My invention relates to an adjustable type of upholstery template in that it provides an adjustable form device for cutting materials and such like for cushions. My invention does not relate to a structure used in building up the material of the cushion but to obtain the correct outline for the cushion material and taking this outline from the actual piece of furniture on which the cushion is to fit.

In upholstery work whether this is made in a factory on a mass production basis or by the individual upholsterer such as is engaged in the repair trade, it is preferable to employ some type of a form or template from which the goods may be cut. Presuming a chair is to have a cushion, my rectangular body block may be adjusted for the two end cushions and then have the intermediate cushions, the sides being adjustable to the shape desired.

An object and feature of my invention is in the template or cushion form employing a relatively rigid centering or body block. This form the support for adjustable sides, front and back, which may be thrust outwardly different distances from the body block and clamped in the correct position. A further characteristic is that the main, side, back and front panels are to a certain extent flexible in order to provide for a curvature at the edge of the cushion. These may be arranged to form convex curves outwardly or concave or a reverse convex and concave curve. My invention also contemplates corner extension strips operating in conjunction with the panels so that these extension strips may be thrust outwardly from their individual panels to meet at a corner, depending upon the variation and size and shape of the cushion to be made. Further details of my invention relate to the manner of slidably mounting the extension panels and in forming the end or connecting strips at the corners. A further feature of my invention relates to forming the panels with a channel-like guide and in having the extension strips slidably mounted in such guide of the panels.

Considered in more detail a characteristic and feature of my invention consists of a flat preferably body block provided with a series of front to rear guide tubes or grooves and transverse guide tubes or grooves. Slidably mounted on the tubes or the grooves there are adjusting rods, these rods extend outwardly beyond the peripheral edge of the body and have the contour panels attached thereto in a loose manner, this being preferably by an upturned finger-like structure on the outer end of each rod so that when the rods are thrust inwardly the contour panels are positioned in close continuity to the sides of the body block. Clamping bolts with clamps extend vertically through the body block and are provided with a detent or keeper end to engage each of the extension rods and clamp or lock these in their adjusted position with the contour panels flexed to the proper shape according to the particular cushion to be made. In order to permit this flexing of the contour panels there is preferably a loose connection between the fingers of the rods and the back of the panels. A further characteristic of my invention is that the guide structure of the panels is made with outward folds having a reverse bend at the upper and lower edges of the panels. These folded edges are notched to facilitate flexing. The extension strips are then slidably mounted in the channel structures. A further detail feature includes locking corner pieces which have an interlocking connection with two adjacent extension strips and thus retain these strips at the corners of the cushion.

In view of the fact that the cushion form having the characteristics of adjustability to develop the outline for cushions of chairs, davenports and the like, it is equally obvious that the adjustable form when set for a particular cushion may be used as a guide structure in upholstering a chair such as the inside back and inside arms of the chair. It may also be used on the inside arms and inside back of a davenport or similar long piece of furniture. An advantage of using my form for this purpose is that it is considerably greater in thickness, that is, vertical height than a cut template and hence more nearly represents the thickness of the upholstery within which the cushion is to fit.

My invention is illustrated in connection with the accompanying drawings, in which:

Fig. 1 is a plan in the direction of the arrow 1, of Fig. 2, however with the side panels and extension strips extended.

Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1 in the direction of the arrows showing the side panels in the collapsed position.

Fig. 3 is a side elevation taken in the direction of the arrow 3 of Fig. 1 showing a portion of the
The flexible side panel and the telescopic extension strip.

Fig. 4 is an enlarged partial elevation taken in the direction of the arrow 4 of Fig. 1 showing the retaining pocket in the back of a panel to receive the adjusting fingers of the adjusting rods.

Fig. 5 is a vertical section taken substantially on the line 5 of Fig. 1 showing the spring latching lever clip for operating the locking bolts to engage the adjusting rods.

Fig. 6 is an elevation showing a form of lever clip operating the locking bolts.

Fig. 7 is a plan of another form of latch for the locking bolts taken in the direction of the arrow 7 of Fig. 6.

Fig. 8 is a side elevation of the latch of Fig. 7.

Fig. 9 is a plan of the pocket taken in the direction of the arrow 9 of Fig. 4.

Referring first to the main details of Figs. 1 through 5, I employ a block 11. This is illustrated as made in the main of a wooden board or the equivalent, rectangular as to plan having a front edge 12, a rear edge 13 and two side edges 14 and 15. On the bottom of the board there are a series of transverse deep grooves 16 extending from side to side back to back, and a series of front to rear shallow grooves 17 and 18. These grooves are slightly offset one from the other depending of course on the size of the block, that is, the distance between the front and rear edges 12 and 13 and likewise if necessary the grooves 16 may be offset laterally where it is necessary to have long extension rods hereunder described. Fitted in each of the grooves there is a guide tube 19, note particularly Fig. 5, held in place by staples or the like at the top of the respective groove and each tube to form a guide for an extension rod has one or more cut-outs or openings 20 for the locking purpose hereunder detailed.

Slidably mounted in each of the tubes are a series of extension rods, such rods being designated by the assembly numeral 25 and the rods extending laterally are designated by the numerals 26 and 27, referring to those which extend beyond the sides 14 and 15. The rods extending beyond the front edge 12 are designated 28 and those extending beyond the rear edge 13 by the numeral 29. Each of these rods preferably has a serrated lower edge 30, note Fig. 5, for the purpose of obtaining an accurate locking.

The locking arrangement designated as the locking assembly 35 includes vertical perforations 36 in the body block. Each perforation has a large recess 37 extending upwardly from the bottom of the block, note Fig. 6. For each rod there is at least one bolt 38 extending downwardly through the perforation 36. The bolt has a lateral detent or keeper end 39, this being shown as formed with longitudinal teeth or serrations 40 to engage the serrations 30 on the rods. The upper part of the bolt is provided with screw threads 41 on which is threaded a lower nut 42, this being preferably arched or domed on its lower surface indicated 43. Also there is a lock nut 44.

With this construction I employ a spring latching clip designated 50 in the details shown in Fig. 7. The clip may have an upturned finger grip end 52, a portion in the strap is formed with an S or reverse curve 53, this having a slot 54. The upper end of the S curved portion has a horizontal end strip 55 engaging the dome surface 43 of the nut 42. The bolt thus extends downwardly through the slot 54 in the S shaped section of the strap-like clip. When this clip is in the position shown in Fig. 5, the bolt is pressed upwardly due to the spring pressure of the S shaped portion of the clip and thus the keeper 39 is brought into engagement with the serrations 30 of an extension rod. When it is desired to loosen the locking grip the clip may be tilted to the dotted line position shown in Fig. 5.

The contour panels designated by the assembly numeral 59 include a front panel 61, rear panel 62 and two side panels 63 and 64. Each of these panels is made of sheet metal having a vertical web 66, reverse bends or folds 67 and 68 at the bottom and top and upwardly and downwardly turned rims 69 and 70. These rims have spaced notches 71 shown as V shaped. By this construction there are thus formed channel guides on the outside of the web of each contour panel and in each guide channel designated by the assembly numeral 72, there are two extension strips 73. Each strip is preferably formed of sheet metal of a flexible nature and they are inserted from opposite ends of the channel guides. Each strip has a reverse end hook 74 outwardly bent so that the hooks of adjacent corner extension strips may touch or be in close proximity. They are then held in place by a locking corner piece 75 (note Fig. 1). Each corner piece has a vertical web 76 with two turned hook-like edges 77 engaging the hooks 74 of the extension strips. These locking corner pieces are inserted vertically and may be removed by the same motion.

A pocket engagement 80 of the extension rods and the contour panels is constructed somewhat as follows, note particularly Figs. 1, 2 and 4. On the back of each panel, that is, attached to the web 66, there are a series of vertical tubular pockets 81. These are formed by preferably metallic strips 82 secured at their vertical edges to the back of the web. They may be somewhat rectangular or curved to form vertical spaces 83. It is through these spaces that the finger end 84 of each of the extension rods extend vertically. Some of these pockets are made larger than the others considered lengthwise of the contour panels to allow for a flexing movement as hereunder detailed and in such pockets there is formed a horizontal slot 85 through which may be extended the locking horizontally bent end 86 of the upwardly extending fingers. In making the assembly the finger with the bent locking end is inserted upwardly through the bottom of a pocket, the end 86 being parallel to the web of a contour panel, then the rod with the finger 84 is turned at right angles so that the locking end 86 extends inwardly substantially at right angles to the contour panel. The extension rod may then be fitted in the guide tube or groove of the body block.

As above mentioned the pockets engaging the fingers 84 of the extension rods are made of different sizes, note a small sized pocket 90 and 91 is at the center of the front and rear panels 61 and 62 as this forms a center of flexing and on 65 each side the pockets 92 and 93 are elongated to permit a slight movement of the fingers in the pockets. In the side panels 63 and 64 there are small pockets 94 and 95, these being preferably offset one from the other and large pockets 96. There should always be a large pocket adjacent the end of each panel. It is to be noted however that the rods are to a certain extent flexible to allow bending so that the contour panels may be properly flexed. If desired 97...
In the manner of using my invention as above described, in the normal operation the contour panels with the extension rods are pressed inwardly so that they are in close proximity to the edges of the body block as shown in Fig. 2. At this time the extension strips 73 are thrust inwardly in their guide channels formed on the contour panels, the locking corner pieces 75 are preferably in place connecting adjacent extension strips. To fit the device for instance to a chair or a construction for which a cushion is to be made, the corner pieces 75 are preferably removed, the front, side and rear contour panels are pulled away from the block, the spring clips 89 having been loosened. This pulls the extension rods outwardly from their guide grooves or tubes, the panels are flexed together the desired contour of the sides, front and back of the cushion. Usually the side panels are symmetrical as to the body block but not necessarily so.

The locking rods are then preferably locked using the locking clip 50 operating on the locking bolt 39 causing its keeper 39 to engage the underside of each extension rod. The extension strips 73 are then pulled outwardly and are flexed or pulled out straight according to the shape of the corners of the cushion to be made and when in proper position the corner locking elements 75 are interlocked with the locking ends 74 of each extension strip, thus causing the contour panels with the extension strips together with the locking corner pieces to form an outline of the cushion for which the material is to be cut. It is to be noted that the whole operation is carried out with the device fitted or used in connection with an article of furniture such as a chair, davenport or the like. As above mentioned the small pockets such as 90 and 91 retain the portion of the contour panels to which they are connected substantially in alignment with the guide tubes 19 or the various guide grooves of the block but the larger pockets indicated for instance at 49 permit a certain looseness so that the contour panels may be readily flexed without bending the extension rods, however, when these rods are pulled outwardly from the body a considerable distance they will flex to a limited extent. The ready flexing of the contour panels is obtained by providing the notches such as 71. These cut away a sufficient amount of the upwardly and down-turned flanges or rims such as 70 so that the main flexing is in the web 66 and the upper and lower edge portions of the guide channels for the extension strips may follow the contour of the webs of each contour panel. As above mentioned the contour panels may be parallel to the side edges of the body block. They may have a convex curve considering the contour panel. They can be bent to the concave curve or a reverse curve including both concave and convex portions. Thus the extension panels may be shaped or flexed to include many shapes for the edge of a cushion to be made from material cut with the aid of my template or cushion form.

In Fig. 6 I illustrate a modification of the locking bolt and clip assembly. In this case the bolt with the keeper end is the same as shown in Figs. 4 and 5. In this case however the lower nut 105 is preferably flat and is engaged by a swivel plate or disc 106 having diametrically opposite stub shafts 101. The locking clip 110 has a flat strip 111, an upturned finger-grip end 112 and two spaced ears 113. These ears are provided with a perforation journal for the stub shaft 76. The ears have a rounded edge 114 facilitating tilting upwardly. The locking bolt 38 is in its raised or locking position when the clip 110 is in the position shown in full lines in Fig. 6 and is loosened when this clip is tilted upwardly as shown in dotted lines. It will be understood that a number of other types of clips can be used to lock and tighten the locking bolts in relation to the extension strips. For convenience of handling the device I may have one or more handles 115 secured to the top of the body block 11.

In Figs. 7 and 8 I illustrate another type of latch. This employs a wedging disk 120, this having prongs to engage in the wood block. Such disk has opposite raised or cam surfaces 121 with peripheral top surfaces 122 between the sides of the raised or cam sections. A lever bar 123 has a perforation through which extends the bolt 38, such bolts having nuts and if desired lock nuts engaging the upper surface of the lever bar. This lever bar is preferably rounded on the lower edge. Therefore when occupying the position shown in Fig. 7 with the lever bar resting on the depressed surface 122, the locking bolt is in its lowered position with the keeper end 39 loosened from the extension rod but when turned into the dotted line position of Fig. 7 with the lever bar raised by the cam 121, the keeper is brought into locking relation with the extension rod.

Various changes may be made in the details of the construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. In a device as described the combination of a substantial body block having opposite sides, a front and a rear edge, rectilinear guide structures in the block, an extension rod slidably mounted in each guide structure to have a straight line extending motion in relation to the sides, front or rear edges, a contour panel for each of the edges, each panel having a slightly loose connection to two or more extension rods, each panel being flexible considered from end to end for bending in concave or convex curvatures to conform to the sides, front and rear of a cushion or the like, each panel being resilient to regain its original shape when said rods are retracted.

2. In a device as described and claimed in claim 1, a locking means for the extension rods including a bolt for each rod adjustable at substantially right angles to the rod and having a keeper to engage the rod and a latching clip to operate the bolt.

3. In a device as described and claimed in claim 1, each contour panel including a vertical web with up and downturned rims at the lower and upper edge respectively, said rims facing outwardly and forming with the web a guide channel, the said rims having cut-out portions to facilitate flexing of the panel, a pair of extension strips slidably mounted in the channel of each panel to extend beyond the end thereof towards a corner of a cushion and means to lock the ends of adjacent extension strips to define a cushion corner.

4. In a device as described and claimed in claim 1, each contour panel having a channel-
Like guide, a pair of extension strips slidably mounted in said guide, each strip at its end having a hook for locking corner piece having a pair of complementary hooks to engage the hooks of two adjacent extension strips and define a cushion corner, the extension strips being flexible considered longitudinally.

5. In a device as described and claimed in claim 1, the connection between the rods and the contour panels including a pocket structure at right angles to the length of the panel, one or more of the pockets for each panel having a transverse slot, an extension rod having an up-turned finger fitting in the pocket and a bent end to extend through the said slot and thereby attach the panel to the rod whereby the block with the panels and rods may be inverted.

6. In a device as described, the combination of a substantial body block having an edge, a guide means therein, three or more extension rods each slidably mounted in a guide means, a contour panel, a somewhat loose connection between the outer end of each rod and the back of the panel, the panel having a channel-like guide with one or more extension strips mounted therein for extending beyond the ends of the panel, and the guide thereof for a construction and characteristics for flexing from end to end whereby the connections of the extension rods to the panel form points of flexing and for retaining the panel in its flexed position, the extension strip or strips likewise being flexible and adapted to continue the curve of the portion of the panel.

7. In a device as described, a contour panel having a vertical web with upper and lower rims turned towards each other and forming a guide structure on one side of the web, an extension strip slidably mounted in the said guide, the said rims having notched or cut-out portions facilitating flexing of the web and the rims between the ends of the panel, the extension strip being flexible and adapted to continue in approximately the same curve as the end portion of a panel.

8. In a device as described, a substantial body block having a guide means therein, an extension rod slidably mounted therein, a perforation in the block from its upper surface positioned to intersect the location of a portion of the rod, a locking bolt vertically movable in the perforation and having a keeper at the bottom to engage the rod, a latching clip having a strap portion with a finger grip end, a slotted portion having an S shaped curvature, the bolt extending through said slot and a nut on the bolt engaged by the upper portion of the S shaped end part of the latching clip, the said clip being adapted to tilt relative to the bolt and to the upper surface of said block.

9. In a device as described, a substantial body block having a guide tube therein with an opening in one side, an extension rod slidably mounted in the tube and having a contour panel secured to the outer end of a rod, the block having a perforation, a locking bolt slidably mounted in said perforation, said bolt having a keeper end fitting in the opening of the tube and engaging the rod, a nut on the bolt positioned above the upper surface of the body block and a latching clip having a pivotal mounting in reference to the bolt, the nut and the body block to elevate the bolt to engage the detent with the rod.

10. In a device as described, the combination of a body block having an edge, one or more extension rods slidably mounted in the body block, each rod having an upturned finger and at least one of the rods having an end on the finger bent in a plane parallel to the rod, a contour panel having a vertical pocket formed on its inner side and having a transverse slot, the pocket being adapted to engage the finger of the rod and the slot to form an opening for the projection of the bent end of the finger whereby the body block with the contour panels may be inverted, the bent end of the finger securing the panel to the rod.

11. In a device as described, a body structure, a plurality of contour panels slidably mounted thereon whereby the panels may be positioned to define the outline of a cushion or the like and means interconnecting the body structure and panels to retain the panels in their adjusted position, each contour panel having an extension strip slidably mounted thereon, the extension strips of the panels on two contiguous sides of the body block being extendable to meet at a corner to define the corner of a cushion.

12. In a device as described, a substantial body block having at least three adjacent sides and a contour panel adjacent and on the outside of each of the sides, slidable connecting rods between each panel and the block and pivotally connected to each panel for positioning the panel contiguous to or remote from its adjacent side, each panel being resilient and being flexible from end to end whereby such panels may be flexed to concave or convex curves considered longitudinally of a side and such curves being between the pivotal connection of adjacent rods, the panels regaining their original shape on retraction of the rods, each panel having an extension strip slidably longitudinally beyond its end, such extension strip being flexible and curving approximately to the curve adjacent the end of the panel.

13. In a device as described, the combination of a substantial body block having at least three sides, a resilient and flexible contour panel for each side, a plurality of rods slidably adjustable in the body block and each having a pivotal connection to a panel whereby the panels may be positioned each contiguous to its adjacent side or remote therefrom on extension of the rods, extension strips slidably mounted thereon or more of the panels whereby such strips may be extended beyond the panels to bring the ends of the strips on adjacent panels in close contiguity.

14. In a device as described and claimed in claim 13, means to interconnect the adjacent ends of the extension strips.

15. In a device as described and claimed in claim 13, the extension strips being flexible whereby the panels may be flexed to form convex or concave curves considered longitudinally and the extensions form a continuation of the portion of the curve adjacent the end of each panel.

16. In a device as described, the combination of a substantial body block having sides and ends, resilient contour panels, means interconnecting the body blocks and panels forming a sliding mounting for each contour panel in relation to a side or end of the body block, each contour panel being flexible in concave or convex curves considered longitudinally of each panel, each contour panel having a guide structure, an extension strip slidably mounted therein extendible beyond the end of its panel, an attachable and detachable corner locking means engaging adjacent extension strips of the panels on adjacent sides of the body block whereby the
contour panels may conform to the sides and ends of a cushion and the extension strips and the corner locking means to the corners of the cushion.

17. In a device as described, the combination of a substantial body block having opposite sides, a front and a rear edge, extension rods slidably mounted in the block and extensible outwardly from each of the sides, the front and the rear edge, a contour panel having an attachment to the outer portions of the extension rods for each of the sides, front and rear of the body block, each contour panel having a construction and characteristic of resilient flexibility considered from end to end for bending in concave and convex curvatures between the attachments to the rods to conform to the sides, front and rear of a cushion or the like, each contour panel having a channel-like guide structure formed on its outer face, a pair of extension strips in each guide channel, said strips being flexible and extensible to define the corners of a cushion and means to lock the ends of the extension strips contiguous to each corner of the body block.

18. In a device as described, a body structure, a plurality of contour panels each of flexible and resilient material for flexing to concave and convex curves and to regain their original shape, adjusting means interconnecting the panels and the body structure whereby the panels may be contracted towards the body structure for compactness and extended therebeyond to define the outline of a cushion or the like, clamping devices or the body structure for the connecting means to the panels, the curvature of contiguous panels adjacent their ends being adapted to indicate a continuing line of the edge of the cushion or the like beyond the ends of the panel.

19. In a device as described, a body structure, a plurality of contour panels each of flexible and resilient material for flexing to concave and convex curves and to regain their original shape, adjusting means interconnecting the panels and the body structure whereby the panels may be contracted towards the body structure for compactness and extended therebeyond to define the outline of a cushion or the like, clamping devices or the body structure for the connecting means to the panels, the curvature of contiguous panels adjacent their ends being adapted to indicate a continuing line of the edge of the cushion or the like beyond the ends of the panel.

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