Feb. 13, 1940. A. H. JUNG 2,190,567

DISPLAY STAND

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Fig. 1.

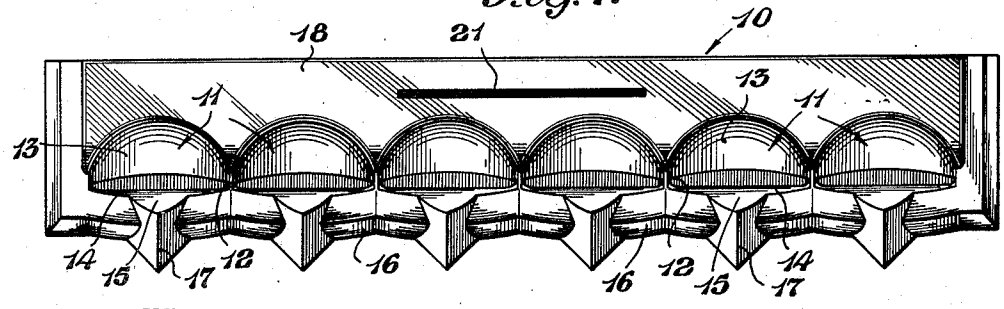
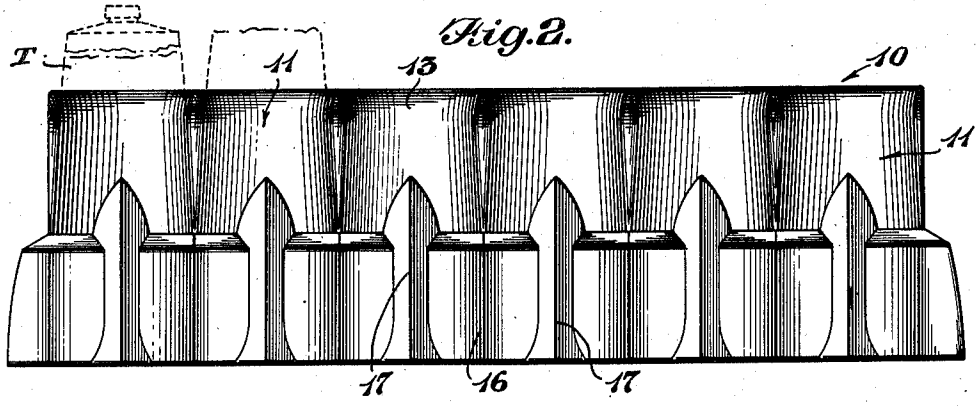


Fig. 2.



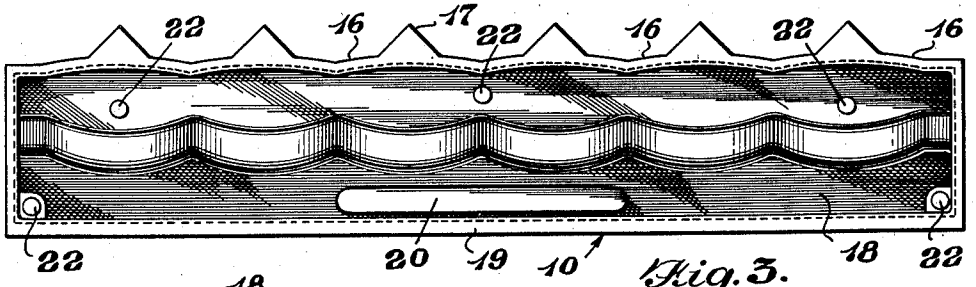


Fig. 3.

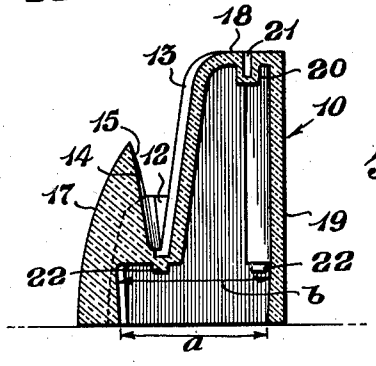


Fig. 4.

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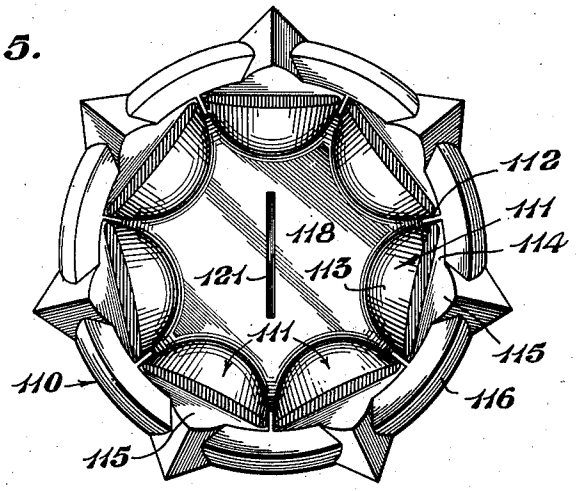
Attorney

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DISPLAY STAND

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Fig. 5.



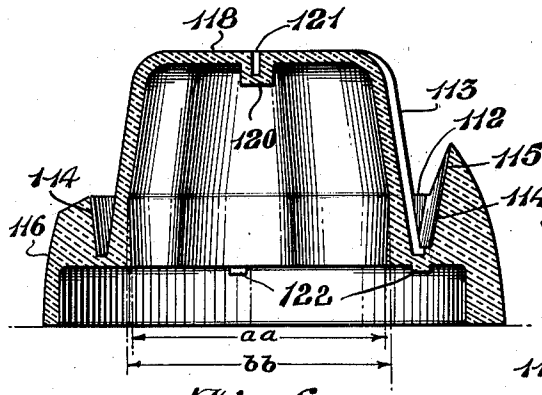


Fig. 6.

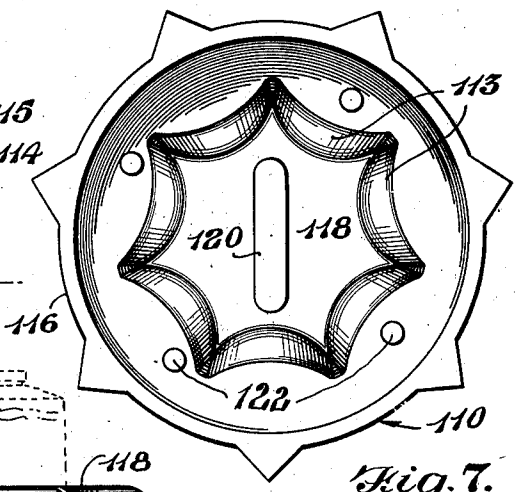


Fig. 7.

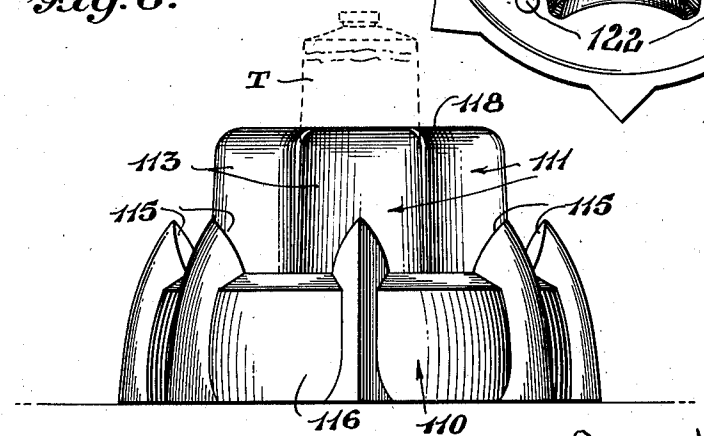


Fig. 8.

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UNITED STATES PATENT OFFICE

2,190,567

DISPLAY STAND

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Application May 6, 1939, Serial No. 272,289

4 Claims. (Cl. 211—13)

This invention relates to display racks and more particularly to display racks adapted to hold a plurality of collapsible tubes in an attractive array.

Prior to the instant invention, it has been customary to display collapsible tubes by attaching them to cards by various means such as clips, staples, rubber bands, flaps cut from such cards; and similar devices have been utilized. Such prior arrangements have been relatively unsatisfactory for such displays were not permanent. Upon removal of one or more of the tubes from the card, reloading thereof was not always practical and the display became unattractive. Furthermore the shipment of loaded cards is expensive for special packing is required to accommodate the cards as well as the tubes.

It is an object of the instant invention to provide a collapsible tube rack of a more or less permanent nature which will not be unattractive when some of the tubes are removed and which may be kept completely loaded in an attractive manner at all times without the aid of any fastening device.

It is a further object of the instant invention to provide a collapsible tube rack comprising a one piece synthetic plastic of light weight, being of good structural characteristics, capable of holding a plurality of collapsible tubes upright in an attractive array.

Other objects and the nature and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a top plan view of one form of the invention;

Fig. 2 is a front elevational view of the form illustrated in Fig. 1;

Fig. 3 is a bottom view of the form illustrated in Fig. 1;

Fig. 4 is a longitudinal section of the form illustrated in Fig. 1;

Fig. 5 is a top plan view of a second form of the invention;

Fig. 6 is a vertical section of the form illustrated in Fig. 5;

Fig. 7 is a bottom view of the form illustrated in Fig. 5; and,

Fig. 8 is an elevational view of the form illustrated in Fig. 5.

Referring to the drawings, the relatively long narrow display stand 10 may be fabricated of a synthetic plastic such as phenolic resin and comprises pockets 11 formed by the relatively thin short spacers 12, concave relatively tall rearwardly tilted backs 13, oppositely curved relatively short front portions 14, and the relatively narrow friction members 15 which extend forwardly from the front outer wall 16. Though the entire stand is an integral molding, the friction members 15 give support and stability to the entire structure by virtue of the outwardly projecting portions 17 which are at variance with the external surface of the relatively thin outer wall 16.

Though the relatively tall backs 13 of pockets 11 are rearwardly tilted, the tubes T are adapted to stand more or less upright as the contours of the tubes are such as to bulge outwardly progressively from the bottom of the tubes upward. The inner surface of each friction member 15 is a continuance of the curved short front portions 14 and actually tilted forwardly to accommodate tubes in a more or less glove-like fit. The forming of the pocket backs 13 with a concave surface automatically centers and aligns the tubes T when they are inserted in the pockets 11 whereby when the stand 10 is completely loaded, the tubes present a neat and attractive array. Though the spacers 12 are illustrated as having an appreciable length they may be entirely omitted by continuing the side margins of the backs 13 until they contact the front portion 14. To further insure the alignment of a tube upon its simple insertion into the pocket 11 the front portion 14 has a concave surface which generally corresponds to the curvature in the relatively tall backs 13.

The walls of the integral stand 10 are relatively thin as illustrated in the sectional view in Fig. 4, and the friction members 15 not only serve to aid in holding the tubes T in their respective pockets by engaging the front portion of the individual tubes at a location closer to the center of gravity of the tubes than any portion of the pockets but they serve two other functions: namely, that of reinforcing the outer wall in the manner of a reinforcing rib and that of stabilizing the entire structure by acting as an extending leg.

The rearwardly extending top portion 18 of the stand 10 connects the upper margin of the relatively tall tilted backs 13 and the rear wall 19. Formed on the underside of the top wall 18 is a relatively thick section 20 having a slit 21 in its top side of a depth greater than the thickness of the relatively thin top wall whereby a display card or other element may be associated with the organization to more attractively complete the array. It is to be understood that it is

within the scope of the invention to form the slit 21 of such dimensions as to accommodate the base of an additional tube.

The display stand 10, being adapted to be fabricated of a synthetic plastic such as a phenolic resin and capable of being molded in a plural part mold in an upside down position, it is desirable that the finished stand, immediately subsequent to its formation, remain attached to the upper portion of the mold rather than to the lower portion in order that the molded article detaching means associated with the mold may engage the interior of the stand rather than its exterior. Accordingly, the dimension "*a*", see Fig. 4, is made approximately five thousandths of an inch less than the dimension "*b*" to effect what may be termed an undercut which will insure that the stand 10 will stick to the upper part of the mold in an upside down position until knockout pins associated with the upper mold part engage the projecting buttons 22 formed integral with the interior of the mold and located immediately below the lower wall of the pockets 11 to dislocate the finished stand from the mold.

Not only may a stand in accordance with the invention be of a straight type wherein the pockets 11 are aligned to hold the tubes in correspondingly aligned array, but the stand may be horse-shoe shaped or circular shaped as illustrated in Figs. 5, 7, and 8. In this embodiment of the invention, the stand may comprise pockets 111 bound by relatively short radial partitions 112, rearwardly tilted relatively tall concave backs 113, forwardly tilted relatively short concave front portions 114 and relatively narrow upstanding friction members 115 which extend forwardly from the front outer wall 116. As in the straight line embodiment of the stand, this circular form of the invention comprises pockets 111 which are so shaped as to cooperate with the inner face of the upstanding friction members 115 as to engage the lower portion of the tubes T in a glove-like fit and automatically provide for their centering or alignment whereby when the stand 110 is completely loaded, a neat and attractive array is effected without undue distortion of the collapsible tubes. In this embodiment of the invention, the walls of the stand 110 are relatively thin and the upstanding and outwardly projecting friction members 115 act not only to support the tubes but to reinforce the outer walls 116 of the stand and to stabilize the entire structure especially when the same is loaded and the center of gravity of the assembly may be relatively high.

Formed on the under side of the top wall 118 is a thick portion 120 having a slit 121 therein on its upper side extending to a depth greater than the relatively thin top wall 118. This slit 121 is adapted to accommodate a further object to complete the display effected by the stand 110 when loaded.

The stand 110 is also adapted to be formed in an upside down position in a plural part mold and the projections 122 formed on the lower side of the pockets 111 are adapted to be engaged by knockout pins associated with the upper part of the mold which forms the stand, whereby only the interior of the mold will be engaged when the stand is finished and ready to be removed therefrom. In order to ensure that the stand remains attached to the upper part of the mold when the solidification of the stand is effected and the plural part mold separated, the dimension "*aa*" is made smaller by approximately five thousandths of an inch than the dimension "*bb*" in order to effect an undercut.

It will be understood from the above description that the invention comprises a stand which is particularly adapted to hold and display in neat and attractive array a plurality of collapsible tubes in vertical position, which stand may be loaded and unloaded with the minimum of attention. Further, the stand is so arranged that it may be kept loaded at all times by selecting tubes from a carton which may efficiently be utilized insofar as space is concerned, the tubes being packed solidly therein, by selecting therefrom the proper number of tubes to fill the empty pockets within the stand. To load the stand, it is merely necessary to select a tube from a supply carton, engage a portion thereof with one of the backs 13 or 113 and then slide the same downwardly until one of the friction members 15 or 115 engages an intermediate portion thereof and the pocket 11 or 111 together with the concave tall backs 13 or 113 and the friction members 15 or 115 all cooperate to hold the tube in a glove-like fit. This procedure is repeated until the stand is loaded.

The stand is particularly adapted to hold single dose tubes on a shelf or display counter in a beauty shop or barber shop but it may be utilized on drug counters, in hospitals and in similar places to hold other collapsible tubes in an efficient manner. In the dispensing of hair tonics, medicines and the like, in order that the consumer may feel satisfied that he is obtaining a true measure of an unadulterated product, individual single dose tubes are provided and the entire tube dispensed for the use of an individual. The empty tube is then discarded. In order to associate the idea of full measure and unadulterated ingredients in the mind of the consumer, it is essential that the small containers containing the ingredients to be dispensed be attractively displayed where the consumer may see them, such as for example, on the barber's shelf, the soda fountain counter, the beautician's shelf and in similar places.

Accordingly, the display stands described above provide a stand which is simple and economical to manufacture, relatively light in weight, of great strength, which provides for the automatic alignment of a plurality of collapsible tubes in a neat and attractive array without injury to or disfigurement of the said tubes.

When the display stand is made circular as illustrated in Figs. 5, 7, and 8, the curvature of the inner face of each front of each pocket not only corresponds to approximately the curvature of the exterior of a tube to be loaded in the pockets of the stand, but corresponds to the curvature of the front of adjacent pockets and continuously therewith forms a circle whereby the cost of the die necessary to form the stand when the same is to be molded is materially decreased and similarly this construction decreases the cost of fabrication of the stand when the same is to be made by other automatic machinery. It has been found in practice that tubes approximately five-eighths of an inch to seven-eighths of an inch in diameter may be held in the pocket of a circular stand having a radius of curvature, for the front surface of each pocket thereof, of approximately one and a quarter inches and that such a stand will conveniently hold seven tubes in vertical alignment.

It will be obvious to those skilled in the art

that various changes may be made in this device without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A display rack adapted to hold at least one collapsible tube with its major axis arranged substantially vertical and without substantial disfigurement comprising, structure forming at least one shallow pocket including a rearwardly tilted relatively tall concave back, a forwardly tilted relatively short concave front, a pair of relatively short thin side pieces, a relatively tall narrow friction member integral with and extending above said front and having an inner surface forming a continuation of the concave surface of the said front of the said pocket structure, said friction member including an integral outwardly projecting portion forming a reinforcing rib and stabilizing foot for said rack, the concavity of the back cooperating with the concavity of the front of each pocket structure to automatically arrange a tube with its major axis substantially vertical as it is loaded within the pocket structure.

2. A display rack adapted to hold at least one collapsible tube with its major axis substantially vertical and without substantial disfigurement of its body comprising at least one pocket structure including a rearwardly tilted relatively tall substantially continuous concave back and a forwardly tilted relatively short concave front, said back and said front having side margins located relatively close together and cooperating to form a pocket structure having a generally vertical axis and whereby a tube loaded within said pocket structure will be securely held in a glove-like fit while a large area thereof is exposed to the view of a consumer.

3. A display rack adapted to hold at least one collapsible tube with its major axis substantially vertical and without disfigurement comprising at least one pocket structure having a substantially continuous concave front, a relatively tall back, said substantially continuous concave front being formed with a relatively narrow upstanding portion having an inner surface which is a continuation of the concave surface of said front, said back and said front having side and bottom margins located relatively close together and cooperating to form a pocket structure having a generally vertical axis and whereby a tube loaded within said pocket structure will be securely held in a glove-like fit while a large area thereof is exposed to the view of the consumer.

4. A circular display rack adapted to hold a plurality of collapsible tubes, each with their major axis arranged substantially vertical without substantial disfigurement and with a relatively large area of the front portion of each tube exposed to the view of a consumer comprising, a structure forming a plurality of pockets arranged circumferentially about a relatively tall concave back, each pocket comprising a relatively short concave front and a segment of said relatively tall back, the segment of said back being concave, the curvature of said front corresponding to the normal curvature of a tube ultimately to be loaded in said rack and to the curvature of the front of the structure forming the adjacent pockets, said pocket fronts being substantially continuous to form a circle.

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