

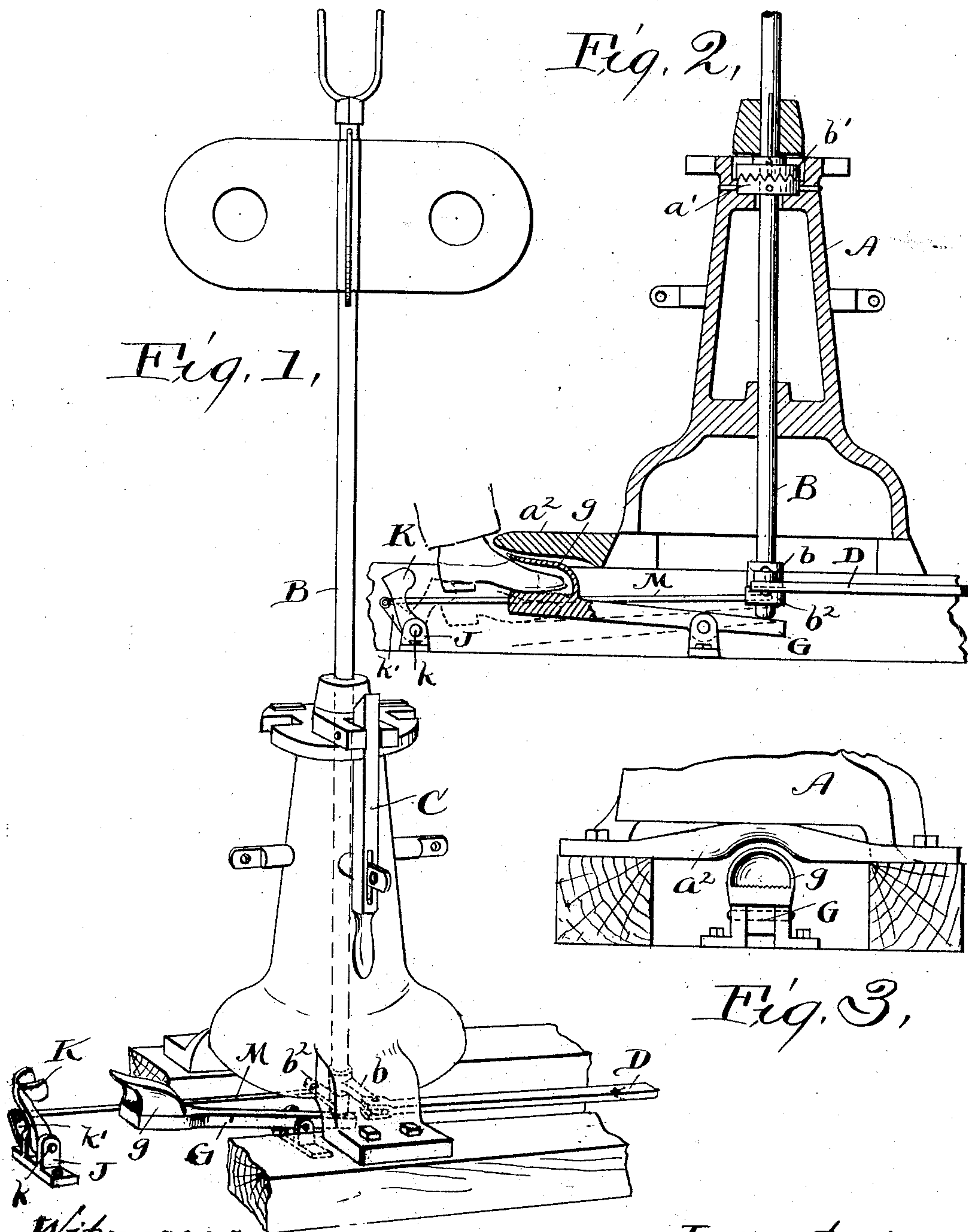
No. 737,380.

PATENTED AUG. 25, 1903.

T. FLEMING.  
SWITCH OPERATING MECHANISM.

APPLICATION FILED NOV. 7, 1902.

NO MODEL.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

THOMAS FLEMING, OF CLEVELAND, OHIO.

## SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 737,380, dated August 25, 1903.

Application filed November 7, 1902. Serial No. 130,462. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS FLEMING, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Switch-Operating Mechanisms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

Many railway accidents occur because switches are carelessly left open by those whose duty it is to close them.

The object of my invention is to render it impossible for one who opens a switch to leave it until he has closed it.

The invention consists, broadly, in the combination, with the switch-operating mechanism, of a foot-operated device for releasing this switch mechanism and a foot-locking device operatively connected with the switch-operating mechanism, whereby the foot of the operator is held until the switch has been closed.

It also consists in the more specific combinations of parts for attaining the stated result, as shown and described herein and pointed out definitely in the claims.

In the drawings, Figure 1 is a perspective view of a switch-stand and associated parts including my invention. Fig. 2 is a central vertical sectional view of the same, and Fig. 3 is an end view of the foot-locking device and the lower part of the switch-stand.

Referring to the parts by letters, A represents a switch-stand, in which a vertical staff B is rotatably mounted. An operating-handle C of familiar construction is secured to the staff above the stand. Attached to the lower end of the staff is an arm *b*, to which is operatively connected the draft-bar D, whose other end is attached directly or indirectly to the switch-tongue to be operated. So much of the device as is above described is substantially like the constructions now in common use. The staff is normally locked against revolution and cannot be unlocked until it is lifted in its bearings. The specific lock shown consists of a serrated disk *b'*, which is secured upon the staff, and another serrated disk, which is fixedly secured to the standard *a'*. The weight of the staff and its attached parts brings the serrated surfaces into contact,

and when they are in contact the revolution of the staff is prevented. In order to lift the staff and separate these serrated surfaces, and to thereby unlock the staff, a lever G is provided, which is pivoted to a fixed plate located below the stand. One end of the lever lies beneath and in contact with the lower end of the staff, while the other end of said lever is provided with a stirrup *g*, into which an operator must put the toe of his foot in order to operate the lever. The end of the lever on which the stirrup is formed lies beneath an overhanging part *a''* of the base of the switch-stand, and thus it is practically impossible to operate the lever save by the foot, as stated. A foot-locking lever K is pivoted a suitable distance behind the stirrup to a fixed support J. In the construction shown the foot-locking lever is attached to a rock-shaft *k*, to which is also attached an operating-arm *k'*. This operating-arm is connected by means of a link M with a lever-arm *b''* attached to the staff B.

The operation of the described mechanism is as follows: In order to open the switch, an operator puts his foot into the stirrup *g* and presses down on the lever G, thereby lifting the switch-staff and unlocking it, so that it may be rotated. He then turns the staff in the direction to open the switch. As the staff turns the foot-locking lever K is drawn forward against the heel of the foot on the stirrup and remains in this position so long as the switch remains open. The operator cannot withdraw his foot until he shall have closed the switch, the movement of the staff which closes the switch being a movement which throws the foot-locking lever backward and releases the foot.

Having described my invention, I claim—

1. The combination of a switch-stand, a rotatable staff mounted therein, and movable vertically in its bearings, a locking device for preventing the rotation of said staff and adapted to be unlocked by the vertical movement of said staff, with a pivoted lever having one end located beneath said staff and in engagement therewith, a foot-locking lever pivoted behind the other end of said lever, and operative connections between said foot-locking lever and staff, substantially as and for the purpose specified.

2. The combination of a switch-stand having in its base an overhanging plate, a vertically-movable staff rotatably mounted in said stand, mechanism for connecting the said staff and the switch to be operated, a lock for preventing the rotation of said staff, and composed of two interlocking members one secured to the staff and one to the switch-stand, a pivoted lever lying beneath the switch-stand and having one end engaging the lower end of the staff, and having a stirrup on the other end which lies beneath a part of the switch-stand base, a foot-locking lever pivoted behind said stirrup, an operating-arm secured to the staff and a link connecting said arm with the foot-locking lever, substantially as and for the purpose specified.

3. The combination of switch-operating mechanism, and a lock for preventing the movement of said mechanism, with a foot-lever adapted to release said lock, which lever has a stirrup, a foot-shackling device for holding the foot in said stirrup, and operative connections between said foot-shackling device and the switch-operating mechanism, whereby the shackling device is operated when and only when the switch is operated.

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

THOS. FLEMING.

Witnesses:

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