May 9, 1939. H. T. HALLOWELL ET AL 2,157,955

PRESSED METAL LEG STRUCTURE

Filed Jan. 13, 1937

Fig. 1.

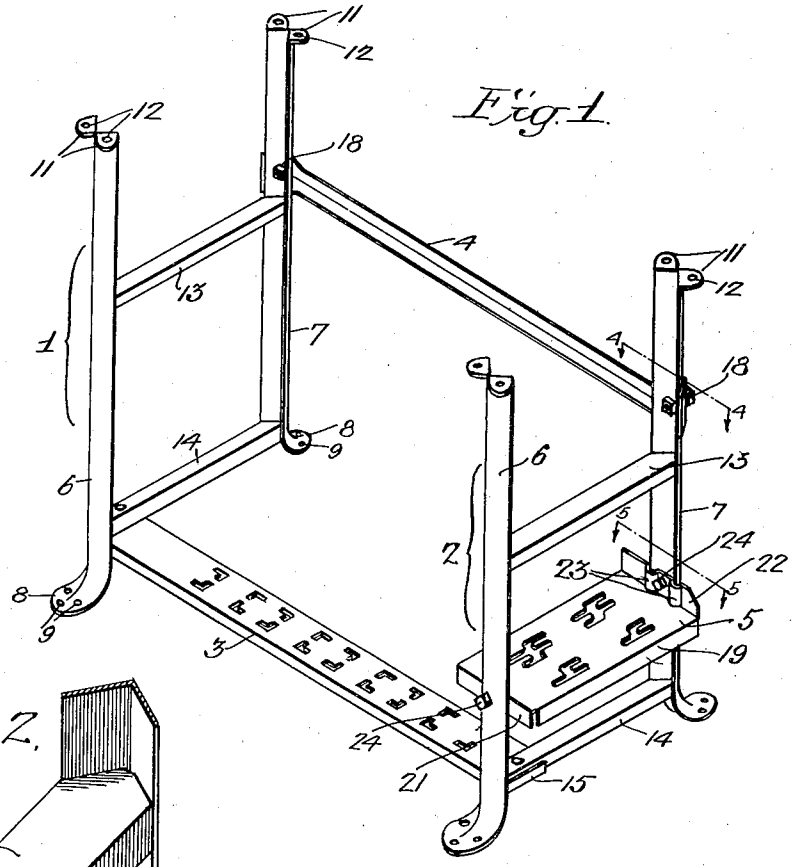


Fig. 2.

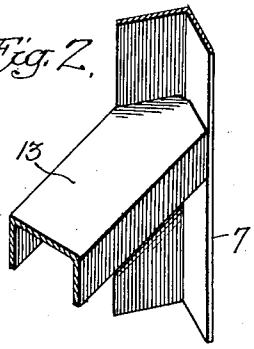


Fig. 4.

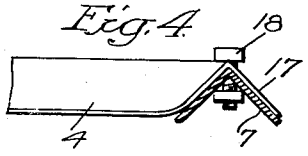


Fig. 3.

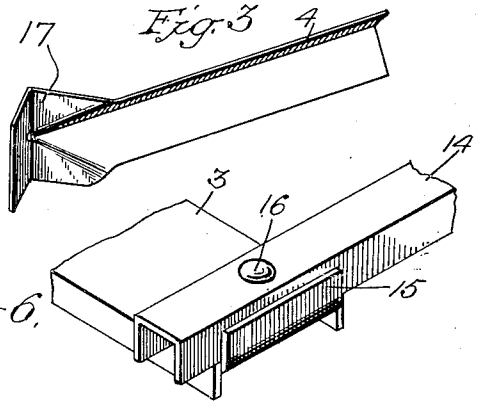
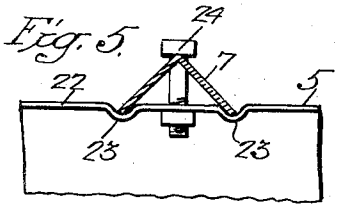


Fig. 6.

Fig. 5.



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PRESSED METAL LEG STRUCTURE

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Application January 13, 1937, Serial No. 120,442

2 Claims. (Cl. 311—109)

This invention relates to improvements in table structures and more particularly to tables of the individual sewing machine type.

One object of the invention is to provide a leg structure suitable for tables of this character that shall be composed throughout of sheet metal and that shall be characterized by simplicity of form and economy of manufacture coupled with the required strength and rigidity.

Another object of the invention is to provide a table leg structure of the stated character composed of two standardized leg units including upright members of transverse V-section, together with novel means for uniting these units into a rigid assembly.

Still another object of the invention is to provide a leg structure having the aforesaid standardized leg units in which the said uprights in the individual units are so united as to substantially preclude the possibility of torsional distortion.

A still further object of the invention is to provide in a leg structure of the stated character a stringer member of V-section having a novel terminal end formation adapted to establish a strong and rigid connection between the stringer and the aforesaid leg units.

The invention further contemplates the provision in a table structure of the character set forth of a motor bracket of novel form and mode of assembly in the leg structure.

The invention further resides in certain novel structural details hereinafter described and illustrated in the attached drawing, in which:

Figure 1 is a view in perspective of a table leg assembly made in accordance with our invention;

Fig. 2 is a fragmentary perspective view illustrating a detail of the construction;

Fig. 3 is a fragmentary view in perspective showing a further detail of construction;

Fig. 4 is a section on the line 4—4, Fig. 1;

Fig. 5 is a section on the line 5—5, Fig. 1, and

Fig. 6 is a fragmentary view in perspective illustrating another of the structural details.

With reference to the drawing, the table leg structure therein disclosed as a preferred embodiment of our invention comprises two leg units 1 and 2 which are united by means of two stringer members 3 and 4 into a rigid assembly. Supported in the leg unit 2 is a motor bracket 5, and the structural form of this bracket and its mode of assembly in the unit will be hereinafter described.

The leg units 1 and 2 are identical in form. Each comprises a pair of pressed metal uprights 6 and 7 of V-section, and these uprights are arranged in parallel spaced relation with their recessed sides facing each other. The lower extremities of the uprights 6 and 7 are turned outwardly, and the flanges at opposite sides of the V are spread out and flattened to form feet 8, and these feet are preferably provided with apertures 9 for reception of screws by means of which the leg structure may be anchored to the floor. The upper end of each of the uprights is provided with a transverse extension which form seats for the table top (not shown), and in the present instance, these transverse extensions are formed as integral parts of the uprights by slitting the upper ends longitudinally at the apex of the V and by turning down the portions at opposite sides of the slit to form the transversely extending ears 11, 11. Each ear in the present instance is provided with an aperture 12 for reception of a bolt or screw by means of which the table top may be secured to the leg structure.

The uprights 6 and 7 are rigidly united by means in the present instance of two transverse members 13 and 14. These members in accordance with our invention and as shown clearly in Fig. 2 depart from the V-shaped cross sectional form of the uprights and are made instead with a true channel or U-shaped cross sectional form. The purpose of this departure from the simpler and cheaper V-formation is to take advantage of the superior resistance to torsional strains of the U-section over the V-section. The uprights of the latter sectional form have in full degree the longitudinal strength required to support the loads and strains imposed thereon, and the transverse members of U-section, by reason of their superior torsional strength, resist any normal strains tending to distort the leg unit from its normal flat plane. We have found that transverse members of the U-section are well adapted for assembly with uprights of V-section to produce an extremely strong and rigid assembly. The manner of uniting the cross members with the uprights is clearly shown in Fig. 2, wherein it will be noted that the ends of the transverse members are tapered so that the said extremities fit neatly within the V-shaped recess of the uprights, the converging edges of the web of the channel engaging and being welded to the inner faces of the flanges of the uprights, and the depending flanges of the U-shaped transverse member engaging the outer edge portions of the uprights and being also welded to the latter. In

this manner, the joint between these members directly resists distortion in all directions, and the construction provides an extremely strong and rigid connection between the uprights and the transverse members. Preferably the channels of the transverse members are inverted as illustrated.

As previously set forth, the leg units 1 and 2 are united by means of the stringer members 3 and 4. The stringer member 3 extends in the present instance between the lower transverse members 14 of the two units. This stringer takes the form of a relatively wide inverted channel which underlies the said members 14, and the stringer is provided at each end with an upturned flange 15 which respectively lie against the outer faces of the members 14 as illustrated. In the present instance, the stringer is secured to the members 14 by means of a bolt 16 which extends downwardly through the channel members 14 and through an aperture in the base flange of the channel.

The stringer 4 extends between and is secured to the rear uprights 7 of the units 1 and 2. Like the uprights, this stringer has a V-shaped transverse sectional form, and the extremities of the stringer are modified as to shape to provide a secure and rigid connection between the stringer and the uprights. As best shown in Figs. 3 and 4, the extremities of the stringer are shaped to provide a transverse channel 17 of V-formation in which the longitudinal channel of the stringer terminates, and the channel 17 is so proportioned as to conform accurately to the V-shaped transverse sectional form of the uprights 7. In the present instance, the stringer is secured to the outer sides of the uprights 7, and the transverse channels 17 of the stringer 4 form in effect sockets which receive and embrace the outer sides of the uprights, the outer surfaces of the flanges of the uprights 7 lying flatly against the inner faces of the channels 17. The stringer in the present instance is secured to the uprights 7 by means of bolts 18, and it will be noted that by reason of the aforedescribed formation at the ends of the stringer, the stringer is mechanically interlocked with the uprights independently of the securing bolts 18, the construction being an extremely strong and rigid one.

The bracket 5 previously referred to and shown in Figs. 1 and 5 consists in a preferred form of a flat plate having at each longitudinal side edge a depending flange 19. Flanges 21 and 22 are also provided at each end of the plate, the flange 21 in the present instance extending downwardly and substantially at right angles to the plane of the plate, and the flange 22 at the other end extending from the plate similarly but in the opposite direction. Each of the flanges 21 and 22 is provided with a pair of spaced pressed ribs 23, the recessed sides of these ribs being in the outer surfaces of the flanges, and the ribs 23 in each of the flanges are so relatively positioned that the recessed sides thereof may form sockets for reception of the longitudinal edges of the uprights 6 and 7, as shown for example in Fig. 5. Bolts 24 are passed through the uprights 6 and 7 and through the flanges 21 and 22 and thereby secure the bracket to the uprights. It is to be noted that by this arrangement inclusive of the ribs 23, the bracket by means of a single bolt at each end is held rigidly between the uprights in a normal horizontal position. It will be noted further by reason of the oppositely disposed flanges 21 and 22 that it is possible to insert the bracket for assembly between the uprights 6 and 7 without distortion of either of the flanges from its normal 90° position with respect to the plane of the plate. In assembling the bracket for example, the latter is placed between the uprights with the forward edge of the bracket, i. e., that to which the flange 21 attaches, in a lower horizontal plane than the rear edge of the bracket, and that in then bringing the plate into the horizontal position between the uprights, there is no interference by either of the flanges 21 or 22. This not only materially facilitates the assembly operation but makes assembly possible as previously described without bending or distorting any part of the bracket.

There may be certain modifications in details of structure described above without departure from the invention as defined in the appended claims.

We claim:

1. In a pressed metal leg structure, the combination with spaced uprights of V-shaped transverse sectional form, of a stringer of like transverse sectional form extending transversely between and secured to said uprights, said stringer having its extremities shaped respectively to the form of a transverse V-shaped channel in which the longitudinal channel terminates, and said transversely channeled extremities conforming accurately in shape with the said cross-sectional form of the uprights and seating against the latter.

2. In a pressed metal leg structure, the combination with spaced uprights of V-shaped transverse sectional form, of a stringer of like transverse sectional form extending transversely between and connecting said uprights, said stringer having its extremities shaped respectively to the form of a transverse V-shaped channel in which the longitudinal channel terminates, and said transversely channeled extremities forming a socket for reception of and embracing the outer convergent faces of the channel uprights and being secured to the latter.

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