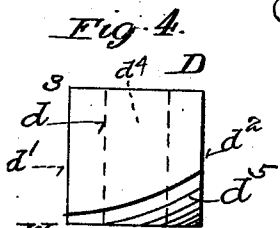
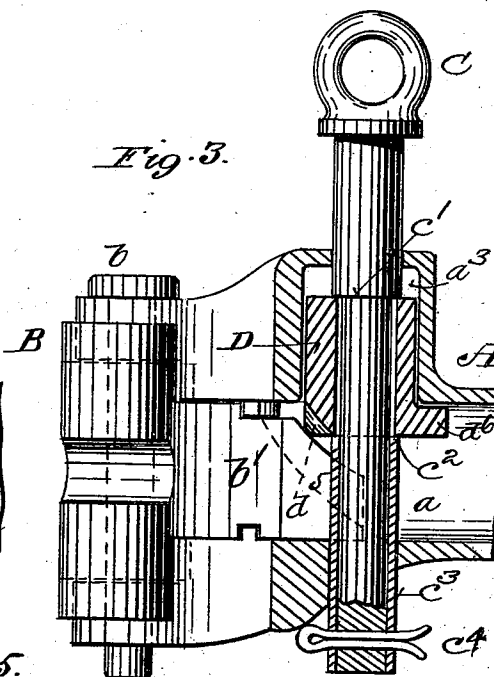
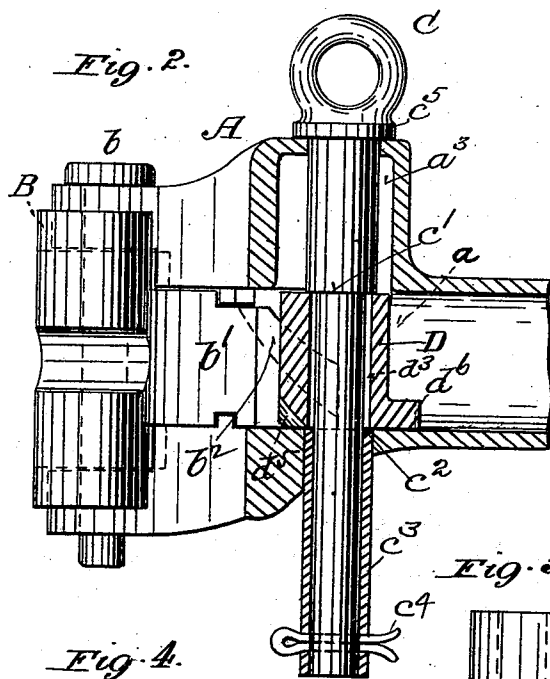
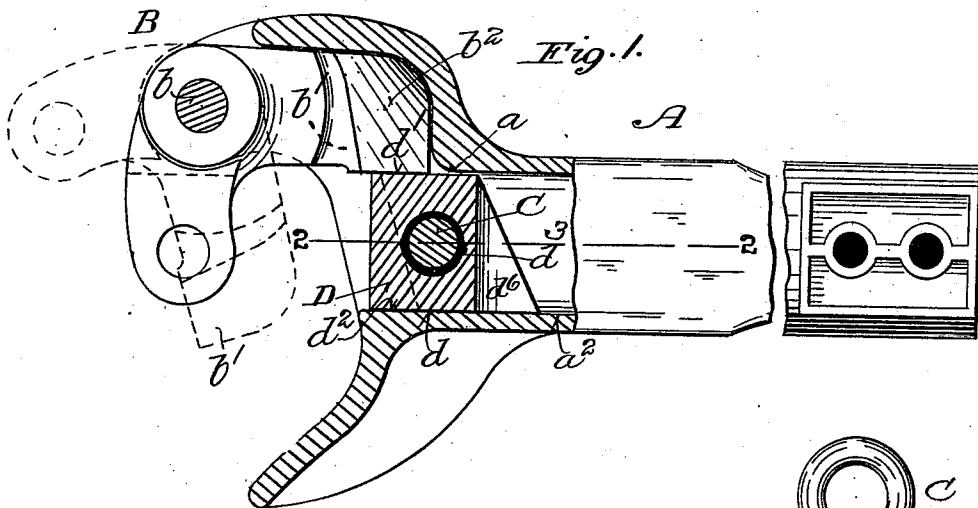


(No Model.)

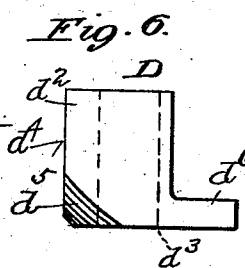
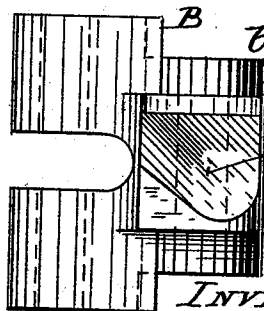
T. M. GALLAGHER.
CAR COUPLING.

No. 512,692.

Patented Jan. 16, 1894.



WITNESSES
Edward L. Furrell
A. Bonville



INVENTOR

Thomas M. Gallagher
by C. Moody
Nov 1889

UNITED STATES PATENT OFFICE.

THOMAS M. GALLAGHER, OF ST. LOUIS, MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 512,692, dated January 16, 1894.

Application filed October 19, 1893. Serial No. 488,572. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. GALLAGHER, of St. Louis, Missouri, have made a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

The invention relates to couplings of the vertical-plane type, and it has reference more especially to the improved means for locking the knuckle, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a view, partly in plan and partly in horizontal section, of a draw-bar having the improvement embodied therein; Fig. 2 a vertical, longitudinal section on the line 2—2 of Fig. 1, the knuckle being closed and the locking pin being dropped to lock it; Fig. 3 a view analogous to that of Fig. 2, saving that the locking pin is raised to release the knuckle; Fig. 4 an elevation of the front face of the block that is part of the knuckle-locking mechanism; Fig. 5 an elevation of the knuckle; and Fig. 6 a side-elevation of the locking-block.

The same letters of reference denote the same parts.

The draw-bar, A, and the knuckle, B, respectively, may be of any of the ordinary forms to which the improvement under consideration is adaptable, and saving as modified or supplemented by the embodiment therein of the improvement the draw bar and knuckle are constructed and operated in the usual manner. The knuckle is pivoted, at *b*, to swing horizontally, and it is shown closed in Figs. 1, 2 and 3, and its open position is indicated in broken lines in Fig. 1. The means for locking the knuckle in its closed position are as follows:

C represents a pin held, and adapted to be adjusted vertically, in the draw-bar. The pin by itself is not intended for a lock, but rather as a means for directing or assisting the movement or adjustment of another part which performs the office of a lock, and which, when the knuckle is closed and the part is arranged in front, or in the way, of the knuckle-finger *b'*, constitutes the immediate means for preventing the knuckle from swinging outward on its pivot, but at the same time without

straining, or causing to be strained, the pin to which the part is attached.

The preferred form of the described part is shown; namely, a block, D, which can be adjusted vertically, and which, when in the plane, vertically, of the knuckle finger *b'*, is interposed between the finger and some shoulder or abutment upon the draw-bar, and so that when a pulling strain upon the knuckle occurs it is sustained ultimately by the said shoulder or abutment, and, as stated, without straining the pin.

I desire not to be restricted to any relative shape of the part D, and the coacting shoulder or abutment *d*, or to any relative shape of knuckle finger *b'* and part D, so long as the thrust, in pulling upon the knuckle, is transmitted from the knuckle-finger through the part D to the said shoulder or abutment without at the same time straining the pin with which the said part is connected.

The part D in practice is substantially of a cubical form and the draw bar is chambered at *a* substantially as shown to receive it. The side *d'*, is presented to the knuckle finger when the knuckle is closed, and the opposite side *d''*, to the shoulder or abutment *d*. The block is perforated at *d'''* to receive the pin C. The perforation in diameter is larger than the pin at that point to enable the block to have a sufficient lateral play upon the pin for it, the block, to be moved to bear against the abutment *d* before it can bear laterally upon the pin. The block, however, is hung upon the pin both so that when the block is lifted the pin is thereby raised in the draw-bar, and when the pin is lifted the block is lifted with it. The preferable mode of accomplishing this is to form a shoulder *c'* upon the pin for the block in rising to encounter, and to form another shoulder *c''* upon the pin which encounters the block when the pin is lifted. This last mentioned shoulder is conveniently formed by applying a tube *c'''* to the pin substantially as shown. The tube is secured by the key *c''''*, and thus, by removing the key and slipping the tube from off the pin the block and pin can be readily detached from each other, and the two parts made removable from the draw-bar. While the block may be otherwise lifted to enable the knuckle finger *b'* to pass it in closing the knuckle I

prefer to adapt the block, and with it the pin, to be lifted by the knuckle finger in closing the knuckle. To this end, the end of the finger is beveled substantially as shown at b^2 and the block has its front d^4 beveled substantially as shown at d^5 to coact with the finger-bevel, and so that as the finger is swung inward against the block it shall operate to wedge the block upward sufficiently for the finger to pass it. As the described action of the finger tends to twist the block around it is desirable to extend the block rearwardly, say in the form of the projection d^6 , to provide an additional bearing against the side, a^2 , of the draw-bar and thus better keep the block in place.

The draw-bar has a chamber a^3 into which the block more or less rises when lifted, and the projection d^6 is made shallow to enable the block to enter sufficiently into the chamber.

The operation of the coupling is as follows: When pushed inward by the action of the knuckle of the opposing draw bar the knuckle B swings and its finger b' is pressed against the block D; the block carrying the pin is lifted and the knuckle finger passes beyond it as shown in Fig. 3, and after the finger has passed the uplifted block and pin drop into position to lock the finger, as shown substantially in Figs. 1 and 2, and the finger remains locked until the block carrying the pin has again been raised to clear the finger. Any suitable means may be employed to lift the pin, and if desired any auxiliary means—a spring for instance—may be used to accelerate the dropping of the pin after the finger has passed it. The weight of the pin and block, especially in view of the movement being in a vertical direction, usually suffices to insure the prompt replacement of the block in front of the finger. The pin, however, can be used as a thrust-bar to depress the block in the event the block becomes caught in its up-position, and the pin also as stated, serves as a handle for lifting the block, and also to guide the block in respect to its position longitudinally in the draw-bar; and in consequence of the pin being uplifted when the block is raised, and of the further fact that the pin-bearings are further apart from the height of the block, it becomes easier to raise the block when the knuckle is being closed. It also prevents the block when lowered from being jostled out of its place. Another office of the pin is that of an indicator. It is quite desirable for the brakeman to be able to determine readily, and sometimes at a considerable distance

therefrom, whether the car is coupled or uncoupled, and this he can ascertain by means of the pin; its up-position shows that the car is uncoupled. This is apparent partly by the larger portion of the pin which appears above the draw-bar, and also by the diminished portion which appears beneath the draw-bar. The portion of the pin projecting beneath the draw-bar can also be easily reached and the pin knocked upward in case the pin has become fast in the draw-bar by reason of ice forming around it. The pin is preferably furnished with a head c^5 which, among other things, serves to cover the joint in the draw-bar around the pin.

It will be observed that the chamber a^3 into which the block rises when lifted is contained in the head of the draw bar. This enables a block of any desired depth to be used and thus the block can be made the full height of the opposing end of the knuckle-finger. When the pin is loose enough in its bearing to permit of the block encountering the co-acting abutment d without cramping the pin in its bearing it is unnecessary for the block to have a lateral play upon the pin. I however prefer to have the block loose laterally upon the pin as described.

I claim—

1. In a car-coupling of the vertical plane type, the combination of the knuckle, the locking-block, the pin, and the shoulder or abutment for sustaining the block when pressed by the knuckle finger, said block being attached to said pin to lift it when the block is raised by the knuckle-finger, and to enable the pin to be used to depress the block when uplifted, as and for the purpose set forth.

2. In a car-coupling of the vertical plane type, the combination of the draw-bar, the pin, and the locking block, said pin working vertically in bearings in said draw bar, and said locking block being attached, but having lateral play, upon said pin to enable the locking block to lift said pin and to be moved laterally thereon, as described.

3. The combination of the draw-bar chambered at a^3 , the knuckle, and the locking-block, the finger of said knuckle being beveled and said block having the rearward extension, substantially as described.

Witness my hand this 17th day of October, 1893.

THOMAS M. GALLAGHER.

Witnesses:

C. D. MOODY,
A. BONVILLE.