No. 676,886. Patented June 25, 1901.

A. FRESCHL.

UPHOLSTERING APPARATUS.

(Application filed Sept. 25, 1899.)

(No Model.)

FIG. 1

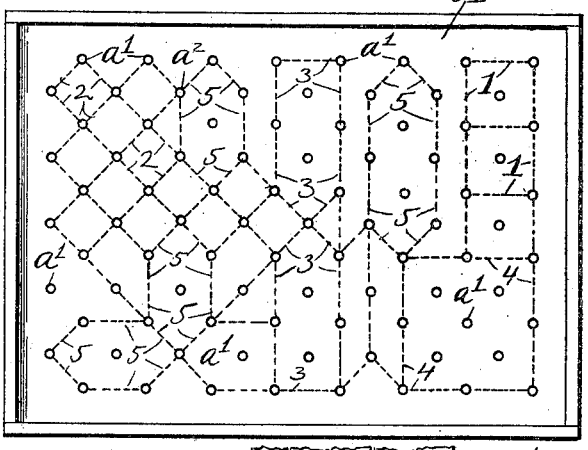


FIG. 3

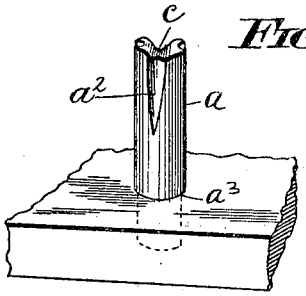


FIG. 5

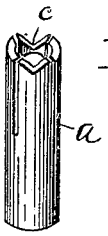


FIG. 2

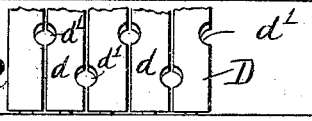
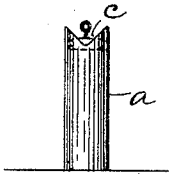


FIG. 6.



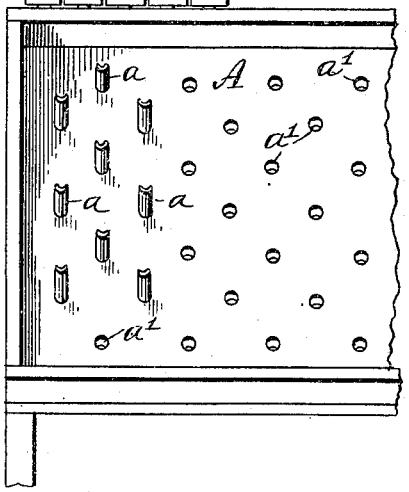


FIG. 8

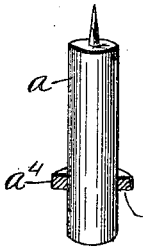


Fig. 9.

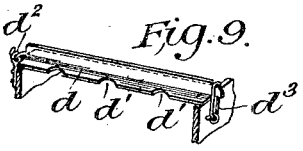


FIG 4

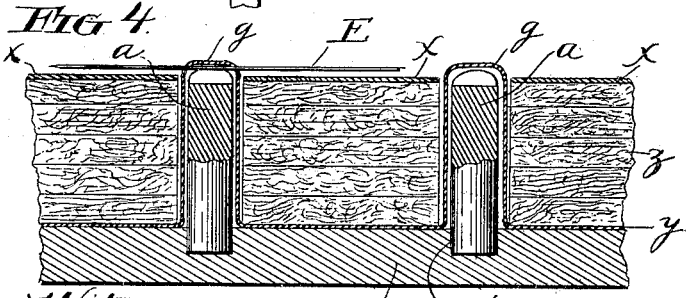
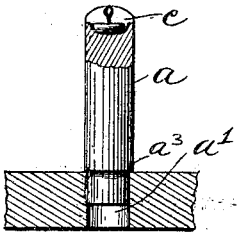


FIG 7



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Robert Ratcliffe

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his Atty.

UNITED STATES PATENT OFFICE.

ALFRED FRESCHL, OF CHICAGO, ILLINOIS.

UPHOLSTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 676,886, dated June 25, 1901.

Application filed September 25, 1899. Serial No. 731,579. (No model.)

To all whom it may concern:

Be it known that I, ALFRED FRESCHL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Upholstering Apparatus, (Case No. 8,) of which the following is a specification.

The cushion or piece of upholstery which my improved machine is adapted to produce consists of a bottom or backing *x*, of strawboard, buckram, or other suitable material, an outer or upper covering or facing *y*, of cloth, leather, or similar material, and a filling or packing *z*, of hair, moss, or like material. The cushion is tufted according to any predetermined pattern or design by dividing the filling or packing into any number of elevated projections or tufts of any desired size or configuration and by forming in the outer or upper covering a plurality of depressions at which and at the bottom of the tufted projections the covering and backing are secured together by suitable fastening or anchoring means. The outer edges of the cushion may be finished in any desired manner, according to the use for which it is intended.

The objects of this invention are to provide a mold or former in which cushions having different patterns or designs of tufts and different sizes of tufts may be upholstered, to afford facilities for the proper adjustment of the tufters for these purposes, and to provide means admitting of the easy manipulation of the devices employed to attach the outer and inner covers.

Other objects and purposes will appear from the subjoined description and claims.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a former or mold adapted to make upholstered cushions of different designs or patterns and tufts of different sizes. Fig. 2 is a view of a former having channeled tufters, over which the upholstered cushion is made. Fig. 3 is a detailed view of one of the channeled tufters shown in Fig. 2. Fig. 4 is a detail view showing the arrangement of parts when the tufting operation is completed. Figs. 5, 6, 7, and 8 are detail views of various forms of tufters. Fig. 9 is a detail perspective view showing one form of a removably-hinged section of a compressor or hollow board.

The reference-letter A indicates a mold or former wherein the cushion is upholstered and which may be of any desired form or size to correspond with the size and form of the cushion to be made. The mold is suitably supported and is provided with a plurality of upwardly-projecting tufters *a*, arranged to correspond with the number and location of the depressions between the tufts to be formed in the finished article.

In this class of devices as now constructed it is the general practice to provide the mold with fixed or permanently-set tuft-forming devices, the usual method being to provide the bottom or base of the mold with tufters of either tubular or solid form permanently seated in its bottom or base. In all upholstering apparatus constructed in accordance with this method each mold is designed to form tufts of but a single predetermined design and size. Thus, for example, a mold or former is designed to make what is known in the trade as "diamond" tufts, and another is designed to make "biscuit" tufts. In each case the tufters are arranged permanently throughout the area of the mold, and the finished cushions made upon any one former are of uniform style and size of tuft. In such cases each mold or former being adapted to produce but a single pattern or design, it is necessary for the operator to keep on hand a large number of molds, each representing a different style or pattern of tuft, and when the pattern of the cushion is to be varied it is necessary to remove and replace the molds in the press with which they are usually associated. Moreover, in such cases it is impossible to change the size of the tufts of any given pattern without knocking out some of the tufters, and thereby destroying the mold. For the purpose of overcoming these objections and to permit variations in the dimensions of any given pattern, as well as in the patterns themselves, I provide a mold or former in which the cells in which the tufts of the upholstered cushion are formed may be of any desired shape or size. Thus on the same mold or former diamond or biscuit tufting or a combination of either of these with "pipings" may be made, and any predetermined

or desired design or pattern may be provided. This is accomplished by providing the mold or base with marks indicating the different sizes and patterns of tufts to be produced and making the tufters removable or adjustable, so that they may have any suitable arrangement or form to permit the shape and dimensions of the intermediate shells in which the tufts are formed to be varied to suit any pattern or size. As will be apparent from Figs. 1 and 2, the most simple and preferred manner of accomplishing this result is by boring or perforating the base of the mold or former with holes a' to provide seats in which the tufting devices a may be removably held. Thus any desired pattern may be represented or marked upon the base of the mold and the necessary seats provided therein to insure the tufting devices being in the relation required to reproduce this pattern in the cushion. Other patterns likewise may be laid off upon the base and appropriate seats provided, it being apparent that a number of different designs or patterns may be provided in a single mold or former. The seats receive the tufters, which are removably inserted therein and which may accordingly be adjusted and employed interchangeably to effect a change in the pattern or size of the tufts formed thereby in the cushion. For example, it is apparent that the ordinary biscuit tufting may be produced by inserting the tufters in the seats connected by the lines 1 in Fig. 1, the diamond tufting may be produced by inserting them in the seats connected by the lines 2, that pipings may be made by arranging them, for example, upon the lines 3, and, in short, that any configuration or design of tufting may be produced by altering the arrangement of the tufters to correspond with the desired pattern. Also, the size of the tufts may be varied, as by inserting the tufters in the seats connected by lines 4 for biscuit and by the lines 5 for diamond tufts. By merely omitting various tufters in any pattern larger tufts of the same pattern may be produced.

It is apparent that certain of the seats for the tufters will be common to a plurality of patterns—as, for example, the seats a^2, which form the corners of both the biscuit and diamond tufts. It is also apparent that by employing marks on the base to indicate the location of the tufters when any size or pattern of tufts is to be selected uniformity in either is assured, the area of the different pockets being thereby automatically controlled and not left to the chance of measurement or guess by the operator.

It is apparent that the construction and character of the tufters themselves are immaterial so far as the feature of providing a multiple-pattern mold is concerned. For example, these tufters may be tubular or longitudinally perforated in order to permit the passage of the stitching-needle, if the cushion be sewed, or of the clench-buttons when the latter are used, both methods being familiar to workers in this art. Again, the tufters may be in the form of posts and may or may not be provided with an outwardly-projecting pin to hold the material against displacement during the operation of forming the cushion, and the pin may be secured rigidly to the post, as in Fig. 8, or it may be in the form of a button which constitutes a part of the post while the cushion is being formed and is detachable therefrom to constitute the means of uniting the outer and inner coverings, as in Figs. 5, 6, and 7, in which latter case the tufters may be provided with seats to detachably hold the buttons—as, for example, in Fig. 5. It is apparent that when tubular tufters are employed to afford passages for the thread or button the seats therefor will extend entirely through the base of the mold, but that when the tufters are in the form of posts these seats may or may not pass entirely through the base. In any of the various forms of machines now in use the feature of providing a multiple-pattern mold may be adopted regardless of the particular character of the tufters employed, as the operations and methods of using the machines are not in the least affected thereby.

After the tufters have been arranged for the desired pattern the method of making a cushion with a mold having multiple patterns in no wise differs from those now practiced in this class of machines, where the mold has but a single pattern, the tufters being temporarily fixed for the purposes of the operation and constituting separate pockets of the style or pattern desired, and thereby forming in the outer covering of the cushion a plurality of cells in which the filling is compressed to constitute the tufts of the corresponding pattern or style or of the dimensions desired. When the cells have been formed by pressing the cover-face downward into the pockets, the filling material is applied, the backing is put in place, and the cover and backing are secured together by any suitable attaching means, according to the method to which the machine is adapted. As before stated, the tufters may be either tubes or posts and the corresponding methods of tufting or attaching the cover and backing will necessarily be followed.

In Fig. 2 I have shown an apparatus which permits the cover and backing to be attached at the points opposite the tufters by means of a pin, wire, threaded needle, or other suitable anchor passing through the cover or through the eyes of tuft-buttons. In this form of machine the tufters may be either temporarily or permanently placed in the base of the mold, and they are provided with channels c, as shown in Figs. 3, 5, 6, and 7, for a purpose to be fully hereinafter described. These channels are preferably mere grooves or cut-aways formed in the upper ends of the tufters and open upwardly in an unobstructed manner, so that the pad may be easily and freely removed and the anchors will not be

beneath any portion of the tufters. A suitable follow-board or compressor D is employed, which is preferably in sectional arrangement, each section *d* being preferably removably hinged to the edge of the mold or former by means of detachable connections of any desirable form, such as shown at d^2, and are provided with suitable clips or fasteners of any desired form, such as at d^3, as shown in Fig. 9. As shown in Fig. 2, this compressor is composed of a series of independently pivoted or hinged boards of ordinary rectangular form, one for each division between the adjoining rows of tufters and for the end rows. It is of course apparent that the form of these compressors may be changed without departing from my invention. Thus they may be in the form of ⊥-shaped angle-irons, which may be removably hinged to the rear edge of the mold, their front ends being confined in operative position by means of any suitable catch, such as hinged staples, interlocking with recesses in their vertical webs. These compressors may be of any desired width and are so arranged as to substantially fill the mold when down, so as to compress the filling material after the manner of the ordinary and well-known follow-board. To properly accomplish this, I prefer to make them of such width that the adjacent edges of the adjoining sections shall come close together, not quite touching, however, and to recess the edges, as at d' in Fig. 2, to provide suitable spaces or openings for the tufters, the recesses corresponding in arrangement and form with the pattern represented by the tufters. By this construction the entire surface of the filling material is compressed, and there is room between the adjacent edges of the sections to insert an anchor or fastening means to secure a row of tufts. The channels thus formed between the adjacent edges of the sections of the compressor permit the anchor or stay device employed to secure the outer and inner coverings to be drawn down closely against the outer face of the backing when the anchor passes through either the material of the cushion or the eyes of the tuft-buttons, each channel being substantially in line with a row of tufters. By this arrangement an anchor may be passed through an entire row of tufts.

A suitable filling *z* of any desired material, preferably layers of cotton-batting, is employed and is preferably provided with holes or perforations corresponding in size to and registering with the tufters *a*. A suitable backing *x* of the desired material is employed, and this also is preferably provided with similar registering perforations. While it is apparent that the filling and backing may each be thus separately prepared, it is obvious that the most expeditious method of doing this is to superpose the backing on the filling, the former having first been marked with the desired pattern or having a blank representing this pattern placed upon it, and then to punch the perforations in the backing and filling with a suitable tool. When properly prepared, the backing and filling are placed in the mold with their perforations registering with the tufters, the cover material having already been disposed face downward around the tufters to form the cells, and the compressors are closed down to pack the material to the required firmness in these cells. When this operation is completed, the parts will occupy the positions shown in Fig. 4, and such parts of the cover as surround the tufters will be exposed above the rear face of the backing in position to receive the anchor or stay E, as clearly shown in this figure. The channels *c* in the upper portions of the tufters enable the anchor or stay to be readily passed through the covering material, which is drawn taut over the ends of the tufters.

The character of the anchoring or stay device is immaterial, and it may be of any suitable material or form. For example, a strong cord or thread supplied with a suitable needle may be employed by passing it through the covering material, the thread being preferably carried the entire length of a row of tufts and drawn tightly against the outer face of the backing intermediate the tufts and within the corresponding channel of the compressor, or individual pins or clips of any suitable form may be employed, one for each tufter, or a single pin, such as a suitable length of wire, may be employed for each row, the channel in the presser allowing the anchor of whatever character to be quickly threaded through the material close against the outer face of the backing.

In the operation performed with any of the forms shown the cells in the outer covering after it has been pressed into the pockets of the mold may all be filled at once over the entire surface of the mold and the backing applied to the same and independently secured over the different pockets, or each transverse row may be separately filled and finished in the manner above described before filling the next row, and so on until all of the rows are completed, any order in filling the pockets or any number of them being followed as is most convenient to the operator or required by the size of the cushion.

It is obvious that where very heavy backing is used it is preferable to provide it with perforations registering with the tufters, as above described, for the passage of the cover therethrough, as it greatly facilitates the work. However, where a lighter grade of backing is employed, or one that is more pliable, it is equally apparent that such perforations need not be provided, as the backing and cover at the several tufters will both be held by the tufters sufficiently above the general plane of the backing as defined by the compressors to permit the anchor to be passed through both thicknesses of material.

Instead of passing the anchor or stay directly through the material of the cover or

of the cover and backing, as above described, it is obvious that the tufters may each be provided with a suitable tufting-button provided with an eye in its shank, as in Figs. 6 and 7, through which the stay or anchor will be threaded.

It is apparent that where buttons are not used the tufters may be provided with any suitable means, such as pins—as in Fig. 8, for example—to hold the material securely in position.

The tufters may be of any material, as either metal or wood, and preferably are provided with suitable means to prevent them from sinking too far into the mold-board under the strain of the work and to insure uniformity in the height of the tufters employed upon the same piece of work, and therefore in the depressions of the cushion, without requiring any nicety of adjustment on the part of the workman. This may be accomplished by providing the tufters with shoulders a^3, as in Figs. 3 and 7, by reducing the size of the tufters, or by employing rings on the tufters, as at a^4 in Fig. 8, or by any other suitable means. It is apparent that where devices similar to the rings a^4 are employed they may be adjusted along the length of the tufters in order to provide for varying the height of the tufters, and consequently the depth of the depressions in the cushion.

The compressor will be provided with recesses or perforations in such arrangement as to register with the tufters when the latter are variously placed for different patterns or styles of tufting, it being apparent that such perforations as do not register when any particular pattern is employed will not affect the operation of the machine, or, if preferred, each presser may be designed for but a single pattern, being removable, and so interchangeable. By having them detachably connected to the mold it is obvious that the number of sections or pressers required for each mold may be greatly lessened, as the operator may use but two or even a single presser, completing one row of tufts and then using the same presser or the same pair of pressers for the next row, and so on to the end. The tufters a may be provided also with vertical grooves a^2, as clearly shown in Fig. 3, so as to present a fluted appearance and to properly position the tucking-pegs when these latter are employed.

It is apparent that various changes may be made in the construction of the apparatus without in any manner departing from the spirit and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An upholstering apparatus provided with tufters each having a channel in its end.

2. An upholstering apparatus including a mold provided with tufters each having a channel in its end and sectional compressors for the filling material.

3. An upholstering apparatus comprising a mold provided with tufters each having a channel in its end and sectional recessed compressors.

4. In an upholstering apparatus, the combination of a mold having tufters provided with end grooves for the passage of a stay or anchor, and means to compress the filling material.

5. In an upholstering apparatus, the combination of a mold having tufters, with a sectional compressor, the sections whereof are removably hinged to the mold.

6. In an upholstering apparatus, the combination with a mold provided with tufters, of a compressor composed of detachable sections hinged to the mold and spaced apart to provide channels between the sections, each section having recesses for the tufters.

7. A former for making tufted cushions having seats and tufters provided with adjustable shoulders adapted to said seats.

In testimony whereof I affix my signature in the presence of two witnesses.

ALFRED FRESCHL.

Witnesses:
ROBERT J. CATCHPOLE,
J. MCROBERTS.