March 12, 1963 N. V. RISDALL 3,080,833

FOLDABLE TABLE STABILIZER

Filed Feb. 13, 1961 2 Sheets-Sheet 1

FIG. 1

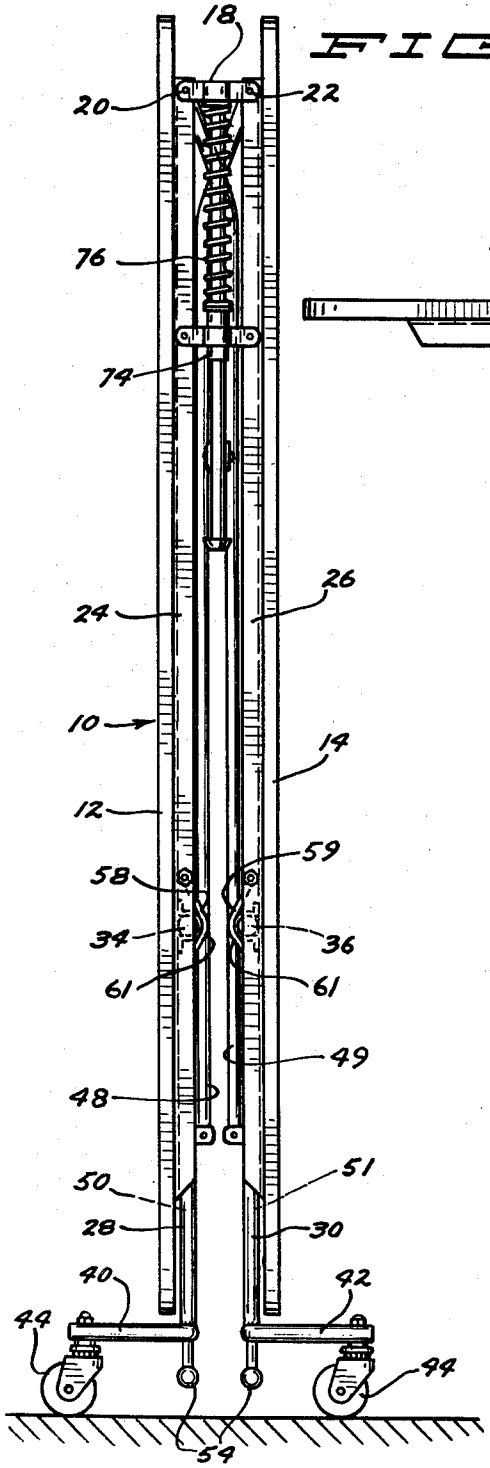
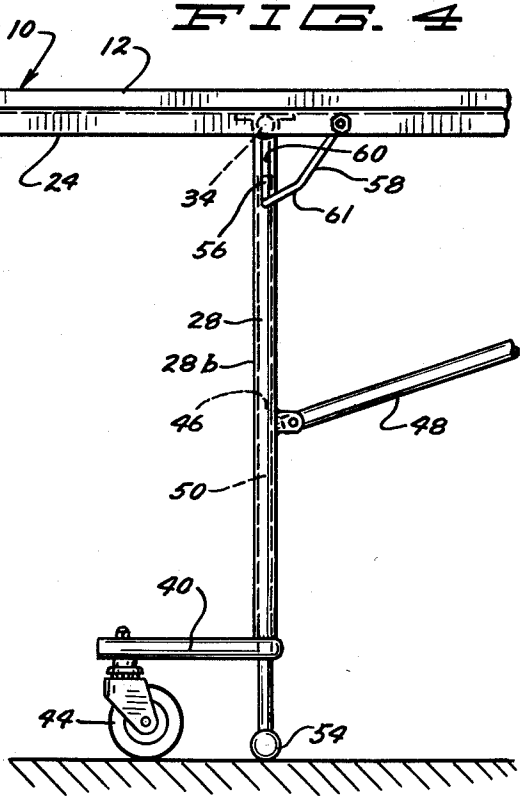


FIG. 4



INVENTOR.
NEWELL V. RISDALL
BY
Carlsen and Carlsen
ATTORNEYS

March 12, 1963 N. V. RISDALL 3,080,833

FOLDABLE TABLE STABILIZER

Filed Feb. 13, 1961 2 Sheets-Sheet 2

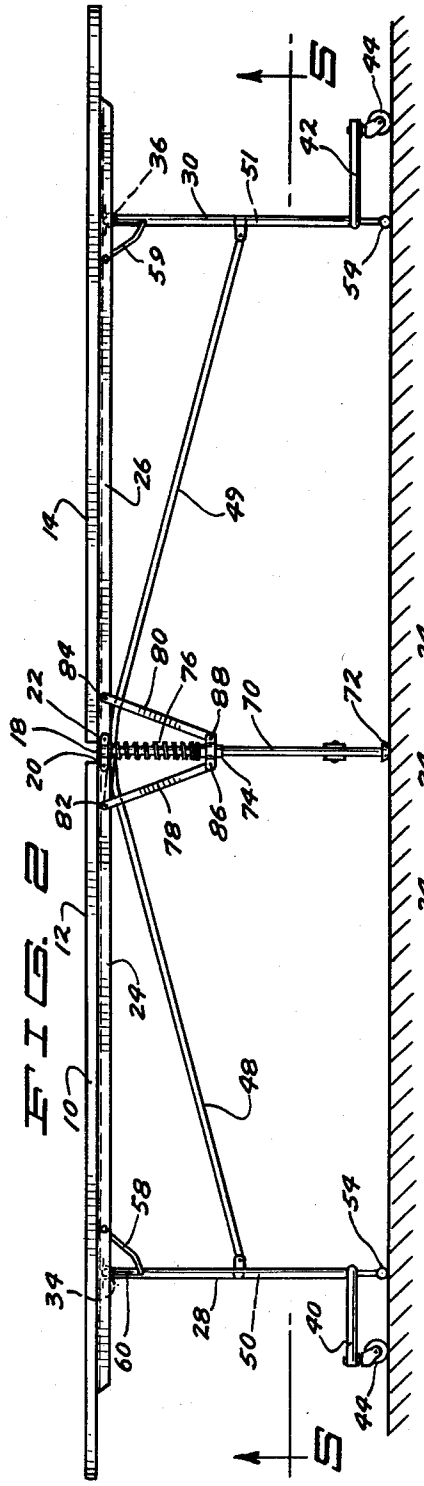


FIG. 2

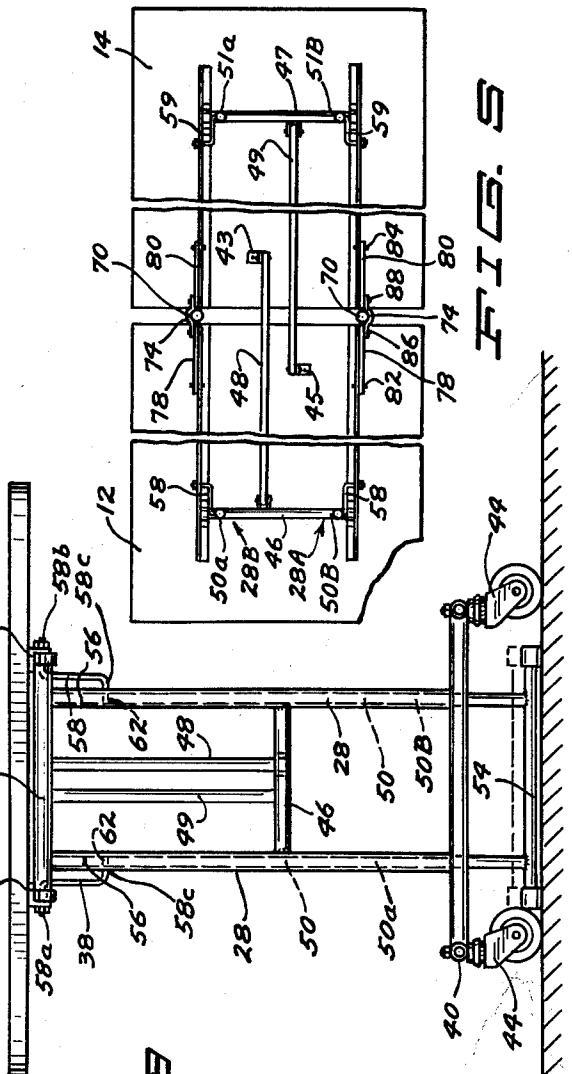


FIG. 3

FIG. 5

INVENTOR.
NEWELL V. RISDALL
BY
Carlsen and Carlsen
ATTORNEYS

United States Patent Office 3,080,833 Patented Mar. 12, 1963

3,080,833

FOLDABLE TABLE STABILIZER

Newell V. Risdall, St. Paul, Minn., assignor, by mesne assignments, to Peabody Seating Company, Inc., North Manchester, Ind., a corporation of Indiana

Filed Feb. 13, 1961, Ser. No. 88,716
2 Claims. (Cl. 108—112)

The present invention relates to foldable tables and more particularly to foldable tables with wheel means to allow convenient transportion of the table from one place to another and means for stabilizing the table by rendering the wheels inoperative when the table is unfolded and placed in position for use.

The present invention is particularly well adapted for use in connection with large tables of the type used for banquets or in schools. Because of the large size and bulk of these tables, they have been inconvenient to collapse and transport for storage during the time they are not in use.

A variety of foldable tables have been previously described. Some of these tables have been provided with wheels allowing the table to be conveniently moved about when it is folded to a collapsed position. Previously, however, most of these tables have been subject to instability or undesired movement after the table has been unfolded and placed in the operative position.

One previous device proposed for rendering wheels inoperative is a means for individually elevating each wheel from the floor so that another part of the table leg then rests against the floor. A shortcoming of this prior device is that the wheels must be each separately moved to an inoperative position. This operation is time consuming and troublesome because it must be carried out manually and is particularly inconvenient when used in connection with relatively large banquet or lunch tables and the like for which the present invention is particularly well adapted.

It is thus one object of the present invention to provide an improved collapsible table having wheels which allow the table to be moved about conveniently when the table is folded to the collapsible condition and also having means for automatically placing the wheels in inoperative position as the table is unfolded for use.

It is another object of this invention to provide an improved collapsible self-stabilizing table of the type described which is economical to manufacture, reliable in operation and durable under conditions of actual use.

It is a more specific object of this invention to provide an improved collapsible table which is stable when unfolded for use, which can be collapsed for storage without lifting the table from the floor and which can then be easily moved about upon wheels which automatically become operative as the table is collapsed.

With these objects in mind the invention broadly comprises a collapsible table preferably divided into two similar folding top portions, a plurality of table legs pivotally connected to the folding table top to support the table from the floor and means connected to the lower end of the legs to enable the table to be readily moved about on the floor. To enable the table to be easily moved wheels of known construction are preferred. The wheels support the entire weight of the table when the table is in the collapsed condition but means are provided for automatically placing the wheels in an inoperative position when the table is in use. Specifically, I provide a table stabilizer means movably connected to at least one of said legs and means such as a stabilizer control lever connected between the table top and the stabilizer for raising the stabilizer as the table is placed in the collapsed position and for lowering the stabilizer to the operative position to render the wheels inoperative as the table is unfolded. Thus, as the stabilizer becomes operative, a floor engaging portion provided on the stabilizer projects beyond that portion of the wheels in contact with the floor. Means are also provided for retaining said legs in a vertical position as the table is folded.

These and other more detailed and specific objects will be disclosed in the course of the following specification, reference being had to the accompanying drawings, in which—

FIG. 1 is a side elevation of a preferred form of foldable table according to the present invention in the folded condition with the wheels in operative position.

FIG. 2 is a side elevation similar to FIG. 1 but with the table unfolded for use.

FIG. 3 is an end elevational view of the table of FIG. 2.

FIG. 4 is a partial side elevation showing the details of construction of the stabilizer mechanism.

FIG. 5 is a sectional view taken along lines 5—5 of FIG. 2.

Referring now more particularly to the drawings and using reference numerals to denote like parts and structural features, there is shown a collapsible table according to the present invention including stabilizer means operatively associated with the legs to automatically lift the wheels to an inoperative position when the table is unfolded and is ready for use. The table comprises a table top **10** divided into two flat rectangular top portions **12** and **14**. Portions **12** and **14** may be formed from wood. Each of the portions **12** and **14** is provided with reinforcing members **24** and **26** such as angle irons. Members **24** and **26** are pivotally connected at the center to a centerpiece **18** by pivots **20** and **22**. These reinforcing members **24** and **26** are rigidly attached to each of the table top portions **12** and **14** by any convenient fastening device (not shown). Pivotally connected to the table top near the outer end of each of portions **12** and **14** are table legs designated at **28** and **30** respectively.

Table legs **28** and **30** include hinge members **34** and **36** which may be formed from metal tubing. Members **34** and **36** are accordingly pivotally connected at each end to one of reinforcing members **24** and **26**. Rigidly attached to each of hinge members **34** and **36** are the leg members **28** and **30**. Each leg comprises a pair of spaced apart vertically disposed metal tubes, designated 28^a, 28^b, 30^a and 30^b. Rigidly attached to the lower end of the leg members **28** and **30** are horizontally disposed wheel supporting members **40** and **42** respectively. Members **40** and **42** may also be formed from metal tubing. At each end of each of wheel supporting members **40** and **42** is provided a wheel **44**, there being a pair of wheels attached to each of the wheel supporting members **40** and **42**.

When the table is collapsed to the position shown in FIG. 1, the wheels are operative enabling the table to be moved about with ease and convenience. However, when the table is unfolded to the position in which it is to be used, as shown in FIGS. 2 to 4, the wheels are rendered inoperative by means of the improved stabilizing mechanism according to this invention which will be described below.

Located approximately intermediate the ends of leg members 28^a and 28^b as well as leg members 30^a and 30^b are provided horizontally positioned connecting members **46** and **47**. Pivotally connected at one end to member **46** is a leg brace **48**, while pivotally connected to connecting member **47** at one end is a leg brace **49**. The other end of the brace **48** is pivotally connected to the table top member on the opposite side of the center pivots **20** and **22** from the leg **28**. Thus brace **48** is pivotally connected to one end to the leg member 28^a and at the other end to top portion **14**. Brace **49** is mounted similarly, it being pivotally connected at one end to table

leg 30 and at the opposite end to table top portion 12. It will be understood by making reference to FIGS. 1 and 2 that as the table is elevated from the unfolded position, shown in FIG. 2, to the collapsed position shown in FIG. 1, the resultant relative movement between table top portions 12 and 14 will cause the legs 28 and 30 to remain in a vertical position as the table is folded due to the action of braces 48 and 49. The braces 48 and 49 may therefore be thought of as a means for maintaining the legs in a vertical position as the table is folded.

Slidably associated with each of the table legs 28 and 30 are stabilizing elements 50 and 51. The stabilizing elements 50 and 51 comprise a pair of elongate members 50^a and 50^b slidably mounted inside the leg members 28^a and 28^b respectively and a pair of members 51^a and 51^b slidably mounted inside leg members 30^a and 30^b respectively. Rigidly attached between the lower end of each pair of stabilizer members is a floor engaging member 54. The length of the stabilizing members 50 and 51 is adjusted so that the upper ends thereof, designated at 56, as shown in FIGS. 3 and 4, is spaced apart from the pivots 34 and 36 when the stabilizing floor engaging portion 54 is in contact with the floor thereby allowing a space for the stabilizing members 50 to slide upwardly with respect to the legs 28 and 30. Pivotally connected near the upper end of each stabilizing member is a stabilizer control lever 58. Each of the stabilizing control levers 58 is pivotally connected at the other end thereof to one of reinforcing members 24. The levers are in effect pivotally connected to the table top by virtue of their connection with reinforcing members 24 and 26. The point of connection between the control levers and the table top is located centrally of the pivot connections 34 and 36 between the table legs and the table top.

According to a preferred form of the invention, each stabilizer control lever comprises a stiff metal rod having a center portion 58^a and portions 58^b and 58^c at each end thereof which are bent at a right angle with respect to the center portion 58^a. The portions 58^a and 58^b can thereby be conveniently pivotally connected to the table top and stabilizer member respectively. The center portion of each of levers 58 is provided with a slight bend 61 best seen in FIGS. 1 and 4 to accommodate the members 34 and 36 when the table is collapsed.

To allow access of the estabilizer control lever 58 to the stabilizer members 50, each leg is provided at the upper end thereof with an elongate opening 60. The portion 58^c of the control lever 58 thus projects through the elongate opening 60 in the stabilizer member 50.

At the center of the table is provided a central leg 70 which is rigidly connected to the upper end thereof to a centerpiece 18. The bottom of leg 70 is provided with a floor engaging portion 72. At approximately the center of leg 70 is provided a sliding collar 74. Between the sliding collar 74 and the centerpiece 18 is provided a helical compression spring 76 which tends to drive apart the collar 74 and the centerpiece 18. Pivotally connected at each end between collar 74 and table top members 12 and 14 are two links 78 and 80. The links 78 and 80 are accordingly pivotally attached at the upper end thereof to table top members 12 and 14 by pivots 82 and 84 respectively. The links 78 and 80 are pivotally connected at their lower ends to collar 74 by means of pivots 86 and 88. Thus, the spring 76 exerts downward force on the collar 74 and therefore also exerts downward force on the links 78 and 80.

The provision of spring 76 and collar 74 and links 76 and 78 tend to assist folding the table to its collapsed position. The spring tension of spring 76 is not sufficient to cause the table to assume the folded position without additional manual force but is sufficient to aid on collapsing the table.

In operation, the table is placed in the unfolded position during use. While the table is in this position, the stabilizers are extended to a floor engaging position, as shown in FIGS. 2, 3 and 4. The stabilizer member 54 thus supports at least a part of the weight of the table. If desired the stabilizer may support the entire weight of the table in which case the wheels 44 will be elevated from the floor. In most applications, however, it is desirable to provide that the stabilizer members support only a part of the weight of the table, the remaining weight being supported by the wheels. If this provision is made, the wheels will not actually be elevated from the floor.

It will be thus apparent that the stabilizing members render the wheels 44 inoperative when the table is in the unfolded position for use and thereby prevent undesired movement of the table across the floor when the table is being used.

To fold the table from the position shown in FIGS. 2 and 3 and 4 to the collapsed position shown in FIG. 1, the centerpiece 18 is raised from the floor. The change in the angle between the top pieces 12 and 14 will cause the braces 48 and 49 to exert lateral forces on the legs 28 and 30 thereby maintaining the legs 28 and 30 in a vertical position as the table is folded in the manner described above. The leg members 28 and 30 will thus turn with respect to the table top portions 12 and 14 in a counterclockwise and clockwise direction respectively. As leg 28 pivots clockwise about pivot 34 relative to table top member 12, the stabilizer control levers 58 associated with leg 28 will cause the stabilizer 50 to slide upwardly in leg 28. The stabilizer control lever associated with leg 30 operates in a similar manner. The stabilizers 50 and 51 are in this way automatically moved to the inoperative position as the table is folded to the collapsed position for storage.

From the above description it can be seen that the invention provides a collapsible table wherein stabilization of wheels is automatic in operation, the wheels being placed in an inoperative position as the table is placed in the position for use. Under conditions of use the invention has shown good reliability and durability.

The tables according to the present invention are surprisingly stable in the unfolded position and can be readily collapsed and thereby rendered easily transportable as the wheels move to the operating position. The invention is particularly useful in connection with large and bulky tables, such as banquet tables. The invention can be economically manufactured and requires relatively few additional parts.

It is undertsood that suitable modifications may be made in the structure as disclosed, provided such modifications come within the spirit and scope of the appended claims. Having now therefore fully illustrated and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. A collapsible table comprising in combination, a table top, said table top being divided into two similar portions, a pivotal connection between said two portions, first and second table legs, each of said legs being pivotally connected at the upper end thereof to one of said portions to support the table from the floor, wheel means connected to the base of each such leg, a first brace pivotally connected at one end to said first leg and at the other end to the table portion connected to said second leg, a second brace pivotally connected at one end to said second leg and at the other end to the table portion to which said first leg is attached, a first and second stabilizer member mounted slidably with respect to said first and second legs respectively to support at least a part of the weight of said table when said table is unfolded for use, a stabilizer extender lever pivotally connected at one end to the upper end of each stabilizer and pivotally connected at the other end thereof to said table top at a position between the center of said table and the end thereof connected to said stabilizer to extend said stabilizer downwardly to a position rendering said wheels inoperative

when said table is unfolded, a central leg means connected to said pivotal connection between said two portions and extending downwardly therefrom, said central leg means being adapted to support the center of said table when said table is unfolded for use.

2. A collapsible table comprising in combination, a table top, said table top being divided into two similar relatively foldable portions, a pivotal connection between said two portions, first and second table legs, each of said legs being pivotally connected at the upper end thereof to one of said portions to provide support for the table from a floor, the pivotal connection of each of said legs comprising a hinge member providing for movement of each leg about an axis parallel to said pivotal connection between said two table top portions, a pair of spaced apart hollow tubular members forming a part of each of said legs and movable therewith, spaced wheels mounted at the lower end of each of said legs for engagement with the floor, a pair of stabilizers slidably associated with said tubular members, each of said stabilizers being in the form

of an elongate member telescopically mounted in a tubular member, and means connected with each stabilizer and a table top portion for extending said stabilizer from a retracted inoperative position to a position projecting beyond the portions of said wheels engaging the floor in response to relative pivotal movement between said table top and said legs.

References Cited in the file of this patent

UNITED STATES PATENTS

2,596,986	Curtis	May 20, 1952
2,720,402	De Puy et al.	Oct. 11, 1955
2,747,958	Wilson	May 29, 1956
2,764,460	Nelson	Sept. 25, 1956
2,792,270	Anderson	May 14, 1957
2,831,741	Wilson	Apr. 22, 1958
2,873,157	Wilson	Feb. 10, 1959
2,978,754	Wilson	Apr. 11, 1961