

No. 624,302.

Patented May 2, 1899.

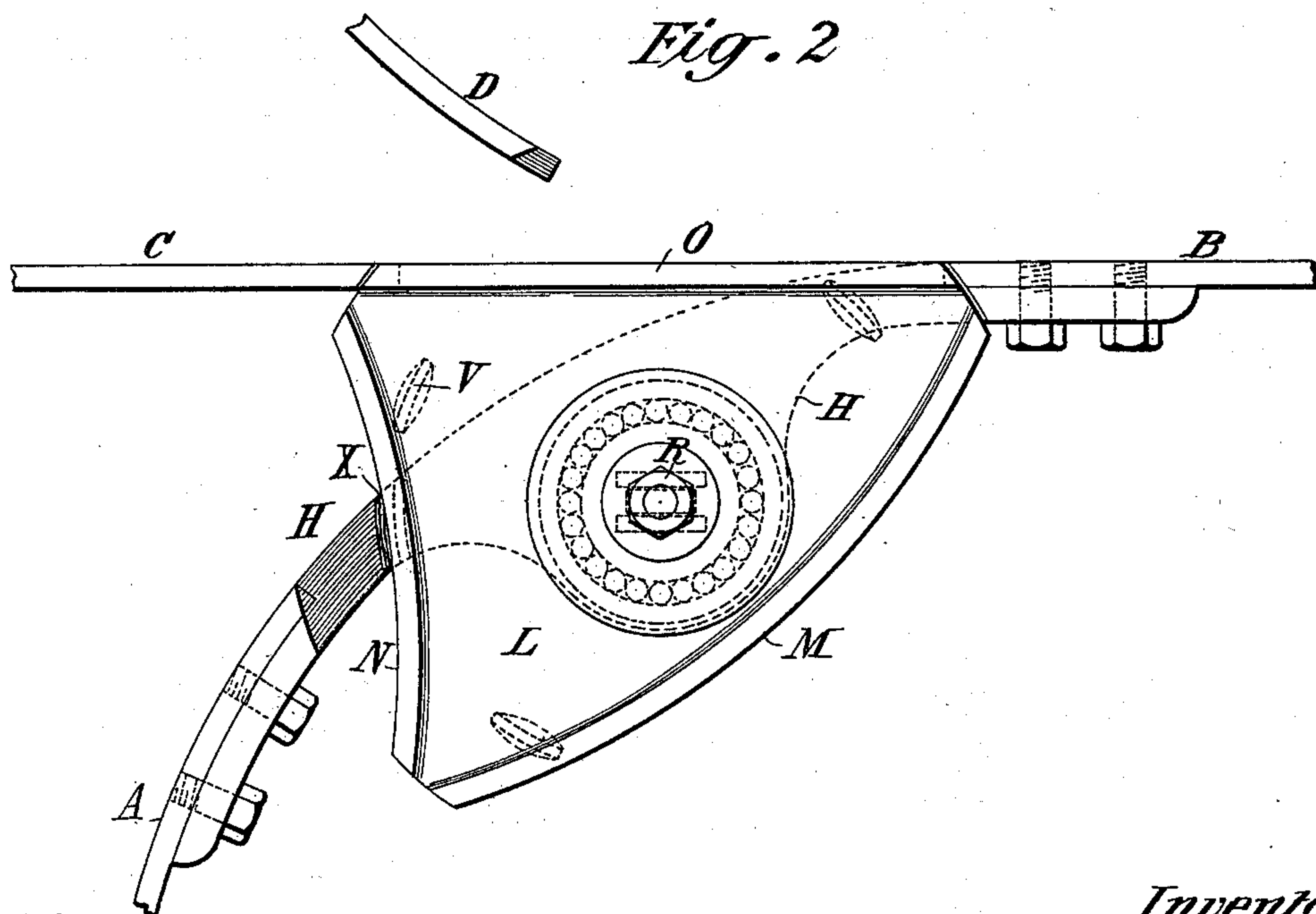
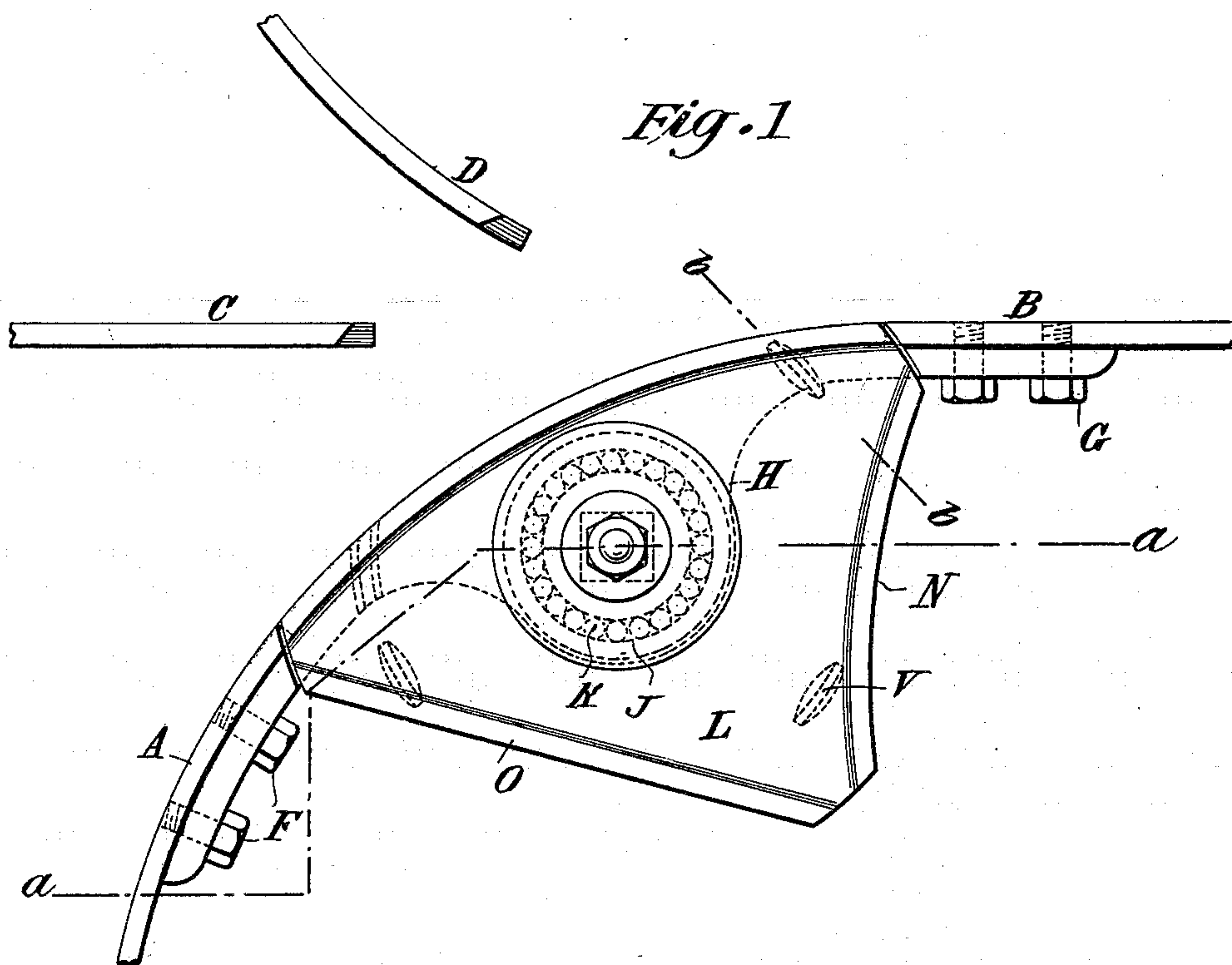
J. H. COOK.

OVERHEAD TRAMWAY SWITCH MECHANISM.

(Application filed Oct. 18, 1897. Renewed Apr. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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2 Sheets—Sheet 2.

Fig. 3

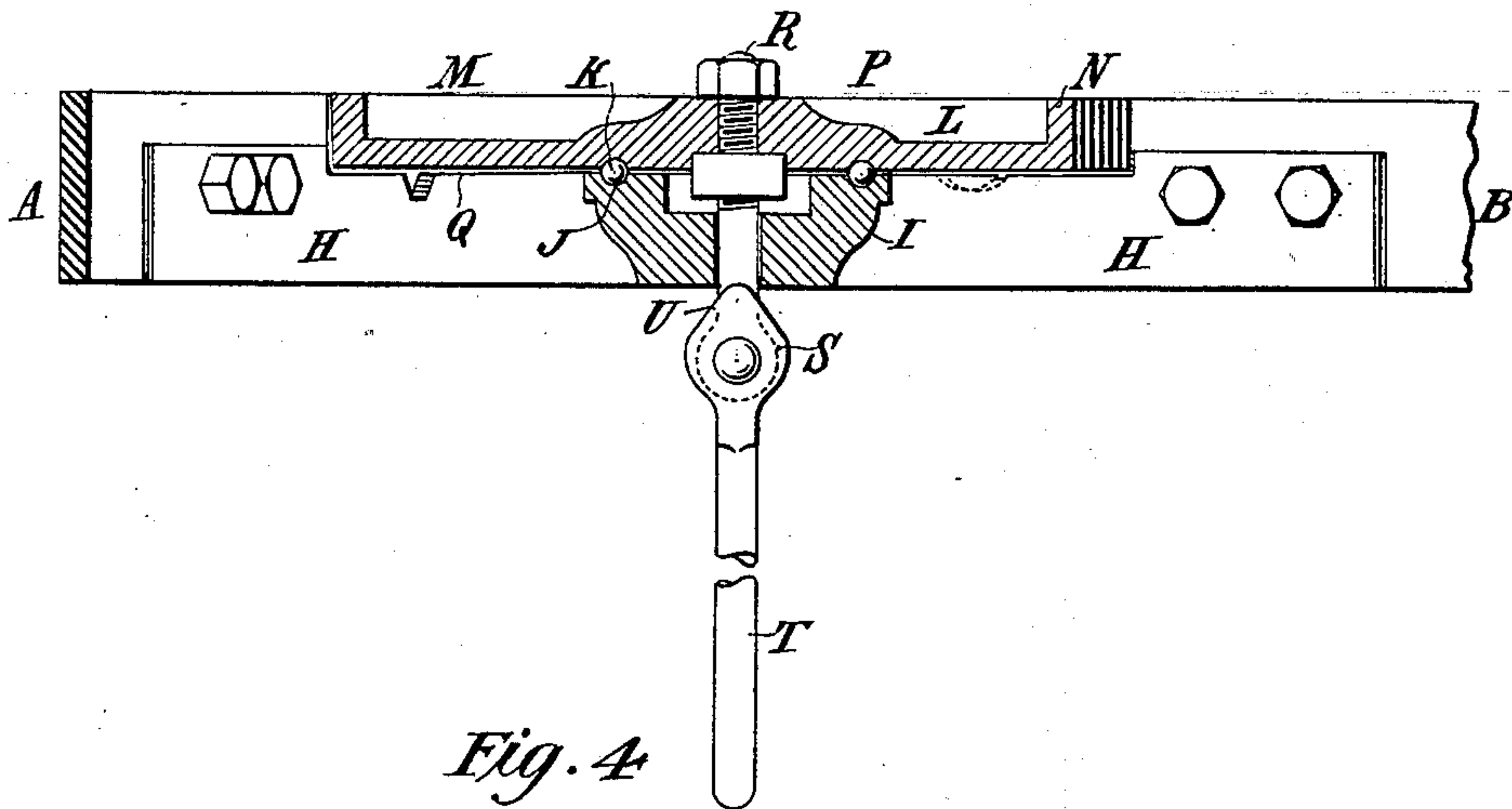


Fig. 4

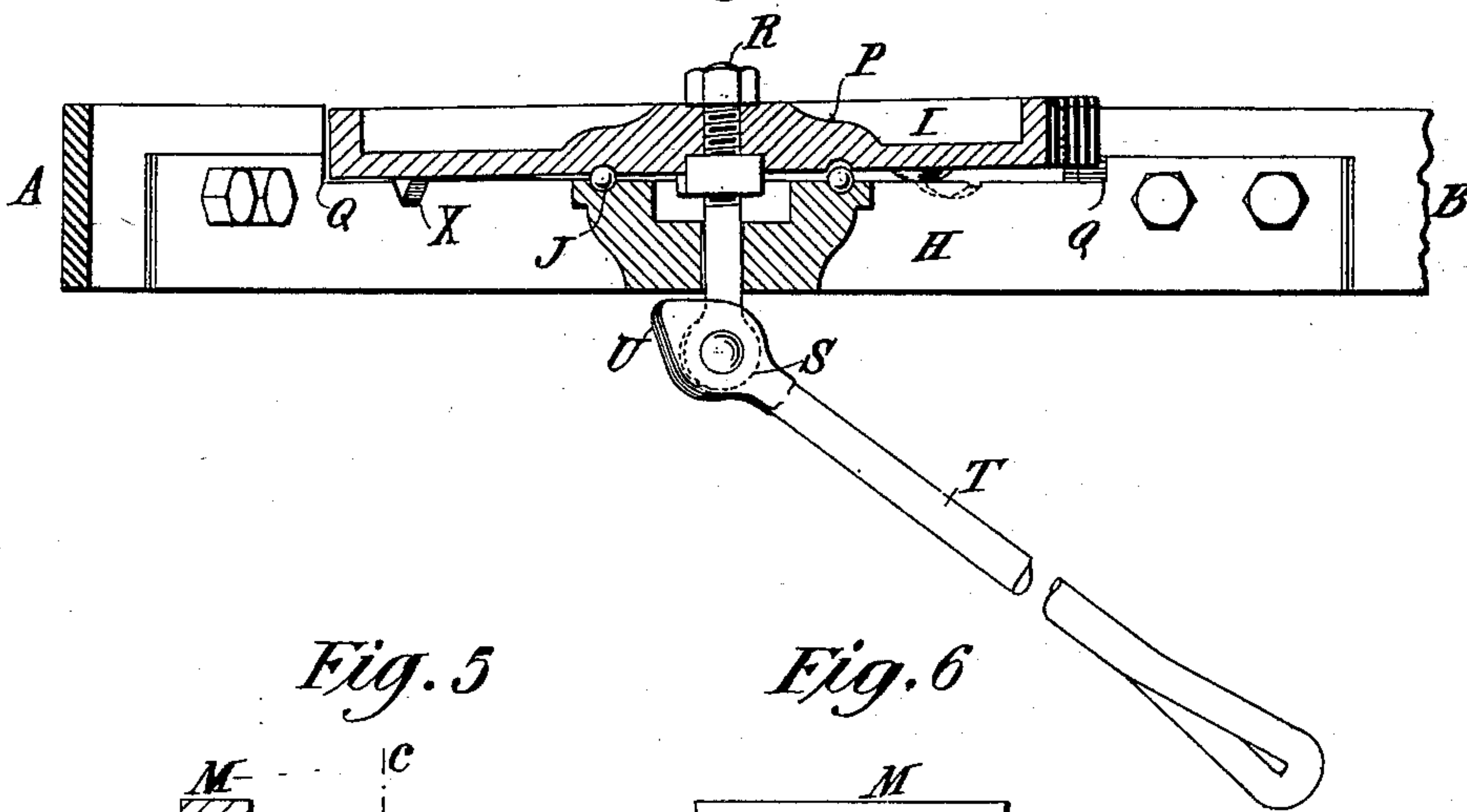


Fig. 5

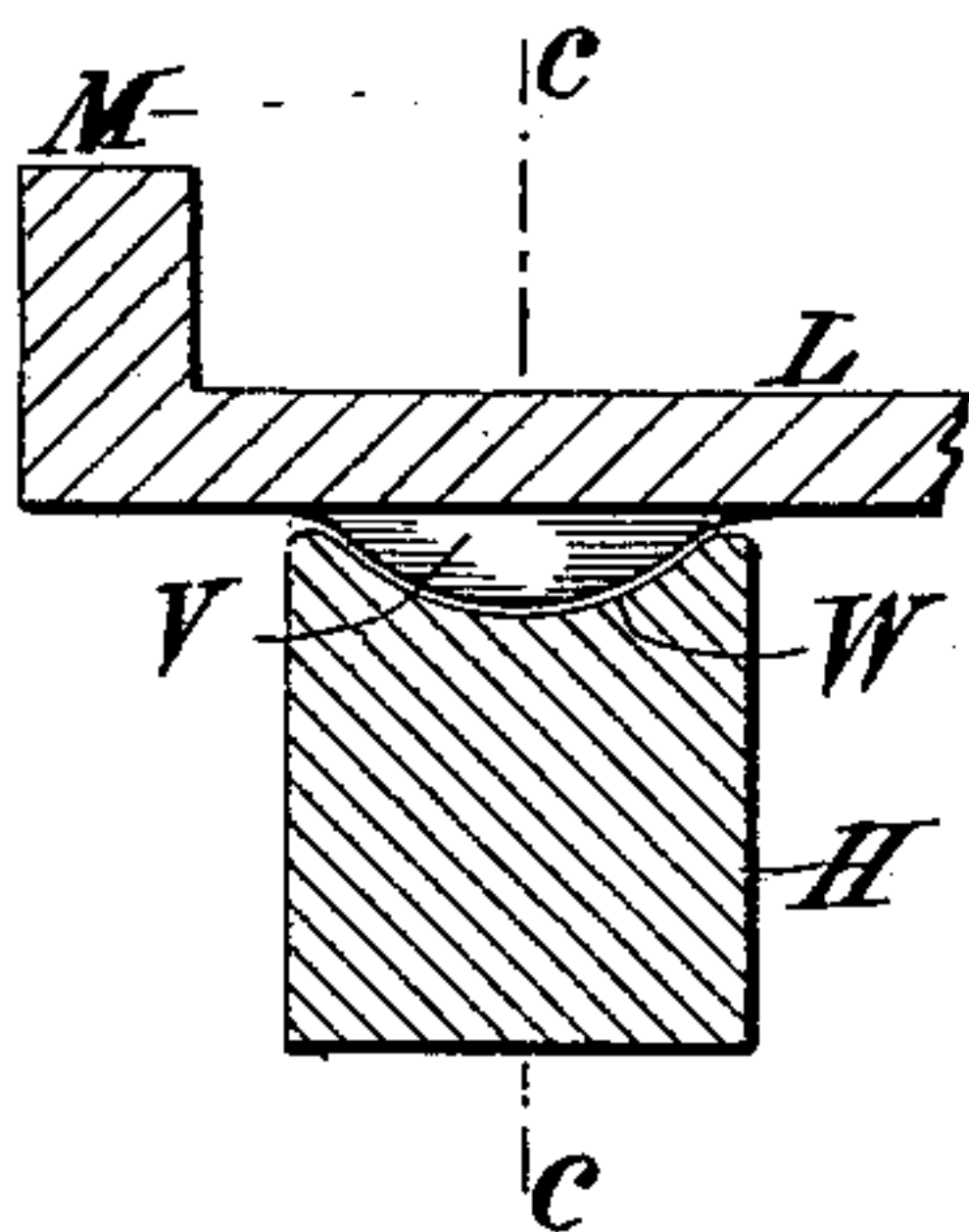
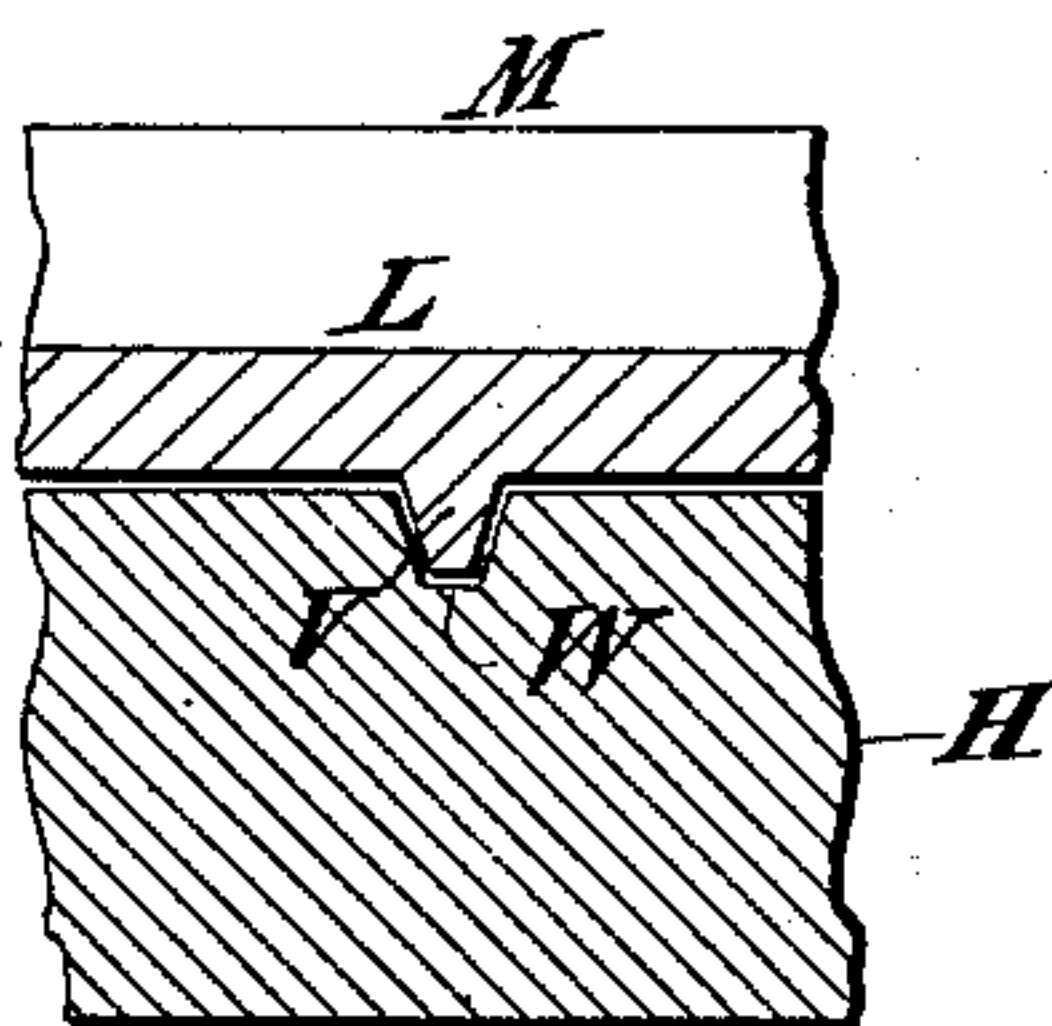


Fig. 6



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UNITED STATES PATENT OFFICE.

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OVERHEAD-TRAMWAY SWITCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 624,302, dated May 2, 1899.

Application filed October 18, 1897. Renewed April 7, 1899. Serial No. 712,352. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COOK, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented a certain new and useful Improvement in Overhead-Tramway Switch Mechanism, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The present invention relates to an improved construction of switches for tramways, especially of the kind such as are used in markets, factories, gun-emplacements, magazines, &c.; and the essential features of the invention relate to improved means for pivotally supporting and operating a horizontally-rotating switch-plate and to particular means for locking the same in various operative positions.

The essential features of the invention are explained in the following specification and will be particularly set forth in the claims thereof.

In the drawings accompanying this specification, Figure 1 is a plan view of a switch mechanism embodying my improvements shown as connecting two parts or sections of an overhead-tramway track. Fig. 2 is a similar view, but with the switch turned to connect the section of main track with a side-track section. Fig. 3 is a section on plane *a a* of Fig. 1, with the switch shown in locked position. Fig. 4 is a similar view with the switch shown in unlocked position and partly turned. Fig. 5 is an enlarged cross-section on the plane *b b* of Fig. 1. Fig. 6 is a similar section on plane *c c* of Fig. 5.

Referring to the views in detail, A and B represent sections or portions of what may be termed a "main" track, while C and D represent branch or side tracks. Fastened to the ends of the sections of the main track by nuts or bolts F and G is the bridge H or supporting-plate of the switch and which is provided with the hub I, annularly grooved in its upper face, as seen at J, which groove carries the antifriction-balls K.

L is the switch, which in this arrangement of two side tracks is of triangular outline and also is of plate-like construction, bearing on its

outer edges the upwardly-projecting flanges M N O, which constitute the switch-rails. This switch is provided with the hub P, the under face of which is grooved so as to register with the groove in the hub of the shoe and form therewith a circular annulus to contain the said antifriction-balls K. The switch-plate rests upon these balls, the bridge being cut away or recessed by the slot Q, so that when the switch is resting on the balls its switch-rails will register with the rail-sections of the main track or with one section of the main track and a section of one of the side tracks. Fixed to the hub of the switch is the axis-rod R, which passes loosely through the hub I of the shoe and just below the shoe is provided with the head S, on which is pivotally hung the switch operating and locking handle T, which handle is provided with the knuckles U, of formation such that when the handle is hanging suspended, as seen in Fig. 3, these knuckles will bear against the hub of the bridge and draw the switch to position shown in Fig. 3 and hold the same locked. Deflecting the handle laterally, as seen in Fig 4, will turn the knuckle from engagement with the hub of the bridge and free or unlock the switch, so that it may be turned, this handle in this latter position serving to readily turn the switch through its axis-rod R.

On the under face of the switch are cast three downwardly-projecting lugs or bosses V, angularly spaced in accordance with the relative arrangement of the switch-rail flanges and adapted when the switch is in operative position to rest in the depression or pocket W in the base-plate or shoe of the switch. These bosses, as also the depression W, are rounded or beveled in their direction of movement, as shown, so as to readily glide into and out of and register with said pocket, they serving mainly to indicate by their entering said pocket that the switch is in position where one of its rails registers with two of the track-rails, though they also assist in holding the switch in such position.

X is a groove cut in the upper face of the bridge to permit the bosses to freely pass through the same without raising the edge of the plate on that side.

The antifriction-balls employed by me as a

support for the switch have a special action independently of assisting the switch to turn easily, which is that of materially assisting as fulcrum points or bearings on which to lift or tilt the plate, so that the boss then in the pocket in the bridge will easily ride out of or be cleared from such pocket and the switch be not bound or held at its axis. At the time the switch is to be turned the right-hand edge is slightly raised (less in proportion in the actual apparatus than is illustrated in the drawings) and so is tilted or rocked on the antifriction-balls on the opposite side of its axis, as seen in Fig. 4, and then as the plate is rotated to its next position, and the boss having passed the bridge, it drops upon and turns or rotates on all the antifriction-balls, the plate being supported by the balls both when horizontally rotating and when tilted or rocked vertically. Were these balls not present, the effort necessary to thus readjust a heavy switch of this character would be greatly increased.

I am aware that friction-balls for journal-bearings are old in many different mechanisms; but I am not aware of their use in a switch mechanism of this kind where they are depended upon to act as above described.

What is claimed as new is—

1. In combination with three or more track-sections, a switch-support, a switch-plate arranged between said sections so as to connect separate pairs thereof, an axis-rod fixed to the plate and passing through and pivotally

mounting the plate on said support, beveled lugs on the said plate arranged to enter a corresponding pocket in the support, and mechanism attached to said rod and acting to tilt the plate to clear the engaging lug and to rotate the plate, substantially as and for the purpose set forth.

2. In combination with three or more track-sections, a switch-plate pivotally supported relatively to said track-sections so as to connect separate pairs thereof together, a support for said plate carrying antifriction-balls upon which the plate rests, beveled lugs on said plate adapted to enter a corresponding pocket in the support, and mechanism acting to tilt the plate on said balls to free the engaging lug and to rotate the plate on the balls.

3. In combination with three or more track-sections, a switch-plate pivotally supported relatively to said track-sections so as to connect separate pairs thereof together, a support for said plate carrying antifriction-balls upon which the plate rests, beveled lugs on said plate entering a corresponding pocket in the support, a depending and laterally-movable handle attached to the plate and adapted when deflected to rotate the plate and acting when in vertical position to hold the same locked on its support.

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Witnesses:

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