June 15, 1965 H. W. POTTER 3,189,379

COMBINATION BENCH AND TABLE SET

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FIG. 1

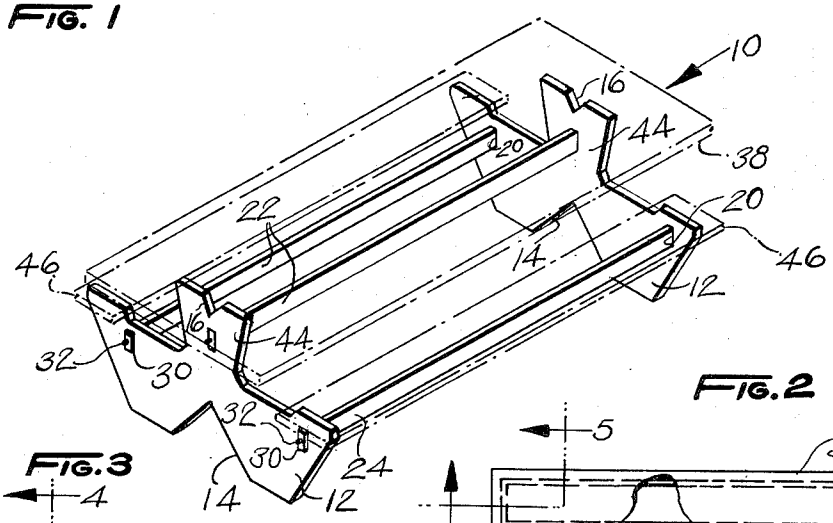


FIG. 2

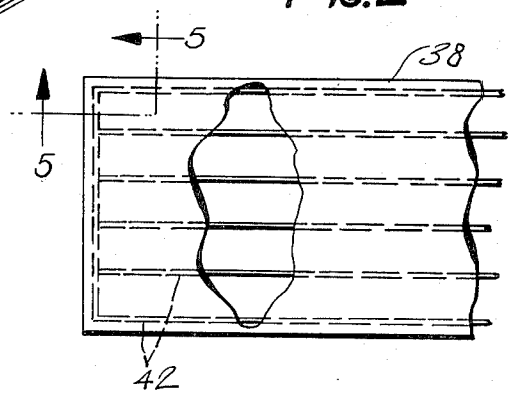


FIG. 3

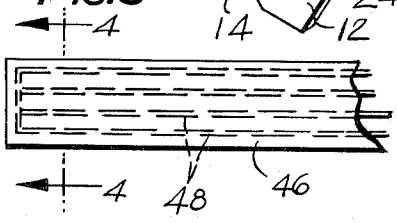


FIG. 4

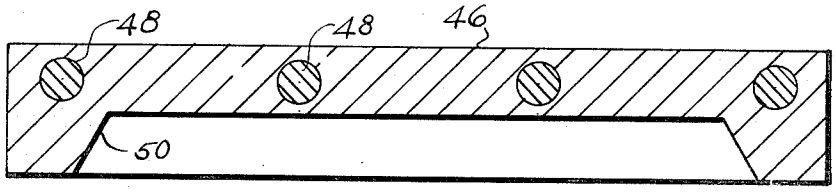
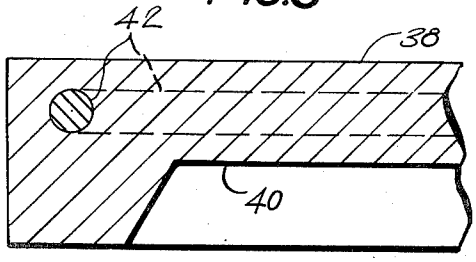


FIG. 5



INVENTOR.
HARVEY W. POTTER
Harvey W. Potter

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FIG. 6

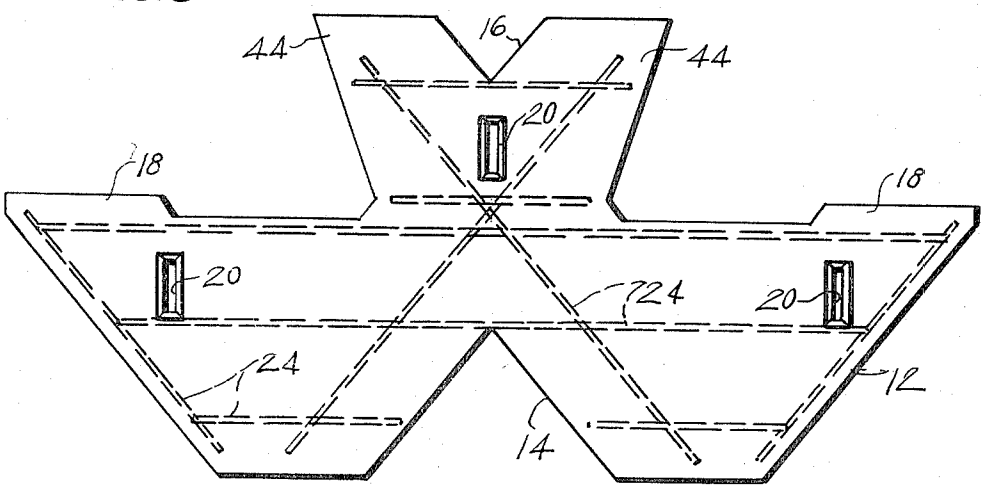


FIG. 7

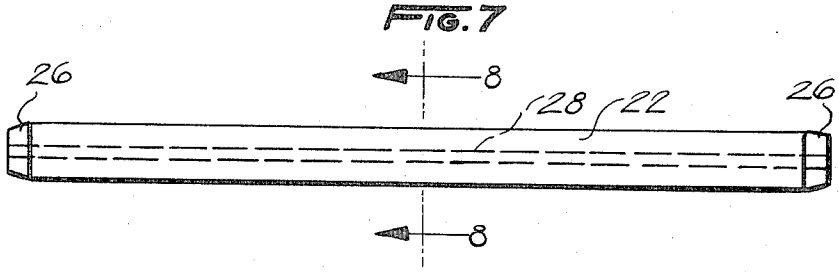


FIG. 8

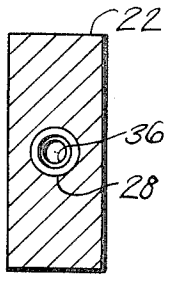


FIG. 10

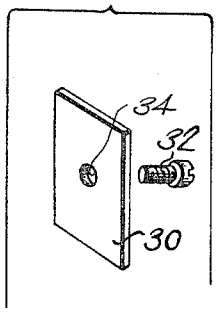
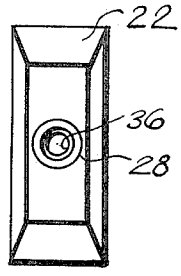


FIG. 9



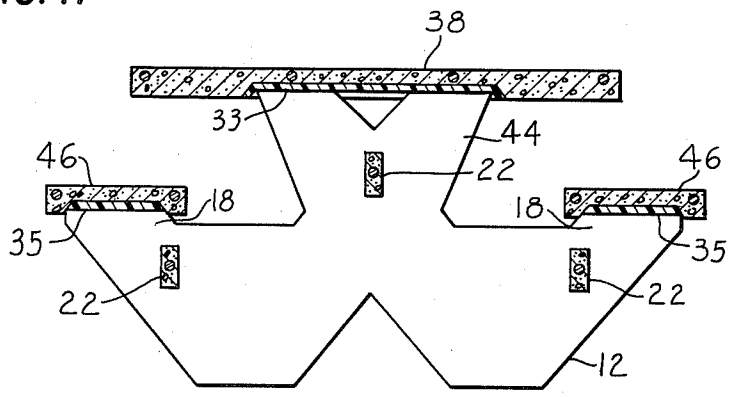
INVENTOR.
HARVEY W. POTTER
Harvey W. Potter

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FIG. 11



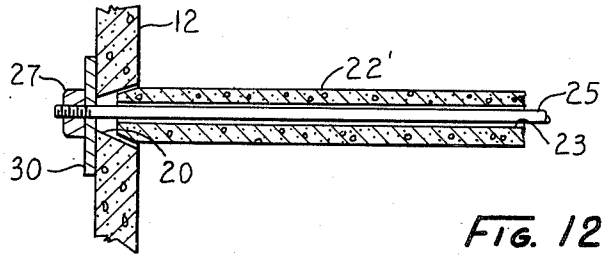


FIG. 12

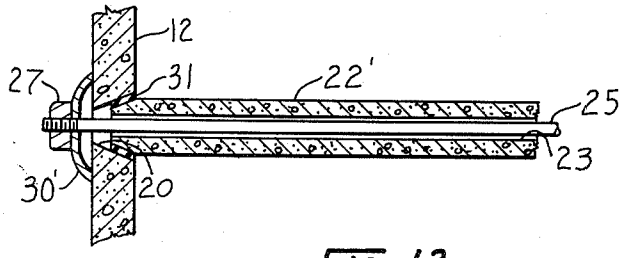


FIG. 13

INVENTOR.
HARVEY W. POTTER

United States Patent Office 3,189,379 Patented June 15, 1965

3,189,379

COMBINATION BENCH AND TABLE SET

Harvey W. Potter, Rte. 1, Box 328a, Cleveland, Liberty County, Tex.

Filed Dec. 23, 1963, Ser. No. 332,809
5 Claims. (Cl. 297—157)

This invention relates to an improved combination bench and table set and, more particularly, to a knock-down combination bench and table set adapted for employment in park and picnic grounds, and this application is a continuation-in-part of my co-pending application Serial No. 247,913, filed December 28, 1962, for "Combination Bench and Table Set."

It is a principal object of the present invention to provide a new and improved bench and table combination.

Another object of the present invention is the provision of a knock-down bench and table combination having improved stability.

A further object of the present invention is the provision of a bench and table combination employing slab-like components.

Still another object of the present invention is the provision of a bench and table combination adapted to resist long term exposure to the elements.

A still further object of the invention is the provision of a bench and table combination which may employ relatively thin slab-like members containing reinforcing means.

Another object of the invention is the provision of a new and improved bench and table combination of knock-down construction which may be assembled in a minimum amount of time entailing a minimum of effort.

Still another object of the invention is the provision of a new and improved bench and table combination of simple construction.

Still another object of the present invention is the provision of a knock-down bench and table combination employing a minimum number of parts resulting in reduced cost of manufacture.

Still another further object of the present invention is the provision of a new and improved bench and table combination employing elements interconnected by joining means particularly adapted for joining elements composed of substantially frangible or brittle material.

A further object of the present invention is the provision of a new and improved bench and table combination comprised of elements joined together by joints which may employ cushioning means for improved stress distribution in said joints.

Still another object of the present invention is the provision of an improved bench and table combination employing members, some of which are adapted for enhancement of their structural properties by virtue of assembly in said combination.

A still further object of the present invention is a provision of a new and improved bench and table combination employing slab-like bench and table top members suitably recessed for registering with their respective supporting members.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiments about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will be obvious to those skilled in the art upon employment of the invention in practice.

Preferred embodiments of this invention have been chosen for purposes of illustration and description. The preferred embodiments illustrated are not intended as exhaustive or to limit the invention to the precise forms disclosed. They are chosen and described in order to

best display the principles of the invention and their application in practical use to thereby enable others skilled in the art to utilize the invention in various embodiments and modifications as may be best adapted to the particular uses contemplated.

In the accompanying drawings:

FIGURE 1 is a perspective view, shown partially in phantom, of a bench and table combination of the present invention;

FIGURE 2 is a plan view of a portion of the table top shown in phantom in FIG. 1, and having a portion removed to illustrate the reinforcing means employed therein;

FIGURE 3 is a plan view of a portion of the bench shown in phantom in FIG. 1;

FIGURE 4 is an enlarged sectional view taken along the line 4—4 of FIG. 3;

FIGURE 5 is a sectional view, somewhat enlarged, taken along the line 5—5 of FIG. 2;

FIGURE 6 is an elevation view of the inside surface of one of the end members shown in FIG. 1;

FIGURE 7 is a side elevation view of one of the longitudinal members shown in FIG. 1;

FIGURE 8 is a sectional view taken along the line 8—8 of FIG. 7;

FIGURE 9 is an end view of the member shown in FIGURE 7;

FIGURE 10 is a perspective view of a bearing plate and cap screw employed in the joining of the end members with the longitudinal members;

FIGURE 11 is a view, shown partially in section, of an alternate embodiment of the bench and table combination of the invention;

FIGURE 12 is a sectional view of another embodiment of a longitudinal member similar to the member of FIG. 7; and

FIGURE 13 is a sectional view of a joint employed for joining the longitudinal and end members of the bench and table combination of FIG. 11.

Referring to the drawings, and particularly to FIG. 1 thereof, the bench and table combination of the invention is generally indicated by reference numeral 10, and is seen to include a pair of spaced-apart and vertically disposed end members 12, a plurality of longitudinally members 22, in joined relation to the end members 12, to maintain said spacing and vertical disposition thereof, and a table top 38 and a pair of bench members 46 disposed in bridging relation between said end members 12.

As may be best seen in FIGS. 1 and 6, the end members 12 are slab-like and may be notched at their lower portions as shown at 14. The end member 12 may have an upwardly extending portion 44, which may be notched at its upper extremity as shown at 16. In addition, the end members 12 may include laterally and upwardly extending portions 18 which function to support the bench members 46. The upwardly extending portions 44 serve to support the table top 38 as shown in FIG. 1. The lateral edges of the end members 12 may converge downwardly as shown in FIG. 6. The end members 12 are provided with a plurality of openings 20 having tapered surfaces as shown in FIG. 6, which openings are adapted to receive longitudinal members 22 as will be described hereinafter. The end members 12 may be made of cementitious material, such as concrete, and may include reinforcing rods as shown at 24.

The longitudinal members 22 may be provided with tapers 26 at the ends thereof as shown in FIG. 7. The tapers 26 adapt the longitudinal members 22 for embedment in the openings 20 of the end members 12, which openings 20 are tapered to correspond with the taper 26. Taper 26 and the corresponding taper of openings 20 may be a sticking taper, i.e., on the order of 10 degrees or

less, if desired. Longitudinal member 22 may be provided with a reinforcing means 28 extending co-extensive therewith, which reinforcing means may be provided at its ends with threaded recesses 36.

As the tapers 26 are placed within the openings 20 in the assembly, a bearing plate 30 is positioned on the opposite surface of the end member 12. The bearing plate 30 is provided with an opening 34 through which a screw 32 extends to threadedly engage the threaded recess 36 provided in the reinforcing means 28, to clamp the longitudinal member 22 between said end members 12 and to impart rigidity to the structure of the bench and table combination.

The table top 38 may have embedded therein reinforcing rod means 42 as shown in FIG. 5, and in addition, may be recessed at its lower or nether surface as shown at 40. The recess 40 in the table top is adapted to engage and register with the upper surface of the upwardly extending portions 44 of end members 12.

Bench members 46 may be provided with reinforcing means 48 as shown in FIG. 4, and in addition, be recessed on their lower or nether surfaces as shown at 50. Recesses 50 are adapted to register in assembly with the laterally and upwardly extending portions 18 of end members 12.

As may be seen in FIGS. 2 through 5, the bench and table members may include continuous peripheral reinforcing means embedded within the marginal edges thereof.

Referring to FIG. 12, a modified longitudinal member 22' is shown in loosely joined relation with an end member 12. The longitudinal member 22' is provided with a longitudinally extending opening 23 providing clearance with respect to a through extending reinforcing rod means 25, which reinforcing rod means extends beyond the ends of the longitudinal member 22' and through the opening 20 in end member 12. The rod means 25 is externally threaded at its ends for receiving a nut 27. A bearing plate 30 is provided intermediate the nut 27 and the end member 12. It is to be noted that the end of the longitudinal member 22' stops somewhat short of the outer surface of the end members 12. In the arrangement shown, the rod means 25 is adapted to be placed under tensile load by virtue of the make-up of the nuts 27, with the result that the longitudinal member 22' is placed under compressive longitudinal loading to accomplish a post-stressing thereof in the assembly of the bench and table combination of the invention, and has thereby imparted thereto enhanced structural qualities.

In FIG. 13, the longitudinal member 22' is shown in joined relation with end member 12 in generally similar fashion to that shown in FIG. 12, but, in addition, including a modified bearing plate 30' of dished configuration to provide for enhanced resilient loading of the longitudinal member 22' and the joint as a whole. In addition, as is further shown in FIG. 13, a cushioning element or material 31 may be interposed between the tapered opening 20 and the tapered end of the longitudinal member 22' for the purpose of distributing stress in the joint so as to avoid any high concentrations of stress therein. This cushioning element or material may be any material with characteristics which would readily conform to irregularities between the tapered surfaces just described. Among the materials which have proved satisfactory are various plastics, lead, and rubber.

Referring to FIG. 11, a further modification of the invention is shown to include a cushioning element 33 interposed intermediate the upwardly extending portion 44 of end member 12 and the recessed portion 40 of the table top 38 resting thereon, as well as cushions 35 interposing the laterally and upwardly extending portions 18 of end members 12, and the registering recesses 50 in the bench members 46. These cushioning materials 33 and 35 may be similar to the materials employed for cushioning element 31. In addition to serving to reduce stress concentrations in the mating parts, these later cushioning materials or elements 33 and 35 function to reduce any tendency to rock or wobble on the part of the benches 46 or table top 38.

Thus, it has been seen that the bench and table combination of the invention, in meeting the objectives set forth, provides significant improvements in park benches, tables and the like. Further, it has been seen that the durability, the cost, and the facility with which the same may be assembled, has been greatly improved, and that these benefits flow, in part, from the novel mode in which the various elements of the combination are joined and assembled.

As various changes may be made in the form and construction herein described without departing from the spirit and scope of the invention, and without sacrificing any of the advantages thereof, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

What is claimed is:

1. A bench and table combination comprising: a pair of vertically disposed end members spaced from and parallel to one another; a plurality of longitudinal members spaced from one another and extending between said end members to maintain the vertical disposition and spacing thereof; means connecting said end members for maintaining said longitudinal members in compressed relation therebetween; each of said end members being provided with a bench supporting surface and a table top supporting surface; a bench slab and a table top slab extending in bridging relation between said end members and resting on the bench and the table top supporting surfaces thereof respectively; and cushioning means disposed between at least one of said slabs and its associated supporting surface.

2. A bench and table combination comprising: a pair of parallel end members, each including an upwardly extending portion and a pair of laterally extending portions; a plurality of longitudinal members extending between said end members and secured thereto for providing mutual support; a table top and a pair of bench members characterized by a recess in their respective nether portions registering and resting respectively with said upwardly and laterally extending portions of said end members; said top and bench members including first reinforcing means embedded and extending within marginal edges thereof; a plurality of second reinforcing means connected to said first reinforcing means, the edges of said end members converging downwardly toward the lower portion thereof, and said lower portion including a notch defining a pair of legs.

3. A bench and table combination in accord with claim 1 wherein each of said longitudinal members extending between said end members includes a reinforcing rod adapted to threadingly receive a screw for securing said longitudinal members with said end members includes a longitudinal members with said end members.

4. The bench and table combination according to claim 1 wherein the end members are provided with tapered openings and the ends of the longitudinal members are correspondingly tapered for reception therein and each longitudinal member includes a reinforcing rod having threaded ends, bearing plates on the surface of said end members opposite said longitudinal members and screw means threadingly engaging with said reinforcing rods and biasing said plates toward said longitudinal members.

5. A bench and table combination comprising: a pair of vertically disposed end members spaced from and parallel to one another; a plurality of longitudinal members spaced from one another and extending between said end members to maintain the vertical disposition and spacing thereof; said longitudinal members having tapered ends adapted to engage tapered openings provided in said end members; said longitudinal members each including reinforcing rod means coextensive therewith and threaded

at the ends thereof; a screw means including a bearing plate threadingly engaging the ends of said reinforcing rod means for biasing the same between said end members, whereby said reinforcing rod means are under tension load and said longitudinal members are compressively loaded against said end members, the said longitudinal members comprising cementitious material.

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FRANK B. SHERRY, *Primary Examiner.*