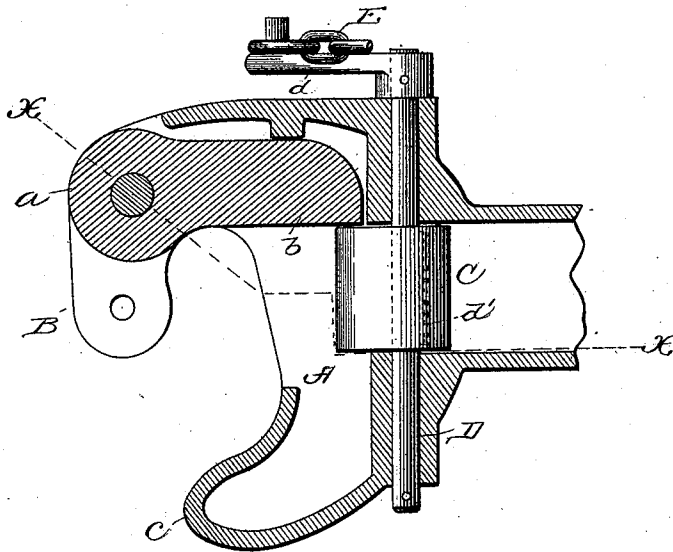
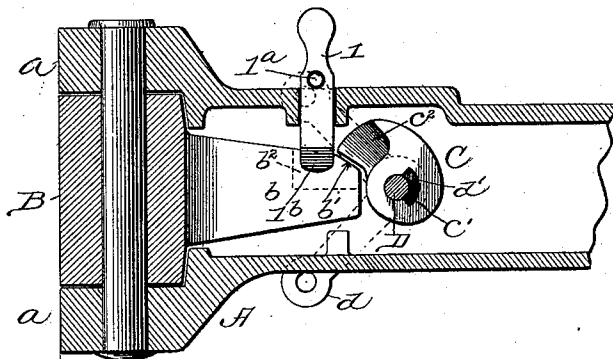


Fig. 2.



WITNESSES:

Harry S. Rohrer.
M. S. Dyer.

INVENTOR

Harry C. Buhoup
BY J. W. Ritter
ATTORNEY.

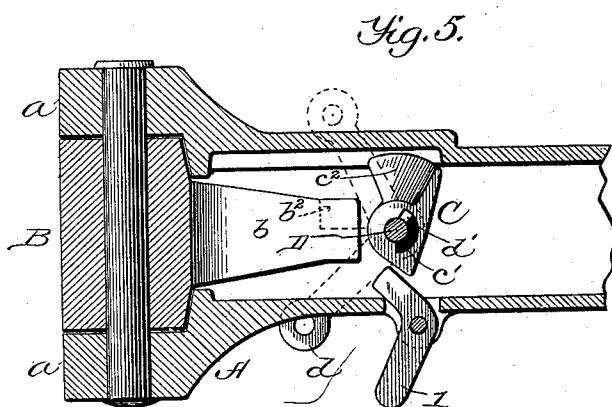
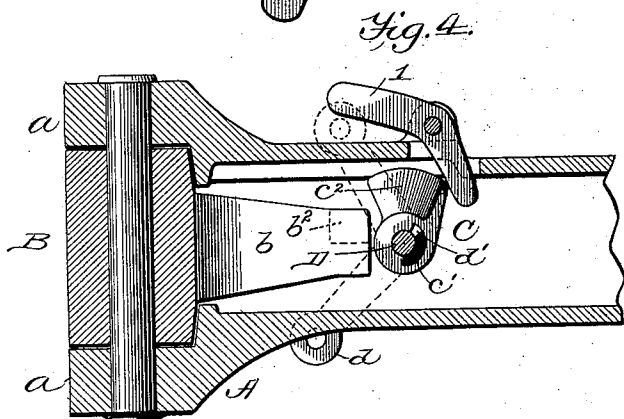
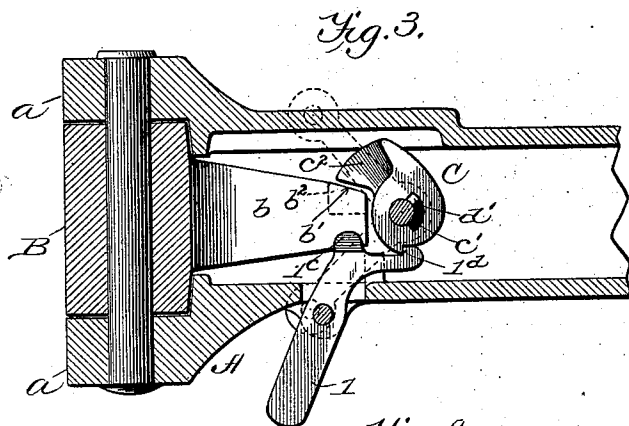
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WITNESSES:

Henry S. Rohrer.
J. M. Dye.

INVENTOR

Harry C. Buhoup
BY F. W. Ritter Jr.

ATTORNEY.

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Fig. 6.

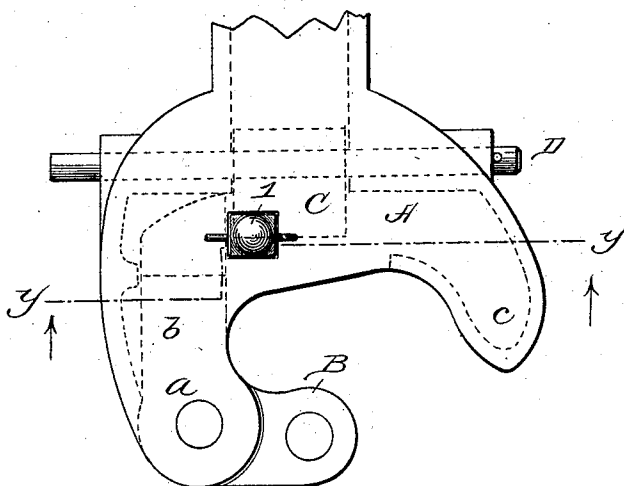
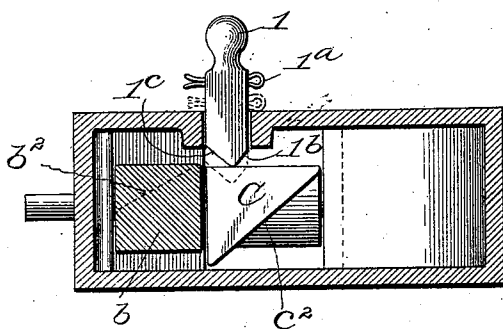


Fig. 7.



WITNESSES:

Harry S. Rohrer.
Wm. Darley.

INVENTOR

Harry C. Buhoup
BY *F. W. Ritter Jr.*

ATTORNEY.

UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 569,954, dated October 20, 1896.

Application filed April 29, 1896. Serial No. 589,567. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in 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 horizontal section of a coupler-head embodying my invention, the vibrating locking-block being shown in plan view. Fig. 2 is a longitudinal vertical section taken on the line *xx*, Fig. 1, the vibrating locking-block shown in side elevation or end view and the trip-catch projecting from the top of the coupler-head. Fig. 3 is a longitudinal vertical section, similar to Fig. 2, of a modification, the trip-catch for the locking-block being shown projecting from the bottom of the coupler-head instead of from the top of the head, as shown in Figs. 1 and 2. Figs. 4 and 5 are longitudinal vertical sections, similar to Fig. 2, of further modifications, illustrating arrangements of the trip-catch where an automatic operation of the devices is not desired. Fig. 6 is a top plan view of the coupler-head shown in Figs. 1 and 2; and Fig. 7 is a transverse vertical section taken on the line *yy*, Fig. 6, looking in the direction of the arrow, Fig. 6.

Like symbols refer to like parts wherever they occur.

My present invention relates to the construction of that class of car-couplings (more commonly used in freight-couplers) wherein the coupling up is effected by combining with the knuckle and its tailpiece a horizontally-pivoted vertically-vibrating locking-block, and has for its object the provision of means which shall indicate when the locking-block is in position for uncoupling and may be used to release the locking-block or recouple without first separating the cars. Heretofore with this class of couplers the construction has embraced the combination, with a knuckle and its tailpiece, of an overbalanced vertically-vibrating locking-block having on its anterior face an incline with which the tailpiece of the knuckle engaged to lift said lock-

ing-block and permit the inward movement of the tailpiece in the act of coupling, the locking-block falling forward into the coupling position by gravity after the tailpiece has passed in or out. For the purpose of uncoupling the usual forms of construction have required the locking-block to be held back by some means not automatic in its operation, though to in a measure overcome the necessity of manual interference in setting the locking-block for coupling up other or additional inclines have been formed on the anterior face of the vibrating locking-block whereby the tailpiece of the knuckle in its outward movement in the act of uncoupling would vibrate the locking-block forward into the position for coupling. However, in all of said constructions the only means of directly operating the vibrating locking-block, other than the crank and shaft by which the locking-block is raised and secured or locked for uncoupling, has been the tailpiece of the knuckle, and as a consequence it has heretofore been impossible with this class of lock to recouple without first uncoupling or separating the cars, so as to actuate the knuckle and through it the vibrating locking-block.

To overcome said objections and obtain means whereby the locking-block may be returned to the coupled position without separating the cars, I combine with the knuckle, its tailpiece, and overbalanced vibrating lock a trip-catch projecting through the head, and having within the head an arm arranged in the plane of vibration of the locking-block, said trip-catch adapted to retain the vibrating locking-block out of the path of the tailpiece of the knuckle until such time as it may be tripped either manually or automatically, and such a construction embodies the main feature of my invention.

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 a coupler-head provided with the usual ears *a*, on which the knuckle B is pivoted, and with the finger-guard *c*, the knuckle B having the usual tail-

piece *b*, which moves within the head and is provided with beveled end *b'* to engage a vibrating locking-block C.

C indicates an overbalanced vibrating locking-block pivoted on a bolt or shaft D, which passes through the head and locking-block and is provided with a crank-arm *d*, connected by a chain E with the usual uncoupling-lever, (not shown,) by which the locking-block is raised to set it for uncoupling.

The bolt or shaft D may be provided with a key *d'*, which moves in a segmental recess *c'* in the vibrating locking-block, or equivalent means may be employed for causing the vibrating locking-block to move with bolt or shaft D in one direction in setting the lock for uncoupling, and independently thereof on the return or forward movement of the block in making a coupling.

The vibrating locking-block has upon its anterior face an incline *c''* for coacting with the beveled end *b'* of the tailpiece *b* in coupling up, or to enable the tailpiece to lift the vibrating locking-block in its inward movement.

With the overbalanced vibrating locking-block I combine a trip-catch 1, the general characteristics of which are that of a lever, one arm of which moves in the path of the vibrating locking-block while its other arm projects from the coupler-head, so as to be within sight and reach of the brakeman; but the particular construction of this element of the combination will be in a measure regulated by its location, by the direction of the overbalance of the vibrating locking-block—that is, whether the weight of the locking-block is forward or back of its pivotal point—and also by whether it is to be operated by the tailpiece of the knuckle (that is to say, automatically) as well as by hand. If its location is to be above and in front of the pivot of a locking-block whose center of gravity is forward of its pivot, as indicated in Figs. 2 and 7 of the drawings, I may employ a vertical lever or loose pin which projects through a slot in the top of the coupler-head and is suspended thereon by a transverse pin *1''*, its lower end beveled, as at *1''*, to engage the tailpiece of the knuckle and the bevel *b''* thereof. The lower end of said lever will thus fall in front of the vibrating locking-block when the same has been rotated back for uncoupling, and will remain in that position until either lifted by the hand of the brakeman or forced up by the outward movement of the tailpiece of the knuckle in uncoupling.

If, however, the trip-catch is to be located below and forward of a vibrating locking-block whose center of gravity is forward of its pivot, (see Fig. 3,) the lever 1 will be preferably of a bell-crank form, its inner arm arranged to vibrate in the plane of vibration of the locking-block and provided with an incline *1'* to be engaged by the tailpiece of the

knuckle and its extremity with a notch *1''* to engage a corresponding notch or tooth on the under side of the vibrating locking-block, so that while the lever 1 outside of the head is so situated as to be operated by hand to release the locking-block and recouple without separating the cars it is at the same time by its inner arm in position to be automatically actuated by the tailpiece of the knuckle to release the locking-block and set the same for coupling up when the knuckle is rotated.

In the special forms heretofore described, and illustrated by Figs. 2 and 3, the center of gravity of the locking-block has been forward of the pivotal point of the locking-block, and the trip-catch has been adapted to be operated both by the tailpiece of the knuckle and by hand, but in the modifications shown in Figs. 4 and 5 the center of gravity of the locking-block, when in position for uncoupling, is back of the pivot of the locking-block C, in which case a simple pivoted trip-lever or trip-catch 1, having its point of support in rear of the pivot of the locking-block C and its inner arm arranged to vibrate in the plane of the locking-block, may be employed.

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

1. In a car-coupling, the combination with a knuckle, its tailpiece, and a vertically-vibrating locking-block, of a trip-catch which projects through the coupler-head, that portion of said catch which is within the head being arranged in the path of the vibrating locking-block whereby the vibrating locking-block may be caused to assume the forward or locked position by the manipulation of the projecting portion of said trip-catch after once being set for uncoupling; substantially as and for the purposes specified.

2. In a car-coupling, the combination with a knuckle and its tailpiece, of a vibrating locking-block, a shaft upon which the locking-block is loosely mounted, means for limiting the rotation of the locking-block independent of its shaft, and a trip-catch arranged in the path of the vibrating locking-block; substantially as and for the purposes specified.

3. In a car-coupling, the combination with a knuckle, its tailpiece and a horizontally-pivoted overbalanced locking-block, of a trip-catch which projects through the head of the coupler and whose point of support is on the same side of the pivot of the locking-block as the center of gravity of the locking-block, that portion of the trip-catch within the coupler-head being arranged in the plane of vibration of the locking-block whereby the locking-block may be thrown into the locking position by the manipulation of the projecting portion of said trip-catch substantially as and for the purposes specified.

4. In a car-coupling, the combination with a knuckle, its tailpiece, and a horizontally-pivoted vibrating locking-block whose center

of gravity is forward of its pivot, of a trip-
catch which projects through the coupler-
head and is arranged forward of the pivot of
the locking-block and in the path of the tail-
5 piece of the knuckle, substantially as and for
the purposes specified.

In testimony whereof I affix my signature,

in presence of two witnesses, this 22d day of
April, 1896.

HARRY C. BUHOUP.

Witnesses:

MARK LANE,

LILIAN BOWMAN.