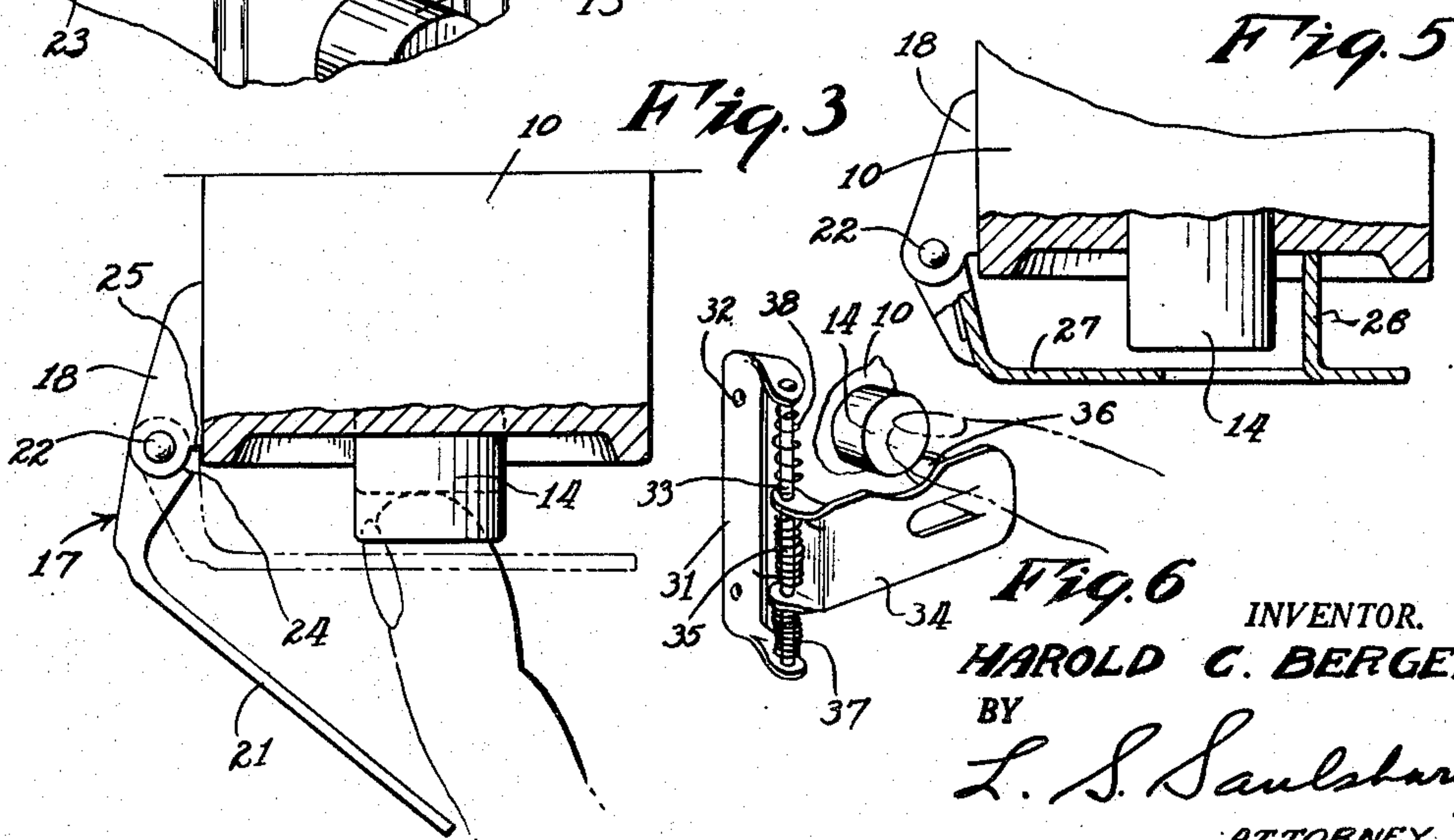
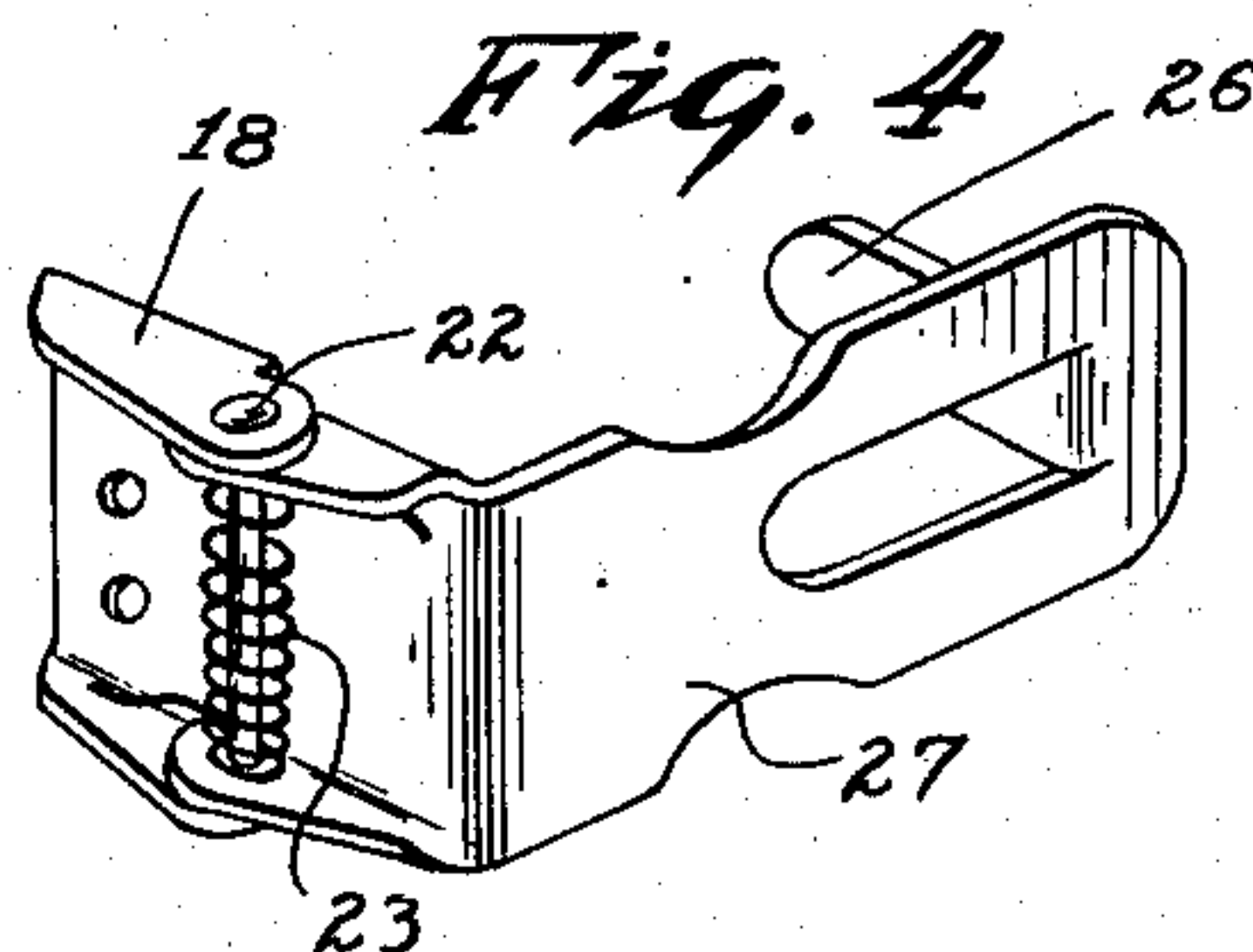
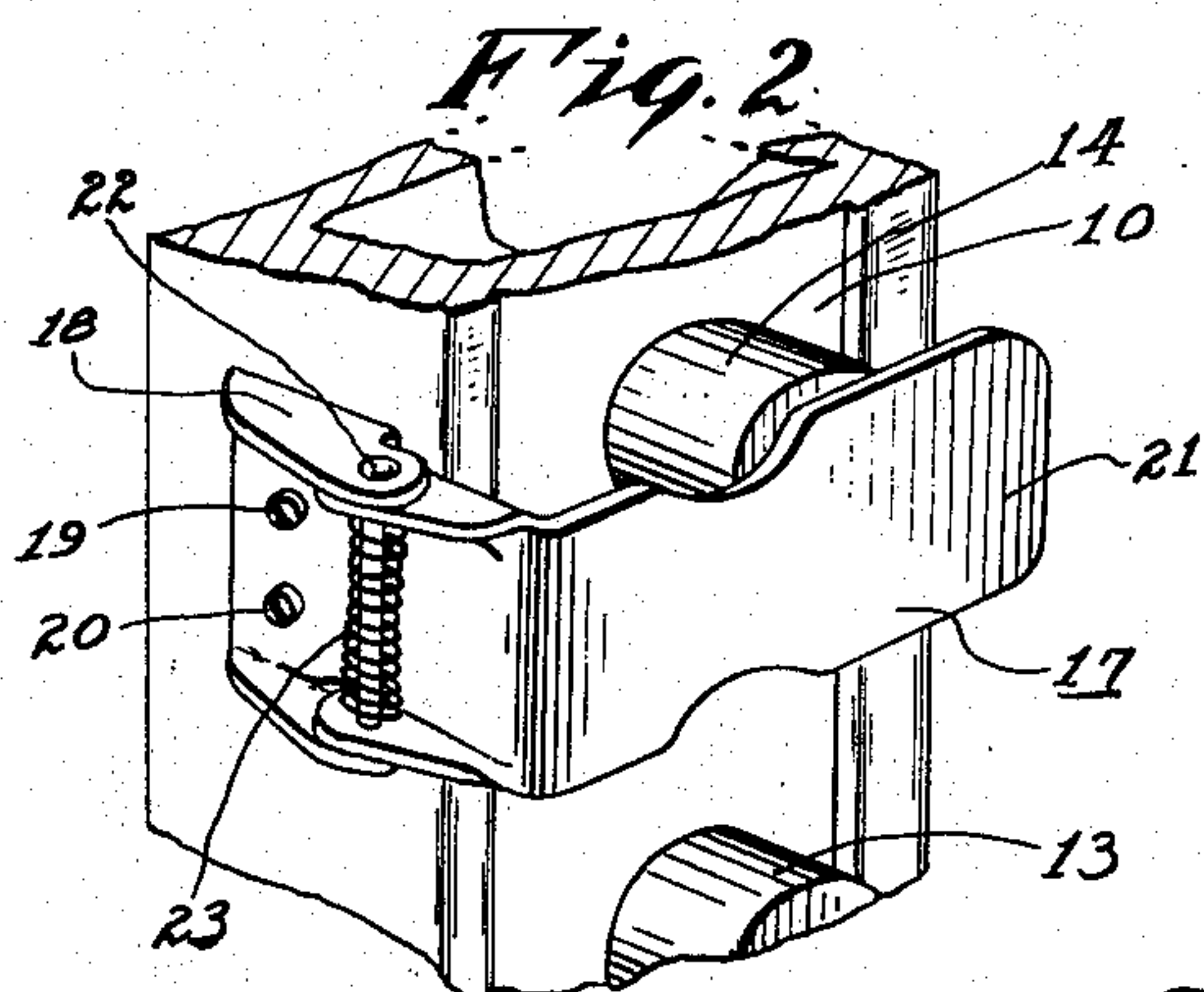
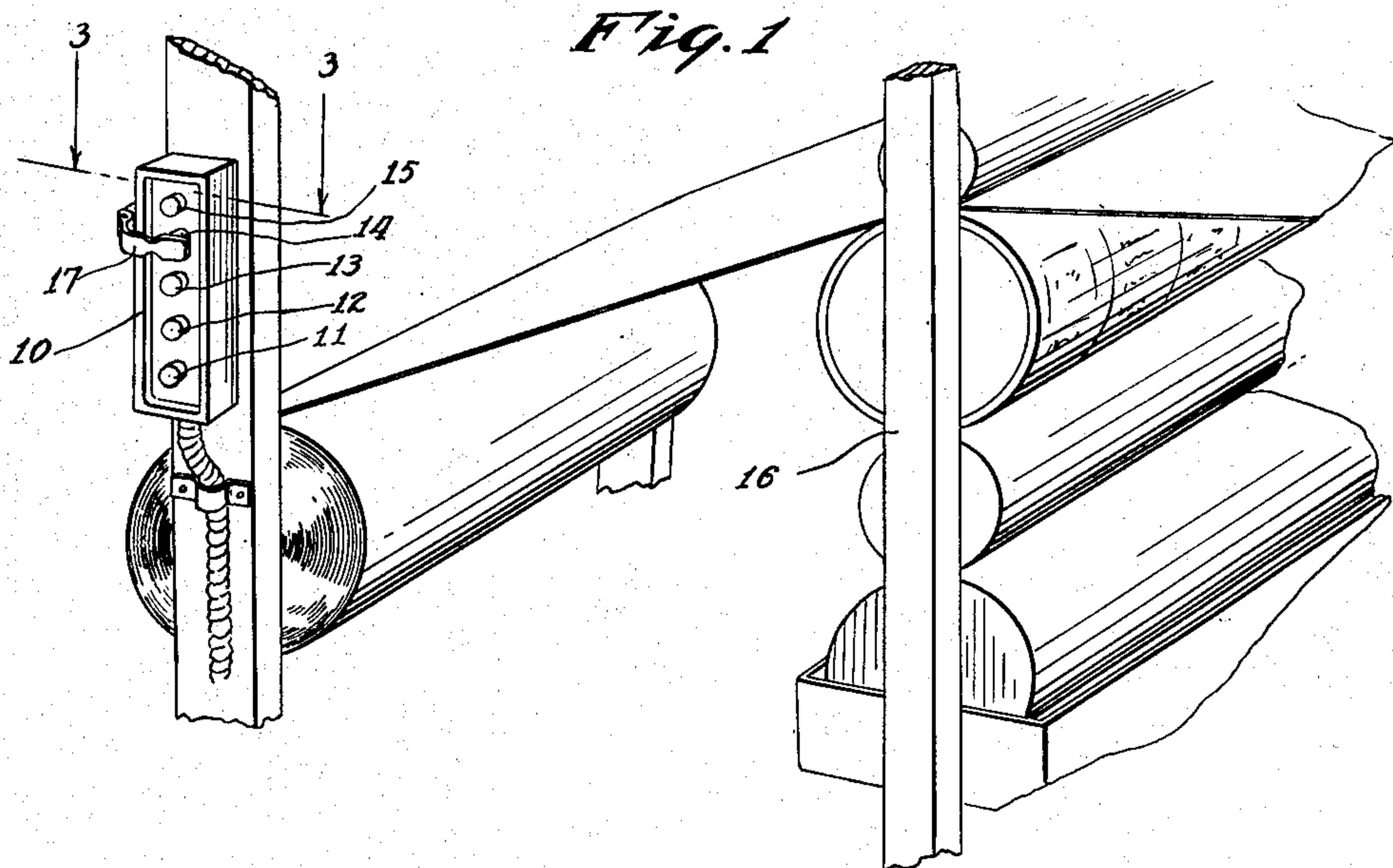


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SAFETY APPLIANCE FOR SWITCHES

2,659,780

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*Fig. 6* INVENTOR.  
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## UNITED STATES PATENT OFFICE

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## SAFETY APPLIANCE FOR SWITCHES

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2 Claims. (Cl. 200—42)

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This invention relates to safety guard for a press button switch box.

It is an object of the present invention to provide a button guard for a starting button of a switch box having a plurality of push buttons arranged in direct line with one another whereby the operator cannot inadvertently reach the starting button for high speed of the machine while seeking a button that causes the machine to be urged only slowly.

It is another object of the invention to provide a simple safeguard for a button switch arrangement which can be by force easily lifted to free the button at times when it is desired to push the same and which will automatically assume its position over the button at other times.

It is a still further object of the invention to provide in a guard which can be hinged over a press button of a switch a stop projection which will positively prevent the inward movement of the guard and the engagement of the guard with the button at any time.

Other objects of the invention are to provide a guard for a push button of a switch which is of simple construction, inexpensive to manufacture, has a minimum number of parts, consumes little space on the switch box, easy to install on the switch box, of pleasing appearance and efficient in operation.

For other objects for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view of a switch box applying the safety device according to one form of the invention and of parts of a machine which is controlled by the switch box;

Fig. 2 is an enlarged fragmentary view of the switch box and showing the guard in perspective over the switch button;

Fig. 3 is an enlarged fragmentary sectional view taken on line 3—3 of Fig. 1, illustrating the manner in which the guard is lifted to depress the button;

Fig. 4 is a perspective view of a modified form of the guard, removed from the switch box and including a projection to limit the inward movement of the part of the guard that overlies the button;

Fig. 5 is a fragmentary and sectional view of the switch box and of the guard shown in Fig. 4, portions of the guard being broken away and shown in section;

Fig. 6 is a perspective view of a still further form of the guard which may be employed in

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connection with the switch box and over a starting button thereof.

Referring now particularly to Figs. 1, 2 and 3, 10 represents a starting box which has a plurality of push buttons 11, 12, 13, 14 and 15 thereon. These buttons are arranged on the face of the switch box and are such as to be depressed when it is desired to give to a machine represented generally at 16 movement or to arrest the movement thereof. The button 14 is used to start the machine and to effect its operation at high speed. A button 13 is used when the machine has been stopped, and it is desired to urge the movement of the machine in slight steps, the movement terminating at the removal of the finger from the button. The button 15 may be used as the stop button, whereas the other buttons 12 and 11 can serve different purposes.

Invariably, when the machine has been stopped and the operator is desirous of edging the machine parts slightly, he reaches for the button 13 and if he is not alert, will reach the starting button 14, so that the machine is started up at high speed, instead of a slow and for brief duration movement. If the operator has his hands in a location close to the moving parts at the time he thinks the machine is to be started slowly, and is in fact moved quickly, or given the usual starting speed, he may accidentally become injured. His hands will be located near the parts and expecting the machine to be started only slowly when it is started at the usual high speed, and accordingly his hands will be directed into places where they will be injured, as a result of the sudden fast starting of the parts.

Accordingly, there has been provided a safety device which can be attached to the switch casing 10 which has a part that may overlie the starting button 14 and thereby prevent inadvertent and easy access to the same. This guard is indicated generally at 17 and comprises a bracket part 18 that is secured by screws 19 and 20 to the side of the switch casing 10 and a part 21 that is hinged by a hinge pin 22 with the bracket 18. A spring coil 23 which has its ends reacting between the part 21 and the bracket 18 whereby to urge the part 21 and its overlying tongue portion thereof toward the switch button 14. The part 21 has a shoulder 24 adjacent the hinge pin which engages with a shoulder 25 of the bracket 18, whereby to prevent the inward movement of the part 21 towards the button 14. The part 21 and the shoulder 24 engage the shoulder 25 and will lie removed and spaced



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from the end of the switch button 14. In this manner there is positively prevented engagement by the finger with the switch button 14 to start the motor of the machine at high speed without first lifting the part 21 by hinging movement outwardly in the manner illustrated in Fig. 3.

Referring now particularly to Figs. 4 and 5, there is shown a similar guard arrangement wherein there is an inwardly struck projection 26 on a part 27. The projection 26 will lie to one side of the button 14 and its end thereof will engage the face of the switch box 10 whereby to positively prevent even under pressure any inward bending movement of the part 27. The other parts of the guard, shown in Fig. 4, are similar to the corresponding parts of the guard shown in Fig. 2, and similar numerals are applied.

Referring now particularly to Fig. 6, there is shown a further form of the invention wherein the guard part can be slid along the switch box to expose the switch button 14 or can be lifted in the manner permitted by the other forms of the invention. According to this form of the invention, there is provided a long bracket 31 having openings 32 through which screws can be extended to attach the bracket to the switch box casing. The ends of the bracket 13 are turned inwardly and retain a long hinge pin 33 on which a guard part 34 can be slid or pivoted to uncover the switch button 14. Surrounding the pin 33 and reacting between the bracket 31 and the part 34 is a spring 35 which keeps the part 34 hinged inwardly. A projection 36 is struck inwardly from the part 34 and prevents movement of the part 34 toward the button 14 so as to engage the same. The projection 36 will engage the front face of the switch box 10 in the manner above explained.

Springs 37 and 38 are coiled about the pin 33 and are arranged to centralize the part 34 over the switch button 14. Any sliding movement of the part 14 along the rod 33 will be resisted by either one of these springs and upon release of the part 34 the springs will return the same to a position over the push button 14.

It will be seen that with the devices above described that there is slight likelihood of access being had to the starting button 14 unless the operator has knowledge or affixed knowingly the outward hinging movement of the guard part. Thus, upon reaching for the slow moving button 13, there is little chance of any accidental depressing of the main starting button 14. The operator thus is not taken unaware of any fast movement of the parts which may draw him into the machine or injure his hands or other portions of the body.

While various changes may be made in the detail construction of these guard devices, it

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shall be understood that such changes shall be within the spirit and scope of the appending claims.

What is claimed is:

1. In combination, a switch box having a plurality of push buttons disposed on the front thereof and aligned with one another, one of said push buttons being to effect fast starting action of the machine with which the switch box is used and an adjacent button adapted to effect normal slow moving motion of the parts of the machine, and a guard device connected to the switch box and having a part adapted to overlie the fast starting switch button in order to prevent the actuation thereof, while reaching for the slow motion switch button, a hinge pin for mounting the guard member on the switch for pivotal movement away from the starting switch button including a spring element carried by said hinge pin biasing said guard towards said fast-starting button resisting the movement of the guard part away from the starting switch button, said guard part having an inwardly extending projection of such length as to prevent movement of the guard part toward the switch box and to maintain the underside of the guard part spaced from the end of the switch button, said projection being struck from the guard part and engageable with the front face of the switch box.

2. In combination, a switch box having a plurality of buttons aligned with one another, a guard device for one of the push button elements comprising a bracket having inwardly bent ends, a hinge pin connected between the ends, a guard arm pivotly connected to the hinge pin and spring means surrounding the hinge pin and urging the guard arm toward the button, projection means on the guard arm engageable with the switch box to prevent engagement of the guard arm with the end of the switch button at all times, spring elements surrounding the hinge pin and disposed on opposite sides of the guard arm to centralize the guard arm relative to the push button whereby to gain access to the push button the guard arm can be longitudinally adjusted along the hinge pin or pivoted thereupon.

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