United States Patent [19]

Shoop

[11] 3,735,714

[45] May 29, 1973

[54] **ENTRY-RESISTANT SECURITY FILE CONSTRUCTION**

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

[22] Filed: **July 15, 1971**

[21] Appl. No.: **162,926**

[52] **U.S. Cl.** **109/59,** 70/417, 312/217

[51] **Int. Cl.** **E05b 65/46**

[58] **Field of Search**.....109/53, 59, 80; 312/215–221; 70/417, 422

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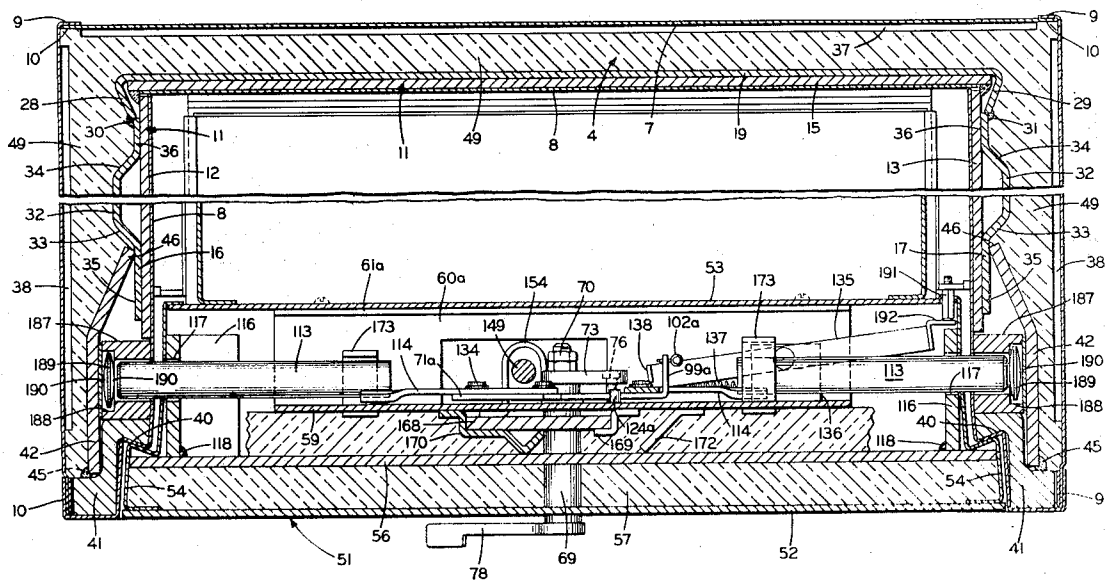
Primary Examiner—Dennis L. Taylor

Attorney—John H. Bishop and Joseph Frease

[57] **ABSTRACT**

A security file having a cabinet open at the front with mullion means dividing the open front into a series of drawer receiving pigeonhole compartments. Spaced outer and inner shells form the cabinet, the inner shell including a duplex walled entry-resistant shell comprising an outer sheet of aluminum and an inner sheet of abrasive steel. Insulation material fills the space between the outer and inner shells where an insulated security file is desired. Drawers are slidably located in the pigeonholes and a gang-lock bolt mechanism which extends through the drawer fronts and mullion means is operated by a handle of the main locking mechanism. The gang-lock mechanism includes dual upper and lower bolts located at the corners of each drawer and tied together by tie straps. A bolt strap is rigidly connected at one end to each tie strap and pivotally connected at its other end to a rotatable cam plate. A plunger operated bolt is fixed to the lower tie strap in the upper or main locking drawer and operates a plunger in the next-adjacent mullion means. Each such plunger contacts the upper end of a gang-lock control rod, the lower end of which contacts the plunger in the next-lower mullion means. Horizontally disposed side bolts are pivotally connected by actuating arms to diametrically opposite points on a cam disc in each drawer front. Detents are provided which prevent locking of any drawer unless the same is fully closed, and release means is provided for releasing said detent means when the drawer is fully closed. An anti-wedge plate is provided in each drawer front and protective angles are welded thereto in positions to permit locking of the bolts in each drawer to pass therethrough. A protective cover is provided for a locking bar bolt which connects the lower tie strap in the main locking drawer with the cam plate. Protective device are provided to impede drilling of the ends of lock bolts and the lower ends of the lowermost control rod of the gang-lock. Protective devices and anti-wedge means are provided in various areas of the mechanism to impede access to or actuation of the mechanism if attacked by externally applied force.

18 Claims, 19 Drawing Figures



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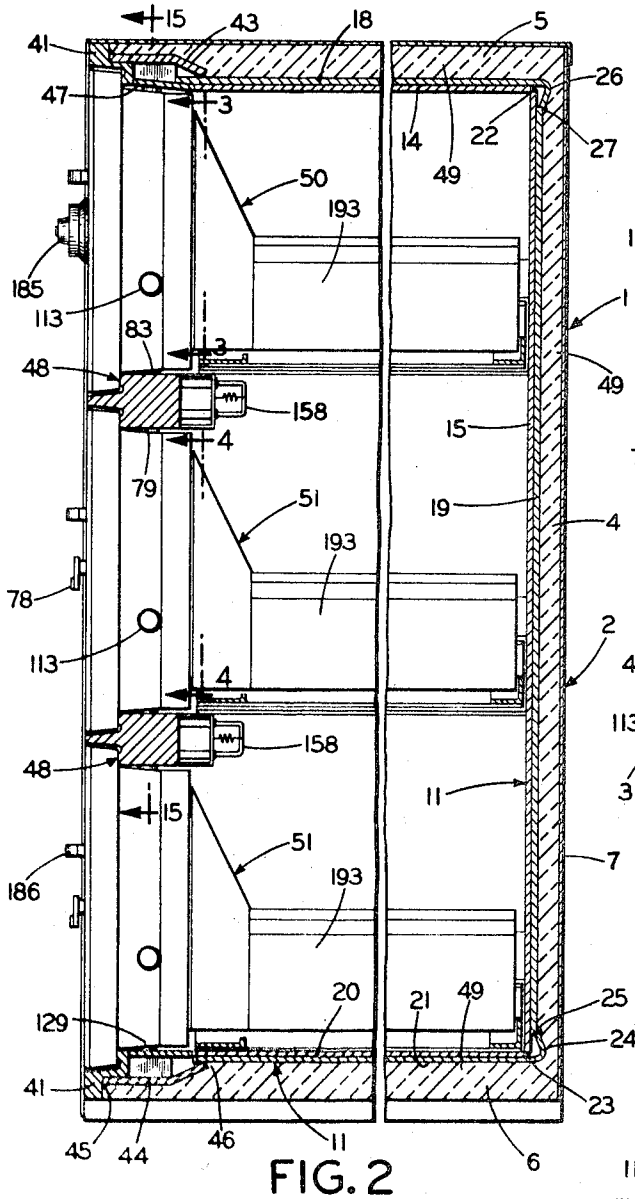


FIG. 2

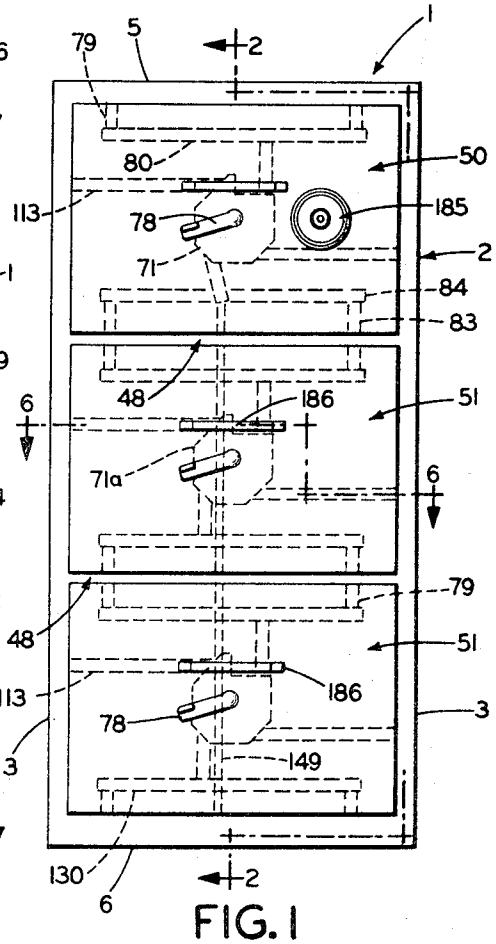


FIG. 1

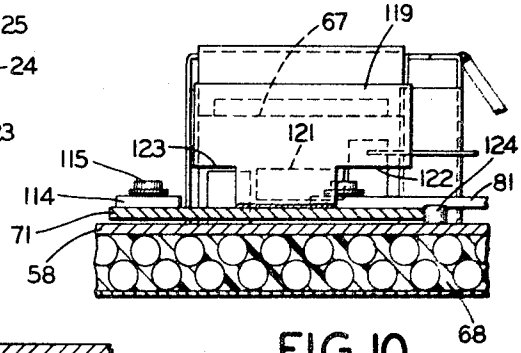


FIG. 10

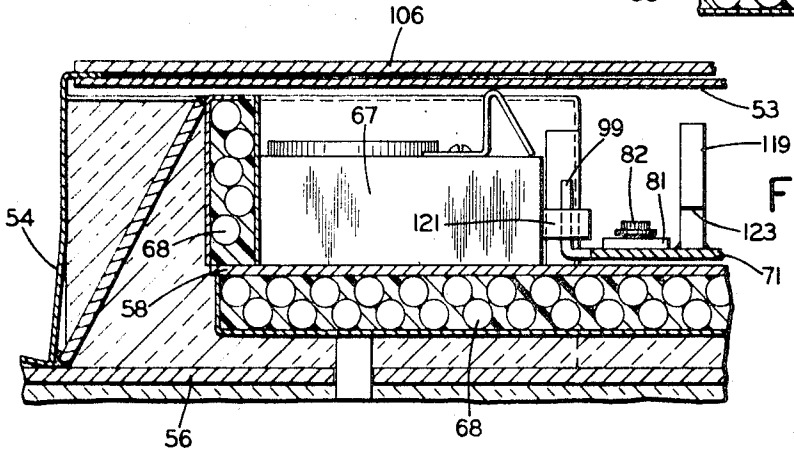


FIG. 9

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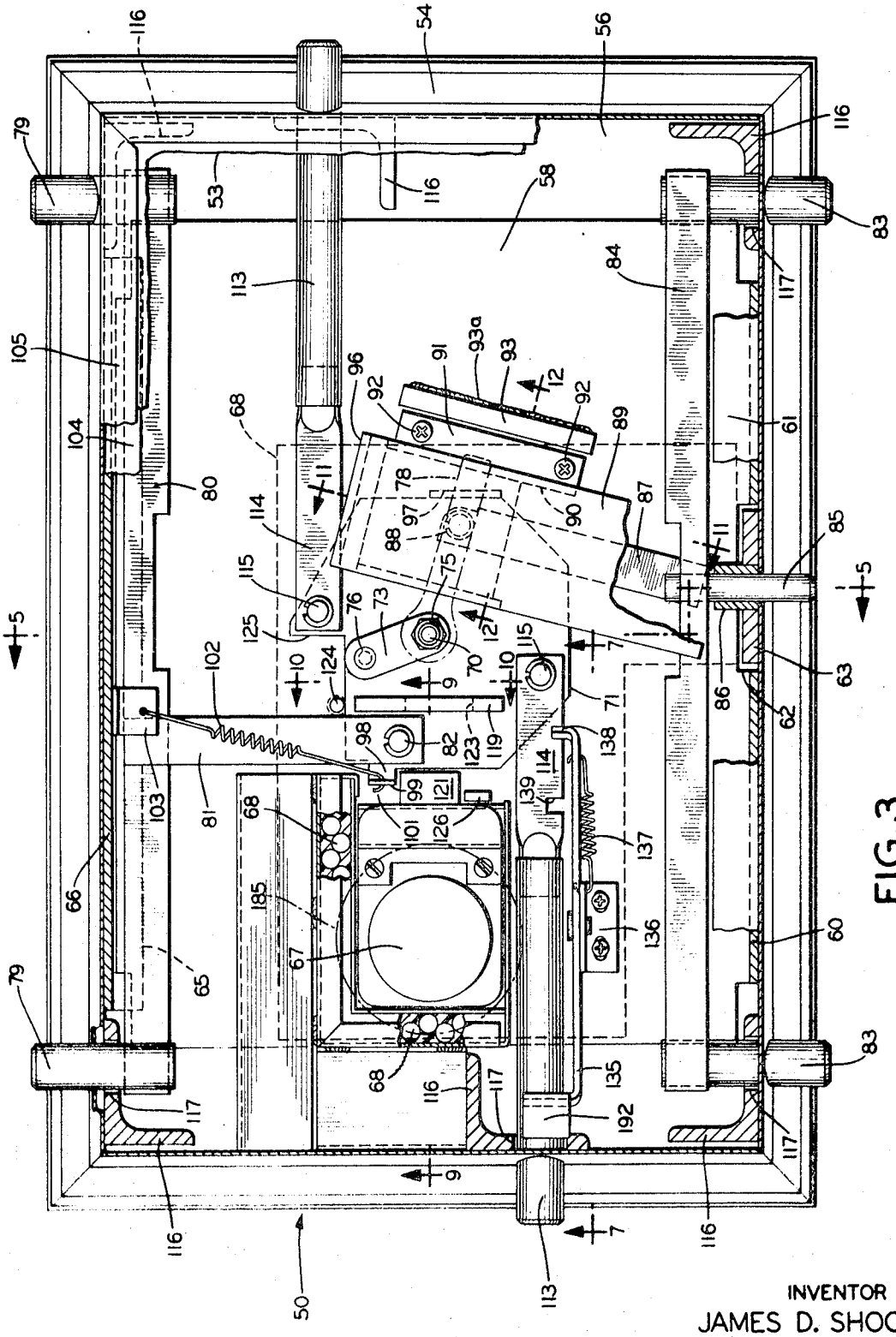


FIG. 3

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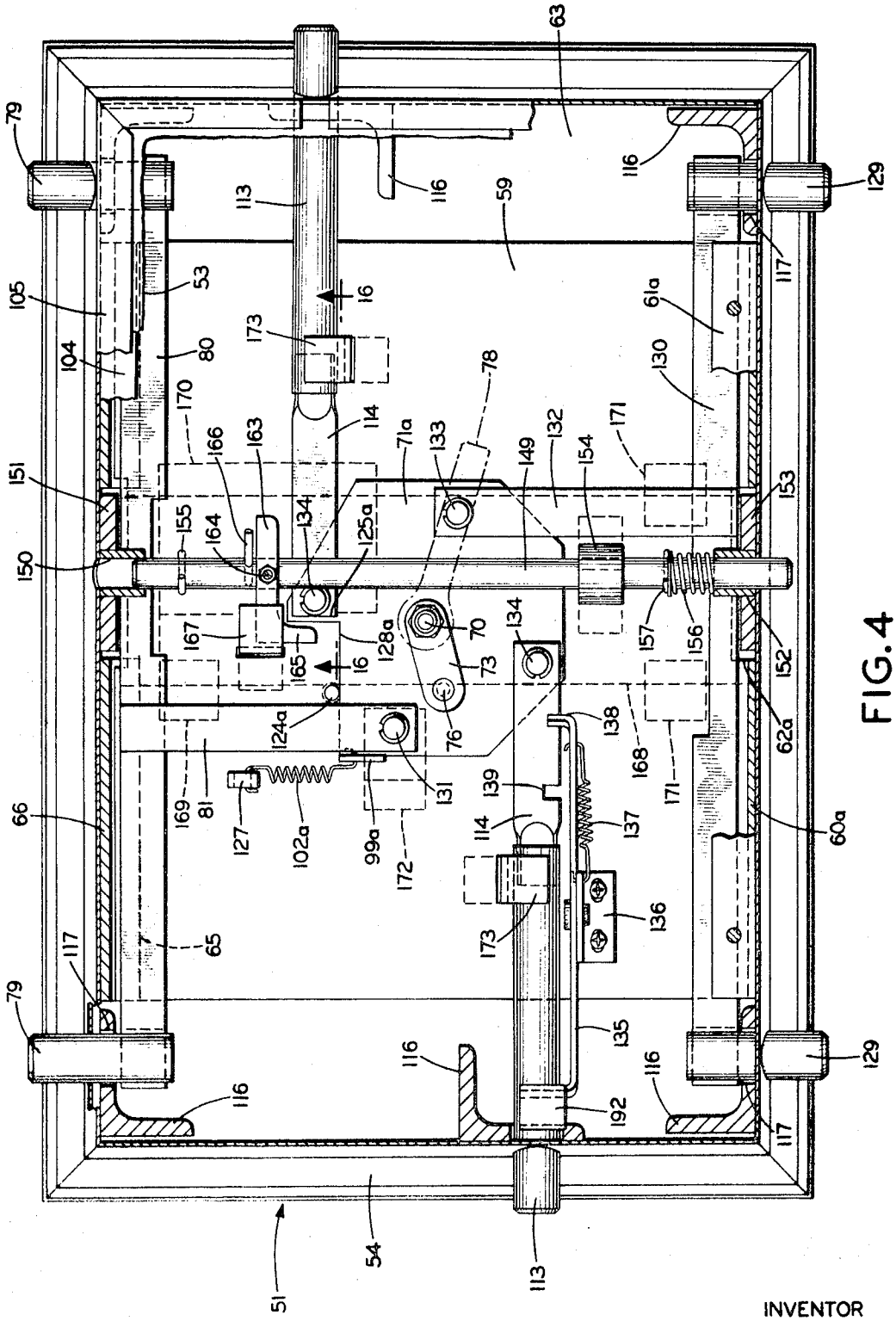


FIG. 4

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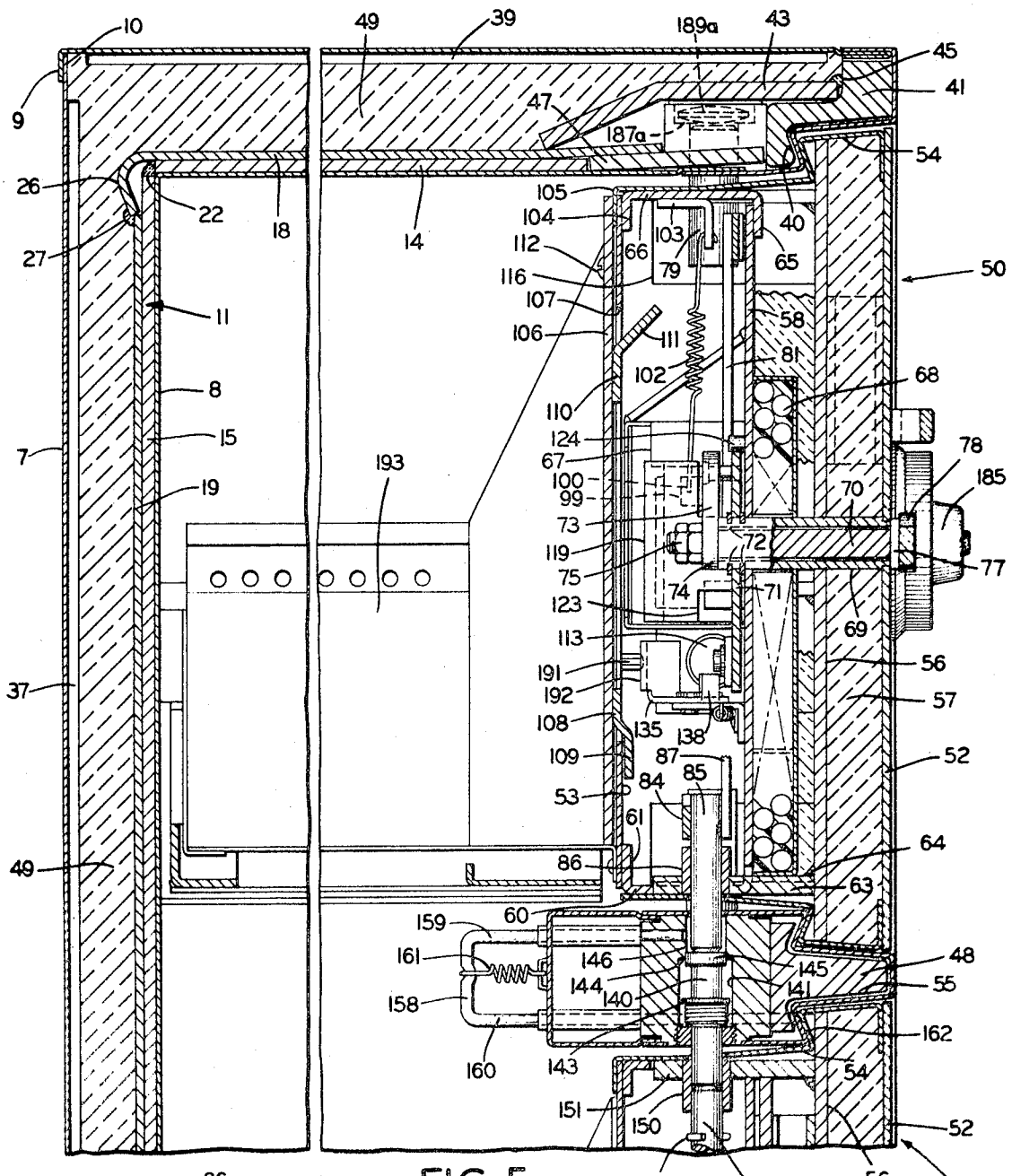


FIG. 5

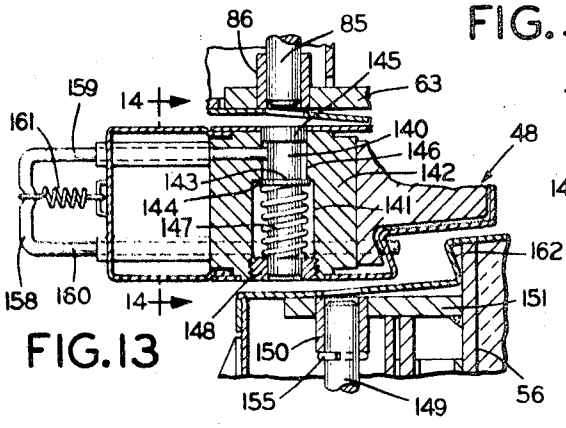


FIG. 13

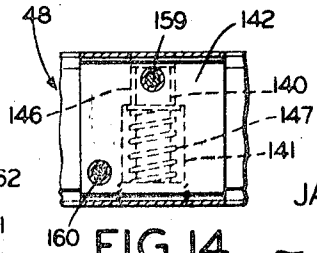


FIG. 14

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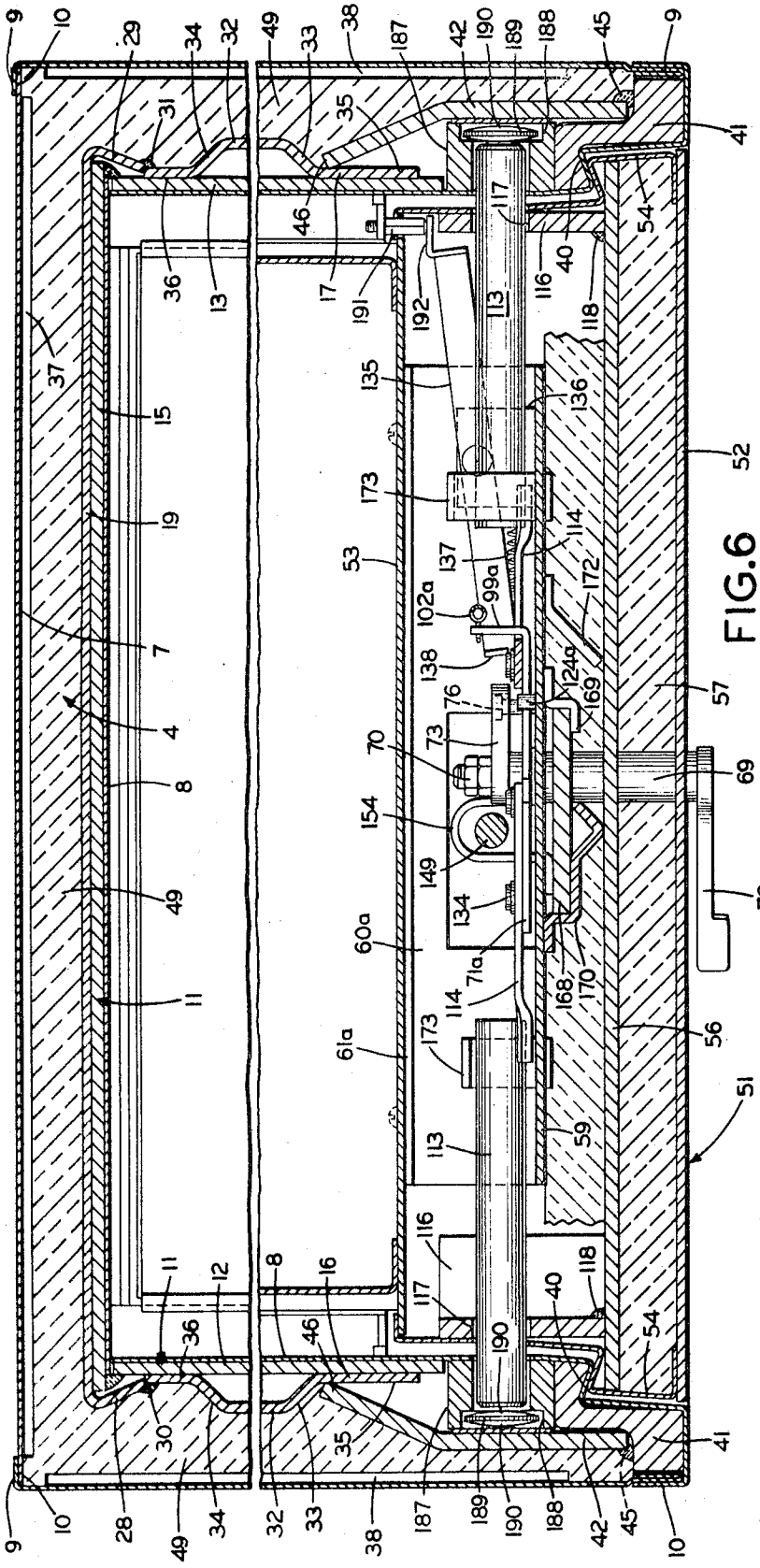


FIG.6

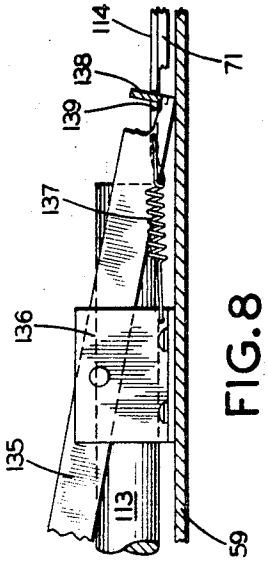


FIG.8

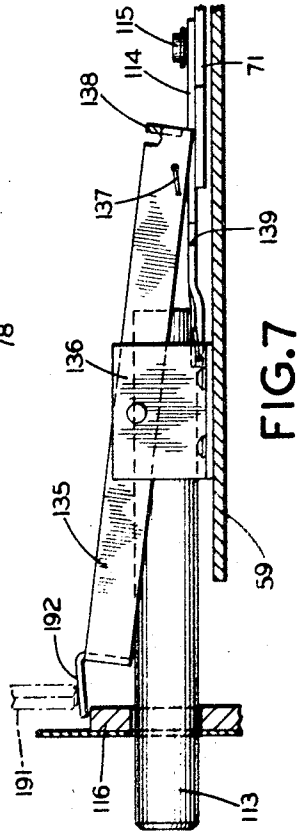


FIG.7

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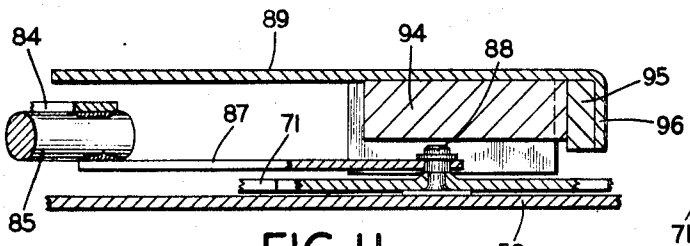


FIG. 11

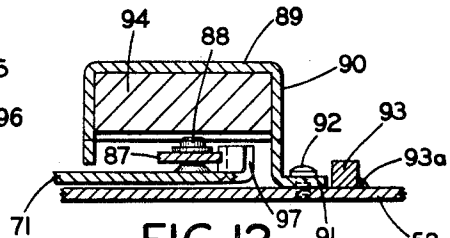


FIG. 12

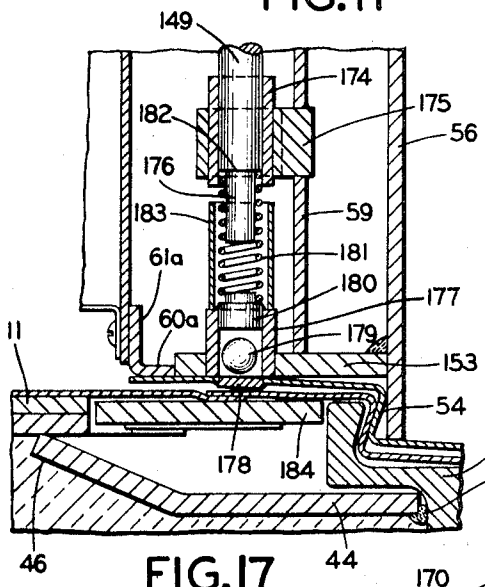


FIG. 17

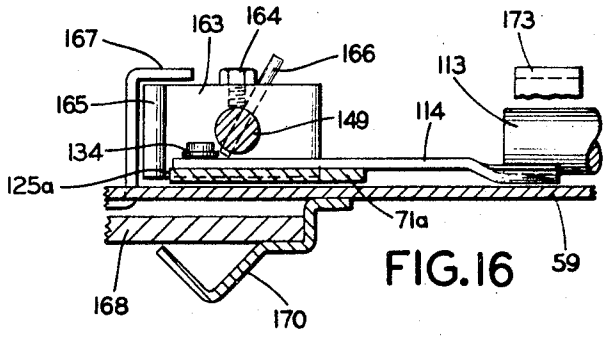


FIG. 16

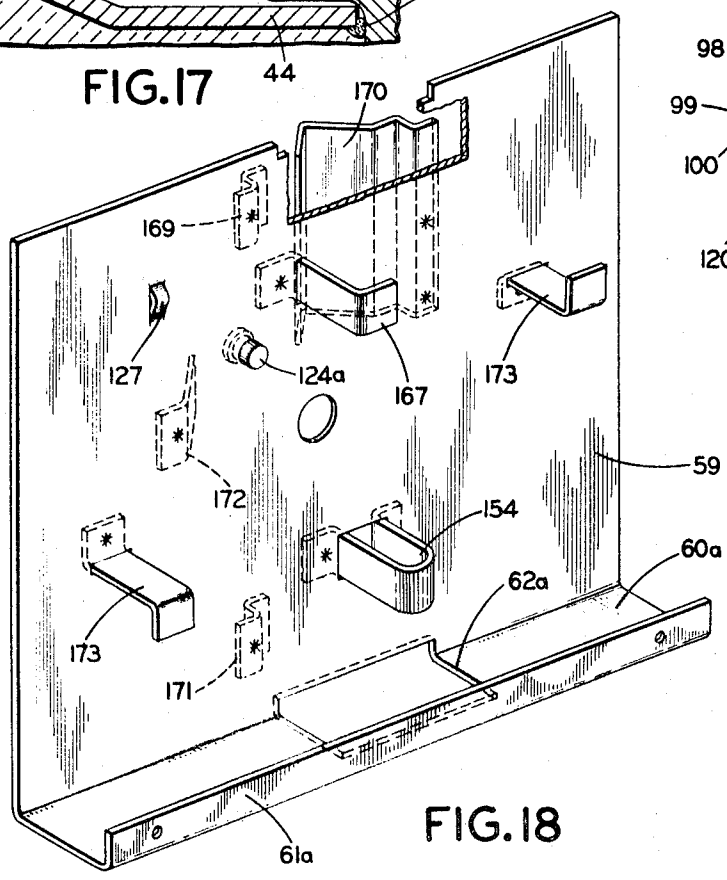


FIG. 18

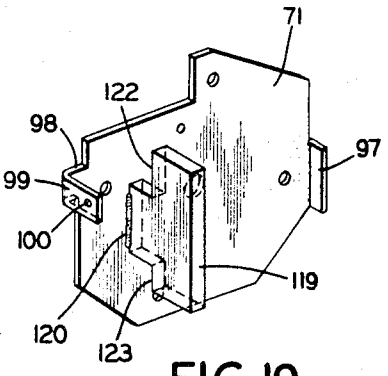


FIG. 19

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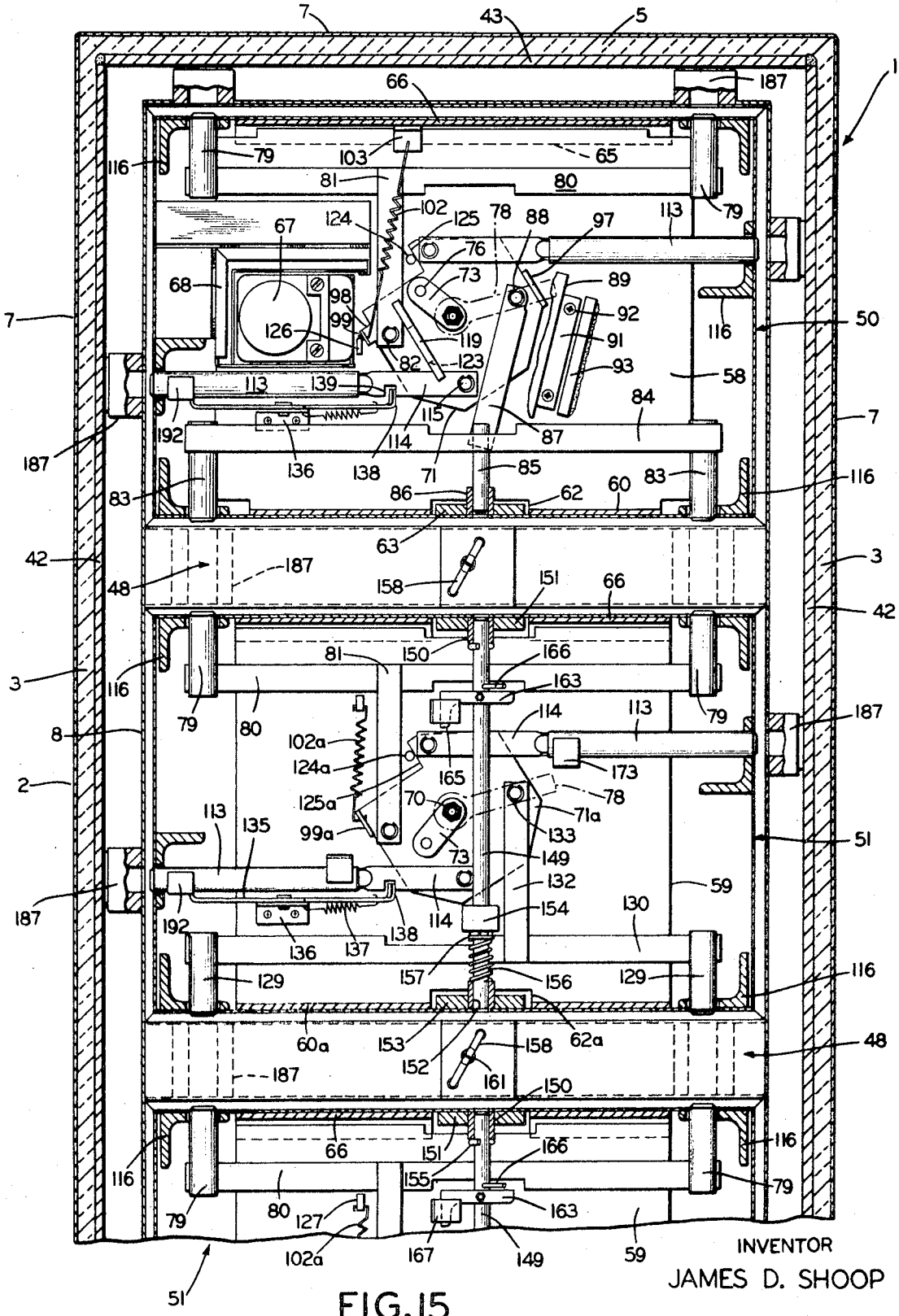


FIG. 15

ENTRY-RESISTANT SECURITY FILE CONSTRUCTION

CROSS-REFERENCE TO RELATED APPLICATION

The present invention is an improvement upon some of the features of copending application Ser. No. 2,240, filed Jan. 12, 1970, now U.S. Pat. No. 3,637,277, of Jan. 25, 1972, and includes drill resistant balls-in-plastic plates as disclosed in copending application Ser. No. 67,338, filed Aug. 27, 1970.

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, of the type comprising a plurality of drawer sections arranged in superimposed relation, and wherein the individual drawers are provided with individual locking mechanisms collectively controlled by a single master lock. The drawers are suspension mounted within a housing having preferably armored walls and each drawer has a drawer head. Gang-lock mechanism locks all drawers when in closed position. The drawers include a main locking drawer and one or more auxiliary drawers. A combination lock is located in the main locking drawer for locking the gang-lock mechanism when in closed position. The drawer heads are armored and the combination lock is protected to impede access to the locking mechanism and combination lock.

2. Description of the Prior Art

Prior security files of the general type referred to have been made with either insulated or noninsulated cabinets. The security files provided with insulated cabinets have been of the general type of the Henkle U.S. Pat. Nos. 2,803,203 and 2,887,965, with cabinets like in Paulos et al. U.S. Pat. No. 3,095,838 and with gang-lock mechanism of the type shown in Blauvelt U.S. Pat. No. 2,956,525. The noninsulated security file as now made by applicant's assignee, Diebold, Incorporated, has been made as shown in said copending application Ser. No. 2,240 now U.S. Pat. No. 3,637,277 of Jan. 25, 1972. Different dies and metal assemblies are required for the two classes of files.

The present invention provides a single construction for both the insulated and noninsulated security files so that the same mechanical and metal assemblies can be made for both classes of files on the same production line.

SUMMARY OF THE INVENTION

The objectives of the invention include providing a security file in which the same cabinet and gang-lock mechanism is used in both insulated and noninsulated files; the same structure of cabinet provided for the noninsulated class of files being adapted for the insulated files by filling the shells and drawer heads with insulation; locating the top and bottom dual locking bolts closer to the corners to make the drawer head more rigid when locked to resist bending or prying from the side edges; significantly increasing the diameters of the dual locking bolts to resist bending of the bolts; providing bolt reinforcing angles through which the dual lock bolts and the side bolts project; increasing the diameters and lengths of the side bolts so that the connections thereof with the actuating arms will overlap the lock plate so that the lock plate will assist in resisting bending of the side lock bolts; providing a spring biased detent arm which engages the actuator arm for one of the side bolts in each drawer for holding the side bolts unlocked; providing a novel cover for the gang-lock link for protecting its pivotal connection with the cam plate; providing balls-in-plastic protective plates to surround and protect the combination lock; providing a simple spring biased U-shaped trigger comprising a blocking arm normally projecting through a portion of the mullion means into a mullion bolt or plunger receiving opening to prevent movement of the gang-lock mechanism when such drawer is open and a release leg projecting through the beyond the mullion means into the path of movement of the adjacent drawer; providing anti-wedge means to prevent forced wedging of various parts of the locking mechanism; providing an inner duplex-wall forced-entry-resistant shell comprising an outer sheet of aluminum and an inner sheet of abrasive steel to defeat forced entry by a hole saw as well as by a wedge instrument; providing high tensile steel frame means for the cabinet to resist bowing; and providing a new security file structure 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; the cabinet comprising an outer shell of aluminum with side, top and back braces of high tensil steel and an inner shell including a duplex-walled entry resistant shell comprising an outer sheet of aluminum and an inner sheet of abrasive steel; heat and cold insulation material between said shells where an insulated file is desired; a file drawer movably mounted in each pigeon hole compartment, each file drawer having a drawer head; the file drawers including a main locking drawer and at least one auxiliary drawer; gang-lock bolt mechanism comprising upper lock bolts connected by a tie strap and lower lock bolts connected by a tie strap in each drawer; a vertical bolt strap connected to each upper tie strap and pivotally connected to a rotatable cam plate in the corresponding drawer, a vertically inclined gang-lock link rigidly connected to the lower tie strap in the main locking drawer and pivotally connected to the rotatable cam plate therein; a vertical bolt strap connected to the lower tie strap in each auxiliary drawer and pivotally connected to the corresponding rotatable cam plate; a lock plate in each drawer head; horizontally disposed side bolts in each drawer, actuating arms for the side bolts pivotally connected to the corresponding cam plate; the connection of said side bolts with the actuating arms overlapping the lock plate; a spring biased detent adapted to engage a notch in one actuating arm of each drawer to hold the bolts in unlocked position; reinforcing angles through which the dual locking bolts and side bolts are located; an anti-wedge plate in each drawer front to which said angles are welded; a novel protective cover for the gang-lock link; balls-in-plastic protective plates surrounding and protecting the combination lock in the main locking drawer which controls rotation of the cam plate therein; a spring biased shouldered plunger vertically slidably located through an opening in each mullion means; a spring biased trigger having a blocking arm

normally projecting through a portion of each mullion means into a mullion bolt receiving opening to prevent movement of said shouldered plunger when such drawer is open and a release leg projected through and beyond the mullion means into the path of movement of the adjacent drawer; anti-wedge means to prevent forced wedging of various parts of the locking mechanism; and a vertically slidable rod in each auxiliary drawer operated by the gang-lock in the main locking drawer and contacting the corresponding shouldered spring biased vertically movable plunger in the corresponding mullion means.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention — illustrative of the best mode in which applicant has contemplated applying the principles — is set forth in the following description and shown in the accompanying drawings, and which are particularly and distinctly pointed out and set forth in the appended claims;

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

FIG. 2 is a vertical sectional view on a slightly larger scale taken on line 2—2, FIG. 1;

FIG. 3 is a larger scale vertical section through the main locking drawer taken on the line 3—3, FIG. 2;

FIG. 4 is a similar view of an auxiliary drawer taken on the line 4—4, FIG. 2;

FIG. 5 is a vertical section through the main locking drawer taken on the line 5—5, FIG. 3;

FIG. 6 is an enlarged horizontal section through one of the auxiliary file drawers taken on the line 6—6, FIG. 1;

FIG. 7 is a fragmentary sectional view on the line 7—7, FIG. 3, showing the position of the detent in the main locking drawer when the corresponding side bolt is in locked position;

FIG. 8 is a similar view showing the detent engaged in the notch in the actuating arm when the side bolt is in unlocked position;

FIG. 9 is an enlarged fragmentary section on the line 9—9, FIG. 3, showing the balls-in-plastic plates protecting the combination lock;

FIG. 10 is an enlarged fragmentary section of the same on the line 10—10, FIG. 3;

FIG. 11 is an enlarged fragmentary section through the protective cover for the gang-lock link taken on the line 11—11, FIG. 3;

FIG. 12 is a fragmentary transverse section through the same taken on the line 12—12, FIG. 3;

FIG. 13 is a fragmentary transverse section through one of the mullion means showing the trigger holding the gang-lock in unlocked position;

FIG. 14 is a fragmentary section through the trigger on the line 14—14, FIG. 13;

FIG. 15 is an enlarged section through the drawer fronts on the line 15—15, FIG. 2;

FIG. 16 is a fragmentary section on the line 16—16, FIG. 4;

FIG. 17 is a fragmentary sectional view showing the gang-lock for the bottom of the lower drawer in unlocked position;

FIG. 18 is a detached perspective view of the lock plate for one of the auxiliary drawers; and

FIG. 19 is a detached perspective view of the rotatable cam plate in the main locking drawer.

Similar numerals refer to similar parts throughout the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The security file generally designated at 1 in FIGS. 1 and 2 includes a five-sided file cabinet 2 having side walls 3, a rear wall 4, a top wall 5 and a bottom wall 6 all of which may be insulated or not as hereinafter described. Each of the walls (FIGS. 5 and 6) comprises an outer shell 7 and an inner shell 8 each of which may be fabricated from light gauge preferably steel sheet members in the usual manner to form the cabinet wall compartments within which insulation material may be contained as disclosed in said Paulos et al. U.S. Pat. No. 3,095,838. Overlapping flanges 9 and 10 of the outer shell may be spot-welded together.

In accordance with the invention a duplex-walled, supplemental, forced-entry-resistant shell, generally indicated at 11 and best shown in FIGS. 5 and 6, is incorporated in the wall structure of the cabinet 2. The duplexed-walled shell 11 comprises abrasive steel inner side plates 12 and 13, inner top plate 14, and inner back plate 15, and aluminum outer side plates 16 and 17, outer top plate 18, and outer back plate 19.

As shown in FIG. 2 the duplex-walled supplemental shell 11 may include the abrasive steel inner bottom plate 20 and the aluminum outer bottom plate 21.

The upper edge of the inner back plate 15 may be welded to the rear edge of the inner top plate 14 as indicated at 22 in FIGS. 2 and 5 and the lower edge of the inner back plate 15 may be welded to the rear edge of the inner bottom plate 20 as indicated at 23 in FIG. 2. The outer bottom plate 21 has an upturned and slightly inturned hook-shaped flange 24 at its rear edge which may be welded to the lower edge of the outer back plate 19 as indicated at 25 in FIG. 2. A similar flange 26 is formed at the rear edge of the outer top plate 18 and may be welded to the upper edge of the outer back plate 19 as indicated at 27.

Similar flanges 28 and 29 (FIG. 6) are formed at the side edges of the outer back plate 19 and welded to the rear edge portions of the outer side plates 16 and 17, respectively, as indicated at 30 and 31.

Each outer side plate 16 and 17 has an outward vertically extending offset portion 32 connected by the shoulders 33 and 34 with the front and rear vertically extending flanges 35 and 36. The outer shell 7 may be provided with sound-deadening liners 37, 38 and 39, respectively. These liners may be attached to the corresponding portions of the outer shell by a suitable adhesive, such as "Pliobond" made by the B. F. Goodrich Co.

At the front open side of the cabinet the inner shell 8 is offset as at 40 at each side, top and bottom and reduced and the shaped metal reinforcing members 41 are located between the inner and outer shells. Similar angularly bent side plates 42 (FIG. 6), top plates 43 (FIGS. 2 and 5), and bottom plates 44 of hardened steel are welded at their forward edges as at 45 to the forward portions of the members 41, their rear inwardly inclined edges 46 contacting the forward flanges, as at 35 (FIG. 6), of the outer side plates 16 and 17.

At the top of the cabinet the inner top plate 14 terminates at a point spaced from the corresponding mem-

ber 41 and a hardened steel plate 47 is interposed therebetween.

The open front of the cabinet is divided into pigeonholes for slidably receiving file drawers in conventional manner, by the mullion means indicated generally at 48 (FIGS. 1, 2, 5 and 15). If an insulated security file is desired, suitable heat and cold insulation material 49 may be placed between the inner and outer shells as best shown in FIGS. 2, 5 and 6. If a noninsulated security file is desired this insulation material is omitted so that the same mechanical and metal assemblies can be made for both classes of files on the same production line.

A file drawer is slidably located within each pigeonhole in the cabinet. There may be two, three, four or five drawers as desired. In the drawings three drawers are shown, the upper drawer indicated generally at 50 (FIGS. 1 and 2) being the main locking drawer, the other drawers 51 being auxiliary drawers.

As best shown in FIGS. 5 and 6, the front of each drawer is formed with a head including an outer plate 52 and an inner plate 53 joined at top, bottom and side edges by a continuous web edge member 54 shaped at its forward portion to conform to the offset front portion 40 of the top, bottom and sides of the cabinet and the corresponding front portion 55 of the mullion means, which offset portions define the open frame end of the pigeonhole compartments in which the front head of each drawer 50 and 51 is seated when the drawer is in closed or locked position.

A steel anti-wedge plate 56 is spaced inwardly from and substantially co-extensive with the outer plate 52, and the space therebetween may be filled with insulation material as indicated at 57. The inner or back plate 53 is spaced from the anti-wedge plate 56, as shown. The offset in the web member 54, as shown in FIG. 6, is located between the front plate 52 and back plate 53 adjacent the edges of the anti-wedge plate 56. The remainder of each drawer may be of any conventional construction as indicated at 193 in FIG. 5. The locking mechanism is of the same general type as disclosed in Blauvelt U.S. Pat. No. 2,956,525. However, Blauvelt does not have any anti-wedge plate such as 56.

The multi-locking bolt locking mechanism in each drawer is mounted upon a lock plate. The lock plate 58 (FIGS. 3, 5 and 15) in the main locking drawer is slightly different from the lock plate 59 (FIGS. 4, 6, 15 and 18) in each of the auxiliary drawers. In FIG. 18 one of the auxiliary drawer lock plates 59 is shown in detail.

Referring now more particularly to FIG. 5, the lock plate 58 for the main locking drawer has a horizontal flange 60 at its lower edge terminating in the upright terminal flange 61. The flange 60 has a cut-out 62 to receive the reinforcing plate 63 of mild steel which is welded as at 64 to the anti-wedge plate 56. The upper edge of the locking plate 58 abuts the inner side of the depending flange 65 of the channel member 66.

The combination lock 67 is mounted upon the lock plate 58 as shown in FIGS. 3, 5 and 15 and is surrounded and protected by the ball-in-plastic plates 68. As best shown in FIG. 5 the latch arbor ferrule 69 is located through suitable apertures in the outer plate 52, anti-wedge plate 56 and lock plate 58 and the latch arbor 70 is journalled therethrough. The cam plate 71 is journalled upon the ferrule 69 between the spacer rings 72.

The drive bar 73 is fixed upon the conical portion 74 of the arbor 70 by the nuts 75 and has a drive pin 76 engaged in an aperture in the cam plate 71. A Nylon spacer 77 is located around the outer end of the arbor 70 between the adjacent end of the ferrule 69 and handle 78.

The lock bolts in the main locking drawer, include the two spaced top bolts 79 which are of considerably larger diameter than the corresponding top bolts in U.S. Pat. No. 2,956,295 and which are located closer to the corners to make the drawer head more rigid when locked and to resist bending or prying of the drawer heads from the side edges and to resist bending of the bolts.

The top bolts 79 are connected by the top tie strap 80. The bolt strap 81 has its upper end welded or otherwise rigidly attached to the top tie strap 80 and its lower end is pivotally connected as at 82 to the cam plate 71. The movement of the cam plate is very slight and as in the Blauvelt Patent there is sufficient clearance for the bolts 79 to permit the same to be easily moved to locked or unlocked position by proper rotation of the cam plate. The lower bolts 83 are also of larger diameter than in the Blauvelt Patent and located closer to the corners of the drawer for the reasons given above and are connected together by the lower tie strap 84.

The gang-lock plunger operating bolt 85 is fixed at its upper end to the central portion of the tie strap 84 and is vertically slidably located through the tubular member 86 located through the gang-lock reinforcing plate 63.

The lower end of the locking bar bolt 87 is rigidly attached to the central portion of the lower tie strap 84, and the upper end thereof is pivotally attached to the cam plate 71 as indicated at 88. As with the top bolt assembly, there is sufficient clearance to permit the bolts 83 and 85 to be moved to locked or unlocked position.

As best shown in FIGS. 3, 11, 12 and 15 a channel shaped protective steel cover 89 is provided for the locking bar bolt 87. One depending flange 90 of the protective cover 89 is longer than the other and terminates in a right angular terminal flange 91 which is attached to the lock plate 58 by screws 92. A protective steel bar 93 is welded as indicated at 93*a* to the lock plate 58 adjacent the edge of the terminal flange 91 to prevent a tool from being driven between the flange 91 and the lock plate 58. A steel reinforcing block 94 is located within the channel member 89 above the pivotal connection 88 and a steel plate 95 may be located between the end of the same and the end flange 96 of the channel member 89.

The cam plate 71, shown in detail in FIG. 19 has a right angle flange 97 to assist in protecting the pivot point 88. Diametrically opposite to the flange 97 is a narrow stop flange 98 terminating in the angular flange 99 having an aperture 100 therein to receive the hooked end 101 of the coil spring 102. The upper end of the spring 102 is connected to the depending lug 103 attached to or formed upon the inverted channel 66.

The upper end of the inner plate 53 (FIG. 5) of the drawer front is connected to the adjacent depending flange 104 of the inverted channel member 66 and the depending flange 105 of the continuous web 54 overlaps the upper end of the inner plate 53.

An access panel 106 normally closes the access opening 107 in the inner plate 53. A horizontal metal strip

108 is attached to the access panel 106 at a point spaced from the lower edge thereof and provided with the offset depending flange 109 which normally overlaps the inner plate 53 at the lower edge of the access opening 107 when the panel is in the closed position as shown in FIG. 5. A horizontal metal strip 110 is attached to the access panel 106 at a point spaced from its upper end and provided with an outwardly angled flange 111 which is located relative to the upper edge of the access opening 107 as shown in FIG. 5 when the panel is in closed position. Screws 112 normally connect the upper end portion of the access panel 107 to the upper end portion of the inner plate 53.

When it is desired to remove the access panel 106 in order to gain access to the interior of the drawer head, the screws 112 are removed allowing the access panel to drop sufficiently so that when tilted inwardly into the drawer the angular flange 111 will clear the upper edge of the access opening 107.

The side bolts 113 are of increased diameter as well as length as compared with the side bolts of the Blauvelt Patent so that the connection thereof to the actuating arms 114 will overlap the lock plate 58 so that the same will assist in resisting bending of the side lock bolts. The actuating arms 114 are pivotally connected at diametrically opposite points to the cam plate 71 as shown at 115.

As best seen in FIG. 6, the outer end of each side bolt 113 is received in a cup 187 located between the inner shell 8 and the adjacent side plate 42. The interior of this cup is enlarged at its outer end as shown at 188 and a hardened tool steel disc 189, having convex faces 190, is loosely located therein beyond the end of the adjacent side bolt 113. This provides additional protection for the side bolts. If anyone is successful in cutting through the outer shell 7 and the side plate 42 at this point and tries to drill through the disc 189 to get at the adjacent side bolt 113, the loosely mounted disc 189 will turn when contacted by the drill preventing the drill from cutting therethrough. As shown in FIG. 5, the upper ends of the upper dual lock bolts 79 in the main locking drawer are protected by a similar disc 189*a* located in a cup 187*a* just beneath the top plate 43.

The upper and lower dual lock bolts 79 and 83 respectively, of the main locking drawer, the upper and lower lock bolts 79 and 129 of the auxiliary drawers, and the side bolts 113 of all drawers are reinforced by the angle members 116 provided with suitable apertures 117 and similar aligned openings in web member 54 through which the bolts pass. The angle members 116 are tied to the anti-wedge plate 56 as by welds 118, as shown in FIG. 6. The angle members 116 each are located adjacent the continuous web member 54 of each drawer head and are rigidly mounted on and extend rearwardly of the anti-wedge plate 56 toward the back plate 53. This is another advantage over the Blauvelt patent in which there is no anti-wedge plate and no reinforcing angle members.

A T-shaped protection plate 119 (FIGS. 3, 5, 15 and 19) is welded upon the cam plate 71 as indicated at 120, in FIG. 19 to protect the combination lock bolt 121. The upper and lower cutouts 122 and 123, respectively, in this protection plate provide a clearance for the upper bolt strap 81 and the left actuating arm 114, respectively, as viewed in FIG. 15 when the gang-lock mechanism is moved to unlocked position as shown in FIG. 15.

As shown in FIG. 3, when the gang-lock mechanism is in locked position, the stop flange 98 prevents the cam plate 71 from being turned counterclockwise because the combination lock bolt 121 is located in the path thereof. A stop pin 124 is mounted upon the lock plate 58 in the path of the shoulder 125 on the cam plate 71 to limit turning movement of the cam plate as shown in FIG. 15. A back-up tab 126 is mounted upon the lock plate 58 in position to be contacted by the angular flange 99 upon the cam plate 71 when the cam plate is moved to the unlocked position shown in FIG. 15.

Referring now more particularly to the auxiliary drawers as shown in FIGS. 4, 6 and 15, the cam plate 71*a* is slightly different from the cam plate 71 in the main locking drawer. The right angle flange 97, the stop flange 98 and the T-shaped protection plate 119 are omitted. The cam plate 71*a* is rotatably mounted upon a ferrule as shown at 69 in FIG. 5 and the latch arbor assembly as shown in FIG. 5 is provided for the cam plate for each auxiliary drawer and the same reference numerals are applied thereto. The cam plate 71*a* has a shoulder 125*a* for contacting a stop pin 124*a* on the lock-plate 59 for limiting turning movement of the cam plate in counterclockwise direction.

The lower hooked end of the spring 102*a* is connected to the angular flange 99*a* on the cam plate 71*a* and the upper hooked end of the spring is connected to the eye 127 upon the lock plate 59 for normally holding the edge 128*a* of the cam plate 71 against the stop pin 124*a* in the same manner that the spring 102 in the main locking drawer holds the edge 128 of the cam plate 71 against the stop pin 124 when the parts are in locked position as shown in FIG. 3.

The dual top bolts 79 and top tie strap 80 are the same as the corresponding parts in the main locking drawer. The lower dual lock bolts 129 of the auxiliary drawers are somewhat shorter than the lower lock bolts 83 of the main locking drawer and are tied together by a lower tie strap 130.

A bolt strap 81 is rigidly connected at its upper end to the upper tie strap 80 and the lower end thereof is pivotally connected to the cam plate 71*a* as indicated at 131. The lower end of the lower bolt strap 132 is rigidly connected to the lower tie strap 130 and the upper end thereof is pivotally connected to the cam plate 71*a* at 133. The side bolts 113 and actuating arms 114 in the auxiliary drawers are the same as the corresponding parts in the main locking drawer and the actuating arms are pivotally connected to diametrically opposite points on the cam plate 71*a* as indicated at 134.

A detent 135 is associated with one side bolt 113 in each of the drawers as shown in FIGS. 3, 4, 6 and 15 and as shown in detail in FIGS. 7 and 8. Each detent is pivotally mounted intermediate its ends upon a bracket 136 fixed upon the lock plate 58 or 59 as the case may be. A spring 137 is connected at one end the bracket 136 and at its other end to the detent 135 near the hooked end 138 thereof, for normally urging said hooked end 138 toward the surface of the adjacent actuating arm 114 when the parts are in locked position as shown in FIGS. 3, 4 and 7, or in the notch 139 of the actuating arm when the parts are in unlocked position as shown in FIGS. 8 and 15, and the drawer is open, preventing moving of the bolts to locked position. When the drawer is closed, as shown in FIG. 6, the release pin 191, supported upon the inner shell of the

cabinet, will contact the end 192 of the detent 135 raising the hooked end 138 thereof out of the notch 139 so that the gang-lock mechanism may be turned to locked position.

A plunger 140 (FIGS. 5 and 13) is vertically slidably mounted in a guide opening 141 in the central portion 142 of each mullion means 48 and provided at a point spaced from its upper end with a shoulder 143 adapted to contact the shoulder 144 in the opening 141. A head 145 is provided at the upper end of the plunger 140 and is of suitable diameter to be slidably received within the upper reduced portion 146 of the opening 141. A coil spring 147 is interposed between the perforate screw block 148, in the lower end of the opening 141, and the shoulder 143 for normally urging the shoulder 143 of the plunger 140 into contact with the shoulder 144 in the opening 141 when the parts are in unlocked position as shown in FIG. 13.

A gang-lock control rod 149 (FIGS. 4 and 15) is vertically slidably mounted through each of the auxiliary drawer heads, the upper end thereof being received within the upper tubular guide 150 mounted through the adjacent steel reinforcing plate 151 and the lower end of which is slidably located through the lower tubular guide 152 mounted through the lower steel reinforcing plate 153.

An intermediate portion of the control rod 149 is slidably located through the U-shaped guide 154 upon the lock plate 59. A shoulder 155, spaced from the upper end of the control rod 149 is adapted to contact the lower end of the upper tubular guide 150 to limit upward movement of the control rod 149 as shown in FIG. 13. A coil spring 156 is interposed between the lower tubular guide 152 and a shoulder 157 spaced from the lower end of the control rod 149 for urging the control rod 149 upward into unlocked position as shown in FIGS. 13 and 15. The lower end of the plunger operating bolt 85 is adapted to contact the upper end of the uppermost plunger 140 and push it downward to locked position as shown in FIG. 5. At the same time the lower end of said uppermost plunger 140 contacts the upper end of the adjacent control rod 149 pushing it down so that in turn it will push the next lower plunger 140 down to locked position which will in turn push the next lower control rod 149 down and so forth.

A trigger mechanism for preventing movement of the gang-lock mechanism when a drawer is open, is shown best in FIGS. 5 and 13. Such trigger comprises the U-shaped member 158 having a relatively short blocking arm 159 and a relatively long release arm 160. A spring 161 normally urges the arms 159 and 160 toward the position shown in FIG. 13. As will be seen from this Figure, when the gang-lock mechanism is in unlocked position the end of the blocking arm 159 of the trigger is projected into the upper reduced portion 146 of the guide opening 141 just below the shoulder 145 upon the plunger 140, preventing downward movement of the plunger to locked position, and the release arm 160 is projected entirely through the mullion means and into the path of the flange 162 of the next adjacent drawer. When said drawer is closed, as shown in FIG. 5, the flange 162 thereof will engage the end of the release arm 160 pushing it inward and pushing the end of the blocking arm 159 out of the reduced portion 146 of the guide opening and thus out of the path of the head 145 of the plunger 140 permitting said plunger to be moved down to locked position by the gang-lock mechanism as shown in FIG. 5.

The lock plate 59 in each auxiliary drawer has a horizontal flange 60*a* at its lower edge as best shown in FIG. 18 terminating in the upright terminal flange 61*a* which has a cut-out 62*a* to receive the lower reinforcing steel plate 153 which may be welded to the antiwedge plate 56 in the same manner that the reinforcing plate 63 is welded to the antiwedge plate 56 in the main locking drawer.

An angular locking dog 163 (FIGS. 4 and 15) is mounted upon each control rod 149 of the gang-lock by means of a setscrew 164. A depending leg 165 of the locking dog is located in the path of shoulder 125*a* of the cam plate 71*a* when the parts are in locked position as shown in FIG. 4. An angularly disposed pin 166 is located in the control rod 149 just above the locking dog 163 to prevent forcing of the locking dog upward in the event the setscrew 164 may be surreptitiously removed by drilling or the like. A protective angle bracket 167 is spot-welded or otherwise attached to the lock plate 59 and overlies the locking dog to protect the same.

A hard steel protective plate 168 (FIGS. 4 and 16) is located on the inner side of the lock plate 59 between the upper clip 169 and angle clip 170 and the pair of similar lower clips 171. An angular clip 172 (FIGS. 6 and 18) is fixed to the outer side of the lock plate 59 and contacts the antiwedge plate 56. Protective angle brackets 173 (FIGS. 6, 15 and 18) upon the inner side of the lock plate 59 extend over the connections between the side bolts 113 and actuating arms 114.

The lower end of the gang-lock mechanism for the lowermost gang-lock control rod 149 (FIG. 17) is slidably located through a tubular guide 174 carried by a block 175 mounted upon the lowermost lock plate 59. The lower end portion of the rod 149 is reduced in diameter as indicated at 176. A cup 177 is mounted in the lower steel reinforcing plate 153 and axially aligned with the tubular guide 174. The web 54 is reinforced at the bottom of the cup 177 as indicated at 178. A steel ball 179 is loosely located in the cup 177 and a small plug 180 is rigidly mounted in the cup, a coil spring 181 being interposed between the same and the shoulder 182 on the lower end portion of the control rod 149.

The spring 181, small plug 180 and lower portion of the control rod 149 are protected by a steel tube 183 which loosely surrounds the same. Anyone trying to drill into the spring 181, lower end of the control rod 149, or small plug 180 would be prevented from doing so by the loosely mounted steel tube 183 which would turn upon its axis when contacted by a drill. Anyone trying to drill upward from the bottom would be deterred by the steel plates 44 and 184. If these two plates and the reinforcement 178 at the bottom of the cup are penetrated the drill encounters the ball 179 which rotates preventing the drill from cutting therethrough.

When the parts are in locked position, as shown in FIGS. 3, 4 and 5, the lock bolt 121 of the combination lock 67, backed up below by the back-up tab 126 is located in the path of the stop flange 98 upon the cam plate 71 in the main locking drawer thus preventing counterclockwise rotation of the cam plate to operate the gang-lock mechanism to unlocked position by rotating the handle 78 of the main locking drawer.

The locking dog 163 upon the control rod 149 in each of the auxiliary drawers will be located in the path of the shoulder 125*a* upon the cam plate 71*a* thus pre-

venting rotation of the cam plate **71***a* by turning the handle **78** of either of the auxiliary drawers.

When the dial **185** is operated to unlock the combination lock **67**, the combination lock bolt **121** will be withdrawn from the path of the shoulder **125** of the cam plate **71** in the main locking drawer. Then by turning the handle **78** of the main locking drawer in the proper direction the gang-lock mechanism will be moved to unlocked position as shown in FIG. **15** and the main locking drawer may be pulled open by the grab handle **186** in usual manner. To then open any of the auxiliary drawers it is only necessary to rotate the cam plate **71***a* thereof in the proper direction by the handle **78** thereof to withdraw the lock bolts after which the drawer may be opened by the pull handle **186** thereof. As shown in FIG. **15**, when a drawer is unlocked the hooked end **138** of the corresponding detent **135** will drop into the notch **139** of the corresponding actuating arm **114** holding the lock bolts in unlocked position.

In accordance with the invention, a security file is provided in which the same cabinet and gang-lock mechanism may be used for both insulated and noninsulated files so that the same mechanical and metal assemblies can be made for both classes of files on the same production line.

Also, the top and bottom dual locking bolts are increased in diameter and located closer to the corners of the drawer to provide a more rigid drawer head, so as to resist bending or prying from the side edges when in locked position.

The increased diameters and lengths of the side bolts provide connections thereof to the actuating arms that overlap the lock plate to assist in resisting bending of said side bolts.

The spring-biased detent which engages one actuator arm of a side bolt in each drawer holds the lock bolts in unlocked position and prevents locking of the same when a drawer is open and is automatically tripped when the drawer is closed so that the bolts may be moved to locked position.

The cover for the gang-lock locking bar bolt protects its pivotal connection with the cam plate, and the balls-in-plastic protective plates surrounding the combination lock protect the same. The spring-biased U-shaped trigger, having a comparatively short blocking arm and a comparatively long release arm, located in each mullion means prevents movement of the gang-lock mechanism when a drawer is open, and is automatically released when the drawer is closed. The inner duplex wall forced entry-resistant shell comprising an outer aluminum sheet and an inner abrasive steel sheet forms means to defeat forced entry by a hole saw as well as by a wedge instrument. Finally, all of the locking bolts are protected by the reinforcing angles, and the ends of the side bolts and upper lock bolts also are protected by the loosely mounted discs. In addition, the lower end of the lowermost control rod of the gang-lock mechanism is protected by the loosely mounted ball.

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 words are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiment of the improved construction illustrated and described herein is by way of example, and the scope of the present invention is not limited to the exact details of construction.

Having now described the invention, the construction, operation, and use of the file construction, and the advantageous, new and useful results obtained thereby; the new and useful construction, and reasonable mechanical equivalents thereof obvious to those skilled in the art, are set forth in the appended claims.

I claim:

1. Security file construction including cabinet means open at the front; the cabinet means including an outer shell and a spaced inner shell, the inner shell being duplex-wall forced-entry-resistant shell, including an outer sheet of aluminum and an inner sheet of abrasive steel; mullion means dividing the open front into a series of drawer-receiving compartments one above another; a file drawer movably mounted in each compartment, the file drawers including a main locking drawer and at least one adjacent auxiliary drawer; each file drawer having a drawer front head, each drawer front head including a front plate, a hard steel anti-wedge plate spaced inwardly from the front plate, a back plate spaced inwardly from the anti-wedge plate, and a continuous web around the edges of the front plate, anti-wedge plate and back plate; gang-lock mechanism extending vertically within the drawer front heads between the anti-wedge plates and back plates, the gang-lock mechanism including spaced upper and lower pairs of lock bolts, one lock bolt being movably mounted in a corner portion of each drawer head, a tie strap connected to each pair of lock bolts, a bolt strap rigidly connected to each tie strap except the lower tie strap in the main locking drawer, a locking bar bolt rigidly connected to said lower tie strap in the main locking drawer; bolt actuating means including cam plate means rotatably mounted in each drawer head, and means normally spring biasing said cam plate means to locked position; operating handle means connected with each cam plate means for rotating the same; means for pivotally connecting each bolt strap and said locking bar bolt to the corresponding cam plate means; each mullion means between adjacent drawers having a bolt receiving opening, a plunger in each bolt receiving opening, means normally spring-biasing said plungers to unlocked position, a plunger operating bolt connected to the lower tie strap in the main locking drawer and contacting the next adjacent lower plunger, a control rod vertically slidably mounted in each auxiliary drawer, the ends of said control rod contacting the adjacent upper and lower plungers, means normally spring-biasing said control rod to unlocked position; a pair of horizontally disposed side bolts in each drawer front head, a bolt actuating arm connected to the inner end of each side bolt; and means pivotally connecting said actuating arm, to diametrically opposite points on the adjacent cam plate means.

2. Security file construction as defined in claim **1**, in which reinforcing angular members are rigidly attached to the anti-wedge plate in each drawer head; and openings formed in said angular members through which the upper, lower and side lock bolts move between locked and unlocked positions.

3. Security file construction as defined in claim **1**, in which a lock plate is mounted in each drawer front head between the anti-wedge plate and the back plate; and in which the side bolts have inner end portions

overlapping the lock plate, whereby the side bolts are reinforced against bending by the lock plate.

4. Security file construction as defined in claim 1, in which the cabinet means has side walls, in which cups are provided in the cabinet side walls, in which the outer ends of the side bolts are received in said cups; in which steel side plates extend over the outer ends of said cups; and in which a steel disc with convex sides is loosely rotatably mounted in each cup beyond the end of the adjacent side bolt.

5. Security file construction as defined in claim 1, in which a lock plate is mounted on each drawer front head between and spaced from the anti-wedge plate and the back plate; in which bracket means are located on the lock plate adjacent one side bolt; in which a detent is pivoted intermediate its ends upon said bracket means; in which the detent has one hook end; in which a notch is formed in the adjacent actuating arm receiving said hook end when the lock mechanism is in unlocked position and the drawer is open; and in which a release pin is mounted in the cabinet engaging the other end of the detent to remove said hook end from said notch when the drawer is closed.

6. Security file construction as defined in claim 1, in which a lock plate is located between and spaced from the anti-wedge plate and the back plate of each drawer front head; in which an inverted channel-shaped cover is located over and around said locking bar bolt and the pivotal connection thereof to the cam plate; in which means connects one edge portion of said channel-shaped cover to the lock plate; and in which steel reinforcing plate means extends and is mounted within said channel-shaped cover.

7. Security file construction as defined in claim 6, in which the means connecting the channel-shaped cover to the lock plate includes an angular terminal flange on one side of the channel-shaped cover and screws attaching said terminal flange to the lock plate; and in which a steel protective bar is welded to the lock plate at the edge of said terminal flange.

8. Security file construction as defined in claim 1, in which a combination lock is mounted in the drawer front head of the main locking drawer; in which the combination lock has a locking bolt engageable with the cam plate normally preventing the cam plate from moving to unlocked position when said combination lock locking bolt is in locked position.

9. Security file construction as defined in claim 1, in which a combination lock is mounted in the drawer front head of the main locking drawer; and in which balls-in-plastic protective plates are located in the drawer front head surrounding and protecting said combination lock.

10. Security file construction as defined in claim 1, in which insulation material fills the space between the outer and inner shells.

11. Security file construction as defined in claim 1, in which sound deadening liners are attached to the top, rear, and side walls of the outer shell between the inner and outer shells.

12. Security file construction as defined in claim 1, in which a tubular guide is mounted in the lowermost drawer front head spaced from the bottom of the drawer front head; in which the lower end of the lowermost control rod extends through said guide; in which a steel cup is mounted in the bottom of said drawer front head vertically aligned with said guide; in which a short shouldered plunger is located in said cup; in which coil spring means is interposed between said short shouldered plunger and the lower end portion of the control rod and normally holds said short shouldered plunger in said cup; in which a steel tube loosely surrounds said coil spring between said tubular guide and said cup; and in which a steel ball is loosely rotatable within said cup.

13. Security file construction as defined in claim 1, in which the cam plate means in each auxiliary drawer front head has a shoulder normally located in upright position at the top of the cam plate when the gang-lock mechanism is in locked position; in which an angular locking dog is provided having a horizontal leg and a depending leg; in which set screw means secures the horizontal leg to the corresponding control rod; in which the depending leg normally over-hangs said upright shoulder on the cam plate when the parts are in locked position; and in which a steel pin is angularly mounted in said control rod above the horizontal leg of said locking dog.

14. Security file construction as defined in claim 1, in which a T-shaped steel protective plate is fixed to the cam plate in the main locking drawer and is so positioned that when the cam plate is moved to unlocked position the T-shaped protective plate over-hangs the pivoted end portion of the bolt strap and the adjacent side bolt actuating arm.

15. Security file construction as defined in claim 1, in which each plunger has a vertically spaced pair of shoulders; in which a U-shaped trigger is located in each mullion means for holding the gang-lock mechanism in unlocked position when any drawer is open; in which the trigger has a relatively short blocking arm extending into the adjacent bolt receiving opening in the mullion means and between said spaced shoulders of the corresponding plunger when said drawer is open; in which the trigger has a relatively long release leg spring-biased normally to project through and beyond the mullion means with an end portion located in the path of movement of a flange on the adjacent drawer when such drawer is moved from open to closed position; in which said blocking leg when in normally projected position blocks said plunger from being moved through the mullion means opening; and in which said drawer flange engages said release leg to move said blocking leg out of blocking position when said drawer is moved from open to closed position, whereby the gang-lock mechanism cannot be locked unless all drawers are closed.

16. In security file construction of a type in which a cabinet has top, bottom and side walls open at the front with mullion means dividing the open front into a series of one above another drawer-receiving pigeonhole compartments, in which offset portions of the cabinet walls and mullion means define an open frame end for each pigeonhole compartment, in which a file drawer having a front head is movably mounted in each compartment with offset head edge portions adapted to be seated in and shaped to conform to corresponding cabinet wall and mullion means frame offset portions, and in which a gang-lock mechanism is provided for the drawers; the improvement including in each drawer front head, a front plate, a steel anti-wedge plate spaced inward of and substantially co-extensive with the front plate, a back plate spaced from the anti-wedge plate, and a continuous web edge member ex-

tending around and joined to the top, bottom and side edges of the front and back plates, the web member having an offset therein between the front and back plates adjacent the edges of the anti-wedge plate; spaced upper and lower pairs of lock bolts and horizontally movable side bolts mounted in and movable in each drawer head between the anti-wedge plate and back plate, one bolt of each pair being mounted adjacent a corner of the drawer head, a tie strap connected to each pair of upper and lower lock bolts; reinforcing angles located adjacent the continuous web member rigidly mounted on and extending rearwardly of the anti-wedge plate toward the back plate, one angle for each bolt; and aligned openings for each bolt through which such bolt moves between locked and unlocked positions formed in each angle and in an adjacent portion of the web member.

17. In security file construction of a type in which a cabinet has top, bottom and side walls open at the front with mullion means dividing the open front into a series of one above another drawer-receiving pigeonhole compartments, in which offset portions of the cabinet walls and mullion means define an open frame end for each pigeonhole compartment, in which a file drawer having a front head is movably mounted in each compartment with offset head edge portions adapted to be seated in and shaped to conform to corresponding cabinet wall and mullion means frame offset portions, and in which a gang-lock mechanism is provided for the drawers; the improvement including in each drawer front head, a front plate, a steel anti-wedge plate spaced inward of and substantially co-extensive with the front plate, a back plate spaced from the anti-wedge plate, and a continuous web edge member extending around and joined to the top, bottom and side edges of the front and back plates, the web member having an offset therein between the front and back plates adjacent the edges of the anti-wedge plate; a lock plate in each front head intermediate the anti-wedge plate and back plate; horizontally disposed side bolts in each front head operated by the gang-lock mechanism; said side bolts being mounted in and movable in each drawer head between the lock plate and back plate and adjacent the lock plate; and the side bolts having inner end portions overlapping the adjacent lock plate and reinforced by the lock plate against bending.

18. Security file construction as defined in claim **16** in which a lock plate is located in each front head intermediate the anti-wedge plate and back plate; in which the horizontally movable side bolts are mounted in and movable in each drawer head between the lock plate and back plate and adjacent the lock plate; and in which the side bolts have inner end portions that overlap the adjacent lock plate, whereby the overlapping arrangement and angles reinforce the side bolts against bending.

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