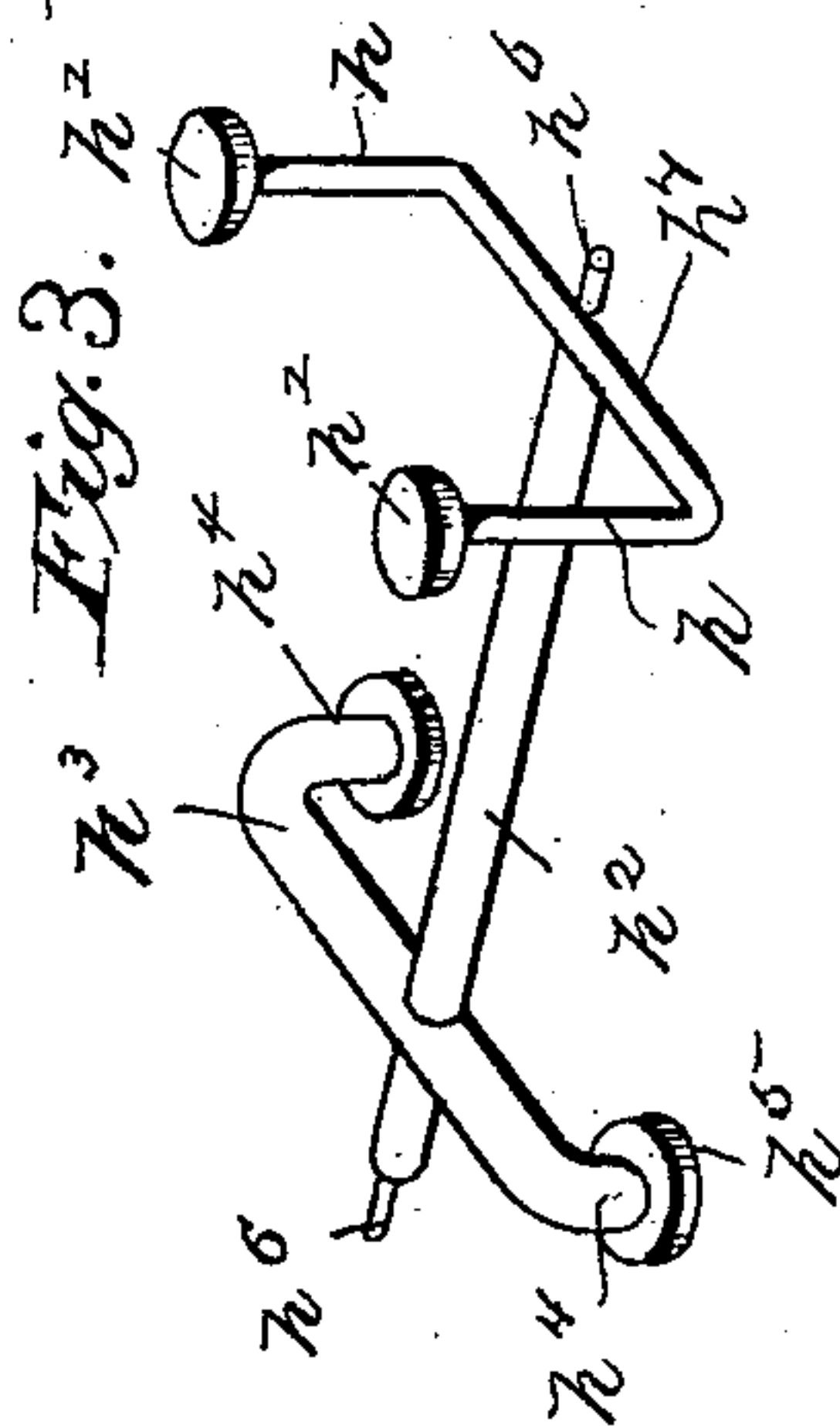
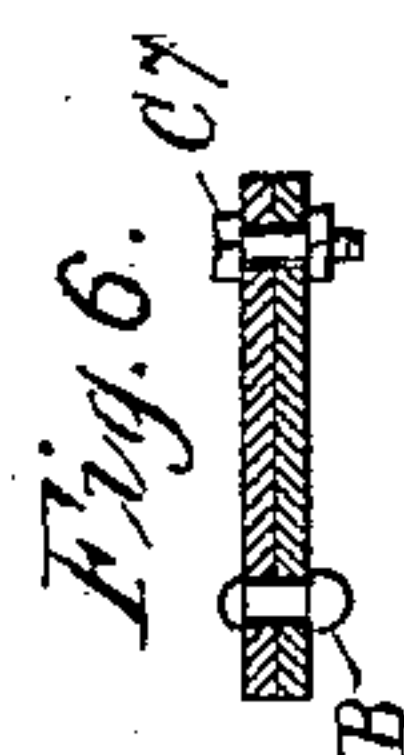
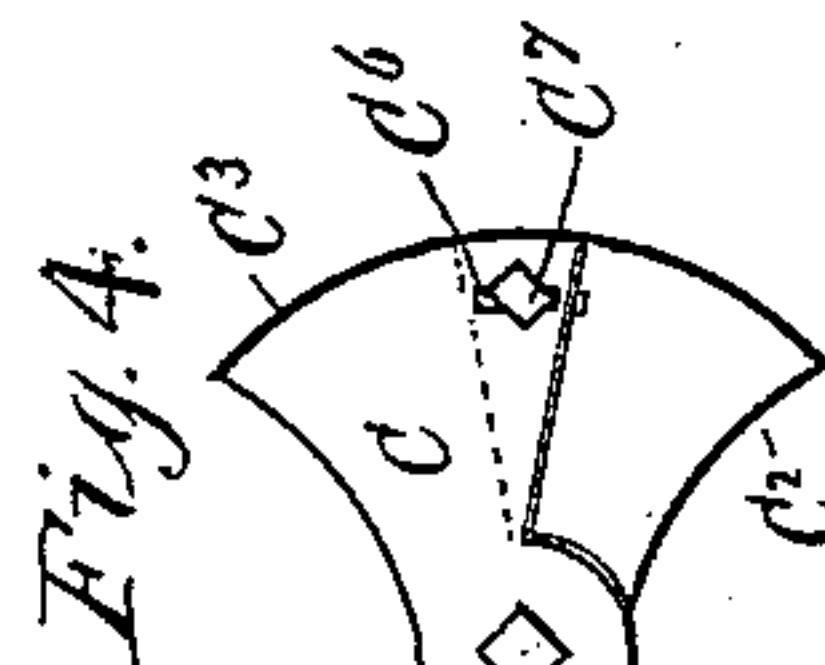
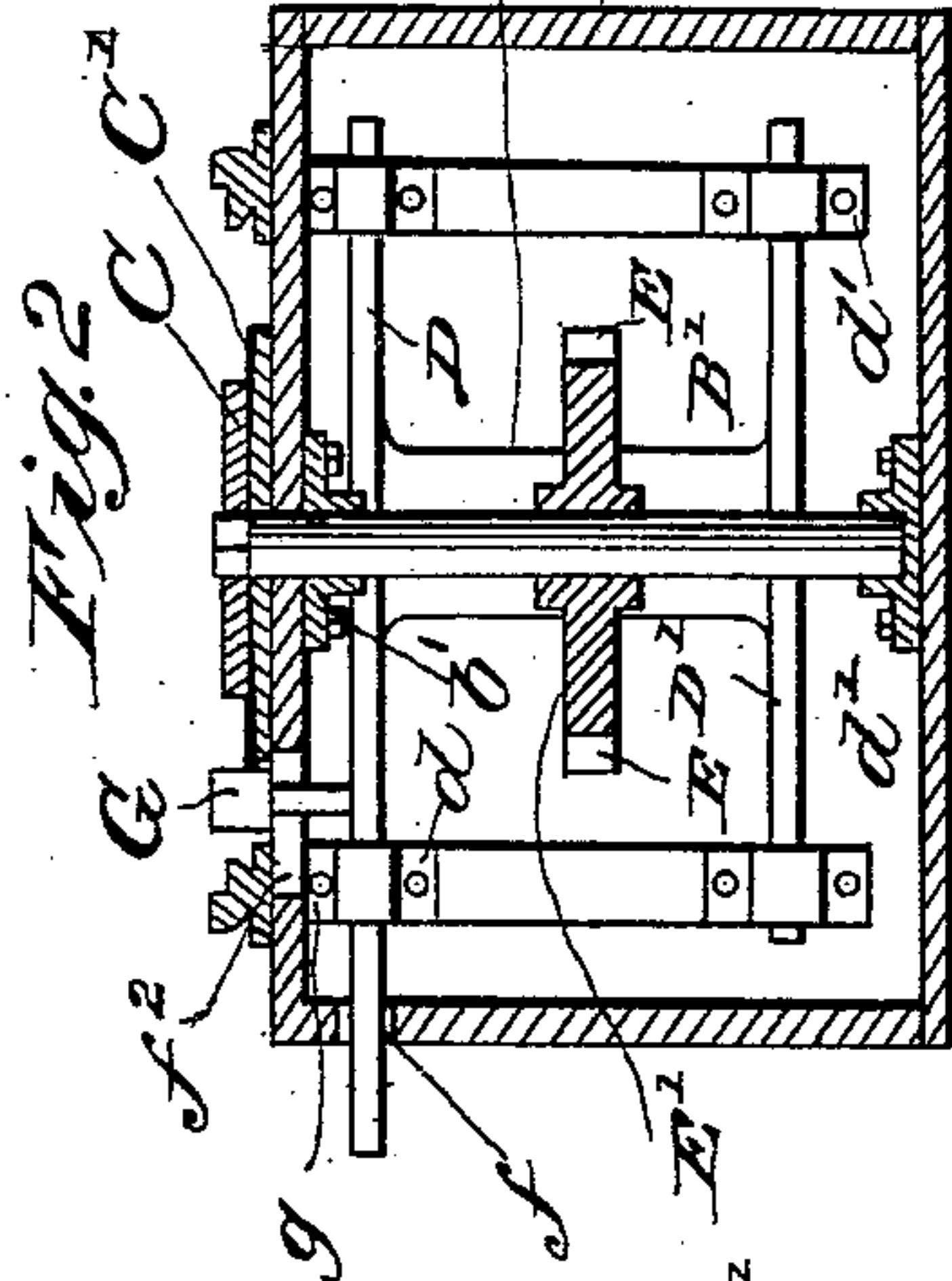


D. HOGAN & F. McMAHON.  
SWITCH FOR RAILWAYS.

Patented June 30, 1896.



W. B. Harris\_

*Inventors*  
*Demis Hogan*  
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*by Francis C. Bowen*  
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# UNITED STATES PATENT OFFICE.

DENIS HOGAN AND FRANK McMAHON, OF BROOKLYN, NEW YORK.

## SWITCH FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 563,176, dated June 30, 1896.

Application filed July 9, 1895. Serial No. 555,365. (No model.)

*To all whom it may concern:*

Be it known that we, DENIS HOGAN and FRANK McMAHON, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Switches for Railways, of which the following is a specification.

Our invention has relation to certain new and useful improvements in automatic switches for railways; and it consists in the construction and novel arrangement of parts, as hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

The object of our invention is to provide a simple and inexpensive device that may be readily attached to any switch, and by the employment of a suitably-constructed foot-press attached to the under side of the platform of a tramway-car or locomotive, whereby the motorman or engineer may easily and readily open or close the switch by bringing foot-pressure to bear upon the foot-press; further, to employ a series of rods running parallel with the rails, whereby the switch may be operated at a distance, as is often the case with trains of freight-cars where the locomotive is shoving the train instead of pulling or drawing the same; further, to provide a suitable and novel method to insure the positive working of the antifriction-rollers against the quadrant when rounding a curve.

In the accompanying drawings, Figure 1 represents a plan view of a section of track, showing part of our device in plan view located therein; Fig. 2, a cross-section of same on the line  $x x$ , Fig. 1; Fig. 3, a perspective view of the foot-press pedal. Figs. 4, 5, and 6 are views showing the quadrant C made in sections.

Referring to the accompanying drawings, wherein like letters of reference indicate corresponding parts in all the figures, A designates the main line of track, and A' designates the branch track, all of the usual well-known construction.

Located between the rails of the main line of track is a pit, within which is a suitable box or casing B.

B' designates an upright shaft supported

at its lower end in a bearing  $b$ , secured in the bottom of the box B, while the upper end of said shaft passes through a suitable bearing  $b'$  on the under side of the top of the box B, and has its extended end squared, upon which is secured a quadrant-shaped piece of metal C, and to permit of the easy turning of said quadrant a similar-shaped piece C' is secured by bolts or otherwise to the top of the box B, and which is inclined from the center outward to permit easy movement of the two parts.

D D' indicate two sliding bars or rods supported in suitable brackets  $d d'$ , secured to one end of the box B, and have made integral within them or secured in any desired manner a cross  $d^2$ , which carries near its central part and extending at right angles thereto a segmental gear E, which meshes with a like gear E', carried by the shaft B'. The rod D has one of its ends extended through an opening  $f$  in the side of the box B, and has such extended end flattened, as at  $f'$ , for a purpose presently explained.

Secured at a suitable point to the rod D, and extending up through a slot  $f^2$ , formed in the top of the box B, is an arm  $g$ , which is secured to the underside of the switch-tongue G, pivoted to the branch rails.

While we have shown and described the mechanism for working the switch-tongue located in a suitable ditch or boxing, it will be readily seen and understood that we may do away with the segmental gears and attach the quadrant direct to the switch-tongue. In that case we would also do away with the expense of the ditch and the rest of the confined mechanism.

H designates an improved foot pedal or presser, and consists of the two upwardly-extending arms  $h$ , carrying at their ends foot-pieces  $h'$ , which have connected to them by an intermediate bar or piece  $h^3$  a transverse piece  $h^2$ , having downwardly-extending bifurcated arms  $h^4$ , on which are journaled antifriction-rollers  $h^5$ .

In Fig. 1 we have shown the foot-pedal attached to so much of a car as will suffice to illustrate its application.

J J designate a series of rods secured in suitable fastenings and running parallel with the rails. At one end these rods are attached



to the flattened end of the rod D, and are designed to work the switch-tongue from a distance. A suitable weighted yoke K is employed whereby the switch may be held in an open or closed position.

The operation of our device is as follows, taken in connection with the above description and accompanying drawings: A car being on the main line of track and desiring to switch to the branch line, the engineer or motorman presses the right foot-piece  $h'$  and causes the roller  $h^5$  on that side to contact with the quadrant-plate C and turn the gears E E and force the rods D D' to the left, which causes the switch-tongue to close and allow the car to take the branch track.

Modifications may be made to our invention without departing from or sacrificing the advantages thereof.

In Figs. 6, 7, and 8 we have shown the quadrant C made in two sections  $C^2$  and  $C^3$ , formed into a lapped joint and having a radial slot  $C^6$  with a bolt inserted therein and secured together by a bolt  $C^7$ , so that the sections can be adjusted laterally, so as to compensate for any loss caused by a deflection of rod on the side of the track, thereby insuring certain engagement of the quadrant under all circumstances.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of switch-operating mechanism consisting essentially of an upright shaft B' segmental gear E', rack E, sliding rods D and D', and quadrant C for operating said shaft made in sections having the inner edges of said sections formed with a lapped joint and provided with means for adjusting said sections with relation to each other, with a switch-lock comprising a rod J having a crank connected with rod D, and extending longitudinally of the track and provided with a weighted yoke K, substantially as described.

2. In combination with a railway-switch a quadrant made in sections having their inner edges formed with a lapped joint and provided with means for their adjustment in relation to each other and also provided with means for retaining the sections in any desired position of adjustment, substantially as shown and described.

DENIS HOGAN.  
FRANK McMAHON.

Witnesses:

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FRANCIS C. BOWEN.