

Jan. 19, 1965

I. V. ABADJIEFF

3,166,117

FABRIC WALL AND CEILING SUPPORTING MEANS

Filed Jan. 14, 1963

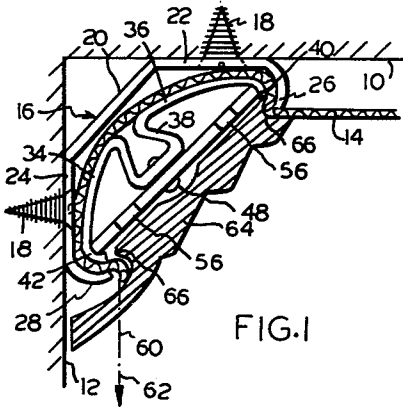


FIG. 1

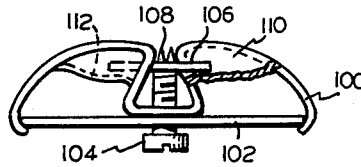


FIG. 10

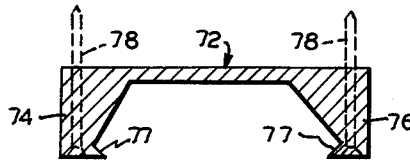


FIG. 6

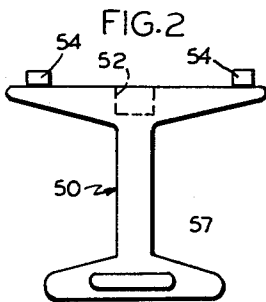


FIG. 2

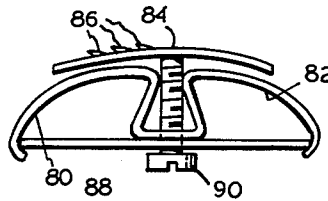


FIG. 7

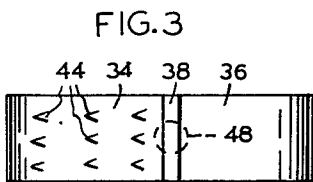


FIG. 3

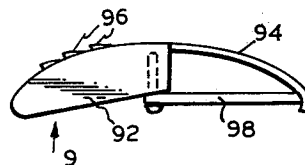


FIG. 8

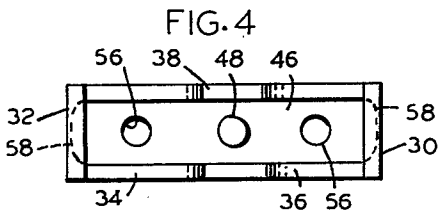


FIG. 4

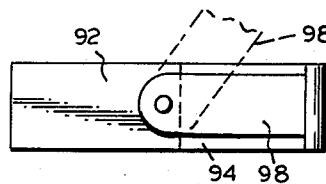


FIG. 9

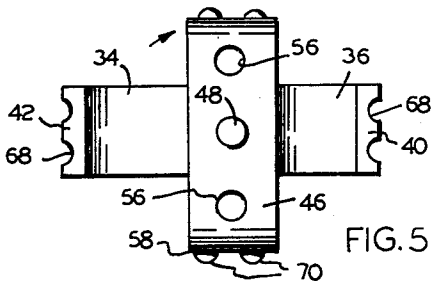


FIG. 5

INVENTOR.

IVAN V. ABADJIEFF

BY *Charles R. Fay*

ATTORNEY

1

3,166,117

FABRIC WALL AND CEILING SUPPORTING MEANS

Ivan V. Abadjieff, 29 Bergin Lane, Worcester, Mass.
 Filed Jan. 14, 1963, Ser. No. 251,326
 11 Claims. (Cl. 160—392)

This invention relates to a new and improved device for improved holding of fabric ceilings and walls under properly stretched conditions. There are a great many advantages to fabric ceilings particularly as well as to fabric walls but heretofore the process of applying the fabric has always been extremely cumbersome and time-consuming which results in making it very expensive. Accordingly it is an object of the present invention to provide means whereby such ceilings and wall fabrics can be applied quickly and easily in an improved manner and at less cost.

It is a further object of the invention to provide means as aforesaid by which the fabric can be applied under required tension, i.e., about twenty pounds per linear inch, which is necessary in order to provide the optimum conditions for holding the fabric in position; and the provision of novel channel and cooperating locking clip means for accomplishing the purpose of putting up the fabric quickly and easily and under uniform conditions of tension. Another object of the invention is to provide ability to loosen the fabric at any desired location for position and tension correction without any damage to the cloth or the locking clip means.

The invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a view partly in section illustrating one form of the invention;

FIG. 2 illustrates a tool for applying the fabric holding clips;

FIG. 3 is a top plan view of a fabric holding clip;

FIG. 4 is a bottom plan view thereof showing the same in locked condition;

FIG. 5 is a view similar to FIG. 4 but showing a modification and illustrating the clip in open condition;

FIG. 6 is a sectional view of a modified channel;

FIG. 7 is a view partly in section illustrating a modification of the fabric holding clip;

FIG. 8 is a view in side elevation illustrating a further modification of the fabric holding strip;

FIG. 9 is a bottom plan view, looking in the direction of arrow 9 in FIG. 8, and

FIG. 10 is a view in elevation, partly in section, showing a modification of the device of FIG. 7.

Referring now to FIG. 1, there is shown a representation of a ceiling 10 having an adjoining wall at 12. The ceiling is to be covered with a fabric such as canvas indicated by the reference numeral 14.

A rigid elongated channel member generally indicated by the reference numeral 16 is applied by fasteners such as at 18 to the ceiling and wall. This channel is preferably extruded and is relatively strong and rigid and it extends in lengths along the entire sides or ends of the room.

This channel comprises a base 20 and a pair of spaced arms 22 and 24 which in this case extend outwardly at an angle from the base 20. Both arms terminate in inwardly directed flanges 26, 28.

A series of fabric holding clips are now positioned. Each clip comprises a springy strip-like member which can be made of any suitable material, the same including a pair of arms 34 and 36 which are joined by a centrally

2

depressed member 38 adding to the springiness of the strip-like member. Each arm 34 and 36 terminates in an inwardly directed short hook as at 40 and 42. One arm, that at 34, is provided with cloth holding means such as struck-up spikes or sharp points 44 for rigidly holding the fabric to the clip, the points extending to the left.

In addition each clip is provided with a pivoted lock generally indicated at 46 and some means such as a rivet 48 can be used to rotatively mount the lock 46 to the springy clip member 34, 36 for instance at the bottom of member 38. This lock is in the form of a strip having a length so that the ends thereof impinge upon the inside aspects of the terminal portions of legs 34 and 36 as is shown in FIG. 1. The entire clip is applied in open condition as in FIG. 5, by a tool which is shown in FIG. 2 and indicated by the reference numeral 50. This tool is provided with a magnet at 52 and a pair of projections 54, 54 which correspond to openings 56, 56 in the lock 46. The tool may have a convenient handle 57. The ends of the lock are rounded off as at 58, 58 to provide for a tight wedging action of the lock 46 relative to the ends of the springy arms 34 and 36, and this provides a cam lock for use in either rotative direction.

In the application of the device, the channel 16 is first positioned and fastened as stated. An edge of the cloth is then secured with respect to the points 44 of the leg 34 of the spring clip. The tool 50 is then applied to the lock entering projections 54 into holes 56 and holding the lock by the magnet. The lock is magnetic or has a magnetic portion and is originally located transversely of the spring clip. The clip is then thrust into the channel with the hook at 42 engaging behind the curved edge at 28. The proportions of the device are such that it then takes some force to snap the springy arm 36 past the curved portion 26 of arm 22 of channel 16, but when this is done, the end 40 of arm 36 snaps into the recess formed by flange 26 and this positions the clip and the fabric. Then the tool 50 is turned 90° to engage the cam surfaces 58 of locking member 46 with the two hooks 42 and 40 jamming the same rigidly against the inside surfaces of the legs 22 and 24, so that the fabric holding spring clip is very solidly locked in position, this being shown in FIG. 1. The clip can be positioned directly by hand without use of the tool, which can then be used simply to turn the lock.

The fabric 14 now being anchored across one end or along one side of the room, a similar action is carried out with respect to the opposite side of the room, but in this case the fabric will be extended at the side of the channel which is indicated by the broken line 60 (FIG. 1) so that the operator can pull to the desired extent downwardly in the direction of arrow 62 in order to have the correct tension applied to the fabric across the room. The cloth is capable of moving in this direction because it slides over the points 44 on the clip arm 34 but the points will not allow the cloth to be retracted. When the correct tension is reached, then the operator applies the clips to this side of the room. This adds tension to the cloth, but this can be varied by loosening the fabrics and adjusting it on the clip.

When the fabric has been installed, a snap cover in elongated form as indicated at 64 and having the inwardly directed snap ends 66 is applied over the portions 26 and 28 of the channel 16 forming a complete cover strip covering all of the clips as well as the channel itself so that the edges of the ceiling, or wall, are attractively trimmed off. The members 64 can be plain or ornamental.

If desired the hooks 40 and 42 of the spring clips can be notched (or depressed) as indicated at 68 for the snap-in reception of projections 70 on the edge portions of the lock 46 in order to make positive locking.

3

A modification of the channel is shown in section in FIG. 6. In this case the channel which is indicated at 72 is provided with a relatively thick pair of outside legs 74 and 76 for the reception of fasteners 78, 78, and in this case it will be seen that the legs 74, 76 cannot be spread under any circumstances. Otherwise the same locking clips as above described, finish strip, etc. are used in the same way as above stated, the channel 72 having reentrant corners or the like as at 77 which are equivalent to the terminal portions 26 and 28 of the channel 16.

Another modification is shown in FIG. 7 wherein the spring clip having the arms 80, 82 instead of engaging the cloth directly is provided with an intermediate solid member 84 having struck-up points 86 similar to those at 44. In this case the locking member is indicated at 88 but instead of having a rivet 48 it has a bolt or the like 90 which upon being turned in the appropriate direction will cause the solid member 84 to rise, thus in addition pulling the cloth tighter. It is to be understood however that this clip (FIG. 7) may be used in the channel 16 or the channel 74.

FIGS. 8 and 9 also show a modification wherein the spring clip has a solid side 92 which is not springy, and a springy arm 94. In this case the action is similar to that above described but the solid portion 92 is inserted first and it can have cloth holding points 96 if desired equivalent to those at 44. The springy member 94 is then pushed into the channel, either that shown at 16 or at 72, and the half-locking member 98 is then turned as from dotted line position in FIG. 9 to the solid line portion in FIGS. 8 and 9. Otherwise however the construction and operation of the parts is the same as above described.

Referring now to FIG. 10 there is shown a device similar to that of FIG. 7. In FIG. 10 the clip is generally indicated at 100 and the lock at 102. The lock has a fastener such as 104 which is similar to that at 90 in FIG. 7 and a cloth holding plate 106 similar to that at 84 in FIG. 7 is provided with points 108 to hold the cloth. However, in FIG. 10 the plate 106 is recessed originally in depressions 110 and 112 formed in the arms of the clip 100 so that the points originally do not impinge upon the cloth in any way until the fastener 104 is turned.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. Apparatus for stretching and mounting a fabric panel on a superstructure comprising an elongated substantially rigid channel, said channel comprising a base member and a pair of spaced side edge arms extending outwardly therefrom at an angle thereto, means to secure the channel to the superstructure, said arms each terminating in an inwardly directed portion extending along the length of the channel,

and a series of strip-like resilient elongated spring clips for engagement with the fabric panel adjacent an edge thereof, each said spring clip terminating at its ends in inclined portions engaging in and behind said inwardly directed terminal portions of the channels, said spring clips each having an original length greater than the distance between the terminal portions of the channel.

and a lock having ends engaging the inclined portions at the ends of said spring clips and forcing the

4

same into tight locking engagement with the inside surfaces of the outwardly directed arms of the channel, locking the spring clips in place within the channel and substantially permanently holding the cloth of the fabric, the locks each having a length greater than the distance between the inclined portions at the ends of the spring clips.

2. The apparatus recited in claim 1 wherein each lock is pivotally mounted on its individual spring clip and is rotated into and out of engagement with the portions of the spring clips adjacent the inclined end portions thereof.

3. Apparatus as described in claim 1 including an elongated finish strip including side edge terminal portions adapted to snap onto the inwardly directed terminal portions of the side edges of the channel.

4. Apparatus as recited in claim 1 including fabric holding points on the spring clip.

5. Apparatus as recited in claim 1 including fabric holding points on one portion of each spring clip, said fabric holding points being arranged in a direction opposite to the extent of the fabric panel over the superstructure preventing loss of tension of the panel.

6. Apparatus as recited in claim 1 wherein said lock ends are cam-shaped for providing increasing tension on the spring clips.

7. Apparatus as recited in claim 1 including a solid member mounted on said spring clip and means on the spring clip exerting pressure on the solid member, urging the same away from the spring clip, the fabric being adapted to be disposed over the solid portion whereby extra tension is applied to the fabric by said means.

8. Apparatus as recited in claim 1 wherein the legs of the channel are solid and include the means for securing the channel to the superstructure.

9. Apparatus as recited in claim 1 wherein said spring clip includes a generally central loop increasing the springiness of the legs of the clip thereof.

10. Apparatus as recited in claim 1 including a separate plate on the spring strip, fabric holding points on said separate plate, and means on the spring clip for moving said plate with the points upwardly into contact with the fabric.

11. Apparatus as recited in claim 1 including a separate plate on the spring strip, fabric holding points on said separate plate, and means on the spring clip for moving said plate with the points upwardly into contact with the fabric, said spring clip being provided with indented portions receiving said separate plate therein.

References Cited by the Examiner

UNITED STATES PATENTS

195,849	10/77	Seybold	215—53
377,991	2/88	Connell	160—391
684,113	10/01	Shaddle	160—392
1,200,977	10/16	Pierce	160—404
1,202,287	10/16	Hartshorn	160—392
1,744,238	1/30	Moore	160—394 X
2,025,686	12/35	Johnson	189—88
2,697,960	12/54	Walsh et al.	85—5

FOREIGN PATENTS

695,350 12/30 France.

HARRISON R. MOSELEY, *Primary Examiner*.

BENJAMIN BENDETT, *Examiner*.