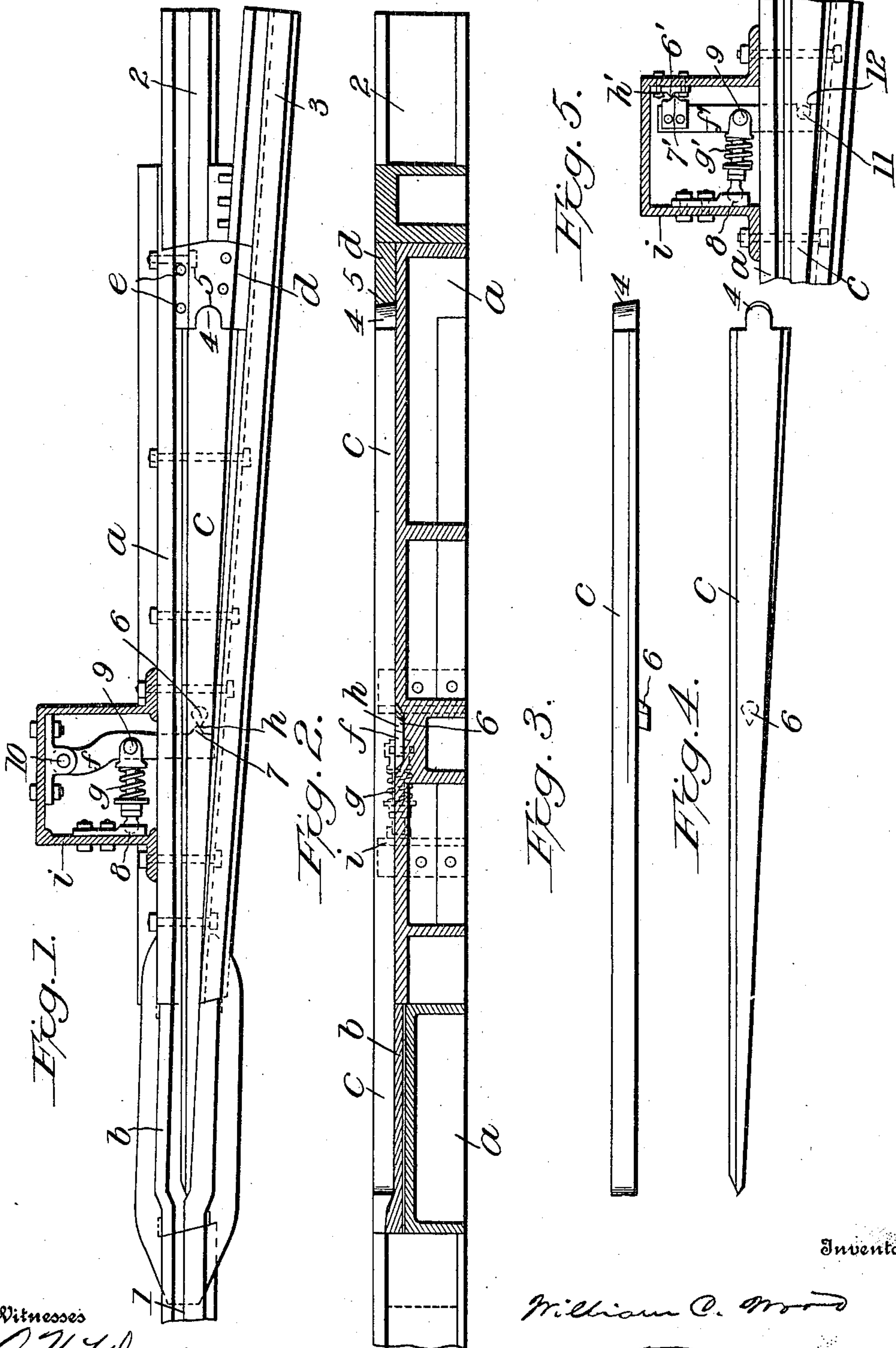


No. 837,766.

PATENTED DEC. 4, 1906.

W. C. WOOD.  
TONGUE SWITCH.  
APPLICATION FILED OCT. 5, 1906.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## TONGUE-SWITCH.

No. 837,766.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed October 5, 1906. Serial No. 337,581.

*To all whom it may concern:*

Be it known that I, WILLIAM CLARK WOOD, a citizen of the United States of America, and a resident of Hoboken, in the State of New Jersey, have invented a new and useful Improvement in Tongue-Switches, of which the following is a specification.

This invention is primarily additional to the improvement in tongue-switches described and claimed in my specification forming part of United States Letters Patent No. 790,335, dated May 23, 1905, but may be embodied in part in tongue-switches of other constructions.

The leading objects common to the present improvement and that patented by said Letters Patent No. 790,335 are to construct an antistraddling or antikicking tongue-switch in which the tongue is held to either side of its travel by spring-pressure in an effective way and to construct such switches without the customary "heel-pin" and with an effective provision whereby the tongue is kept firmly down on its bed and its heel end is effectively prevented from being driven down into the bed or floor of the switch. Such driving or grinding down of the heel of the tongue in tongue-switches as heretofore constructed is owing to the fact that there is a slight movement of the tongue every time the car passes over it, the tendency of the tongue being to go with the travel the same as the rails, and the only thing to prevent such travel or "creeping ahead" has been the heel-pin, which soon wears, so as to leave the tongue loose.

In the improved switches the heel end of the tongue is pivoted within an undercut socket and is pressed into this socket by the antistraddling spring. Owing to such construction, the improved switches are equally well adapted for use either as trailing-switches or as "head-on" or facing switches.

The distinguishing objects of the present invention are to simplify the antistraddling feature of the improved switches and to dispense with one or more pivotal joints in the construction of such switches.

This invention consists in certain novel combinations of parts hereinafter described and claimed.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 is a plan view of an improved tongue-switch, illustrating this invention, the spring-containing box being shown in section. Fig. 2 represents a longitudinal section in the plane of the tongue. Figs. 3 and 4 are respectively an elevation and a top view of the tongue detached, and Fig. 5 is a fragmentary sectional plan view illustrating a modification.

Like reference characters refer to like parts in all the figures.

In common with said patented switch the body *a* of the improved switch and the connections of said body with the adjoining rails 1, 2, and 3 may be of any known or improved description. Within the switch-body *a* and preferably and conveniently in part within a steel center *b* the movable point of tongue *c* is arranged, as shown in Figs. 1 and 2 and Fig. 5, so as to be movable horizontally in customary manner. This tongue also may be of any known or improved construction apart from the features hereinafter specified, and included in the appended claims, respectively.

For pivoting the tongue *c* its heel end is preferably constructed with a peculiarly beveled knuckle 4, fitted to an undercut pivotal recess 5 in the adjoining edge of a steel heel-cap *d*, which is fastened in place by vertical bolts or rivets *e*, Fig. 1.

The improved means for holding the tongue *c* in its respective positions of rest and for holding it down upon its seat within the switch-body *a* and pressing it endwise into said pivotal recess 5 include a horizontally-movable shifting bar *f* or *f'*, substantially at right angles to the tongue *c* and interacting therewith, a spring device *g*, which may be of known construction, hereinafter termed a "spring," arranged horizontally and substantially parallel with said tongue and interacting with said bar *f* or *f'*, and a locking device *h* or *h'*, including a V-shaped detent 6 or 6', preferably in the form of a projection, the inclines of which are arranged sidewise with reference to the tongue, said bar *f* or *f'* being provided with a matching pair of inclines 7 or 7', which are preferably and conveniently formed by a matching projection interacting with said detent 6 or 6'.

The customary spring-containing box *i* is rigidly attached to the switch-body *a* at one



side and provided internally with a suitable support 8 for the outer end of said spring *g*, the other end of which is correspondingly attached to the shifting bar *f* or *f'* at 9. In both the species represented by the drawings the support 8 is in the form of a knuckle-joint, and the joint at 9 is formed by a vertical pivot.

In the construction represented by Figs. 1 to 4, inclusive, the V-shaped detent 6 of the locking device *h* is formed on the bottom of the tongue *c* as a substitute for the shifting pin of said patented switch, and said interacting inclines 7 are carried by the tongue end of the shifting bar *f*, and said bar is supported against endwise movement by a pivotal abutment 10 at its outer end within said spring-containing box *i*.

In the modification illustrated by Fig. 5 the locking device *h'* is arranged within the spring-inclosing box *i*. Said V-shaped detent 6' is formed on a steel piece rigidly bolted in place within the box, and the matching inclines 7' are carried by the outer end of the shifting bar *f'*, the inner end of the shifting bar being pivotally attached to the tongue *c* by a shifting pin 11 on the bottom of the tongue and a notch 12 in that edge of the shifting bar which is toward the heel end of the tongue.

A tensile spring may obviously be substituted for the compression-spring shown in both of the above-described arrangements, and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification—

1. The combination, substantially as hereinbefore specified, of a switch-tongue having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar, and a locking device including a V-shaped detent the inclines of which are arranged sidewise with reference to said tongue, said bar being provided with a matching pair of inclines interacting with those of said detent.

2. The combination, substantially as hereinbefore specified, of a switch-tongue having an undercut pivotal bearing at its heel end and having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar and pressing said heel end into said bearing, and a locking device in-

cluding a V-shaped detent the inclines of which are arranged sidewise with reference to said tongue, said bar being provided with a matching pair of inclines interacting with those of said detent.

3. The combination, substantially as hereinbefore specified, of a switch-tongue having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar, and a locking device including a V-shaped projection the inclines of which are arranged sidewise with reference to said tongue, said bar being provided with a matching projection interacting with said V-shaped projection.

4. The combination, substantially as hereinbefore specified, of a switch-tongue having an undercut pivotal bearing at its heel end and having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar and pressing said heel end into said bearing, and a locking device including a V-shaped projection the inclines of which are arranged sidewise with reference to said tongue, said bar being provided with a matching projection interacting with said V-shaped projection.

5. The combination, substantially as hereinbefore specified, of a switch-tongue having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar, and a locking device including a V-shaped detent on the bottom of said tongue the inclines of which are arranged sidewise with reference to said tongue, said bar being provided at its tongue end with a matching pair of inclines interacting with those of said detent and supported against endwise movement.

6. The combination, substantially as hereinbefore specified, of a switch-tongue having an undercut pivotal bearing at its heel end and having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar and pressing said heel end into



said bearing, and a locking device including a V-shaped detent on the bottom of said tongue the inclines of which are arranged sidewise with reference to said tongue, said bar being provided at its tongue end with a matching pair of inclines interacting with those of said detent and supported against endwise movement.

7. The combination, substantially as here-  
inbefore specified, of a switch-tongue having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar, a locking device including a V-shaped projection on the bottom of said tongue the inclines of which are arranged sidewise with reference to said tongue, said bar being provided at its tongue end with a matching pair of inclines interacting with those of said locking device, a spring-inclosing box fixedly supported at one side of the switch, and pivotal supports within said box for the outer ends of said bar and said spring respectively.

8. The combination, substantially as here-  
inbefore specified, of a switch-tongue having an undercut pivotal bearing at its heel end and having the customary horizontal travel from one position of rest to another, and an antistraddling device including a horizontally-movable shifting bar substantially at right angles to said tongue interacting therewith, a horizontally-arranged spring substantially parallel with said tongue interacting with said bar and pressing said heel end into said bearing, a locking device including a V-shaped projection on the bottom of said tongue the inclines of which are arranged sidewise with reference to said tongue, said bar being provided at its tongue end with a matching pair of inclines interacting with those of said locking device, a spring-inclosing box fixedly supported at one side of the switch, and pivotal supports within said box for the outer ends of said bar and said spring respectively, substantially as hereinbefore specified.

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