July 18, 1961 J. HUFF 2,992,745

FOLDING RACK

Filed Sept. 30, 1960

Fig. 1.

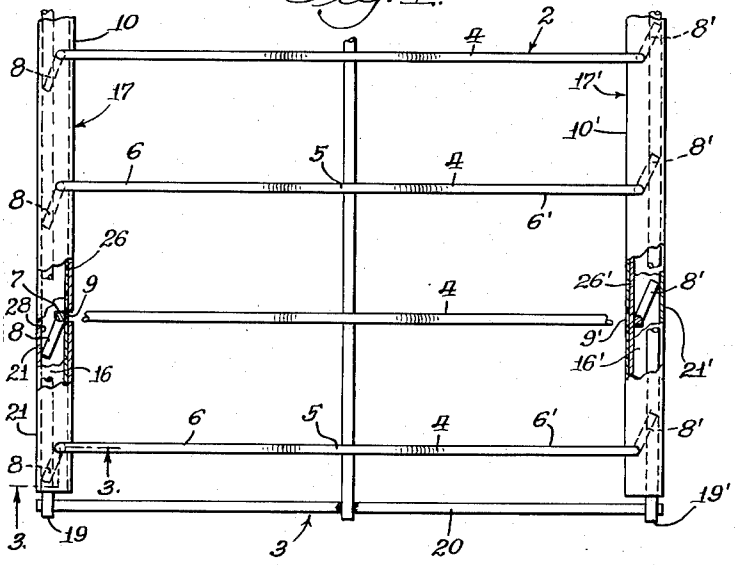


Fig. 4.

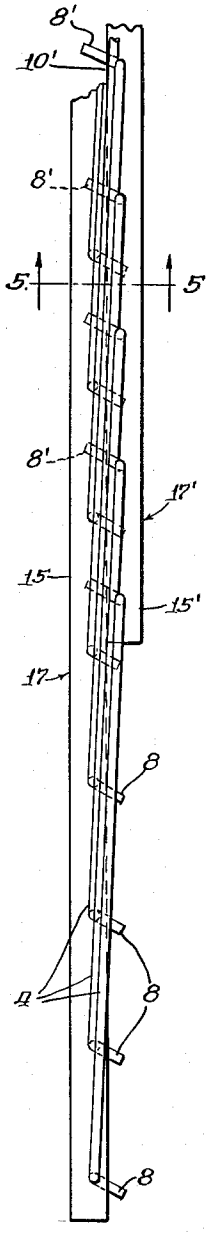
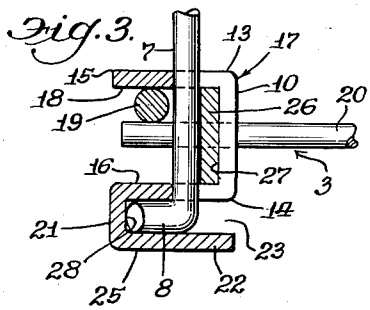


Fig. 3.



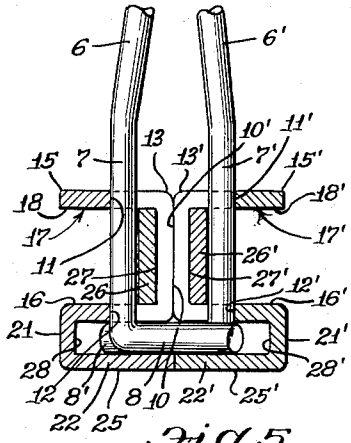
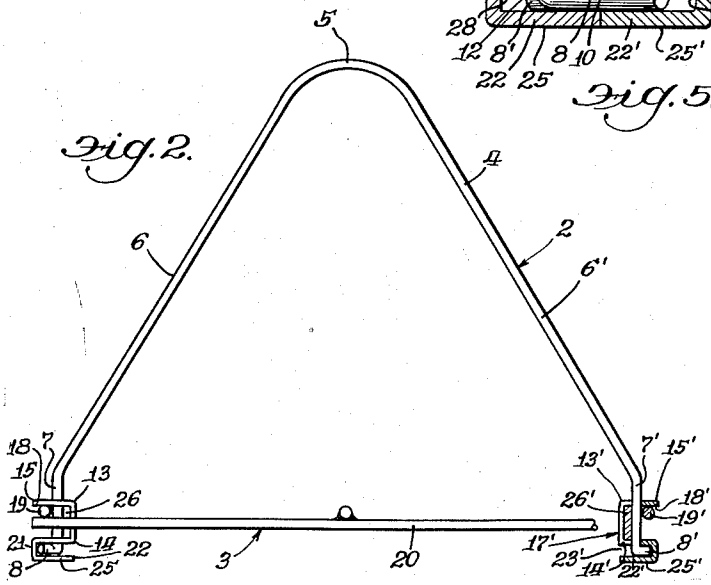


Fig. 5.

Fig. 2.



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United States Patent Office 2,992,745 Patented July 18, 1961

2,992,745

FOLDING RACK

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Filed Sept. 30, 1960, Ser. No. 59,674
11 Claims. (Cl. 211—178)

This invention relates to racks for holding records, files and the like and more specifically to an improved structure over the device in my U.S. Patent 2,892,548.

My improved folding rack is designed to minimize tooling and to provide an arrangement comprising separators extending between and pivoted to holders located at opposite sides of the rack, the connections between the holders and dividers being easily disconnectible so that various spacings between the separators may be obtained by removing or adding separators to the holders.

A further object of the invention is to provide novel connections between the holders and separators, the connections including lugs on the ends of U-shaped wire separators which are reversely angled to the plane of the separator and which enter into longitudinal grooves in the holders between a pair of opposed vertically spaced webs thereof to retain the separators and holders against relative vertical displacement, the lugs also serving as stops abuttable against vertical webs interconnecting the spaced webs to hold the rack squared.

A still further object of the invention is to provide a novel rack wherein the lugs on the ends of the separator wires are caused to swing out of the grooves of the respective holders and project toward the other holder as the rack is skewed and folded so that the lugs at one side of the rack enter the groove in the holder at the other side of the rack to releasably hold the parts in folded position.

The construction comprehends the provision of a plurality of inverted U-shaped dividers having downwardly extending legs at opposite ends which enter vertical slots open at their upper and lower ends through upper and lower horizontal webs of channel shaped holders, the slots being open through the back side of the channel in a vertical web thereof so that the legs are entered and withdrawn transversely of the holder, the legs being held against withdrawal by retaining strips which enter behind the legs between the same and the vertical web and extend across the slots.

In extension of the previous object, the invention contemplates the provision of locking lugs at the lower ends of the legs which in the squared position of the rack swing under the lower web into a longitudinal groove developed between the lower web and a longitudinal flange reversely bent from the free edge of the lower web and projecting therebeneath and yieldably embracing the respective lugs for holding the rack in position.

These and other objects inherent in and encompassed by the invention, will become more readily apparent from the specification and the drawings, wherein:

FIGURE 1 is a plan view of my novel rack in use position, portions being broken away and shown in section;

FIGURE 2 is an end elevational view of the structure as shown in FIGURE 1; partially in section,

FIGURE 3 is an enlarged sectional view taken substantially on line 3—3 of FIGURE 1;

FIGURE 4 is a fragmentary top elevation of the rack in folded position; and

FIGURE 5 is an enlarged sectional view taken substantially on line 5—5 of FIGURE 4.

Description of the invention

Describing the invention in detail and having particular reference to the drawings, there is shown an upper divider or separator portion 2 and a bottom or basal tray portion 3 to which the separator portion 2 is mounted.

The upper portion comprises a plurality of inverted

generally V-shaped spring wire dividers or partitions 4, each of which is preferably a round rod of steel or other resilient material and comprises an apex 5 with downwardly diverging diagonal leg portions 6, 6' which terminate in vertical end portions 7, 7', the lower ends of which are formed with reversely angled locking and holding lugs 8, 8'.

The end portions 7, 7', are entered through vertical slots 9, 9' in upright walls 10, 10' into vertically aligned notches 11, 12 and 11', 12' in the inner edges 13 and 14 and 13', 14' of the top and bottom generally horizontal flanges 15 and 16 and 15', 16' of the channel shaped holders generally designated 17, 17', the flanges 15 and 16 projecting from the top and bottom edges of the vertical wall 10 and flanges 15', 16' projecting outwardly from web 10 respectively forming pockets 18, 18' therewith for reception of associated side elements 19, 19' of the base structure 3 which may include transverse rods 20, 20 interconnecting the side elements 19, 19'. It will be understood that the pockets 18, 18' preferably open outwardly and that the resiliency of the separators tends to maintain the holders yieldably against the respective side members. However, the holders if desired, may be assembled with the dividers in such manner that the pockets face inwardly.

The lugs 8, 8' are disposed respectively beneath the bottom flanges 16, 16' of the holders 17, 17', said holders having webs 21, 21' respectively depending from the free edges of the lower flanges 16, 16' and respectively merging into flanges 22, 22' which extend beneath the bottom webs 16, 16' of holders 17, 17' and form longitudinal slots 23, 23' which respectively receive the lugs 8, 8' therein in the functional or operative position of the rack.

Preferably the flanges 22, 22' respectively pinch the lugs 8, 8' with the flanges 16, 16' to releasably hold the rack in open or operating position either partially skewed or squared particularly when the rack is being used as a file holder without a base at which time the rack seats upon the bottom sides 25, 25' of flanges 22, 22' which respectively are preferably spaced a distance from flanges 16, 16' slightly less than the diameters of the lugs 8, 8'. The weight of the files between the separators when such files rest upon the holders further augments the holding action of flanges 22 and 22' against the flanges 16, 16' by loading the holders so that the slots 23, 23' tend to close.

The holders are retained in assembly with the separators by means of flat, substantially ribbon-like preferably sheet steel retainer strips 26, 26' which fit behind the end portions 8, 8' against the internal sides 27, 27' of webs 10, 10' and close the vertical entry ways or slots 9, 9' blocking escape of the end portions 7, 7' therefrom.

In the construction of the lugs 8, 8' and their placement within the holders, the device features a novel arrangement for holding the rack squared in that lugs 8 abut the web 21 on its interior side 28 and lugs 8' simultaneously engage the interior side 28' of web 21' in the fully open position of the rack.

The lugs 8, 8' and slots 23, 23' serve a further function in that as the rack is skewed as shown in FIGURE 4 the reverse relative rotation of the end portions 7, 7' swings the lugs 8, 8' out of the slots 23, 23' and in the folded position the lugs 8, 8 project endwise toward the holder 17' and likewise lugs 8', 8', project toward the holder 17. In such position the bringing together of the holders 17, 17' back to back enters lugs 8 into slot 23' and lugs 8' into slot 23 in the overlapped portions of the holders. The remaining lugs on the portions of the holders which are longitudinally displaced from one another project outwardly from the respective holders and lugs 8' align transversely lengthwise of holder 17 and lugs 8 similarly align with holder 17'. This folding and in-

genious arrangement of the lugs so that they align as aforesaid greatly facilitates packaging in a small flat carton and the structure is maintained rattle-free in shipment.

Thus a novel and efficient device has been disclosed which can be modified various ways as will be well known to those skilled in the art and it is intended that such arrangements are to be understood as definitions of that specifically shown and described within the purview of the appended claims.

I claim:

1. A rack comprising a plurality of vertical transversely spaced partitions each including a pair of legs disposed at opposite sides of the rack, longitudinal members along opposite sides of the rack each pivotally mounting the legs at that side of the rack on vertical axes, at least some of the legs having lugs projecting angularly therefrom and abuttable against the associated member in the operational position of the rack, said rack being skewable to fold the same.

2. A rack according to claim 1 and each member having socket means and said lugs projecting from each member into the socket means of the other member in the folded position of the rack.

3. A rack comprising a pair of side members and a plurality of partitions having spaced portions pivoted to the side members on parallel axes, each side member having a channel section including top and bottom flanges and an intervening vertical wall with vertical slots and communicating notches in the flanges admitting respective portions therein, and retainer means within each member between the respective portions and said vertical wall.

4. The invention according to claim 3 and said side members each having a web depending from the bottom flange and a web underposed with respect to the bottom flange and spaced therefrom and defining a socket therewith, and said spaced portions each having a lug paralleling the flanges and enterable into the associated socket and snugly embraced between the web and bottom flange releasably holding the partitions and members in a plurality of positions.

5. The invention according to claim 4 and said side members aligned transversely and foldable against each other coincidentally with the lugs on the portions at one side entering the socket of the other member.

6. A rack comprising a pair of substantially parallel side members each comprising an S-shaped channel having top, bottom and intermediate flanges and intervening webs, separators extending between said members and having a pair of end portions pivoted to respective members and extending through the top and intermediate flanges, lugs on said end portions generally paralleling the flanges of the associated holder and enterable in the open position of the rack between said bottom and intermediate flanges thereof into a slot formed therebetween, said rack being skewable to folded position by pivoting said separators and coincidentally withdrawing said lugs from the slots in the respective holders, said lugs in the folded position of the rack extending from one holder into the slot in the other holder.

7. A file comprising a pair of horizontal generally coplanar longitudinal side members spaced laterally, a plurality of vertical wire partitions spaced lengthwise of the side members and pivotally connected at opposite ends to respective side members, said file being skewable to fold, said partitions and members having means interengaging in the folded position of the file to releasably hold the same in said position.

8. The invention according to claim 7 and said means interlocking in the open position of the file for holding the same open.

9. A file comprising a plurality of vertical transversely separated spring-wire partitions each including a pair of legs disposed at opposite sides of the file, a member having a pair of outwardly directed flanges with openings therein receiving therethrough the lower ends of the legs at that side, each leg having a lug at its lower end paralleling the lower flange and swingable thereunder in the open position of the file and extendible inwardly from the related member under the lower flange of the other member and engageable therewith to hold the file folded.

10. The combination of a divider assembly and a base, said assembly comprising a plurality of upright parallel laterally spaced separators each of which comprises a resilient structure having an upper portion and a pair of legs dependent therefrom disposed at opposite sides of the assembly, said legs having lower end portions, a holder at each side of the assembly, each holder pivotally connected on vertical axes to the lower end portions of the legs at that side of the assembly, said base spanning the holders and having opposite edges mounted on respective holders, said base removable to accommodate folding of the divider assembly.

11. In a foldable filing rack, a pair of laterally spaced side members, a plurality of wire partitions extending therebetween and having end portions pivoted thereto, each member having at least three vertically spaced flanges adjacent of which define sockets, and said partitions having releasable interlocking means on said end portions entering the sockets of one of the members in an open position of the rack and into the sockets of the other member.

No references cited.