

No. 765,669.

PATENTED JULY 26, 1904.

P. LAVELLE.
TONGUE SWITCH.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.

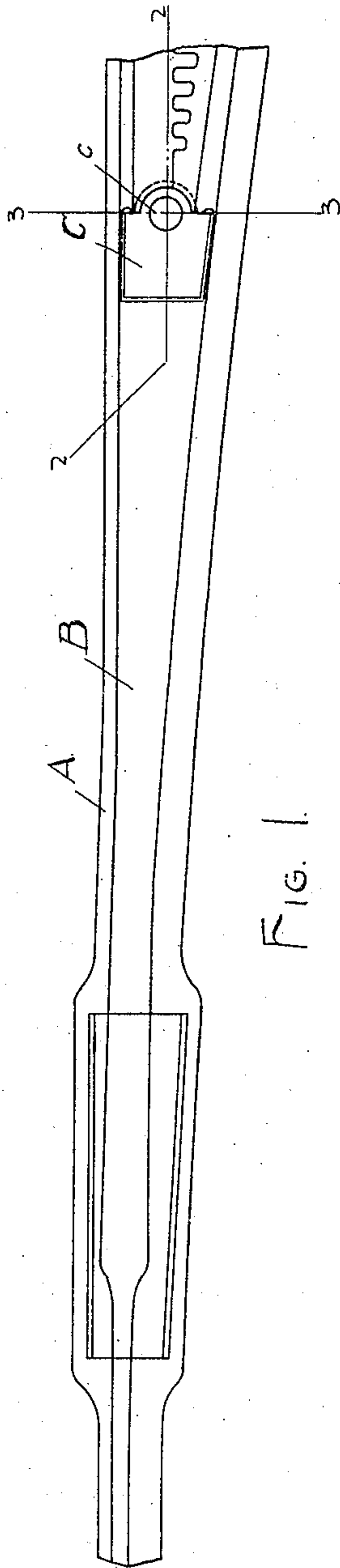


FIG. 1.

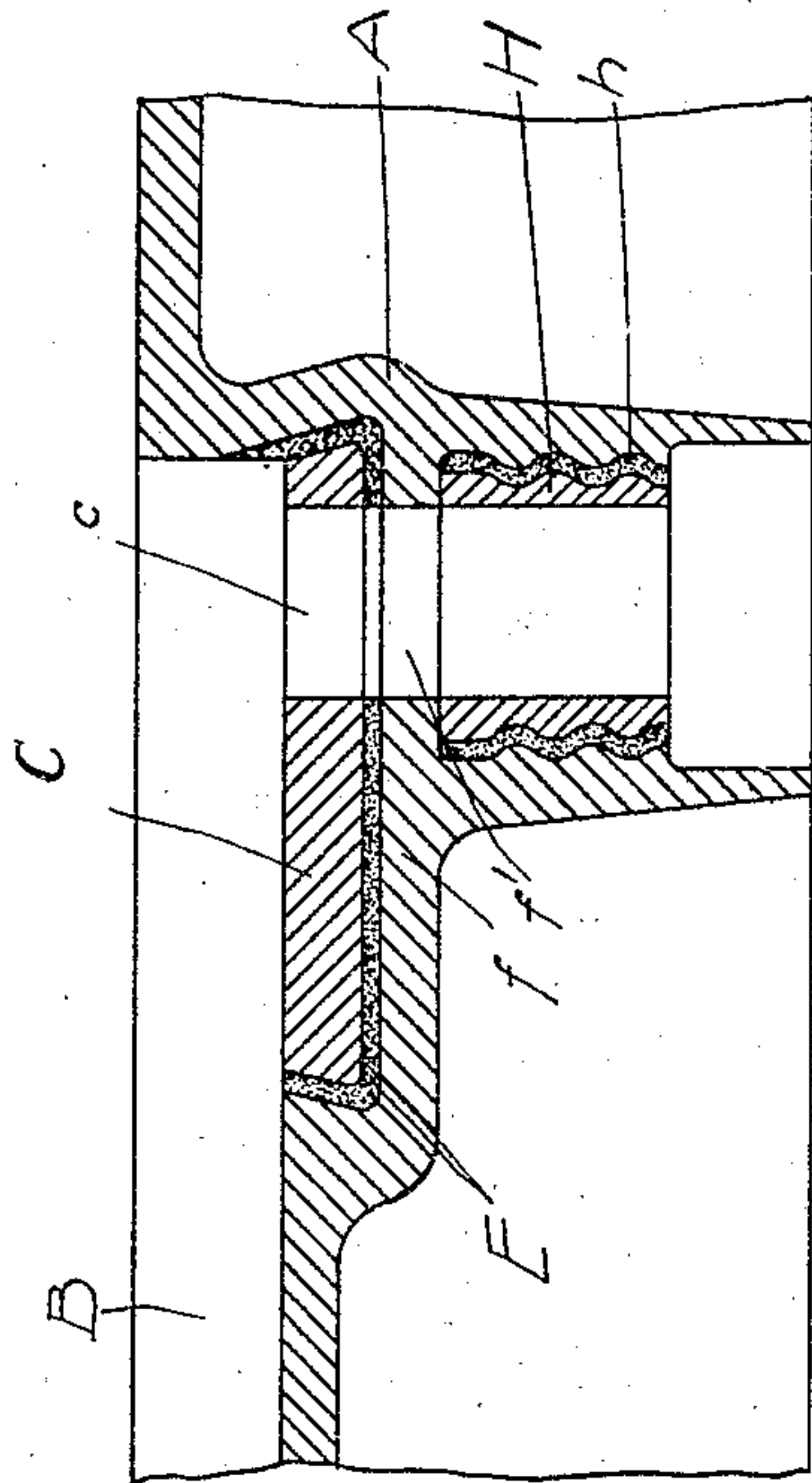


FIG. 2.

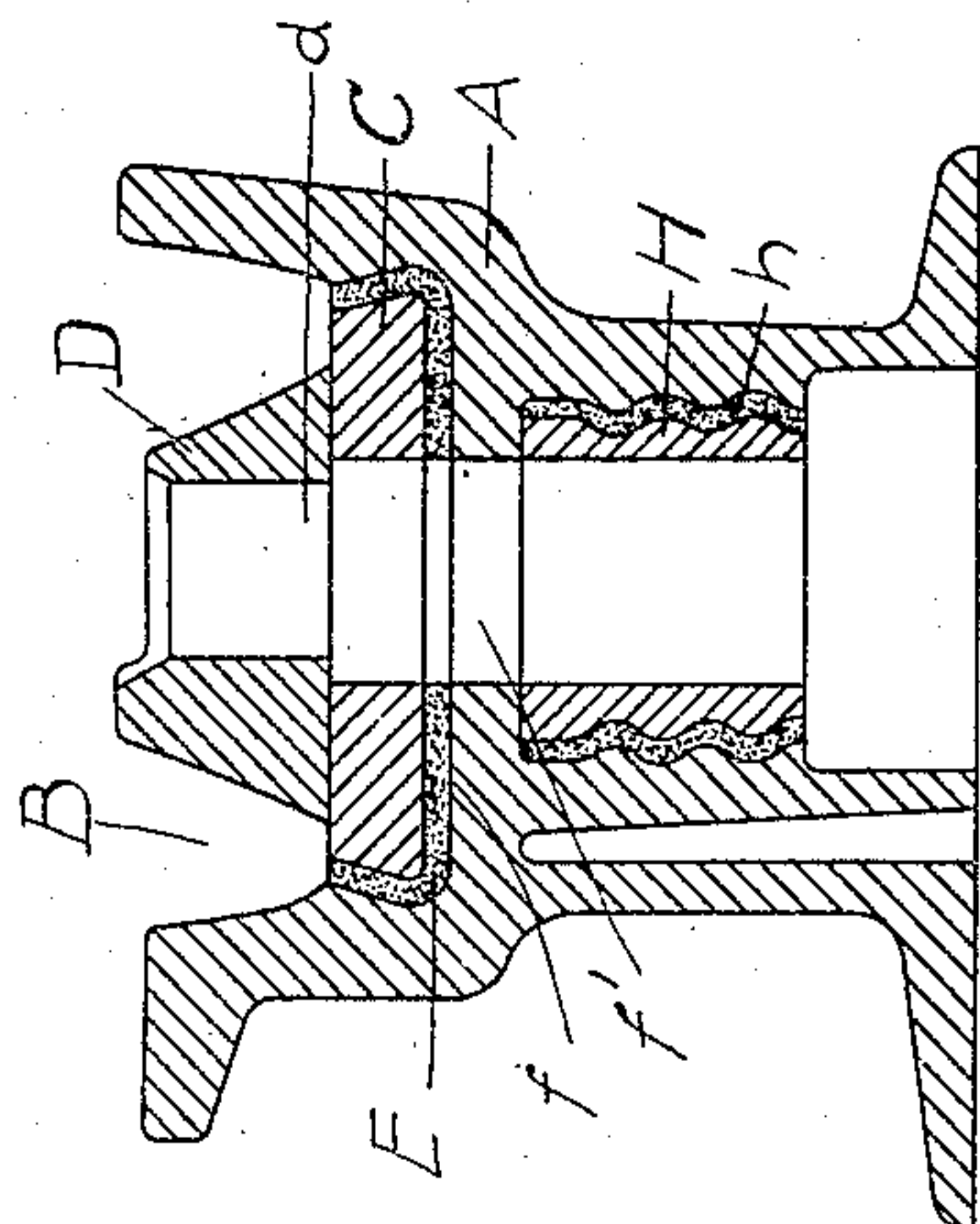


FIG. 3.

WITNESSES:
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UNITED STATES PATENT OFFICE.

PATRICK LAVELLE, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

TONGUE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 765,669, dated July 26, 1904.

Application filed October 22, 1903. Serial No. 178,053. (No model.)

To all whom it may concern:

Be it known that I, PATRICK LAVELLE, 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 a more efficient bearing for the bed portion of the tongue in the body portion of the tongue-switch structure.

It has been found difficult in practice heretofore to accurately fit the bearing-surface of the bed portion of the tongue to its bed, owing to the shape of the latter and the difficulty of surfacing the parts to each other. It has therefore frequently been the case that a slight space has been left between these bearing-surfaces sufficient to give the tongue more or less of a pounding action as soon as the switch was put into service. This pounding action once started by reason of the cutting action of the tongue upon its bed causes the looseness to increase rapidly, with a correspondingly-rapid increase in the pounding and cutting, and the efficiency of the switch is soon impaired. My invention overcomes this difficulty by providing a separate bearing-plate for the bed portion of the tongue. This plate is of very hard material and before being seated is applied to and accurately surfaced with respect to the bearing-surface of the tongue. It is then seated and accurately leveled with respect to the adjacent surface of the tongue-seat. In this manner I insure a true fit between the bearing-surfaces such that there is no initial looseness or pounding, and thereby greatly increase the life and efficiency of the structure. The plate is also removably seated in the structure, and if in time wear and looseness develop it (together with the tongue, if necessary) may be removed and replaced by new parts.

It has heretofore been proposed to use separate hard bearing-plates under the bed of the

tongue, (not, however, seated and fitted as herein described;) but the attempts made in this direction have not been satisfactory because of the difficulty in providing in these hard plates a proper bearing for the tongue pin or pivot. My invention overcomes this difficulty in that I do not attempt to make the entire bearing in the plate, but provide below it and below the floor of the structure a separate bearing-sleeve or bushing which can be accurately seated with respect to the said pin or pivot.

My invention also consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a switch embodying my invention with the tongue removed. Fig. 2 is a section on the line 2 2 of Fig. 1; and Fig. 3 a section on the line 3 3 of Fig. 1, but with the tongue shown.

The letter A designates the body portion of the structure, having the seat or pocket B for the usual removable tongue or point D.

C is the hardened and surfaced wear-plate, which is seated in a recess cored in the pocket B. This plate is of hard material, such as chrome or manganese steel or steel which has been treated to give it a hard wear-resisting surface. Before being seated it is accurately surfaced with respect to the complementary bearing-surface of the tongue. It is formed with a circular opening *c* for the tongue-pin *d*, and before the plate is seated the walls of this opening are ground to accurately fit said pin. The plate is then seated and accurately leveled with respect to the adjacent surface of the pocket B. Melted spelter or other like material (indicated at E) is then poured around and underneath the plate.

Formed through the floor *f* of the structure is a circular opening *f'* in line with the opening *c*. Below this floor the structure is cored out to receive a sleeve or bushing H, which is seated so that its interior bearing-surface registers with the walls of the openings *c* and *f'* and which is held in place by a filling *h* of sulfur, spelter, or other suitable material.

This bushing is protected by the floor *f* from receiving any pounding action from the tongue through the plate C, and it is protected by the pin-bearing in said floor and plate from lateral and end thrusts. At the same time it forms a deep or extended bearing for the pin.

As the life of a tongue-switch is ordinarily limited by the life of the tongue-bearing at the bed, it will be readily seen that the improvements above described will greatly increase the efficiency and durability of the switch.

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

1. In a tongue-switch, the combination with the body portion of the structure having a seat or pocket for the tongue, formed with a recess in its bed portion, of a hard wear-plate seated in said recess and accurately surfaced to the under surface of the tongue.

2. In a tongue-switch, the combination with

the body portion of the structure having a seat or pocket for the tongue, formed with a recess at its bed portion, of a hard wear-plate seated in said recess and accurately surfaced to the under surface of the tongue, said plate having a pin-bearing opening therethrough, and a separate bearing-sleeve or bushing seated in said structure below the plate and set to register with the opening thereof.

3. In a tongue-switch, the body portion having the surfaced wear-plate, the floor portion upon which said plate is seated, and the bushing below said floor portion, said plate, floor portion and bushing having registering bearings for the tongue pin or pivot.

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

P. LAVELLE.

Witnesses:

LORETTO O'CONNELL,
H. W. SMITH.