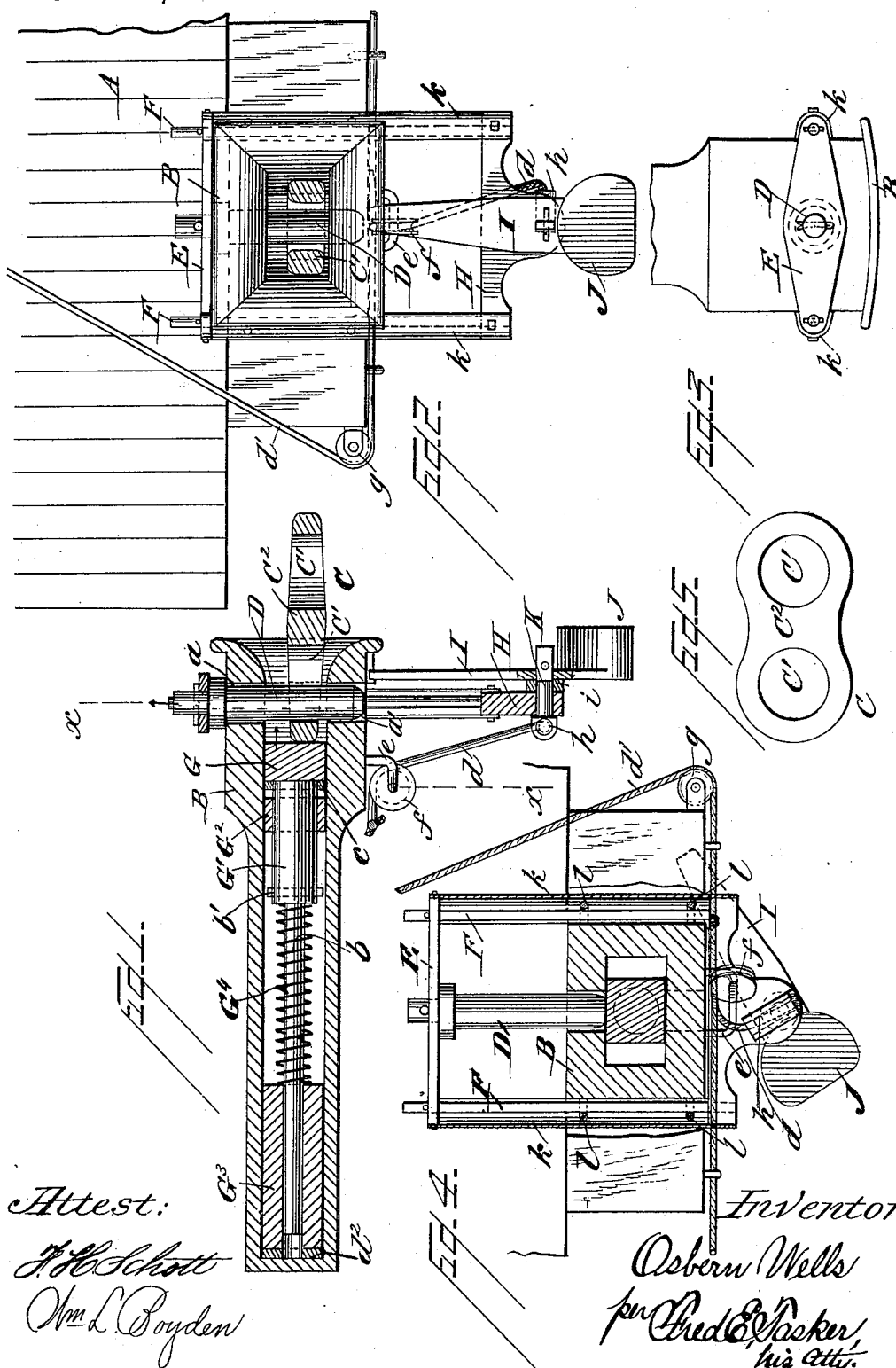


O. WELLS.  
CAR COUPLING.

Patented Jan. 19, 1892.



# UNITED STATES PATENT OFFICE.

OSBERN WELLS, OF NEWBERRY, SOUTH CAROLINA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,326, dated January 19, 1892.

Application filed April 27, 1891. Serial No. 390,649. (No model.)

*To all whom it may concern:*

Be it known that I, OSBERN WELLS, a citizen of the United States, residing at Newberry, in the county of Newberry and State of South Carolina, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has reference to an improvement in car-couplers.

The object of the invention is to provide a cheap, simple, and practical coupler which can be applied at slight cost for use in connection with cars as now commonly constructed, so as to gain many obvious advantages and overcome many defects and insufficiencies found in devices now employed; and it therefore consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a longitudinal vertical section of my improved car-coupler, certain parts being shown in elevation. Fig. 2 is an end elevation of a portion of the end of a car and of my improved coupler arranged in connection therewith. Fig. 3 is a detail plan view of the draw-head. Fig. 4 is a transverse vertical section on the line *xx* of Fig. 1, certain parts being shown in elevation. Fig. 5 is a detail plan view of the coupling-link.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

A designates a portion of the front end of a car, in connection with which my improved coupler is represented as applied for practical use.

B denotes the draw-head, which is made of any suitable size and of any desirable length, it being hollow to contain a spring-actuated draw-bar and having the usual flaring or bell mouth. The draw-head B is furthermore provided with the pin-hole *a*, passing through the upper portion thereof, and the corresponding hole *a'* in the lower part thereof.

C designates the coupling-link, which is preferably employed with my present form of coupler. It is made out of a piece of flat

metal and is provided with a couple of circular or other suitably-shaped holes or openings *C'* *C'*, between which is the intervening metallic part *C*<sup>2</sup>, said central portion *C*<sup>2</sup> of the link being preferably made thicker than the end portions, as shown in Fig. 1, so that the link may be of a very strong nature and not liable to easily bend out of its proper shape. A link of this kind is found to be very strong, durable, and efficient.

G indicates the head of the draw block or bar, which is located within the draw-head, said head G being preferably square and moving neatly within the space that contains it, it being adapted to tightly press the link C against the coupling-pin D, as shown in Fig. 1, and thereby hold the said link in a position of horizontality, or said head G may, after the operation of uncoupling has taken place, rest beneath the pin D, as shown in Fig. 4, and thus sustain the same in position to descend whenever the striking of the link against the head G dislodges the latter from beneath the pin and causes it to fall through lack of support. The head G is formed integral with the round portion *G'*, which passes through a bearing *G*<sup>2</sup> in a stationary block located within the draw-head, and the round portion *G'* has formed integral therewith another round portion or stem *G*<sup>4</sup> of less diameter, the opposite end of which works within a passage in the other end *G*<sup>3</sup> of the aforesaid block, said stem or spindle portion *G*<sup>4</sup> being surrounded by a coiled spring *b*, which is tensioned between the part *G*<sup>3</sup> and the end of the round portion *G'*. The round portion *G'* is provided with a transverse pin *b'*, which is adapted to strike against the bearing *G*<sup>2</sup> when the rod G has moved as far outward as is desirable. Furthermore, the round portion *G'* is provided with one or more washers *c*, located thereon close up against the head G. By providing as many or as few of these washers as may be needful or by making them of the desired size any requisite amount of play for the head G can be regulated and the slack or amount of movement in the said part can be easily governed. The inner end of the part *G*<sup>3</sup> of the stationary block is provided, also, with a washer *d*<sup>2</sup>, which bears against the inner end of the draw-head. There may be one or more of

these washers  $d^2$ . The slack therefore can be regulated at this point as well as at the point near the head G; also, a cushion can be arranged between the end of the block  $G^3$  and the inner end of the draw-head, if desired, said cushion being located where the washer  $d^2$  is located and being of any desired thickness. The block of which the parts  $G^3$  and  $G^2$  are sections can be secured in position within the draw-head in any desired manner, and I do not wish to be restricted to any particular mode of fixing it in place.

The coupling-pin D occupies a vertical position and is movable vertically. The upper end of the pin D is secured to a horizontal cross-beam E, which is perforated for the passage therethrough of a reduced section on the upper end of the pin, a small split pin or other suitable fastening being employed for the purpose of firmly connecting the cross-bar E to the pin D.

On each side of the draw-head B is a vertical rod F, which is located loosely within the eyebolts or other suitable bearings  $l$ , secured to the sides of the draw-head for the purpose, said bearings being susceptible of various modifications in order to adapt them to permit the aforesaid rods F F to play freely up and down within them. The upper ends of the rods F are connected securely to the cross-beam E near the outer ends thereof, all as is clearly shown in Figs. 2 and 4.

In Fig. 3 we have a top plan view of the upper cross-beam E, showing the mode of connecting it to the upper end of the pin D and the upper ends of the side rods F F. The lower ends of the side rods F F are securely connected to the outer ends of the lower cross-head H.

I find it convenient to provide vertical shields  $k$ , preferably semicircular in cross-section, as indicated in Fig. 3, said shields being connected to the cross-heads E and H, as shown in Figs. 2 and 4, and said shields being so arranged that they will cover the bearings  $l$ , within which the rods F move, and thus protect said bearings from becoming clogged or otherwise injured in consequence of exposure to ice, sleet, or other damaging influences which might obstruct the free working of the parts of the device. Thus it will be seen that I provide a frame surrounding the draw-head and carrying the pin, said frame having a vertical movement. As it moves up into the position shown in Fig. 4 it carries the pin with it and removes the latter from the lower hole  $a'$  and also from without the draw-head, allowing the lower end of said pin to rest simply within the hole  $a$ , where it is in readiness to drop into engagement with the link whenever the latter, being thrust into the mouth of the draw-head, forces the support of the pin D out from under it and allows it to fall; also, it will be seen, as represented in Fig. 2, that when the pin D does fall the frame falls with it. The pin after having once fallen is prevented from rising by the following mechanism

until it is desired to uncouple: I denotes a vertical arm, which is movable in a horizontal arc and which is pivoted to the lower cross-head H near its middle point, said arm I being provided at its lowermost end below its pivotal point with a counterbalancing device J, having a greater or less weight, as may be desired. K designates a horizontal pin, which constitutes the pivot for the arm I and is rigidly connected thereto, as shown, said pin having a bearing in the cross-head H and carrying a washer  $i$ , interposed between it and the arm I. The inner end of the pin or journal K is provided with a short tubular arm  $h$ , located at right angles to the direction of the arm I. A cord, rope, wire, cable, or other device  $d$  is connected to the tubular arm  $h$ . This cord  $d$  runs over a pulley  $f$ , supported on the curved rod  $e$ , fixed on the draw-head, which rod constitutes a journal on which the pulley is not only permitted to turn, but also to slide, and thus vary the angle of its position. (See Fig. 4.) The cord  $d$ , after it passes from the pulley  $f$ , is connected to two cords  $d'$   $d'$ , which run toward either side of the car, thence around pulleys  $g$   $g$ , located at suitable points near the outer edges of the car. Thence the cords  $d'$  run upward to the top of the car or to any other convenient point where it may be desired to have them in readiness to grasp for the purpose of uncoupling.

When it is desired to uncouple, all that the operator needs to do is to pull upon one of these cords and the result will be to swing the arm I from its perpendicular position outward to one side or the other, as the case may be, into an inclined position, as shown in Fig. 4, and when this inclination of the arm I has been effected the tubular arm  $h$  will be found to be either in an inclined or horizontal position, and then a continued drawing on the cord will result in lifting the frame which supports the pin, and consequently in lifting the pin and disengaging it from the coupling-link. When the act of coupling takes place and the pin drops, owing to the lack of any support beneath it, the arm I swings back from its inclined position into its perpendicular position, the weight J acting to carry it back. When the arm I is in its perpendicular position, its upper end rests beneath the lower edge of the draw-head B, and when the arm I is in this position the pin-carrying frame cannot be lifted. Therefore the pin is held firmly down. It cannot rise out of its hole during the jolting or oscillation of the car, no matter how great such movement may be. The arm I therefore provides a secure lock against any uncoupling and the ears are held firmly, rigidly, and strongly coupled.

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

1. In a car-coupler, the combination of a hollow draw-head having a suitable pin-opening, the vertically-movable pin, a frame connected to and moving with said pin, and a

pivoted locking-arm for keeping the frame normally in its lowest position and thus preventing the pin from jumping out of position.

2. In a car-coupler, the combination, with the draw-head, a pin, and a pin-supporting block, of a frame connected to the pin and an arm pivoted to the lower part of said frame, said arm being adapted to have its upper end rest beneath the draw-head and thus prevent the frame and the pin from rising, and said arm being provided on its lower end below its pivotal point with a suitable weight.

3. In a car-coupler, the combination, with the draw-head and the pin, of the frame consisting of two upright rods, one on each side of the draw-head, an upper cross-bar connected to the pin, a lower cross-bar connecting the two lower ends of the upright rods, a locking-arm pivoted to the lower cross-bar and provided on its lower end below its pivotal point with a weight, and devices for oscillating said arm into and out of operative position, substantially as described.

4. The combination, with the draw-head and the pin, of the frame consisting of the said upright rods, a cross-head connecting the upper ends of these rods and being connected near its center with the upper end of the pin, a lower cross-head connecting the lower ends of said rods, a centrally-located upright arm pivoted to the lower cross-bar and having its upper end adapted to rest beneath the cross-head and thus prevent the upward movement of the said frame and likewise of the pin, said arm being provided on its lower end below its pivotal point with a weight, a pivot for said arm, and a rigid tubular arm on the inner end of said pivot, to which a cord or other operating device is connected, whereby the arm can be operated into and out of operative position, substantially as described.

5. In a car-coupler, the combination, with the draw-head having a suitable pin-hole and a vertically-movable pin, of a frame consisting of the said uprights F F, the upper cross-bar E, connecting said uprights and connected near its middle point to the pin, the lower cross-bar H, connecting the lower ends of said uprights F, the arm I, pivoted to the cross-bar H and provided on its lower end with the weight J, a pivot K for said arm, said pivot being provided on its inner end with a tubular arm h, located at right angles to the direction of the arm I, and a cord d, secured to the arm h and passing around the adjustable pulley f, substantially as described.

6. In a car-coupler, the combination of the draw-head having a suitable pin-opening near its forward end, the vertically-movable pin located within said opening, the spring-actuated pin-supporting block within the cross-head, the link, the pin-supporting frame connected to the pin and provided with a pivoted arm provided at its lower end with a weight, the cord connected to the tubular arm, the projection on the inner end of the pivot on which the aforesaid arm oscillates, the supporting-rod e for the adjustable pulley, and the pulley f, adapted to be adjusted to different points upon said rod, all arranged substantially as described.

7. In a car-coupler, the combination, with the draw-head, a pin, and a pin-supporting block, of the frame connected to the pin and an arm pivoted to the lower part of said frame, said arm being adapted to have its upper end rest beneath the draw-head and thus prevent the frame and the pin from rising and said arm being provided on its lower end and below its pivotal point with a suitable weight, and the coupling-link consisting of the flat plate provided with two circular openings, substantially as described.

8. In a car-coupler, the combination of a hollow draw-head having a suitable pin-opening, the vertically-movable pin, the frame connected to and moving with said pin, a pivoted locking-arm for keeping the frame normally in its lowest position, and a coupling-link C, having the circular openings C' C' and the thickened central portion C<sup>2</sup>, substantially as described.

9. In a car-coupler, the combination of the draw-head, the pin D, the frame for said pin, consisting of the side uprights F F, upper beam E, connecting said uprights and secured to the pin, and lower beam H, secured to the lower end of the uprights, the shields k k, surrounding the uprights F F, the bearing l l, within which the uprights F F are located and are movable, the pivoted arm I, provided with the weight J, and the means for operating said arm, so that it may bear beneath the draw-head or be removed from that position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

OSBERN WELLS.

Witnesses:

GEO. L. CLARK,  
WM. L. BOYDEN.