

[54] **DEVICE FOR FIXING A COVERING SHEET
INSIDE A DIHEDRON FORMED BY TWO
PERPENDICULAR SURFACES**

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[58] Field of Search 160/327, 328, 329,
160/391-397; 52/222, 288, 287, 273;
248/222; 24/243 K, 243 N, 246; 16/10-13

[56] **References Cited**

UNITED STATES PATENTS

548,901	10/1895	Welch.....	160/393
3,166,117	1/1965	Abadjieff	160/392
3,323,819	6/1967	Barker.....	160/395 X
3,371,702	3/1968	Keegan et al.	160/395 X

3,373,546	3/1968	Setnan	160/391 X
3,719,013	3/1973	Blick.....	160/395 X

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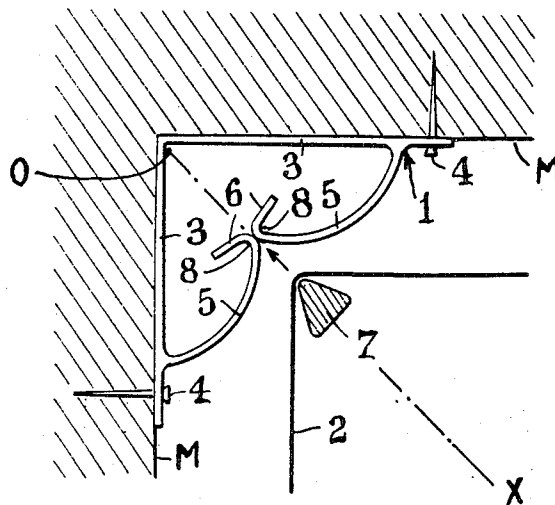
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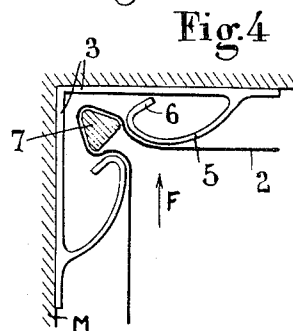
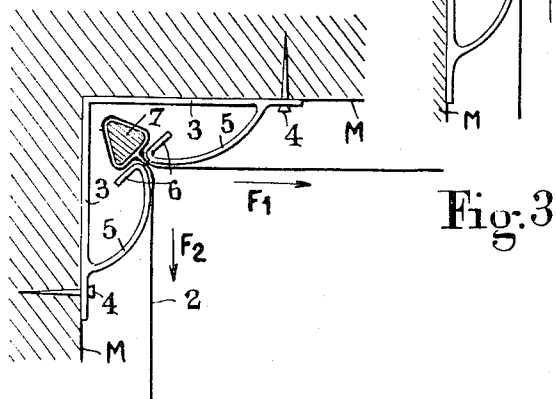
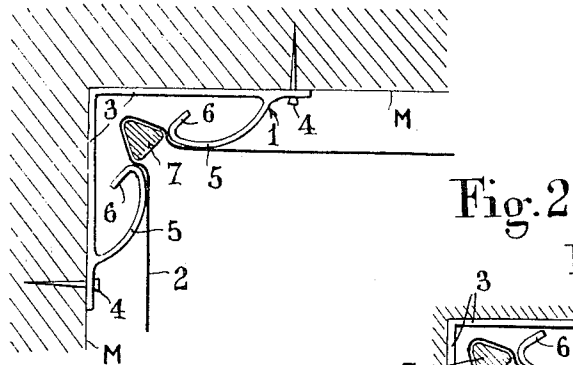
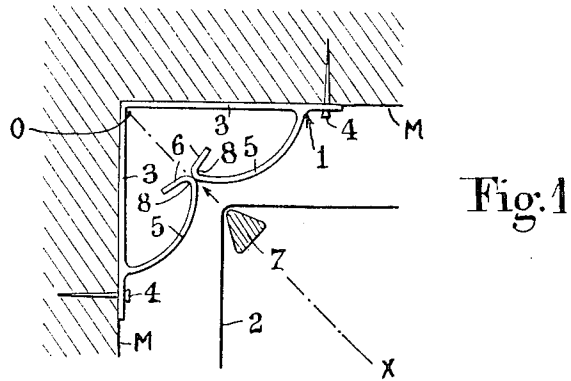
Attorney—Ernest G. Montague

[57] **ABSTRACT**

Device for fixing one or two covering sheets, such as hangings, inside a dihedron formed between two perpendicular surfaces, said device consisting of a section member comprising two wings extending at right angles to each other and adapted to be secured to the corresponding perpendicular surfaces, respectively. Said wings carry inside the angle or corner formed therebetween a pair of resilient blades projecting towards each other and having their ends curved or bent towards the apex of the angle formed by said wings, these wings contacting substantially each other in their inoperative or unstressed condition and carrying at their aforesaid ends in-turned lips extending substantially at right angles to the bisectrix of the angle formed between said wings, so as to constitute means for efficiently retaining an extra-thickness of material formed along the marginal portion of the covering sheet to be fixed in position.

6 Claims, 12 Drawing Figures





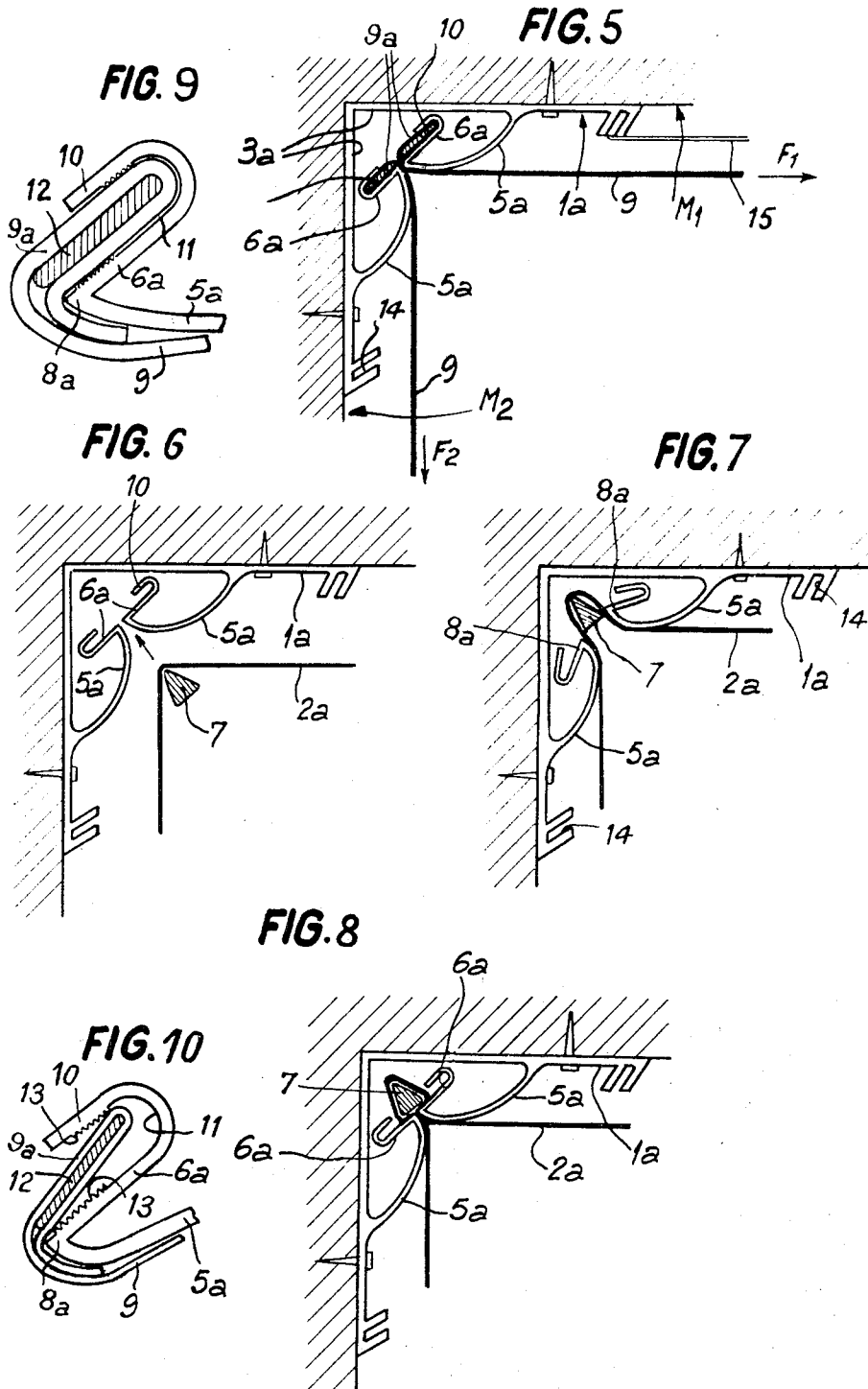


Fig. 11

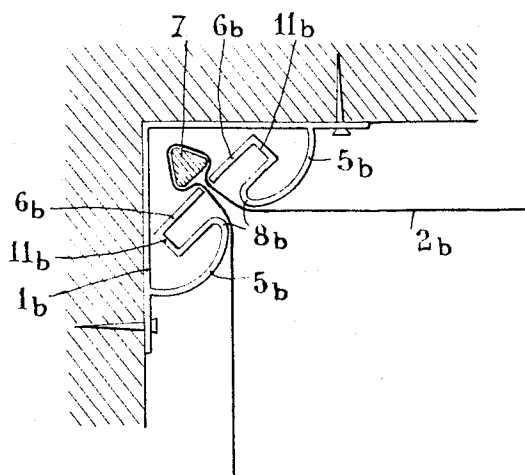
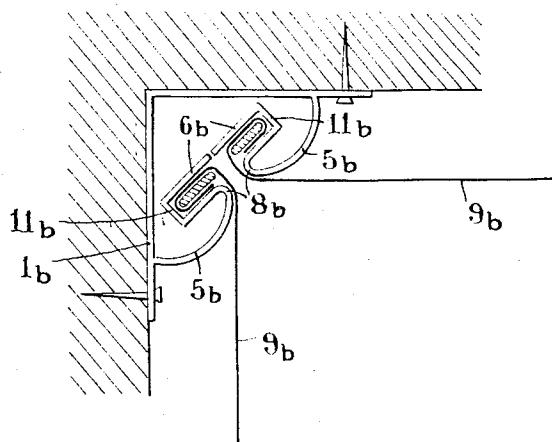


Fig. 12



DEVICE FOR FIXING A COVERING SHEET INSIDE A DIHEDRON FORMED BY TWO PERPENDICULAR SURFACES

The present invention relates to means for fixing a covering or lining sheet, such as hangings, inside a dihedron formed between two surfaces extending at right angles to each other, such as two adjacent walls of a same room.

As a rule, hangings, tapestries or other covering sheets of this character are fixed in the proper position along walls, partitions or like surfaces by using nails, points or staples driven into these surfaces. However, this operation is rather difficult inasmuch as the sheet must at the same time be properly stretched.

To avoid this difficulty, various devices have already been proposed in order to simplify considerably the simultaneous fixing and tensioning of hangings or the like. However, these known devices, although fully satisfactory, are relatively complicated and expensive.

It is therefore a primary object of the present invention to provide a device of particularly simple design, adapted to be used for fixing hangings or tapestries extending continuously in front of two surfaces disposed at right angles to each other, for example two adjacent walls of a same room.

To this end, this device consists of a section member comprising two wings extending at right angles to each other and adapted to be secured to the corresponding perpendicular surfaces, respectively, said wings carrying inside the angle or corner formed therebetween a pair of resilient blades projecting towards each other and having their ends curved or bent towards the apex of the angle formed by said wings, these wings contacting substantially each other in their inoperative or unstressed condition and carrying at their aforesaid ends in-turned lips extending substantially at right angles to the bisectrix of the angle formed by said wings, so as to constitute means for efficiently retaining an extra-thickness of material formed along the marginal portion of the covering sheet to be fixed in position.

This device is adapted, of course, to be secured beforehand inside the corner formed by the two perpendicular surfaces to be covered with the hangings or like material, for example by using any suitable means such as nails.

Then, the hangings proper are fixed by means of this device. To this end, it is adequate to first form in the corresponding marginal portion of the hangings a fold registering with the position of said device, and then providing means adapted to constitute an extra thickness, such as a small rod or any other similar element, within the fold thus formed. Then, it is only necessary to force fit this assembly between the two resilient blades of the fixing device. After this operation, the corresponding fold of the covering sheet or hangings is safely retained in position by the retaining lips carried by said pair of resilient blades.

However, other features and advantages of this device will appear as the following description of a few typical forms of embodiment thereof proceeds with reference to the attached drawings illustrating diagrammatically by way of example the basic principles of this invention. In the drawings:

FIG. 1 is a horizontal section showing the dihedron formed by two adjacent vertical walls and receiving the

fixing device of this invention, shown prior to its actual use;

FIGS. 2 and 3 are similar views showing the same device when fixing a hanging and after completing this fixing operation;

FIG. 4 is a similar view showing the voluntary removal of the hanging secured by means of this device;

FIG. 5 is a similar view illustrating another form of embodiment of the device of this invention, designed more particularly for fixing two separate sheets of material in a same corner;

FIGS. 6, 7 and 8 are similar sectional views showing the use of the same device for fixing a one-piece hanging;

FIGS. 9 and 10 are fragmentary sectional views showing on different scales two different forms of embodiment of the means for fixing the edges of a hanging in the device of FIG. 5; and

FIGS. 11 and 12 are views similar to FIG. 4 showing two different uses of another form of embodiment of the fixing device of this invention.

In the example illustrated in FIGS. 1 to 4 of the drawings the device of this invention comprises essentially a section member designated in general by the reference numeral 1. This section member is adapted to be fitted inside the dihedron formed by two perpendicular surfaces, such as two adjacent walls M of a same room, which are to be lined with a continuous sheet of covering or lining material 2, such as hangings.

This section member 1 comprises a pair of perpendicular wings 3 adapted to be fastened to said surfaces M, respectively, for example by means of nails 4, or through any other suitable means. The inner faces of these wings 3 carry a pair of resilient blades 5 projecting towards each other. The free ends of these blades are curved inwards of the angle formed by said wings 3, i.e. towards the apex O of this angle.

These two free ends are each bent to provide an elbow 8 forming a substantially acute angle and each end is thus completed by a lip 6 on the inner side, i.e. adjacent the apex O of the angle formed by said wings 3. In the inoperative or unstressed condition of the device, these elbows 8 of resilient blades 5 engage each other along a line substantially coincident with the plane OX of the bisectrix of the angle formed by said wings 3. As to the lips 6, they extend substantially at right angles to said bisectrix plane OX. Therefore, these two lips 6 can act as retaining elements to a sheet material engaged beyond the ends or elbows 8 of the pair of resilient blades 5.

Preferably, this section member is produced by extrusion from a suitable plastic material having both a suitable elasticity and a satisfactory strength. However, any other suitable material may be used for manufacturing these section members, for example metals or metal alloys.

In combination with this section member 1 the device comprises a rod 7 adapted to be inserted into the fold formed at this location by the hanging 2, in order to provide a zone of extra thickness therein. This rod may advantageously have a triangular cross-sectional contour. In this case, the rod 7 is disposed as shown in FIG. 1 so that one of its edges extends towards the channel formed between the pair of registering resilient blades 5.

With this relative arrangement, the rod 7 can easily be force fitted inbetween the pair of curved resilient

blades 5 so that these blades undergo a deformation towards the perpendicular wings 3, as illustrated in FIG. 2. When this rod 7 has been driven beyond the pair of retaining lips 6, the resilient blades 5 tend to resume their initial position, thus causing the bent elbows 8 to move towards each other. Under these conditions, the rod 7 is trapped behind the ends or elbows 8 of the pair of resilient blades 5 and the lips 6 thereof act as retaining or stop members the efficiency of which is improved by the fact that said lips 6 extend substantially at right angles to the bisecting plane OX.

Thus, any traction exerted on one or the other side of the hanging thus fixed in position cannot cause the folded portion thereof to be pulled out from the device of this invention. Much on the contrary, this traction will only accentuate the movement of the pair of resilient blades 5 towards each other, thus definitely precluding any untimely release of the rod 7 and of the corresponding fold thus formed in the hanging 2.

In this respect it will be seen that when the two perpendicular portions of said hanging 2 have been thus fixed in position, they are stretched in front of the corresponding walls M to be covered. Due to this stretching effect the tractive efforts exerted in the direction of the arrows F_1 and F_2 on the folded portion of the hangings and therefore on the rod 7 lying in this folded portion will only accentuate the clamping action exerted by the elbows 8 of the pair of resilient blades, thus precluding any untimely release of the folded portion of the hanging from the device.

It is therefore clear that this release can only be obtained through a voluntary action. To this end, the resilient blades 5 must be acted upon manually in order to force them backwards, i.e. towards the corresponding wings 3 of section member 1, to permit the release of the rod 7 and the hanging fold wrapped therearound from the device.

Of course, the pressure thus exerted on the pair of resilient blades 5 must be applied through the two corresponding portions of said hanging 2.

Besides, FIG. 4 illustrates by way of example the manner in which one of the resilient blades 5 must be deflected by pressing same in the direction of the arrow F through the corresponding portion of the hanging 2. Of course, the other resilient blade 5 must also be deflected in a similar manner to permit a complete release of the rod 7.

FIGS. 5 to 10 of the drawings illustrate another form of embodiment of the fixing device of this invention. The device illustrated therein is designed with a view to permit not only the fixing of a one-piece sheet or hangings as in the preceding example, but also of two separate sheets 9 extending on either side of the apex O of the corresponding dihedron and along the two walls M_1 and M_2 .

As in the preceding form of embodiment, the present device comprises a section member 1a consisting essentially of a pair of perpendicular wings 3a adapted to be secured to the corresponding walls M_1 and M_2 , respectively. On their inner sides these wings carry a pair of resilient blades 5a similar to the blades 5 of the preceding form of embodiment. The ends 8a of these blades are each bent inwards and completed by a bent portion 6a substantially perpendicular to the bisecting plane OX.

However, in this modified form of embodiment these two bent portions 6a comprise each a terminal lip 10

bent in the opposite direction in order to provide a pair of registering grooves 11. Each groove 11 is adapted to receive one edge of a separate covering sheet 9 to be fixed in front of the relevant wall M_1 or M_2 .

However, as shown in the drawings, the edge 9a of this sheet is preferably folded about a rod 12 or like element adapted to increase the thickness of the folded portion and therefore to ensure an efficient wedging thereof within the relevant channel 11. As in the preceding form of embodiment the angle of the elbow 8a formed by the end of each resilient blade 5a is an acute angle. The edge of each covering sheet 9 is thus caused to form by itself an acute angle at this location, thus ensuring the reliable locking thereof in said channel 11, even if the thickness of the covering sheet is not sufficient for filling this channel completely.

In fact, according to the thickness of the fabric or other material constituting the sheet 9, this channel 11 can be filled either completely (as shown in FIG. 9), or partially (as shown in FIG. 10). Preferably, teeth, ribs or striations 13 are formed on the inner surface of the channel 11 for assisting in retaining the folded marginal portion of the corresponding sheet 9.

Of course, the reinforcing rod 12 may have any suitable thickness, according to the specific application contemplated, in order to obtain an extra thickness filling as much as possible the channel 11. If desired, a rod coated with an adhesive substance may advantageously be used.

As mentioned in the foregoing, the device of this invention permits of fixing two separate sheets or hangings 9 to adjacent walls M_1 and M_2 extending at right angles to each other.

The edges of these hangings or sheets 9 cannot under any normal circumstances be released from the channels 11 of this device, for example in case the sheets were pulled in an attempt to release same from the device. In fact, such tractive efforts would be exerted in the direction of the arrows F_1 and F_2 against the marginal portions of the sheets and therefore against the rods 12. Under these conditions, these efforts would be transmitted to the resilient blades 5a, with the only result that the elbows 8a of these blades would be urged with a greater force towards each other. This causes a certain locking action to develop between the pair of resilient blades 5a, thus precluding any possibility of releasing the ends 9a of said sheets and also the corresponding rods 12.

However, the device illustrated in FIG. 5 may also be used for fixing in position a one-piece sheet or hanging 2a in the same manner as in the case of the arrangement shown in FIGS. 1 to 3. This mode of fixing a one-piece sheet is clearly apparent from FIGS. 6, 7 and 8 of the drawings.

As in the preceding example, an element adapted to increase locally the thickness of said sheet, for example a rod 7, must preferably be disposed inside the corresponding fold of the continuous hangings 2a (see FIG. 6). This fold is subsequently inserted together with its rod between the adjacent resilient blades 5a until this assembly lies beyond the pair of bent portions 6a formed at the ends of these blades (see FIGS. 7 and 8).

Under these conditions, these bent portions 6a act as abutment means and retain positively the folded portion of the hanging together with its rod 7a. Thus the hangings is safely fixed to the wall in the same manner as in the case illustrated in FIGS. 1 to 3.

Preferably, each wing 3a of the main section member 1a may comprise a groove or rabbet 14 permitting the easily fitting in position of a lining material 15 disposed behind each hanging or sheet 9, or behind each one of the two portions of a continuous sheet 2a.

FIGS. 11 and 12 illustrate a modified form of embodiment of the device illustrated in FIGS. 5 to 8. In this case, the corresponding rod 1b is also designed with a view to permit the fixing of either a continuous sheet 2b or two separate sheets 9b.

This modified structure differs from the preceding one only in that the bent terminal portions 6b adapted to act as retaining elements when fixing a single sheet are formed on the inner edges of the pair of resilient blades 5b carried by the pairs of wings of the device. Thus, the channels 11b adapted to receive the marginal portions or edges of the two separate sheets 9b are positioned between these bearing terminal portions 6b, on the one hand, and the adjacent elbows 8b, respectively, of the pair of resilient blades 5b.

However, this modification does not alter the mode of operation of the device. When fixing a single sheet 2b, the fold thereof is tucked together with a reinforcing flat-sectioned strip or rod 7 beyond the pair of terminal portions 6b so as to be retained thereby (see FIG. 11). When fixing a pair of separate sheets 9b, the end or marginal portion of each sheet is somewhat wound on a corresponding rod or strip 12 and the assembly is tucked into the corresponding channel 11b. Thus, in either case the sheet or sheets are perfectly fixed in position.

But, of course, the forms of embodiments described hereinabove and illustrated in the attached drawings should not be construed as limiting the scope of the invention, since many modifications and variations may be brought thereto without departing from the basic principles of the invention as set forth in the appended claims.

As already mentioned in the foregoing, this device is intended more particularly for fixing hangings in front of walls or partitions in a dwelling place. However, it is also adequate for fixing any other lining elements, such as carpets on the floor or a sheet material for covering a ceiling, etc.

What I claim as new is:

1. Device for fixing at least one covering sheet, inside a dihedron formed between two perpendicular sur-

faces, comprising a section member having two wings extending at right angles to each other and adapted to be secured to the corresponding perpendicular surfaces, respectively, a pair of resilient blades carried by said wings inside the angle or corner formed therebetween and projecting towards each other, the ends of said blades being curved toward the apex of the angle formed by said wings and contacting substantially each other in their unstressed condition, and in-turned lips carried by aforesaid ends and extending substantially at right angles to the bisectrix of the angle formed between said wings, whereby said lips constitute means for efficiently retaining an extra-thickness of material formed along the marginal portion of the covering sheet to be fixed in position.

2. Device according to claim 1, comprising in combination with said section member, a rod adapted to be inserted inside the corresponding fold of a sole covering sheet disposed in front of said surfaces, said rod being adapted to form an extra thickness efficiently retained by said bent lips of said pair of resilient blades.

3. Device according to claim 1 wherein said bent lips of said pair of resilient blades are followed by a marginal strip bent in the opposite direction and providing a channel, the pair of channels thus formed registering with each other and being each adapted to receive therein the edge of a separate sheet disposed in front of the surface to which the corresponding wing of the section member is secured.

4. Device according to claim 1, wherein the adjacent ends of said pair of resilient blades are bent firstly towards the corresponding wing of said section member, then in the opposite direction to provide a pair of retaining lips substantially perpendicular to the bisectrix of the angle formed by said wings, and at the same time a pair of channels registering with each other in face to face relationship, each channel being adapted to receive the edge of a sheet disposed in front of the surface to which the corresponding wing of the second member is secured.

5. Device according to claim 3, wherein striations are formed of the inner walls of the channels formed by the ends of said resilient blades.

6. Device according to claim 4, wherein striations are formed on the inner walls of the channels formed by the ends of said resilient blades.

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