April 23, 1935. C. F. WOLTERS ET AL 1,999,162

CARD INDEX CABINET

Filed Feb. 20, 1934 5 Sheets-Sheet 1

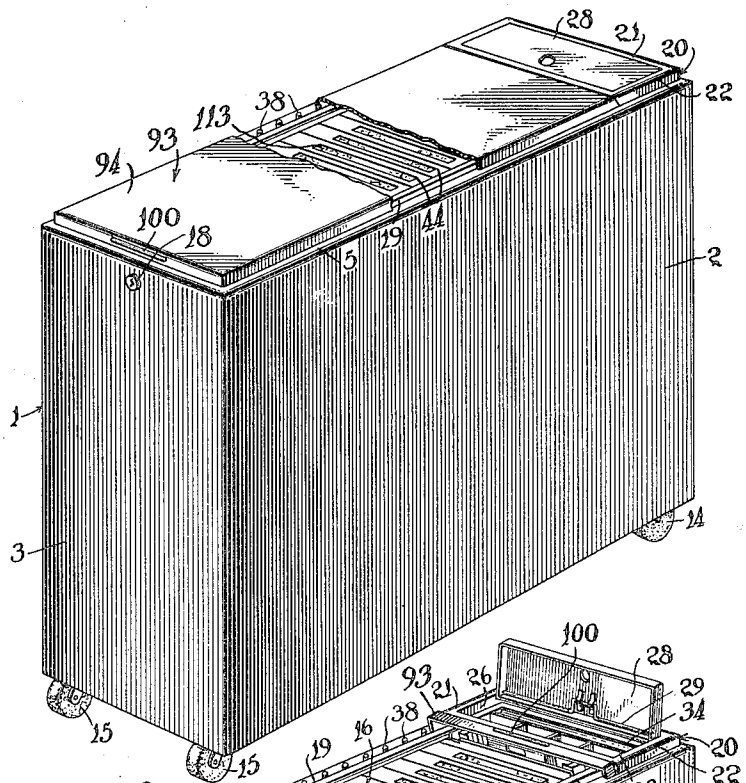



Fig. 1.

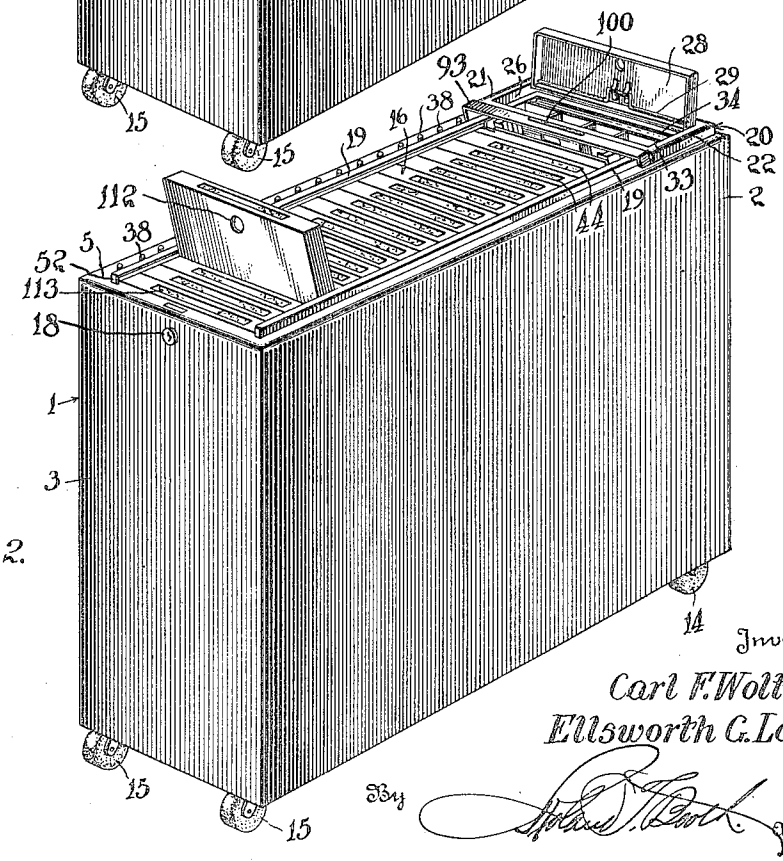



Fig. 2.

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CARD INDEX CABINET

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Fig. 3.

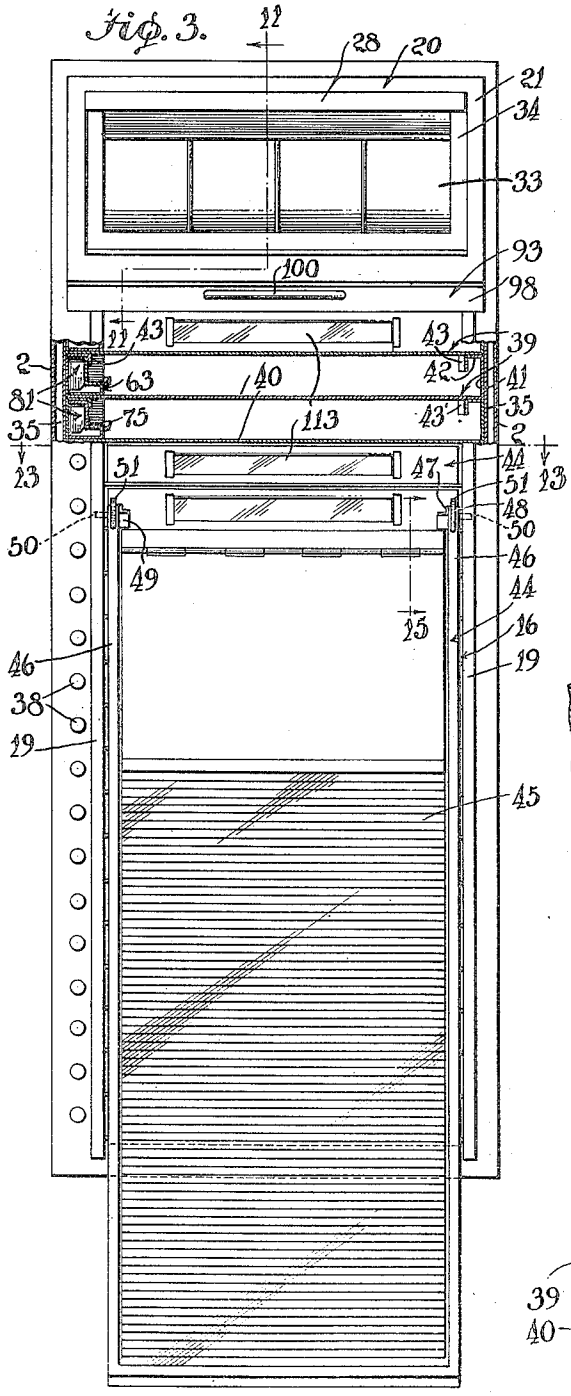
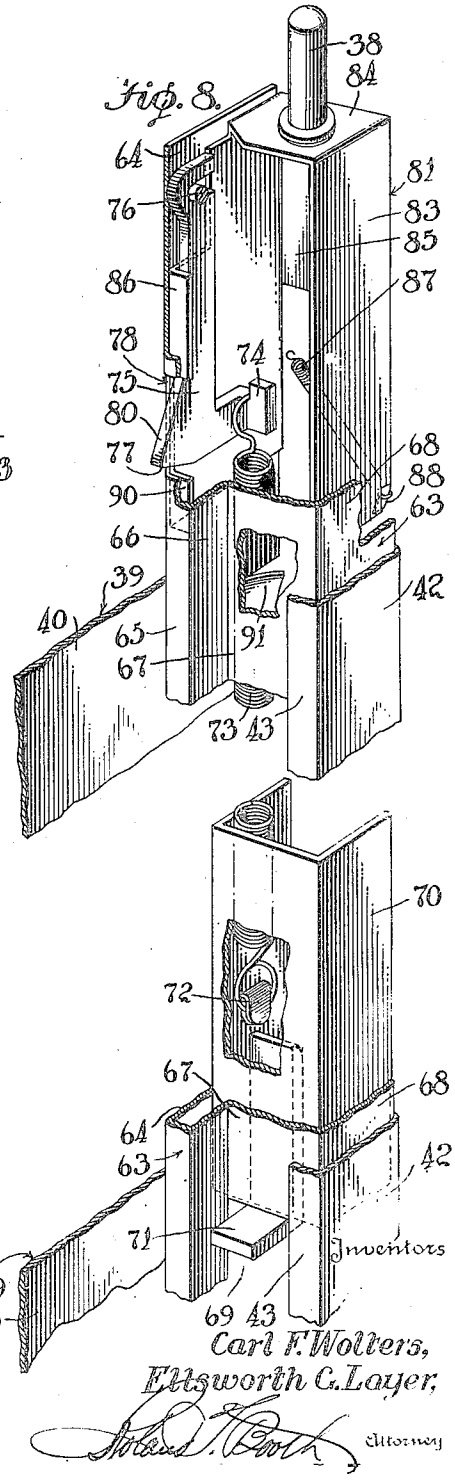



Fig. 8.




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CARD INDEX CABINET

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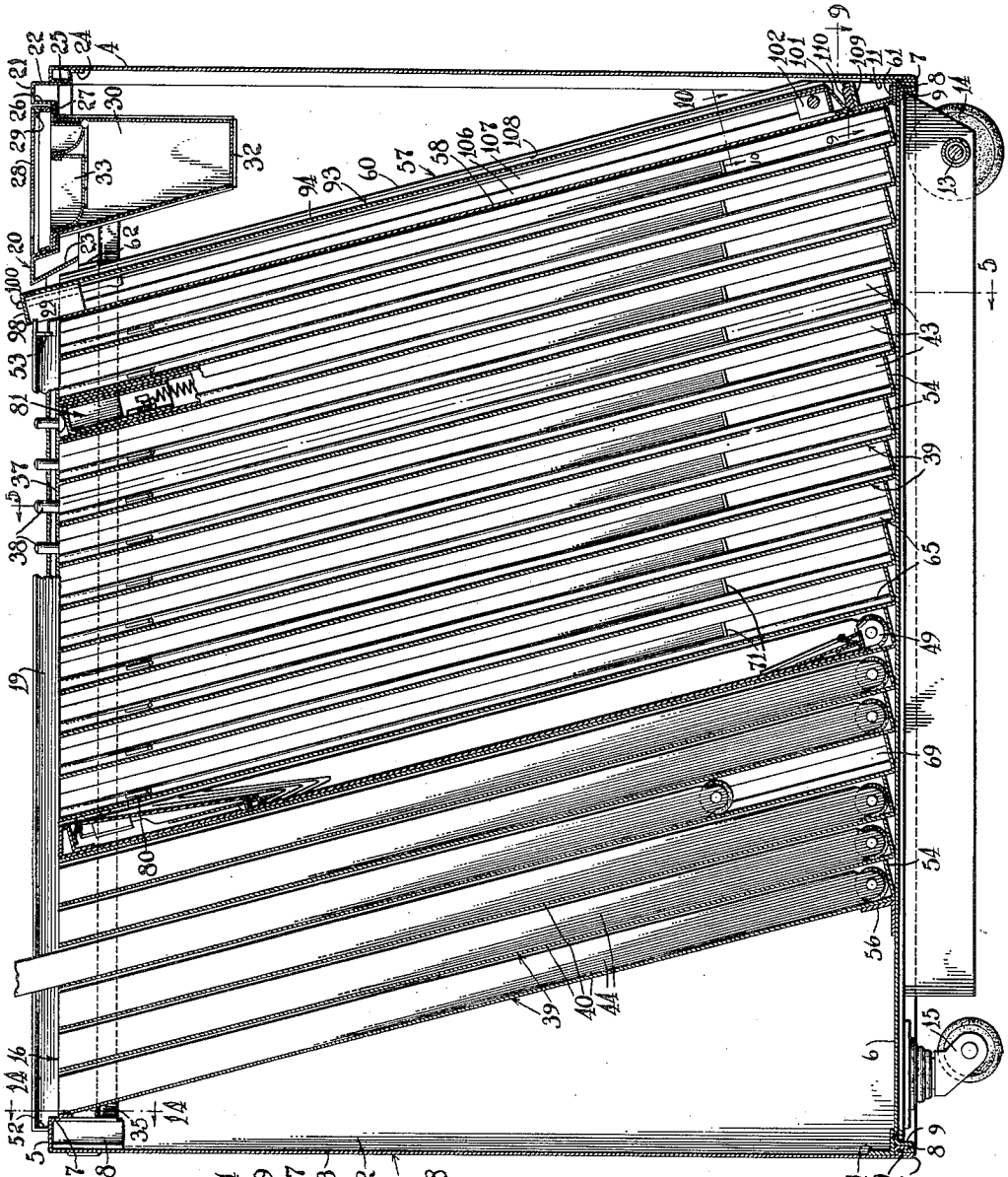


Fig. 4.

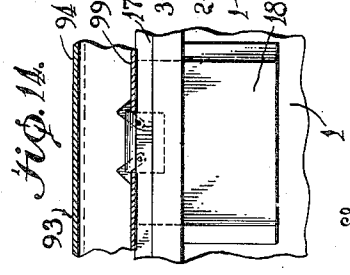


Fig. 14.

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CARD INDEX CABINET

Filed Feb. 20, 1934 5 Sheets-Sheet 4

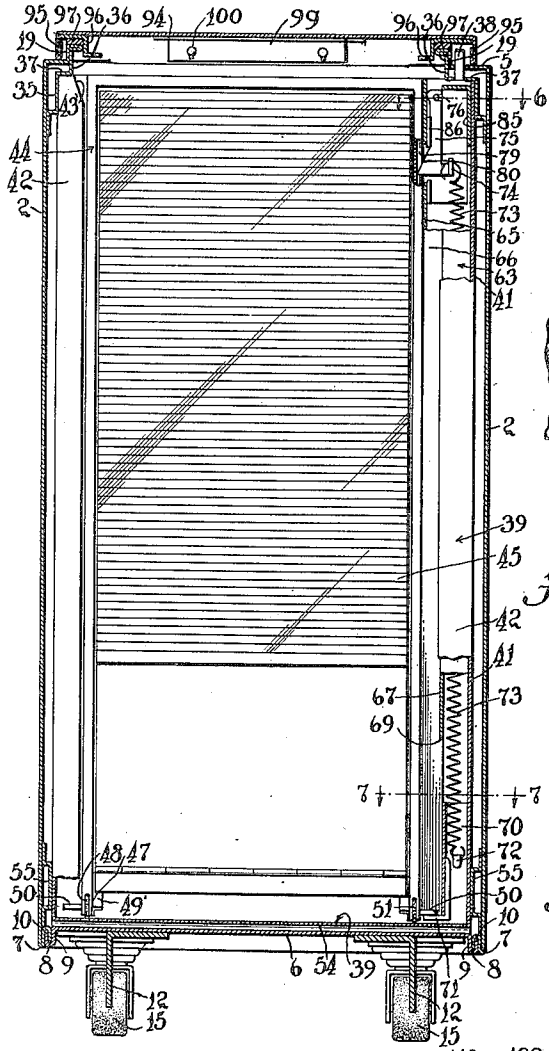


Fig. 5.

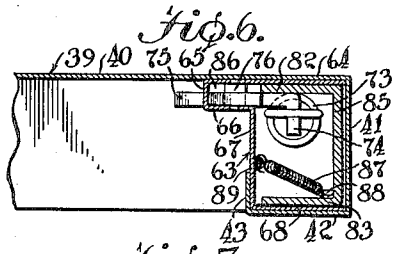


Fig. 6.

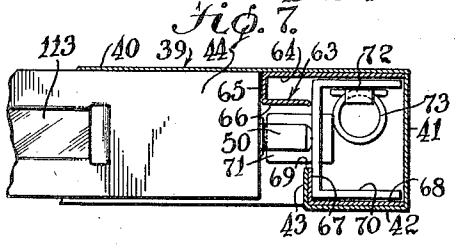


Fig. 7.

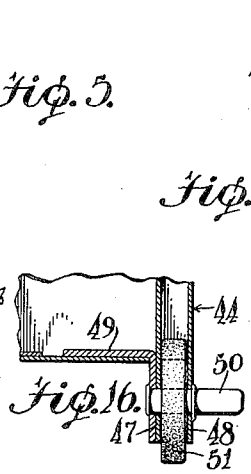


Fig. 16.

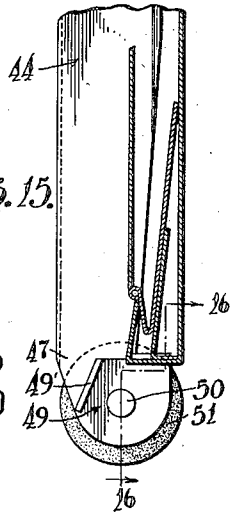


Fig. 15.

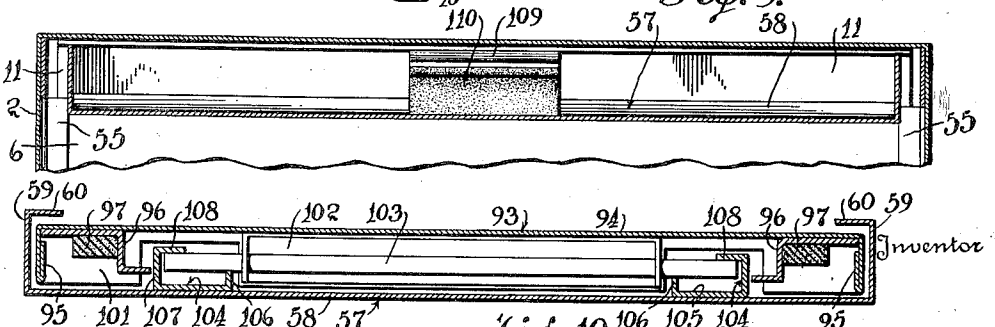


Fig. 9.



Fig. 10.

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CARD INDEX CABINET

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Fig. 11.

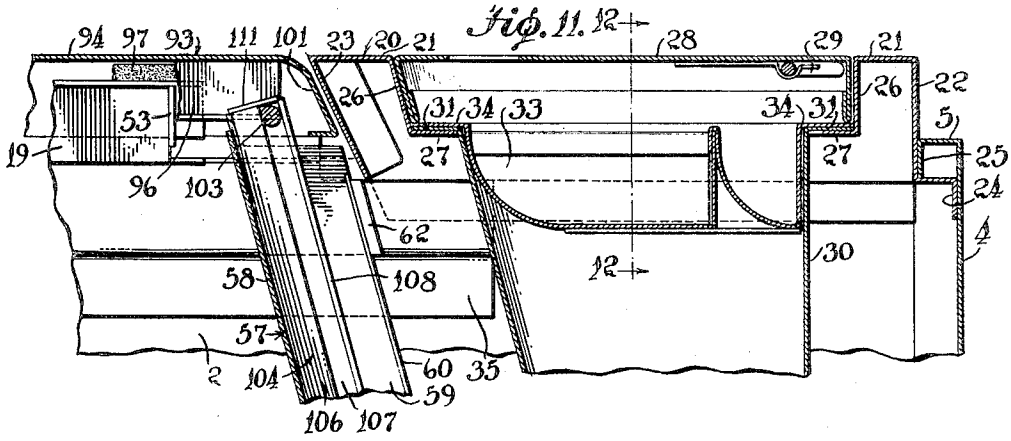
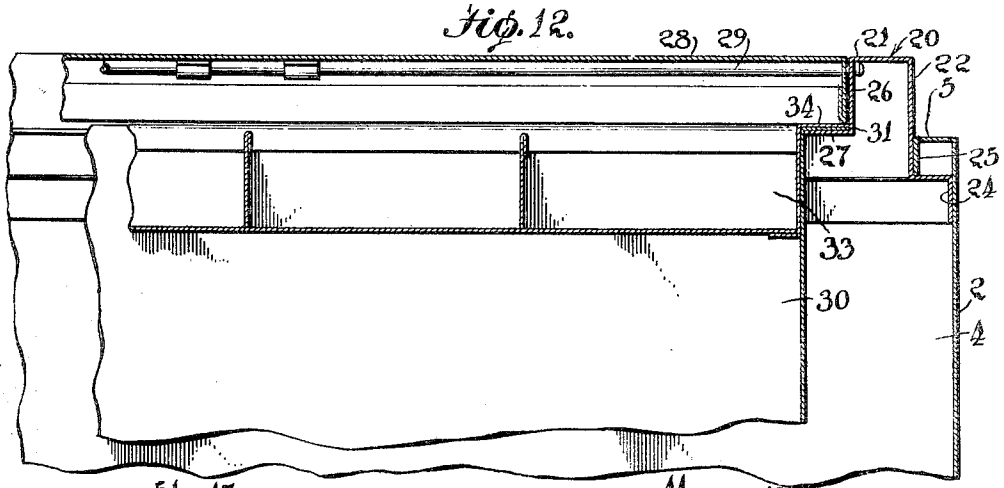



Fig. 12.



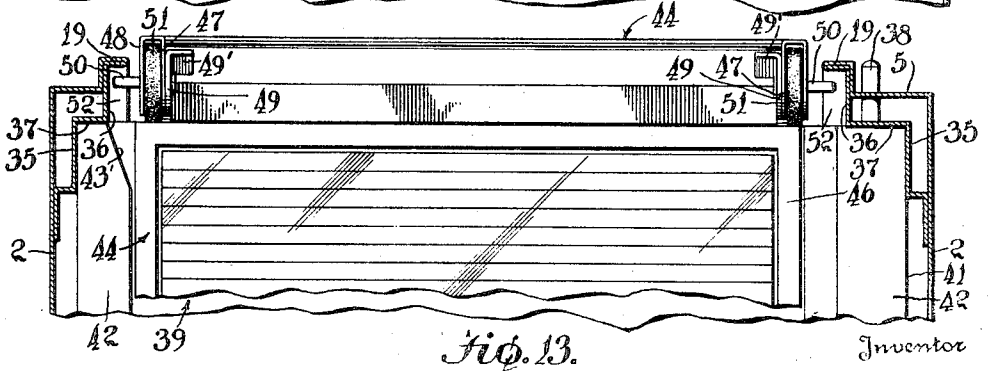




Fig. 13.

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Patented Apr. 23, 1935 1,999,162

# UNITED STATES PATENT OFFICE

1,999,162

## CARD INDEX CABINET

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Application February 20, 1934, Serial No. 712,100

19 Claims. (Cl. 45—2)

This invention relates to cabinets for visible card indexes.

The invention comprehends the provision of a card index cabinet adapted to rest on the floor with the top portion no higher than an ordinary desk and the card index trays supported in upwardly inclined relation for removal through the top portion and support thereon in use, as distinguished from the conventional form of card index cabinet supported on a table or desk and where the trays are supported and housed in horizontal relation.

The invention provides a cabinet in which the trays are withdrawn through an opening in the top and are provided with means for preventing complete detachment of the trays from the cabinet but allowing their sliding movement along the top of the cabinet in withdrawn position so the trays may be manipulated to lie on the top during use. The cabinet is constructed with a removable wall portion providing for the assembly of a series of independent tray holders in the cabinet that cooperate to form a series of compartments opening through the opening in the top wall of the cabinet, the top and bottom walls being provided with means for holding the tray holders in adjacent assembled relation to form the tray compartments. The cabinet is provided with mechanism for projecting each tray upwardly in its compartment to facilitate removal of the trays from the compartments.

The mechanism is also provided for cushioning the downward movement of the trays into the compartment so that they will not hit the bottom of the cabinet and for eliminating noise and jars in the operation of the trays, while the trays are provided with parts on their rear ends to cooperate with the top wall of the cabinet so that when a tray is withdrawn from its compartment it is not completely detached from the cabinet, but will be held in slidable connection with the top wall, each tray having anti-friction means provided on the rear end so that it may be freely moved over the top of the cabinet and the upper ends of the trays in the compartments.

The invention comprehends the provision of a cabinet in which the compartment forming members are made in units and are held in assembled relation by positioning means on the walls of the cabinet to cooperate in forming the compartments for retaining the trays therein, while the projecting and cushioning mechanism for the trays is also made in unit form so that it may be slidably assembled in a cabinet to cooperate in such a way that special securing means for the various parts are eliminated, but yet they are held in assembled relation in an efficient manner so as to provide for the construction of a cabinet in which the parts may be made and assembled with a minimum of labor and at an economical cost of production.

The invention also comprehends the provision of a cabinet having the upwardly extending trays and compartments inclined forwardly in the files to facilitate the removal of the trays and also to provide a compartment adjacent to the trays in the cabinet for receiving a card tray to hold loose cards, signals and other accessories used in connection with the index.

The invention includes other features of construction that will be fully pointed out hereafter in connection with the description of a preferred embodiment of the invention, it being understood that variations may be made in the construction of the tray holders, the projecting and cushioning mechanism and the assembly thereof in the cabinets that are clearly comprehended by the invention as set forth in the following description and appended claims.

In the drawings:

Fig. 1 shows the improved card index cabinet in perspective with the cover for the top of the cabinet in closed position and having a portion broken away.

Fig. 2 shows the card index cabinet in perspective with the cover for the top of the cabinet over the card index trays and the top for the supplies tray in open position, and one of the card index trays in partially projected relation from its compartment.

Fig. 3 is a plan view of the cabinet with the cover in open position showing a card index tray removed from its compartment and lying flat on top of the cabinet in position for use or inspection of the records therein, other portions of the top wall of the cabinet being broken away to show details of construction of the cabinet.

Fig. 4 is a vertical longitudinal cross section through the cabinet with the cover shown in open position, some of the trays being omitted from their compartments, other trays being shown in elevation in their compartments, one tray being shown in its partially projected position in its compartment, and one tray being shown in cross section, other parts being broken away and shown in cross section to facilitate illustration of the details of construction of the cabinet and its various parts.

Fig. 5 is a vertical cross section taken on line 5—5 of Fig. 4.

Fig. 6 is an enlarged cross section taken on line 6—6 of Fig. 5.

Fig. 7 is an enlarged cross section similar to Fig. 6 taken on line 7—7 of Fig. 5.

Fig. 8 shows a portion of one of the tray holders at the side carrying the projecting and cushioning mechanism for a card index tray and the latch for holding the tray in its compartment, in perspective, with portions of the various parts broken away to facilitate illustration of the details of construction.

Fig. 9 is a cross section taken on line 9—9 of Fig. 4.

Fig. 10 is a cross section taken on line 10—10 of Fig. 4.

Fig. 11 is an enlarged cross section taken on line 11—11 of Fig. 3.

Fig. 12 is a cross section taken on line 12—12 of Fig. 11.

Fig. 13 is a cross section taken on line 13—13 of Fig. 3 showing how the withdrawn tray seats on top of the cabinet over the compartments, the bottom portions of the cabinet being omitted.

Fig. 14 is a cross section taken on line 14—14 of Fig. 4 showing how the cover is locked in closed position.

Fig. 15 is an enlarged cross section of the rear bottom end of the tray taken on line 15—15 of Fig. 3.

Fig. 16 is a cross section taken on line 16—16 of Fig. 15.

The cabinet body 1 as shown in Figs. 1, 2 and 4 has side walls 2, front and rear end walls 3 and 4 respectively, top wall 5 and a bottom wall or base plate 6. The lower margins of side walls 2 and end walls 3 and 4 are folded inwardly against the inner face of said walls to provide a marginal portion with a double thickness as shown at 7 in Figs. 4 and 5. At the inner edge of this doubled portion the edge portion of the sheet metal forming the walls is then bent inwardly and then downwardly to provide a flange 8 in spaced parallel relation to the doubled portion 7. The marginal portion of the base plate 6 is formed to provide a depending flange 9 terminating in an outwardly and upwardly directed flange portion 10 spaced from flange 9.

Portions 9 and 10 provide a marginal groove to receive flange 8 on the side and end walls by which the base plate and side and end walls are engaged in interfitting and interlocked relation to provide a rigid cabinet structure. Angle bars 11 are mounted on end walls 3 and 4 so that one flange of said angle bars will seat on the upper face of base plate 6 at the ends so as to fix the relation of the base plate in cabinet body 1 in assembled relation. The angle members 11 receive screws that project through base plate 6 and are threadedly engaged in angle members 11 for rigidly but detachably connecting the base plate to the side and end walls of the cabinet.

The base plate is provided on the underface with a pair of spaced longitudinally extending angle frames 12 that cooperate therewith to form a rigid base and cabinet construction. Angle frames 12 carry a transversely extending axle 13 under one end of the base plate as shown in Fig. 4 having supporting rollers 14 mounted on the ends of the axle outside of said angle frames. The opposite end of the base plate is provided with ball bearing casters 15 as shown in Figs. 4 and 5 so the cabinet may be readily moved about from one place to another.

The top wall 5 of cabinet body 1 is formed with an elongated rectangular opening indicated at 16 in Figs. 2 and 4 which extends longitudinally between side walls 2 from a point adjacent front wall 3 to a point spaced from rear wall 4 as clearly apparent from Fig. 4.

A depending flange 17 is formed on top wall 5 at the front end of opening 16 as shown in Fig. 4 in spaced parallel relation to front wall 3 and in the central portion a lock 18 is housed in the cabinet under top wall 5 and between front wall 3 and flange 17 for the purpose of locking a cover over opening 16 in the top wall in a manner that will be understood from the following description. Top wall 5 along the sides of opening 16 is formed with upwardly and inwardly extending angle portions forming guide members 19, while the rear end of opening 16 is formed by a fixed top frame 20 shown in Figs. 4, 11 and 12.

Frame 20 is provided with a top plate portion 21 having depending marginal flanges 22 on the side and rear edges and a depending rearwardly inclined flange 23 on the front edge, see Figs. 11 and 12. At the lower edges of depending flanges 22 are outwardly offset portions indicated at 24 spot-welded or otherwise suitably secured to the inner faces of side walls 2 and rear wall 4 of the cabinet body immediately below top wall 5. Top wall 5 around top frame 20 is formed with a depending flange 25, as shown in Figs. 11 and 12, so that the structure of frame 20 and the upper edges of the side and rear walls of cabinet body 1 will cooperate to provide a rigid structure at the rear top portion of the cabinet and close the top of the cabinet in the rear of opening 16.

Top wall 21 of frame 20 is formed with a central rectangular opening defined by depending flanges 26 terminating at their lower edges in an inturned seat 27. A top 28 has a hinge rod 29 slidably secured thereto with opposite ends pivotally engaged in depending flanges 26 at opposite sides of top frame 20 so as to pivotally mount top 28 for movement into open and closed positions as illustrated in Figs. 1 and 2 for example for the purpose of providing access to a supplies tray 30 suspended from seat 27. Supplies tray 30 has an annular marginal flange 31 on the upper open end thereof with side and end walls depending from this flange and carrying a bottom indicated at 32. This supplies tray 30 supports an accessory holder 33 that removably fits in the upper end of supplies tray 30, having a marginal flange 34 as shown in Fig. 11, seating on top of flange 31 or tray 30. Index cards may be placed in supplies tray or receptacle 30 below holder 33 while signals, paper clips, pins, etc. used in connection with the keeping of records may be placed in the holder 33, which may be divided into several compartments as illustrated.

Positioning brackets 35 are mounted on the side walls 2 along the inner upper edges and extend along the sides of openings 16 in top wall 5, and have upper edge portions 36 offset inwardly from the side walls and engaging in the guide members 19 as clearly shown in Fig. 5 for cooperation therewith in guiding card index trays in movement over the top of the cabinet.

These positioning brackets 35 are provided with horizontal sections 37 in spaced parallel relation below top wall 5, and along one side of the cabinet are provided with openings in aligned relation with openings in top wall 5 to slidably receive and guide a plurality of spaced push buttons 38. Horizontal sections 37 of positioning brackets 35 form part of an angle portion of the positioning brackets. The angle portions of these brackets at the oppo-

site sides of the cabinet cooperate to form a seat for receiving the upper ends of tray holders **39**. A plurality of tray holders **39** in the form of separately assembled units are arranged in upwardly and transversely extending relation between the side walls of the cabinet in the manner shown in Figs. 2, 3, and 4, while these figures and Figures 6, 7 and 8 of the drawings illustrate details of construction in each tray holder.

Each tray holder **39** has a sheet metal plate **40** provided along the side edges with lateral flanges **41** extending to one side of plate section **40** and having inturned strip portions **42** on the free edges of flanges **41** that terminate in guide flanges **43** arranged in spaced parallel relation between lateral flanges **41**. The inner edges of guide flanges **43** are spaced from plate sections **40** to provide guide channels for a purpose that will be hereinafter described. Strip sections **42** of the tray holders at the left-hand side, as shown in Fig. 3, are wider than the strip sections as shown at the right-hand side of Fig. 3 for the purpose of providing a side compartment for mounting tray supporting and projecting mechanism.

The space between guide flanges **43** forms a compartment for slidably receiving a card index tray indicated generally at **44**. The upper end of the guide flange **43** on each tray holder as shown at the right-hand side of Fig. 3, is provided with an inclined end portion **43'** for cooperating to guide a tray into the compartment.

As shown in the drawings the card index trays **44** are elongated shallow trays and may be generally constructed in conventional form such as is customarily used to house a plurality of index cards or card holders **45**, Fig. 3. These card holders are of conventional form, and arranged in trays **44** in offset overlapping relation in the manner shown in Fig. 3, and hingeable to be moved about their connections adjacent card index trays **44** so as to expose the surface of any record member for reference to the record information thereon. This method of constructing and mounting index cards and card holders is well known in the art and the form indicated in the drawings is a conventional type.

The trays **44** will be preferably constructed to provide side portions **46** having inner and outer sections **47** and **48** that extend beyond the rear end of the tray as clearly shown in Fig. 3. Angle brackets **49** are mounted on the inner faces of inner side walls **47** at the rear ends thereof, (Figs. 15 and 16), said brackets being attached to the rear wall of the tray and providing a rigid extension structure rearwardly of the rear wall for the purpose of rigidly supporting guide pins **50** in said angle brackets and wall sections **47** and **48**. Angle brackets **49** have lips **49'** adapted to support and limit the hinging movement of the top cover on the rear wall of the tray.

Supporting rollers **51** for the rear end of the tray are rotatably mounted on the portions of pins **50** where they extend between wall sections **47** and **48**. Rollers **51** are formed of some suitable composition material to eliminate noise in operation of the trays and have a diameter large enough so that the periphery of the rollers extend to about or slightly beyond the plane of the bottom wall of the tray. When a tray is withdrawn from its compartment in the cabinet as illustrated in Fig. 3 for example, and the front end of the tray lifted up slightly above the top of the cabinet, rollers **51** will roll across the front ends of the trays that are in the respective compartments in the cabinet, while guide pins **50** will engage in guide members **19** and cooperate to retain the tray attached to the top of the cabinet at the rear end. The rollers provide for free movement of the rear end of the tray from the front to the back of the cabinet so that the tray may be laid upon the top of the cabinet in the manner illustrated in Fig. 3, for reference to the records on the cards or card holders **45** in the tray.

By providing this construction of the tray at the rear end and the cooperating structure on the top wall of the cabinet, a tray may be withdrawn from its compartment in a tray holder whether it be a tray in the front of the cabinet or one toward the rear, and after being withdrawn so that pins **50** engage guide members **19**, the tray may then be moved rearwardly or forwardly as desired and laid upon the top of the cabinet in a desired position for reference to the record members carried thereby.

The movement of trays **44** on top of the cabinet in the guides **19** is limited at the forward and rear ends of guides **19** by stops **52** and **53** respectively. The stop **52** on each guide member is formed by extending the sheet metal of the top wall laterally from the vertically extending portion of the guide member and welding this laterally extending stop member **52** to the top wall **5** and the horizontal portion of the guide member. Stops **53** at the rear ends of guide members **19** are formed by providing a lateral projection on the rear end of each of the vertically extending offset portions **36** of positioning brackets **35**. It will be observed by referring to Figs. 4 and 11 that these stops **53** are in advance of depending flange **23** of frame member **20** at the rear end of opening **16** for the purpose of providing an opening to the cover compartment for the cabinet that will be hereinafter described.

Plates **40** of tray holders **39** are provided at the lower ends with laterally extending bottom flanges **54** so that each tray holder is closed at both sides and the bottom and the tray receiving compartment is open on one side and the top. These tray holders **39** are assembled in the cabinet with plate sections **40** of one tray holder engaged with inturned strips **42** of an adjacent tray holder, so that one tray holder seats on the other in the manner shown in Figs. 3 and 4. When tray holders **39** are assembled in this manner the sides or lateral flanges **41** at the sides of plate section **40** engage at the upper ends in the socket provided by positioning brackets **35** as shown in Fig. 5, while complementary positioning brackets **55** as shown in Fig. 5 extend longitudinally along the bottom portions of side walls **2** to position tray holders **39** in properly aligned relation transversely in the cabinet.

By referring to Fig. 4 it will be noted that these tray holders are inclined in the cabinet with plate **40** of the forward tray holder having its upper end engaging depending flange **17** on top wall **5** and its lower end engaging angle bracket **56** extending transversely on base plate **6**, this angle bracket **56** forming a bottom positioning member for the tray holders.

The open side of the tray compartment of the rearmost tray holder is closed by a cover holder **57**, see Fig. 4. This cover holder is shown in detail in Figs. 9, 10 and 11 as well as Fig. 4 and comprises a sheet metal plate section **58**, side flanges **59** and inturned strips **60**. The lower end of plate section **58** of cover holder **57** is formed with a bottom flange **61** that seats on

angle member 11 at the rear end of the cabinet and determines the position of the cover holder in the cabinet at the bottom.

Positioning elements 62 are mounted on the rear ends of positioning brackets 35 to engage inturned strips 60 and support cover holder 57 at the upper end in upwardly inclined relation in the manner shown in Fig. 4. The distance between positioning brackets 62 and the forward end of opening 16 formed by flange 17 is fixed to receive a certain number of tray holders 39 plus the cover holder 57, and the same is true of the distance betwen angle bracket 11 at the rear of the cabinet and positioning member 56 on base plate 6 for holding the bottom ends of the tray holders and cover holder.

The tray holders and cover holder are assembled through the bottom of the cabinet in the preferred construction of the invention as illustrated in the drawings by the removability of base plate 6 from the side and end walls of the cabinet in the manner hereinbefore described.

When all of the tray holders are inserted through the open bottom of the cabinet so that their upper ends engage in the socket formed by positioning brackets 35, base plate 6 may then be applied in position as shown in Fig. 4 so as to bring positioning brackets 56 into operation to secure the tray holders in assembled position. When assembled in this manner as shown in Fig. 4, the tray holders are held in compact rigidly assembled relation to form tray compartments that are open only at the upper ends through opening 16 in the top wall of the cabinet. The inclined relation of the tray holders in the cabinet, with the tray compartments inclining forwardly, facilitates the removal of trays from their compartments by an operator desiring to examine or use the records in the trays.

As above stated, each tray holder has a side compartment shown at the left-hand side of Fig. 3 for housing latching and projecting mechanism for the tray. This mechanism includes a latch housing 63, Figs. 6, 7 and 8, formed of a strip of sheet metal having wall portion 64 provided at one edge with a lateral extension 65 terminating in a parallel strip portion 66 spaced from wall 64 as shown in Figs. 6 and 7. Strip portion 66 is of less width than wall portion 64 and at the edge opposite to flange 65 is an offset flange portion 67 terminating in wall portion 68 in spaced parallel relation to wall 64, and having its free edge terminating in the same transverse plane as the free edge of wall portion 64, so as to form a substantially U-shaped latch housing.

The latch housing telescopes in the side compartment as shown in Figs. 3, 6, 7 and 8, by sliding the latch housing into the side compartment from the upper end in which the free edges of wall portions 64 and 68 engage lateral flange 41 on the tray holder with wall portion 64 slidably engaging plate section 40 and wall portion 68 slidably engaging inturned strip 42. Offset flange 67 slidably engages guide flange 43 on the outer face thereof in the manner shown in Fig. 8, and a portion of wall 64 together with flange 65 and strip portion 66 project inwardly into the tray compartment through the space between the inner edge of guide flange 43 and plate section 40 as shown in Fig. 8. The lower end of offset flange 67 of the latch housing is formed with a slot 69 extending longitudinally thereof and opening through the space between guide flange 43 and plate section 40 as shown in Figs. 4 and 8.

A tray actuating slide member 70 is slidably mounted in the lower end of latch housing 63 between walls 64 and 68, and flanges 41 of the tray holder and 67 of the latch housing. This slide member 70 has a lateral projecting part 71 extending through slot 69 that is engaged by one of the pins 50 on the rear end of a tray when it reaches the bottom portion of the compartment in the manner shown in Fig. 7. Slide member 70 has an offset tongue 72 to provide a means for attaching one end of coil spring 73 to the slide member to normally slide it upwardly in the latch housing until the tray supporting projecting part 71 engages flange 67 at the upper end of slot 69 as shown in Fig. 8. The other end of spring 73 is anchored to projection 74 of latch member 75 pivotally mounted at the upper end of the latch housing on pin 76 extending transversely between wall portion 64 and strip 66.

Spring 73 normally projects latch 75 so that shoulder 77 thereon will project outwardly through the slot 78 in flange 65 and engage in slot 79 in the side wall of tray 44. Latch 75 is provided with a cam face 80 engaged by the side wall of the tray as it moves into the compartment in a tray holder so that the latch will be swung outwardly away from the tray and drop into slot 79 in the tray as it moves to its lower position in its compartment, as shown in Fig. 5. In this position it will be noted that pin 50 has engaged projection 71 and moved the same against the tension of spring 73 downwardly in the latch housing to the lower end thereof to place spring 73 under tension. Upon release of latch 75 from engagement in slot 79 in the tray, spring 73 through the medium of tray supporting projection 71 will slidably move the tray upwardly in its compartment to partially project the upper end out of the compartment as clearly illustrated in Figs. 1 and 4, the lower end of the tray being supported on the projection in the partially projected position with tray supporting projection 71 engaging flange 67 at the upper end of slot 69.

In order to release latch 75 from engagement with the tray so that it may be projected, there is a latch releasing member 81 as shown in Fig. 8 slidably mounted in the upper end of the latch housing. This member includes a pair of side sections 82 and 83 slidably engaging walls 64 and 68 respectively. The upper ends of these sections 82 and 83 are connected by an end section 84 while the outer side edges are connected by a web portion 85.

The inner side edge of side member 82 is provided with a latch operating projection 86 normally located above the inclined cam face 80 of the latch and operable to engage face 80 in downward sliding movement of the latch releasing member so as to move the latch on its pivot 76 to retract shoulder 77 from engagement with tray 44, whereupon the tray is released for partial projection from its compartment as above described. The latch operating and releasing member 81 is normally maintained at its upper limit of sliding movement by a spring 87 connected at its lower end with a tongue 88 on side portion 83, and at its upper end with a tongue 89 on flange 67 of the latch housing.

The upward movement of latch releasing member 81 is limited by a projection 90, see Fig. 8, on side section 82 located below latch 75 that is adapted to engage the lower end of latch 75 at its upper limit of movement in assembled relation. As a matter of fact this projection 90 in the normal operation of the device does not actually engage latch 75 because connecting section 84 is

positioned in the assembled relation of the tray holders in the cabinet to be aligned with a head portion on one of the push buttons 38 so as to engage the head portion at the lower end of the push button as shown in Figs. 5 and 8 and to hold the head portion of the push button up against the horizontal portion 37 of positioning bracket 35 and thereby limit the upward movement of the latch releasing member. The downward movement of this member 81 is limited by a stop member 91 in the form of an inward projecting shoulder formed from wall portion 64.

Each tray 44 slidably fits in its tray holder between guide flanges 43 with pin 50 on the left-hand side of the tray as shown in Fig. 5 slidably engaging the channel formed by guide flange 43, while on the opposite side the side of the tray rides along flange 65 with pin 50 extending over strip portion 66 and adapted to have the end slidably engage offset flange 67. Each tray 44 is thus slidably guided in its tray holder so that pin 50 adjacent flange 67 will be in position to engage part 71.

A cover 93 is provided on the cabinet and is formed of sheet metal having a plate section 94 provided with laterally extending side flanges 95 as shown in Figs. 5 and 10. Fig. 5 shows the closure member in closed position on top of the cabinet with the lower edges of side flanges 95 engaging top wall 5 and plate section 94 closing opening 16 in the top wall to prevent access to the card index trays, and also enclosing push buttons 38. Fig. 1 clearly illustrates how closure member 93 closes the upper open end of the cabinet and prevents access to the card index tray while Fig. 2 shows the closure member in the open position housed in cover holder 57. Fig. 4 shows closure member 93 in open position housed in cover member 57 in section and Figs. 9 and 10 illustrate other views of this construction with the cover in its open position housed in cover holder 57. The underside of plate section 94 is provided with longitudinally extending angle bars 96 having one edge portion of each bar offset in spaced parallel relation below plate section 94 as clearly shown in Figs. 5 and 10. These offset sections as shown in Fig. 5 fit inside of guide members 19, and rubber strips 97 are arranged in these angle members to seat on top of guide members 19 for cushioning the closing movement of the cover and supporting it in the closed position on the upper ends of guide members 19 with the edges of side flanges 95 terminating in close adjacent relation with top wall 5.

These angle members also act to position closure member 93 on the top of the cabinet and prevent its being moved from side to side by the cooperation of angle bars 96 with guides 19 as shown in Fig. 5.

The front end of closure member 93 is provided with a lateral flange 98 joining the front edges of side flanges 95. A bracket member 99 is attached to the underside of plate portion 94 in the center thereof, inside of the front flange 98, for slidably supporting a U-shaped handle member 100 that is used for manipulating the cover between open and closed positions. This bracket member 99 also provides a keeper for cooperation with lock 18 to lock the cover in closed position on the cabinet in the manner clearly shown in Fig. 14. The rear end of the cover is formed with a laterally extending inclined rear wall 101 and an attaching bracket 102 is mounted on the underside of plate portion 94 adjacent wall 101 for mounting the transversely extending cover retaining bar 103 as shown in Figs. 10 and 11. The ends of bar 103 extend beyond the ends of bracket 102 and slidably engage in a pair of cover guide members 104. These cover guide members 104 are formed of sheet metal having a base section 105 secured to plate member 58 of cover holder 57 and extending longitudinally thereof in spaced parallel relation inwardly of side flanges 59 as clearly shown in Fig. 10, from the lower to the upper end of said cover holder. The side edges of base section 105 are provided with flanges 106 and 107, the edge portions of flanges 106 providing a slide way for one side of bar 103 while the flanges 107 are formed with lateral guide extensions 108 engaging over the ends of the bar 103 on the opposite side so as to slidably retain the cover in connected relation to guide members 104.

In order to cushion the movement of the cover in the open position as shown in Fig. 4, as it reaches the housed position in cover holder 57, plate section 58 of the cover holder is formed with a transversely extending stop portion 109 adjacent the bottom end. A rubber or other suitable cushioning bumper member 110 is mounted on stop member 109 in the manner shown in Figs. 4 and 9 and cushions the movement of the closure member as it reaches its housed position in cover holder 57. When the cover is withdrawn from cover holder 57 the ends of bar 103 ride in guide members 104 to the upper end of the cover holder until the ends of bar 103 engage stop flange 111 on the upper ends of guide member 104 as shown in Fig. 11. The closure member 93 may then be pivoted about bar 103 as a center until the cover member moves into the closed position shown in Figs. 1, 5 and 11. In the movement of the cover between open and closed positions the inner edges of angle bars 96 spaced in parallel relation from cover plate 94 as shown in Fig. 10 will be positioned outside of flanges 107 and cooperate with these flanges in evenly guiding the cover into its compartment in cover holder 57.

By having base plate 6 for the cabinet cooperating with the lower margins of the side and end walls and removably associated therewith, a cooperation is obtained by which the tray holders and cover holder may be assembled in adjacent relation as illustrated in the drawings in the cabinet with the open upper ends registering with opening 16 in the top wall, and the latch releasing members registering with the push buttons while each tray holder cooperates with its adjacent holder to close the open side and form a tray compartment to efficiently support and guide the trays for movement into and out of the cabinet through the opening in the upper wall.

It will also be appreciated that with the pins 50 and rollers on the rear ends of the trays cooperating with guides 19 that the trays are efficiently retained in connection with the cabinet although movable over the top of the cabinet when withdrawn so that they may be laid on top of the cabinet over the upper ends of the trays in the compartments as illustrated in the drawings for reference to and use of the records in any tray.

When it is desired to remove any tray from the cabinet the push button for the tray at the side thereof is depressed to operate the latch releasing member which retracts latch 75 from engage-

ment in opening 79 in the tray and thereby releases the tray for movement out of its compartment. Spring 73 will then slide tray actuating slide member 70 with its projection 71 upwardly to the upper end of the slot 69 and elevate the tray so as to project the upper end out of the compartment in the manner disclosed in Fig. 2. The operator may then grasp the tray and withdraw the same from the inclined compartment until pins 50 engage guide members 19. A finger hole 112 is provided in the bottom forward end of each tray to provide means to firmly grip the tray, and a label holder 113 carries the index for the records in the tray so the proper tray may be selected and removed. The pins 50 will prevent complete detachment of the tray from the cabinet and it may be then swung into a horizontal position and the tray moved rearwardly or forwardly on the top of the cabinet as may be desired and laid down on this top for reference to the records contained therein.

In moving the tray on the top of the cabinet rollers 51 will ride on the upper front ends of the trays in the compartments in a manner that will be apparent from the drawings so that the rear end of the tray will be freely movable over the top of the container, the front upper ends of all of the trays in the compartments being in co-planar relation to provide for smooth operation of a removed tray. Should it be desired to detach the tray from connection with the cabinet, it is only necessary to twist the same sideways to disengage pins 50 from guideways 19.

When the cabinet is not in use and in order to prevent the accumulation of dust, dirt and other foreign matter in the trays and the cabinet, and to prevent unauthorized access to the cabinet, the handle 100 is grasped and pulled to its outer limit of sliding movement and the cover is withdrawn from the cover holder until the ends of bar 103 engage stops 111 whereupon the cover is swung into a horizontal position on the top wall of the cabinet.

The lock 18 may then be operated by its key, not shown in the drawings, through placing the key in the key slot shown in the front of the cabinet, Figs. 1 and 2, for example. This will project the locking mechanism to engage the keeper in the front end of the cover on the under side thereof and retain the cover in the closed position on the top wall of the cabinet to prevent access to any of the trays.

The space at the rear end of the cabinet beyond the cover holder is utilized as shown and above described for containing a card holder 30 for receiving blank record cards that may be used in the trays while the tray 33 will be used for signals, paper clips, pencils and other accessories used in connection with the use and operation of the index, cover 28 providing a closure for the compartment when it is not desired to use the contents of the trays therein and to enhance the exterior appearance of the cabinet.

The several positioning members 35, 55 and 56 cooperate with the parts of the cabinet supporting these members for not only positioning the tray holders in proper relation in the cabinet for cooperation with each other, but also cooperate with the cabinet to reinforce the same and provide a rigid structure. The tray holders as above described are preferably constructed in the form of independent units that are loosely assembled in the cabinet, that is, without direct attachment to each other when they are in assembled relation, being held by the positioning members in compact relation for compartment-forming cooperation. The positioning members also hold the tray holders in such relation that the tray elevating and latching mechanism carried in the side compartment as shown in Fig. 8 will have the latch releasing member so arranged in the cabinet that the connecting member 84 will always be aligned with its push button 38 for convenient manual release of a tray from the housed position in its compartment for partial projection by spring 73.

The spring 73 not only acts to partially project the tray from its compartment but also upon the insertion of a card index tray into its compartment the spring and projection 71 will cooperate by engagement of projection 71 with one of the pins 50, to cushion the downward movement of the tray into its compartment and prevent it from bumping against the bottom. This structure therefore acts as a cushioning or shock absorbing member in the bottom of the cabinet as well as a projecting mechanism for the tray, while latch 75 operates to engage the tray in its housed position in the compartment and cooperate with spring 73 to retain the spring under tension to project the tray upon release of the latch.

The cabinet may or may not be provided with rollers on the bottom as above described according to its use. This cabinet has the particular advantage of being readily movable around the floor of an office for use beside a desk, table or machine, with the trays removable by upward movement so they will subsequently lie on top of the cabinet to facilitate reference to the records therein and removal, replacement and the making of entries in the records. As the cabinet is low in height, less than the height of a desk, its use beside a desk or table is most convenient, and it eliminates the necessity of providing a separate support for the trays when withdrawn for use. although the trays may be readily detached from the cabinet for separate use away from the cabinet. A series of these cabinets may also be used with the sides in adjacent relation without interfering with the individual use of the trays in each cabinet.

What is claimed is:

1. A card index file comprising a cabinet having side, end, and bottom walls and an opening at the top, means in said cabinet forming a plurality of compartments opening at the top through the opening in the top of said cabinet, guide members on the top of said cabinet, card index trays slidably housed in said compartments, and means on said trays for engaging said guide members to normally retain said trays in attached relation with the cabinet and against complete detachment when withdrawn from said compartments, said means being movable on said guide members along the top of said cabinet.

2. A card index file, comprising a cabinet having side, end and bottom walls, and an opening at the top, a plurality of spaced guide members mounted in inclined relation in said cabinet to provide inclined compartments opening at the top through the opening in the top of said cabinet, guide means on said cabinet above said compartments, a card index tray slidable in and out of each compartment in inclined relation, and means on said trays cooperating with said guide means when a tray is withdrawn from its compartment to normally retain the tray against complete detachment from said cabinet, said last-mentioned means slidably engaging said guide means for movement of the tray across the top of said cabi-

net, said tray being movable in withdrawn position to lie flat on the top of said cabinet over the upper ends of said compartments.

3. A card index file, comprising a base plate, a cabinet body having side and end walls detachably connected at the lower margins with said base plate, the top of said body having an opening therein, a series of tray holders arranged in said body to form a plurality of compartments open at the upper end through the opening in said top, means on said base plate and cabinet body retaining said tray holders in adjacent compartment forming relation in said body in the assembled relation of said body and base plate, and a card index tray slidably mounted in each compartment.

4. A card index file, comprising a base plate, a cabinet body having side and end walls detachably connected at the lower margins with said base plate, the top of said body having an opening therein, a series of tray holders arranged in said body in adjacent contacting relation to form a plurality of compartments open at the upper end through the opening in said top, positioning means on said base plate and body spaced inwardly from the end walls cooperating with said tray holders for retaining said tray holders in assembled relation with said compartments aligned with the opening in the top of said body, a card index tray slidable in and out of each compartment, and cooperating means on said body and each tray for retaining each tray normally connected with the top of the body against complete detachment, said means providing for movement of each tray along the top of the body and into a position lying flat on the top of said file.

5. A card index file, comprising a cabinet having side, end and bottom walls and an opening at the top, tray holders assembled in adjacent upstanding relation in said cabinet cooperating to form a plurality of compartments opening at the top through the opening in the top of said cabinet, a tray in each compartment, and means in the bottom portion of each tray holder for detachably engaging and normally supporting lower end of the tray therein in one position, and resilient means supporting said last named means in said position operable by relative movement of the last-mentioned means to cushion the latter portion of the downward movement of the tray in the compartment.

6. A card index file, comprising a cabinet having side, end and bottom walls and a top wall having an opening, means in said cabinet forming a plurality of compartments opening at the top through the opening in the top of said cabinet, a card index tray slidable in and out of each compartment, means in the bottom of said cabinet for supporting the trays therein operable to cushion the downward movement of the trays into said compartments, and cooperating means on said trays and the top of said cabinet for normally retaining each tray connected with the cabinet in withdrawn position for sliding movement along the top and adapted for movement of a withdrawn tray to lie on the top of said file.

7. A card index file, comprising a cabinet having an opening in one wall portion, a series of card index trays slidably mounted in said cabinet for withdrawal through said opening, guide and retaining means on the outside of said wall portion, and means on each tray detachably cooperating with said guide and retaining means for retaining said trays in attached relation with the cabinet when completely withdrawn through said opening for sliding and swinging movement along and in front of said wall portion.

8. A card index file, comprising a base plate, a cabinet body having side and end walls detachably connected at the lower margins to the marginal portions of said base plate, the top of said body having an opening therein, a series of tray holders having plate sections extending transversely between said side walls in spaced parallel relation, said plate sections extending in upwardly inclined relation from said base plate to said top, said tray holders having spacing flanges on the side edges and cooperating in adjacent assembled relation to provide a plurality of compartments opening through the opening in the top of said cabinet body, positioning members on said base plate and top engaging the ends of the end tray holders of the series for retaining said tray holders in assembled inclined relation between the end walls of said cabinet, said top having angle members extending along opposite sides of said opening, and trays mounted in said compartments having means on each tray to slidably engage said angle members for retaining said trays in attached relation with the cabinet when withdrawn from said compartments for slidable movement along said top and swinging movement to lie on the top of said file.

9. A card index file, comprising a cabinet having side, end, bottom and top walls, said top wall having an opening, a plurality of tray holders assembled in transversely extending relation between the side walls in said cabinet and extending upwardly between said top and bottom walls and cooperating to form a plurality of separate compartments opening through the opening in said top wall, one of said walls being detachable for removably retaining said tray holders in said cabinet in assembled compartment-forming relation, a card index tray slidable in and out of each compartment, said cabinet having side compartments adjacent each of said first-mentioned compartments, supporting and actuating means in said side compartments for each tray having a movable part for engaging and supporting each tray and normally operable to partially and individually project each tray from its compartment, tray retaining means mounted in said side compartments for each tray operable to retain each tray in its compartment against projection with said supporting and actuating means set for operation, and manually operable means carried by said cabinet for actuating said tray retaining means to release a selected tray for partial projection by said supporting and actuating means.

10. A card index file, comprising a cabinet having side, end, bottom and top walls, said top wall having an opening, a plurality of separate tray holders assembled in transversely extending relation between said side walls in said cabinet in contacting relation, extending upwardly between said top and bottom walls and cooperating to form a plurality of separate compartments opening through the opening in said top wall, one of said walls being detachable for removably retaining said tray holders in said cabinet in assembled compartment forming relation, a card index tray slidable in and out of each compartment, each of said tray holders having a housing formed at one side of the tray compartment therein, a tray engaging and supporting member slidable in said housing and pro-

jecting into the tray compartment for engaging and supporting the tray therein, resilient means in said housing for operating said tray engaging and supporting member to normally retain said member at its upper limit of movement and partially project a tray from its compartment, means in said housing for normally retaining a tray in its compartment against projection, and a push button on said top wall for actuating said last-named means into an inoperative position whereby the tray is partially projected from said compartment, and guide means on said top wall for cooperating with each tray to provide for sliding and swinging movement of each tray on said top wall when withdrawn from its compartment in attached relation with the cabinet and for support in substantially horizontal relation on the top of said file.

11. A card index file, comprising a cabinet having side, end, bottom and top walls, said top wall having an opening, a plurality of individual tray holders, each tray holder having a sheet metal plate section, laterally extending flanges on the side edges of said plate section having inturned strips on the free edges of said flanges, guide flanges on the inner edges of said strips substantially perpendicular to said plate section and cooperating with said plate section to receive and guide a tray therebetween, said tray holders being mounted in said cabinet with the plate sections extending transversely between the side walls and the ends extending between the top and bottom walls, the plate section of one tray holder engaging the inturned strips on an adjacent tray holder and cooperating to form a tray receiving compartment opening only at one end through the opening in said top wall, one of said walls, being removable to detachably retain said tray holders in assembled compartment forming relation in said cabinet, means on said cabinet walls for retaining said tray holders with the open ends registering with the opening in said top wall, and a card index tray for slidably fitting in each compartment adapted to lie flat on the top of said file when withdrawn from its compartment.

12. A card index file, comprising a cabinet having side, end, bottom and top walls, said top wall having an opening, a plurality of individual tray holders, each tray holder having a sheet metal plate section, laterally extending flanges on the side edges of said plate section having inturned strips on the free edges of said flanges, guide flanges on the inner edges of said strips substantially perpendicular to said plate section and cooperating with said plate section to receive and guide a tray therebetween, said tray holders being mounted in said cabinet with the plate sections extending transversely between the side walls and the ends extending between the top and bottom walls, the plate section of one tray holder engaging the inturned strips on an adjacent tray holder and cooperating to form a tray receiving compartment opening only at one end through the opening in said top wall, one of said walls being removable to detachably retain said tray holders in assembled compartment-forming relation in said cabinet, means on said cabinet walls for retaining said tray holders with the open ends registering with the opening in said top wall, a tray slidable in each compartment between said guide flanges, a latch housing telescopically mounted in each tray holder at one side of said compartment between the guide flange, inturned strips and lateral flanges, tray projecting and latching means mounted in said housing, and a push button slidably mounted in the top wall of said cabinet operable for actuating said tray projecting and latching means.

13. In a card index cabinet, a tray holder comprising a sheet metal plate, lateral flanges on the side edges of said plate, inturned strips on the edges of said flanges in spaced parallel relation to said plate, guide flanges on the inner edges of said strips terminating in spaced parallel relation to said plate, said guide flanges being substantially perpendicular to said plate, said guide flanges defining a tray compartment therebetween and one of said guide flanges and the adjacent lateral flange and inturned strip cooperating with said plate to form a side compartment, a latch housing telescopically mounted in said side compartment, a latch pivoted in said latch housing, a tray engaging member slidable on said latch housing, resilient means in said housing connected to said latch and tray engaging member for normally operating said latch and member in one direction, and a slidable latch actuator in said housing operable to move the latch in the opposite direction.

14. In a card index file, a tray holder comprising a sheet metal plate, guide flanges mounted on opposite side portions of said plate to define a tray compartment, said flanges being spaced from said plate to provide channels on opposite sides of the plate, a tray adapted to bear a plurality of record members thereon in overlapping offset arrangement, said tray being slidably mounted between said guide flanges, said tray having a sheet metal bottom and side walls, the rear ends of the side walls projecting beyond the end of the bottom wall, rollers mounted on said projections for supporting and guiding the rear end of said tray, and guide pins mounted on said projections and projecting in opposite directions beyond the sides of the tray for slidable engagement with said guide flanges to guide the tray in said holder.

15. In a card index file, a tray holder comprising a sheet metal plate, guide flanges mounted on opposite side portions of said plate to provide channels on opposite sides of the plate, a tray adapted to bear a plurality of record members thereon in overlapping offset arrangement, said tray being slidably mounted between said guide flanges, said tray having a sheet metal bottom and side walls, the rear ends of the side walls projecting beyond the end of the bottom wall, rollers mounted on said projections for supporting and guiding the rear end of said tray, tray projecting and latching means on said tray holder mounted along one of said guide flanges having a latch for engaging and retaining said tray in said compartment, a tray engaging member for engaging one of said guide pins and operable to project the tray from said compartment when said latch is released, and latch releasing means for disengaging said latch from said tray.

16. In a card index file, a card index tray adapted to bear a plurality of record members thereon in overlapping offset arrangement, comprising a sheet metal bottom, side walls formed on the sides of said bottom having spaced parallel wall portions, said side walls extending beyond said bottom at the rear end of said tray, guide pins mounted in the rear end portion of said side walls, and rollers mounted between the spaced wall portions of each side wall on said guide pins having the peripheries thereof projecting in substantial alignment with said bottom, said guide pins projecting outwardly beyond said side walls

to provide means for supporting and guiding said tray in a file.

17. A card index file comprising a cabinet having a series of compartments extending upwardly and opening through the top of said cabinet, a card index tray in each compartment adapted to bear a plurality of record members thereon in overlapping offset arrangement, the upper front ends of said trays when in said compartments lying in a substantially co-planar relation, guide members on the top of said cabinet, guide pins on the lower rear ends of said trays projecting beyond the side walls thereof, and rollers on the rear ends of said trays, said guide pins cooperating to guide the movement of said trays into and out of said compartments and for engaging said guide members on said top when a tray is withdrawn from its compartment to provide for free sliding and swinging movement of each tray over the top of said cabinet, said rollers and withdrawn tray riding on the upper front ends of trays in said compartments.

18. A card index file comprising a cabinet having an opening in the top, a plurality of upwardly extending tray compartments opening through said top opening, a tray slidable in and out of each compartment, guide members on the top of said cabinet cooperating to prevent complete detachment of said trays from said cabinet when withdrawn from said compartments, a cover compartment in the rear of said tray compartments and guide members opening through said top, and a cover in said compartment slidably removable to extend over the opening in said top and said guide members and prevent access to said trays.

19. A card index file comprising a cabinet having a top provided with a pair of rectangular openings extending from the front to the rear of said top in aligned relation, one of said openings being substantially larger than the other, the portions of top forming the sides of said openings being in substantial alignment, a plurality of card index trays slidable in and out of said cabinet through said larger opening, a card tray mounted in said smaller opening, an elongated cover member slidable into said cabinet at one end of said larger opening and adapted to lie flat on said top to close said larger opening in closed position, and a second cover member for said card tray mounted on said top in closed position in longitudinal alignment with said first cover member.

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