No. 654,494. Patented July 24, 1900.

F. SHELDON & H. M. MILLIKEN.

CAR COUPLING.

(No Model.) (Application filed Apr. 23, 1900.)

Fig. 1.

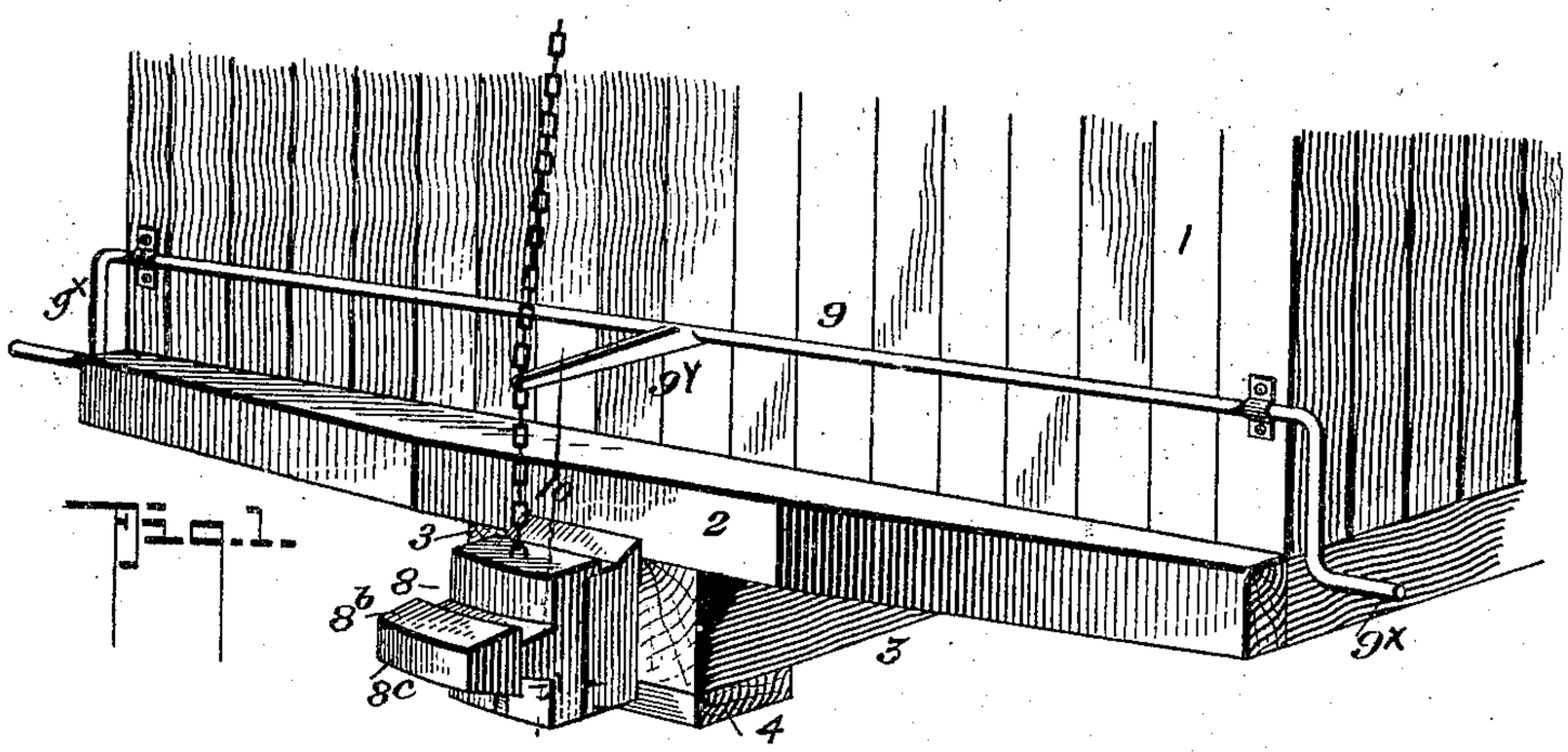


Fig. 2.

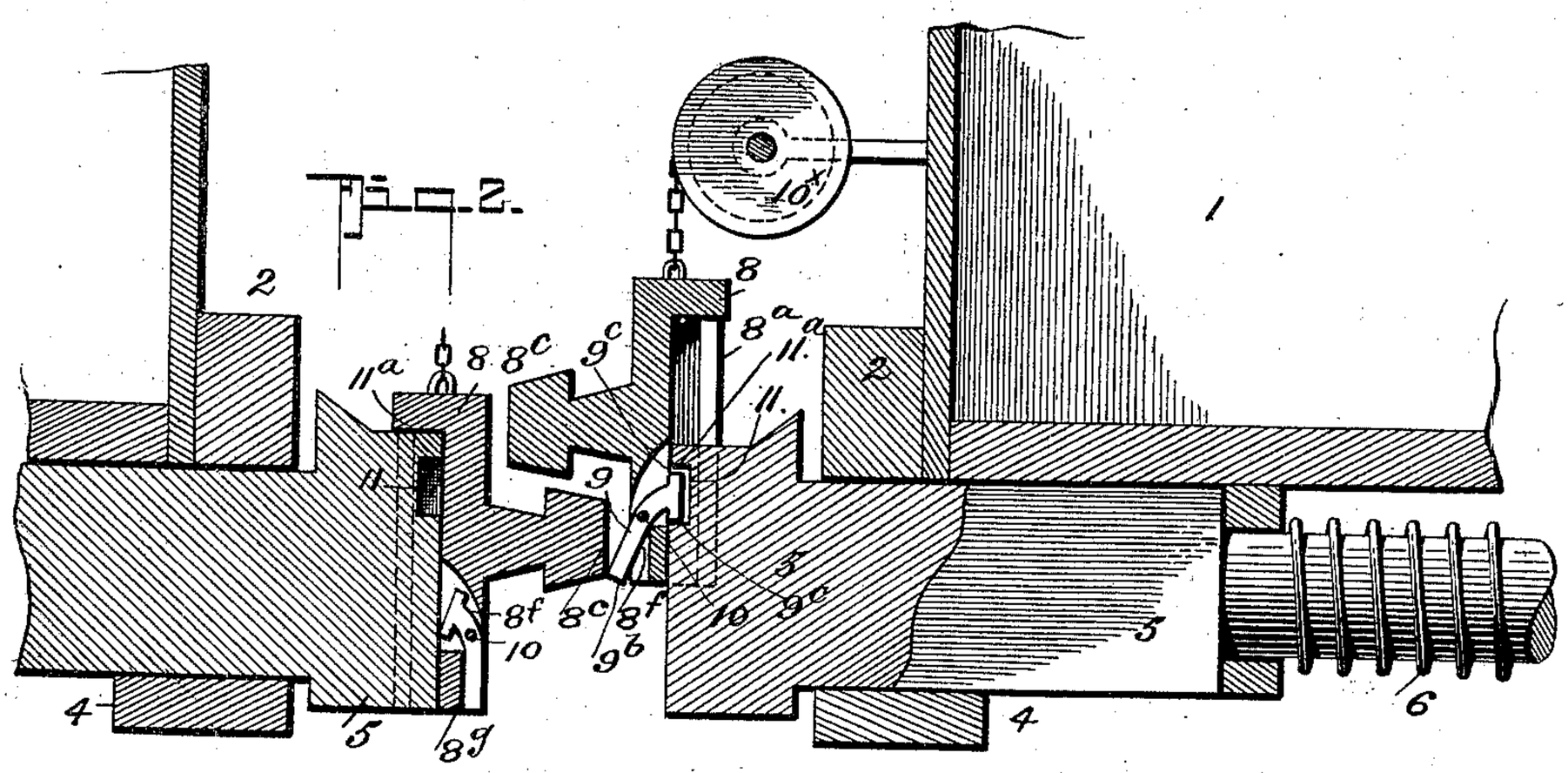


Fig. 4.

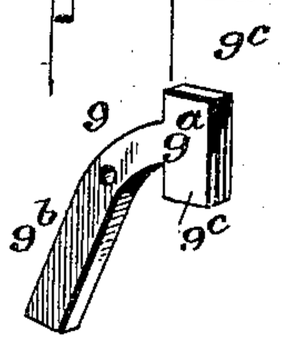
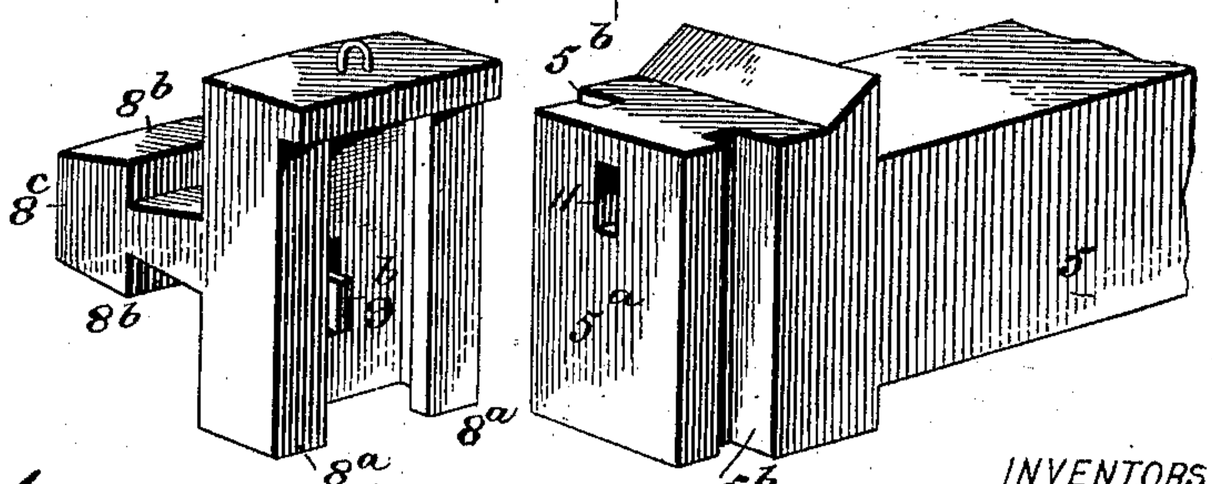


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK SHELDON AND HARRY M. MILLIKEN, OF CHEBOYGAN, MICHIGAN, ASSIGNORS OF ONE-THIRD TO JOHN B. STIMPSON, OF MACKINAW CITY, MICHIGAN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 654,494, dated July 24, 1900.

Application filed April 23, 1900. Serial No. 13,965. (No model.)

To all whom it may concern:

Be it known that we, FRANK SHELDON and HARRY M. MILLIKEN, residing at Cheboygan, in the county of Cheboygan and State of Michigan, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to that class of car-couplers having the draw-bars equipped with vertically-adjustable coupling-heads capable of being so manipulated by means operated from the top and sides of the car; and it more particularly relates to improvements on that type of coupler mechanism disclosed by our Patent No. 621,163, dated March 14, 1899.

While we have found in the practical application of our patented invention aforesaid the means for elevating the vertically-adjustable heads an advantageous one, yet so far as it relates to holding the draw-heads to their proper vertical adjustment the results are not all desired, for the reason that special devices are required for holding the rocking rod on the lifter-elevating chain to a locked position to keep the said adjustable draw-heads at a proper elevation. This means for holding the heads up we have found not entirely reliable, as a careless locking of the bar or the lifting-chain frequently leaves the said parts in a position to be easily loosened by jarring of the car and other causes, thereby causing the draw-heads to drop down and out of a proper condition for automatically coupling.

Again, in the form of draw-head-supporting devices shown in our patent aforesaid it sometimes requires that the rocking bar and the lifting-chain be released from their detent or locking means by hand before a proper interlocking of the opposing vertically-adjustable draw-heads can be accomplished.

Our present invention seeks to provide, in addition to the means shown in our patent for lifting the draw-heads or other equivalent means, an automatically-operating detent or trip which when the vertically-slidable draw-head is elevated will automatically move into a position to positively engage with and hold the said sliding draw-head to its elevated position regardless of the adjustments of the lifting-chain or locking-bar.

Our present invention also comprehends in its complete make-up a trip device carried by each vertically-movable draw-head adapted, when the draw-head is raised to its uppermost position, to engage with a locking portion on the draw-bar and automatically lock the said vertically-adjustable draw-head to its elevated position and having a member or portion so constructed as to be in the path of the abutment end of the opposing draw-head, whereby when the two draw-heads come together the said detent will be first tripped to release the elevated draw-head and permit of its automatically dropping into a coupling engagement with its opposing coupling-head.

In its subordinate features our invention also consists in certain details of construction and peculiar combination of parts, all of which will be hereinafter fully described and then specifically pointed out in the appended claim, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a draw-head constructed in accordance with our invention, means being shown for elevating the slidable coupling member from the sides or from the top of the car. Fig. 2 is a longitudinal section of a pair of coupling draw-bars constructed in accordance with our invention. Fig. 3 illustrates one of the draw-bars and its slidable coupling-head in detail, the two portions being detached; and Fig. 4 is a perspective view of the automatically-operating detent hereinafter specifically referred to.

In the accompanying drawings, in which like numerals indicate like parts in all the figures, 1 indicates a car-body; 2, the end sill; 3, the longitudinal draw-bar guide-beams, and 4 the transverse draw-bar-supporting timbers.

5 5 indicate the draw-bars of our improved coupler, which, as will be readily seen by reference to Fig. 1, are of a width to fit the space between the beams 3, they being held thereby from lateral movement, said draw-bars, however, having the usual longitudinal or buffer movement and are provided with the usual buffer-springs 6. The bars 5 are also held from vertical movement by reason of having a close engagement with the bottom of the car and the cross-timbers 4.

So far as described it will be seen that while the draw-bars have the usual longitudinal movement in their bearings they are positively held from lateral and vertical movement, such construction being provided to maintain the opposing draw-bars always in a positive and proper longitudinal position and thereby provide draft members having positive bearing portions at the front and rear ends to produce a strong and firm coupling and also to keep the draw-heads, hereinafter referred to, in a true central position to insure a positive and automatic coupling action.

The draw-heads 8 are detachably connected to the draw-bars and have a clearly-defined vertical movement thereon—that is, they are held from lateral movement as well as longitudinal movement independent of the draw-bars. For this purpose the draw-bars have their outer ends terminating in enlargements 5^a and the sides thereof are formed with vertical grooves 5^b to receive the vertical side flanges 8^a of the detachable draw-heads 8.

By referring now more particularly to Fig. 3 it will be noticed the head 8 has a forwardly-extending and horizontally-disposed arrow-like locking member 8^c, provided with the vertical front abutment-face and having the upper and lower faces 8^b thereof beveled, as shown, so as to admit of the higher member 8 when the two draw-heads come together riding freely on the opposing member 8.

Any suitable means may be provided for lifting the members 8; but we prefer to employ a lock-shaft 9 held transversely on the front end of the car, having a handle 9^x at the end. This bar has a central crank or lift member 9^y, to which is attached a chain 10, as shown in Fig. 1, which in practice may be extended to the top of the car, or it may have a drum or chain disk 10^x, as shown in Fig. 2, it being obvious that in this latter construction the lift-chain 10 would be composed of two sections, one of which winds about the drum in one direction and connects therewith, while the other winds about the drum in an opposite direction and is fixedly connected therewith.

So far as described the parts are substantially the same as disclosed in our former patent, hereinbefore referred to. In the operation of the said parts to adjust the draw-heads to a coupling position it is only necessary to elevate one of the heads sufficiently high so its lower beveled face 8^b will engage the upper beveled face 8^b of the opposing head, it being obvious that as the two heads thus engage and are closed against each other by releasing the lifting-rod on the upper coupling-head the same will drop by gravity into a coupled engagement with its mate.

To positively hold the vertically-adjustable coupling-head to its elevated position, we provide a detent or trip mechanism the peculiar construction of which and its combination with the fixed part of the draw-bar and the vertically-adjustable coupling-head forms the essential feature of this invention.

The trip member shown in Fig. 4 and indicated by 8 comprises a vertically-extending head-block 9^a and a pendent diagonally outwardly extending head-block 9^b. This trip member 9 is pivotally supported in a socket 8^f in the lower end of the vertically-adjustable draw-head, and its pivot-point 10 is so arranged that the upper or head portion will gravitate to normally bring the shank 9^b forward in a plane beyond the front face of the coupling-head 8, as clearly shown in Fig. 2.

At a point near the upper end and in the front face thereof the fixedly-held portion of the draw-bar has a socket 11, and when the vertically-adjustable head 8 is elevated to its uncoupling position, as indicated in Fig. 2, the head 9^a of the trip or detent 9 will drop into engagement with the said socket, and thereby form a positive detent or lock for holding the vertically-adjustable draw-head from dropping back to its coupling position. It will also be noticed by reference to the said Fig. 2 that the upper and lower faces of the head-block 9^a are squared off, as indicated at 9^c, and the upper edge of the socket 11 is also squared off, as indicated at 11^a, such correlation of parts serving a double function, as it provides for the trip or detent 9 positively seating with its lower squared edge 9^c on the bottom of the socket 11 to hold the vertically-adjustable head 8 from dropping down, and, furthermore, it also prevents the said head from being pulled through or out of engagement with its coincident draw-bar section by reason of the upper surface 9^a of the trip engaging with the squared portion 11^a of the socket, as clearly shown in the drawings. Thus it will be seen by providing the draw-bar in the head-block with a detent mechanism, as described, that when the coupling-head has been moved to its uncoupled position it will be held from moving either upward or downward irrespective of any movement of the lifting-chain or the lifting-rod.

The projecting or shank portion of the tripper is in practice of sufficient length to project in the plane of the movement of the front or impacting face of the opposing coupling-head 8 when the two draw-bars move toward each other, and by reason thereof it is obvious that when the two draw-heads come together, and assuming that one of the draw-heads is elevated to the uncoupled position, as shown in Fig. 2, that the impacting face 8^c of the opposing draw-head will first engage the said shank and swing the detent 9 so its head 9^a will move out of engagement with the socket 11 and its shank move into the pendent vertical extension 8^g of the recess or socket 8^f in which the trip member is pivoted, thereby releasing the detent from the draw-bar, and as during this operation the lifting-chain and the

coupling-rod are left free to move to their uncoupled position the said coupling-head will drop by gravity into engagement with the opposing coupling-head and the two coupling-heads be thereby permanently locked, it being understood that by reason of the head 9^a engaging with the front or straight face of the draw-bar its shank portion will be maintained with its outer edge flush with the straight face of the vertically-adjustable head 8, as shown at the left in Fig. 2.

From the foregoing description, taken in connection with the drawings, it is thought the advantages of our invention will be readily understood. It will be observed that the detent mechanism is of an exceedingly-simple character, and by reason of being of but a single member adapted to be pivotally hung in a vertically-adjustable draw-head 8, as shown and described, the same will positively act for the purposes described and all danger of the said draw-heads 8 dropping after they have been elevated to their uncoupling position is positively overcome. Furthermore, it dispenses with any special means for locking the uncoupling-rod or coupling-chain and entirely does away with the necessity of the brakeman or other carman setting the uncoupled draw-head in position to drop to its coupled position, and the said operation being under all conditions positively automatic.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination with the draw-bar, said draw-bar having a locking-socket in its front face, said socket having straight upper and lower locking-faces; of the vertically-slidable draw-head 8, said draw-head having a projected arrow-head coupling member and having a recess 8^f, in its lower end, a detent 9, pivotally mounted in the recess of the head 8, said detent having a head portion 9^a, provided with locking-face 9^c, and a shank member 9^b, said detent being so pivoted that its upper or head bar will gravitate into a locked engagement with the socket in the draw-bar when it moves into line therewith and its shank portion being adapted to project beyond the front face of the slidable draw-head when its head portion moves into a locking position, substantially as shown and for the purposes described.

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Witnesses:
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