United States Patent

Krug et al.

[15] **3,637,277**

[45] **Jan. 25, 1972**

[54] ENTRY RESISTANT SECURITY FILE CONSTRUCTION

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[73] Assignee: **Diebold, Incorporated**, Canton, Ohio

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[21] Appl. No.: **2,240**

[52] **U.S. Cl.** **312/217**, 70/417, 70/422

[51] **Int. Cl.** **E05b 65/46**, E05c 15/04, E05b 15/16

[58] **Field of Search** 312/215–221; 70/1.5, 417, 422

[56] **References Cited**

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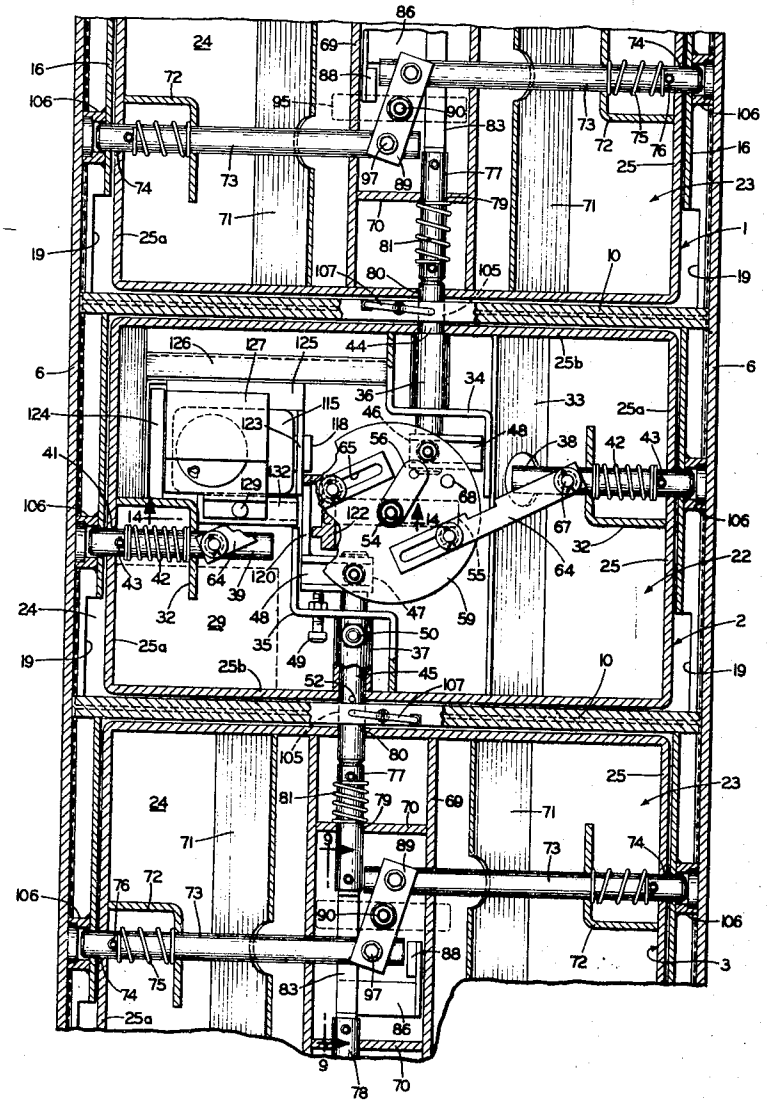
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Primary Examiner—Paul R. Gilliam
Attorney—Frease & Bishop

[57] **ABSTRACT**

A security file which has a gang-lock bolt mechanism that extends vertically along and generally centrally of the drawer fronts of a plurality of drawers operated by a handle in a main drawer. The operating handle also operates horizontal bolts in the main drawer. There are mullions between the drawer fronts through which the gang-lock mechanism extends. When actuated to lock the drawers, the gang-lock bolts move a substantially greater distance vertically than the movement of the horizontal bolts in the main drawer. The other drawer heads of the plurality of drawers also have individually actuated horizontal bolts which lock their drawers automatically when the drawers are fully closed. Detents are provided which prevent horizontal bolt locking of any drawer unless such drawer is fully closed. Gang-lock stop devices also are provided which prevent actuation of the gang-lock mechanism unless all drawers are fully closed. Backup pins and relocking devices also are provided in various areas of the mechanism to impede access to or actuation of the mechanism if attacked by externally applied force. Protective devices also are provided to impede drilling of the ends of the lock bolts.

14 Claims, 27 Drawing Figures



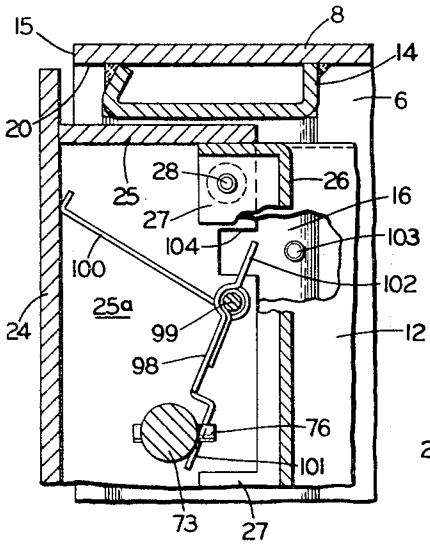


Fig. 12

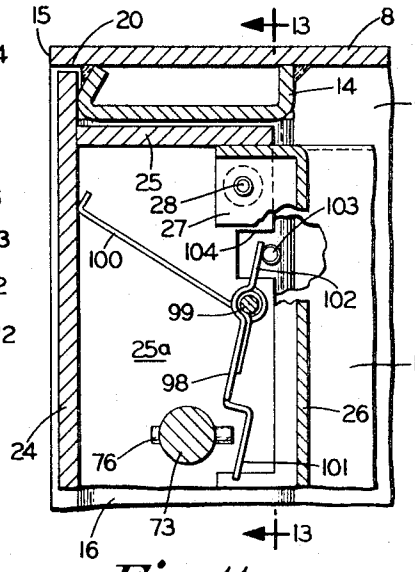


Fig. 11

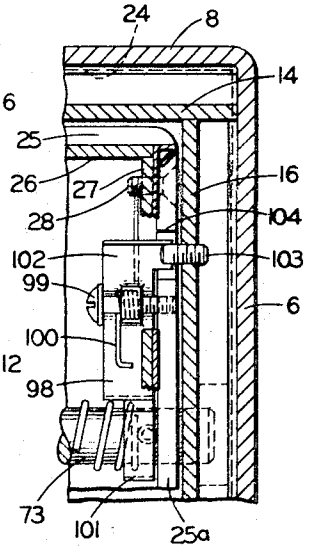


Fig. 13

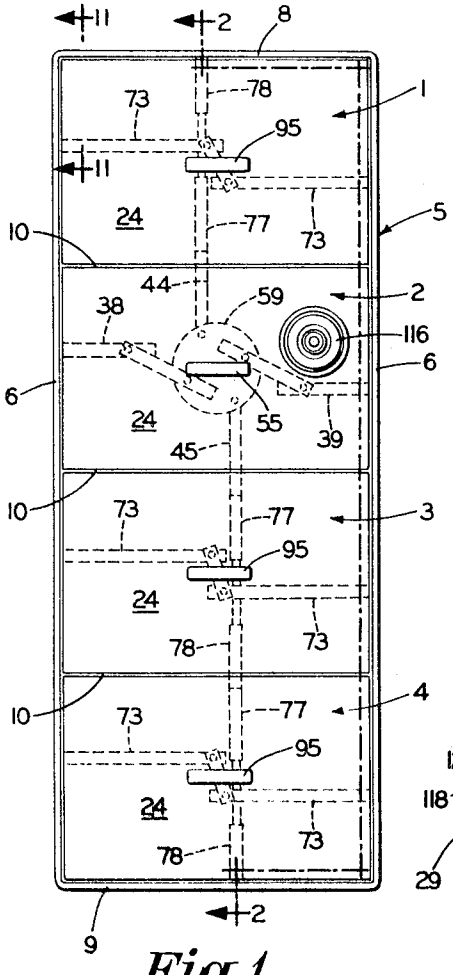


Fig. 1

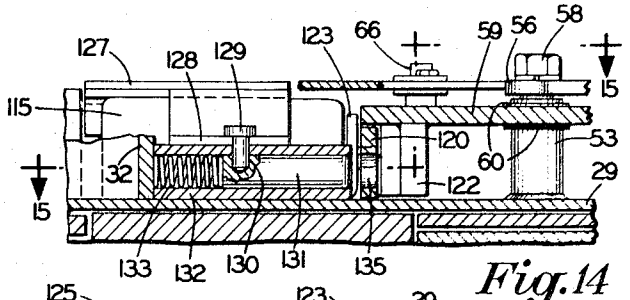


Fig. 14

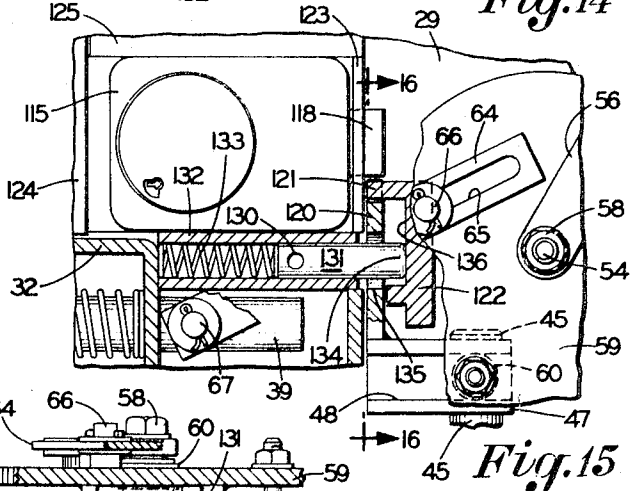


Fig. 15

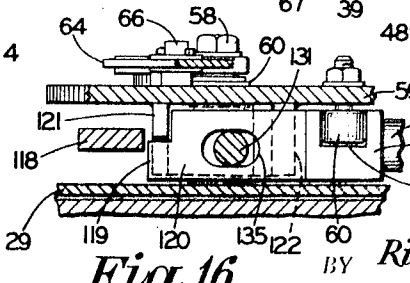


Fig. 16

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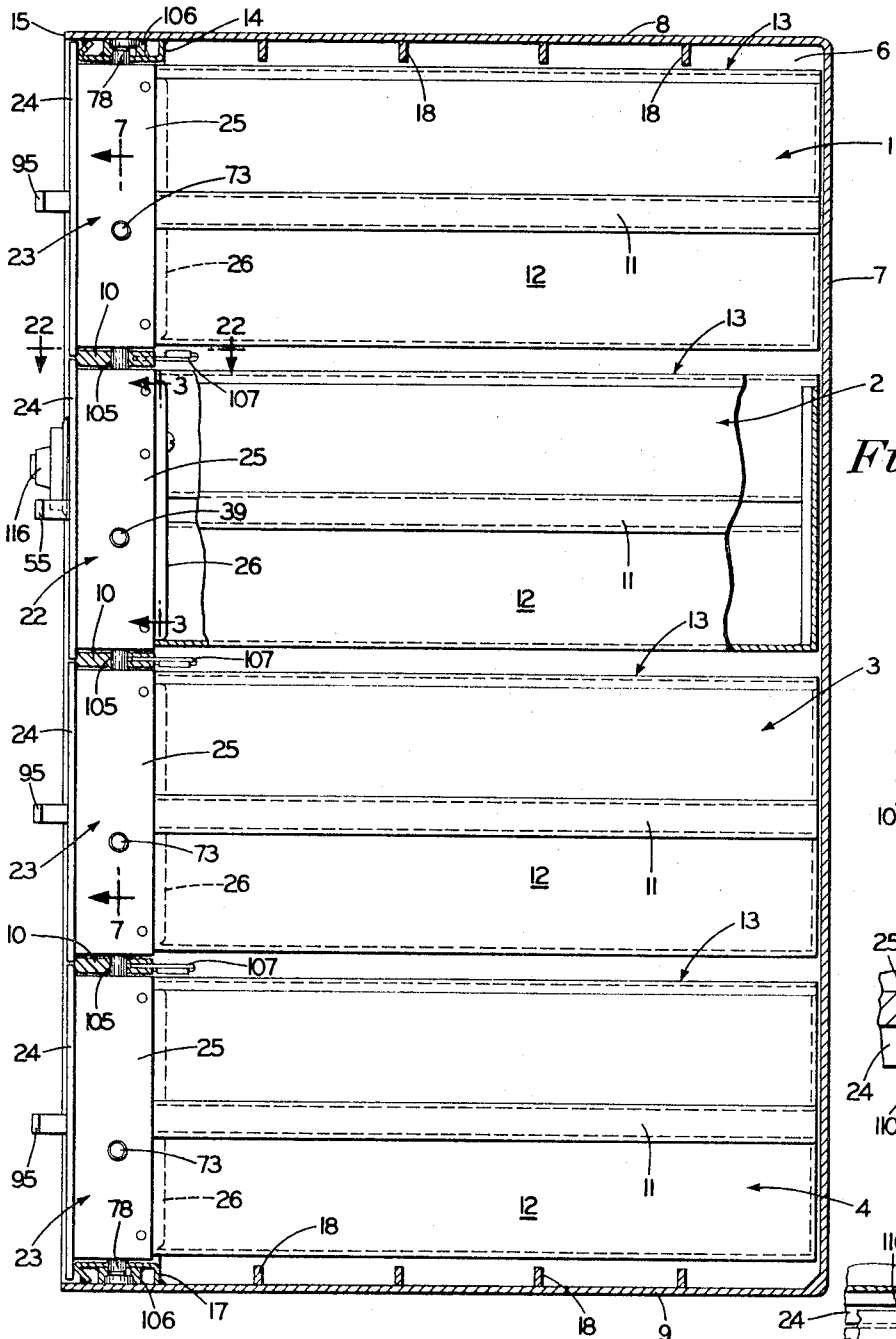


Fig. 2

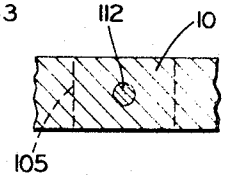


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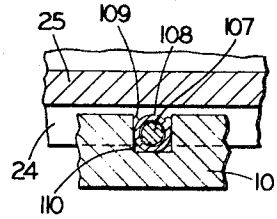


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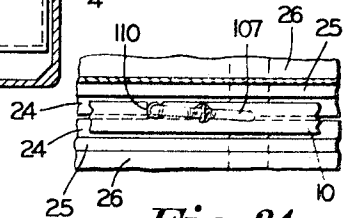


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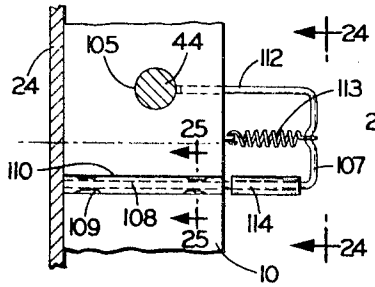


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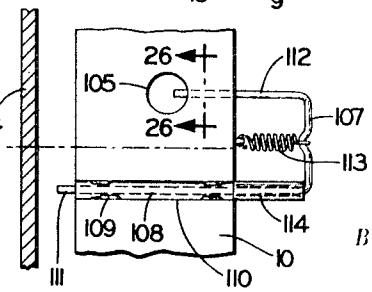


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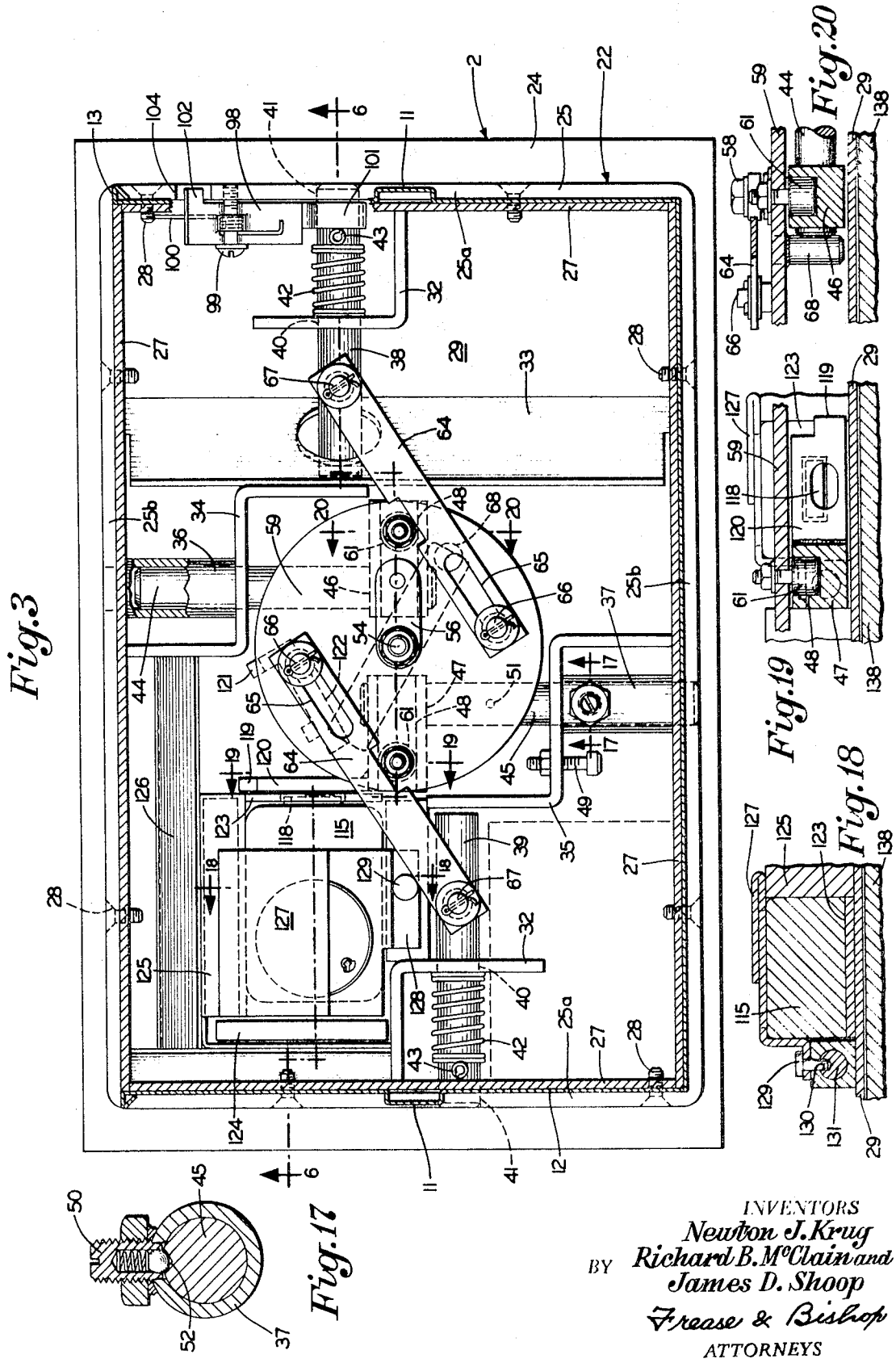


Fig. 3

Fig. 20

Fig. 19

Fig. 18

Fig. 17

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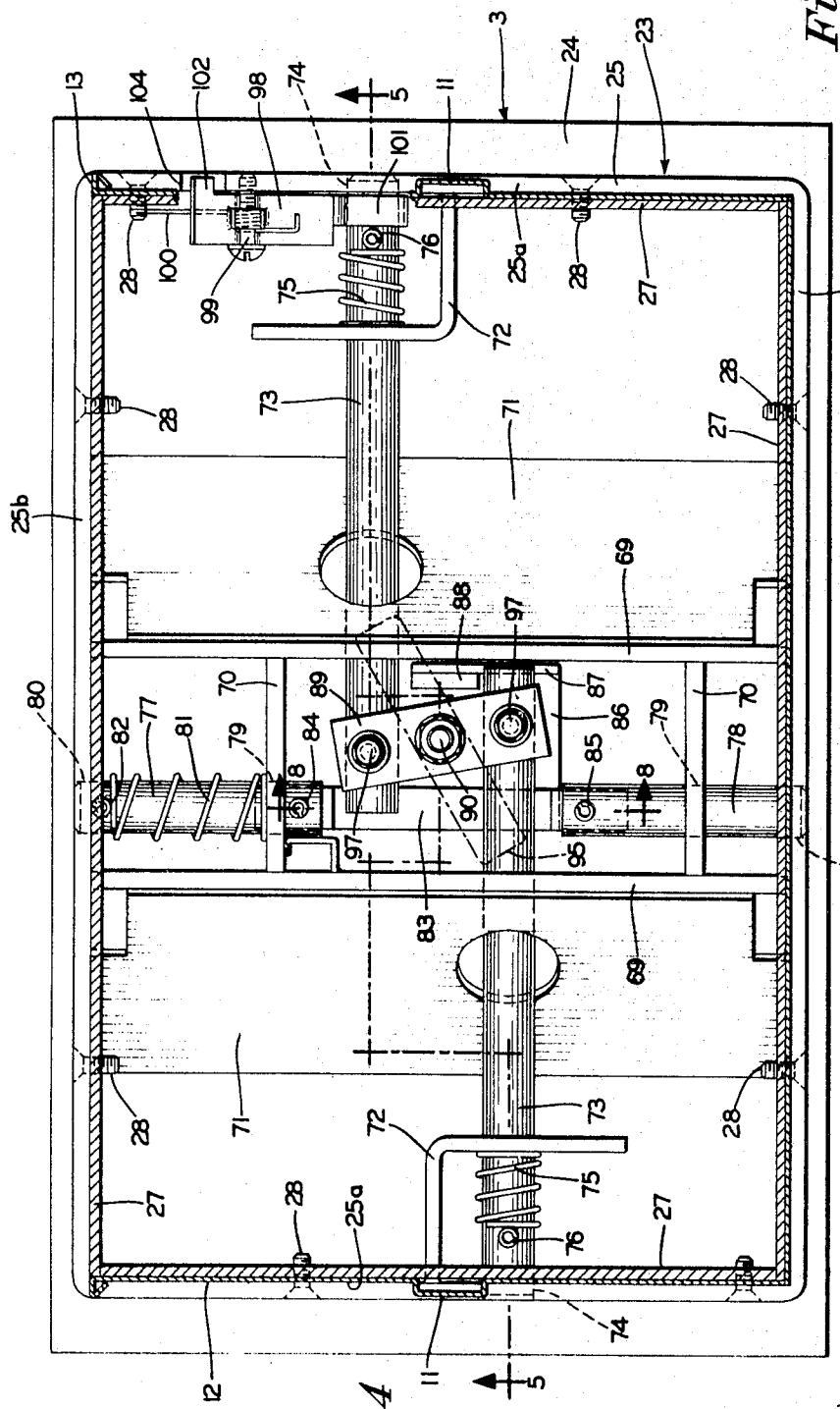


Fig. 4

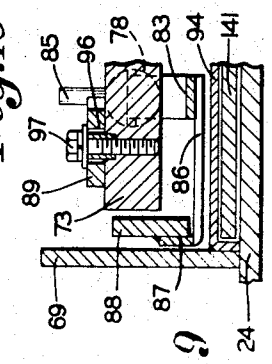


Fig. 10

Fig. 9

Fig. 8

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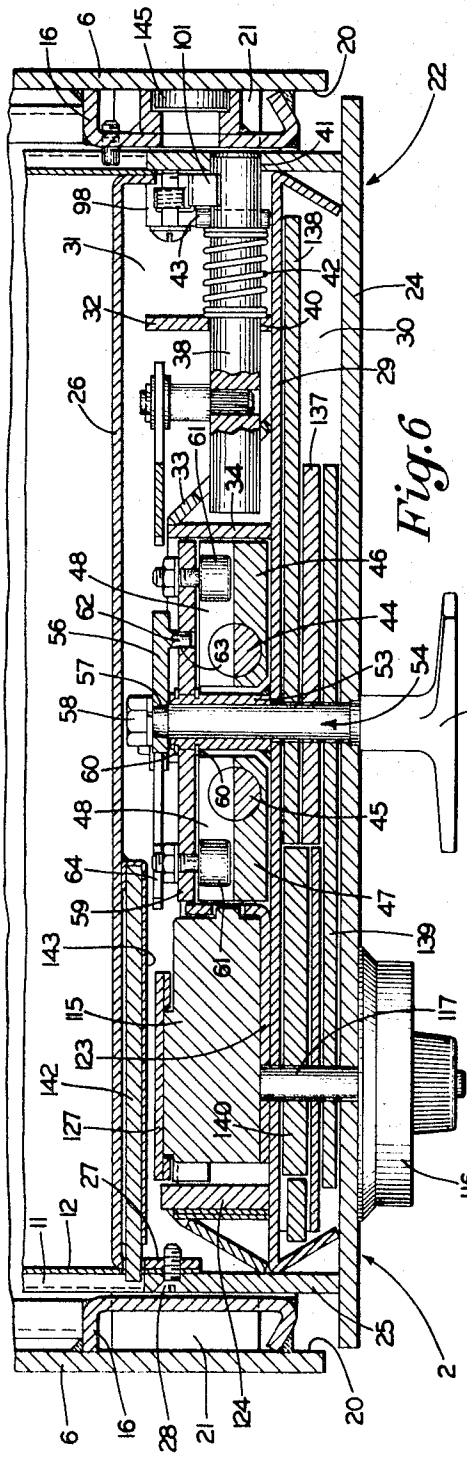


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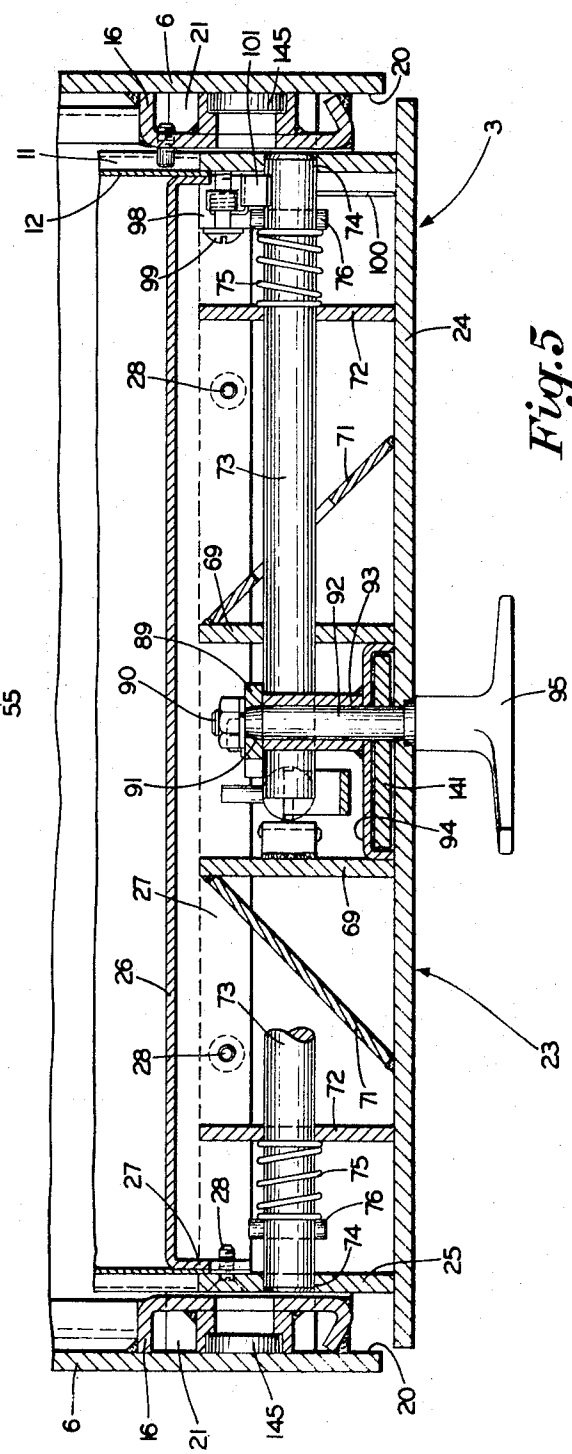


Fig. 5

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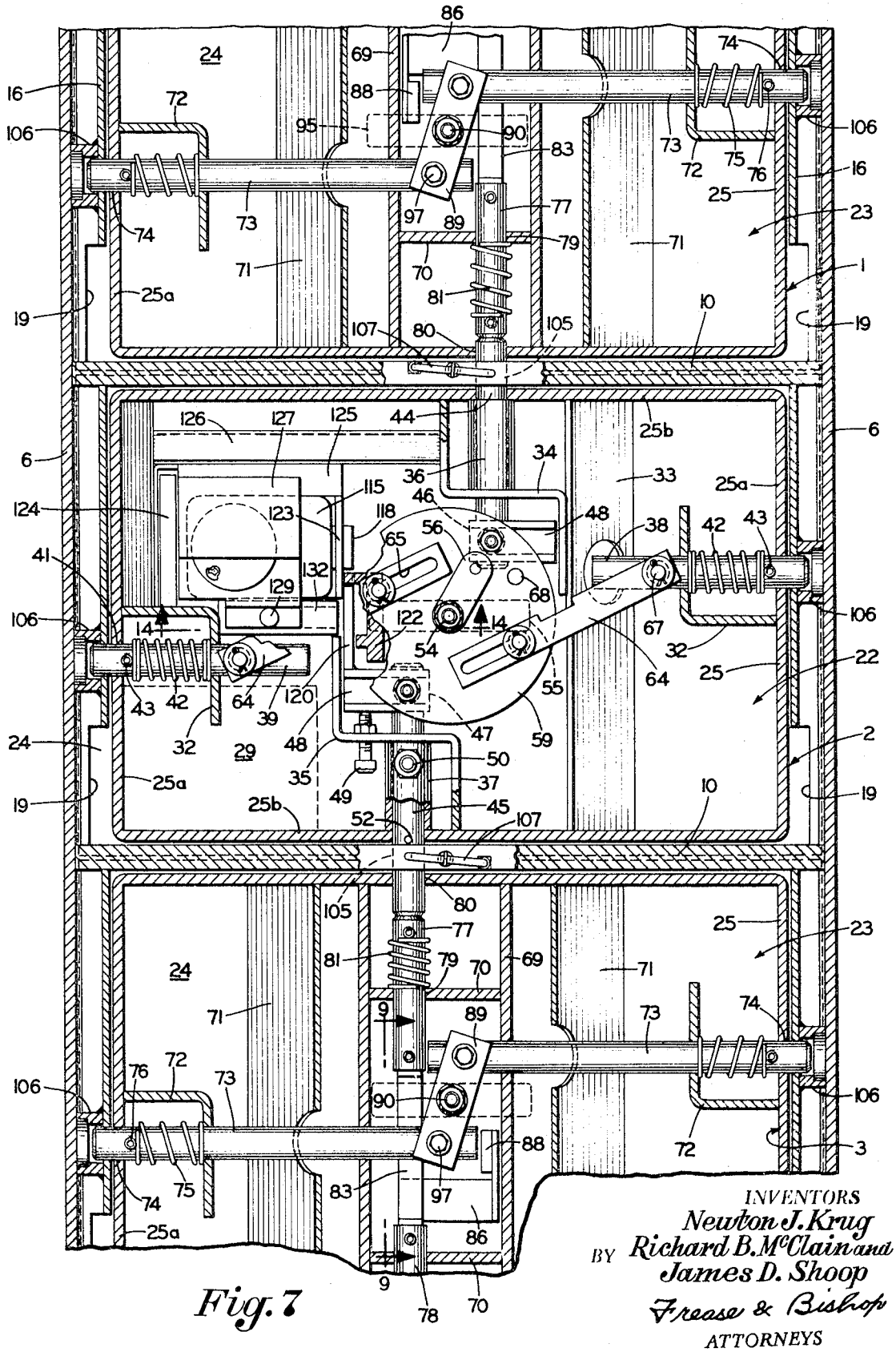


Fig. 7

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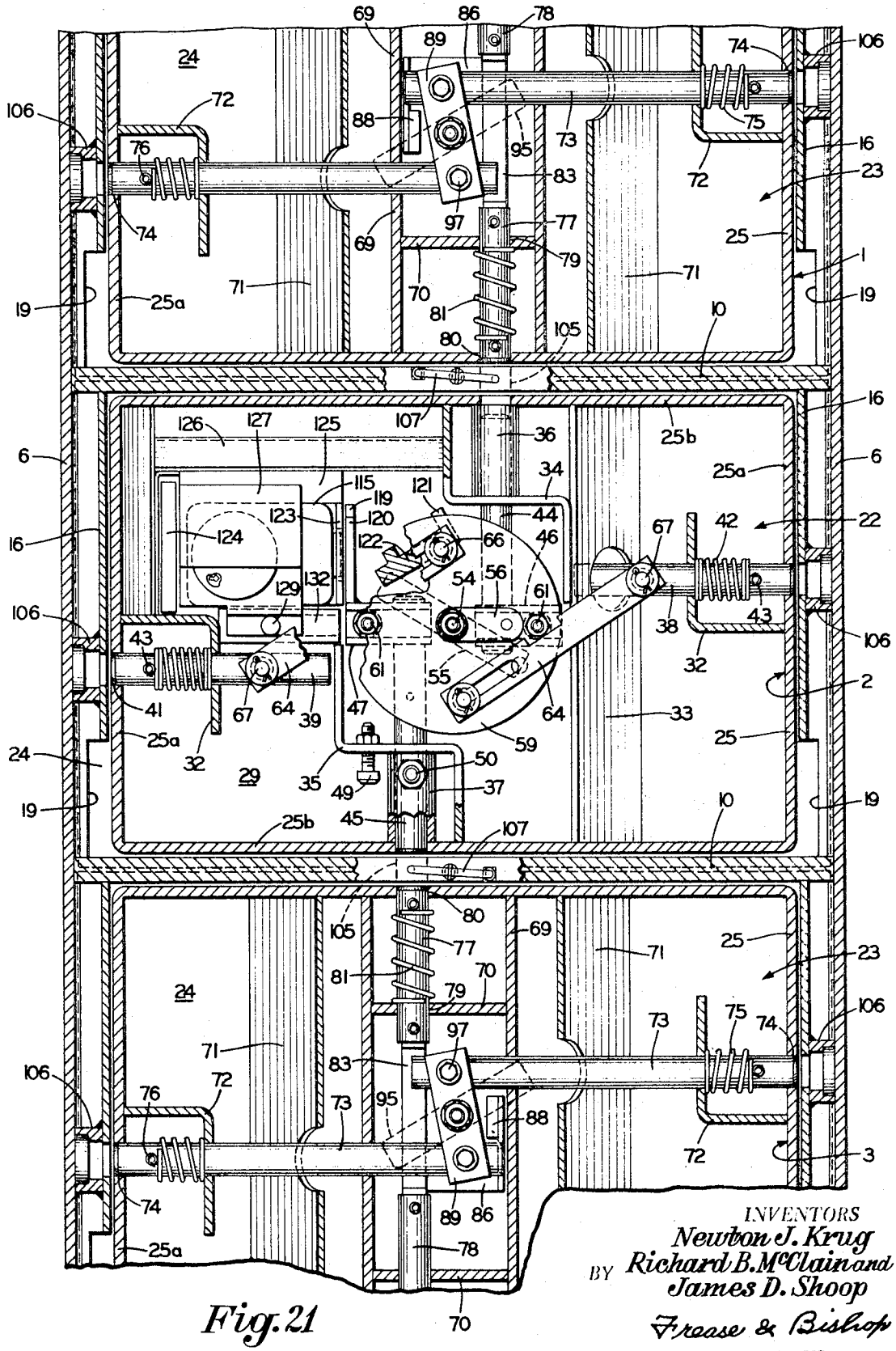
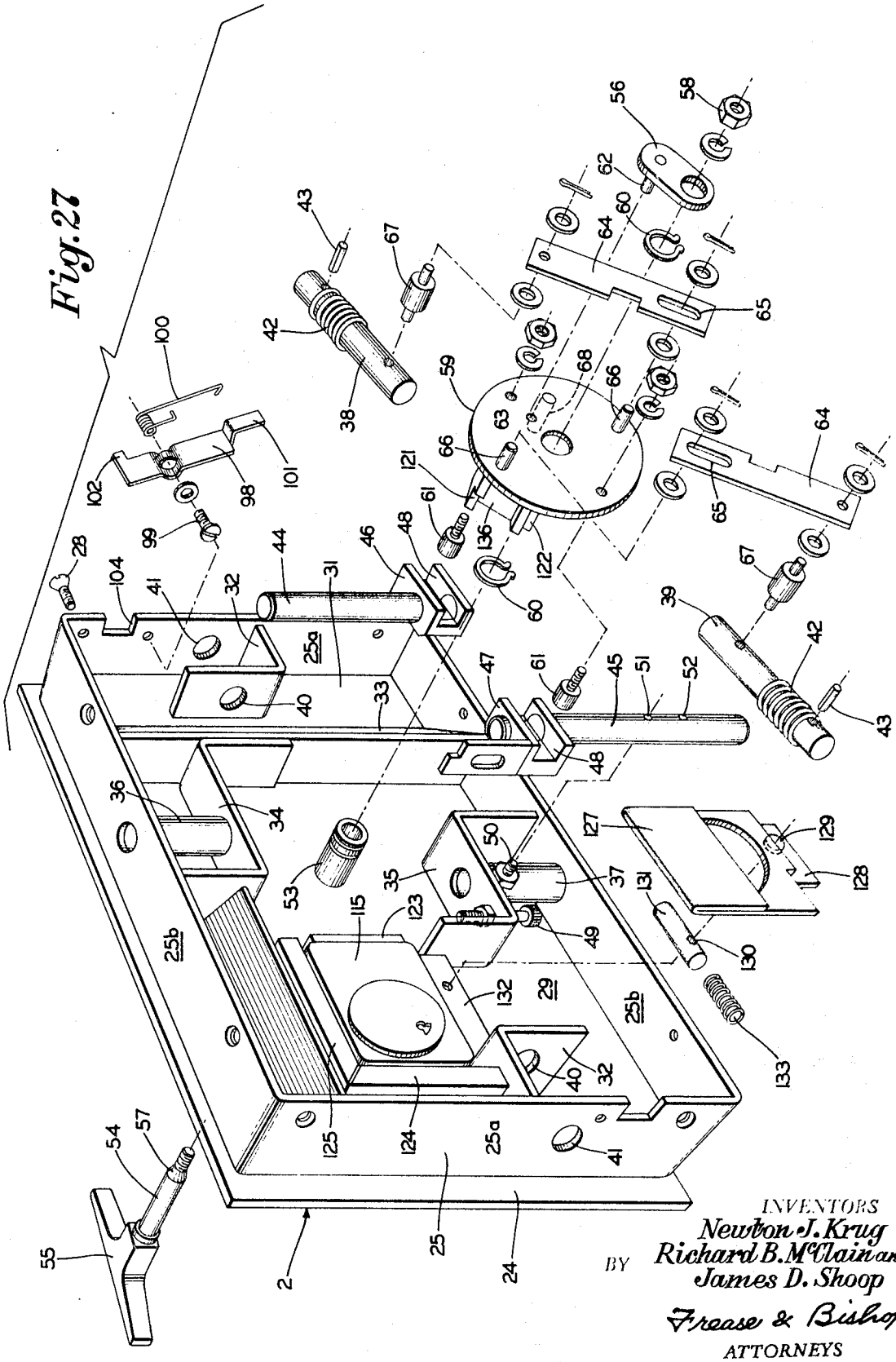

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Fig. 21

Fig. 27



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ENTRY RESISTANT SECURITY FILE CONSTRUCTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to filing cabinets of the general type classified as security files resistant to forced and surreptitious entry. These files usually have a plurality of drawers having drawer heads, the drawers being suspension mounted within a housing having preferably armored walls. The files usually are provided with gang-lock mechanisms which lock all drawers when in closed position. A combination lock is used to lock the gang-lock mechanisms when in locked position. There may be any number of drawers, usually four, but sometimes two, three or five drawers are desired or required. The drawer heads are heavily armored and the combination locks are specially protected to impede access to the locking mechanisms and combination lock.

2. Description of the Prior Art

Prior security files of the general type described have included a central gang-lock mechanism of the type generally shown in U.S. Pat. No. 732,971 having vertical bolt means in each drawer head and spools in the cabinet mullions between drawer heads so arranged that the bolts and spools may be actuated by a control mechanism between locked and unlocked positions.

These prior security files have had complicated and expensive locking mechanisms; have had a minimum of file drawer space due to the space occupied by mullions and spools between drawers; have not provided deterrents to driving the gang-lock bolts inward from the exterior of the file cabinet to a lock released position; have no provisions for preventing bolts for any individual drawer head from being moved to locked position until such drawer is completely closed; have no provisions for preventing the main gang-lock mechanisms from being actuated unless all drawers are in closed position; and do not provide many desired interlocking and relocking devices which are effective to impede unauthorized entry to the contents of the file drawers.

SUMMARY OF THE INVENTION

Objectives of the invention include providing a simplified gang-lock mechanism for security files which eliminates the necessity for and use of separate spools in the file cabinet mullions, thereby reducing the thickness of the mullions and gaining file space sufficient to provide five file drawers in a cabinet approximating the size of cabinets heretofore required for four file drawers; providing a squat file construction which permits the construction of a five-drawer security file at approximately the same cost and space occupied as the cost and space occupied by prior four-drawer file structures; providing a center gang-lock mechanism for security files which is less accessible and more resistant to forced and surreptitious entry than prior gang-locked file mechanisms, which improved mechanism has a simplified design of component locking mechanism parts; providing a simplified gang-locked security file construction which has less weight than comparable prior structures having an equivalent security rating; providing a new structure which prevents externally applied forces intended to drive components of the mechanism out of locking relation from achieving unlocking either by drive-releasing certain bolt components or drive-moving the bolt actuating mechanism; providing a gang-lock mechanism for security files which includes vertically and horizontally extending and movable bolt components for each file drawer in which the vertically movable bolt components for each drawer move a substantially greater distance than the horizontal movable bolt components for such drawer in moving between locked and unlocked positions; providing a gang-locked security file construction having a plurality of drawers, in which a main drawer has actuating mechanism for the gang-locking of all drawers and for access individually to said main drawer, and in which the drawers additional to the main drawer each have individual actuating mechanisms for individually locking and unlocking each such additional drawer; providing a new security file structure in which the bolts for any individual drawer cannot be moved to locked position except when such drawer is fully closed; providing a new security file structure in which the gang-lock mechanism cannot be actuated to locked position unless all file drawers are fully closed; providing a new security file structure in which the gang-lock mechanism for all drawers cannot be actuated to locking position unless the individual locking bolts for the additional drawers are in locking position, and in which the individual locking bolts for the additional drawers cannot be moved to unlocked position while the gang-locking mechanism is in locked position; providing a new security file structure in which the actuating mechanism for the gang-locking mechanism has backup pin interlock means for holding the vertical gang-lock bolt components in the main drawer in locked position when the gang-lock actuating mechanism is in locked position; providing a new security file structure in which the combination lock is substantially surrounded by armor means and in which the combination lock if dislodged from normal position releases a relocking device for the gang-lock actuating mechanism; providing a new security file structure in which an entry intended driving-in of the shaft of the actuating mechanism handle disengages the connection of the handle and shaft with the gang-lock moving mechanism; providing a new security file structure having drill deterrent means for impeding attempts to drill out the ends of the locking bolts of each of the drawer heads; and providing a new security file structure which eliminates the complicated and expensive structures heretofore required, which achieves the indicated objectives simply, effectively and inexpensively, and solves problems and satisfies needs existing in the art.

These objectives and advantages are obtained by the security file construction which is resistant to forced or surreptitious entry including cabinet means open at the front, a series of mullions dividing the open front into a series of drawer-receiving pigeonhole compartments; a file drawer movably mounted in each pigeonhole compartment, each file drawer having a drawer head; the file drawers including a main locking drawer and additional drawers; gang-lock bolt mechanism extending vertically along and generally centrally of the drawer fronts; the main drawer head having an operating handle, cam plate means, a plurality of offset vertically movable lock bolts, driving connections between the cam means and lock bolts for extending the lock bolts vertically to locked position upon rotation of the cam means in one direction, a drive bar connecting the operating handle and cam means adapted to be disconnected upon attempts to force unauthorized actuation of the cam means, and stop backup means on the cam means engageable behind one of the vertical bolts when the mechanism is in locked position; combination lock means engageable with the cam means when the combination lock and cam means are in locked position; a plurality of horizontally movable lock bolts in the main drawer head spring biased normally to locked position, a lost motion driving connection between the horizontal bolts and the cam means, detent means holding said horizontal bolts in unlocked position, and means for actuating said detent means to release the horizontal bolts upon fully closing the main drawer; the additional drawers each having upper and lower, saddle-connected, vertically movable bolt means aligned and engageable with one of the vertical bolts of the main drawer, a plurality of offset horizontally movable spring biased, detent-controlled lock bolts, and an operating handle for the horizontal bolts; a stop member on the additional drawer vertical bolts movable to a position blocking movement of the horizontal bolts when the vertical bolts are in locked position; means mounted on the mullions blocking movement of the vertical bolt means of all of the file drawers, said blocking means being actuated to unblocking position when all file drawers are in fully closed position; a relocking device for the combination lock; the locking bolts in locked position being engageable in bolt cups mounted on the cabinet; and rotatable drill-resisting discs in the bolt cups.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention—illustrative of the best mode in which applicants have contemplated applying the principles—is set forth in the following description and shown in the drawings, and which is particularly and distinctly pointed out and set forth in the appended claims.

FIG. 1 of the drawings is a partially diagrammatic front elevation of a four-drawer security file (locked position) incorporating the improvements of the invention;

FIG. 2 is a sectional view, taken on the line 2—2, FIG. 1, with the parts in locked position;

FIG. 3 is a sectional view looking forward toward a rear portion of the drawer head of the main locking drawer (unlocked position), taken on the line 3—3, FIG. 2;

FIG. 4 is a view similar to FIG. 3 of the drawer head below (FIGS. 1 and 2) the drawer head shown in FIG. 3, with the parts in unlocked position;

FIG. 5 is a section taken on the line 5—5, FIG. 4 showing the drawer moved slightly out of closed position in the cabinet, with the parts in unlocked position;

FIG. 6 is a view similar to FIG. 5, taken on the line 6—6, FIG. 3, with the parts in unlocked position;

FIG. 7 is a vertical sectional view looking in the direction of the arrows 7—7, FIG. 2, with the parts in locked position;

FIG. 8 is a fragmentary sectional view taken on the line 8—8, FIG. 4, with the parts in unlocked position;

FIG. 9 is a sectional view similar to FIG. 8, taken on the line 9—9, FIG. 7, with the parts in locked position;

FIG. 10 is a sectional view taken on the line 10—10, FIG. 9, with the parts in locked position;

FIG. 11 is a fragmentary sectional view, taken on the line 11—11, FIG. 1, with the parts in locked position;

FIG. 12 is a view similar to FIG. 11 with the drawer head moved slightly out of closed position and the parts in unlocked position;

FIG. 13 is a sectional view taken on the line 13—13, FIG. 11, with the parts in locked position;

FIG. 14 is a fragmentary sectional view taken on the line 14—14, FIG. 7, with the parts in locked position;

FIG. 15 is a fragmentary view taken on the line 15—15, FIG. 14, showing the relocking pin actuated to lock the cam assembly with other parts in locked position;

FIG. 16 is a sectional view taken on the line 16—16, FIG. 15;

FIG. 17 is a fragmentary sectional view taken on the line 17—17, FIG. 3;

FIG. 18 is a sectional view taken on the line 18—18, FIG. 3;

FIG. 19 is a sectional view taken on the line 19—19, FIG. 3;

FIG. 20 is a sectional view taken on the line 20—20, FIG. 3;

FIG. 21 is a view similar to FIG. 7, but showing the parts in unlocked position;

FIG. 22 is a fragmentary sectional view taken on the line 22—22, FIG. 2;

FIG. 23 is a view similar to FIG. 22, but showing the drawer moved slightly out of closed position;

FIG. 24 is a view looking in the direction of the arrows 24—24, FIG. 22;

FIG. 25 is a sectional view taken on the line 25—25, FIG. 22;

FIG. 26 is a sectional view taken on the line 26—26, FIG. 23; and

FIG. 27 is an exploded perspective view of the parts of the main locking drawer head.

Similar numerals refer to similar parts throughout the drawing.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The improved security file construction is illustrated as a four-drawer file having an upper drawer 1, a main locking drawer 2, a lower drawer 3 and a bottom drawer 4. However, the file may be a two-, three- or five-drawer file, using drawers 2 and 3 if a two-drawer file, drawers 1, 2 and 3 if a three-drawer file, and drawers 1, 2, 3 and 4 and an additional drawer like drawer 1 on top of drawer 1 if a five-drawer file.

The file includes a five-sided cabinet 5 having sidewalls 6, a rear wall 7, a top wall 8 and a bottom wall 9, all of which may be strong or armored, or insulated, or combine such properties. Heavy plate-strip mullions 10 divide the open front of cabinet 5 into pigeonholes receiving the drawers 1, 2, 3 and 4. Each drawer may be mounted on usual suspension means, not shown, which engage and support the drawer ribs 11 extending longitudinally from front to rear of the sidewalls 12 of the open top drawer containers generally indicated at 13.

Cabinet 5 has a reinforcing top channel member 14 welded internally to its top wall 8 adjacent the free front edge 15 of top wall 8. Similar channel members 16 extend internally adjacent the front edges of the cabinet sidewalls 6 (FIGS. 5, 6, 7 and 21), and a similar channel member 17 is similarly located adjacent the front edge of the bottom wall 9 (FIG. 2). Gussets 18 preferably are welded to the inner surfaces of the cabinet top and bottom walls 8 and 9 to reinforce and stiffen walls 8 and 9 (FIG. 2). Sidewall channels 16 are cut out of 19 at either side of each drawer pigeonhole as shown in FIGS. 7 and 21 for receiving usual drawer suspension means, not shown, and channels 14, 16 and 17 are spaced rearwardly of the front edges of cabinet top, side and bottom walls 8, 6 and 9, as indicated at 20. As shown in FIGS. 5 and 6, mullions 10 extend through sidewalls channels 16 with their ends 21 engaged with cabinet sidewalls 6.

Main locking drawer 2 is provided with a drawer head generally indicated at 22 (FIG. 3), and drawers 1, 3 and 4 are provided with similar drawer heads generally indicated at 23 (FIG. 4). Each drawer head 22 and 23 has a front plate 24, heavy rectangular ringlike sidewalls 25, and a cap sheet 26. Cap sheets 26 are flanged at 27 and flanges 27 are connected with drawer head sidewall 25 by screws 28. Certain of screws 28 also connect drawer sidewalls 12 to ring member 25 (FIG. 6).

Main locking drawer head 22 has an intermediate baseplate 29 spaced from members 24 and 26 and forming therewith a protective compartment 30 and a mechanism compartment 31. L-shaped brackets 32 are mounted on plate 29 and are connected with the vertical legs 25*a* of ring sidewall 25. An angularly arranged vertical strut member 33 extends between the horizontal legs 25*b* of ring sidewall 25. Upper and lower S-shaped brackets 34 and 35 are located within compartment 31, bracket 34 extending downward from upper ring leg 25*b* and being connected to strut 33, and bracket 35 extending upward from lower ring leg 25*b* (FIG. 3). Upper bolt guide tube 36 extends between upper leg 25*b* and upper bracket 34, and lower bolt guide tube 37 extends between lower leg 25*b* and lower bracket 35. Horizontal locking bolts 38 and 39 are slidably mounted through holes 40 formed in brackets 32 and are adapted to move to locking position outward through holes 41 formed in vertical legs 25*a* of ring 25. Bolts 38 and 39 are spring pressed by springs 42. Spring retainer pins 43 also act to limit projected movement of bolts 38 and 39 outward of ring legs 25*a*, the pins 43 engaging in the inner surfaces of ring legs 25*a* when in locked position (FIG. 7).

Upper and lower vertical lock bolts 44 and 45 are slidably mounted respectively in bolt guide tubes 36 and 37 and are movable to project upward and downward beyond the outer surfaces of ring legs 25*b* to locked position shown in FIG. 7. U-shaped roller-engaging members 46 and 47 are mounted respectively on the inner ends of bolts 44 and 45 having horizontally extending grooves 48. Full travel of bolts 44 and 45 outward to locking position is limited by adjustable stop screw 49 which is mounted on lower F-bracket 35 and engages member 47 on lower lock bolt 45 (FIG. 7). A ball plunger detent 50 is mounted on lower guide tube 37 to index the locked and unlocked positions of lower lock bolt 45 by engagement respectively in the bolt recesses 51 and 52 (FIGS. 7, 17 and 21).

A tubular journal post 53 is mounted centrally on and extends inward in compartment 31 from baseplate 29, and a gang-lock operating shaft 54 is journaled in post 53 extending outward through baseplate 29 and drawer head front plate 24. A T-shaped operating handle 55 is mounted on the outer end

of shaft 54, and a lever drive bar 56 is mounted on conical portion 57 of inner end of shaft 54, clamped by nut 58.

A gang-lock control cam plate 59 is journaled between C-washer keys 60 on the inner end of post 53 overlying bolt-engaging members 46 and 47. Diametrically disposed cam pins 61 are mounted on the project forwardly of cam plate 59 and are engaged in the grooves 48 of upper and lower bolt-engaging members 46 and 47. Drive bar 56 has a drive pin 62 which projects forwardly from the outer end of bar 56 and is engaged in hole 63 in cam plate 59.

Links 64 having a slot 65 and pin 66 lost motion driving connection with cam plate 59 at the inner ends of the links, are pivotally connected at 67 at their outer ends with horizontally disposed bolts 38 and 39. A lock backup pin 68 projects forwardly from cam plate 59 (FIGS. 3 and 20) at a location such that, as shown in FIG. 7, pin 68 is directly below the inner end of upper vertical lock bolt 44 when the mechanism is in locked position. Thus, backup pin 68 prevents bolt 44 from being driven inward from locked position by force applied in some manner from above, at any time when cam plate is held immovable in locked position shown in FIG. 7.

The drawer heads 23 for drawers 1, 3 and 4 are similar except that the position of drawer head 23 for drawer 1 is reversed upside down from those of drawers 3 and 4. Drawer head 23 is described herein (FIG. 4) in detail with reference to drawer 3, although the relative positions of the parts of drawer heads 23 for drawers 1 and 3 in locked and unlocked conditions are shown in FIGS. 7 and 21, respectively.

Each drawer head 23 has spaced beam plates 69 mounted on and extending inwardly of front plate 24 and extending between the horizontal legs 25*b* of ring wall 25. Braces 70 spaced from each other and from legs 25*b* extend between beam plates 69 and form a boxlike structure also braced by angular strut members 71. L-shaped brackets 72 are mounted on plate 24 and are connected with the vertical legs 25*a* of ring wall 25.

Horizontal lock bolts 73 are slidably mounted through holes formed in beam plates 69 and bracket 72 and are adapted to move to locking position outwardly through holes 74 formed in legs 25*a* of ring wall 25. Bolts 73 are spring pressed by springs 75 retained by retainer pins 76 which also act to limit projected movement by springs 75 of bolts 73 outward of ring legs 25*a*, the pins 76 engaging the inner surfaces of ring legs 25*a* when lock bolts 73 are in locked position (FIG. 7).

Upper and lower vertical lock bolts 77 and 78 are slidably mounted through holes 79 formed in braces 70 and are adapted to move to locking position outward through holes 80 formed in legs 25*b* of ring wall 25. Upper bolt 77 is spring pressed by spring 81 retained by retainer pin 82 which also acts to limit upward projected movement by spring 81 of bolt 77 outward of upper ring leg 25*b*, the pin 82 engaging the inner surface of ring leg 25*b* when lock bolt 77 is in unlocked position (FIGS. 4 and 21).

Lower lock bolt 78 (FIGS. 4, 8 and 9) is connected by a U-shaped saddle bar 83 with upper bolt 77 so that bolt 78 moves with bolt 77. Stop pins 84 and 85 project from the inner ends of upper and lower lock bolts 77 and 78, respectively (FIGS. 8 and 9). A bracket 86 having an upturned flange 87 provided with a stop plate 88 is mounted on saddle bar 83. Stop plate 88 is located between horizontal lock bolts 73 when the latter are in unlocked position (FIGS. 4 and 21) and prevents movement of bars 77 and 78 out of unlocked position when horizontal bolts are in unlocked position. Conversely, when horizontal lock bolts 73 are in locked position (FIGS. 7, 9 and 10), stop plate 88 is located behind the inner end of lower lock bolt 73 (FIG. 7) and prevents such bolt from being driven inward by force applied externally to the outer end of the bolt.

Bolts 73 are tied to move together by link 89 mounted at 90 on inner conical end portion 91 of operating shaft 92 journaled within tubular post 93 mounted centrally of drawer head 23 on mounting bracket 94. A T-shaped operating handle 95 is mounted on the outer end of shaft 92, and the ends of link 89 are pivotally connected loosely by a slot 96 and pin 97 connection (FIG. 10) with the inner ends of bolts 73.

Bolts 73 controlled by operating handle 95 form the individual and initial lock or latching mechanism for each of drawers 1, 3 and 4 by turning handle 95 clockwise (FIG. 1) or counterclockwise viewing FIGS. 4, 7 and 21, to retract bolts 73 to unlocked position. Springs 75 normally bias the bolts 73 to locked position so as to automatically lock any drawer 1, 3 and 4 when moved to fully closed position. However, a detent mechanism is provided to prevent bolts 73 from moving by springs 75 or handle 95 out of unlocked position when unlocked and the drawer open and until the drawer is fully closed.

This detent mechanism (FIGS. 4, 5, 11, 12 and 13) comprises a detent plate 98 pivotally mounted at 99 at an upper corner of each drawer head ring 25 on one of the legs 25*a* thereof, spring biased by spring 100 to move clockwise (FIGS. 11 and 12) so that its lower detent end 101 engages the outer end portion of horizontal lock bolt 73 when the latter is in unlocked position (FIGS. 4 and 12) in a location to block movement of stop pin 76 (FIG. 4). Detent end 101 is moved out of position blocking stop pin 76 by engagement of upper detent end 102 with a stud 103 mounted on cabinet side channel 16. Ring leg 25*a* is cut out at 104 to accommodate projecting detent upper end 102. The same detent mechanism described in connection with drawer 3 is on all drawers 1, 2, 3 and 4. The handle for any drawer cannot be operated to move the horizontal lock bolts out of unlocked position until that drawer is in fully closed position, since movement of the bolts 38 or 73 is stopped by engagement of detent lower end 101 with stop pins 43 or 76.

The locking mechanism of the main locking drawer 2 is controlled by operating handle 55. Turning handle 55 counterclockwise (FIG. 1), or clockwise viewing FIGS. 3, 7 and 21 unlocks drawer 2, retracts horizontal bolts 38 and 39 which form the initial or individual lock mechanism for drawer 2, and actuates the gang-lock mechanism.

The gang-lock mechanism includes the vertical lock bolts 44 and 45 of drawer 2 and the vertical lock bolts 77 and 78 connected by saddle bar 83 of each of drawers 1, 3 and 4. The bolts 77 and 78 of drawer 1 are aligned vertically with bolt 44 of drawer 2, and bolts 77 and 78 of drawers 3 and 4 are aligned vertically with each other and with bolt 45 of drawer 2. An opening 105 is formed in each mullion 10 (FIGS. 2, 7, 22 and 23) through which bolts 44, 45 and 78 may extend and in which such bolts are engaged when the gang-lock mechanism is in locked position (FIG. 7).

Main operating handle 55, on being turned clockwise (FIG. 1) to move the locking mechanism to locking position (turned counterclockwise viewing FIGS. 3, 7 and 21), rotates cam 59 and bolt 44 is projected upward and bolt 45 downward by movement of cam pins 61 in grooves 48 of bolt-engaging members 46 and 47. Bolts 44 and 45 thus emerge from guide tubes 36 and 37 and pass through openings 105 in the mullions 10 above and below drawer 2. Upper lock bolt 44 then enters hole 80 in the bottom ring leg 25*b* of drawer 1 and pushes bolts 77 and 78 and connecting saddle 83 upward (FIG. 7) so that bolt 78 of upper drawer 1 enters bolt cup 106 located in cabinet top channel 14 (FIG. 2). At the same time lower bolt 45 enters hole 80 in the top leg 25*b* of drawer 3 and pushes bolts 77 and 78 and connecting saddle 83 downward in drawer 3 and bolts 77 and 78 in turn similarly move corresponding bolts in lower drawer 4 downward so that bolt 78 of drawer 4 enters bolt cup 106 located in cabinet bottom channel 17 (FIG. 2).

Similar bolt cups 106 are located in sidewall channels 16 in which lock bolts 38, 39 and 73 are received when the drawers are locked.

Meanwhile cam plate 59 through pins 66, slots 65 and links 64 on locking rotation permits bolts 38 and 39 of main locking drawer to move to locked position by pressure of springs 42. However, the horizontal bolts of all drawers only move a short distance, from the position of the parts in FIG. 21 to the position of the parts in FIG. 7 in moving from unlocked to locked position or vice versa. At the same time certain vertical bolts of the gang-locking mechanism in drawers 2 and 3 move a substantially greater distance.

The front plates 24 of all drawers 1, 2, 3 and 4 present a laterally projecting flange which overlaps the cabinet channel members 14, 16 and 17 and the mullions 10 when the drawers are closed (FIGS. 1 and 2). The gang-lock mechanism is prevented from being actuated by handle 55 unless all drawers are in the fully closed position. This gang-lock stop mechanism is shown in FIGS. 2 and 22–26, and includes a U-shaped wire stop member 107 mounted on each mullion 10. A tube 108 is welded at 109 in a groove 110 in each mullion. One leg of member 107 extends through tube 108, and when a drawer is open its outer end projects at 111 beyond front of mullion 10 (FIG. 23). The outer leg 112 of member 107 extends part way through mullion 10 so that its outer end projects into mullion lock bolt receiving opening 105 (FIG. 23) being spring pressed by spring 113. A sleeve 114 is provided on the one leg of member 107 to control travel of member 107.

Thus, when any of drawers 1, 3 or 4 are open, leg 112 of the stop member for such drawer projects into mullion opening 105 and prevents any of the vertical lock bolts from entering and passing through any mullion opening 105. The stop device for drawer 1 is mounted so that stop member end 111 is engaged by the lower projecting flange portion of drawer front plate 24 as the drawer is closed which retracts stop member 107 to the position of FIG. 22, withdrawing leg 112 from opening 105 permitting bolt 44 to enter and pass through opening 105. The stop members 107 for drawers 3 and 4 as shown in FIG. 2 are engaged and actuated by the upper flange edges of drawer front plates 24 of such drawers.

The gang-lock mechanism is in turn locked in locked position by a usual combination lock 115 controlled by a usual dial 116 having a lock shaft 117. The bolt 118 of lock 115 when projected in locking position blocks an end 119 of a bracket 120 which projects from lower U-shaped bolt-engaging member 47 of main drawer 2 (FIG. 7). Bolt 118 also blocks an ear 121 on engaging member 122 which projects forwardly of the underside of cam plate 59.

Lock 115 is mounted within compartment 31 on a lock cam bracket or partition 123 which may be welded to baseplate 29; and lock 115 may be surrounded by various armor and protective devices 124, 125 and 126. A relock cover 127 is located over the back of lock 115, and cover 127 has an offset flange 128 having a pin 129 which extends into an opening 130 in relock pin 131 which is located in housing 132 and spring pressed by spring 133. If external force is directed to lock 115, perhaps through shaft 117 in an attempt to dislodge or manipulate the lock, relock cover 127 is dislodged, withdrawing pin 129 from relock pin 131 permitting spring 133 to move pin 131 to the right (FIGS. 14 and 15) to the position shown in FIG. 15. The forward end 134 of pin 131 passes through opening 135 in bracket 120 and also engages in recess 136 in engaging member 122 mounted on cam plate 59. Thus, relocking pin 131 not only prevents movement of cam 59, but also prevents movement of members 120, 47 and bolt 45, thus holding bolt 45 in locking position.

FIGS. 7 and 21 illustrate that the upper drawer 1 has vertical bolts 77 and 78 to the right of center while the lower drawer 3 has vertical bolts 77 and 78 to the left of center, viewing FIG. 7.

Protection compartment 30 (FIG. 6) may contain a number of plates 137, 138, 139, 140, etc., of different materials typically used to protect locks, etc., in vault doors and the like, such protective plates being drill resistant, torch resistant, etc. Similarly the shafts 92 of drawers 1, 3 and 4 may have a protective plate 141 in front of mounting bracket 94 (FIG. 5). A wicket 142 is mounted within compartment 31 behind lock 115 and relock cover 127 in a pocket formed by member 143 carried by cap sheet 26.

FIG. 21 shows the various bolts 38 and 39 just before they move into bolt cups 106. When any of the drawers 1, 3 or 4 is fully closed, its spring-loaded horizontal bolts 73 are projected automatically into bolt cups 106. However, the gang-locking vertical bolts of all drawers are moved by manipulation of the main locking drawer handle 55 to lock the gang-lock mechanism.

If an attempt is made to drive one of the vertical bolts 77 or 78 upward or downward by an external force for example by driving down at the top of the file against the end of bolt 78 in bolt cup 106 (FIG. 2), the saddle bar 83 (FIG. 7) will collapse and bolt 77 and bolt 44 therebelow will remain in locked position.

Each of bolt cups 106 at its outer end contains a rotatable hardened disc 145. Thus, if it is attempted to drill from the outside into the file cabinet to drill out the end of any lock bolt engaged in any bolt cup 106, the drill first contacts a disc 145 into which the drill bites, whereupon the disc rotates with the drill preventing further penetration of the drill, or the drill may be broken by the hardened disc.

The provision of thin mullions 10, without spools, and of considerably greater vertical bolt movement than horizontal bolt movement enables the height and weight of the file to be reduced such that a five-drawer file can be built as a security file having substantially the same height heretofore required for a four-drawer security file. This is accomplished while retaining the relative inaccessibility of center gang-locks thus enhancing the resistance of the file to forced or surreptitious entry.

The conical connection of the operating handle shafts with their connected members turns or shifts if force is applied through the shafts in an attempt to force operation of the mechanism components. If the main locking drawer operating shaft is driven inward, the drive bar engagement with the cam plate is destroyed.

A number of backup devices are provided by the improved mechanism to impede or prevent access to or operation of the lock bolts. Further, a relocking device is provided in event the combination lock is dislodged.

The horizontal bolt detent mechanism prevents the bolts from being moved to locked position unless the drawer is fully closed; and the gang-lock stop mechanism prevents the gang-lock from being actuated unless all drawers are fully closed.

The saddle connection between the vertical bolts in the upper, lower and bottom drawers permits the horizontal bolts on these drawers to be moved to unlocked position or to block movement of the horizontal bolts when the gang-lock is locked.

Accordingly, the new security file structure provides a more effective, more compact file, with enhanced ability to resist unauthorized entry, and simplifies the construction of security files, and thus achieves the stated objectives and solves problems that have existed in the art.

In the foregoing description, certain terms have been used for brevity, clearness and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention are by way of example, and the scope of the invention is not limited to the exact details shown or described.

Having now described the features, discoveries and principles of the invention, the manner in which the improved security file is constructed and operates, the characteristics and advantages of the new structure, and the advantageous, new and useful results obtained; the new and useful structures, devices, elements, arrangements, parts, combinations and subcombinations are set forth in the appended claims.

We claim:

1. Security file construction including cabinet means open at the front, mullion means dividing the open front into a series of drawer-receiving pigeonhole compartments one above another, a file drawer movably mounted in each compartment, each file drawer having a drawer front head, the file drawers including a main locking drawer and at least one adjacent auxiliary drawer; gang-lock mechanism extending generally centrally vertically along and within the drawer heads, the gang-lock mechanism including spaced upper and lower lock bolts movably mounted in each drawer head, the upper and lower lock bolts in the auxiliary drawer being spring

biased normally to unlocked position, one of the main drawer lock bolts being aligned with and adapted movably to engage a lock bolt in an adjacent auxiliary drawer; cam plate engaging members on the inner ends of the main drawer lock bolts, the mullion means between adjacent drawers having a bolt-receiving opening, said one main drawer lock bolt when moved from unlocked to locked position moving entirely through the adjacent mullion means opening and into the auxiliary drawer head and directly engaging and moving said auxiliary drawer lock bolt to locked position to maintain the main and auxiliary drawers locked, and said one main drawer lock bolt when moved from locked to unlocked position moving out of said mullion means opening and disengaging said auxiliary drawer lock bolt leaving the auxiliary drawer lock bolt biased to unlocked position; and actuating means including cam plate means rotatably mounted in the main drawer head, operating handle means connected with the cam plate means for rotating the same, and members on the cam plate means operably engaged with said cam plate engaging members for moving said main drawer lock bolts upward and downward respectively from the main drawer head to locked position with said main drawer upper and lower bolts extending entirely through the bolt-receiving openings of adjacent mullion means.

2. The construction defined in claim 1 in which the main drawer upper and lower lock bolts are laterally offset, and in which the auxiliary drawer upper and lower lock bolts are vertically aligned.

3. The construction defined in claim 2 in which a U-shaped saddle weaker than the upper and lower auxiliary drawer lock bolts connects the inner ends of said auxiliary lock bolts, whereby the saddle tends to collapse when one of said upper and lower bolts is driven by externally applied force in an attempt to gain unauthorized access to the file.

4. The construction defined in claim 1 in which the operating handle means is accessible exteriorly of the main drawer head, in which a drive shaft extends from the handle into the main drawer head, in which a lever drive bar connects with said shaft, in which a releaseable pin connects between the bar and cam plate, in which the drive shaft and drive bar connection is a frictional connection, and in which the pin connection between the bar and cam plate is released upon driving the drive shaft axially inwardly of the main drawer head by externally applied force in an attempt to gain unauthorized access to the file.

5. The construction defined in claim 1 in which a pair of spaced horizontally movable lock bolts is mounted in the main drawer head, in which said horizontally movable lock bolts are spring biased normally toward locked position; in which the actuating means has lost motion link and pin connection means with the horizontally movable lock bolts for moving said horizontally movable main drawer lock bolts from locked to unlocked position; whereby the travel of the upper and lower lock bolts between unlocked and locked positions is greater than the travel of the horizontally movable lock bolts between unlocked and locked positions.

6. The construction defined in claim 1 in which the actuating means includes gang-lock control cam plate means, in which the members on the cam plate are cam pins, and the cam plate engaging members on the upper and lower lock bolts are engaged with said cam pins, whereby rotation of the cam plate to locked position moves the upper and lower main drawer lock bolts upward and downward respectively from unlocked to locked position; and in which a backup pin is mounted on the cam plate means located to be directly below the inner end of the main drawer upper lock bolt when the cam plate means is in locked position, whereby the backup pin prevents the upper bolt from being driven inward from locked position by externally applied force in an attempt to gain unauthorized access to the file.

7. The construction defined in claim 1 in which a pair of spaced horizontally movable lock bolts is mounted in each main and auxiliary head, in which said horizontally movable lock bolts are spring biased normally toward locked position, and each bolt has a detent engagement projection thereon, in which detent means including a spring biased plate is mounted in the drawer head, in which said detent plate engages said projection and normally holds said horizontally movable lock bolts in unlocked position, in which stud means is provided on the cabinet means engaged by any drawer when being closed to engage said detent plate means when the drawer is fully closed to thereby release said detent plate means from said projection and permit the horizontally movable lock bolts to move to locked position; and in which independent actuating means is provided for each drawer to move said horizontally movable lock bolts from locked to unlocked position.

8. The construction defined in claim 1 in which a pair of spaced horizontally movable lock bolts is mounted in each auxiliary drawer head; in which stop plate means including a flange bracket with a stop plate thereon is mounted on the upper and lower lock bolts on each auxiliary drawer; in which actuating means including a rotatable operating handle and link means connected thereto is provided for each auxiliary drawer to move said horizontally movable lock bolts from locked to unlocked position; and in which the stop plate means when the horizontally movable and upper and lower lock bolts of said auxiliary drawer are in locked position is located behind an end of at least one of said horizontally movable lock bolts to block the horizontally movable lock bolts to block the horizontally movable bolt from being driven inward by force applied externally of said bolt.

9. The construction defined in claim 1 in which a pair of spaced horizontally movable lock bolts is mounted in each auxiliary drawer head; in which actuating means including a rotatable operating handle and link means is provided for each auxiliary drawer to move said horizontally movable lock bolts from locked to unlocked position; and in which means is provided interengageable between said horizontally movable lock bolts and said gang-lock mechanism whereby at least one of the vertical upper and lower lock bolts when in locked position abuts the inner end of at least one of the horizontally movable lock bolts preventing movement of said horizontally movable lock bolts to unlocked position when the gang-lock mechanism is in locked position.

10. The construction defined in claim 1 in which bracket means is mounted on at least one of the upper and lower main drawer lock bolts; in which a relock bolt opening is formed in said bracket means; in which combination lock means is mounted in the main drawer head having a bolt which in locked position blocks movement of said bracket means, in which a relock cover is mounted on the back of said combination lock means; in which a horizontally disposed relock pin normally spring biased toward locking position is mounted in said main drawer head adjacent said combination lock means; in which said relock cover has a release pin mounting the relock cover on the combination lock means and engaging and normally holding said relock pin in unlocked position; and said relock pin when released being extended through said bracket relock opening; whereby dislodging of the combination lock by an externally applied force dislodges said relock cover, thereby releasing the relock pin to move to a position engaged in the bracket opening to hold said gang-lock mechanism in locked position.

11. The construction defined in claim 10 in which the cam plate has a relock-pin-engaging member mounted thereon; in which the combination lock bolt engages the cam plate engaging member and the bracket means when in locked position; and in which the relock pin engages said cam-engaging member when in relocked position; whereby release of the relocking pin to locked position not only blocks movement of the gang-lock mechanism bolts but also blocks movement of the lock bolt actuating means.

12. The construction defined in claim 1 in which the cabinet means is provided with bolt cups in each of which a lock bolt is engaged when in locked position; and in which a rotatable disc is mounted within each bolt cup; whereby drilling through the cabinet from the exterior toward a bolt cup in an attack at-

tempt to drill out a lock bolt engages the drill with the disc in said bolt cup and the disc rotates with the drill preventing further drill penetration toward the attacked lock bolt.

13. In gang-lock mechanism for a cabinet file open at the front of the type having mullion means dividing the open front into a series of drawer-receiving pigeonhole compartments one above another, a file drawer movably mounted in each compartment having a front head and gang-lock mechanism including lock bolts movably mounted in and extending generally centrally vertically along the drawer heads and into openings formed in the mullions; the combination of a projecting flange on each drawer, spring pressed stop means mounted on each mullion means between each pair of adjacent pigeonhole compartments; each stop means having a blocking leg and a release leg; the blocking leg being spring biased normally to project through a portion of the mullion means into a mullion bolt-receiving opening to prevent movement of an adjacent lock bolt through said mullion bolt-receiving opening when an associated drawer is open, and the release leg when said drawer is open also being spring biased normally to project through and beyond the mullion means with a portion located in the path of movement of the adjacent drawer flange of an associated drawer when such drawer is moved from open to closed position; said blocking leg when in normally projected position thereby blocking any gang-lock mechanism lock bolt from being moved through a mullion opening; and said drawer flange engaging said release leg to move said blocking leg out of blocking position when said auxiliary drawer is moved from open to closed position; whereby the gang-lock mechanism cannot be locked unless all drawers are closed.

14. The construction defined in claim 1 in which a pair of spaced horizontally movable lock bolts is mounted in each auxiliary drawer head; in which said horizontally movable lock bolts are spring biased normally toward locked position; in which actuating means including a rotatable operating handle and link means connected thereto is mounted on each auxiliary drawer to move said horizontally movable lock bolts from locked to unlocked position; in which stop plate means including a flanged bracket with a stop plate thereon is mounted on the upper and lower lock bolts on each auxiliary drawer; and in which the auxiliary drawer horizontally movable lock bolts when in unlocked position block movement out of unlocked position of said stop plate means and the upper and lower lock bolts on which the stop plate means is mounted.

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