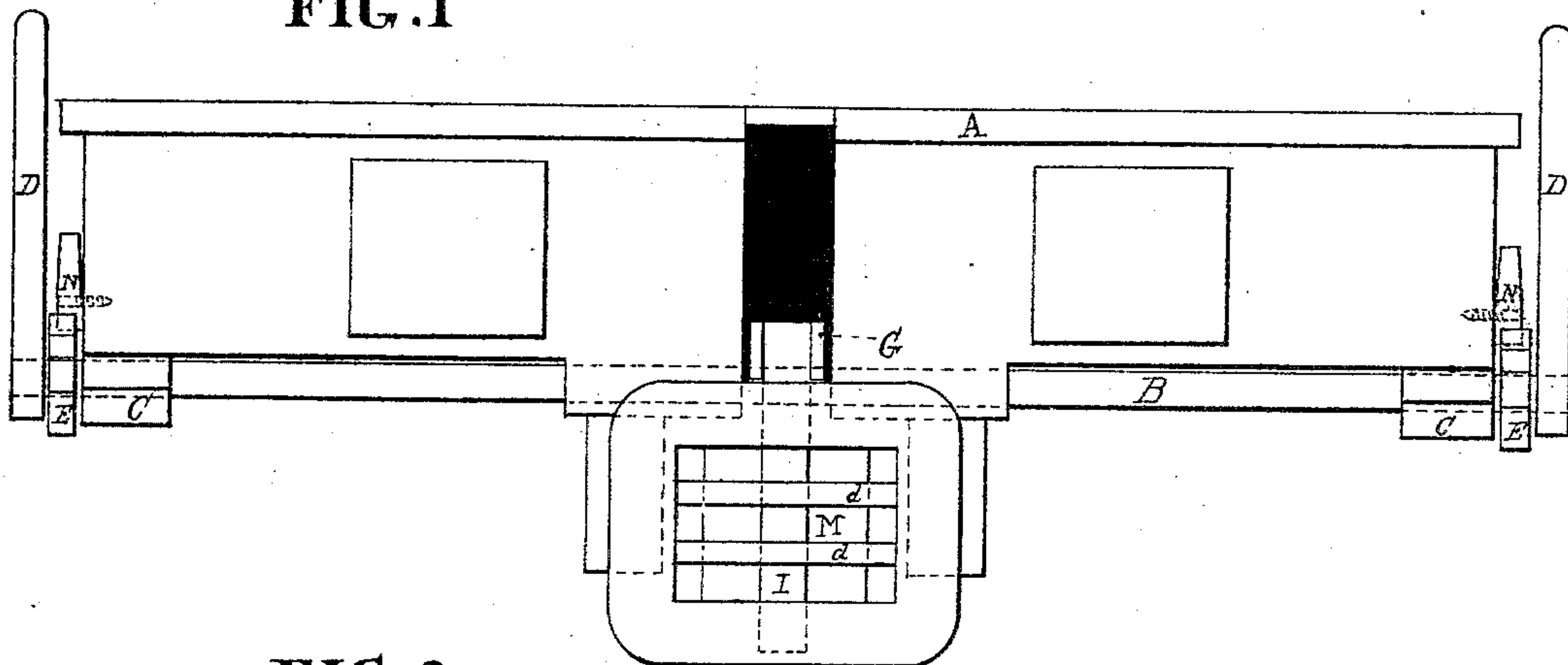


**W. A. BOYDEN.**  
**Car-Couplings.**

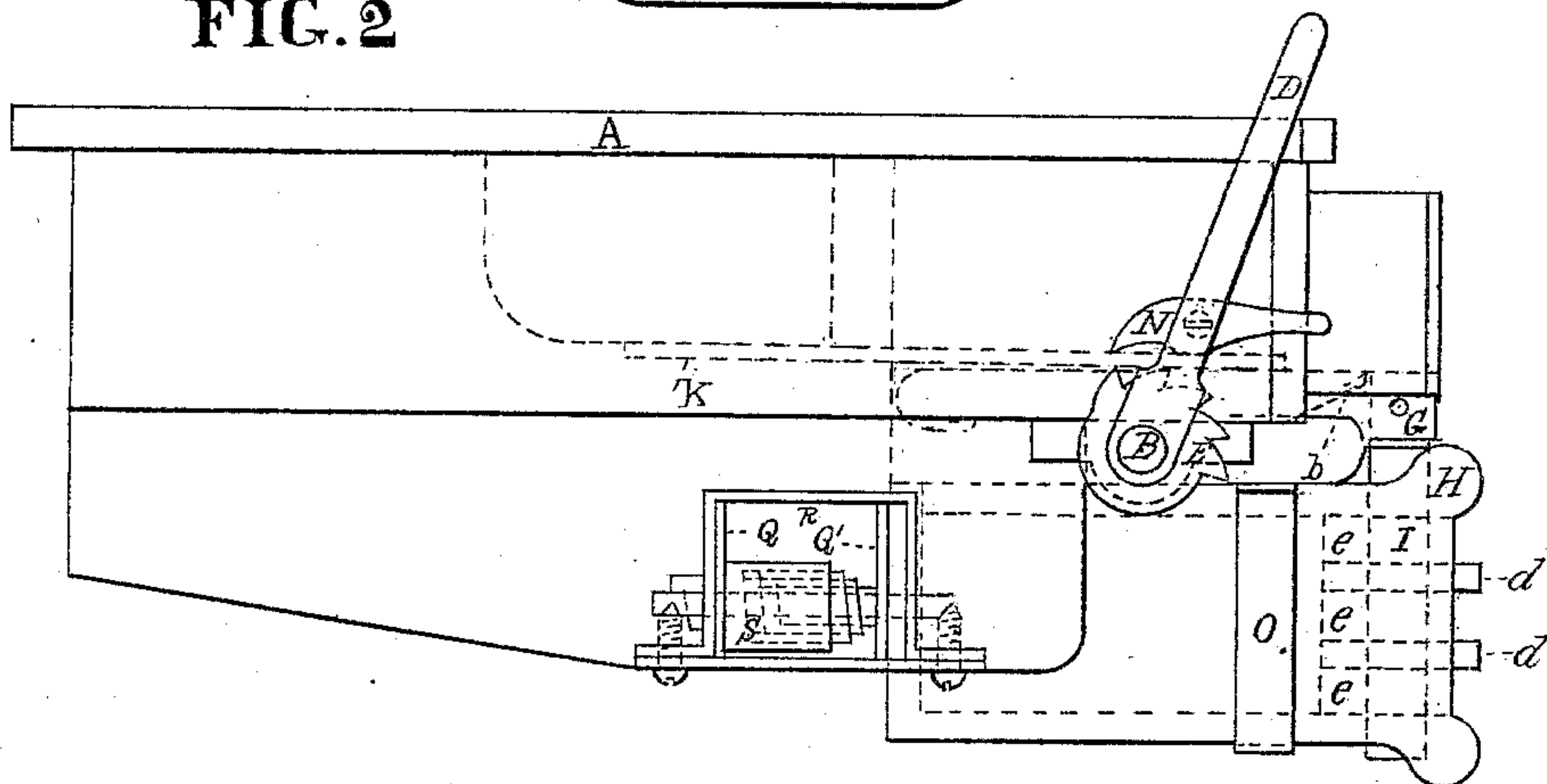
No. 143,055.

Patented September 23, 1873.

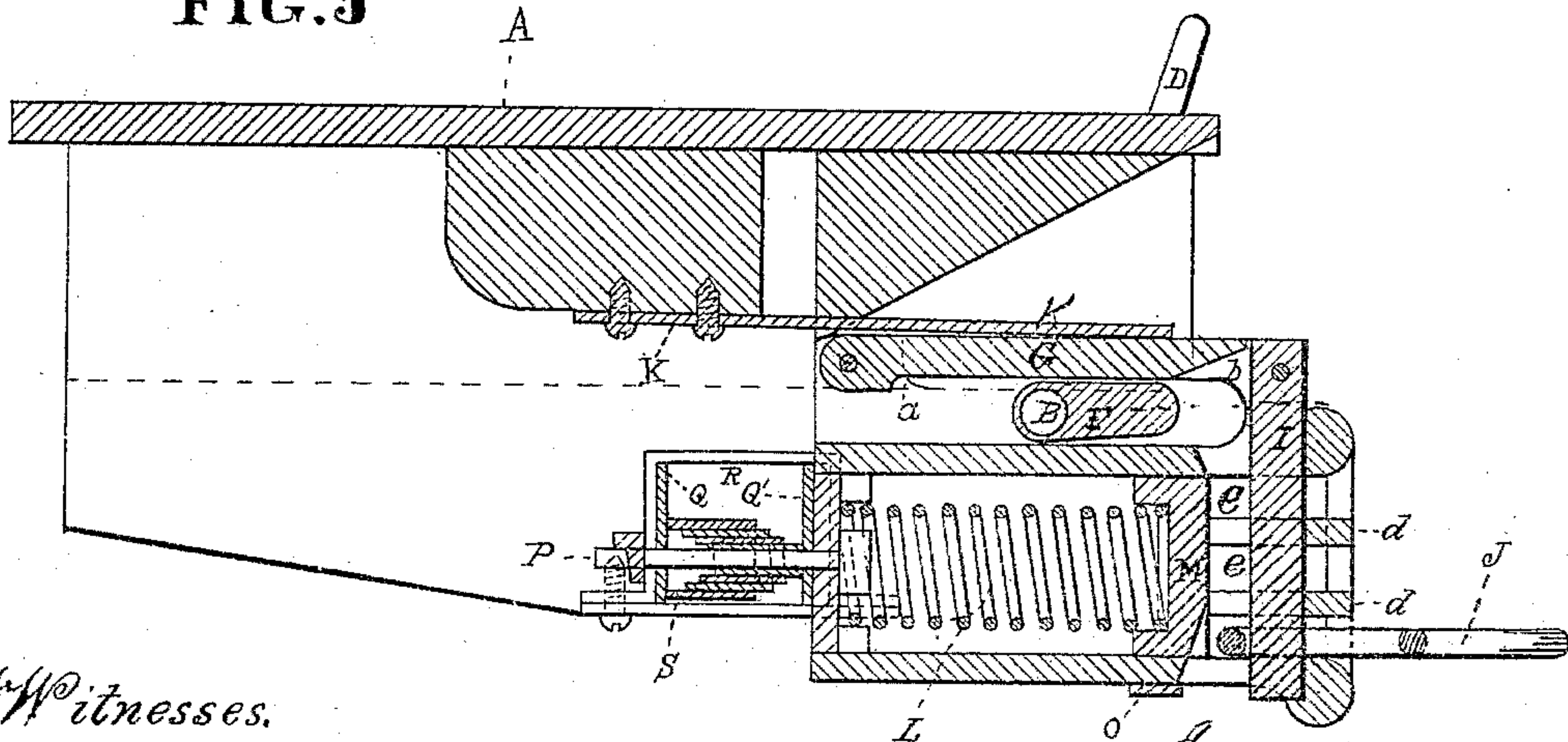
**FIG. 1**



**FIG. 2**



**FIG. 3**



*Witnesses.*

*Thomas C. Dewley.*  
*William R. Wright*

*Inventor.*

*William A. Boyden*  
*By His Attorney*  
*Stephen Ustick.*

W. A. BOYDEN.  
Car-Couplings.

No. 143,055.  
FIG. 4

Patented September 23, 1873.

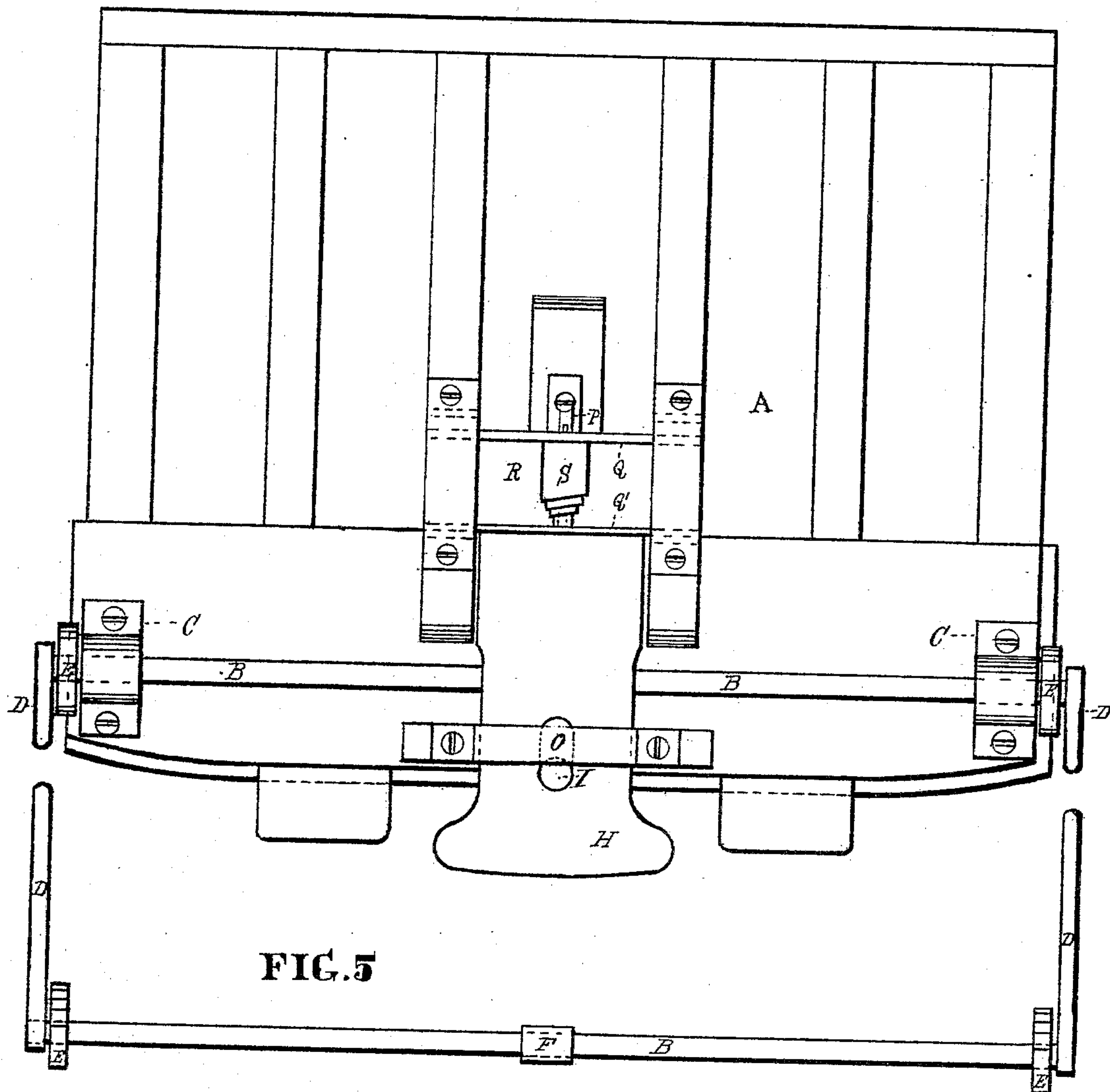
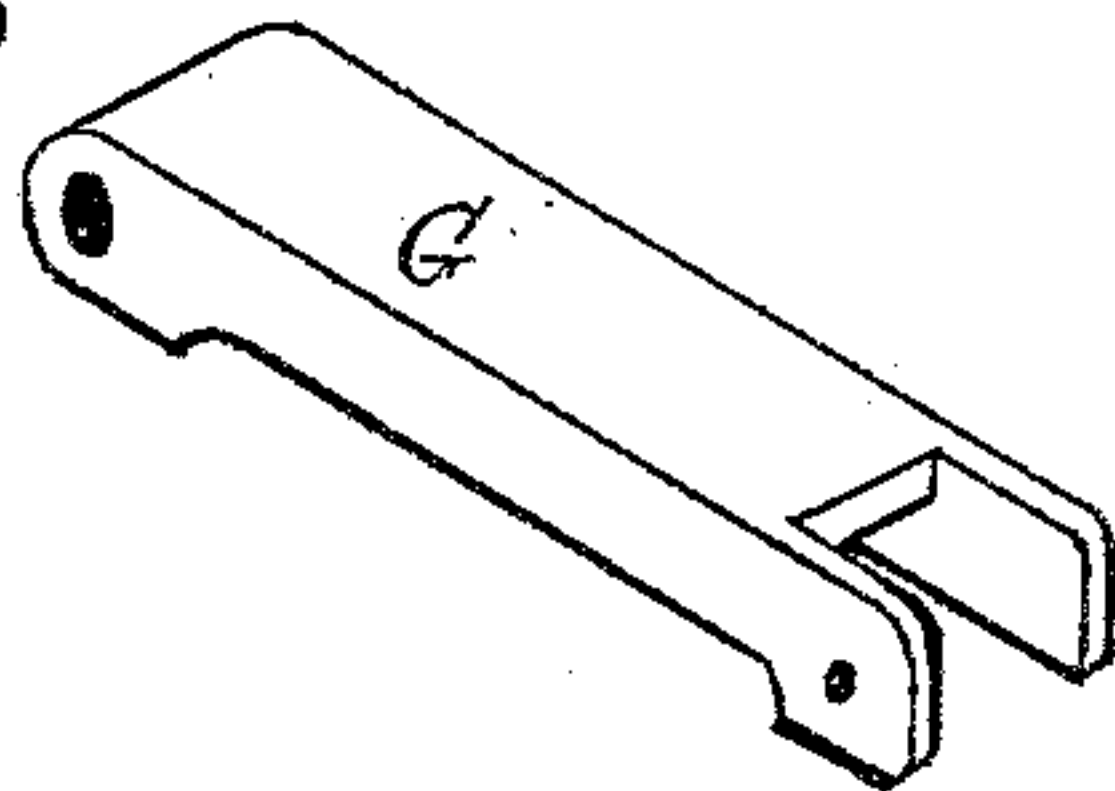


FIG. 5

FIG. 6



Witnesses  
Thomas B. Dewley.  
William R. Wright

Inventor  
William A. Boyden  
By His Attorney  
Stephen Ustick



# UNITED STATES PATENT OFFICE

WILLIAM A. BOYDEN, OF HARRISBURG, PENNSYLVANIA.

## IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 143,055, dated September 23, 1873; application filed May 22, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM A. BOYDEN, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a Safety and Self Coupler for Railroad-Cars, of which the following is a specification:

My invention relates to the combination and arrangement of a swinging pin connected with a lever, which is elevated by means of a lifting arm, cam, or eccentric, on a horizontal shaft, which extends from one side of the platform to the other, and is provided with a lever at each end, so that the cars may be uncoupled from the outside to avoid the danger of getting between them.

Figure 1 is a front elevation of a platform having the improved coupler in connection therewith. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section at the line *x x* of Fig. 1. Fig. 4, Sheet No. 2, is a reverse plan. Fig. 5 is a front view of the rocking-shaft B, having levers D D, lifting-arm F, and ratchet-wheels E E. Fig. 6 is a perspective view of the lever G.

Like letters in all the figures indicate the same parts.

A is a platform of a car. B is a rocking-shaft connected therewith at each side by means of bearings C C. The shaft is provided with a lever, D, and ratchet-wheel E at each end, and a lifting-arm, F, in the middle. G is a lever pivoted, at its rear end, to lugs *a a*, which project upward from the upper side of the draw-bar H, as seen clearly in Fig. 3. The swinging connecting-pin I is pivoted to the front end of the lever, the latter being cut away at *b* to admit of the pin swinging backward as the connecting-link J strikes it, when the cars are brought together for coupling and the pin is in its vertical position, thus admitting of its lower end being raised over the end of the link until the latter passes it. Then the pin falls down into the vertical position, the fall being made positive and expeditiously by means of the spring K, which bears upon the lever G. When the link J advances in the draw-

bar the wire spring L yields to the pressure of the sliding plate M, against which the rear end of the link bears, but forces the plate back again into the position seen in Fig. 3, when the connecting-pin has fallen into its vertical position and coupled the cars.

When the cars are to be uncoupled the brakeman, standing at one side of the same, bears the lever D backward, by which the lifting-arm F is borne upward, so as to elevate the connecting-pin I, to free it from the link J, and, if desired, engages the pawl N with the ratchet-wheel E to hold the link in its elevated position. The front end of the draw-bar has horizontal partitions *d* to provide for separate spaces, *e*, of different heights, to receive the link J in accommodation to differences in the heights of cars to be coupled together. The front end of the draw-bar is held by and permitted to slide in the yoke O. The rear end is connected with the front end of the horizontal rod P, the rear end of which is connected with the stationary plate Q, and the front end with the sliding plate Q', whose ends fit in the boxes R R. The said sliding plate Q' is pressed forward by the helical spring S, which yields to the backward pressure of the draw-bar.

I am aware that rocking-shafts have been used for elevating the swinging pin for uncoupling the cars, the pin being pivoted to an arm of the lever. My arrangement, in which the pin is hinged to a separate lever, is I think far preferable, as the lever may be made of any desired length so as to give a free and easy movement to the pin.

I claim as my invention—

The combination and arrangement of the rocking-shaft B provided with levers D D, and lifting-arm F with the lever G, and swinging connecting-pin I, substantially in the manner and for the purpose above described.

WILLIAM A. BOYDEN.

Witnesses:

OLIVER EDWARDS,  
WM. W. ROSS.