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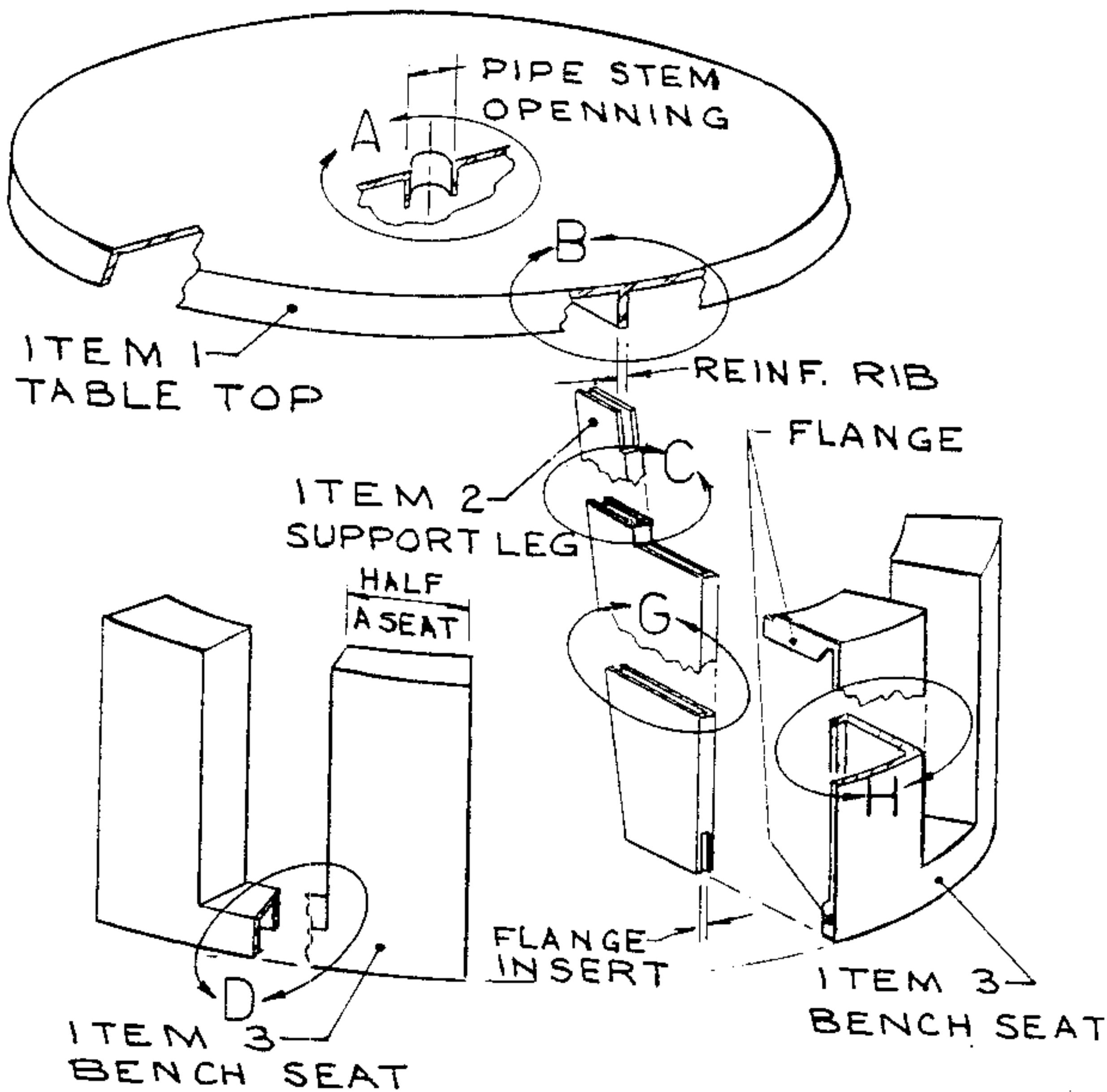
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(54) **TABLE ET BANC STRUCTURELLEMENT AUTOSTABLES**

(54) **STRUCTURALLY INDEPENDENT SELF-SUPPORTING TABLE
AND BENCH SEAT**



(57) Ensemble banquette et table du type utilisé pour un patio ou à l'extérieur, comprenant un plateau de table unique, plusieurs pieds de support verticaux pouvant s'emboîter et se verrouiller réciproquement avec le plateau de table, et un nombre égal de sièges de type banquette entourant la table. Les banquettes s'emboîtent également dans les pieds de support. Lorsqu'ils sont verrouillés en position, l'ensemble table et banquette forment une seule unité indépendante et de structure solide. Un trou peut également être pratiqué au centre de la table afin d'y fixer un parasol ou autre. Cette invention est unique en ce que les différents éléments, lorsqu'ils sont assemblés, présentent la forme d'une hémisphère, chaque élément remplissant à la fois un rôle fonctionnel et structural, ce qui accroît la robustesse, la stabilité dimensionnelle et l'intégrité structurale de l'ensemble tout entier.

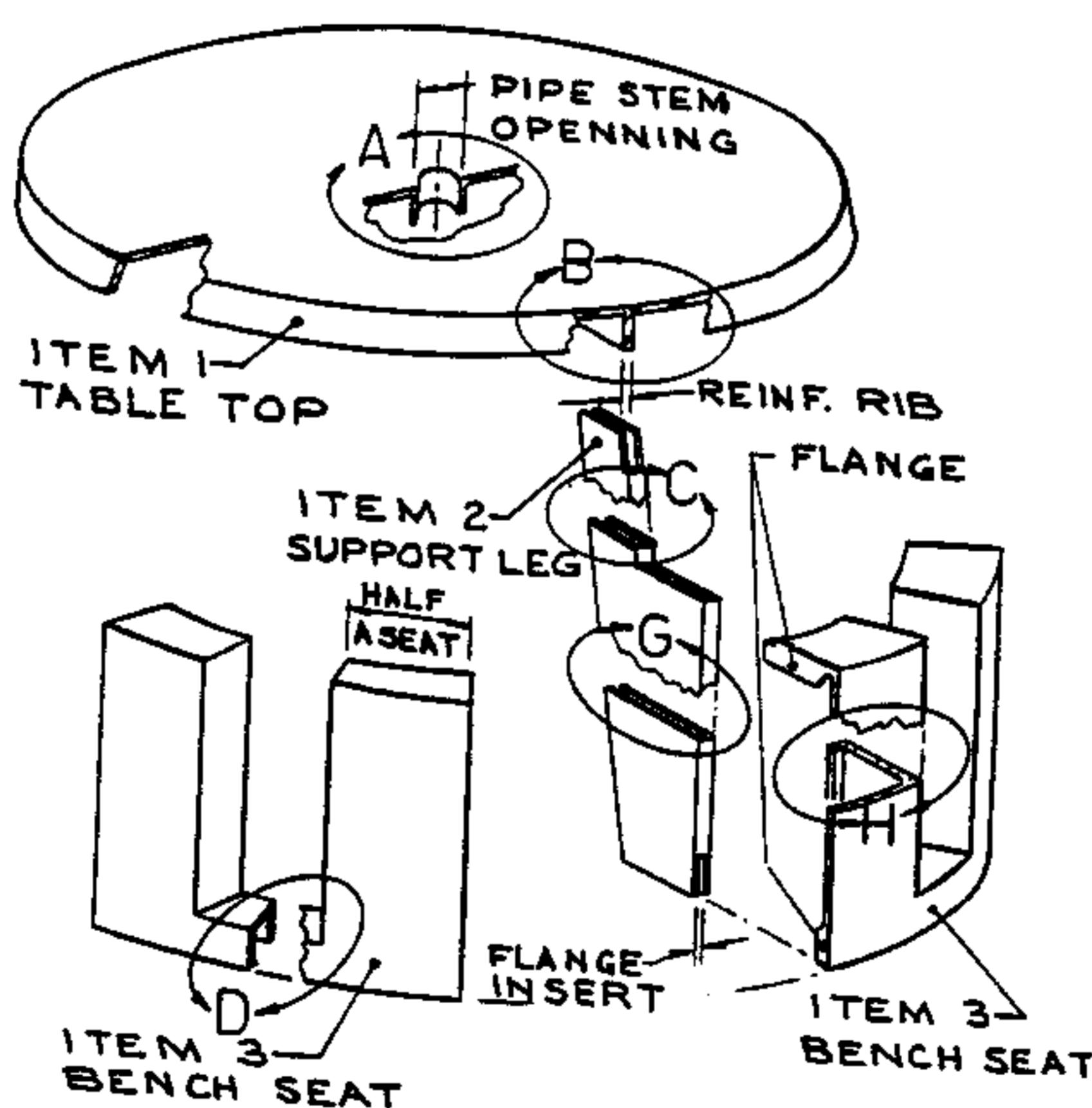
(57) A patio or outdoor type table and bench unit comprising of a single table top, several vertical support leg members, nestable in an interlocking relationship with the table top, and an equal number of bench type seats which orbit the table top. The bench type seats also nest within the support leg members. When locked into place, the table and bench seat assembly becomes a single, independent, structurally strong unit. A hole in the centre of the table top may also be incorporated for reception of an umbrella or the like. The uniqueness of this instant invention is that the various components, when assembled, approach the shape of a hemisphere, with each member becoming both functional as well as structural, adding to the strength, dimensional stability, and structural integrity of the entire unit.

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(54) Title: STRUCTURALLY INDEPENDENT SELF-SUPPORTING TABLE AND BENCH SEAT



(57) Abstract

A patio or outdoor type table and bench unit comprising of a single table top, several vertical support leg members, nestable in an interlocking relationship with the table top, and an equal number of bench type seats which orbit the table top. The bench type seats also nest within the support leg members. When locked into place, the table and bench seat assembly becomes a single, independent, structurally strong unit. A hole in the centre of the table top may also be incorporated for reception of an umbrella or the like. The uniqueness of this instant invention is that the various components, when assembled, approach the shape of a hemisphere, with each member becoming both functional as well as structural, adding to the strength, dimensional stability, and structural integrity of the entire unit.

Structurally Independent Self-Supporting Table and Benchseat

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DESCRIPTION:

This instant invention relates to a table top which is supported by a plurality of radial, spaced legs, which surround the table top. When assembled, elements of the unit can be joined to approach the shape and structural integrity of a hemisphere. Special Technical Features of this instant invention are: each element is designed to simulate either the geographic meridians of longitude or the parallels of latitude on the earth's surface, thus incorporating in the finished product the strength that is inherent with such a shape. When viewed from above, this principle can also be extended to include any shape which is a closed figure such as a rectangle with rounded ends, pentagon, hexagon, and any multi sided polygon, with or without equal distances across the flats of its perimeter.

Historically table and bench units of this type have found it necessary to add members to their assembly to improve the structural integrity. These added members not only increase the cost of manufacture and construction but often add to the discomfort of the users through unnecessary seat and leg interference. This instant invention eliminates the need for additional structural elements while improving the comfort, accessibility, and leg room of the users.

The table top is a disk, similar to a Parallel of Latitude bisecting the upper part of the imaginary hemisphere. The table top has at its centre a hollow cylindrical shaped section which is flush with the top of the table and protruding on the underside. On the underside and moulded to the centre section are radiating reinforcing ribs, where the support legs for the table top are nested, near the outer periphery, and can be locked in place.

The legs supporting the table top are vertical and spaced about the centre/centres of the table, similar to the Meridians of Longitude which radiate around the earth's poles, and on which the table top is assembled. In an embodiment of the invention the support leg is a separate member which is then assembled to the table top and the bench seat. In an alternative embodiment this vertical section becomes a part of the lower support & bench seat unit, extending from and above the seat proper.

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35 The bench seats, consists of segmented disc shaped rings which are horizontal and parallel with the table top, forming the upper and lower portion. The upper portion, the seat proper is an angular sector of a disc which circumscribes the perimeter of the table top at a level somewhere between the table top and the floor. Moulded to the underside of the seat proper are vertical supports. At the bottom and extending from either side of these vertical bench supports is another set of horizontal segmented disc shaped rings, parallel to the seat proper and circumscribing the table top. When viewed from either the front or the side, the shape of the leg and bench is stepped, similar to a square wave form with a vertical 40 extending from the top of the wave. On top of this vertical peak is the table top. When assembled, the table top nests with the verticle leg support and bench seats, which nest with adjacent bench units which surround the table top.

45 United States Patent No. 4, 917,436 issued to Thom discloses a picnic table having a table top member and a peripheral bench seat extending around the periphery of the table top. The table also includes a plurality of vertical leg members extending from the table top member and spaced radially around the perimeter of the table top. This patented picnic table is constructed of a large number of different shaped wood members with some members only purpose is to add to the strength of the assembled unit. Each member is then secured to each other in a 50 desired form. This instant invention primarily differs with the United States (Thom) patent in its elimination of all structural strength components not a functional necessary part of the assembly such as; the table top, the bench seats, and the vertical supports. This instant invention also differs in the design concept in that it is entirely moulded.

55 Reference to the accompanying drawings forming a part hereof, wherein the same item numbers refer to like parts throughout, and lettered views refer to the broken-out pictorial section views shown in FIG.3, and in which:

60 FIG. 1 is a pictorial view of the table and bench assembly as an embodiment of the invention.

65 FIG. 2 is a cross-sectional view taken substantially on a plane passing through line X-X of FIG. 1.

70 FIG. 3 is an exploded pictorial view of the components illustrating the sectional nature of the construction as shown on FIG. 1.

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Note: Final assembly of the components may be by chemical or mechanical means such as;

- a/ chemical or mechanical adhesive or cohesive bonding.
- b/ mechanical fasteners such as nuts, bolts, etc.
- c/ fit, nest, and/or lock in place.

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The components are identified as:

Item 1 - TABLE TOP - One required.
75 Item 2 - SUPPORT LEG - Three or more required.
Item 3 - BENCH SEAT - Equal to Item 2 in number required.

ITEM 1 - TABLE TOP - Moulded of an appropriate ceramic, metal, plastic or thermo plastic material, or reinforced plastic or thermo plastic material, consisting of; a circular, oblong, or closed polygon shaped disk with a moulded pipe stem in the geometric centre which is flush with the top surface and extending on the underside (see FIG. 3 View A). On the underside of the table top reinforcing ribs radiate from the centre (see FIG. 3 View B), a minimum of which match in quantities required of Items 2.

ITEM 2 - SUPPORT LEG - Moulded of an appropriate ceramic, metal, plastic or thermo plastic material, or reinforced plastic or thermo plastic material, consisting of; a channel construction where the inside measurement between the legs of the channel is slightly greater than the width of the reinforcing ribs on Item 1 (see FIG. 3 View C) to permit nesting of the legs of the channel onto the reinforcing rib on the underside of Item 1 - Table Top. The lower portion of the Support Leg is a continuation of the channel construction with the addition of an opening for the location and insertion of flanges on Item 3 - Bench Seat (see FIG. 3 View G), which when assembled are radially located on both sides of the Support Leg. The inside measurement of the channel at this point is slightly greater than the accumulated thickness of the flanges on Item 3 which are inserted.

ITEM 3 - BENCH SEAT - Moulded of an appropriate ceramic, metal, plastic or thermo plastic material, or reinforced plastic or thermo plastic material; consisting of a channel construction (see FIG. 3 View H & D), where the upper part of the seat proper is a channel with a downward facing flange, and nests into Item 2 - Support Leg. The upper horizontal seat is moulded to a vertical channel construction with legs facing inward (see FIG. 3 View H) toward Item 2 - Support Leg. The vertical member is also moulded to a horizontal lower channel member, which faces downward (see FIG. 3 View D). The other half of Item 3 is radially opposite, about a centreline which radiates outward from the centre of the Table Top.

The instant invention consists of several components, dependant on the number of seats required, which can be moulded.

The instant invention can be modified to accommodate three or more seats.

The instant invention is subject only to the limitations of moulding capacity and strength of materials.

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The instant invention is not labour intensive, easy to store, manufacture, and assemble.

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The instant inventions uniqueness is due to the fact that its assembly approximates a geometric shape which is necessary for achieving the desired structural support and stability: resulting in fewer, stronger, lighter components, and less costly to manufacture in large quantities.

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One of the primary objects of the instant invention is its suitability to having the components moulded or cast in plastic, reinforced thermoplastic, or equivalent material.

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Another significant object of the instant invention is the simplicity and ease with which its components can be manufactured, stacked, packaged, stored, assembled, and disassembled for storage.

Other significant object of the instant invention is that its simplicity makes it particularly desirable for private, recreational, business, institutional, public, picnic areas, and the like.

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Another significant object of the instant invention resides in having the table support common with the bench seat and so configured as to provide minimal interference to the access and comfort of the user of the device, and no interference to the legs, once seated.

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A significant object of the instant invention resides in the simplicity of its design, which adds to the comfort and use of the device, by eliminating unnecessary structural cross-sectional members.

140 CLAIMS:

1. A table and bench assembly, comprising:
 - a/ a disc shaped table top (1) having upper and lower surfaces and an outer perimeter ,
 - b/ a plurality of generally vertical leg members (2) extending from the lower surface and spaced radially around the outer perimeter, each leg member having a bench supporting means (3): and
 - c/ a plurality of bench members (3) each having at least one seat portion and means for attachment to the bench supporting means, the bench members being attached to the leg members (2) so as to form a circular seating area around the table top (1), wherein the assembly is generally shaped as a cut-off hemisphere or a cylinder to provide structural strength with no external structural elements, the improvement comprising: the table top (1), the leg members (2) and the bench members (3) are each integrally moulded and made from a material chosen from the group consisting of an appropriate ceramic, metal, plastic, thermoplastic material, or reinforced thermoplastic material.
2. The assembly of claim 1, wherein each bench member has two seat portions (3), each one seat portion combining with a seat portion of an adjacent bench member to form a seat.
3. The assembly of claim 1, wherein each bench member has one seat portion (3) forming a seat (optional moulded construction, see lines 78, 85, 96, and 68).
4. The assembly of claim 1, wherein the lower surface of the table top (1) comprises a plurality of reinforcing ribs extending radially to the outer perimeter, and the leg members (2) are connected to the ribs and extend therefrom.
5. The assembly of claim 1, wherein each of the table top (1), the leg members (2) and the bench members (3) are separate and the means of attachment may be by chemical and mechanical means (line 66) chosen from the group consisting of:
 - a/ chemical or mechanical adhesive or cohesive bonding,
 - b/ mechanical fasteners,
 - c/ fit, nest and / or lock in place, or
 - d/ any combination of the above.
6. The assembly of claim 1, wherein each leg member (2) is integrally moulded with a respective one of each bench member (3). (optional moulded construction, see lines 78, 85, 96, and 68)

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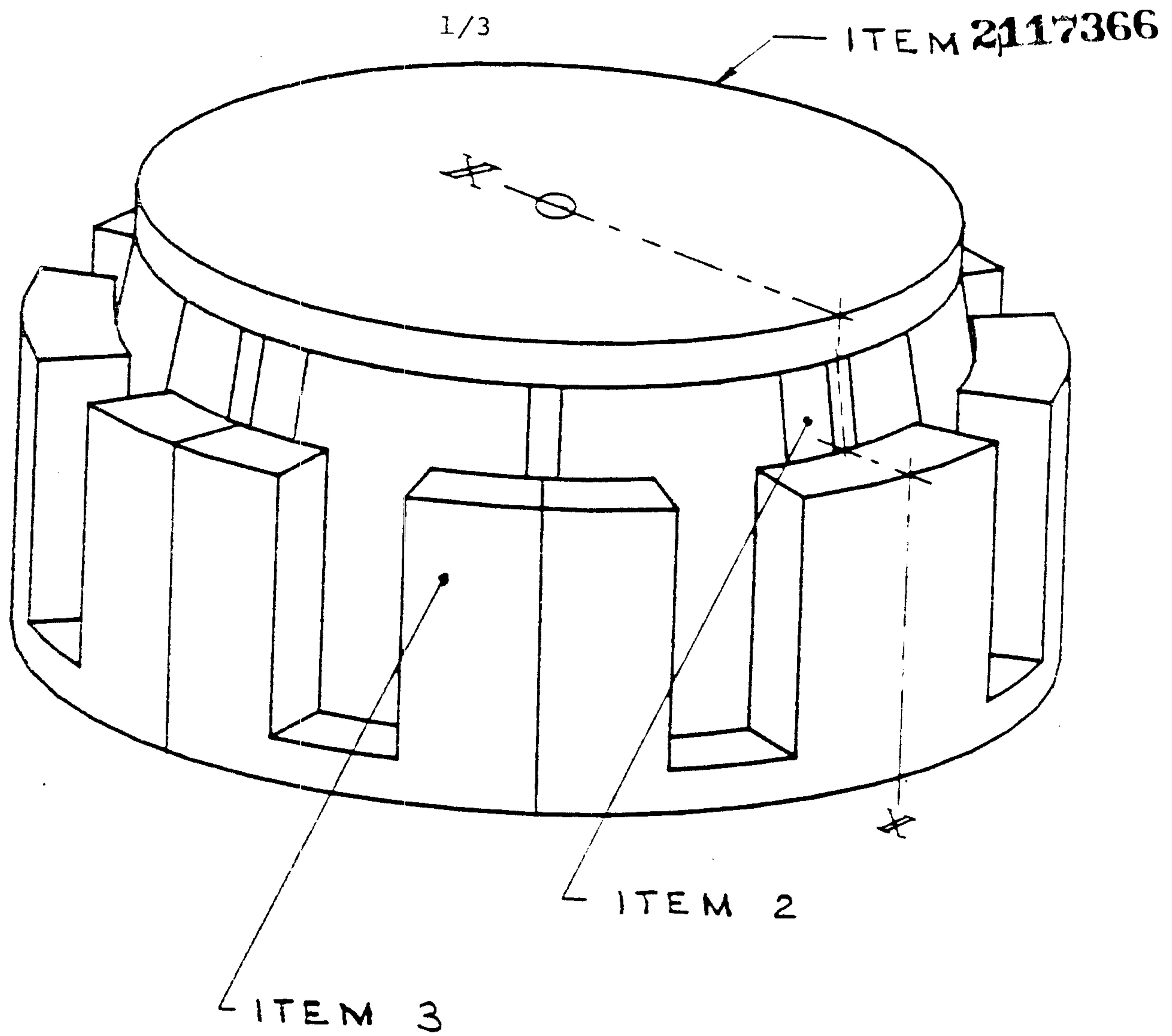


FIG. 1

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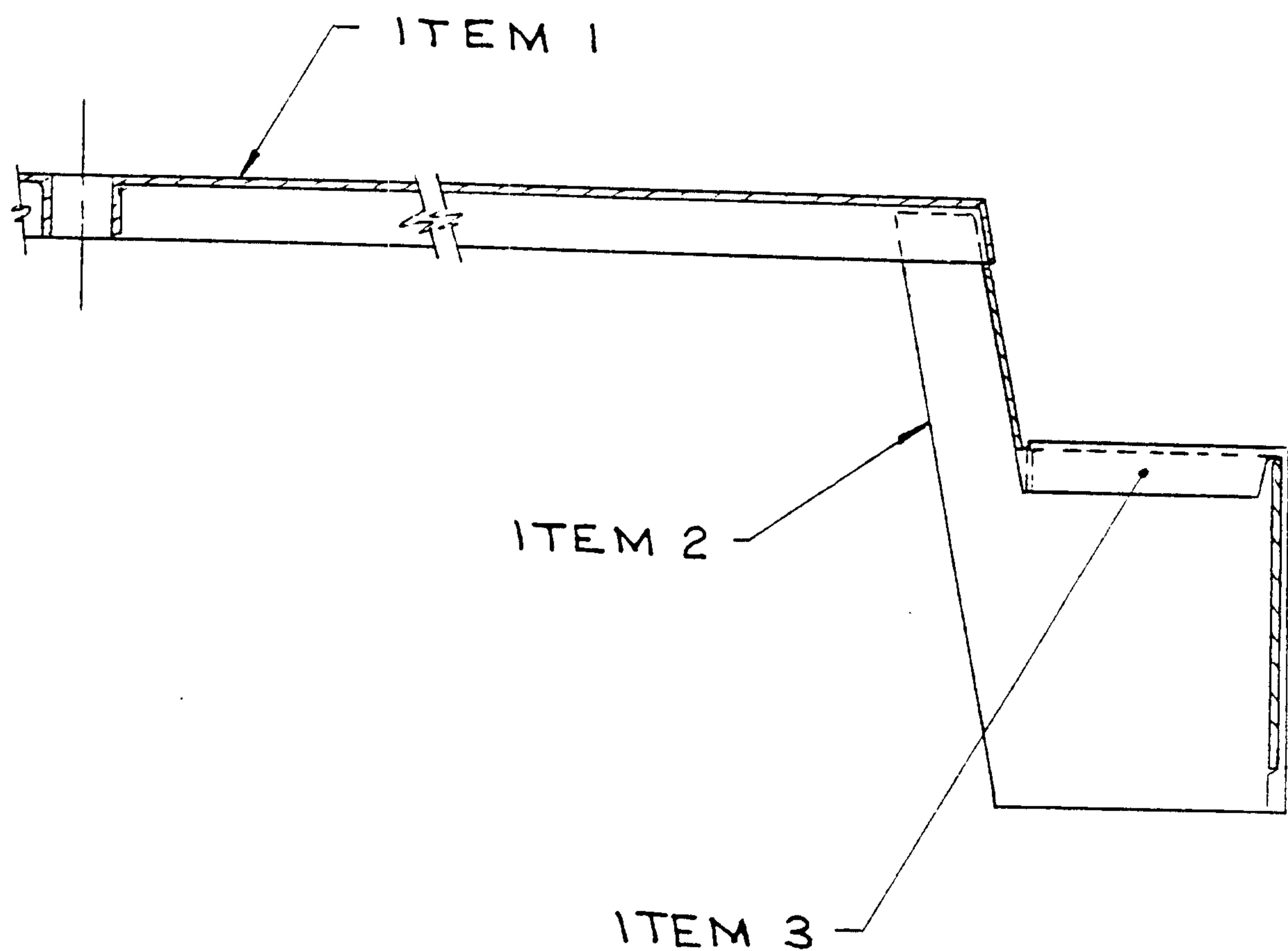
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SECTION THROUGH X-X

FIG. 2

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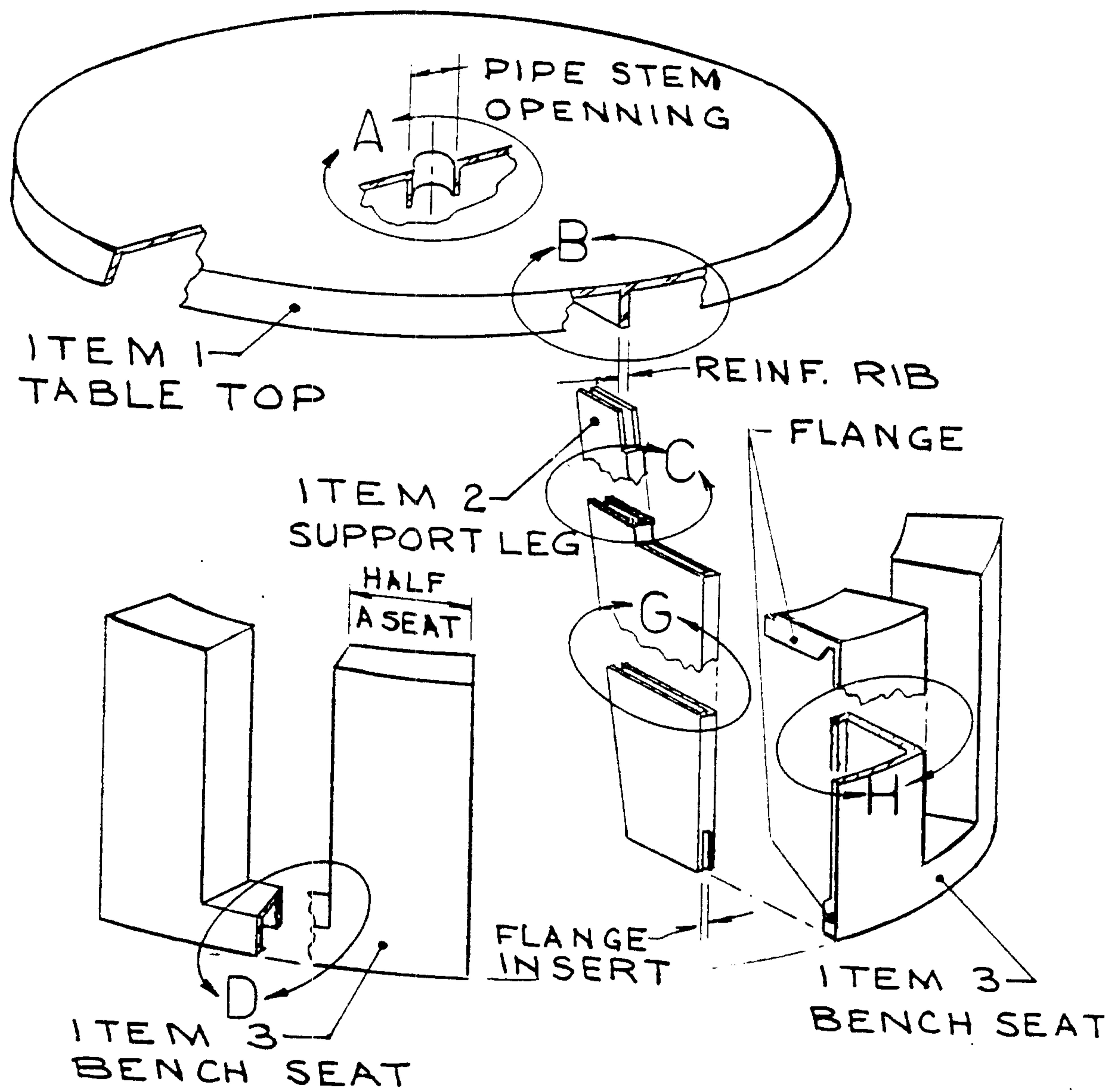


FIG 3

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