No. 748,345. PATENTED DEC. 29, 1903.

J. E. CAMPBELL.

SWITCH OPERATING DEVICE.

APPLICATION FILED SEPT. 15, 1903.

NO MODEL.

Fig. 1

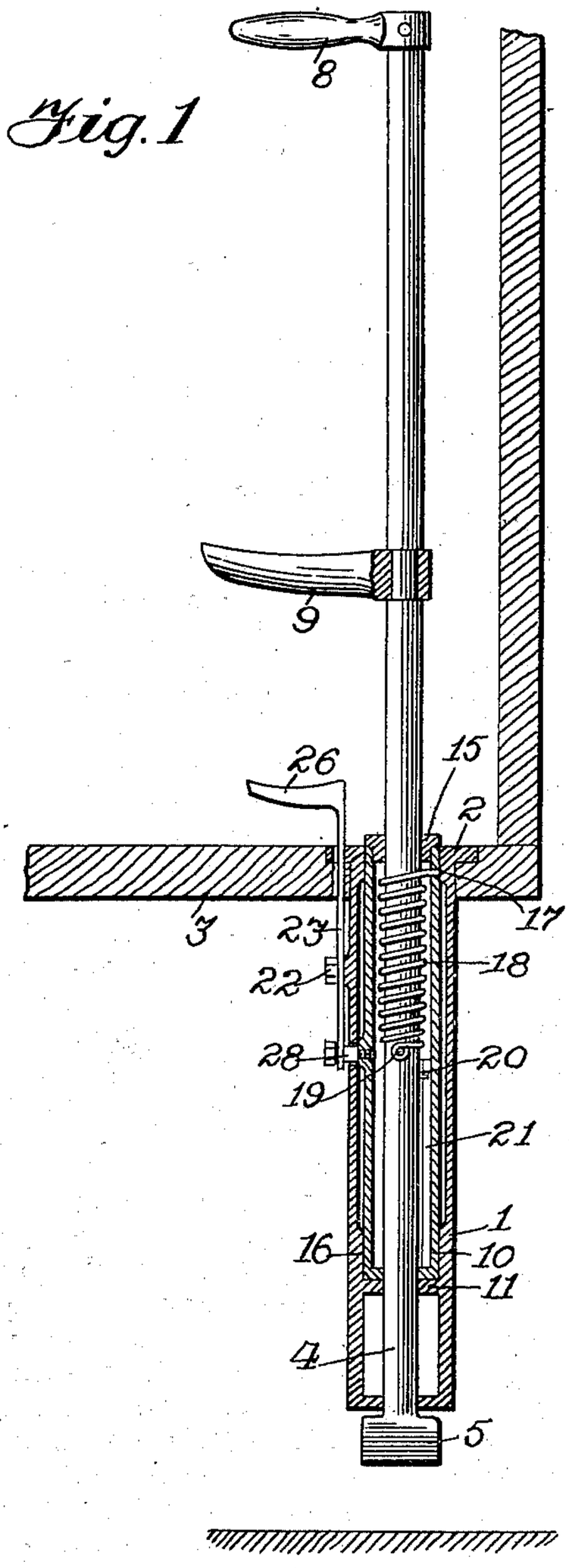


Fig. 2

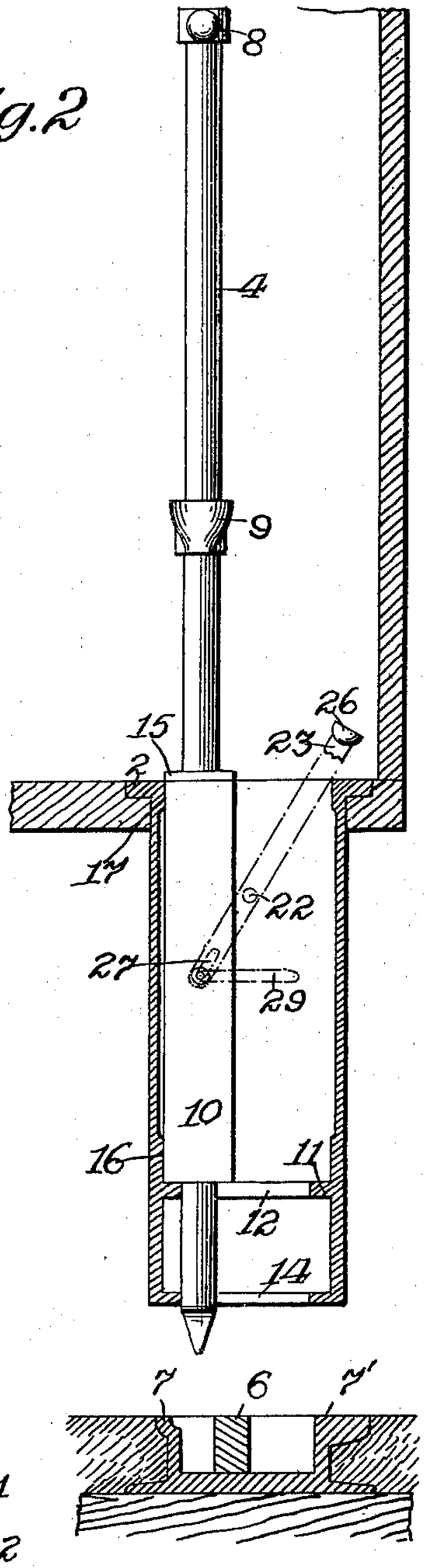
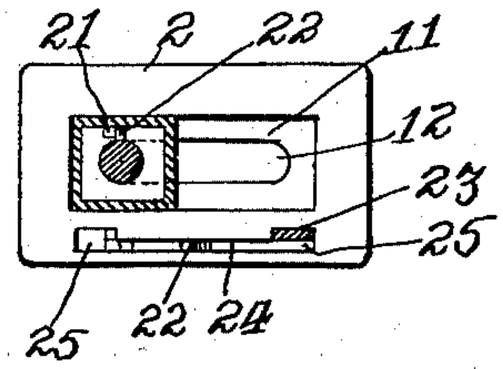


Fig. 3



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No. 748,345. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH E. CAMPBELL, OF PITTSBURG, PENNSYLVANIA.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 748,345, dated December 29, 1903.

Application filed September 15, 1903. Serial No. 173,239. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. CAMPBELL, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Operating Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switch-operating devices; and the object of the invention is to provide means adapted to be connected to the platform of a car whereby the motorman may readily and conveniently move the switch-tongue to the desired position without requiring the dismounting from the car.

Briefly described, the invention comprises a casing which is suitably secured to the floor of the car-platform, in the chamber of which casing is arranged an inner casing adapted to be shifted when desired within the outer casing. Extending through the inner casing and through the bottom of the outer casing is an operating-rod provided on its lower end with a shoe for engagement with the switch-tongue to throw the latter, and on its upper end this rod is provided with a handle by means of which it may be turned within the casing so as to cause the shoe to shift the switch-tongue. A foot-piece is carried by the rod, so that the operator may depress the same, and, if desired, this foot-piece may be fixedly secured to the rod, so as to be employed both for depressing and for turning the rod. Means is provided for automatically returning the operating-rod to its normal or elevated position and for so positioning the rod as to have the shoe in proper position for engagement with the switch-tongue, and means is also provided for shifting the inner casing within the outer casing to bring the operating-rod into desired position vertically with the switch-tongue.

All of the above construction will be hereinafter more specifically described and then particularly pointed out in the appended claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this application, and wherein like numerals of reference will be employed to indicate like parts throughout the different views, in which—

Figure 1 is a central vertical sectional view of my improved device, showing the same in position on a car-platform, the latter being in section. Fig. 2 is a transverse vertical sectional view thereof. Fig. 3 is a detached detail top plan view of the outer casing, showing the inner casing, operating-rod, and shifting-lever in section.

To put my invention into practice, I provide an outer casing 1, substantially rectangular in cross-section and preferably provided at its upper end with a flange 2, which may be countersunk in the platform-floor 3, as seen in Figs. 1 and 2 of the drawings. This casing is closed at its lower end, except for the opening through said lower end to receive the operating-rod 4, which rod is provided on its lower end with a suitable shoe 5, made of a length considerably greater than the diameter of the rod, so that when said shoe is inserted between the switch-tongue 6 and the side of the frog 7 and the rod turned the shoe will force the switch-tongue in the desired direction. The rod at its upper end is preferably provided with a handle 8, and at a point a desired distance above the floor 3 with a foot-piece 9, which in practice is generally loosely mounted. If it is desired, however, the foot-piece may be fixedly secured to the operating-rod, and this foot-piece employed both for depressing the rod and for turning the same, so as to cause shoe to actuate the switch-tongue. Generally, however, it is preferable to employ the foot-piece for depressing the rod and the handle for turning said rod. Fitted in the casing 1 is an inner casing 10, which rests upon a web 11 in the casing 1. This web and the bottom of the outer casing are provided, respectively, with slots 12 14 to permit the movement of the operating-rod 4, and the bottom of the inner casing 10 has an opening registering with slots 12 14 and receiving the rod 4 therethrough. In the upper end of this inner casing 10 is a nut 15, through which the rod extends. The inner casing and the operating-rod are shiftable in the oblong direction of the outer casing, but held against lateral movement in said outer casing. I prefer to have the inner cas-

ing engage with the inner walls of the outer casing only at the top and bottom of said inner casing, as seen at 16 17, thus materially decreasing the friction between the said casings during the shifting of the inner casing, but securely holding the latter against lateral movement. Means is provided for automatically returning the operating-rod to the elevated position, and a practical embodiment of such means is the employment of a spring 18, wound on the rod below the nut 15, with its upper end attached to the inner casing 10 and its lower end attached to the rod 4, as by a pin 19. This spring besides performing the function of elevating the rod to its normal position, also serves to partially rotate the rod back to its normal position after pressure on the handle is relieved. When the rod is depressed, it is partially rotated, if required, so as to properly aline the shoe 5 with the slot between switch-tongue and the frog, and when the pressure on rod is relieved the spring 18 will return the rod to its normal position. Means is provided to limit this rotating movement, which may be accomplished by providing the rod with a stop-pin 20 to engage a rib 21 on the inner wall of the inner casing 10. Pivotally secured to the outer face of the casing 1, as at 22, is a lever 23, which extends through a slot in the platform-floor and through a slot 24 provided therefor in the flange 2, notches 25 being provided in the flange 2 at each end of the slot 24, into which said lever is engaged. This lever is provided at its upper end with a foot-piece 26, and near its lower end has a slot 27, to receive the pin 28, carried by the inner casing, and working in a slot 29 in the outer casing.

In operation the motorman depresses the rod by placing the foot on foot-piece 9, and when shoe 5 has been inserted alongside the switch-tongue the rod is turned by means of the handle 8 to move said tongue. The relieving of the pressure on the rod permits spring 18 to return said rod to its normal position. When the switch-tongue is lying against the rail side 7′ and it is desired to throw the same over against the frog side 7, the motorman by means of lever 23 shifts casing 10 and operating-rod within said outer casing, so as to bring the rod 4 into position to be inserted between the switch-tongue and the rail side 7′, and then by turning the rod as above described the switch-tongue is shifted to the desired position. The spring 18, as stated, besides elevating the rod also serves to partially rotate the same after pressure on the rod is relieved, so that the shoe 5 will always be properly alined for use.

While I have herein shown and described the invention in detail as it is practiced by me, yet it will be evident that various changes may be made in the details of construction without departing from the general spirit of the invention.

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

1. In a switch-throwing device, an outer casing secured to the car-platform, an inner casing, a rod operating through said casings and having a shoe on its lower end, and means for returning said rod to its elevated position, substantially as described.

2. In a switch-throwing device, an outer casing, an inner casing capable of being shifted within the outer casing, an operating-rod extending through said casings, and means for shifting the inner casing and rod within the outer casing, substantially as described.

3. A switch-thrower comprising two casings movably mounted one within the other, and a rod within the inner casing partaking of the movement thereof.

4. In a switch-throwing device, an outer casing, an inner casing mounted to be shifted to different positions within the outer casing, an operating-rod extending through said casings, and a lever for shifting the inner casing within the outer casing, substantially as described.

5. In a switch-throwing device, a casing supported from the car-platform and shiftable to different positions, an operating-rod extending through said casing and provided on its lower end with a shoe, a lever pivoted to the casing for shifting the same, and a foot-piece carried by the rod for depressing the same, substantially as described.

6. A switch-thrower comprising two casings one movable within the other, a rod in the inner casing and movable therewith, and means for moving said inner casing in the outer casing.

7. In a switch-thrower, an outer casing, an inner casing carrying a rod mounted therein and movable the width thereof, and means connected to the outer casing and to the inner casing for operating the latter.

8. In a switch-thrower, an outer casing, and an inner casing movable laterally therein, a rod in the inner casing movable therewith and movable vertically independent thereof.

9. A switch-thrower, comprising two casings movably mounted one within the other, and a rod in the inner casing movable vertically independent thereof.

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

JOSEPH E. CAMPBELL.

Witnesses:
H. C. EVERT,
E. E. POTTER.