No. 765,662. PATENTED JULY 26, 1904.

G. M. ERVIN.

TONGUE SWITCH.

APPLICATION FILED APR. 2, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

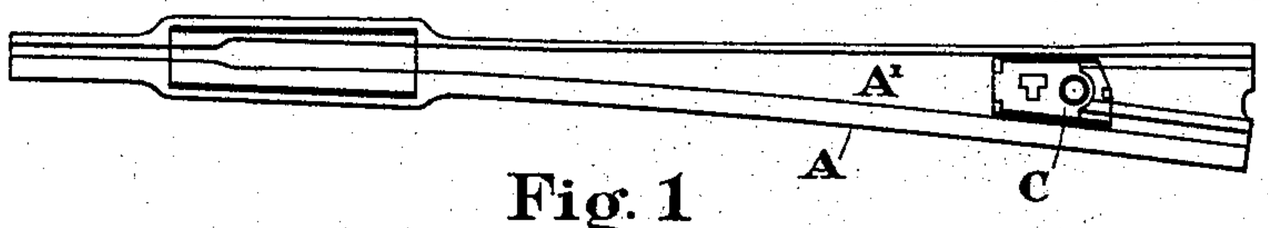

Fig. 1

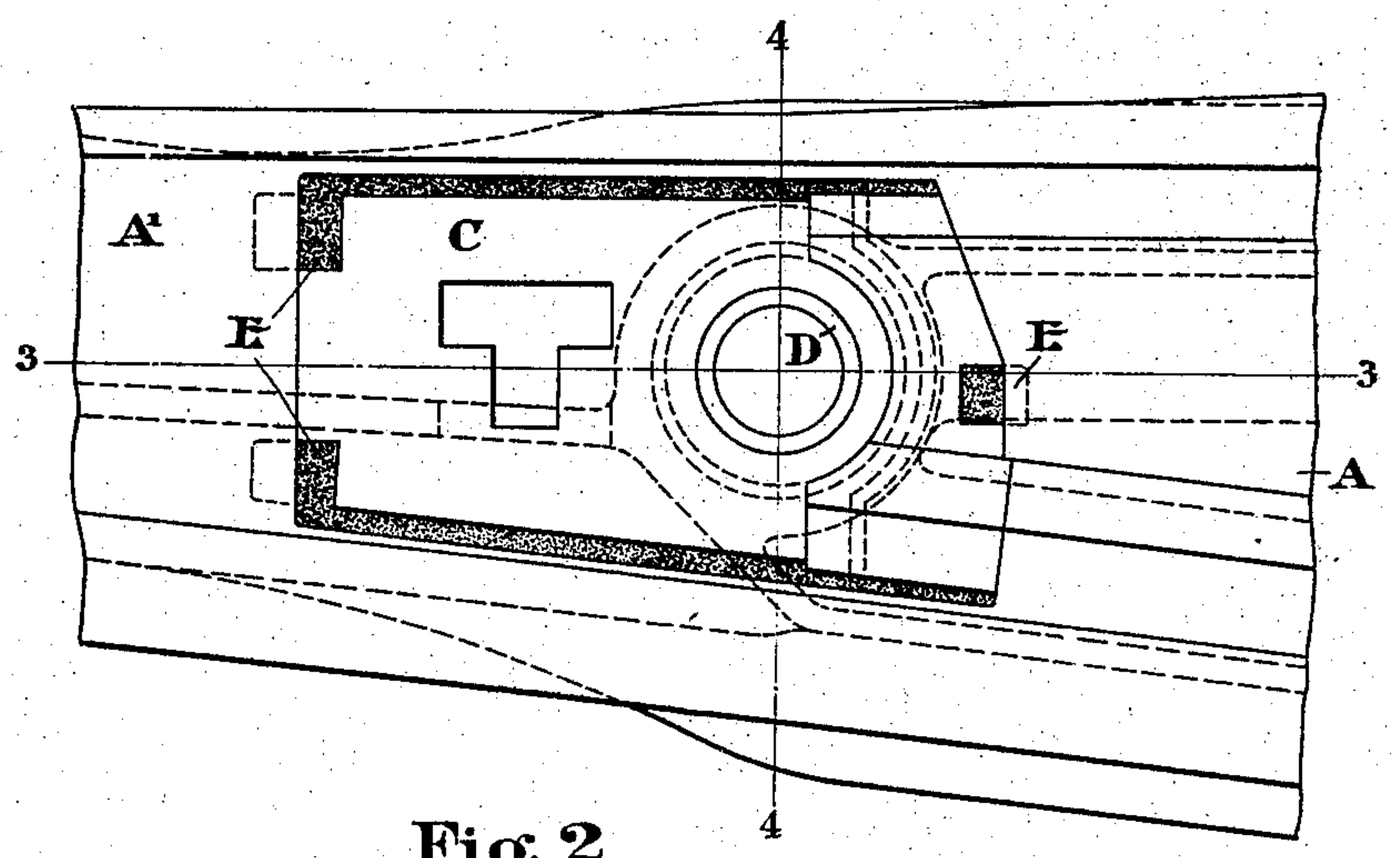

Fig. 2

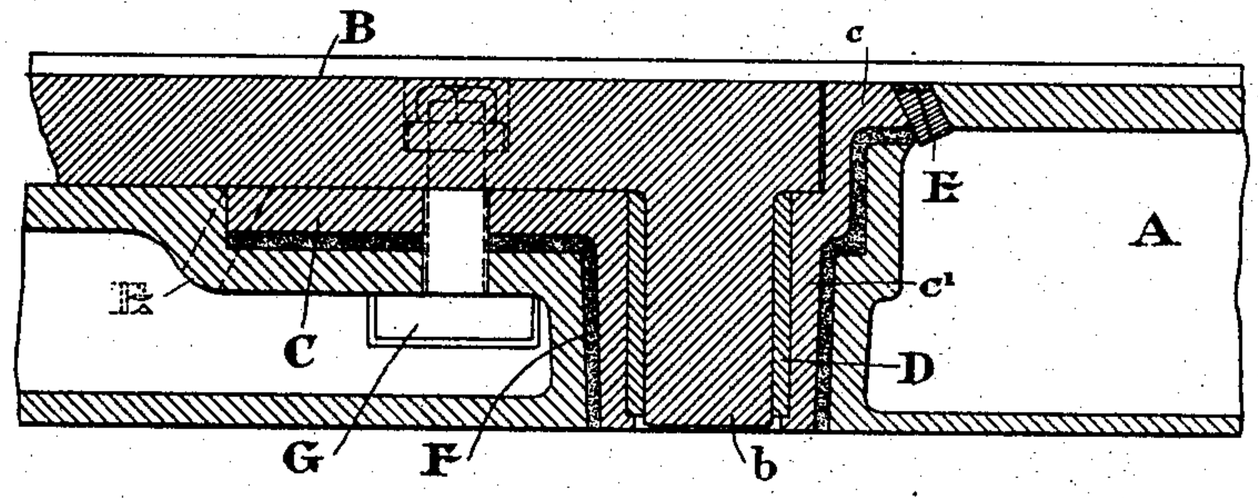

Fig. 3

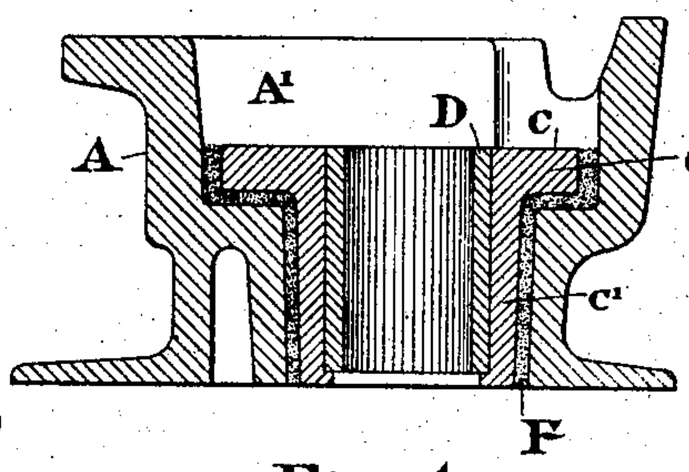

Fig. 4

WITNESSES:
Milton J. Constable
Loretta O'Connell

INVENTOR
Geo. M. Ervin,
BY
Geo. H. Parmelee,
His ATTORNEY.

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NO MODEL. 2 SHEETS—SHEET 2.

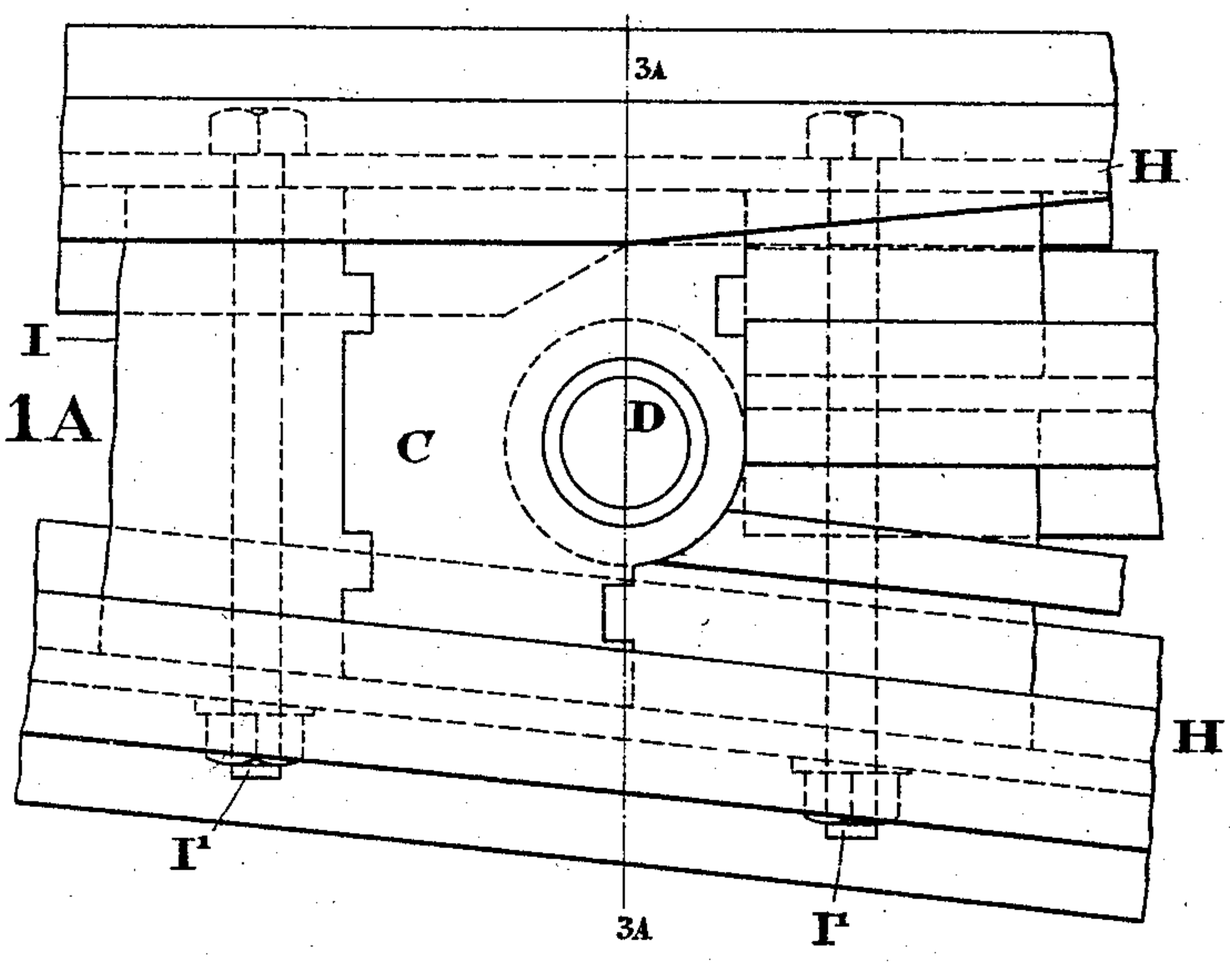

Fig. 1A

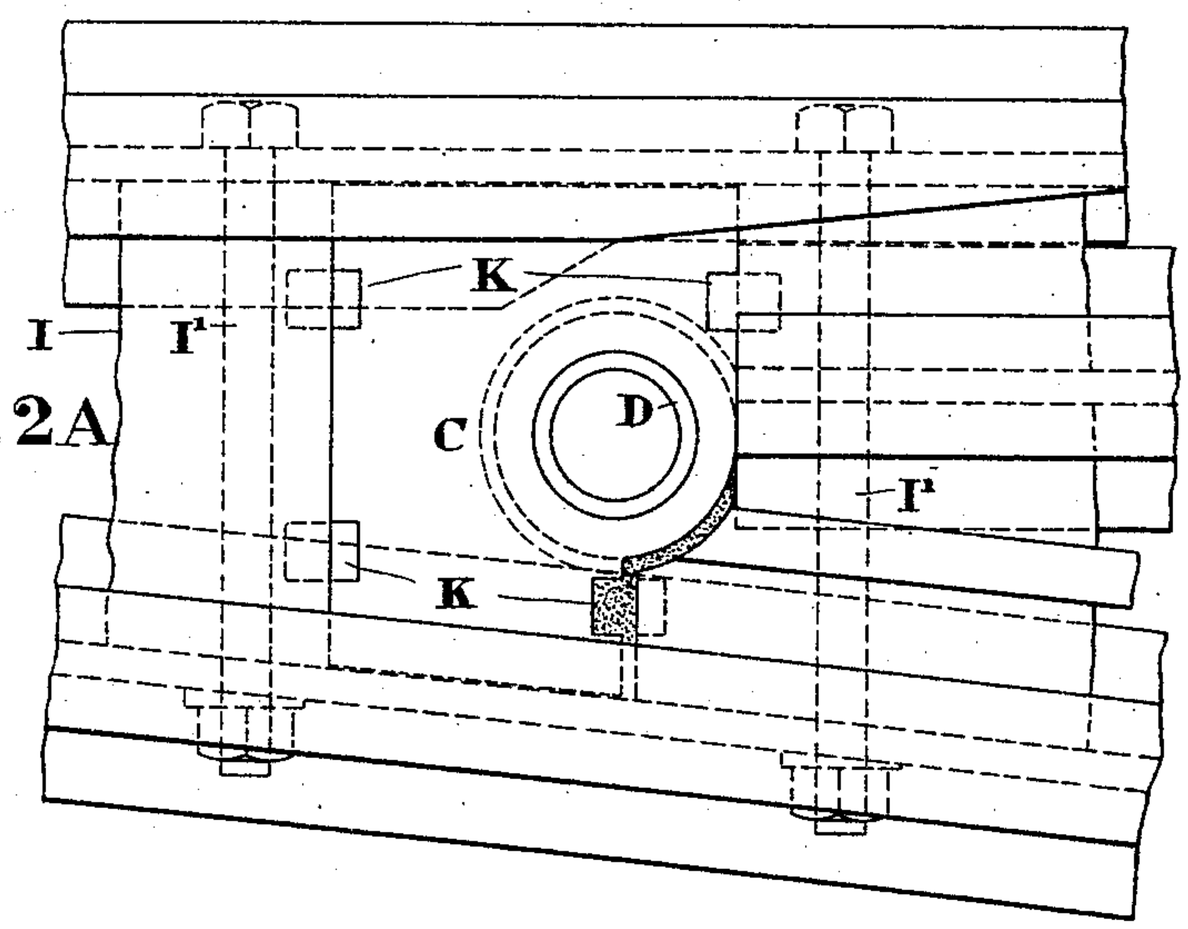

Fig. 2A

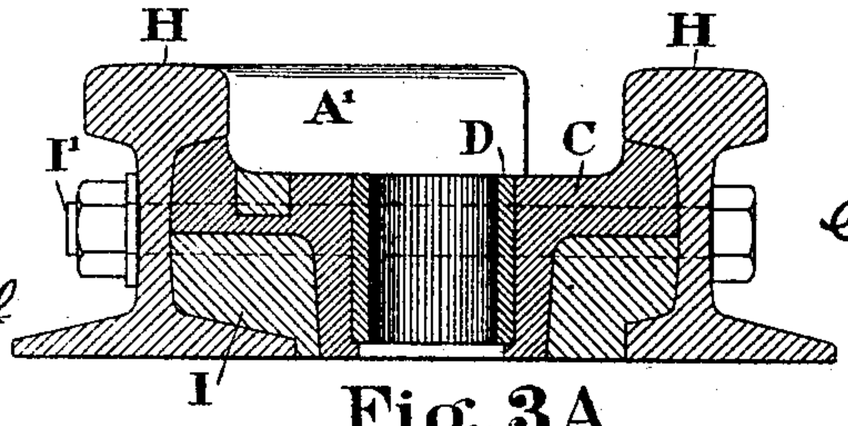

Fig. 3A

WITNESSES:
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No. 765,662. Patented July 26, 1904.

UNITED STATES PATENT OFFICE.

GEORGE M. ERVIN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

TONGUE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 765,662, dated July 26, 1904.

Application filed April 2, 1903. Serial No. 150,740. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. ERVIN, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Tongue-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in tongue-switches, and is designed to provide an improved bearing for the heel portion of the movable tongue and for its pin or pivot.

In the operation of switches of this type considerable trouble has been experienced by reason of the tendency of the heel portion of the tongue to grind or cut away its bearing on the bed of the structure. This often occurs to such an extent as to seriously impair the operation and usefulness of the structure and to make necessary more or less frequent renewals. Various means have been devised to overcome this defect, most of them having in view the provision of a bearing-surface of a very hard and durable character. These, however, have not been altogether satisfactory, owing to the difficulty in securing the bearing-surface firmly in the bed of the structure and also by reason of the fact that the material used is of such hard nature as to make it very difficult to form therein a proper bearing for the tongue pin or pivot.

The present invention also seeks to provide a harder and more durable bearing-surface; and it consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described and claimed, whereby the bearing-piece is securely held in place and the difficulty in providing a proper pin-bearing is overcome.

Referring to the accompanying drawings, Figure 1 is a plan view of a tongue-switch embodying my invention with the tongue removed. Fig. 2 is an enlarged plan view of the heel portion of the structure; Fig. 3, a section on the line 3 3 of Fig. 2 with the tongue in place; Fig. 4, a section on the line 4 4 of Fig. 2; Figs. 1^A and 2^A, views similar to Fig. 2, but showing modified constructions; and Fig. 3^A, a section on the line 3^A 3^A of Fig. 1^A.

The letter A designates the body portion of the structure, which in the construction shown in Figs. 1, 2, 3, and 4 is an integral casting having a pocket or seat A′ for the tongue B.

C is a hard-metal wear-plate of any suitable material, such as manganese steel, and which is seated in the body A to form a bearing for the heel portion of the tongue B, as clearly shown in Fig. 3. This piece C is formed with the upward extension *c* behind the convex end of the heel of the tongue, its concave bearing-face for said end being cast to approximately the right shape and then finished with an emery-wheel or other suitable grinding-tool. It is also formed with a downward extension *c′*, which preferably extends through to the bottom of the structure and in which is formed the bearing for the tongue pin or pivot *b*. This bearing is formed by a sleeve D, of steel or iron, which is placed in the mold in casting the piece C and the metal thereof cast about it, being held therein by the shrinkage of the metal around it. This sleeve being of ordinary iron or steel can be readily bored out and filled to form an accurate bearing for the pin *b*.

In assembling the structure the piece C is seated loosely in the body A and after being properly leveled up is secured in place by keys or wedges E, driven between it and the body of the structure. These keys or wedges are preferably of the divided type described and claimed in my Patent No. 729,049, dated May 26, 1903, so that they can be readily released by driving thereon. Molten spelter (shown at F) or other similar material is then poured around and underneath said piece to bed it and further secure it.

G designates a holding-down device for the tongue. This device may be of any suitable character and forms no part of my present invention.

Figs. 1^A and 3^A show the invention applied to a built-up T-rail structure. In this construction the piece C is shaped to fit under the

head of the T-rails H. In making this construction the rails H and the piece C are set in the proper relation to each other in a suitable mold and the bed or filler I, of cast iron, is cast in place, the piece being held by the metal cast around it. Cores are formed in said bed, through which the trough-bolts I′ are afterward inserted. In this construction the upward extension *c* of the piece C is usually omitted. Fig. 2ᴬ also shows a built-up T-rail structure, in which the piece C instead of being cast in place, as in Figs. 1ᴬ and 3ᴬ, is secured by keys or wedges and by a bedding or retaining material, as in Figs. 1, 2, 3, and 4. The key-seats are shown at K. In this construction, as well as that shown in Figs. 1, 2, 3, and 4, the piece C is removable and renewable.

I do not wish to limit myself to the precise constructions and arrangements of parts herein shown and described, as various changes may be made in the details thereof without departing from the spirit and scope of my invention as it is defined in and by the following claims.

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

1. In a tongue-switch, a hard-metal bed bearing-piece having therein a sleeve of relatively softer metal about which the piece is cast and which forms a bearing for the tongue pin or pivot.

2. In a tongue-switch, a hard-metal bed bearing-piece secured in the body of the structure and formed with a downward extension in which is seated a bearing-sleeve of relatively softer material about which the said piece is cast.

3. In a tongue-switch, a hard-metal bed bearing-piece secured in the body of the structure and formed with a downwardly-extended bearing for the tongue-pin.

4. In a tongue-switch, a hard-metal bearing-piece secured in the body of the structure and formed with a downwardly-extended bearing for the tongue-pin, and with an upwardly-extended bearing for the heel end of the tongue.

5. In a tongue-switch, the combination with the body portion of the structure, of the hard-metal plate removably seated and secured therein, and a bearing-sleeve of relatively softer metal in said piece and about which it is cast.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEO. M. ERVIN.

Witnesses:
LORETTO O'CONNELL,
H. W. SMITH.