United States Patent

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[54] **TABLE CORNER ASSEMBLIES**
10 Claims, 5 Drawing Figs.

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[51] **Int. Cl.** **A47b 7/02**
[50] **Field of Search** 108/91, 155, 53; 240/188.1, 188, 345.1

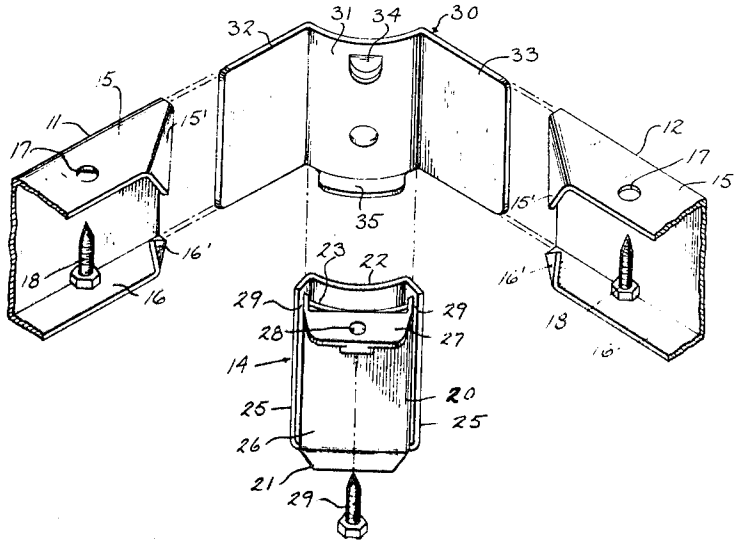
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ABSTRACT: In a table having foldable legs there is provided an apron corner assembly including a resilient molded plastic element fitted over a metal supporting bracket, said bracket having projecting wings retained within the channel-shaped apron members and said plastic corner element being screwed to the underside of the table top to eliminate the need for welding and thereby increasing the variety of apron materials that can be utilized, said resilient corner element including an integral bottom pad which eliminates relative movement or marring of the table surfaces when said tables are folded and stacked or rested against each other.



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SHEET 1 OF 2

Fig. 1

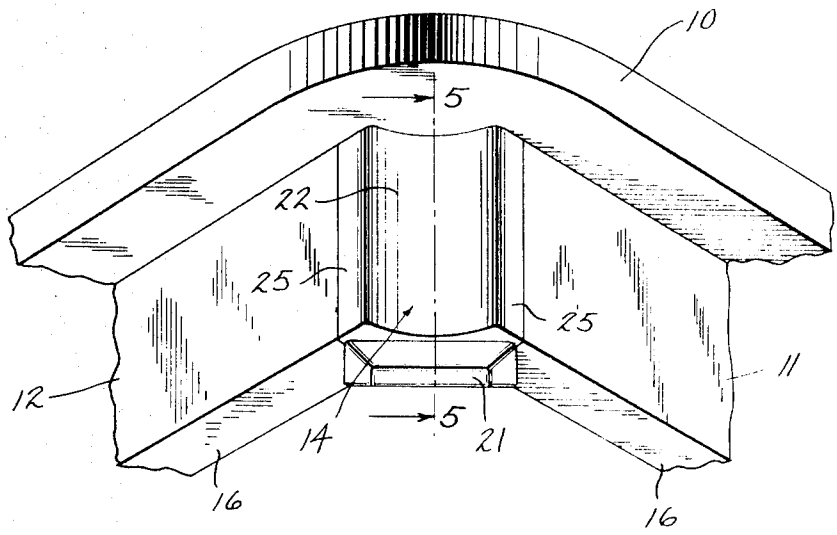
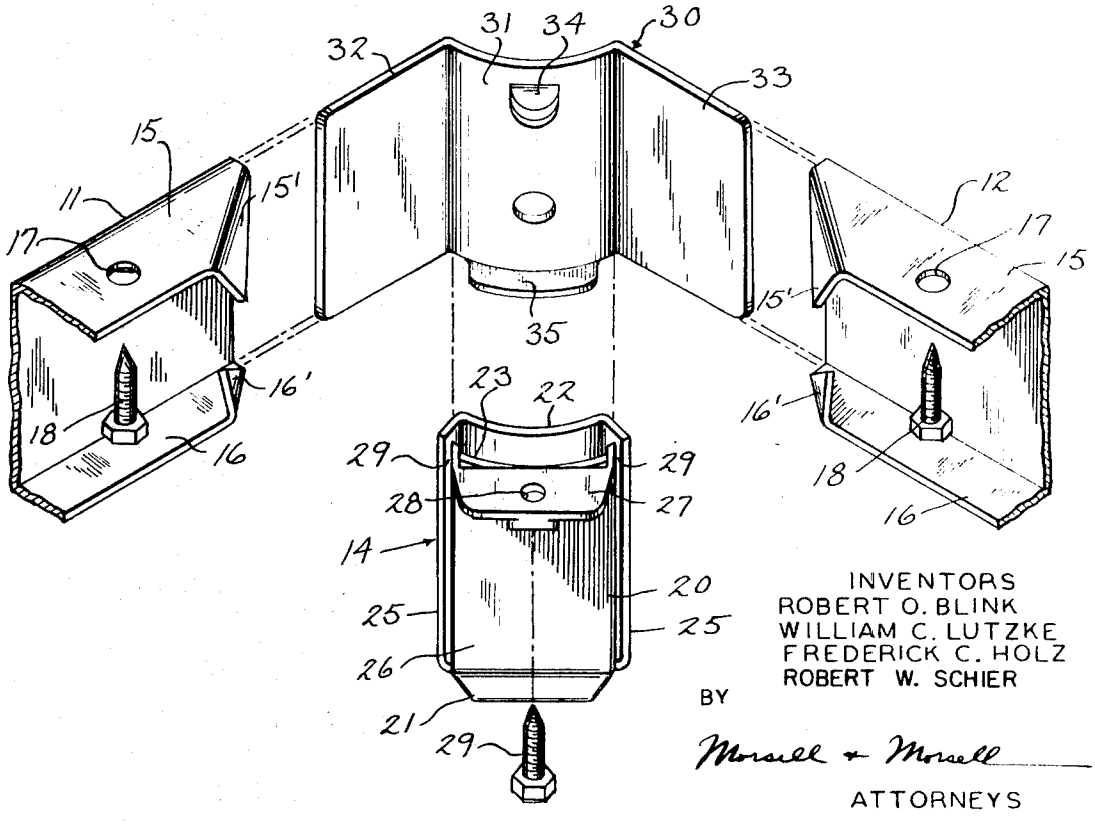


Fig. 2



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Fig. 3

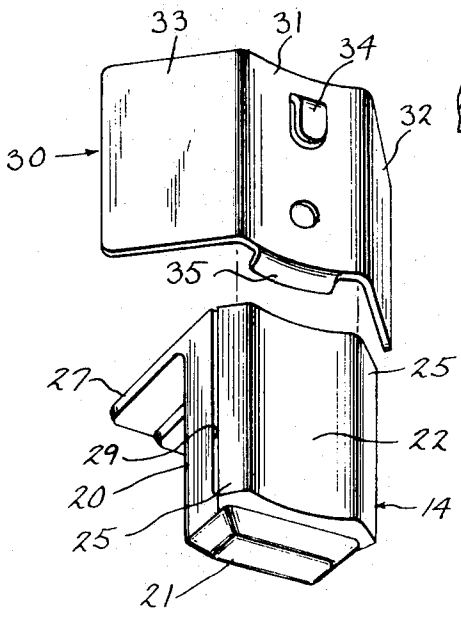


Fig. 5

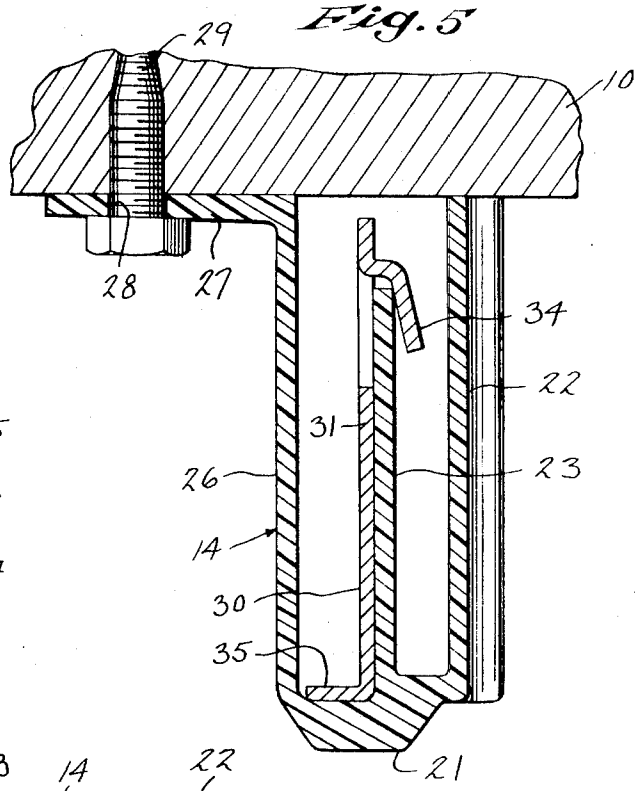
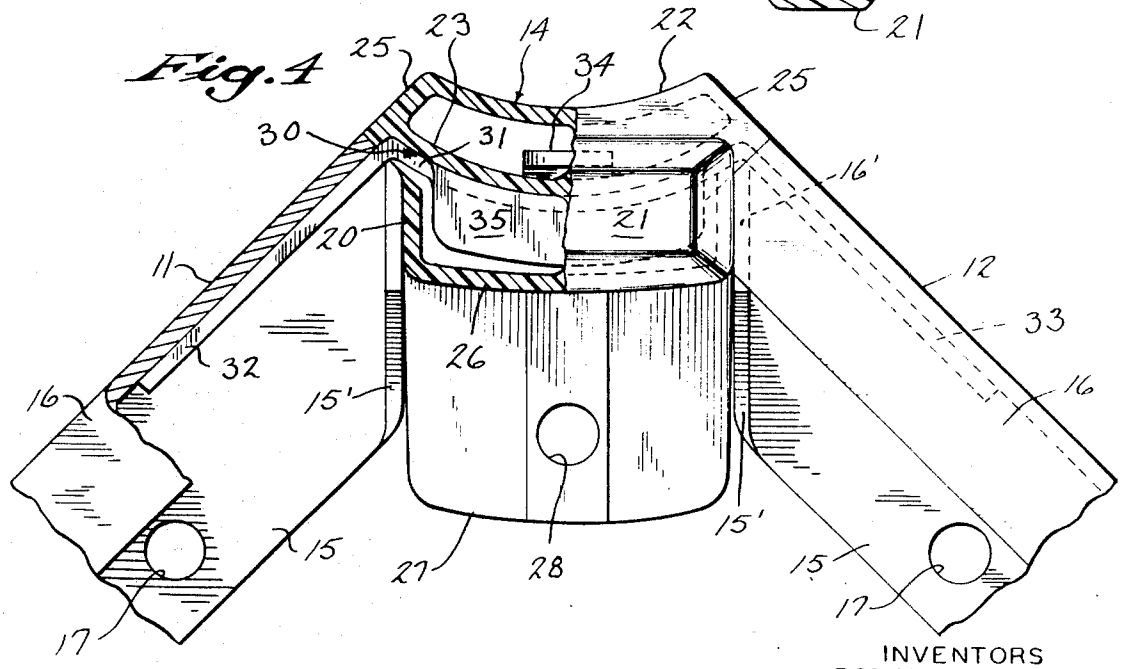


Fig. 4



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TABLE CORNER ASSEMBLIES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to tables of the type having legs which can be pivoted upwardly against the underside of the table for storage purposes, which tables are frequently utilized in school and church cafeterias, libraries, meeting rooms, offices, and numerous other uses, and more particularly the invention relates to a new and improved corner assembly for such tables.

2. Description of the Prior Art

Heretofore in foldable tables of the general type herein concerned the frame portion or so-called apron depending immediately below the table top has been formed entirely of steel, consisting either of one continuous piece which must be carefully bent to form, or, as is more frequently the case, consisting of individual lengths which are joined together at the corners by welding. Unfortunately, the use of welding to join said apron corners is not only a relatively slow and costly process, but the choice of material available for said aprons is necessarily limited to unpainted steel, thereby negating the possibility of using other more attractive metals such as aluminum, stainless steel, chrome plating, etc. Moreover, the necessity for welding the corners eliminates the possibility of utilizing attractive vinyl coated or prepainted aprons, or it requires that the paint or other desired finish be applied thereto after the frame has been assembled, which is inconvenient and difficult.

In addition to the above disadvantages, with such conventional all-metal frame structures when it is desired to fold and store a plurality of said tables they must be stacked with the table surfaces in back to back relationship, so that said surfaces will not become scratched or marred. With such an arrangement when the tables are positioned in a vertical stack they tend to slide around, which is undesirable particularly when said tables are being transported, and it is also a relatively time-consuming and tedious chore to manually lift and invert every other table when they are being stored, or when removing said tables from the stack and setting them up.

SUMMARY OF THE INVENTION

The present invention provides a new and improved corner assembly for tables, and particularly for foldable tables of the type that are adapted to be stored in stacked condition when not in use, said assembly featuring a novel resilient plastic corner element which provides a protective pad to eliminate the scratching or marring of the table tops when said tables are stacked, or when they are positioned on end and rested against each other.

A further object of the present invention is to provide a table corner assembly as described wherein said novel resilient plastic corner element has friction properties designed to prevent said tables from sliding or shifting about when they are in their stacked condition.

A further important object of the invention is to provide a novel and improved corner assembly which eliminates the necessity for welding the apron corners, thereby increasing the variety of materials and finishes that can be utilized in the manufacture of said table for greater attractiveness.

A further object is to provide a novel table corner assembly which eliminates the necessity for welding or for forming the apron from a single elongated metal piece bent to form, as described, thereby permitting the table to be inexpensively shipped in a compact, disassembled condition and then quickly and easily assembled at its destination, thereby minimizing the assembly cost to the manufacturer as well as reducing shipping and storage costs.

Still further objects of the present invention are to provide a novel corner assembly for tables, as described, which is unique and attractive in appearance, which is strong and durable, and which is otherwise particularly well adapted for its intended purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, wherein there is illustrated one preferred embodiment of the present invention, and wherein the same reference numerals designate the same parts in all of the views:

FIG. 1 is a fragmentary perspective view of a portion of a table provided with the improved corner assembly comprising the present invention;

FIG. 2 is an exploded interior perspective view of the corner assembly;

FIG. 3 is an exploded perspective view of the plastic corner element and interfitting metal supporting bracket;

FIG. 4 is an enlarged bottom plan view of the corner assembly with parts thereof broken away and shown in section; and

FIG. 5 is an enlarged vertical sectional view through the assembly taken along line 5–5 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to FIG. 1 of the drawings, illustrated therein is the corner portion of table provided with the improved corner assembly comprising the present invention. Said table includes a flat top member 10 and a pair of converging, right-angularly disposed frame elements or so-called apron members 11 and 12 depending therebelow. As mentioned, the present invention is intended primarily for institutional type tables commonly used in school and church cafeterias, as well as in offices, libraries and diverse other uses, and said tables are provided with leg units (not shown) which can be swung upwardly to a position immediately beneath the table tops to permit said tables to be compactly and conveniently stored in stacked condition when not in use.

In conventional tables of the type described the aprons are formed of unpainted steel pieces welded together at the corners to provide the necessary strength or said apron consists of one continuous piece which must be carefully and precisely bent to form said member. Unfortunately, however, and as hereinbefore mentioned, with such all-metal aprons the tables have to be stacked in alternate, back to back relationship in order to prevent the table top surfaces from becoming marred or scratched by said metal aprons, which stacking arrangement is tedious and time-consuming both when stacking said tables and when unstacking and setting them up. Moreover, with said conventional, all-metal apron construction the tables have a tendency to shift and slide about when arranged in a vertical stack, particularly when they are being transported, which can be a nuisance and even dangerous. Further disadvantages of said all-metal apron construction is that it is relatively expensive, and it, of course, require that the tables be shipped in a completely assembled condition.

As will be seen in FIG. 1, in the present invention a space is provided between the adjacent inner ends of the apron members and mounted therebetween is the unique plastic corner element 14 featured in the invention. Said corner element 14 is preferably molded of a copolymer of polyethylene and polypropylene which has been found to have just the desired coefficient of friction, the purpose of which will be hereinafter described in greater detail, and said synthetic material combines strength and rigidity with a degree of resiliency designed to provide a pad or cushion which will not mar or disfigure the tops of the stacked tables, as will be described. It is to be understood, however, that other suitable plastics or comparable material could also be utilized and the invention is not to be limited or confined in this request.

With reference now to FIGS. 2 and 4 of the drawings, the table apron members 11 and 12 are channel-shaped, with a relatively large, inwardly directed top flange 15 and a narrower inwardly directed bottom flanged portion 16. Said top flanges 15 are provided with spaced apertures 17 through which screws 18 (FIG. 2) or the like are projected to secure said apron members to the underside of the table top and the inner adjacent ends of said upper and lower flanges have their corner portions 15′ and 16′ deflected downwardly and up-

wardly, respectively, to form shoulders as shown in FIG. 2, the function of which will become apparent hereinafter.

The plastic corner member 14 featured in the present invention is of substantially the same height as the table aprons 11, 12, but is provided with an integral pad element 21 on the bottom thereof which projects somewhat below said apron members. As mentioned, said corner member 14 is molded of a plastic or other material which has a certain degree of inherent resiliency, thereby providing a cushion or pad that bears on the top surface of the adjacent table when a plurality of said tables are arranged in stacked condition, or when they are positioned on end and rested against each other, to prevent the metal apron members from contacting and scratching said table top surface. In addition, the material from which said pads are formed preferably has a coefficient of friction such that the stacked tables will not slide or move about, even when they are being transported.

As best appears in FIG. 5, said plastic corner member 14 is of one-piece molded construction and is provided with an outer wall 22 which is concave in form, said concavity not only providing a unique and attractive appearance but also adding strength to said member, and spaced inwardly from said outer wall 22 is an intermediate wall 23 of similar concave shape which extends upwardly to a point spaced below the upper edge of said member. Said plastic member also includes angled sidewall portions 25 which conform to the angular disposition of the apron members 11, 12, and straight, rearwardly extending sidewalls 20 which are separated from said angled wall portions 25 by elongated slotted openings 29 extending from the upper edge of said plastic member to a point spaced immediately above the lower end thereof.

An integral rear wall 26 is spaced from the intermediate wall 23 in said plastic member 14 and merges with a horizontal, rearwardly projecting top flange 27. Said flange 27 is preferably provided with a raised shoulder portion for increased thickness and strength, and is provided with an aperture 28 through which a screw, such as the screw 29 (FIGS. 2 and 5), can be projected to secure said plastic element to the underside of the table top when the unit is completely assembled, as will be described.

As is shown in FIGS. 2—5, a metal supporting bracket 30 is designed to be inserted into the plastic corner element 14 to add strength and rigidity thereto, said bracket member including a center portion 31 which is concave to conform to the shape of the walls of said plastic element, and a pair of side wings 32, 33 which are deflected rearwardly and outwardly at an angle corresponding to the angular relationship of the table apron members 11, 12. Said bracket center portion 31 has a downwardly and forwardly projecting hooklike element 34 formed therein adjacent its upper end, said hook element being punched outwardly from the metal stock, and formed on the bottom of said center portion is an integral rearwardly projecting horizontal flange 35.

In the assembly of the novel corner unit comprising the present invention, the metal bracket 30 is manually inserted into the top of the plastic element 14, with the bracket concave center portion 31 positioned against the back of the intermediate wall 23 of said plastic element. The flange 35 on the lower end of said bracket is located in the space between the intermediate wall 23 and rear wall 26 of said plastic member, and the bracket side wings 32, 33 project through the aforementioned elongated slotted openings 29 formed between the sidewall portions 25 and 20 of said plastic member.

As best appears in FIG. 5, said metal bracket 30 is then urged downwardly within the member 14 until the flange 35 on the lower end of said bracket bears against the bottom of said member 14, the hook 34 formed adjacent the bracket upper end simultaneously bearing against the upper edge of the intermediate wall 23 of said member 14 to distribute the forces or stresses acting upon said plastic element during use or transporting of the table.

The bracket side wings 32, 33 are then projected into the open inner ends of the channel-shaped table apron members 11, 12, the vertically deflected corner portions 15', 16' of said channeled aprons functioning as shoulders to retain said bracket wings therein. As will be seen in the drawings, said bracket side wings 32, 33 are of a size adapted to fit snugly within said channels, and the corner shoulder elements 15', 16' are designed to minimize lateral movement of said bracket side wings within said channels. When both wings 32, 33 of the bracket 30 have been inserted into the right-angularly disposed apron members 11, 12 inadvertent movement or shifting of said bracket member is effectively prevented.

With the interfitting bracket and plastic members thus mounted between the adjacent ends of the aprons 11, 12, as described, screws 18 may be projected through the apertures 17 in the apron top flanges and driven into the underside of the table top 10 to secure said apron members thereto, and a screw 29 projected upwardly through the aperture 28 in the plastic element 14 and into the table top to effectively maintain the entire corner unit in its assembled condition.

Thus it will be seen that the present invention provides a novel and improved combination metal and plastic corner assembly for tables of the type that are intended to be stored in a stacked condition, or positioned on end and rested against each other. Said improved corner assembly features a novel resilient plastic element that provides a protective pad to prevent the scratching or marring of the tops of said tables, and eliminates the chore of stacking said tables in alternate upwardly and downwardly facing relationship as is required with conventional tables having welded all-metal corners or which have an apron formed of a single continuous metal piece bent to form. Moreover, the elimination of welding in the present invention, or the bending and forming of a single elongated metal piece, which are relatively time-consuming and expensive processes, reduces manufacturing costs and also permits the use of a wider range of metals, including aluminum, stainless steel, chrome plating, etc., as well as permitting the use of a variety of attractive prepainted or vinyl finishes in the construction of the table frame for greater beauty and eye-appeal.

In addition, the elimination of the necessity for welding the apron corners in the present invention, or for using a single, continuous formed apron piece, permits the tables or parts thereof to be shipped in a disassembled condition and then quickly and easily assembled at their destination.

Another important advantage of the improved corner assembly comprising the present invention is that the frictional properties of the resilient plastic pad elements eliminates the possibility of the stacked tables sliding or shifting about, even while they are being transported.

Still further advantages of the invention are that the new combination metal and plastic corner assembly is unique and attractive in appearance, and it is extremely strong and dependable.

It is to be understood, of course, that while one preferred embodiment of the present invention has been shown and described herein, numerous variations and modifications thereof will undoubtedly occur to those skilled in this art. What is intended to be covered herein, therefore, is not only the illustrated form of the invention but also any and all variations or modifications thereof as may come within the spirit of said invention.

What we claim is:

1. A table, comprising: a top; leg means movable to a raised position beneath said table top to permit the stacking of a plurality of tables; an apron member depending from the underside of said table top adjacent each edge thereof, the adjacent ends of said aprons at the corners of the table being spaced from each other; a rigid bracket member mounted between the spaced ends of said adjacent aprons, said bracket having a center portion and a pair of angularly disposed side wings positioned against the inner faces of the adjacent apron members; means retaining said bracket side wings in said position;

and a resilient nonmetallic corner element mounted on said rigid bracket, said corner element including a front wall portion, a pair of sidewalls having elongated slotted openings through which said bracket wings project, and a bottom having a pad portion extending below said aprons to form a cushion when a plurality of said tables are stacked one on another or positioned on end and rested against each other to prevent marring of the table tops.

2. The table recited in claim 1 wherein said apron members are channel-shaped with inwardly directed top and bottom flanges.

3. The table recited in claim 2 wherein the corner portions of said apron top and bottom flanges are deflected to projected shoulders forming said bracket wing retaining means.

4. The table recited in claim 3 wherein said apron top flanges are provided with spaced apertures through which screws are projected to secure said aprons to the underside of said table.

5. The table recited in claim 1 wherein said nonmetallic corner element is molded of plastic.

6. The table recited in claim 5 wherein said plastic material is characterized by a coefficient of friction adapted to prevent the tables from sliding or shifting about when in a stacked condition.

7. The table recited in claim 1 wherein said nonmetallic corner element includes a back portion with a rearwardly projecting flange on its upper edge, and wherein a screw is projected through said flange and into the underside of the table top to securely retain said corner unit in its assembled condition.

8. The table recited in claim 1 wherein said corner element sidewalls include portions formed on an angle corresponding to the angular relationship of said adjacent aprons.

9. The table recited in claim 1 wherein said corner element front wall portion is concave in form.

10. A table comprising: a flat top; leg means movable to a raised position immediately beneath said table top to permit a plurality of said tables to be stacked one on top of another; an apron member depending from the underside of said table top adjacent each edge thereof, said apron members being channel-shaped with inwardly directed top and bottom flanges, the adjacent ends of said aprons at the corners of the table being spaced from each other, and the corner portions of said apron top and bottom flanges being deflected to from bracket-retaining shoulders; a rigid metal bracket member mounted between the spaced ends of said adjacent aprons, said bracket having a concave front face with a hook formed therein and projecting outwardly and downwardly at a point spaced below the upper edge of said bracket member, an inwardly directed horizontal flange formed on the lower end of said bracket front face, and said bracket member having a pair of angularly disposed side wings fitted within said channel-shaped apron members and being retained therein by said flange bracket-retaining shoulders; a one-piece molded resilient plastic corner element mounted on and over said metal bracket, said plastic element having a concave front wall portion, a spaced concave intermediate wall terminating below the upper edge of said front wall portion upon which said bracket hook members bears, the concave front face of said bracket being positioned against the back of said plastic element intermediate wall, a backwall on said plastic element spaced from said intermediate wall, sidewall portions on said plastic element arranged at an angle corresponding substantially to the angular disposition of said apron members, rearwardly extending sidewall portion separated from said angled sidewall portions by elongated slotted openings, said metal bracket side wings projecting through said slotted openings and into said apron channels, a bottom formed on said resilient plastic element including a pad portion extending below said table apron members, said pads providing cushions when a plurality of said tables are stacked one on another to prevent the scratching of the table tops and the relative shifting movement of said stacked tables, the flange formed on the lower end of said metal bracket bearing against the bottom of said plastic element, and said plastic element including an integral horizontal flange extending rearwardly from the upper edge of said backwall, said flange having an aperture therethrough; and a screw projected through said plastic element top flange and into the underside of the table top to securely retain said corner unit in its assembled condition.