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DETACHABLE ROTATABLE LEG CONSTRUCTION
FOR TABLE TOPS
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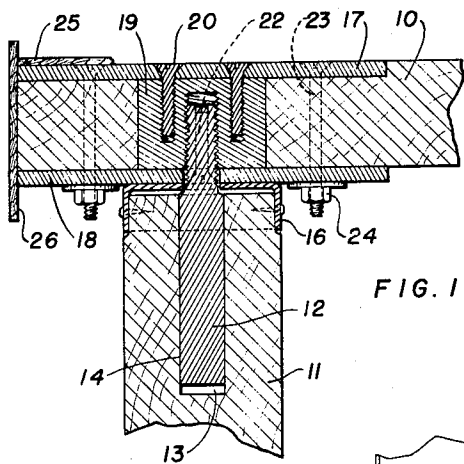


FIG. 1

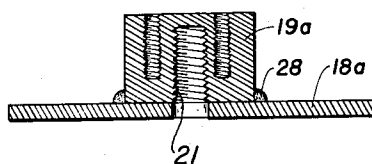


FIG. 7

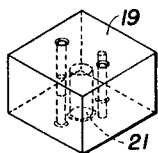


FIG. 3

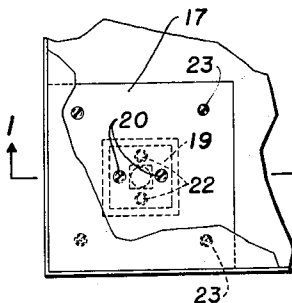


FIG. 2

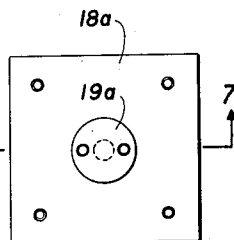


FIG. 6

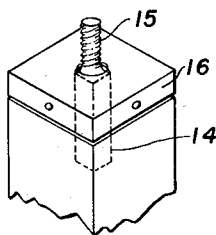


FIG. 4

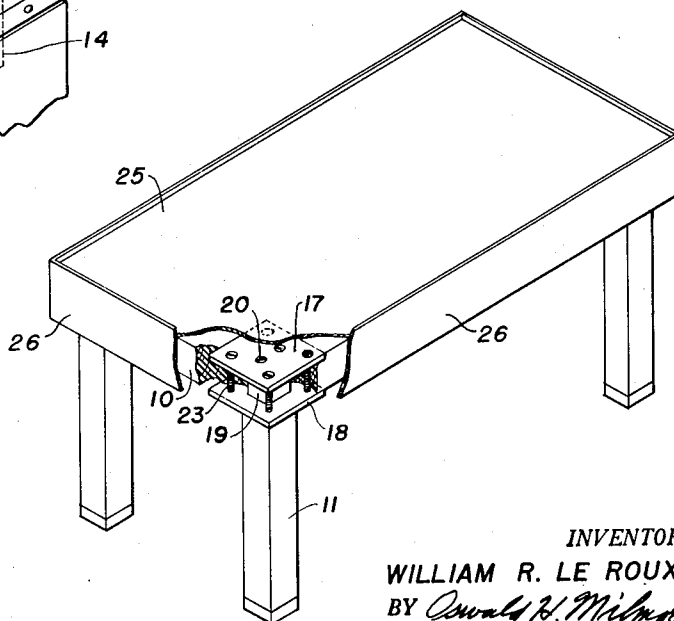


FIG. 5

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DETACHABLE ROTATABLE LEG CONSTRUCTION FOR TABLE TOPS

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1 Claim. (Cl. 311-114)

This invention relates to tables and the like, such as cabinets, having one or more demountable legs, and to a fixture adapted to be fixed to the table top or the like affording a coupling by which the leg can be attached to and removed from the table top. More particularly, the invention relates to a construction providing a female screw-threaded support on the table top and a screw-threaded pin on the leg.

There is frequent need in homes, clubs, hotels and restaurants for tables that can be stored with an economy of space. Tables from which the legs can be removed completely to permit parallel stowage of a number of table tops in juxtaposition have not been entirely satisfactory for the reason that the coupling fixtures have been subject to one or more of the following deficiencies: weakening of the table top caused by cutting therein the holes necessary to receive the fixture and the cooperating part of the leg; insufficient rigidity between the table-mounted part of the fixture and the table top and/or between said part of the fixture and the leg to transmit bending stresses and thereby to prevent rocking motion between the leg and the table; undue size or excessive cost of manufacture and complication in design and operation; and difficulty in mounting the fixture firmly on the table top. For this reason collapsible tables currently in use employ hinged or "folding" legs which are, however, unsteady and undependable and hence not practical when steadiness is required. Tables with folding legs are not suitable to match other furniture.

It is often useful to provide other pieces of furniture with demountable legs. For example, cabinets having such legs can be more easily transported through doorways or adapted to different schemes of furniture arrangement. The drawbacks noted above in regard to tables have heretofore prevented the general adoption of demountable legs on such furniture.

It is an object of this invention to provide an improved table or the like that has one or more demountable legs that are firmly secured to the table top or equivalent piece of furniture by a simple screw thread connection.

It is a further object of the invention to provide an improved fixture for connecting a demountable leg to a table top or the like that is well adapted to transmit the stresses inherent in the connection at the top of the leg, whereby the table or the like will be steady and can be used to match other good quality furniture. Ancillary objects are to provide an improved fixture of the type indicated that can be easily attached to the table top without undue weakening of the table and will reinforce the cut-out portion of the table top; to provide a fixture that is inexpensive and can be made small in size; to provide a fixture that is adapted to precision manufacture insofar as the relative position of the attached leg is concerned, whereby the attached leg will always assume the same orientation when

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screwed tightly thereto; and to provide a fixture that is simple, sturdy and dependable.

In summary, according to the invention the demountable leg has a metal pin fixed to the upper part thereof, said pin having a threaded part projecting upwards from the leg, and the fixture that is mounted on the table top or the like comprises a pair of parallel, vertically spaced metal plates that are fastened to opposite surfaces of the table top, and an internally threaded block having an external outline smaller than that of the plates and extending between the plates, the block being fastened to the plates against rotation and being initially separate from at least one of said plates to permit assembly of the fixture to the table by cutting a hole through the table top large enough to receive the block but materially smaller in cross sectional area than the area of the plates. The metal pin can be inserted into the block for threaded engagement thereto through an aligned hole in the lower plate. The top of the leg may be provided with a metal ferrule at the base of the pin for engagement with the lower plate when the leg is screwed home to insure that the leg is always in a desired, predetermined position or orientation when firmly attached, although in a broader aspect of the invention other means for insuring such predetermined position of the leg may be employed.

For convenience, the expression table top will be used herein to designate the part of the piece of furniture to which the fixture is secured, it being understood that in every instance the fixture may be secured to some equivalent or corresponding part of the furniture, e. g., to the bottom of a cabinet.

The invention will be described in greater detail by reference to the accompanying drawing forming a part of this specification and showing two preferred embodiments by way of illustration, wherein:

Figure 1 is a sectional view, taken on the vertical section plane indicated at 1-1 on Figure 2, and showing the fixture and a part of the leg mounted on a table top;

Figure 2 is a fragmentary plan view of a corner of the table on a reduced scale, part of the table top being broken away;

Figure 3 is an isometric view of the block;

Figure 4 is an isometric view of the top of the leg and of the coupling pin fixed thereto;

Figure 5 is an isometric view of the complete table, a part of the corner being broken away;

Figure 6 is a plan view of the lower plate of a fixture according to a modification; and

Figure 7 is a sectional view, taken on the vertical section plane indicated at 7-7 on Figure 6, on an enlarged scale.

Referring to Figures 1-5 of the drawings in detail, the table top comprises a main, wooden board 10 supported by demountable legs 11 that may, for example, be square in cross section. A coupling pin 12 is fixed in the upper portion of the leg in any suitable manner. According to a preferred method, the pin is mounted at the central axis of the leg by drilling a circular hole 13 into the top of the leg and then driving or pressing the pin into the hole to produce a friction fit. The pin is made of metal and has a lower shank 14 that is polygonal, e. g., square, in cross section, with a diagonal dimension exceeding the diameter of the hole 13 to insure a tight fit and prevent relative rotation. The pin further has an externally threaded upper part 15 that projects above the top of the leg. A metal ferrule 16 may be attached to the top of the leg at the base of the threaded part 15.

The table-mounted part of the coupling fixture comprises an upper metal plate 17 and a lower metal plate

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18, these plates being spaced apart vertically and in engagement with opposite surfaces of the board 10. It is preferred in most cases to recess the upper plate 17 in the board to provide a continuous upper surface, as shown, although this expedient is not in every case essential. A coupling block 19 is in abutment with both plates and secured to both plates but detachable from at least one of them, e. g., from both as shown. The block may have any desired cross sectional shape, such as square (Figures 1-5) or circular (Figures 6 and 7), and the area thereof is materially less than that of the plates 17 and 18 to provide the latter with lateral overhang for secure engagement with the board 10 to reinforce the latter. The upper plate 17 is secured to the block by a pair of flat head machine screws 20 that are recessed in the plate and have threaded engagement with the block at diametrically opposite sides of a central, internally screw threaded hole 21. This hole is open at least at the bottom of the block and has a thread matching that on the pin 12. The lower plate 18 has a central hole in alignment with the hole 21 and is secured to the block by a pair of flat head machine screws 22 that are recessed and situated at diametrically opposite sides of the hole 21 in a vertical plane perpendicular to that of the screws 20, to permit the screws 20 and 22 to be longer than half the height of the block. The screws 20 and 22 constitute fastening means securing the coupling block to the plates. The plates 17 and 18 are secured firmly to the upper and lower faces of the board 10 by four flat head bolts 23 that are recessed in the upper plate, extend through holes in the board, and have lock washers and nuts 24 for clamping the plates together.

To mount the fixture to the table top the upper face of the board 10 is first recessed at each corner to permit the upper plate of the corresponding fixture to be mounted flush with the upper surface. A central, large hole is then drilled at each niche to receive the block 19 and four smaller holes are drilled near the corners of each niche to receive the bolts 23. The central hole is advantageously made only slightly larger than necessary to receive the block. The block 19 may be secured to one of the plates prior to mounting; thus, it may be secured to the plate 17 by the screws 20, and the assembly emplaced from the top. The lower plate 18 is then emplaced from below and secured to the block by the screws 22. The two plates are then clamped together by the bolts 23 and nuts 24 to insure a firm connection between the fixture and the board 10.

The table top may thereafter be finished as desired, as by attaching a finish board or veneer 25 to the top and an edge board 26 to each edge.

When mounting the legs to the table their coupling pins 12 are screwed into the blocks 19 until the metal ferrules 16 come into engagement with the lower plates 18, the bolts 23 being positioned so as to avoid interference with the rotation of the legs. It will be noted

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that the ferrule bears against the plate 18 over an extended area, permitting a firm connection, although this feature is not always essential. It is desirable to case harden the threads in the block 19 and on the threaded part 15 of the pin to insure long life.

Referring to Figures 6 and 7, according to a modified construction the coupling block 19a is circular in outline and is welded to the lower plate 18a by a weldment 28, which constitutes the fastening means between the coupling block and the plate. The block is provided, as before, with a central threaded hole 21 and with a pair of smaller threaded holes to receive the screws 20 by which it is secured to the upper plate 17 after assembly of the fixture on the table top; however the lower holes for the screws 22 are omitted in this case.

The fixture of modified design is mounted to the table top and used in the manner previously described, except that the block 19a is inserted into the large hole in the board 10 from beneath, and the upper plate 17 is attached after being emplaced.

I claim as my invention:

A table or the like having a demountable leg comprising, in combination: a horizontal board; a coupling fixture secured to said board and including a pair of separate metal plates in flat engagement with upper and lower surfaces, respectively, of said board and in vertically spaced relation, said board having a vertical hole between the plates of cross section materially less than the areas of the plates; a metal coupling block situated within said hole in the board and in engagement with both said plates, said block being secured rigidly to both said plates by fastening means including at least one fastener securing the block non-rotatably to one plate and at least one fastener securing the block detachably to one plate; clamp means spaced laterally from said block and extending through the board between said plates for drawing said plates together into firm engagement with said surfaces of the board; a leg; and a coupling pin having a shank fixed within said leg and an externally threaded portion protruding upwardly above the leg and threadedly engaged to said block within the hole therein.

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