No. 810,433.

PATENTED JAN. 23, 1906.

E. B. PRIOR.

TONGUE SWITCH.

APPLICATION FILED JUNE 29, 1905.

2 SHEETS—SHEET 1.

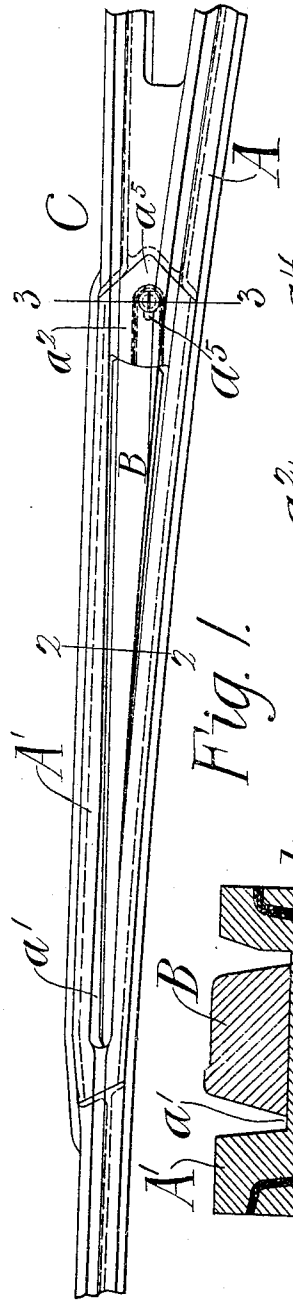

Fig. 1.

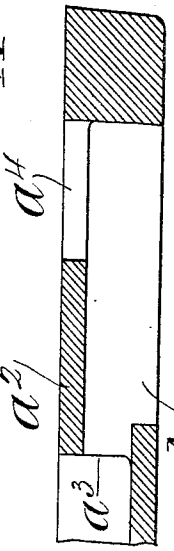

Fig. 5.

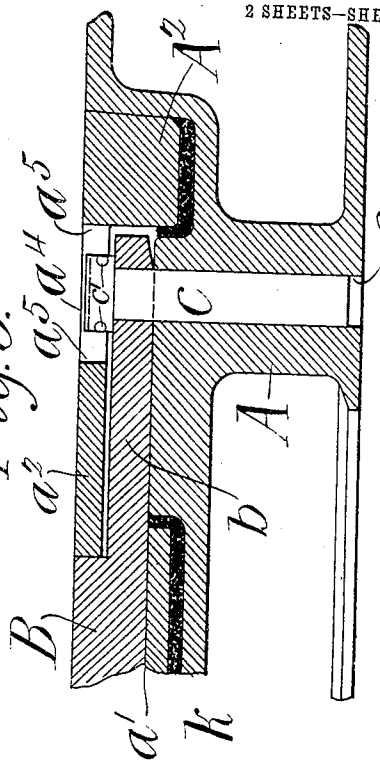

Fig. 4.

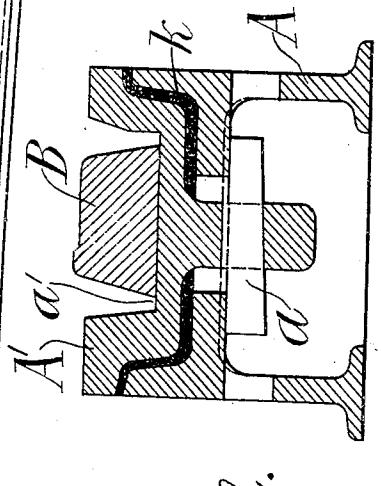

Fig. 2.

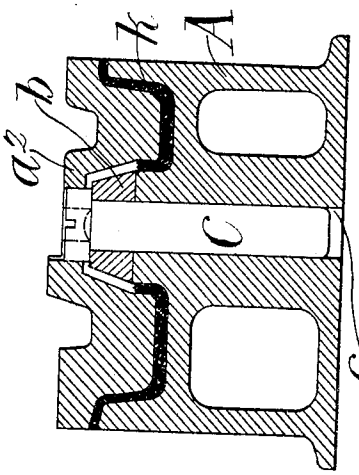

Fig. 3

WITNESSES:

Charles Curam Jr.

Loretto M. O'Donnell

INVENTOR

E. B. Prior,

BY

Geo. H. Parmelee,

His ATTORNEY.

No. 810,433. PATENTED JAN. 23, 1906.

E. B. PRIOR.

TONGUE SWITCH.

APPLICATION FILED JUNE 29, 1905.

2 SHEETS—SHEET 2.

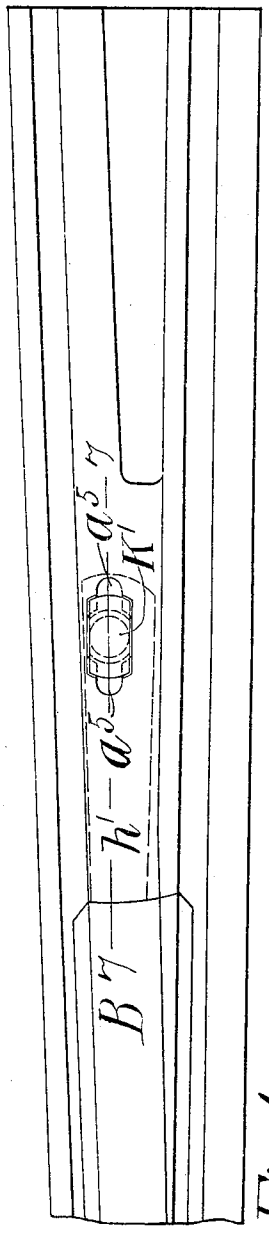

Fig. 6

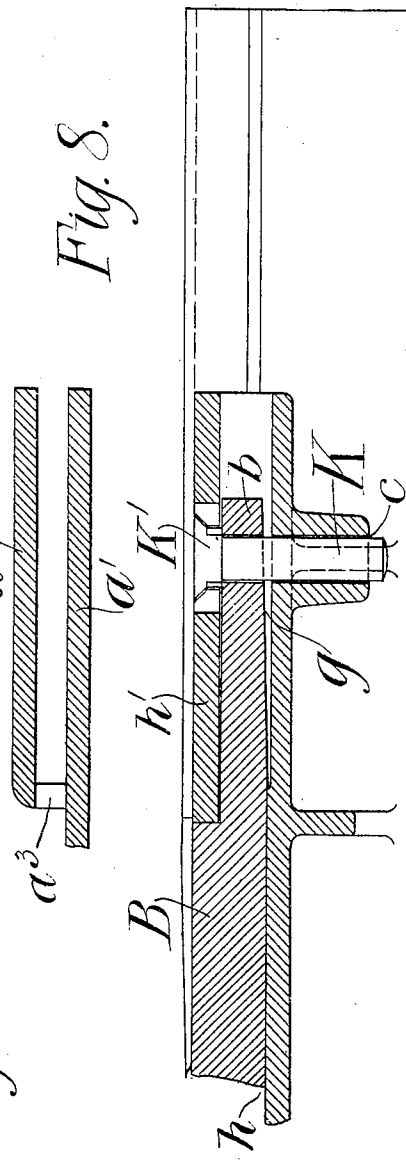

Fig. 8.

Fig. 7.

WITNESSES:

Charles Curran Jr.

Loretto M. O'Donnell

INVENTOR

E. B. Prior.

BY

Geo. H. Parmelee.

ATTORNEY.

UNITED STATES PATENT OFFICE.

ERNEST B. PRIOR, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE LORAIN STEEL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TONGUE-SWITCH.

No. 810,433. Specification of Letters Patent. Patented Jan. 23, 1906.

Application filed June 29, 1905. Serial No. 267,594.

To all whom it may concern:

Be it known that I, ERNEST B. PRIOR, of Brooklyn, in the county of Kings, city and State of New York, 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 that class of tongue-switches known as "protected" or "armored" heel-switches.

Prior to my invention in this type of switch it has been customary to employ a plate separate from the rest of the structure and secured thereto over the heel portion of the tongue and which must be removed in order to permit the removal of the tongue. It has also been a matter of more or less difficulty to properly secure these plates rigidly, yet removably, in the structure with their track-surfaces in alinement with the adjoining track-surfaces.

It is the object of my invention to provide a switch in which the heel is protected by an integral portion of the structure, which, together with the tongue and its pin, is so constructed and arranged that the tongue may be readily removed.

With these objects in view my invention consists in the novel construction, arrangement, and combination of parts, all substantially 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; Figs. 2 and 3, sections taken on the lines 2 2 and 3 3, respectively, of Fig. 1; Fig. 4, a longitudinal section through the heel portion of the switch; Fig. 5, a sectional view of the heel portion of the face-plate removed; Fig. 6, a plan view of the heel portion of a switch, showing a slightly-modified construction; Fig. 7, a longitudinal vertical section on the line 7 7 of Fig. 6, and Fig. 8 a detail sectional view of another form of the face-plate.

In the construction shown on Sheet 1 the body portion of the switch consists of the base-casting A and the surface portion or face-plate A′, which is rigidly secured to the base portion in any suitable manner, as by the keys *a*, Fig. 2. This face-plate, which is of harder and more durable metal than the base portion, is somewhat longer than the movable tongue B and has the depressed floor *a′*, upon which the tongue rests and moves for the greater portion of its length, and also the integral raised overhanging track-surfaced portion a^2, which forms the protection for the heel portion *b* of the tongue, the latter, which is thinner than the body of the tongue, being introduced underneath said portion a^2 by means of the opening at a^3. C is the tongue pin or pintle, which is separate from the tongue and is dropped through the same into its bearing-cavity *c* by means of an opening a^4 in the portion a^2. To enable the tongue to be removed, this pin is withdrawn, and to facilitate this it is provided with the notches *c′*, which can be engaged by suitable lifting or pry bars, to admit which the opening a^4 has the enlargements a^5. The pin C preferably has a good bearing fit in the cavity *c*, but may be loose therein, as shown in Fig. 7.

The construction shown in Figs. 6 and 7 differs from that just described in that instead of a separate face-plate the body of the switch is formed by an integral casting having the depressed floor portion *h* and the raised overhanging heel-protecting portion *h′*, said portions *h* and *h′* corresponding to the portions *a* and *a′* of the face-plate. These figures also show the pin or pivot K as having an oblong head K′ to prevent it from turning. The switch is essentially the same in both forms of construction, the employment of the face-plate being resorted to because of the fact that by its use the base portion of the switch can be made of a less durable and expensive metal and also because of the fact that it is somewhat easier to grind (the metal being too hard to machine) the bearing-surfaces of said plate when made in a separate piece. For this reason when the integral construction is used there is preferably a clearance left under the heel portion of the tongue, as indicated at *g*. This clearance obviates the difficulty of making a good bearing fit at this place.

The tongue is preferably, but not necessarily, made sufficiently long so that the pin C can be placed at a point where the wheel-treads will not pass directly over it.

When the face-plate construction is em-

ployed, it is preferably seated upon a bed *k*, of spelter or similar material. It is also preferably formed at its extreme heel end with the portion A^2, which is bedded in a recess of the casting. Said plate may, however, be constructed as shown in Fig. 8, in which the floor portion *a'* is carried back underneath the raised portion a^2 to form a hard-metal bearing underneath the bed portion *b* of the tongue.

While I have shown the rail members or connecting-arms of the structure as integral with the body-casting, it will be evident that they may be separate pieces of rail secured to said casting in any suitable manner.

By reason of the construction above described I provide a switch in which the heel portion is guarded from the action of passing wheels by an integral portion of the structure which cannot work loose or pound down upon the tongue. I also provide for the ready removal and replacement of the tongue.

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

1. In a tongue-switch, a body structure having a depressed floor portion forming the bed for the body portion of the tongue, and an integral overhanging portion extending forward of the tongue pin or pivot and covering the heel portion of the tongue.

2. In a tongue-switch, a body structure having a depressed tongue-bearing floor, and a raised portion overhanging the heel portion of the tongue to a point in advance of the tongue pin or pivot, said depressed and overhanging portions being integrally connected, and partially separated by an opening.

3. In a tongue-switch, the combination with a base portion, of a face-plate secured to the said base portion, said face-plate being underneath the tongue for a portion of its length, and over the tongue for the balance of its length.

4. In a tongue-switch, the combination with a base portion, of a face-plate secured thereto and forming the bed for the tongue, said face-plate having at its heel portion an integrally-connected portion which overhangs the seat for the heel portion of the tongue.

5. In a tongue-switch, the combination with a body structure having an integral portion overhanging the seat for the heel portion of the tongue, of a tongue having a heel portion shaped to enter said seat, and a pin for the tongue arranged to permit the removal of the tongue.

6. The combination of a body structure having an integral overhanging portion at the heel, a switch-tongue extending underneath said overhanging portion and having a pin or pivot, and means whereby the tongue may be removed without disturbing said overhanging portion.

7. The combination of a body structure having an overhanging portion at the heel, of a tongue having a depressed heel portion arranged to seat underneath said overhanging portion, a pin or pintle for the tongue, and means whereby the pin or pintle may be removed through the said overhanging portion.

8. In a tongue-switch of the character described, the combination with a body structure having an overhanging portion at the heel integral with the tongue-bed, of a tongue extending underneath said overhanging portion, and a pin or pivot for the tongue arranged to permit the tongue to be removed without disturbing said overhanging portion.

9. In a tongue-switch, a body structure having an integral overhanging portion at the heel extending forward of the tongue-pin and having an aperture therethrough to permit the insertion and withdrawal of the said pin.

10. In a switch of the character described, the combination with a body structure having an integral overhanging portion at its heel extending forward of the tongue-pin and having an aperture therethrough to permit the insertion and withdrawal of the said pin, of a pin having means for the engagement therewith of lifting or withdrawing means.

11. The combination in a switch structure, of a body having a cavity for the reception of a tongue-pivot, a face-plate having a portion extending over the cavity and grooved for the flanges of the wheels, the said overhanging portion being integral with the facing-plate.

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

ERNEST B. PRIOR.

Witnesses:
RICHARD P. WILLIAMS,
SAMUEL GANSMAN.