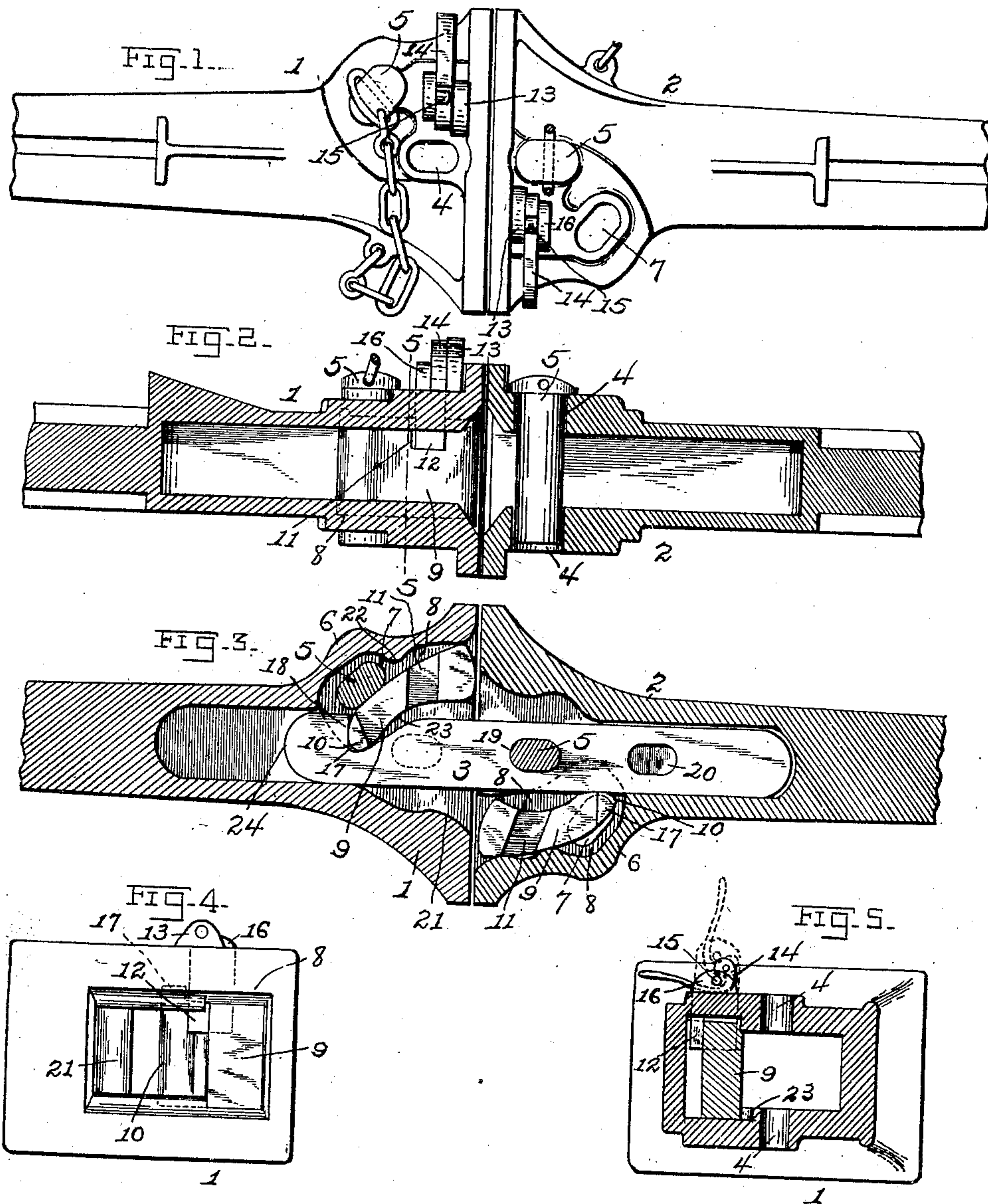


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PATENTED DEC. 4, 1906.

W. S. WRIGHT.
AUTOMATIC CAR COUPLING.
APPLICATION FILED MAR. 21, 1906.



Witnesses.

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AUTOMATIC CAR-COUPLING.

No. 837,893.

Specification of Letters Patent.

Patented Dec. 4, 1906.

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To all whom it may concern:

Be it known that I, WILLIAM S. WRIGHT, a citizen of the United States of America, and a resident of Wheeling, county of Ohio, and State of West Virginia, have invented certain new and useful Improvements in Automatic Car-Couplings, of which the following is a specification.

My invention relates to new and useful improvements in car-couplings, and more particularly to a coupling which is specially adapted to street and elevated railway car service; and it consists in the particular construction, arrangement, and combination of parts, which will hereinafter be fully described.

The object of the invention is to provide a simple, durable, and efficient automatic coupling for cars of the character mentioned which is composed of but few parts, without springs, and which is consequently little liable to become out of order.

A further object of the invention is to provide a draw-head for cars to which the coupling-link ordinarily employed on elevated-railway cars is readily applicable and which consequently may be used upon cars and coupled with other cars equipped with the ordinary draw-head and link; and a still further object is to provide a car-coupling the construction of which is such as to render coupling positive and accidental uncoupling impossible.

In describing the invention in detail reference is herein had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top plan view of two draw-heads coupled together. Fig. 2 is a longitudinal vertical section of the same with the coupling-link removed. Fig. 3 is a longitudinal horizontal section of the same, showing the draw-heads in coupling engagement. Fig. 4 is an end view of the draw-head; and Fig. 5 is a cross-section on the line 5 5, Fig. 2.

Referring to said drawings, in which like reference numerals designate like parts throughout the several views, 1 and 2 indicate the two draw-heads, each of which consists, in part, of a substantially rectangular hollow casing with a wide flaring mouth adapted to afford ready access to the coupling-link 3 and to facilitate the entrance of the end of said link.

Centrally located and extending through each draw-head adjacent to its outer end is a

vertical pin-aperture 4, which is adapted to receive a coupling-pin 5. Said apertures are preferably of oval shape—that is, elongated—the length of each aperture being parallel with the axis of the draw-head, and the pins 5 are of corresponding shape. Extending through each draw-head in the rear of said aperture 4 and near the side wall 6 is a lateral pin-aperture 7, corresponding in size and shape to the aperture 4, but inclined obliquely to the axis of the draw-head, as shown.

Within each draw-head, in the upper and lower casing-walls thereof, are registering recesses 8 of irregular shape or outline, in which are respectively held the upper and lower edges of a movable dog 9, having a rounded point 10, which is adapted to be engaged by the end of the coupling-link 3, as will hereinafter be more fully described. Said dog has provided in its upper edge a recess 11, which is adapted to be automatically engaged by the lower end of a locking-bar 12 when the coupling of the two draw-heads has been effected.

An integral vertical post 13 is provided upon the top of each draw-head at a suitable point, and pivoted thereto is the end of a curved lever 14, the body of which normally lies in a substantially horizontal position at right angles to the axis of the draw-head. The locking-bar 12, which projects through and is vertically movable in an opening in the upper wall of the casing in the rear of said lever 14, has a stud 15 projecting forward from its upper end 16 over the said lever 14, and, as is obvious, by raising said lever the said locking-bar is raised out of engagement with the recess 11 in the dog 9, leaving said dog free to move outward, sliding in the recesses 8 of the draw-head. On the upper edge of the dog 9 at its point 10 is an integral lug 17, adapted to engage the lower end of the locking-bar 12 to prevent said dog from being entirely withdrawn from the draw-head, the lever 14 being incapable of raising the said locking-bar to a sufficient height to admit of the passage of said lug 17.

The coupling-link 3 comprises a bar, preferably rectangular in cross-section, which is recessed at one end to form a lateral hook 18 for engaging the point 10 of the dog 9 when in coupled position. A central vertical aperture 19 is provided in said bar, which aperture is adapted to register with the aperture 4 in one draw-head while the hook 18 is in coupled engagement with the dog 9 in the

other draw-head. As is apparent, both ends of the link may be recessed to form hooks, if desired, the hooks being provided upon the opposite edges of the bar. The extreme ends of the link are rounded, as shown, or may be beveled approximately to a point. To provide means whereby said link 3 may be employed to couple the draw-heads rigidly together, a second aperture 20 is provided in the link at a suitable distance from the aperture 19. Then said apertures 19 and 20 may be made to register, respectively, with the apertures 4 in the two draw-heads and the coupling-pins 5 inserted therethrough.

The operation of my invention is substantially as follows: The link 3 is first secured, as is clearly shown in Fig. 3, in the draw-head 2 by inserting the pin 5 through the aperture 4 therein and the aperture 19 in the link, which latter aperture has previously been made to register with said aperture 4, and the pin 5 of the opposite draw-head 1 is inserted in the lateral aperture 7. The dog 9 of said draw-head 1 stands with its butt projected outward beyond the face of said draw-head, having been withdrawn to that position by a previous uncoupling, and the locking-bar 12 stands with its lower end resting upon the upper edge of said dog directly in front of the lug 17. When the cars to which the draw-heads 1 and 2 are attached are brought together in coupling position, the hook end of the link 3 passes directly and unobstructedly into the opening in the draw-head 1, being guided or directed by the inwardly-inclined wall 21, and when the face of the draw-head 2 strikes the butt of the dog 9 the latter is driven inward to substantially the position shown in Fig. 3, in which its point 10 is shown in engagement with the hook 18 of the link 3, being directed to that position by the rounded projection or reinforcement 22, carried by the casing, and by the pin 5, said projection 22 directing the rounded point 10 past the front edge of said pin. Being driven to said position, the locking-bar 12 automatically drops into engagement with the recess 11 in said dog and firmly locks the latter against retraction. As shown, the point of the dog 9 occupies a position between the pin 5 and the walls 23 of the recesses 8, which results in admitting of but little play in said point. Said walls 23, being curved rearwardly and inwardly, as shown, form a bearing which relieves much of the stress, which would otherwise be almost wholly upon the locking-bar 12. To uncouple the cars, the lever 14, carried by the draw-head 1, is raised to approximately the position indicated in dotted lines in Fig. 5, thus withdrawing the locking-bar from engagement with the recess in the dog. Then when a separating force is exerted the dog 9 slips outward, and, being guided by the walls 23, the point 10 of the dog is withdrawn

from engagement with and out of the path of travel of said hook 18. The dog 9 in the opposite draw-head 2 occupies substantially the position shown in Fig. 3, in which it appears as occupying a position between the side of the link 3 and the wall of the casing, a sufficient space being left by the absence of the pin 5 from the lateral aperture 4.

It frequently happens in coupling cars that the dog 9 has been accidentally or inadvertently forced inward to the position which it occupies when in coupled position. In such cases the lever 14 has only to be raised to withdraw the locking-bar from engagement with the recess 11. The force of the impact when the rounded or beveled end 24 of the link 3 strikes the rounded point 10 of said dog will cause said dog to jump back sufficiently to admit of the passage of said link.

The lever 14 is pivoted above and slightly in the rear of the point occupied by the stud 15 of the locking-bar when the latter is in lowered position, and being so located and bent over, as shown, when it is raised the said locking-bar is readily raised thereby, but is not permitted to be accidentally raised while the lever remains lowered by reason of the fact that the pivoted end of the lever overlies a portion of said locking-bar. The curvature of the pivoted end of said lever is such that the locking-bar may be raised only to a point where it will clear the recess 11 in the dog 9, attempts to further raise said bar resulting in said bar being subjected to a lateral pressure against the side of the opening in which it operates.

As is obvious, various minor changes in the form and arrangement of the parts composing the invention may be resorted to without departing from the general spirit or scope thereof. Hence I do not wish to limit myself to the precise construction and arrangement of parts herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic car-coupling, a draw-head having a flaring mouth, recessed walls within said draw-head, a dog movably mounted with its edges engaging said recessed walls, means for automatically directing said dog to a coupling position, locking means for said dog, a link having a hooked end for interlocking engagement with the front end of said dog, means for locking said dog in engagement with said hooked end, means for releasing said dog and means for preventing the complete retraction of said dog.

2. In an automatic car-coupling, a hollow draw-head, the upper and lower internal walls of which are provided with registering rearwardly and inwardly inclined recesses, a lateral vertical pin-aperture in said draw-

head, a central vertical aperture in said head, a pin mounted in said lateral aperture, a slidable dog in said head with its edges in said recesses, the walls forming the boundaries of said recesses being adapted for directing said dog inward and outward respectively in coupling and uncoupling, means for automatically locking said dog in its inward or coupled position, means for releasing said dog, means for preventing the complete retraction of said dog when released, and a coupling-link having a hooked end adapted to automatically engage the front end of said dog.

3. In an automatic coupling for cars, two like draw-heads, a curved dog slidably mounted in each draw-head, walls for directing said dogs to and from the coupling position, a centrally-located pin-aperture in the front end of each head, a laterally-located pin-aperture in each head, a pin in the lateral aperture in one of said heads, a coupling-link having a hook on one side adapted for engagement with the end of the laterally-mounted pin, said link having a central aperture registering with the central aperture in the other draw-head, a pin projecting through said registering apertures, means whereby the dog engaging the hook is normally held against retraction when occupying a coupled position, means for releasing said dog, and means whereby said dog when released is directed by the withdrawal of the link out of the path of the hook.

4. The combination with a draw-head, of a dog movably mounted therein, said dog having parallel edges engaging recessed walls in said head, a coupling-link comprising a bar substantially rectangular in cross-section and having a hook formed on the end thereof for engaging the point of said dog, means for locking said dog in engagement with said hook, means whereby said dog may be released from engagement with said hook, and a lug on said dog for preventing its complete withdrawal from the draw-head.

5. In a car-coupling, the combination with a draw-head, of a dog slidably mounted in said head, said head having recesses in its upper and lower walls in which the dog is held, the boundary-walls of said recesses being curved for directing said dog to and from a substantially central position, a removable pin vertically mounted in said head, means

for directing the point of the dog past said pin, a coupling-link having a hooked end adapted for positively engaging the point of said dog when in said central position, said dog provided with a recess in its edge, a locking-bar mounted to automatically engage said recess to prevent the retraction of the dog from said central position, a lever for raising said locking-bar from engagement with said recess, and a lug carried by the dog for preventing the complete withdrawal of the latter from the draw-head when said locking-bar is raised.

6. In an automatic car-coupling, a hollow draw-head the upper and lower interior walls of which are cored out forming corresponding registering recesses, a dog movably mounted with its opposite edges in said recesses, the inner boundary-walls of said recesses being curved rearwardly and inwardly, a lateral vertical pin-aperture in said head, a pin in said aperture, a projection on the lateral wall for directing the dog past said pin as it is forced inward, a coupling-link having a hooked end for engagement with said dog, a vertically-movable locking-bar for engaging a recess provided in said dog to prevent its retraction, means for withdrawing said locking-bar from engagement with the recess in the dog, and a lug on the dog for engaging the lower end of said locking-bar when the latter is fully raised to prevent the complete withdrawal of said dog.

7. The combination with two draw-heads having central pin-apertures therethrough, and with the internal mechanism thereof, of a coupling-link adapted for both automatically-releasable and rigid engagement therewith, said link comprising a straight bar having one edge plain and its other edge recessed near one end to form a lateral hook; a central vertical pin-aperture in said bar, and a second vertical pin-aperture located in the end of the bar opposite the hook, said second aperture being spaced from the central aperture a distance equal to that between the apertures in the draw-heads when the latter are in coupled engagement.

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

WILLIAM S. WRIGHT.

Witnesses:

EARLE A. LEUKARD,
H. E. DUNLAP.