

952,189.

C. H. FISHER.
TUFTING APPARATUS.
APPLICATION FILED MAR. 29, 1909.

Patented Mar. 15, 1910.
2 SHEETS—SHEET 1.

Fig. 1

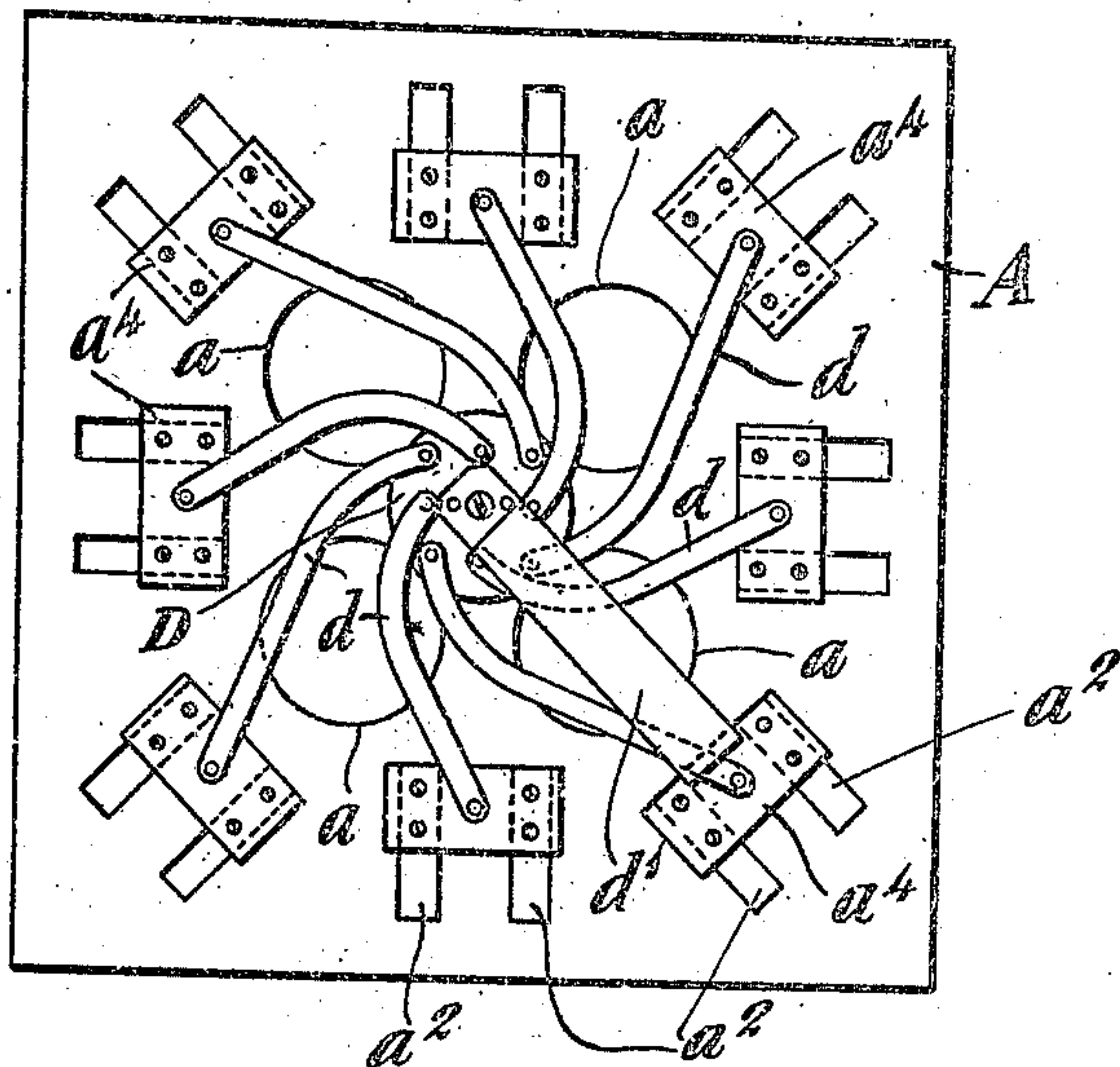


Fig. 2

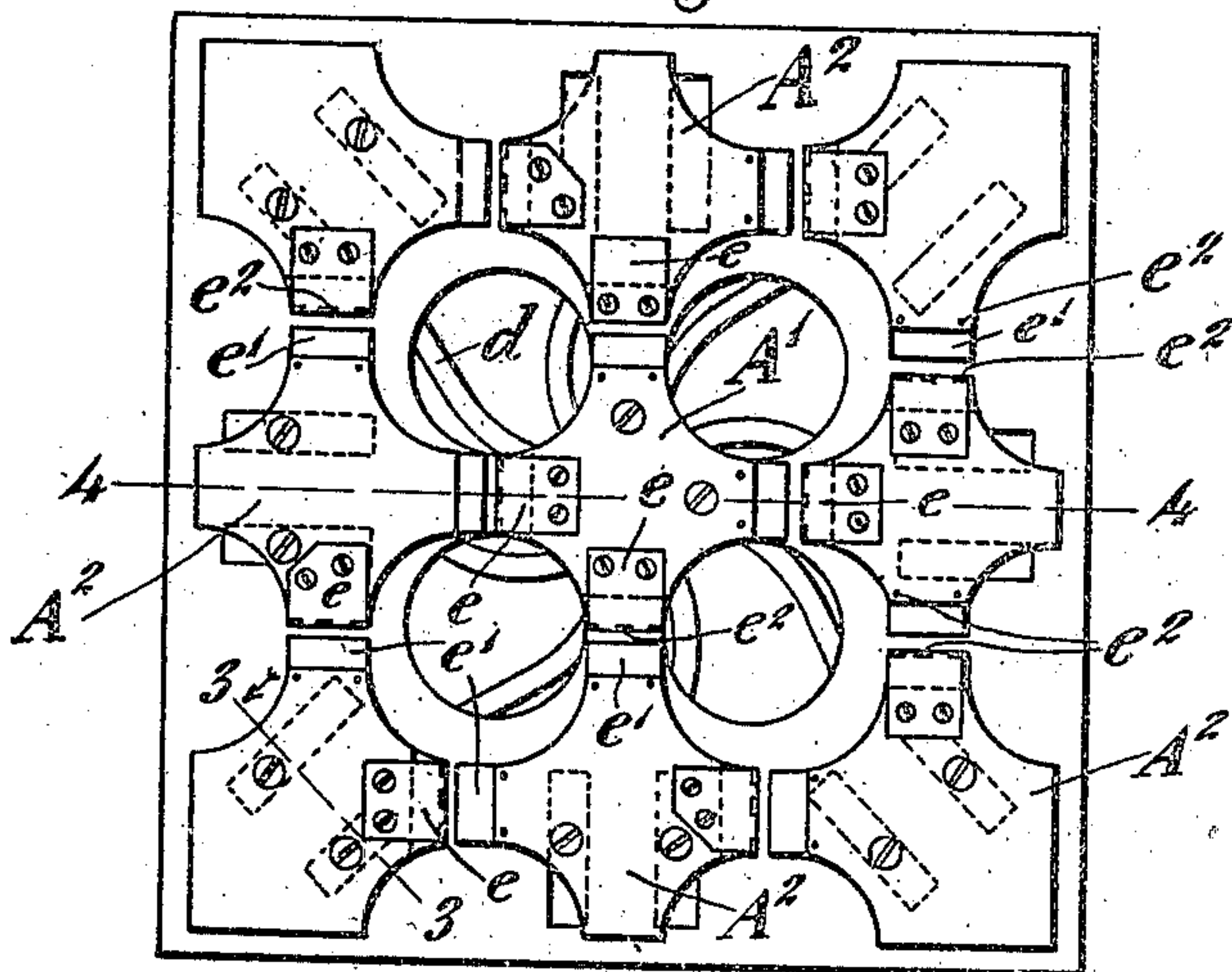
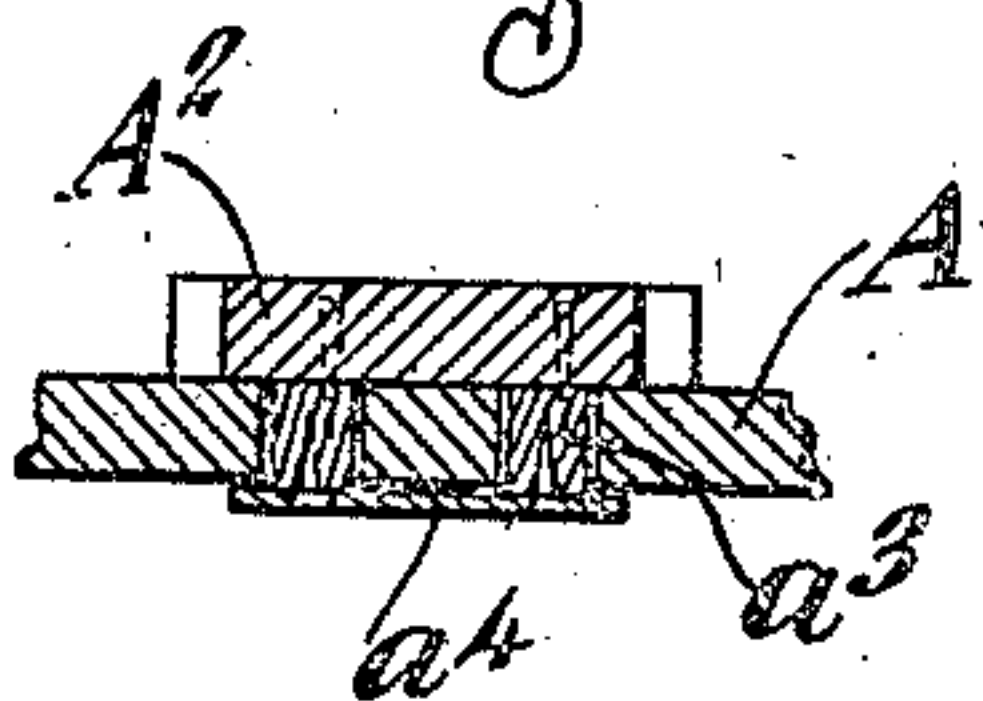


Fig. 3



Witnesses

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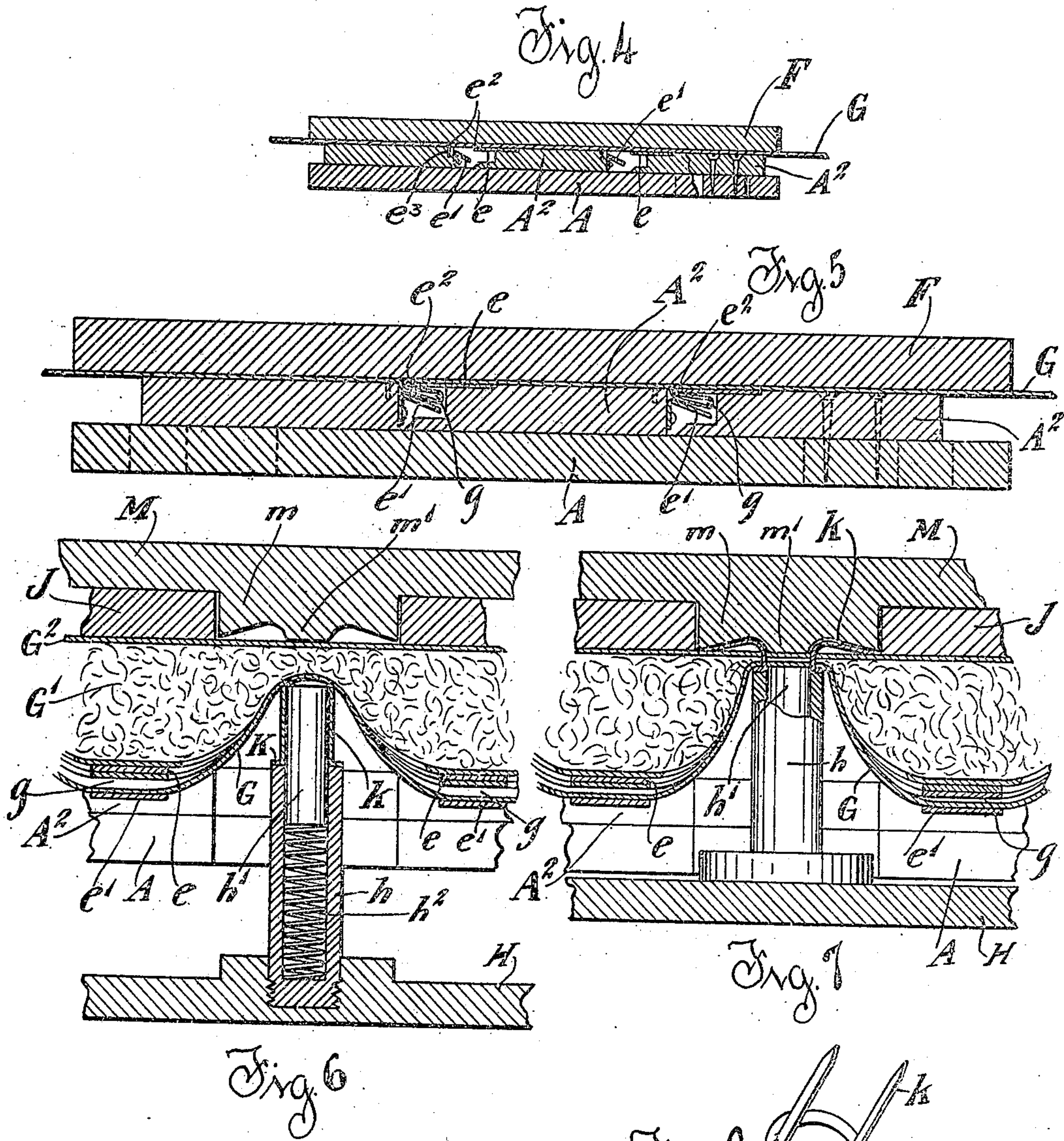
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CLIFFORD H. FISHER, OF CINCINNATI, OHIO.

TUFTING APPARATUS.

952,189.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed March 29, 1909. Serial No. 486,329.

To all whom it may concern:

Be it known that I, CLIFFORD H. FISHER, a citizen of the United States of America, and resident of Cincinnati, county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Tufting Apparatus, of which the following is a specification.

In making tufted cushions, upon tufting machines, it has been customary to lay the material, which is to form the cover of the cushion, in plaits, on the lines joining the tufting posts, after the cover has been laid upon the mold or base-board. To economize in the amount of material used in a cover, and to obviate the necessity of thus plaiting the cover, it has also been customary to stitch plaits in the leather or covering material, before it is placed face downward upon the tufting posts.

It is the object of my invention to provide a machine which lays the plaits and holds them in place upon the base-board while the cushion is being formed.

Other objects of my invention are a means of inserting all of the tufting buttons in place at once, and a means of clenching the prongs of the tufting buttons at one operation.

This object is attained by the means described in the specification and illustrated in the accompanying drawings, in which,

Figure 1 is an inverted plan view of a tufting board and the mechanism for moving the sections thereof from the expanded to the contracted position, the sections being shown in the contracted position. Fig. 2 is a plan view of the base-board, the sections being shown in their expanded position. Fig. 3 is a sectional view taken upon line 3—3 of Fig. 2. Fig. 4 is a sectional view taken upon line 4—4 of Fig. 2. Fig. 5 is a view similar to Fig. 4, but taken upon an enlarged scale, and showing the sections in their contracted position. Fig. 6 is a central sectional view taken through the apparatus after the parts have been brought to the position they occupy preparatory to forcing the tufting buttons through it. Fig. 7 is a view similar to Fig. 6, but showing the position of the parts when the button is clenching. Fig. 8 is a perspective view of the button.

Referring to the parts: the base-board is composed of a bottom board, A, and a series of blocks. The central block, A', is secured to the center of the board, A, and blocks, A²,

are mounted to slide upon the board, A, and when in a contracted position, to form a plate with tufting holes to register with the tufting holes, *a*, in the plate, A. The means of effecting the movement of the blocks from the expanded to the contracted position, is as follows: Board, A, has in it a series of slots, *a*², through which pins, *a*³, project from the blocks, A², to plates, *a*⁴, which are connected by links, *d*, to a hub, D, which is journaled centrally upon the bottom of the board, A, and is adapted to be rotated by means of a handle, *d'*, the rotation of the handle in one direction forcing the blocks outward to their expanded position, such as shown in Fig. 2, and the rotation in the opposite direction drawing the blocks inward to the contracted position, such as shown in Fig. 1.

The means of forming the plaits are as follows: Blocks, A², have the shape of a Greek cross. Upon the ends of the arms of the crosses are plates which cooperate with the plates upon adjacent arms, to make the plaits. Thus upon one arm, a plate, *e*, is secured so that its outer edge projects beyond the end of the arm, as shown in Fig. 5, and upon the opposite arm of the adjacent block a V-shaped plate, *e'*, is secured in a plane below that of the plate, *e*. The outer end of plate, *e*, has upwardly projecting pins, *e*², and the arm to which the plate, *e'*, is secured, has upon its edge also upwardly projecting tines, *e*³, as illustrated in Figs. 4 and 5. A guide board, F, is used for the purpose of pressing the leather, G, into tines, *e*², *e*³, and for causing the leather to form into plaits, *g*, when the blocks, A², are drawn inward to the contracted position.

The operation of the parts thus far described is as follows: The covering material for the cushion, such as a sheet of leather, G, is held face downward upon the base-board, while the same is in the expanded position, such as shown in Fig. 2. Then guide-board, F, is laid upon top of the leather and pressed downward so as to cause the tines, *e*², *e*³, to pierce the leather. While the guide board is held in contact with the leather, the handle, *d'*, is rotated so as to draw the blocks, A², inward to their contracted position. This causes the arms of the adjacent blocks to be drawn in contact with each other, and causes the leather between the tines, *e*², *e*³, of adjacent arms to be thrown into plaits, *g*, and draws an excess

of leather over the holes of the base-board so as to give enough leather at those points, to form the pockets of the cushion. After the sections have been drawn to their contracted position, the guide-board, F, is removed, and the pin board, or post board, H, is raised so as to carry the posts, h , upward through the holes in the base board. The post board, H, may be raised by any convenient means, for instance, by a screw and hand wheel, such as the screw 3 and hand wheel 4 in the patent to Hagedorn, No. 777019.

I will now describe the construction of the pin board.

Upon the pin board is mounted a series of posts, each of which consists of a tube, h , within which a guide pin, h' , is mounted upon a coiled spring, h^2 . In the normal position, the pin, h' , is projected by the spring, h^2 , above the top of the tubular post, h , a distance equal to the length of prongs, k , of the tufting button, K, whose head is in the form of a ring, adapted to set down over the pin, h' , as illustrated in Fig. 6.

In conjunction with the pin board, I use a clench plate, M, which has a series of short posts, m , to register with the holes in the follow board, J. The posts, m , have central studs, m' .

I will now describe the operation after the cover has been plaited by the base-board, as heretofore described.

The pin-board, H, with the tufting buttons, K, mounted upon its posts, is raised so as to press the leather over the holes in the base board upward. The filling material, G' , such as excelsior, is then placed upon the inverted cover; the burlap, G^2 , is placed upon the filling material, and the follow board, J, being placed upon top of the burlap, is compressed so as to bring the burlap to its proper relative position to the cover. The cushion is now in place for receiving the tufting buttons. I may either push the tufting buttons upward through the cushion, by raising the pin-board, H, and then

bringing the clenching plate, M, downward upon the prongs protruding through the burlap, or I may lower the clenching plate to the position shown in Fig. 6, and then force the pin-board, H, upward. This carries the clenching prongs, k , upward through the cushion. The guide pin, h' , because of the spring, h^2 , recedes into the tube, h , as the pin-board is forced upward. The guide pin guides the prongs, k , so that they go through the cushion straight. When the prongs contact the post, m , of the clenching plate, the stud, m' , turns them over and clenches them, as illustrated in Fig. 7.

What I claim is:

1. In a tufting apparatus the combination of a base board composed of movable sections, means of moving the sections toward and away from each other, a device carried by each section and adapted to cooperate with the device carried by adjacent sections to plait a covering material when the sections are moved from the expanded to the contracted position.

2. A base board for a tufting apparatus composed of a perforated board and cross-shaped blocks mounted upon the bottom board, means of moving the blocks together to form a plate with perforations registering with the perforations in the bottom board, and teeth upon the ends of the arms of the blocks for engaging the covering material.

3. In a tufting apparatus the combination of a base board composed of movable sections, means of moving the sections toward and away from each other, teeth carried by each section adapted to engage a covering material and to co-act with the teeth of other sections to throw the covering material in plaits when the sections are contracted and a guide plate to fit upon the top of the movable sections.

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Witnesses:

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