July 14, 1931. J. YOUNG 1,814,880

FOOT CONTROLLED DEVICE

Filed Oct. 22, 1928

Fig. 1.

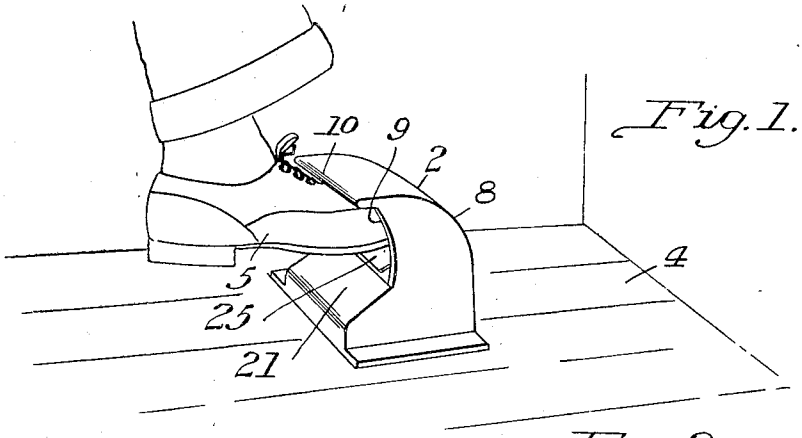


Fig. 2.

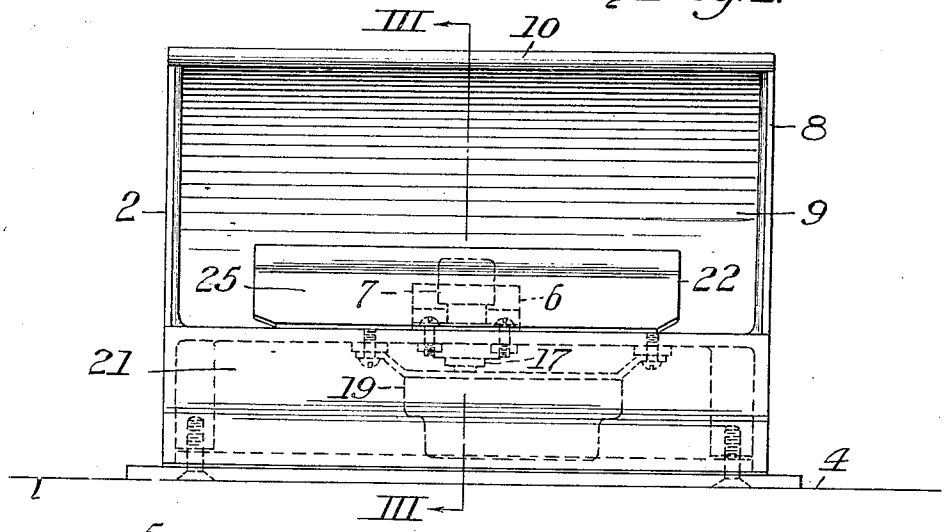
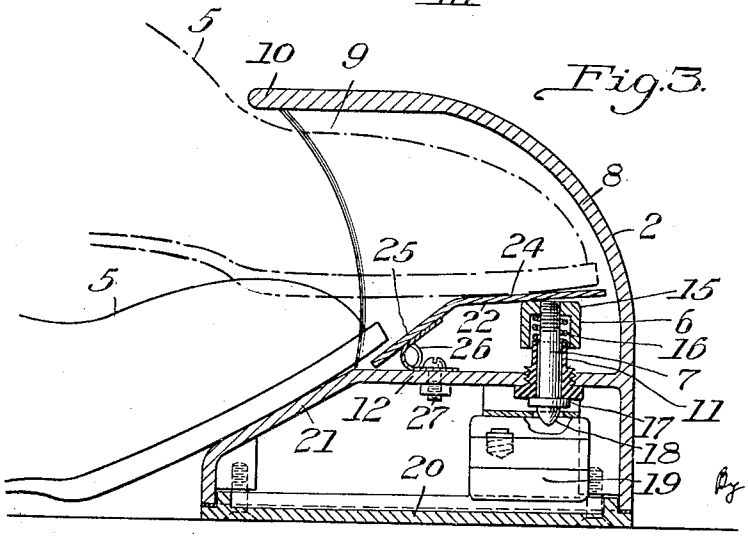


Fig. 3.



INVENTOR

John Young,

By Byrnes, Stebbins & Pomeroy

his attorneys.

Patented July 14, 1931 1,814,880

UNITED STATES PATENT OFFICE

JOHN YOUNG, OF BEN AVON, PENNSYLVANIA, ASSIGNOR TO FEDERAL LABORATORIES INCORPORATED, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF DELAWARE

FOOT CONTROLLED DEVICE

Application filed October 22, 1928. Serial No. 313,989.

My invention relates to a foot controlled device and particularly to a device for controlling signalling systems such as fire alarm, burglar alarm and incapacitating gas systems.

For controlling signalling systems, fire alarm systems, burglar alarm systems, incapacitating gas systems and the like, it is frequently desirable to have a controlling device accessible to the foot of an operator without the necessity of the operator shifting his position when it is desired to operate the cooperating system. This is particularly true if the operator is in an exposed position such as at a teller's or cashier's window in a bank, where the operator is liable to be covered by the guns of robbers. Under such condition perceptible movement of the operator might result in his instant death.

Foot controlled devices have heretofore been positioned beneath a counter or work bench so that they could be operated by a slight movement of the operator's foot. However, such devices are liable to be accidentally actuated during the movement of the feet of the operator or during a mopping or sweeping operation. Where the foot controlled device controls a signalling system, fire alarm system and/or a burglar alarm system, accidental movement of the foot controlled device, while not desired, is not liable to cause the cessation of operations in the room where the foot controlled device is located.

However, if the foot controlled device is a part of an incapacitating gas system, such as tear gas, an accidental operation of the device results in the cessation of operations in the room until the gas has been driven out.

I provide a foot controlled device requiring a definite and positive, though slight, movement of an operator's foot for actuating it. In order to actuate a control device mounted within a hood, it is necessary for an operator to raise his foot from the floor and/or a foot rest and move the foot into an opening in the hood while held in substantially a horizontal position. A foot rest is provided in front of and below the foot receiving opening. The foot rest is so positioned that an operator in moving around in front of the hood, or in resting his foot upon the hood and/or upon the rest is not able to actuate a control device within the hood unless he intentionally moves his foot in a definite manner. The hood and foot rest also prevent accidental operation of the control device by a mop or broom.

Certain of the features of the present invention constitute improvements on the structure shown and described in the patent to Lawrence No. 1,509,676, of September 23, 1924.

The accompanying drawings illustrate the present preferred embodiment of the invention, in which

Figure 1 is a perspective view of the foot controlled device with the operator's foot in a signalling position,

Figure 2 is a face view of the foot controlled device, and

Figure 3 is a view partially in elevation and partially in section of the foot controlled device, taken substantially along the section line III—III of Figure 2, and showing different positions of an operator's foot.

Referring to the drawings, a foot controlled device 2 for initiating the operation of a signalling system is mounted on a floor 4 in a position easily reached by a foot 5 of an operator. The foot controlled device is particularly useful for initiating signalling systems, fire alarms, burglar alarms and incapacitating gas systems, although it is to be understood that it may be used for other purposes and that such uses are contemplated within the scope of the appended claims.

In order to prevent accidental operation of a signalling device 6, here illustrated in the form of an electrical switch having a depressible member or plunger 7, the device is mounted in a hood 8. The hood is provided with a foot receiving opening 9, into which the toe of the foot 5 may extend. The hood 8 and foot receiving opening 9 are of sufficient size to permit an operator to locate them without difficulty when his

eyes are riveted on another object, such as would be the case where a bank teller is facing the guns of robbers. The hood 8 terminates in a portion 10 overhanging the opening 9, thereby preventing the operator from actuating the signalling device 6 by directly stepping onto it.

The plunger 7 of the signalling device 6 is mounted in an insulating bushing 11 seated in a web 12 formed in the hood. The upper end of the plunger 7 is provided with threads 14 on which a cap 15 is threaded. A spring 16 is disposed between the end of the bushing 11 and the inside of the cap 15. The spring 16 urges the plunger 7 to a raised or inactive position.

The bottom of the plunger 7 is provided with a collar 17 for engaging the bushing 11 and terminating the upward movement of the plunger, and a projection 18 extending into a switch 19. While I have shown and described the plunger 7 as actuating a switch 19, it is to be understood that the plunger 7 may be used for actuating other signalling devices or mechanisms. As the switch 19 may be of any one of a number of forms available on the market, a detailed description thereof has been omitted from the present specification. The switch 19 is mounted in a chamber defined by a bottom plate 20 of the hood, the web 12 and a sloping surface 21 disposed beneath the opening 9.

The plunger 7 is actuated by a relatively wide curved plate 22 having a horizontally extending portion 24 engaging the cap 15, and a sloping portion 25. The plate 22 is secured to the web 12 by a coil spring 26. One end of the spring is secured, as by welding, to the inner surface of the sloping portion 25, and the other end is secured to the web 12 by bolts 27. The springs 26 and 16 cooperate to keep the plunger 7 and plate 22 in a raised or an inactive position.

The sloping surface 21 of the hood provides a toe rest for the foot of an operator when the operator's heel is on the floor. The sloping portion 25 of the plate 22 is approximately in line with the sloping surface 21, so that a toe of a foot resting on the sloping surface 21 and projecting past the end of the sloping portion into the opening 9 lies substantially parallel to the portion 25, as shown in solid lines in Figure 3. In this position the operator's foot does not engage the plate 22 to depress the plunger 7.

When the operator desires to actuate the signalling device 6, the heel of the foot is raised from the floor and the toe of the foot is moved into the hood 8 in a substantially horizontal position as shown by the dotted lines in Figure 3. In this position, the toe of the foot rests upon the horizontal portion 24 of the plate 22. A depressing movement of the foot moves the plunger 7 downwardly to complete an electrical circuit or to actuate a mechanism, as may be desired.

While I have shown and described the preferred embodiment of my invention, it is to be understood that it may be otherwise embodied within the scope of my appended claims.

I claim:

1. A foot controlled device comprising a hood having a foot-receiving opening therein, a circuit controlling device within the hood, a toe-rest extending from said opening for supporting an operator's toe while the heel is on the floor, and means for actuating the circuit controlling device comprising a guard having a portion in alinement with the foot supporting surface of said toe-rest and forming a continuation thereof and another portion accessible to the operator's toe when said toe is moved into a substantially horizontal position within said hood for actuating the circuit controlling device.

2. A foot controlled device comprising a hood having a foot-receiving opening therein, a circuit controlling device within the hood, a toe-rest extending from said opening for supporting an operator's toe while the heel is on the floor, and means for actuating the circuit controlling device comprising a pivotally mounted guard having a portion in alinement with the foot supporting surface of the toe-rest for keeping the operator's foot from the circuit controlling device while in engagement with said toe-rest and a horizontal portion accessible to the foot when placed in a substantially horizontal position within the hood for actuating the circuit controlling device.

3. A foot controlled device comprising a hood having a foot receiving opening therein, a control device within the hood, a toe rest sloping downwardly away from the opening, a pivotally mounted guard having a portion forming a continuation of the toe rest and in line therewith and a horizontal portion, whereby the control device is inoperable when the foot is in normal position with the heel on the floor and the toe on the toe rest but is operable when the heel is lifted from the floor and downward pressure is applied to said horizontal portion of the guard.

In testimony whereof I have hereunto set my hand.

JOHN YOUNG.