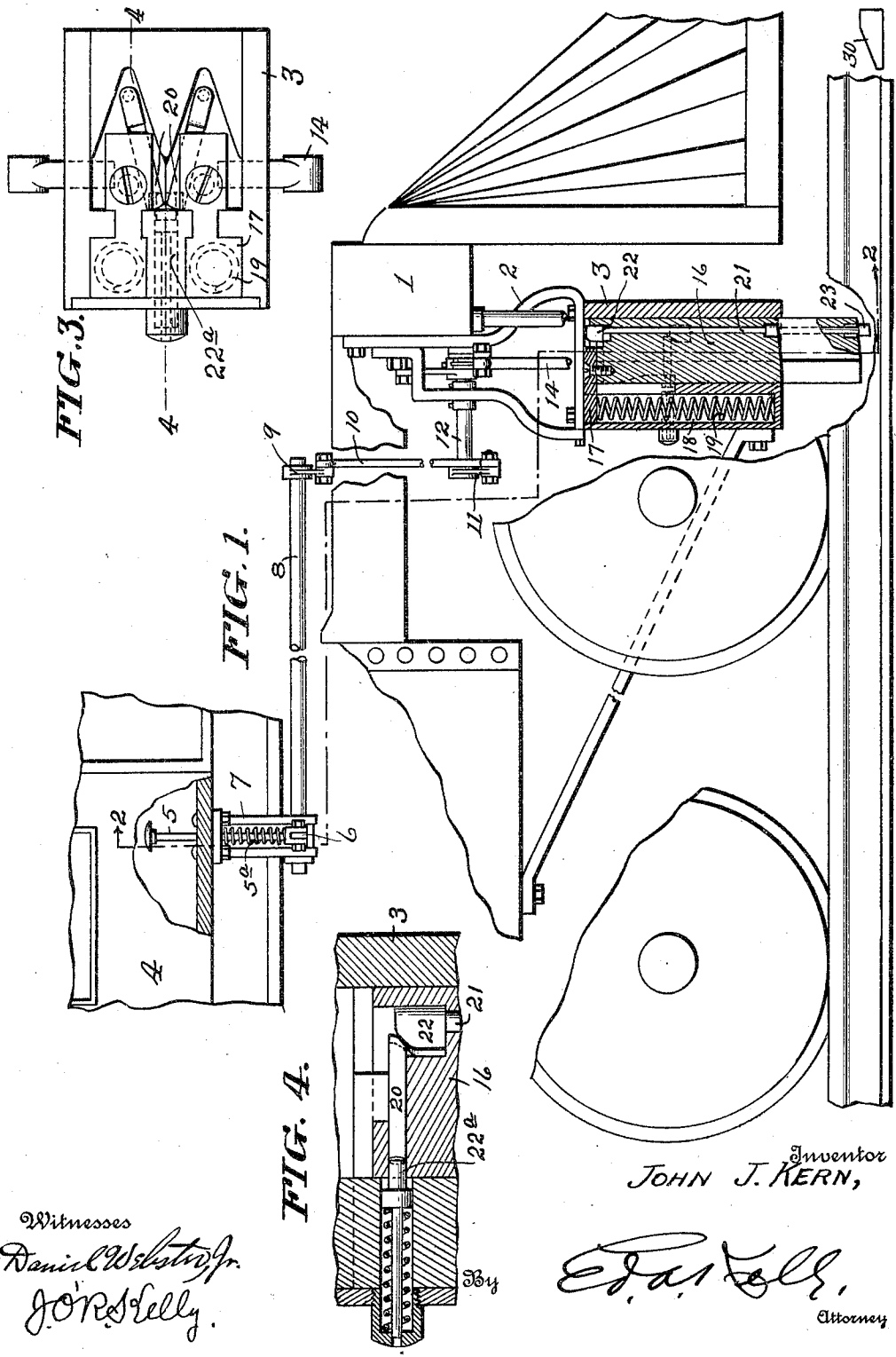


J. J. KERN.
 SWITCH OPERATING DEVICE.
 APPLICATION FILED JAN. 28, 1911.

1,006,226.

Patented Oct. 17, 1911.

2 SHEETS-SHEET 1.



Witnesses
Daniel Webster Jr.
J. O. Kelly.

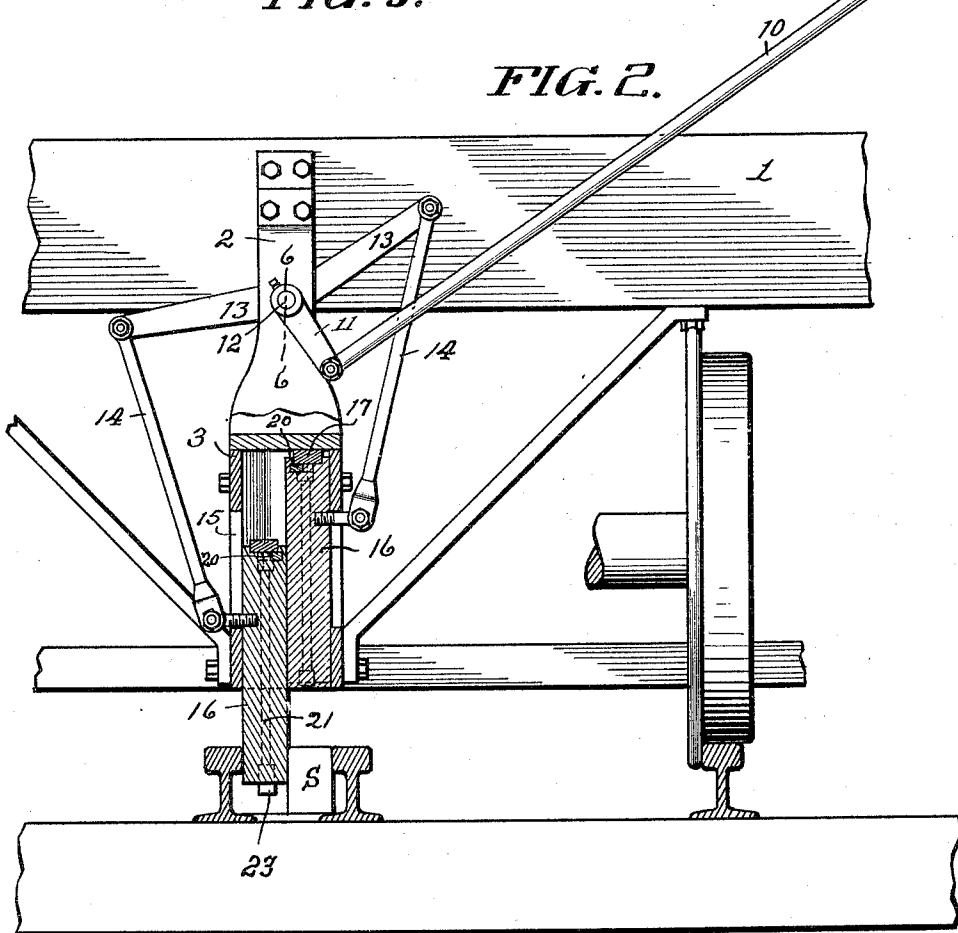
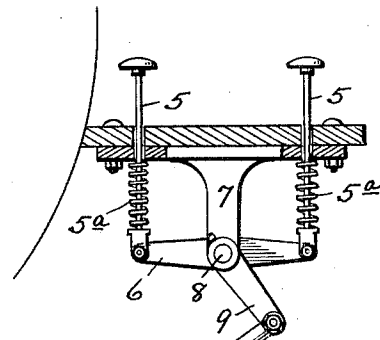
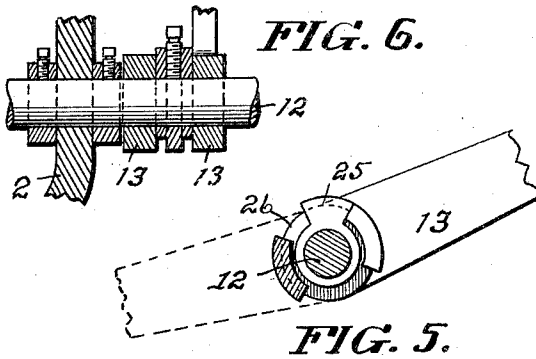
Inventor
 JOHN J. KERN,

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 Attorney

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 Daniel Webster, Jr.
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UNITED STATES PATENT OFFICE.

JOHN J. KERN, OF READING, PENNSYLVANIA.

SWITCH-OPERATING DEVICE.

1,006,226.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed January 28, 1911. Serial No. 605,173.

To all whom it may concern:

Be it known that I, JOHN J. KERN, citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Operating Devices, of which the following is a specification.

This invention relates to improvements in switch operating devices and the object is to provide means for operating switches of railways from the locomotive engine of a railway train.

The invention consists of a vertically movable device carried by the locomotive, capable of moving a switch in either direction, and means on the locomotive for operating this device in the form of foot levers capable of being operated by the engineer without disengaging his hands from the engine levers.

The invention is more fully described in the following specification and clearly illustrated in the accompanying drawings, in which:

Figure 1, is a side elevation, partly in section, of the forward portion of a locomotive engine, with my device in position thereon. Fig. 2, is a sectional view taken through line 2—2 of Fig. 1. Fig. 3 is a plan view of the casing inclosing the vertically movable operating blocks. Fig. 4 is a section through 4—4 of Fig. 3. Fig. 5 is a section of the rocking shaft. Fig. 6 is a section through 6—6 of Fig. 2.

The numeral 1 designates the forward portion or bumper block of a locomotive engine and to the rear of this block at about its center, I secure a hanger 2. To the lower end of this hanger I secure a rectangular casing 3 in which the switch operating blocks are located.

The numeral 4 designates the cab of the engine and in the floor thereof I locate a foot operating mechanism comprising two vertical rods 5 whose lower ends are pivotally secured to opposite ends of a lever 6, which lever is pivotally secured at its center to a hanger 7. The shaft 8 to which the lever 6 is secured and with which it turns, carries on its forward end a bar 9 and to the opposite end of this bar 9 is pivotally secured a rod 10. The rod 10 carries at its lower end a bar 11 which is secured in turn to a shaft 12 which has its bearing in the hanger 2. This shaft carries a pair of arms 13, which are keyed to the shaft so as to permit their

upward movement independent of the turning of the shaft (see Fig. 5). To the free ends of these arms are secured the links 14 whose lower ends are provided with studs 60 which pass through and move vertically in slots 15 in the casing 3. These studs enter the switch operating blocks 16, which are arranged to move vertically in the casing 3.

It is evident that the pressure of the foot 65 on either of the rods 5 in the cab will cause, through the levers just described, the corresponding one of the blocks 16 to descend. Each of these blocks carries a plate 17 at its top and its end projects over an opening 70 in the casing just behind the block, and in this opening I locate a coiled spring 19, capable of being compressed when the block is pressed down. Each block also carries a diagonally arranged sliding bolt 20 and a 75 vertical rod 21, provided with a head 22 adapted to move said sliding bolt.

In the center of the casing, at its rear, I form a spring backed latch 22^a, capable of being moved by the sliding bolts 20. The 80 lower ends of the vertical rods 21 are each provided with a tapered toe piece 23 adapted to contact with any suitable obstruction, placed in its path at a convenient point beyond the switch that has been operated. 85

The operation of the device is as follows:—Assuming that the switch-operating bar, which is indicated in Fig. 2 by the letter S, was to be thrown to the right, as it is shown in Fig. 2, the vertical foot bar 5 at 90 the left is depressed, turning the shaft 8 and the bar 9 to the position shown in Fig. 2 and drawing the bar 11 to the right. This action will through the arm 13 at the left and the link 14 cause the block 16 in the casing 3 to descend and engage the bar S as 95 shown, on its left side and move it to the right, and as the switch connection is made with this bar, the switch will be moved in the same direction. The connection to the 100 switch may be of any desired form and is not shown nor claimed as a portion of this invention.

At a convenient point beyond the switch, a suitable projection, preferably a tapered 105 block (not shown) is placed, in the path of the toe piece 23 on the rod 21, and when this block is engaged by the toe of the rod, it will cause the rod to move up in the block. This movement of the rod, will by its head 110 22 engaging and moving the sliding bolt 20, compress the latch 22, and when the latch

bolt is sufficiently compressed, the coiled spring 19 will raise the block to normal position.

When the foot rod 5 has been operated as at first described, and the foot removed therefrom, the spring 5^a beneath it will return it to normal position, and with it also the lever 6, the bars 9 and 11 and the rod 10. This is due to the keyed construction of the rocking shaft 12, which is formed with a key 25 adapted to engage the slots 26. This will cause the shaft to move with the bar 11 in one direction, but permit it to move independently thereof in the other direction.

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

1. In a switch operating device the combination with a switch bar of an operating mechanism therefor comprising a casing secured to a vehicle, a pair of vertically movable blocks in said casing, springs adapted to hold said blocks in normally raised position, means for lowering said blocks comprising a pair of links secured to the blocks, arms secured to the links, a rocking arm on which said arms are secured, a rod for turn-

ing said rocking arm, foot operated means for moving said rod, springs on said foot rods for returning the foot rods and the operating rod to normal position, a latch for holding the blocks in lowered position and a releasing device carried by each block for releasing said latch after the switch has been thrown.

2. In a switch operating device, the combination with a vehicle of a switch throwing mechanism comprising a casing, a pair of switch operating blocks arranged to move vertically in the casing, foot levers for moving the blocks down in the casing to engage the switch bar, a latch for holding the blocks in lowered position, and a releasing device for said latch carried by each of the blocks and springs in said casing adapted to return the blocks to raised position when the latch has been released.

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

JOHN J. KERN.

Witnesses:

CLARA E. YOUNG,
ED. A. KELLY.