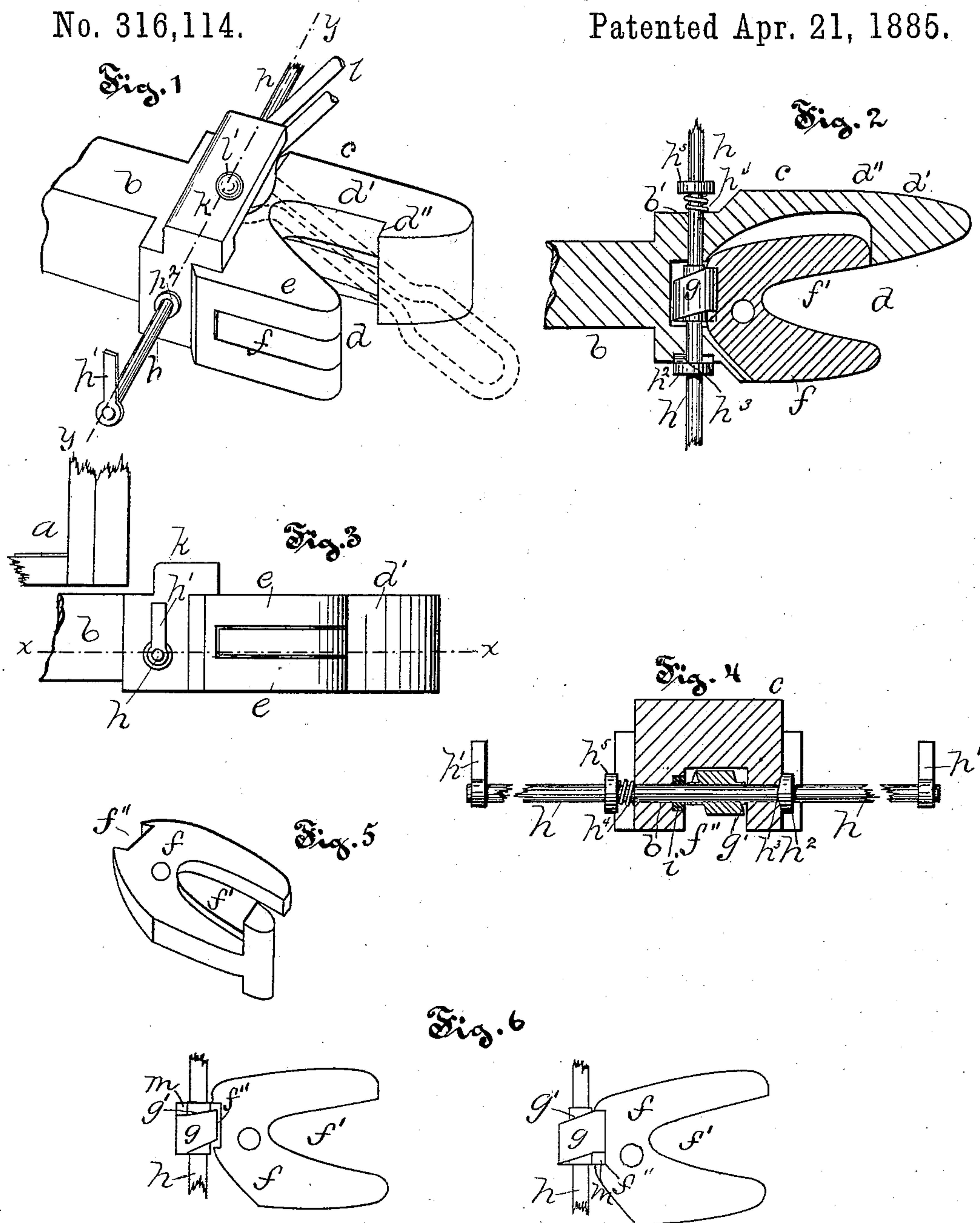


(No Model.)

A. W. CASE.  
CAR COUPLING.

No. 316,114.

Patented Apr. 21, 1885.



Witnesses:  
H. R. Williams.  
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# UNITED STATES PATENT OFFICE.

A. WELLS CASE, OF SOUTH MANCHESTER, CONNECTICUT.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 316,114, dated April 21, 1885.

Application filed February 2, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, A. WELLS CASE, of South Manchester, in the county of Hartford and State of Connecticut, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, where—

Figure 1 is a perspective view of the draw-head and part of the draw-bar of my improved coupler. Fig. 2 is a view in central horizontal section of the same on plane denoted by line  $x x$  of Fig. 3. Fig. 3 is a side view of the same. Fig. 4 is a view in cross-section through the cam-spindle on plane denoted by line  $y y$  of Fig. 1. Fig. 5 is a view of the front end of the coupling. Fig. 6 is a detail diagram view illustrating the operation of the locking cam and tongue.

The object of my improvement is to produce a car-coupling that may be used with safety in all the different situations required—as, for instance, for use with other forms of coupling or on cars of different height of floor.

It consists in the improved devices that are used in making the coupling, and in their combination, as more particularly hereinafter described.

In the accompanying drawings, the letter  $a$  denotes a car;  $b$ , a draw-bar attached thereto in the ordinary manner;  $c$ , the draw-head in which the parts of the coupling are borne. The front part of the draw-head is divided by a vertical opening,  $d$ , on one side of which is located the jaw  $d'$ , with the inturned hook  $d''$ , and on the other the jaw  $e$ , and between these jaws the hooked jaw of a similar coupling is thrust to couple the cars, the hooked jaws engaging.

In a horizontal socket in the draw-head is pivoted a forked tongue,  $f$ , with the opening  $f'$  in its front part curved, and so formed with respect to the pivot that any pressure in this opening and toward the head will throw the tongue over toward the hooked jaw  $d'$ . The rear end of the tongue has a vertical socket,  $f''$ , the side walls of which form the bearing-surfaces for the cam  $g'$ , that projects from the cam-block  $g$ , which is secured to a cam-spindle,  $h$ , in such manner that any rotation of the spindle turns the block also. By this con-

struction the tongue  $f$  may be made to play back and forth sidewise in the head, and may be locked at either limit of its play, any pressure that would tend to swing the tongue being resisted by the contact of the wall of the socket  $f''$  with the cam on the cam-block  $g$ , which is supported by the socket  $b'$  within the head.

In order to prevent any accidental breaking of the cam or tongue, this cam-block may be seated against firm elastic cushions  $i$ , of steel springs or india-rubber, suitably placed within the head, as shown in sectional view in Fig. 2.

The cam-block is preferably so secured on the spindle (as by means of a key) as to allow the latter a longitudinal sliding motion in its bearings in the draw-head. This spindle or rod is continued to each side of the car, and bears on each end a handle,  $h'$ , by means of which it may be rotated, and a collar,  $h^2$ , fast to the spindle close against the side of the head, bears a lug,  $h^3$ , that by projecting into a hole in the head prevents accidental turning of the spindle.

In order that this device may operate, the collar must bear against the head with a yielding pressure that is gained by placing a spring,  $h^4$ , between the collar  $h^5$  and the opposite side of the head.

In order that the tongue may be struck by the entering jaw of the opposite coupler when cars of different heights of platform are used, the end of the tongue that plays in the jaw  $d'$  is made  $\perp$ -shaped, or broadened vertically across the end, as shown in Fig. 5; and to prevent the accumulation of snow or ice on the tongue the inner and upper edge of the same part is beveled off. On the upper side of the head a projection,  $k$ , is so formed that its rear side forms a shoulder to limit the backward play of the draw-bar and form a bunter, and its front side is cut away to form a socket for the link  $l$ , that is pivoted on the pin  $l'$ , that may also form the pivot for the tongue. This link is permanently attached to the draw-head, being swung one side when not needed, but thrown to the front when one of the old link-and-pin draw-heads is to be coupled to my improved coupler. The cam on the cam-block has a double face, so arranged that the tongue may be held at either limit of its play,



and each face has a shoulder, *m*, that limits the rotation of the cam-block by striking one upon the upper and the other upon the under side of the tongue. At another point upon the block the cam is narrowed, so that the tongue may play loosely, the object of this latter construction being to allow two couplings to freely run together—that is, with the hooked jaws of each in the opposite socket—without being locked there. When the parts are thus engaged, however, they may be secured by locking the tongue of one only of the couplers.

I claim as my invention—

1. In a car-coupler, in combination, a draw-head having a frontal opening with a hooked jaw on one side of the opening, a forked tongue swinging across the opening and having a socket back of the pivot on which the tongue swings, and a rotary cam-spindle bearing a cam that engages the socket in the tongue, all substantially as described.

2. In combination, in a car-coupler, a draw-head, *c*, with transverse opening *d*, the hooked jaw *d'* on one side of the opening, a swinging forked tongue, *f*, pivoted on one side of the line of the axis of the curved opening in the tongue, that has also a socket, *f''*, in its rear end, a rotary cam-spindle, *h*, bearing a cam-block, *g*, with a cam, *g'*, that engages the walls of the socket *f''* in the tongue, and by means of

which the tongue is locked at either limit of its play, all substantially as described.

3. In a car-coupler, in combination, a draw-head, *c*, with transverse opening *d*, the hooked jaw *d'* on one side of the opening, the forked tongue *f*, swinging across the opening, having a socket back of the pivot, a cam-block, *g*, with a cam, *g'*, with the portion between the faces of the cam narrower than the socket in the tongue, and a rotary cam-spindle whereby the cam may be operated, all substantially as described.

4. In a car-coupler, in combination, a draw-head, *c*, with transverse opening *d*, the hooked jaw *d'* on one side of the opening, a projection on the upper side of the head, forming a bumper and supporting a link, *l*, a forked tongue, *f*, swinging across the opening in the head, and a rotary cam engaging in the socket in the tongue and borne on a rotary cam-spindle, *h*, all substantially as described.

5. In a car-coupler, in combination, a draw-head, *c*, with transverse opening *d* and hooked jaw *d'*, the swinging tongue *f*, the cam-block *g*, borne on the cam-spindle *h*, and the elastic cushion *n* within the head, all substantially as described.

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Witnesses:

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