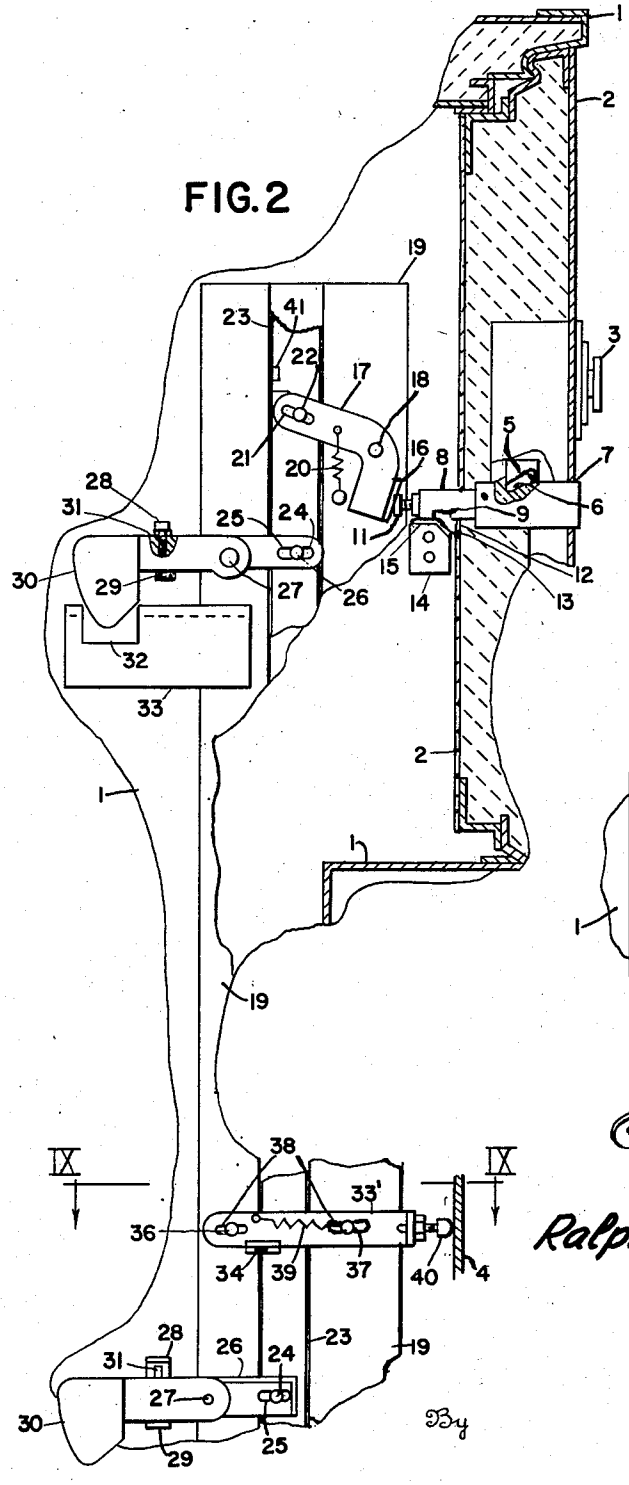
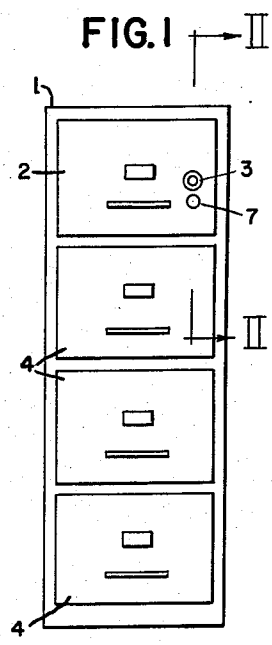
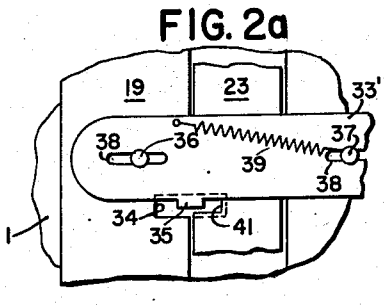
Sept. 22, 1953 R. E. McCLELLAN 2,653,070

FILING CABINET LOCKING CONTROLS

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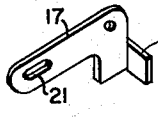


FIG. 3

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FILING CABINET LOCKING CONTROLS

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FIG. 4

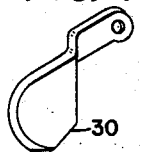


FIG. 9a

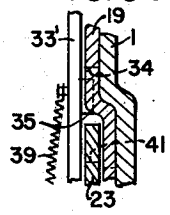


FIG. 5

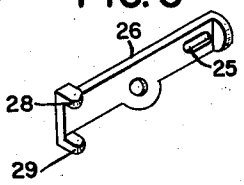


FIG. 6

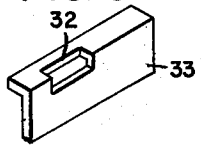


FIG. 7

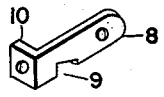


FIG. 9

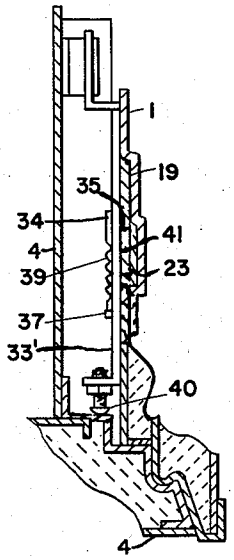


FIG. 8

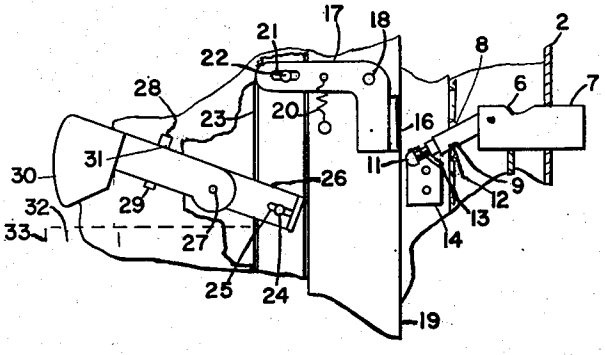
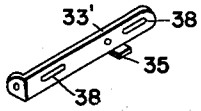


FIG. 10



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Sept. 22, 1953 R. E. McCLELLAN 2,653,070

FILING CABINET LOCKING CONTROLS

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FIG. 12

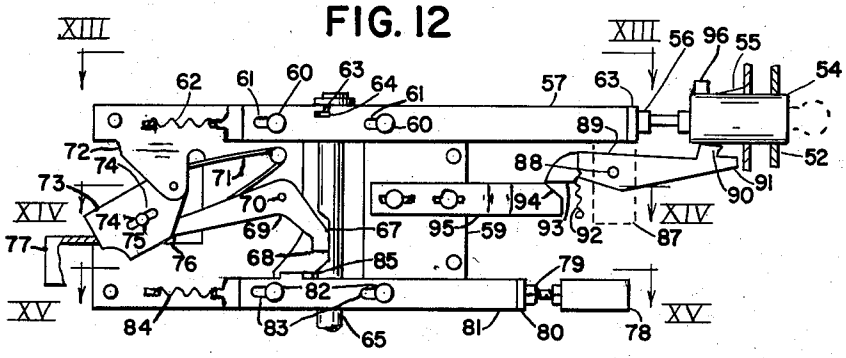


FIG. 13

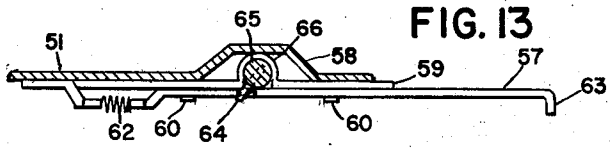


FIG. 14a

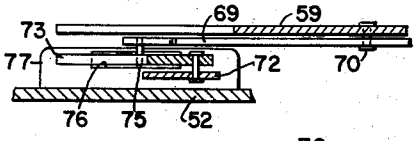


FIG. 14

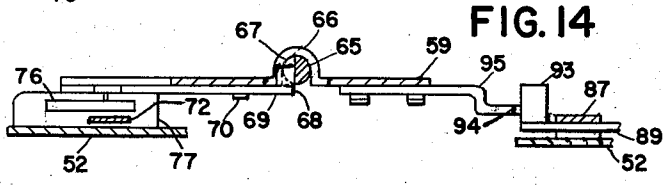


FIG. 11

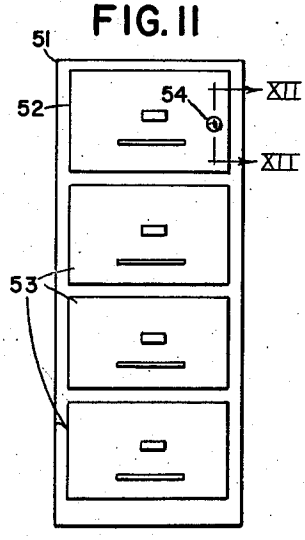
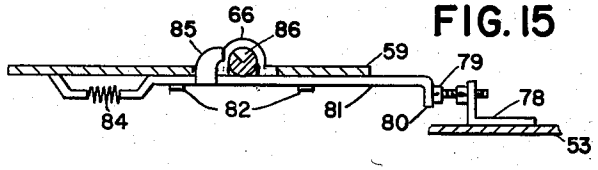


FIG. 15



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FILING CABINET LOCKING CONTROLS

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FIG. 17

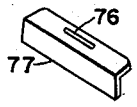


FIG. 21

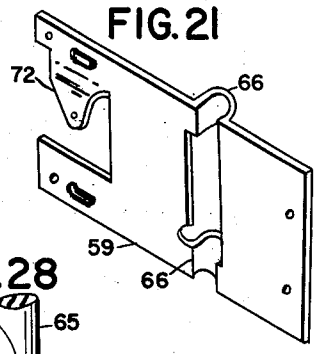


FIG. 29

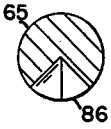


FIG. 16

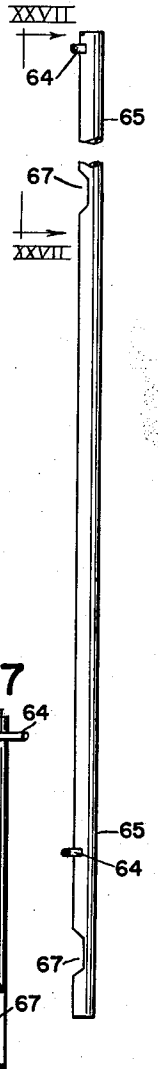


FIG. 18

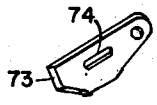


FIG. 28

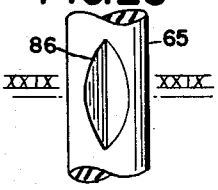


FIG. 22

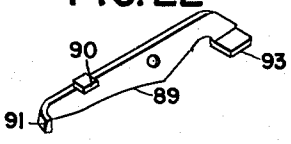


FIG. 19

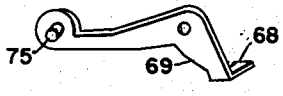


FIG. 23

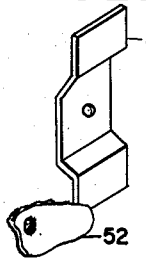


FIG. 27

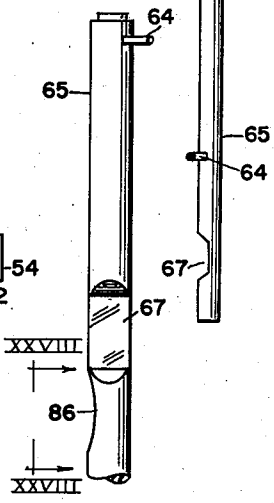
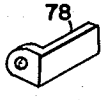


FIG. 20



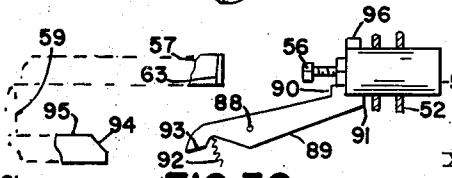


FIG. 24

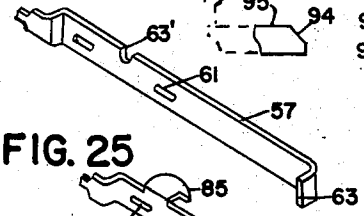


FIG. 30

FIG. 25

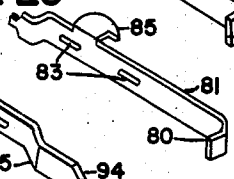


FIG. 26

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Patented Sept. 22, 1953 2,653,070

UNITED STATES PATENT OFFICE

2,653,070

FILING CABINET LOCKING CONTROLS

Ralph E. McClellan, Toledo, Ohio, assignor to Meilink Steel Safe Company, Toledo, Ohio, a corporation of Ohio

Application February 27, 1951, Serial No. 213,020

17 Claims. (Cl. 312—218)

1

This invention relates to plural compartment receptacles, especially with inter-controls involving not only locking unit as closed for the individual compartments in the simultaneous release from the locking, but a precluding of locking unit operation unless the respective compartments each be closed.

This invention has utility when incorporated in multi-drawer safety provision filing cabinets. The drawers may be variously grouped and with the respective drawer predetermined positioning, as in locking closed, local to a single drawer of the group in the control, shown as the top drawer in a vertical stack. Whether combination or key lock, by placing such with or for a drawer, there is range for locating such control drawer in the assembly.

Under the disclosures herein, the unlocking procedure results in a plunger shifting outward of the drawer front. An inter-drawer element, carried by and movable relatively to the cabinet, is thereby actuated to release the respective drawers for manual shifting as to the cabinet. Any one of the selected group of drawers, thus opened, locks the element against relocking of the file until each of the drawers be in fully closed position. The lock-released cabinet-carried element, whether slidable or rockable in its inter-drawer extent, as providing individual drawer holding or locking against outward shifting from the cabinet, is an element in itself locked against return to drawer relocking as to any one of the drawers until each of the drawers is fully closed in the cabinet.

Referring to the drawings:

Fig. 1 is a front view of a safety type of four drawer filing cabinet with combination lock fitting therewith;

Fig. 2 is an enlarged fragmentary view from the line II—II, Fig. 1 showing the combination lock held plunger and the cabinet mounted controls therefrom in locking position for two of the drawers;

Fig. 2a is an enlarged fragmentary view of part of the lower portion of Fig. 2 showing the bar locking mechanism;

Fig. 3 is a perspective view of the trigger or angle lever actuator for shifting the combination-lock-released plunger outward from the drawer front;

Fig. 4 is a perspective view of a cabinet-carried rock arm or pawl, which as down locks a drawer with the cabinet;

Fig. 5 is a perspective view of the yield-connected actuator lever for the pawl of Fig. 4;

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Fig. 6 is a perspective view of the drawer-carried catch with which the pawl of Fig. 5 coacts;

Fig. 7 is a perspective view of an adjustable pusher-arm transmitting from the cabinet-carried trigger of Fig. 3 to the lock released plunger to push the plunger outward in the drawer front;

Fig. 8 is a fragmentary detail departing from Fig. 2 in that here the plunger is held outward by the now-caught pusher-arm and the actuator lever has transmitted its release to pull the pawl clear of holding position to the drawer, and thereby away from the locked position showing in Fig. 2;

Fig. 9 is a view in the region of the line IX—IX, Fig. 2, showing closed drawer re-locking release;

Fig. 9a is an enlarged view of the central portion of Fig. 9;

Fig. 10 is a perspective view of the latch for cooperating with closed drawer to free the inter-control for cabinet relocking;

Fig. 11 is a front elevation of a filing cabinet, similar to Fig. 1, except that there is adopted a key lock release for the plunger, in lieu of the combination lock embodiment in Figs. 1, 2;

Fig. 12 is a view in the region of the line XII—XII, Fig. 11, showing in drawer locking position features of drawer-carried means and cabinet-carried element of the locking and re-locking controls;

Fig. 13 is a view from the region of the line XIII—XIII, Fig. 12, of the plunger actuator bar, of a first coaction means;

Fig. 14 is a view from the region of the line XIV—XIV, Fig. 12, of pawl and lever features of the controls;

Fig. 14a is an enlarged view of the left end of Fig. 14;

Fig. 15 is a view from the region of the line XV—XV, Fig. 12, being a detail, as a second coaction means to the inter-drawer control element, wherein first coaction means is from the inter-drawer element to the respective locking pawls for the compartment-opening closures or drawers, said detail being of a latch clearing the element for relocking operation of the controls;

Fig. 16 is a fragmentary side elevation of the inter-drawer control element shown as a vertical axis rocking bar for coacting means thereto and therefrom in the cabinet of Figs. 11, 12;

Fig. 17 is a perspective view of the drawer-carried catch, being the feature in the controls coacting at locked position of the drawer or closure;

Fig. 18 is a perspective view of the cabinet-carried pawl adapted to engage the catch of Fig. 17 at locked position of the drawer;

Fig. 19 is a perspective view of a cabinet-carried operating lever for the pawl of Fig. 18;

Fig. 20 is a perspective view of a drawer-carried bracket or pusher for mounting an adjustable stop to move the re-locker clearing bar or latch of Figs. 12, 15, from holding the rocking bar of Fig. 16 from returning to re-locking operation;

Fig. 21 is a perspective view of the cabinet-carried plate providing seat means for the inter-drawer control element and mountings for further cooperating parts of the control in Fig. 12;

Fig. 22 is a perspective view of the drawer-carried trigger adapted to coact, at drawer-carried lock-released plunger out-throw from the actuator, to hold the plunger as so thrown outward from the drawer front until the drawer be at its predetermined fully closed position, in thereby precluding re-locking of the plunger until the drawer is thus fully back in the cabinet;

Fig. 23 is a perspective view of the drawer-carried mounting bracket with adjacent portion of the drawer forming a catch for the trigger to be mounted in the bracket of the drawer carrying the lock plunger;

Fig. 24 is a perspective view of the actuator bar of Fig. 13 having transmission coaction between the lock plunger and the inter-drawer element;

Fig. 25 is a perspective view of the interference means or latch bar of Fig. 15;

Fig. 26 is a perspective view of the cam bar of Figs. 12, 14, adapted at closed position of the drawer to have its cam portion act on the trigger to move the trigger clear of the lock plunger;

Fig. 27 is an enlarged side elevation of a lever seat portion of the inter-drawer cabinet-carried element or rock bar from the line XXVII—XXVII, Fig. 16;

Fig. 28 is a still further enlarged view from the line XXVIII—XXVIII, Fig. 27, showing a locking recess or latch seat of the bar, which seat is in position at drawer unlocking position of the bar to be engaged by an opened drawer latch;

Fig. 29 is a section on the line XXIX—XXIX, Fig. 28 showing the latch seat in the bar; and

Fig. 30 is a fragmentary view showing the drawer-carried trigger, released by the cabinet-carried cam, for the trigger to be swung on its pivotal mounting by the spring in locating the trigger portion remote from the cam to hold the lock plunger in out-thrown position as to the drawer front.

A document safety type of filing cabinet 1 (Fig. 1) is shown as comprising a stack of drawers, individually slidable into and out of compartments in the receptacle 1. A top drawer 2 is shown equipped with a combination lock 3 mounted in the drawer front wall in a convenient position for operation. In the cabinet assembly there is shown in proximity additional drawers 4.

Upon operation of the knob of the combination lock 3, a catch or bolt 5 may be retracted from a recess 6 (Fig. 8) in a plunger 7, mounted for reciprocation, or as released, for outward thrust as to the front of the drawer 2. Pivoted to swing downwardly from the inner end of the plunger 7 is a pusher 8 (Figs. 2, 7) having a catch-providing notch 9 along its lower side, while at its free end there is an offset 10 (Fig. 7) in which is mounted an adjustable stop or screw 11. As the drawer 2 is shifted toward closed position, the plunger 7, as protruding from the front of the drawer 2 and so held by the

catch 9 astride a stop 12 of the drawer front inner wall, has the offset 10 ride along upward incline 13 of a bracket 14 fixed with the cabinet interior wall. The incline or cam 13 lifts the pusher 8 free end offset 10 to ride upon a top guide portion 15 of the bracket 14.

With the several drawers locked in the cabinet 1, the position of the plunger 7 (Fig. 2) has the stop 12 against an offset 16 (Figs. 2, 3) of an angle lever 17 having pivotal mounting 18 with a channel-providing plate 19 fixed with the inner wall of the cabinet 1. A tension spring 20 between the plate 19 and the lever 17 is of sufficient strength to cause the angle lever 17 to function as an actuator in thrusting the released plunger 7, as at locking position (Fig. 2), to unlocking position (Fig. 3) in releasing the several drawers. The rocking of the actuator 17 has transmission effectiveness thru a slot 21 in an arm of the lever to act on a pin 22 on an inter-drawer slide element or bar 23 in the channel seat of the plate 19.

In addition to the pin 22 coacting with the actuator 17, the inter-drawer slide element 23 movably carried as guided by the plate 19, has pins 24 coacting with slots 25 in connector levers 26 having pivotal mounting on the plate 19 opposite side of the guide channel for the bar 23 than the actuator pivotal mounting 18. The connector lever pivotal mounting 27 locates the lever 26 to have a pair of spanner offsets 28, 29, at the lever free end remote from the bar 23 (Figs. 2, 5, 8). Also on the pivot mounting 27 fixed with the cabinet 1, is a pawl 30 (Fig. 4) having width somewhat less than the spacing between the offsets 28, 29. A spring thrown pin 31 carried by the pawl 30 is projected to abut against the offset 28. There is thus provided a slight yield or take-up in the transmission from the bar 23 thru the lever 26 for pushing the pawl 30 into a recess or catch 32 of a bracket 33 fixed with a drawer 2 or 4. However, as the bar 23 is pushed downward, there is positive transmission from the pin 24, thru the lever 26 and its lower offset 29 to rock the pawl 30 upward and clear of the catch 32. There is thus insured release from locking position for all of the drawers 2, 4, as the bar 23 descends (Figs. 2, 6).

Manufacturing procedure may prompt carrying thru for each of the drawers some control feature which may be considered as duplication when applied to the lock carrying drawer. For instance, the actuator 17, as the plunger 7 is released or the drawer 2 be open, yieldably holds the bar 23 at several drawer unlocking positions. A more positive lock, with the drawer open is provided by a latch 33'. In the upper portion of Fig. 2 is shown in full lines a notch 41 with which the latch 33' may coact (Fig. 2*a*). A slide guide 34 (Fig. 2*a*) cut out of the plate 19 and slightly into the channel for the bar 23, is a directing control for latch offset 35. Pins 36, 37, from the plate 19 protrude thru slots 38 in the latch 33' with a tension spring 39 normally holding the offset 35 to engage the bar 23. An adjustable screw stop 40 for setting the catch as abutted by the inner wall of a drawer front clears the offset 35 from a notch 41 to release the lowered engaged bar 23 from down-holding by such closed drawer.

The clerk may operate the combination lock 3 for withdrawing or retracting the bolt 5 (Fig. 2) with the result that the spring 20 is effective thru the actuator lever 17 to thrust the plunger 7 to project further outward from the front of the drawer 2. Simultaneously, the lever 17 has

lowered the bar 23 in its channel in the plate 19, to effect thru the levers 26 the lifting of the several pawls 30 clear of drawer lock closed holding assembly in the recesses 32 fixed with the respective drawers. The clerk may now withdraw or open any drawer by sliding such outward forwardly from the cabinet 1. There is thus rendered effective the inter-control for simultaneous unlocking of the several drawers.

Herein, there is precluded any relocking to be effective except as to all of the drawers in the assembly, with the requirement that each thereof be closed before the relocking. This further inter-control is brought about by latches 33 which individually respond as any drawer is opened for the offset 35 of such latch to engage the lowered bar 23 and hold such bar 23 lowered as any one of the drawers in the cabinet inter-control be not closed. This maintained lowered position for the bar 23 precludes rocking of the actuator or trigger 17 upward as to its slot 21, thereby holding the offset 16 of its opposite end in positively held position against the plunger 7 being thrust back into the front of the drawer 2 sufficiently to be engaged by the locking bolt 5. However, as all of the drawers 2, 4, in the inter-control assembly are closed, there is release of this down-holding for the bar 23. From this it follows, as the drawer 2 is now fully closed, the pusher 8 is effective in rocking the trigger to lift the bar 23. The adjustment 11 in this transmission connection is accurately predetermined for insuring that the respective pawls 30 are each in engagement with its catch recess 32. Accordingly the cabinet is now relocked thruout, and there is precluded occasion that even one of the drawers of the assembly be not properly locked shut.

A four-drawer type of filing cabinet 51, is shown with a top drawer 52, and additional drawers 53. A key lock 54 (Fig. 11) at the top drawer 52 is shown with a retractable bolt 55, which, at locked position, engages with the inner side of the front wall of the drawer 52 to hold the lock or plunger from being thrust outward from the drawer front. The inner end of the plunger 54 has an adjustable stop 56 (Fig. 12) to be engaged by an actuator or thrust bar 57 (Figs. 12, 13, 24).

Extending vertically along an inner wall of the cabinet 51 is a channel 58 (Fig. 13) astride which may be located, one for each drawer a control-carrying plate 59 (Fig. 21). A pair of pins 60 are thru slots 61 in the bar 57 in assembling the bar 57 to be thrust by compression spring 62 to have offset end 63 of the bar 57 act on the plunger stop 56 so that at once the key retracts the locking bolt 55, the bar 57 is slid relatively to the plate 59 to move the lock 54 further to protrude from the front of the drawer. In this movement of the bar 57, a notch 63' in the bar 57 acts on a pin 64 extending radially from and fixed with an inter-drawer element or rock bar 65 located by seats 66 in the plate 59 for turning clear of the channel 58 in the cabinet 51. The bar 65 is axially fixed against vertical shifting relatively to the cabinet 51, and this rocking or turning thereof may be in an arc of say 40°.

This rocking of the element 65 unlocks the several drawers in the assembly. In the region of the plates 59, the bar 65 has cam notches 67 to coact, in this turning, with offsets 68 (Figs. 12, 19) of levers 69 having pivotal mounting 70 on the plate 59. A torsion spring 71 holds the lever 69 for its offset to be against the bar 65. An overhang 72 of the plate 59 mounts a pawl 73 (Figs. 14a, 18, 21) having a slot 74 engaged by a pin 75 of the lever 69. This rocking of the bar 65 effected by the out-thrust of the bar 57, causes the lever 69 to lift the pawl 73 clear of a catch recess (Fig. 17) 76 in a bracket 77 fixed with a drawer. Thus the respective drawers are each automatically released for opening.

Fixed with the drawers 53, or what may be surplusage as fixed with the drawer 52 is a bracket 78 (Figs. 12, 15, 20) carrying an adjustable stop or screw 79, adapted, as the drawer be closed, to abut an offset 80 of a latch 81. Pins 82 on the plate 59 ride in slots 83 of the latch 81 (Fig. 25) while compression spring 84 holds the latch offset 80 against the stop 79 as the drawer is closed. Upon the drawer being opened, the latch is thus released to have an overhang 85 from the latch 81 ride against the bar 65. In the event that the notch 63' has acted upon the pin 64 to rock the bar 65, this rocking is sufficient not only to rock the lever 69 thru the cam 67, but brings a cam recess 86 of the bar 65 into position to be engaged by the overhang 85. It follows that so long as any one of the drawers is open, there is an overhang 85 in a recess 86, and the rocking bar is not released, but held in unlocking position as to all of the drawers in the assembly (Figs. 15, 28, 29).

A bracket 87 (Figs. 12, 14, 23) is fixed with a side wall of a drawer in proximity to the bracket 78, usually only as to the drawer carrying the lock. The bracket 87 provides pivotal mounting 88 for a lever 89 (Figs. 12, 22). As the spring 62 operates the actuator bar 57 to thrust the plunger 54 outward as the bolt 55 is retracted, offset 90 of the lever 89 rides up against the inner end of the plunger 54 in proximity to the stop 56, with up-swing limit determined by an offset 91 at the end of the lever 89. There is thus holding means against pushing the plunger 54 back into the drawer front for effecting re-locking closed. This catch position for the plunger 54 effected by the lever 89 has this upswing of the lever caused by a tension spring 92. An offset 93 at this end of the lever 89 rides on a cam 94 of a mounting bar 95 (Fig. 26) adjustably mounted on the plate 59 for swinging the lever offset 90 clear of the plunger 54 as the drawer is closed. The spring thrown actuator bar 57 may now act on the plunger to give only the spring resistance as from its stop 96 the plunger 54 is thrust inward, and with all the latches 81 clear of the recesses 86, the bar 65 is rocked to set the pawls 73.

What is claimed and it is desired to secure by Letters Patent is:

1. A housing having a plurality of openings, closures for said openings, a movable plunger mounted on a closure, a movable bar mounted in said housing extending adjacent said closures, individual closure latching devices mounted on said housing and a plurality thereof operated by the movement of said bar, abutment operated means mounted on said housing for moving said bar to latch said closure by abutment with said plunger when said closure carrying said plunger is in closed position, and individual spring resistant closure operated slides mounted on said housing for preventing movement of said bar when the closures are unlatched and one of said closures is out of its closed position.

2. A housing according to claim 1 comprising a filing cabinet wherein said closures are drawers for said cabinet.

3. A housing according to claim 1 wherein each

of said latching devices comprises a pivoted pawl mounted on a pivoted lever.

4. A housing according to claim 3 including a spring means urging said pawl in one direction about its pivot on said lever.

5. A housing according to claim 1 wherein said bar is provided with notches and said slides are provided with fingers cooperating with said notches to lock said bar in its unlatching position.

6. A housing according to claim 1 wherein said plunger comprises an abutment.

7. A housing according to claim 6 wherein said abutment is adjustably mounted with respect to said plunger.

8. A housing according to claim 1 wherein said abutment operated means comprises a bell crank lever pivoted to said housing, one end of which lever is connected to said bar and the other end of which lever is engageable with said plunger.

9. A housing according to claim 1 wherein said abutment operated means includes resilient means for urging said bar towards its unlatching position.

10. A housing having a plurality of openings, closures for said openings, a movable plunger mounted on a closure, a movable bar mounted in said housing extending adjacent said closures, individual closure latching devices mounted on said housing and operable by the movement of said bar, abutment operated means mounted on said housing for moving said bar to latch said closure by abutment with said plunger when said closure carrying said plunger is in closed position, individual spring resistant closure operated slides mounted on said housing for preventing movement of said bar when said closures are unlatched and one of said closures is out of its closed position, catch means mounted on said closure for preventing the movement of said plunger relative to said closure when said closure carrying said plunger is out of the closed position, and cam means mounted on said housing for operating said catch means to release said plunger just before final closing position of said closure to permit said plunger to move to operate said abutment operated means independent of the motion of said closure.

11. A housing having an opening, a closure for said opening, a pivoted latch mounted on and inside said housing, a latch seat connected with said closure, an abutment operated means mounted in and on said housing, a movement transmitting means mounted in said housing between said pivoted latch and said abutment operated means, a movable plunger mounted on said closure, means operable by said plunger for engaging said abtument operated means when said closure is in closed position to operate said latch to engage said seat to lock said closure in said housing opening, a means pivotally mounted with respect to said closure for locking said plunger to said closure when said closure is out of its closed position, and a cam means on said housing for operating said pivotally mounted means to release said plunger from said closure just before the final closing movement of said closure, to permit said engagement of said engaging means on said plunger with said abutment operated means, whereby said latch and abutment operated means in and on said housing are unaffected by the momentum of movement of said closure.

12. A housing and closure mechanism according to claim 11 including a resilient means for urging said pivoted means into locking engagement with said plunger.

13. A housing and closure according to claim 11 wherein said pivoted means is pivoted to an end of said plunger.

14. A housing and closure according to claim 11 wherein said pivoted means is pivoted on said closure and is adapted to engage one end of said plunger.

15. A housing and closure according to claim 11 wherein said pivoted latch comprises a pawl pivoted to said latch.

16. A housing and closure according to claim 11 wherein said abutment means is mounted on the end of said pivoted means.

17. A housing and closure according to claim 11 wherein said abutment means is adjustable relative to said plunger.

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