

(No Model.)

2 Sheets—Sheet 1.

H. C. BUHOUP.
CAR COUPLING.

No. 498,381.

Patented May 30, 1893.

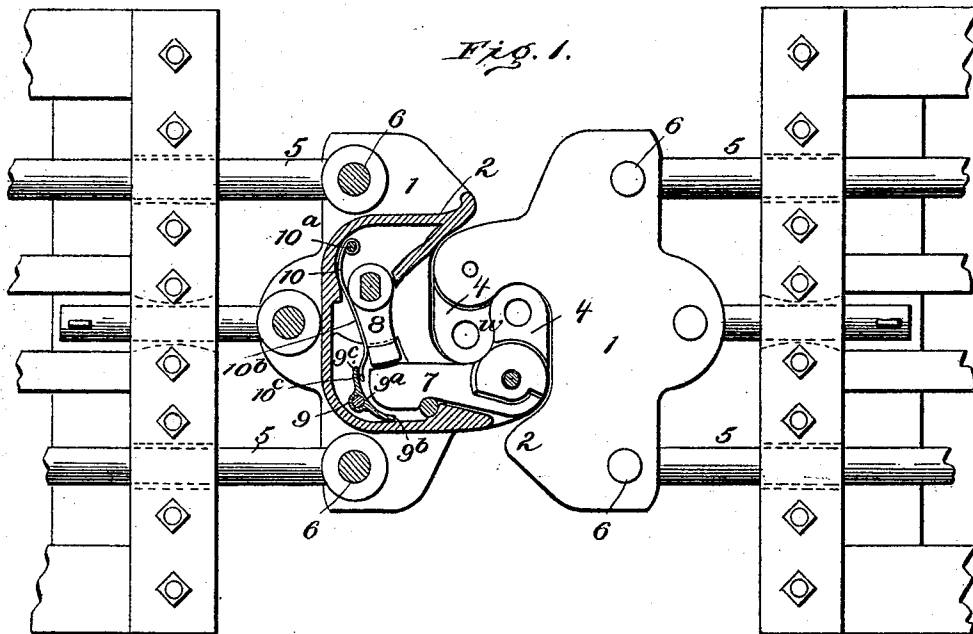
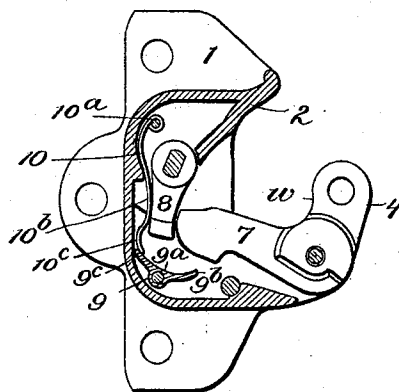


Fig. 2.



Witnesses

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Fig. 3.

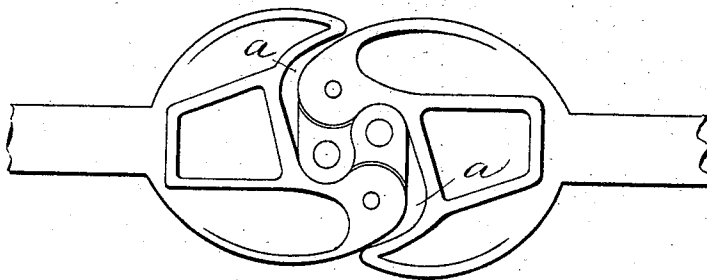
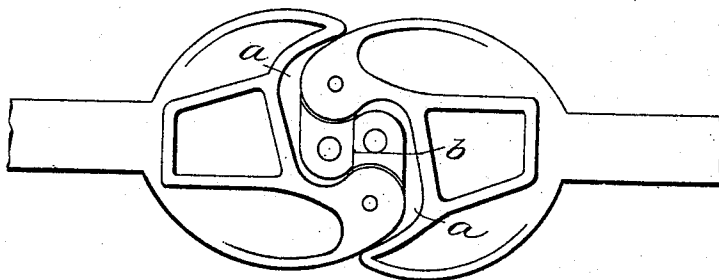


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 498,381, dated May 30, 1893.

Application filed February 8, 1893. Serial No. 461,484. (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 and State of Illinois, have invented certain new and useful Improvements in Car-Couplers; 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 plan view of two couplers embodying my invention—coupled together—one of said couplers being in horizontal section to show the position of the spring, locking block, and kicker-casting when the parts are coupled. Fig. 2, is a horizontal section of one of the couplers showing the position of the locking block, spring, and kicker-casting when in the act of uncoupling. Fig. 3, is a plan view of two couplers having the lines now in use coupled together. Fig. 4, is a view similar to Fig. 3, but showing the effect of wear thereon which removes the draft of the coupler from the center line creating a wedge action and rendering the couplers liable to separate without the opening of the knuckle.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of car couplers generally designated "twin jaw" couplers, or vertical couplers; and has for its object, first, to overcome the wear on the points of the knuckles and the tendency of the coupler to pull apart without the knuckle opening; and second, to so combine the knuckle, kicker and locking block of a vertical coupler, that the kicker may be actuated by and actuate the knuckle with a very slight or minimum movement of the locking block. In this class of couplers as now commonly constructed, a single stem is used and the lines of the coupler (see Fig. 3), are such as to allow of considerable space (as indicated at *a*), between the guard arm and knuckle, when two couplers are coupled up, in order to allow for curving. As a result of such a construction the constant wear on the inner surfaces of the knuckles (see *b* Fig. 4) very soon creates a wedge and renders the couplers liable to pull apart without the opening of the knuckle. To overcome such objection

I provide each coupler with two or more stems, and form the couplers on substantially the lines indicated in Fig. 1, that is to say, without the space heretofore allowed for curving, 55 and adapted to fit snugly one within the other, so that there shall be substantially no lateral play, but only the vertical movement required in all vertical couplers, and such a construction or its equivalent embodies the first feature of my invention. 60

Heretofore in actuating the kicker-casting from the locking-block, a greater movement of the locking-block was required than could be readily allowed in the construction of most 65 couplers, and where springs were used to actuate the kicker they have been so combined with the kicker and locking-block as either to be kept under constant tension which affected their usefulness, or else have been so located 70 with relation thereto, as to require more space within the head than could be safely given them. To overcome these objections, I combine a wing lock or locking block and a kicker-casting, by means of an interposed spring, so 75 arranged as to be compressed by the initial movement of the locking-block and to actuate the kicker-casting to the full extent of its movement the instant the locking block passes the tail piece of the knuckle; and such a combination or its equivalent embodies the second feature of my invention. 80

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

I will now proceed to describe my invention 85 more fully so that others skilled in the art to which it appertains may apply the same.

In the drawings (Figs. 1 and 2) which illustrate my invention, 1, indicates a coupler-head provided with a guard arm 2, ears 3, 90 wherein the knuckle 4 is pivoted, and with two or more stems 5, 5, pivoted to the head as at 6, 6, and which may have the usual or any approved form of draft and buffing springs. The lines on which the coupler head and 95 knuckle are formed, (see Fig. 1,) are such that when two couplers are coupled up there will be substantially no lost space which will permit of the independent lateral or longitudinal movement of the couplers, one upon the other, 100 or in fact any independent movement of the couplers, except that incident to the inequali-

ties of castings, the ordinary expansion and contraction of metals, and the vertical movement required in this class of couplers. The knuckle 4 is provided with the usual tail piece 7, which is adapted to swing within the head 1.

8 indicates a pivoted wing lock or locking block, having its front face 8^a concave to accommodate the sweep of the tail piece 7 of the knuckle 4, and its rear surface straight or slightly concave to accommodate the spring which actuates the kicker-casting.

9 indicates the kicker-casting of somewhat triangular form having a concave face 9^a, adapted to accommodate the convex end of the tail-piece 7. This kicker-casting is pivoted within the head 1 in rear of the tail piece 7 and so that one of its horns 9^b shall stand back of the tail piece while its other horn 9^c shall project on a line parallel with but back of the wing lock or locking block 8.

10 indicates a curved spring arranged transversely of and within the head 1 in rear of the wing lock 8, said spring being secured as at 10^a and slightly curved first forward as at 10^b to engage the rear face of locking block 8 and thence backward as at 10^a to engage the horn 9^c of the kicker-casting 9.

The construction being substantially of the character hereinbefore specified, will operate as follows:—The initial backward movement of the wing lock or locking block 8 will compress the spring section 10^a, which bears on the horn 9^a of the kicker-casting and cause the horn 9^b, to press on the tail piece 7 of knuckle 4, so that the instant the locking block 8 passes the end of tail piece 7 the kicker-casting will automatically project the tail piece and open the knuckles. Owing to the close fit of the knuckles 4, with each other, and the head, there being no slack between the parts, the couplers will be devoid of play upon each other in rounding curves, but will obtain the required curving movement by the operation of the parallel stems 5, 5.

Among the advantages of my invention are the following, viz: The spring is arranged to be acted on by the initial movement of the locking block which spring creates sufficient compression on the kicker-casting to operate it to the full extent of its movement so that the construction is adapted for use in coupler-heads which permit but a limited movement of the locking block; the spring also, has sufficient bearing on the locking block to hold it in position when the lock is forward in coupling, while in both the coupled and uncou-

pled position of the parts the spring is virtually relieved from tension or compression.

The close fit of the two heads always holds the knuckles or coupling faces in the original position when coupled together, so that the wear will occur at the points indicated by *w*, Fig. 1, which will at least double the life to the wear of the knuckles or pivoted nose, and will obviate the wedge wear (as indicated at *b*, Fig. 4) which renders the couplers liable to pull apart without the opening of the knuckle or nose. The two or more parallel pivoted stems with the usual draft or buffing springs balance the head and cause it, when uncoupled, to at all times maintain a central or coupling position and to readily right itself after passing curves.

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

1. A "twin jaw" or vertical type coupler, provided with two or more pivoted stems, and having its head and knuckle formed on lines substantially as specified, whereby all lateral or curving play of the couplers on each other is obviated when two couplers are coupled up.

2. The combination of two vertical type car couplers having their heads formed on lines which prevent the lateral play of said heads on each other, each of said couplers having two or more stems, substantially as and for the purposes specified.

3. In a vertical type coupler, the combination with the knuckle, of a kicker-casting arranged to operate on the tail piece of the knuckle, a locking block, and an interposed spring secured at one end and having its other end arranged to bear on the kicker-casting; substantially as and for the purposes specified.

4. In a vertical type car coupler, the combination with the knuckle, of a kicker-casting pivoted within the head back of the tail piece of the knuckle, a wing lock, and an interposed spring arranged transversely within the head back of the wing lock and adapted to bear thereon, said spring fixed at one end and having its opposite end arranged to bear on the kicker-casting; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 6th day of February, 1893.

HARRY C. BUHOUP.

Witnesses:

P. HIEN,

R. E. JANNEY.