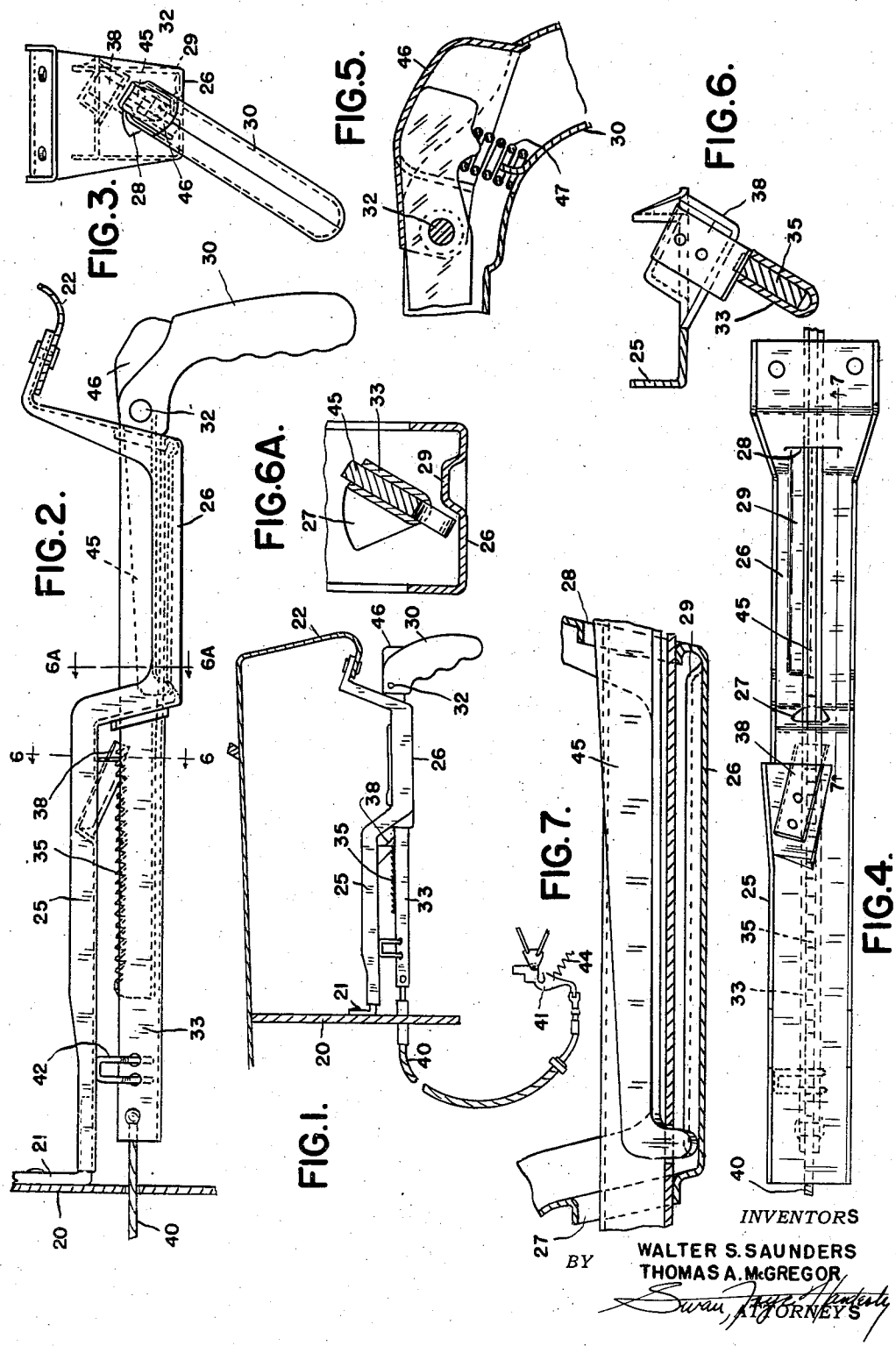
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CONTROL HANDLE

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CONTROL HANDLE

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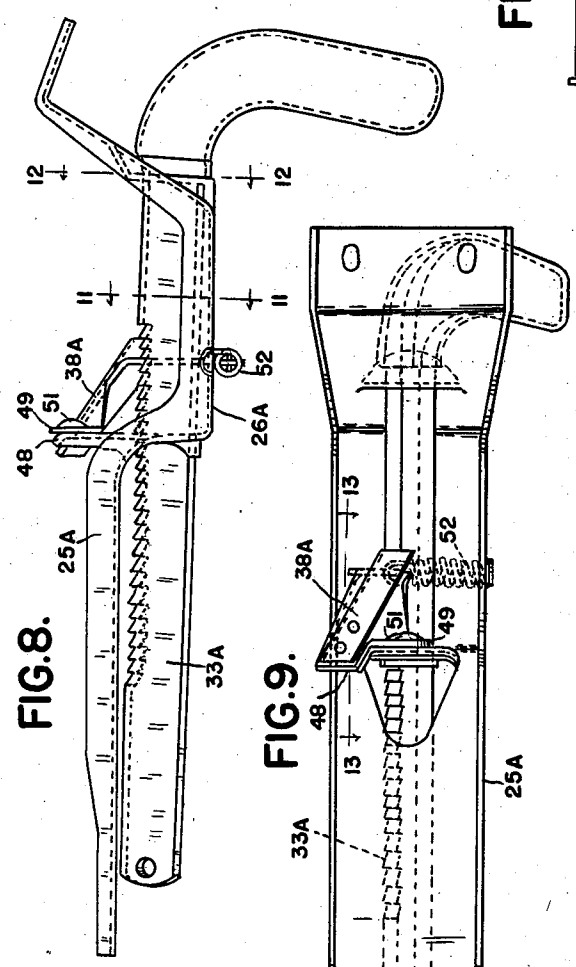


FIG.8.

FIG.9.

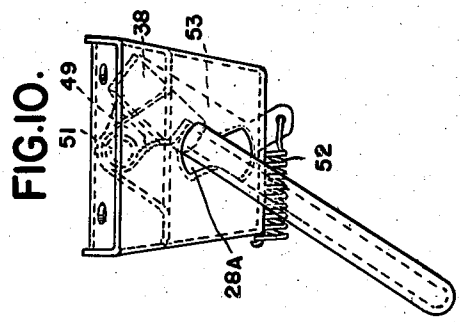


FIG.10.

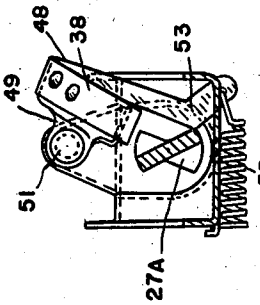


FIG.11.

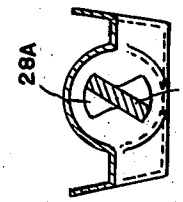


FIG.12.

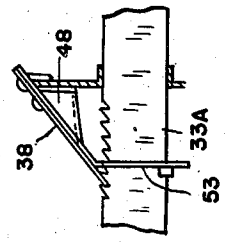


FIG.13.

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FIG.15.

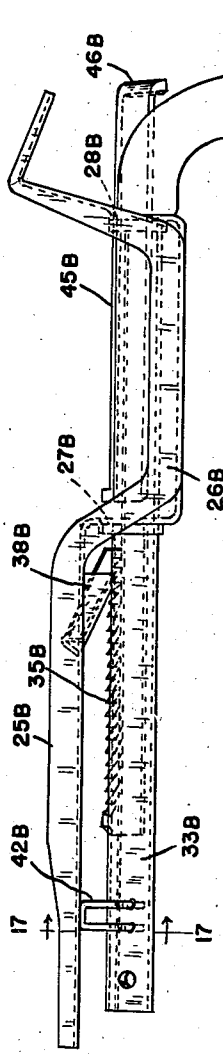


FIG.17.

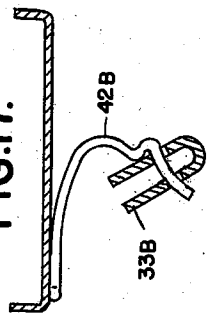


FIG.16.

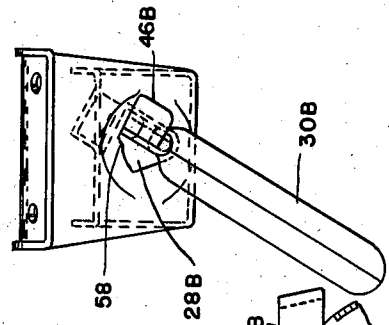


FIG.14.

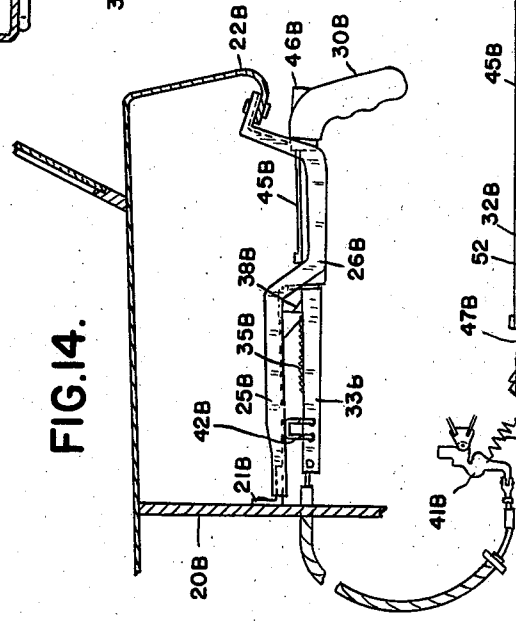
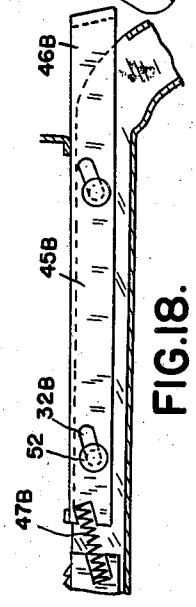


FIG.18.



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2,180,215

CONTROL HANDLE

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Application October 21, 1938, Serial No. 236,262

8 Claims. (Cl. 74—502)

This invention relates to hand-controlled operating mechanisms. Although readily adaptable to the manually effected control of apparatus of almost any character, application of the invention to the hand or emergency brake system of a motor vehicle is illustrated herein as constituting an important use of the invention.

A primary object of the invention is to improve upon the devices shown in co-pending applications, Serial Numbers 208,117, 208,134, filed May 16, 1938, to simplify the construction thereof and render them less expensive, and at the same time to incorporate improved means for preventing unwanted release of the controlled mechanism, in the form of simple and reliable locking means arranged to prevent accidental movement of the control handle toward released position.

Another object is to provide an improved and simplified ratchet mechanism, and improved means for releasing the same.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating preferred embodiments of my invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawings:

Figure 1 is a somewhat diagrammatic view, partly in vertical section and partly in side elevation, showing an embodiment of the invention installed in a motor vehicle, to control the emergency brakes thereof, fragmentarily showing the adjacent parts of the vehicle to which the apparatus is attached.

Figure 2 is an enlarged side elevational view of the control assembly.

Figure 3 is an end elevational view thereof.

Figure 4 is a plan view of the device removed.

Figure 5 is a fragmentary vertical section of the latch releasing mechanism.

Figures 6 and 6A are sectional details taken substantially on the lines 6—6 and 6A—6A respectively, of Figure 2, and looking in the direction of the arrows.

Figure 7 is a fragmentarily longitudinal sectional elevation taken substantially on the line 7—7 of Figure 4, and looking in the direction of the arrows.

Figure 8 is a side elevational view similar to Figure 2, showing a somewhat modified construction.

Figure 9 is a plan view thereof corresponding to Figure 4.

Figure 10 is an elevational view thereof from the handle end, corresponding to Figure 3.

Figures 11 and 12 are sectional details taken substantially on the lines 11—11 and 12—12 respectively, of Figure 8, and looking in the direction of the arrows.

Figure 13 is a fragmentarily sectional elevation taken substantially on the line 13—13 of Figure 9, and looking in the direction of the arrows.

Figures 14, 15, and 16 are views respectively corresponding to Figures 1, 2, and 3, showing another somewhat modified construction,

Figure 17 is a sectional detail taken substantially on the line 17—17 of Figure 15, and looking in the direction of the arrows.

Figure 18 is a larger scale longitudinal sectional elevation of the safety catch mechanism.

Referring now to the drawings:

Reference character 20 designates the dash panel and 22 indicates the instrument panel of a motor car, which is shown only fragmentarily, such portions being used to support our improved control handle assembly, the frame 25 of which is of stamped sheet metal and channeled in cross-section. The front end of the frame is attached to the dash panel by means of an angle bracket 21, while its rear extremity is projected upwardly and lapped over the bottom flange of the instrument panel, to which it is riveted or otherwise secured. The assembly thus extends longitudinally beneath the instrument panel, the hand grip portion 30 being located in a position conveniently accessible to the driver or occupants of the vehicle. The hand grip portion is fixedly attached to a slidable ratchet bar assembly 33, formed as a channel of U-section which travels in a dropped hanger portion 26 of the frame. The front and rear walls of the hanger section are provided with fan shaped apertures 27, 28, in which the bar assembly is slidable and rockable. The forward end of the bar assembly travels beneath the frame, 25, while a portion thereof nearer the hand grip travels over the top of the dropped hanger section.

A ratchet plate 35 is welded or otherwise secured in the bar assembly between the side webs thereof, with its teeth projecting upwardly thereabove for engagement with a leaf spring pawl member 38, secured to the frame 25 and inclined both forwardly and toward one side of the assembly, as best shown in Figures 1 and 6. The arrangement is such that when the handle is pulled outwardly the pawl prevents return movement of the bar assembly, in the conventional manner of pawl and ratchet mechanisms. The

bar assembly is attached, as by the cable 40 or other suitable means, to the brake mechanism or other apparatus to be controlled, a part of which is indicated at 41. A return spring 44 tends to draw the handle-ratchet bar assembly inwardly.

By virtue of the V-shape of the apertures 27 and 28, the ratchet plate may be swung bodily into and out of engagement with the pawl, by rocking the bar assembly about its lower edge. A torsion spring 42, projected through apertures in the ratchet bar 33 and bearing against the bottom of the frame member 25 yieldably urges the bar toward and maintains it in the inclined position shown in Figures 3, 5, and 6, in which the pawl and ratchet are maintained in engagement.

When the handle is pulled out, toward the rear of the vehicle, a latching dog 45 travels upon one side of an abutment 29 in the bottom of the hanger portion 26, the ratchet bar assembly being thereby maintained in inclined position during its movement toward and while it is in out-drawn position. The ratchet teeth are thus held in position to be engaged by the pawl, so that the bar assembly cannot be returned to release the brakes or other mechanism. The locking dog is carried by and rockable about a transverse pin 32 mounted in the hand grip portion 30 near the top thereof, and a finger piece 46 pivoted with the locking dog is accessibly positioned near the top of the hand-grip and adapted to be depressed, against the effort of a compression spring 47, to free the dog and allow the handle to be rocked to free the ratchet plate from the pawl, whereupon the bar assembly may be returned inwardly or to released position.

In the somewhat modified construction shown in Figures 8–13, the pawl 38A, also formed as a leaf spring member, is carried by an ear 48 turned upwardly from the bracket 25A adjacent the forward wall of the dropped hanger section 26A. The slidable ratchet bar assembly 33A in this embodiment turns about a central axis, the apertures 27A, 28A, in the front and rear walls of the hanger section of the bracket being of hour-glass shape to permit such rotation of the ratchet bar, which is formed of strap metal. The pawl is secured to a swingable plate 49 pivoted to the ear 48 by means of the rivet 51, which is so located that when the supporting plate is swung in the direction indicated by the arrow in Figure 11, the pawl is moved upwardly away from the ratchet teeth. A spring 52 normally returns the plate and the pawl to the engaged position. A downward extension 53 of the pawl-supporting plate is provided with a toe portion which lies in the path of the bottom of the ratchet bar when the latter is rocked (counter-clockwise as viewed in Figures 10, 11, and 12) to free the ratchet teeth from the pawl. Engagement of the bottom of the bar with the toe portion 53, in the manner shown in Fig. 11, thus acts also to raise the pawl and free it at the same time, as the ratchet plate is moved away.

In the further modification shown in Figures 14 to 17, inclusive, the slidable ratchet bar 33B, and its handle 30B are formed similarly to the corresponding parts of the first described embodiment, and in like fashion slidably mounted in a dropped hanger portion 26B of a supporting frame 25B adapted to be attached at its forward extremity to the dash panel as 20B of a motor car, and at its rear extremity supported by attachment to the instrument panel 22B.

The ratchet plate 35B is carried between and projects from the closely spaced webs of the U-section bar 33B, and a pawl 38B is fixedly mounted in the bracket 25B in analogous manner for engagement with the ratchet teeth when the ratchet plate is in the inclined position in which it is normally yieldably maintained by the torsion spring 42B. The ratchet bar is rockable in the V-shape openings 27B, 28B in the hanger bracket portion of the frame, by means of the operating handle 30B, to move the ratchet teeth away from their normal position of engagement with the pawl and free the rod for inward movement.

A thumb piece 46B is carried by the hand-grip portion to enable releasing a dogging plate, formed integrally therewith, which normally prevents rocking the ratchet bar assembly to a position to free the teeth from the pawl. The dogging plate 45B is provided with angular slots as 32B riding over and supporting the same upon spacer rivets 52, transfixing the side webs of the channel. The inclination of the slots is such that when the plate is pushed inwardly, by pressure exerted upon the thumb portion 46B, the upper edge of the plate is also moved downwardly into the bar, to free it from obstructing engagement with a shoulder 58 formed in the upper portion of the front V-opening 28B, in which the ratchet bar is mounted. A spring 47B urges the dogging plate outwardly and upwardly, so that it normally projects beside the shoulder 58 to prevent rocking the ratchet bar assembly to a position to free the ratchet teeth from the pawl. The handle may thus be pulled out, and the rod assembly held and locked in extended position until it is rocked counter-clockwise, as viewed in Figure 16, to release it, but such rocking and release cannot be accidently effected, since it is necessary first to press in the thumb piece 46B.

We are aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and we therefore desire the present embodiments to be considered in all respects as illustrative and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

What we claim is:

1. Control means for desired apparatus, comprising in combination with a suitable support, an actuating member slidable and rockable in the support, pawl and ratchet portions, one carried by the support and the other by the actuating member, arranged to prevent unwanted return movement of the actuating member when it has been moved in one direction, means yieldably tending to rock the actuating member toward and maintain it in a position in which said pawl and ratchet portions are in operative engagement, means for rocking the actuating member away from said position to separate the pawl and ratchet portions and permit such return movement of the actuating member, and separately releasable latching means restraining unwanted rocking movement of said actuating member away from said position.

2. Control means for desired apparatus, comprising in combination with a suitable support, an actuating member slidable in the support and rockable about a longitudinal axis, pawl and ratchet portions, one carried by the support and the other by the actuating member, said portions being arranged to prevent unwanted return movement of the actuating member when it has been slid in one direction, and separately releasable latching means slidable with the actu-

ating member and releasably maintaining said member in an angular position in which said pawl and ratchet portions are in operative engagement.

3. Control means for desired apparatus, comprising in combination with a suitable support, an actuating member slidable in the support and rockable about a longitudinal axis, pawl and ratchet portions, one carried by the support and the other by the actuating member, said portions being arranged to prevent unwanted return movement of the actuating member when it has been slid in one direction, means yieldably urging the actuating member toward an angular position in which said pawl and ratchet portions are in operative engagement, and separately releasable latching means slidable with the actuating member and releasably maintaining said member in such angular position.

4. Means as set forth in claim 2 including a hand-grip portion for rocking and sliding said actuating member, said latching means comprising a dog slidable with said actuating member, a finger portion appurtenant said hand grip portion for operating said dog, and an abutment portion carried by the support with which said dog is releasably engageable in any of a plurality of longitudinal positions.

5. Means as set forth in claim 2 including a hand grip portion for rocking and sliding said actuating member, said latching means comprising an elongated dog slidable with said actuating member, a finger portion appurtenant said hand grip portion for operating said dog, and an abutment portion carried by the support with which said dog is releasably engageable when the actuating member is in any of a plurality of longitudinal positions.

6. Means as set forth in claim 2 including a hand grip portion for rocking and sliding said actuating member, said latching means comprising a dog, a finger portion appurtenant said hand grip portion for operating said dog, and an elongated abutment portion carried by the support with which said dog is releasably engageable when the actuating member is in any of a plurality of positions.

7. Means as set forth in claim 2 including a hand grip portion for rocking and sliding said actuating member, said latching means comprising a dog rockably carried by said actuating member, an elongated abutment portion carried by the support and extending generally in the line of movement of said actuating member, means normally urging said dog to a blocking position with respect to said abutment portion, in which blocking position said dog prevents rocking of said actuating member to released position when said member is in any of a plurality of longitudinal positions, and a trip portion for rocking said dog to released position, said trip portion being located adjacent said handgrip portion to permit selective actuation thereof by the hand of an operator.

8. Means as set forth in claim 2 including a hand grip portion for rocking and sliding said actuating member, said latching means comprising an elongated dog carried by said actuating member and movable laterally with respect thereto to and from interlocked relation with a cooperating abutment portion carried by said support, means normally urging said dog to said interlocked relation, in which position said dog prevents rocking of said actuating member to released position whether said member be in any one of a plurality of longitudinal positions, and a trip portion for moving said dog out of said interlocked relation, said trip portion being located adjacent said handgrip portion for convenient manipulation by an operator.

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