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JOINT BAR FOR SECTIONAL TABLES

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2 Sheets-Sheet 1

Fig. 1.

Fig. 2.

Fig. 3.

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JOINT BAR FOR SECTIONAL TABLES

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2 Claims. (Cl. 311—4)

1. This invention relates to joint structures for sectional work tables, more particularly to means for holding the surface material of adjacent table sections smoothly in place, and for bridging the space between the working surfaces of the adjacent sections.

The invention is disclosed herein as embodied in a table structure of the kind disclosed in Letters Patent of the United States No. 2,327,743, granted to me on August 24, 1943, and in the nature of an improvement upon the invention disclosed and claimed in said patent.

Tables of the kind referred to commonly include two or more sections, each comprising a metallic frame having a plane metallic top portion and a non-metallic sheet of surfacing material adhered or otherwise suitably secured to the top table.

Because of the difference in thermal coefficients of expansion of the metallic and non-metallic portions of the table, and also because the material of the surface sheet may be more or less hygroscopic in character while the metallic parts are not, there is a tendency for the surface sheet to creep and pull loose from the metallic portion of the table top, particularly at the ends of the table sections, and hence to produce objectionable bulging or warping of the surfacing material at the joint between sections. It is a primary object of the present invention to provide an improved joint bar for obviating these drawbacks.

In Patent No. 2,327,743, disclosure is made of a joint bar having channels in its opposite sides at a short distance below the upper surface, each channel of just sufficient width to receive and hold together a reduced end portion of the surface sheet and the immediately adjacent sheet metal portion of the table top. This construction obviated the need for hold-down screws, provided opposed holding members under no substantial initial strain, and located the opposed holding surfaces so near to one another that changes of humidity and temperature could have no material tendency to impose strain upon the bar. While the head of the bar designed to lie in the rabbets formed in the upper face of the surface material was continuous, the side portions of the body of the bar were made discontinuous, being divided into a series of spaced-apart blocks. This construction was provided because the metallic portion of the table top was composed of a series of adjacent channel members. The spaces between adjacent blocks were made wide enough so that the side walls of the channel and inturned flanges at the lower extremities of the side walls could extend in between adjacent blocks. The spaces between blocks were square-cut as shown in the patent.

The joint bar of the prior patent has proved to be very practical and satisfactory in use and has enjoyed a very substantial commercial success. It has certain drawbacks and disadvantages, however, which it is the object of the present invention to eliminate. The bars had to be made one at a time, and when hollowed out rectangularly as shown in the patent involved rather expensive operations. Hollowing out to the extent illustrated in the patent, moreover, has been found to be unnecessary, and indeed to lack advantages which can be realized if the spaces between blocks are formed by a simple boring operation.

When the spaces are formed by boring, the minimum thickness of the block for accommodating the vertical flanges of the channel members is the same as before, but the portions bordering the arcuate bores extend over the corners of the lower, inturned, horizontal flanges, and fit snugly between such flanges and the table top, so that the bar when pressed into place is held snugly in place between the flanges and the table top.

With the improved construction referred to the joint bars can advantageously be operated upon in pairs for producing the spaces between adjacent blocks. By clamping two joint bars in a jig or holder at a predetermined, uniform distance from one another, the bars can be fed together step by step beneath a boring tool. At each operation of the tool segments are cut from both joint bars, and this operation is performed in an especially advantageous manner because the opposed joint bars serve to balance one another with respect to lateral thrusts exerted upon the boring tool.

The boring tool desirably has a mechanically limited stroke and includes boring instruments of two diameters, the larger diameter tool being designed to reduce the marginal area adjacent the smaller bore to a thickness precisely equal to the space between the body portions of the channel members and the inturned lower flanges thereof. When the several required cuts have been made in a pair of bars, the bars are reversed in the jig and the operation is repeated.

The improved construction can be produced far more economically than the construction which it is designed to supersede. It has no dis-
advantages as compared with the prior construction and is, on the contrary, adapted to interfit more securely with the channel members of the table top.

Other objects and advantages will herein-after appear.

In the drawing forming part of this specification:

Figure 1 is a fragmentary, perspective view showing all of one section top and part of a second section top of a multiple section table embodying the invention;

Figure 2 is a fragmentary, sectional view taken upon the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a view similar to Figure 2, taken upon the line 3—3 of Figure 1, looking in the direction of the arrows;

Figure 4 is a vertical, transverse, sectional view, the section being taken upon the line 4—4 of Figure 5, looking in the direction of the arrows;

Figure 5 is a fragmentary, horizontal, sectional view taken upon the line 5—5 of Figure 4, looking in the direction of the arrows;

Figure 6 is a perspective view of an inverted joint bar which embodies features of the invention; and

Figure 7 illustrates a pair of joint bars clamped together so that they may be operated upon simultaneously in the boring of the spaces between the side blocks of the bar.

The illustrative table 1 comprises two or more sections, of which two sections, designated 2 and 3, respectively, are illustrated. The several sections are essentially duplicates of one another, and a description of the parts of one section is, therefore, equally applicable to the parts of another. Each table section is desirably made up of a series of longitudinal sheet metal channel bars 4, each comprising a plain central body portion 5, down-turned vertical side flanges 6, and inturned horizontal bottom flanges 7. The members 4 are connected to one another by transverse tie members 8, 9 and 10 in the form of sheet metal channel members. The tie members 8 are located intermediate the ends of a section and may be plain channel members, while the tie members 9 and 10 are located at opposite ends of a section, are of special construction, and will be described more fully hereinafter.

The table legs 11 may also be in the form of sheet metal channel bars, each having the upper end thereof secured in one of the channel bars 8, 9, 10.

A surface sheet 14 of non-metallic material, desirably of the composition known commercially as "Masonite," is adhered or otherwise suitably secured to the top plane surface of the table top formed by the body members 5 of the channel bars 4. Each sheet 14 at the end of its table section which is to be joined to another table section is formed with a shouldered upper recess 15 to provide a reduced lower end portion 16. The end portion 16 terminates a little short of the channel bars 4, so that if the surface sheet becomes loosenable from the table top, the ends of the surface sheet can creep toward the end of the table section without bulging. A joint bar 17 is interposed between the adjacent ends of the table sections 2 and 3, the bar being desirably made of wood or some non-metallic composition which will provide: for a mating "locking surface." The bar 17 includes a continuous smooth head portion 18 and a continuous central body portion 19. The head portion 18 projects to either side of the central body portion 19 to lie in the recesses 15 of the surface sheets 14. The head portion 18 is of substantially the same depth as the recesses 15, and the smooth upper surface of the head 18 stands substantially flush with the upper surfaces of the surface sheets 14.

The side faces of the head are spaced slightly from the adjacent vertical walls of the recesses 15, so as to admit of relative creeping of the surface sheets without buckling. Beneath the plain body members 5 of the channel bars 4 which form the main body of the table top, the central body portion 19 of the joint bar 17 has projecting from each of its sides a series of spaced side body parts 20. The side body parts 20 are spaced from one another to provide clearance for the side vertical flanges 6, the spacing being effected by removing arcuate segments of the material to leave segmental bores 21.

Each side body part 20 is separated from the opposed side portion of the head 18 by a slot or channel 22 of just sufficient width to receive and substantially fit the body part 5 of a channel member 4, together with the reduced end portion 16 of the associated surface sheet 14. The head part 18 and the side body parts 20 do not exert any substantial clamping or frictional force upon the members 5 and 16, but they do hold these members apart from one another, while permitting relative creep to occur with substantial freedom.

Concentrically with the segmental bores 21 additional segmental bores 23 of larger diameter but of less depth are formed.

Desirably a single boring tool is provided for making both of the bores, and the penetration of this tool is mechanically limited so that the smaller bore will not be extended into the head portion 18 of the joint bar 17 and so that the base of the larger bore will be separated from the lower boundary of the slot 22 by a distance exactly equal to the space between a flange 7 and the body part 5 of a channel member 4.

The formation of the relatively small diameter bores reduces the bar in thickness to provide regions of minimum thickness adapted to fit between the side flanges 6 of adjacent table sections. Since this region of minimum thickness is of extremely limited lengthwise extent the flanges 7 do not fit into the spaces between the side body members 20 but instead engage the surfaces 24 which constitute the bases of the larger diameter bore 23. The body members 20 are thus fitted snugly between the parts 7 and 5 of the channel members 4 at the corners of the flanges 1.

The bores 21 and 23 are formed in an extremely efficient and economical manner by the procedure illustrated in Figure 7. Two of the bars 17 are clamped together with spacer blocks 25 of predetermined thickness placed between them.

The particular clamping device employed is not important so long as it is suitable for clamping and maintaining the two bars at the proper distance from one another. U-shaped clamps 26 are illustrated. Through one arm 27 of a screw 28 is threaded which carries a clamping plate 29. Turning of the screw 28 clamps the assembled bars and interposed spacer block firmly together. The two bars thus associated are subjected together to the action of the two-diameter boring tool so that each has the series of bores 21 and 23 formed in it at the side face which faces toward
the other bar. When the several segmental bores have been formed, the bars are interchanged as to position and again subjected together to the action of the boring tool for forming the remaining bores and completing the two bars. As illustrated, each table section has at the left-hand end thereof one of the tie members 8 and at the right hand end one of the tie members 10. These tie members are secured to horizontal flange members 7 in any suitable manner as by screws 30. The tie member 10 comprises a vertical flange 31, a horizontal body portion 32, a vertical flange 33, and an inturned horizontal flange 34 at the lower extremity of the flange 33. The tie member 8 comprises a right hand vertical flange 35, a central horizontal body portion 36, a left hand vertical flange 37, and an outturned horizontal flange 38. The tie member 8 extends across the space intervening between the two table sections which is bridged by the central body portion 16 of the joint bar 17.

When the joint bar and table sections have been fitted together substantially as illustrated in Figures 1, 2, 3 and 5, bolts 39 are passed through the flanges 33 and 37 and the flanges are drawn and clamped together by threading nuts 41 onto the bolts 39. Bolts 42 are also passed downward through the flanges 34 and 38. Nuts 44 are threaded on the bolts 42 and clamp the flanges 34 and 38 together. With the construction described, table sections may be conveniently and efficiently united and separated as conditions may require. The joint bar is clamped between the adjacent ends of the table sections, and it serves to hold the ends of the section tops and of the surface sheets in smooth contact with one another at all times. The joint bar is not subjected to any substantial strain, either during manufacture, assembly, or use. It performs its intended function in a very efficient and dependable manner at all times.

I have described what I believe to be the best embodiment of my invention. I do not wish, however, to be confined to the embodiment shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

I claim:
1. A joint bar of non-metallic material for table joints, comprising a continuous central body portion, a continuous head portion projecting outward at both sides from the central body portion, and a series of side body portions at spaced intervals along opposite sides of the central body portion, said side body portions being separated from the continuous head portion by channels of substantially uniform width, and the successive side body portions being separated from one another by spaces each of which has the shape of a cylinder segment.

2. A joint bar of non-metallic material for table joints comprising a continuous central body portion, a continuous head portion projecting outward at both sides from the central body portion, and a series of side body portions at spaced intervals along opposite sides of the central body portion, said side body portions being separated from the continuous head portion by channels of substantially uniform width, and the successive side body portions being separated from one another by spaces each of which has the shape of a cylinder segment, the side body portions being reduced to predetermined thickness in arculate areas bordering upon and concentric with the segmental spaces.

PHILIP ROSENBERG.

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