



(No Model.)

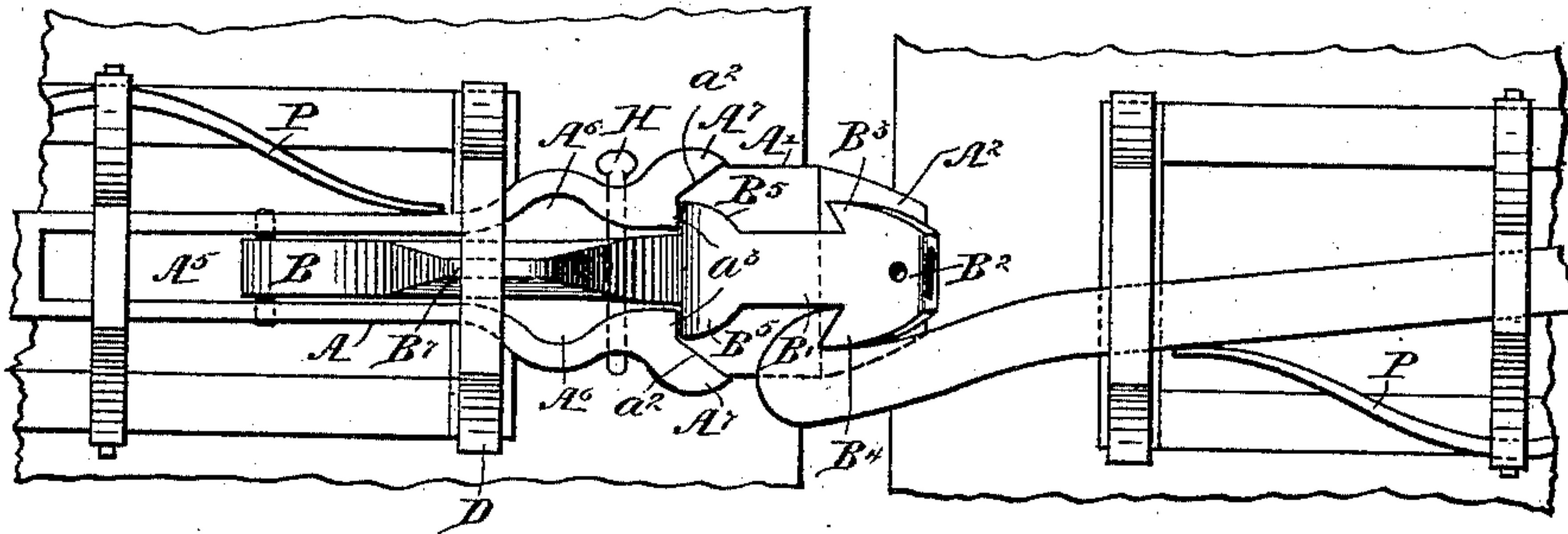
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T. H. WALSH.  
CAR COUPLING.

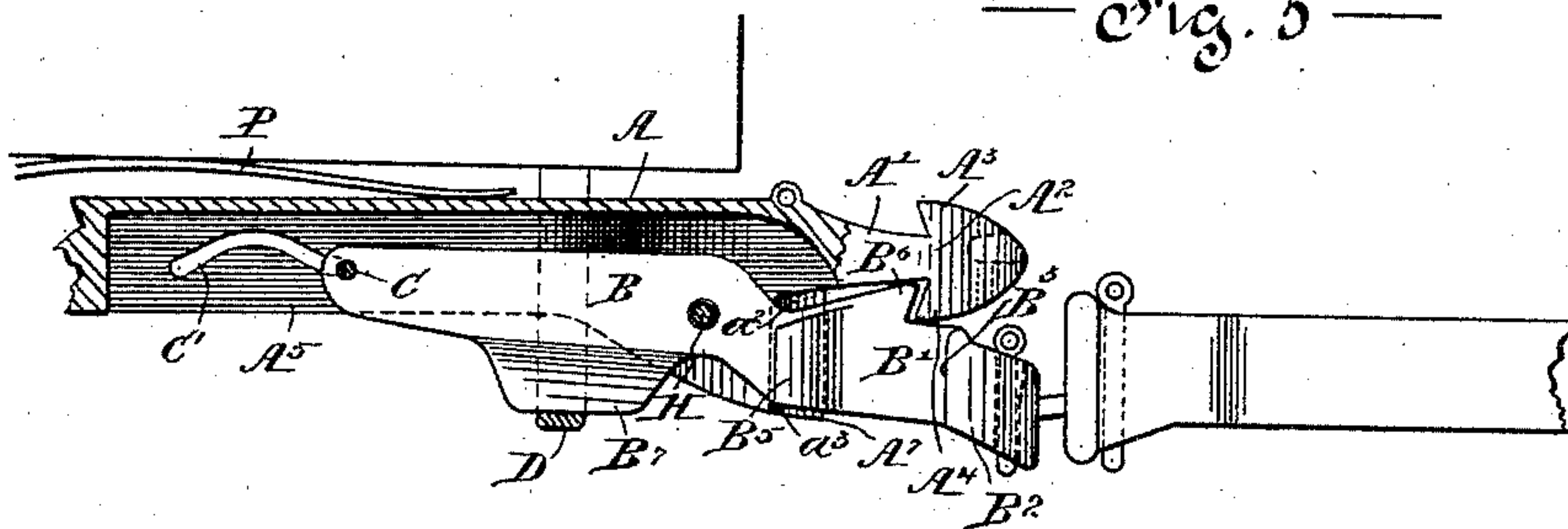
No. 444,913.

Patented Jan. 20, 1891.

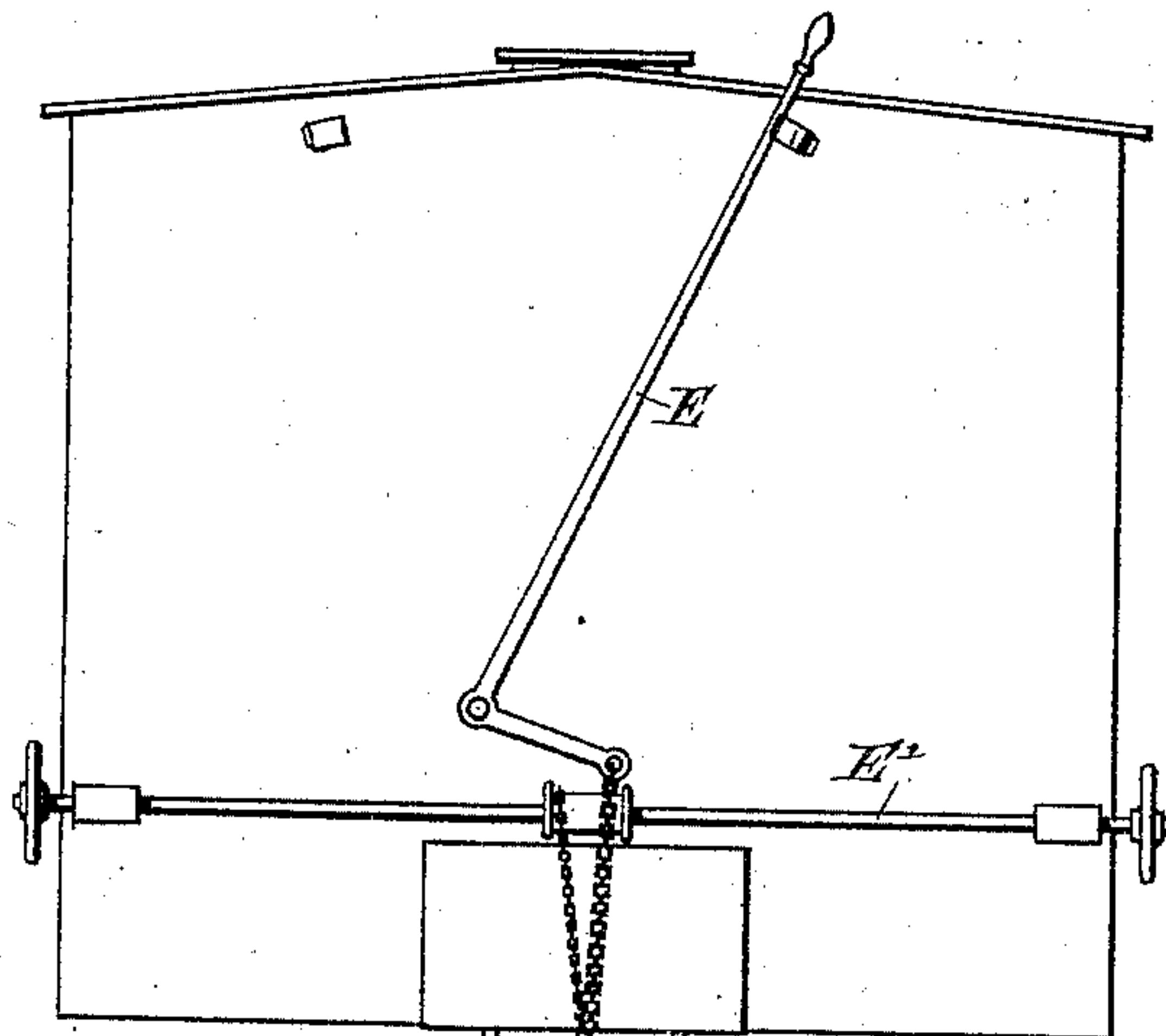
—Fig. 4—



— 519. 5 —



—<sup>4</sup>Aug. 6—



Witnesses

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 444,913, dated January 20, 1891.

Application filed September 25, 1890. Serial No. 366,151. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS HERMAN WALSH, of the city of Montreal, in the District of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has for its object to combine the features of the "Miller" or vertical-plane hook-couplers and the ordinary link-and-pin couplings with a horizontal-plane hook-coupling provided with guards against lateral uncoupling, so that passenger and freight cars with my coupler can with equal facility be coupled together with the Miller or vertical-plane type-couplers or any link or pin coupling, and perfect buffing, with strength and security, be attained.

It consists, essentially, of a hollow or slotted draw-bar proper having a pointed or hooked head on a horizontal plane and side guards, and an auxiliary draw-bar fitted to slide forward and backward in such draw-bar proper, the auxiliary draw-bar having a head embracing the features of the ordinary link-and-pin draw-bars, as well as those of the Miller type, and the whole operating together to effect a coupling under any circumstances and when coupled adapting themselves to any movement of the cars with the greatest possible ease and elasticity, but with the requisite rigidity.

For full comprehension, however, of the invention, reference must be had to the annexed drawings, in which--

Figure 1 is a side elevation of a coupling effected by two of the draw-bars proper assisted by one of the auxiliary bars; Fig. 2, a bottom view of same; Fig. 3, a face view of a single coupler formed by a draw-bar proper and an auxiliary bar applied to a passenger-car platform, lever mechanism for uncoupling being also shown. Fig. 4 is a bottom view showing the coupling of a draw-bar of the Miller type with the auxiliary bar of my coupler; Fig. 5, a part side elevation and section showing the coupling of an ordinary link-and-pin draw-bar with the auxiliary bar of my coupler; and Fig. 6, a face view of a single coupler similar to that shown in Fig. 3,

but applied to a freight-car, the lever mechanism for uncoupling being shown also.

Like symbols indicate corresponding parts.

A is the draw-bar proper, having a neck portion A', a head A<sup>2</sup>, which has hooked upper and lower sides A<sup>3</sup> A<sup>4</sup>, and a cavity A<sup>5</sup>, open and extending along the bottom from a point about the middle of the neck A' back for about two-thirds of the length of the draw-bar. Looking at this draw-bar A, the innermost portion of which is not shown, as it is exactly similar in construction to the ordinary draw-bars and connected to the car-body in a like manner from the under side, as in Figs. 2 and 4, enlargements A<sup>6</sup> A<sup>6</sup> in the width of the cavity A<sup>5</sup> and on each side of same will be seen, and between these enlargements and the neck portion A' are formed, also on each side of the cavity, guards A<sup>7</sup> A<sup>7</sup>, providing buffing-shoulders which (seen in side elevation, as in Figs. 3, 5, and 6) extend down below the main bottom line of the draw-bar, the faces of such shoulders presenting beveled portions a<sup>2</sup> a<sup>2</sup>, leading into surfaces a<sup>3</sup> a<sup>3</sup>, square with the axis of the draw-bar.

B is the auxiliary draw-bar, having a neck portion B', a head B<sup>2</sup>, which is hooked on each of its sides B<sup>3</sup> B<sup>4</sup>, shoulders B<sup>5</sup> B<sup>5</sup>, also on each side at the base of the neck, a hook or beveled projection B<sup>6</sup> on the upper side of the neck portion B', and a projection B<sup>7</sup> on the under side of the shank portion of the bar. The cavity A<sup>5</sup> in the draw-bar A is sufficiently deep and long to receive the whole of the auxiliary draw-bar B, with the exception of the projection B<sup>7</sup> and the head B<sup>2</sup>, as shown by dotted lines in Fig. 1, the spaces formed by the enlargements A<sup>6</sup> A<sup>6</sup> accommodating the shoulders B<sup>5</sup> B<sup>5</sup>, as shown in Fig. 2. The auxiliary draw-bar B is connected with the draw-bar A by means of a steel pin C, fixed in the draw-bar B and projecting from each side near its rear end into a curved slot C' in each side of the draw-bar A, and it is thus capable of a sliding movement back and forth, as will now be explained in connection with the operation of the coupler as a whole.

D is the usual sling or support for the draw-bar, hung from the timbers of the car in the ordinary way, and when two cars pro-



vided with my coupler are to be coupled the operation will be as follows, special reference being had to Figs. 1 and 2: In this case the coupling is effected by means of the two heads  $A^2$ , which hook together on a horizontal plane, assisted by one of the auxiliary bars B. The position of the parts previous to coming together would be as shown by the left-hand coupler in Fig. 1, the auxiliary bars being within the draw-bars proper, so that the steel pins C are at the rear ends of the curved slots  $C'$  and the projections  $B^7$  back of the slings D. On coming together either one of the heads  $A^2$  strikes between the under side of the opposite head and the auxiliary bar and forces such opposite head upward, (the steel pin C forming a pivot-point for the auxiliary bar,) as shown in Fig. 1, thus locating itself in between the two, so that, supposing the right-hand coupler should rise bodily from any cause, it would be impossible for the left-hand hooked end (which is the one inserted in this case) to become disengaged, as the head of the right-hand auxiliary draw-bar would still support it, and as regards lateral movement Fig. 2 shows how the guards  $A^7 A^7$  effectively prevent any disconnection that way.

In the coupling just described, which is that of two passenger-cars, the buffing is effected in the ordinary way between buffers in the ends of the platform, and when it is the coupling of two freight-cars the buffing takes place between the noses of the heads  $A^2$  and the shoulder-surfaces  $a^3 a^3$ . To uncouple, it is necessary to raise the end  $A^2$ , (the right-hand one in this case,) which is uppermost, so as to free the hooks, and this can be done by any ordinary lever mechanism, such as E, (shown in Figs. 3 and 6,) the other lever F being used in the event of a coupling between a draw-bar of the Miller type and one of my auxiliary bars, as will now be described with special reference to Fig. 4. The hooked sides  $B^3 B^4$  of the auxiliary-draw-bar heads are virtually the same as the hooked side of a Miller draw-bar head, including the beveled shape, and to effect a coupling it is necessary first to raise the draw-bar proper A till the shoulders  $B^5 B^5$  are free to slip along beneath the bottom of the guards  $A^7 A^7$ , then to draw the auxiliary bar forward over the sling D (the beveling on the forward face of the projection  $B^7$  facilitating this) to the position of the parts shown in Fig. 5, (which position is after the draw-bar A has been lowered again,) so that the hooked projection  $B^6$  on the upper side of the neck of the auxiliary bar will be engaged with the lower hook of the end  $A^2$  of the main bar, and the shoulders  $B^5 B^5$  be in front of and in contact with the buffing-faces  $a^3 a^3$  of the guards  $A^7 A^7$ , and the bolt C be located at the forward ends of the slots  $C'$ . The auxiliary bars are in each case normally below the usual level of the ordinary draw-heads, and for this reason the projection  $B^7$  is used, whereby upon drawing

the auxiliary bar forward it will slip upward and rest upon the sling D, as shown in Fig. 5, and thus the draw-bar proper A is prevented from dropping to its original level, which is assumed for the time being by the auxiliary bar. The parts being located as just described, a Miller coupler can in the usual manner be coupled with either side of the auxiliary-draw-bar head and uncoupled therefrom by the lever F in the same way as the Miller, and (on referring to Fig. 5) it will be seen by the relative position of the auxiliary bar and the points of contact between its pin C and hook  $B^6$  and the ends of the slots  $C'$  and the lower hook  $B^4$  of the main bar that the line of traction will be identical in both couplers and a normal pressure on the sling D.

A coupling with the ordinary link-and-pin draw-head is effected by the use of my auxiliary bar, as shown in Fig. 5, this being in the same position as for coupling with the Miller draw-head, the buffing taking place between the shoulders  $B^5 B^5$  and the faces  $a^3 a^3$  of the guards  $A^7 A^7$ .

The usual springs (indicated at P) will be arranged in the ordinary way to exert a pressure tending to return the parts to their normal position, and extra link-recesses G and pin-holes  $G'$  may be provided in the noses of the heads  $A^2$  to effect a link-and-pin coupling without bringing the auxiliary bar into position.

If desired, an additional means of connecting the auxiliary bar to the main bar can be used in the form of a pin passed horizontally through both, as shown at H, Figs. 4 and 5.

Any of the well-known devices for retaining the levers in place while holding the draw-bars A in open position can be applied, and in Fig. 6 a transverse shaft  $E'$  is shown, in addition to the lever E, to allow of raising the head  $A^2$  from the sides of freight-cars; but these of course form no part of my invention.

If desired, any ordinary lever action can be adopted to be used from the sides of freight-cars or platform of passenger-cars for moving the auxiliary bars backward or forward.

What I claim is as follows:

1. A draw-bar for coupling cars, having a closed head hooked on a horizontal plane and adapted to lock, and downwardly-projecting side guards formed in one with said draw-bar, for the purpose set forth.

2. A draw-bar for coupling cars, having a closed head hooked on a horizontal plane and adapted to lock, and downwardly-projecting side guards formed in one with said draw-bar and containing buffing-faces, as set forth.

3. In a car-coupler, the combination, with a main recessed draw-bar having a head formed in one with it and hooked on a horizontal plane, of an auxiliary draw-bar arranged within said main draw-bar and means for holding same together, as set forth.

4. In a car-coupler, the combination, with a main recessed draw-bar having a head hooked



on a horizontal plane, of an auxiliary draw-bar arranged to slide within said main draw-bar and having a head hooked in a vertical plane, and means for holding such draw-bars together, as set forth.

5 5. In a car-coupler, the combination, with a main recessed draw-bar having a head formed in one with it and hooked on a horizontal plane, of an auxiliary draw-bar arranged to slide  
10 within said main draw-bar and having a chambered head with pin-hole, and means for holding such draw-bars together, as set forth.

6. In a car-coupler, the combination, with a main recessed draw-bar having a head hooked  
15 on a horizontal plane, of an auxiliary draw-bar arranged to slide within said main draw-bar and having a hooked projection on its upper side adapted to engage with the hooked lower side of said main draw-bar, and means for  
20 holding such draw-bars together, as set forth.

7. In a car-coupler, the combination, with a main recessed draw-bar having a head hooked

on a horizontal plane, of an auxiliary draw-bar arranged to slide within said main draw-bar and having a beveled projection on its under  
25 side adapted to slide over and rest on the usual supporting-sling, and means for controlling the movement of such auxiliary bar, as set forth.

8. In a car-coupler, the combination, with a  
30 main draw-bar having a head hooked on a horizontal plane and buffing-shoulders and a cavity open and extending along its bottom for about two-thirds the length of the draw-bar back from such buffing-shoulders and having  
35 enlargements on each side, of an auxiliary draw-bar arranged to slide within such cavity and having a locking-head and buffing-shoulders, and pin projections working in slots in the sides of said main bar, as set forth.

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Witnesses:

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