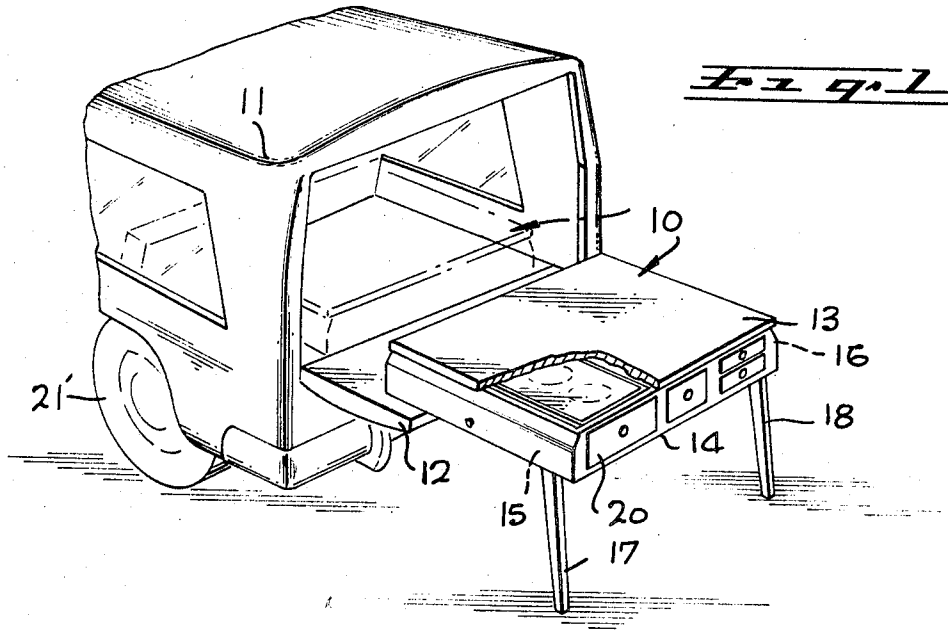
July 30, 1968 E. PEARLMAN 3,394,666

FOLDABLE UTILITY TABLE

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Fig. 1



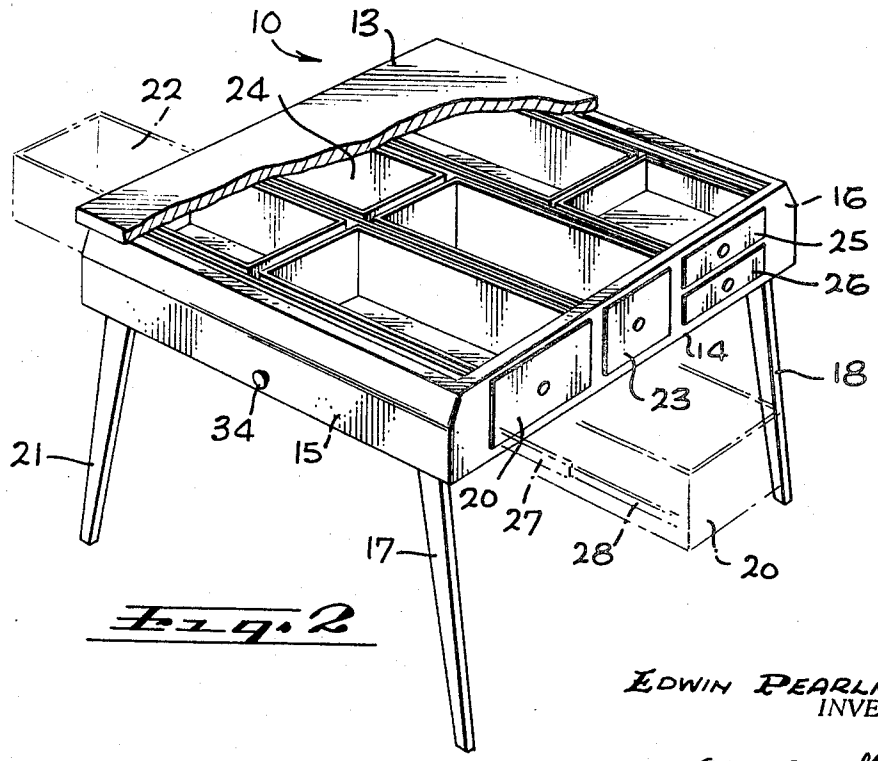


Fig. 2

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Fig. 3

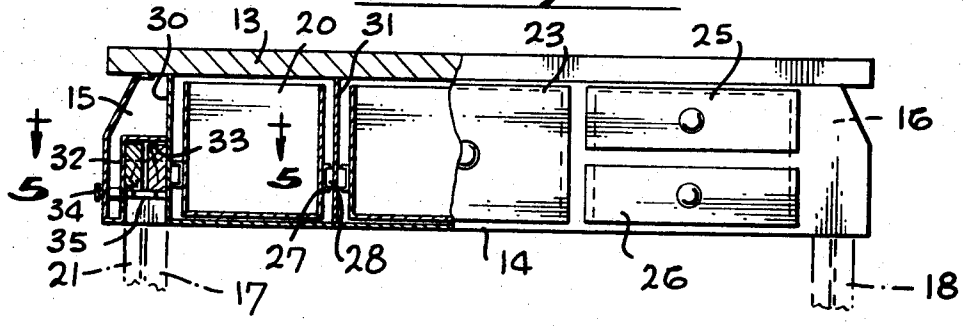


Fig. 4

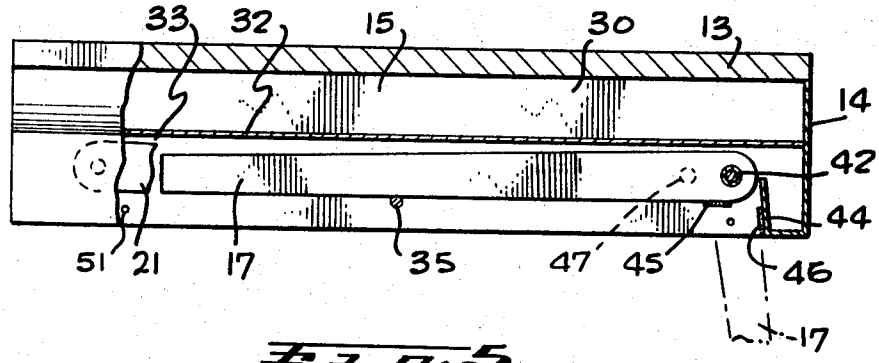


Fig. 5

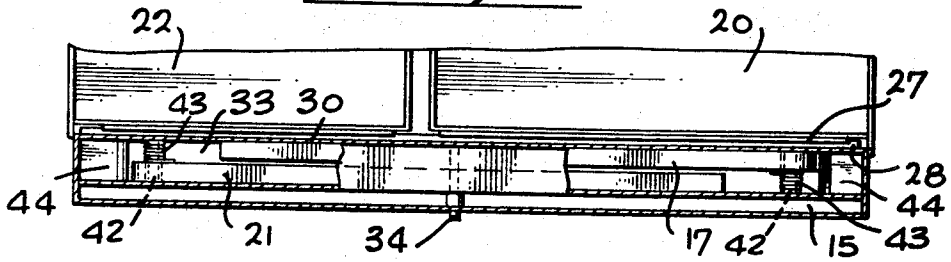
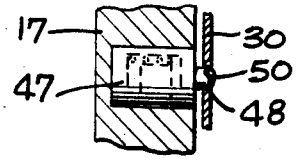


Fig. 6



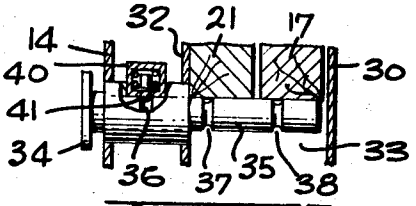


Fig. 7

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3,394,666

FOLDABLE UTILITY TABLE

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Filed Mar. 17, 1967, Ser. No. 624,013
11 Claims. (Cl. 108—129)

ABSTRACT OF THE DISCLOSURE

A folding table is provided having a frame for supporting a table top, a plurality of drawer storage compartments opening from opposite ends of the frame and a pair of lateral leg storage compartments on opposite sides of the frame for each housing a pair of folded legs. Each leg is pivotally secured to the frame by a pin and includes a stop member to limit pivotal movement thereof when the leg is downwardly and outwardly extended and magnetic closure means to releasably retain each leg in the extended position.

BACKGROUND OF THE INVENTION

1. *Field of the invention*

This invention relates to folding tables and, more particularly, to a novel foldable table having storage compartments for storing pivotally folding legs wherein the legs in their stored position are adapted to swing downwardly by the force of gravity and outwardly by virtue of the generated momentum so that the legs may be extended by the user as the folded table is being removed from its storage location.

2. *Description of the prior art*

Attempts have been made in the past to provide a folding table having a frame on which is fixed a table top and including a plurality of hingeable legs disposed with respect to the frame so as to be collapsed and stored therein when the table is not in use. Such examples of foldable tables are disclosed in U.S. Letters Patent 1,636,912, 2,115,727 and 2,681,841 for example. However, difficulties and problems have been encountered with such conventional devices inasmuch as the legs in their collapsed or folded condition within the frame do not automatically advance into a table supporting position when the table is desired for use. Generally, it is required that either two persons cooperate together to both support and unfold the legs so that the table can be supported by itself or a single person must manipulate the table by placing it on its end or side while the legs are unfolded and then maneuver the table so that it is supported on its legs. Obviously, such manual manipulation is cumbersome, awkward and requires a certain amount of forethought and planning on the part of the user preparatory to the unfolding or folding operation.

Furthermore, the prior art folding tables do not lend themselves to permit the legs to automatically unfold when the table is being removed from a storage area. Positive action is required on the part of the user to intentionally deploy each of the legs prior to the table being in condition for supporting itself. In some instances, elaborate mechanisms and spring biasing devices are incorporated in connection with each of the foldable legs to not only bias the leg in either a folded or unfolded position but to brace or support each leg with respect to the table frame and top so that the table is stable in its unfolded condition. Obviously, the employment of springs and other mechanical bracing mechanisms increases the cost of manufacture and the complexity of the devices not only has a tendency to frustrate the user

but presents certain repair and maintenance problems which are comparatively expensive to solve.

SUMMARY OF THE INVENTION

The novel folding table apparatus of the present invention obviates the difficulties and problems encountered with the prior art by providing a frame for supporting a table top and having a plurality of drawer compartments opening from opposite ends of the frame and four legs pivotally mounted at the four corners of the frame which are adapted to diverge downwardly and outwardly in two planes when unfolded to support the frame and table top. Each of the legs is mounted by only a single pivot pin which is transverse to a longitudinal slot or receiver leading into lateral leg storage compartments located on opposite sides of the frame into which a pair of legs is pivotally recessed when the table is folded. The pins for pivotally mounting each of the legs are located at a distance upwardly spaced from the downwardly facing entrance to the slot leading to each lateral compartment such that the edge of each leg abuts against a stop member located at each end of the slot when a respective leg is pivoted into its full downward and outward position, wherein such abutment prevents further movement of the leg and causes the table to be supported on the extended legs at both the pivot pin and the top member locations of each leg.

Additionally, a magnet means is included at a corresponding location on the stop member and its associated leg to effectively cause these elements to draw together and to be retained together in abutting contact engagement therebetween. Therefore, when the table is lifted upwardly with the legs in an initially folded position, the legs may swing downwardly by the force of gravity out of the respective lateral compartments and downwardly by virtue of momentum until magnetic engagement occurs between each leg and its associated stop member whereupon the table can be lowered with its legs ready for ground engagement.

Therefore, it is a primary object of the present invention to provide a novel foldable utility table having pivotally mounted legs which are adapted to unfold from lateral storage compartments located on opposite sides of a frame in a downwardly direction by the force of gravity and outwardly by virtue of momentum.

Another object of the present invention is to provide a novel arrangement of folding legs with respect to a table top that may be readily unfolded by the forces of gravity and momentum as the table is being unloaded from a vehicle or carrier in an elevated position whereby the unfolding of the legs may be accomplished by a single person in a convenient manner.

Another object of the present invention is to provide a novel folding utility table wherein the legs may be collapsed into compact form to occupy the least possible space when not in use and to facilitate the unfolding of the legs from the table by an individual when it is desired to do so.

Another object of the present invention is to provide a novel utility table wherein the legs therefor are readily selectively unfoldable from their storage position by means of a manually operated retention pin that effectively permits selected ones of the legs to unfold preparatory to the unfolding of the other legs.

Yet another object of the present invention is to provide a novel folding utility table wherein the legs are adapted to swing downwardly and outwardly from their stored position including magnetic means for releasably retaining the legs in their downward and outward position.

Yet a further object of the present invention is to provide a novel utility table having a plurality of pivotal

legs mounted thereon which includes a stop member for limiting the swinging movement of each of the legs when the legs are released by a pin retention means in a preselected order, said preselected order being determined by the user of the table to facilitate the unfolding of all of the legs included in the plurality.

DESCRIPTION OF THE DRAWING

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view of the novel utility table of the present invention illustrating the table partially unfolded in solid lines and as employed in conjunction with the tailgate of a vehicle during an unloading procedure and illustrating the table in its folded condition in broken lines for storage within the vehicle;

FIGURE 2 is an enlarged perspective view of the utility table shown in FIGURE 1 and illustrating a portion of the table top as broken away to expose the plurality of storage compartments provided for therebeneath;

FIGURE 3 is a front elevational view of the table showing a portion broken away to expose one of the pair of lateral leg storage compartments employed to house a pair of legs associated with one side of the table showing a pair of legs in their stored position;

FIGURE 4 is a side elevational view of the table shown in FIGURE 3 illustrating a portion of the lateral compartment broken away to illustrate the legs folded therein;

FIGURE 5 is a cross-sectional view of the table shown FIGURE 3 as taken in the direction of arrows **5—5** thereof;

FIGURE 6 is an enlarged fragmentary view, in section, of a detent means employed to releasably retain a leg in its extended position; and

FIGURE 7 is an enlarged cross-sectional view of a releasable pin means for retaining the legs associated with one side of the table in their stored position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGURE 1, the novel foldable utility table is indicated in the general direction of arrow **10** and is illustrated in conjunction with a vehicle **11**. The table **10** is adapted to be collapsed or folded as illustrated in broken lines and stored in the rear end of the vehicle **11**. Although the vehicle **11** is illustrated as being of the station wagon type, it is to be understood that the table in its folded condition may be stored in a trunk of passenger vehicles or other types of carriers. As illustrated in solid lines, one end of the table **10** is supported on a tailgate **12** pivotally carried on the end of the vehicle **11** so that it can be seen that the table may be initially removed from the vehicle and a first set of legs deployed simultaneously.

In general, the foldable table **10** includes a table top **13** supported on a box frame **14** which is provided with lateral storage compartments **15** and **16** in which the legs for the table may be stored when the table is in its collapsed or folded condition. As shown in FIGURE 1, legs **17** and **18** are disposed in table supporting position so that one end of the table is supported while the opposite end of the table is supported on the tailgate **12**. The other legs associated with the end opposite to the end supported by legs **17** and **18** are in the respective storage compartments **15** and **16**. In this manner, the table **10** is adequately supported so that it may be used at roadside locations when it is not intended to use the utility table in its completely unfolded condition.

Disposed between the lateral leg storage compartments **15** and **16**, here is provided a plurality of storage compartments taking the form of drawers, such as drawer **20**, which adapted to slide on the frame **14** to outwardly extend from opposite ends of the table. When the table is supported from the tailgate **12**, the table is extremely stable and is capable of sustaining substantially heavy weights or loads on the top **13** since the table is supported on the ground by means of vehicle wheels **21'** and the extended legs **17** and **18**.

Referring now to FIGURE 2, the utility table **10** is illustrated in its fully unfolded condition wherein both ends of the table are supported by the legs. One side of the table is supported by a pair of legs consisting of leg **17** and a leg **21** while the opposite side of the table is supported by a pair of legs consisting of leg **18** and an identical leg (not shown) located on the side of the table as leg **18** but at its other end. Drawer compartment **20** is shown partially opened as indicated in broken lines so that it projects from one end of the table. A similar drawer indicated by numeral **22** is illustrated in broken lines as being partially extended from the opposite end of the table. Drawers **20** and **22** are arranged in back-to-back relationship so that the rearmost panels of the drawers almost abut, the front panel of each drawer having a flanged periphery adapted to engage the respective opposite ends of the table frame.

Additional drawer compartments **23** and **24** are incorporated into the frame **14** in a similar manner to drawers **20** and **22**. Also, it is to be noted that the drawer storage compartments may take the form of tiered drawers, such as is represented by drawers **25** and **26**. Other drawer arrangements may be readily accommodated by the box frame **14**, if desired. Preferably, each of the drawers included in the drawer storage compartment system is slidably mounted on the box frame **14** so as to be movable through openings provided in the end of the frame by means of a conventional drawer slide arrangement such as is indicated by guide track **27** on one side of drawer **20**. Such an arrangement generally includes a portion which partially projects from the end of the frame **14** to support the drawer in its open or extended position and which cooperates with members outwardly projecting from opposite sides of each drawer, such as member **28**, so that the guide track **27** operates as a support and a guide for the extended drawer.

Referring now to FIGURE 3 in detail, means are shown to effectively separate the various drawer compartments of the drawer compartment system including a plurality of partitions, such as is indicated by numerals **30** and **31** and which are employed to mount the respective drawer guide and track arrangement **27**. When the drawers are closed within the end members of the box frame **14**, the bottom of each drawer rests on the bottom of the frame **14**. However, when desired in some instances, the bottom of frame **14** can be left open and the various drawers can be supported by the guide and track arrangement **27** in which case the drawers are supported from the partitions located on opposite sides of each drawer.

FIGURES 3–5 inclusive more clearly illustrate the lateral leg storage compartment **15** in which legs **17** and **21** are housed when the legs are in their folded position. Compartment **16** is identical thereto for the storage of legs associated with the other side of the table. It is to be noted that a bracket **32** is provided within the storage compartment **15** that extends along the full length of the compartment from one end of the table to its opposite end as noted in FIGURE 5. The bracket **32** defines a receiver or slot **33** opening downwardly from the bottom of frame **14** so as to accommodate the pair of legs **21** and **17**. The width of the receiver **33** is sufficient to accommodate the combined width of each leg so that the legs will lie adjacent each other in side-by-side relationship within the full length of the receiver when the legs are in their folded condition. Such relationship is best shown in FIGURE 5. In order to maintain the legs in their stored

position within compartment **15**, a retainer pin **34** is provided having a shank which is mounted on the side of compartment **15** and extends through the bracket **32** and through the receiver **33** immediately below the uppermost stored position of the pair of legs **17** and **21** so that the legs rest thereon. Construction in this manner enables the legs **17** and **21** to be maintained in their folded and stored position.

As viewed in FIGURE 7, the retainer pin **34** includes a shank **35** that is provided with annular grooves **36–38** inclusive which are arranged in fixed spaced apart relationship along the length thereof. Each of the annular grooves is adapted to cooperate with a detent means **40** that includes a spring biased detent ball **41** so that the retainer pin **34** may be releasably held in three positions. The detent means **40** cooperating with groove **36** releasably holds the pin **34** so that shank **35** extends beneath both legs **17** and **21** so that the legs will not unfold. When the detent means **40** engages with annular groove **37**, only the extreme terminating end of shank **35** will be maintained within the receiver **33** to support leg **21**. This condition permits leg **17** to move out of receiver **33** and storage compartment **15** to its extended position as shown in FIGURE 1 while leg **21** is still maintained within the compartment. When detent means **40** is releasably engaged with annular groove **38**, both legs **17** and **21** are free to move out of their stored position within compartment **15** into their fully extended position as shown in FIGURE 2.

As shown more clearly in FIGURES 4 and 5, each of the respective legs are mounted between bracket **32** and partition **30** in the case of legs **17** and **21**, by means of a pivot pin, such as pin **42**. By pivoting one end of each leg in this manner, each leg will be free to leave its respective storage compartment via the force of gravity so that the legs will swing downwardly and outwardly by momentum. The downward movement and swinging action of each leg is somewhat restricted by means of an expansion spring **43** carried by each pivot pin **42** between the side wall of bracket **32** and the leg in the case of leg **17**, and abutting against the extreme end of leg **21** and the partition **30** in the case of leg **21**. The downward swinging movement of each leg is terminated by encounter with a stop member **44** carried by the frame **14** at the extreme opposite ends of each elongated receiver **33**. Preferably, each stop member **44** is angularly disposed with respect to a vertical plane so that each leg will extend not only downwardly but outwardly when each leg is in its completely unfolded position so as to provide structural support for stabilizing the table. In order to achieve a firm closure and engagement between the end of each leg adjacent its pivot **42** with its respective stop member **44**, magnetic means are provided to effect engagement therebetween whereupon the table can be lowered with its legs ready for ground engagement. Such magnetic means may include a pair of flat magnets **45** and **46** of opposite polarity which are carried on the end of each leg adjacent its pivot connection and each stop member **44** respectively.

With respect to FIGURE 6, detent means are illustrated for releasably retaining each of the legs in its outward and downward position when the legs are unfolded. Such means comprises a detent member **47** carried by each leg, such as leg **21** as shown, that includes a spring biased member **48** that projects outwardly from the side of the leg and which is adapted to releasably engage with an aperture **50** provided in partition **30** with respect to leg **17**. In the case of leg **21**, for example, the aperture will be placed in the side wall of bracket **33** as is represented by numeral **51**. The relationship of the detent means **47** with respect to its corresponding aperture bears a direct relationship to the closure position of each leg with its respective stop member **44** so that each leg will be retained in its downward and outward position against the stop member when the member **48** of the detent means **47** is biased into its respective aperture.

From the foregoing, it can be seen that the novel foldable utility table of the present invention provides a table wherein the legs may be partially unfolded as illustrated in FIGURE 1 so that the table is supported only on legs **17** and **18** while the opposite end of the table may be supported on the tailgate of a vehicle. Such a position is extremely useful in unloading the table from a vehicle in that a person may readily pull the completely folded table out from its storage compartment within the vehicle as shown in broken lines and when the table has been withdrawn therefrom at a point beyond its mid-section, retainer pin **35** may be partially removed from its position shown in FIGURE 7 to a point where detent means **40** engages with annular groove **37**. When the retainer pin **35** has been so positioned, leg **17** will swing downwardly by the force of gravity and outwardly by virtue of momentum until magnetic engagement occurs by magnets **45** and **46** and the swinging movement of the leg stopped by member **44**. At this time, the detent means **47** will engage with its respective aperture and the leg will be stabilized.

Next, the table may now be either used in this position in conjunction with the vehicle or the table may be further withdrawn from the vehicle tailgate so that the extreme edge of frame **14** is resting thereon. The user may now withdraw retention pin **34** to a location where detent **40** engages with annular groove **38** which will permit leg **21** on one side of the table and its other leg associated with the other side of the table (when the pin retainer means associated with compartment **16** is actuated) to swing downwardly and outwardly in the same fashion as legs **17** and **18** so that all four legs are fully extended and the unfolded table is ready for use.

While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects, and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

What is claimed is:

1. A foldable utility table comprising:

a box frame having a top, opposite ends and sides, each of said sides forming lateral storage compartments having a longitudinal slot opening into each of said compartments from the underside of said box frame;

a pair of legs disposed in each of said lateral storage compartments adapted to move upwardly therein to a folded position and to move downwardly and outwardly to an unfolded position; and

means pivotally mounting each of said legs respectively at a location adjacent to each of the opposite ends of said longitudinal slot associated with each of said lateral storage compartments whereby each of said pair of legs are adapted to be deployed into said unfolded position to support the table by the forces of gravity and momentum; and

retainer pin means associated with each of said lateral storage compartments adapted to selectively release each leg of each pair so as to extend or deploy a selected one of each of said pair of legs separately and individually.

2. The invention as defined in claim **1** including

stop means carried by said box frame at the extreme terminating end of each of said slots associated with each of said lateral storage compartments operable to interfere with the pivotal movement of said legs and to limit the outward extent of said legs upon abutting engagement of said legs wih each of said respective stop means.

3. The invention as defined in claim **1** including

said pin means constituting manually operated elongated means slidably carried on each of said lateral storage compartments transverse to the major length of said slots and adapted to hold said pairs of legs in their folded position and adapted to selectively

release each leg of said pair in accordance with a predetermined order of release.

4. The invention as defined in claim 3 including an elongated received mounted in each of said lateral storage compartments defining said longitudinal slot opening and having a width suitable to accommodate the combined thickness of one of said pair of legs.

5. The invention as defined in claim 1 including closure means mounted on each leg of said pair adjacent its associated pivot location and on said box frame at the extreme terminating end of each of said slots associated with each of said lateral storage compartments operable in response to deployment of each leg of said pairs to effect a positive and releasable abutting engagement therebetween.

6. A foldable utility table comprising:

a box frame having a top, opposite ends and sides, each of said sides forming lateral storage compartments having a longitudinal slot opening into each of said compartments from the underside of said box frame;

a pair of legs disposed in each of said lateral storage compartments adapted to move upwardly therein to a folded position and to move downwardly and outwardly to an unfolded position;

means pivotally mounting each of said legs respectively at a location adjacent to each of the opposite ends of said longitudinal slot associated with each of said lateral storage compartments whereby each of said pair of legs are adapted to be deployed into said unfolded position to support the table by the forces of gravity and momentum;

stop means carried by said box frame at the extreme terminating end of each of said slots associated with each of said lateral storage compartments operable to interfere with the pivotal movement of said legs and to limit the outward extent of said legs upon abutting engagement of said legs with each of said respective stop means; and

retainer pin means associated with each of said lateral storage compartments adapted to selectively release each leg of each pair so as to extend or deploy a selected one of each of said pair of legs separately and individually.

7. The invention as defined in claim 6 including

magnetic closure means mounted on each leg of said pair adjacent its associated pivot location and on each of said respective stop means operable in response to deployment of each leg of said pairs to effect a positive and releasable abutting engagement therebetween.

8. The invention as defined in claim 1 including detent biasing means carried on each leg of said pairs operable in cooperation with a selected portion of each of said lateral storage compartments to releasably retain each leg of said pairs in said unfolded position.

9. The invention as defined in claim 6 wherein said retainer pin means includes a headed pin having at least three annular grooves formed along the length of its shank in spaced apart relationship to each other, said shank to support said legs in their folded position and adapted to be moved to any one of three positions corresponding to said annular grooves whereby selected ones of said legs may be deployed to their extended and unfolded position.

10. The invention as defined in claim 9 including detent biasing means carried on each of said lateral storage compartments operable to releasably hold each of said retainer pin means in any one of said three positions.

11. The invention as defined in claim 8 including a plurality of drawer compartments slidably carried on said box frame between the said opposite sides thereof and adapted to open outwardly from said opposite ends of said box frame to achieve access to each of said drawer compartments.

References Cited

UNITED STATES PATENTS

1,679,017	7/1928	Athans	312—243
2,574,592	11/1951	Schatter.	
3,033,630	5/1962	Mugler	108—129
3,152,709	10/1964	Fowler	108—129 X
3,156,510	11/1964	Hindin et al.	108—129 X

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