No. 672,024. Patented Apr. 16, 1901.

C. B. VOYNOW.

RAILWAY SWITCH.

(Application filed Jan. 24, 1901.)

(No Model.)

Fig. 1.

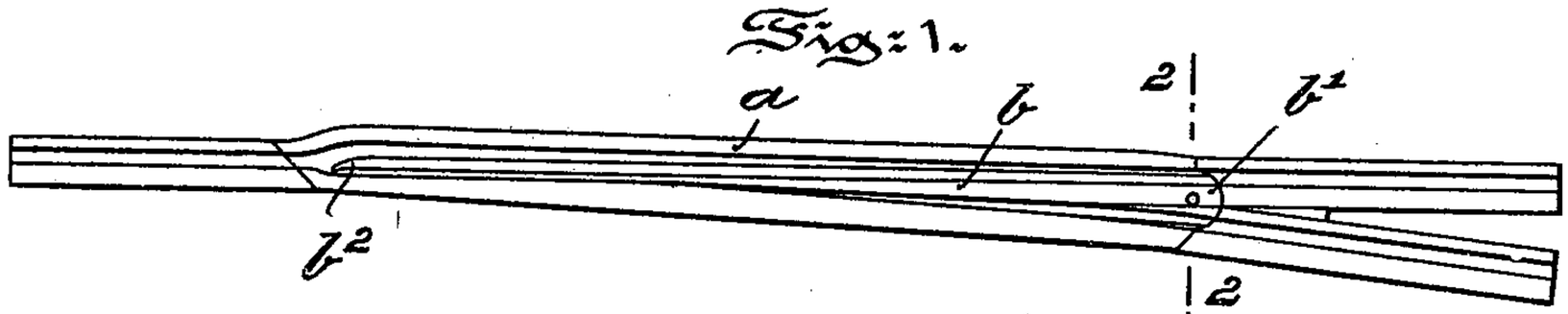


Fig. 2.

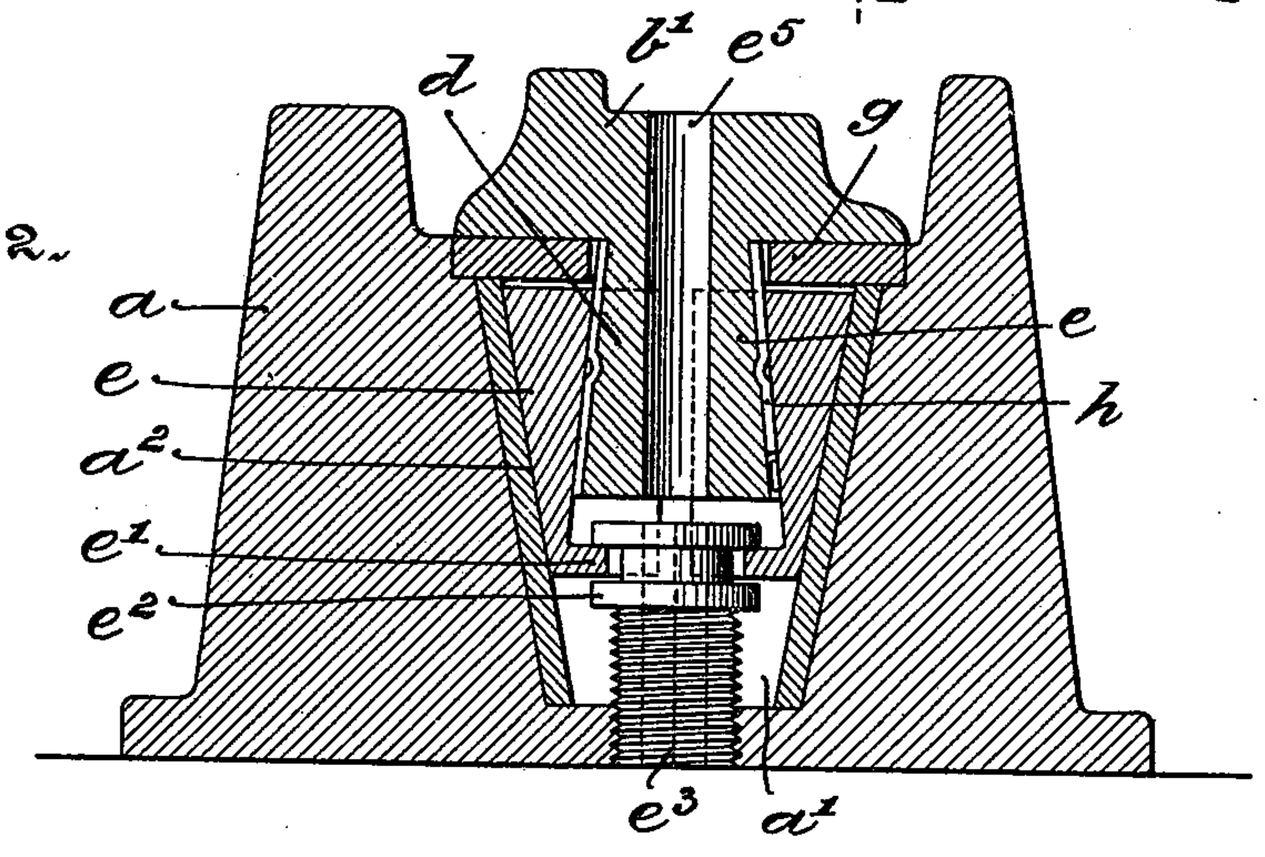


Fig. 3.

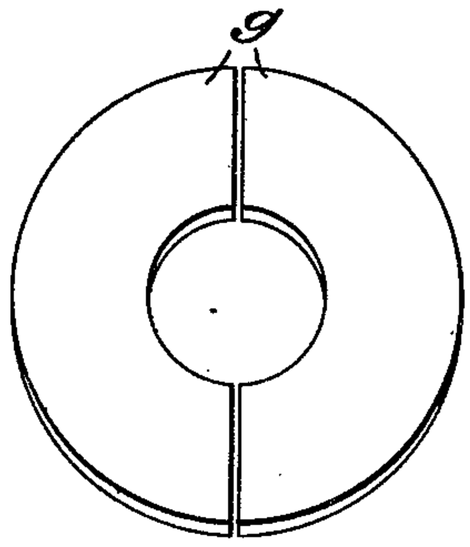


Fig. 4.

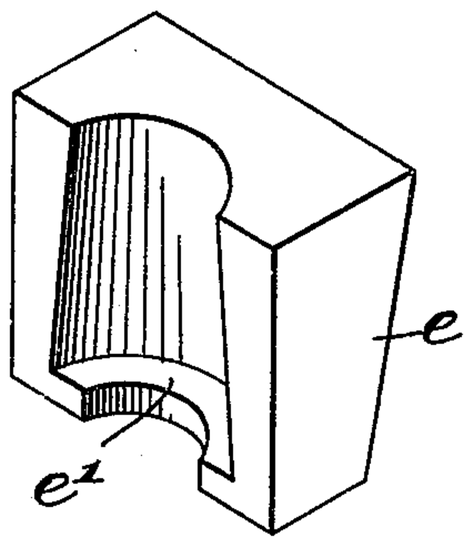


Fig. 5.

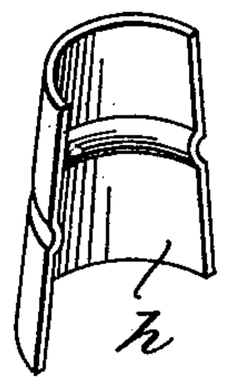


Fig. 6.

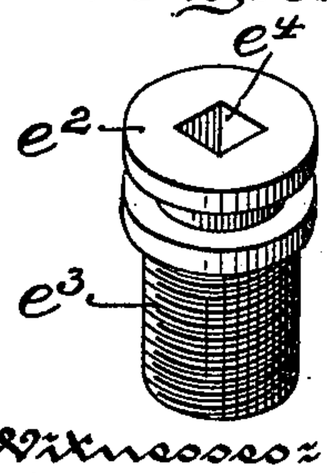


Fig. 7.

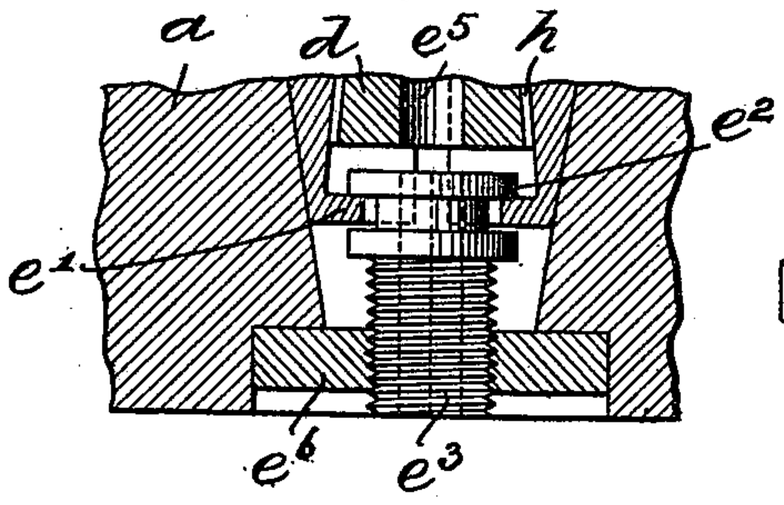
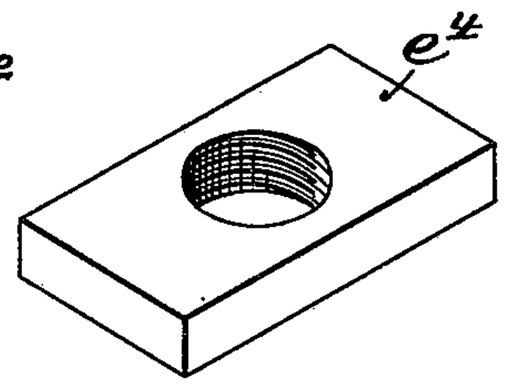


Fig. 8.



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UNITED STATES PATENT OFFICE.

CONSTANTINE B. VOYNOW, OF PHILADELPHIA, PENNSYLVANIA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 672,024, dated April 16, 1901.

Application filed January 24, 1901. Serial No. 44,515. (No model.)

To all whom it may concern:

Be it known that I, CONSTANTINE B. VOYNOW, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

My invention has relation to a railway-switch of the type or class known as "tongue-switches," and in such connection it relates to the construction and arrangement of such a switch.

Heretofore in the construction of the ordinary tongue-switch upon the heel of the tongue was formed a depending pin of either cylindrical or inverted conoidal shape fitting into a complemental recess or opening formed in the switch-block. The tongue of the switch was held in position by its own weight. When the wheel of a car passed over such a switch, it first jumped from the solid rail onto the heel, then traveled along the tongue, and jumped from the point of the tongue to the solid rail, or vice versa. The tongue was thus subjected to two blows, one at either end of the switch, which caused the tongue to see-saw on its bed and subjected the bed and tongue of the switch to a pounding operation, thus wearing away both in a short time. Then, furthermore, the motion of the tongue due to the pounding, switching, and side blows from the wheels and traffic speedily wore away the bearing-surface of the pin and of the socket in which the pin turned.

The principal object of my present invention is to obviate the above-stated objectionable features of a tongue-switch and to provide means for taking up the wear on the pin and socket and at the same time to always hold snugly the tongue down against its own bed to prevent any rocking of the same. To accomplish this object, the pin of the tongue is made of conical form, with the base of the pin of wider diameter than its root, and the beveled periphery of the pin is engaged by a bearing-block having its interior recessed and shaped to conform to the exterior of the pin and to bear thereon, said bearing-block being inserted in the switch-block and capable of adjustment therein to clamp against the periphery of the pin and to draw the pin down into the block or to maintain always the tongue snugly against its bed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a railway-switch embodying main features of my invention. Fig. 2 is a cross-sectional view, enlarged, taken on the line 2 2 of Fig. 1. Fig. 3 is a detail view of the split washer interposed between the pin of the tongue and the switch-block. Fig. 4 is a perspective view of one portion of the bearing-block. Fig. 5 is a similar view of a portion of the sleeve or bushing surrounding the depending pin of the heel. Fig. 6 is a similar view of the bolt or screw for adjusting the bearing-block, and Figs. 7 and 8 are detail views illustrating a modified form of the invention.

Referring to the drawings, a represents the switch-block, in which oscillates the tongue b, having a heel b' and point b^2. From the heel b' depends a conical pin d, the base whereof is of larger diameter than the root or point where the pin and heel unite. The switch-block a has a recess or opening a' to receive the pin d, and between the inclined walls a^2 of this opening and the periphery of the pin d is arranged a bearing-block e, which may consist of several sections, but preferably of two wedge-shaped members, the exteriors of which are adapted to ride upon the walls a^2 of the opening a'. The interior of the bearing-block e, when the wedge-shaped members are assembled together, is shaped complementally to the exterior of the conical pin d and arranged so that when the bearing-block e is pushed downward in the recess a' of the switch-block its interior surface will be forced down upon and inwardly against the conical periphery of the pin d, thus clamping the periphery between the wedge-shaped members of the block e, as well as holding the pin d and heel b' down upon the switch-block a. The upper end of the recess a' is sufficiently wide to permit the wedges of the bearing-block e to be readily inserted, and a split block or washer g is inserted between the upper edge of the recess a' and the heel b', thus bridging over the recess a' and form-

ing a base or bearing for the heel b'. Upon the periphery of the pin d is preferably arranged a split thimble or sleeve h, of steel, within which the pin may turn. This sleeve h is connected to the bearing-block e to prevent turning in any suitable manner. The lower edge of each wedge-shaped portion of the bearing-block e is provided with a ledge or flange e', extending inwardly and adapted to be engaged by the grooved head e^2 of a screw-bolt e^3. The head e^2 is preferably formed with a square slot e^4 to receive a key for turning the head and bolt. In Fig. 2 the screw-threaded end of the bolt e^3 is adapted to be advanced in the base of the switch-block, whereas in the modification illustrated in Figs. 7 and 8 it enters a threaded block e^5, inserted in the switch-block. The key for turning the head e^2 and bolt e^3 is adapted to be introduced through a vertical opening e^5, traversing the heel b' and pin d.

The arrangement and location of the tightening-bolt e^3, so that it is independent and separate from the pin d of the switch, prevent accidental loosening or unclamping of the pin d in its oscillation within the bearing-block. The use of a split sleeeve h upon the periphery of the pin d while desirable is not necessary and may be dispensed with.

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

1. In a railway-switch, a tongue having a depending conical projection constituting the pivot for the tongue and said pivot having an opening extending therethrough, the base of said projection being of larger diameter than its root, a recessed switch-block arranged to receive the projection, and means for confining said projection in said switch-block.

2. In a railway-switch, a tongue having a depending pivot provided with an opening extending therethrough and the form of said pivot being conical and having its larger diameter at the base.

3. In a railway-switch, a tongue having a downwardly-depending conical pin, a recessed switch-block arranged to receive said pin, a bearing-block adapted to surround the periphery of the pin and to bear thereon, said bearing-block interposed between the pin and the switch-block, and means for moving said bearing-block in the switch-block to both clamp the pin and to hold said pin in the switch-block.

4. In a railway-switch, a tongue having a depending conical pin, a recessed switch-block adapted to receive said pin and a block or washer bridging the recess in said switch-block.

5. In a railway-switch, a switch-block, a tongue having a depending conical pin with an opening extending therethrough at its heel portion, a split block or washer arranged to receive said pin and to support said heel portion and means for confining said pin in said switch-block.

6. In a railway-switch, a switch-block, a tongue having a depending conical pin at its heel portion, a separate split block or washer forming a base for the heel of the tongue, and means for confining said pin in said switch-block.

7. In a railway-switch, a switch-block, a tongue provided with a depending pivot having an opening extending therethrough, a block or washer adapted to receive said pivot and means for confining said pivot in said switch-block.

In testimony whereof I hereunto set my signature in the presence of two subscribing witnesses.

CONSTANTINE B. VOYNOW.

Witnesses:

J. WALTER DOUGLASS,

THOMAS M. SMITH.