

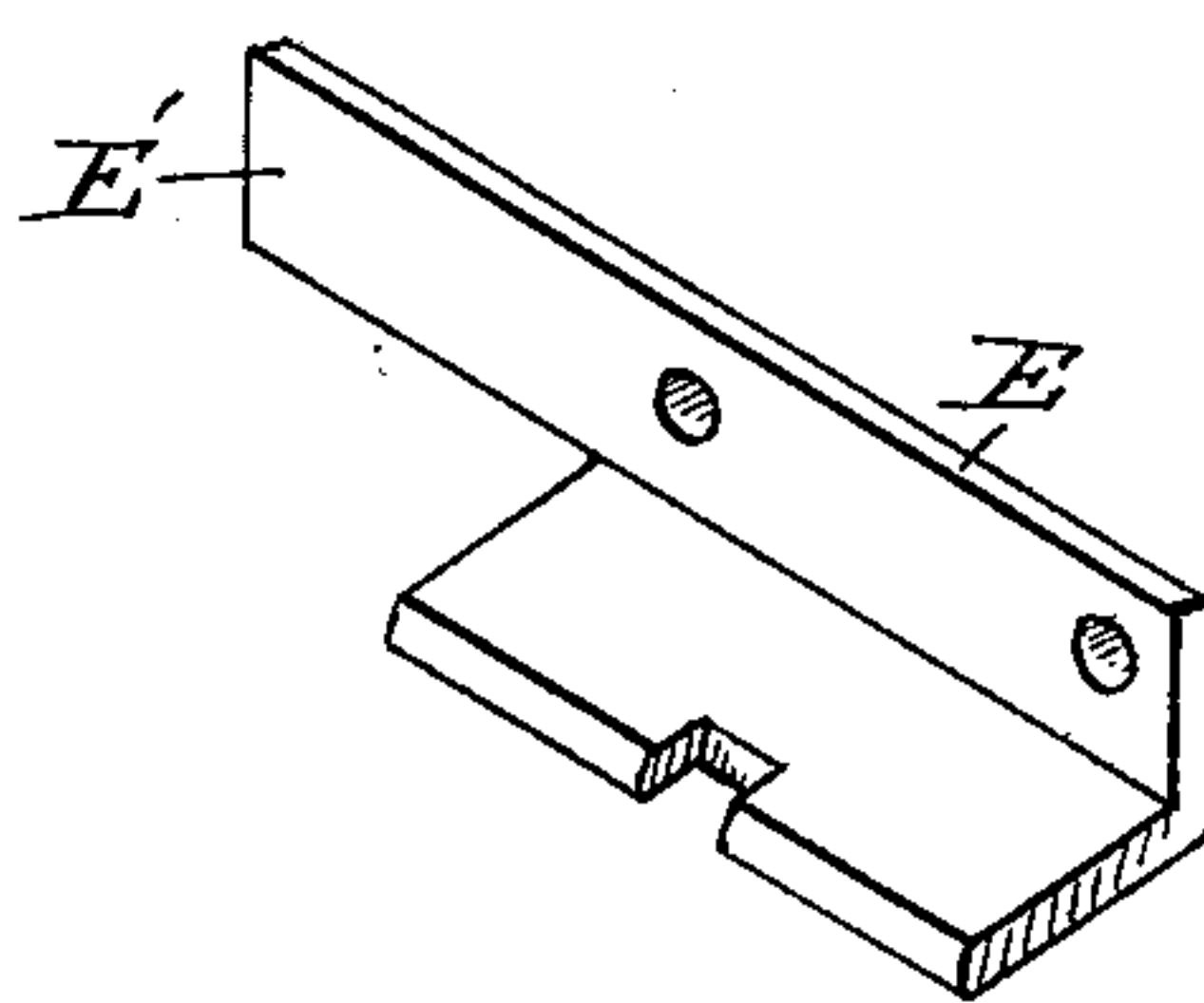
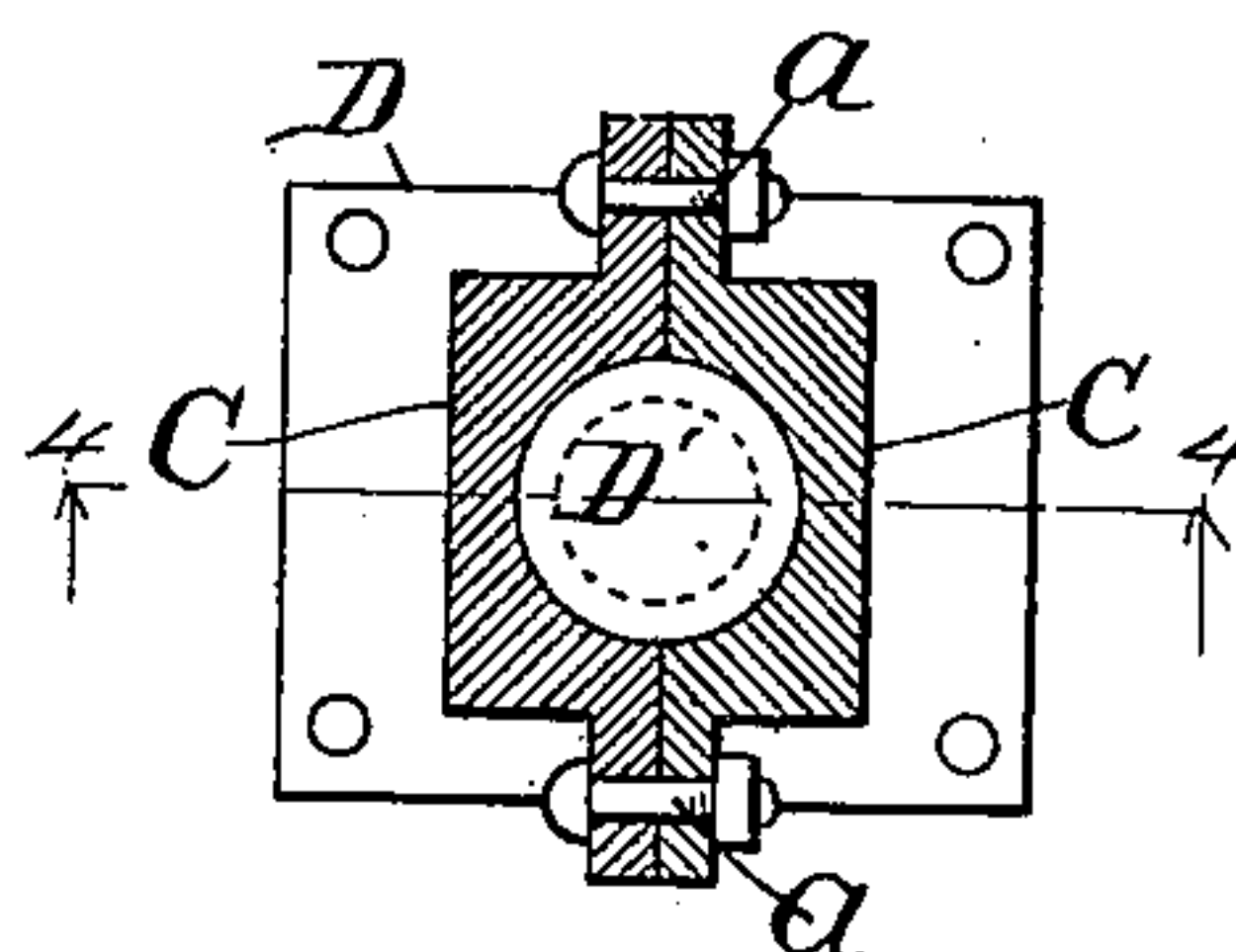
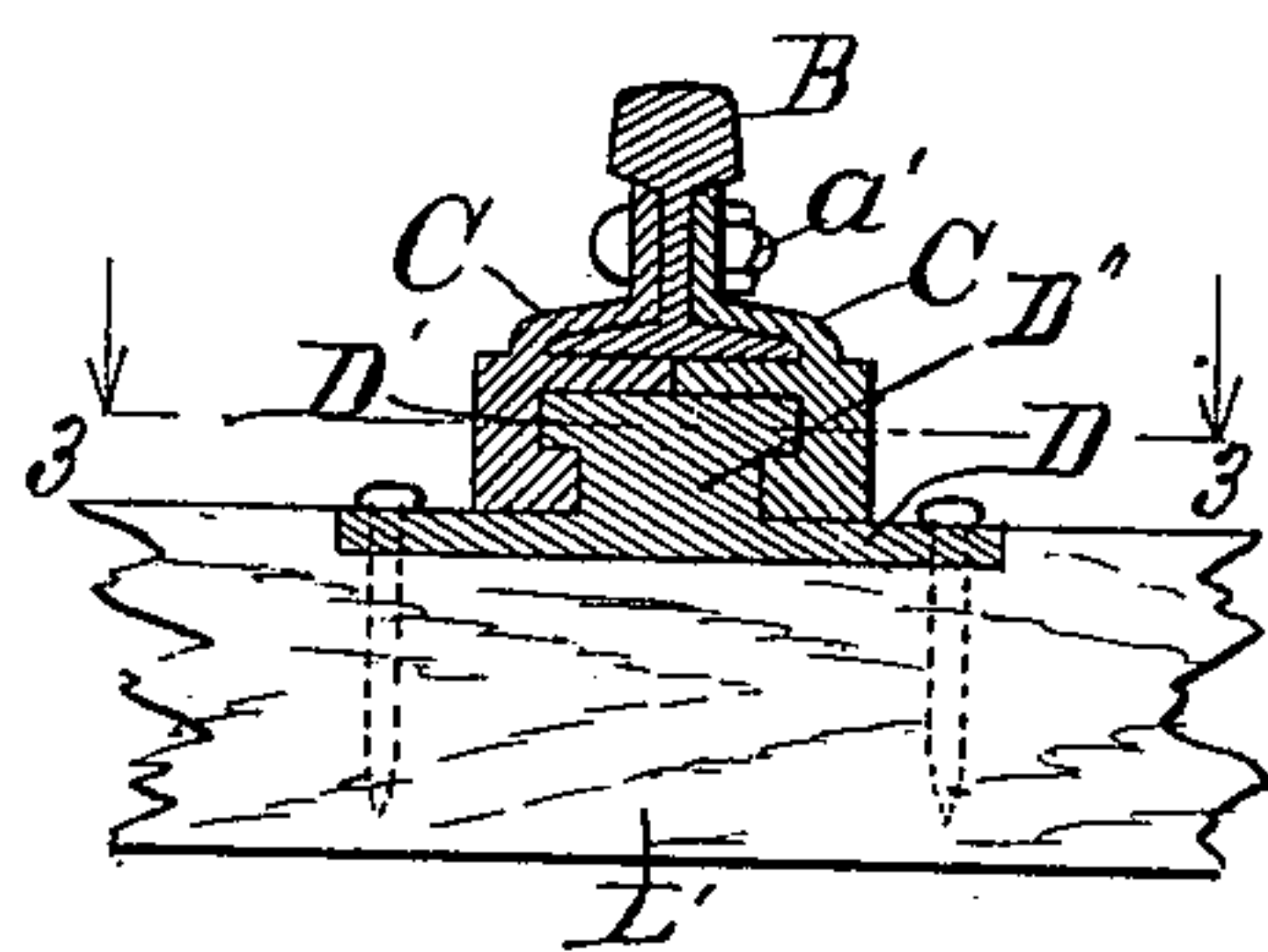
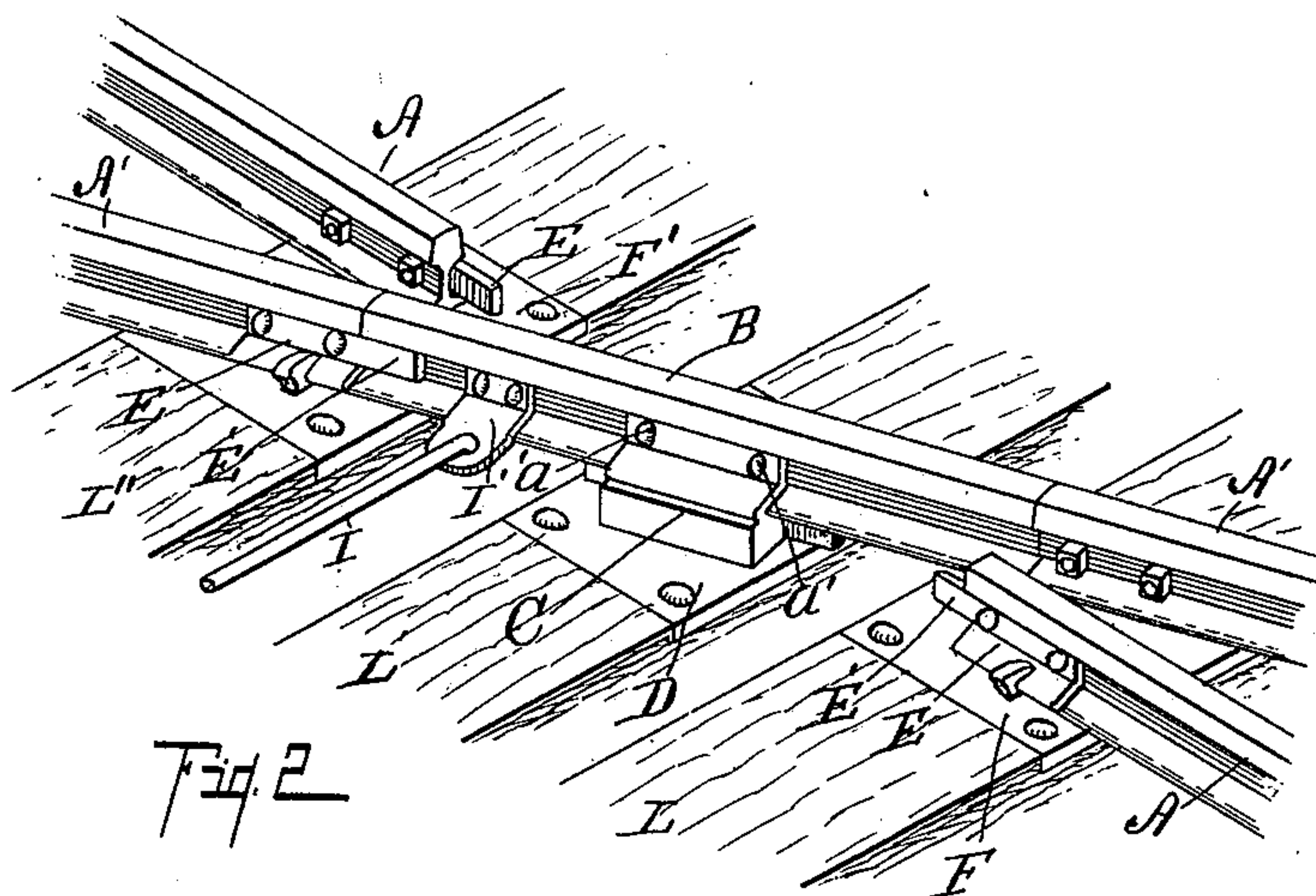
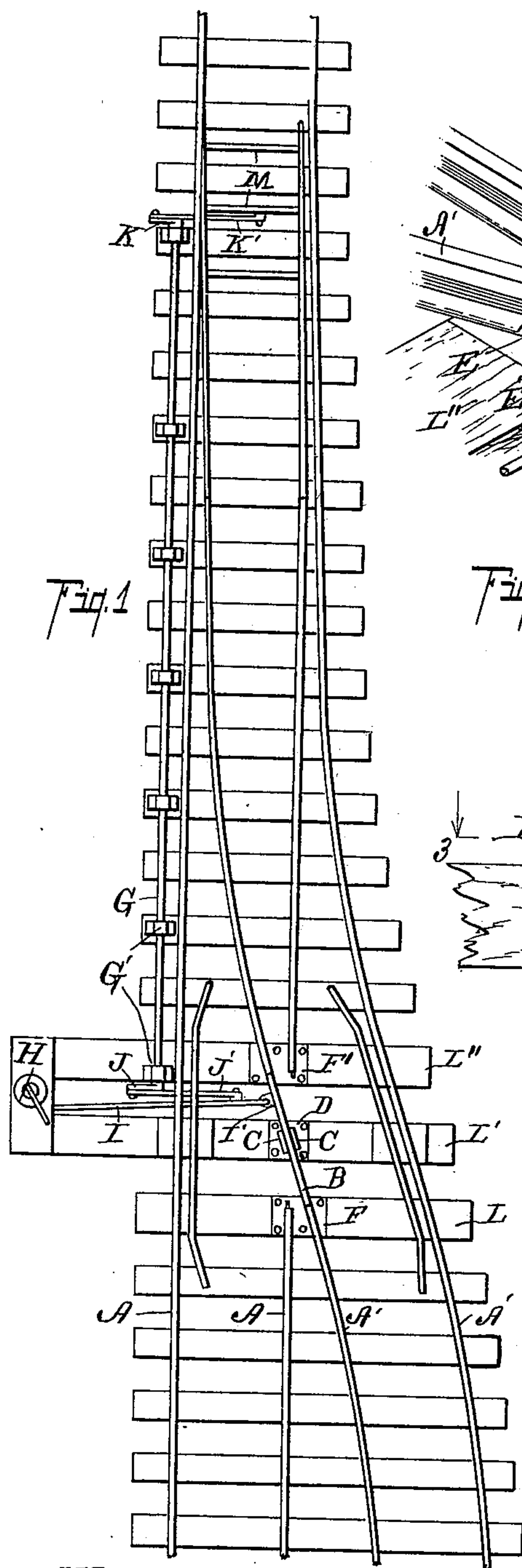
No. 630,518.

Patented Aug. 8, 1899.

J. S. PERRY.
RAILWAY SWITCH.

(Application filed May 16, 1899.)

(No Model.)



Witnesses:

Otis A. Earl
Cass M. Chappell

Inventor

James S. Perry
By Fred L. Chappell
Att'y.

UNITED STATES PATENT OFFICE.

JAMES S. PERRY, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO ALBERT M. GATES, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 630,518, dated August 8, 1899.

Application filed May 16, 1899. Serial No. 717,108. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. PERRY, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to improvements in railway-switches in which the usual construction of frog is replaced by a swinging rail and to improvements in swinging rails wherever they may be needed in railways, whether in switches or crossings.

I am aware that swinging rails have been used before my invention in switches and also in other relations, but so far as I am able to learn these were not a practical success.

The objects of my invention are to provide a new and improved switch for railways in which the improved construction of swinging rail is substituted for the usual frog, and, further, to provide an improved swinging rail and a strong, simple, cheap, and efficient device for securing the same.

Further objects will appear in the detailed description.

I accomplish the objects of my invention by the devices and means set forth in this specification.

The invention is fully pointed out and defined in the claims.

The structure embodying my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail plan view of the switch. Fig. 2 is a detail perspective view of the swinging rail and its connections. Fig. 3 is a transverse horizontal detail sectional view through the turn-table or pivot on which the rail swings, taken on a line corresponding to line 3 3 of Fig. 4. Fig 4 is a detail transverse sectional view through the turn-table and rail and adjacent parts, taken on a line corresponding to line 4 4 of Fig. 3. Fig. 5 is an enlarged detail perspective view of the stop for locating the swinging rail positively in position.

In the drawings all of the section views are taken looking in the direction of the little

arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A A are the main rails of a railroad-track. A' A' are the rails of a side track or switch, all of which are represented secured to the usual ties.

The style of switch here illustrated is what is known as a "fly-rail" switch, and as my invention does not pertain to this part of the switch, the same being adapted to any style of switch in which a frog has heretofore been used, I will not specifically describe the same, as I do not care to base claim on that specific part. I will only remark that the fly-rails are held together by the usual cross-coupling M, connected by a link K' to an arm K on the rock-shaft G, which is actuated from the switch-stand by proper connections.

I provide in the place of the usual frog a swinging rail B. The ties L L' L'' are especially equipped to receive, support, and guide the swinging rail. On the ties L L'' are placed plates F F', respectively, which serve as chairs for the ends of the approaching rails. The rails are notched and spiked to prevent their creeping upon the ties and chairs. To the inside of the rails A A', resting on the chair F, are secured stops E', the same being projections from part E, similar to fish-plates, which are bolted to the ends of the rails and form stops against which the web at the end of the rail B strikes in swinging from side to side. The rails on the plate or chair F' are provided with similar stops located on the outside of the rails, which positively locate the swinging rails in the same way in this position. The stop is only of sufficient size to strike against the web of the rail, so that the base of the rail can swing under the same and remove any obstruction at that point, so that the swinging rail will always operate perfectly.

The swinging rail is provided at its center on a specially-constructed turn-table, which is an important feature of my invention. The tie L' is arranged below the level of the track at this point, and suitable blocks are put under the outside rails. My improved turn-

table is at the center, and to it is secured the swinging rail. The turn-table consists of a base-plate D, having a circular head D', connected thereto by a circular neck D'', the cross-section of which clearly appears in Fig. 4. This constitutes the pivot of the turn-table on which the rail swings. Embracing this, preferably constructed in two pieces, is the swinging part of the table. This consists of two equal symmetrical halves C, within each of which is formed one-half of a bearing, like a journal-bearing, to receive the head D' and neck D'', and the parts extend down to and into contact with the base D below, which thus forms a broad powerful support for the swinging rail. The upper portions of the members are formed like two oppositely-facing fish-plates. Through these fish-plates and swinging rail B at this point are bolts a', which secure the same firmly in position. Bolts a are through suitably-projecting ears at the ends of the members C C to retain the same securely in position on the pivot-head D'. From this it will be observed that my improved turn-table is very strong, all of the bearing parts are protected from exposure to the elements, and that they cannot be easily obstructed, the table easily brushing to one side any snow or ice or other accumulations on the base-plate D. It is also a structure that can be very easily repaired or installed in position, as all that is necessary is to secure the proper elevation and spike the bottom plate D in position. By the structure also a perfectly-continuous rail is secured, which is of very great advantage, as it increases the durability of the switch and at the same time avoids any very serious wear on any rolling-stock passing over it. I provide a connection from this swinging rail to the switch-stand which operates the switch-rails, so that both are operated at the same time. This is accomplished by providing a switch-stand II, having a connecting-rod I therefrom to a suitable eye I', which is bolted to one side of the rail, as clearly appears in Figs. 1 and 2. To this same rod I connect the link J', which connects to an arm J on the rock-shaft G, which extends along the track and is connected in any suitable way to the switch-rails to move them in unison with the swinging rail. Thus the swinging rail (in the place of the frog) and the motion of the switch-rails at the ends are controlled by the same means effectively and practically. I desire to state in this connection that other arrangements of switch-stand might be employed in this connection, and while I have shown guard-rails in the usual position occupied in connection with frogs they are not in this connection a necessity, but are merely put in as a means of greater safety, like the guard-rails at a bridge.

It will be observed that by this arrangement of the swinging rail the same is made very short, thus securing great strength, and it will also be observed that the structure can

be shortened still further than I have here illustrated it by placing the turn-table closer to one end of the rail and adjusting the other parts accordingly.

This structure incidentally avoids the possibility of accidents so common in connection with railway - frogs, which in connection with the fact that this structure is cheaper and easier to produce than the regular frogs makes it very desirable and of great advantage over anything known to me.

I am aware that the details of this structure can be considerably varied and that additional locking means to those I have shown can be provided for the swinging rail, though I do not choose to illustrate them in this connection, as my invention pertains principally to the method of securing and locking a swinging rail in a switch.

The turn-table as I show it is the preferred construction, though I will state that other means of securing the rail might be adopted and the turn-table be divided into a greater number of parts than I show. The exact structure with few parts is best.

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

1. In a railway-switch, the combination of the switch-rails and the rails of the main track; a switch-stand; connection therefrom to the shifting rails; a swinging rail occupying the position of the usual frog connected to the switch-stand and adapted to be swung from side to side; a turn-table to carry the swinging rail consisting of a bottom plate D having the circular head and neck D' and D''; blocks C recessed to form bearings to embrace said head having fish-plates above; a rail; and bolts to secure the said fish-plates to the rail and the blocks C together, all coacting substantially as described for the purpose specified.

2. In a device for use in a railway-track as a substitute for a frog or other purpose, the combination of the bottom plate D having a circular head D' supported on a neck D'' thereon; blocks C, C, with recesses formed therein to afford a bearing to engage said head and neck, and rest upon the base-plate D and having fish-plates formed on the upper side integral therewith; a rail to rest within the fish-plates and suitable bolts a, a' for clamping the fish-plates to the rail and securing the blocks C together, all coacting substantially as described for the purpose specified.

3. In a device for use in a railway-track as a substitute for a frog or for other purposes, the combination of a bottom plate D having a circular head D' supported on a neck D'' thereon; blocks C, C, with recesses formed therein to afford a bearing to engage said head and neck; means of securing the blocks together to embrace the said head and neck; suitable plates on said blocks to receive the

rail of a railway, and the rail secured by said plates to swing on said head, coacting for the purpose specified.

4. In a device for use in a railway-track as
5 a substitute for a frog or for other purposes, the combination of a bottom plate D having a circular head D' supported on a neck D'' thereon; blocks C, C, with recesses formed therein to form a bearing to engage said head
10 and neck; means of securing the blocks together to embrace the said head and neck; a suitable rail secured to said blocks, coacting as specified.

5. In a device for use in a railway-track as

a substitute for a frog or for other purposes, 15
the combination of a circular head D' supported on a neck D''; a plurality of blocks with recesses formed therein to afford a bearing to completely engage said head and neck; means of securing the blocks together to em- 20
brace the said head and neck, coacting as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

JAMES S. PERRY. [L. S.]

Witnesses:

CASSA M. CHAPPELL,

OTIS A. EARL.