Jan. 23, 1951 J. H. ROETHEL 2,538,913

DOOR LOCK

Filed March 8, 1949 3 Sheets-Sheet 1

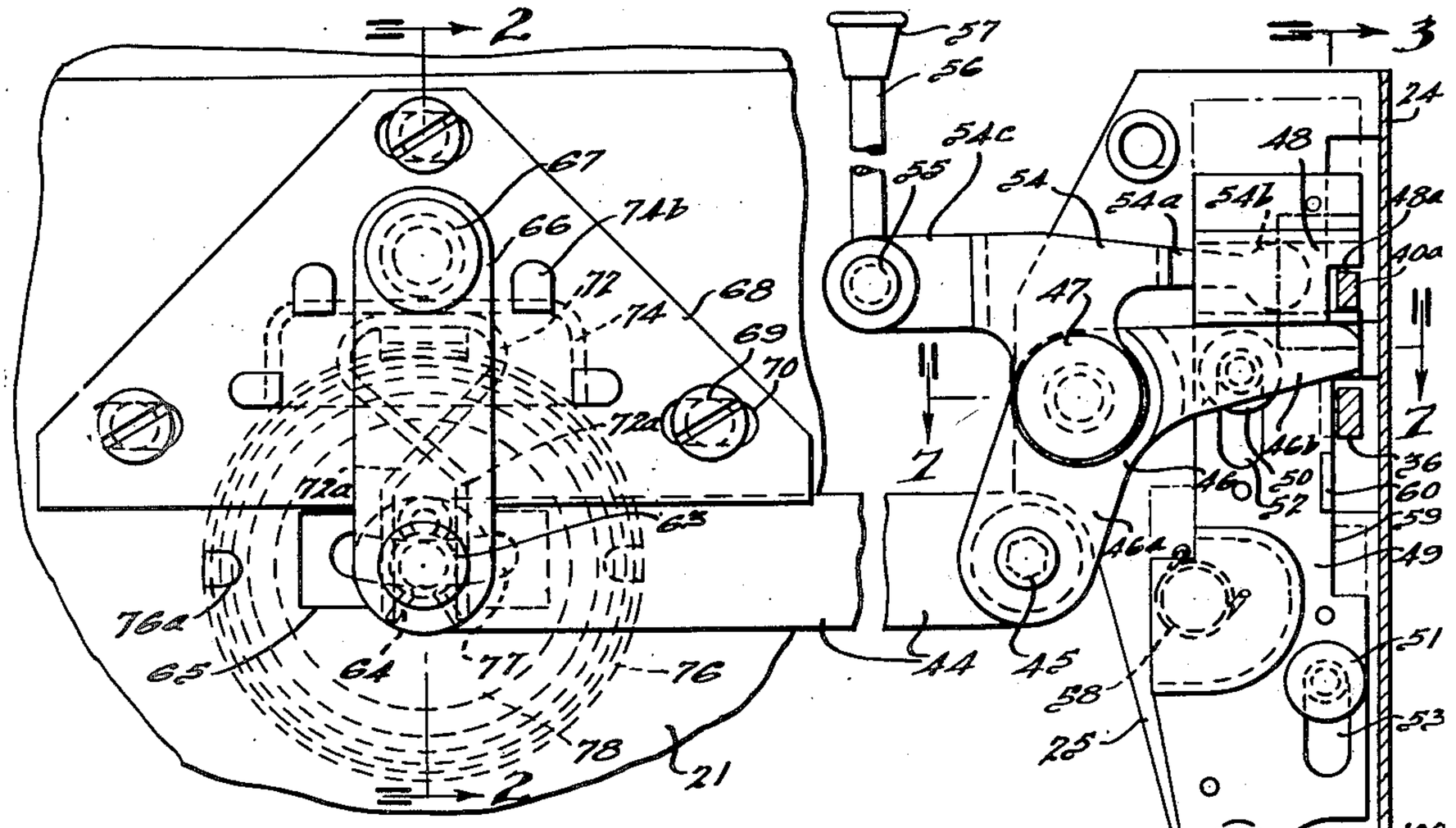


FIG. 1.

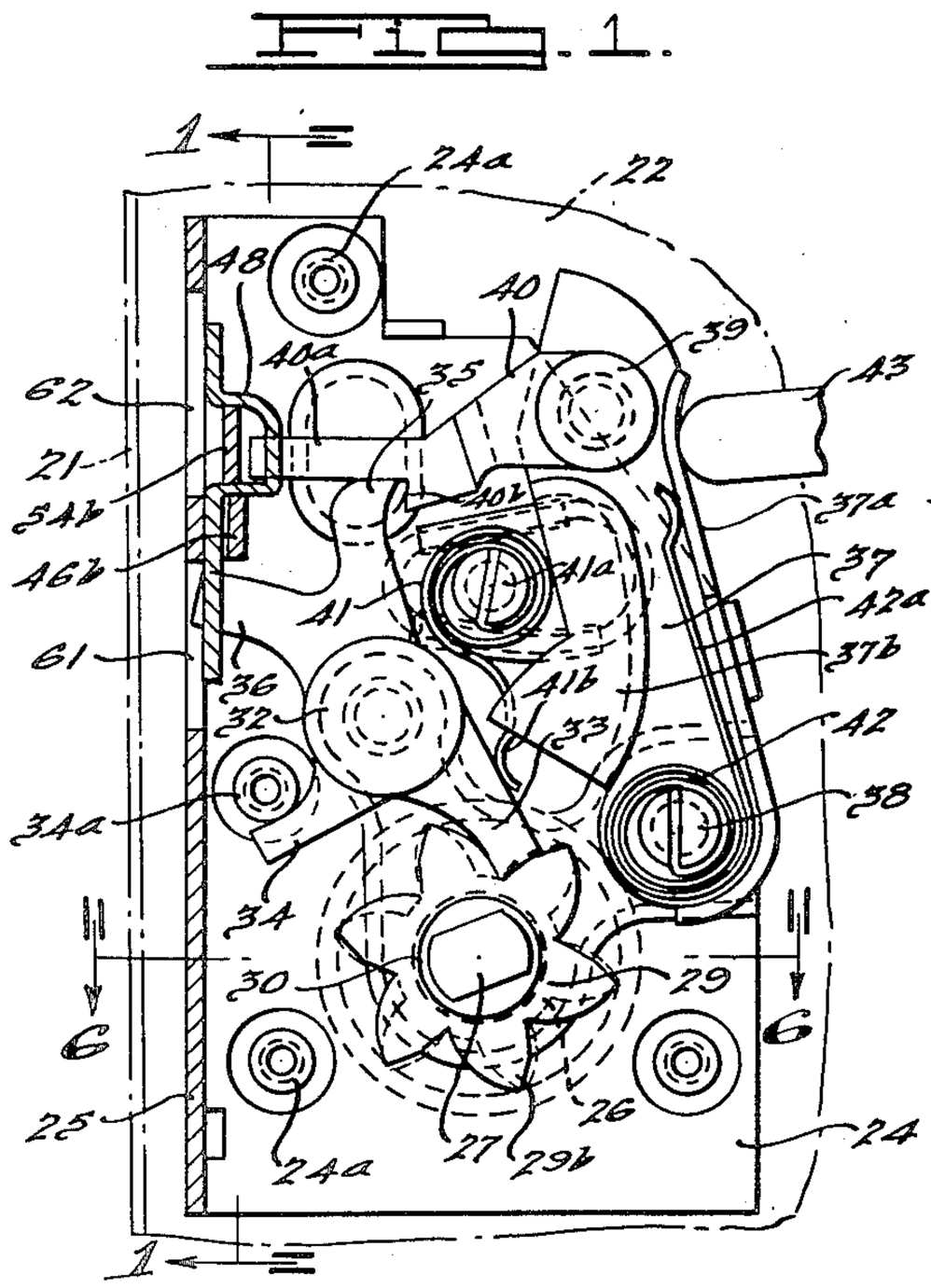


FIG. 3.

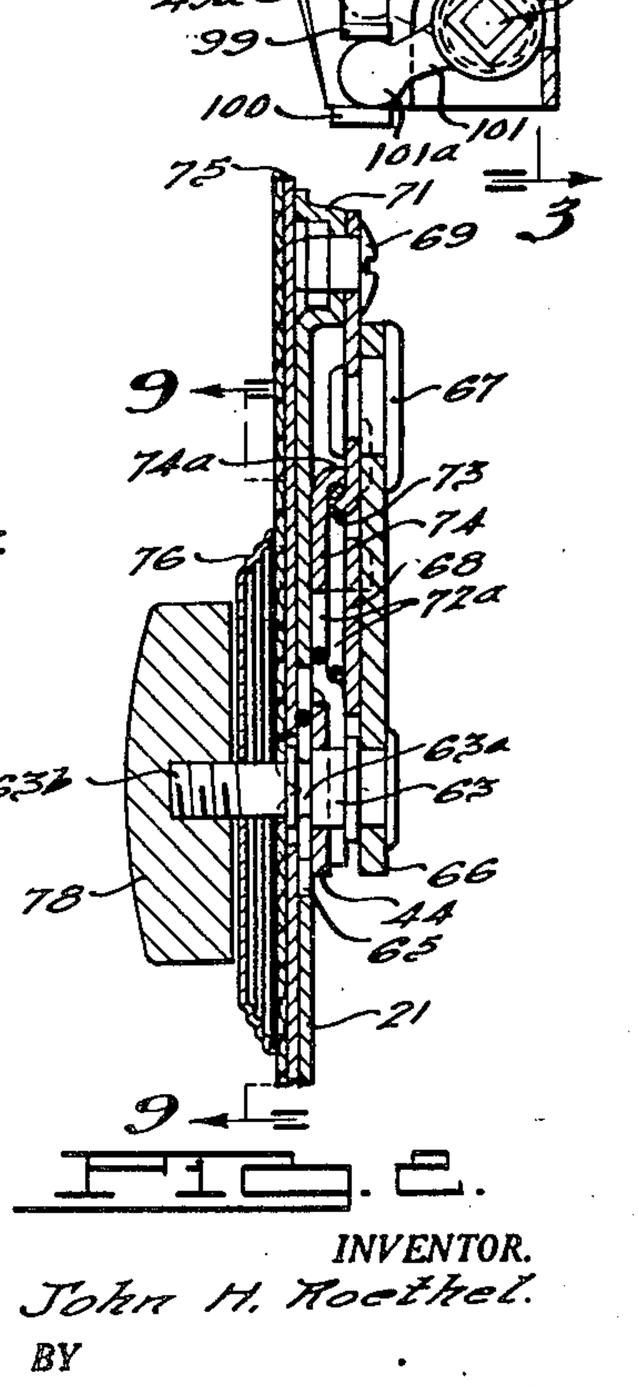


FIG. 2.

INVENTOR.
John H. Roethel.
BY
Elmer Jamison Gay
ATTORNEY.

Jan. 23, 1951 J. H. ROETHEL 2,538,913

DOOR LOCK

Filed March 8, 1949 3 Sheets-Sheet 2

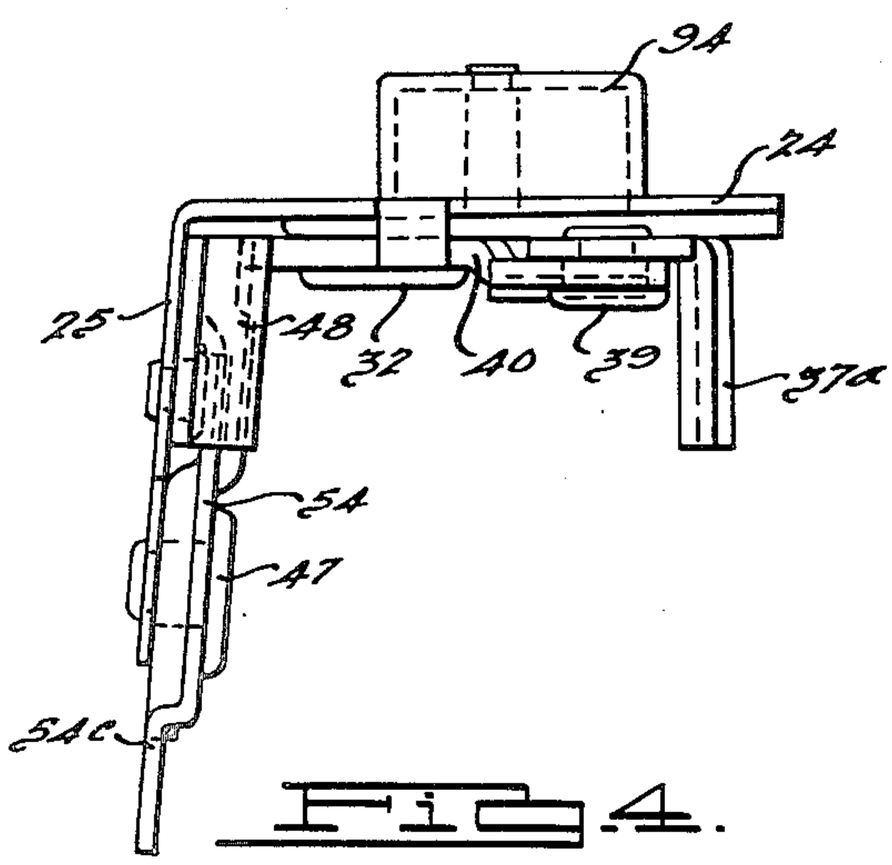


Fig. 4.

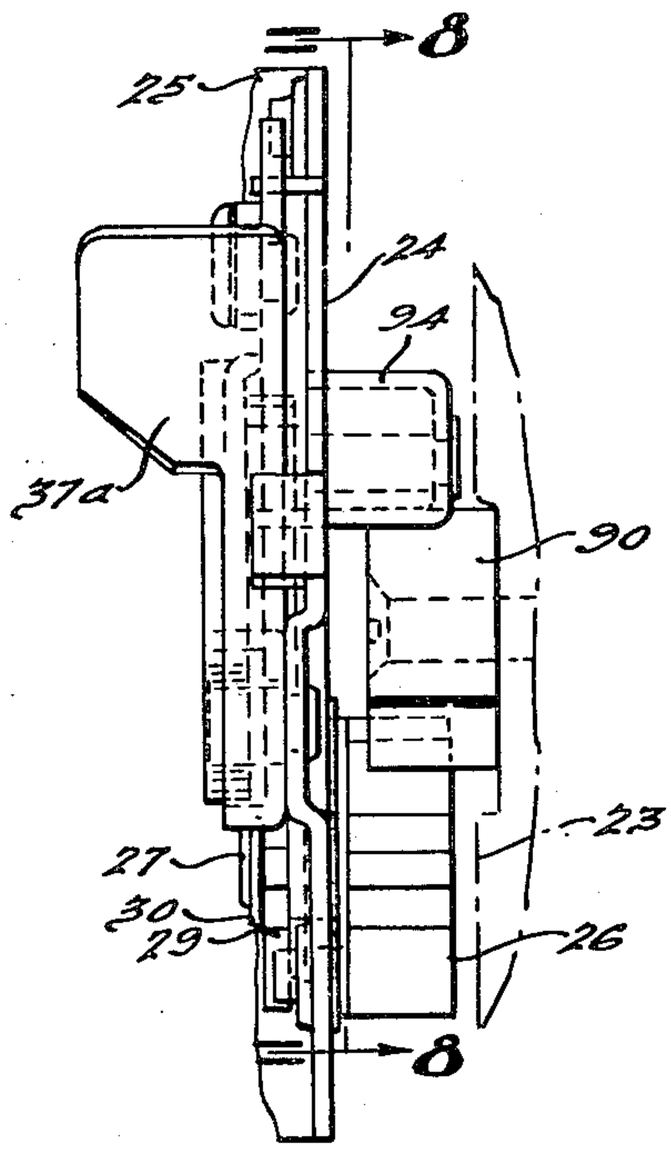


Fig. 5.

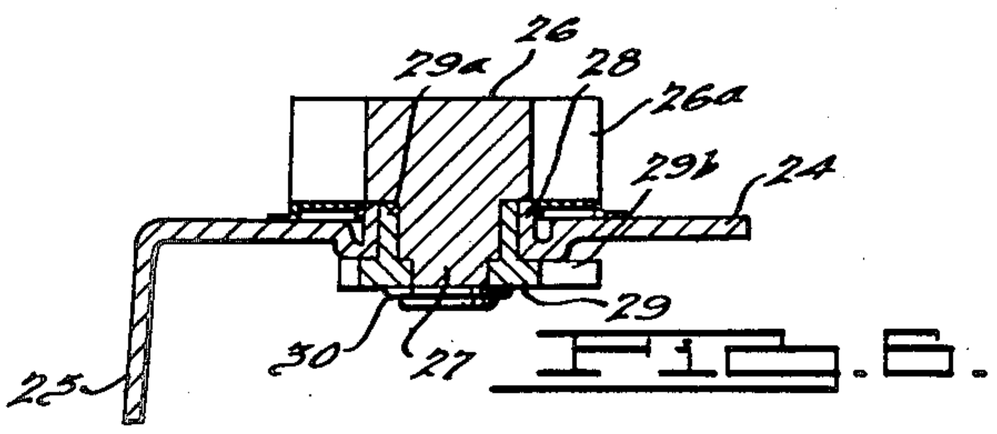


Fig. 6.

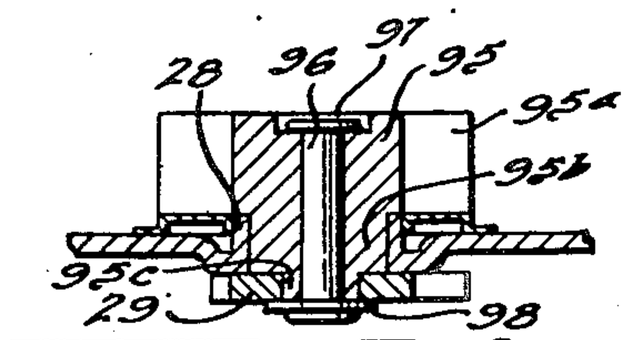


Fig. 6A.

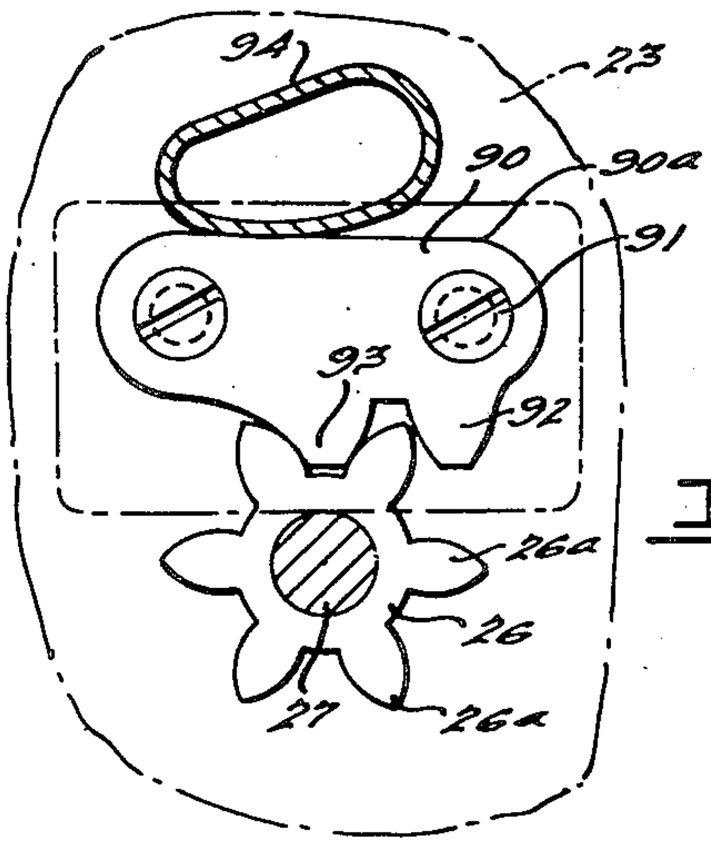


Fig. 8.

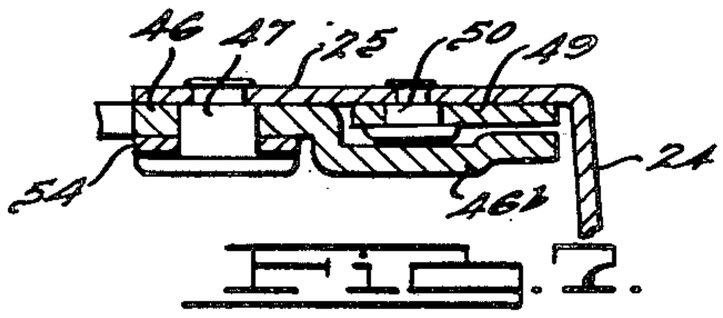


Fig. 7.

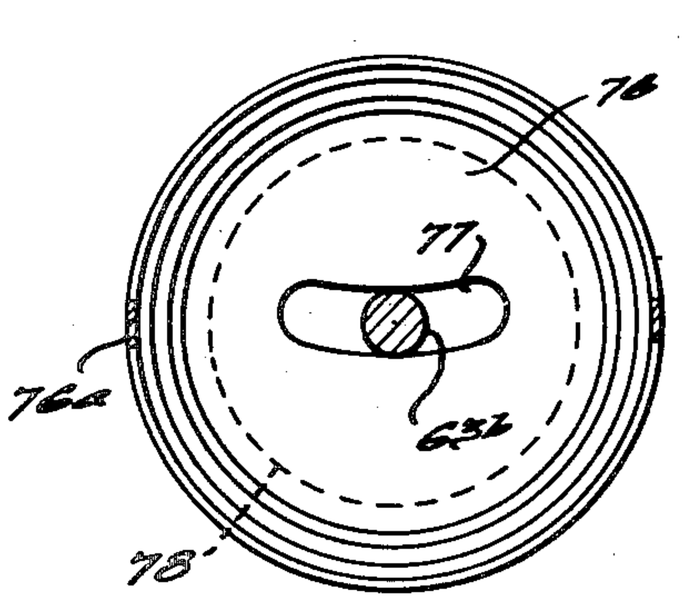
INVENTOR.
John H. Roethel.
BY
Elmer Jamison Gray
ATTORNEY.

Jan. 23, 1951 J. H. ROETHEL 2,538,913

DOOR LOCK

Filed March 8, 1949 3 Sheets-Sheet 3

Fig. 9.



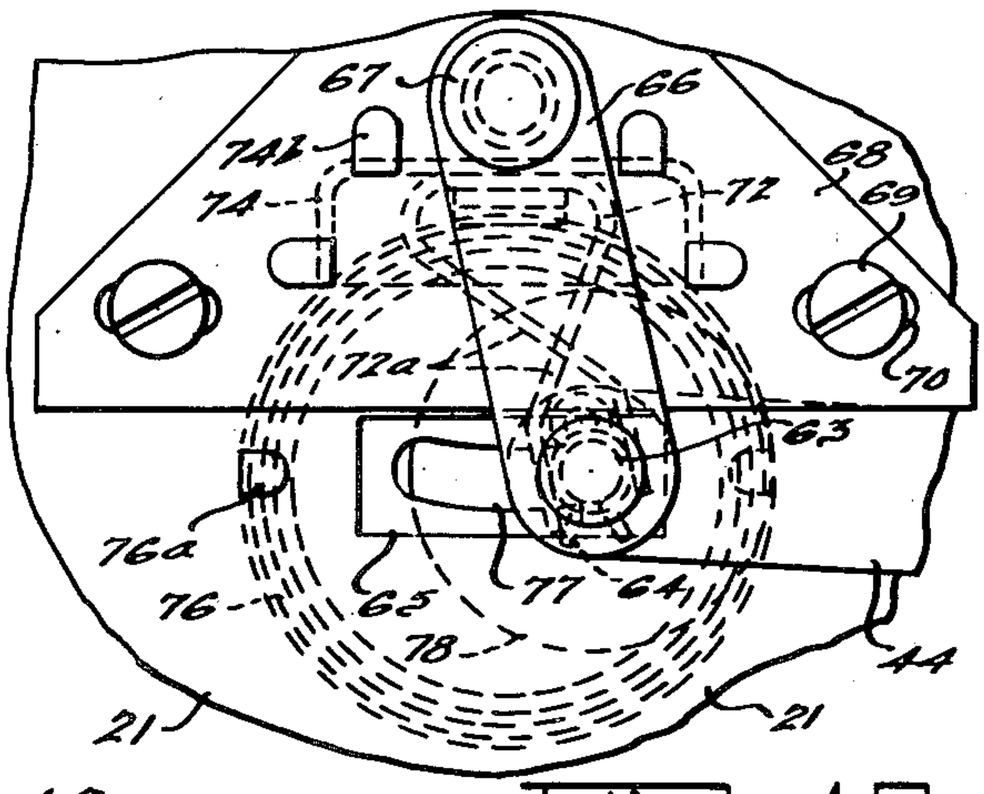


Fig. 10.

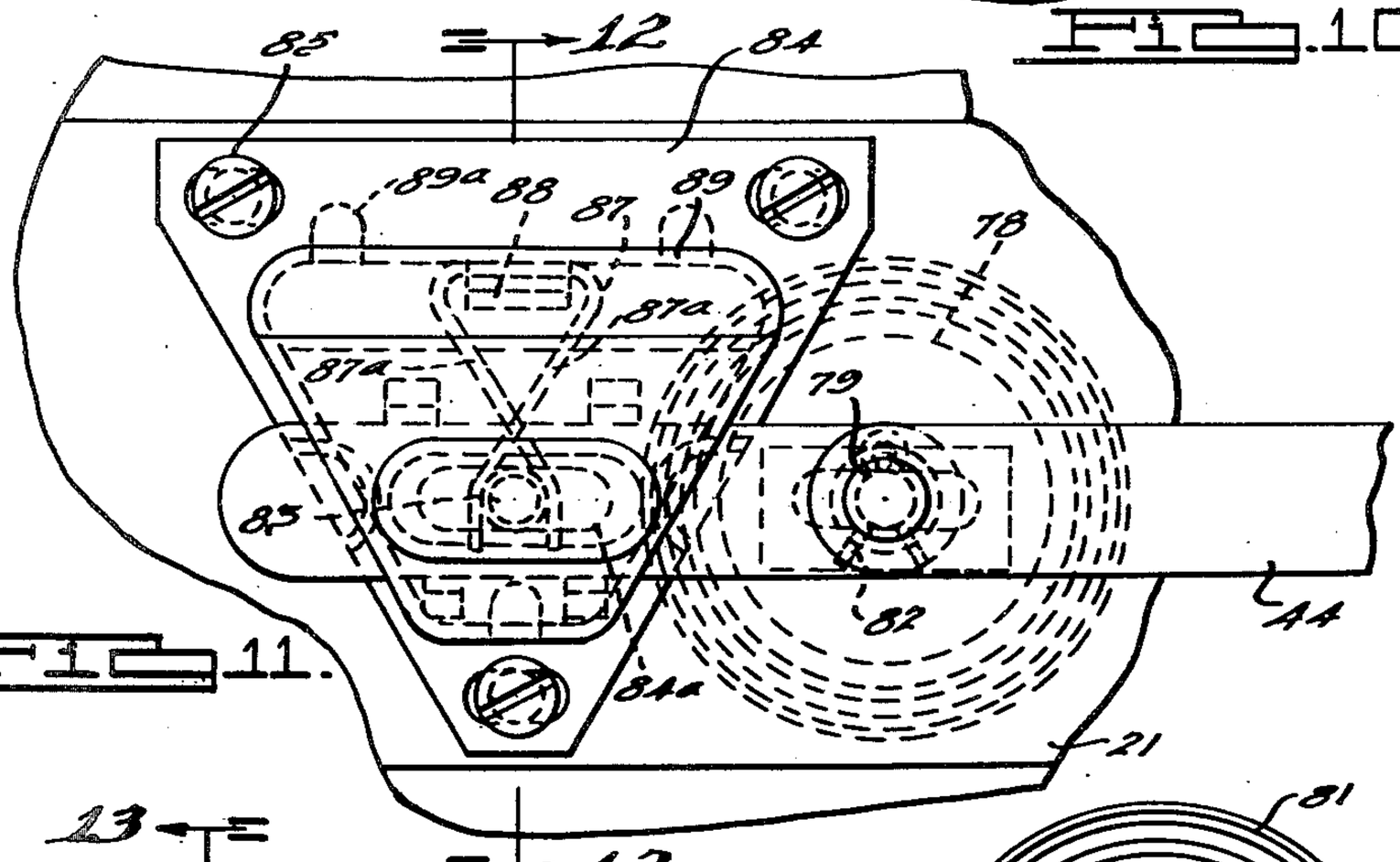


Fig. 11.

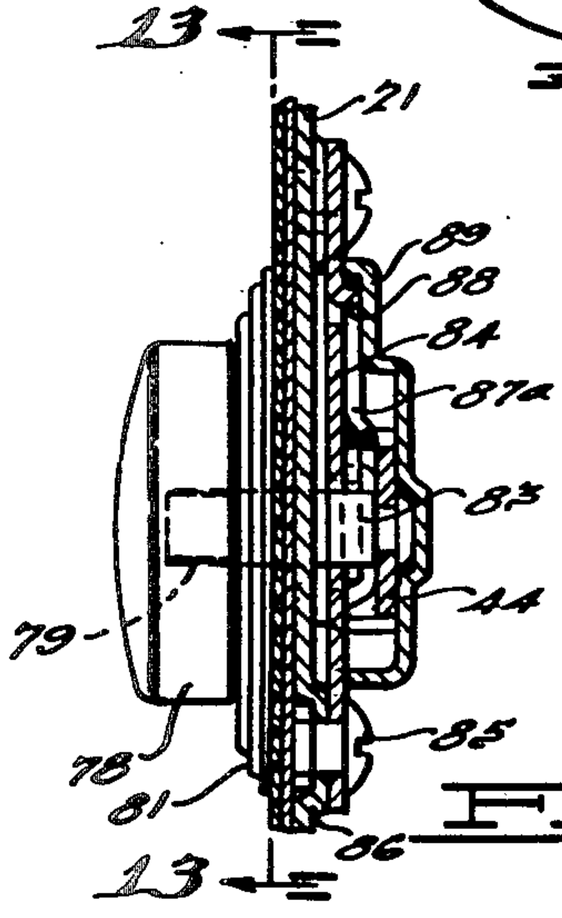


Fig. 12.

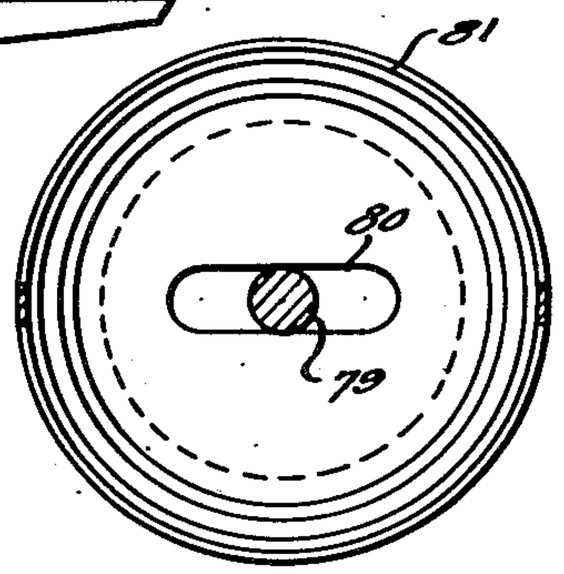


Fig. 13.

INVENTOR.
John H. Roethel.
BY
Elmer Jamison Gray
ATTORNEY.

Patented Jan. 23, 1951

2,538,913

UNITED STATES PATENT OFFICE

2,538,913

DOOR LOCK

John H. Roethel, Detroit, Mich., assignor to Roethel Engineering Corporation, Detroit, Mich., a corporation of Michigan

Application March 8, 1949, Serial No. 80,279

3 Claims. (Cl. 292—280)

1

This invention relates to latch mechanism for swinging doors, particularly the doors of automobile or other vehicle bodies, an object of the invention being to provide an improved door latch mechanism which is not only relatively small in size, simple, compact and economical to manufacture, but also durable and efficient as well as comparatively quiet in operation.

Another object of the invention is to provide an improved door latch mechanism embodying a fully rotatable latch device together with a fully rotatable detent engaging member by which the latch device is positively held through the medium of a detent or the like in any position to which it may be rotated. More specifically an object is to form the latch device as a toothed member which, when the detent is disengaged, is unrestrained against rotation in any direction, yet which will rotate into locking relation to its striker regardless of the position to which the latch device is turned.

A further object of the invention is to provide an improved door lock especially adaptable for use on the doors of automobile bodies, the lock being provided with detent means for holding a rotatable bolt in door locking position and also being provided with improved means under the control of outside and inside manually controlled operators for releasing or disengaging the detent means, and in addition having improved means for rendering the outside operator ineffective to release or disengage the detent means.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Fig. 1 is a fragmentary sectional elevation taken substantially through lines 1—1 of Fig. 3 and showing in particular the mechanism of the door lock mounted adjacent the inner door panel.

Fig. 2 is a section taken substantially through lines 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a section taken substantially through lines 3—3 of Fig. 1 looking in the direction of the arrows.

Fig. 4 is a plan view of the latch device illustrating the parts thereof carried by the case plate.

Fig. 5 is a fragmentary side elevation taken from the right in Fig. 3 in the direction of the arrow numbered 5.

Fig. 6 is a section taken substantially through

2

lines 6—6 of Fig. 3 looking in the direction of the arrows.

Fig. 6A is a view generally similar to Fig. 6 but illustrating a modification.

Fig. 7 is a section taken substantially through lines 7—7 of Fig. 1 looking in the direction of the arrows.

Fig. 8 is a section taken substantially through lines 8—8 of Fig. 5 looking in the direction of the arrows.

Fig. 9 is a section taken substantially through lines 9—9 of Fig. 2 looking in the direction of the arrows.

Fig. 10 is a fragmentary view, in part similar to Fig. 1, illustrating an operated position of the remote control mechanism.

Fig. 11 is a fragmentary side elevation illustrating a modification of the remote control mechanism.

Fig. 12 is a section taken substantially through lines 12—12 of Fig. 11 looking in the direction of the arrows.

Fig. 13 is a section taken substantially through lines 13—13 of Fig. 12 looking in the direction of the arrows.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

The latch device constructed in accordance with the particular embodiment of the invention herein illustrated, by way of example, is shown mounted on an automobile door having the usual inner door panel 21 terminating in a transverse jamb edge 22 facing the fixed jamb face or edge 23 (Fig. 5) of the door frame post or body pillar.

The present latch device comprises a case plate 24 provided with screw bosses 24*a* by means of which the case plate is secured to the inner side of the jamb portion 22 of the door. The case plate terminates at its inner edge in a flange 25 facing the inner door panel 21. The latch device is preferably provided with a rotatable toothed latch or bolt 26 positioned at the outer face of the case plate 24, this latch or bolt having an integral projecting shaft or shank 27 extending through an aperture in the case plate and having a bearing in the annular flanged edge 28 of this aperture. The inner end of the shank 27 of the

bolt is flattened and extended through a correspondingly shaped aperture in a rotatable toothed detent engaging member or ratchet member **29**. The ratchet member **29** in the present instance is molded from nylon plastic material and is formed, as shown in Fig. 6, with an integral bushing portion **29***a* interposed between the shank **27** of the bolt and the flanged edge **28** of the aperture in the case plate **24**, thus providing a bearing for the ratchet member **29** and bolt **26**. The reduced end of the bolt shank **27** is riveted over a washer **30** against the inner face of the ratchet member **29**. As a result of this construction the bolt **26** and ratchet member are rigidly attached together so as to turn in unison. By virtue of the bushing **29***a* formed from nylon plastic as an integral part of the ratchet member **29**, a highly wear resistant bearing for the bolt is provided in the case plate **24** which requires no lubrication.

The rotatable latch **26**, as shown in Fig. 8, is formed with a number of radially projecting tooth-like projections **26***a*, such as six, which are spaced equally around the periphery of the latch so as to provide in effect a gear type latch. The ratchet member **29** is also formed around its periphery with a number of tooth-like abutments or projections **29***b* which correspond in number to the tooth-like projections **26***a* of the bolt.

Pivotally mounted on a shoulder rivet **32** secured to the case plate **24** is a swinging detent, pawl or dog which has a downwardly extending detent arm **33** cooperable with the teeth or projections **29***b* of the ratchet member **29**. The detent arm is engageable with any one of the teeth **29***b* in the manner shown in Fig. 3 to hold the ratchet member and, hence, the bolt **26** in locking position against rotation in a counterclockwise direction as viewed in Fig. 3. The detent, in the embodiment of Fig. 3, is also formed with an inwardly extending arm **34** adapted to engage a rubber bumper **34***a* so as to silence impact of the detent arm **33** against the sides of the teeth **29***b* when the ratchet member **29** is rotated in a clockwise direction, as viewed in Fig. 3, during closing of the door. The bumper **34***a* is arranged so as to be engaged by the detent arm **34** slightly before the detent arm **33** goes fully home and to yield sufficiently to permit full engagement of the detent arm **33** with a tooth of the ratchet member **29**, as shown in Fig. 3.

The detent is also provided with an upwardly projecting arm or extension **35** and also an inwardly extending arm or extension **36**. Thus, the detent in the embodiment shown in Fig. 3 is provided with four arms **33**, **34**, **35** and **36** and is preferably formed from a single piece of flat metal stock.

Associated with the detent is a detent actuating or release lever **37** which is pivoted at its lower end upon a shoulder rivet **38** secured to the case plate. Pivoted at **39** to the side of the lever **37** near the upper end thereof is a detent operating link **40**, this link in the present instance extending inwardly from the lever **37** and having an extension **40***a* overlying and normally slidingly engageable with the upper end of the detent arm **35**, the link **40** thus being mounted so as to swing vertically toward and from the detent arm **35**. The link **40** is formed at its lower edge with an abutment or shoulder **40***b* adapted to engage the upper end of the detent arm **35** when the link **40** is shifted inwardly by swinging the lever **37** inwardly.

The detent arm **33** is yieldingly urged toward the ratchet plate **29** by means of a coil spring

41 anchored to a stud **41***a* secured to the case plate, this spring having a downwardly projecting arm **41***b* engageable with the edge of the detent arm **33** so as to yieldingly hold the arm in latching engagement with a tooth of the ratchet plate **29**. The lever **37** is urged outwardly toward its normal position shown in Fig. 3 by means of a coil spring **42** anchored to the shoulder rivet **38** and having an upward extension **42***a* engaging behind the flange **37***a* on the lever **37**. This lever is provided with a flange portion **37***b* which overlaps the spring arm **41***b* and prevents it from becoming disengaged from the detent arm **33**. The flange portion **37***a* on this lever is widened for engagement by a plunger **43** which may be shifted inwardly to swing the lever **37** by any suitable manually operable means on the outside of the door such, for example, as a push button or a pull out type handle.

The present latch device is preferably operated from the inside of the door through the medium of a remote control mechanism comprising a longitudinally shiftable draft link **44** which is pivoted at **45** to the lower end of one arm **46***a* of a bell crank lever **46**. This lever is pivoted on the shank of a shoulder rivet **47**, Figs. 1 and 7, secured to the case plate flange **25**. The lever is provided with a projecting arm **46***b* overlying at its outer end the detent arm **36**.

In accordance with the present embodiments of the invention means is provided for disconnecting the operating link **40** and release lever **37** from the detent arm **35** and also for effecting the operative connection of these parts, this being accomplished through the medium of a manually operable slide which may be shifted either by manually operable means at the inside of the door or by a key operating lock from the outside of the door. This slide, designated at **49**, is embossed at its upper end to provide an outwardly extending channel shaped projection **48** notched at **48***a* to receive the inner end of the extension **40***a* of the link **40**. The lower edge of the channel shaped projection **48** overlies the lever arm **46***b* and the latter in turn overlies the detent arm **36**, see Figs. 1 and 3. Since the extension **40***a* of the operating link **40** projects within the notch **48***a* in the vertically shiftable slide **49**, an interlocking connection is thus provided between the link extension **40***a* and the slide so that upward movement of the slide will raise the link **40** to disengage it from the detent arm **35** and reverse movement of the slide will position the link **40** with its abutment **40***b* in operative relation to the upper end of the detent arm. The slide **49** is guided on the case plate flange **25** by means of upper and lower headed guide studs **50** and **51** extending through vertical guide slots **52** and **53** in the slide.

The slide **49** may be shifted upwardly to the dotted line position shown in Fig. 1 and downwardly to its full line position by means of a lever **54** pivotally mounted on the shank of the shoulder rivet **47**. This lever has a projecting arm **54***a* terminating in a round end **54***b* lying within the channel shaped projection **48** on the slide **49**. The lever **54** also has a lever arm **54***c* pivotally connected at **55** to a vertically shiftable rod or plunger **56** which extends upwardly through the garnish molding at the inner side of the glass panel of the door. This rod carries at its upper end a knob **57** which may be grasped at the inside of the door to shift the plunger vertically in either direction.

From the foregoing construction it will be ap-

parent that by pressing the knob 57 downwardly the lever 54 will be rocked, thereby raising the slide 49, and conversely when the rod 56 is pulled upwardly the slide 49 will be shifted downwardly. The slide is yieldingly held and urged toward its upper and lower limits of movement by means of a snap-over spring 58 of suitable strength attached at one end to the slide and at the opposite end to the case plate flange 25. As shown in Fig. 1, the slide 49 is notched or cut away at 59 to provide clearance for the detent arm 36 which in the present embodiment is free to move vertically without engaging the lower edge of the notched portion 59 in any position of the slide. Projecting outwardly from the side edge of the notch 59 in the slide 49 is a flange or lug 60 which, when the slide is shifted upwardly, is moved into position to underlie and substantially engage the lever arm 46*b*, as shown in dotted lines in Fig. 1. Thus, with the slide in its uppermost position the lever arm 46*b* will contact the lug 60 when the lever arm is swung downwardly, thereby returning the slide to its lowermost position. The case plate flange 25 is provided with an aperture 61 to receive the end of the detent arm 36, and the case plate flange is also provided with an aperture 62 to receive the extension 40*a* of the operating link 40 when shifted inwardly.

Extending through a hole in the remote end of the draft link 44 is a threaded stud or pin 63, the link being locked in position on the stud by means of a snap-on cotter pin 64 engaging in an annular groove 63*a* in the stud 63. The inner door panel 21 is formed with an elongate aperture 65 through which the stud 63 extends, and the inner end of this stud is anchored, as shown in Fig. 2, in a hole in the lower end of a hanger link 66. The upper end of this link is pivoted on the shank of a shoulder rivet 67 secured to a mounting plate 68. This plate is adjustably attached to the inner door panel 21 through the medium of screws 69 extending through adjusting slots 70 in the mounting plate and to screw bosses 71 on the inner door panel. Since the stud 63 is mounted on the lower end of the swinging link 66 longitudinal movement of the stud will be in an arcuate path having its center at the axis of rivet 67. This longitudinal movement of the stud 63 is yieldingly resisted by means of a wire spring 72 which is bent to provide a pair of depending arms 72*a* which cross each other and engage at their lower ends opposite sides of the shank of the stud 63. The upper horizontal portion of the spring 72 is anchored between a retainer lug 73 lanced out of the metal of the plate 68 and the upper flanged edge 74*a* of a retainer piece 74 secured in spaced relation to the mounting plate 68 by means of tongues or tabs 74*b* projecting through slits in the mounting plate and clinched over as shown in Fig. 1.

The inner door panel 21 is covered in accordance with conventional practice by means of a fabric covered trim panel 75. Mounted against the inner face of the trim panel is an escutcheon disk 76 which is attached in position by means of tabs 76*a* projecting through slots in the inner door panel and clinched over. The escutcheon disk 76 is formed, as shown in Fig. 9, with an arcuate slot 77 through which the inner threaded end 63*b* of the stud 63 projects. Threaded onto the inner end of the stud is an annular slide button 78 which is preferably of sufficient size to enable it to be readily grasped by the hand so as to shift the button 78 fore and aft, thereby

shifting the stud 63 within the slot 77 in the escutcheon disk 76, this slot being covered by the slide button as shown in Fig. 9. When the slide button 78 is shifted to the right on the escutcheon disk 76, as view in Figs. 1 and 10, the hanger link 66 will be swung to the right against the resistance of the spring 72 and the stud 63 will also be shifted to the right within the slot 77 in the escutcheon disk and the slot 65 in the inner door panel. This will result in shifting the link 44 to the right, thereby rocking the bell crank lever 46 and swinging the lever arm 46*b* upwardly and raising the slide 49 to its dotted line position in Fig. 1 by engagement of the lever arm 46*b* with the bottom of the embossment 48 in the slide. Upon releasing the slide button 78, after performing the above operation, the spring 72 will return the slide button and lever 46 to their normal positions shown in Fig. 1. Conversely upon shifting the slide button 78 to the left in Fig. 1 the lever 46 will be rocked in the opposite direction, thereby depressing the lever arm 46*b* and causing it to swing the detent arm 36 downwardly to disengage the detent 33 from the ratchet member 29, thus freeing the ratchet member and bolt and permitting the door to be opened. In the event the slide 49 has been set in its upper position either by operation of the lever 46 or the lever 54, the slide will be returned to its normal position upon shifting the slide button 78 to the left in Fig. 1 by engagement of the lever arm 46*b* with the lug 60 on the slide.

Assuming that the link 40 is in its operative position with respect to the detent arm 35, as shown in Fig. 3, upward movement of the slide 49 by actuation of either the lever 54 or the lever 46 will swing the link 40 upwardly by virtue of the connection of the arm 40*a* of the link within the notch 42*a* in the channel embossment 48 of the slide. This operation will disconnect the link 40 from the detent arm 35 by raising the abutment 42*b* of the link above the upper end of the detent arm. When this occurs it will be apparent that the release member 37 may be pushed inwardly freely without disengaging the detent from the ratchet member 29, since by this inward motion of the member 37 the link 40 will be free to move inwardly relatively to the detent arm 35 without imparting any disengaging motion thereto. Even though the outside release lever 37 may be disconnected from the detent arm 35 by shifting the slide 49 upwardly, the slide will be returned downwardly to its normal position to again connect the release lever with the detent by operation of the inside remote control mechanism through the slide button 78 accompanied by actuation of the detent arm 35 to disengage the detent arm 33 from the toothed member 29.

In the embodiment illustrated in Figs. 11 to 13 inclusive the remote control link 44 carries a transverse pin or stud 79 slidable within a straight slot 80 in an escutcheon disk 81 which is otherwise similar to the disk 76 and mounted on the inner door panel in a corresponding manner. The link 44 is anchored in position on the pin 79 by means of a snap-on cotter pin 82 extending through an annular groove in the pin 79. The slide button 78 is threaded onto the inner end of the pin 79 and is shiftable fore and aft on the escutcheon plate 81 so as to shift the remote control link 44 fore and aft to operate the bell crank lever 46 in the manner above described. Extending through a hole in the end of the link 44 at a point spaced from the coupling pin 79 is a

stud 83 which is riveted to the end of the link as shown in Fig. 12. This stud is slidable within a straight slot 84*a* in a mounting plate 84 adjustably secured to the inner door panel by screws 85 threaded into screw bosses 86 in the inner door panel 21. Longitudinal movement of the stud 83 in one direction or the other is resisted by means of a wire spring 87 having depending crossed arms 87*a* which engage at their lower ends opposite sides of the stud 83. The upper horizontal portion of the spring 87 is anchored in position between a lug 88 lanced out of the metal of the plate 84 and the upper flanged edge of a retainer piece 89 secured to the mounting plate by clinched over tongues 89*a*. It will be apparent that by shifting the slide button 78 fore and aft upon the escutcheon disk 81 with the coupling pin 79 shiftable within the slot 80 in the escutcheon disk, the remote control link 44 will be shifted in an endwise direction; and this movement of the link will be resisted by the spring 87 which, upon releasing the slide button 78, will return it as well as the remote control link to normal position.

In the several embodiments of the invention the rotary toothed latch or bolt 26 is actuated when the door is closed by means of a striker or keeper device 90 which is rigidly mounted on the jamb edge 23 of the body pillar or fixed upright member of the door frame. Where a steel bolt 26 is used, as in the embodiment of Fig. 6, the striker member 90 is preferably molded from nylon plastic material and is secured to the body pillar by means of screws 91. The nylon striker member 90 is formed at its lower edge with two integral tooth like projections 92 and 93 with which the teeth 26*a* of the latch bolt mesh to hold the door in either a final or safety locking position. When an adjacent pair of teeth 26*a* embrace and engage the tooth 92 the door is in safety locking position, and when an adjacent pair of teeth 26*a* engage and embrace the tooth 93 of the striker member the bolt is in final locking position as shown in Fig. 8. The upper surface 90*a* of the striker member forms an inclined ramp engaged by a dovetail shoe or guide block 94 rigidly secured to the case plate and cooperable with the bolt by engagement with the striker member 90 to hold the door against vertical movement in its fully closed position. Where the striker member 90 is molded from nylon plastic, the guide block or shoe 94 is preferably formed of metal such as steel. I have discovered that by using a steel bolt 26 and a steel wedge block or shoe 94 in conjunction with a nylon plastic striker member 90 considerable reduction in frictional resistance as well as noise is achieved when the door is closed. Furthermore, this construction has the important advantage of eliminating any need for lubrication of the contacting surfaces between the bolt 26, shoe 94 and striker member. An additional advantage derived from this construction resides in the practical elimination of wear at the contacting surfaces of the bolt, shoe and striker member.

In the embodiment of Fig. 6A the bolt 95 having teeth 95*a* is similar to the bolt 26 but in this instance is molded from nylon plastic. The outer face of the bolt is recessed at 97 to receive the head of a rivet 96 which passes through a hole in the bolt and a steel washer 98 and is riveted over the washer. The bolt 95 has a round reduced shank portion 95*b* forming a bearing within the flanged aperture 28 in the case plate.

The inner end 95*c* of the bolt is reduced and flattened to extend through a correspondingly shaped aperture in the ratchet member 29, thus keying the ratchet member to the bolt so as to turn in unison therewith. Where the bolt 95 is formed of nylon plastic, as in the embodiment of Fig. 6A, the striker member 90 is preferably formed of steel, being otherwise substantially similar to the construction shown in Fig. 8. However, where the striker member 90 is formed of steel, the wedge block or shoe 94, which slides upon the upper inclined surface 90*a* of the striker member, is preferably molded from plastic material and rigidly secured to the case plate 24. The advantages of this construction are similar to those above set forth in connection with the elimination of noise, frictional resistance, lubrication and wear on the parts. Thus, in the embodiment of Fig. 6A the bolt 95 and wedge member 94 are of nylon plastic material and the striker member 90 is of steel.

Where a key controlled device is incorporated with the door lock as in the embodiment of Fig. 1, the slide 49 is provided with a depending extension 49*a* having spaced lugs 99 and 100 pivotally receiving a rounded end 101*a* of a swinging crank arm 101. This arm is connected to the square portion 102 of a key actuated shaft, the shaft in turn being connected to the cylinder mechanism of any conventional lock having the usual key control. By turning the key in the lock on the outside of the door the crank arm 101 may be swung to shift the slide 49 vertically in one direction or the other, thereby to shift the detent operating link 40 into or out of engaged relation to the detent arm 35. The key control means for the slide 49 is usually embodied in the front door locks of an automobile body but is usually omitted from the locks used on the rear doors.

I claim:

1. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position, a second arm extending upwardly from said axis, and a third arm extending inwardly toward said flange, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, a vertically shiftable slide on said flange connected to said link means, lever means on said flange for shifting said slide upwardly to cause the same to pivotally move said link means in a generally vertical direction to position its said part out of operative relation to said part of said second arm and to position said slide in a raised position, a manually operable lever on said flange engageable with a part on said slide when in said raised position for shifting the slide downwardly and also at the same time engageable with said third arm

for pivotally actuating said detent means to disengage the same from said latch device, and a single pivot for pivotally supporting said lever means and said manually operable lever on said flange.

2. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a latch bolt mounted on said plate portion to rotate about an axis and having a series of tooth-like projections extending around the periphery thereof, a detent engaging latch device secured to said bolt to rotate therewith about said axis and having a corresponding series of tooth-like abutments, detent means pivotally mounted on said plate portion and engageable with said latch device for holding the same in latching position, outer manually operable means for pivotally actuating said detent means to disengage the same from said latch device and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion for operation thereby and having a part normally arranged in operative relation to a part of said detent means and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, a vertically shiftable slide on said flange connected to said link means, an inner manually operable swingable lever for shifting said slide in one direction to swing said link means into a position in which said parts are out of operative relation, a second inner manually operable swingable lever for shifting said slide in the opposite direction, and a common pivot for supporting both of said inner manually operable levers on said flange.

3. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a latch bolt mounted on said plate portion to rotate about an axis and having a series of tooth-like projections extending around the periphery thereof, a detent engaging latch device secured to said bolt to rotate therewith about said axis and having a corresponding series of tooth-like abutments, detent means pivotally mounted on said plate portion and engageable with said latch device for holding the same in latching position, outer manually operable means for pivotally actuating said detent means to disengage the same from said latch device and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion for operation thereby and having a part normally arranged in operative relation to a part of said detent means and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means engageable with said link means and movably mounted on the support for shifting said link means in one direction to position said parts out of operative relation, said control means including a manually operable swingable lever, a second manually operable swingable lever for moving said control means in the opposite direction, and a common pivot for supporting both of said levers on said flange.

JOHN H. ROETHEL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,184,623	Clines	May 23, 1916
2,195,282	Pacy	Mar. 26, 1940
2,218,183	Springer	Oct. 15, 1940
2,221,181	Dall	Nov. 12, 1940
2,249,018	Marple et al.	July 15, 1941
2,272,167	Cloutier et al.	Feb. 10, 1942
2,394,646	Wagner	Feb. 12, 1946

FOREIGN PATENTS

Number	Country	Date
25,596	Great Britain	July 11, 1907