July 7, 1953 H. SAINT-MAURICE 2,644,511

SECTIONAL ARTICLE OF FURNITURE

Filed May 6, 1948 3 Sheets-Sheet 1

FIG 1

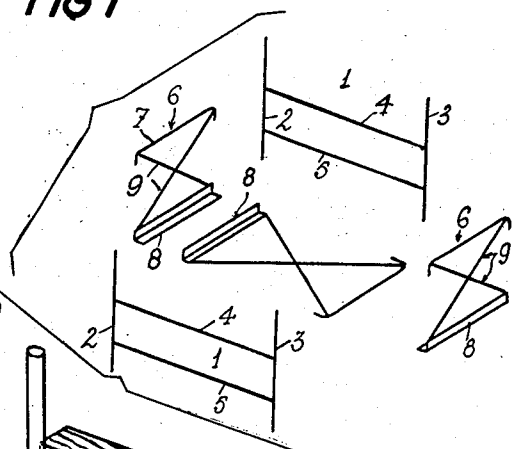


FIG 2

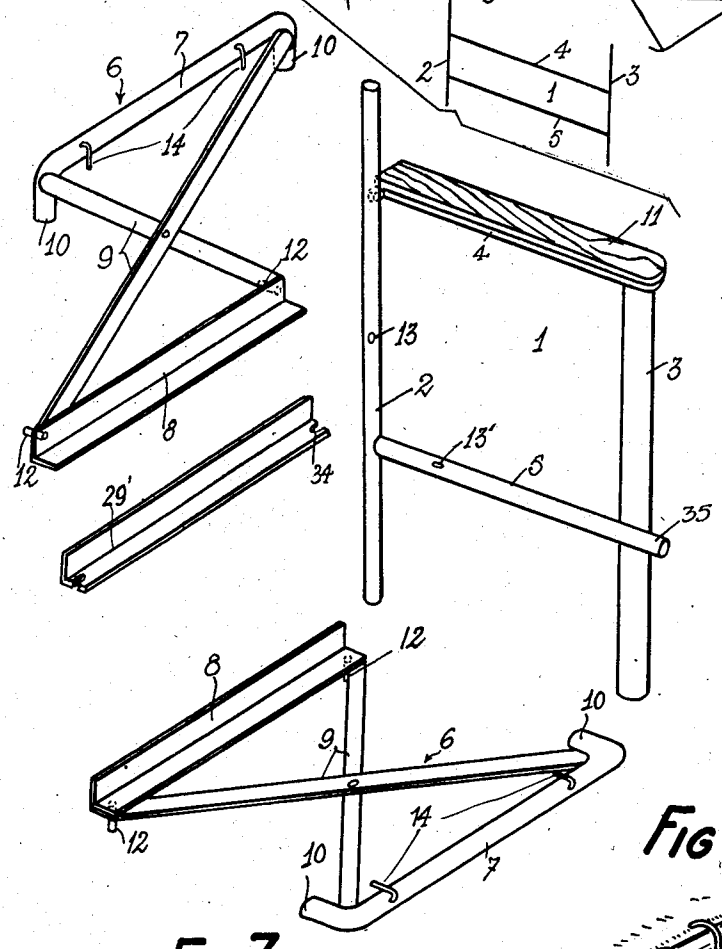


FIG 7

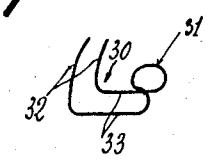
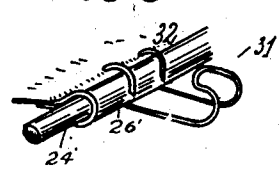


FIG 8



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July 7, 1953 H. SAINT-MAURICE 2,644,511

SECTIONAL ARTICLE OF FURNITURE

Filed May 6, 1948 3 Sheets-Sheet 2

FIG 1A

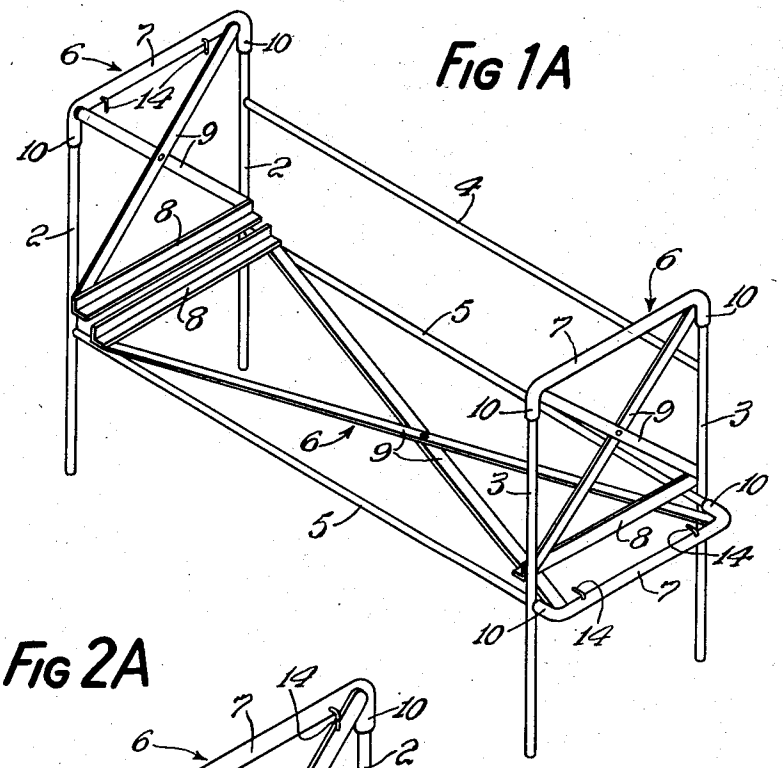
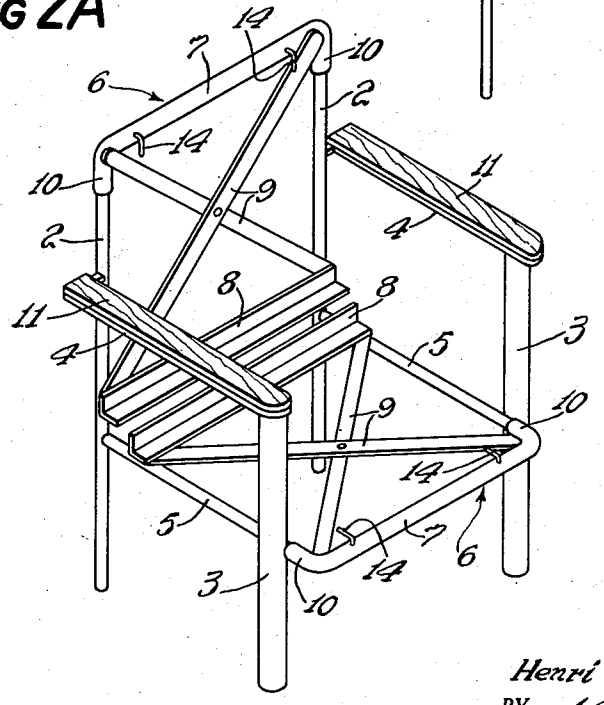


FIG 2A



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July 7, 1953 H. SAINT-MAURICE 2,644,511

SECTIONAL ARTICLE OF FURNITURE

Filed May 6, 1948 3 Sheets-Sheet 3

FIG4

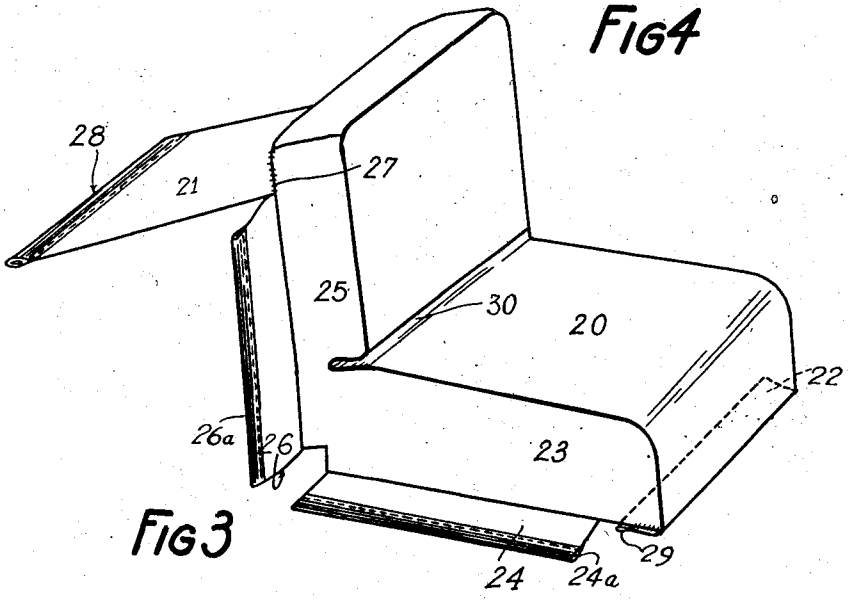


FIG3

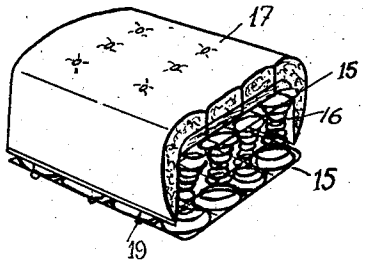


FIG6

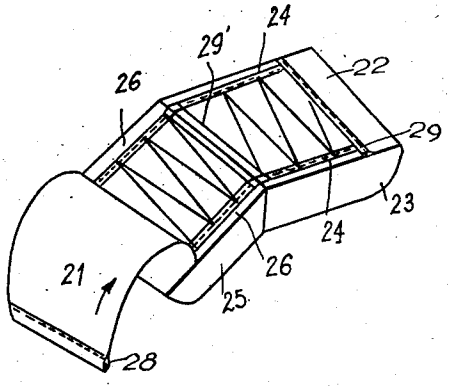
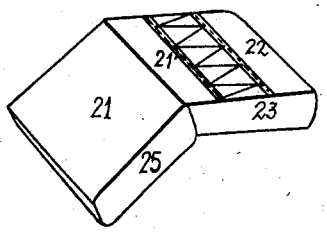


FIG 5



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UNITED STATES PATENT OFFICE

2,644,511

SECTIONAL ARTICLE OF FURNITURE

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In France June 27, 1947

9 Claims. (Cl. 155—194)

1

The present invention relates to collapsible articles of furniture and the individual sections forming these articles. Such sections may be employed for the manufacture of furniture items such as beds, divans, armchairs, etc. My invention employs two types of rigid frames which may be used in different quantities and assembled together without any connecting means such as screws, stretchers, or similar devices. Generally, the assembly will be a four-sided structure likely to be used as a supporting member for cushions, mattresses, etc. and a shaping member for the upholstery of the piece of furniture.

Various embodiments of the invention are shown in the accompanying drawings, by way of example only:

Fig. 1 shows diagrammatically the use of the sections according to my invention to form a divan;

Fig. 2 illustrates an embodiment using the same types of sections to form an armchair, the structure being shown only partially;

Figs. 1A and 2A illustrate the assembled articles with parts omitted in Fig. 1A for reasons of clearness;

Fig. 3 shows the method for making a cushion, part of the view being broken away for clearness;

Fig. 4 is an out-stretched view of the armchair upholstery;

Figs. 5 and 6 are views showing the various phases whereby the cover is stretched by lacing over the cushion-stuffed armchair; and

Figs. 7 and 8 show the hooks used for lacing the edges of the armchair.

As disclosed hereinabove, the invention has for its object a self-contained four-sided metallic structure to form a superstructure on four feet and made from different sections or basic elements.

1. One of these elements generally designated 1 is comprised of two uprights 2, 3 to which are welded two cross members 4, 5 thus resulting in a rigid frame which will constitute one of the sides (or two opposite sides) of the structure.

2. The other element designated 6, which will be arranged at right angles with respect to the former, comprises two parallel rods 7, 8 interconnected by means of two cross members 9 forming an X. The rod 7 is a tube having both ends inwardly bent at 90°. The rod 8 is an angle iron while both cross members 9 are flat. The frame 6 may be disposed vertically and/or horizontally so as to assemble two members 1 to obtain a four-sided framework resting on the lower ends of the uprights 2, 3 of the members 1.

2

The following description will show how the basic elements according to my invention may be assembled to form, for instance, an armchair without employing any such assembling means as screws, keys, stretchers.

In the member 1, the rear post 2 is longer than the front post 3. A horizontal lower tubular member 5 is welded endwise to the post 2 and sidewise against the post 3 wherefrom it extends outwardly. To the upper end of the front post is secured a horizontal metallic plate 4 welded at its other end on one side to the post 2. This horizontal plate 4 carries the arm-rest 11 which may be lined or not.

The assembly of the sections or frames which will result in the final armchair framework takes place as follows:

An element 1 is held vertically and an element 6 is assembled thereto at right angles. To this end a downwardly bent end 10 of the tubular member 7 receives the upper end of the post 2. At the same time a stud 12 on the corresponding end of the angle iron 8 of the element 6 enters a hole 13 suitably provided in the post 2.

Hooks 14 are provided on the tubular member 7.

A similar operation will make it possible to assemble another element 1 on the free side of the element 6.

In order to give the required stiffness to the structure so far obtained, it is necessary to arrange another element 6 between the elements 1. The former will be disposed horizontally so that the bent ends 10 of its tubular member 7 receive the protruding ends 35 of the lower tubes 5 of the elements 1. Studs 12 of the angle iron 8 enter holes 13' provided in the tubular members 5.

Thus, an armchair structure as shown in Fig. 2A is obtained wherein the back and seat each are confined on one side by an angle iron 8.

A cushion is now placed against the back and on top of the seat, respectively, which is similar to automobile seats and the basic structure of which comprises two metallic frames 15 and springs 16 arranged between and secured to the frames 15. These frames and springs are covered by a lining the edge of which is provided with hooks 19 to be fastened to one of the frames 15. Layers of vegetable fibres and padding and another lining are used to complete the cushions.

For instance, the cushion to be used as the seat cushion is put in place by moving same edgewise and obliquely, while the person doing this stands behind the back of the armchair, toward the front of the chair so that the forward portion of the cushion becomes engaged under the hooks

14 of the tube 7 of the horizontal section or element 6. Then, the cushion is moved angularly around its forward edge until the rear portion will rest on the horizontal flange of the angle iron 8 of the horizontal element 6. The seat cushion will, thus, be firmly held in place. The back cushion is similarly brought in place. First, its forward portion is engaged by the hooks 14 of the vertical element 6, while the person stands in front of the chair, and then the rear or lower portion is moved along the top of the seat cushion already in position until it rests upon the horizontal flange of the respective angle iron 8.

The last setting up operation consists in lining the armchair thus obtained. This is effected by using a lining made in the following way (Fig. 4). A piece of material 20 the width of which is equal to that of the cushions is chosen with a length sufficient to cover the adjacent sides of the back and seat cushions as well as the outer side 21 of the armchair back and to form, further, two border strips 21', 22 which will be contiguous with the bottom face of the seat cushion (see Fig. 5). The length of this piece of material must be also chosen so as to allow (as will be seen presently) the introduction of a given portion thereof between the adjacent sides of the back and seat cushions in order to form a bellows 30. Along the sides of the piece of material 20 are sewn on:

1. two skirts of material 23 which will cover the side faces of the seat cushion and form thereunder continuation folding-in skirts 24;

2. two skirts 25 which will cover the side faces of the back cushion and form folding-in skirts 26 behind the back of the armchair. It will be noted that the skirts 26 have not the same length as the skirts 25 which will allow the sewing thereto of portions of the corresponding edges 27 of the piece 20. Through this assembly, a kind of parallelipipedic strap is obtained which will be placed upon the back cushion. Then, the sides of the upwardly turned skirt 22 are sewn to the corresponding edges of the skirts 23. In this way, at each end of the lining pockets will be obtained which, after being positioned over the seats will keep this lining stretched.

To cover the armchair, the lining is laid over the armchair and the extreme pockets obtained as described hereinabove are fitted over the corresponding portions of the back and seat cushions. Thus, its material is stretched over the two cushions while pushing back the material manually between the adjacent edges of said cushions, thus forming a bellows 30.

Thereafter, beads are introduced into the hems 28, 29 formed along the widths of the piece of material 20 as well as into the hems 24a, 25a of the side panels 24 and 26. In fact, these beads will serve to stiffen the cover edges which will be connected by lacing; the lace used therefor will pass through fasteners (eyelets, hooks or the like) carried by said edges.

To this end, the hook system shown in Figs. 7 and 8 may be used, for instance. This hook 30 is hairpin shaped while portion 31 connecting the two arms 32 is bent or rolled by 180° so as to form a cylindrical hook. The opposite ends of said arms 32 are bent at 90° with respect to the body 33 thereof and are slightly cambered. To position these hooks 30, the ends 32 of the hairpin branches are sunk into the lining material rearwardly of the stiffening beads 24', 26', the hook arms 33 resting on a horizontal surface and the ends 32 being bent by pliers to grip

around the beads. Thus, the hook 30 is secured without any connecting means so that the actual hook 31 will extend from the beads 24', 26' outwardly.

Before the lacing is carried out, an angle iron 29' (see Fig. 2) will be positioned between the uprights 2 on the one hand and between the elements 6 on the other hand, in order to stretch the material covering the back of the armchair.

The horizontal flange of the angle 29' is provided with notches 34 to receive the uprights 2. The vertical flange of the angle 29' will thus lie behind the uprights 2 and beneath the horizontal tubes 5.

Then the lacing operation will begin with the panels 26 and continue with the panels 24. The lace is then used to connect the edges 28, 29 of the width which lacing is carried out at right angles with respect to the first. The free end of the latter is fastened by any suitable clamping or securing means.

Thus, without using any tool, an armchair structure is obtained together with its spring fittings and outer lining.

It is obvious that the above-described means regarding the construction of an armchair are applicable with very simple constructional alteration, to the manufacture of different pieces of furniture, the framework of which may be obtained by the same method. Fig. 1A, for instance, shows a divan structure assembled from the elements shown in Fig. 1, the cross members 4 and 5 of the elements 1 being however, omitted for purposes of clearness.

What I claim is:

1. In a sectional article of furniture, two identical sections of each of two types of substantially flat sections, one of said types including two vertical posts and a horizontal cross member disposed between said posts and projecting beyond one of said posts, the other type including a tubular member having its end portions bent inwardly at right angles, the bent portions of a section of the latter type each receiving in the assembled condition the upper end portion of a post of a section of the former type, and the bent portions of the other section of the latter type each receiving a portion of the projection of the cross member of one of said sections of the former type.

2. In a sectional chair, two identical sections of each of two types of sections, the sections of one of said types forming the sides, each including two vertical posts and a horizontal cross member disposed between said posts, one of the posts serving as a front post, the other post being a rear post, said cross member projecting beyond the front post, the sections of the other type forming the seat and the back, each including a tubular member having its end portions bent inwardly at right angles, the bent portions of the back-forming section each receiving in the assembled condition the upper end portion of a rear post of a side-forming section, and the bent portions of the seat-forming section each receiving a portion of the projection of the cross member of a side-forming section.

3. In a sectional article of furniture, two identical sections of each of two types of sections, each section of one of said types comprising two vertical posts and two cross members secured to and extending between said posts, one of said cross members projecting beyond one of the posts, each section of the other type comprising a tubular member, an angle iron, and two bracing

members to connect the tubular member and angle iron, each tubular member having its end portions bent inwardly at right angles, the bent portions of a vertically arranged section of the latter type each receiving in the assembled condition the upper end portion of a post of a section of the former type, and the bent portions of a horizontally arranged section of the latter type each receiving a portion of the projection of the cross member of one of said sections of the former type.

4. The article according to claim 3, wherein one of said posts of each section of the former type is provided with a hole and one of said cross members projects beyond the other post of the same section, each of the projecting cross members is provided with a hole, and each angle iron carries two studs, said holes and studs being arranged so that in the assembled condition the studs fit into the holes.

5. The article according to claim 3, wherein one of said posts of each section of the former type is provided with a hole and one of said cross members projects beyond the other post of the same section, each of the projecting cross members is provided with a hole, each angle iron carries two studs, and each tubular member is provided with at least one hook, said holes and studs being arranged so that in the assembled condition the studs fit into the holes, the angle irons and hooks being arranged to hold cushions in place.

6. In a sectional chair equipped with back and seat cushions, two identical sections of each of two types of sections, the sections of one of said types forming the sides, each comprising two vertical posts and two cross members secured to and extending one above the other between said posts, one of the posts serving as a front post and forming a front leg, the other post being a rear post and forming a rear leg, each rear post being longer than the front post and being provided with a hole, the lower one of said cross members being provided with a hole and projecting beyond the front post, the sections of the other type forming the seat and the back, each comprising a tubular member and an angle iron, the tubular member and angle iron being arranged in parallel relationship and being connected by two crosswise extending bracing members, each tubular member having its end portions bent inwardly at right angles and being provided with hooks, each angle iron carrying two studs, the bent portions of the tubular member of the back-forming section each receiving in the assembled condition the upper end portion of the rear post of a side-forming section, the holes in the rear posts thereby receiving the studs pertaining to the back-forming section, the bent portions of the tubular member of the seat-forming section each receiving a portion of the projection of the lower cross member of a side-forming section, the holes in the lower cross members thereby receiving the studs pertaining to the seat-forming section, the angle irons and hooks holding the cushions in place.

7. In the sectional chair according to claim 6, the combination of two identical sections of each of said two types of sections, two identical frame-supported cushions, and a piece of fabric, the frames of said cushions fitting the seat-forming and back-forming sections and being removably secured in place solely by said angle irons and hooks, said piece of fabric detachably enclosing the cushions and portions of said chair.

8. In the sectional chair according to claim 6, the combination of two identical sections of each of said two types of sections, two identical frame-supported cushions, and a piece of fabric, the frames of said cushions fitting the seat-forming and back-forming sections and being removably secured in place solely by said angle irons and hooks, said piece of fabric covering the outer and side faces of the cushions and including marginal skirts to partially cover the bottom face of the seat-forming section and the rear face of the back-forming section, the edges of the fabric being drawn together by laces.

9. In a sectional article of furniture, two identical sections of each of two types of sections, each section of one of said types comprising two vertical posts, each section of the other type comprising a tubular member, an angle iron, and two bracing members to connect the tubular member and angle iron, each tubular member having its end portions bent inwardly at right angles, each bent portion of each section of the latter type receiving in the assembled condition the upper end portion of a post of a section of the former type, the two sections of the latter type being vertically and parallel arranged, both sections of the former type being likewise vertically and parallel arranged, and an additional section horizontally supported by the horizontal legs of the angle irons of the two sections of the latter type.

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