

June 7, 1955

T. VIGMOSTAD

2,709,909

DECK LID LOCK

Filed Oct. 6, 1949

2 Sheets-Sheet 1

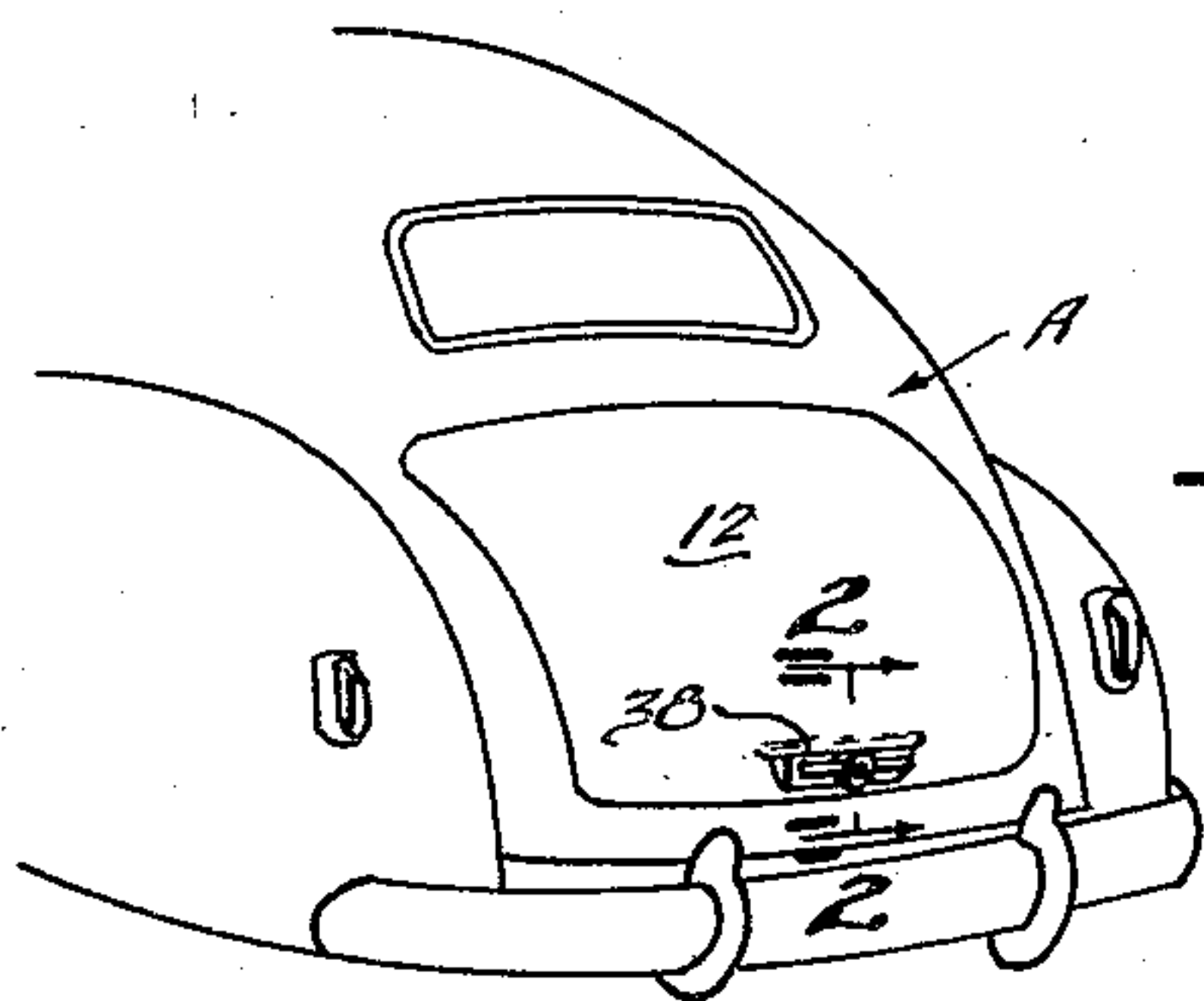


FIG. 1.

FIG. 2.

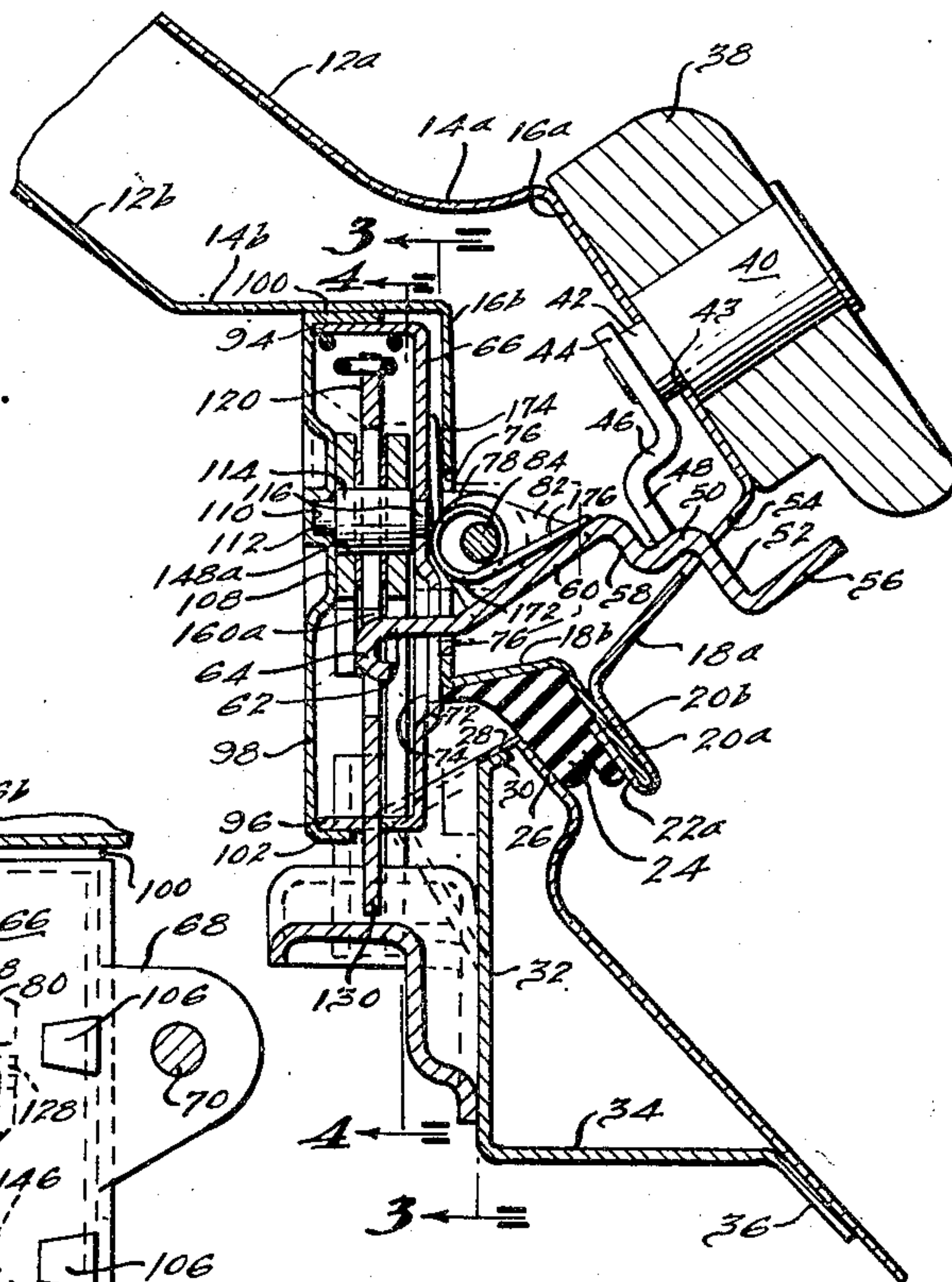
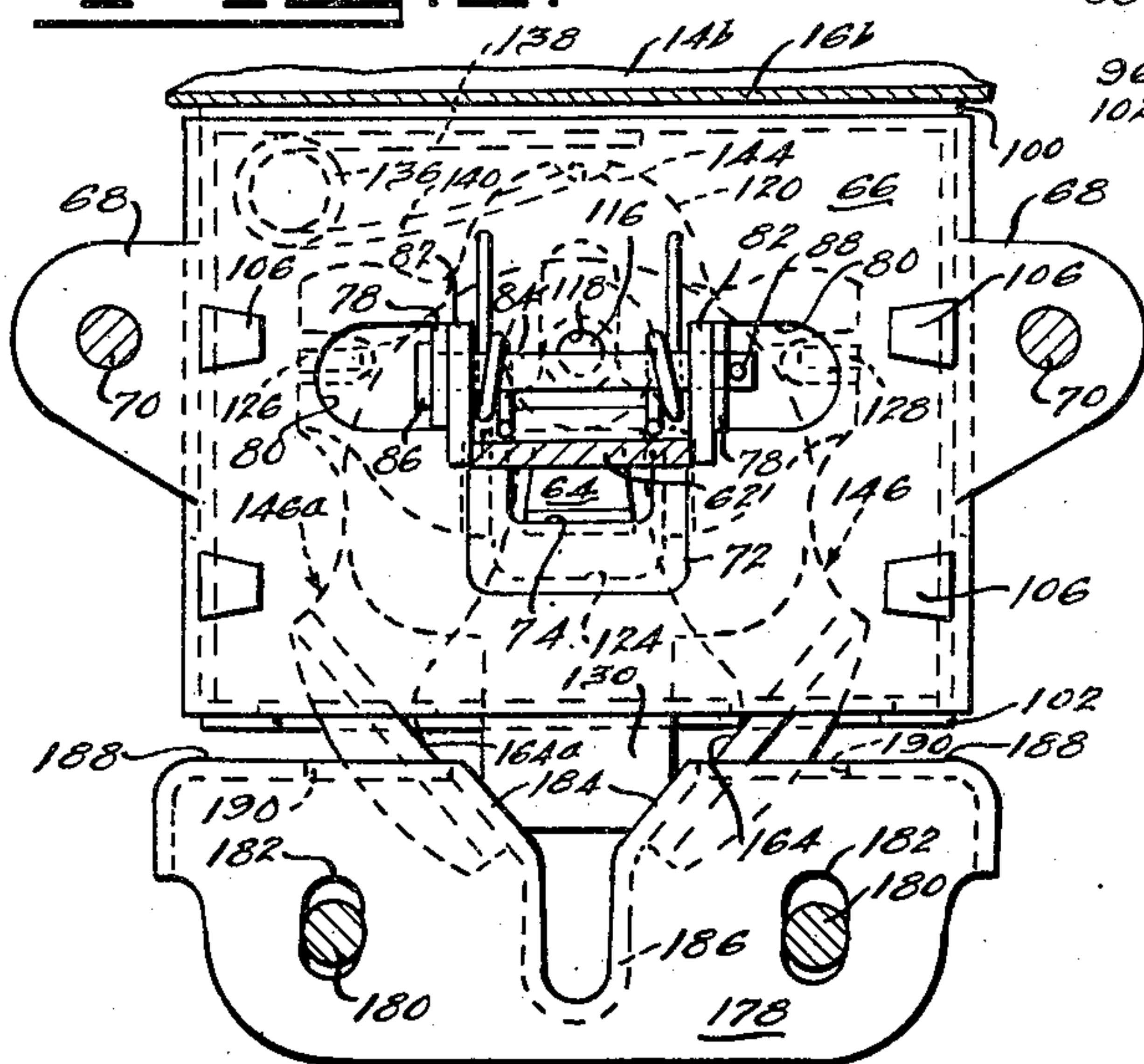


FIG. 3.



INVENTOR.

Trygve Vigmostad.

BY

Elmer James Gray
ATTORNEY.

June 7, 1955

T. VIGMOSTAD
DECK LID LOCK

2,709,909

Filed Oct. 6, 1949

2 Sheets-Sheet 2

FIG. 4.

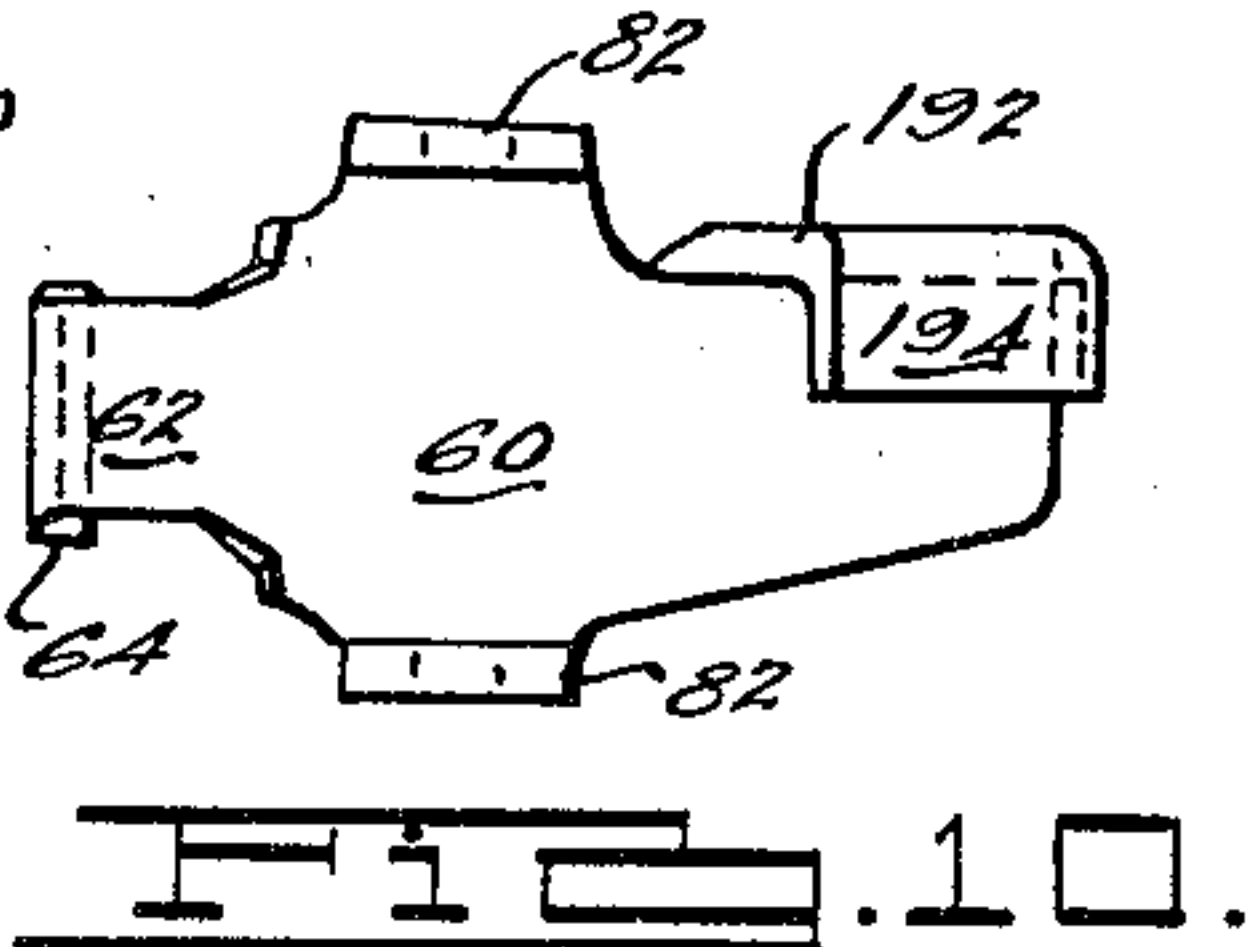
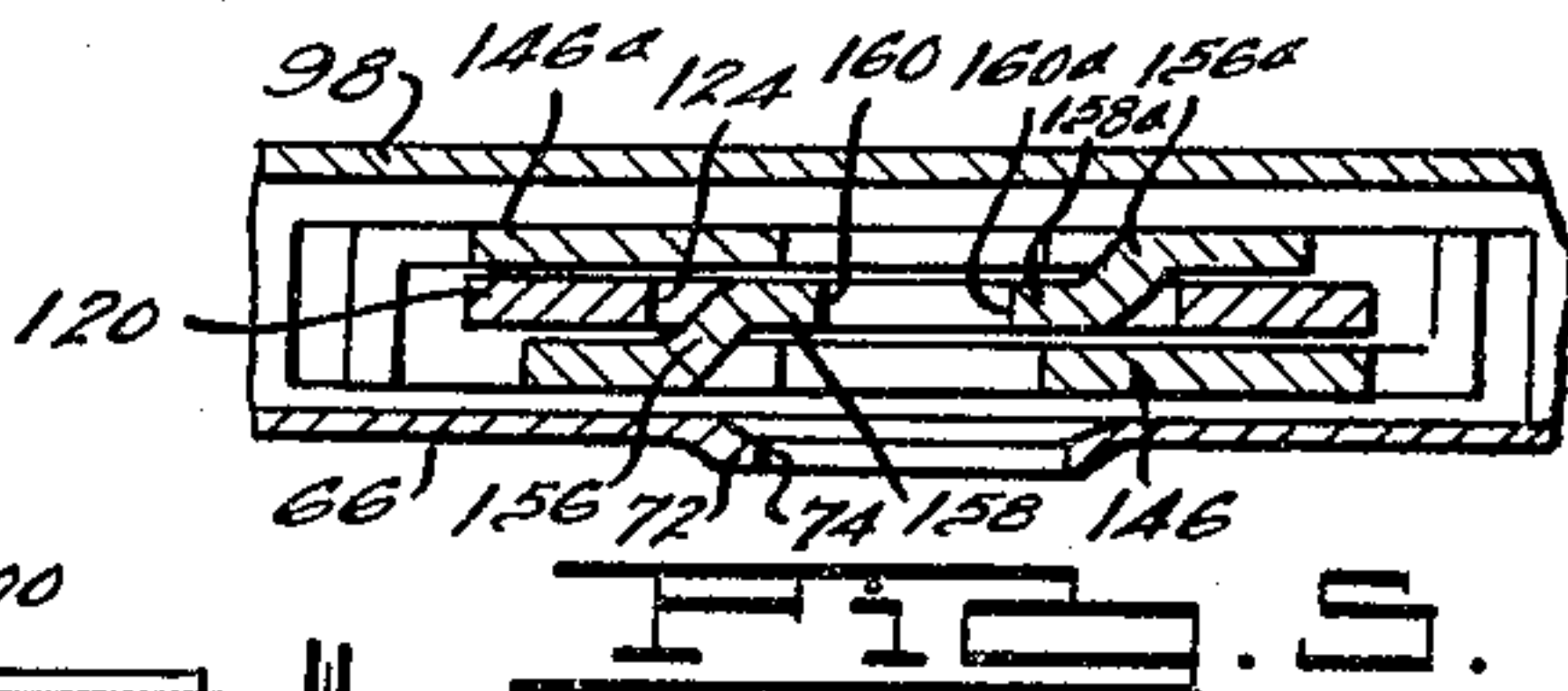
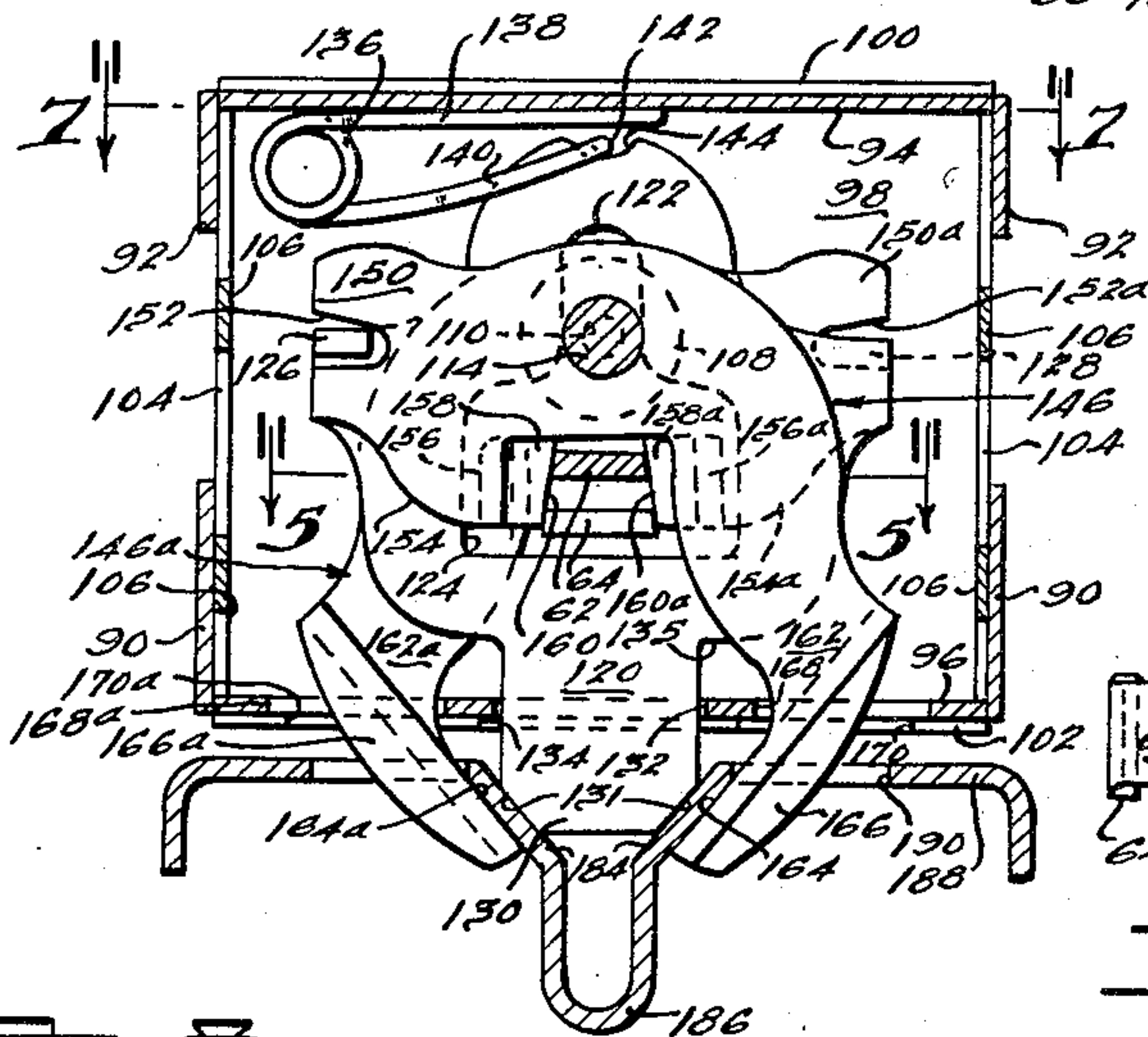


FIG. 8.

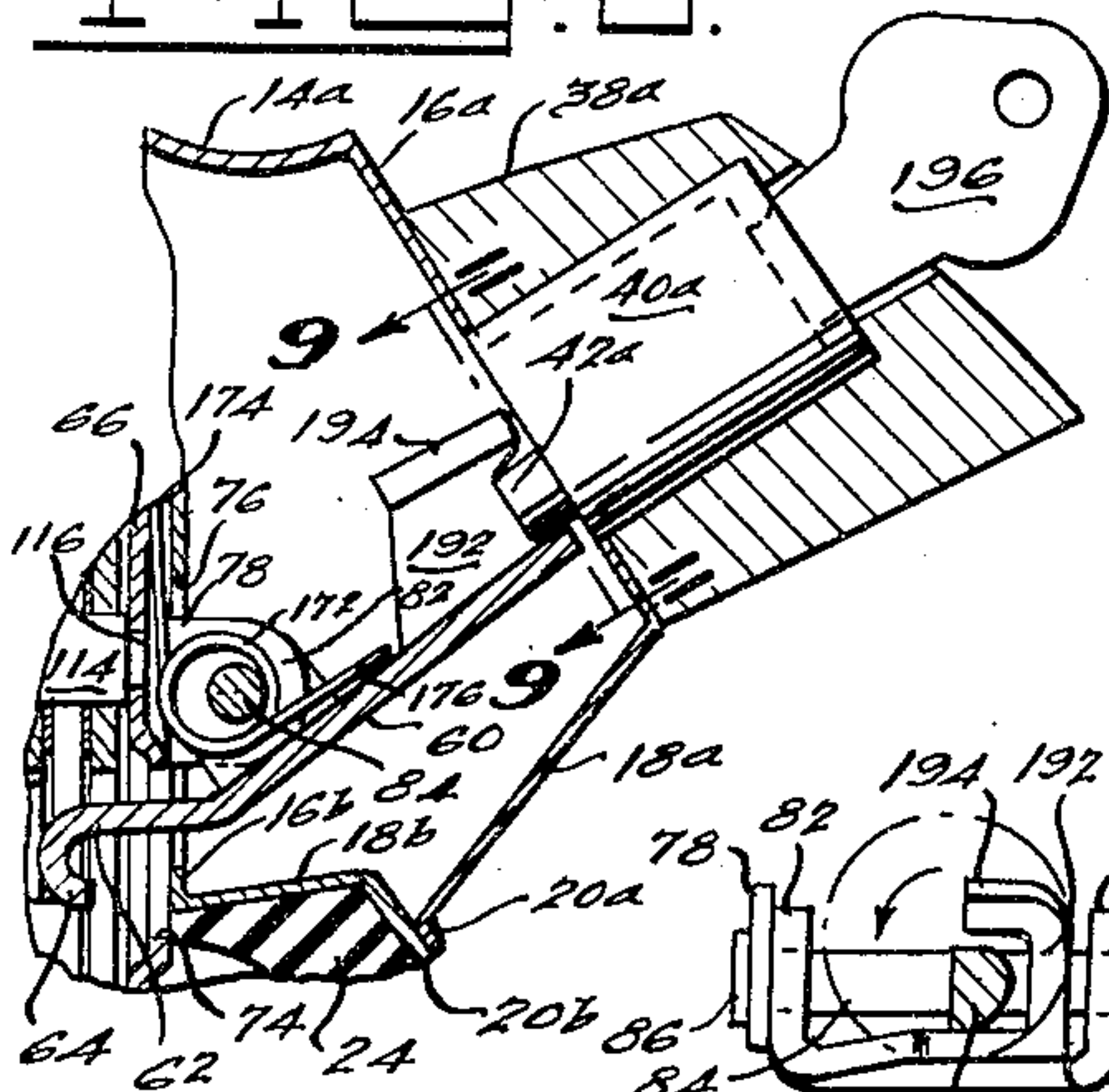


FIG. 9.

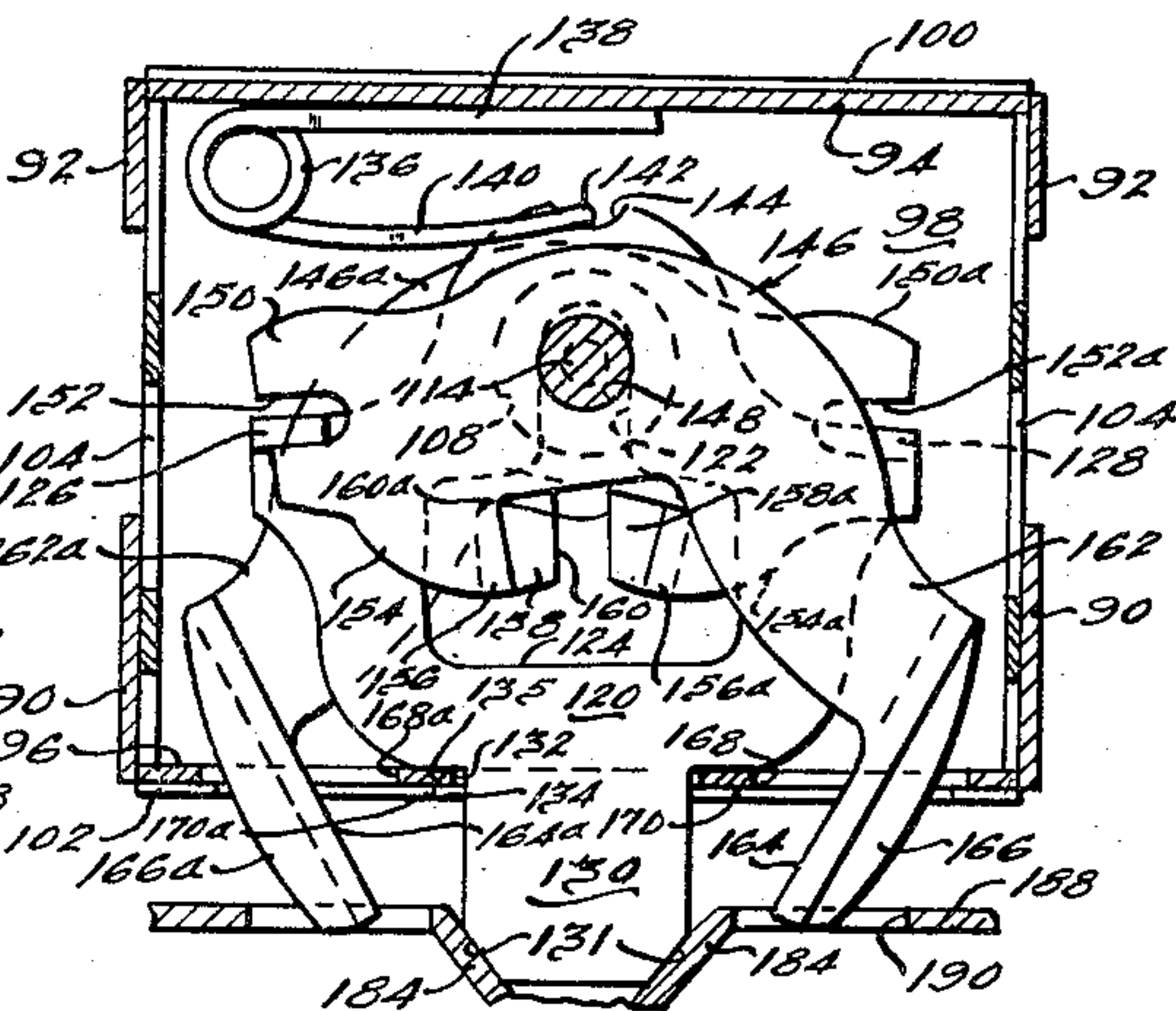


FIG. 6.

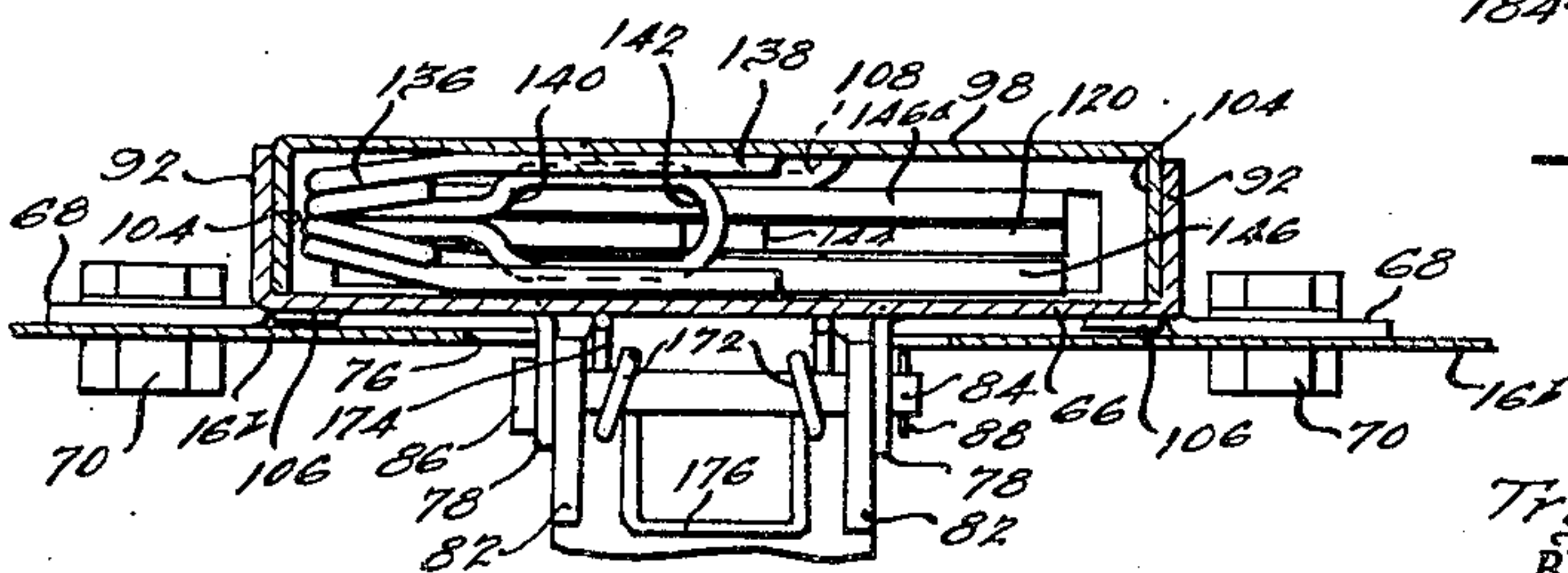


FIG. 7.

INVENTOR.
Trygve Vigmostad.

BY
Elmer Jamison Gray
ATTORNEY.

1

2,709,909

DECK LID LOCK

Trygve Vigmostad, Detroit, Mich., assignor to Briggs Manufacturing Co., Detroit, Mich., a corporation of Michigan

Application October 6, 1949, Serial No. 119,870

11 Claims. (Cl. 70—142)

This invention relates to an improved self-latching lock of the type which is particularly but not exclusively adapted for use in latching an automobile front hood or rear deck lid in the closed position.

An object of the present invention is to provide an improved lock having a highly efficient and economically manufactured latch mechanism cooperable with a striker for automatically interlocking with the same upon being brought into juxtaposition therewith, as upon closure of the door, hood, lid, or other member with which the lock is associated, and which is readily operable by a trigger comprising an element of the latch mechanism for releasing the latter from the striker.

Another object is to provide such a lock wherein the latch mechanism and striker are always interlocked when in the closed position and wherein the releasing trigger is operable either manually or by means of a cam on the end of a cylinder lock tumbler, in which latter case the trigger can only be operated by use of the cylinder lock key.

Still another object is to provide a lock of the foregoing character which is particularly suited for latching an automobile hood or rear deck lid closed and wherein the component moving parts of the latch structure are continually under resilient tension, so that objectionable rattling or vibration of the parts over rough roads is avoided.

Another and more specific object of the present invention is to provide an improved lock including in a preferred embodiment a latch mechanism having a tongue or latch pusher and latch means operatively mounted within a latch housing for moving in unison relative to the latter and to each other between latching and unlatching positions, the latch pusher being engageable by a striker to be moved thereby from the unlatching to the latching position upon closure of the door or other member with which the lock is associated, and means being provided for governing the movement of the latch mechanism to the unlatching position.

Another object is to provide such a lock structure wherein the latch mechanism is continually urged yieldingly to the unlatching position and wherein releasable detent means are provided to hold the latch mechanism in the latching position; and in particular to provide such a lock structure wherein the latch pusher and latch means firmly engage the striker therebetween in a spring pressed clamping action when in the latching position, thereby positively preventing objectionable play or rattling between the interengaged members.

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.

Details of two embodiments of the present invention are illustrated by way of example in the drawings wherein:

Fig. 1 is a fragmentary perspective view showing the

2

rear end of an automobile having a hinged rear deck lid and latching mechanism therefor employing the present invention.

Fig. 2 is an enlarged fragmentary vertical median section through the lock structure, taken in the direction of the arrows substantially along the line 2—2 of Fig. 1.

Fig. 3 is a vertical section taken in the direction of the arrows substantially along the broken line 3—3 of Fig. 2.

Fig. 4 is a vertical section taken in the direction of the arrows along the line 4—4 of Fig. 2, showing the latch mechanism in the latching position.

Fig. 5 is a horizontal section through the latch members and latch pusher, taken in the direction of the arrows substantially along the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary vertical section taken similarly to Fig. 4, but showing the latch mechanism in the unlatching position.

Fig. 7 is a horizontal section taken in the direction of the arrows substantially along the line 7—7 of Fig. 4, showing details of the latch pusher spring mounting.

Fig. 8 is a fragmentary section similar to Fig. 2, showing a modified form of the lock constructed in accordance with the present invention.

Fig. 9 is a section taken in the direction of the arrows substantially along the line 9—9 of Fig. 8, showing the interengagement between the detent releasing trigger and the operating cam on the inner end of a key operated rotatable lock cylinder.

Fig. 10 is a plan elevation of the detent and trigger shown in Fig. 9.

Before explaining the present invention in detail 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.

Referring to the drawings, the rear portion of an automobile body indicated generally by the letter A is shown in Fig. 1. The body A is provided with a rear trunk accessible by means of a hinged deck lid 12 pivotally connected near its upper portion to the body A in accordance with conventional practice by means not shown.

In the present instance the rear deck lid or hood 12 is formed from suitably spaced and reinforced outer and inner sheet metal panels 12a and 12b respectively, Fig. 2. The lower portion of the panel 12a is formed with an outward channel-like embossment disposed symmetrically with respect to the midline of the body A and including a horizontally extending concave upper wall 14a which bends angularly downward and rearward to comprise a flat handle seat 16a. The latter in turn terminates rearwardly in a forwardly declined lower wall 18a ending in a rearwardly declined flange 20a.

Similarly, the inner panel 12b is provided with a corresponding underlying outward embossment of V-section comprising a horizontal wall 14b terminating rearwardly in a vertical depending wall 16b. A flange 18b extends generally horizontally rearward from the base of the wall 16b toward the lower extremity of the channel side 18a and then bends angularly downward and rearward in a flange 20b underlying the flange 20a. The latter is provided with an underlapping flange portion 22a which is formed snugly around the flange 20b, the three flange portions 20a, 20b and 22a being preferably secured together as by welding for example to complete a triple thickness lower edge for the rear deck 12.

Underlying the rear edge of the lid 12 is a transverse raised embossment 26 of the body A terminating along its upper edge in a forwardly declined marginal

3

flange 28. The flange 28 is reinforced from below and welded to a parallel flange 30 of a V-type channel bracket having a vertical wall 32 depending from the forward edge of the flange 30 and a horizontal rearwardly extending base 34 terminating in a rearwardly declined flange 36 which lies flush with and is welded to the adjacent inside wall of the body A.

Overlying the embossment 26 and extending around the marginal edges of the rear deck opening to which it is secured is a bumper or cushion molding 24 of rubber or rubber-like material against which the marginal edge of the rear deck lid 12 seats in weather proof seal when in the closed position, Fig. 2. Raising and lowering of the deck lid 12 is facilitated by means of a handle element 38 of conventional construction suitably secured by means (not shown) to the seat or platform 16a.

In the present instance, a cylinder type key operated lock 40 is mounted within the handle 38. A cylindrical extension 42 of the rotatable cylinder of the lock 40 projects through an opening 43 in the platform 16a and is suitably secured at its inner end to a detent arm 44 adapted to swing about the pivot axis of the lock cylinder. In the locking position, Fig. 2, as described hereinafter, the arm 44 declines rearwardly in parallelism with the handle seat 16a along the midline of the body A and is offset inwardly at 46, terminating above the wall 18a in a rearward trigger engaging extension 48 which abuts at right angles a shoulder 50 of a latch control trigger and detent member. The latter, which may comprise a sheet metal stamping if desired, extends from the upper end of the shoulder 50 generally perpendicularly rearward and downward at 52 through an opening 54 in the wall 18a, terminating in an upward and rearward extending finger piece or lever arm 56. Extending perpendicularly forward and upward from the lower end of the shoulder 50 is an offset 58 which merges with a flat trigger body portion 60 having a generally horizontal extension 62 terminating in a downward and rearwardly curved hook-like detent 64 a purpose which will be clear hereinafter.

The latch structure for which the detent 64 is employed is enclosed within a housing comprising in the present instance a sheet metal stamping, including a vertical case plate 66 formed with a pair of lateral ears 68 which are bolted to the inside surface of the wall 16b by a pair of bolts 70.

As shown in Fig. 2, the body of the case plate 66 is spaced from the wall 16b by a flat rearward embossment 72 which projects from the plane of the plate 66 substantially the thickness of the sheet metal material thereof. The embossment 72 is provided with an opening 74 which aligns with a somewhat larger opening 76 in the wall 16b for freely receiving the horizontal trigger extension 62.

On either side and slightly above the embossment 72, a pivot support or flap 78 is lanced from the case plate 66, leaving an opening 80 therein. The paired flaps 78 are formed to extend perpendicularly rearward in vertical planes through the upper portion of the opening 76. Extending upward from the sides of the trigger body 60 in vertical planes adjacent the proximal faces of the pivot supports 78, Fig. 3, are a pair of integral lateral wings 82, which are pivotally secured to the supports 78 by means of a horizontal transverse pivot pin 84. The pivot pin 84 is retained in position by means of an enlarged head 86 adjacent the lateral surface of one of the pivot supports 78 and a retaining pin 88 extending diametrically through the other ends of the pin 84 adjacent the lateral face of the other pivot support 78.

By the structure thus far described, it is apparent that the trigger body 60 may be pivoted about the axis of the pin 84 after the detent arm 44 is pivoted one way or the other about the axis of the cylinder 42 so as to free the trigger shoulder 50 from the trigger engaging extension 48. The opening 54 in the embossment wall 18a for the trigger extension 52 and the aligned portions of the open-

4

ings 74 and 76 for the trigger extension 62 are dimensioned to permit the desired pivotal movement freely as required to operate the trigger in the manner described below.

As shown particularly in Fig. 4, the opposite side portions of the case plate 66 bend perpendicularly forward at 90 below each of the ears 68 and at 92 above said ears. The upper and lower edges of the case plate 66 bend forward in top and bottom flanges 94 and 96 respectively to complete a generally rectangular coverless box-like structure or housing.

The box-like housing or case plate 66 is covered by a forward cover plate 98, Fig. 2, comprising a sheet metal stamping having rearwardly bent upper and lower flanges 100 and 102 respectively closely overlying and underlying the upper and lower flanges 94 and 96 respectively of the case plate 66. The cover plate 98 is also provided with rearwardly bent side flanges 104 which lie inside and closely adjacent the respective lateral flaps or side portions 90, 92 of the case plate 66.

Extending rearwardly as integral portions of each side flange 104 are two retaining tabs 106, which project through slotted openings provided therefor within the case plate 66 and bend toward each other snugly against the plate 66 to secure the latter to the plate 98. The thickness of the tabs 106 is approximately equal to the height of the rearward embossment 72 from the plane of the case plate 66, so that the latter together with the four tabs 106 solidly abut the inner surface of the embossment wall 16b upon tightening the fastening bolts 70.

Projecting rearwardly into the housing 66, 98, is an annular embossment 108 within the cover plate 98, leaving a central pin retaining seat or anchor 110 for the forward reduced end 112 of a pivot pin 114 on which is mounted a latching mechanism contained within the housing as described below. The pin 114 extends horizontally rearwardly from its seat 110 and terminates in a reduced rearward end 116 which projects through an opening 118 provided therefor within the case plate 66 at a point intermediate the pivot supporting wings 78.

As illustrated more particularly in Figs 4 and 6, the latch mechanism within the housing 66, 98 includes a vertically movable latch pusher 120, which may comprise a sheet metal stamping having a vertical movement limiting slot 122 therein through which the pivot pin 114 projects. The lower end of the slot 122 enlarges into a rectangular detent receiving opening 124. Laterally of the slot 122 and projecting rearward from the left side of the body of the latch pusher 120 is an integral flange or lug 126. Bent forwardly from the opposite or right side of the latch pusher 120 at the level of the lug 126 is a similar lug 128. Projecting downward from the body of the latch pusher 120 along the midline thereof is a tongue 130 having chamfered lower corners 131 adapted to abut mating portions of a striker described hereinafter. The tongue 130 is movable freely through aligned openings 132 and 134 provided therefor within the aforementioned bottom flanges 96 and 102 respectively. Downward movement of the tongue 130 and integral pusher body 120 is determined by paired shoulders 135 comprising lateral extensions of the pusher body 120 at the root or base of the tongue 130 and adapted to abut the upper surface of the bottom flange 96 on either side of the opening 132 therein, Fig. 6.

Referring particularly to Figs. 4, 6 and 7, the latch pusher 120 is normally held at the limit of the aforementioned downward movement by means of a spiral torsion spring 136 having paired arms 138 urged by spring tension firmly against the upper housing wall 94. A closed loop 140 of the spring 136, having a horizontal end portion 142 seated under tension within a notch or seat 144 provided therefor within the upper end of the body of the latch pusher 120, extends from the spring 136 in opposition to the spring arms 138.

Pivotally mounted on the pin 114 in vertical planes

5

rearward and forward respectively of the latch pusher 120 are a pair of latch members or dogs 146 and 146a preferably comprising identical sheet metal stampings. The dogs 146, 146a are provided with pivot holes 148, 148a respectively adapted to receive the pin 114 and are pivotally mounted on the latter face to face by means of said pivot holes so as to complement each other on opposite sides of the vertical midline of the latch structure, as will be apparent below.

The rearward latch dog 146 is provided with an arm 150 which extends from the pivot 114 to the rearwardly turned lug 126 and has a notch 152 formed in its extremity into which the lug 126 projects. Below the arm 150, the member 146 bellies downward at 154 to provide a forward offset portion 156 terminating in a vertical detent support 158 lying in the plane of the latch pusher 120 within the opening 124 thereof. The support 158 terminates on the left of the vertical midline through the pivot 114 in a generally vertical detent engaging edge 160.

On the right side of the pivot 114, the body 146 extends downward in an arm 162 at an obtuse angle with respect to the arm 150. The lower end of the arm 162 is provided with a latch jaw 164 which projects angularly downward in a plane parallel to the lower right chamfered edge 131 of the tongue 130 when in the latching position as described hereinafter, and also extends perpendicularly forward from the plane of the body 146. A reinforcing web or flange 166 extends laterally from the jaw 164 parallel to the plane of the body 146. The jaw 164 and web flange 166 project from the latch housing freely through openings 168 and 170 provided therefor adjacent the right side of the tongue 130 in the bottom flanges 96 and 102 respectively.

As aforementioned, the forward dog 146a is identical in construction to the dog 146, but is reversed with respect thereto on the pivot 114. Accordingly each of the aforementioned elements of the dog 146 is complemented by a generally oppositely disposed and correspondingly numbered element of the dog 146a, each identifying numeral for latter elements being suffixed by the letter "a." The arm 150a of the member 146a extends to the right of the pivot 114 and is provided with a notch 152a which receives the forward projecting stud or lug 128. The under portion of the arm 150a bellies downward at 154a and provides a rearward offset portion 156a overlying the right side of the opening 124 and terminating in a vertical detent support 158a lying in the plane of the tongue pusher 120 within the opening 124. The support 158a terminates mesially in a generally vertical detent engaging edge 160a opposed to the aforementioned edge 160, the edges 160, 160a being disposed symmetrically on opposite sides of the vertical midline to the latch structure.

The arm 162a of the body 146a extends angularly downward and laterally toward the left corner of the latch housing and is provided with a latch jaw 164a which lies in a plane extending perpendicularly rearward from the plane of the member 146a and angularly downward generally parallel to the chamfer 131 at the lower left corner of the tongue 130. A reinforcing flange or web 166a extends laterally from the jaw 164a parallel to the body 146a. Also corresponding to the openings 168 and 170, bottom openings 168a and 170a are provided in the flanges 96 and 102 respectively on the left side of the tongue 130 for freely receiving the jaw 164a and reinforcing web 166a.

The disposition and dimensions of the latch pusher 120, dogs 146, 146a, and pivot 114 are determined so that when the latch pusher 120 and integral lugs 126, 128 are moved downward by the spring arm 140 to the limit permitted by abutment of the shoulders 135 with the lower walls 96, the arms 150, 150a will be pivoted downward about the pivot 114 to an unlatching position, Fig. 6, by virtue of their engagement with the lugs 126, 128 in the slots 152, 152a. The arms 162, 162a and jaws 164, 164a will correspondingly be pivoted upward and laterally

6

to an unlatching position. Upon upward movement of the latch pusher 120, the lugs 126, 128 within their corresponding notches 152, 152a will raise the arms 150, 150a and thereby pivot the jaws 164, 164a downward and mesially about the pivot 114 to a latching position as indicated in Figs. 3 and 4.

In the unlatching position, the opposed detent engaging edges 160, 160a are sufficiently close together to prevent insertion therebetween of the detent loop 64 at the forward extremity of the trigger body 60. When the jaws 164, 164a are in the lowered latching position, the detent engaging edges 160, 160a are pivotally separated to permit insertion of the detent loop 64 therebetween, whereupon return of the latch mechanism to the unlatching position is prevented by engagement of the edges 160, 160a with the interposed detent 64.

In order to assure positive automatic actuation of the latch detent mechanism, a trigger operating spring 172 is coiled around the pivot pin 84, Fig. 7, and provided with paired tensioned arms 174 which extend upward between the embossment wall 16b and the rearward face of the case plate 66 and firmly press against the latter. Oppositely to the arms 174, the other end of the coil spring 172 extends rearwardly in a closed loop 176 above the trigger body 60 and is spring pressed thereagainst so as to urge the trigger pivotally clockwise, Fig. 2, about the pin 84. Thus, when the dogs 146, 146a are in the unlatching position and the separation between the edges 160, 160a is a minimum, Fig. 6, the rounded forward end of the detent loop 64 is pressed by the spring 172 against the supports 158, 158a. When the edges 160, 160a are separated upon movement of the dogs 146, 146a to the latching position, Fig. 4, the spring pressed detent loop 64 snaps into the opening 124 between the edges 160, 160a. Thereafter, until the trigger's finger lever 56 is raised or moved pivotally toward the handle element 38, as described above, return of the latch mechanism to the unlatching position is prevented.

Cooperating with the above described latching structure for locking the rear deck 12 closed is a striker means, also preferably comprising a sheet metal stamping having a plane body 178 suitably secured to the vertical bracket portion 32 of the body A at a point below the handle 38 by means of a pair of bolts 180 extending through a corresponding pair of vertically elongated adjustment openings 182. The plate 178 is provided with paired forwardly extending inclined striker flanges 184, one of each being disposed to underlie one of each of the lower chamfered corner edges 131 of the tongue 130 in parallelism therewith. The lower ends of the inclined striker flanges 184 are reinforced by an integral U-flange 186 also projecting forward from the plate 178. Extending laterally from the upper end of each inclined striker flange 184 and also forward from the plate 178 is an integral reinforcing flange 188, within which is provided a latch jaw receiving opening 190, Fig. 4, adapted to receive the corresponding overlying jaw and web structure 164, 166 or 164a, 166a, as the case may be, when the latch mechanism and striker means are brought into juxtaposition upon closure of the rear deck lid 12.

It is apparent from the foregoing that upon closure of the rear deck lid 12, the chamfered lower edges 131 of the latch pusher tongue 130 will engage the parallel striker flanges 184 and force the body of the latch pusher 120 upward against the tension of the spring arm 140. Simultaneously the latch jaws 164, 164a will be swung downward about the axis of the pin 114, as described above, through the openings 190 provided therefor within the striker flanges 188. In this position, the lower ends of the jaws 164, 164a will underlie the striker flanges 184.

The lateral dimensions of the detent loop 64 and the disposition of the detent engaging edges 160, 160a are determined with respect to the disposition and dimensions of the latch jaws 164, 164a and the striker flanges 184, so that as the undersides of the latter are snugly engaged

by the jaws 164, 164a, the edges 160, 160a will be separated sufficiently to receive the detent loop 64 at the forward end of the trigger body 60. Accordingly when the striker flanges 184 are firmly engaged and interlocked with the jaws 164, 164a, the forwardly spring pressed detent 64 will snap into detent position between the opposed edges 160, 160a to prevent their return movement and release of the jaws 164, 164a from the striker flanges 184. The deck lid 12 will thus be securely locked closed until release between the interlocked jaws 164, 164a and striker flanges 184 is permitted by tripping the finger operated lever 56 upward to remove the detent 64 from the opening 124. However upon such an action, the latch pusher spring arm 140 will force the latch pusher 120 and tongue 130 downward, simultaneously swinging the latch jaws 164, 164a out of the openings 190 therefor and clear of their interengagement with the striker flanges 184. The downward movement of the tongue 130 will of course slightly raise the rear deck 12, whereupon the latter may be opened in accordance with conventional practice by means of the handle element 38.

By virtue of the elongate bolt holes 182, the vertical position of the striker plate 178 may be suitably adjusted to assure a tight interlocking connection between the latch structure and striker means, whereby the striker flanges 184 are tightly clamped between the chamfered edges 131 of the tongue 130 and the jaws 164, 164a. Thus undesirable rattling or movement between the interlocking elements is avoided when the automobile is driven over rough roads.

It is also to be noted that by means of the detent arm 48 rotatable with the cylinder 42 and adapted to abut the trigger shoulder 50 so as to prevent counterclockwise pivoting thereof to the latch releasing position, the trigger lever 56 may be locked in the detent position until the proper key is inserted into the cylinder lock 40 to rotate the cylinder 42 sufficiently to disengage the detent arm 48 from the abutted trigger shoulder 50.

Figs. 8, 9 and 10 show a modification of the latch mechanism wherein the general operation and construction of the latching and striker means are the same as above described. The only significant difference between this construction and that described above is that the trigger means is entirely confined within the embossment provided in the outer deck lid panel 12a for the deck lid handle element. In this instance, the handle element 38a shown is of slightly different design than the aforementioned handle 38, but is provided for the same purpose of raising or lowering the rear deck lid 12. A cylinder type lock 40a is suitably mounted within the handle 38a and is provided with an eccentric cam extension 42a projecting forward as an integral structure of the rotatable lock cylinder.

Extending upward and forward from the trigger body 60 in a vertical plane is an integral extension or flange 192, bent at its upper end at 194 to overlie the projecting cam portion 42a and to be engaged by the latter upon rotation of the lock cylinder, Figs. 9 and 10. Thus upon insertion of a proper key 196 to rotate the lock cylinder counterclockwise as indicated in Fig. 9, the cam element 42a will engage the overhang 194 and tilt the trigger body 60 counterclockwise about the pivot 84 in a latch releasing operation substantially as described above. By this construction the rear deck lid will always be locked when in the closed position and can only be opened by means of the proper cylinder lock key.

I claim:

1. In a latch mechanism for a swinging closure, a support, a pair of latch members pivoted on the support and having a common pivot axis, a pusher shiftable radially with respect to said axis in one direction or the opposite and extending therefrom in said one direction for engagement with a striker to be shifted thereby, said latch members having opposed keeper engaging portions extending generally in said one direction from opposite

sides of said axis and also having opposed detent engaging portions extending generally in said one direction from opposite sides of said axis and also having pusher engaging portions extending generally at right angles to said direction at opposite sides of said axis, each latch member having its pusher engaging portion and detent engaging portion at one side of said axis and its keeper engaging portion at the opposite side, thereby to cause the opposed keeper engaging portions to swing from and toward each other and the opposed detent engaging portions to swing toward and from each other in unison with swinging of said pusher engaging portions in said one direction or the opposite respectively, said pusher having portions engageable with said pusher engaging portions to swing the same generally in the direction of shifting of said pusher, spring means yieldingly urging said pusher in said one direction, detent means shiftable between said opposed detent engaging portions to block swinging thereof toward each other, and means for shifting said detent means from between said detent engaging portions.

2. In a latch mechanism for a swinging closure, a support, a pair of latch members pivoted on the support and having a common pivot axis, a pusher shiftable radially with respect to said axis in one direction or the opposite and extending therefrom in said one direction for engagement with a striker to be shifted thereby, said latch members having opposed keeper engaging portions extending generally in said one direction from opposite sides of said axis and also having opposed detent engaging portions extending generally in said one direction from opposite sides of said axis and also having pusher engaging portions extending generally at right angles to said direction at opposite sides of said axis, each latch member having its pusher engaging portion and detent engaging portion at one side of said axis and its keeper engaging portion at the opposite side, thereby to cause the opposed keeper engaging portions to swing from and toward each other and the opposed detent engaging portions to swing toward and from each other in unison with swinging of said pusher engaging portions in said one direction or the opposite respectively, said pusher having portions engageable with said pusher engaging portions to swing the same generally in the direction of shifting of said pusher, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into detent position between said opposed detent engaging portions to block swinging of the latter toward each other, and means for swinging said detent from the detent position comprising a finger actuated extension of said detent projecting from said closure for finger engagement.

3. In a latch mechanism for a swinging closure, a support, a pair of latch members pivoted on the support and having a common pivot axis, a pusher shiftable radially with respect to said axis in one direction or the opposite and extending therefrom in said one direction for engagement with a striker to be shifted thereby, said latch members having opposed keeper engaging portions extending generally in said one direction from opposite sides of said axis and also having opposed detent engaging portions extending generally in said one direction from opposite sides of said axis and also having pusher engaging portions extending generally at right angles to said direction at opposite sides of said axis, each latch member having its pusher engaging portion and detent engaging portion at one side of said axis and its keeper engaging portion at the opposite side, thereby to cause the opposed keeper engaging portions to swing from and toward each other and the opposed detent engaging portions to swing toward and from each other in unison with swinging of said pusher engaging portions in said one direction or the opposite respectively, said pusher having portions engageable with said pusher engaging portions to swing the same generally in the direction of shifting of said pusher, spring means yieldingly urging said pusher

in said one direction, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into detent position between said opposed detent engaging portions to block swinging thereof toward each other, spring means yieldingly urging said detent to the detent position, means for swinging said detent from the detent position comprising a finger actuated extension of said detent projecting from said closure for finger engagement, and key operated means engageable with said detent at the detent position to block swinging thereof.

4. In a latch mechanism for a swinging closure, a support, a pair of latch members pivoted on the support and having a common pivot axis, a pusher shiftable radially with respect to said axis in one direction or the opposite and extending therefrom in said one direction for engagement with a striker to be shifted thereby, said latch members having opposed keeper engaging portions extending generally in said one direction from opposite sides of said axis and also having opposed detent engaging portions extending generally in said one direction from opposite sides of said axis and also having pusher engaging portions extending generally at right angles to said direction at opposite sides of said axis, each latch member having its pusher engaging portion and detent engaging portion at one side of said axis and its keeper engaging portion at the opposite side, thereby to cause the opposed keeper engaging portions to swing from and toward each other and the opposed detent engaging portions to swing toward and from each other in unison with swinging of said pusher engaging portions in said one direction or the opposite respectively, said pusher having portions engageable with said pusher engaging portions to swing the same generally in the direction of shifting of said pusher, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into detent position between said opposed detent engaging portions to block swinging thereof toward each other, and key operated means engageable with said detent to swing the same from the detent position.

5. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging about a common axis to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, spring means yieldingly urging said detent to the blocking position, means for swinging said detent from the blocking position, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members to swing the same to the keeper engaging position upon said shifting in said one direction.

6. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging about a common axis to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, spring means yieldingly urging said detent to the blocking position, key operated means engageable with an extension of said detent to swing the latter from the blocking position, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members

to swing the same to the keeper engaging position upon said shifting in said one direction.

7. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging about a common axis to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a swinging detent having a pivot axis at right angles to said first named axis and pivoted on said support to swing into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, spring means yieldingly urging said detent to the blocking position, means for swinging said detent from the blocking position including a finger actuated extension of said detent projecting from said support for finger engagement, key operated means engageable with said detent at the blocking position to block swinging thereof, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members to swing the same to the keeper engaging position upon said shifting in said one direction.

8. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging parallel to a common plane to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a detent pivoted on said support to swing perpendicularly to said plane into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, means for swinging said detent from the blocking position, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members to swing the same to the keeper engaging position upon said shifting in said one direction.

9. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging parallel to a common plane to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a detent pivoted on said support to swing perpendicularly to said plane into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, key operated means engageable with an extension of said detent to swing the latter from the blocking position, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members to swing the same to the keeper engaging position upon said shifting in said one direction.

10. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging parallel to a common plane to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a detent pivoted on said support to swing perpendicularly to said plane into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, means for swinging said detent from the blocking position including a finger actuated extension of said detent projecting from said support for finger engagement, key operated means engageable with said detent at the blocking position to block swinging thereof, and a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said mem-

11

bers to swing the same to the keeper engaging position upon said shifting in said one direction.

11. In a latch mechanism for a swinging closure, a support, a pair of latch members having keeper engaging portions and pivoted on the support for swinging parallel to a common plane to and from a keeper engaging position, said members having opposed detent engaging portions arranged to swing toward each other upon swinging of said members from the keeper engaging position, a detent pivoted on said support to swing perpendicularly to said plane into blocking position between said opposed detent engaging portions to block swinging thereof toward each other, spring means yieldingly urging said detent to the blocking position, means for swinging said detent from the blocking position including a finger actuated extension of said detent projecting from said support for finger engagement, key operated means engageable with said detent at the blocking position to

12

block swinging thereof, a shiftable pusher mounted on the support for shifting in one direction by engagement with a striker and having portions engageable with said members to swing the same to the keeper engaging position upon said shifting in said one direction, and resilient means yieldingly urging said pusher oppositely to said one direction.

References Cited in the file of this patent

UNITED STATES PATENTS

689,074	Ferris	Dec. 17, 1901
1,143,653	Smith	June 22, 1915
2,224,671	Crooks et al.	Dec. 10, 1940

FOREIGN PATENTS

42,177	France	Mar. 3, 1933
84,928	Austria	July 25, 1921