

No. 611,124

Patented Sept. 20, 1898.

W. H. HOPKINS & J. S. EVANS.

CAR COUPLING.

(Application filed Jan. 24, 1898.)

(No Model.)

Fig. 1.

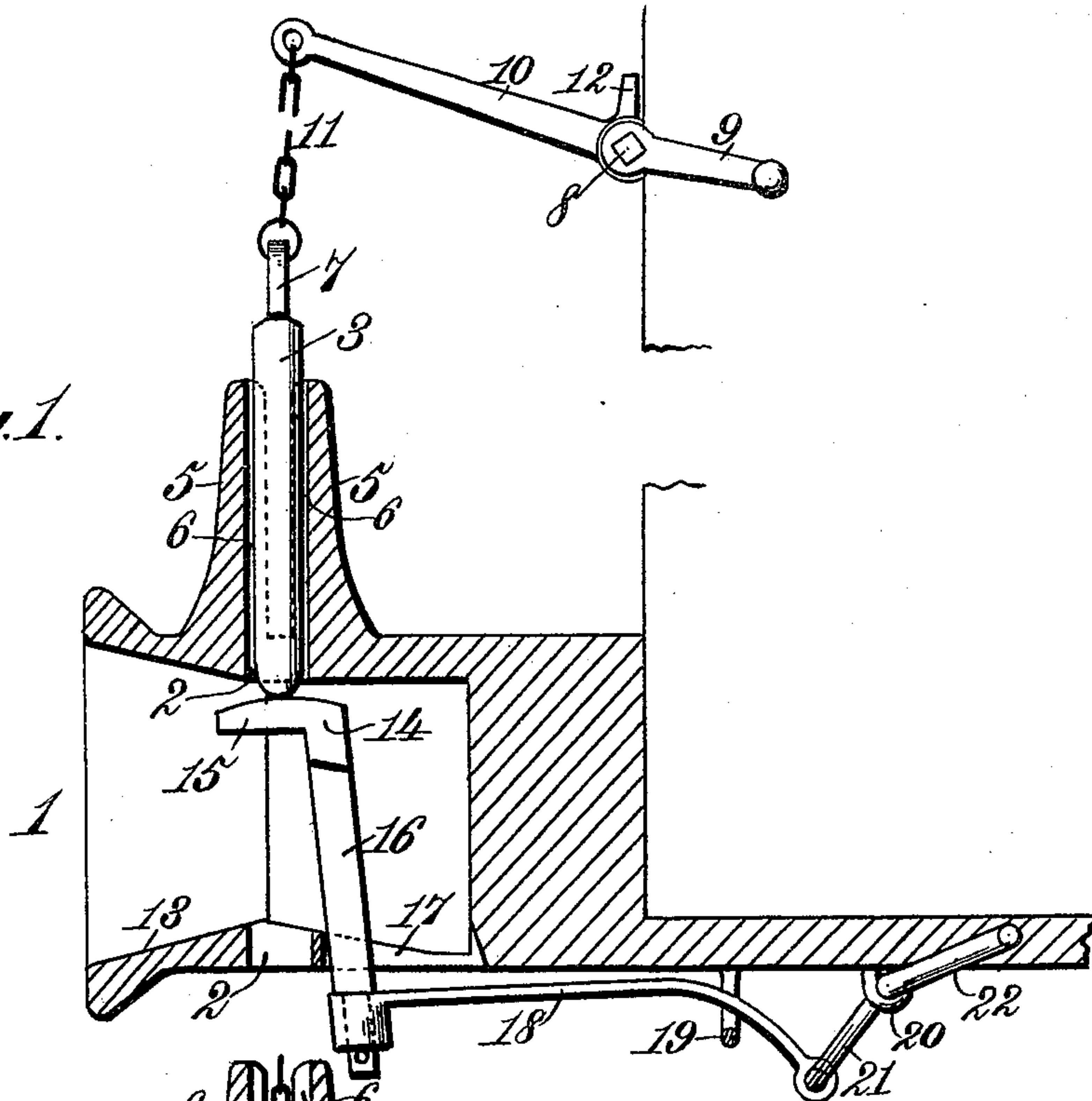


Fig. 2.

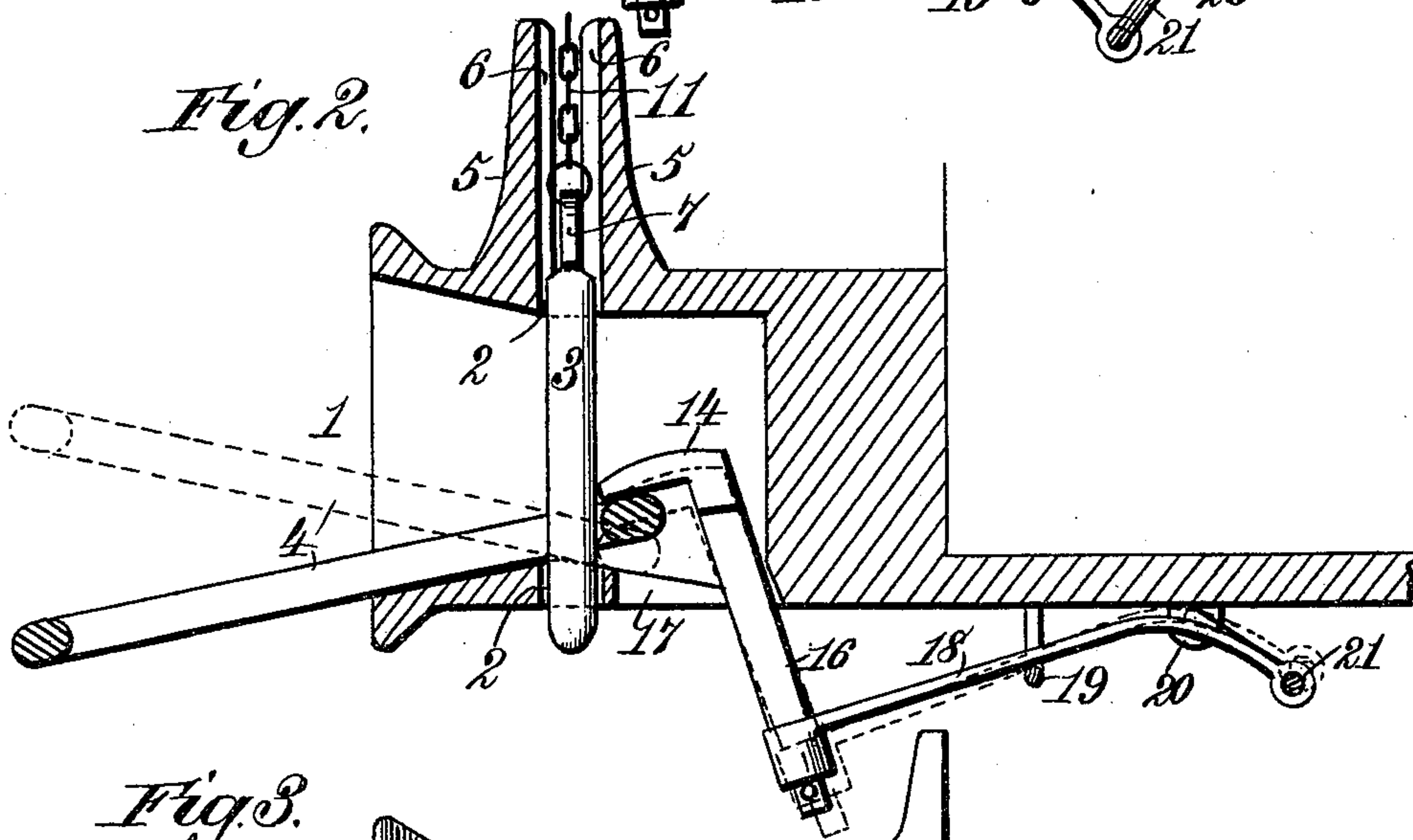
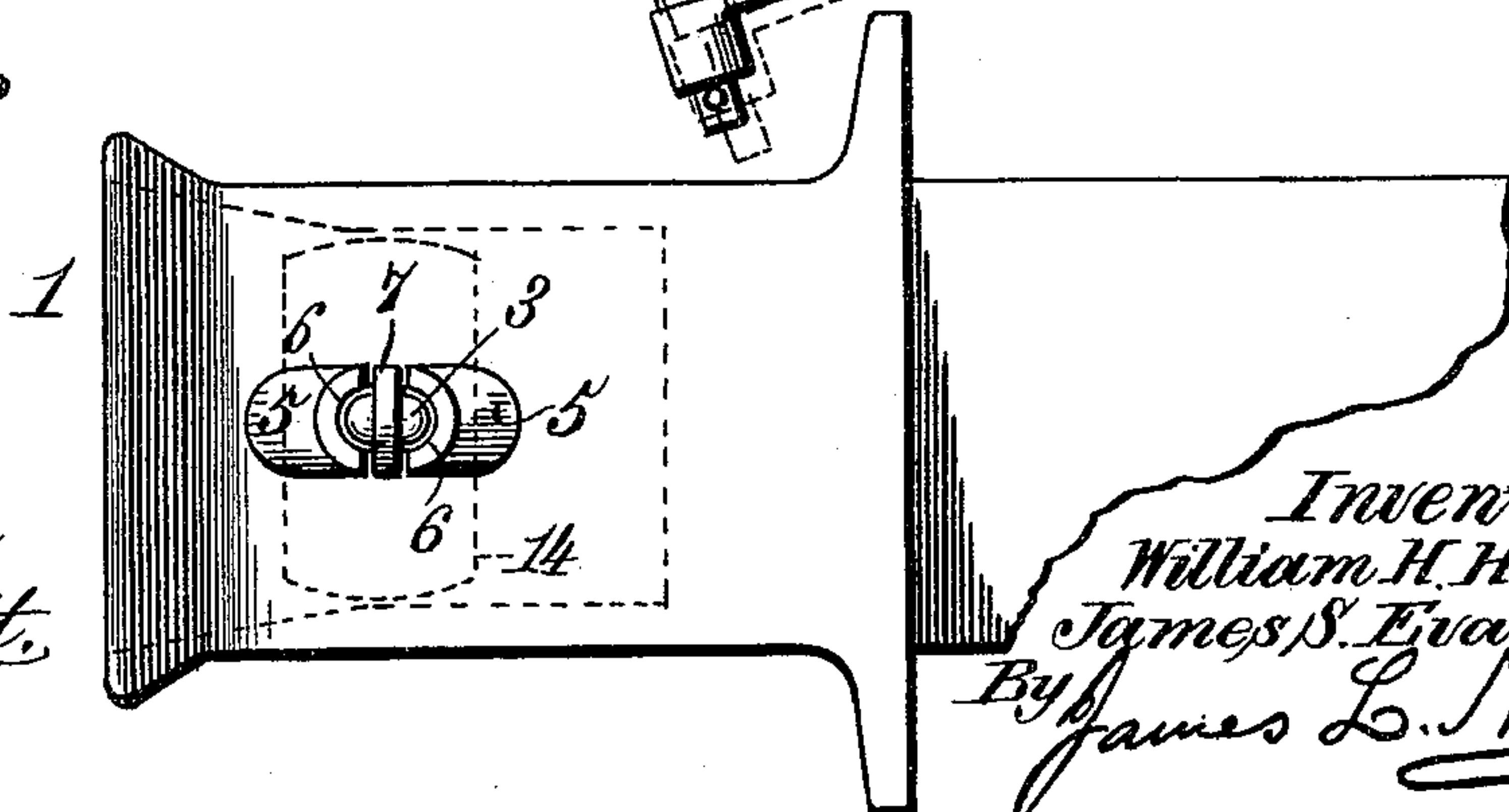


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM H. HOPKINS AND JAMES S. EVANS, OF DETROIT, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 611,124, dated September 20, 1898.

Application filed January 24, 1898. Serial No. 667,758. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. HOPKINS and JAMES S. EVANS, citizens of the United States, residing at Detroit, in the county of Lamar and State of Alabama, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to an improved car-coupling, and particularly to that class of automatic couplings in which the coupling is effected by means of a link and pin; and it has for its object to provide improved means for holding the pin raised until the link has passed thereunder into the draw-head and also for holding the link level or at different inclinations to effect the coupling between cars of the same or different heights.

It has for its further object to provide improved means for operating the pin and link supporting mechanism.

It has for its further object to provide an improved coupling-pin and pin-guiding mechanism; and, finally, it has for its object to improve the construction and efficiency of this class of couplings generally.

To these ends our invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a central vertical section of one of the draw-heads equipped with our improved coupling mechanism, showing the pin elevated in readiness to couple with a link. Fig. 2 is a similar view showing in full lines the link supported in position for coupling with a low car and showing in dotted lines the link elevated to couple with a high car, and Fig. 3 is a top plan view.

Referring to the drawings, the numeral 1 indicates the draw-head, provided with pin-holes 2, as usual, through which the coupling-pin 3 is adapted to pass to hold the link 4 in the draw-head. The pin 3 is elongated or elliptical in cross-section, its major axis being in alinement with the major axis of the link, whereby the pin is greatly strengthened and enabled to withstand heavy strains. To

prevent the pin from turning and to hold it in its proper position to most successfully resist such strains, we provide two guides 5, which are arranged on top of the draw-head in front and rear, respectively, of the upper pin-hole 2. The inner face of each of the guides 5 is grooved throughout its length, as at 6 6, the grooves registering with each other and forming a way in which the pin is free to move vertically to couple and uncouple the link; but owing to the elliptical cross-sectional shape of the pin and the way formed by the grooves the pin is prevented from turning, and its major axis is thus maintained in alinement with the link. The attainment of this result is aided by providing the pin 3 with a flat head 7, which is arranged at a right angle to the major axis of the pin and projects on each side between the adjacent sides or edges of the guides 5. The guides 5 not only serve to prevent the coupling-pin from turning, but also operate to accurately guide the pin into the lower pin-hole 2 in the operation of coupling, and the head of the pin holds it in place. For raising the pin we journal to the end of the car a cranked shaft 8, which extends transversely across the end of the car and is provided at its opposite ends with handles 9. The crank 10 of the shaft is connected to the pin 3 by a chain 11, whereby when the shaft is turned or rocked in the proper direction the pin will be raised to release the link. In order to prevent the pin from being entirely withdrawn from the guides, the shaft 8 is provided with a lug or arm 12, which when the pin has been raised the required distance will abut the end of the car and prevent the shaft from being further rotated. By this means the pin can be raised from either side of the car to uncouple the cars without the necessity of going between the cars. The end of the draw-head is made flaring, as usual, to effect an easy entrance of the link, and the floor or bottom of the draw-head is formed with a downward and rearward incline 13, as shown.

Arranged in the draw-head is a pin-supporting and link-holding block 14, that is unattached to any part of the draw-head and is provided at its front edge with a forwardly-projecting overhanging flange 15. Rigid with the block 15 is an arm 16, that projects down

and through an elongated slot 17, formed in the bottom of the draw-head and rigidly attached at its lower end to the forward end of a lever 18. The lever 18 is straight for the greater portion of its length, but at its rear end is curved downward and passes through a guide 19, fixed to the under side of the draw-head. Journaled in bearings on the under side of the draw-head is a rock-shaft 20, provided with a crank 21, to the end of which is loosely connected the lower curved end of the lever 18. The opposite ends of the rock-shaft 20 are provided with crank-handles 22, by means of which the rock-shaft may be turned from either side of the car.

The operation of the coupling is as follows: When it is desired to couple two cars together, one end of the link 4 is inserted in one of the draw-heads and the coupling-pin 3 lowered therethrough into the lower pin-hole 2. If the opposing draw-head is lower than the draw-head carrying the link, then the rock-shaft 20 is turned in the proper direction to lift the block 14 until the link rests on the flaring lower edge of the mouth of the draw-head, as shown in full lines in Fig. 2, in which position the link will be inclined downwardly, so as to enter the opposite and lower draw-head. If, on the other hand, the opposing draw-head is higher than the draw-head carrying the link, the rock-shaft 20 is turned in the opposite direction to cause the overhanging flange 15 of the link and raise it until it lies flat upon the rearward incline 13, in which position the link will be inclined upward, so as to enter the opposite and higher draw-head. Again, if the two draw-heads to be coupled are of the same height then the rock-shaft should be turned to cause the overhanging flange 15 to depress the inner end of the link until the latter assumes a horizontal position, the link turning upon the apex of the incline 13 as a fulcrum. In the opposing draw-head the pin is raised by the mechanism before described and is held in its elevated position by turning the rock-shaft 20 to throw the block 14 upward and forward to its extreme limit of movement, in which position the flange 15 will rest beneath the lower end of the pin and support the latter. When the two draw-heads are brought together, the end of the link will pass beneath the overhanging flange 15 and strike the block 14, forcing the latter back,

upon which the pin will drop through the link by gravity and complete the coupling.

Having described our invention, what we claim is—

1. In a car-coupling, the combination with the draw-head, of a block arranged to move both vertically and longitudinally therein, said block being provided at its front edge with a forwardly-projecting overhanging flange adapted to engage the end of the link or hold the pin elevated, an arm rigid with said block and projecting downward through a slot in the bottom of the draw-head, a lever rigidly attached at one end to said arm, and means for simultaneously rocking and reciprocating said lever, substantially as described and for the purpose specified.

2. In a car-coupling, the combination with the draw-head provided with a rearwardly and downwardly inclined bottom having an elongated slot formed therein, of a block arranged in the draw-head and provided at its front edge with a forwardly-projecting overhanging flange, an arm rigid with said block and projecting downward through said slot, a lever rigidly attached at its forward end to the lower end of said arm and curved downward at its rear end, a guide on the under side of the draw-head through which the lever passes, and means for moving the rear end of the lever in the arc of a circle, substantially as described, and for the purpose specified.

3. In a car-coupling, the combination with the draw-head having a rearwardly and downwardly inclined bottom having an elongated slot formed therein, of a block arranged in the draw-head and provided at its front edge with a forwardly-projecting overhanging flange, an arm rigid with said block and projecting downward through said slot, a lever rigidly attached at its forward end to the lower end of said arm and curved downward at its rear end, a guide on the under side of the draw-head through which the lever passes, and a rock-shaft provided with a crank loosely connected to the rear end of the lever, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

WILLIAM H. HOPKINS.
JAMES S. EVANS.

Witnesses:

JOHN H. MALIER,
JAMES T. CLARK.