

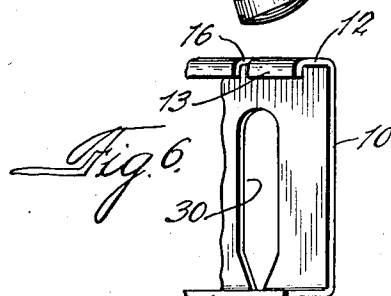
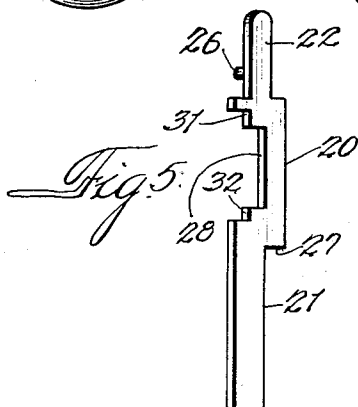
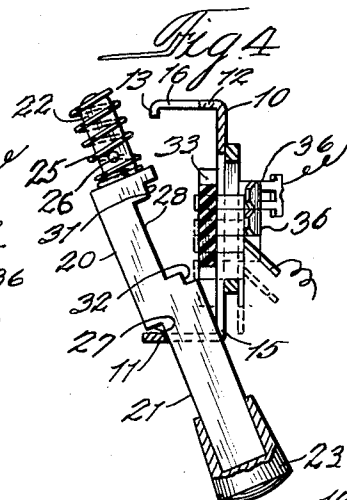
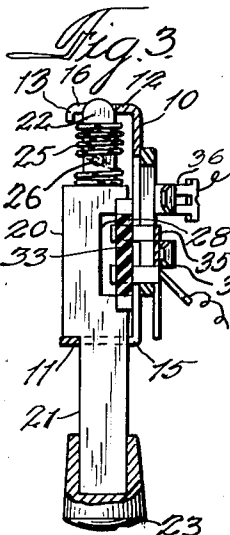
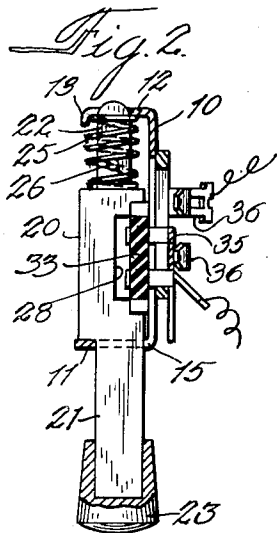
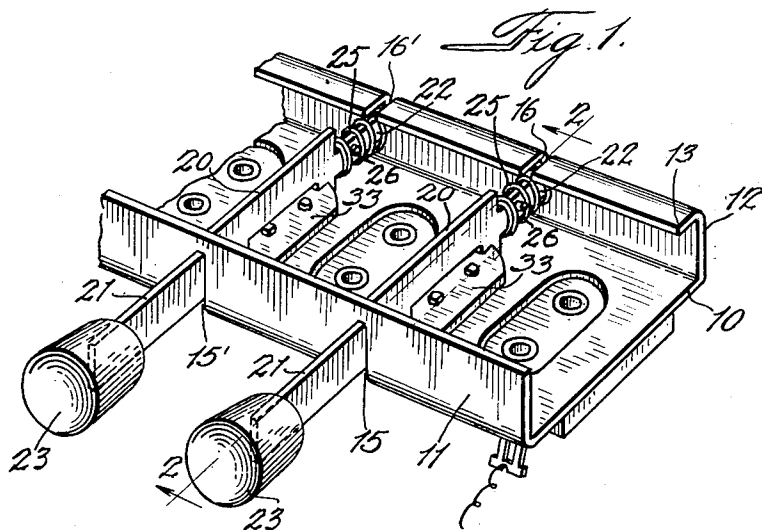
July 14, 1942.

A. ANDERS

2,289,475

PUSH ROD MECHANISM

Filed March 12, 1941



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UNITED STATES PATENT OFFICE

2,289,475

PUSH ROD MECHANISM

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Application March 12, 1941, Serial No. 382,860

4 Claims. (Cl. 200—5)

This invention relates to push rod mechanism structure and aims to provide a simple, easily assembled structure. Push rods for radio receivers, switching systems and the like have become common. As a rule these devices comprise a base with a plurality of parallel operating rods slidably disposed therein. These rods are generally spring biased and involve some difficulty in inserting or removing.

By virtue of this invention, a simple structure is provided whereby each rod may be readily inserted or removed.

Referring to the drawing:

Figure 1 is a perspective view of a construction illustrating the invention;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but with the bias spring retracted in preparation for rod removal;

Fig. 4 is a view similar to Fig. 2 but showing the operating rod swung out and ready for complete withdrawal;

Fig. 5 is a detail of an operating rod; and

Fig. 6 is a detail of the base at the rod engaging part.

The structure to which this invention is applied comprises a base 10 of sheet metal or the like having opposite edge portions 11 and 12 turned up to form flanges. Flange 12 has a bent portion 13 generally parallel to base 10 so that flange 12 has a general L section.

Flanges 11 and 12 are provided with a series of paired slots 15 and 16, 15' and 16', only two being shown here. Obviously as many or as few as desired may be provided. Inasmuch as each slot pair and accompanying structure are repeated, only one will be described in detail.

Referring to slots 15 and 16, it will be noted that slot 15 is a closed slot whereas 16 is open and extends to the edge of part 13. A rod 20 having slot engaging portions 21 and 22 is provided for each pair of cooperating slots. Rod portion 21 may carry a push button 23 which may be readily removed by sliding if desired. In any event, rod 20 has portion 21 in slot 15. This may be accomplished by tilting the rod as shown in Fig. 4, and threading part 21 or 22 there-through, depending upon how rod 20 is shaped and how easy button 23 may be removed.

End portion 22 of rod 20 has a coil spring 25 around it. It will be noted that in the retracted position of rod 20 in the complete structure, that part 22 extends beyond flange 12. Rod 20 may therefore be retracted and coil spring 25 be compressed as shown in Fig. 3 in order to swing

end 22 into the open slot 16. As soon as rod 20 is in position as shown in Fig. 3, spring 25 may be released and extends right up to flange 12. The overhang of part 13 prevents accidental removal of rod 20.

A small lug 26 may be provided on one side of part 22 to function as a positive stop during spring compressing movements of rod 20. If desired, lug 26 may be long enough to engage a coil of spring 25 and anchor the same against loss when the rod is out of the base. Edge portion 27 at the junction of part 21 and the central part 28 of rod 20 may be used as a rod stop in the retracted position as shown in Figs. 2 and 3.

In order to promote the ready insertion of rod 20 into slot 15, it is preferred to have slot 15 extend inward of base 10 and merge with a large cutout 30 in base 10. Hence rod 20 may have a variety of shapes and sections.

The rods may operate any suitable means. As shown, center portion 28 of rod 20 has an irregular outline including steps 31 and 32. A flat insulating block 33 may have the ends thereof engaged by steps 31 and 32 and moved back and forth. Block 33 may operate over cutout 30 and may carry movable contacts 35 cooperating with stationary contacts 36. The contact structure may be of any kind desired and may advantageously be the kind disclosed and claimed in United States Patent No. 2,213,845.

It is understood that the invention herein may be applied to an interlocking type of mechanism such as disclosed in the above patent. In that case, an interlock bar threads the various rods and provides an automatic lock and release action whereby one rod is locked in position and releases a previously locked rod.

What is claimed is:

1. In a push rod mechanism, a base having a pair of generally parallel opposed slotted portions, one of said portions having an edge portion bent over generally toward the opposite portion and having the slot therein open to the very edge of the material, a rod slidably disposed in said slotted portions, said rod being movable transversely in and out of said open slot, a coil spring around said rod and compressible between said part of said rod and said one portion to bias the rod in one position, said spring normally extending under said bent over edge portion to lock the rod against transverse withdrawal from said open slot.

2. In combination, a base having a pair of generally parallel opposed slotted portions, one of said portions having an open slot extending

to the edge of said portion, a switch block movable on said base, a rod slidable in said portions and movable transversely in and out of said open slot to engage and disengage said block, said rod being completely removable from said base when free of said open slot portion, a coil spring around a part of said rod and compressible between a rod portion and said one portion to bias said rod in one position, means on said one portion cooperating with the adjacent spring end for locking said spring and rod into normal operating position in said one portion to prevent lateral movement of said rod out of said open slot and

stationary means cooperating with said switch block for opening and closing a circuit in response to rod movements.

5 3. The structure of claim 2 wherein said means for locking the spring and rod comprise an edge portion on said one portion bent over generally toward the other portion.

10 4. The structure of claim 1 wherein said rod has a lug at the part thereof enclosed by the coil spring and adapted to cooperate with the one portion for limiting rod movement against the spring bias.

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