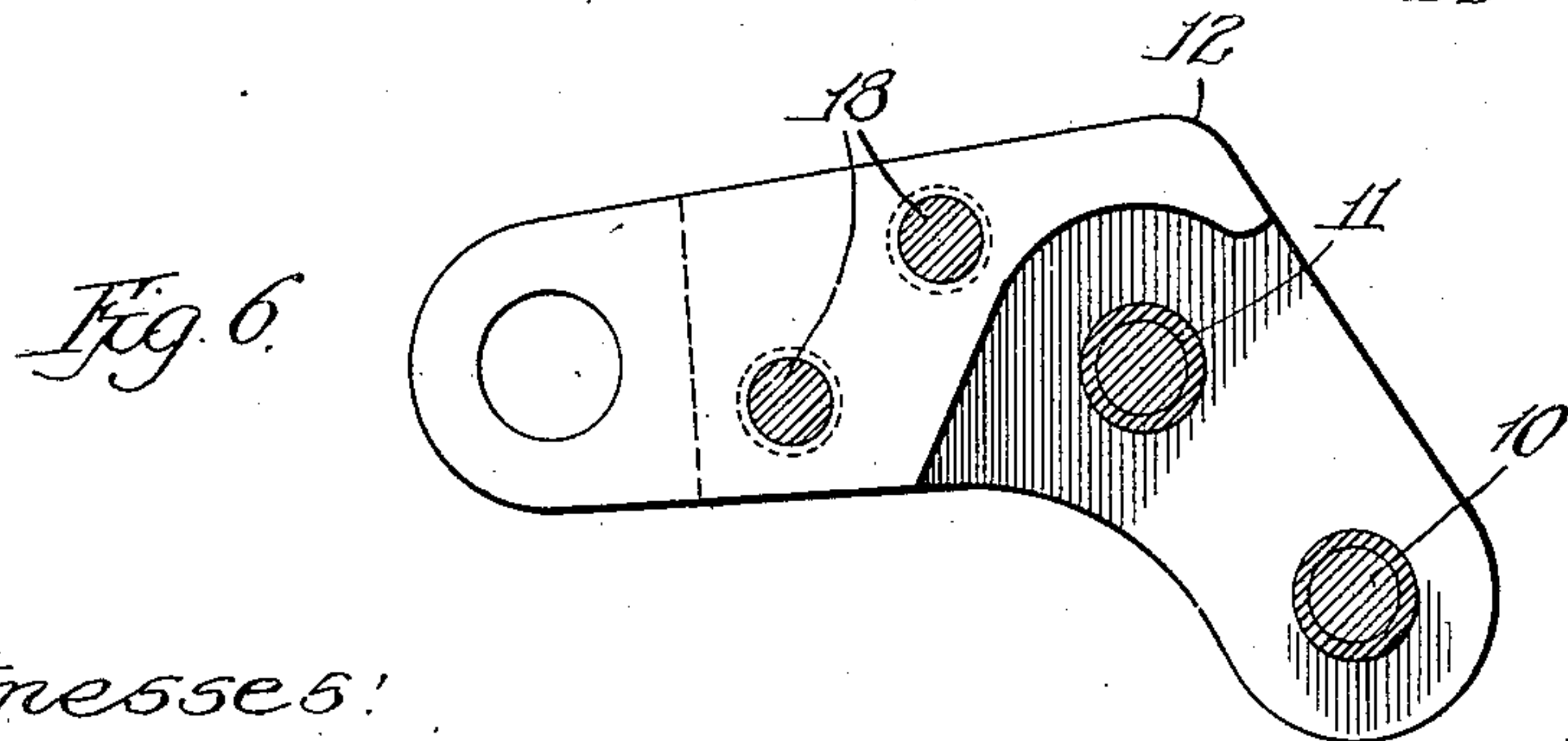
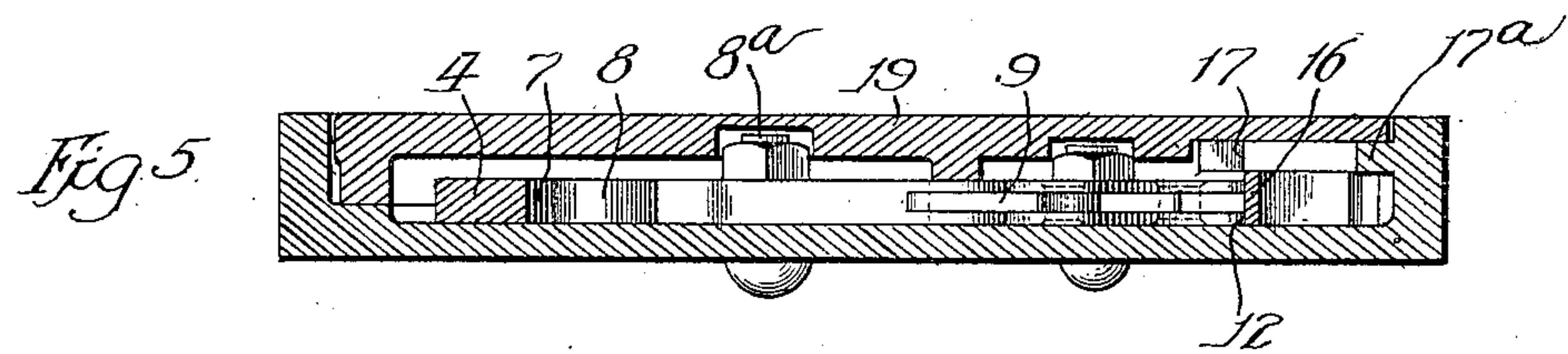
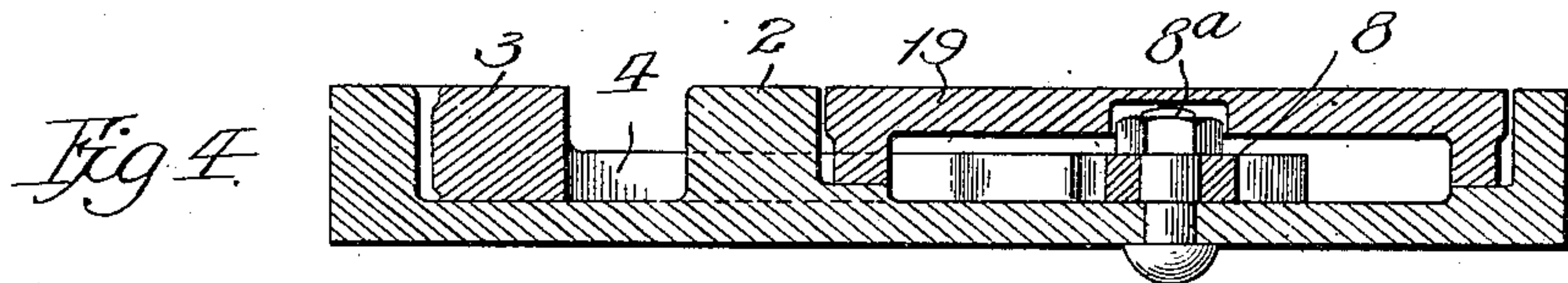
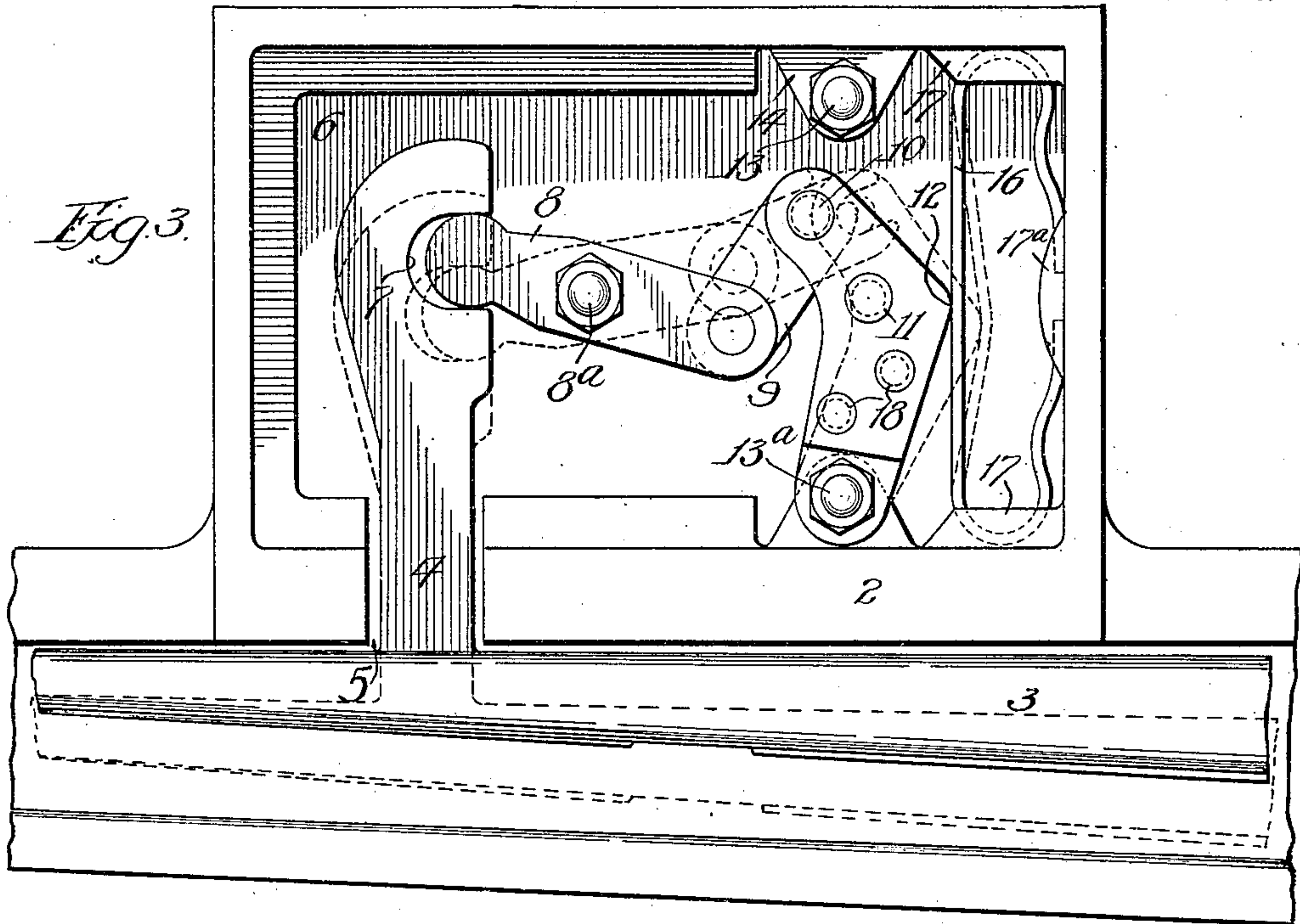


Witnesses:
 Geo. C. Davison
 R. D. Little.
 Inventor:
 Otto Sann
 By Luthicum, Best & Fuller
 his Attys.



Witnesses:
Geo. C. Johnson
R. D. Little

Inventor:
Otto Sann
By Luthicum Bell & Fuller
his Attys.

UNITED STATES PATENT OFFICE.

OTTO SANN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, OF JOHNSTOWN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SWITCH-TONGUE-ACTUATING MECHANISM.

991,752.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed January 30, 1911. Serial No. 605,615.

To all whom it may concern:

Be it known that I, OTTO SANN, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Tongue-Actuating Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the construction and arrangement of the actuating mechanism of railway track switch tongues and the invention more particularly relates to the actuating mechanism for switch tongues of the shallow type such as are used with portable connecting tracks in which shallow rails and switches are temporarily laid over existing tracks for the purpose of diverting cars from one track to another during the time a section of the track is being repaired or re-laid. The switch boxes and switch actuating mechanism in the switch boxes must necessarily be very shallow.

One object of this invention is to provide switch tongue actuating mechanism for such track switches constructed and arranged to be adjusted in such manner as to permit of the switch tongue being thrown into and held in either of three positions: that in which the point of the switch tongue will be thrown into and held in either right or left hand position; that in which the point of the switch tongue will be thrown into and yieldingly held in its normal position at the right hand of the switch structure; or that in which the point of the switch tongue will be thrown into and yieldingly held in position at the left hand side of the switch structure.

Another object of this invention is to construct the actuating mechanism in such manner as to permit the tongue when held in either position to yield when a car passes over the switch structure from the heel toward the point of the tongue, while in all cases preventing accidental displacement of the tongue by yieldingly holding the point of the tongue in contact with the side of the rail.

In the accompanying drawings, Figure 1 is a plan showing a portion of a switch tongue with switch actuating mechanism constructed and arranged within a switch box in accordance with my invention, and

showing the actuating mechanism in position to move and yieldingly hold the point of the switch tongue against the side of the track rail on the right hand side of the switch structure. Fig. 2 is a plan showing the actuating mechanism connected to the switch tongue in such manner that the tongue will be yieldingly held against either the right or left hand side of the switch structure. Fig. 3 is a similar plan showing the actuating mechanism connected together in such manner that the switch tongue normally will rest against the left hand side of the switch structure. Figs. 1, 2 and 3 are shown with the switch box cover or lid removed, for the sake of clearness. Fig. 4 is a transverse section on the line IV—IV of Fig. 2, the cover being shown in position on the switch box in this view. Fig. 5 is a longitudinal sectional side elevation taken on the line V—V of Fig. 2, the cover being shown in position in this view also. Fig. 6 is a detail plan on a larger scale showing the knee or rocker forming part of the apparatus.

Referring to the drawings, 2 designates a switch structure having a switch tongue 3 pivoted at one end in the usual manner and having a horizontally extending arm 4 which projects through an opening 5 in one side of the switch box 6. The arm 4 is provided on one end with a groove or notch 7, into which projects one end of the lever 8, which is pivotally mounted at an intermediate point in its length on the bolt 8^a secured to the bottom of the switch box 6. The opposite end of the lever 8 is connected to one end of a link 9, the opposite end of this link being forked and the projections forming the fork being arranged to embrace one or the other of the pins 10 or 11 which are secured to and form part of the knee or rocker 12. One end of the knee or rocker 12 is pivoted to one or the other of the pivot pins or bolts 13, 13^a, which are located on opposite sides of the switch box 6. As shown in Figs. 1 and 2 the rocker 12 is secured by the pin 13 to the lugs 14 on the left hand side of the switch box, and, as shown in Fig. 3, the position of the rocker is changed or reversed so that the end of the rocker 12 is pivoted to the bolt 13^a on the right hand side of the box. The right hand and left hand sides of the box are determined by looking

from the point toward the heel of the switch tongue.

Secured in the end of the switch box 6 is a leaf spring 16, this spring being retained in place in the switch box by means of the lugs or flanges 17 and 17^a. The knuckle 12^a on the knee or rocker 12 is arranged to contact with the spring 16 so as to be moved into and yieldingly held in the desired position by the action of the spring, and, through the connecting link 9 and pivoted lever 8, move and yieldingly hold the switch tongue in the desired position in the switch structure.

A cover or lid 19 is provided for the switch box 6, this cover being formed in the usual manner.

The knee or rocker 12 preferably is formed of a plurality of thin plates which are secured together by countersunk rivets 18, as is best shown in Fig. 6, although this rocker may be formed of one piece of metal instead of being built up as shown in the drawings when found desirable.

In the operation of my improved switch tongue actuating mechanism, the parts are assembled and the knee or rocker 12 is secured in the switch box in either of the three positions shown by Figs. 1, 2 and 3, depending upon the side of the switch structure to which the switch point is to be moved and held by the action of the spring 16. When the apparatus is assembled as shown in Fig. 1, the spring 16 will bear against the knuckle 12^a of the bent knee or rocker 12. The forked end of the link 9 will in this case be in engagement with the pin 10 on the end of the rocker 12, and the point of the switch tongue will be yieldingly held against the track rail so as to maintain the switch point in engagement with the track rail at the left hand of the switch, and permit of its being moved from the position shown in full lines in Fig. 1 into that shown in dotted lines by the wheels of a car passing through the switch.

In the construction shown in Fig. 2, the parts are assembled as before, with the exception that the forked end of the link 9 is in engagement with the pin 11 located at an intermediate point in the length of the rocker 12, instead of being in engagement with the pin 10 on one end of the rocker. When the forked end of the link 9 is in this position relative to the knee 12, the spring 16 will act to yieldingly hold the switch tongue point in either the position shown in full lines or in its other operative position, (that shown by dotted lines in Fig. 2.)

In the construction shown in Fig. 3, one end of the bent knee or rocker 12 is secured by the pivot pin or bolt 13^a to the lug or ear 14 located on the opposite side of the box from that to which the rocker 12 is shown pivoted in Figs. 1 and 2 and the

forked end of the link 9 is in engagement with the pin 10 on one end of the rocker 12. When the apparatus is assembled as shown in Fig. 3, the spring 16 acts on the knuckle 12^a of the rocker 12 to yieldingly hold the switch tongue against the track rail on the right hand side of the switch structure, the opposite position to that shown in Fig. 1.

It will be noted that, as shown in Fig. 1, the axis of the pivot pin by which the end of the lever 8 is connected to the link 9 is held to the right of a straight line extending through the axes of the pivot pin 8^a and the pin 10 in the end of the rocker 12, and that when the parts are assembled, as shown in Fig. 2, the spring 16 will act to maintain the axis of the pivot pin connecting the end of the lever 8 with the end of the link 9, in a position which is to either the right or to the left hand of a straight line extending through the axes of the pivot pin 11 and pivot pin 8^a, while in Fig. 3 the position of the end of the rocker 12 connected to the opposite side of the switch box from that shown in Fig. 1 and in this case the axis of the pivot pin connecting the end of the lever 8 with the end of the link 9 is at the left hand of a straight line extending through the axes of the pin 10 in the end of the rocker 12 and the pin or bolt 8^a by which the lever 8 is secured to the bottom of the switch box.

The apparatus is so simple that a detailed description of the operation of the switch is deemed unnecessary.

The advantages of my invention will be appreciated by those skilled in the art. It will be noted by the construction shown that the box can be made very shallow in depth. The construction and location of the parts as shown permit of the switch tongue being held in either of three positions, as is illustrated in Figs. 1, 2 and 3. It should be noted that with the rocker arm 12 secured to the switch box, as shown in Fig. 3, and the forked end of the link 9 connected to the pin 11, instead of as shown in Fig. 2 to the pin 10, the actuating mechanism will operate in such case in the same manner as that shown in Fig. 2 and will hold the switch tongue in either the right or left hand position.

Modifications in the construction and arrangement of the parts may be made without departing from my invention as defined in the appended claims.

I claim:—

1. In a railway switch, switch tongue actuating mechanism comprising a switch box, a horizontally extending arm on the switch tongue projecting into the switch box, a lever arm pivotally mounted in the switch box and operatively connected by one end to said switch tongue arm, a knee or rocker arm pivotally connected by one

end to the lever arm, means in said switch box to which said knee is pivoted and a spring in the rear of said switch box operatively engaging with the knee to yieldingly hold the switch tongue in position in the switch, said knee being arranged to pivotally engage with the lever arm in said switch box, the spring, knee, lever arm and switch tongue arm being located in the box in substantially the same horizontal plane.

2. In a railway switch, switch tongue actuating mechanism comprising a switch box, a horizontally extending arm on the switch tongue projecting into the switch box, a lever arm pivotally mounted in the switch box and operatively connected by one end to said switch tongue arm, a knee or rocker arm pivotally connected by one end to the lever arm, means in said switch box to which said knee is pivoted and a spring in the rear of said switch box operatively engaging with the knee to yieldingly hold the switch tongue in position in the switch, said knee being arranged to pivotally engage with the lever arm in said switch box, the spring, knee, lever arm and switch tongue arm being located in the box between horizontal planes defining the top and bottom of said box.

3. In a railway switch, a switch tongue, a pivoted lever or arm operatively connected to the said tongue for holding the tongue in its moved positions, a spring pressed knee or rocker arm for holding the pivoted lever or arm in its adjusted positions and a link arranged to engage with and connect the lever arm and knee, said link being adapted to be detachably secured to different points on the knee to vary the position in which the point of the switch tongue is held by

said knee, and means to which the lever arm and knee are pivoted.

4. In a railway switch, a switch tongue, a switch box having a lever or arm pivotally mounted therein, one end of said lever being operatively connected to the switch tongue, a spring pressed knee or rocker pivoted in said switch box and arranged to yieldingly hold said switch tongue in a plurality of positions against the track rail and a link connecting the lever or arm and knee, said link being arranged to be detachably secured to the knee at a plurality of points to operatively hold the switch tongue in either of a plurality of positions relative to the track rail.

5. In a railway switch, a switch tongue, a switch box having a lever or arm pivotally mounted therein, one end of said lever being operatively connected to the switch tongue, a spring pressed knee or rocker pivoted in said switch box and arranged to yieldingly hold said switch tongue in a plurality of positions against the track rail and a link connecting the lever or arm and knee, said link being arranged to be detachably secured to the knee at a plurality of points to operatively hold the switch tongue in either of a plurality of positions relative to the track rail, said switch box having means on opposite marginal side edges to which the knee is attached to change the operative movement of the switch tongue from one hand to the other.

In testimony whereof, I have hereunto set my hand.

OTTO SANN.

Witnesses:

MAE STERN,
H. W. SMITH.