

(No Model.)

2 Sheets—Sheet 1.

G. K. SMITH.
CAR COUPLING.

No. 480,631.

Patented Aug. 9, 1892.

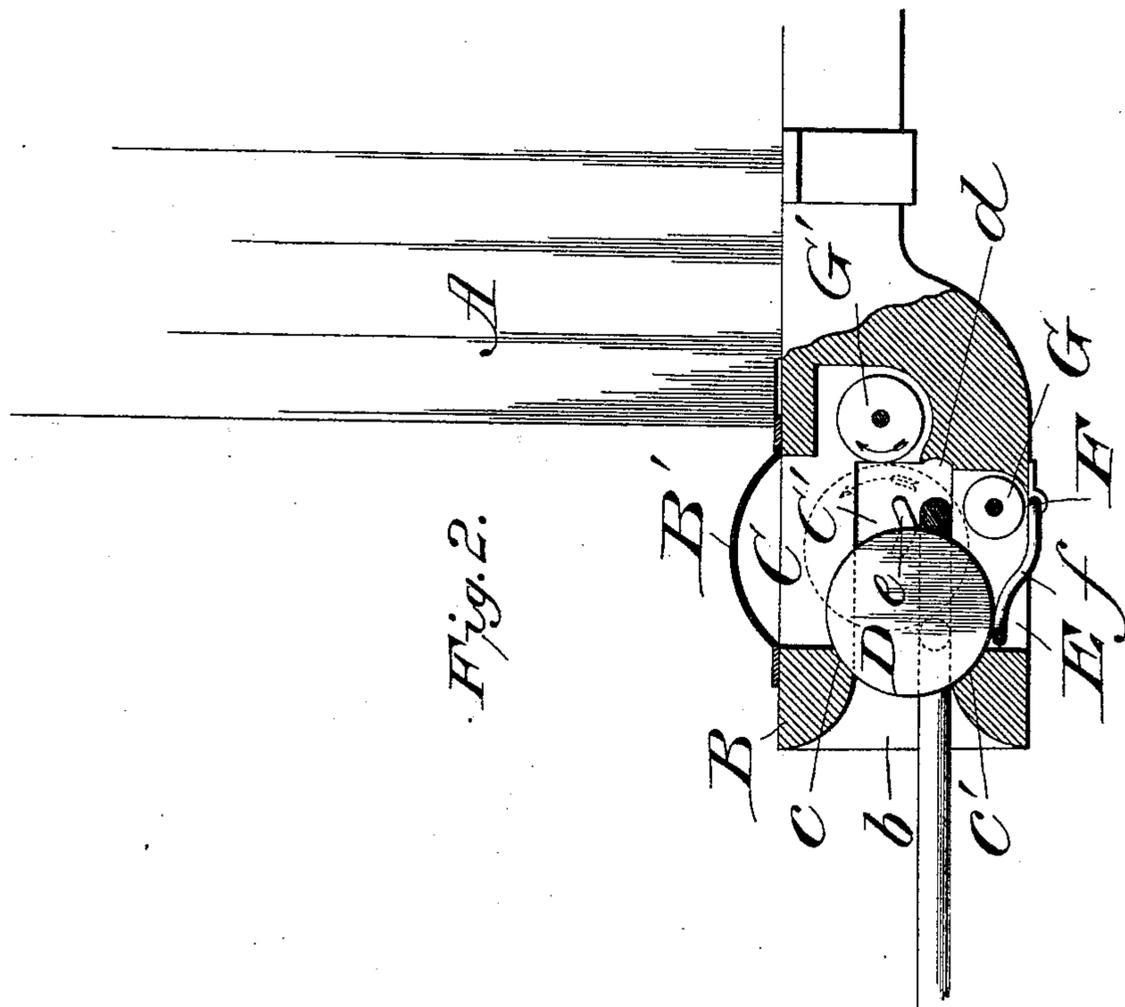


Fig. 2.

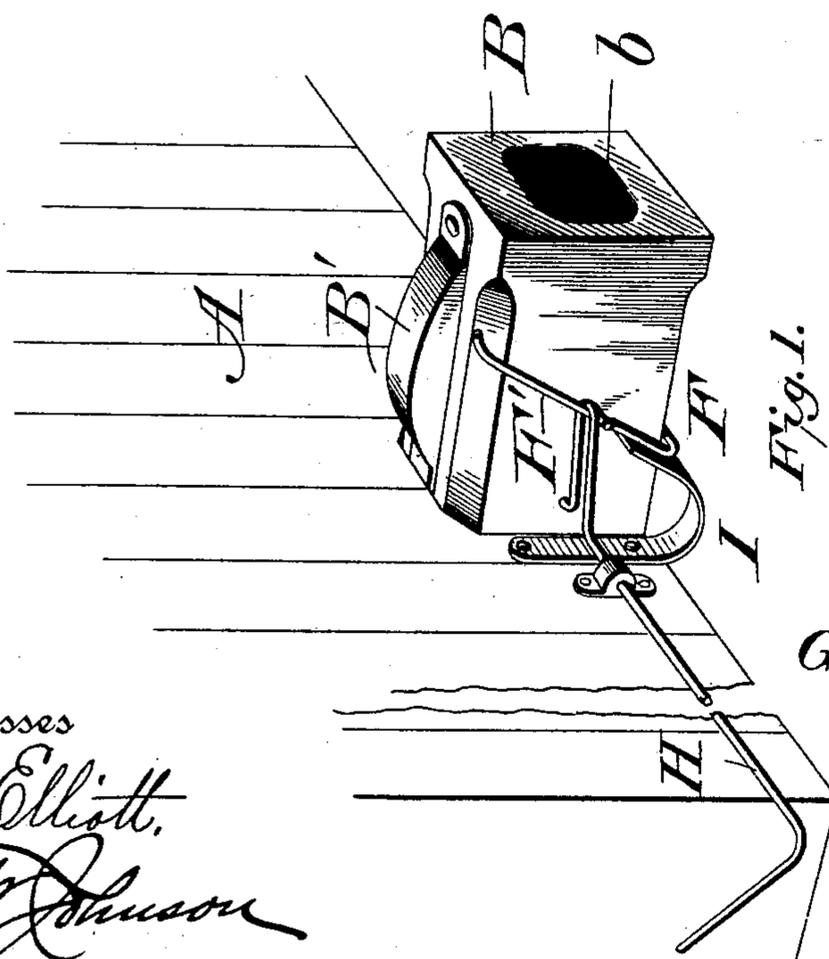


Fig. 1.

Witnesses

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W. Johnson

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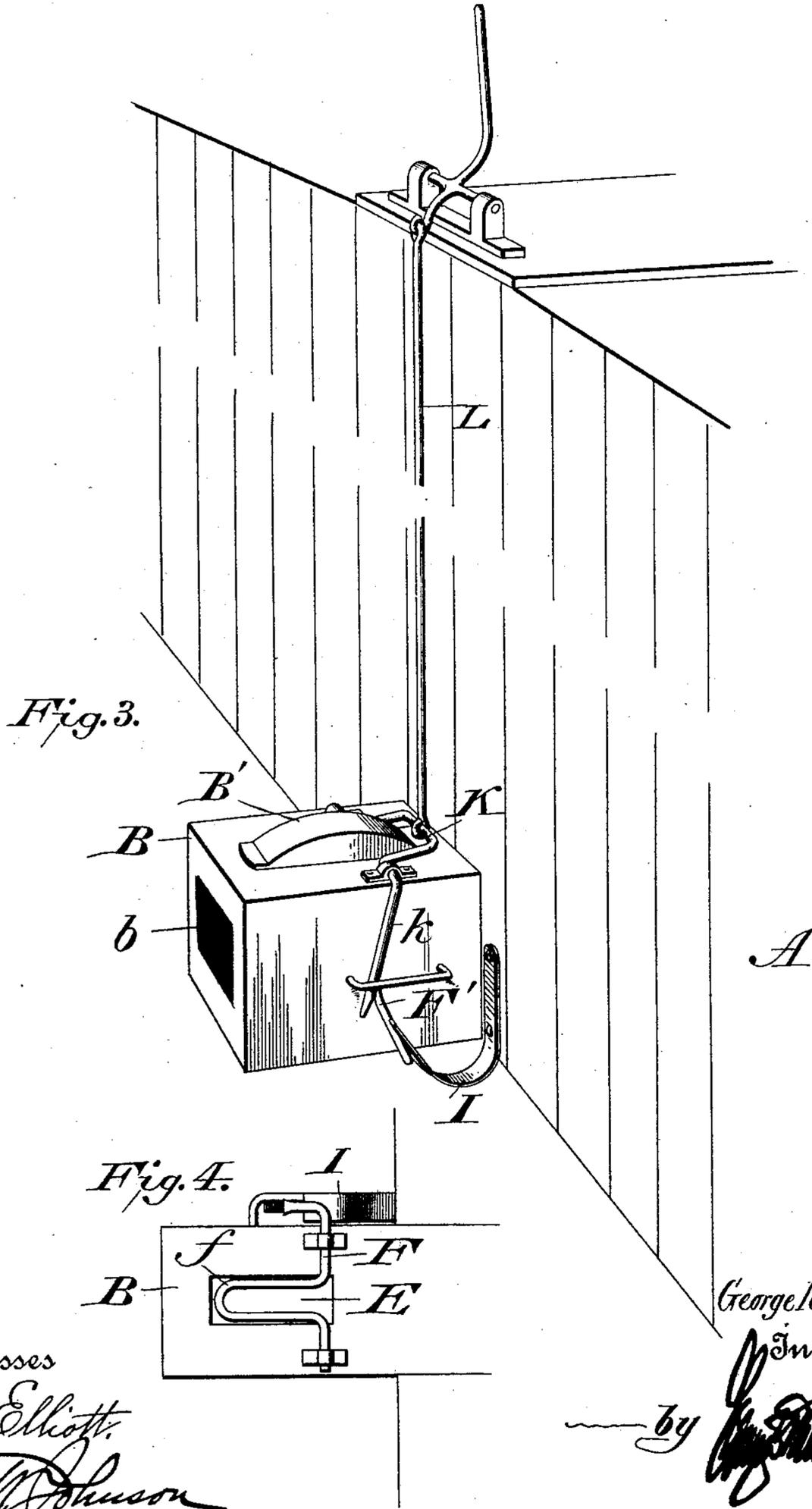
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L. S. Elliott.
A. M. Johnson

George K. Smith.
 Inventor
 by *[Signature]*
 Attorney

UNITED STATES PATENT OFFICE.

GEORGE K. SMITH, OF CHIPMAN, TENNESSEE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 480,631, dated August 9, 1892.

Application filed April 14, 1892. Serial No. 429,188. (No model.)

To all whom it may concern:

Be it known that I, GEORGE K. SMITH, a citizen of the United States of America, residing at Chipman, in the county of Sumner and State of Tennessee, have invented certain new and useful Improvements in Car-Couplings; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in car-couplings; and it consists in the construction and combination of the parts whereby I dispense with the usual coupling-pin and am enabled to couple cars automatically by means of the ordinary link, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view showing a car-coupling constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view. Fig. 3 is a perspective view showing the manner of operating the coupling mechanism from the top of the car. Fig. 4 is a view of the under side of the draw-head.

A designates the body of the car, to which the draw-head is attached in any approved manner.

The draw-head B is provided at its forward end with the usual link-opening, into which the link passes. The draw-head rear of the bell-mouth or link-opening *b* is provided with a cavity C. The front walls thereof will cut away to provide concaves *c* and *c'*, against which a roller D will bear when the link is in contact therewith. The inner side walls of the cavity C are cut away, as shown at C', so that the link can enter therein, the width of the chamber formed by the extensions C' being the same as the width of the opening *b*. The lower portion of the rear wall of the chamber C' is provided with a concave recess *d*, into which the end of the link will move, and when therein will be maintained in a horizontal position.

e e designate inwardly-projecting lugs or

guides formed on the draw-head so as to project toward each other and serve as guides for the link when it enters the draw-head, and the end of the link may bear upon the under side of these lugs to maintain it in an inclined position for coupling cars of different heights.

The under side of the draw-head is provided with a slot E, into which pass the arms *f* of a rock-shaft F, pivotally secured in suitable bearings to the under side of the draw-head, and this rock-shaft, when manipulated to elevate the arms *f*, will contact with the roller and elevate the same, so as to move it in the upper portion of the cavity, so that the link can be withdrawn.

G designates a roller of comparatively small diameter, which is pivoted in the rear portion of the slot E, and against this roller the coupling-roller D will rest when the link is out of the draw-head. A similar roller G' of slightly larger diameter is also journaled in the draw-head above and rear of the roller G. The cavity C in the draw-head is covered by a suitable plate B'.

In a car-coupling thus constructed when the link is passed into the draw-head it will contact with the roller D below the center thereof and move said roller rearward so that it will contact with the rollers G and G', journaled in the draw-head, and the link, striking the coupling-roller below its center, will elevate the same and move it not only rearward but upward, after which it will return to its normal position, so that the forward edges thereof will enter the concaves *c* and *c'* of the draw-head. The link when it enters the draw-head will be guided by the lugs *e e*. When the roller assumes the position shown in Fig. 2, the coupling is completed. When it is desired to uncouple the cars, it is only necessary to properly manipulate the rock-shaft F, when the crank portion *f* thereof will bear against the lower portion of the roller D and elevate it so that the cross-bar of the link will not positively engage therewith.

In Fig. 1 of the drawings I have shown a transverse bar or lever H for operating the rock-shaft from the side of the car, said lever having a loop which engages with the upwardly-projecting portion F' of the rock-shaft, which rock-shaft is held normally in a forward position by a spring I. In Fig. 3 of the

drawings the projecting end F' of the rock-shaft is engaged by an arm k of a looped shaft K , which is connected to the top of the car by a bar L , the upper end of which is engaged by a suitable lever, as shown. The transverse shaft H , it will be noted, can be readily applied to the manner of operating shown in Fig. 3.

With my improved coupling device or draw-head the ordinary links may be used, whether straight or curved, and the operation of the device is entirely automatic.

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

1. In a car-coupling, the combination of a movable roller retained within the draw-head and adapted to engage with an open link of ordinary construction, and a rock-shaft secured to the under side of the draw-head and having a forwardly-projecting portion adapted to raise the roller out of engagement with the link, said draw-head having concave portions c and c' , against which the roller bears, and a transverse recess C' , into which the link passes, substantially as shown, and for the purpose set forth.

2. In a car-coupling, a draw-head having a cavity C and transverse chamber C' , rollers G and G' , journaled in the chamber, and a coupling-roller D of greater diameter than the depth of the transverse chamber C' , substantially as shown, and for the purpose set forth.

3. In a car-coupling, the combination of a draw-head having a cavity C and a transverse chamber C' back of the link-opening, lugs e , projecting toward each other from the sides of said chamber, and a coupling-roller D , substantially as shown, and for the purpose set forth.

4. In a car-coupling, the combination of a

movable roller which is adapted to engage with an open link and retain said link in the link-chamber, of inwardly-projecting lugs e , and concave recess d at the rear end of the chamber, and concaves c and c' at the forward portion of the draw-head, above and below the chamber C' , substantially as shown, and for the purpose set forth.

5. In a car-coupling, the combination of a draw-head constructed substantially as shown and provided with a cavity containing a coupling-roller D , of rollers G and G' , journaled in the draw-head, with which the coupling-roller is adapted to contact, substantially as shown, and for the purpose set forth.

6. In a car-coupling having a draw-head constructed substantially as shown, of a roller D , an open link adapted to engage therewith, and a rock-shaft having a forwardly-projecting portion which is adapted to engage with the under side of the roller and lift the same out of positive engagement with the link, and a spring for normally holding the forwardly-projecting members of the rock-shaft depressed, for the purpose set forth.

7. In a car-coupling, the combination of a coupling-roller, a rock-shaft having a forwardly-projecting portion which is adapted to engage with said roller, a spring for normally holding the forwardly-projecting portion of said rock-shaft depressed, and means for operating the rock-shaft from either the top or side of the car, substantially as shown, and for the purpose set forth.

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

GEORGE K. SMITH.

Witnesses:

JAMES ANDERSON,
HARRIS BROWN.