No. 837,144. PATENTED NOV. 27, 1906.

J. STEPHENS.

AUTOMATIC CAR COUPLING.

APPLICATION FILED SEPT. 6, 1906.

Fig. 1.

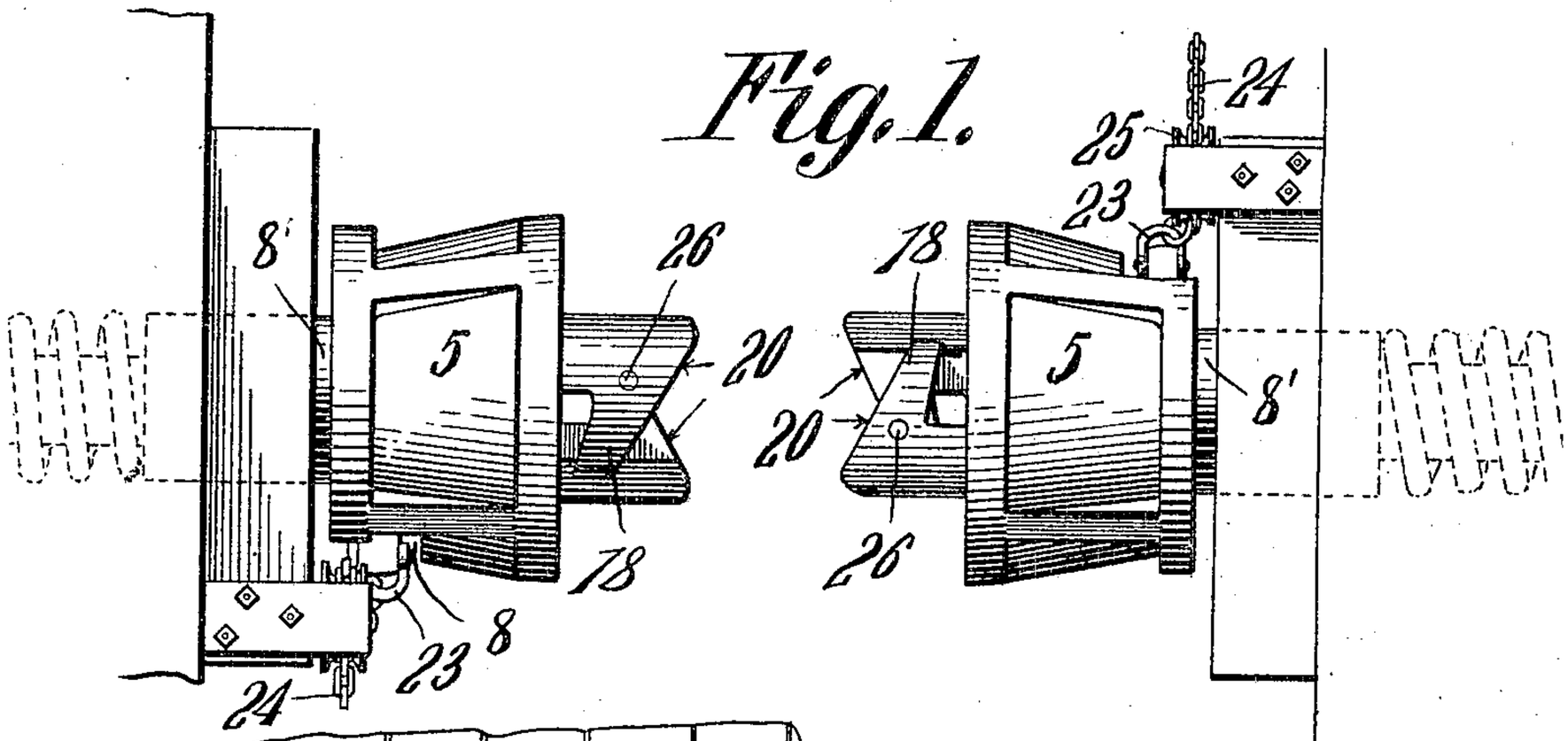


Fig. 3.

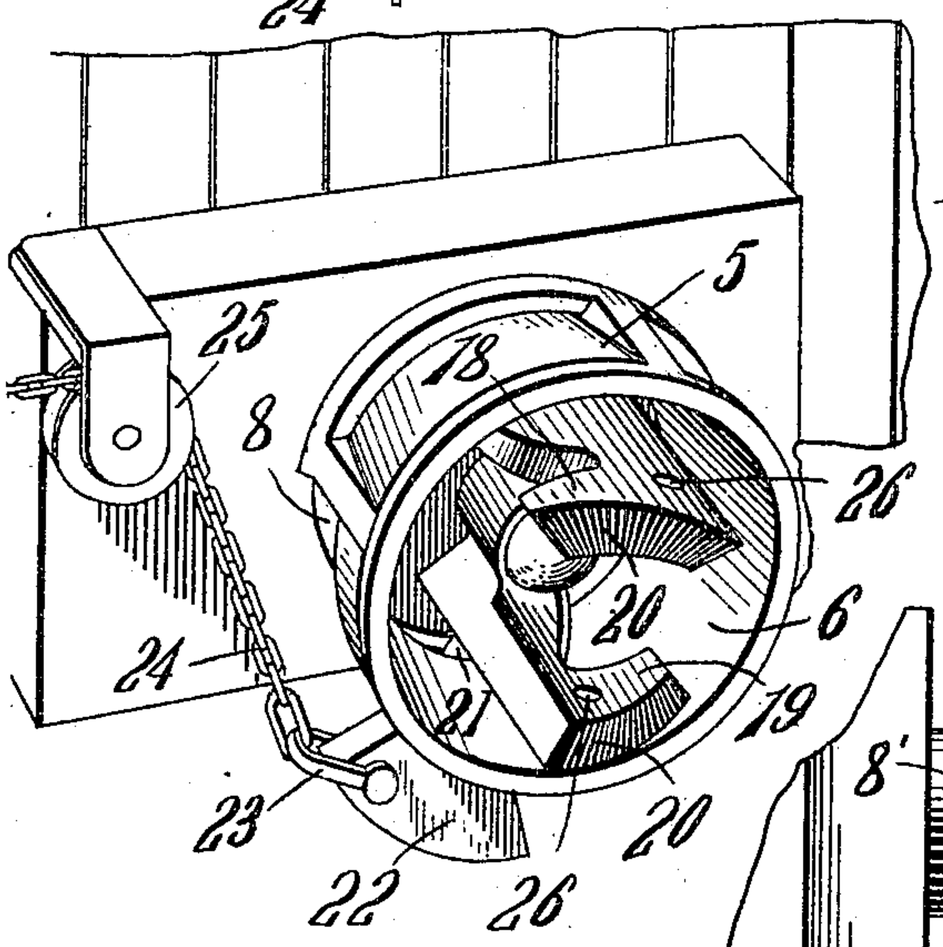


Fig. 2.

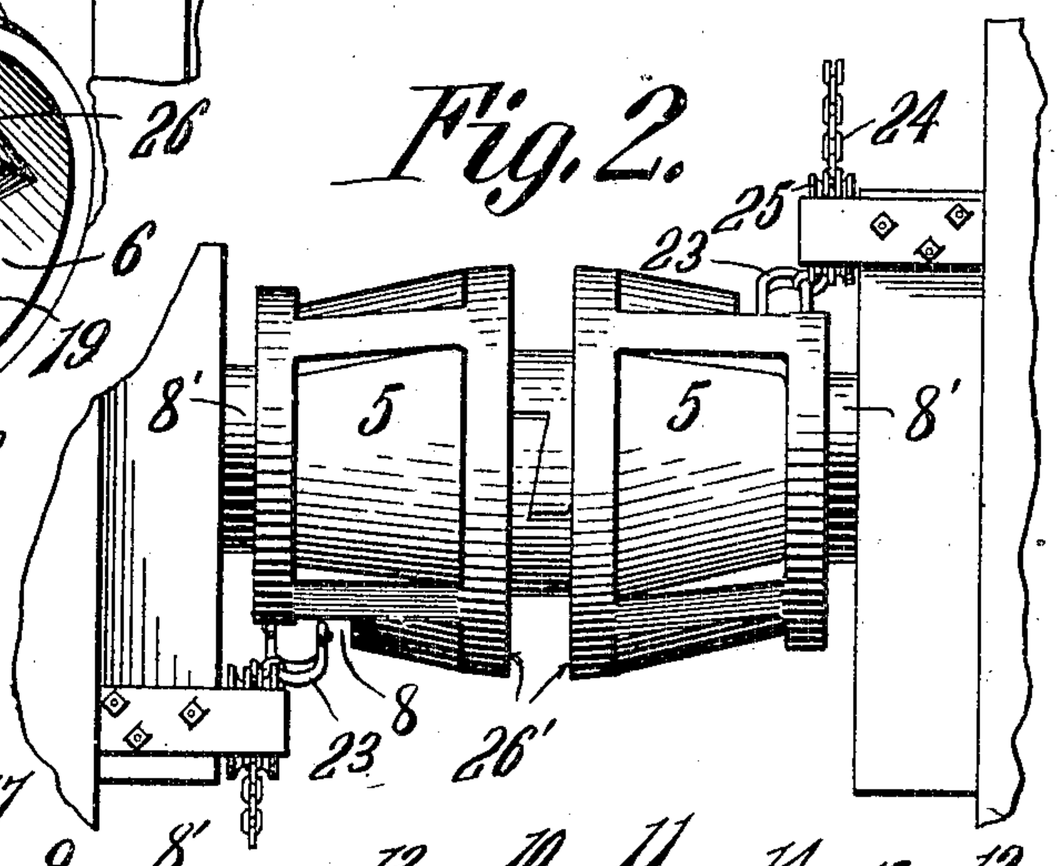
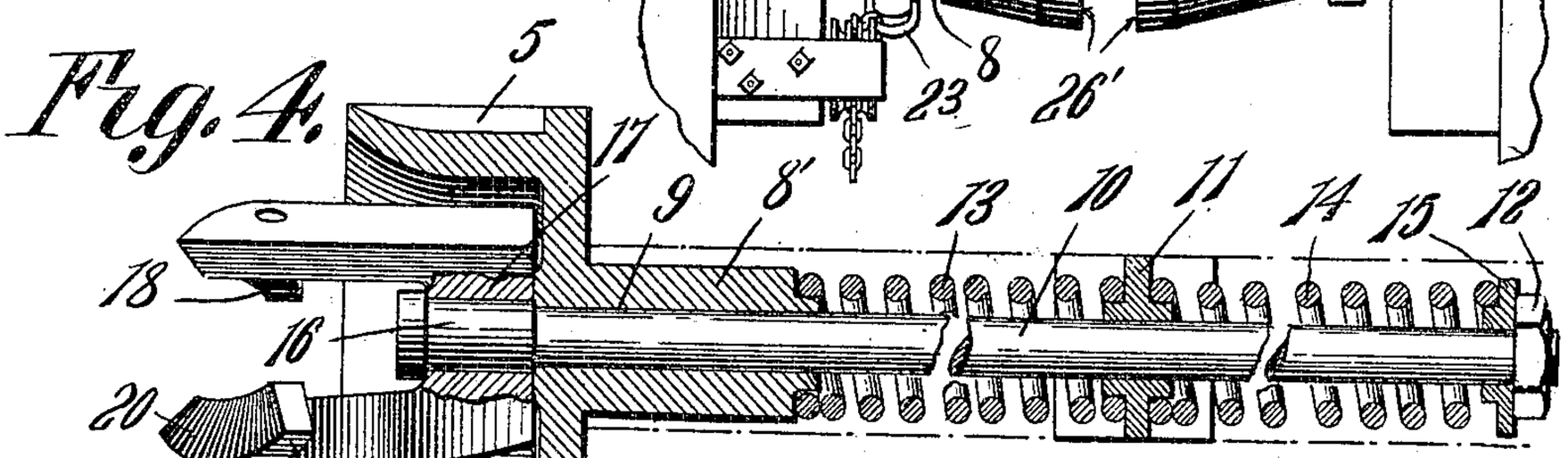


Fig. 4.



WITNESSES

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AUTOMATIC CAR-COUPLING.

No. 837,144. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed September 6, 1906. Serial No. 333,513.

To all whom it may concern:

Be it known that I, JAMES STEPHENS, a citizen of the United States, residing at Rock Island, in the county of Rock Island and State of Illinois, have invented a new and useful Automatic Car-Coupler, of which the following is a specification.

This invention relates to car-couplers, and has for its object to provide means whereby adjacent cars may be automatically coupled and uncoupled without the employment of the usual fixed jaw and pivotal knuckle.

A further object of the invention is to provide a plurality of laterally-extending coupling-hooks mounted for rotation within the head and adapted to engage the hooks of an adjacent coupling-head when the cars are coupled.

A further object is to provide means for moving the hooks to released position, thereby to permit uncoupling of the cars, and, further, to provide a gravity-actuated device for automatically returning the coupling-hooks to operative or set position.

A further object is to provide means for yieldably supporting the coupling-head and means whereby the coupler may be used for coupling cars equipped with the ordinary link-and-pin coupler.

A still further object is to generally improve this class of devices so as to increase their utility, durability, and efficiency.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of an automatic car-coupler constructed in accordance with my invention, showing the cars in position to be coupled. Fig. 2 is a similar view showing the cars coupled. Fig. 3 is a perspective view of one of the couplers. Fig. 4 is a longitudinal sectional view.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved device comprises a head 5, preferably circular in shape, as shown, and having its central portion provided with a recess or chamber 6, the side walls of which are inclined or beveled, as indicated at 7, and provided with a segmental slot 8. Extending laterally from the head 5, and preferably cast or otherwise formed integral therewith, is a shank or draw-bar 8′, provided with a longitudinal opening or bore 9, which also pierces the rear wall of the coupling-head, there being a rod 10 passed through the bore 9 and having its inner end extending through a stationary bracket 11 and provided with terminal threads for engagement with a clamping-nut 12.

Interposed between the free end of the shank 8′ and the bracket 11 is a coiled spring 13, which serves to receive and absorb the jar or impact incident to coupling and uncoupling the cars, there being a similar spring 14 interposed between the bracket 11 and the collar 15 for relieving the coupling-head of excessive strains when a longitudinal pull is exerted on said coupling, it being here stated that the spring 14 is secured to and movable with the collar 12.

The inner end of the rod 10 is provided with an enlarged head 16 and a bearing-sleeve 17, upon which is mounted for rotation a pair of laterally-extending coupling-hooks 18 and 19, the free ends of which are inclined or beveled in opposite direction, as indicated at 20, for engagement with the correspondingly-inclined faces of the hooks of an adjacent coupling-head, whereby when the cars are united the hooks of adjacent coupling-heads will be partially rotated, so as to cause the bills of the hooks to interengage, and thus prevent accidental detachment of the cars.

Extending laterally from one of the coupling-hooks is an arm 21, the free end of which extends through the slot 8 and is provided with a weighted terminal 22, so that when the coupling-hooks are released the weight 22 will automatically return the hooks to operative or set position. Pivotally mounted on the weighted end 22 of the arm is a loop 23, to which is secured one end of a chain or other flexible medium 24, the opposite end of which passes over a pulley or roller 25, secured to the transverse beam of the car, and thence extended laterally to one side of the car, so that the operator by grasping the end of the chain may move the hooks to released position, and thus permit the cars to be readily uncoupled.

The hooks 18 and 19 are provided with

alined openings 26, adapted to receive a coupling-pin when the coupler is used in connection with a car equipped with the ordinary link-and-pin coupler.

In coupling the cars the inclined faces of the hooks 18 and 19 contact with each other, and thus partially rotate said hooks, so as to permit the bills thereof to interengage.

In uncoupling the cars a longitudinal pull is exerted on the chain 24, which elevates the weighted end of the arm 21 and partially rotates the adjacent coupling-hooks, thus permitting the cars to be readily detached, the arm 21 dropping by gravity to lowered position and rotating or returning the hooks to set or operative position, as best shown in Fig. 3 of the drawings.

Attention is called to the fact that when the cars are coupled the adjacent adges of the coupling-heads 5 are spaced apart, as indicated at 26′, thereby to permit lateral movement of the cars in traveling around curves or over rough uneven roads.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. In a car-coupling, a hollow coupling-head having its wall provided with a segmental slot, hooks mounted for rotation within the head and provided with inclined or beveled ends adapted to engage the correspondingly-inclined ends of an adjacent coupler, an arm extending laterally from one of the hooks and projecting through the slot in the wall of the coupling-head, said arm being adapted to engage one wall of the slot for limiting the rotary movement of the hooks, means operatively connected with the arm for moving the hooks to released position, the free end of said arm being weighted thereby to automatically return the hooks to set position after the cars have been uncoupled.

2. In a car-coupling, a coupling-head provided with a chamber the side walls of which are inclined toward the free ends of the head and provided with a segmental slot, spaced hooks mounted for rotation within the chamber and having their free ends inclined in opposite directions for engagement with the correspondingly-inclined ends of the hooks of an adjacent coupler, said hooks being provided with alined openings for the reception of a pin, an arm secured to the hooks and extending through the segmental slot and adapted to engage one wall of said slot for limiting the rotary movement of the hooks, means operatively connected with the arm for moving the hooks to released position, the free end of said arm being weighted thereby to automatically return the hooks to set position after the cars have been uncoupled.

3. In a car-coupling, a hollow coupling-head, laterally-extending hooks mounted for rotation within the coupling-head and having their free ends inclined in opposite directions and adapted to engage the correspondingly-inclined ends of the hooks of an adjacent coupler, the wall of the coupling-head being provided with a segmental slot, an arm extending laterally from the hooks and having its free end weighted and extending through the segmental slot, said arm being adapted to engage one wall of the slot for limiting the rotary movement of the hooks, a loop pivotally mounted on the weighted end of the arm, and a chain secured to the loop for moving the hooks to released position.

4. In a car-coupling, a hollow coupling-head having a shank provided with a longitudinal bore communicating with the interior of the coupling-head, a rod seated in said bore, spaced hooks arranged within the coupling-head and mounted for rotation on one end of the rod, said hooks having their free ends inclined in opposite directions for engagement with the corresponding inclined faces of the hooks of an adjacent coupling, a spring carried by the rod and bearing against the shank, an arm extending laterally from the hooks, means operatively connected with the arm for moving the hooks to released position, said arm being weighted thereby to automatically return the hooks to set position after the cars have been uncoupled.

5. In a car-coupling, a coupling-head having a chamber the walls of which are provided with a segmental slot, a shank extending laterally from the coupling-head and provided with a longitudinal bore communicating with the chamber, a brace spaced from the shank, a rod threaded through the longitudinal bore and having one end thereof provided with a collar and its opposite end provided with a bearing-sleeve, a spring interposed between the shank and the brace, a spring interposed between the brace and the collar, a pair of hooks seated within the chamber and mounted for rotation on the sleeve of the rod, said hooks having their free ends inclined in opposite directions and provided with alined openings, a weighted arm projecting from the hooks and extending through the slot in the coupling-head, and means operatively connected with the weighted end of the arm for moving the hooks to released position.

6. In a car-coupling, a coupling-head provided with a chamber the walls of which are inclined toward the open end of the chamber and provided with a segmental slot, a shank extending laterally from the coupling-head and provided with a longitudinal bore, a rod passing through said bore and extended within the chamber, spaced hooks disposed within the chamber and mounted for rotation on the rod, the free ends of the hooks being in-

clined in opposite directions and provided with alined openings, an arm extending laterally from the hooks and having its free end weighted and projecting through the slot, and means operatively connected with the weighted end of the arm for moving the hooks to released position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES STEPHENS.

Witnesses:

CHRISTIAN W. BAKER,

THOS. J. DONOHUE.