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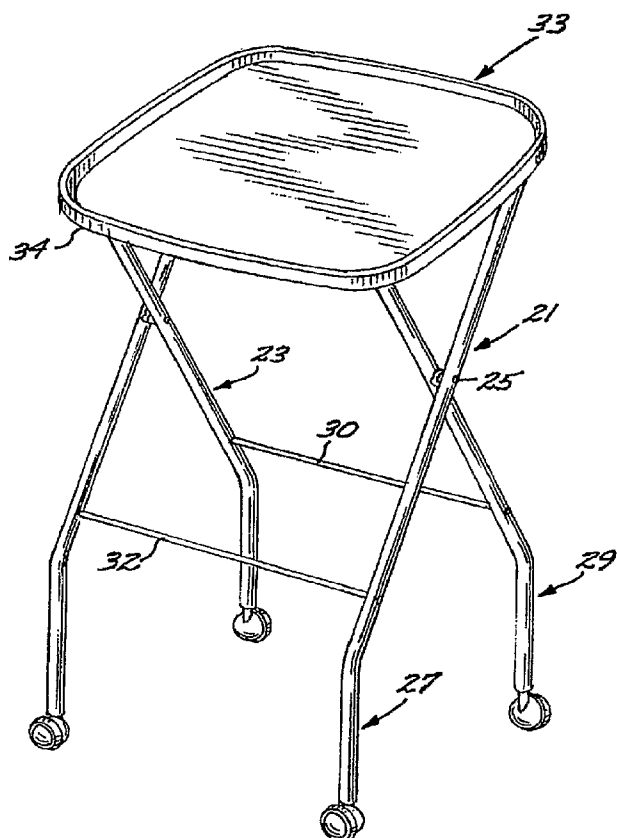
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(54) Title: FOLD AWAY SERVICE TRAY



(57) Abstract: To pairs of elongated legs for supporting a tray and shiftable from a deployed position orienting the tray in a horizontal working orientation and including one or more connector lengths connecting the tray and legs for shifting to a vertical position when the legs are collapsed together to a self-supporting position.

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FOLD AWAY SERVICE TRAY

BACKGROUND OF THE INVENTION

The present invention relates to stand up trays for use by stylists in styling the hair of customers.

5 Description of the Prior Art:

Hair stylists often times share salon space and typically have personal stations where they store their working tools, hair coloring and treatment products. In the efficient rendering of their service menus it is important that the stylists have ready access to their hair treatment products for repetitive applications to different selected areas of the
10 customer's hair. Mobile stands have long been utilized by stylists, typically supported on castors for rolling about with the stylists as he or she maneuvers about the customers' chair to perform the styling tasks. A problem arises with storage of these stands when not in use, often leading to collection of a number of such stands at one end or corner of the salon thus detracting from the aesthetics and frequently invading the space of a stylists
15 occupying the station where stored.

Thus, there exists a need for a standing tray, which is convenient to erect for usage and to collapse for storage. Efforts in different applications have led to proposals of different styles of collapsible serving stands, furniture and the like. A collapsible serving stand has been proposed which includes a pair of X-shaped legs pivoted together centrally
20 to support at their upper ends a removable tray and which includes an intermediate shelf connected to the legs by pivot pins and followers which travel through a circuitous cam path during the collapsing procedure to cause the intermediate shelf to be manipulated in rectilinear fashion to a vertical collapse position. A device of this type is shown in U.S. Patent No. 2,802,578 to Barile. Such serving stands are relatively expensive to
25 manufacture and require some degree of care in maintaining the latch and keeping it clear. Furthermore, the requirement that the tray be removed for storage renders such a stand inconvenient to use in a styling salon in that the separation of the tray for collapsing would create a temptation for the stylists to store the tray separate from the stand so that, when the stand is to be subsequently erected, the tray must be retrieved and the stand
30 manipulated about with two hands to deploy to its standing position for mounting of the

tray thereon. This task would be time consuming and would tend to discourage the stylists from using the stand itself.

Other efforts for providing satisfactory collapsible furniture has led to the proposal of convertible furniture incorporating pairs of legs pivotally connected together in X-
5 fashion to support a foldable tray from their top ends with the legs being pivotable to different positions to selectively position the tray in a planar position, intermediate V-shaped position to act as a bookshelf or a collapsed position sandwiched between the upper extremities of the legs. Such a device suffers the shortcoming that deployment of the furniture piece requires some degree of dexterity for manipulation thereof and for locking
10 the tray in its selected orientation.

SUMMARY OF THE INVENTION

The fold away service tray of the present invention includes, generally, a pair of crossed legs having upper extremities to support a tray with the tray being pivotally
15 connected on one side to the upper extremity of one pair of the legs and being connected on its other side to the other pair of legs by means of at least one pivotal link to allow for collapse of the frame and tray to a compact configuration for storage.

Other features and advantages of the invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawings
20 which illustrate, by way of example, the features of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view showing a preferred embodiment of my foldable tray apparatus of the present invention;

Fig. 2 is a top view thereof;

25 Fig. 3 is a left side view thereof;

Fig. 4 is a right side view thereof;

Fig. 5 is a bottom view thereof;

Fig. 6 is a front view thereof;

Fig. 7 is a rear view thereof;

Fig. 8 is a bottom detailed view thereof, in enlarge scale, taken along the line 8-8 of Fig. 3 and depicting a latch in the latching position;

5 Fig. 9 is a detailed view similar to Fig. 8 but depicting the latch in its unlatched position;

Fig. 10 is a partial detailed view similar to Fig. 8 but depicting part of the latch broken away;

10 Fig. 11 is a partial rear view similar to Fig. 7 but depicting the castors shown therein translating past one another; and

Fig. 12 is a left side view similar to Fig. 3 but depicting the tray apparatus in its collapsed position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1, 3 and 12, the foldable salon tray of the present invention
15 includes, generally, first and second pairs of formed legs 21 and 23 which, in the deployed position shown in Fig. 1 cross one another in X-fashion to be pivotally connected together at the intersection by respective pivot pins 25 and are formed on their bottom extremities to curve vertically downwardly forming respective knee portions 27 and 29. The pair of legs 23 are pivotally connected at their upper extremities to one side of a service tray,
20 generally designated 33, and the top ends of the pair of legs 21 abut the bottom surface on the other side of such tray and are connected thereto by respective parallelogramatic links, generally designated 35 (Figs. 3, 4 and 12). Thus, the tray apparatus may conveniently be grasped by one edge and lifted to the position shown in Fig. 12 thereby drawing such legs to their collapsed position depicted with the respective knees 27 and 29 crossing back over
25 one another allowing respective roller castors 39 at the bottom ends thereof to be spaced laterally under the vertical center of gravity of such tray apparatus to conveniently support the apparatus in its collapsed position.

Referring to Figs. 1-4, the pairs of legs 21 and 23 may conveniently be constructed of formed metallic tubes or plastic and may be bent to the desired configuration. The walls

of pair of tubular legs 21 and 23 are conveniently pressed together at their upper extremities to form respective flat pivot flanges configured with respective through pivot bores for receipt of respective pivot pins 36 and 38 for connection to the tray and link, respectively. The legs of the pair 21 are connected together medially by means of a cross rod 30 (Fig. 1) and the other pair 23 by a cross rod 32.

The tray 33 is preferably of rigid construction and may be constructed of plastic halves molded with a hollow construction and textured on its exterior surface to provide an aesthetically pleasing and effective gripping surface. The tray is formed in its bottom side with a parametrical channel, generally designated 41, which is, itself, constructed on one side with a downwardly depending longitudinal mounting rib 43 (Fig. 7) and on its opposite side with a corresponding mounting rib, generally designated 45 (Figs. 8-10). The rib 45 is formed at one end with an inturned latch mounting block, generally designated 47, configured along its laterally outside under surface with a longitudinally extending downwardly facing and laterally outwardly opening latch channel 51. The rib is configured interiorly thereof with a downwardly projecting, generally U-shaped latch stop housing 53 formed at the end of one leg of the U-shape with a laterally outwardly facing latch stop surface 55 and on the other leg of the U-shape with a laterally outwardly facing abutment surface 57 angling at about 25° to the longitudinal extent of such tray. An elongated latch bar, generally designated 61 is pivotally mounted medially from the latch channel 51 by means of pivot screw 63 and includes a catch end 65 and a downwardly bent handle extremity 67. Mounted from the screw 63 and sandwiched between the bar 61 and latch surface 51 is a torsion spring, generally designated 71 formed on one end with a stop 73 projecting into the hollow of the U-shaped latch housing 53 and abutting one side thereof (Figs. 8-10). The opposite end of the torsion spring 73 is formed with a hook 75 which hooks over the latch end of such bar 61 and biases it in the counter clockwise direction as viewed in Figs. 8-10 to the latching position disposed beneath the bottom edge of the link 35 when such when the link is in its horizontal position as dictated by deployment of the tray apparatus.

The mounting ribs 43 and 45 are formed with an offset such that the top extremities of the pairs of legs 21 are spaced laterally outwardly of the top extremities of the pairs of legs 23 to provide for clearance of the legs to pass by one another. Referring to Fig. 6, cylindrical axial spacers 81 and 83 are sandwiched between the medial portions of such

legs at the pivot points to define by the pivot screws 25 to provide clearance for such legs to pass by one another during collapsing and deployment.

In the preferred embodiment, the castors 39 are in the form of offset spherical roller castors such that, as the tray apparatus is collapsed from the position shown in Fig. 1 to the position shown in Fig. 12 the castors, to the extent they engage one another, will be pivoted about their vertical pivot axis for the bodies thereof to be disposed laterally away from one another and to provide clearance as such castors pass by one another. As will be appreciated by those skilled in the art such castors may take many different forms such as conventional castors, cylindrical castors or the special configuration shown.

In operation, it will be appreciated the tray apparatus of the present invention will typically be stored in the collapsed configuration shown in Fig. 12. There, the pairs of legs 21 and 23 cross one another at the respective pivot pins 25 with the respective knee portions 27 and 29 being re-crossed over one another as shown so that the vertical center of gravity of such tray apparatus is disposed generally medially between the laterally spaced respective castor rollers 39 so that the apparatus is self supporting in its vertical position for convenient storage.

As the stylist progresses with his or her task and desires to support, for instance, an open container of hair treatment solution he or she may grasp the top or activating edge of the tray 33 as depicted in Fig. 12 and pivot such top edge downwardly about the pivot axis defined by the pivot screws 36 at the top ends of the respective pairs of legs 21 pivot the tray downward to cause the lateral outer edge 64 of the latch bar 61 to engage the top surface of the underlying link 35 causing such cam edge 64 as downward pivoting continues, to be driven laterally inwardly by the top edge of such link thus pivoting the latch bar 61 counter clockwise as viewed in Fig. 8 to thus clear the path of such link and to ride downwardly along the interior planar surface thereof until such time as the bottom surface of the tray engages the top end of the respective pairs of legs 21 for nesting support thereon. At that time, the latch bar 61 will be moved into the horizontal plane beneath the level of the lower edge of the link 35 thus freeing the working extremity of such latch to be pivoted laterally outwardly by the torque spring 71 to be engaged beneath such link to restrict the activating extremity of the tray from lifting upwardly relative to the pivot pins 36 at the top extremity of the pairs of legs 21 to thus lock the tray apparatus in its deployed support position.

Treatment hair materials may then be placed on the top of the tray 33 for ready access. As the stylist's moves about the chair of the customer, her or she can grasp the tray 33 and draw or push the tray apparatus in one direction or another for convenient rolling on the rollers 39 to be positioned in convenient relative positions for ready access to the paraphernalia thereon. The latch bar 61 will serve to maintain such tray apparatus in its deployed position and prevent accidental raising of the actuating extremity end of such end 34 of such tray to avoid lifting and premature collapse of the tray apparatus or tilting of such tray resulting in discharge of the working paraphernalia from the top surface thereof.

When the tasks associated with the paraphernalia supported on such tray are completed, the paraphernalia may be removed from the top surface of such tray and the tray easily and conveniently collapsed by the stylists merely grasping the down turned handle extremity 67 and rotating the latch bar 61 counter clockwise as viewed in Fig. 8 to the position shown in Fig. 9 to clear the vertical path of the link 35 such that the actuating end 34 of such tray may be lifted to pivot such tray about the respective pivot pins 36 to allow the tray to be raised to its vertical position shown in Fig. 12 thereby collapsing the pairs of legs 21 and 23 in a compact self supporting storage position for easy storage either along the wall of the stylists station or at one end of the salon for convenient retrieval at a later time.

From the foregoing, it will be appreciated that the folding stylists tray apparatus of the present invention provide a sturdy economical apparatus for compact storage but readily deployable to a deployed position for use by a stylist in need of ready access to hair treatment solutions and tools.

I Claim:

1. Foldable tray apparatus comprising:

first and second pairs of elongated legs having respective first and second pairs of upper and lower ends and medial sections crossed centrally and pivotally connected to be
5 rotated to deployed positions with the upper end of the respective pairs spaced apart and the medial sections angling downwardly therefrom toward one another to cross one another in one direction and then angle downwardly away from one another and configured to, when rotated to collapsed positions, project parallel to one another, the legs formed on their bottom ends with respective knee portions angled to, when in the collapsed
10 position, cross one another in the direction opposite the one direction;

a tray pivotally connected on one side to the first pair of upper ends;

at least one link pivotally connected between the side of the tray opposite the one side and constructed to, when the legs are in the deployed position, provide for the tray to nest on the connector ends, and when in the collapsed position, provide for the knees to
15 cross one another in the opposite direction;

first and second pairs of roller on the bottom ends of the first and second legs and configured to clear one another as the legs are rotated from the deployed to the collapsed position.

20 2. A foldable tray apparatus as set forth in claim 1 wherein:

the link is constructed of rigid material.

3. The foldable tray apparatus of claim 1 that includes:

a latch for latching the tray and legs with the legs in their deployed positions.

4. The foldable tray apparatus of claim 1 that includes:

a latch device mounted on the tray for engaging the link to latch the legs in their deployed positions.

5 5. The foldable tray apparatus of claim 1 wherein:

the tray includes a pair of laterally spaced apart coextensive mounting ribs on the underside thereof;

the first pair of legs are connected at the respective second pair of upper ends to the respective one ends of the respective ribs; and

10 the apparatus includes a pair of links pivotally connected between the medial portion of the respective ribs and the respective second pair of upper ends.

6. The foldable tray apparatus of claim 1 wherein:

15 the rollers are spherically shaped rollers and are so configured and arranged as to, upon the rollers of the respective first and second pairs of legs passing one another during rotation of the pairs of legs from the deployed to the collapsed position, engaging one another and coming past one another as the collapse of such legs progresses.

7. The tray apparatus of claim 1 wherein:

20 the tray is formed on its bottom side with a latch mounting block disposed adjacent the path traveled by the link as the tray shifts from its collapsed position to its deployed position, the mounting block including an elongated downwardly opening and laterally outwardly opening latch channel, the latch mount further including a stop disposed at one end of the latch channel and a latch abutment surface at the opposite end of the latch
25 channel;

an elongated latch bar disposed in the channel and pivotally mounted thereon and pivotable between a first position aligned with such channel and clear of the path of such link and to a position disposed in the path of the link to block travel of the link to preventing rotation thereof relative to the tray to maintain the tray in its deployed position;
5 and

a spring biasing the latch bar to the latch position.

8. The tray apparatus of claim 1 that includes:

a pair of rigid links pivotally connected between the respective second ends and the
10 intermediate underside of the tray.

9. The tray apparatus of claim 1 wherein:

the tray is of plastic molded construction.

15 10. Foldable tray apparatus comprising:

first and second pairs of elongated legs pivotally connected together medially to pivot from a deployed to collapsed positions;

a rigid tray to be supported from the upper extremities of the respective pairs of legs, the tray having a first actuation side and an apparently disposed second side;

20 pivot pins pivotally mounting the first pair of legs to the bottom of the foldable side of the tray;

a pair of connector links having respective on ends connected pivotally to the medium under side of the tray and having the opposite ends pivotally connected to the upper extremities of the second pair of legs, the connector links being so configured and
25 arranged as to, when the pairs of legs are in their deployed positions, provide for such legs to support the tray in its horizontal working position and being further so configured that

as the actuation of the tray shifted from its working position and its stand position provide for rectilinear translation of the tray relative to the legs to cause the tray and legs to pivot a substantially coextensive positions; and

a latch mounted under the tray for latching the legs in their deployed positions.

5

11. The foldable tray apparatus of claim 10 wherein:

lifting the tray from its working position to its collapsed position serves to move at least one of the links through a predetermined path; and

10 the latch includes a latch bar pivotally mounted on the underside of the tray and configured to, in a latching position, be disposed in the path of the link and,

pivotable to an unlatching position clear of the path.

12. The apparatus of claim 11 wherein:

the latch includes a spring biasing the latch bar to its latching position.

15

13. The tray apparatus of claim 11 wherein:

the latching bar includes a handle.

14. The tray apparatus of claim 11 that includes:

20 a stop mounted on the underside of the tray and positioned in the path of the latch bar to limit rotation thereof in at least one direction.

15. Foldable tray apparatus comprising:

first and second pairs of legs pivotably connected together medially to pivot from deployed to collapsed positions, the legs included upper ends respective first and second pairs of upper ends spaced apart when the pairs of legs are in the deployed positions;

5 a rigid tray to be supported from the first and second pairs of upper ends;

mounting means mounting the tray from the respective first and second pairs of upper ends and operative upon shifting of the legs from their deployed positions to orient the tray in a horizontal position and upon shifting of the legs to their collapsed position to orient the tray in a vertical position generally coextensive with the legs; and

10 the legs including stabilizing means operative when the legs are in the collapsed position to support the legs and tray in a generally vertical position.

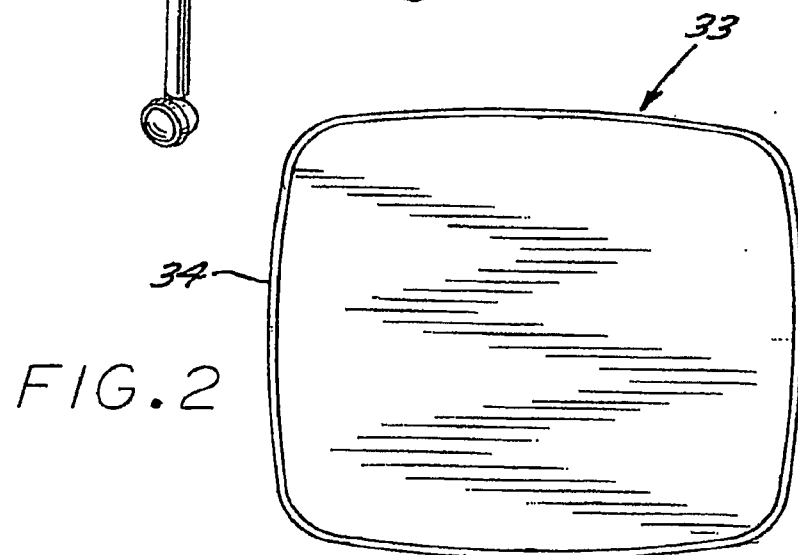
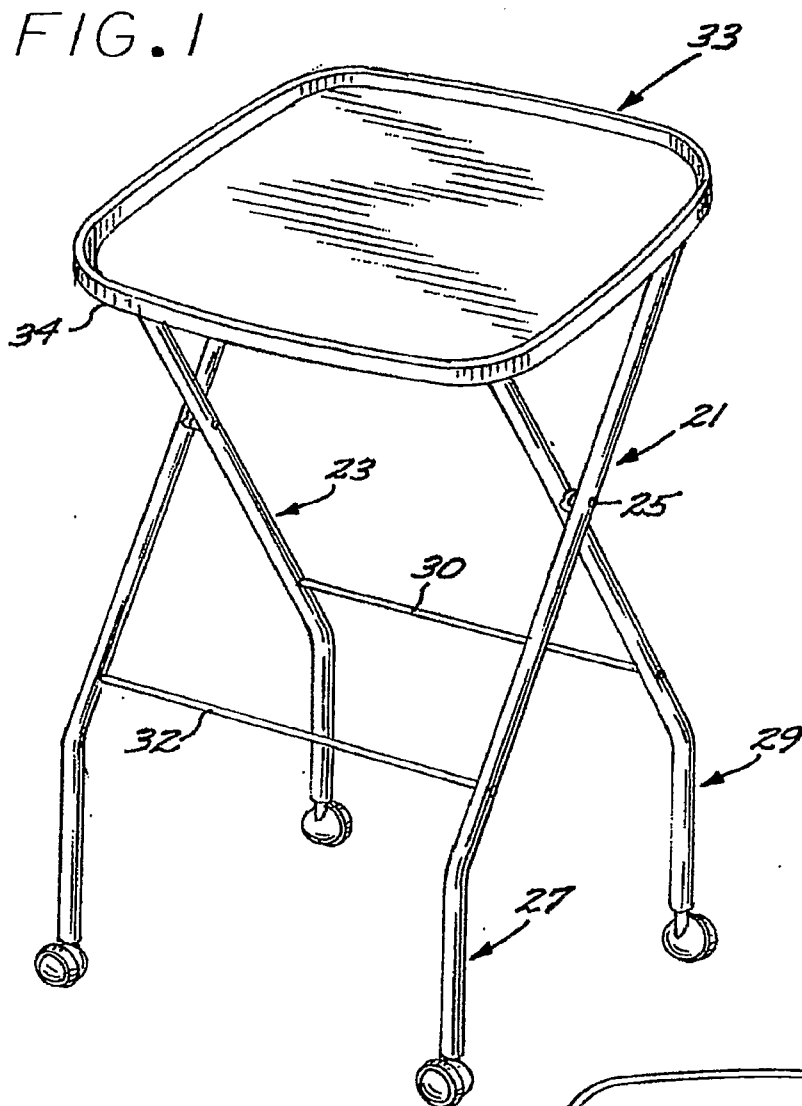
16. The foldable tray apparatus of claim 15 that includes:

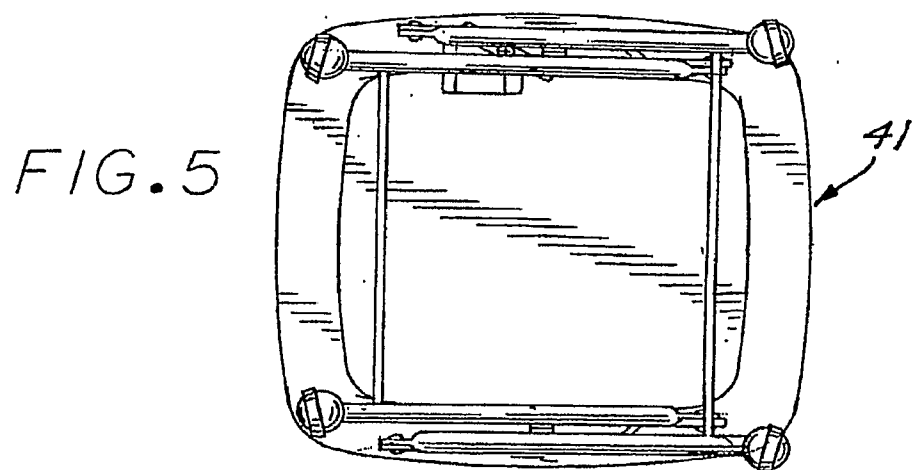
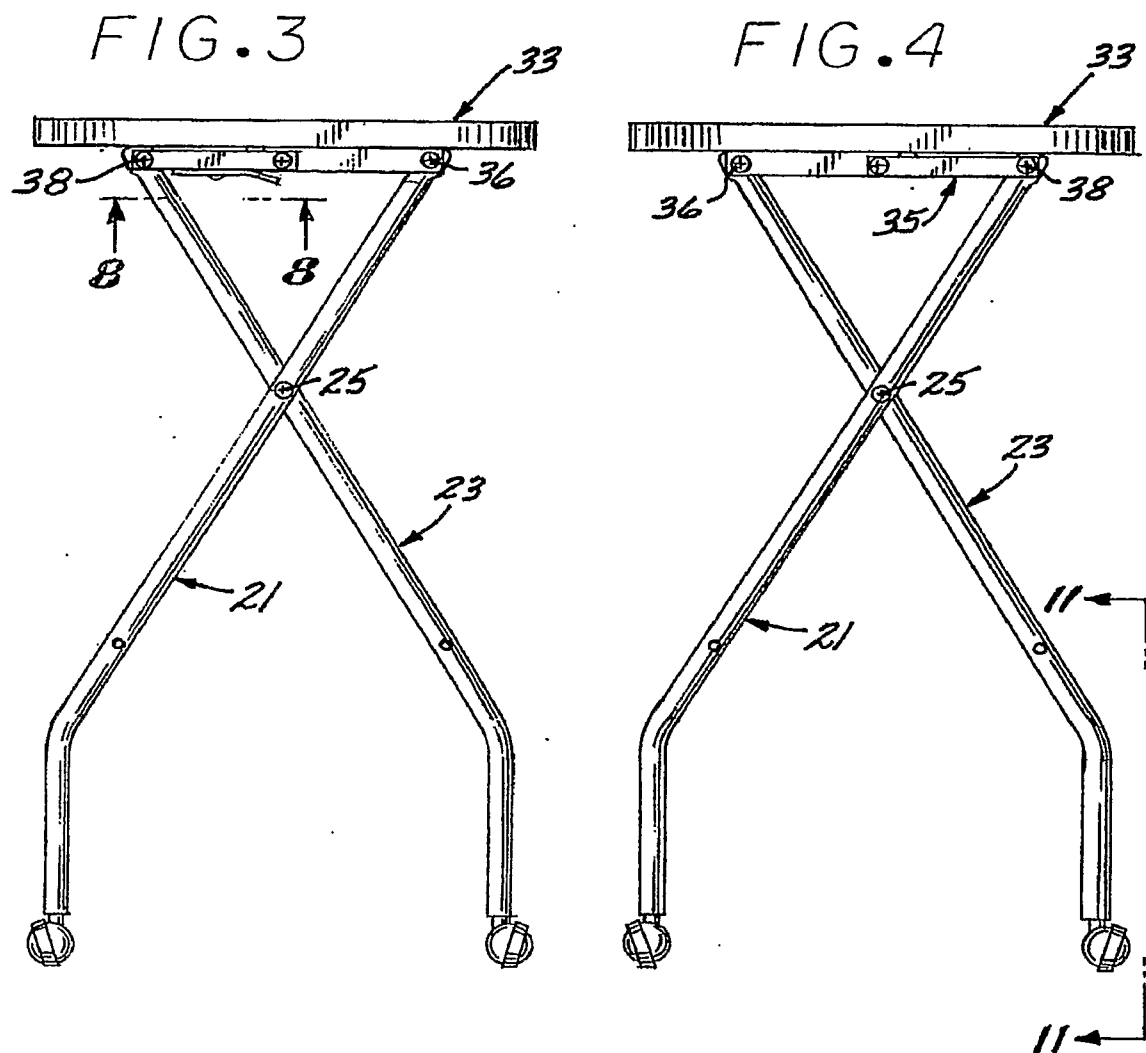
roller means on the lower extremities of the legs.

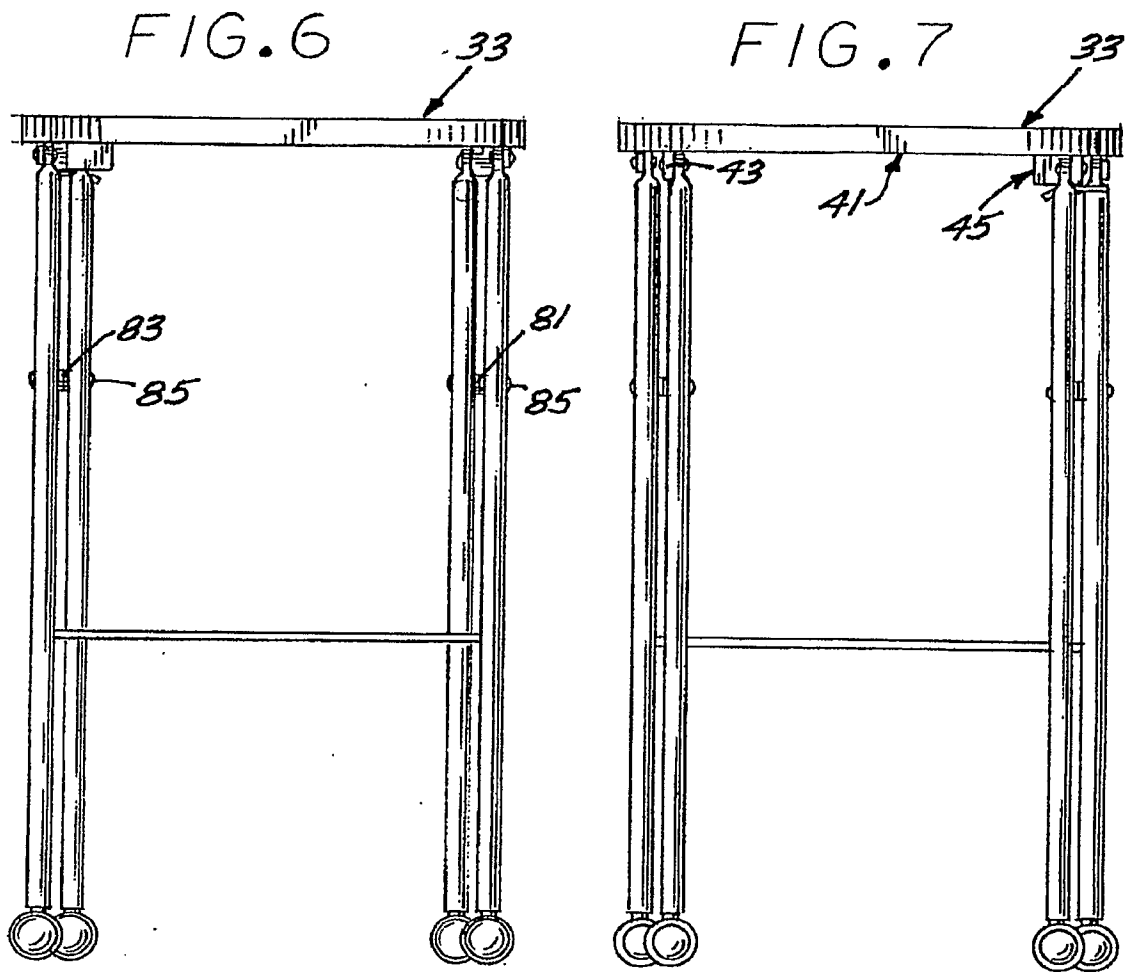
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17. The foldable tray apparatus of claim 15 that includes:

latch means for latching the legs in their collapsed positions.







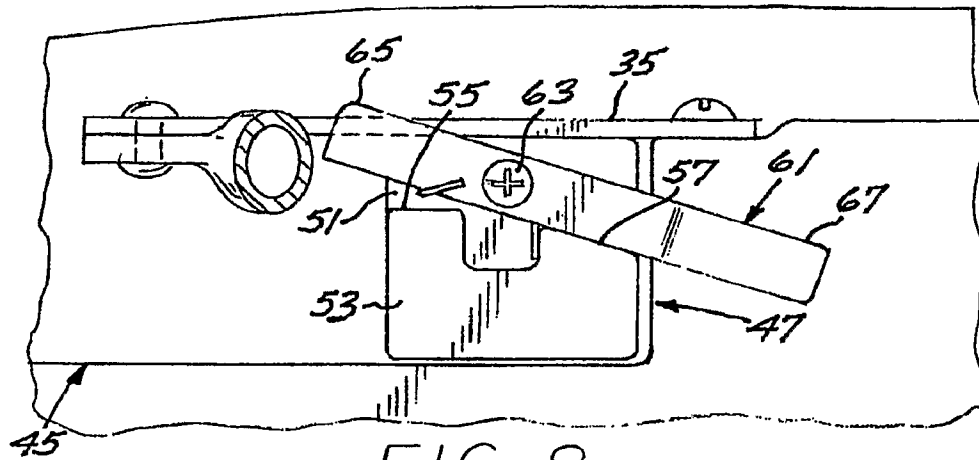


FIG. 8

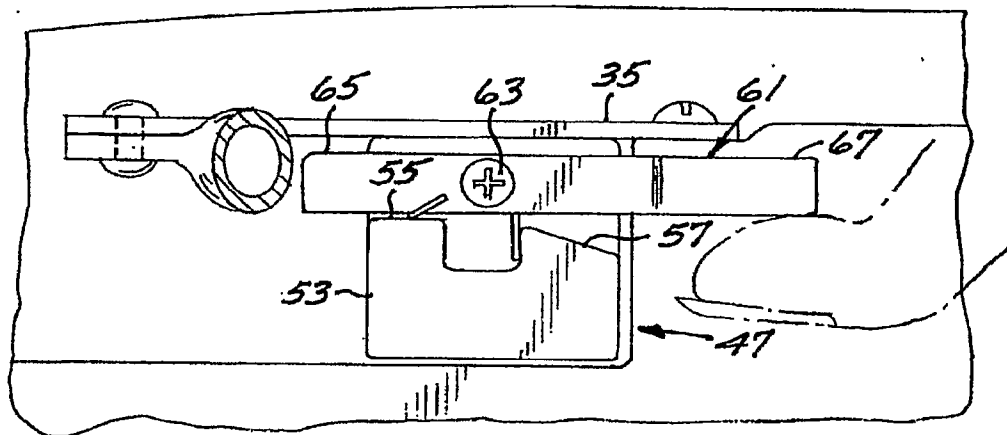


FIG. 9

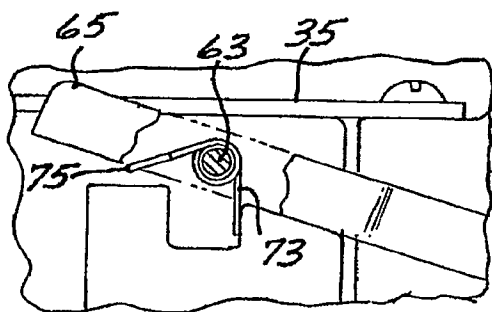


FIG. 10

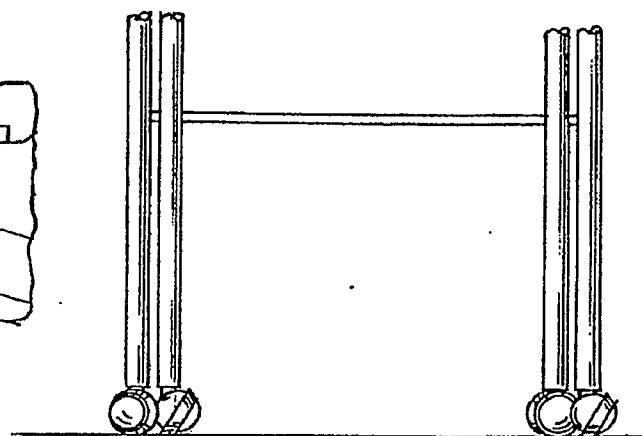


FIG. 11

