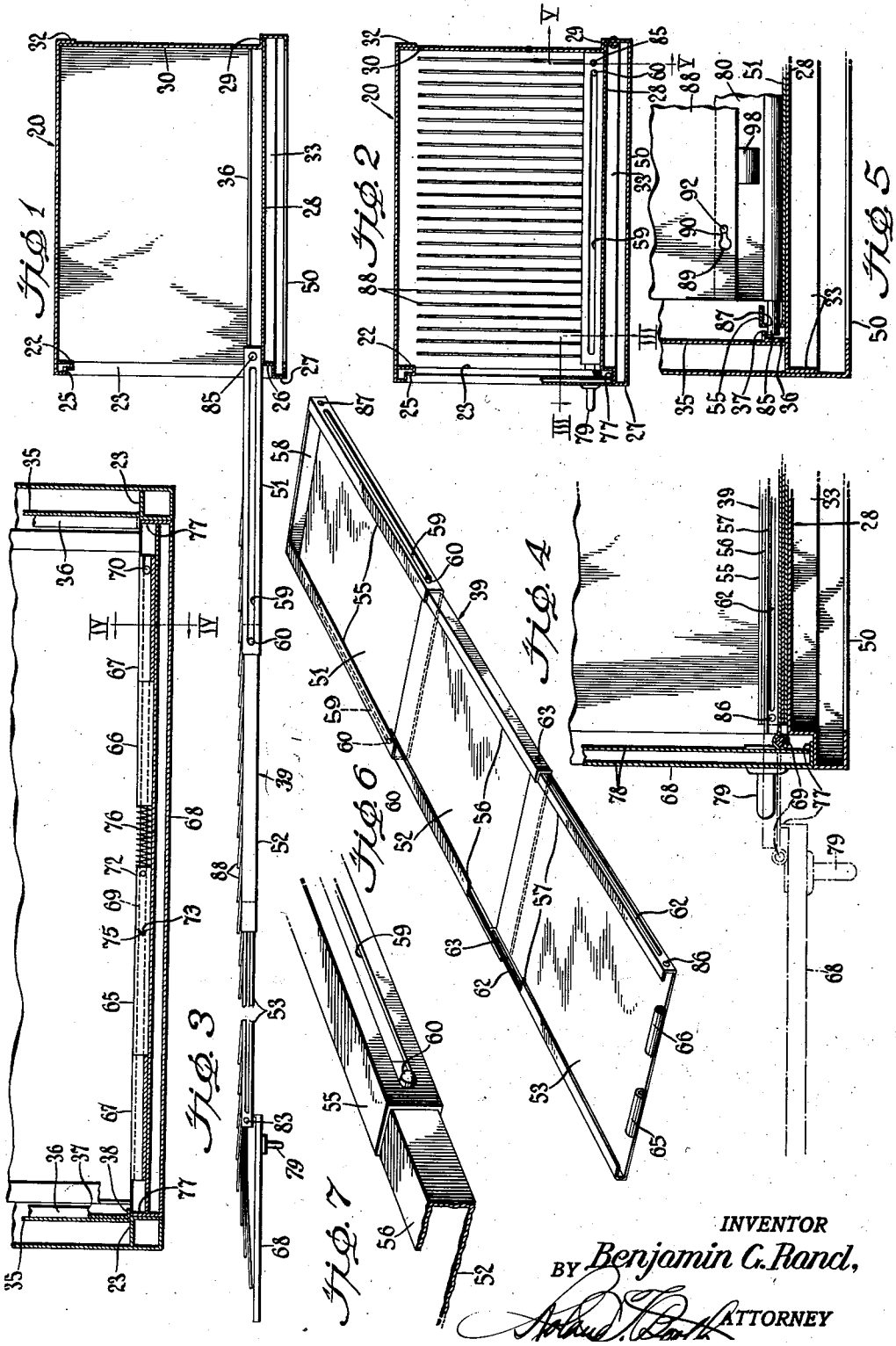
July 6, 1937. B. G. RAND 2,086,047

CARD INDEX FILE

Filed July 30, 1932 3 Sheets-Sheet 1



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July 6, 1937. B. G. RAND 2,086,047

CARD INDEX FILE

Filed July 30, 1932 3 Sheets-Sheet 2

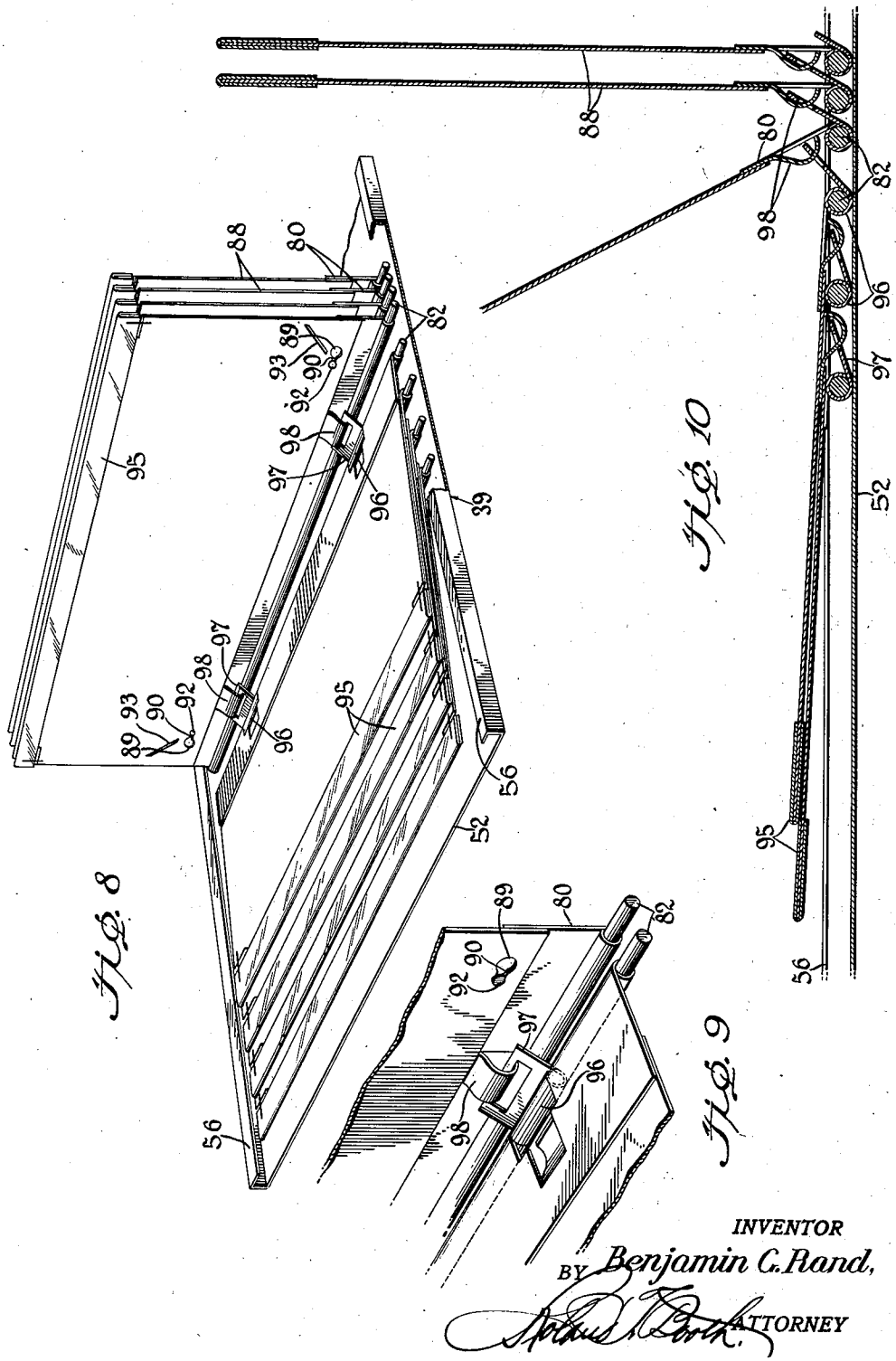


Fig. 10

Fig. 8

Fig. 9

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Filed July 30, 1932 3 Sheets-Sheet 3

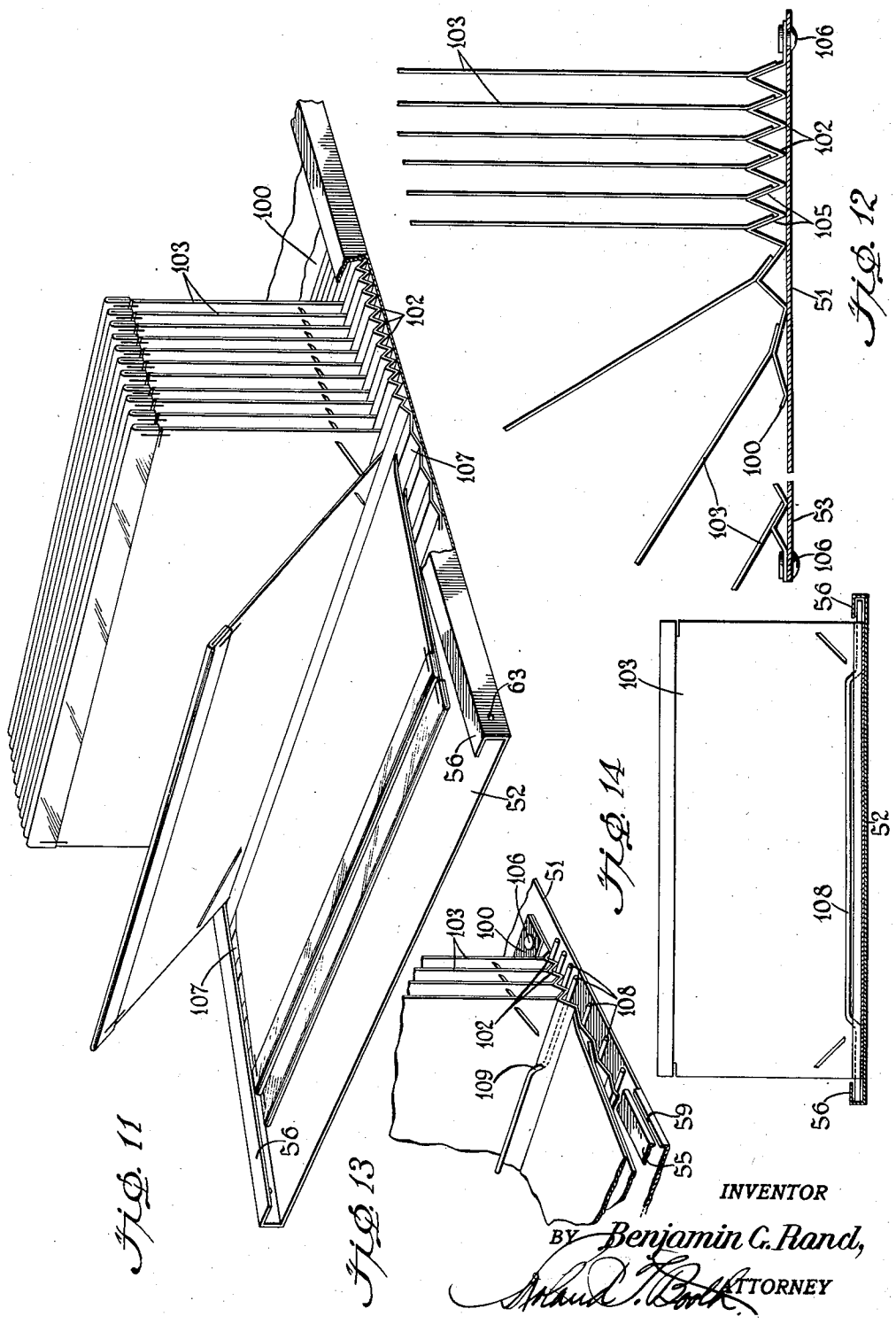


Fig. 11

Fig. 12

Fig. 13

Fig. 14

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CARD INDEX FILE

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Application July 30, 1932, Serial No. 626,697

15 Claims. (Cl. 129—16)

This invention relates to card index files and it has for one of its objects the provision of a collapsible or extensible record member support wherein the record members are adapted to be disposed in visible offset overlapping relation when the files are in use and retracted in closely stacked relation when they are not in use.

Another object of the invention is to provide an extensible filing tray for cooperation with an extensible series of connected record members whereby the record members are automatically exposed in offset overlapping relation when the tray is extended.

In one embodiment of the invention a series of relatively slidable interconnected tray sections are mounted in a filing casing or cabinet in which one of the tray sections is slidably guided. These sections are collapsible into the casing. Cards or record members in series form are extensibly connected together, either detachably or permanently, and the opposite extremities of the card series are connected to the corresponding opposite extremities of the series of tray sections. Thus when the tray sections are withdrawn from the casing and extended the series of record members is also extended. These record members are normally in an upright position inside the casing and they are so connected and arranged that the operation of extending them, incidental to the withdrawal of the tray sections from the casing, causes them to tilt forwardly and to lie substantially horizontal, in which position their marginal edges are visible in offset overlapping relation. A closure for the casing is provided upon one of the end tray sections which assists in maintaining the record members in the latter substantially horizontal position.

Therefore, a relatively extensive series of index data carrying cards is visible while the file is in use, and in its closed position the cards and tray sections occupy a relatively small space.

In the drawings:

Fig. 1 is a cross-section of a filing casing having a collapsible filing tray attached thereto in extended position.

Fig. 2 is a cross-section of a file casing having a collapsible filing tray shown in retracted position therein.

Fig. 3 is a fragmentary cross-section, on a larger scale, taken substantially along the line III—III of Fig. 2.

Fig. 4 is a fragmentary cross-section taken substantially along the line IV—IV of Fig. 3, and having filing trays added.

Fig. 5 is a fragmentary cross-section, on a larger scale, taken substantially along the line V—V of Fig. 2.

Fig. 6 is a perspective of a collapsible record member supporting tray.

Fig. 7 is a fragmentary perspective of telescoping portions of the collapsible tray.

Fig. 8 is a fragmentary perspective of record members mounted upon the collapsible tray.

Fig. 9 is a fragmentary perspective of record members and holders therefor and illustrating in detail the manner in which record holders are interconnected.

Fig. 10 is a vertical section of a plurality of record member holders of the type shown in Fig. 8.

Fig. 11 is a perspective similar to Fig. 8 and illustrating another form of record member holders.

Fig. 12 is a fragmentary view, on a larger scale, showing in detail the structure included in Fig. 11.

Fig. 13 is a fragmentary perspective of another form of the invention in which reinforcing and guiding wires are added to the structure shown in Fig. 11; and

Fig. 14 is a cross-section of a collapsible tray having record member supports therein of the type shown in Fig. 13.

Referring to Figs. 1 to 7, a filing case or cabinet **20** is provided which is composed of relatively thin material and has angular beads **22** and **23** extending about the inner front edges of the casing top and sides, respectively. An inwardly offset shoulder **25** extends along the upper bead **22** and is disposed in opposed relation to a similar shoulder **26** formed across the lower front bead portion of the casing and which is included in a bottom plate **28** having its rear edge secured beneath an offset portion **29** of a wall **30** forming the rear of the casing. The top and rear of the casing are overlapped and secured as indicated at **32**. The bottom plate **28** has flanges **33** along its marginal portions to facilitate rigid connection to the walls of the casing. As best shown in Figs. 3 and 5 each side wall is provided with an additional wall section **35** which rests upon the bottom plate **28**. Oppositely disposed guiding strips **36** having upper inwardly turned flanges **37**, and front inwardly turned flanges **38**, (Fig. 3), are supported along the side walls of the casing and have their ends disposed in the corners joining the wall section **35** and bottom plate **28**. These strips **36** constitute retaining guides or guideways for a col-

lapsible or extensible and sectional file carrier or tray 39 that is slidable in the casing upon the bottom plate 28.

It will be observed from Fig. 2 that the bottom plate 28 and rear wall 30 together with a bottom support 50, constitutes a continuous sheet of material which is bent or folded into the form shown.

The filing tray 39 is composed of a plurality of telescoping tray sections 51, 52 and 53 which are provided with inwardly turned telescoping angular guide flanges 55, 56 and 57, respectively. The rear end of the section 51 has a flange 58 joining the ends of the flanges 55. A pair of slots 59 extending a greater portion of the lengths of the flanges 55 slidably receive a pair of pins 60 that are rigidly secured adjacent the rear end of the section 52 on opposite sides thereof to prevent the sections from being disassembled or separated in the direction of their telescoping movement. Likewise the flanges 57 and 56 are provided with similar slots 62 and pins 63, respectively, to prevent their separation. Thus, within the limits of the slots 59 and 62 both sections 52 and 53 can be telescoped into the section 51 or withdrawn or extended to the position shown in Fig. 6.

The outer end of the section 53 has a plurality of integral hinge barrels 65 and 66 which cooperate with similar hinge barrels 67 rigidly secured to a closure 68 for the front of the file casing. A rod or wire 69 extends through the barrels to provide hinging relation between the section 53 and the closure. One end of the wire 69 has an angular projection or hook 70 extending therefrom and engaging in a slot in hinge barrel 67 as shown in Fig. 3, while a sleeve 72 is mounted upon an intermediate portion of the wire between the hinge barrels 65 and 66 with a pin extending transversely through the sleeve and wire. One end of the sleeve has a V-shaped projection 73 thereon which normally fits into a V-shaped notch 75 in the end of the adjacent hinge barrel 65. The other end of the sleeve is secured to one end of a coil spring 76 normally under compression which surrounds the wire and has its other end abutting the hinge barrel 66. When the closure is in its upright or closed position, as shown in Figs. 2 and 3, the V-shaped projection and notch interengage under the influence of the spring and thus yieldably maintain the closure in this position. However, the closure may be pivoted upon the hinge wire 69 to the position shown in Fig. 1 where the V-shaped projection is cammed out of notch 75 and where it will be held until it is desired to move the closure to the upright position to close the casing.

In movement of the closure from upright position to horizontal position sleeve 72 and wire 69 are moved to the right as shown in Fig. 3, end 70 sliding in the slot in hinge barrel 67 but held against rotation relative to hinge barrel 67, projection 73 moving out of notch 75 and riding along the edge of hinge barrel 65. When the closure is moved again to upright position the notch is again reached by the projection and the spring 76 will operate sleeve 72 to project projection 73 to engage in notch 75. The movement of sleeve 72 is against the tension of spring 76 and the projection and notch have beveled camming surfaces for camming projection 73 out of notch 75. Of course, another notch similar to notch 75 may be provided in hinge barrel 65 at right angles to notch 75 for receiving projection 73 so closure 68 may be effectively held in the position shown in dotted lines in Fig. 4.

It will be observed that the barrels 67 are spaced slightly from the lower edge of the closure and that stop flanges 77 are provided to extend along the inner edge of the closure for impinging upon the bottom of the section 53. When the closure is in open position as shown by the broken lines of Fig. 4, it constitutes a horizontal support or shelf extending parallel to, or in the same general direction as, the section 53. The closure is composed of double walls 78 and the stop flanges 77 continue beyond the lateral edges thereof. In order to facilitate the extension of the sectional tray, a handle 79 is mounted upon the closure for manual manipulation.

Referring to Fig. 5 and Fig. 8, a group of record member or card holders 80 is supported in the tray 39 and these holders are provided at their lower edges with transverse rods 82 the ends of which are adapted to be guided slidably in the guide flanges 55, 56 and 57. Front and rear gauging rods 83 and 85, (Figs. 1, 2 and 5), are similar to the other rods with the exception that they are longer and their ends are positively and pivotally mounted by extending through openings 86 and 87 adjacent the front and rear ends of the sectional tray 39. The ends of the rod 85 are guided by the flanged guiding strip 36, (Fig. 5), from the rear to the front of the casing. However, the front rod 83 need not extend beyond the outer surface of the flanges 57. Forward movement of the rod 85, together with the section 51, is arrested by the stops 38, (Fig. 3), at the front end of the strips 36.

Each record member holder detachably supports a card or record member 88 which is provided with openings 89 having slots 90 communicating therewith and directed toward each other for receiving the heads of rivets 92. These cards 88 are bent along their intermediate portions until the larger openings 89 register with the rivet heads 92 and then by releasing them the slotted portions 90 snugly engage about the rivets. Slots 93 adjacent the inner corners of the cards are provided for receiving record bearing members, cards or information slips which are adapted to be attached therein, and strips 95 are folded over and secured about the outer edges of the cards to provide pockets in which index data may be applied

Each rod 82, 83 and 85 is provided with hinges 96 having slotted extensions 97 for receiving therethrough suitable hooks or loops 98 secured to the several record members. Thus the entire group of record members are secured together adjacent the respective rods. As best shown by Figs. 2, 8, 9 and 10 the record members in their upright position are disposed relatively close together when the sections 51, 52 and 53 are collapsed or telescoped. However, when the sections are drawn outwardly by the handle 79, the rods 83 and 85 begin to spread or separate and the intervening record holder rods 82 also separate uniformly. In this operation the hinges 96 move or tilt the record members forwardly until they are substantially in horizontal position and the outer or upper edges of the marginal strips 95 are then arranged in visible offset overlapping relation. This extended position of the cards and card holders is shown clearly in Fig. 1. The members are automatically returned to their upright position when the sections are collapsed or telescoped to the position shown in Fig. 2.

In the form of the invention shown by Figs. 11 and 12 the sectional tray 39 is employed for receiving a sheet of material 100 having transverse plaits 102 of accordion-like form and record members 103 for receiving information and hold-

ing information slips or record cards are secured to rearwardly inclined portions 105 of the plaits. Opposite ends of the sheet of material are positively secured, as indicated at 106, to the front and rear ends of the sections 53 and 54, respectively. These plaits are extended when the sections are extended and the record members are automatically extended into substantially horizontal visible offset overlapping relation illustrated in the front portion of the illustration of Fig. 11. Likewise, they are automatically returned to their upright position when the tray is collapsed. During these operations, outer marginal portions 107 of the sheet-material which project beyond the lateral edges of the record members 103 are guided in the guide flanges 55, 56 and 57.

Referring to Figs. 13 and 14 the sectional tray 39, together with the plaited sheet-material, is employed but the marginal portions 107 shown in Fig. 11, are omitted and a plurality of wires 108 are employed that are offset, as indicated at 109 and extend through plaited portions 102 of the sheet-material. Thus the outer end portions of the wires are disposed underneath the sheet-material between the angular plaited portions thereof. Hence the rod ends and corners of the plaited portions ride upon the bottom of the tray 39 and the end portions of the wires are also guided in the guide flanges 55, 56 and 57. In this construction the opposite ends of the sheet-material are secured to opposite ends of the tray 39 in the same manner as the sheet 100 shown in Fig. 12.

Although only the preferred forms of the invention have been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

The invention claimed is:

1. A filing device comprising an extensible carrier, a plurality of record members, and means having cooperating connections with the carrier and record members and operable in the extension of the carrier for moving the record members into visible offset overlapping relation substantially parallel to the carrier from a substantially vertical position perpendicular to the carrier.

2. A filing device comprising an extensible carrier, a series of record members normally disposed in an upright position upon the carrier, and means having cooperating connections with the extensible carrier and record members for tilting the record members into visible offset overlapping relation when the carrier is extended.

3. A filing device comprising an extensible carrier, a plurality of record members disposed in an upright position upon the carrier, means having a part detachably and interchangeably connecting each of said record members to the carrier, and means on said parts having cooperating connections for moving the record members from said upright position into visible offset overlapping relation when the carrier is extended.

4. A filing device comprising a support having guideways thereon, an extensible carrier mounted for movement between the guideways, a series of record members normally disposed in an upright position upon the carrier, means having cooperating connections with the carrier and record members for tilting the record members into visible offset overlapping relation when the carrier is extended, and means upon the edge portion of the carrier and independently movable to a position in substantial alignment with the carrier for supporting adjacent tilted record members.

5. A filing device comprising a support having guideways thereon, an extensible carrier mounted for movement between the guideways, a series of record members normally disposed in an upright position upon the carrier, means having cooperating connections with the carrier and record members for tilting the record members into visible offset overlapping relation in the carrier when the carrier is extended, means mounted upon the edge portion of the carrier and independently movable to a position in substantial alignment with the carrier for supporting adjacent tilted record members, and means on the tray cooperating with said guideways for maintaining the carrier in a substantially horizontal position as it is drawn outwardly between the guideways.

6. A filing device comprising a casing having guideways therein, an extensible carrier mounted for movement between the guideways, a series of record members normally disposed in upright position upon the carrier, said record members having means for extensibly connecting them together with their upper edges free, said series of record members having at its ends positive connections to the carrier, and means for guiding the record members intermediate the spaced positive connections in a predetermined path in the extensible carrier, said connecting means and positive connections cooperating to tilt the record members in extended relation when the carrier is extended.

7. A filing device comprising an extensible tray, a series of collapsibly connected record members mounted in the tray, the end portions of said series of record members having positive connections to the tray, record members between the positive connections being slidably mounted in the tray, and means for moving the record members to vertical position when the tray is contracted and to horizontal position when the tray is extended.

8. A filing device comprising a series of tray sections telescopingly connected for extension and collapsing action, said sections having guideways along their edges, a series of record members having projections extending laterally from their lower portions, end portions of the series of record members having their projections pivotally anchored to the opposite end portions of the series of sections, and said intermediate projections being mounted for movement in the guideways, and loosely connected hinging members connecting the record members of the series to each other, each hinging member extending from the lower extremity of one record member to a portion spaced from the lower extremity of the next adjacent record member, said record members being automatically movable to tilted or extended position in visible overlapped relation when the sections are extended.

9. A filing device comprising a series of tray sections telescopingly connected for extension and collapsing action, said sections having guideways along their edges, a series of record members having projections extending laterally from their lower portions, end portions of the series of record members having their projections pivotally anchored to the opposite end portions of the series of sections, and said intermediate projec-

tions being guided for movement in the guideways, loosely connected hinging members connecting the series of record members to each other, said hinging members each extending from the lower extremity of one record member to a portion spaced from the lower extremity of the next adjacent record member, said record members being automatically movable to tilted and extended position in visible offset overlapped relation when the sections are extended, and means for mounting the sections for movement in a supported horizontal position.

10. A filing device comprising a series of tray sections telescopingly connected for extension and collapsing action, said sections having guideways along their edges, a series of record members having projections extending laterally from their lower portions, end portions of the series of record members having their projections pivotally anchored to the opposite end portions of the series of sections, intermediate projections being guided for movement in the guideways, and loosely connected hinging members connecting the series of record members to each other, each hinging member extending from the lower extremity of one record member to a portion spaced from the lower extremity of the next adjacent record member, said record members being automatically movable to tilted or extended position in visible offset overlapped relation when the sections are extended, means for mounting the sections for movement in a supported horizontal position, a pivoted extension at one end portion of the series of sections and means for supporting the extension in alignment with the sections to receive free edges of the end record members when they are tilted.

11. A filing device comprising a sectional tray, guiding means along the edges of the tray, plaited sheet material mounted in the tray having opposite end portions anchored to opposite end portions of the sectional tray, the edges of the sheet of material having guiding relation with the guiding means of the tray, and a series of record members mounted upon corresponding sides of the plaited portions of the sheet material whereby extension of the tray extends the sheet and tilts the record members into visible offset overlapped relation.

12. A filing device comprising a sectional tray, and guiding means along the edges of the tray, a sheet of plaited material mounted in the tray and having opposite end portions anchored to opposite end portions of the sectional tray, a series of record members mounted upon corresponding sides of the plaited portions of the sheet of material, an elongate member extending along the lower portion of each record member and along a sheet material, said elongate members having their opposite end portions extending beyond the record members and guided in said guiding means when the sectional tray is extended or collapsed.

13. In a visible card system, means for storing the cards in closely packed vertical position and for exhibiting said cards in substantially separated horizontal position, said means comprising a series of card securing means and an expanding chain means linking said card securing means together, a telescopic guide channel supporting said card securing means and receiving said expanding chain means therein.

14. A visible card index comprising a support having opposed guide channels, record members, means for supporting said record members having portions slidably engaging in said guide channels, portions engaged by said record members, and parts on each record member supporting portion for cooperation with complementary parts on adjacent record member supporting portions operable when said record member supporting portions are moved apart to positively move each record member and its engaging portion from an upright to a horizontal offset position and operable to positively move said record members from said horizontal to an upright position when said supporting portions are moved toward each other into a compact relation.

15. A visible card index comprising a series of record members disposed in upright closely packed relation when stored, a horizontal support having guide and retaining means on opposite side edges, record carrying means slidably mounted on said guide and retaining means having parts carrying said record members above said means in attached relation, and means on each of said parts cooperatively connected with means on adjacent parts for positively moving said record members from said upright stored position into horizontal offset overlapping visible indexed relation when said parts are moved away from each other, and for returning said record members to the stored position when said parts are moved toward each other.

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