

[54] RECORD HOLDING STRUCTURE

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[51] Int. Cl. ....A47b 81/06

[58] Field of Search.211/40, 40 S; 40/104.12,104.17, 40/104.09

[56] References Cited

UNITED STATES PATENTS

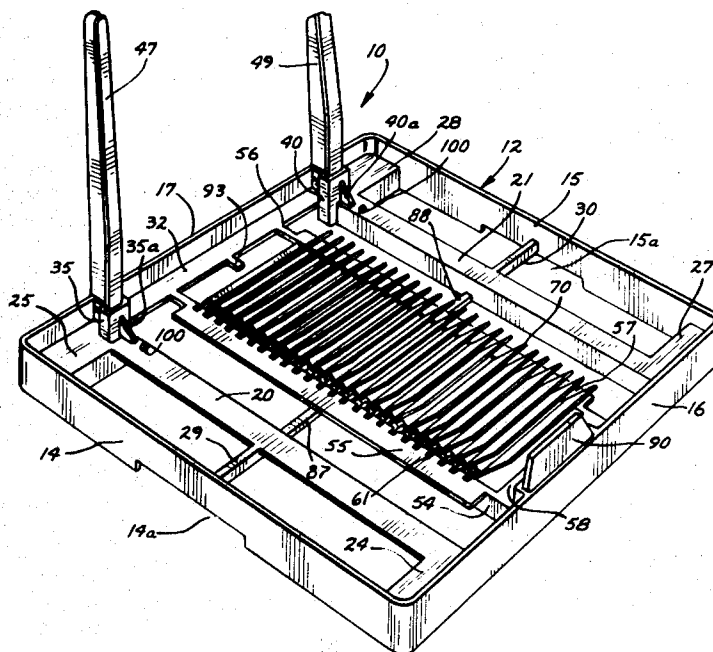
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2,389,811	11/1945	Ozlek.....	135/15 PQ UX
3,446,360	5/1969	Gutierrez .....	211/40

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[57] ABSTRACT

A phonograph record holding apparatus comprising a multiplicity of pivotal record holding members each arranged and adapted to have lateral displacement for their insertion and removal. Said members each comprise a yoke portion to receive a record and have shaft portions extending from either end thereof journaled in aligned apertures of a pair of spaced supporting members with one of said supporting members including a stop member to engage and abut one shaft end of a holding member to retain said holding member in operating position, said stop member being adapted to yield to an upward bias to free said shaft end and permit lateral displacement or movement of said holding member for removal thereof from said supporting members.

8 Claims, 11 Drawing Figures



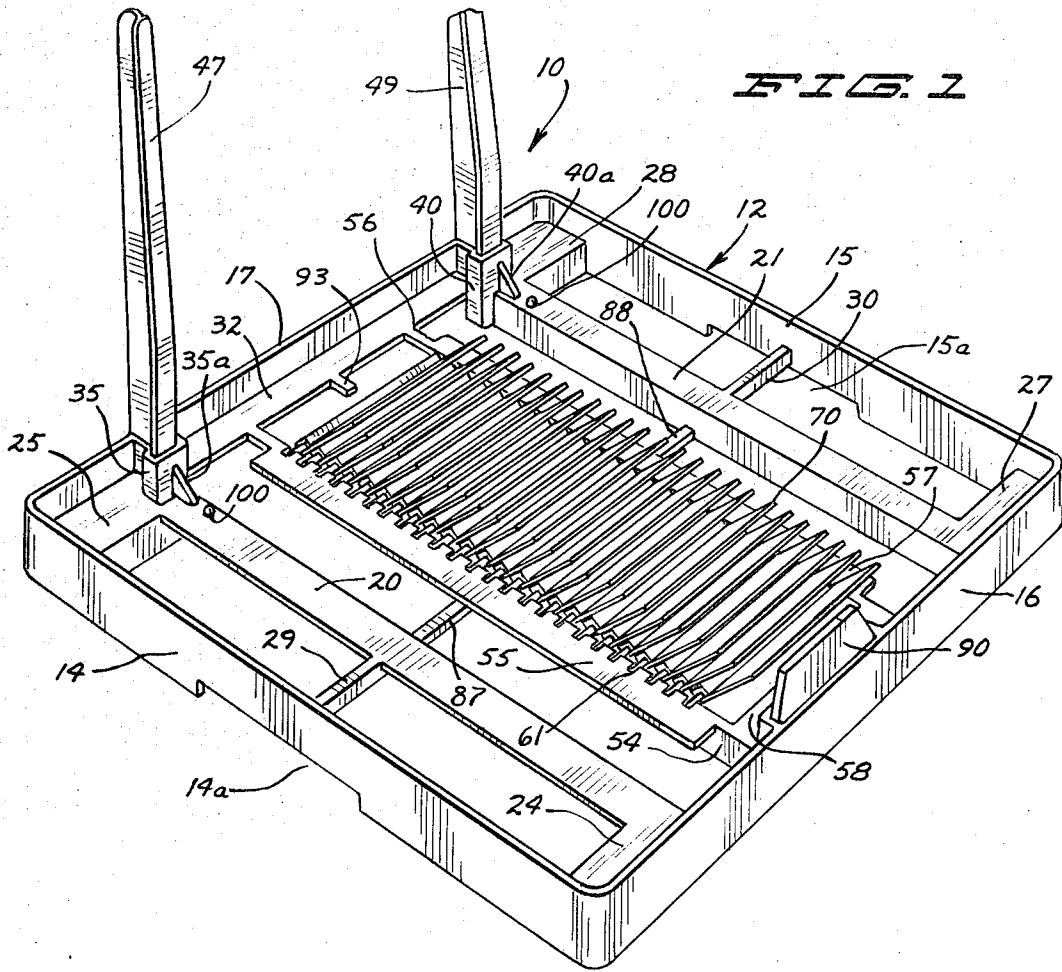


FIG. 1

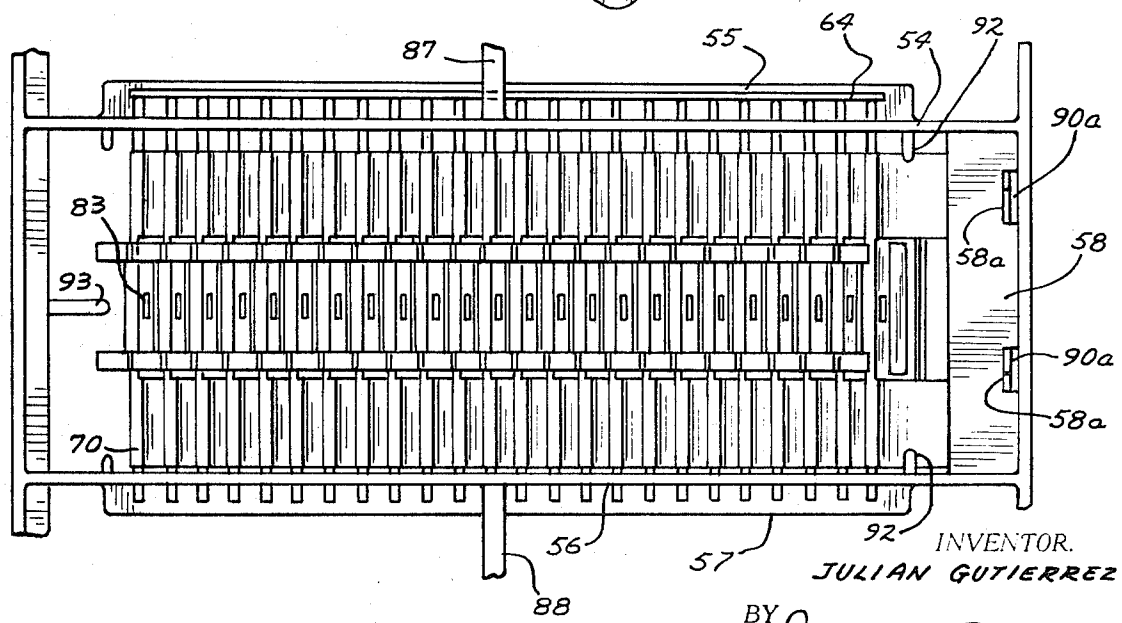


FIG. 4

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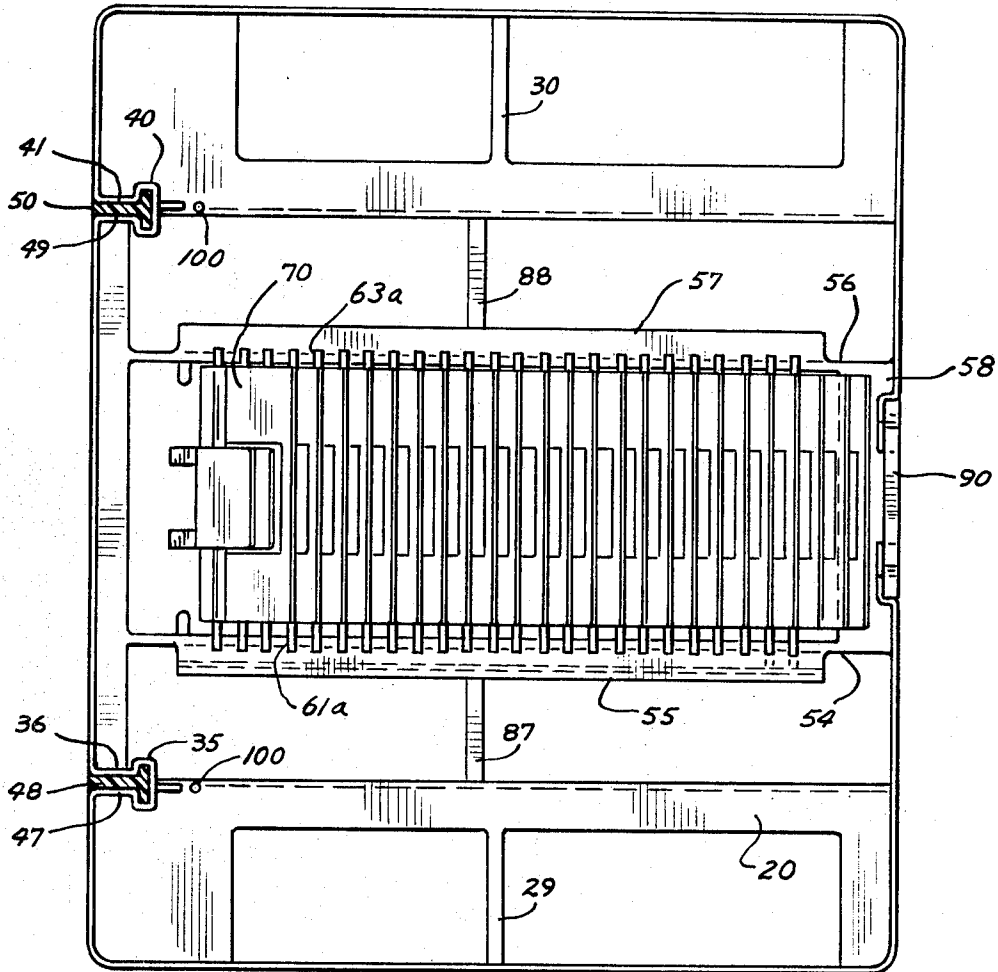


FIG. 2

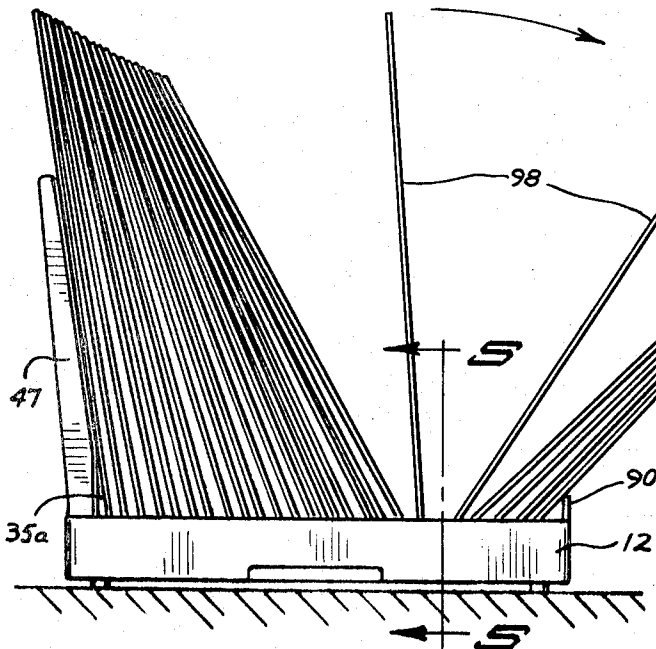
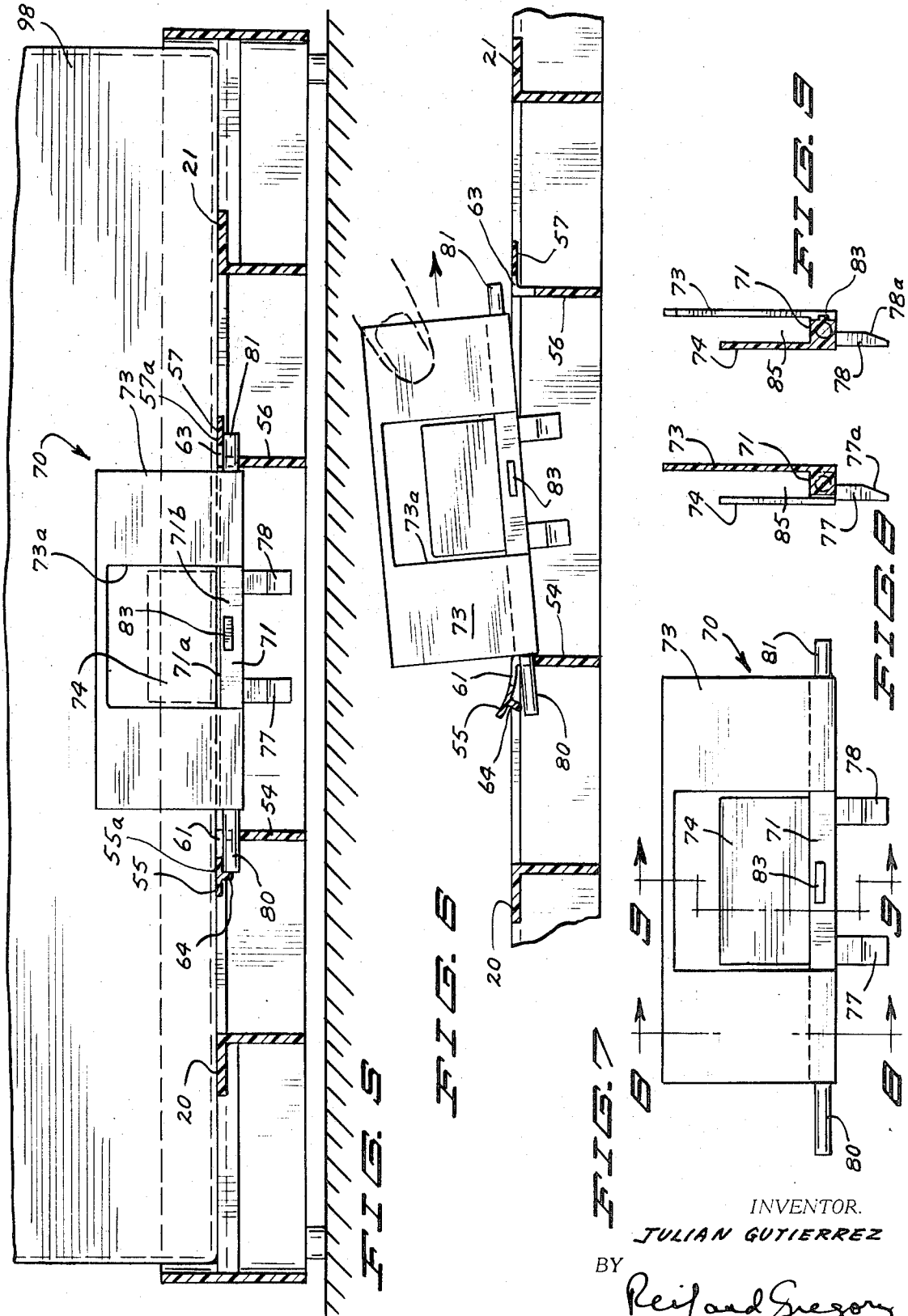


FIG. 3

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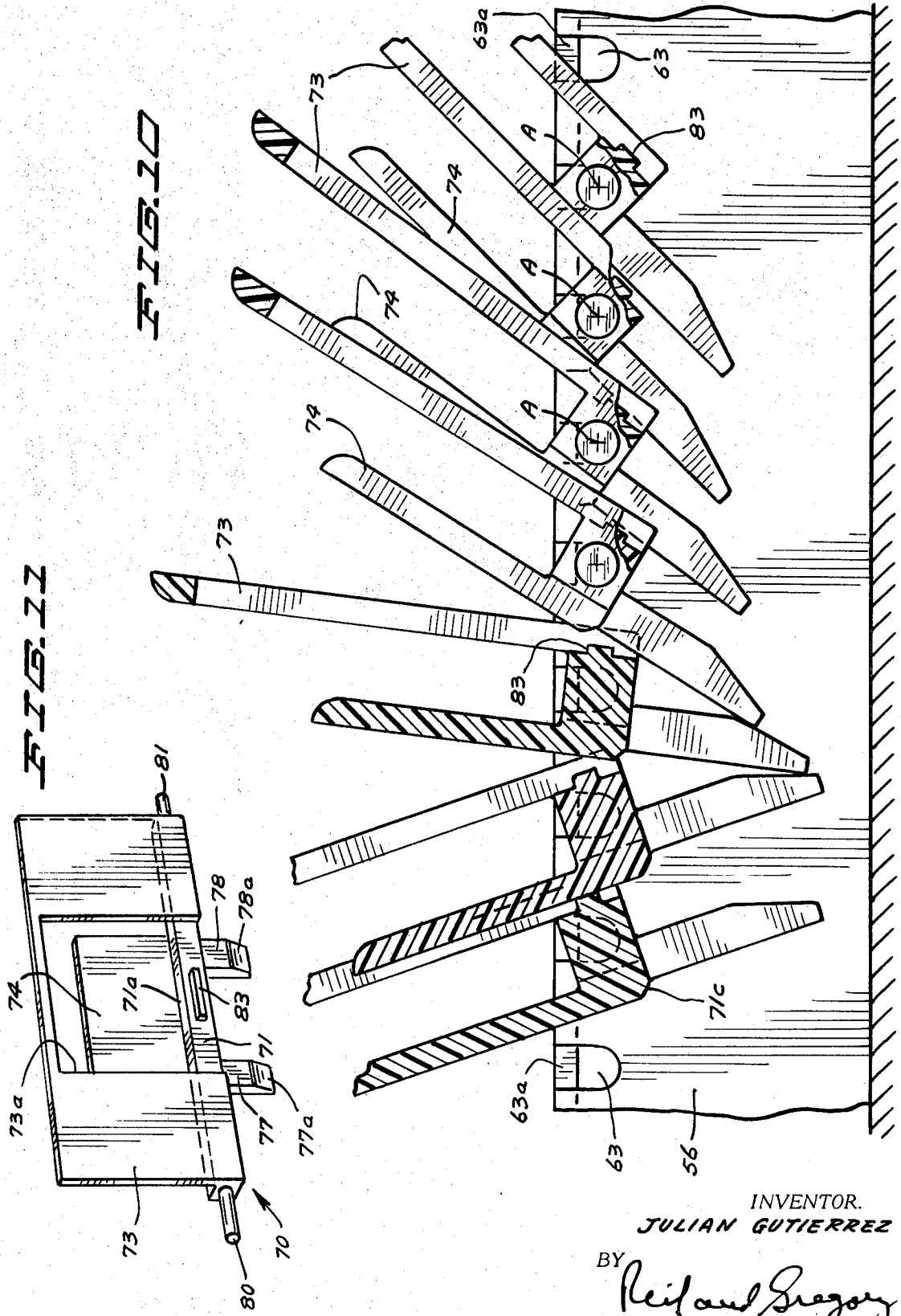
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## RECORD HOLDING STRUCTURE

### BACKGROUND AND SUMMARY OF THE INVENTION

The invention herein relates to an apparatus for holding and displaying relatively flat items. In the present embodiment specific reference is had to phonograph records such as are generally contained in a paperboard jacket. The disclosure herein represents an improvement over the structure set forth in U.S. Letters Pat. No. 3,446,360 issued May 27, 1969 to the inventor herein. The improvement disclosed herein consists principally of the modification of the record holding members thereof and related supporting structure to permit a relatively simple insertion and removal of said members with respect to their operating position.

It is an object of this invention therefore to provide a record holding apparatus into which the record holding members thereof may be readily inserted into operating position.

It is another object of this invention to provide a record holding apparatus which in the assembly of the apparatus in the manufacturing process thereof, a substantial savings in assembly cost is effected by the ease and quickness of installing the record holding members into the basic supporting structure of the apparatus.

It is also an object of the invention herein to provide record holding members with wall portions arranged and constructed in such a manner that the adjacent walls of adjacent of said members nest with each other.

It is another object of the invention herein to provide for a lesser pivotal distance of travel in the movement of the record holding member rearwardly of its perpendicular position than forwardly thereof.

More generally stated it is an object of this invention to provide a record holding apparatus comprising a pair of spaced supporting members having therein aligned pairs of longitudinally spaced apertures, record holding members each having shaft portions disposed in a pair of said aligned apertures, one of said supporting members having a stop member engaging and abutting an end of each of said shaft portions, said stop member being adapted to be biased upwardly to permit said abutting shaft portions to have axial movement outwardly thereof for removal of the other shaft portions of said record holding members from the respective apertures within which they are disposed.

These and other objects and advantages of the invention will be set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the several views and in which

FIG. 1 is a view in perspective with a portion thereof broken away;

FIG. 2 is a top plan view with some portions thereof in section;

FIG. 3 is a view in side elevation on a reduced scale showing the apparatus in operating position;

FIG. 4 is a bottom plan view with portions broken away;

FIG. 5 is a magnified view in vertical cross section taken on line 5—5 of FIG. 3 as indicated;

FIG. 6 is a broken view similar to FIG. 5 showing a detail thereof in a different position;

FIG. 7 is a view in front elevation of a detail of structure on a magnified scale;

FIG. 8 is a view in vertical cross section taken on line 8—8 of FIG. 7 as indicated;

FIG. 9 is a view in vertical cross section taken on line 9—9 of FIG. 7 as indicated;

FIG. 10 is an enlarged broken view showing a detail of structure, and

FIG. 11 is a view in perspective on a magnified scale of an element of the structure herein.

### DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to the drawings, the apparatus comprising the subject matter of the invention herein is indicated generally by the reference numeral 10. Reference is made to the invention herein as a phonograph record holding apparatus merely for the purpose of describing one embodiment thereof.

Said apparatus comprises a rectangular frame base member 12 which may be formed very conveniently as a unitary member of a suitable molded plastic material.

Said base member comprises side walls 14 and 15 and end walls 16 and 17. Strut members are provided within said base member to add rigidity thereto. A pair of such strut members are the members 20 and 21 spaced inwardly of said side walls 14 and 15 and extending longitudinally of said base member.

Said strut member 20 has coplanar right angled front and rear end portions 24 and 25 forming corner portions of said walls 16 and 17 and the respective adjacent end meeting portions of the side wall 14. Said member 21 has like end portions 27 and 28 forming corner portions of said walls 16 and 17 and the adjacent respective end meeting portions of the side wall 15.

Said member 20 has a short central transverse strut 29 extending over to the wall 14 and the member 21 has a similar strut 30 extending over to the wall 15.

Extending along the inner side of the rear wall 17 between the corner strut portions 25 and 28 is a narrow plate member 32.

Integral with said rear wall and extending the height thereof and being formed between said portion 25 and the adjacent end portion of the plate member 32 is a horizontally disposed T-shaped post supporting base portion 35 having a T-slot 36 extending therethrough. A corresponding post supporting base portion 40 having a T-slot 41 therein is formed between the member 28 and the adjacent end portion of said plate member 32.

Upstanding from said post supporting base portions 35 and 40 and removably disposed therein are post members 47 and 49 which are T-shaped in horizontal section having lower end portions 48 and 50 respectively which are adapted to be disposed within said T-slots 36 and 41.

Next to be described is the supporting structure for the record holding members of the apparatus. Extending between and being integral with said end walls 16 and 17 centrally transversely of said base member 12 and in transversely spaced relation with each other are a pair of support plate members 54 and 56 having parallel facing sides.

Said plate member 32 overlies and is shown to be flush with the adjacent end portions of said members 54 and 56. A plate member 58 extends between and is flush with the upper front end portions of said plate members 54 and 56 and is integral with said front wall 16.

Said members 54 and 56 respectively are here shown to have upper oppositely extending flange portions or flanges 55 and 57. Said flange 55 has a somewhat greater width than the flange 57 as will be further described.

Formed at the upper edge portion of said member 54 extending therethrough and spaced therealong are a multiplicity of apertures 61 formed as slots having open upper ends 61a which are here shown to extend into said flange 55 so as to have an upper opening of greater length than the thickness of said member 54. Underlying said flange 55 projecting downwardly therefrom and extending therealong and laterally spaced from said member 54 is a stop member 64 in the form of a rib. Said flange 55 is sufficiently resilient as to be biased upwardly as will be further described.

Said frame member 56 has apertures 63 therein which correspond to and respectively are in transverse alignment with said apertures 61. Said apertures 63 have upper open ends 63a.

Respectively disposed in aligned pairs of said apertures 61 and 63 are record holding members 70. In the present embodiment said holding members as will be described are indicated generally as being formed unitarily as of suitable plastic material and are here shown to have substantially U shaped body portions having depending leg portions and having stub shafts extending outwardly of either end thereof.

Referring to FIGS. 11 and 5-7 and specifically to one of said members 70 as representative of the others, a bottom wall portion 71 is shown here to be substantially rectangular in cross section. Upstanding from one side of said bottom wall portion 71 is a front wall 73 having a central cut out portion 73a as illustrated. Upstanding from the opposite side of said bottom wall portion 71 is a rear wall 74 disposed oppositely of said cut out portion and is shown being of a size somewhat less in width and height than that of said cut out portion. Said front and rear walls are integral with and overlie adjacent side portions of said bottom wall. Said bottom wall in the present embodiment will be of a width to accommodate the thickness of a phonograph record within a paperboard cover or like envelope.

Depending from said bottom wall 71 in spaced relation are a pair of leg portions 77 and 78 having forwardly tapered lower end portions 77a and 78a. Thus said holding members form substantially a yoke shaped member.

Extending oppositely from each end of said bottom wall 71 are stub shafts 80 and 81. The shaft 81 is shown to be shorter than the shaft 80. With the end of the wall 73 and/or the end of the bottom wall 71 engaging the adjacent side of the member 56, said shaft 81 will be of a length to extend through an aperture 63 and underlie the flange 57 as shown in FIG. 5. Said bottom wall preferably will have a greater thickness than the width of the apertures 61 and 63.

The bottom wall portion 71 has a length just sufficiently less than the space between the walls 54 and 56 so that axial or endwise movement of said bottom wall to engagement with said member 54 will withdraw the shaft 81 clear of the flange 57. With the bottom wall 71 in engagement with the member 56, the shaft 80 will extend outwardly under the flange 55 to the point of engagement with said rib or stop member 64. Thus with the shaft 80 having its outer end in engagement with or

abutting the rib 64, said shaft 80 and said shaft 81 will be positioned axially to have portions underlying the flanges 55 and 57. The apertures 61 and 63 thus provide bearing surfaces and said shafts are respectively journaled therein.

Said flange 55 will have sufficient resilience to be adapted to be biased upwardly, as indicated in FIG. 6, and it will yield sufficiently to be raised above the adjacent end portion of the shaft 80 to permit said shaft to be moved axially outwardly beyond said rib to withdraw the shaft 81 clear of the flange 57.

Said walls 73 and 74 in connection with the surface 71a of the bottom wall 71 are described as forming therebetween a record holding chamber 85.

With the member 70 in operating position as indicated in FIG. 5, the upper surface 71a of said bottom wall 71 is disposed in a plane which is slightly below the plane of the upper surfaces 55a and 57a respectively of said flanges 55 and 57, said flanges having coplanar upper surfaces.

Projecting outwardly of the forwardly facing side 71b of the bottom wall 71 within the cut out portion 73a of said wall 73 is a narrow rib 83 of short length. Said rib is here shown somewhat less in thickness than the wall 73.

Strut members 87 and 88 extend between members 20 and 54 and between the members 21 and 56 respectively to add rigidity to said base 12.

Upstanding from said plate member 58 and from the adjacent edge portion of the front wall 16 is a plate like support member 90 to act as a stop in support of a forwardly tilting record as indicated in FIG. 3.

Said member 90 is indicated as having a pair of leg portions 90a disposed through accommodating apertures 58a in said plate member 58 for frictional engagement therein.

Extending inwardly of the forward end portions of the members 54 and 56 are pegs 92 forming stop members for the adjacent holding member 70 as indicated in FIG. 4. A peg member 93 extends forwardly of the plate member 32 to act as a stop for the rearward tilting of the rearmost holding member 70.

At either central lower side portion of the side walls 14 and 15 are shown wide open bottom slots 14a and 15a for ease of grasping and raising the apparatus from a rest position.

With reference to FIG. 3, the reference numeral 98 indicates phonograph records which are shown in operating position.

The rearmost record 98 carried by the base 12 instead of being carried in a holding member 70 will be supported by the surface portions of the support members 54 and 56 retained between the small upstanding pegs 100 forming stop members and the angled stop members 35a and 40a as shown in FIG. 1 and will tilt against the posts 47 and 49 as shown in FIG. 3.

With reference to FIG. 10, the rear lower corners 71c of the bottom wall portions 71 are shown beveled to provide clearance for the ribs 83 in the forward tilt of the holding members 70.

#### OPERATION

The principal function of the apparatus herein described is to provide for a self or automatic forward tilting of the records carried by the holders 70 once the

first or forwardmost record thus held has been manually tilted. A description of the self-tilting of said record holders 70 with records therein is set forth in U.S. Letters Pat. No. 3,446,360 referred to above.

The principal improvement set forth herein with respect to said patent is present in the structure of the record holding members and the directly related structure.

With reference to FIGS. 5-9, a holding member 70 is readily positioned for operation in the base 12 by being taken in hand and tilted as indicated in FIG. 6 with the stub shaft 80 being disposed through an aperture 61 to the point of engagement of the wall 73 with the adjacent side of the member 54. In this position the shaft 80 will underlie the rib 64. Said member 70 is next tilted downwardly to a horizontal position which movement biases the flange 55 upwardly. Then the shaft 81 is moved axially through the aperture 63 which is transversely aligned with said aperture 61 to the point of engagement of the adjacent edge of the wall 73 with the support member 56. In this position, the shaft 81 will have an end portion underlying the flange 57 and the shaft 80 will just clear the rib 64 and then said flange 55 and said rib will spring downwardly and the rib abut the adjacent end portion of the shaft 80. Thus the holding member 70 is held in operating position.

For removal of said holding member, the flange 55 and rib 64 are biased upwardly to clear the shaft 80. The member 70 is merely moved endwise in the direction of said rib to clear the shaft 81 from the flange 57, the holder is then tilted upwardly and pulled outwardly free of the support members 54 and 56.

What is probably the most important benefit from the ease and quickness of the installation of the holding members 70 into operating position is in the factory assembly of the apparatus. Very minimal training, no particular technical skill and no tools are required for the installation of said holding members 70 into operating position.

With reference to the tilting of the holding members, as described, they are arranged and constructed to hold a record in a substantially upright position in being tilted toward the rear and to hold a record in a pronounced forwardly angled position. These two relative positions provide a substantially large angle of movement in being tilted forwardly for a maximum scanning time in which the label on the phonograph record may be read. Further, less force is required to tilt forwardly a holder and the record therein from what is substantially an upright position than from a substantially tilted position. Hence the rib stop members 83 are provided to engage the adjacent rear wall portions of the bottom walls of the adjacent forward holding members to stop and support said members in a near upright position. As indicated in FIG. 3, the rearward tilt of the records increases with regard to the forward positioning of the records in the holders. The rib members 83 serve to hold the records in a more upright position than otherwise. The rearwardmost record will be supported by the posts 47 and 49 and will be retained by the stop members 100 as described.

With reference to FIG. 10, the ribs 83 serve as stop members with respect to limiting the rearward tilting of the holding members 70 but with respect to the forward tilt of the holding members 70, the said holding mem-

bers are spaced sufficiently apart as to permit the rib 83 to clear the bottom wall of the adjacent forward holding member in pivoting forwardly to a point therebelow. Thus in tilting forward, the wall 73 of each rearward holding member nests about the rear wall of the adjacent forward holding member. Thus the angle of forward tilting is increased by a nesting of adjacent walls as described and illustrated. The axes of rotation are indicated by the character A.

The apparatus herein has met with substantial commercial success.

It will of course be understood that various changes may be made in form, details arrangement and proportions of the parts without departing from the scope of the invention herein which, generally stated, consists in an apparatus capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A record holding apparatus comprising a pair of elongated transversely spaced supporting members having aligned pairs of open ended apertures therein spaced longitudinally thereof, record holding members comprising endwise extending shaft portions, each of said record holding members disposing its shaft portions in an aligned pair of said apertures, said record holding members except for their shaft portions having a length less than the space between said supporting members, one of said shaft portions being longer than the other, said shaft portions extending somewhat beyond each side of said supporting members, one of said supporting members having a right angled upper flange portion coplanar therewith extending in a direction away from said other supporting member and overlying the adjacent ends of said shaft portions, the other supporting member having an upper flange portion coplanar therewith extending in a direction away from said one supporting member, said last mentioned flange portion having a depending rib portion forming a stop member and engaging the end of the shaft adjacent thereto, and said last mentioned flange being sufficiently flexible to be biased upwardly to raise said depending rib portion above the adjacent shaft portion to permit said shaft portion to be moved axially outwardly thereof to permit its record holding member to be moved between said supporting members sufficiently for the removal of the other shaft of said record holding member from said first mentioned supporting member.
2. A record holding apparatus comprising a pair of spaced elongated supporting members, said supporting members having transversely aligned pairs of apertures spaced longitudinally thereof, an upwardly yielding stop means in connection with one of said supporting members substantially coextensive therewith and carried thereby remote from the other of said supporting members, said means being in alignment with said apertures of said one of said supporting members,



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record holding members having endwise extending shafts respectively received within aligned pairs of said apertures,  
said stop means abutting the ends of one of said shafts of each of said record holding members and yielding to an upward bias to free the other of said shafts of said record holding members for axial movement to remove said other of said shafts from said aperture of said other of said supporting members,  
each of said record holding members comprises spaced front and rear wall portions having a bottom wall therebetween,  
said front wall having a central cut out portion,  
said rear wall having a height and a width less than the height and width of said cut out portion of said front wall,  
said shafts extending from both ends of said bottom wall,  
a rib portion projecting forwardly from said bottom wall within said cut out portion of said front wall,  
said holding members spaced sufficiently apart whereby in a forward tilting movement each said rib portion underlies the adjacent surface of the forwardly adjacent holding member whereby the front wall of a holding member nest with the rear wall of the adjacent holding member forwardly thereof and receives said rear wall within its cut out portion.  
3. The structure set forth in claim 2 wherein said rib portion is arranged and positioned to be engaged by the rear wall of the adjacent holding member forwardly thereof,  
whereby said rib portion of each of said holding members supports the forwardly adjacent holding member in a spaced relationship thereto.  
4. The structure set forth in claim 2 including a base member,  
said supporting members being disposed within said base member longitudinally thereof, and  
a pair of transversely spaced post members upstanding from adjacent the rear portion of said base member and means in connection with said post members retaining a record in connection therewith in substantially an upright position.  
5. The structure set forth in claim 2 including a base member,  
said supporting members being disposed centrally longitudinally of said base member,  
a pair of longitudinal strut members being respectively spaced intermediate said supporting members and the outer walls of said base member, and

a plurality of transverse strut members disposed respectively between said supporting members and said longitudinally extending strut members and between said longitudinally extending strut members and the outer walls of said base member.  
6. The structure set forth in claim 2, wherein said supporting members each have a flange portion substantially coextensive therewith,  
said flange portions being coplanar and extending in directions away from one another,  
one of said flange portions having a rib depending therefrom therealong forming said stop means, and  
said one of said flange portions being adapted to yield to an upward bias.  
7. The structure set forth in claim 6, wherein said bottom wall has an upper surface disposed in a plane below the plane of said flange portions, whereby records disposed in said holding members rest upon said flange portions.  
8. A record holding apparatus comprising a pair of spaced elongated supporting members,  
said supporting members having transversely aligned pairs of apertures spaced longitudinally thereof,  
an upwardly yielding stop means in connection with one of said supporting members substantially coextensive therewith and carried thereby remote from the other of said supporting members, said means being in alignment with said apertures of said one of said supporting members,  
record holding members having endwise extending shafts respectively received within aligned pairs of said apertures,  
said stop means abutting the ends of one of said shafts of each of said record holding members and yielding to an upward bias to free the other of said shafts of said record holding members for axial movement to remove said other of said shafts from said aperture of said other of said supporting members,  
each of said record holding members is substantially yoke shaped having a bottom wall to support a record disposed therein,  
said supporting members having coplanar upper surfaces,  
said bottom wall having an upper surface disposed in a plane below said plane of said surfaces of said supporting members,  
whereby each said record holding member is free of the weight of a record disposed therein, said record resting on said supporting members.

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