

April 13, 1948.

R. E. LIPPENBERGER

2,439,690

FURNITURE

Filed March 22, 1943

4 Sheets-Sheet 1

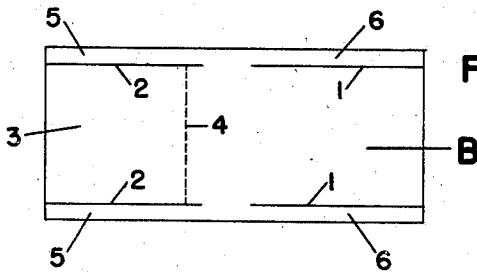


FIG. 3

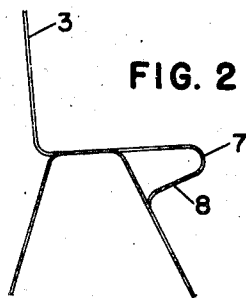


FIG. 2

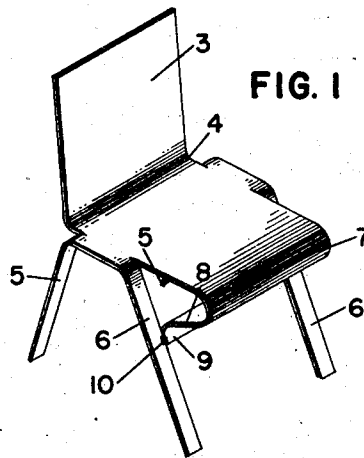


FIG. 1

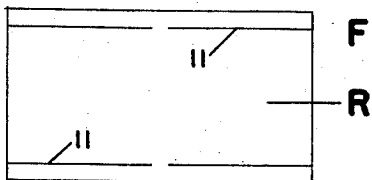


FIG. 6

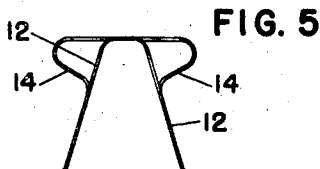


FIG. 5

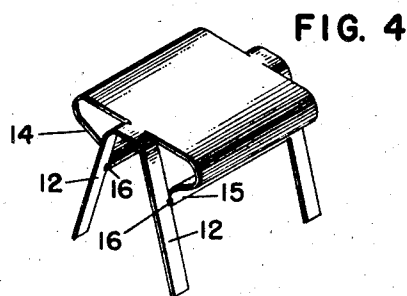


FIG. 4

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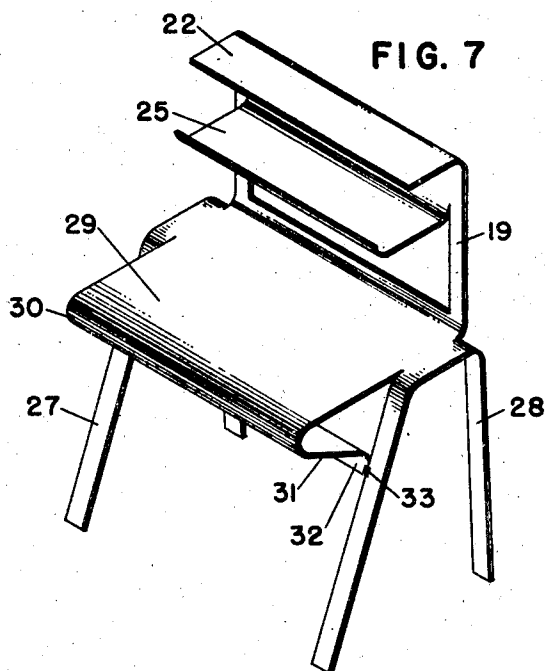
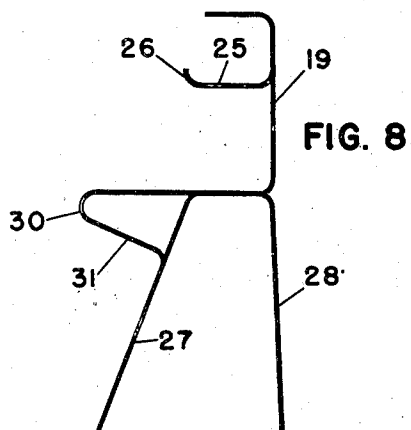
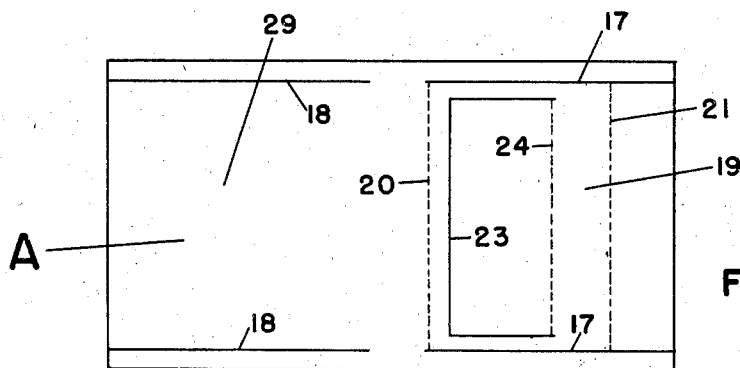
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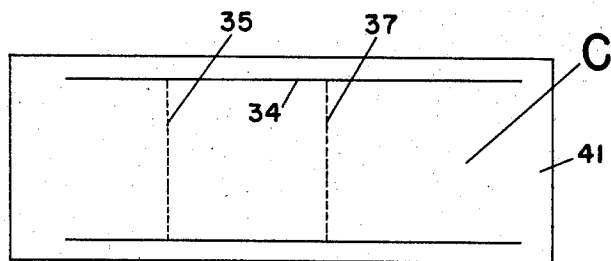


FIG. 12

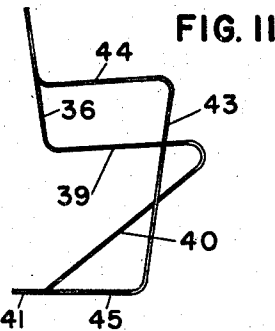


FIG. 11

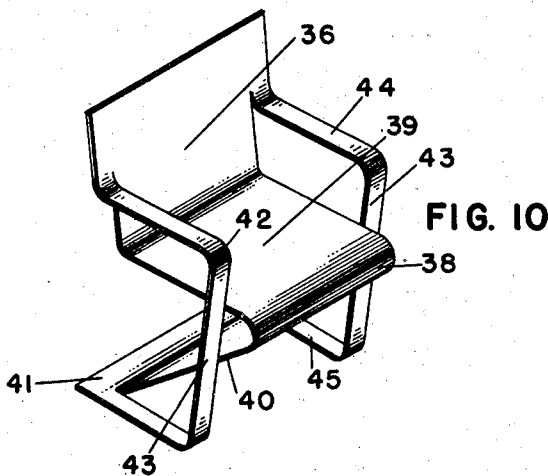


FIG. 10

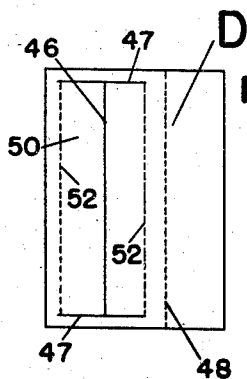


FIG. 15

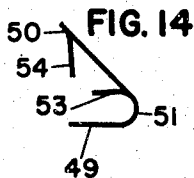


FIG. 14

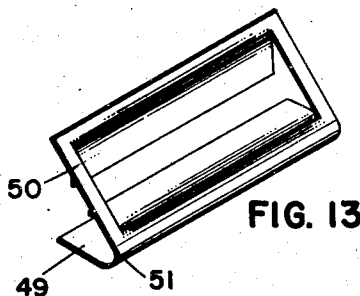


FIG. 13

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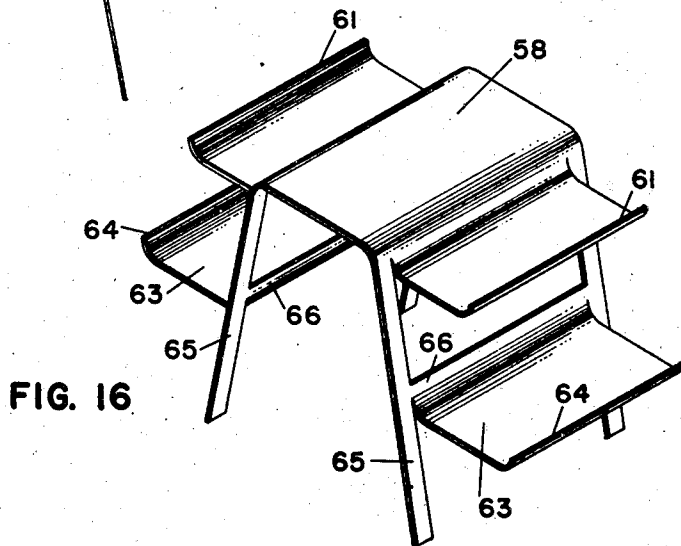
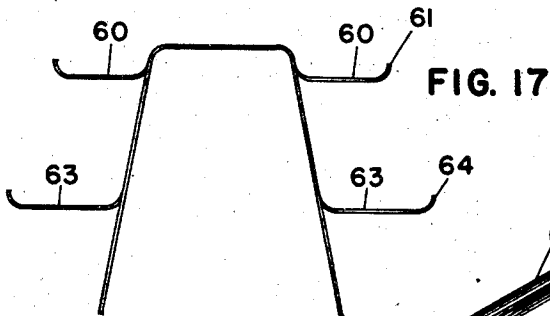
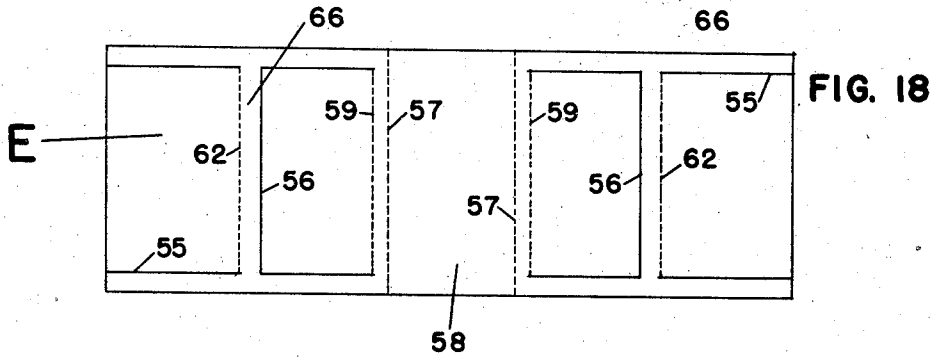
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FURNITURE

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10 Claims. (Cl. 155-194)

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This invention relates to improvements in furniture, and it is primarily an object of the invention to provide an article of furniture produced from a single piece of material.

It is also an object of the invention to provide an article of furniture which can be readily constructed from a single blank of material possessing requisite strength and in a manner involving but small cost of production.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved furniture whereby certain important advantages are attained, as will be hereinafter more fully set forth.

In order that my invention may be better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in perspective illustrating an article of furniture constructed in accordance with an embodiment of the invention.

Figure 2 is a view in side elevation of the article of furniture illustrated in Figure 1.

Figure 3 is a view in plan of the blank from which is produced the article illustrated by Figures 1 and 2.

Figure 4 is a view in perspective illustrating another embodiment of the invention.

Figure 5 is a view in side elevation of the article as illustrated in Figure 4.

Figure 6 is a view in plan of the blank from which is produced the article as illustrated in Figure 4.

Figure 7 is a view in perspective illustrating a still further embodiment of the invention.

Figure 8 is a view in side elevation of the structure as illustrated in Figure 7.

Figure 9 is a view in plan of the blank from which is produced the article illustrated in Figures 7 and 8.

Figure 10 is a view in perspective of a still further embodiment of the invention.

Figure 11 is a view in end elevation of the article as illustrated in Figure 10.

Figure 12 is a view in plan of the blank from which is produced the article as illustrated in Figures 10 and 11.

Figure 13 is a view in perspective of a still further embodiment of the invention.

Figure 14 is a view in end elevation of the device as illustrated in Figure 13.

Figure 15 is a view in plan of the blank from which is produced the article as illustrated in Figures 13 and 14.

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Figure 16 is a view in perspective of an article of furniture constructed in accordance with an additional embodiment of the invention.

Figure 17 is a view in side elevation of the article of furniture as illustrated in Figure 16, and

Figure 18 is a view in plan of the blank from which is produced the article as illustrated in Figures 16 and 17.

Figures 1 and 2 illustrate an embodiment of my invention wherein the article of furniture constitutes a chair. This article or chair is produced from a rectangular blank B of required dimensions and which is provided along its opposite side marginal portions at desired points spaced inwardly from the side edges thereof with the slits 1 and 2 open at the ends of the blank B. These slits terminate in close proximity to the longitudinal center of the blank B with the slits 1 closer to said longitudinal center than the inner ends of the slits 2.

The slits 1 are of the same length as are also the slits 2 and the portion 3 of the blank between the slits 2 is flexed across a transverse line, as at 4, at a point closely adjacent to the inner ends of the slits 2 to provide an upstanding back for the chair, said back being disposed on such angle with respect to the horizontal as may be preferred.

The side portions of the blank B outwardly of the slits 2 are transversely flexed adjacent the inner ends of the slits 2 to provide the downwardly disposed rear supporting legs 5. The side marginal portions of the blank B outwardly of the slits 1 are transversely flexed immediately adjacent to the inner ends of the slits 1 to provide the downwardly and forwardly inclined front supporting legs 6 and the forward extremity of the portion of the blank between the slits 1 is downwardly curved, as at 7, with said curved portion continued by an inwardly and downwardly inclined apron 8 extending between the legs 6 with the outer or free extremity 9 of the apron 8 outwardly and downwardly flexed to be substantially coplanar with the legs 6. The ends of this extremity or strip 9, in the present embodiment of the invention, are each welded, as at 10, or otherwise rigidly secured to the adjacent leg 6.

As illustrated by Figures 1 and 2, the chair is of a type to allow for comfortable lounging although it is believed to be obvious that the dimensions of the chair may be varied as desired without requiring any differences in structure.

In the embodiment of the invention as illustrated in Figures 4, 5 and 6, the article of furni-

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ture constitutes a stool and is produced from a rectangular blank R of desired dimensions provided along its side marginal portions at desired points spaced inwardly of the longitudinal edges of the blank R with the slits 11 open at the ends of the blank R. In this embodiment of the invention, the slits 11 at each end of the blank R are of the same length and are in parallelism with one another and the slits 11 at one end are also of the same length, as the slits at the opposite end of the blank. The slits 11, as clearly illustrated in Figure 6, terminate at points closely adjacent to the longitudinal center of the blank R.

The portions of the blank R outwardly of the slits 11 are transversely flexed closely adjacent their inner ends to provide the downwardly diverging supporting legs 12 while the outer end portions of the blank between the slits 11 are downwardly reverted, as at 14, and terminate in the extremities or cross members 15 fitting between and coplanar with the legs 12 and welded or otherwise rigidly secured thereto, as at 16.

Figures 7 and 8 illustrate a desk or the like constructed in accordance with the present invention and such article is produced from the blank A, as illustrated in Figure 9. This blank A is herein disclosed as rectangular in form and of required dimensions and is provided along its opposite sides and closely adjacent to its longitudinal edges with the slits 17 and 18. The slits 17 at the front end of the blank are in parallelism and of the same length and terminate in relatively close proximity to the longitudinal center of the blank A and the slits 18 are also in parallelism and are herein disclosed as slightly longer than the slits 17. The portion 19 of the blank A is upwardly flexed transversely of the blank along a transverse line 20 closely adjacent to the inner ends of the slits 17 to provide a substantially vertically disposed back, with the upper or free extremity of this portion or back 19 forwardly flexed along the line 21 to provide a forwardly directed shelf 22 substantially at right angles to the portion or back 19.

The inner portion 19 of the blank A is provided with a U-shaped slit 23 with the base member thereof closely adjacent to the line 20 of flexure. The part of the portion or back 19 defined by this slit 23 is bent or folded along a transverse line 24 immediately adjacent to the free extremities of the side portions of the slits 23 to provide a forwardly directed second or lower shelf 25 also substantially at right angles to the portion or back 19. The forward or free longitudinal marginal portion of the shelf 25, as herein disclosed, is flexed to provide therealong an upstanding retaining ledge 26.

The portions of the blank A outwardly of the slits 18 are transversely flexed to provide the downwardly and forwardly inclined front supporting legs 27 while the portions of the blank outwardly of the slits 17 are transversely flexed adjacent to the inner ends of said slits 17 to provide the depending rear supporting legs 28.

The outer or forward extremity of the portions 29 of the blank A between the slits 18 at a desired point intermediate the ends thereof is downwardly and rearwardly curved, as at 30, and continued by a downwardly and rearwardly inclined apron 31 having its outer or free extremity formed to provide a transverse strip 32 snugly fitting between the front legs 27 and welded, as at 33, or otherwise rigidly secured thereto.

In Figures 10 and 11 is illustrated an arm-

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chair constructed in accordance with an embodiment of the present invention and such chair is produced from the blank C illustrated in Figure 12. This blank C is rectangular in form and of desired dimensions and is provided in its side marginal portions with the slits 34 a desired distance inwardly of the longitudinal edges of the blank C. These slits 34 are parallel and extend from a point in close proximity to one end of the blank C to a point in close proximity to the opposite end of the blank. However, such last-named extremities of the slits are spaced from the adjacent end of the blank C a distance greater than the space between the opposite ends of the slits 34 and the adjacent end of the blank C.

The part of the blank C between the slits 34 and at a desired point inwardly of the ends of the slits 34 spaced the greater distance from the adjacent end of the blank C is transversely flexed along the line 35 to provide an upstanding back 36 and along a second transversely disposed line 37 this part of the blank is downwardly curved, as at 38, to provide a seat 39 while the downwardly curved portion 38 is continued by a downwardly and rearwardly disposed apron 40 terminating at the adjacent ends of the slits 34, the transverse portion or strip 41 of the blank C outwardly of said ends of the slits 34 being disposed for flat contact with the supporting surface or in a position substantially parallel with the seat 39, although this parallel relation is not essential.

The portions of the blank C outwardly of the slits 34 are transversely flexed, as at 42, at desired points spaced lengthwise thereof to provide the substantially U-shaped side elements, each substantially U-shaped in form with the intermediate portions 43 thereof disposed closely adjacent to the forward end of the seat 39 and substantially vertically disposed. The side members 44 and 45 of each of the elements 43 are substantially horizontally disposed and are, of course, vertically spaced, with the upper member 44 spaced above the seat 39 and constituting an arm-rest while the lower member 45 is spaced below the seat 39 and is coplanar with the portion or strip 41 for direct contact with the supporting surface upon which the chair is placed.

In Figures 13 and 14 is illustrated an embodiment of my invention which constitutes a book rack and this article is produced from the blank D. This blank D is of desired dimensions and is rectangular in form with its length in the present embodiment considerably less than its width although this is not of any particular import. The blank D adjacent to one end is provided thereacross with a slit 46 extending substantially entirely across the blank D but closed at its opposite ends. The extremities of this slit 46 open into the perpendicularly related slits 47 extending equidistantly beyond opposite sides of the slit 46. In the present embodiment of the invention, the slit 46 together with the slits 47 are to substantially one side of the longitudinal center of the blank D although this may be otherwise changed.

The blank D along the transverse line 48 immediately adjacent to the inner end of the slits 47 is flexed to provide a supporting plate or foot 49 to rest upon a table top or other support while the portion of the blank D provided with the slits 46 and 47 constitutes a plate 50 which is disposed upwardly and rearwardly with respect to the supporting plate or foot 49 on an angle of ap-

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proximately 45 degrees, with the merging marginal portions of the plates 49 and 50 outwardly rounded, as at 51.

The portions of the plate 50 above and below the slit 46 and between the slits 47 are inwardly flexed along the transverse lines 52 between the extremities of the slits 47 to provide the substantially perpendicularly related plates 53 and 54, the plate 53 constituting the back for the rack.

Figures 16 and 17 illustrate an article of furniture which constitutes a table or kindred article and which is produced from the blank E, as illustrated by Figure 18. In this embodiment of the invention, the blank E is rectangular in form and of desired dimensions and is provided in each end portion with the parallel slits 55. In the present embodiment of the invention the slits 55 at one end of the blank E are substantially of the same length as the slits 55 at the opposite end and these slits 55 at both ends of the blank E extend only a comparatively short distance inwardly of the ends of the blank E.

The blank E inwardly of and closely adjacent to the inner ends of the slits 55 is provided with the U-shaped slits 56, with the side portions of the slits inwardly disposed. These slits 56 are substantially in duplicate and are equi-distantly spaced at opposite sides of the longitudinal center of the blank E.

The blank E along the transverse lines 57 are folded to provide a central table top 58 while the portions of the blank E between the side lengths of the slits 56 and along the transverse lines 59 at the inner ends of said side portions of the slits 56 are folded to provide the table extensions 60, the outer marginal portions of which are upwardly flexed, as at 61.

The portions of the blank E between the slits 55 and along the transverse lines 62 at the inner ends of the slits 55 are folded to provide the bottom shelves 63 also having their outer longitudinal marginal portions upturned, as at 64. The portions of the blank E outwardly of the slits 55 and 56 constitute the supporting legs 65 while the portions 66 of the blank E between the lines of bend 62 and the intermediate portions of the slits 56 constitute brace members for the structure.

The article as illustrated in Figures 16 and 17 may be used for the purpose of display or otherwise, as may be desired.

While it has been hereinbefore stated that in the several embodiments of the invention the different articles are to be made from a single blank or sheet of material, it is believed to be obvious that similar structures may be obtained by molding.

From the foregoing description it is thought to be obvious that an article of furniture constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and used.

What is claimed is:

1. The herein described method of forming an article of furniture in one piece, which consists in taking a rectangular sheet of metal, cutting the sheet lengthwise from each of two opposite edges along lines adjacent to and paralleling the other opposite edges, to points approaching the transverse center of the sheet to form four leg strips, then bending the leg strips to arrange the two strips adjacent to each of the said other sides of the sheet in divergent relation

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to form a pair of legs, the portion of the sheet lying between the pairs of legs forming a body support, and then bending back and under a part of the said body support forming portion to a position between the adjacent pair of legs to form an apron, and securing edges of the apron to the adjacent legs.

2. The method of forming an article of furniture as set forth in claim 1, with the additional step of bending upwardly a part of that end of the body supporting portion opposite from the apron.

3. The method of forming an article of furniture as set forth in claim 1 which comprises the added steps of bending upwardly a part of that end of the body supporting portion opposite from the apron and cutting out and bending forwardly into overlying relation with the body supporting portion, a portion of the upwardly bent part to form a supporting shelf.

4. An article of furniture consisting of a single sheet of material having four leg forming portions attached at opposite sides and constituting integral continuations of the sheet, the legs at each side of the sheet being arranged in downwardly divergent relation, the portion of the sheet lying between the legs constituting a body support, and the material of the sheet at each of the two ends between the legs being bent under to form downwardly extending aprons, each of said aprons being between and secured at opposite side edges to a pair of legs.

5. The method of forming a self-sustaining legged article of furniture, which consists in taking a rectangular sheet of metal, cutting the sheet from each end lengthwise along two lines each adjacent to and paralleling a longitudinal edge of the sheet to form four leg strips, then bending such strips to form legs having a desired angular relation with a portion of the sheet lying between the two ends of the sheet, the said portion forming a body supporting surface, and bending back and under a part of the sheet joining the said portion to position between the legs, and securing the bent back part to the legs.

6. The method of forming a self-sustaining legged article of furniture, which consists in taking a rectangular sheet of metal, cutting the sheet from each end lengthwise along two lines each adjacent to and paralleling a longitudinal edge of the sheet to form four leg strips, then bending the leg strips and the body of the sheet lying therebetween on lines extending transversely of the sheet to form: four legs, a body supporting flat portion between the legs, and a downwardly and rearwardly directed apron part extending from the flat portion between the legs.

7. The method of forming a self-sustaining legged article of furniture, which consists in taking a rectangular sheet of metal, cutting the sheet from each end lengthwise along two lines each adjacent to and paralleling a longitudinal edge of the sheet to form four leg strips, then bending the leg strips and the body of the sheet lying therebetween on lines extending transversely of the sheet to form: four legs, a body supporting a flat portion between the legs, a downwardly and rearwardly directed apron part extending from the flat portion between the legs, and an upwardly directed back part forming a continuation of the flat portion.

8. The method of forming a self-sustaining legged article of furniture, which consists in taking a rectangular sheet of metal, cutting the sheet lengthwise to opposite end edges, from points in-

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wardly from each longitudinal edge along lines adjacent to and paralleling the longitudinal edges to form four leg strips, then bending the leg strips and the body of the sheet lying therebetween on lines extending transversely of the sheet to form: four legs each consisting of an upright and an upper and a lower substantially horizontal part, a body supporting flat portion between the upright parts of the legs, a downwardly and rearwardly directed apron part forming a continuation of the flat portion and passing between said upright leg parts to the lower leg parts, and an upwardly directed back part forming a continuation of the flat portion and joined to the upper leg parts.

9. An article of furniture comprising a single sheet of material having a horizontal support portion, and an inverted U-shaped member at each side of said horizontal support portion, each member having its blight portion in the plane of said horizontal portion, extending horizontally therewith and integrally joined thereto to form front and rear legs at each side of said horizontal portion, said horizontal portion projecting forwardly of said front legs and having a portion reversely curved downwardly to extend rearwardly between said front legs in contact therewith and rigidly secured thereto.

10. An article of furniture, consisting of a single sheet of metal comprising a central body supporting portion and legs at each of two opposite sides of said portion comprising strips consisting of portions of the sheet and each joined at a longitudinal edge midway between its ends to a side of the body supporting portion, said strips having their ends extending downwardly from the plane of the body supporting portion, a part of said body supporting portion being

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turned down and under the plane of the body supporting portion to form an apron which is disposed between two legs and secured thereto.

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