No. 811,883. PATENTED FEB. 6, 1906.

M. TAUBER.

UPHOLSTERING APPARATUS.

APPLICATION FILED JUNE 21, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

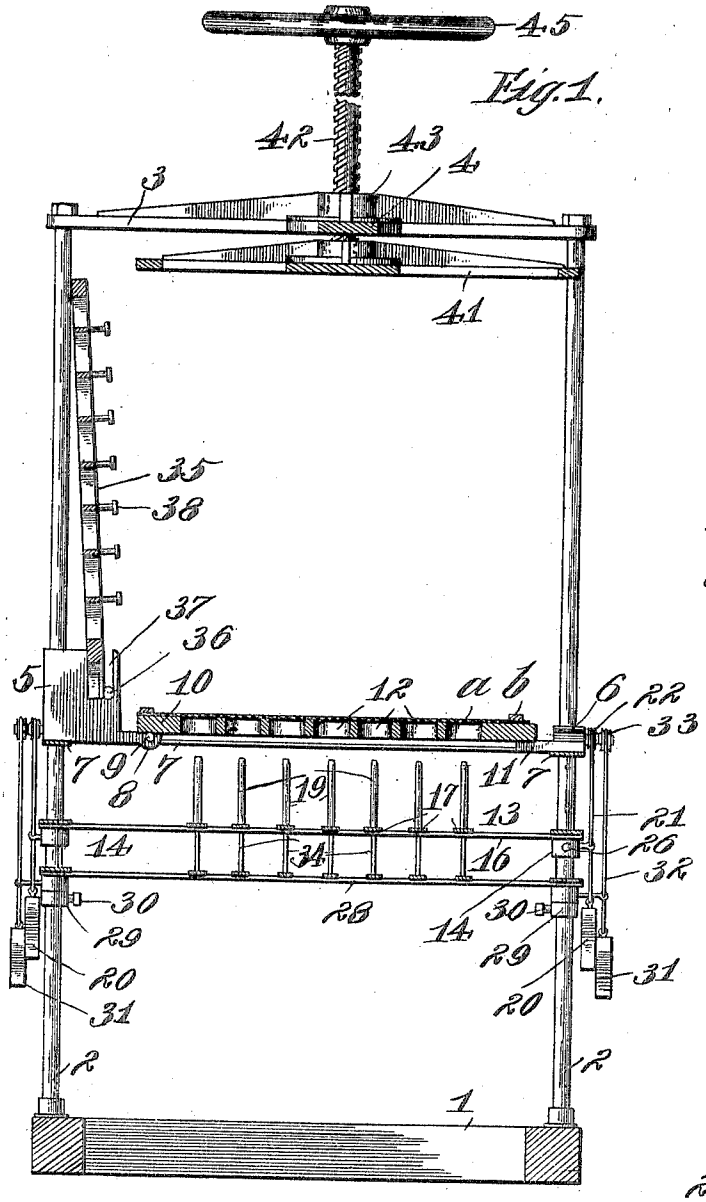


Fig. 2.

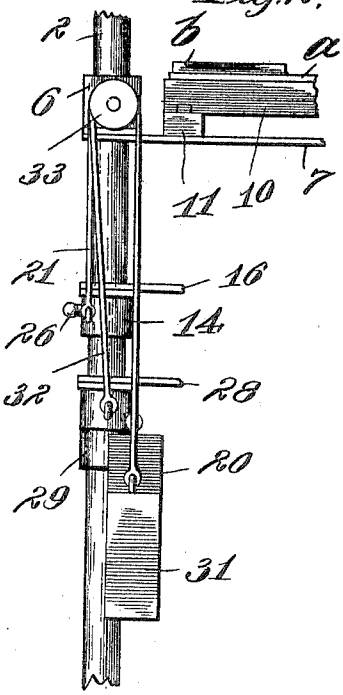
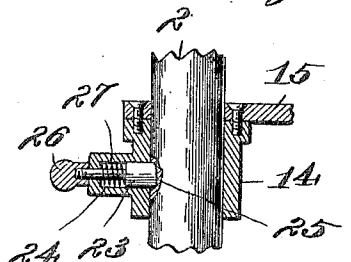


Fig. 3.



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3 SHEETS—SHEET 2.

Fig. 4.

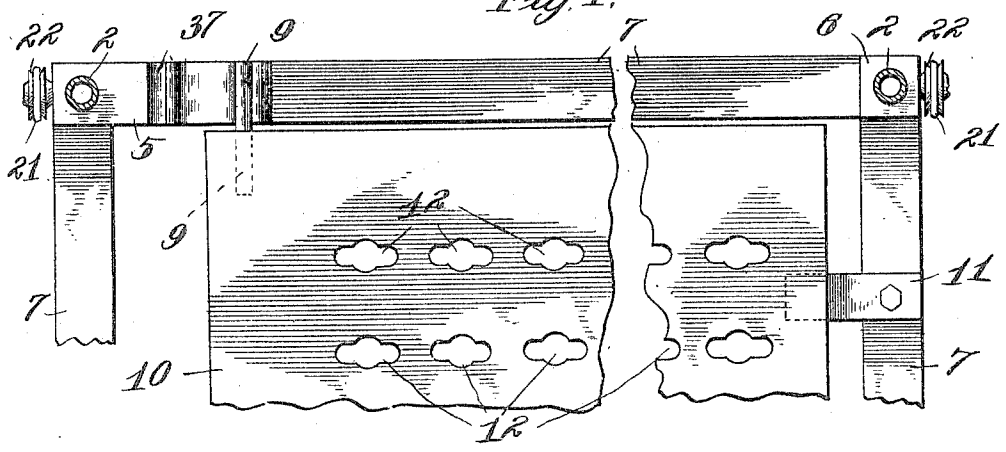


Fig. 5.

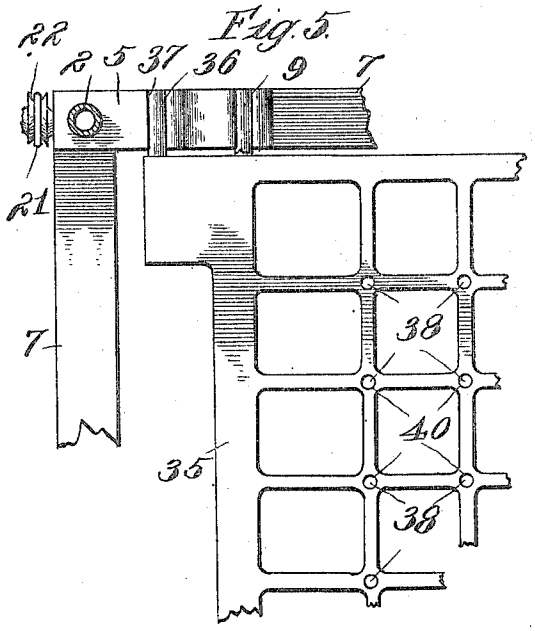
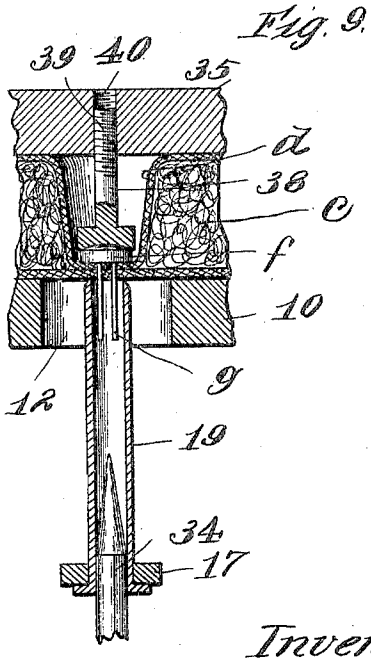


Fig. 9.



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3 SHEETS—SHEET 3.

Fig. 6.

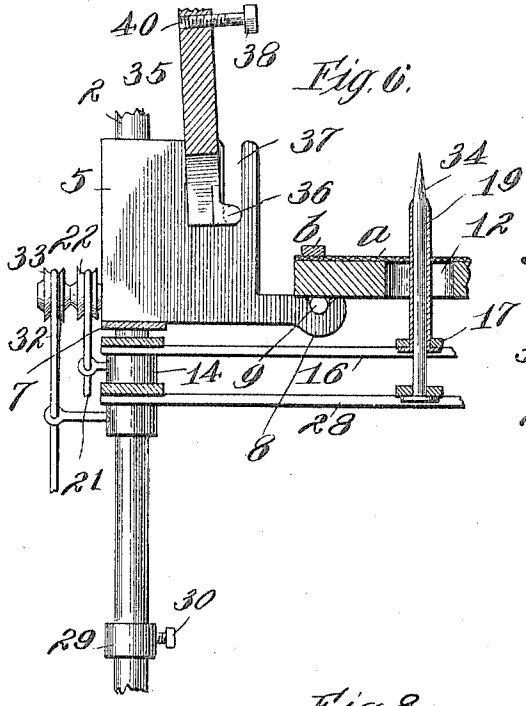


Fig. 7.

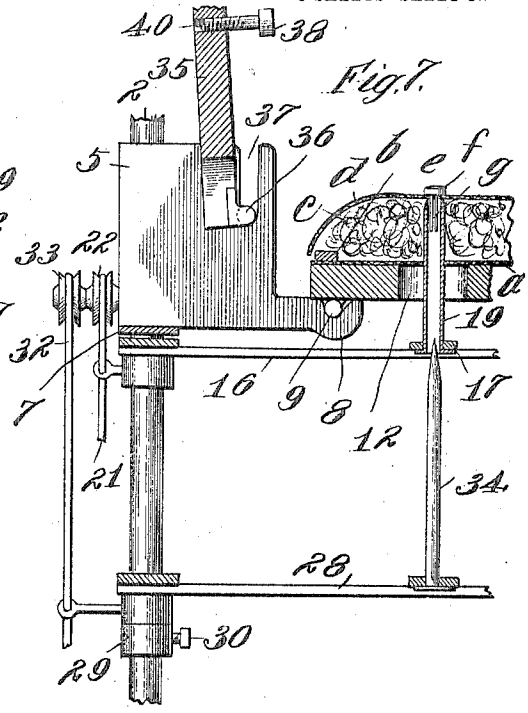


Fig. 8.

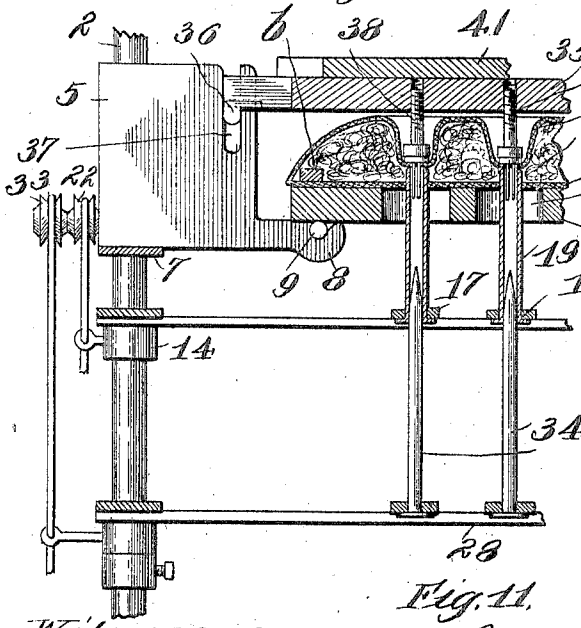
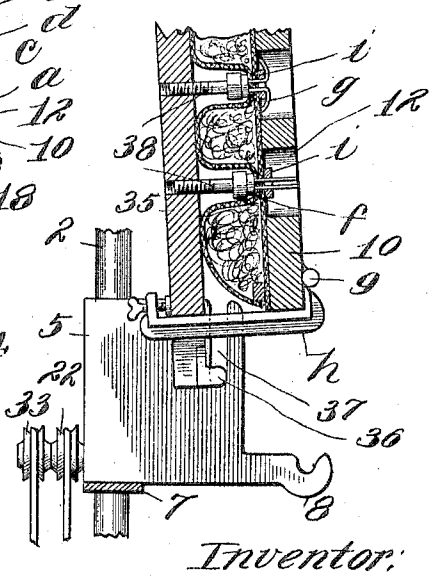


Fig. 11.



Fig. 10.



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UPHOLSTERING APPARATUS.

No. 811,883. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed June 21, 1905. Serial No. 266,351.

To all whom it may concern:

Be it known that I, MAURICE TAUBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Upholstering Apparatus, of which the following is a specification.

The object of this invention is the production of an improved apparatus or machine for use in making the upholstered covers of couches, chairs, and other articles of furniture.

In the accompanying drawings, Figure 1 is a vertical sectional view through an apparatus embodying the features of my invention. Fig. 2 is a detail view showing the counterbalancing means for the needle-tube frame and the needle-frame. Fig. 3 is a detail view of the means for locking the needle-tube frame in position. Fig. 4 is a fragmental view of the supporting-frame of the machine and the work-board. Fig. 5 is a fragmental view of the supporting-frame, showing a portion of the presser-board. Figs. 6 to 10 are views in a series, illustrating the manner of using the apparatus. Fig. 11 is a fragmental detail view showing the means for guiding the platen in its movements.

The general proportions of the apparatus are determined by the size of the upholstered cover to be made upon it, though it will be understood that small covers may be made upon an apparatus especially intended for the formation of larger ones.

In the embodiment of this invention illustrated in the drawings the supporting-framework of the apparatus comprises a substantially rectangular base 1, rising from the corners of which are the posts 2. The upper ends of these posts 2 at each end of the framework are connected together by means of cross-braces 3, and said cross-braces are united by means of a longitudinal brace 4. Brackets 5 are secured to the posts 2 at one side of the machine, and brackets 6 to the posts upon the opposite side thereof. These brackets are connected by bars 7, extending around the ends and sides of the machine. The brackets 5 each comprise a socket 8, adapted to receive the pivot-pins 9 of a rectangular work-board 10, which pivot-pins are secured to said board at one edge thereof, the opposite side of said work-board being supported upon a suitable number of lugs 11, fixed upon one of the bars 7. The work-board 10 is provided with openings 12 of suitable form to permit the passage therethrough of the heads and prongs of the buttons used in making the upholstered covers, and said openings are arranged in appropriate order for the formation of a particular kind of upholstering—as, for instance, biscuit or diamond tufting.

A rectangular needle-tube frame 13 is slidably mounted in the supporting-frame of the machine below the work-board 10, said frame comprising sleeves 14, surrounding the posts 2, side bars 15, cross-bars 16, and longitudinal bars 17, said bars 16 and 17 crossing each other (in this instance) at right angles and at the points of crossing being provided with openings 18, within which openings are secured upwardly-extending needle-tubes 19. The needle-tubes 19 are so arranged upon their supporting-frame 13 as to be adapted to pass upwardly through the centers of the openings 12 in the work-board 10. The weight of the needle-tube frame 13 is substantially counter balanced by means of counterweights 20, which weights are connected to said frame by straps 21, extending over the guide-sheaves 22, said guide-sheaves being rotatably mounted upon the brackets 5 and 6. The needle-tube frame 13 is arranged to be locked in its upper position by means of a locking-plunger 23, slidably mounted in a recess 24 in two of the sleeves 14. A locking-opening 25 is formed in the posts upon which said sleeves are mounted, within which openings said plungers are adapted to lie. The plunger 23 is provided with an operating-knob 26. A coil-spring 27, lying in the recess 24, tends to move said plunger into engagement with the post 2.

A needle-frame 28, substantially similar in construction to the needle-tube frame 13, is slidably supported upon the posts 2, its lower limit of movement being determined by stop-collars 29 on said posts, which collars are arranged to be locked in position on the posts by means of set-screws 30. The weight of the needle-frame 28 is substantially counterbalanced by means of counterweights 31, supported upon straps 32, running over guide-sheaves 33. At points in said needle-frame 28 directly beneath the needle-tubes 19 are secured upwardly-extending needles 34. These needles are somewhat longer than the

tubes 19, and when the needle-frame 28 is raised, as shown in Fig. 6, the sharp upper ends of said needles project above the upper ends of the tubes 19. Said tubes are beveled at their upper ends to provide a conical surface, continuing the conical point of the needle.

A presser-board 35 is pivotally mounted in the main frame of the machine by means of two pivot-pins 36 at one side of said presser-board, each of said pins lying loosely within a slot 37, formed in one of the brackets 5. As shown in Fig. 5, this presser-board is in the form of a grid and is provided with presser-pins 38 at points arranged when the presser-board is in a horizontal position to be directly above the needle-tubes 19. The screw-threaded stems 39 of said presser-pins lie within screw-threaded openings 40 in the presser-board 35, means being thus provided for adjusting the position of said pins. The outer side of the head of each of said presser-pins is slightly concave in order the better to engage the upholstering-buttons, as shown in Fig. 9.

A platen 41 is rotatably mounted upon the lower end of a screw 42, which screw extends through a screw-threaded opening in a boss 43, formed centrally of the longitudinal brace 4. Two of the corners of the platen 41 are notched, as shown at 44, Fig. 11, and slide in contact with two of the posts 2, the platen being thereby held from rotation. A hand-wheel 45 is secured to the upper end of the screw 42 for rotating said screw to raise and lower the platen 41.

In operation, assuming the parts to be in the position indicated in Fig. 1, a piece of burlap or other suitable material intended to form the backing *a* of the upholstered cover is laid upon the work-board 10 and held in place thereon by means of a frame *b*, laid upon the edges of said backing. The needle-frame 28 is now raised to force the points of the needles 34 through the backing, said needle-frame in its ascent carrying with it the needle-tube frame 13, and the needle-tubes 19 being thereby also forced through the backing, as shown in Fig. 6. When said needle-tube 13 is fully elevated, the locking-plungers 23 engage the locking-openings 25 in the posts 2 and hold said needle-tube frame in its elevated position. The needle-frame 28 is then lowered to its initial position. Hair, tow, or other suitable stuffing material *c* is placed upon the backing between the needle-tubes 19, said tubes keeping the openings formed by the needles 34 clear of said stuffing material. The fabric *d*, to form the face of the upholstered cover, is now placed over the upper ends of the needle-tubes 19, sufficient slackness being provided in the fabric *d* about each needle-tube to permit said fabric to be tufted, as will be hereinafter described. A button *e* of any of the well-known constructions comprising a head *f* and prongs *g*, is then forced through the fabric *d* into each of the needle-tubes 19. The presser-board 35 is now tilted to bring its presser-pins 38 into engagement with the buttons *e*, as shown in Fig. 8. The needle-tube frame 13 having been unlocked by withdrawing the plungers 23 from engagement with their locking-openings 25, the platen 41 is lowered into contact with the presser-board 35 and said board pressed down upon the work by means of said platen until the needle-tubes 19 have been forced out of the backing *a*. The presser-board 35 and the work-board 10 are then clamped together by means of a suitable number of clamps *h*, of common construction, and said boards tilted into a substantially vertical position, as shown in Fig. 10, exposing the prongs of the buttons to the view of the operator. Washers *i* are inserted over said prongs and said prongs clenched down upon the backing fabric *a*. The work-board and presser-board are returned to their horizontal position, the clamps *h* removed, the presser-board again raised to a vertical position, and the completed cover lifted from the work-board.

I claim as my invention—

1. An upholstering apparatus comprising means for piercing the backing material, and a movable frame carrying a plurality of tubes adapted to extend through the openings thus formed for keeping said openings clear of the stuffing material.

2. An upholstering apparatus comprising means for piercing the backing material, and means for keeping the openings thus formed clear of the stuffing material, said last-mentioned means comprising movably-supported tubes adapted to extend through said openings.

3. An upholstering apparatus comprising a supporting-framework, a frame slidably mounted in said framework and carrying a plurality of needles for piercing the backing material, and a second frame, also slidably mounted in said framework, carrying a plurality of tubes through which said needles are adapted to extend, said tubes being adapted to extend through the openings formed by said needles.

4. An upholstering apparatus comprising a perforated work-board for supporting the work, a plurality of tubes arranged to be moved through the perforations in said work-board and adapted to extend into the materials being operated upon, and a plurality of needles arranged to be moved into and out of said tubes.

5. An upholstering apparatus comprising a perforated work-board for supporting the work, and two independently-movable frames, one of said frames carrying a plurality of tubes adapted to be projected through the openings in said work-board, and the other frame carrying a plurality of needles each adapted to fit within one of said tubes.

6. An upholstering apparatus comprising a perforated work-board for supporting the work, a plurality of tubes adapted to be moved into and out of the openings in said work-board, and a plurality of needles adapted to be moved into and out of said tubes, the upper ends of said tubes being adapted to receive the shanks of the buttons and support the heads thereof.

7. An upholstering apparatus comprising a supporting-framework, a work-board pivotally mounted therein, a presser-board for forcing buttons through a portion of the materials being operated upon, which presser-board has a connection with said framework permitting a pivotal and a rectilineal movement of said presser-board, said presser-board carrying a plurality of pins each adapted to engage a button.

8. An upholstering apparatus having means for forcing buttons through a portion of the materials being operated upon, said means comprising a presser-board, pivot-pins for said presser-board, supporting members having elongated openings therein in which said pivot-pins are adapted to lie, and means for moving said presser-board bodily in a straight line.

9. In an upholstering apparatus, in combination, a work-board; means for piercing material laid on said work-board; tubes adapted to be projected through the openings thus formed for keeping the openings clear of the stuffing material; and means for forcing buttons through a portion of the materials being operated upon.

10. In an upholstering apparatus, in combination, a pivotally-mounted work-board; means for piercing material laid on said work-board; tubes adapted to project through the openings thus formed for keeping the openings clear of the stuffing material; and means comprising a pivotally-mounted presser-board for forcing buttons through a portion of the materials being operated upon.

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