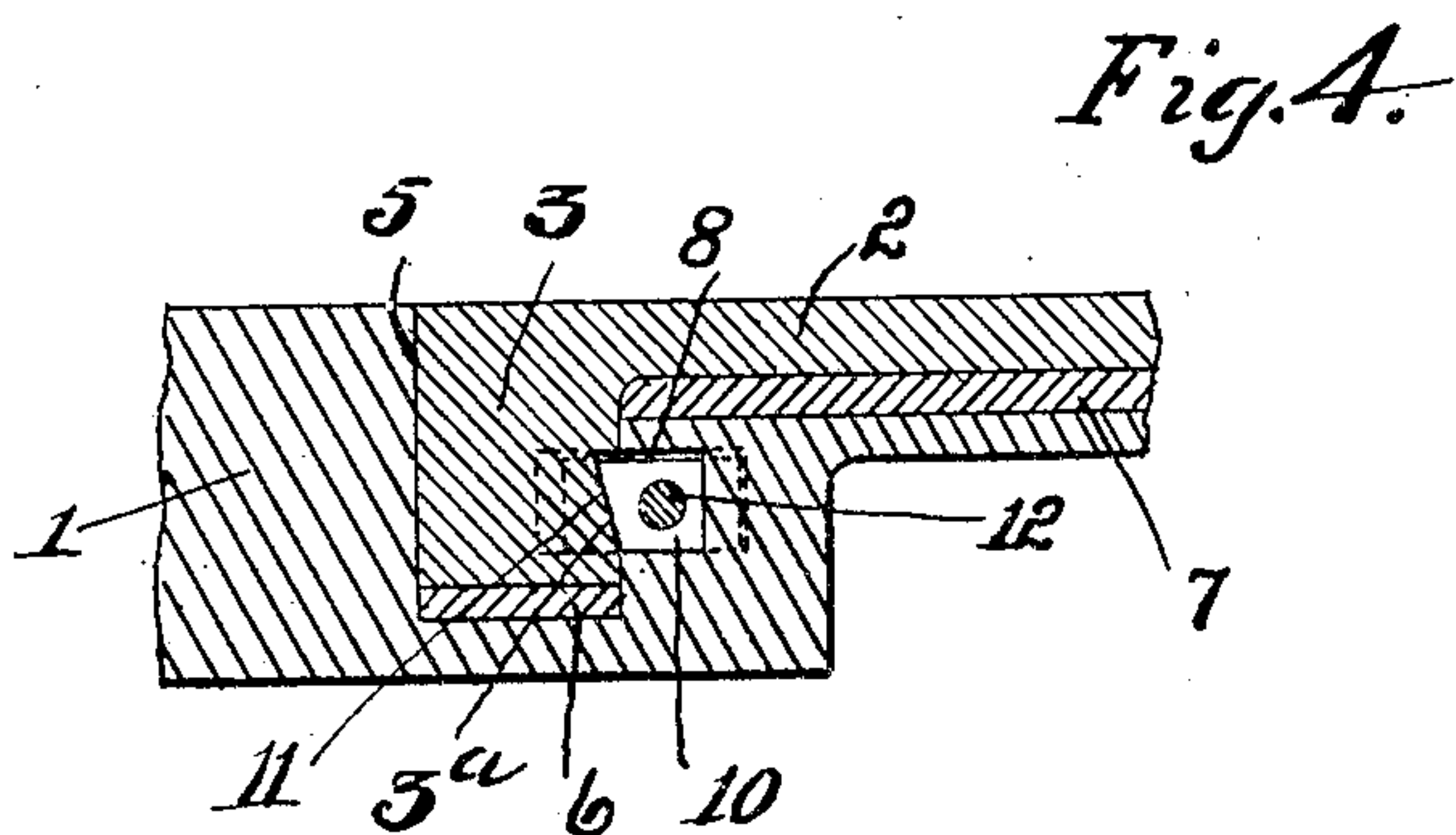
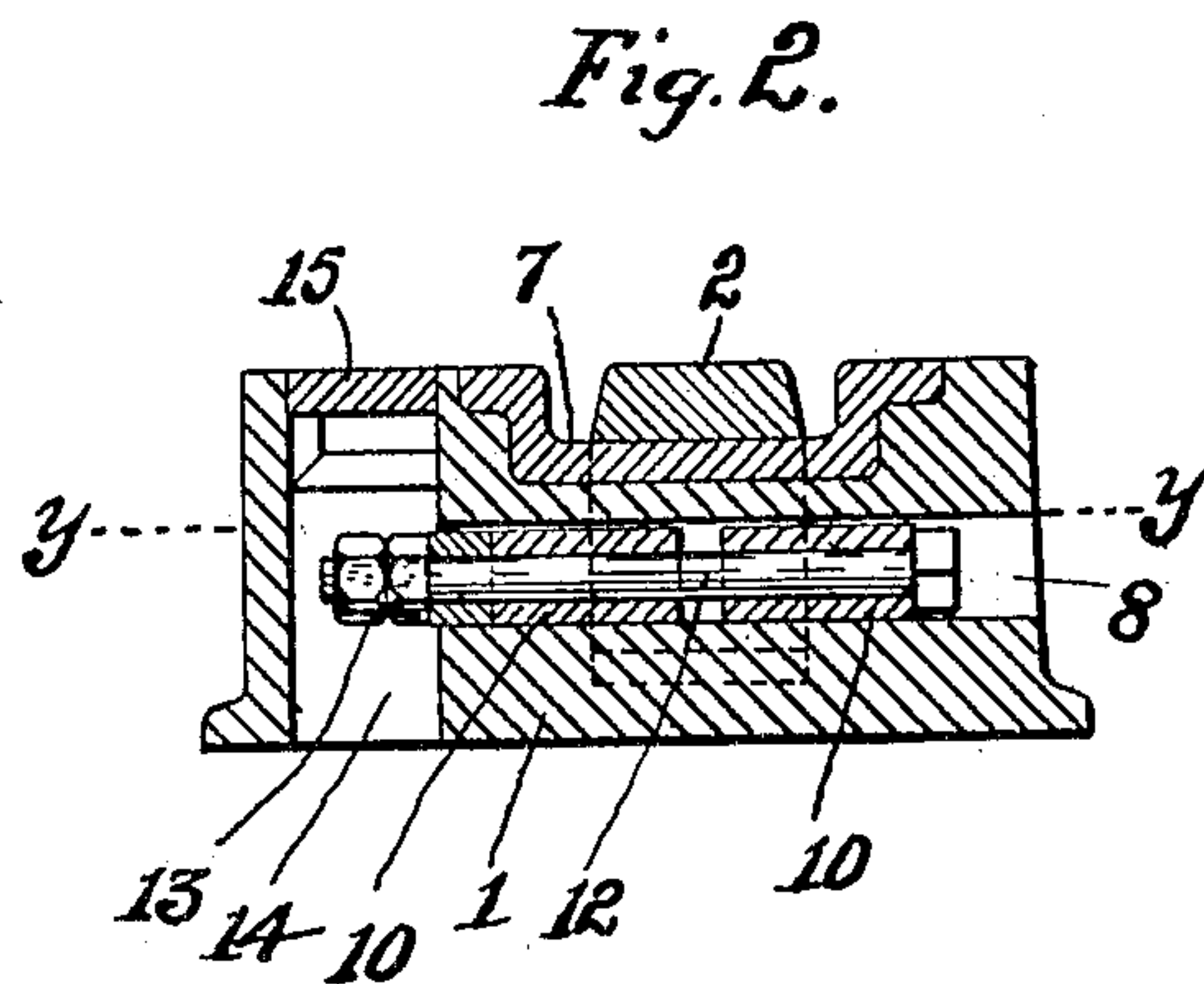
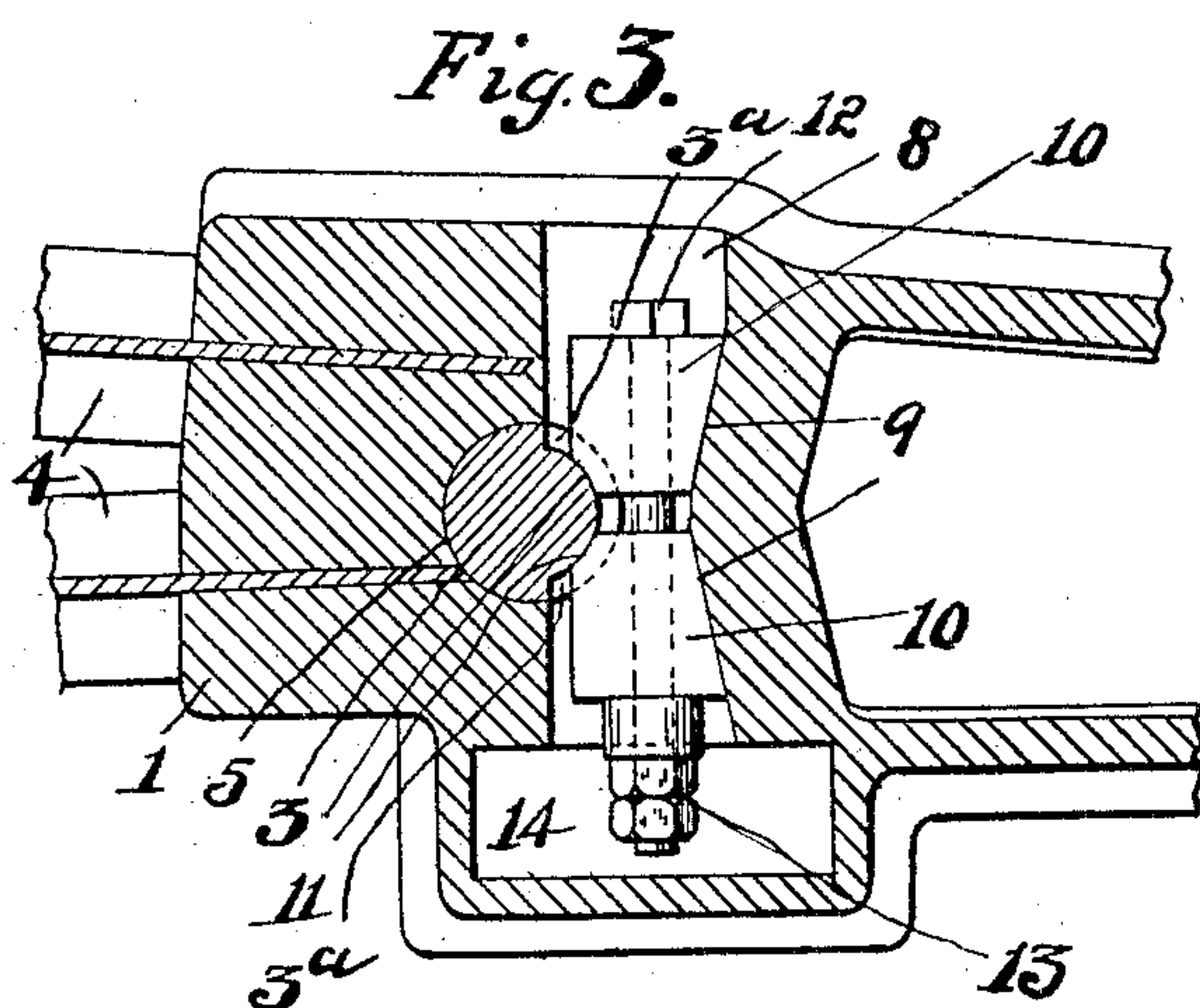
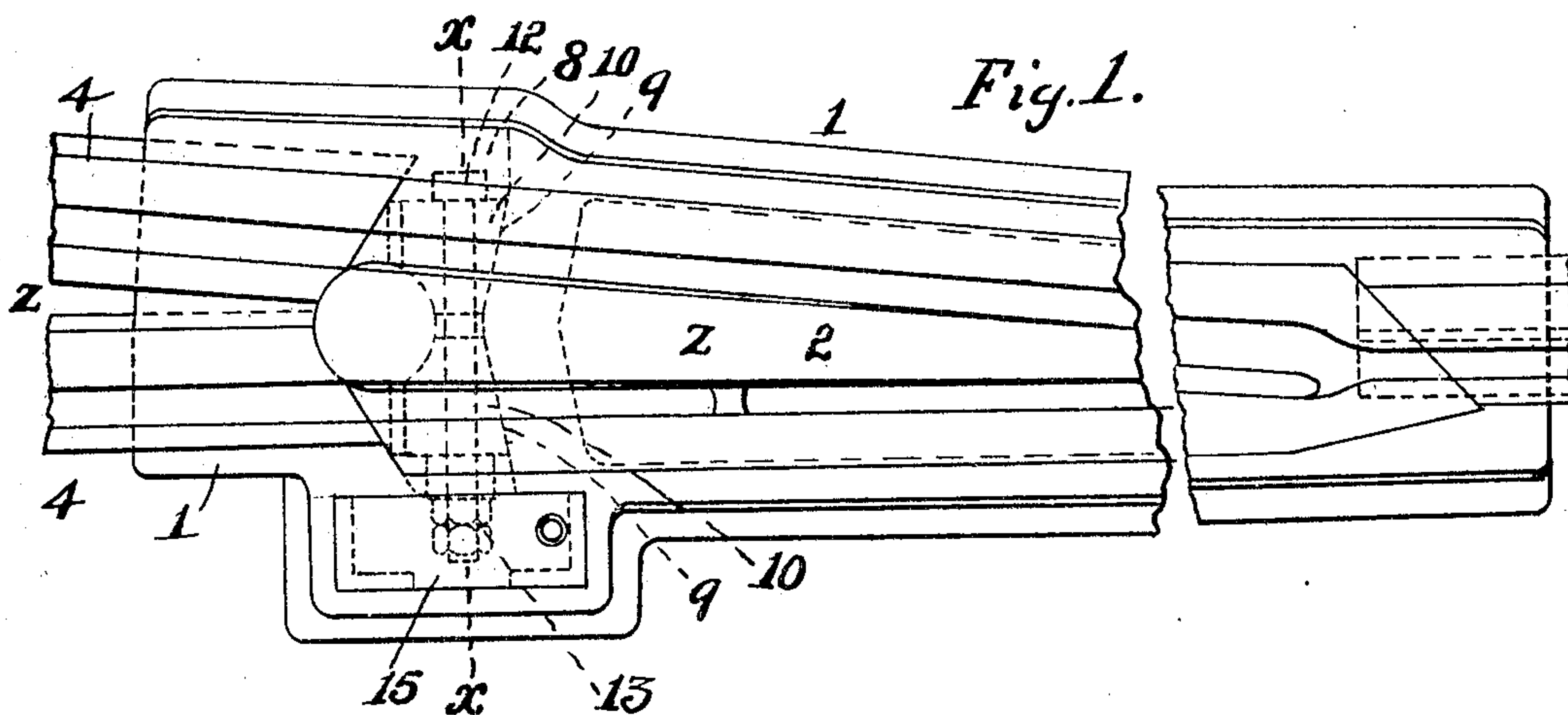


No. 869,580.

PATENTED OCT. 29, 1907.

E. LEWIS.
TONGUE SWITCH.

APPLICATION FILED MAY 20, 1905.



WITNESSES:

Walter C. Pusey
Edward Stern

INVENTOR:
Edward Lewis,
BY
Joshua Pusey.
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWARD LEWIS, OF STEELTON, PENNSYLVANIA, ASSIGNOR TO THE PENNSYLVANIA STEEL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TONGUE-SWITCH.

No. 869,580.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed May 20, 1905. Serial No. 261,428.

To all whom it may concern:

Be it known that I, EDWARD LEWIS, a citizen of the United States, and a resident of Steelton, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Tongue-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view; Fig. 2, a section on line $x-x$, Fig. 1; Fig. 3, a section on line $y-y$, Fig. 2; and Fig. 4, a section on line $z-z$, Fig. 1.

This invention relates to tongue switches for street railways, and its object is to provide a switch of this kind in which the pivoted tongue is prevented from tilting up at the point, and the wear of the pivot pin is minimized, and such wear as may take place may be readily taken up, and liability of the tongue getting loose is obviated.

The precise nature of the invention will clearly appear from the following description.

In the drawings, 1, is the base or body of the switch; 2, the tongue pivoted thereto by a pin, 3; and 4, the usual track-rails, whose convergent ends are entered into and secured in recesses in the end of the body, 1.

In carrying out my invention, I make the pin, 3, of a diameter about equal to, or somewhat greater than, the width of the tongue on the line of the said pin, the base of the latter being in a plane at right angles to its sides, and the outer side or back or heel of the pin extending to the plane of the top of the tongue, as seen in Fig. 4.

The heel end of the body of the switch is provided with a socket, 5, whose diameter and depth are substantially equal respectively to the diameter and length of the pin, 3, so that when the latter is in said socket, its base will rest upon the bottom wall of the latter, as in Fig. 4. I usually, however, insert in the socket, to constitute the bottom thereof, a removable disk, 6, of steel or other hard metal. The under side of the tongue rests upon or is closely adjacent to the floor, 7, of the switch.

In the base of the switch, adjacent the socket, 5, is a transverse recess, 8, open at both ends, into which recess a portion (about one half its diameter) of the pin, 3, projects, as more clearly seen in Fig. 3. A part of the wall of said recess in front of the socket, 5, is formed to provide faces, 9, inclined from the middle in opposite directions, as seen in Fig. 3, and indicated by dotted lines in Fig. 1. Within said recess are inserted two blocks, 10, having inclined sides contacting with the inclined faces, 9, respectively, and having each also curved faces, 11, adapted to fit and bear against the periphery of the pin, 3, as more clearly seen in Fig. 3. 12 is a bolt that extends through holes in the

said blocks, 10. The projecting end of this bolt is screw-threaded and has a nut, 13, thereon. There is a recess, 14, into which the said bolt extends, which recess is open at the top. By means of a suitable wrench passed into said recess, 14, the nut, 13, may be turned as may be required. By screwing up the same, the blocks, 10, will be drawn towards each other, and their inclined sides, riding upon the inclined faces, 9, of the wall of recess, 8, will obviously cause the blocks to tend to force the pin, 3, backwardly, and thus any lost motion that may result from wear of the pin or its socket may be readily taken up.

Preferably, I make the part or side (3^a) of the pin, against which the rounded faces, 11, of the blocks, 10, bear, tapering upwardly, as seen in Fig. 4, and also in Fig. 3; and said faces, 11, are correspondingly tapered, as also seen in Fig. 4. By this construction, any liability of the tongue rising is obviated, and the tendency of the blocks when drawn towards each other by the bolt, 12, is to force the pin down on its seat in the socket, 5.

In order to prevent rolling of the tongue by the passage of the wheels of cars over the same, I make the sides of the tongue tapering upwardly, so that the under or bearing surface of the tongue will be broader than the upper surface thereof, as seen in Fig. 2.

It will be seen that, by reason of the pin having a large diameter, fitting a corresponding socket, and thus having a broad bearing, as described, and the rear or heel end of the pin extending up to the upper line of the top of the tongue and the line of the top of the base of the switch (or rather the line of the tops of the track-rails fitted and secured to said base) which lines are in the same plane, tilting of the tongue is prevented; and, by means of the blocks, 10, and bolt, 12, lost motion between the pin and sides of the socket may be taken up.

When necessary, that is, in case the hard metal disk, 6, becomes unduly worn, it may be removed and a similar one of suitable thickness may be substituted.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a tongue-switch, the combination of the base having the socket therein, the tongue having the pivot pin of diameter as great as the heel end of the tongue, the rear side of said pin being in the same plane as the heel end of the tongue, together with means for taking up lost motion of said pin, substantially as set forth.

2. In a tongue-switch, the combination of the base having the socket therein, the removable hard-metal disk in the bottom of said socket, the tongue having the pivot pin of diameter as great as the heel end of the tongue and the rear side of the said pin being in the same plane as the heel end of the tongue, said pin having a bottom bearing on said disk, together with means for taking up lost motion of said pin in said socket, substantially as set forth.

3. In a tongue switch, the combination of the base having the socket therein, the tongue having the pivot pin entered into said socket, and means for taking up lost motion of said pin, comprising separate blocks within a recess in said base, one side of each of which blocks is adapted to fit against the side of said pivot-pin and the opposite side of which blocks are provided with inclined faces correspondingly engaging inclined sides of the wall of said recess, together with means for operating said blocks, substantially as set forth.
4. In a tongue-switch, the combination of the base, having the vertical socket and the lateral recess communicating therewith, the tongue having the pin entered into said socket, the blocks having the faces corresponding with and contacting with the adjacent face of said pin, means for adjusting said blocks to take up lost motion of said pin, together with means for preventing vertical displacement of said pin in its socket, substantially as set forth.
5. In a tongue-switch, the combination of the base, having the vertical socket and the lateral recess communicating therewith, the tongue having the pin entered into said socket, said pin having the face adjacent said recess tapered, the blocks having the faces corresponding with and contacting with said tapered face of the pin, and means for adjusting said blocks to take up lost motion of said pin, substantially as set forth.
6. In a tongue-switch, the combination of the base, having the vertical socket and the lateral recess communicating therewith, the tongue having the pin entered into said socket, the blocks having the faces corresponding with and contacting with the adjacent face of said pin, the opposite faces of said blocks contacting with inclined

inwardly convergent faces of the inner walls of said recess, together with the bolt passing through and connecting said blocks and the nut on one end of said bolt, substantially as and for the purpose set forth.

7. In a tongue-switch, the combination of the base, having the socket and the lateral recess communicating therewith, the tongue having the pin entered into said socket, the blocks within said recess and having the faces corresponding with and contacting with the adjacent face of said pin, said blocks and pin having inter-engaging parts to prevent vertical displacement of said pin, together with means for adjusting said blocks to take up lost motion of said pin, substantially as set forth.

8. In a tongue-switch, the combination of the base, having the vertical socket and the lateral recess communicating therewith, the tongue having the pin entered into said socket, the blocks in said recess and having the faces corresponding with and contacting with the adjacent face of said pin, the opposite faces of said blocks contacting with inclined inwardly convergent walls of said recess, the bolt passing through and connecting said blocks there being a recess in said base communicating with said lateral recess and to which access may be had from the top, and into which said recess one end of said bolt extends, together with the nut on said end of said bolt, substantially as set forth.

In testimony whereof, I have hereunto affixed my signature.

EDWARD LEWIS.

Witnesses:

A. B. SMITH,
WM. E. WINKS.