(No Model.)

W. NUNAMAKER.

CAR COUPLING.

No. 277,152. Patented May 8, 1883.

Fig. 1.

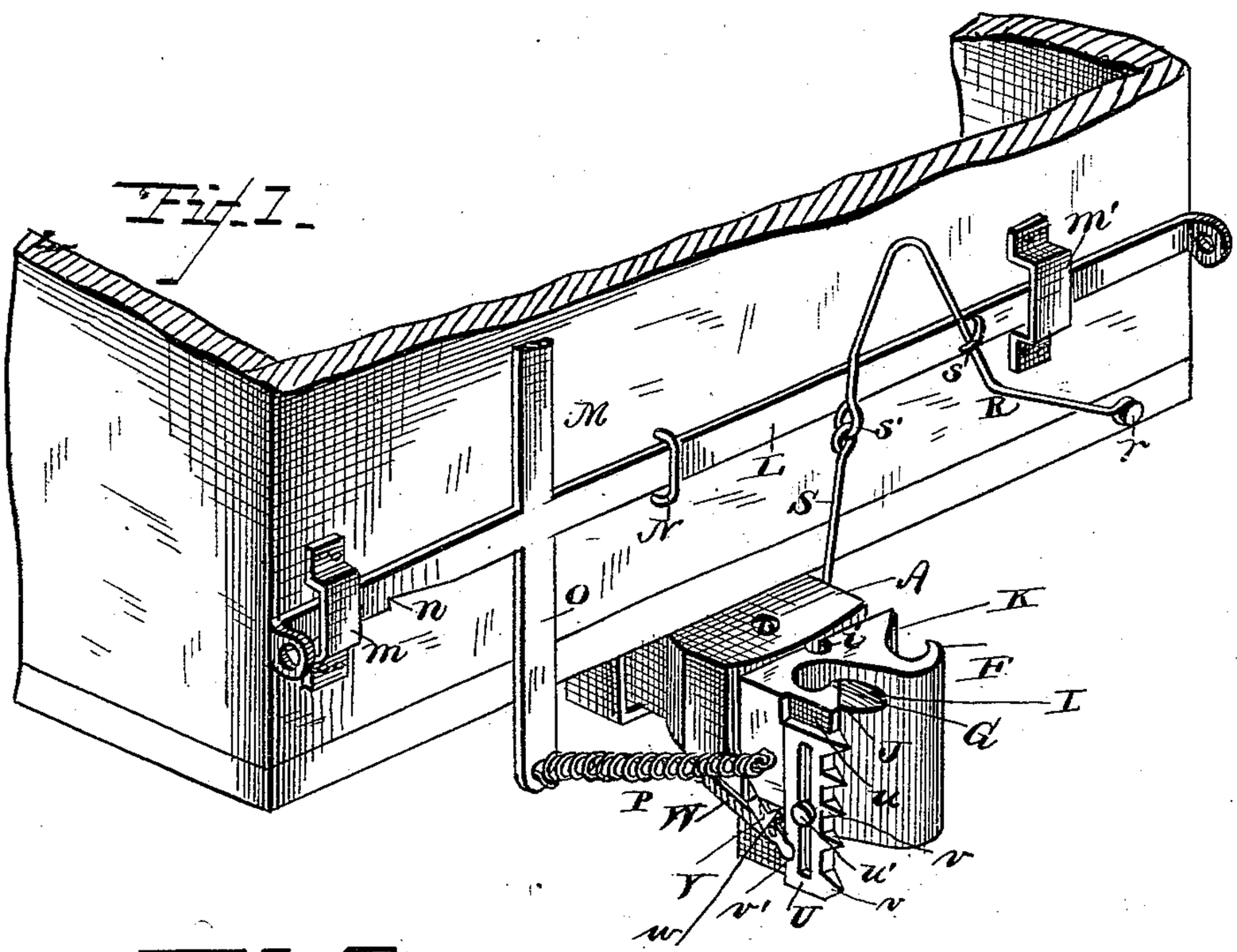


Fig. 2.

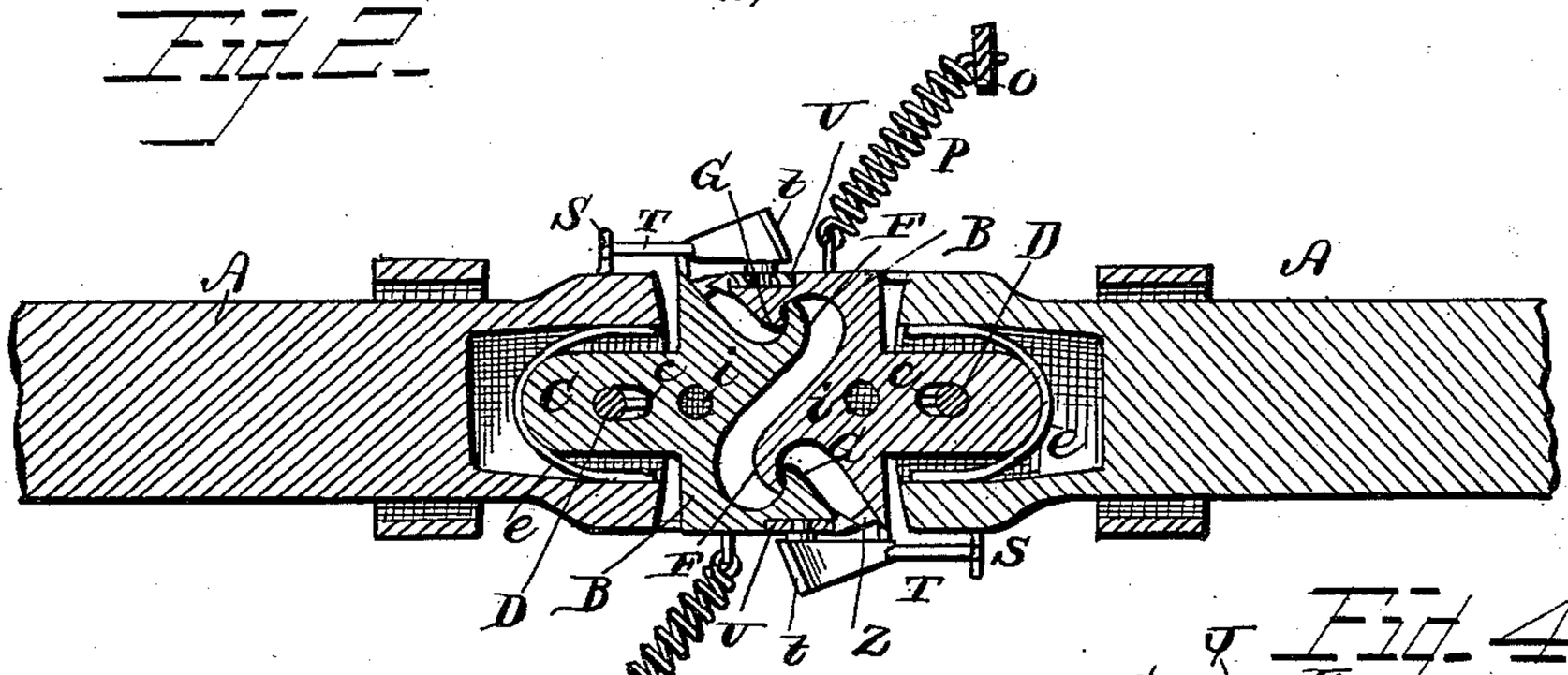


Fig. 3.

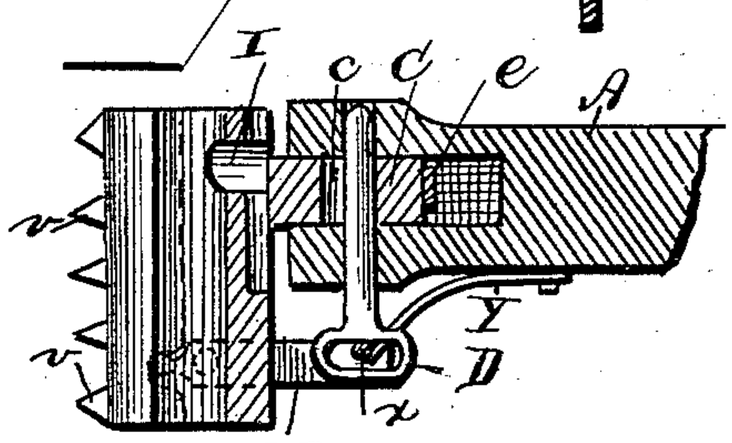
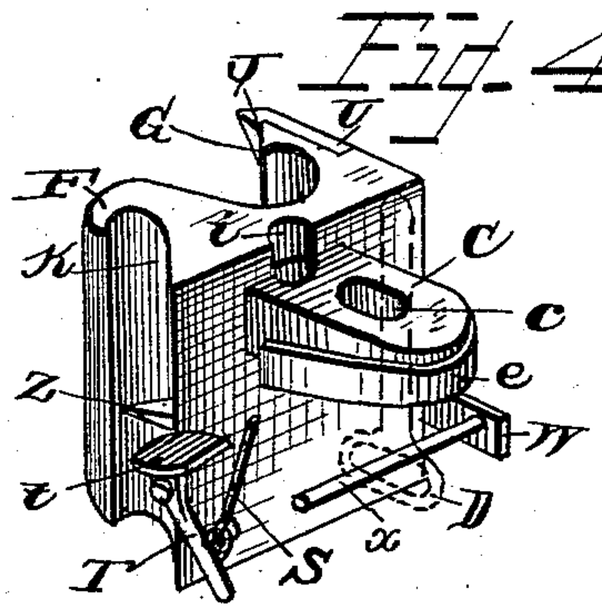


Fig. 4.



WITNESSES

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 277,152, dated May 8, 1883.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NUNAMAKER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to car-couplers, and the object is to provide a device of this kind adapted to all the ordinary forms of freight and passenger cars, which will enable them to couple automatically, and at the same time provide means for uncoupling without the undue expenditure of manual labor; and to that end the novelty consists in the construction of the same, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings similar letters of reference indicate like parts of the invention.

Figure 1 is a perspective elevation of a portion of one end of an ordinary freight-car fitted up with my improved coupler. Fig. 2 is a longitudinal section through the couplers, showing their respective positions when two cars are coupled. Fig. 3 is a vertical section through the draw-head and coupler on a line with the coupling-pin, and Fig. 4 is a rear perspective view of one of my improved couplers removed from the draw-head.

A is the ordinary draw-head or buffer, and is secured to the car in the usual manner.

B is my improved head, and its rear end is provided with a tongue, C, having a slot, *c*, so that the tongue may be inserted in the draw-head A and secured in place by the pin D, which passes up through the draw-head from the bottom, as shown in Fig. 3. This tongue C is provided with a U-shaped spring, *e*, which holds the head B in position in the draw-head, and as the draw-heads vary considerably on the different forms of cars and on different roads, this spring adapts itself to these various forms and holds the head in a central position. The face of the head B is curved somewhat like the letter S—that is, it is provided with two hooks, F and G, which connect with and engage the two similar hooks on the opposite head. This formation of the face provides two beveled surfaces or inclines, J and K, so arranged that when two of the heads come together in the act of coupling the hooks F will strike the inclines J on each and force them over, so that the hooks F will engage with the hooks G of the opposite head, thereby coupling the cars together.

L is a transverse lever, secured to the end of the car in the guides *m m'*, and is provided with a vertical extension, M, so that it may be operated either from the sides or the top of the car, as may be most convenient. This lever L passes through a guide or staple, N, which acts as a fulcrum, so that as the lever is moved backward or forward one end of it may be depressed, so as to engage the detent *n* with the guide *m* and retain the lever in that position, while, of course, when that end is raised the detent will be released and the lever will resume its normal position. This lever is provided with a depending arm, O, to the lower end of which is attached a spiral spring, P, which in turn is secured to the side of the head B, so that as the lever L is moved the arm O and spring P draw the head over, so as to release the hooks F and G, and thereby uncouple the cars.

R is a bent lever, fulcrumed at *r*, and it extends upward through the guide *s* on the lever L, thence downward and terminates in an eye, *s'*. To this eye is attached a connecting-rod or pitman, S, the lower end of which is secured to a locking-lever, T, attached to the side of the head B. This locking-lever is provided with a flat face, *t*, and when the lever is in a horizontal position the free end serves to lock the head of the opposite coupler into contact with the head on which the lever T is secured.

It will thus be seen that as the lever L is set so as the detent *n* is engaged with the guide *m* the bent lever R will be forced downwardly, so as to depress the locking-lever T and cause it to assume a vertical position. This movement sets the lever T so as to release the opposite head, B, and the arm O draws its head over so as to uncouple, as above set forth.

U is a plate mounted on the side of the head B, so as to have a vertical sliding motion in the recess *u*, and is held in place and secured there-

to by the bolt *w'*. The forward end of this plate is provided with a series of teeth, *v*, while its rear end has a recess, *v'*, in which is inserted the rounded end of a compound lever, V, so that if the plate be moved up or down a corresponding motion will be communicated to the lever. This lever V is provided with a dog, *w*, and to the fulcrum of said lever is hinged a secondary lever, W, which extends rearward and carries a shaft, *x*, which passes through the eye of the reversed coupling-pin D.

It will thus be seen that if the plate U be raised the free end of the lever V will be depressed, and the dog *w* on it engages with and carries down the secondary lever W, and its shaft *x* withdraws the pin D and releases the head B from the draw-head A; but if the plate be lowered the free end of the lever V is raised, and, the dog *w* not coming in contact with the lever W, the coupling-pin D is not disturbed. A leaf-spring, Y, secured to the draw-head A, serves to keep the lever W and pin D in their normal position when they are not acted upon by the plate U and lever V; but of course when they are so acted upon the spring is forced down and gives way, so as to allow the lever to withdraw the pin D.

Z is a tooth on the side of the head B, and when the couplers come together this tooth is inserted between the teeth *v* on the opposite head, and if the draw-head on which the plate is secured were depressed while the one on which the tooth Z is secured remained level, as would be the case if the car on which the former was secured became derailed, the plate would be forced upward, and, as before shown, this motion of the plate withdraws the pin D, and consequently uncouples the cars. As each head is provided with the plate U and on the opposite side with the tooth Z, it will readily be seen that the same object is accomplished if either car leaves the track.

In coupling, both draw-heads are set in the position shown in Fig. 1, and as they come together the hooks F strike the inclines J and engage with the hooks G, and at the same time the teeth *v* of the plate U strike the face *t* of the locking-lever T, thereby forcing it backward until the heads assume the position shown in Fig. 2. Then the locking-lever flies back and prevents any side motion to the heads, which would allow the release of the hooks.

To uncouple the cars the lever L is moved so as to engage the detent *n* with the guide *m*. This motion, as before set forth, causes the spring P to draw the head in that direction, and at the same time throws the locking-lever T into a vertical position, which permits the separation of the respective hooks. If the parts are left in this position, the cars may be pushed about without coupling; but should it be desirable to couple them the lever L is released and allowed to assume its normal position, and when the cars come into contact they are securely coupled without any further attention from the train-hands.

I is a slot in the head B for the insertion of a common link, which is coupled to it by the ordinary pin inserted through the hole *i*, so that my device may be coupled with an ordinary draw-head.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupler, the head B, provided with hooks F and G, and tongue C, slot *c*, and spring *e*, substantially as set forth.

2. In a car-coupler, the head B, provided with hooks F and G and inclines J and K, substantially as set forth.

3. The combination, with the head B, having hooks F and G, of the locking-lever T, transverse lever L, and the pitman S and lever R, substantially as set forth.

4. The combination, with the head B, having tooth Z, and sliding plate U, provided with teeth *v*, of the compound levers V W, having dog *w* and shaft *x*, and the pin D, substantially as set forth.

5. In a car-coupler, the head B, having levers T and R and pitman S, in combination with the transverse lever R and spring P, substantially as set forth.

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

WILLIAM NUNAMAKER.

Witnesses:
E. H. BRADFORD,
H. J. ENNIS.