(No Model.)

C. W. SMITH.

CAR COUPLING.

No. 447,165. Patented Feb. 24, 1891.

Fig. 1.

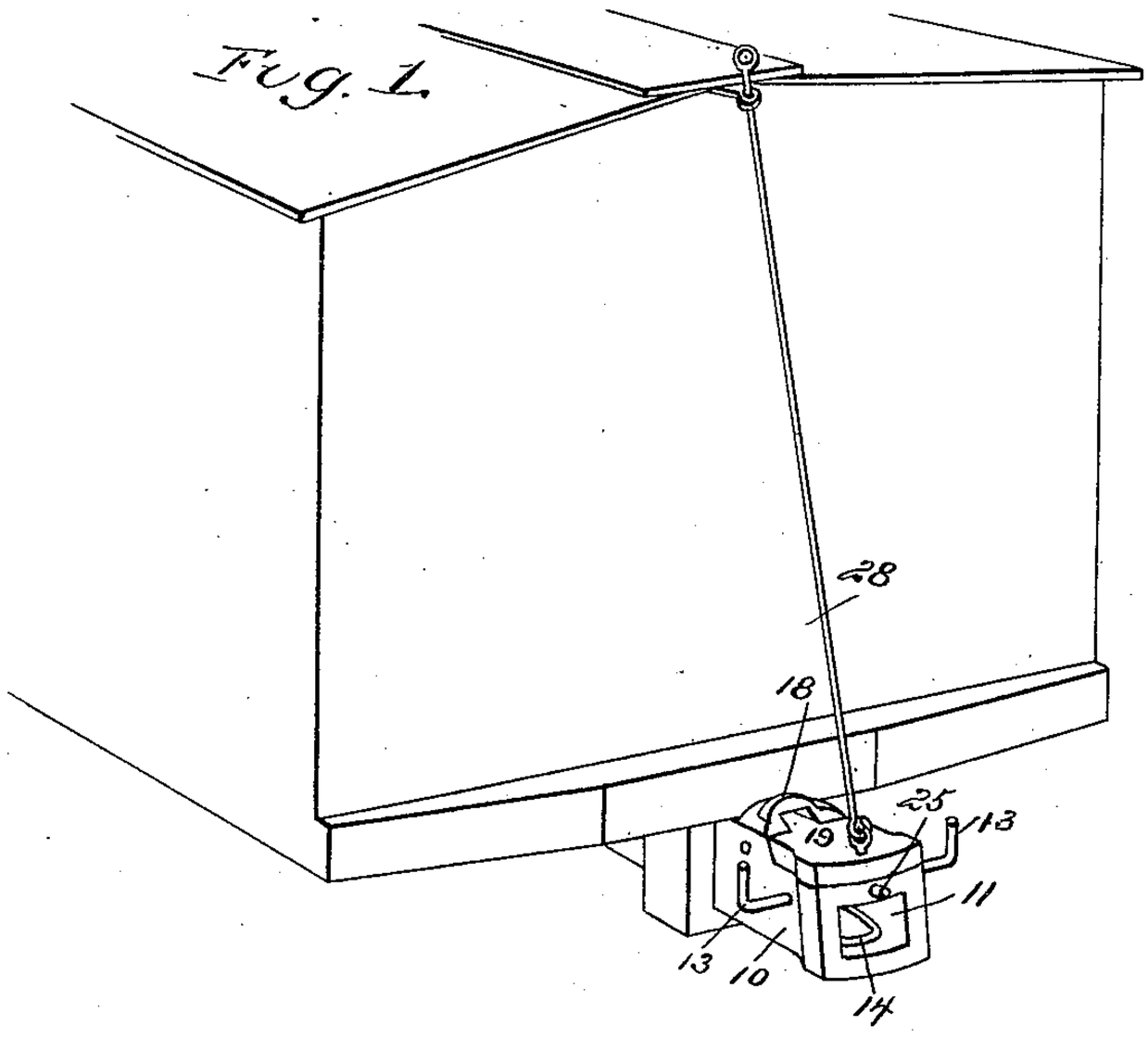
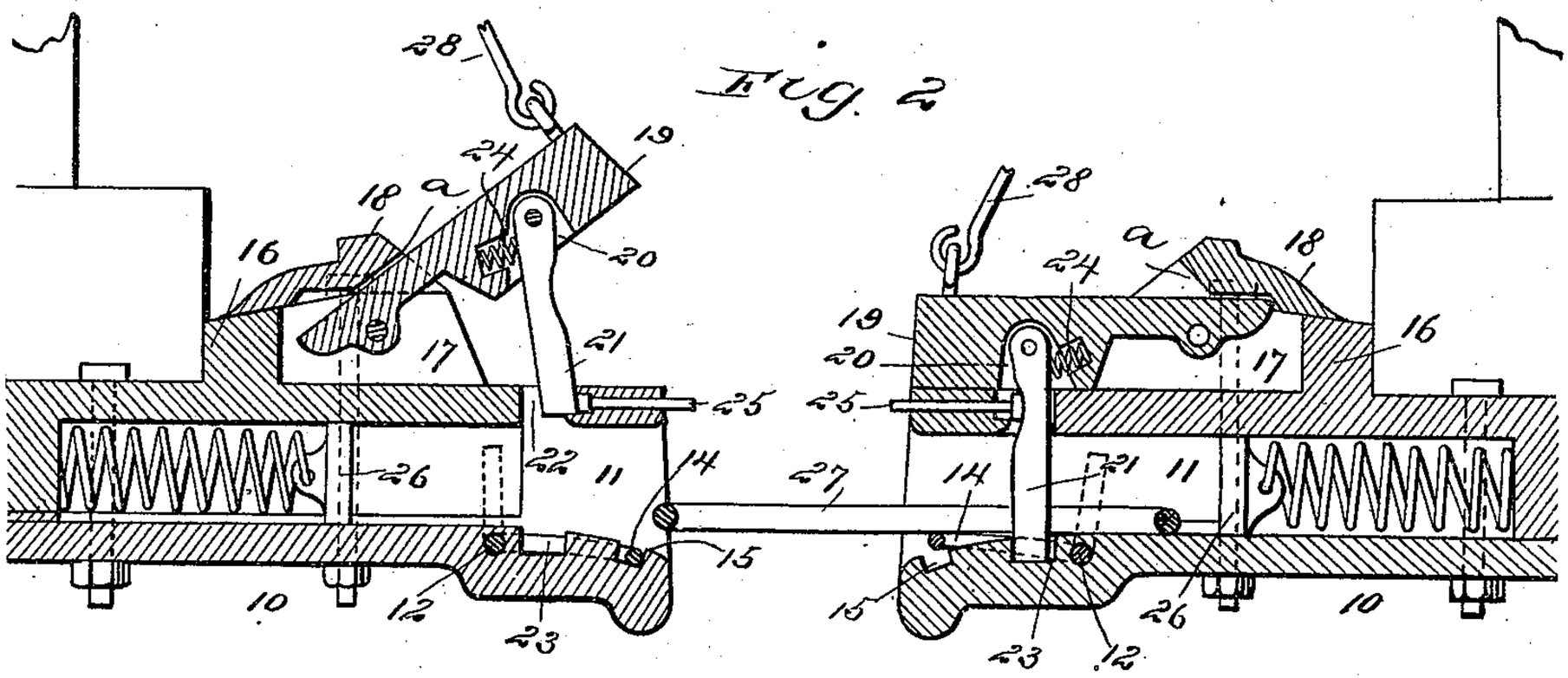


Fig. 2.



WITNESSES:

H. R. Clarke.

C. Sedgwick

INVENTOR:

C. W. Smith

BY

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHAUNCEY W. SMITH, OF BRUSH CREEK, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 447,165, dated February 24, 1891.

Application filed August 15, 1890. Serial No. 362,058. (No model.)

To all whom it may concern:

Be it known that I, CHAUNCEY W. SMITH, of Brush Creek, in the county of Fayette and State of Iowa, have invented a new and useful Improvement in Car-Couplings, 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 means whereby a link-and-pin coupler is rendered automatic in coupling and wherein an uncoupling may be effected from the top or from the side of the car, and also to provide a means whereby the improved coupler may be conveniently coupled with the old style of link-coupler.

A further object of the invention is to provide mechanism capable of operation from the side of the car, whereby the link may be held in position to couple with a draw-head having its link-opening at a greater elevation.

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 and letters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the coupler, illustrated as applied to a freight-car; and Fig. 2 is a central vertical section through two opposed couplers, represented in the act of coupling.

The draw-head 10 is provided with the usual link-opening 11, the lower wall of which opening at the front is preferably downwardly inclined and the side walls beveled inward in the usual manner. Within the link-opening at its bottom a shaft 12 is journaled, which extends through from side to side and terminates at its extremities in crank-arms 13. The said shaft at its central portion within the link-opening is provided with an inwardly-extending preferably U-shaped crank-arm 14, which arm is curved to conform to the bevel of the lower wall of said opening, and in the said lower wall a channel or groove 15 is produced, of a contour and depth to receive the crank-arm 15, as is best shown in Fig. 2. The object of the crank-shaft 12 is to provide a means for elevating and guiding the link. When the central arm of the crank-shaft is in its grooove or channel, its upper face is flush with the bottom face of the link-opening; but by manipulating the shaft through the medium of its outer arms 13 the central crank-arm may be elevated to impart to the link the necessary elevation for coupling with a similar opposed draw-head or with a draw-head of greater height.

Upon the top of the draw-head, near the sill of the car to which it is attached, an offset 16 is produced, provided with a recess or cavity 17, extending through its front and upper surface some distance to the rear, the top of the recess or cavity 17 being covered by a hood 18, the under face of which at its forward end is upwardly beveled, as illustrated at *a* in Fig. 2. Within the hood recess or cavity 17 the inner end of a lift-arm 19 is pivoted, the outer end of which arm is considerably heavier than its inner end, and the upward movement of the arm is limited by engagement with the bevel surface *a* of the hood. In the bottom of the heavier end of the lift-arm 19 an irregular recess 20 is created, and in one portion of the recess the upper end of a coupling-pin 21 is pivoted. The coupling-pin is adapted to pass downward within the draw-head through an opening 22 in its upper surface, and the lower end of the coupling-pin, when in the coupled position, is seated in a cavity 23, formed in the base-wall of the link-opening. The lower end of the coupling-pin is not entirely withdrawn from the upper pin-opening 22 when the lift-arm is at its greatest elevation, and the pin is held in engagement with the forward wall of the upper pin-opening at all times by a spring 24, located in one portion of the cavity 20 of the lift-arm and having a bearing against the rear portion of the pin. When the lift-arm is in its elevated position and the pin is carried thereby to its greatest height, the lower end of the pin is forced by the spring 24 to a seat in a recess formed in the forward wall of the upper pin-aperture, as shown in Fig. 2. When the pin is so seated, the coupler is in position to couple with an opposed draw-head. The pin is thrown from its upper seat through the medium of a needle 25, held to slide laterally in the draw-head, the inner end of which nee-

dle is adapted for engagement with the front face of the lower end of the pin, and the forward end of the needle extends some distance beyond the front face of the draw-head. The unseating of the pin is accomplished by the draw-head of the opposed coupler coming in engagement with the outer end of the needle, thereby causing its inner end to force the coupling-pin from its seat, and as the link is in position within the draw-head and the outer end of the lift-arm is quite heavy the said arm by gravity drops downward to an engagement with the upper face of the draw-head, and the coupling-pin is carried through the link and seated in the lower cavity 23, as shown at the right in Fig. 2. When the pin is in the coupled position shown in the above-named figure, the inner end of the needle preferably rests against the concave surface in the front edge of the pin.

Within the link-opening a spring-buffer 26 is held to slide, adapted to be engaged by the entering link 27, which may be of any suitable form, and prevent the pin from being broken, bent, or otherwise injured as the draw-heads approach. The forward end of the lift-arm is connected by a link 28, a chain, or their equivalents with suitable mechanism at the top of the car, whereby the lift-arm may be carried upward to the uncoupling position from that point; or the lift-arm may be manipulated from the sides of the car through the medium of the usual form of shafting.

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

1. A car-coupling comprising a draw-head having link and pin openings, an offset 16, having a hood 18, beveled at *a*, the lift-arm 19, pivoted in the offset and having a recess 20, the pin 21, pivoted at its upper end in said recess, the spring 24, and means for releasing the said pin when set for coupling, substantially as set forth.

2. A car-coupling comprising a draw-head having a channel 15 in the bottom of its link-opening, a pin-opening 22, a pin-supporting shoulder at the upper end of said opening, a spring-pressed buffer-block 26, the forward throw of which terminates in rear of the pin-opening, the link-raiser 12, having a cranked portion 14 resting in the channel 15, the lift-arm 19, the pin 21, and spring 24, substantially as set forth.

3. In a car-coupling, the combination, with a draw-head provided with pin-apertures, of a lift-arm pivoted at one end upon the draw-head, a coupling-pin pivoted at its upper end in the said arm, and a buffing-needle held to slide longitudinally in the draw-head and adapted for engagement with the said pin, substantially as shown and described, whereby the pin, when elevated, is unseated by the opposed draw-head striking the needle, as and for the purpose set forth.

4. In a car-coupling, the combination, with a draw-head provided with pin-apertures and a recess in the forward wall of the said apertures, of a lift-arm pivoted near one end over the upper face of the draw-head, a spring-pressed coupling-pin pivoted near its upper end in the lift-arm and adapted, when raised, to be seated in the recess of the wall of the upper pin-aperture, and a buffing-needle held to slide longitudinally in the draw-head, one end of which needle projects beyond the front face of the draw-head, while the other end extends within the said recess to an engagement with the coupling-pin, as and for the purpose set forth.

CHAUNCEY W. SMITH.

Witnesses:
JAMES H. LITTLE,
M. F. LITTLE.