

(No Model.)

W. A. MAYHALL.  
CAR COUPLING.

No. 475,696.

Patented May 24, 1892.

Fig. 1.

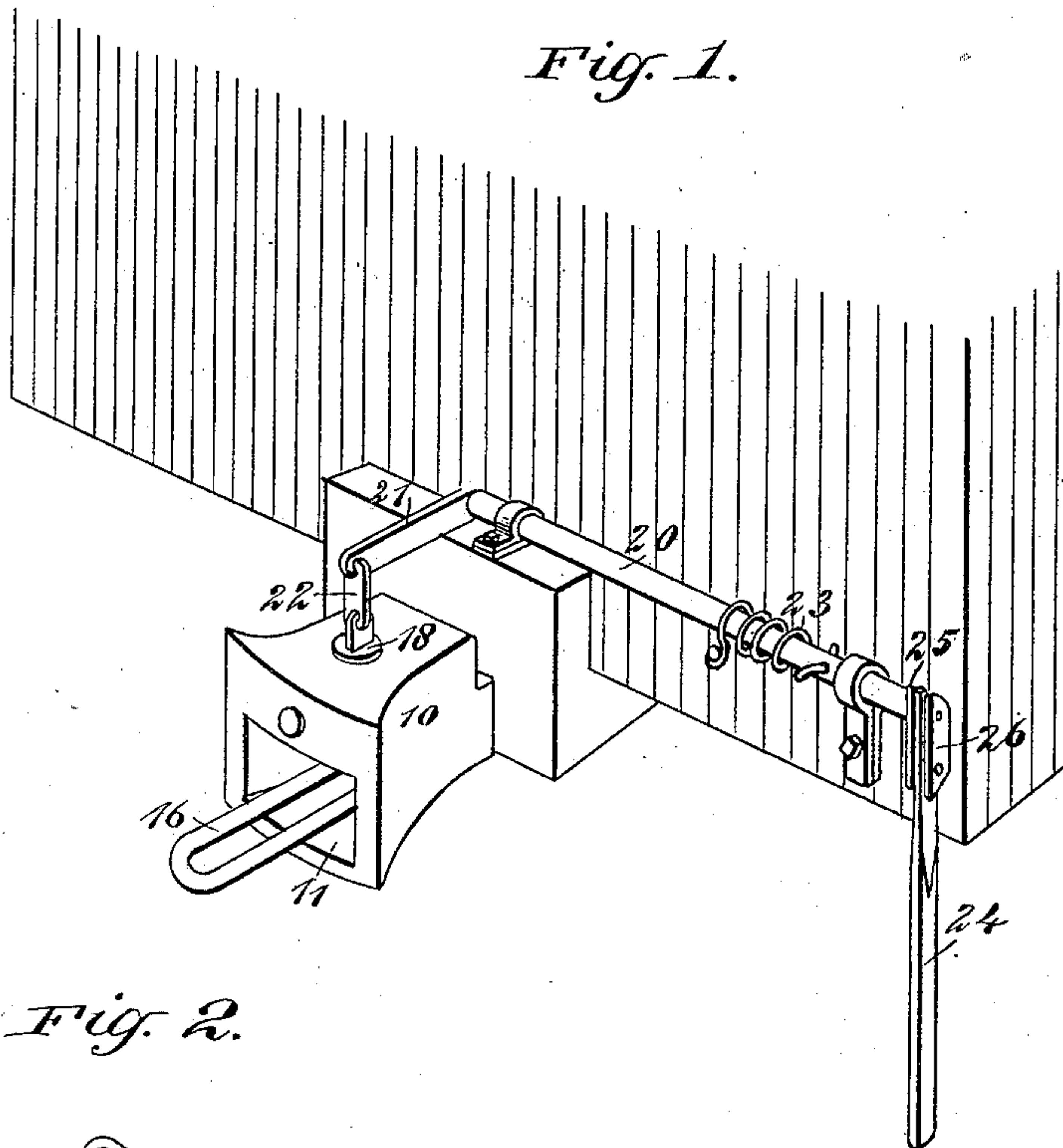


Fig. 2.

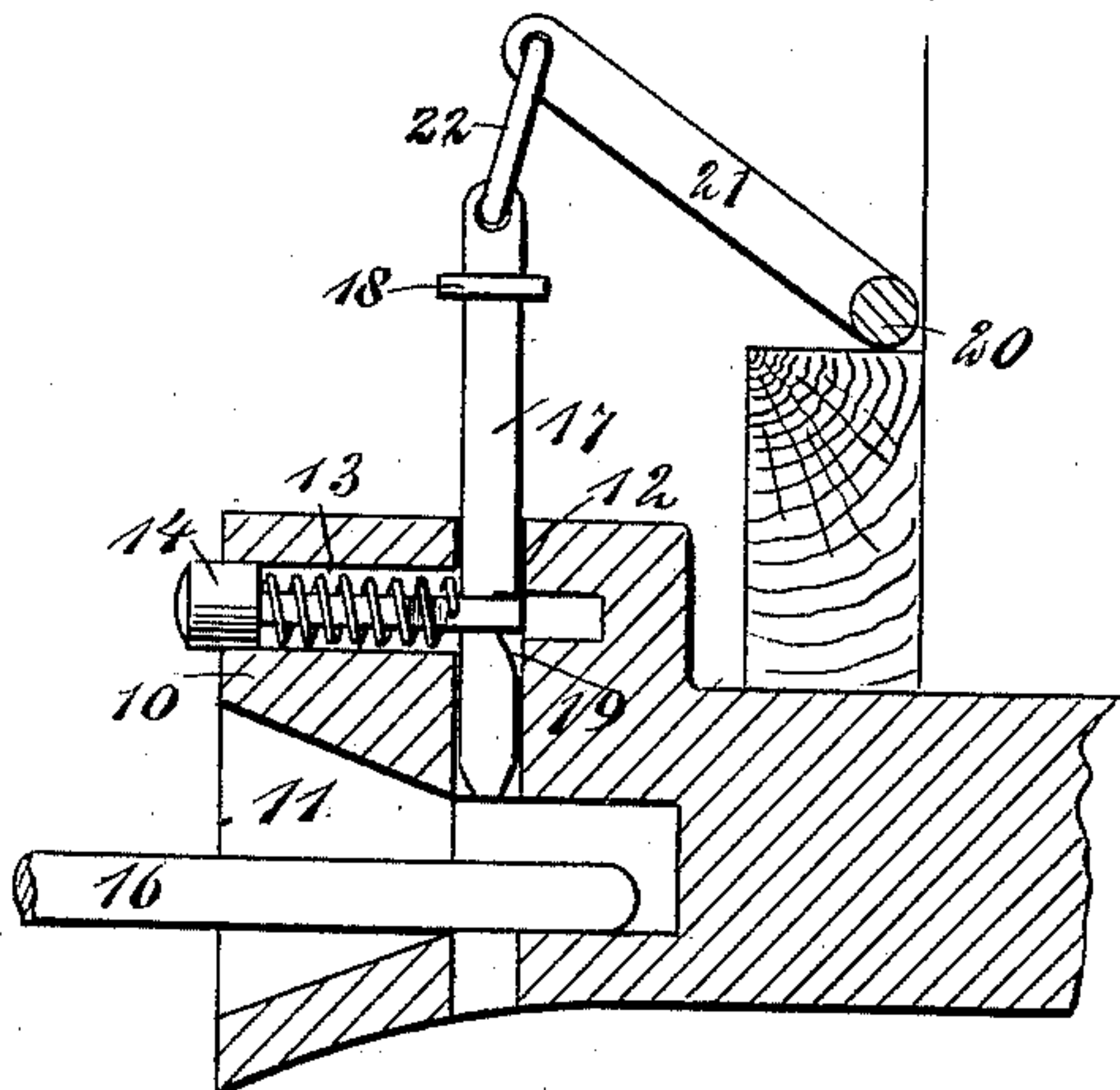


Fig. 3.

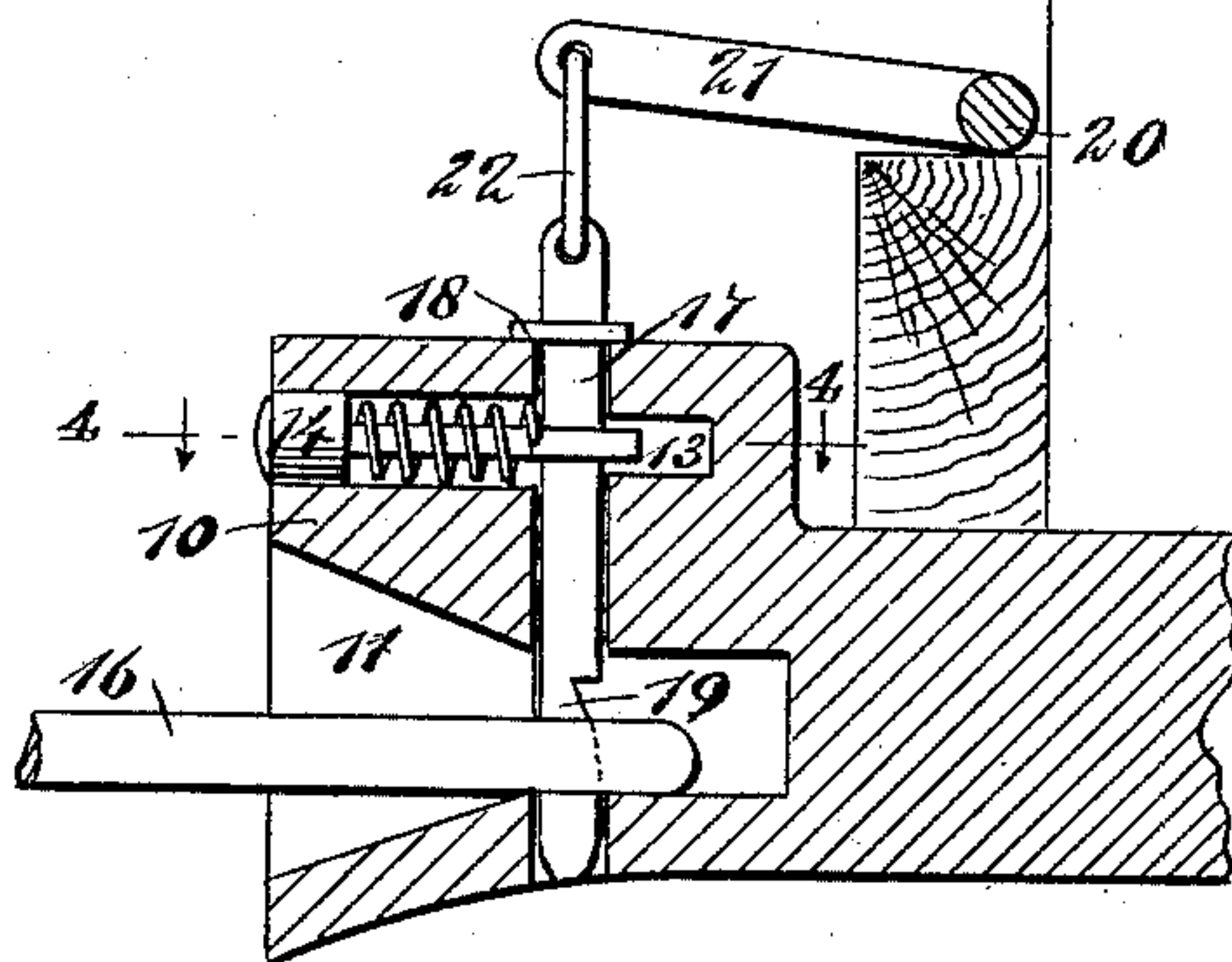
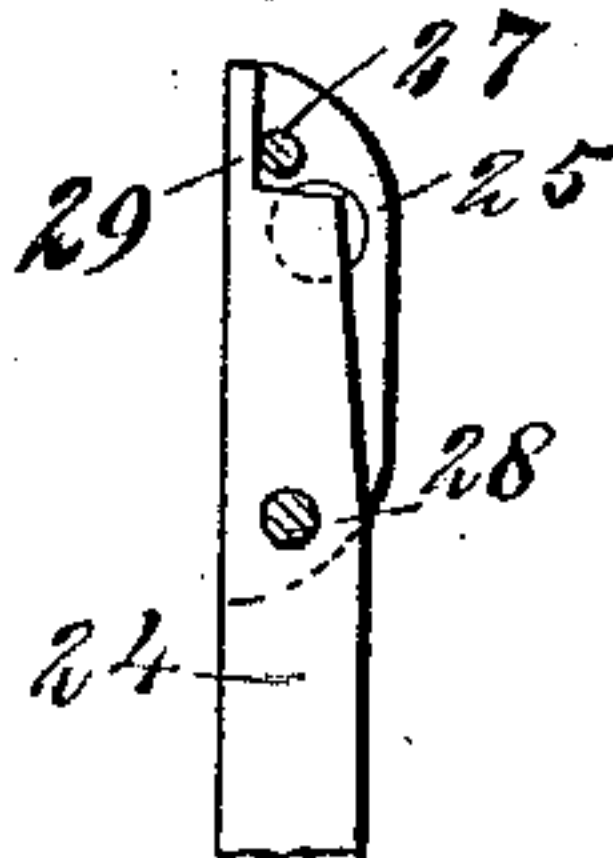


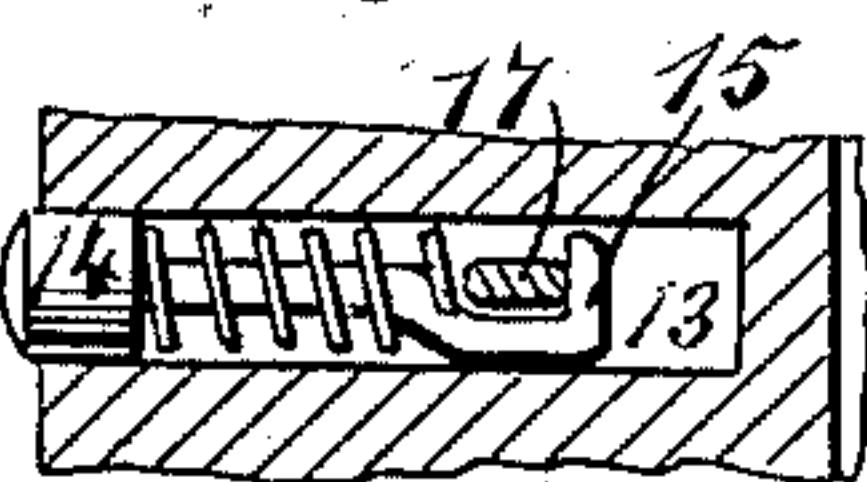
Fig. 5.



WITNESSES:

J. M. Griswell.  
C. Sedgwick.

Fig. 4.



INVENTOR

W. A. Mayhall

BY

Munn & Co.  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

WILLIAM A. MAYHALL, OF GLOSTER, MISSISSIPPI, ASSIGNOR OF ONE-HALF  
TO HIRAM L. VAN NORMAN, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 475,696, dated May 24, 1892.

Application filed August 11, 1891. Serial No. 402,382. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MAYHALL, of Gloster, in the county of Amite and State of Mississippi, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a coupler of exceedingly simple, durable, and economic construction, and one capable of coupling with any opposed link-coupler whether the opposed coupler be higher or lower than the improved coupler.

A further object of the invention is to provide a means whereby the coupling-pin when in the uncoupled position will be held elevated by a spring-pressed latch and wherein the coupling of two opposed draw-heads will be automatically effected by the said draw-heads being brought sufficiently close together to operate the latches, and thereby release the pin, the said pin at that time being automatically thrown down by gravity to the coupling position and through the assistance of a spring-controlled rock-shaft connected therewith.

Another object of the invention is to provide a lever in connection with the rock-shaft which will be at all times out of the way and to so connect the rock-shaft with the coupling-pin that the draw-head may move laterally without affecting such connection.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the coupler, the coupling-pin being illustrated in its coupling position. Fig. 2 is a central vertical section through the coupler, the coupling-pin being shown in its uncoupled position. Fig. 3 is a vertical section through the coupler, the pin being in its coupling position. Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 3, and Fig. 5 is a detail view

of the upper portion of the rock-shaft or lifting-lever.

The draw-head 10 is provided with the usual link-opening 11, said link-opening at its mouth having flaring side and upper and lower walls. The link-opening is crossed by a pin-opening 12, which extends through the draw-head preferably from top to bottom thereof, and between the link-opening and the upper face of the draw-head a horizontal chamber 13 is formed, in which chamber a spring-controlled bolt or latch 14 is located, the inner end of which bolt or latch is provided with an opening or is made substantially hook-shaped, as shown at 15 in Fig. 4. The chamber 13 is of such diameter that the head of the bolt will freely slide therein, and the outer face of the head projects beyond the front upper face of the draw-head. That portion of the bolt surrounded by the spring controlling it is of less diameter than the head. The chamber 13 crosses the pin-aperture 12, and at the rear of the pin-aperture the chamber 13 is flat in cross-section, as is best shown in Fig. 2.

The link 16 may be of the usual or of any desired type, and the coupling-pin 17 is preferably rectangular in cross-section, that being also the shape of the pin-aperture, whereby the pin is prevented from turning. The pin is provided near its upper end with a flange 18 or the equivalent thereof, which limits its downward movement, and near the lower end of the pin in the rear edge thereof a notch or recess 19 is produced.

A rock-shaft 20 is journaled at the end of the car and is provided at its inner end with an arm 21 at a right-angle to the shaft and extending over the draw-head terminating above the coupling-pin, and said arm is connected with the coupling-pin by a link 22. The arm 21 of the rock-shaft is normally held in a horizontal position through the medium of a spring 23, suitably applied to the rock-shaft, and the rock-shaft is manipulated by means of a lever 24, located at or near its outer end. The lever 24 is shown attached to the rock-shaft that it may at all times assume a vertical position and be out of the way.

The preferred connection of the lever is as



follows: A plate 25 is rigidly secured to the outer end of the rock-shaft, extending downward therefrom and a slight distance forwardly, and a second and parallel plate 26 is connected to the plate 25 through the medium of two pins 27 and 28, located, respectively, near the tops and bottoms of the plates. The lower pin 28 constitutes the fulcrum for the lever 24, the upper end whereof is recessed or provided with an upwardly-extending lip or lug 29, integral with its upper end at the front, as best shown in Fig. 5. The rear ends of both the plates 25 and 26 are preferably made round or cylindric at their upper ends, and when the lever is to be used to rock the shaft it is forced outward from the end of the car and its lug 29 engages with the upper pin 27 of the plates, bringing the lever thereby in rigid connection with the rock-shaft.

In the operation of the coupler, when it is necessary to uncouple cars, the lever 24 is carried outward and upward, as above mentioned, whereby its attached arm 21 is elevated, and, through the medium of the link 22, the coupling-pin 17 is likewise raised and its notch 19 carried within the chamber 13 of the draw-head, and as soon as the notch enters said chamber the inner end of the spring-controlled latch 14 enters the notch and maintains the pin in an elevated position, its lower end being entirely removed from the link-opening, as shown in Fig. 2, and when the latch thus engages with the coupling-pin its spring forces its head some distance outward beyond the front upper face of the draw-head.

To couple cars, one car is carried in direction of the other, and owing to the beveled shape mouth of the link-opening the link of the opposed coupler will readily enter the opening of the draw-head of a coupler having its pin elevated, no matter whether one car is higher or lower than the other. When the link has entered the opposed draw-head a sufficient distance, the two draw-heads are brought into engagement and the latch 14 of the draw-head with which the coupling is to be effected is forced inward, and when so operated upon releases the coupling-pin, which would drop by gravity through the link, but is forced rapidly downward to its coupling position by the spring 23, acting upon the rock-shaft. No matter in what position the rock-shaft is carried the lever 24 will hang perpendicularly downward, and as the arm of the rock-shaft is connected with the coupling-pin

by a link the draw-head may have the usual lateral movement without interfering with the action of either the shaft or the pin.

The coupler is exceedingly simple, containing but few parts, and the action of all its parts is positive. Furthermore, each and every part may be readily duplicated and the coupler may be used to couple with a draw-head or a coupler of the link-type no matter what its construction may be.

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

1. In a car-coupling, the combination, with a draw-head provided with a link-opening, a pin-opening, and a chamber above the link-opening and crossing the pin-opening, of a coupling-pin provided with a recess in its rear edge and a spring-actuated bolt arranged in the said chamber with its outer end projecting beyond the draw-head and provided at its inner end with a hook engaging the coupling-pin, substantially as described.

2. In a car-coupling, the combination, with a draw-head provided with a link-opening, a rectangular pin-opening, and a chamber above the link-opening and crossing the pin-opening, of a rectangular coupling-pin provided with a recess in its rear edge and a spring-actuated bolt in the chamber and having a hook-shaped inner end engaging the coupling-pin, substantially as described.

3. In a car-coupling, the combination, with a draw-head provided with a link-opening, a pin-opening, and a chamber above the link-opening and crossing the pin-opening, of a coupling-pin having a recess in its rear edge, a spring-actuated bolt in the chamber and provided with a hook-shaped inner end engaging the pin, a rock-shaft provided with an arm at right angles thereto, and a link connecting the arm to the coupling-pin, substantially as herein shown and described.

4. In a car-coupling, the combination, with a rock-shaft connected with the coupling-pin, of spaced plates attached to one end of the rock-shaft and provided with a stop-pin, and a lever pivoted between the plates and having a lug extension adapted for connection with the rock-shaft, substantially as and for the purpose set forth.

WILLIAM A. MAYHALL.

Witnesses:

E. H. RATCLIFF,  
L. B. ROBINSON.