

(No Model.)

J. A. HINSON.
CAR COUPLING.

No. 503,208.

Patented Aug. 15, 1893.

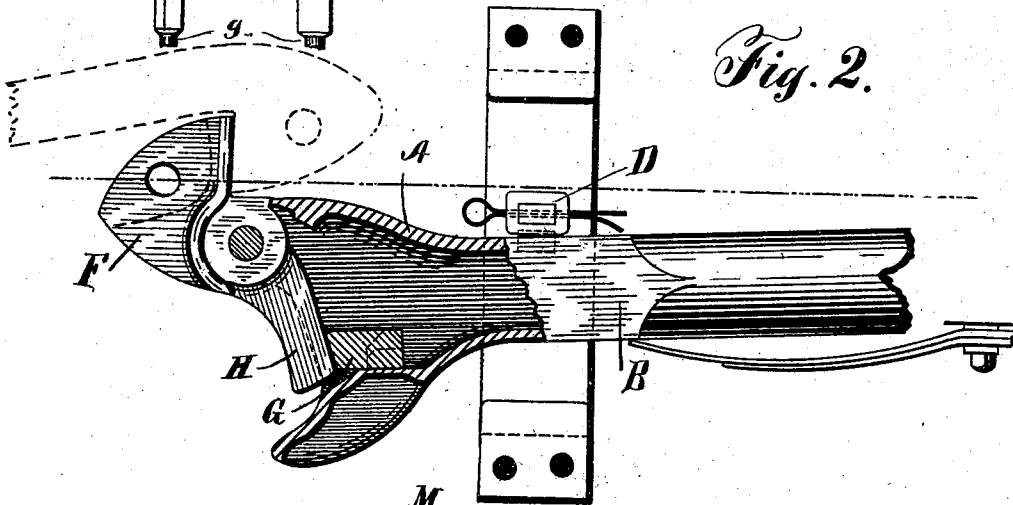
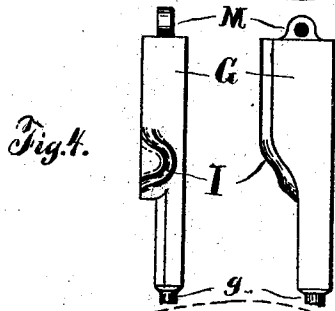
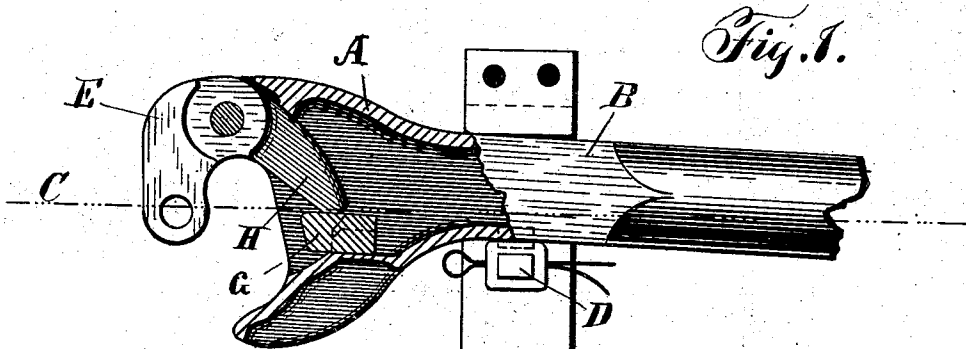
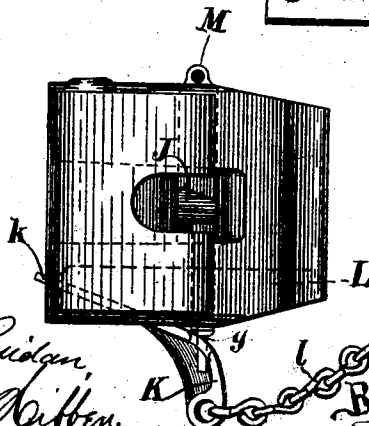


Fig. 3.



Witnesses.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 503,203, dated August 15, 1893.

Application filed July 12, 1892. Serial No. 439,752. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Chicago, Cook county, Illinois, have made certain new and useful Improvements in Automatic Couplers, of which the following is a specification.

The object of my invention is to make a coupler that can be used interchangeably with the Miller coupler and with the master car builders' (twin jaw) coupler; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of a standard coupler. Fig. 2 is a side elevation, partly in section, of the same adapted to interlock with the Miller hook. Fig. 3 is a front elevation of the standard coupler shown in Fig. 1; and Fig. 4 is a side elevation of locking pins adapted to lock either style of coupler.

At the present time the automatic coupler most generally in use on passenger cars is that known as the Miller coupler; but the coupler adopted by the Master Car Builders' Association, and which I will hereinafter refer to for convenience of designation as the "standard coupler," is gradually coming into use and taking the place of the Miller couplers. As so many cars, however, are still equipped with the Miller coupler, it becomes important to make a coupler that can be used interchangeably with a Miller or a standard coupler, so that cars containing each kind can be coupled together. Heretofore there has been no practical means employed to enable two such cars to be coupled together.

In making my improved interchangeable, automatic coupler, I make the head, A, of the drawbar different in form from those heretofore used, and substantially in the form shown in Figs. 1 and 2 of the drawings. This change in form of head is necessary to enable it to accommodate the different styles of knuckles necessary to interlock with the Miller or the standard hook. I not only thus change or modify the shape of the head, but I also change the shape of the stem, B, by making it with a greater proportion of its size at one side of the center line, C, than has been the practice heretofore. This will be well understood by an examination of Fig. 1 of the

drawings. When the head is in the position shown in Fig. 1, it is adapted to intercouple with a standard hook. In order to place the head in position to intercouple with a Miller hook, I withdraw the pin D, and move the head laterally into the position shown in Fig. 2, and again insert the pin. It will thus be seen that, in order to couple with a standard hook, the drawbar is arranged at one side of the pin D, while to intercouple with a Miller hook it is arranged at the other side of the pin, as shown in the drawings.

To enable the coupler to interlock with a standard hook, I provide the head with a pivoted, rotating knuckle E, shown in Fig. 1. When the coupler is intended to be used with a Miller hook, however, the knuckle E is removed, the drawbar thrown to the other side of the pin D, and a knuckle F, of the form shown in Fig. 2, inserted in its place. To hold these knuckles—the standard or the Miller knuckle—in their position of use, I employ a locking pin G, that passes through the head and engages with the arm H of the knuckles, respectively. When the standard knuckle is used, the end of the arm rests against the side of the locking pin, but when the Miller knuckle is used, the side of the arm rests against the edge of the pin. This will be readily understood from an inspection of Figs. 1 and 2 of the drawings. As the knuckle in Fig. 1 rotates or swings into its locking position, the arm engages with a helical or spiral cam surface, I, on the locking pin, and raises the pin enough to let the arm pass into its intended position for use, when it passes out of engagement with the cam surface and permits the pin to drop into its position, to hold the arm and knuckle in their locked position, so that the hook will remain in locked engagement with them. I have made the helical or spiral cam surface on the locking pins of the peculiar form shown, as I have found that such form is the best adapted to enable the arm of the knuckle to raise the pin as it is moving into position to be locked. These pins are heavy, weighing a number of pounds, and it is important that the arms should be able to raise them with as little difficulty as possible.

In Fig. 3 I have shown a somewhat modified form of locking pin, in which I use an in-

clined plane J, for that part of the pin against which the arm of the knuckle bears as it is moved into position to be locked. This beveled surface or inclined plane enables the arm to raise the pin and move it into its final position. As the knuckle in Fig. 2 is in its position of disengagement, the arm is far enough back to permit the cam surface of the pin to rest on it, thus holding the pin somewhat up or out of its locking position. As the head, however, is moved into position to engage with a Miller hook, the arm is moved forward enough to allow the locking pin to fall or slip down into its locking position, so that the arm rests against its front edge just above the helical or spiral cam surface.

In order to unlock the coupler, it is of course necessary to raise the locking pin to a position that will enable the arm to swing back and rotate or turn the knuckle away from the hook with which it is in engagement. In order to do this, I have arranged a lever K, beneath the head. This lever is fulcrumed at *k* in a hole in the head, and it is provided with a hole to receive the point *g* of the locking pin. A recess or cavity L, shown by dotted lines in Fig. 3, is provided in the head to enable the body of the lever to be lifted up into it, and thus raise or lift the locking pin enough to permit the disengagement of the knuckle arm with it. A chain *l*, leading from the free end of the lever, is carried to a position where the attendant may reach the same from the side of the car or other convenient position, whenever it is desired to raise the pin and unlock the coupler. If preferred, this chain may be fastened to a loop M in the top of the pin, so that the pin can be raised, in which case the lever K may be dispensed with.

From the above description it will be noticed that in order to make a coupler that can be used interchangeably, either with the ordinary Miller coupler or with the standard coupler, as cars may be equipped with the one or the other, I change the form of the coupler head, so that it will be adapted to accommodate different styles of knuckles; that I change the form of the stem of the drawbar and throw a greater proportion of it to one side of the center line than the other; that I employ knuckles of different form or construction, adapted to be inserted into the head and to interlock respectively with the Miller or the standard hook; that I make a locking pin with a peculiar cam or inclined surface against which the arm of the knuckle may contact to raise the pin as it is moved into its final po-

sition to be locked; and that I provide peculiar means for raising the locking pin, to permit the coupler to be unlocked or uncoupled. I do not, however, propose to confine myself to the use of all of these characteristics of construction or arrangement together, but propose to use all or part of them, as I may find desirable, to suit the requirements of different cases. Nor do I propose to confine myself to every specific detail of construction shown and described, but intend to change from them, so long as I do not depart from the main principle of construction and operation shown and described above.

What I regard as new, and desire to secure by Letters Patent, is—

1. In automatic couplers, the combination of a drawbar head adapted to receive knuckles of different forms, and knuckles of different forms interchangeably insertible into the head, substantially as described.

2. In automatic couplers, the combination of a drawbar head adapted to receive knuckles of different forms movable laterally to one side or the other, means for holding the head in its position of lateral adjustment, and knuckles of different forms interchangeably insertible into the head, substantially as described.

3. In automatic couplers, the combination of a drawbar head adapted to receive knuckles of different forms, knuckles of different forms interchangeably insertible into the head, and means for locking the knuckles in their position of use, substantially as described.

4. In automatic couplers, the combination of a drawbar head adapted to receive knuckles of different forms, knuckles of different forms interchangeably insertible into the head and provided with projecting arms, and locking pins provided with a cam surface against which the knuckle arms bear before they are moved into position of use, substantially as described.

5. In automatic couplers, the combination of a drawbar head adapted to receive knuckles of different forms, knuckles of different forms interchangeably insertible into the head, locking pins for locking the knuckles in their place of use, and means for raising the pins to permit the knuckles to move out of their locking position, substantially as described.

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Witnesses:

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