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FOLDING TABLE LEGS WITH GRAVITY LOCK

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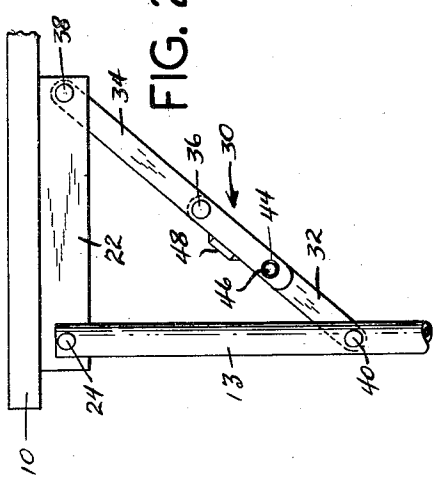


FIG. 2.

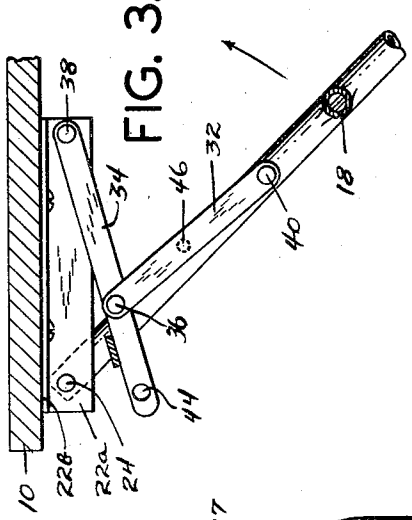


FIG. 3.

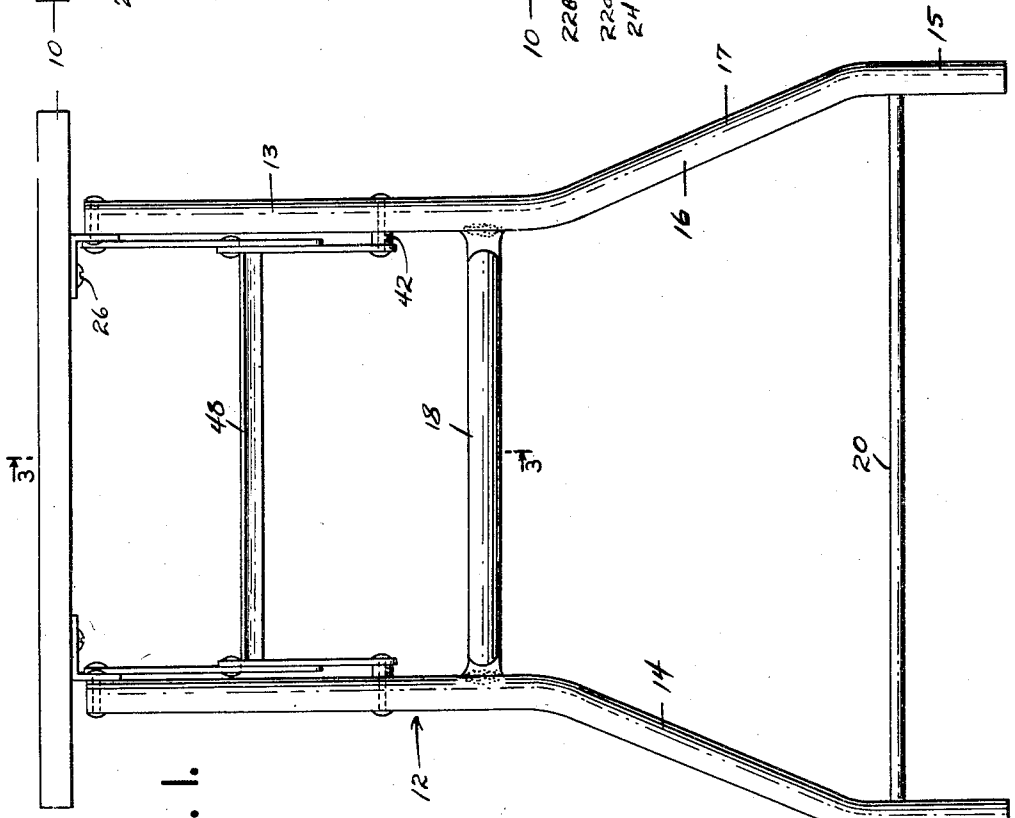


FIG. 1.

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FOLDING TABLE LEGS WITH GRAVITY LOCK

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1 Claim. (Cl. 311—86)

This invention relates to a table with folding legs.

Tables with folding legs are in common use today and are well known to the prior art. These tables are usually provided with individually foldable legs or with legs which are joined or connected in pairs, each pair of legs being foldable as a single unit and independently of the other pair. The present invention applies to the latter category in which the legs are foldable in paired units.

There is no problem in securing one leg to another to form a paired unit. These legs are generally made of tubular metal and cross braces are provided between legs to lock them into a single integral unit. The real problem relates to mounting the legs on a table top and properly attaching the folding braces thereto. The conventional practice is to provide four pads or plates for each paired unit and its folding braces to secure said paired unit and said folding braces to the table top. There is one pad for each leg and one for each folding brace. Since the two legs of each paired unit are fixed in relation to each other, the pads which are secured to said legs are similarly fixed in relation to each other. The folding braces, however, are normally free of each other and consequently their respective pads do not occupy fixed positions relative to each other. It is therefore necessary to provide external means to hold the two leg pads and the two folding brace pads in fixed relation to each other in order to secure them to the table top. This is a relatively difficult and time consuming operation, especially since it is generally the case that the legs and folding braces are made by one manufacturer in one plant and the table tops are made by another manufacturer in another plant and sometimes it is the one manufacturer, sometimes the other, and sometimes still a third manufacturer, who would assemble the tables. Also to be borne in mind is the fact that very frequently the person to assemble the tables is not a manufacturer at all but rather merely a distributor, store keeper or ultimate user, and the problem of properly attaching the table legs and folding braces to the table tops assumes serious proportions.

It is the principal object of this invention to provide a unified assembly consisting of a pair of table legs and a pair of folding braces which are so interconnected that they are adapted to occupy fixed positions relative to each other. More specifically, each such assembly comprises a pair of legs with interconnecting braces which fix them relative to each other, a pair of folding braces which are pivotally secured to said legs, a cross brace, if desired, interconnecting the two folding braces to lock them in fixed positions relative to each other, and a pair of longitudinally extending frame members, each interconnecting one leg with one of said folding braces.

These two longitudinal frame members serve as pads for affixing the table leg and folding brace assemblies to the table tops and they take the place of the four pads which are in conventional use today. With these longitudinal frame members it is possible to pre-form suitable holes in the table tops to receive screws or other fastening

means for fastening said longitudinal frame members to said table tops. Jigs, fixtures and the like are no longer required and all that need be done is to place these longitudinal frame members against the table tops in registration with the holes pre-formed therein and to screw said longitudinal frame members to said table tops or otherwise fasten them thereto.

An important feature of this invention, aside from the feature above mentioned, is the fact that fewer fastening elements are required to attach the table leg and folding brace assemblies of the present invention to the table tops than are required in the fastening of conventional table legs and folding braces thereto. As has above been indicated, in conventional constructions each table leg and each folding brace is provided with its own pad. Each said pad requires two fastening elements for good results. Consequently, a conventional table with four folding legs and four folding braces requires sixteen fastening elements. In the present invention, on the other hand, a typical table would be provided with only four longitudinal frame members and each said member would require only two fastening elements, making a total of eight fastening elements which do the work of the sixteen now required. There is accordingly a saving not only in materials but also in the time and labor required to install them.

Moreover, a table made in accordance with the present invention is a much sturdier structure than conventional tables of like nature and dimensions. This is obviously the case since each longitudinal frame member provides great structural strength and there is nothing in conventional folding table constructions which corresponds to this structural member.

The invention is illustrated in the accompanying drawing in which:

Fig. 1 is an end view of a table incorporating a pair of folding leg and folding brace assemblies made in accordance with this invention.

Fig. 2 is a fragmentary side view of one of these assemblies.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1 showing how one of these assemblies folds up against the table top.

The drawing shows a conventional table top **10** and a folding leg and folding brace assembly **12** made in accordance with the present invention. Each such assembly **12** includes a sub-assembly of the table legs themselves. Thus, there are two legs **14** and **16** and a pair of cross braces **18** and **20** respectively which are welded or otherwise secured at their respective ends to said legs. In the form of invention illustrated in the drawing, each leg has an upper portion **13** which extends along a vertical line, a lower portion **15** which also extends vertically and an intermediate portion **17** which extends diagonally from the upper portion **13** to the lower portion **15**. Diagonal portions **17** of each leg assembly are oriented in opposite directions, being closer together at the top and farther apart at the bottom and consequently upper leg portions **13** are set inwardly from the lower portions **15**. Stated differently, the lower portions **15** are spaced relatively far apart so as to lend greater stability to the entire structure. This shape of the table legs is purely illustrative and should not be taken as limiting the invention.

At the top of each leg is a longitudinal frame member **22** which, in the preferred form of this invention, comprises an angle bar. Viewing this longitudinal frame member as it is positioned when secured to a table top, said table top occupying a horizontal plane, it is noted that said frame member possesses a vertically extending flange **22***a* and a horizontally extending flange **22***b* integral therewith. A bolt or rivet **24** pivotally secures the top of each leg to one end of the vertical flange of one

of these longitudinal frame members. This may be seen in Figs. 1 and 3. The horizontal flange **22***b* is adapted to abut the underside of table top **10** and it may be secured thereto by means of screws **26** or other suitable fastening means. Fig. 3 shows that only two screws **26** are required to attach each longitudinal frame member **22** to the table top.

Each leg is provided with a folding brace **30** which interconnects it with the table top. Each said folding brace **30** consists of a lower bar **32** and an upper bar **34** and a rivet **36** which pivotally connects them. A second rivet **38** pivotally secures the upper bar **34** to the vertical flange of longitudinal frame member **22**. A third rivet **40** pivotally secures the lower bar **32** to the table leg. If necessary, a spacer **42** may be provided on rivet **40** between the table leg and the lower bar **32**. A hole **44** is provided at the lower end of upper bar **34**, on the opposite side of rivet **36** from rivet **38**. A prominence **46** is provided in lower bar **32** intermediate the two rivets **36** and **40**, said prominence **46** and said hole **44** being equidistant from rivet **36**. Consequently, when the two bars **32** and **34** are swung into alignment with each other, in overlapping relationship, as shown in Fig. 2, prominence **46** will register with hole **44** and since said prominence projects in the direction of said hole, it will enter the same, thereby yieldably locking the two bars in their said respective positions. This is conventional.

It has been stated above that a cross brace may also be applied to the folding braces and this is illustrated by cross-bar **48** which is secured at its opposite ends to the two upper bars **34** of each double leg assembly. More specifically, cross-bar **48** is welded to bars **34** intermediate rivets **36** and **44**. Consequently, when the folding braces are swung into aligned positions as shown in Fig. 2, cross-bar **48** serves as a stop member relative to bars **32** to prevent folding of the foldable braces in the wrong direction, that is, in the opposite direction from what is shown in Fig. 3. This would supplement the locking action of prominence **46** and hole **44**.

The foregoing illustrates a preferred form of this invention and it will be understood that this preferred form may be modified and other forms may be provided within the broad spirit of the invention and the broad scope of the claim.

We claim:

A folding table construction, comprising a rectangular table top and a supporting leg at each corner of said table top, each leg comprising a vertically extending upper end portion, a vertically extending lower end portion which

is offset outwardly from said upper end portion, and a diagonally extending intermediate portion which is connected at its upper end to said upper end portion and at its lower end to said lower end portion, the two legs situated at each end of said rectangular table top being rigidly secured to each other by means of horizontal bars which are secured at their respective ends to said legs, one horizontal bar being secured to the upper end portions of said legs, the other of said horizontal bars being secured to the lower end portions of said legs, whereby the two legs at each end of the rectangular table top are rigidly secured together to form a single integral unit, four longitudinal frame members secured to the under-side of said table top, one at each corner thereof, said frame members being all disposed longitudinally of said table top, each said frame member comprising an angle bar having an upper horizontal flange and a vertically extending flange projecting downwardly from said horizontal flange, each said frame member being secured to said table top by means of screws securing its horizontal flange to the table top, the upper end portion of each leg being pivotally secured to the vertical flange of the correspondingly located frame member to render the legs pivotally movable from their normally upright positions supporting the table top to horizontal positions generally flat against the underside of said table top, and a folding brace between each leg and its corresponding longitudinal frame member, each said folding brace comprising a pair of bars which are pivotally secured to each other, one of said bars being also pivotally secured to the upper leg portion and the other of said bars being also pivotally secured to the vertical flange of said longitudinal frame member, and a stop portion on one of said bars which is engageable with the other of said bars when the legs are in upright position and said bars are disposed at an angle of 180 degrees to each other to prevent further angular movement of said bars relative to each other beyond said angle of 180 degrees.

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