July 15, 1947. C. F. WOLTERS 2,423,919

CARD INDEX CABINET

Filed May 20, 1943 3 Sheets-Sheet 1

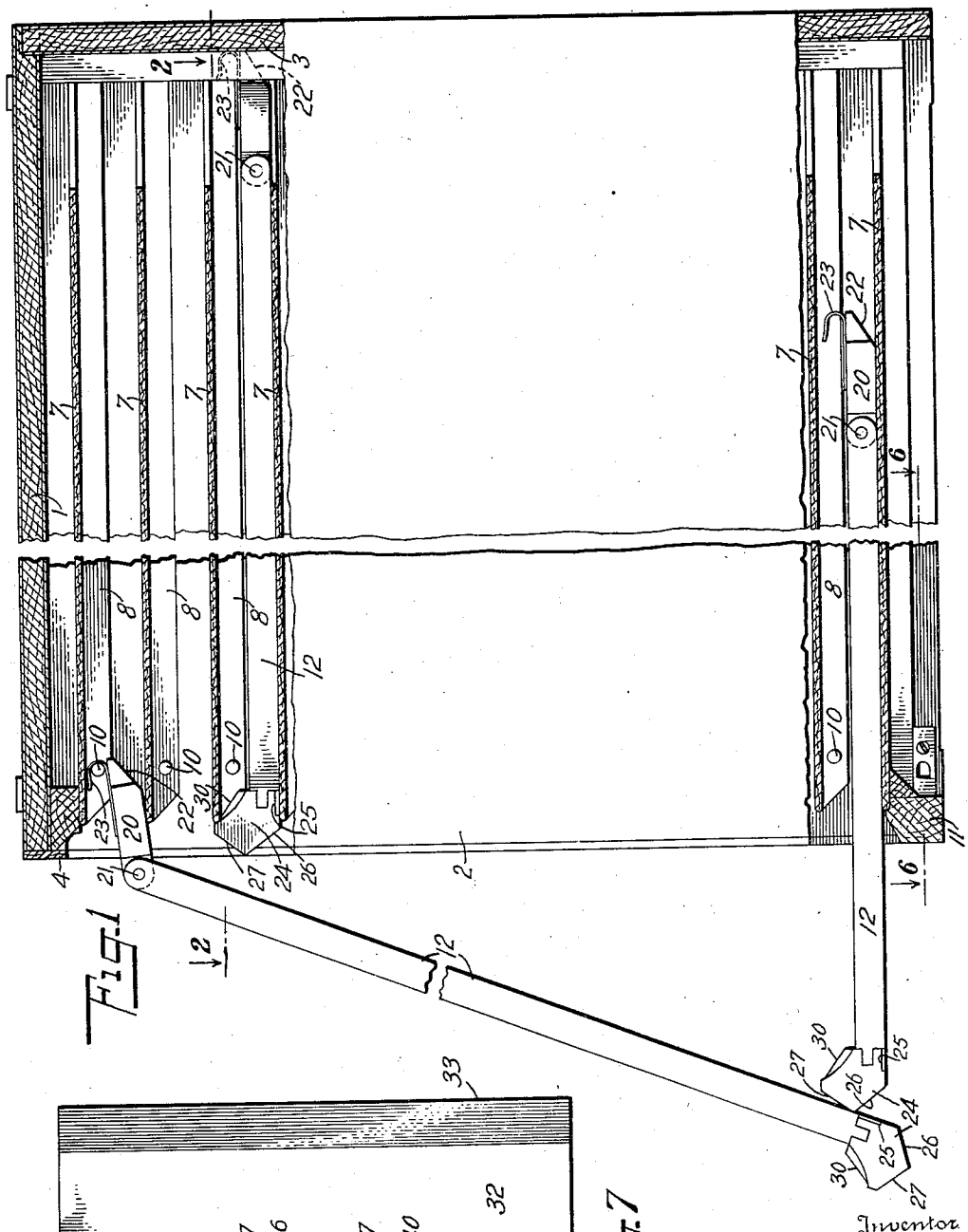


Fig. 1

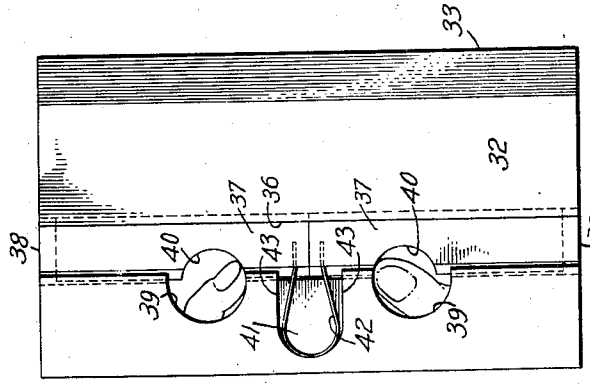


Fig. 7

Inventor
CARL F. WOLTERS

BY Roland V. Bond
Attorney

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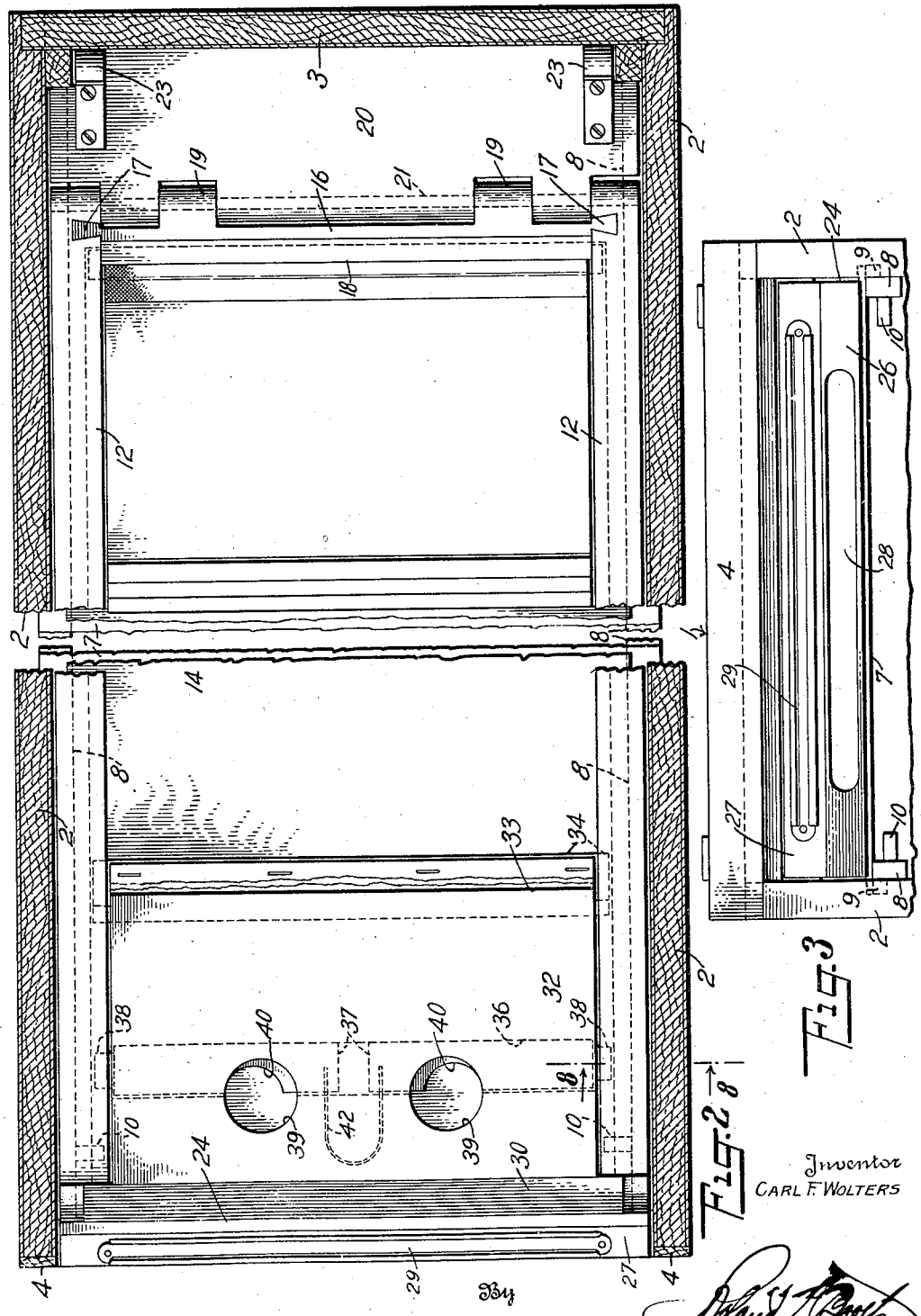


Fig. 2

Fig. 3

Inventor
CARL F. WOLTERS

By

Attorney

July 15, 1947. C. F. WOLTERS 2,423,919

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Fig. 4

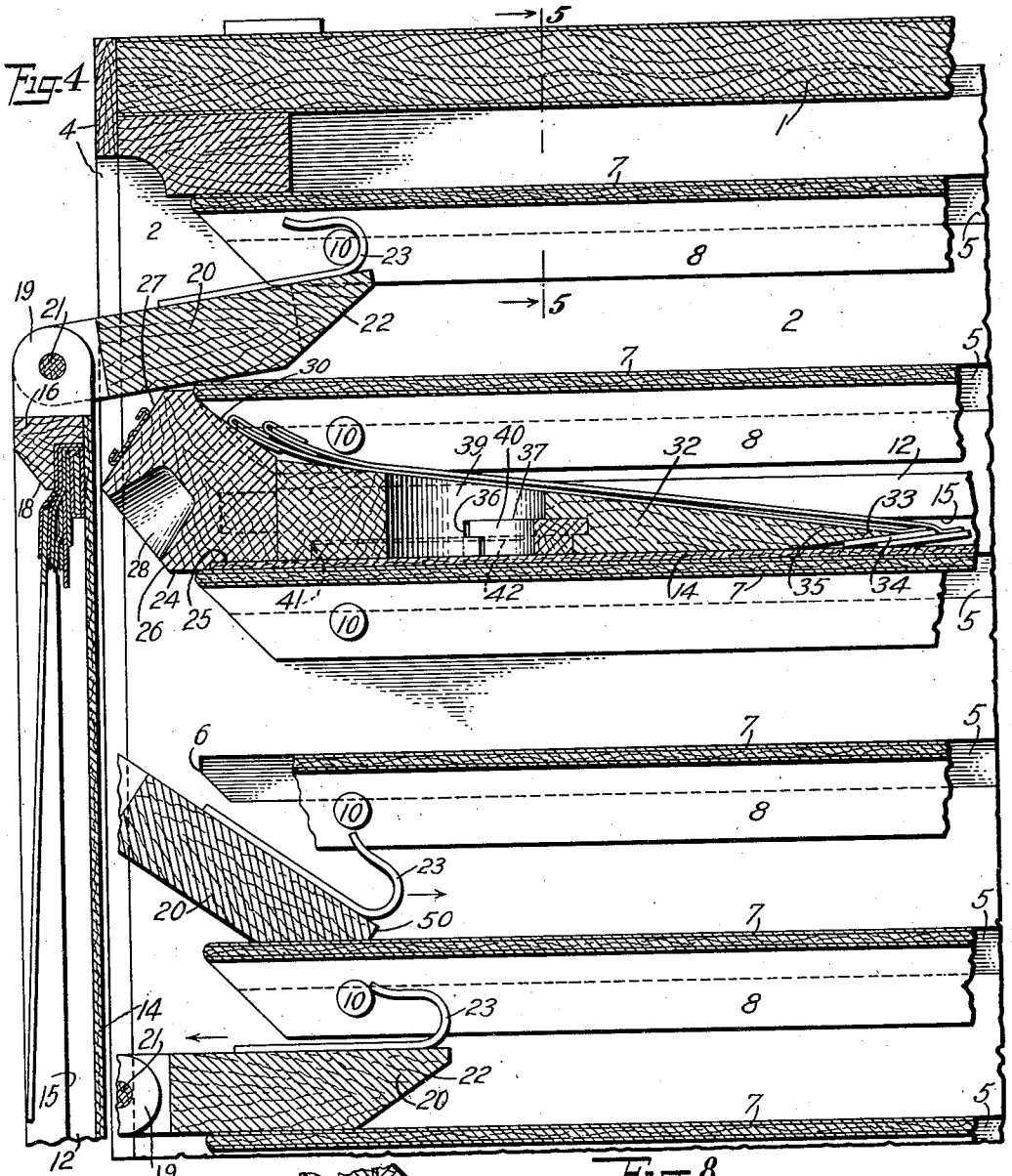


Fig. 8

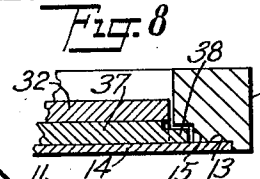
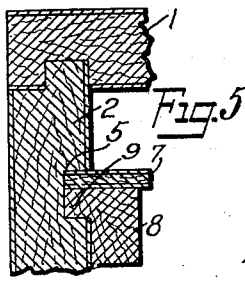


Fig. 5



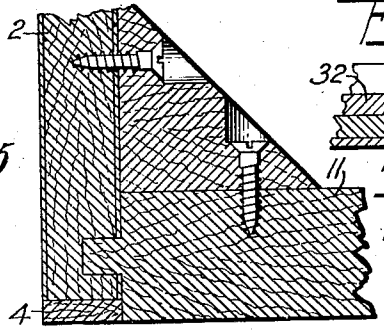


Fig. 6

Inventor
CARL F. WOLTERS

By Richard S. Booth
Attorney

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UNITED STATES PATENT OFFICE

2,423,919

CARD INDEX CABINET

Carl F. Wolters, Kenmore, N. Y., assignor to Remington Rand Inc., Buffalo, N. Y., a corporation of Delaware

Application May 20, 1943, Serial No. 487,744

3 Claims. (Cl. 45—2)

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This invention relates to improvements in the construction of cabinets for visible card indexes.

This invention comprehends the provision of a cabinet for visible card indexes constructed of wood or equivalent material for eliminating the use of metal.

This invention comprehends the construction of a wood cabinet for visible card indexes of a character wherein the cabinet is provided with suitable guideways on the inside and partitions dividing the cabinet into a plurality of compartments are constructed and arranged in a manner that the cabinet may be constructed at low cost while the guide and partition structures will cooperate to provide substantial strength in the cabinet structure for efficiently mounting a plurality of card index trays for slidable movement into and out of the compartments in the cabinet. Side members on each tray are arranged to be guided in the guideways at the sides of the cabinet by guide strips in order that loads on the tray will be distributed directly to the side walls of the cabinet through the side members thereby providing for the use of relatively thin wood partition members in the cabinet as well as thin tray bottoms. Yet, the structure of the trays in the cabinet is such by this arrangement of guide strips and guide members on the cabinet and trays respectively, that an efficient structure which is strong and will withstand hard usage at least equal to that of metal cabinets for housing similar records is provided.

The invention includes the provision of a wood tail-piece on the rear end of each tray for slidable engagement in the guideways at opposite sides of the cabinet formed by the cooperation of the retaining strips and the partitions. Means on the rear end portion of the tail-piece is adapted to normally engage and cooperate with complementary parts on the forward ends of the guide strips to normally retain each tray in engaged relation against complete detachment from the cabinet when withdrawn from its compartment. The tail-piece is constructed with a beveled rear edge portion to provide for tilting in a manner that the retaining means thereon can be disengaged from the complementary parts on the guide strips when it is desired to completely disengage a tray from the cabinet.

The invention provides a wooden tray structure for holding visible card indexes having the side members provide the main support with the rear ends arranged to receive a back member or stop in interlocked and transversely extending relation so that a wood tail-piece may be hingedly

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connected to the rear end of the tray by attachment to the back stop and the rear ends of the side members.

The invention comprehends the provision of a front member connecting the front ends of the side members of each card index tray arranged to provide a handle and label holder for convenient gripping to operate the tray in slidable movement into and out of the cabinet. A wooden bottom stop is arranged adjacent the front member in the tray for slidable movement along the bottom of the tray in retaining a plurality of offset overlapped card holders in position in the tray with the bottom stop retained in engaged relation with the tray by a pair of oppositely projected wooden slide members having the outer ends provided for interlocking engagement with the side members of the tray. The bottom stop has the slide members slidably mounted therein in coaxial relation in a transversely extending channel and retained and limited in their sliding movement by means of a resilient member seated in a recess in said bottom stop in which the outward resilient projection of the slide members is limited by the wall portions of the bottom stop at the sides of the recess receiving the resilient member. Suitable means is provided for conveniently and manually gripping the slide members in order to retract them from engagement with the side members of the tray in removing the bottom stop from the tray.

In the drawings:

Fig. 1 is a fragmentary side elevation of a cabinet constructed in accordance with the invention having portions at the top and bottom of the cabinet broken away and shown in cross section to illustrate details of construction, the uppermost tray in the cabinet being shown in withdrawn position from its compartment and the lowermost tray being shown in partly withdrawn position.

Fig. 2 is a horizontal cross section taken on line 2—2 of Fig. 1.

Fig. 3 is a front elevation of the upper front end of the cabinet illustrating the front end of one tray in its housed position in the cabinet.

Fig. 4 is an enlarged fragmentary vertical cross section illustrating details of construction of the cabinet and showing the tail-pieces of three different trays in different positions relative to the stop means at the front of the cabinet to show how the tail-piece and the stop means cooperate to prevent complete detachment of a tray from the cabinet, and also how a tray may be detached from engagement with the cabinet.

Fig. 5 is a detail fragmentary cross section of one upper corner of the cabinet taken on line 5—5 of Fig. 4 illustrating details of construction.

Fig. 6 is an enlarged fragmentary detail cross section showing details of the cabinet corner construction at the lower front corner thereof, taken substantially on line 6—6 of Fig. 1.

Fig. 7 is a bottom plan view of the bottom stop illustrating the slide members manually operated into the retracted position for removal of the bottom stop from a tray.

Fig. 8 is a detailed cross section through one side of the tray taken substantially on line 8—8 of Fig. 2.

The cabinet is formed of a casing having a top wall 1, side walls 2, rear wall 3 and a front facing structure indicated at 4. These side, top and rear walls are formed of wood boards or sheets, plywood having been found to be a very desirable material. These members are suitably assembled together to form a rigid casing structure by joints at the edges. Glue or other suitable cement may be used in uniting these members into rigid relation to form the casing.

Side walls 2 have the inner faces thereof formed to provide a plurality of spaced parallel grooves 5 opening through the inner faces and terminating at a distance from the front ends of the side walls as indicated at 6 in Fig. 4. The interior of the cabinet is divided into a plurality of tray compartments by transversely extending thin plywood partitions 7 having the side margins extending into groove 5 as shown in Fig. 5. A plurality of wood guide strips 8 are mounted against the inner faces of side walls 2 with the upper edges engaged with the lower faces of partitions 7. These guide strips 8 have longitudinally extending ribs 9 projecting laterally therefrom into grooves 5 for cooperation to retain guide strips 8 rigidly in position on side walls 2 and also to retain partitions 7 engaged in groove 5. A suitable glue or cement may be used for uniting the edges of the partitions together with guide strips 8 including integral ribs 9 thereon to side walls 2 to form a rigid structure.

Guide strips 8 terminate at the lower edges in spaced relation above the upper face of the next partition below and cooperate to provide guide channels at opposite sides of the cabinet in each compartment. Stop pins 10 are secured in the front ends on each guide strip 8 as shown in Figs. 1, 3 and 4 in inwardly extending relation from a point intermediate the upper and lower edges of the inner sides for a purpose that will be hereinafter described.

A connecting member 11 joins the front edges of side walls 2 at the bottom of the cabinet as shown in Figs 1 and 6. Member 11 also provides a support for the front edge of the bottom partition 7 in the cabinet in the manner disclosed in Fig. 1.

A plurality of trays are provided, one to slidably engage in each compartment in the casing. Each tray is formed of a pair of side members 12 arranged in spaced parallel relation and having a rabbeted lower edge portion indicated at 13 in Fig. 8 for receiving the marginal portion of tray bottom 14, formed of thin wood veneer or other suitable sheet material. Tray bottom 14 is suitably glued to side members 12. The lower inner edges of side members 12 are also recessed at 15 longitudinally throughout their length to provide a groove in cooperation with tray bottom 14. The grooves of the side members face inwardly for receiving opposite ends of lugs on the ends of conventional card holders so that the card holders may be slidably attached in the tray in a well-known manner.

A back member or back stop 16 extends across the rear end of the tray and has dovetailed connections at 17 with the rear ends of side members 12. The lower portion of back stop 16 has the rear edge of tray bottom 14 suitably secured thereto by glue or the like, as shown in Fig. 4. Back stop 16 has a forwardly projecting flange 18 at the upper edge thereof cooperating to provide a back stop for the card holders at the rear end of a series mounted in the tray including a top cover member so they are held in the groove formed between projection 18 and tray bottom 14, as shown in Fig. 4. The rear edge of back stop 16 is formed with a pair of rearwardly extending projections 19 forming hinge members in cooperation with the rear ends of side members 12, as clearly illustrated in Fig. 2. These hinge members are complementary to hinge members on the front edge of a tail-piece 20 formed of a block of wood. The hinge members of tail-piece 20 are pivotally connected to the rear end of the tray by a wooden pivot pin 21 interengaging in the hinge portions on tail-piece 20, back-stop 16 and the rear ends of side members 12. Tail-piece 20 is formed of a suitable wooden block or strip having the side edges slidably engaged in the guideways formed by guide strips 8, the thickness of tail-piece 20 being such that it substantially fills the space between a guide strip 8 and the partition below.

The tail-piece is freely slidable in the guide channels forwardly and rearwardly without binding, but is otherwise held against movement. The rear lower face of tail-piece 20 is formed with an inclined or beveled rear end or face 22 as shown in Fig. 4. Stop members 23 in the form of metallic hooks are mounted on the upper face at the rear edge of tail-piece 20 and at opposite sides thereof adjacent the inner faces of guide strips 8. Hooks 23 extend above the guideways formed by guide strips 8 as clearly shown in Fig. 4, and are normally positioned in line with inwardly extending stop pins 10.

Each tray has a front member 24 formed of a transversely extending bar of wood having a larger cross-section than side members 12. Front member 24 extends transversely across the front end of the tray and has an interlocking joint connection at opposite ends with the front ends of side members 12. The lower rear edge of front member 24 is rabbetted at 25, see Fig. 4, for receiving the front edge of tray bottom 14 suitably cemented or otherwise secured thereto.

The front edge of front member 24 is formed with a downwardly facing front portion 26 and an upwardly facing front portion 27 providing a pair of front angle faces projecting outwardly and forming the front of the tray. The lower face 26 is formed with a recess 28 extending transversely across the front of the tray and longitudinally of member 24 to form said member into a hand grip or handle by which the tray may be operated. The upwardly facing portion 27 of front member 24 supports a label holder 29 for receiving an index label identifying the contents of the tray.

The upper rear portion of front member 24 is formed with an inclined face extending downwardly and rearwardly as indicated at 30, to provide an inclined support for the lower free edges of card holders in the tray as illustrated in Fig. 4, and in continuation of the support provided by a bottom stop 32.

Bottom stop 32 is in the form of a wood block having a wedge-shape in cross-section as shown in Fig. 4, and is positioned in the front end of the tray. The front portion of bottom stop 32 has a vertical cross-section somewhat greater than the thickness of side members 12 in order that the forward upper face thereof will terminate in approximate registry with the rear lower edge of rear supporting face 30 on front member 24. From this forward edge the upper face of bottom stop 32 inclines rearwardly and downwardly to a sharp rear edge 33 for engaging end card holder 34 for holding it in position in a manner well-known in the art. The lower rear face of stop member 32 is provided with an inclined portion 35 to bring the sharp edge 33 in spaced relation above the upper surface of tray bottom 14 as shown in Fig. 4. This provides for the lugs on the end card holders engaging under the rear sharp edge 33 of bottom stop 32 so that the bottom stop will effectively hold the card holders in proper position in the tray at the front end.

Bottom stop 32 is provided with a transversely extending channel 36 of a T-shape in cross-section as shown in Fig. 4 for slidably receiving a pair of slide members 37 of T-shape in cross-section in channel 36 in end-to-end relation. The outer ends of each of the slide members 37 are provided with projections 38, see Fig. 8, for engaging in channels 15 at the sides of the tray in the outwardly projected position thereof for latching bottom stop 32 in attached relation in the tray against accidental displacement. Bottom stop 32 is provided with a pair of apertures 39 intersecting T-shaped channel 36 as shown in Figs. 4 and 7. These apertures 39 provide finger openings by which slide members 37 can be operated through engaging the fingers in notches 40 cut in the forward edges thereof which normally register with openings 39 in a manner that shoulders are provided for manual engagement so slide members 37 can be moved to have their ends retracted into abutting relation as illustrated in Fig. 7 for removing the bottom stop from the tray.

The bottom portion of bottom stop 32 is recessed as indicated at 41 for receiving and housing a metallic U-shaped resilient wire 42 having the ends engaged in recesses in the end portions of slide members 37 as shown in Fig. 7. The side portions of bottom stop 32 indicated at 43 provide stop shoulders against which the end portions of spring 42 engage in resiliently projecting slide members 37 outwardly for thereby limiting the outward sliding movement of members 37. Spring 42 having the ends engaged in slide members 37 also prevents disengagement of slide members 37 from the channel in bottom stop 32 when it is moved from the tray. Spring 42 therefore serves the purpose of projecting the slide members into latching position, limits their movement and prevents removal from the bottom stop by engaging the shoulders at opposite sides of the recess.

Bottom stop 32 may be readily inserted and removed from the front end of a tray in engagement with an end card holder in a manner shown in Fig. 4 so that the card holders are held against longitudinal sliding movement in the tray.

By grasping bottom stop 32 between two fingers engaged in openings 39, the bottom stop can be readily removed from the tray when slide members 37 are moved into the position shown in Fig. 7 to disengage latch projections 38 on the ends

thereof from channels 15. The bottom stop is also readily replaced in the tray by holding it in the same manner as above described during replacement, the sharp rear edge 34 being first inserted into engagement with the end card holder while the forward end of the bottom stop is subsequently moved into position in the tray. Upon releasing slide members 37 spring 42 forces latch projections 38 under slide members 12 into channels 15 so that the bottom stop is latched in position in the manner shown in Fig. 4. In this position bottom stop 32 forms a support for the forward card holders in the tray in conjunction with face 30 of member 24 so that index cards carried thereby can have entries made thereon while supported on the upper face of the bottom stop.

The entire cabinet is made substantially of wood or wood veneer suitably cemented or glued together almost entirely eliminating the use of metal in the construction of the cabinet. Hooks 23, label holder 27, spring 42 and a few screws used in assembling the cabinet constitute the only metal content in the cabinet. Yet, the cabinet is rugged and efficiently supports the trays in position for free sliding movement into and out of the cabinet for the normal use of the visible index records in the tray.

In operation, a tray is manually gripped by inserting the fingers in recess 28 of front member 24. The tray may then be pulled outwardly from the fully housed position in the cabinet as shown in Figs. 1 and 4, until a tray and its connected tail-piece is pulled into a position where hooks 23 contact projections 10 on guide strips 8. In the forward motion of a tray the free upper ends of the hooks engage projections 10 in the manner illustrated in connection with the tail-piece shown on the bottom tray in the cabinet as illustrated in Fig. 4. Further forward movement causes the hook members 23 to fully engage projections 10 in the manner illustrated by the upper tray shown in Fig. 4. In this position the tray is supported in front of the cabinet for free swinging movement on the hinge connection with tail-piece 20 thereof and can be moved into a vertical position as shown in Fig. 4. This presents the visibly indexed records in the tray at the front of the cabinet for inspection or the entry of records in a manner well-known in the art.

Should it then become desirable to entirely detach the tray from the cabinet, this may be done by lifting the tray upwardly and moving the tail-piece with the tray rearwardly into the compartment to a sufficient extent that the free ends of hooks 23 will be disengaged and extend rearwardly of projections 10. Then by tilting tail-piece 20 upwardly at the front end where it is hingedly connected to the rear end of the tray, the tail-piece may have its rear inclined face 22 engaged with the upper surface of partition 7 forming the bottom of its compartment in the manner indicated at 50 in Fig. 4, when the free end of hooks 23 will clear projections 10 by being moved below and out of line therewith. In this position forward movement of tail-piece 20 will enable the tray and the tail-piece to be entirely detached from the cabinet.

To insert a detached tray into the cabinet, the tail-piece is moved into the position shown at 50 in Fig. 4 when it is moved rearwardly as indicated by the arrow until hooks 23 clear stop projections 10 and extend rearwardly thereof into the guide channels at the sides of the cabinet whereupon the tail-piece and the tray are guided

by guide strips 8 in sliding movement back and forth in the cabinet between the forward and rear positions therein.

By having side members 12 engage between guide strips 8 in the guideways formed thereby at the sides of the cabinet with guide strips 8 providing additional support for partitions 7 at the side edges of the cabinet where side members 12 engage therewith, it is possible to provide a strong wooden visible cabinet structure in which the weight and forces applied to the tray are transmitted by side members 12 directly to guide strips 8 and side walls 2 of the cabinet. This provides for the use of substantially thin veneer partitions 7 providing for economy in the use of space and yet providing for the construction of a wood cabinet having substantial strength and efficiency in carrying a plurality of visible index card holders and cards for convenient reference.

The construction of the front member and back stop also provides for efficiently retaining card holders in the tray and provides for the use of a substantially thin sheet of veneer to form a tray bottom so that a strong tray for efficiently holding a series of card holders is provided by the cooperation of the side members, the front and rear members joined at the ends of the side members to form a rigid frame structure efficiently carrying the weight of the tray. The bottom stop also cooperates with the front member in retaining the card holders in position against longitudinal sliding movement in the tray and in supporting the front ends thereof. Yet, the bottom stop is readily removable to provide for the shifting and interchanging of card holders in a manner well-known in the art in the operation of a visible index.

The invention claimed is:

1. A card index cabinet, comprising a casing having spaced side walls formed with a plurality of spaced parallel longitudinal grooves opening through their inner faces and arranged in opposite corresponding relation, a plurality of partitions extending between opposite side walls in spaced parallel relation each having its side margins seated in opposite corresponding grooves, a plurality of guide strips engaged with the inside faces of said side walls and the lower side margins of said partitions, each guide strip having a laterally projecting rib seated in one of said grooves, means rigidly retaining said partitions and ribs in said grooves for securing said side walls together in cabinet forming relation, said partitions forming a plurality of separate tray compartments, said strips forming with said side walls and margins of the partitions below guide channels at opposite sides of said cabinet, a tray slidable in each compartment having side members slidably guided in opposite channels, and cooperative means on the rear end of each tray and at the front end of said cabinet for normally retaining the trays against complete detachment from the cabinet when slidably withdrawn from the compartments.

2. A card index cabinet, comprising a casing having spaced parallel side walls, each side wall having its inner face formed with a plurality of spaced parallel longitudinal grooves terminating in spaced relation from the front edge, a plurality of partitions extending between opposite side walls in spaced parallel relation each having opposite side margins seated in oppositely disposed grooves in said side walls with the front edges thereof engaged with the side walls at the front ends of said grooves, a plurality of guide strips engaged with the inner faces of said side walls, each guide strip being engaged with the lower face of a partition adjacent to the marginal portion thereof and having a laterally projecting rib thereon seated in the groove with the adjacent partition and the front end of the rib engaging the side wall at the front end of said groove, means rigidly retaining said partitions and ribs in said grooves in said side walls and cooperating to form tray compartments in said cabinet and retain said side walls together in cabinet-forming relation with the guide strips forming with said side walls and margins of the partitions below guide channels at the opposite sides of each compartment along the inner face of each side wall, a tray slidable in each compartment having side members slidably guided in said channels, a tail-piece hingedly mounted on and extending rearwardly from the rear end of each tray, said tail piece having side portions slidably engaged in said channels and guided by said guide strips, said tail-piece being adapted to have its bottom face ride on the partition forming the bottom of the compartment for the tray and having an upwardly and rearwardly inclined face on the rear end thereof, hooks mounted on the upper face of said tail-piece adjacent to the rear end thereof and extending upwardly adjacent to the inner faces of said guide strips at opposite sides of each compartment, and stop projections extending inwardly from the forward ends of the guide strips adapted to normally be engaged by said hooks for retaining a tray against complete detachment from said cabinet when withdrawn therefrom, said tail-piece being adapted for tilting of the front end upwardly when near the front end of the compartment for engagement of the inclined face on the rear edge thereof with the partition for moving the hook portions out of alignment with said stop projections whereby the tray may be completely disengaged from said cabinet.

3. A card index cabinet, comprising a casing having spaced parallel side walls, each side wall being formed with a plurality of spaced parallel longitudinal grooves opening through its inner face and arranged in opposite corresponding relation, said grooves terminating in spaced relation from the front edge of each side wall, a plurality of partitions extending between said side walls in spaced parallel relation and having the side margins thereof engaged in corresponding grooves in opposite side walls for dividing said cabinet into a plurality of tray compartments, a plurality of guide strips mounted against the inside face of each side wall at each side of each compartment in said cabinet, each guide strip having its upper edge engaging the lower face of one of said partitions, a rib projecting laterally from each guide strip and cooperating with the adjacent marginal portion of the partition to fill said groove in said side wall for rigidly holding said guide strips in position relative to said side wall, the front edges of said ribs and each partition engaging the side wall at the front end of said groove for retaining said partitions and guide strips against longitudinal movement in said grooves, a tray slidably mounted in each compartment having side members slidably engaged in the guide channels formed by said guide strips and partitions along the inner faces of each side wall, a tail-piece hingedly mounted on each tray at its rear edge and extending rearwardly therefrom, cooperative means on the rear

edge of each tail-piece and at the front end of each guide strip adapted to normally interengage for retaining each tray against complete detachment from said cabinet when withdrawn from the compartment therein, each tail-piece being formed for cooperation with downwardly and rearwardly inclined front ends on said guide strips and having a downwardly and forwardly inclined rear end to engage the partition below so that by tilting the front end of each tail-piece upwardly near the front end of its compartment, said cooperative means will be positioned for disengagement whereby a tray and its connected tail-piece may be disengaged from said cabinet.

CARL F. WOLTERS.

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