No. 619,685. Patented Feb. 14, 1899.

A. FRESCHL.

APPARATUS FOR TUFTING CUSHIONS.

(Application filed July 11, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

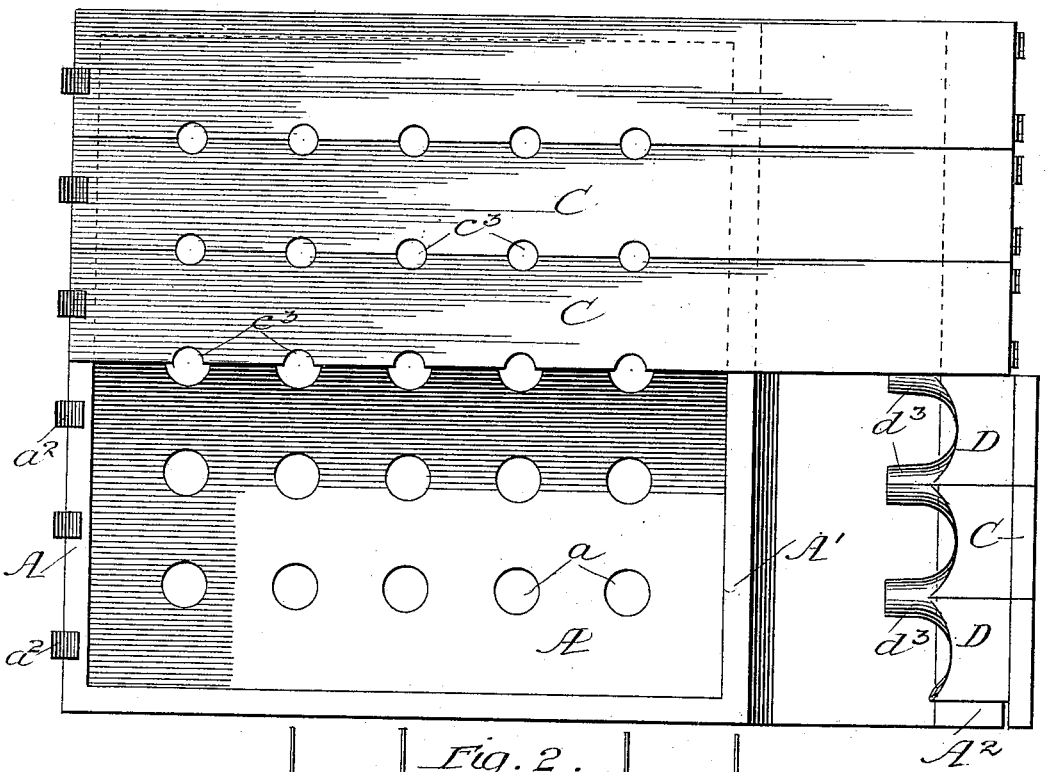
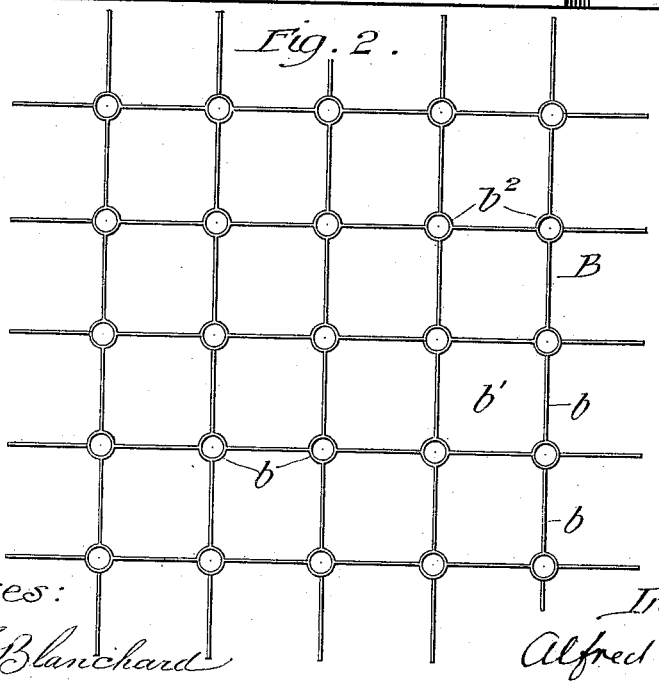


Fig. 2.



Witnesses:
Frank S. Blanchard
Charles W. Hills

Inventor:
Alfred Freschl
By Attorneys
Poole & Brown

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Fig. 3.

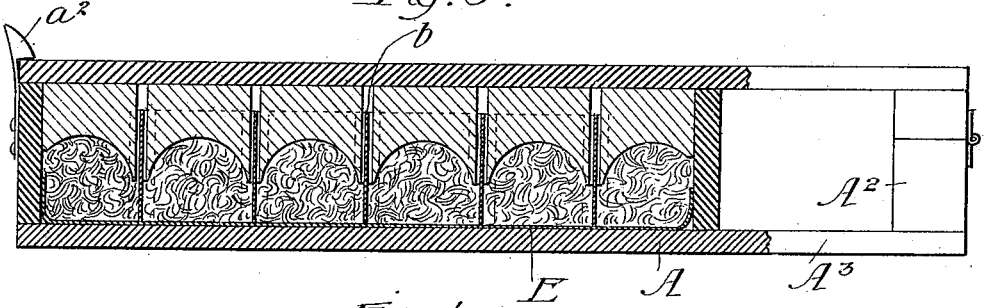


Fig. 4

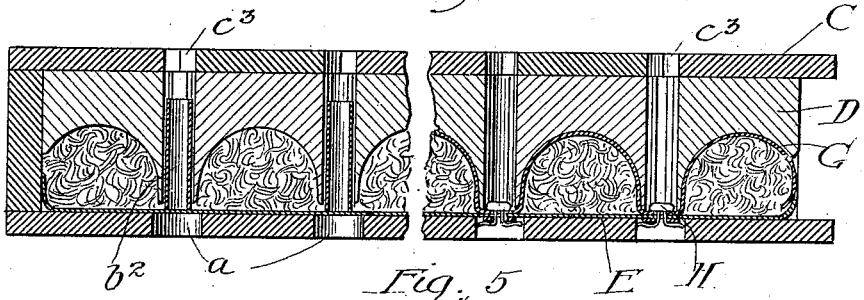


Fig. 5

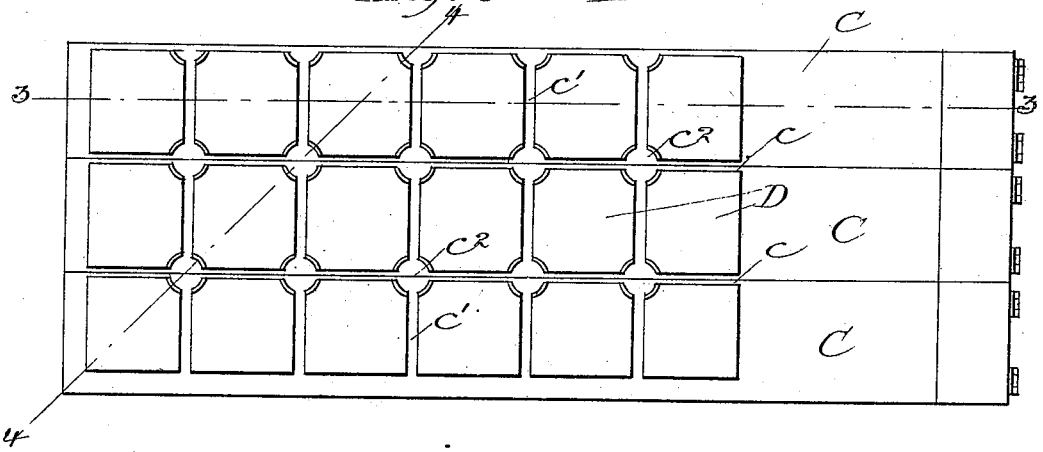


Fig. 7

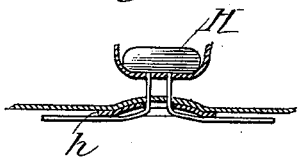
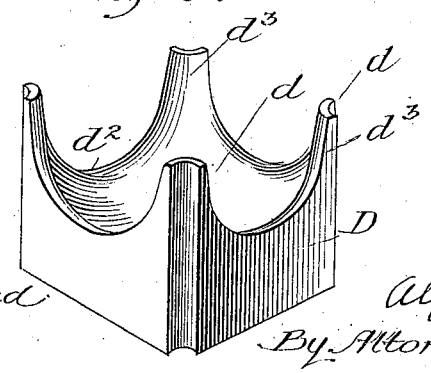


Fig. 6.



Witnesses:

Frank S. Blanchard

William Hall

Inventor:

Alfred Freschl

By Attorneys

Poole & Brown

UNITED STATES PATENT OFFICE.

ALFRED FRESCHL, OF CHICAGO, ILLINOIS.

APPARATUS FOR TUFTING CUSHIONS.

SPECIFICATION forming part of Letters Patent No. 619,685, dated February 14, 1899.

Application filed July 11, 1898. Serial No. 685,670. (No model.)

To all whom it may concern:

Be it known that I, ALFRED FRESCHL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Tufting Cushions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in apparatus for making tufted cushions for use in upholstering; and the invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a top plan view of an apparatus constructed in accordance with my invention. Fig. 2 is a top plan view of the frame which is employed to divide the filling material when making a cushion. Fig. 3 is a cross-section of the apparatus, showing the same in one of the stages of making a cushion, said section being taken in a plane parallel to the sides of the base-board, as indicated by the line 3 3 on Fig. 5. Fig. 4 is a section of the apparatus, taken diagonally in a plane which intersects the points at which the cushion is tufted, as indicated by the dotted line 4 4 on Fig. 5, said figure being broken away and indicating two stages in the operation of making a cushion. Fig. 5 is a bottom plan view of a portion of the movable part of the molding apparatus. Fig. 6 is an enlarged perspective view of one of the molding-blocks. Fig. 7 is an enlarged detail showing the manner of fastening the covers of the cushion together.

In said drawings, A designates a base-board, which constitutes the bottom of an open-topped box, within which the cushion is formed, said box having connected side walls A′ A′, which are secured to the base-board in any suitable manner.

B designates a reticulated frame, which is adapted to be placed upon said base-board to provide compartments within which the filling material will be placed to form a plurality of separate masses or divisions, constituting severally the rounded protuberances of the upholstering. The inner and outer covers of the cushion are fastened or tufted at the bases of said masses, as common in this class of upholstering.

C C designate a plurality of strips, which are separately and independently hinged to the upper edge of one side of the box or to a part connected therewith, and D D designate a plurality of mold blocks or forms which are attached to the lower sides of said strips, said blocks being concave on their lower sides to form cells, which are adapted to give proper form to the separate masses of filling material and to compress the same in such manner that the covers of the cushion may be brought together at the bases of said several masses for the purpose of fastening together or tufting them.

The base-board A is provided with a plurality of apertures *a*, which are located opposite to the points at which the outer covers of the cushion are to be fastened or tufted, the apertures being equal in number to the tufts in the cushion. Said mold-box is shaped to correspond with the exterior form of the cushion to be made by the apparatus, and the apertures *a* are arranged in an angular relation to each other in the base-board to correspond with the shape of the separate masses or divisions of the filling material.

The reticulated frame B is of the same exterior form as the mold-box and consists of a plurality of transversely-arranged thin strips *b*, which are adapted to be placed edgewise on the base-board A. Said strips are attached permanently together at their points of intersection, which points when the frame is in place on the base-board are located in alinement with the apertures *a* in said board. Said connected strips form a plurality of separate compartments *b′*, within which the filling material is adapted to be placed, and said material thereby divided into a plurality of masses, at the bases of which the covers are fastened or tufted. Preferably said frame is provided at the intersections of the strips *b* with a plurality of posts, to which said strips are permanently attached, said posts extending from the upper to the lower edges of the strips. The purpose of said posts is to separate the filling material at the points opposite to said apertures *a*, so as to provide at said points vertical openings through which

the tufting or fastening devices may be inserted, as will hereinafter more fully appear.

The mold blocks or forms D, which are attached to the hinged strips C and which together form the movable part of the molding apparatus, consist of a plurality of similar and equal blocks which are of slightly less size than the compartments of the frame B. Said blocks or forms are permanently attached in any suitable manner to the inner surface of the hinged strips C, so as to project into the mold-box when said strips are swung downwardly into the position shown in Figs. 1, 3, and 4. Said strips C are hinged at one side of the box and extend transversely across the same in line with the rows of apertures *a* in the base-board. They are of a width equal to the distance between the centers of two adjacent rows of said apertures *a* and form when all of the strips are swung downwardly into position shown in Fig. 3 a complete cover for the box. Said strips are separately and independently movable, and the molding-blocks are attached thereto in separate and independent sets extending across the base-board, between the rows of apertures therein. The blocks attached to the different strips are arranged in rows which extend transversely to said strips. Said blocks or forms are of less width than the strips to which they are attached, thereby leaving spaces *c c* between the several rows or sets opposite to the meeting margins of the strips, and are also spaced at a distance apart on the several strips, so as to provide oppositely-arranged spaces *c' c'* between the same, which extend transversely to the said strips from one side of the box to the other. Each of said blocks is provided in its vertical corners with vertically-extending grooves *d* of curved shape in horizontal section. Said grooves when the hinged strips C are in the same plane with each other form cylindrical openings c^2 c^2, which openings are intersected by the longitudinal and transverse spaces between the blocks or forms D. The strips C are provided in their margins with half-circular openings c^3, which are arranged to register with each other and form when the strips are in their lowermost position a plurality of circular openings, which are alined with the apertures *a* of the base-board and the opening c^2 between the corners of the mold-blocks and through which the tufting buttons or nails are adapted to be passed. The purpose of providing said cylindric openings and the intersecting transversely-arranged spaces *c* and *c'* is to permit the strips and attached blocks to be swung downwardly in their operative position when the reticulated frame B is resting on the base-board A, as will hereinafter more fully appear in the description of the operation of the apparatus. Each of said blocks or forms is provided on its inner side with a concave recess *d'*, which forms a cell within which the filling material is adapted to be pressed or molded. The vertical side walls of said blocks, between the corners thereof, are cut away to form curved lateral openings d^2 d^2, as clearly shown in Fig. 3, thereby forming four separate inwardly-extending projections d^3, the inner or adjacent surfaces of which are convexly curved at their extreme ends. Said blocks or forms may be made of solid blocks of wood or other suitable material and cut to the form required or may be molded in such form, as may be most convenient or desirable. They will be made of such vertical length that the projecting parts d^3 thereof will reach to or nearly to the upper surface of the base-board when the hinged strips C are swung downwardly into their closed position. The projections d^3 when the blocks are attached to the hinged strips C and the latter are in the same plane form downwardly-projecting tubular and substantially cylindric posts, which are located opposite the apertures of the base-board when the strips are in their lowermost position. The outer rows of said blocks D are not provided in their sides adjacent to the side walls A' A' with the inwardly-projecting posts d^3, as the recesses in said blocks do not form complete cells, the outer and inner coverings at the side edges of the cushion being fastened together in any common or preferred manner after the cushion has been removed from the mold-box.

The operation of manufacturing upholstering with an apparatus made as above described is as follows: A backing or foundation E of strawboard, burlap, or other suitable material and of a slightly-greater size than the finished cushion is laid upon the base-board A, and the edges thereof are turned upwardly against the inner face of the side wall A. The reticulated frame D is then placed upon the base-board over the backing E, with the pins or tubes b^2 in register with the apertures *a* of the base-board and the compartments *b'* of said frame opposite to the imperforate surface thereof. Said compartments of the frame B are then successively filled with a suitable quantity of filling material to give the required firmness to the cushion. The strips C, forming the cover of the box and to which the mold-blocks are attached, are next swung downwardly, either separately or together, to bring said blocks D into position to compress the filling material into the several compartments and give proper form to the same. As before stated, the cylindrical apertures between each four adjacent blocks register with the pins or tubes b^2 and the spaces *c c'* with the strips or plates *b* of the frame B, so that said tubes pass upwardly through said apertures when said blocks are moved downwardly into their lowermost position in the mold-box. Said tubular parts formed by the projections d^3 of each four adjacent blocks reach to, or nearly to, the base-plate when lowered into the box in the manner described and serve in the preliminary operation on the filling to give proper

form to the several divisions of the filling material within the compartments b' of the frame B and also to separate the material at the points opposite to the apertures a, and thereby provide openings therethrough into which the covering material may be depressed preparatory to the insertion of the tufting or fastening means by which said covering is attached to the backing E. In order that the arc through which the several strips C swing shall not be short enough to allow the side walls of the apertures between the mold-blocks to come in contact with the tubes or pins b^2 or the vertical faces of the blocks to engage the plates or strips b of the frame, said strips will desirably be hinged at a distance outside of the mold-box. As herein shown, said strips are extended at one end beyond one of the side walls A' of the box and are hinged to a part A^2, which is connected with an extension A^3 of the base-plate A and arranged parallel with the adjacent side wall A'. Preferably said strips will also be hinged in a plane below the level of the plane thereof. The wall A of the box is provided with a plurality of spring-latches a^2, which are adapted to engage the free ends of the strips in a manner to hold the same and the blocks attached thereto in their lowermost position or that in which the material in the mold-box is being compressed. When said filling material has been compressed into the several compartments of the frame B in the manner described, the several strips C and attached mold-blocks will be swung upwardly out of the box and the frame B removed therefrom. A fabric or covering material G, constituting the outer surface of the upholstering, is placed over the filling material, with its finished or exterior face upward. The strips C and attached mold-blocks are then lowered into the mold-box into engagement with said fabric G and moved downwardly, thereby pressing the covering against and causing it to conform to the undulated surface of the filling material. Said projections d^3 of the blocks serve to carry the fabric downwardly between the several divisions of the filling material into contact with the backing E, at which points said backing and outer covering are adapted to be tufted or fastened together. At the left hand of Fig. 4 is shown the position of the parts of the apparatus when the cellular moldboard is lowered into the mold-box to compress the filling material into the compartments b of the frame B, and at the right hand of said figure the parts are shown in position to depress the outer covering upon and about the divisions of filling material and to hold the outer covering in position to be fastened to the backing.

The apertures formed between each adjacent four molding-blocks and which stand opposite the apertures a in the base-plate and the registering apertures in the strips C afford openings through which tufting-nails H may be inserted by any suitable tool in a manner to pierce the outer covering and backing which are in contact with each other, after which said nails will be fastened upon the outer surface of the backing in any preferred manner, as shown at the right hand in Fig. 4. As herein shown, the tufting-nail H is provided with two prongs which when inserted through the outer covering and backing in the manner described are bent outwardly upon the outer surface of the backing or, desirably, upon a washer h, applied thereto. The covering and backing may be fastened by other means than that herein shown if found convenient or desirable. The cellular mold formed by the strips C and blocks D may either be lowered into the mold-box together and the outer cover and backing tufted at one time or two adjacent strips C and the blocks attached thereto only may be operated at once separately and each row of tufts, beginning at one side of the box, completed before the next adjacent pair of strips is lowered into the mold-box. When the cushion has been tufted in the manner described, the cellular mold will be swung outwardly away from the cushion and the latter removed from the mold-box and the edges thereof finished in the usual manner. So far as the general features of my invention are concerned said moldboard may be made of a single rigid part instead of a plurality of independently-movable sections, as shown, and the apparatus is herein claimed without restriction to the particular construction shown.

I claim as my invention—

1. An upholstering apparatus comprising a perforated base-board, a reticulated frame adapted to rest thereon, and a cellular moldboard having a plurality of cells located opposite to the imperforate sections of the base-board and provided with a plurality of apertures which extend therethrough in alinement with the apertures of said base-board, said cells being separated by a plurality of transversely-arranged spaces which intersect said vertical openings.

2. An upholstering apparatus comprising a perforated base-board, a reticulated frame adapted to rest thereon and a cellular moldboard having a plurality of cells located opposite the imperforate sections of the base-board and provided in alinement with said apertures in the base-board with a plurality of vertical openings which extend therethrough, and between the cells thereof with transversely-arranged spaces which separate the said cells and intersect said vertical openings.

3. An upholstering apparatus comprising a perforated base-board, a reticulated frame adapted to rest thereon and a cellular moldboard comprising a plurality of separate and independently-movable sections and a plurality of mold-blocks attached to the under side thereof and provided with inwardly-opening, concave recesses which form cells which come opposite to the imperforate sections of the base-board, said blocks being provided in

their diagonally opposite corners with grooves which form centrally of each four adjacent cells, when in their lowermost position, vertical openings in alinement with the apertures in the base-board.

4. An upholstering apparatus comprising a perforated base-board, a removable recticulated frame adapted to rest thereon and a cellular moldboard comprising a plurality of parallel strips hinged at one side of said base-board and adapted to extend across the same and a plurality of mold-blocks attached to the inner sides of said strips and provided with inwardly-opening concave recesses which form cells which come opposite to the imperforate sections of the base-board, said blocks and strips being provided with vertical openings which are in alinement with the perforations in said base-board.

5. An upholstering apparatus comprising a perforated base-board, a reticulated frame adapted to rest thereon, and a cellular moldboard comprising a plurality of parallel strips hinged at one side of said base-board and adapted to extend across the same, and a plurality of mold-blocks attached to the inner side of said strips, each provided on its inner side with a concave recess which comes opposite an imperforate section of the base-board, said blocks being provided in their adjacent vertical corners with recesses which form, when the strips are in their lowermost position, vertical openings in alinement with the apertures in the base-board.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 5th day of July, A. D. 1898.

ALFRED FRESCHL.

Witnesses:
WILLIAM L. HALL,
CHARLES W. HILLS.