

C. H. KNOWLTON.

Car-Couplings.

No. 133,456.

Patented Nov. 26, 1872.

Fig. 1.

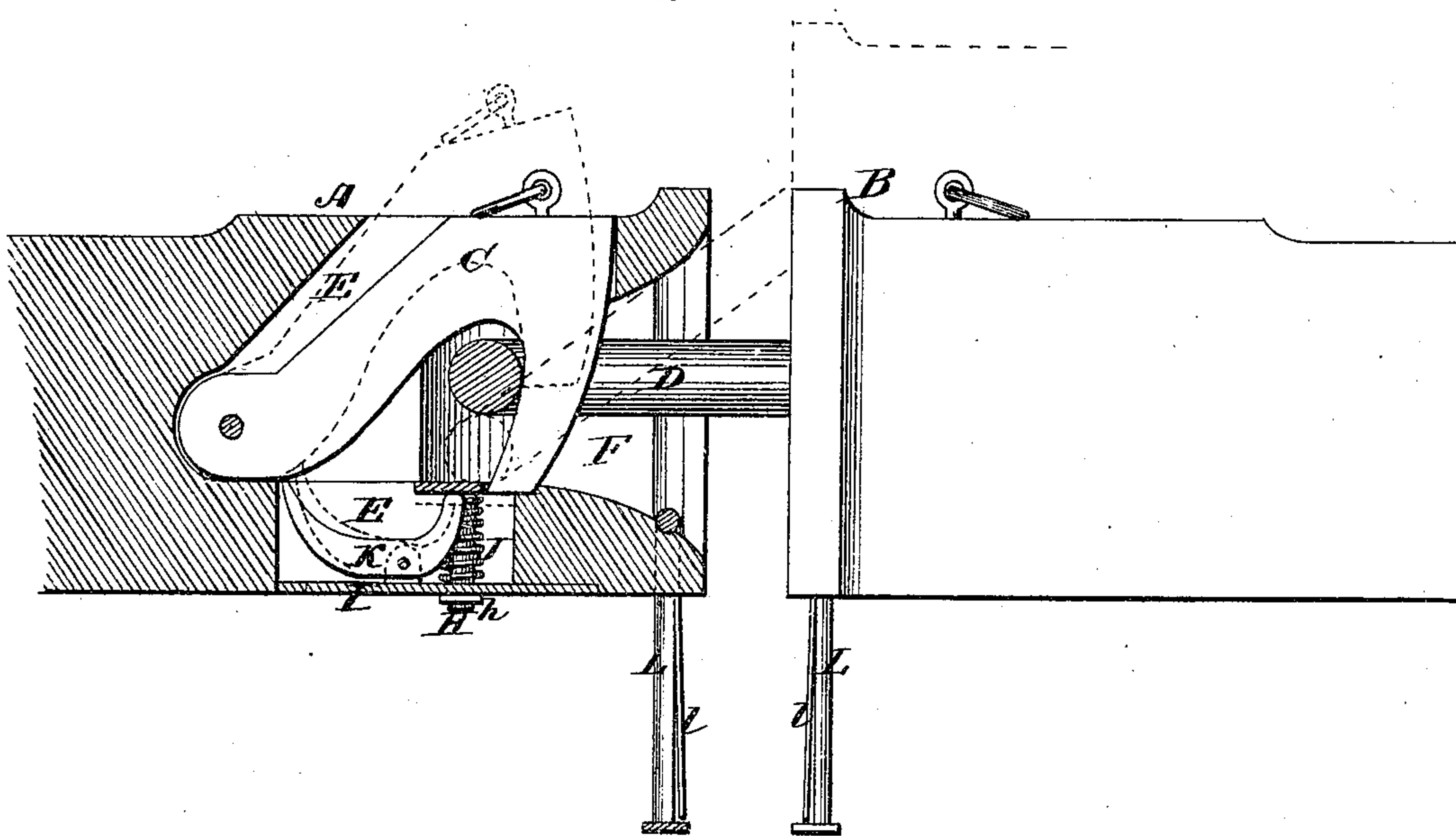


Fig. 2.

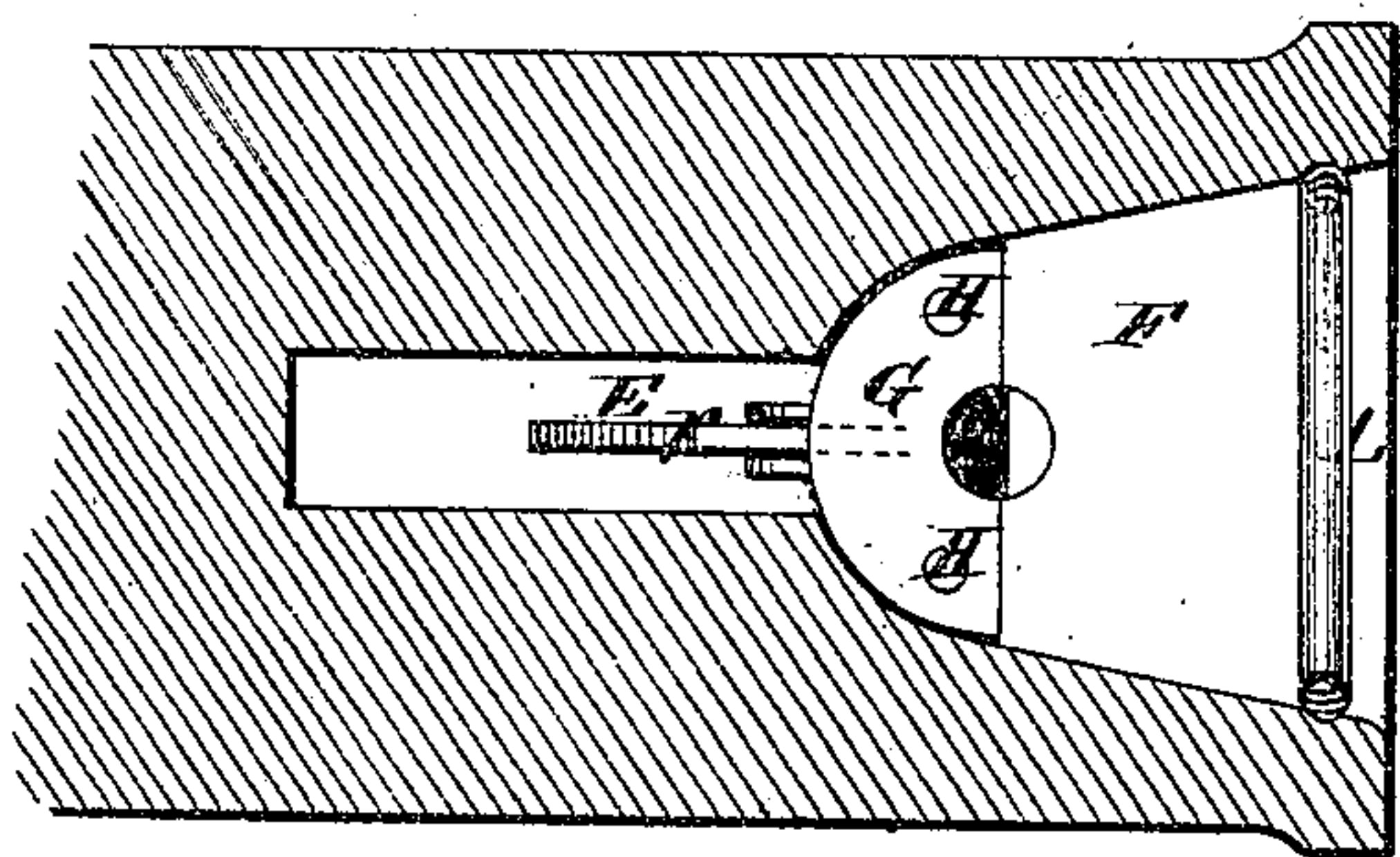
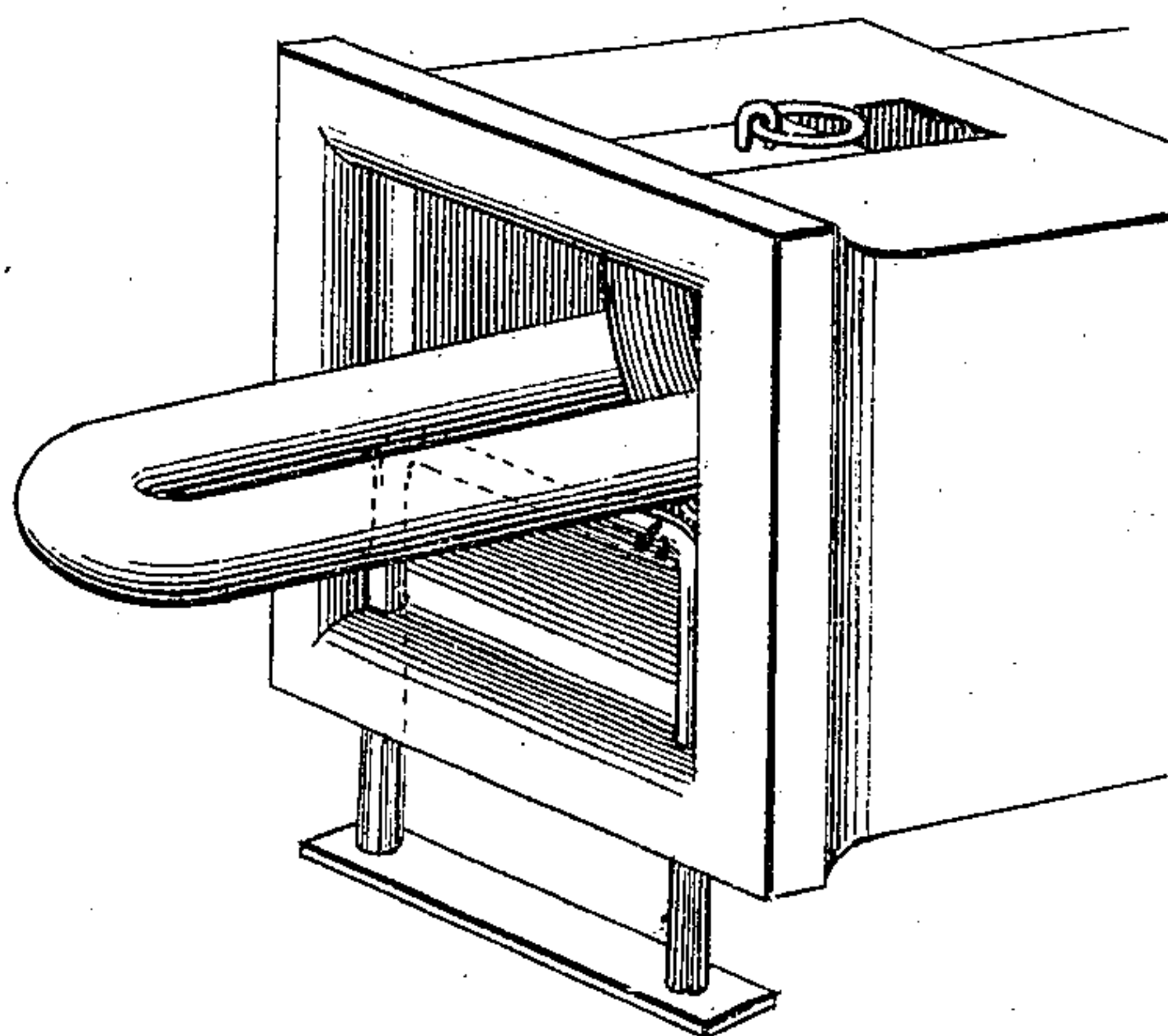


Fig. 3.



Witnesses.  
C. F. Brown.  
Deak and Ellsworth.

Inventor.  
Charles H. Knowlton  
By Hill & Ellsworth  
His attys.



# UNITED STATES PATENT OFFICE.

CHARLES H. KNOWLTON, OF ROCKLAND, MAINE.

## IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 133,456, dated November 26, 1872.

*To all whom it may concern:*

Be it known that I, CHARLES H. KNOWLTON, of Rockland, in the county of Knox and State of Maine, have invented a new and useful Improved Car-Coupling; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side view, showing a vertical section of one draw-head embodying my invention and a side elevation of the opposite draw-head. Fig. 2 is a horizontal section, and Fig. 3 a perspective view.

Similar letters of reference in the accompanying drawing indicate the same parts.

This invention relates to that class of car-couplings which couple automatically by means of a hook pivoted so as to rise and fall in a vertical plane in the draw-head; and the object of my invention is, first, to construct a coupling which shall automatically uncouple the cars when one of them is overturned or otherwise displaced from the track; and, secondly, to provide means for causing the link to project from the draw-head before coupling at any angle necessary to cause it to enter properly the draw-head of the next car. To these ends, my invention consists in the construction hereinafter described.

A B represent two adjacent draw-heads, which are alike in construction, each being provided with a hook, C, that automatically engages with the link D in the usual manner. The hook C is pivoted at its rear end in a slot, E, the latter extending backward from the bell-shaped or flaring recess F of the draw-head. At the rear end of the recess F and covering a continuation of the slot E is a semicircular plate, G, the rear edge of which conforms to the curvature of the back of the recess F, as shown in Fig. 2, its upper side being flush with the bottom of said recess. H H represent bolts, which are rigidly attached to the plate G and extend downward therefrom, passing freely through a plate, I, which constitutes the bottom of the slot or space E, said bolts being provided on their lower ends with nuts *h*. Rubber or spiral springs J surround the bolts H and support the plate G, the lower ends of the springs resting on the plate I, thus allowing

the plate G and its bolts H to move vertically, while they are prevented from rising too high by the nuts *h*. K represents a curved lever pivoted in the lower part of the space E, its forward end being in contact with the lower side of the plate G and its rear end with the hook C in front of its point of connection to the draw-head, as shown in Fig. 1. When the link from the opposite draw-head enters the recess F it engages with and lifts the hook C, and couples with the same in the usual manner. If, however, one of the cars be thrown from the track, and thereby caused to fall below the horizontal line of the others, the end of the link will press violently down upon the plate G of the lower draw-head, as shown in dotted lines in Fig. 1, thereby depressing the same, the spring J yielding to the pressure. The depression of the plate G acting upon the curved lever K throws up the rear end of the latter, and this in turn raises the hook C, frees the same from the link, and detaches the displaced car. The same result is produced when the link is turned within the recess by the overturning of a car. By this device it will be readily seen that when a car is thrown from a track in any manner it immediately detaches itself from the remaining portion of the train and prevents further accident to the other cars. The saving of life and property which in many cases will result from the use of my invention will be obvious when it is considered that, by the use of the ordinary coupling, when any portion of the train is thrown from the track it commonly drags the remaining portion after it unless the coupling should break. In the mouth of each draw-head I locate a rectangular frame, L, which slides vertically in the orifices in the lower lip of the draw-head and in grooves along the inner sides of the same, as shown in Fig. 3. The vertical portions of the frame L are provided with springs *l*, which bind against the walls of the orifices through which they pass and sustain the frame at any point desired. The link rests upon the upper part of the frame L, as shown, which latter is adjusted in such manner as to cause the link to incline to any desired degree and hold it ready for the draw-head of the next car, so that in coupling cars of varying heights the link requires



only to be adjusted as above to enter properly the mouth of the next draw-head, thus obviating the breaking of links resulting from the violent contact of the link with the end of the draw-head and the danger of personal injury to the attendant who usually guides the link. The motion of the train will gradually cause the frame to sink to the inner part of the draw-head, as shown in Fig. 1.

Having thus described my invention, what I claim is—

1. In combination with an automatic coupling, the spring-plate G and curved link K

operating the weighted hook C, substantially as described, for the purposes specified.

2. The rectangular frame L provided with spring sides and arranged in the orifices and grooves in the mouth of the draw-head, so that by sliding the frame vertically the position of the link can be adjusted, substantially as described, for the purpose specified.

CHARLES H. KNOWLTON.

Witnesses:

J. P. CILLEY,

I. G. LOVEJOY.