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2,569,254

INSULATED POSTING TRAY CABINET

Filed March 15, 1949

3 Sheets-Sheet 1

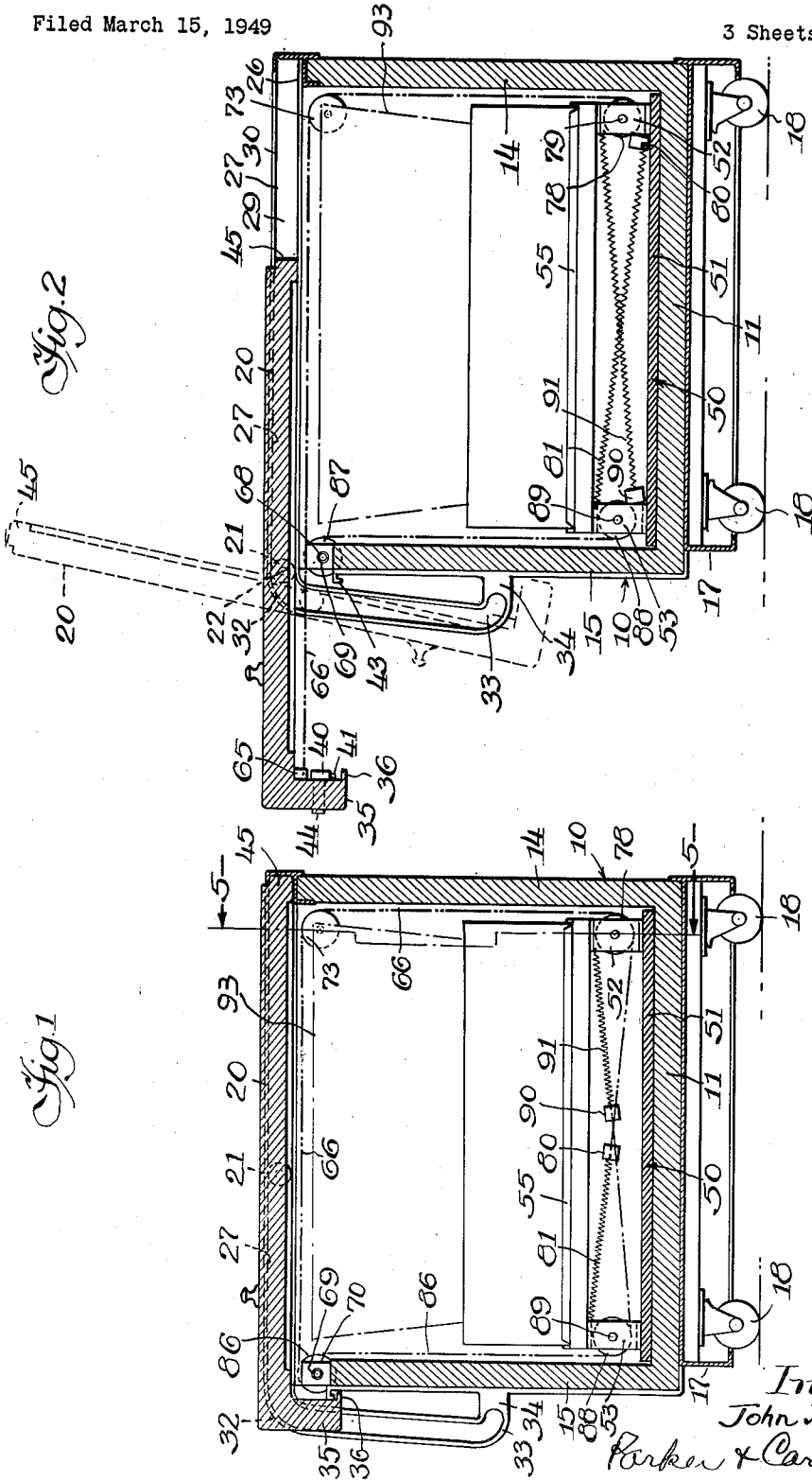


Fig. 1

Fig. 2

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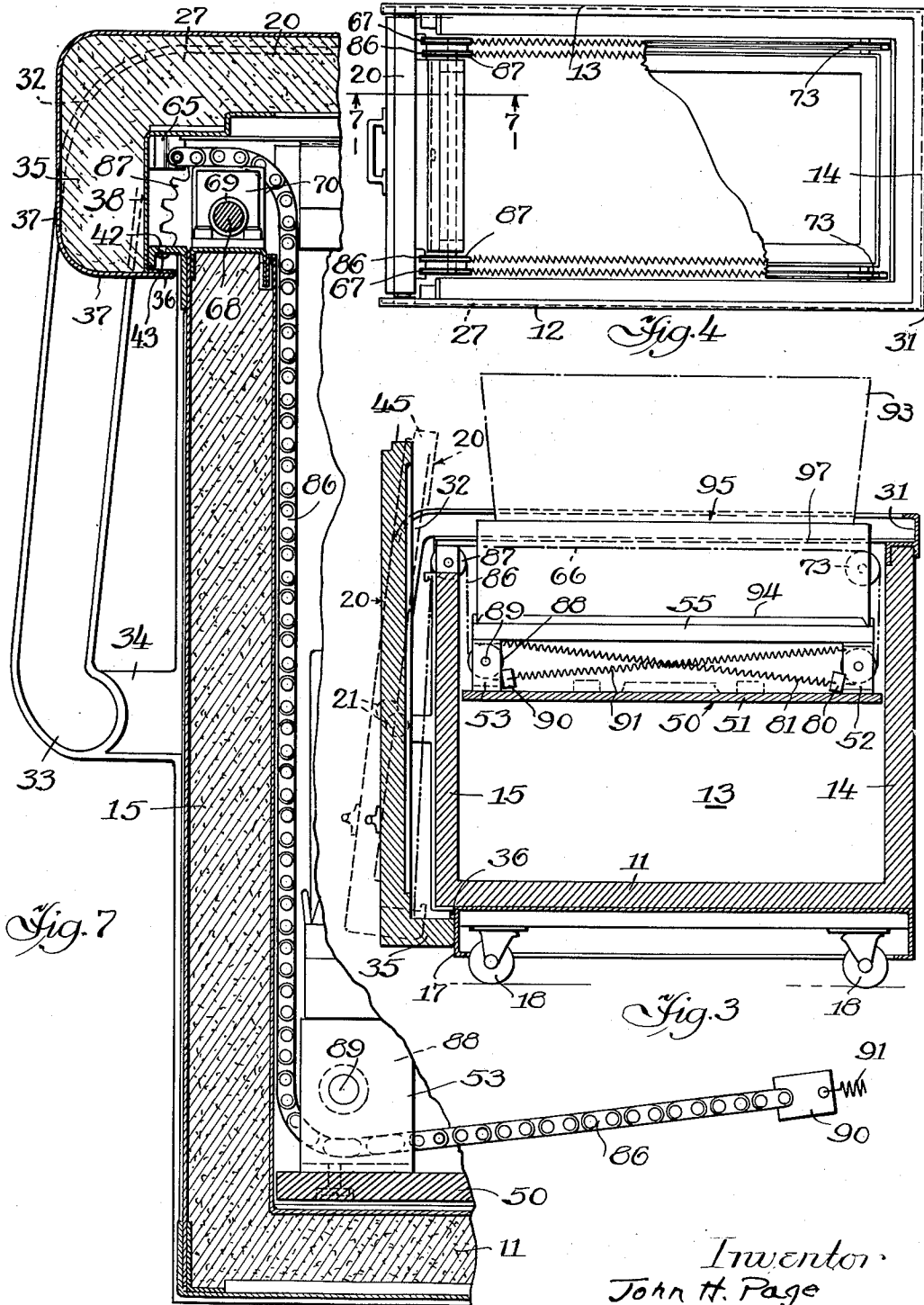
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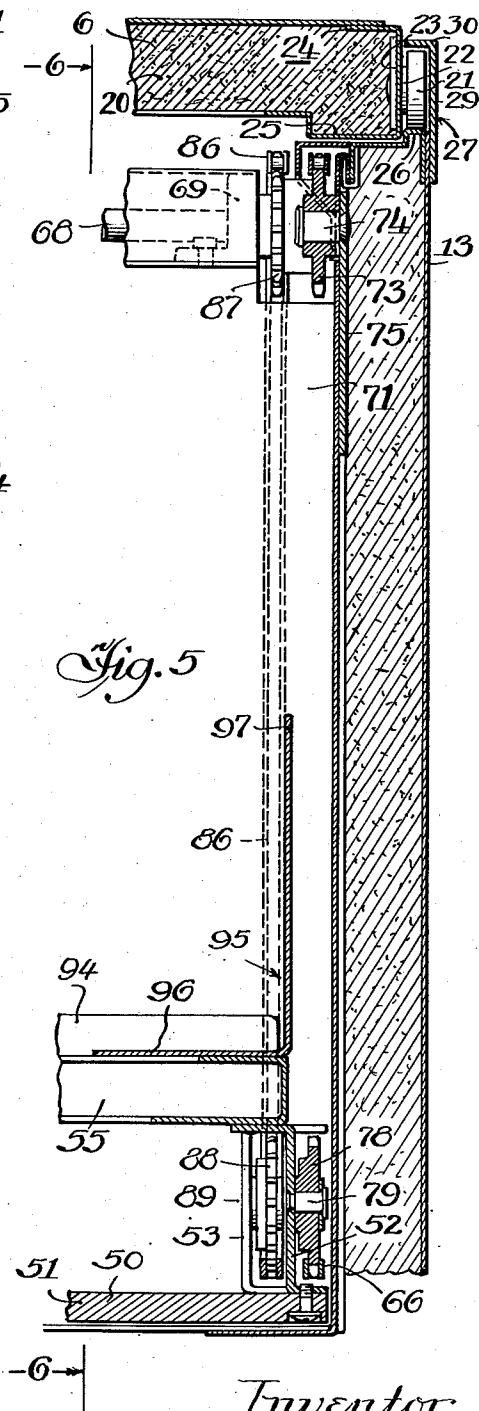
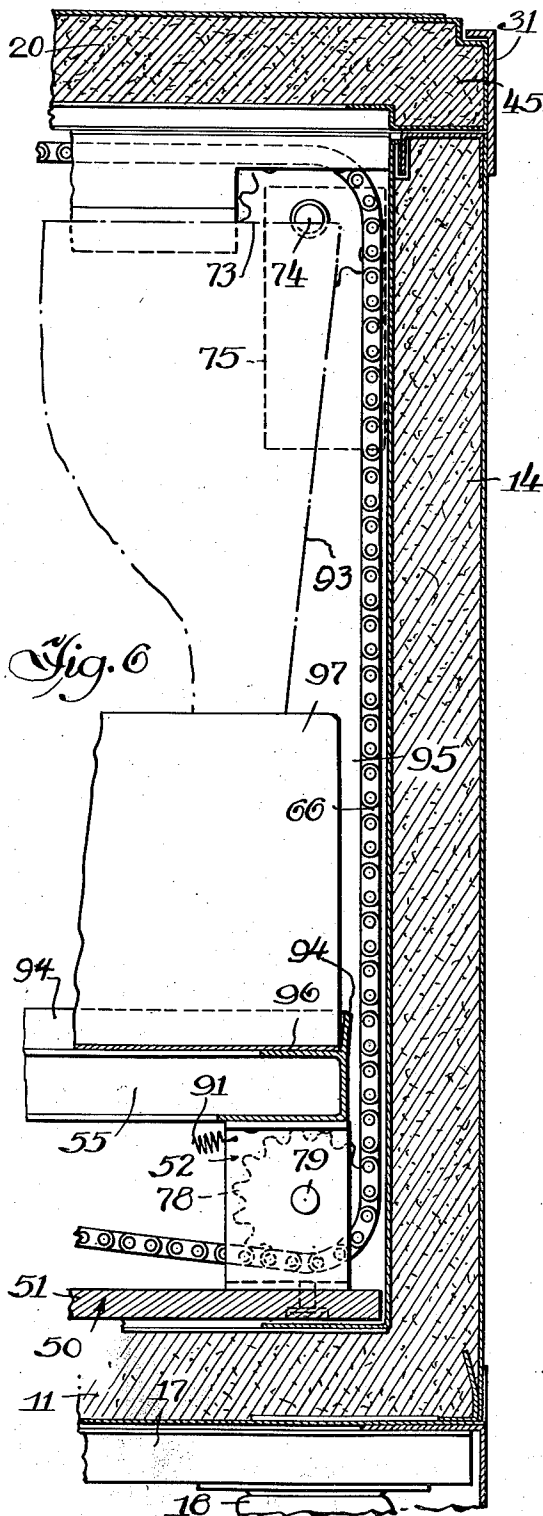
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3 Sheets-Sheet 3



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# UNITED STATES PATENT OFFICE

2,569,254

## INSULATED POSTING TRAY CABINET

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9 Claims. (Cl. 312-272)

1 This invention relates to improvements in record-posting tray cabinets and more particularly to insulated fire-resisting cabinets of the character mentioned, having a top closure member capable of removal therefrom and automatically operable to elevate and expose the records contained within the cabinet for convenient reference.

One of the principal objects of the invention is to provide a cabinet of the character above described with an improved and simplified operating connection between the top closure member and a record-supporting tray for elevating the latter when the closure member is removed from its normal position overlying the top of the cabinet.

A further object is to provide an operating connection between the top closure member and the record-supporting tray whereby the latter is supported for simultaneous raising and lowering in the cabinet at a plurality of points adjacent each of the four corners thereof so as to eliminate any tendency of tilting action or binding of the supporting tray while it is being raised or lowered in the cabinet.

Still another object is to provide an improved and simplified operating connection between the top closure member and the tray-elevating mechanism wherein the closure member serves as a counterbalance for the tray-elevating mechanism to facilitate the opening and closing of the cabinet.

Other objects of the invention will be apparent from time to time as the following description proceeds.

The invention may best be understood by reference to the accompanying drawings in which:

Figure 1 is a sectional view taken from one side of a cabinet constructed in accordance with my invention and showing the closure member or cover in fully-closed position.

Figure 2 is a view similar to Figure 1 but showing the cover in full lines in partially-removed relation to the cabinet and also showing the cover in dotted lines in a slightly-advanced position of removal in which it has been tilted into a generally upright position along one end of the cabinet.

Figure 3 is a view similar to Figure 2 but showing the cover in fully-removed and upright position along one end of the cabinet and with the tray-elevating mechanism supporting the records within the cabinet raised to its uppermost position, to expose the records at the top of the cabinet.

2 Figure 4 is a top plan view of the cabinet with the parts in the position shown in Figure 3 but with the upper portion of the record-supporting tray removed to show portions of the elevating chains and tension springs forming part of the elevating mechanism.

Figure 5 is an enlarged detailed section with intermediate parts broken away taken on line 5-5 of Figure 1.

Figure 6 is an enlarged detailed section taken on line 6-6 of Figure 5.

Figure 7 is an enlarged detailed section taken on line 7-7 of Figure 4.

Referring now to details of the embodiment of my invention illustrated in the accompanying drawings, the cabinet indicated generally at 10 includes a single compartment, open at its upper end, consisting of a bottom wall 11, side walls 12, 13 and end walls 14, 15. In the form shown, the side, end and bottom walls are formed of a single monolithic casting of a suitable fire-resisting material, such as gypsum. The inner and outer surfaces of these side walls may be sheathed or covered as usual by thin metallic plates which need not be enumerated, excepting as hereinafter specifically indicated. The upper end of the compartment is closed by a cover 20 also formed of a suitable casting of fire-resisting material, also having its surfaces covered by metallic sheathing. The monolithic compartment just described may be supported for movement from place to place on a suitable metal-base frame indicated generally at 17, and having caster rollers 18, 18 adjacent the four corners thereof.

The cover 20 is provided with a pair of rollers 21, 21 at opposite sides thereof, each rotatable on a laterally-extending stub shaft 22, supported on a plate 23, embedded in the casting at one side of the cover 20. Each plate 23 may be partially enclosed by the overlapping upper and lower flanged sheets 24, 25 forming part of the metallic sheathing for the cover, as shown in Figure 5.

The two rollers 21, 21 at opposite sides of the cover are arranged for movement along opposed inwardly-opening guideways 27, 27 extending along the upper margins of the side walls 12, 13 of the cabinet. As shown herein, these guideways are defined by bottom rails 26, extending along the outer edges of the side walls 12, 13, and upright metal strips 29, 29 having inwardly-bent flanges 30 forming the upper rails of said guideways.

The two guideways 27 terminate at a horizon-

tally-aligned end rail 31, extending along one end wall 14 of the compartment. At the opposite end of the compartment, the guideways are curved downwardly at 32, and thence extend along the end wall 15 in slightly-diverging parallel paths in relation to the outer face of said end wall. Their lower ends terminate in inwardly-turned arcuate portions 33, 33 fixed to brackets 34, 34 extending from opposite sides of the end wall 15 at a level slightly more than one-half the vertical height of said wall.

The guideways 27 are arranged to permit the cover 20, under control of the rollers 21, 21, to be moved lengthwise of the compartment from its fully-closed position, as shown in Figure 1, to its fully-opened position, shown in full lines in Figure 3. During the initial opening movement of the cover, the latter slides horizontally toward the end wall 15 until it reaches the position where the rollers 21 reach the downwardly-curved portions 32 of the guideways 27, as indicated in full lines in Figure 2. Further movement of the cover is then effected by tilting the latter into a generally upright position, as indicated by dotted lines in Figure 2. The cover is then lowered along the end wall 15 until the rollers 21, 21 reach the arcuate lower end portions 33 of the guideways, as indicated in dotted lines in Figure 3. The rollers finally move inwardly to the extreme ends of the arcuate portions 33, in which position the cover may come to rest in an upright position substantially parallel with and close to the end wall 15, as shown in full lines in Figure 3.

The outer end of the cover 20 is preferably provided with a transverse marginal flange 35, formed integrally with and at right angles to the molded body portion thereof. The flange 35 also has an intumed lip 36 at its bottom end, herein formed by the metal sheets 37 and 38, which comprise the outer and inner sheathing of the cover, as shown in detail in Figure 7.

On the under face of the flange 35 is mounted a latch housing 40, therein adapted to engage a detent 42 formed in a flanged strip 43 fixed transversely along the end wall 14 of the compartment, when the cover is in fully-closed position, as shown in Figure 1. The latch 41 may be released by any suitable control member, indicated generally at 44, extending through the cover flange 35. Details of the latch control means need not be shown nor described herein as it forms no part of the invention.

The intumed lip 36 at the lower end of the cover flange 35 is adapted to engage and fit closely beneath the transversed flanged strip 43 on the end of the compartment when the cover is in fully-closed position.

The end of the cover 20, opposite the flanged portion 35, is formed with a downwardly-offset end portion 45 adapted to have close-fitting engagement within the transverse channel strip 31 on the end wall 14 when the cover is in fully-closed position.

As will be seen from Figure 4, the cover 20 is slightly narrower than the over-all width of the compartment and fits between the guideways 27, 27 with the bottom side margins of the cover closely nested between the bottom rails 26, 26 which project upwardly along the outer edges of the side walls 12 and 13. The arrangement, just described, insures close fitting of the cover along all the upper margins of the compartment when the cover is in fully-closed position, to protect the interior of the cabinet in case of fire.

The elevating, record-supporting platform is

indicated generally at 50, and includes a rectangular bottom plate 51 extending over the entire area of the cabinet's interior, excepting for a slight clearance around its edges. This forms an air-cushion which prevents too rapid elevating or lowering of the platform in the event of an unbalanced load, as will hereinafter more fully appear.

Mounted at the four corners of the plate 51 are two pairs of upstanding brackets 52, 52 and 53, 53 upon which is mounted frame member 55 for supporting a record tray. Details of the record tray will hereinafter be more fully described.

Two pairs of roller chains are anchored to blocks 65, 65 fixed on the under side of the cover 20 at its juncture with end flange 35. The outer chains 66 of each pair are trained over sprockets 67 fixed at the outer ends of a rotatable shaft 68, which extends the full width of the compartment, and is journaled in bearings 69, 69 suitably fixed to the upper edge of the end wall 15. The bearings 69, 69 and the shaft 68 are preferably enclosed in a metal housing 70, forming a continuation of the end wall 15, as shown in Figures 1, 2, 3 and 7. The outer chains 66 then extend horizontally through protection shields or housings 71, 71 fixed along the inner faces of the side walls 12 and 13 at their upper edges. The chains 66 are then trained over sprockets 73, 73 rotatably mounted on stub shafts 74, 74 carried by supports 75, 75 fixed to the side walls 12 and 13 closely adjacent the end wall 14, as shown in Figure 6. From thence, the chains 66 extend downwardly to sprockets 78, 78 rotatably supported on horizontal stub shafts 79, 79 carried by the outermost pair of corner supports 52, 52 of the elevating platform. The chains 66, 66 then extend inwardly, in an upwardly inclined direction, to blocks 80, 80. Coil springs 81, 81 are hooked to the blocks 80, 80 and their free ends are anchored to the opposite pair of corner supports 53, 53 so as to form yieldable continuations of the chains 66, 66 just described.

The innermost pair of chains 86, 86 are trained over sprockets 87, 87 also fixed on the shaft 68 and, from thence, extend downwardly to sprockets 88, 88 rotatably supported on stub shafts 89, 89 carried by the corner supports 53, 53 adjacent the end wall 15. The second pair of chains 86, 86 then extend inwardly and are connected to blocks 90, 90 which, in turn, are connected to coil springs 91, 91 anchored at their free ends to the opposite corner brackets 52, 52 of the platform.

Records or files, indicated in dotted lines at 93, are supported on a tray 95, herein consisting of a bottom plate 96 and upstanding end-wing portions 97, 97. The tray 95 is preferably fitted on upstanding marginal flanges 94 of the open rectangular frame 55 so as to be readily removable therefrom when desired; as for instance, for the purpose of removing all of the records bodily from the cabinet, or to insert or remove auxiliary weights on the bottom plate 51 for counterbalancing the platform and records, as will hereinafter be more fully described.

The use and operation of the elevating mechanism and its cooperation with the cover may now be described as follows:

When the compartment is in fully-closed position, as shown in Figure 1, the record-supporting platform 50 is in its bottom-most position, at or adjacent the bottom of the compartment. The coil springs 81 and 91 maintain their respective chains 66 and 86 under slight tension. During

the initial opening movement of the cabinet, the cover is slid horizontally toward the end wall 15. The resulting pull on the chains 66 and 86 expands the springs 81 and 91 until the blocks 89 and 90 engage suitable stops, herein formed by the upright supports 52 and 53 on the platform. The chains and springs are preferably proportioned in length so that the blocks engage their respective stops at approximately the same time that the rollers 21 reach the arcuate portions 32 of the guideways 27, at the end wall 15, as shown in full lines in Figure 2. Any further movement of the cover will then exert a vertical pull through the chains 66 and 86 to start the elevating movement of the platform 50. As the rollers 21 pass outwardly around the upper arcuate portions 32 of the guideways 27, the cover is tilted into an upright position, as indicated in dotted lines in Figure 2. The platform 50 can then be elevated, with the records carried thereby projecting above through the open top of the cabinet, while the cover is simultaneously being lowered along the end of the cabinet. When the cover reaches the position where the rollers 21 engage the lower arcuate portions 33 of the guideways 27, and finally come to rest against the lower end of said guideways, the cover can now be swung into an upright position parallel with the end wall 15, and with the end flanged portion 35 of said cover projecting beneath the proximate edge of the bottom wall 11, as shown in full lines in Figure 3. In this position of the cover, the elevating platform 50 has reached a level near the top of the compartment where the records are fully exposed for use or reference, as desired.

When the cabinet is to be closed, substantially the reverse action of the cover from that above described may be followed. It will be noted, however, that, while the cover is being moved vertically relative to the side wall of the cabinet during opening or closing of the latter, the cover serves as a counterbalance for the weight of the elevating platform and the records carried thereby, so that a minimum of effort is required either for opening or closing the cabinet. Consequently, the parts are arranged so that the cabinet can be closed in emergencies merely by pushing the upper end of the cover inwardly, so as to release its lower flanged end 35 from engagement with the bottom wall 11, as indicated in dotted lines in Figure 3. Thereupon, the cover can be raised to its tilting position at the upper edge of the cabinet with little or no effort while the platform is being lowered. The cover is then pivoted to a horizontal position and finally moved to its fully closed position. Sufficient tension on the springs 81 and 91 may be provided to effect this final horizontal closing movement of the cover without any assistance from the operator.

As the cover reaches the end of its closing movement, the spring pressed latch 41 will be automatically engaged in its locking detent 42, so that in an emergency only a few seconds are required to completely close and lock the cabinet.

While, under ordinary conditions, the weight of the records housed in the cabinet may be maintained at a fairly constant value, substantially counterbalanced by the cover 20, under some conditions where the weight of the records is insufficient, additional weights may be placed on the platform to provide the desired counterbalanced relationship. Such weights can conveniently be inserted in the space between the

frame 55 and the bottom plate 51 of the platform.

Although I have shown and described a certain embodiment for the purpose described, it will be understood that I do not wish to be limited to the exact construction shown and described, but that various changes and modifications may be made without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In a cabinet, a compartment having an opening at the top, and a cover therefor, guide means affording continuous sliding and tilting movement of said cover from its closed horizontal position over said opening to a fully open position along one side of the compartment, and vice versa, a record-supporting platform vertically movable in said compartment, and means operatively connecting said cover and said platform for raising the latter to a relatively exposed position by movement of said cover to fully open position, and lowering said platform when said cover is closed, said last-named means including a plurality of flexible members secured adjacent opposite ends of said platform, and guides for said flexible members at the opposite ends of said compartment adjacent the top thereof.

2. A cabinet in accordance with claim 1, wherein the flexible members are secured to the cover adjacent one end thereof, and said cover serves as a counterbalance for said record-supporting platform during vertical movement of the latter.

3. A cabinet in accordance with claim 1, wherein the flexible members each include yieldable sections adjacent their ends affording limited extension thereof while the cover is being initially removed and finally replaced by horizontal sliding movement along said top opening.

4. In a cabinet, a compartment having an opening at the top, and a cover therefor, guide means affording continuous sliding and tilting movement of said cover from its closed horizontal position over said opening to a fully open position along one side of the compartment, and vice versa a record-supporting platform vertically movable in said compartment, and a plurality of flexible members operatively connecting said cover and said platform for raising the latter to a relatively exposed position by movement of the cover to fully open position, and lowering said platform when said cover is closed, said flexible members each including yieldable sections adjacent the ends which are connected to said platform, to afford limited extension of said flexible members while the cover is being initially removed and finally replaced by horizontal sliding movement along said top opening.

5. In a cabinet, a compartment having an opening at the top, and a cover therefor, guide means affording continuous sliding and tilting movement of said cover from its closed horizontal position over said opening to a fully open position along one side of the compartment, and vice versa, a record-supporting platform vertically movable in said compartment and two pairs of flexible members operatively connecting said cover with said platform, one of said pairs of said flexible members being trained over guides adjacent that end of the compartment over which said cover moves during its sliding and tilting movement, and thence downwardly to the adjacent end of said platform, and the other pair of flexible members being trained over guides

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at both ends of said compartment and extending thence downwardly to the opposite end of said platform.

6. In a cabinet in accordance with claim 5, wherein said platform has guides adjacent the opposite ends thereof, and the lower terminal portions of said flexible members are trained under said guides and thence extend respectively to fixed abutments adjacent the opposite end of said platform, and the lower terminal portions of each of said flexible members, between their anchored ends and the respective guides on the platform under which they are trained, include yieldable spring members arranged for limited extension while the cover is being initially removed and finally replaced by horizontal sliding movement along the top opening of the compartment.

7. A cabinet in accordance with claim 6, wherein the yieldable spring members are of substantially equal yielding tension, and each of said flexible members have stop members thereon arranged to engage fixed abutments on said platform when the cover reaches its point of tilting movement at one side of the compartment.

8. In a cabinet, a compartment having an opening at the top, and a cover therefor, guide means affording continuous sliding and tilting movement of said cover from its closed horizontal position over said opening to a fully open position along one side of the compartment, and vice versa, said guide means including a pair of continuous guideways, one portion of which extends generally horizontally along opposite sides of the cabinet, and a second portion of which extends generally vertically of the cabinet at one end thereof, and projections at opposite sides of the cover intermediate its ends, movable along said guideways, a record-supporting platform vertically movable in said compartment and means including a plurality of flexible members operatively connecting said cover and said platform for raising the latter to a relatively exposed position when the cover is fully open and lowering said platform when said cover is closed, said flexible members each including yieldable sections adjacent the ends connected to said

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platform and arranged for limited extension while the inter-engaging projections of said cover are being moved along the generally horizontal portion of said guideways.

9. In a cabinet, a compartment having an opening at the top, and a cover therefor, guide means affording continuous sliding and tilting movement of said cover from its closed horizontal position over said opening to a fully open position along one side of the compartment, and vice versa, said guide means including a pair of continuous guideways, one portion of which extends generally horizontally along opposite sides of the cabinet, and a second portion of which extends generally vertically of the cabinet at one end thereof, and projections at opposite sides of said cover intermediate its ends, movable along said guideways, a record-supporting platform vertically movable in said compartment, means including a plurality of flexible members operatively connecting said cover and said platform for raising the latter to a relatively exposed position when the cover is fully open and lowering said platform when said cover is closed, said flexible members each including yieldable sections adjacent the ends connected to said platform and arranged for a limited extension while the inter-engaging projections of said cover are being moved along the generally horizontal portion of said guideways, and stop means for rendering said extensible portions ineffective when the projections on said cover are being moved along the generally vertically extending portion of said guideways, whereby said cover serves as a counterbalance for said platform during vertical movement of said cover.

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