

PATENTED JUL 25 1871

# Theo. Warren Sparks. Car Coupling.

117475

Fig. 1.

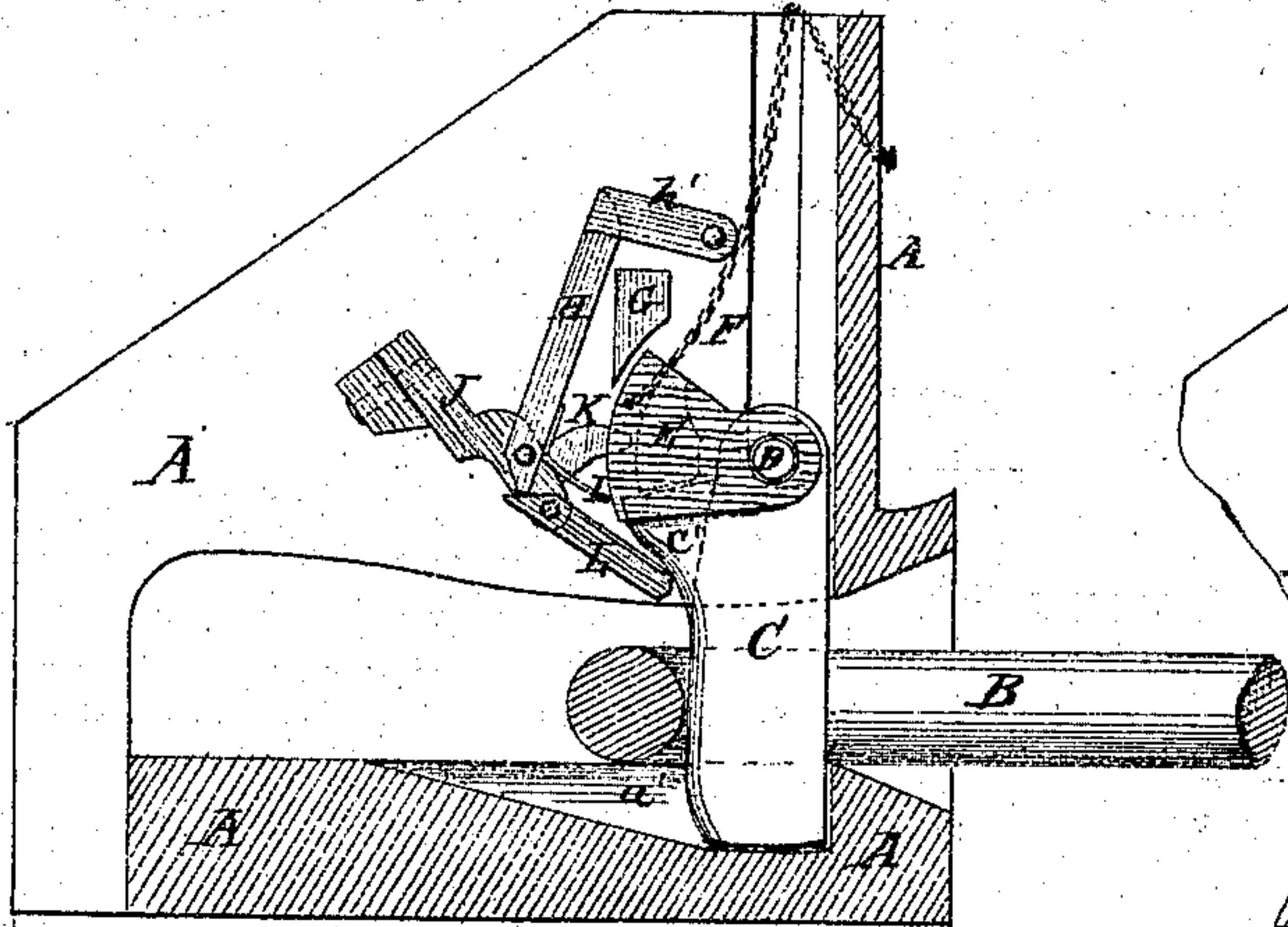


Fig. 2.

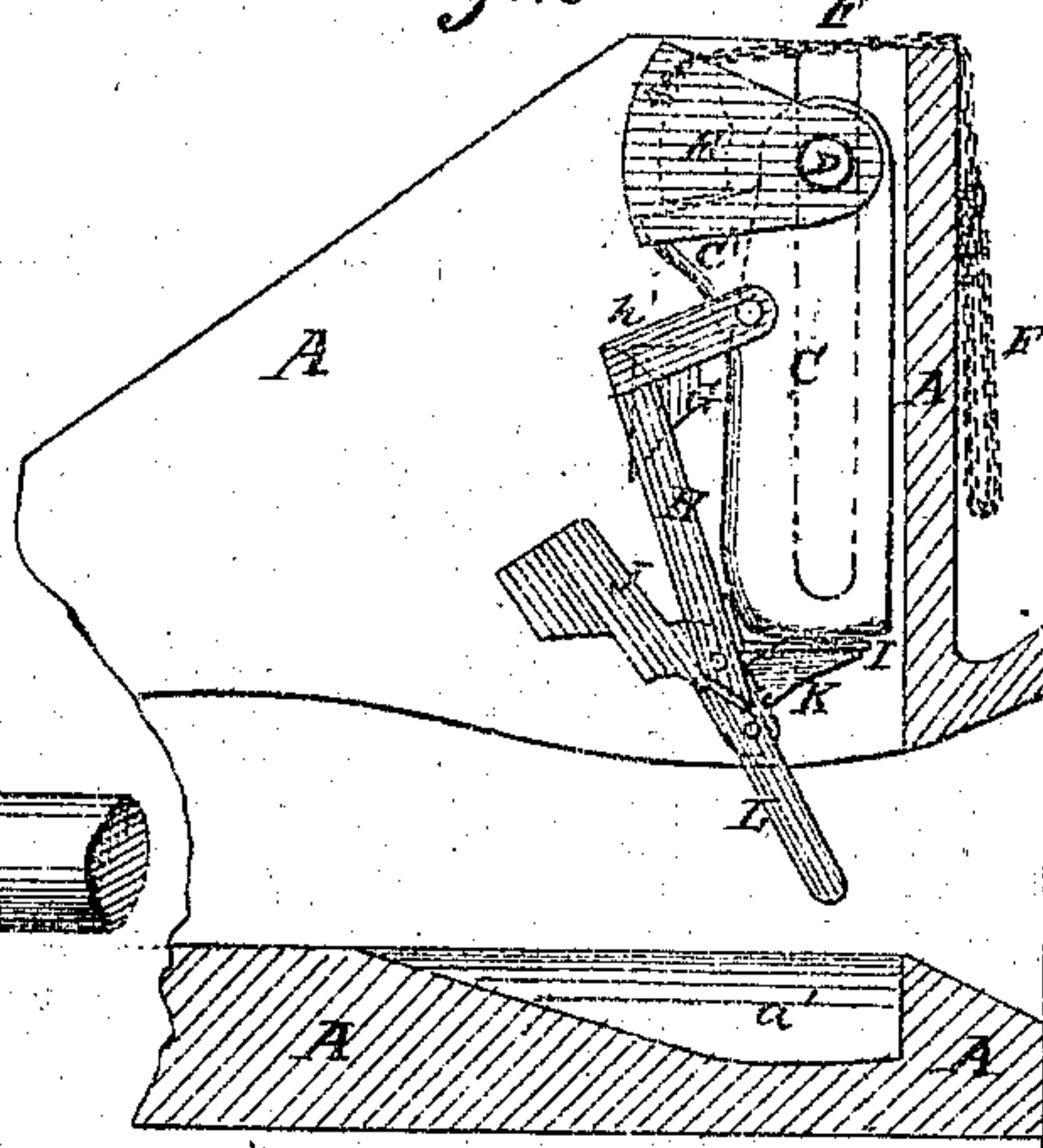


Fig. 3.

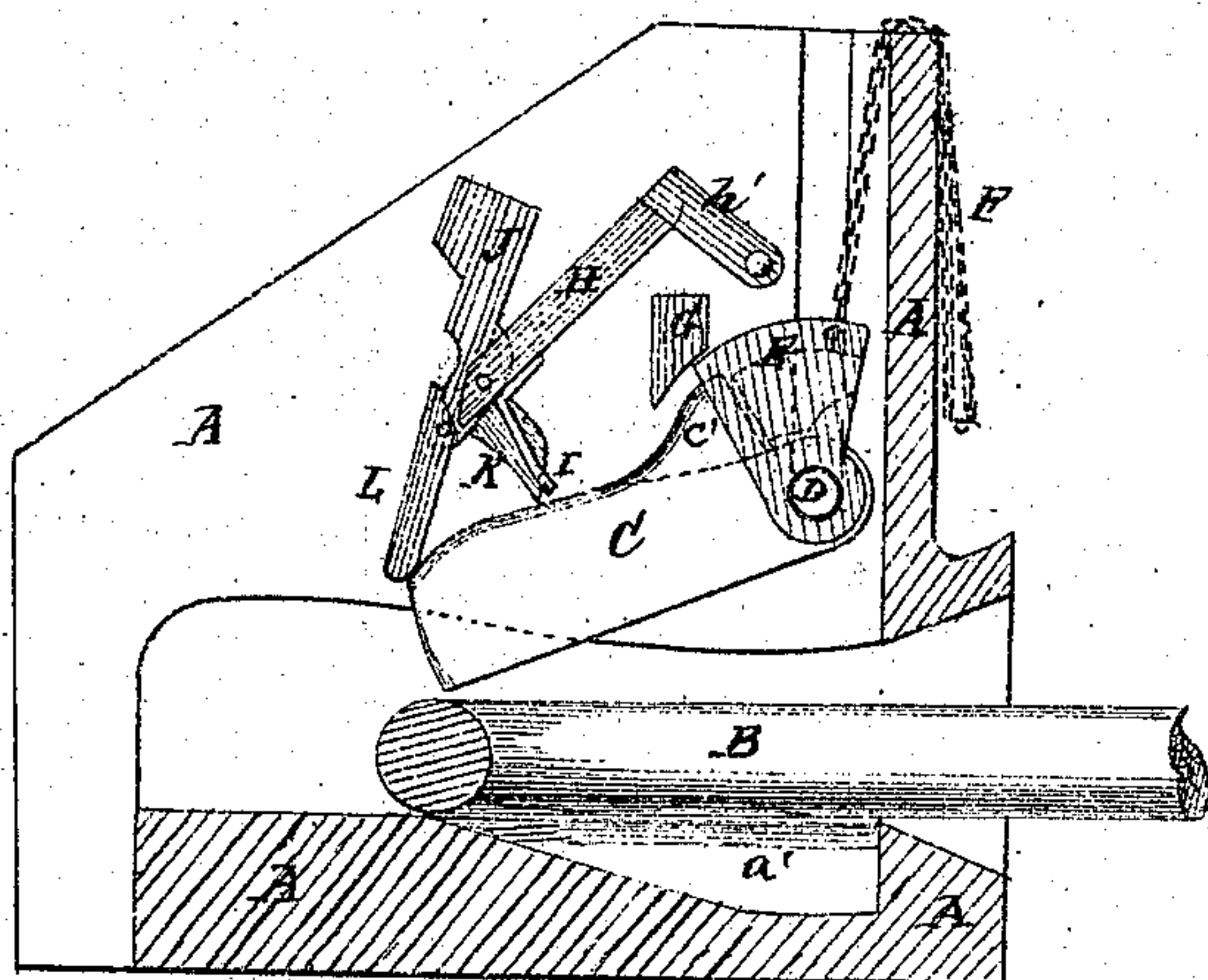


Fig. 4.

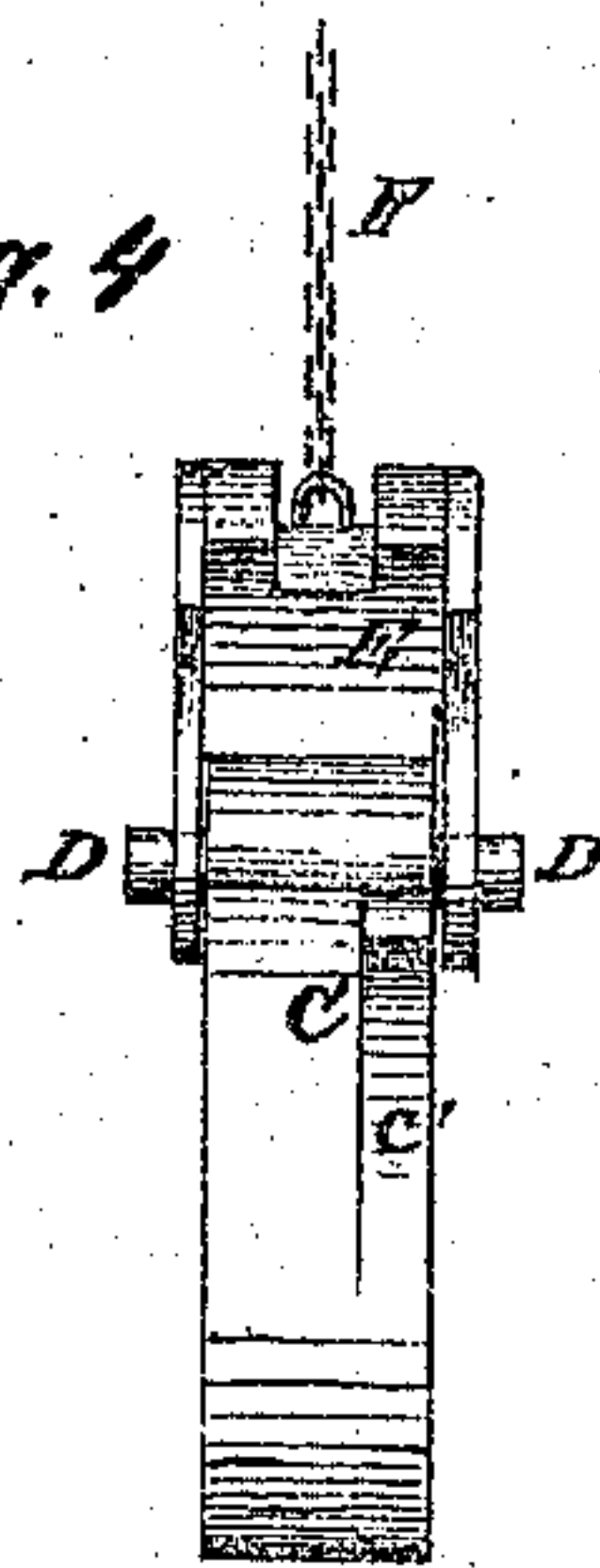
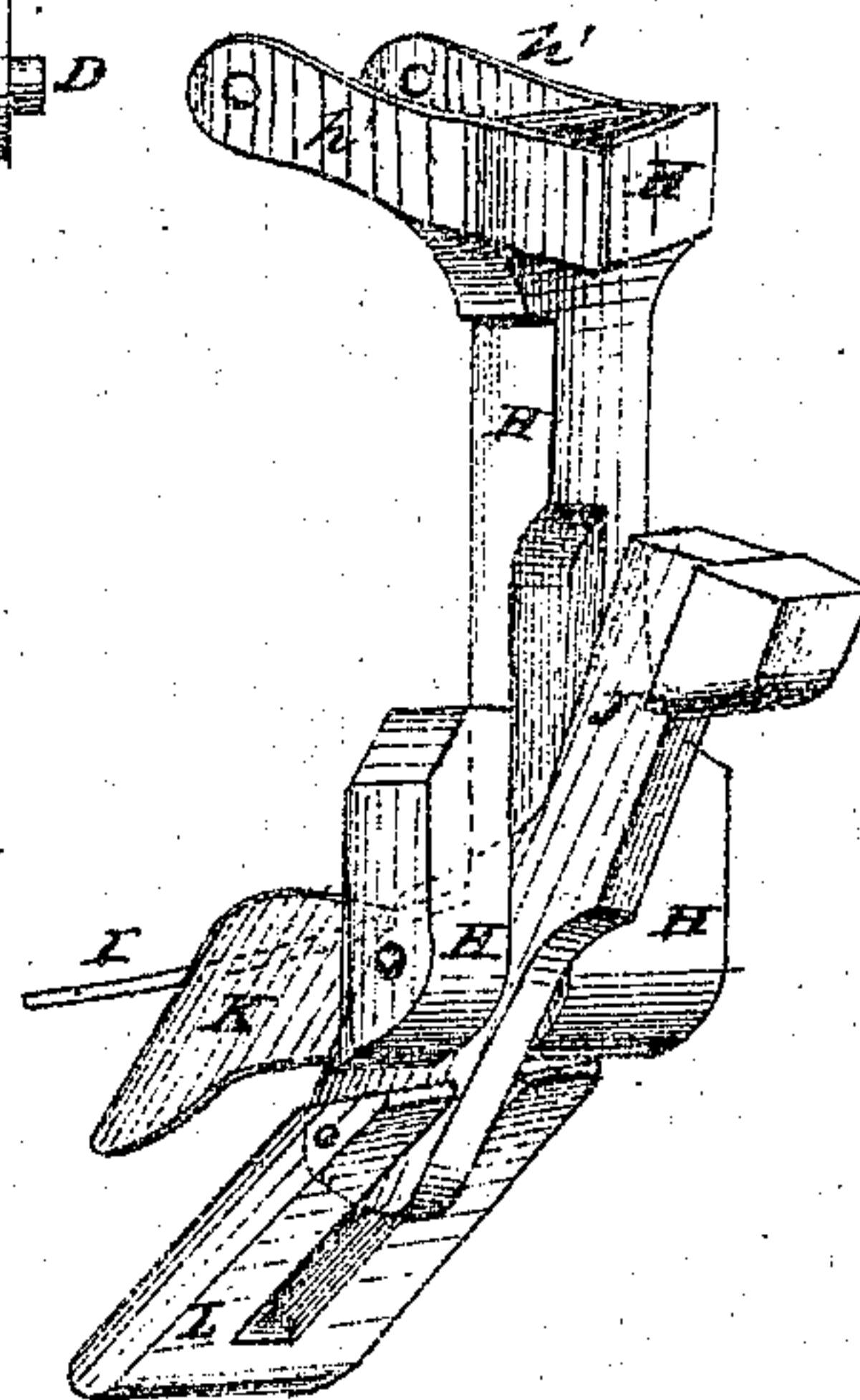


Fig. 5.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 117,475, dated July 25, 1871; antedated July 13, 1871.

*To all whom it may concern:*

Be it known that I, THEODORE WARREN SPARKS, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a detail sectional view of my improved car-coupling, showing the parts in their position when coupling the cars. Fig. 2 is the same view as Fig. 1, showing the coupling-pin raised ready to couple the cars automatically. Fig. 3 is the same view as Figs. 1 and 2, showing the position of the parts when the cars are run together without having the coupling-pin raised. Fig. 4 is a detail rear view of the coupling-pin and lifting-block. Fig. 5 is a reversed perspective view of the swinging bar and its attachments.

My invention has for its object to furnish a simple and convenient car-coupling, which shall be so constructed as to couple the cars when they are run together, whether the coupling-pin be up or down, which cannot be uncoupled accidentally by a sudden jar, and which shall at the same time be simple in construction and not liable to get out of order, no springs being used in its construction; and it consists in the construction and combination of the various parts of the coupling, as hereinafter more fully described.

A represents the bumper-head, the mouth of which is made hopper-shaped, in the ordinary manner. The interior cavity of the bumper-head A is enlarged or curved upward upon the rear part of its upper side, for adapting it to couple cars of different height, and to hold the link B in proper position to enter the bumper-head of the next car when the cars are run together. The forward part of the lower side of the bumper-head is recessed, as shown in Figs. 1, 2, and 3. The forward end of the recess *a'* is made with a straight shoulder for the lower end of the coupling-pin C to rest against while sustaining the draft strain. The forward part of the bottom of the recess *a'*, upon which the lower end of the coupling-pin C rests, is made about horizontal, and its rear part inclines upward, as shown. This

construction prevents the lower end of the coupling-pin C from being jarred back so as to uncouple the cars accidentally. C is the coupling-pin, which is made in about the form and manner shown in Figs. 1, 2, 3, and 4. *c'* is a projection formed upon one part of the rear side of the coupling-pin to push or hold back the swinging bar and its attachments when the cars are coupled, holding said attachments raised, as shown in Fig. 1, so that they cannot be touched or interfered with by the working of the coupling-link when the cars are coupled. The coupling-pin C is pivoted to the bumper-head, and held in position and guided as it moves up and down in coupling and uncoupling the cars by a pin, D, passing through its upper end, and the ends of which enter vertical grooves in the sides of the cavity in the bumper-head in which the said coupling-pin moves up and down. E is a block, the lower end of which is notched or recessed to receive the upper end of the coupling-pin C, to which the said block is pivoted by the pin D. The upper end of the block E is made curved upon the arc of a circle, as shown in Figs. 1, 2, and 3, and is grooved to receive the end of the trigger, as shown in the figures. To the upper end of the block E is attached the end of the coupling-chain F, which passes out through an opening or hole in the upper side of the bumper-head, and is secured in such a position that it may be conveniently reached when required for uncoupling the cars. G is a stop-block attached to the side of the bumper-head, and the lower end of which is curved, as shown in Figs. 1, 2, and 3, to correspond with the curve of the upper end of the block E. By this construction when the cars are coupled the upper end of the block E drops down below the stop G, which thus becomes a lock, and prevents the possibility of the coupling-pins rising and uncoupling the cars without first raising the block E by the chain F, so that it will be impossible for a jar or jolt to raise the coupling-pin and uncouple the cars. H is a bar, having arms *h'* formed upon or attached to its upper end and projecting nearly at right angles, and the ends of which are pivoted to the bumper-head at the sides of the cavity in which the coupling-pin C moves up and down. To the lower end of the bar H is attached a step, I, which, when the coupling-pin C is raised, swings forward beneath the lower end of the said coup-



ling-pin C, as shown in Fig. 2, and supports it until withdrawn from beneath it by the entering-link. In a slot in the lower end of the bar H is pivoted a lever, J, the rear end of which is weighted, as shown in the drawing, and to the forward part of which is rigidly attached an arm or trigger, K, upon which the lower end of the coupling-pin C rests, to hold the jointed lower part L of the lever J depressed into such a position that the end of the entering-link B may strike it and push back the step I, allowing the coupling-pin to drop into the coupling-link and couple the cars. The lower part L of the lever J is jointed to the body of said lever, as shown in the drawing, to enable the link B to be withdrawn from the bumper-head when the parts are in the position shown in Fig. 2, as the cars are drawn apart without interfering with the position of the other parts of the coupling.

By this construction, when the cars are to be uncoupled, all that is necessary is for the coupling-pin C to be raised. The bar H and its attachments immediately swing forward so that the coupling-pin C, when released and allowed to drop, will be received upon the step I and supported, as shown in Fig. 2, so that when the cars are drawn apart the link B may raise the jointed part L of the lever J and pass out, the said part L immediately dropping back into the position shown in Fig. 2, making it impossible for the link to enter the bumper-head without pushing back the bar H and its attachments and allowing the coupling-pin C to drop and pass through the said link. By this construction, also, should the cars be run together with the coupling-pin C down

the lower end of said coupling-pin will be pushed back, as shown in Fig. 3, until the end of the link has passed the end of the pin C, allowing said pin to swing forward to its place, coupling the cars, so that it is impossible for the parts of the coupling to be in such a position that the cars will not be coupled automatically when run together.

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

1. The notched, pivoted, and grooved block E and stop G, in combination with the coupling-pin C and bumper-head A, substantially as herein shown and described, and for the purposes set forth.

2. The swinging bar H *h'*, step I, pivoted, weighted, and jointed lever J L, and arm or trigger K, in combination with the coupling-pin C and bumper A, substantially as herein shown and described, and for the purpose set forth.

3. An improved car-coupling, formed by the combination of the coupling-pin C, block E, stop-block G, swinging bar H *h'*, step G', weighted and jointed lever J L, and arm or trigger K with each other and with the bumper A, said parts being constructed and operating substantially as herein shown and described, and for the purpose set forth.

The above specification of my invention signed by me this 31st day of January, 1870.

THEODORE WARREN SPARKS.

Witnesses:

GEO. W. MABEE,  
JAMES T. GRAHAM.