

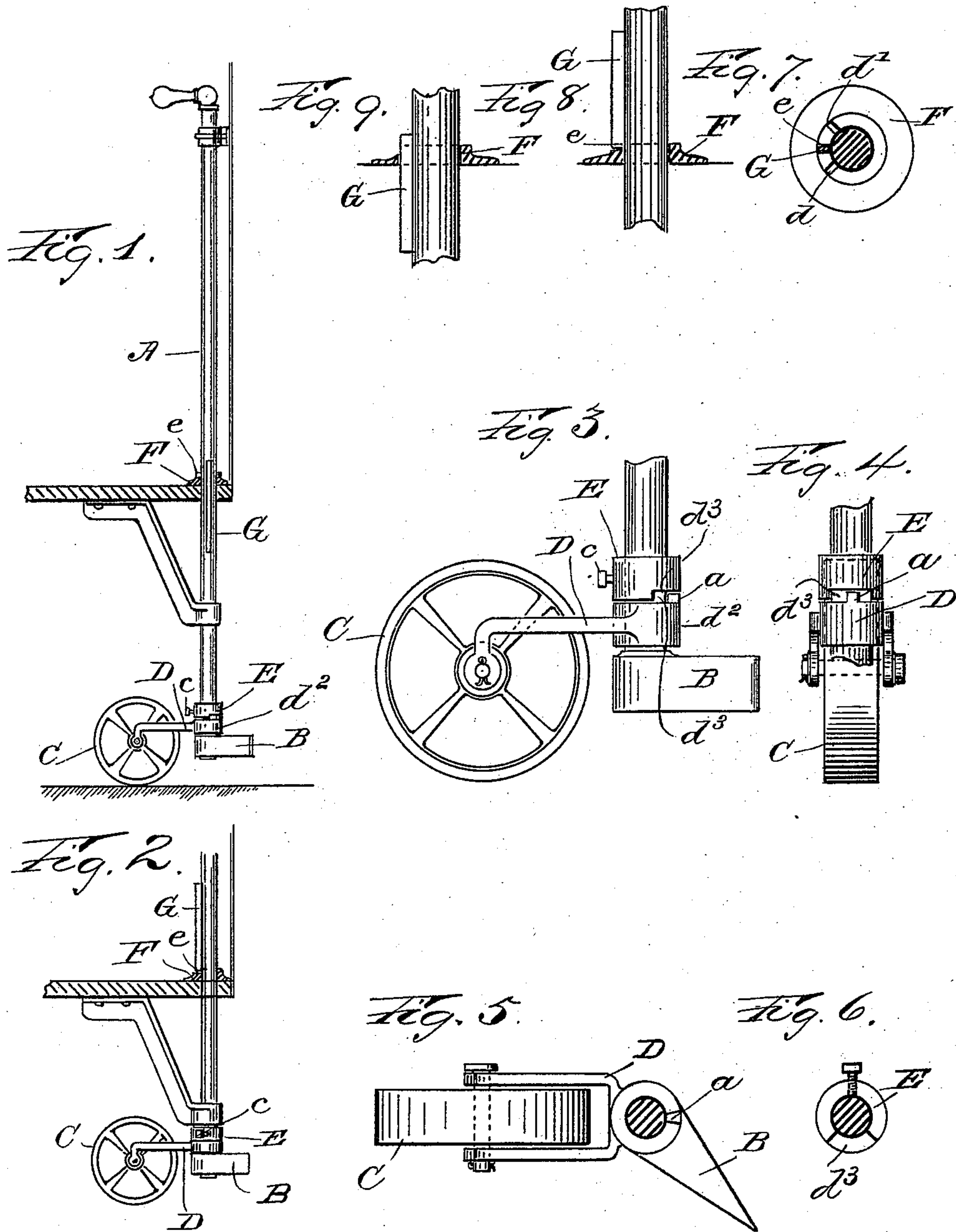
(No Model.)

2 Sheets—Sheet 1.

A. C. McKENZIE.  
AUTOMATIC SWITCH FOR RAILROADS.

No. 539,232.

Patented May 14, 1895.



WITNESSES:

John Emmaus  
Richard Speer

INVENTOR.

A. C. McKenzie.  
BY  
H. L. Bennett  
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 10.

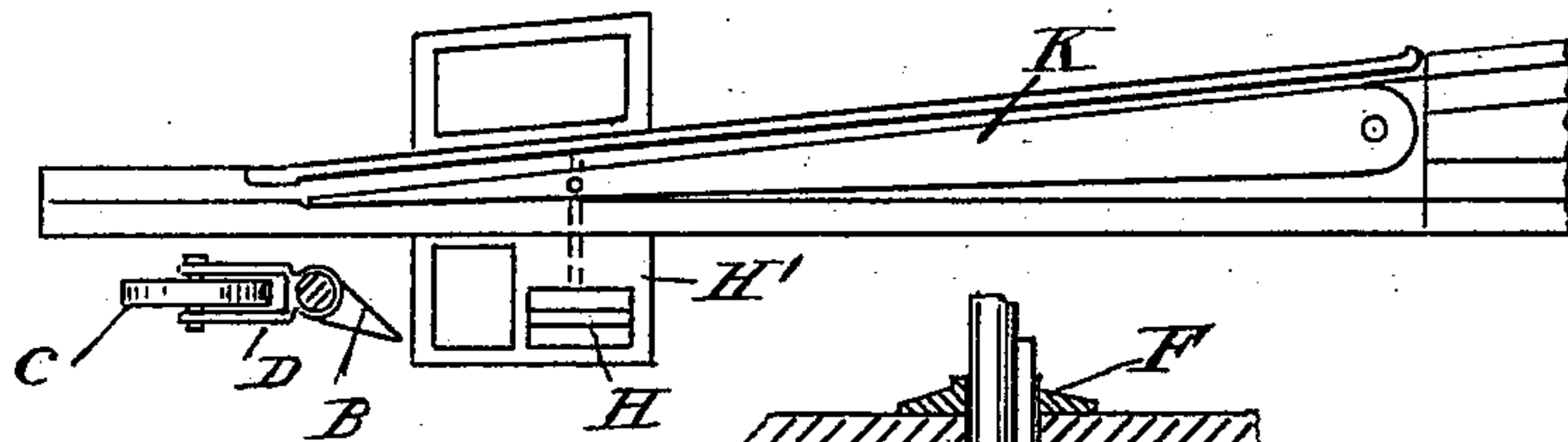


Fig. 11.

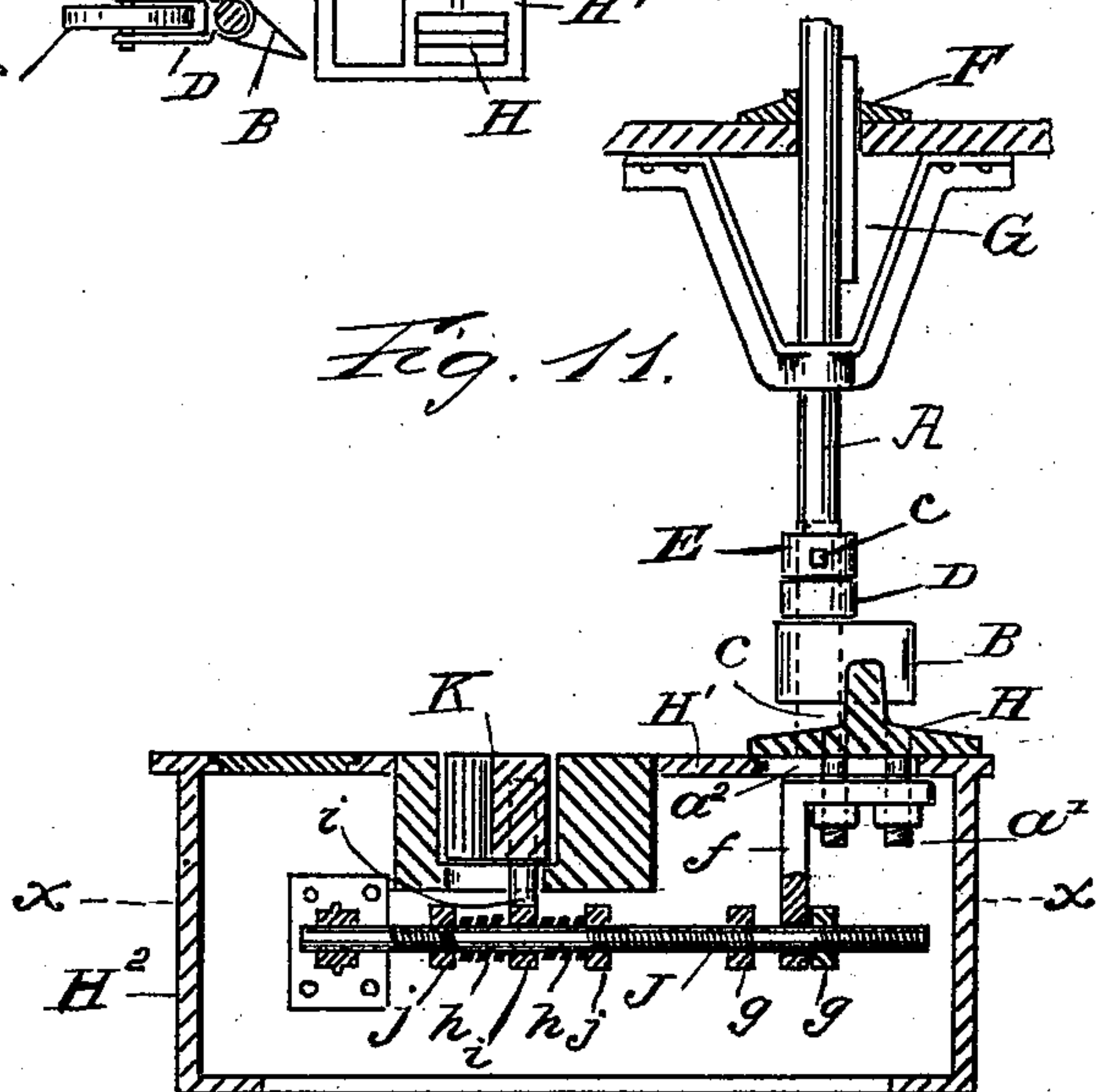


Fig. 13.

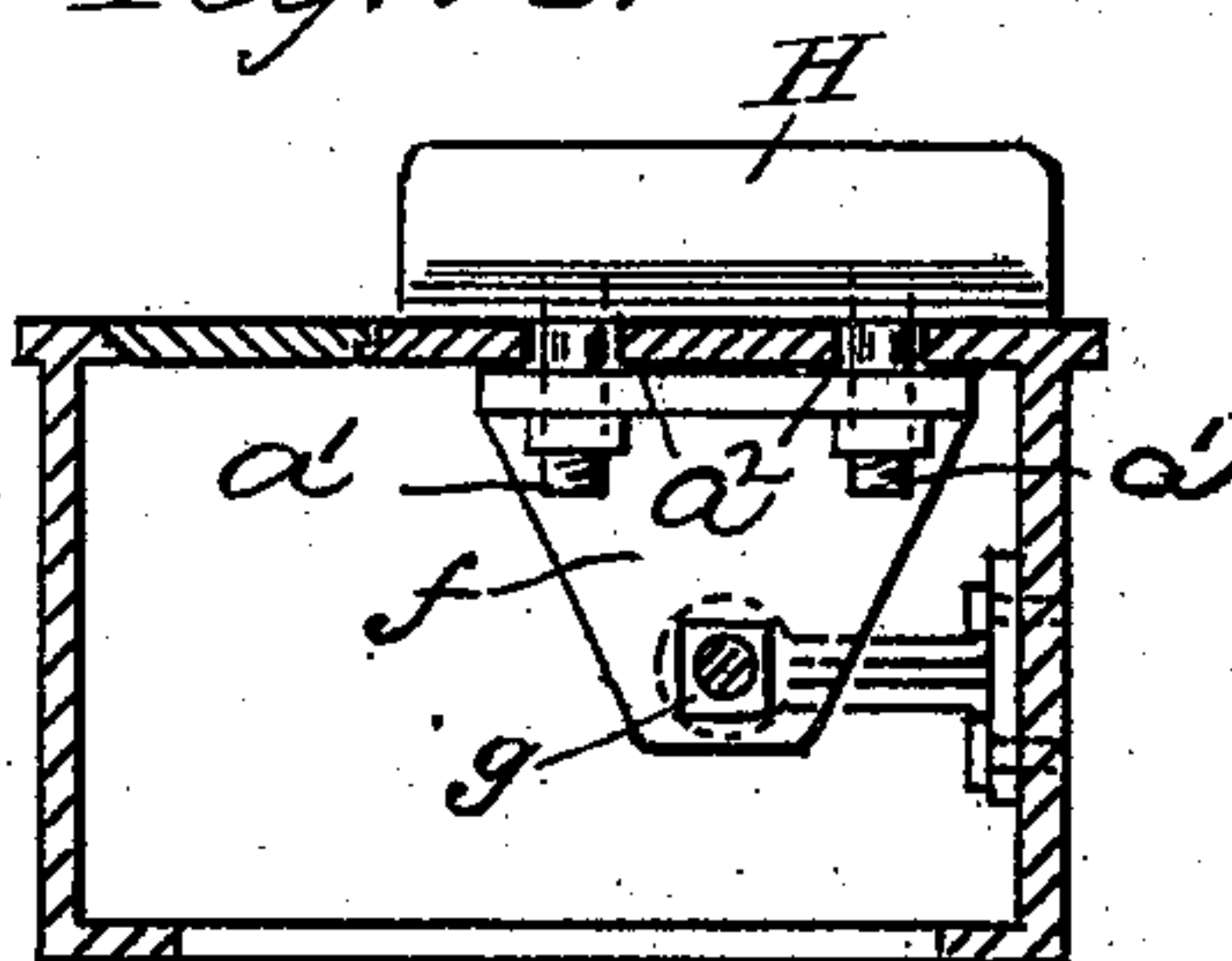


Fig. 12.

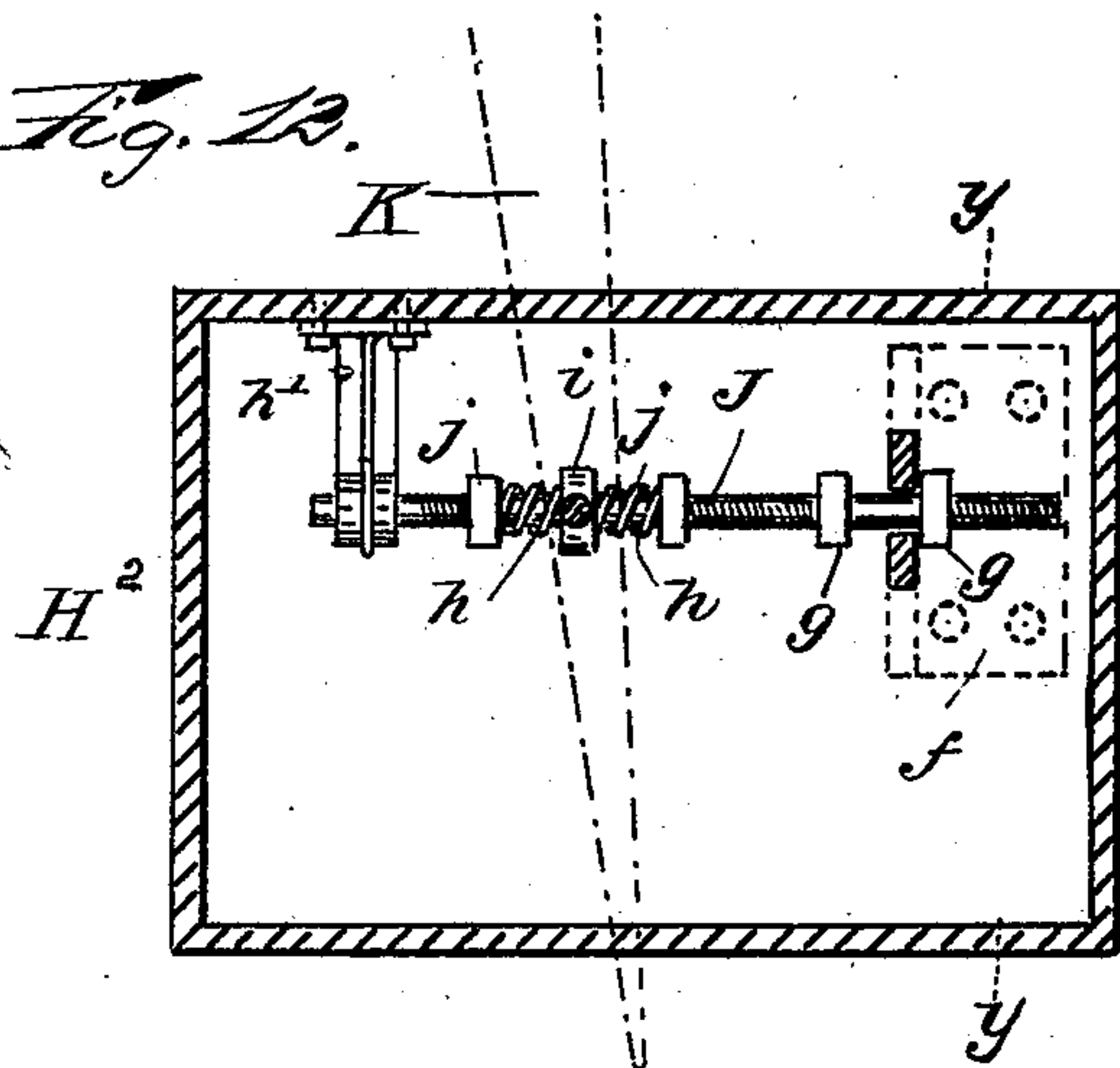
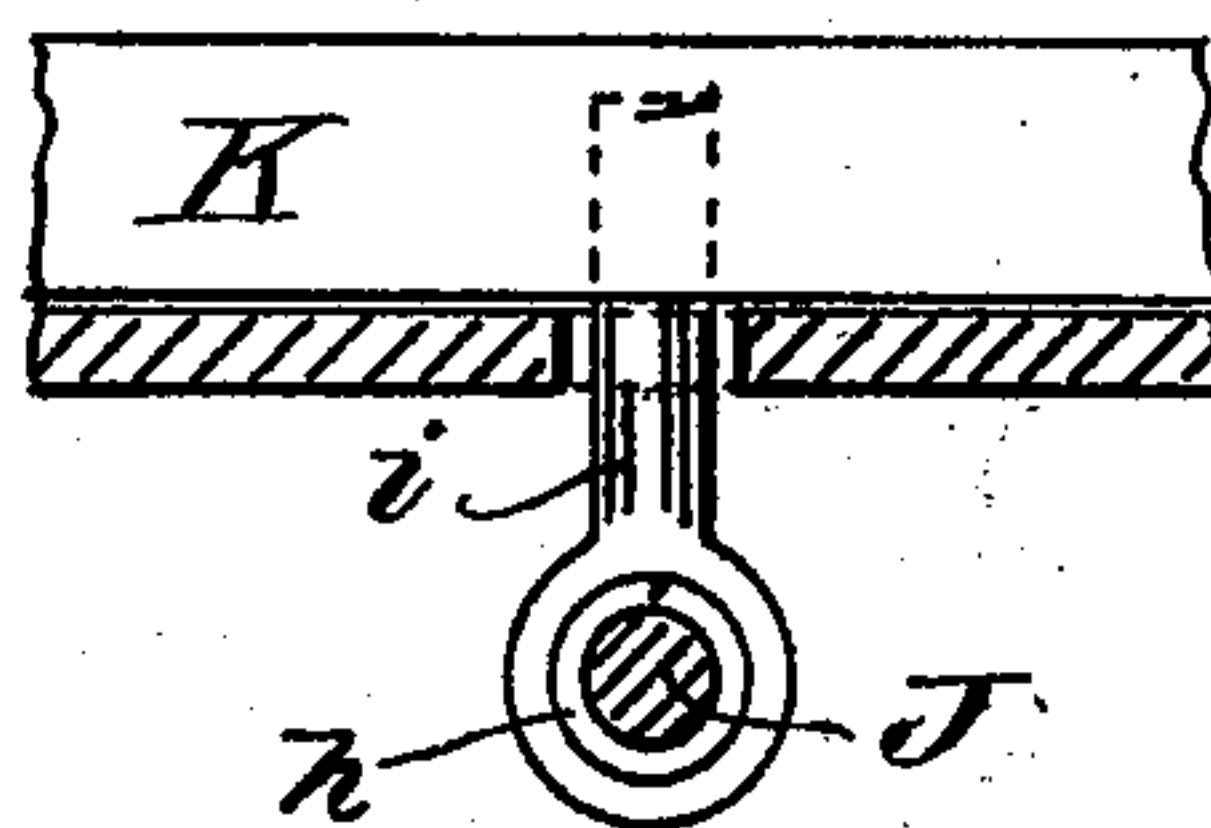


Fig. 14.



**WITNESSES:**

WITNESSES:  
John Emmaux  
Richard Speer

***INVENTOR***

INVENTOR  
A. C. McKenzie

BY

*N. L. Bennet*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ANDREW C. MCKENZIE, OF BROOKLYN, NEW YORK.

## AUTOMATIC SWITCH FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 539,232, dated May 14, 1895.

Application filed January 25, 1895. Serial No. 536,219. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW C. MCKENZIE, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Automatic Switches for Railroads, of which the following is a specification.

My invention relates to improvements in an automatic railroad switch and operating device, and the objects of my improvements are, first, to avoid the possibility of the operating arm coming in contact with the pavement or ground, caused by the platform of a car assuming a lower level, either by the oscillation of the car while in motion or by the variable loads, and, second, to allow for easily adjusting the draw bar connected with the tongue of the switch, and to avoid the liability of disarranging or damaging the entire apparatus by a pebble or other substance obstructing movement of the switch. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a section through the platform of a car, showing the attachment in position for engagement with the switch. Fig. 2 is an elevation of the lower part of the attachment in an elevated position when not in use. Fig. 3 is an enlarged side elevation of the guide-wheel and arm. Fig. 4 is an end elevation of the guide-wheel with the arm broken away. Fig. 5 is a section through the rod, showing a plan of the arm and guide-wheel. Fig. 6 is a section through the rod, giving a plan of the under side of a stop employed. Fig. 7 is a plan of the platform-collar, showing a section of the rod. Fig. 8 is a section through the platform-collar, showing the portion of the rod with the projecting rib in place when the apparatus is in an elevated position. Fig. 9 is a section through the platform-collar, showing the portion of the rod with the projecting rib in the groove when the apparatus is in position to act upon the switch. Fig. 10 is a plan view of a switch, showing guide-wheel and arm about to operate the same. Fig. 11 is a cross-section through the switch and bed-plate, showing the car attachment in position to act upon the same. Fig. 12 is a horizontal section of the bed-plate, showing a plan of the draw-bar. Fig. 13 is a cross-section through

the bed-plate, showing the connection of the shoe with the draw-bar. Fig. 14 is a section of the draw-bar, showing an elevation of the bolt connecting same to the tongue of the switch.

Referring by letter to the drawings, A designates a switch rod extended through the car platform and provided at its upper end with a suitable handle, by means of which it may be rotated. The lower end of the switch rod is provided with a forwardly projecting switch arm B, which extends to a point, or in other words, is wedge shaped.

The rod A, passes loosely through a collar F, secured to the upper side of the platform and at one side of its inner periphery this collar F, is provided with two slots  $d$ ,  $d'$  through which a rib G, on the rod A, may pass when it is desired to lower the rod.

It will be seen that the slots  $d$   $d'$  are on opposite sides of the center for a purpose as will hereinafter appear.

Obviously when it is desired to support the rod A, in its upward position it may be turned so that the end of the rib will rest upon the collar or in a notch  $e$  therein.

C, is a guide wheel supported by the switch rod A, by means of a yoke D, which has a collar  $d^2$  loosely surrounding the switch rod, so that said rod may rotate therein. To prevent too great a relative movement between the collar  $d^2$  and the switch rod, I provide the collar  $d^2$  with a stop in the form of a lug  $a$  which passes into a segmental cut away portion forming shoulders  $d^3$  on a stop collar E, adjustably secured to the switch rod by means of a set screw  $c$ . The cut away portion in the collar E, is sufficiently long to allow the switch arm to be turned to the right or left, as occasion may require.

By employing the guide wheel to run on the ground or road bed, I provide means for automatically adjusting the arm B, to a proper level to engage a shoe H, notwithstanding the deviation in a car level, and avoid liability to damage by the arm coming in contact with the ground, resulting from varying loads or other causes.

H, is an upwardly projecting shoe or lug, movable laterally on a bed plate H' and having connection with the switch tongue K. This connection is made through the medium



of a bolt or bolts  $a'$  passing through a slot  $a^2$  in the bed plate, a downwardly extending plate  $f$ , with which said bolts  $a'$  engage, a draw bar J, extended from the plate  $f$ , and a pin  $i$  depending from the switch tongue and engaging around the draw bar. These parts it will be seen are located in a boxing  $H^2$  beneath the bed plate and switch tongue.

To overcome a possible difference of travel between the shoe and switch tongue, I pass the bar J, loosely through a hole in the plate  $f$ , and at each side of the plate stops  $g$  are attached to the bar. These stops are shown in the form of nuts engaging with a thread on the bar and it is evident they may be adjusted to provide for any lost motion. The bar J, passes loosely through a hole in the pin  $i$  and coiled springs  $h$ , at opposite sides of the pin about at their outer ends against collars  $j$ , made in the form of nuts engaging with a thread on the bar so as to be adjustable thereon. These springs  $h$  provide yielding abutments and are designed to prevent damage to the working parts should the switch tongue be obstructed in any manner such for instance as by a stone between the tongue and frog. The outer end of the bar J, is supported by a bracket  $h'$  extended from the boxing.

From the foregoing description it is obvious that a switch tongue may be swung in either direction by turning the arm B, to engage with either one side or the other of the shoe.

Having described my invention, what I claim is—

1. A switch operating mechanism carried by a car, comprising a switch rod extended through a car platform, a switch shoe on the lower end of said rod, a guide wheel having bearings in a yoke provided with a collar loosely surrounding the switch rod, a lug extending upward from said collar, and a collar having a segmentally cut away portion into which said lug, extends and means for secur-

ing said last named collar as adjusted on the switch rod, substantially as specified.

2. The combination with a car, of a switch rod carried thereby and movable relatively thereto, a switch arm on the lower end of said rod, a guide wheel wholly supported by the switch rod and having connections with the rod whereby there may be a rotary movement of the wheel relatively to the axis of the rod, and a stop to control the extent of the rotary movement consisting of a collar having shoulders and adjustably mounted on the switch rod, substantially as specified.

3. The combination with a switch tongue, of a switch shoe, and a yielding connection between said shoe and switch tongue having a lost motion construction, substantially as specified.

4. The combination with a switch tongue, of a switch shoe arranged at one side thereof, a horizontal movable draw bar—a lost motion connection between said switch tongue and shoe a connection between the bar and switch tongue, and yielding abutments for said connection between the shoe and switch tongue, substantially as specified.

5. The combination with a switch tongue and the shoe at one side thereof, of a draw bar, an adjustable lost motion connection between the shoe and bar, a pin extended from the switch tongue and through which the draw bar loosely passes, a spring at each side of said connection and adjustable stops for the outer ends of said springs, substantially as specified.

Signed at New York city, in the county of New York and State of New York, this 21st day of January, A. D. 1895.

A. C. MCKENZIE.

Witnesses:

JAS. E. WARNER,  
WM. A. HEYWOOD.