Aug. 13, 1963 J. LISS ETAL 3,100,459

NESTED TRAY STAND

Filed Aug. 2, 1962

FIG. 1

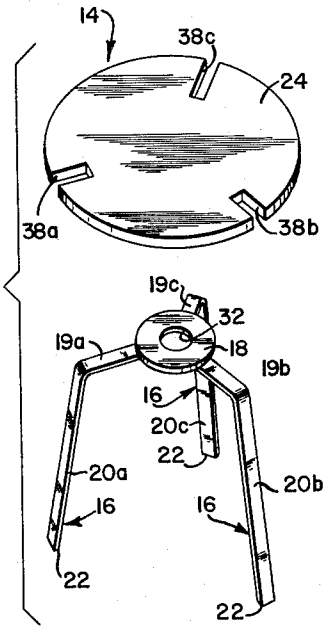
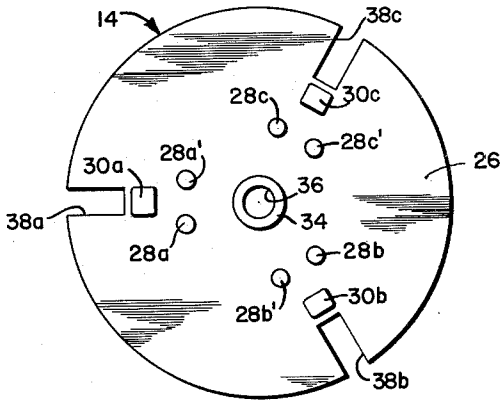


FIG. 2



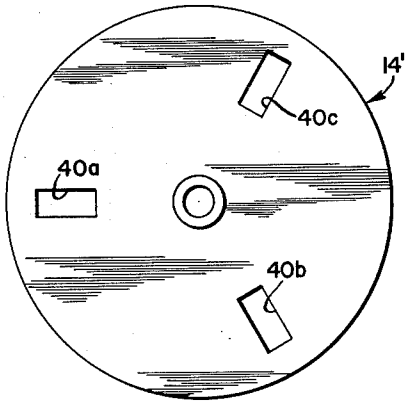
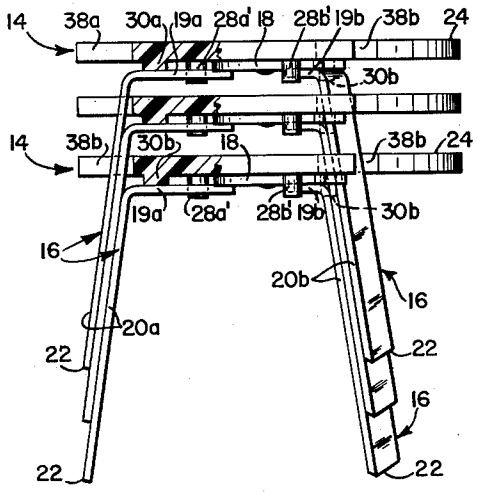


FIG. 4

FIG. 3



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NESTED TRAY STAND

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The present invention relates to a tray stand unit comprising a stand portion and a tray portion that can be readily assembled, and wherein individual units can be nested or stacked vertically to occupy a minimal storage space. It is contemplated to provide a novel decorative tray stand wherein the stacking means enhances the overall appearance of the device, thus permitting a stacked number of individual units to be kept at convenient near-at-hand locations, rather than in closets or storerooms. Novel nesting means are provided to avoid the inherent clumsiness in the method of stacking and arrangement of the units found in conventional nested tray stands.

The device of the present invention is formed of a metal stand portion wherein the legs are secured to a central support member, to which a plastic tray portion is affixed by simple bolt means. It will be appreciated that the conventional low-cost assembly of nested tray stands do not ordinarily contain any element of novely or inherent interest in appearance. It will be appreciated that if this can be attained it will enhance the utility of the device, and consequently attain greater public acceptance.

It is therefore a primary object of the present invention to provide a low cost easily manufactured tray stand unit adapted to be nested so as to occupy minimal space in the stacked condition.

Yet a further object of the present invention is to provide spacing means formed integrally on the tray portion of the device, enabling rapid accurate assembly of the unit to take place.

These and other objects and advantages of the present invention will be pointed out with particularity or will be apparent from the following description and the drawings appended thereto, in which:

FIG. 1 is a perspective view in the exploded condition of a device of the present invention.

FIG. 2 is a bottom plan view of the tray portion of the present invention.

FIG. 3 is an elevation view, partly in section, of units of the present invention in nesting relationship.

FIG. 4 is an alternate embodiment of the tray portion of the present invention.

Referring more particularly to the drawings, there is shown in FIG. 1 an embodiment of the present invention characterized generally by the numeral **10**, comprising staand portion **12** and tray portion **14**. Stand portion **12** comprises a plurality of ground engaging leg members **16** mounted upon a central support member **18**. A preferred configuration is a three-legged stand since the device is designed to serve as an occasional tray stand, carrying ash trays vases or the like, with little weight normally carried by the unit. Leg members **12** have radially extending horizontal portions **19***a*, **19***b*, **19***c*, and downwardly and outwardly extending portions **20***a*, **20***b* and **20***c*, adapted to engage the ground at the terminal portions **22** thereof. The stand portion may be conveniently manufactured of light steel strips, which are spot-welded to the support member **18**. It will be understood that critical tolerances are not needed in a generally low cost device of this type.

Tray portion **14** is a molded plastic member having an upper surface **24** and a lower surface **26** (FIG. 2). Bottom surface **26** has integrally formed thereon a plurality of downwardly depending spacing members herein

shown as three pairs of members **28***a*—**28***a*', **28***b*—**28***b*', **28***c*—**28***c*', which are adapted to register with and abut the horizontal portions of the leg members **19***a*, **19***b* and **19***c*, respectively. In the assembled condition, these spacing members are disposed on either side of each of these horizontal portions **19***a*, **19***b*, **19***c*, to prevent angular displacement of the tray **14** relative to the stand **12**.

Bottom surface **26** has formed thereon a second set of downwardly depending spacing members **30***a*, **30***b* and **30***c*, also adapted to register with horizontal portions **19***a*, **19***b*, and **19***c*. However, the second set of spacing members abuts upon and rests on the upper surface of the horizontal portions of the leg members in order to maintain the tray in a plane normal to the axis of the stand portion. An axial bore **32** is formed in central support member **18**, and a corresponding downwardly depending hollow cylinder **34** is formed axially on the bottom surface **26** of the tray portion. To assemble the unit, a tapered screw is introduced into the bottom opening of axial bore **32** and thence into the bore **36** of hollow cylinder **34** to threadedly engage the cylinder. Since the tray portion is made of a fairly non-rigid plastic, the screw thread is adapted to cut into the inner wall portion of the cylinder and tighten the tray to the stand. In the assembled relation, the tray is maintained in spaced relationship to the stand by means of the first and second set of spacing members hereinabove described, which prevent the tray from moving relative to the stand either in the horizontal or the vertical planes.

As shown in FIGS. 1 and 2, tray **14** is formed with a set of slots **38** which are equal in number to and parallel with the respective horizontal portions of the leg members **19***a*—**19***c*. As shown in FIG. 4, these parts enable the tray stands of the present invention to be compactly nested with the downwardly extending portions **20***a*—**20***c* of the leg members registering with and passing through the slots of the tray stand stacked underneath. It will be appreciated that this forms an extremely compact assembly of tray stands.

Alternatively, for a tray **14'** of larger dimension, a simple notch configuration may be employed, as shown in FIG. 4, wherein the slots **40***a*—**40***c* do not extend to the edge of the tray but remain inwardly of the edge portion. This permits of a sturdier structure and also increases the total surface of the tray.

It will be appreciated that the spacing members hereinabove described enable the device of the present invention to be shipped in "knock-down" condition and yet be rapidly assembled by the user. The spacing members **28** and **30** place the stand **12** in accurate registry with the tray **14** and also place the slots in correct registration for stacking purposes, as hereinabove explained. The provision for assembly of the unit by a simple screw connection permits shipping of the device at low cost, since it will be in compact, "knocked-down" form. Also, the spacing members enable the unit to be assembled with a single screw connection, with tray and stand disposed in proper spaced relation to each other. It will be appreciated that this greatly simplifies the manufacturing process.

There has been disclosed heretofore the best embodiment of the invention presently contemplated and it is to be understood that various changes and modifications may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A stackable tray stand unit comprising:

a stand portion and a tray portion;

said stand portion comprising a plurality of ground-engaging leg members mounted upon a central sup-

port member, said leg members each having a radially extending horizontal portion proximate to said central member and a downwardly and outwardly extending portion adapted to engage the ground at the terminal portion of said members;

said tray portion comprising an integrally molded plastic member having an upper surface and a bottom surface;

said bottom surface having formed thereon a first plurality of downwardly depending spacing members adapted to register with said horizontal portion of each of said leg members respectively, said first spacing members being disposed on either side of each of said horizontal portions in the assembled condition to prevent angular displacement of said tray relative to said stand;

said bottom surface having formed thereon a second plurality of downwardly depending spacing members adapted to register with said horizontal portion of said leg members, said second set of spacing members adapted to abut and rest upon said horizontal portions of said leg members to thereby maintain said tray in a plane generally normal to the axis of said stand portion;

an axial bore formed in said central support member of said stand portion, and a downwardly depending hollow cylinder formed axially on the said bottom surface of said tray portion;

a tapered screw adapted to be introduced into the bottom opening of said axial bore and to register with the bore of said hollow cylinder and said tray portion in the assembled relation and to threadedly engage said cylinder to thereby urge said tray portion and said stand portion in close abutment, whereby said tray portion is maintained in spaced relationship to said stand portion by means of said first and said second set of spacing members; and

a plurality of radially extending slots formed on said tray portion equal in number to and substantially parallel with the horizontal portion of said leg members respectively, in the assembled condition, whereby a plurality of said tray stand units are adapted to be vertically stacked together with the downward extending portion of said leg member of one unit adapted to register with and pass through one of said slots of a tray stand unit disposed directly underneath, in stacking relationship.

2. A stackable tray stand unit comprising:

a stand portion and a tray portion;

means to releasably secure said stand portion to said tray portion;

spacing means formed on the bottom surface of said tray portion and adapted to register with said stand portion in the assembled condition whereby said tray is retained on a plane generally normal to the axis of said stand portion, and whereby said tray is constrained against angular displacement in said normal plane relative to said stand portion;

said stand portion being provided with a central support member and a plurality of ground-engaging leg members, said leg members each having a radially extending horizontal portion proximate to said central member and a downwardly and outwardly extending portion adapted to engage the ground at the terminal portion of said members, and wherein said tray portion comprises an integrally molded plastic member, having formed thereon a plurality of openings, equal in number to said leg members, each of said openings being generally vertically aligned relative to one of said leg members, respectively, in the assembled condition, whereby a plurality of said tray stand units are adapted to be vertically stacked together, with a portion of each of said leg members of one unit adapted to register with and pass through one of said openings of a tray stand unit, respectively, disposed directly underneath, to thereby dispose said units in stacking relationship;

said spacing means comprising:

a first plurality of downwardly depending spacing members adapted to register with said horizontal portion of each of said leg members respectively, said first spacing members being disposed on either side of each of said horizontal portions in the assembled condition to prevent angular displacement of said tray relative to said stand;

said bottom surface having formed thereon a second plurality of downwardly depending spacing members adapted to register with said horizontal portion of said leg members, said second set of spacing members adapted to abut and rest upon said horizontal portions of said leg members to thereby maintain said tray in a plane generally normal to the axis of said stand portion.

3. A stackable tray stand unit comprising:

a stand portion and a tray portion;

means to releasably secure said stand portion to said tray portion;

spacing means formed on said tray portion and adapted to register with said stand portion in the assembled condition whereby said tray is retained on a plane generally normal to the axis of said stand portion, and whereby said tray is constrained against angular displacement in said normal plane relative to said stand portion;

said stand portion being provided with a central support member and a plurality of ground-engaging leg members, said leg members each having a radially extending horizontal portion proximate to said central member and a downwardly and outwardly extending portion adapted to engage the ground at the terminal portion of said members, and wherein said tray portion comprises an integrally molded plastic member having formed thereon a plurality of openings, equal in number to said leg members, each of said openings being generally vertically aligned relative to one of said leg members, respectively, in the assembled condition, whereby a plurality of said tray stand units are adapted to be vertically stacked together, with a portion of each of said leg members of one unit adapted to register with and pass through one of said openings of a tray stand unit, respectively, disposed directly underneath, to thereby dispose said units in stacking relationship;

wherein said means for releasably securing said tray portion to said stand portion comprises:

an axial bore formed in said central support member of said stand portion, and a downwardly depending hollow cylinder formed axially on the bottom surface of said tray portion; and

screw means adapted to be introduced into the bottom opening of said axial bore and to register with the bore of said hollow cylinder and said tray portion in the assembled relation and to threadedly engage said cylinder to thereby urge said tray portion and said stand portion in close abutment, whereby said tray portion is maintained in spaced relationship to said stand portion by means of said spacing means.

4. A stackable tray stand unit comprising:

a stand portion and a tray portion;

means to secure said stand portion to said tray portion;

spacing means formed on said tray portion and adapted to register with said stand portion in the assembled condition whereby said tray is retained on a plane generally normal to the axis of said stand portion, and whereby said tray is constrained against angular displacement in said normal plane relative to said stand portion;

said stand portion being provided with a central support member and a plurality of ground-engaging leg members, said leg members each having a radially

extending horizontal portion proximate to said central member and a downwardly and outwardly extending portion adapted to engage the ground at the terminal portion of said members, and wherein said tray portion comprises an integrally molded plastic member having formed thereon a plurality of openings, equal in number to said leg members, said openings comprising a plurality of radially extending slots formed on said tray portion equal in number to and substantially parallel with the horizontal portion of said leg members respectively, in the assembled condition, whereby a plurality of said tray stand units are adapted to be vertically stacked together with the downward extending portion of each of said leg members of one unit adapted to register with and pass through one of said slots, respectively, of a

tray stand unit disposed directly underneath, in stacking relationship.

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