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2,669,361

DISPLAY AND DELIVERY STAND

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2 Sheets-Sheet 1

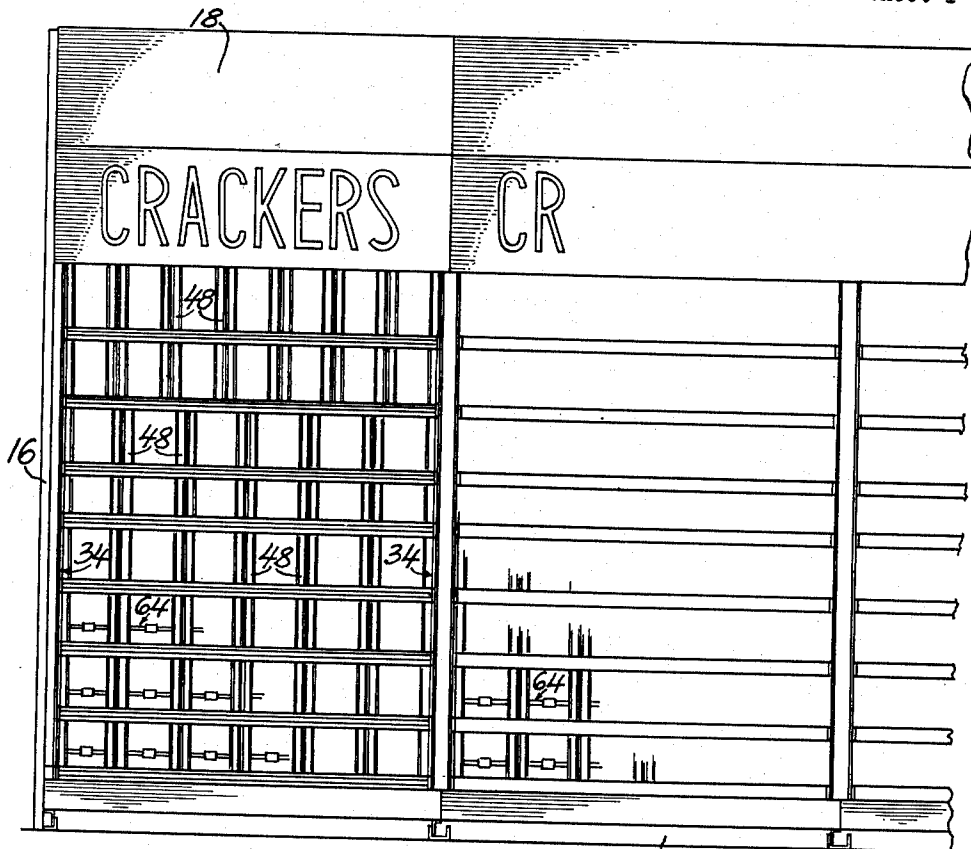


Fig. 1.

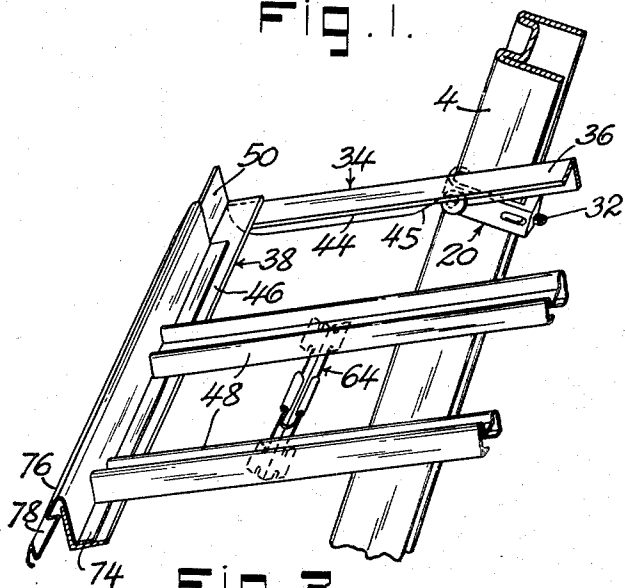


Fig. 3.

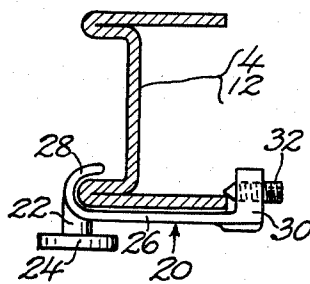


Fig. 4.

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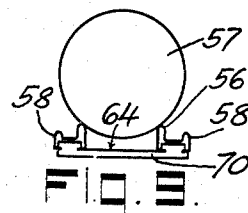
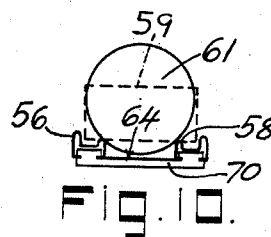
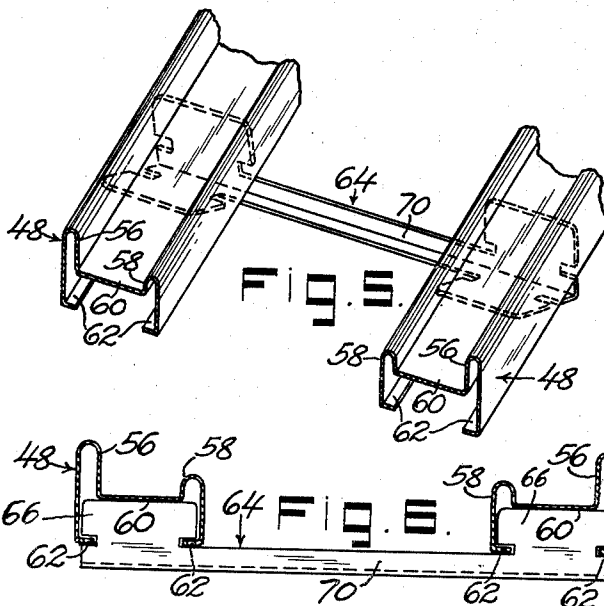
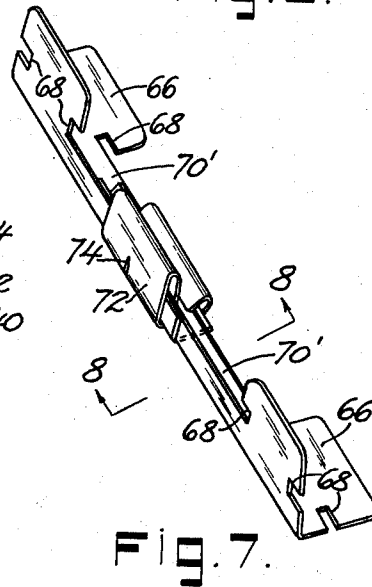
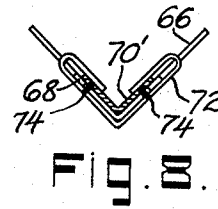
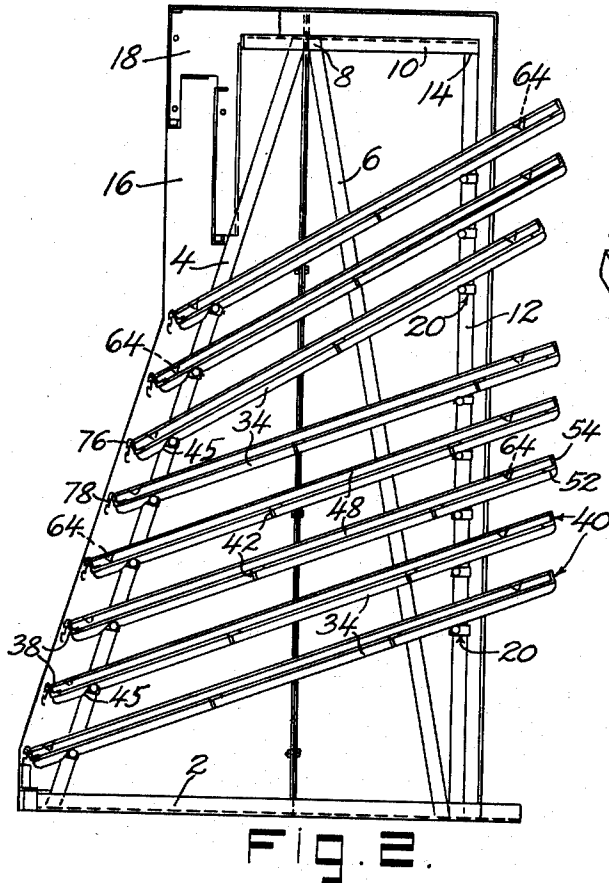
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2 Sheets-Sheet 2



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DISPLAY AND DELIVERY STAND

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9 Claims. (Cl. 211-49)

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This invention relates to display and delivery stands and is directed particularly to constructions which are simple and economical to produce and erect and which permit variations in arrangement to accommodate substantially all sizes and shapes of articles.

Display and delivery stands of the type described and claimed in the patent to Shield No. 2,443,871 have been widely used in self service stores for presenting canned goods, bottles and packages of merchandise in an attractive manner for selection and removal by the customers. At the same time they insure automatic replacement of each article removed and thereby replenish the supply to the customer continuously as long as the stand is charged with merchandise.

This result is attained by forming the stand with supports on which parallel tracks are arranged in inclined positions so that articles placed on the tracks by clerks at the rear of the stand are delivered by gravity to the lower ends of the tracks at the front of the stand and to positions for attractive display and easy removal by customers.

One of the most troublesome problems in all display and delivery stands has been that of spacing the articles in adjacent channels to prevent interference in their movement into position for removal. This problem is accentuated when the tracks along which the articles move are adjustable since the continual jarring or vibration due to movement of the articles tends to cause the tracks to shift until articles on one track engage those on an adjacent track and prevent free sliding movement thereof.

In accordance with the present invention the construction of the frames, tracks and supporting means is simplified and much greater adjustability is provided whereby the cost of fabrication and erection is reduced and the manner of adjustment is simplified. At the same time interference between articles on adjacent tracks is positively prevented. These results are attained by providing an entirely new type of adjustable track construction together with a new type of framing and support for the tracks.

One of the objects of the present invention is to provide a novel type of framing and support for tracks in a display and delivery stand.

Another object of the invention is to provide a novel type of shelf frame and support for tracks which is readily adjustable to any desired position for holding the shelf frames and tracks in varied inclined elevations and inclined positions.

A further object of the invention is to provide a novel type of track assembly which permits

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quick and easy adjustment of the tracks, loaded or unloaded, to any required spaced relation.

Another object of the invention is to prevent interference between articles on adjacent tracks of a display and delivery stand.

A particular object of the invention is to provide tracks and adjusting means for display and delivery stands which may be easily fabricated from sheet metal, extrusions or other conventional metal forms.

Another particular object is to provide means for quick and easy removal of individual pairs of tracks, loaded or unloaded, from one position to another on a shelf frame or from one shelf frame to another to permit cleaning or repair or for other purposes without disturbing or interrupting the use of other tracks or of the merchandise thereon.

These and other objects and features of the present invention will appear from the following description in which reference is made to the figures of the accompanying drawings for the purpose of indicating the general nature of the invention and illustrating a typical embodiment thereof.

In the drawings:

Fig. 1 is a front elevation of a preferred form of display and delivery stand embodying the present invention;

Fig. 2 is an end elevation of the construction shown in Fig. 1;

Fig. 3 is an enlarged view in perspective of a portion of the display and delivery stand shown in Fig. 1;

Fig. 4 is a sectional view showing a preferred form of shelf frame support embodying the present invention;

Fig. 5 is a perspective illustrating a track construction similar to that embodied in the assembly of Figs. 1 and 2;

Fig. 6 is an end view of the track construction shown in Fig. 5;

Fig. 7 is a perspective of the adjustable track spacing and holding members illustrated in Fig. 3;

Fig. 8 is a sectional view taken on line 8-8 of Fig. 7;

Fig. 9 is an end elevation of the rails arranged to hold relatively large articles; and

Fig. 10 is a similar view showing the rails arranged to hold smaller articles.

In that form of the invention chosen for purposes of illustration in the drawings the stand has a plurality of side supports each of which includes a base member 2 having a front member 4 which may be perpendicular or inclined and a diagonal brace 6 which are joined together near

the top of the frame as indicated at 8 by means of a top horizontal member 10. A rear member 12 extends upward from the rear of the base member 2 adjacent the lower end of the brace 6 and is connected to the top member 10 at 14. Any number of these side supporting structures may be provided and they may be spaced apart lengthwise of the assembly to form a series of bays or sections of the desired width. The members 4 and 12 are preferably formed of generally H-shaped members as shown more clearly in Fig. 4, whereas the base member 2 and top member 10 may be U-shaped channel members as indicated generally in Fig. 1. The finished structure also has an end closure 16 together with a valance or hood as shown at 18 so as to provide a finished, attractive assembly for the display and delivery of merchandise.

The front member 4 and the rear member 12 are provided with clamps indicated generally at 20 and as shown more fully in Fig. 4 each clamp is provided with a laterally extending stud 22 having an enlarged head 24. The clamp is preferably formed with a strap portion 26 having a reversely turned end 28 for engaging one edge of the H-shaped member, whereas the opposite end of the strap portion is formed with an enlarged body 30 through which a set screw 32 extends to engage the opposite edge of the side flange of the H-shaped member to which the clamp is secured. With this construction, the clamps may be positioned at any desired points on the uprights and they may be quickly and easily applied and removed or changed in location to hold shelf or track supporting frames 34 at any elevation and in any inclined position required. The H-shaped member is formed to accommodate clamps 20 on its two opposite sides without interfering with each other, thereby permitting single members 4 and 12 to be used between bays or sections while simultaneously permitting shelf frames in the same section and in adjoining sections to be positioned as desired at the same or different elevations and also at the same or different inclinations without interfering with each other.

The shelf or track supporting frames 34 shown in Fig. 3 are generally rectangular in shape and are provided with opposite side members 36 which are held in fixed spaced relation by a front member 38 and a rear member 40. One or more intermediate bracing members 42 may also extend between the side members 36 to provide a strong and rigid structure and afford support for the tracks intermediate the ends thereof so that the tracks can be relatively long and yet carry heavy loads without danger of sagging or spreading. The members of which the shelf or track supporting frames are fabricated are preferably formed of angle iron and the side members each have an outer downwardly extending flange 44 with a rearwardly inclined slot 45 located a short distance from the front member 38. These slots are shaped and positioned to receive the studs 22 of clamps 20 secured in similar positions on the front members 4 of adjacent side supporting structures. The flanges 44 of the side members rest upon the studs of clamps secured to the rear members 12 of the side supports without the use of slots in the side members for engagement with the clamps at the rear of the stand. In fact, the use of slots at the rear of the frames is generally undesirable since the distance between the clamps on the front and rear members 4 and 12 will vary with each change in pitch or angle of inclina-

tion of the frame and with the varying elevation of the frame on the supporting upright members.

The front member 38 of each track supporting frame is arranged to present a rearwardly extending supporting flange 46 by which the front ends of tracks 48 are supported and an upwardly projecting flange 50 which projects above the tracks and prevents longitudinal movement of the tracks with respect to the frame. The flange 50 preferably also projects upward far enough to serve as a stop means for preventing articles from slipping off the front ends of the tracks. The rear frame members 40 are preferably arranged to present an inwardly projecting track supporting flange 52 and it is preferable to provide a rear upwardly projecting flange 54 so that articles cannot be pushed off the rear of the track and identifying tags can be located at the upper end of each track so that clerks at the rear of the stand will know what article is to be loaded onto each track.

The preferred type of tracks is best shown in Figs. 3, 5 and 6. The tracks extend in parallel relation from the front supporting flange 46 to the rear supporting flange 52 and across the intermediate bracing members 42 of each frame so that the tracks are supported intermediate the ends thereof. Each individual track member is formed with a relatively high side rail 56 and a lower side rail 58 joined by a web 60. The tracks may be constructed from any suitable material and may be extruded or otherwise formed with the lower extremities or edges of the side rails turned inward as indicated at 62 to receive track spacing and holding members 64.

The tracks may be arranged in pairs with the higher rails 56 innermost as in Fig. 9 to support and guide large cylindrical packages 57 and to raise such merchandise to clear the spacers or holders 64 and the intermediate shelf frame members 42 while the outwardly disposed lower rails 58 project beyond the sides of the packages. Spacers or holders 64 are provided as hereinafter described to insure proper spacing of each pair of tracks and to maintain them in established spaced relation at all times and throughout the length thereof in order to insure passage of articles along the tracks without stoppage or jamming and in order to prevent articles thereon from interfering with articles on adjacent tracks.

The tracks may be reversed to present the higher rails outermost as in Fig. 10 to receive rectangular shaped packages as shown in dotted lines at 59 or to receive smaller cans 61. The packages 59 slide along the inner rails 58 but are held in alignment and prevented from interfering with articles on adjacent tracks by the higher outer rails 56. The inner rails 58 serve both to support and guide cylindrical packages indicated at 61. The spacers or holders 64 control the width of each pair of tracks. In Fig. 10 the spacers are adjusted so that cylindrical packages will be supported by the lower inner rails 58 at a proper elevation to prevent contact with the spacers and the intermediate frame members 42. When the size of the cylindrical packages makes the arrangement of the rails as shown in Fig. 10 impossible, then the arrangement of the rails is reversed as shown in Fig. 9.

The track spacing and holding members 64 may be formed of a single piece of stamped sheet metal, plastic or other material. These members may be of any desired cross section. For example, as shown in the drawings, they

may have the generally V-shaped cross section shown in Figs. 5, 7 and 8. They may also be formed of two telescoping portions as shown in Figs. 7 and 8. In either case the holding members have opposite end portions 66 which are slotted as shown at 68 to receive the intumed edges 62 of the tracks. These end portions are designed to slide lengthwise of the tracks into position to hold the tracks in fixed spaced and parallel relation so as to prevent spreading or dislocation thereof under load. They also prevent turning of the tracks under the wedging action of cylindrical or round objects. Any desired number of holding members may be used and they may be spaced apart as desired lengthwise of the tracks but it is usually sufficient to employ one holding member adjacent the lower ends of the tracks and another adjacent the upper ends thereof. When the holding member is formed in a single piece, it is necessary to provide a series of holding members of different lengths corresponding to the different widths of tracks desired. However, as shown in Fig. 7, the central portion of the holding member may be extensible so as to vary the spaced relation of the end portions and consequently the spaced relation of the tracks with respect to each other. For this purpose each holding member of the extensible type embodies two parts including one end portion 66 and a central portion 70'. The central portions 70' of oppositely facing members are arranged in nested relation as shown in Fig. 7 and are surrounded by a sleeve 72 within which they are capable of relative telescoping movement to extended and contracted positions for spacing the end portions of the holding members and the tracks any desired distance apart. When the portions 70' of the spacing and holding member have been adjusted to afford the proper spaced relation of the end portions 66, the sleeve 72 may be crimped, pierced or staked as shown at 74 to hold the portions 70' and 66 in place whereby the tracks 48 will be fixedly held in the desired spaced relation for receiving articles of any predetermined length, width or diameter.

The tracks and track holding members thus are combined to form units wherein the tracks are held in parallel relation and spaced apart predetermined distances. As shown in Figs. 9 and 10 the same track holding members may be used even though the positions of the tracks are reversed and in every case the outer rails of the tracks project laterally beyond the articles they support so that there is no possibility of interference between the articles on adjacent tracks. Furthermore, the assembly of the tracks and spacing and holding members into units renders it possible for the units, either loaded or empty, to be moved about and shifted in position on the shelf frame or from one shelf frame to another or to be removed for cleaning or for other purposes without relative displacement of the tracks removed and without disturbing adjacent tracks or merchandise thereon. Moreover, the slotted end portions 66 extend into the space between the side rails 56 and 58 and beneath the web 60 to support and stiffen the tracks and prevent tilting, twisting or flexing thereof under even the heaviest loads.

As shown in Fig. 3, the lower ends of the rails of the tracks 48 preferably rest upon the rearwardly directed extension 74 of a tag holder 76. When such a tag holder is used the face of the tag holder is recessed or otherwise formed at

78 to receive price tags or other signs or pieces indicating the price of the articles or the type of goods on display. The tag holder is preferably connected to the front member 38 by extending over the upwardly projecting flange 50. The tag holders can thus be applied very easily and held securely in place on the frames 34 by the weight of the articles carried by the tracks 48.

In using the construction shown in the drawings, the various pairs of tracks are held together and in fixed spaced relation by the track holding members. Adjacent pairs of tracks may be moved farther apart or closer together to fill up a frame or individual pairs may be removed or moved from one frame to another as a unit without altering the spacing of the tracks with respect to each other and without disturbing the merchandise thereon or the merchandise on other tracks. In fact, pairs of tracks and even entire frames fully loaded with cans, bottles or packages may be moved about from one position or frame to another. In this way the assembly permits the most ready adjustment and variation in both shelf and track arrangement to accommodate changes in stock and alternative arrangements of the goods on display. Moreover, cleaning of the individual tracks or groups of tracks may be carried on during business hours without interfering with the operation of the stand and with a minimum of labor. The frames carrying the tracks may also be adjusted in level or in angle of inclination by loosening the clamps 20 and sliding them along the members 4 and 12. The elevation and the inclination of each rectangular frame with the tracks thereon, whether fully or partially loaded or unloaded, is changeable at will and each frame with the tracks and any merchandise thereon may be removed or replaced with another frame, loaded or unloaded, without interrupting the delivery of merchandise on other tracks.

The simplicity of the whole assembly will be apparent when it is appreciated that all of the frames may be made of the same size; all of the tracks are identical and independent of the other tracks; all of the frame supporting clamps are identical and require nothing more than a set screw to secure them in place. A limited number of sizes of track holding members are required and these may be adjustable if desired. The tracks and frames can thus be assembled and complete adjustment of the parts can be effected to change or vary their position with a minimum of skilled labor and technical assistance.

While particular forms of tracks, frames and upright members are shown in the drawings and are preferred, it will be apparent that numerous changes may be made in the form and shape of the individual elements and in their arrangement with respect to each other. In view thereof it should be understood that the particular embodiment of the invention shown in the drawings and described above is intended to be illustrative only and is not intended to limit the scope of the invention.

I claim:

1. In a display and delivery stand units comprising pairs of tracks with track holding members extending transversely thereof and serving to hold said tracks against relative displacement, said track holding members being generally V-shaped in cross section and having opposite end portions with means thereon receiving and holding said tracks against change in

spaced relation while permitting relative sliding movement of the holding members lengthwise of the tracks.

2. In a display and delivery device a pair of tracks for receiving and supporting articles, said tracks each having inner and outer rails formed at their lower edges with flanges turned substantially at right angles to said rails and track holding members extending transversely of said tracks from one track to the other and each formed with opposite end portions slotted to receive said flanges and serving to hold said rails in predetermined spaced relation.

3. In a display and delivery device a pair of tracks for receiving and supporting articles, said tracks each having inner and outer rails formed at their lower edges with flanges turned substantially at right angles to said rails and track holding members extending transversely of said tracks from one track to the other and each being generally V-shaped in cross section and formed with opposite end portions slotted to receive said flanges and serving to hold said rails in predetermined spaced relation.

4. In a display and delivery device tracks for receiving and supporting articles comprising elongated members each formed with a relatively high outer rail and a relatively low inner rail connected by a web located below the upper edges of both rails, said tracks being formed with flanges extending substantially at right angles to said rails near the lower edges thereof for engagement with track positioning members.

5. In a display and delivery stand a unit comprising a pair of tracks, track spacing and holding members engaging said tracks and provided with means for holding the tracks in predetermined spaced relation, said means slidably engaging said tracks for movement of said members lengthwise of the tracks to various selected positions along the tracks.

6. In a display and delivery stand a plurality of independently movable article receiving units each of which comprises a pair of tracks held in predetermined spaced and parallel relation by a plurality of track spacing and holding members, said members and tracks having complementary edges and slots arranged in engagement and serving to hold said tracks in said predetermined spaced relation while permitting

longitudinal sliding movement of said members with respect to said tracks to any desired positions lengthwise of the tracks.

7. In a display and delivery stand a plurality of independently movable article receiving units each of which comprises a pair of tracks held in predetermined spaced and parallel relation by a plurality of track spacing and holding members, said tracks each having opposite edges extending laterally from the track and said members having opposite end portions with slots therein receiving the edges of said tracks and preventing transverse tilting of the tracks.

8. In a display and delivery stand a plurality of independently movable article receiving units each of which comprises a pair of tracks held in predetermined spaced and parallel relation by a plurality of track spacing and holding members, said tracks each having opposite edges extending laterally from the track and said members having opposite end portions with slots therein receiving the edges of said tracks and preventing transverse tilting of the tracks, said members further being adjustable in length to hold said tracks in selected predetermined spaced relations for receiving articles of different size.

9. In a display and delivery device a pair of tracks for supporting and guiding articles for movement along said tracks, each of said tracks being formed with two longitudinally extending rails one of which rails is higher than the other, said rails being connected by a web located below the upper edges of both rails, said tracks further being formed with flanges extending substantially at right angles to said rails near the lower edges thereof for engagement with track positioning members.

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