(No Model.)

C. H. TAYLOR.

CAR COUPLING.

No. 504,637. Patented Sept. 5, 1893.

Fig. 1.

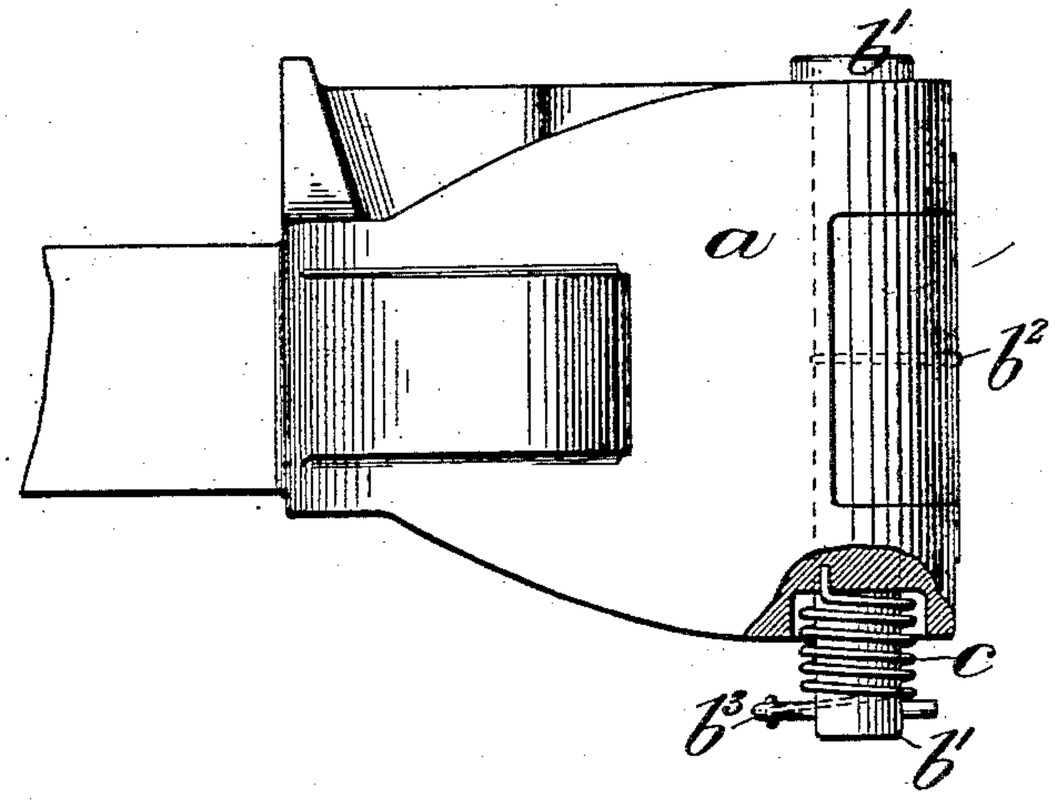


Fig. 2.

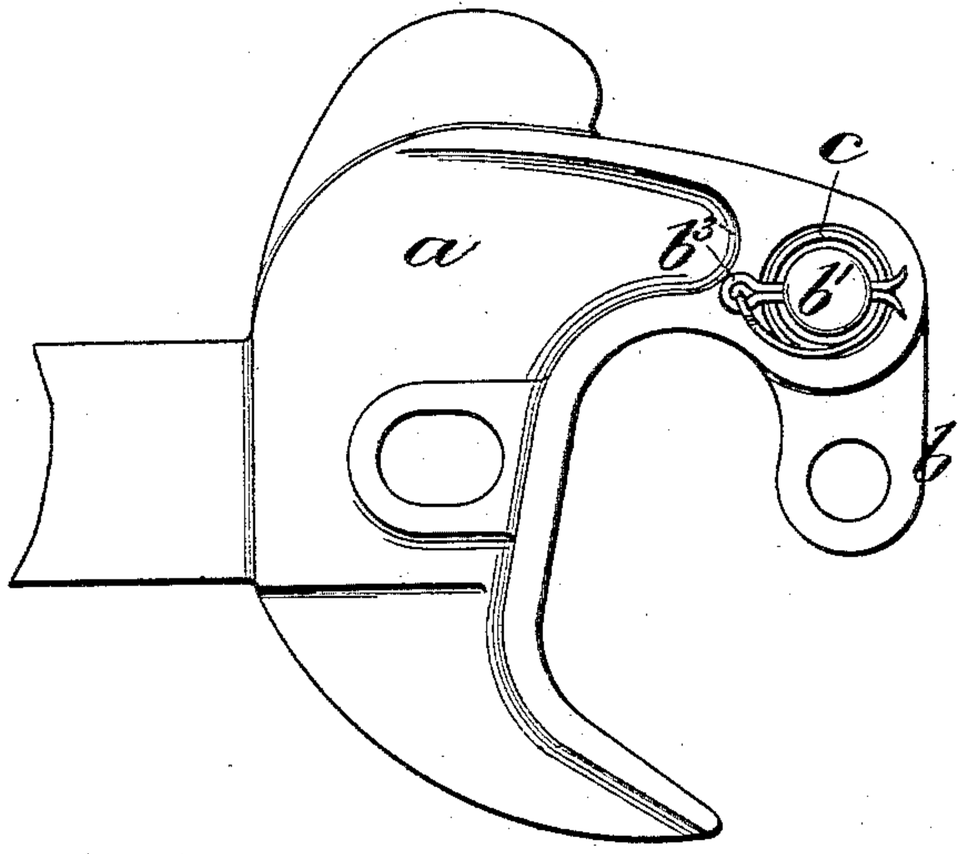


Fig. 5.

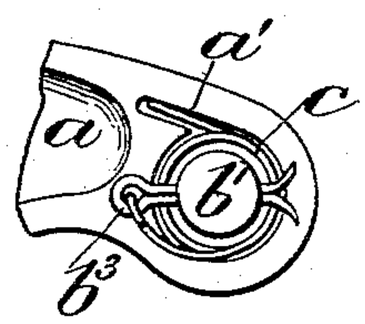


Fig. 4.

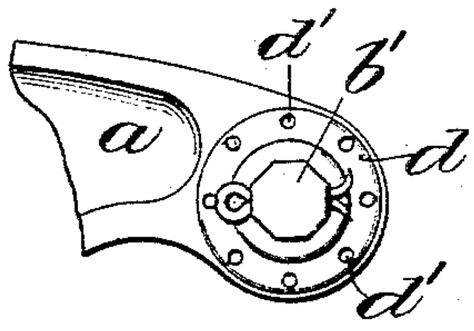
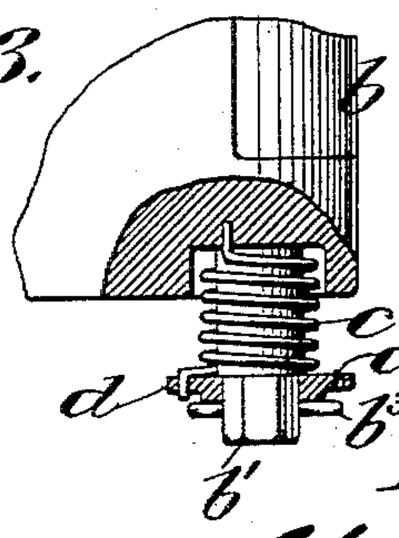


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 504,637, dated September 5, 1893.

Application filed July 2, 1892. Serial No. 438,795. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. TAYLOR, a citizen of the United States, and a resident of South Orange, in Essex county and State of New Jersey, have invented new and useful Improvements in Car-Couplers, of which the following description, taken in connection with the drawings herewith accompanying, is a specification.

My invention relates to that class of car-couplers known as the "vertical-plane" coupler, and has for its object to provide a cheap, simple, and positively operating means for automatically moving the hook or knuckle to an open or extended position after being released by its locking device, that may be located in a position on the exterior of the draw-head and have connection with the hook or knuckle in such manner as not to effect the regular or usual operation or working of the coupler in case of the removal, breakage or other accident that might occur to such knuckle opening device. This object I attain by means of the construction illustrated in the accompanying drawings and hereinafter set forth in detail and pointed out in the claims.

Referring to the drawings:—Figure 1, represents a side view of the draw-head of a coupler, with a portion thereof broken away, showing my improved knuckle opening device. Fig. 2, represents a bottom view of the same. Fig. 3, represents a portion of the draw-head broken away, showing a modification in the means of connection between the pivot-pin or arm of the knuckle and its operating spring, and, Fig. 4, represents a bottom view of the same. Fig. 5, represents a modification to be hereinafter referred to.

To explain in detail,—*a* represents the draw-head, and *b* the hook or knuckle which, in the present instance shown, is hinged to said draw-head by means of a pivot-pin *b'* in the usual manner. According to my present invention, I make the said pivot-pin fast with the hook or knuckle in a manner to turn or rotate therewith, by means of a pin b^2 which unites the same, although it is obvious that any other suitable means may be employed for connecting or making said parts fast with each other, the method or means of uniting the same not affecting the spirit of my invention. The lower end of the pivot-pin *b'* which forms an arm of the hook or knuckle by reason of its being made fast therewith, is lengthened in this instance, to project below the lower surface of the draw-head a greater distance than usual in order to form a support for a coiled spring *c* which is located thereon with its upper or still end having connection with, or a bearing against, a portion of the draw-head and its opposite or lower end having connection with the outer end of the cotter-pin b^3 located in the arm or pivot-pin *b'* adjacent to its lower end. This spring exerts a pressure on the said cotter-pin in a direction to turn or move the connecting hook or knuckle *b* to an open or extended position automatically, when released by its locking device, as will be readily understood. The upper end or portion of the spring *c* is seated within a pocket or depression formed in the lower side of the draw-head, as clearly shown in the drawings, and has a fixed or stationary connection with the latter by having its end project into a corresponding opening therein as shown, although it is obvious that the same may have a bearing against a shoulder in the draw-head as shown at *a'* in Fig. 5, in lieu of projecting into an opening as described, and operate equally well.

Referring to Figs. 1 and 2, I have shown the lower or movable end of the spring *c* as connected with the outer end of the cotter-pin located in the arm or pivot-pin *b'* in order to exert a greater force or pressure upon the arm or pivot-pin *b'* than if connected directly thereto as will be obvious.

Referring to Figs. 3 and 4, I have shown a modification in the means for connecting the spring *c* with the arm or pivot-pin *b'* of the hook or knuckle of that shown in Figs. 1 and 2. In this instance, I make the lower end of the arm or pivot-pin *b'* octagon or other similar shape to form several flat or uneven surfaces, and provide a washer or disk *d* with a central opening therein corresponding with the end of the arm *b'*, which said washer or disk is adapted to slide or fit on the latter in a non-rotatable position and be held thereon by means of a small cotter-pin as shown. This washer or disk is provided with a series of holes or openings *d'* located therein adjacent to its outer periphery, into which the end of

the spring *c* is adapted to be inserted to form an adjustable connection with the disk or washer *d* to operate the arm or pivot-pin *b'* and the connecting hook or knuckle in a manner as before described. By this means of connection between the spring *c* and the arm or pivot-pin *b'*, the tension of the spring upon the latter may be easily and readily adjusted to any desired extent, by simply changing the point of connection between the spring and the washer or disk by shifting the connecting end of the spring from one hole to another in the said disk to secure a greater or less degree of tension as will be readily understood. Or if desired, the adjustment of the tension of the spring *c* may also be secured by turning the disk or washer on the arm or pivot-pin, which is accomplished by withdrawing the disk or washer from the latter and turning the same in a direction to secure a greater or less tension of the spring before slipping it on the said arm or pivot-pin again. The washer or disk *d* being located on the lower end of the arm or pivot-pin *b'*, also serves as a guard for the spring *c* and adjacent parts to protect the same from injury in case the coupler should fall to the ground or be otherwise liable to damage, and this feature forms a very essential element when a flat coiled spring is employed, as is sometimes the case, in lieu of the long coiled spring as shown for the reason that a flat coiled spring presents more surface for contact and therefore it is essential that the same should be protected.

It will be obvious to those skilled in the art that the spring attachment *c* may be applied at the upper or head portion of the pivot-pin *b'* in lieu of at the bottom as shown without departing from the spirit of my invention, and the head or flanged portion be provided with perforations and otherwise constructed to serve the functions of the washer or disk *d* located at the lower end of the pivot-pin as described.

Having thus described my invention, I do not wish to be understood as claiming broadly a spring for opening the hook or knuckle of a coupler, because I am aware that springs have been employed for the same purpose prior to my invention, but heretofore the springs have been located at a point within the draw-head and in such position have been found in practice to be liable to become damaged or otherwise out of order, in which case, by reason of their location, the springs interfere with the proper operation of the coupler until repaired, thus causing much delay, trouble and expense; but according to my invention as herein described and illustrated in the accompanying drawings, I obviate all such difficulties as have heretofore been found, by reason of the new and novel arrangement, location and construction of the parts forming the knuckle opening device, which are independent of the other working or operating parts of the coupler, and in case of removal, breakage or other accident to such knuckle-opening device, it would in no way effect the regular working of the coupler, the advantage of which is obvious.

Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupler, the combination with the draw-head, of a hook or knuckle hinged thereto provided with an arm projecting beyond the exterior of said draw-head, a plate or disk having an adjustable connection with said arm, and a spring having connection with said adjustable plate or disk to rotate the same and the connecting hook or knuckle, substantially as described and for the purpose set forth.

2. In a car-coupler, the combination with the draw-head, of a hook or knuckle hinged thereto provided with an arm or pivot-pin having a flange or disk thereon, and a spring having an adjustable connection at one end with said flange or disk, substantially as described and for the purpose set forth.

3. In a car-coupler, the combination with the draw-head, of a hook or knuckle hinged thereto provided with an arm or pivot-pin having one end projecting beyond the exterior of the draw-head and provided with a flange or disk thereon having a series of openings therein, and a spring having adjustable connection with said flange or disk through the medium of the openings therein, substantially as described and for the purpose set forth.

CHAS. H. TAYLOR.

Attest:
CHAS. F. DANE,
A. L. HAYES.