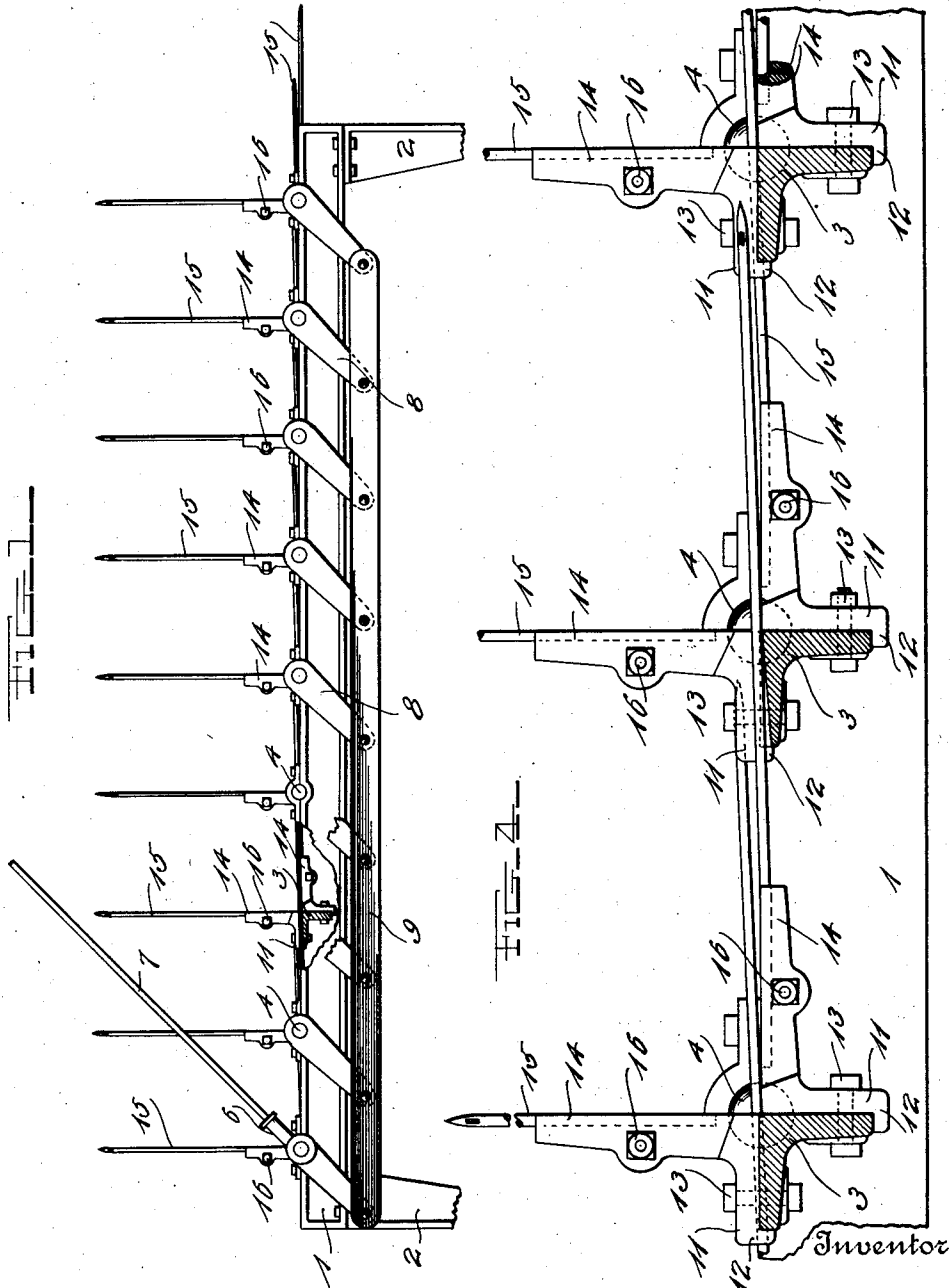


C. E. MARTIN.
TUFTING MACHINE.
APPLICATION FILED NOV. 27, 1911.

1,037,786.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.



Witnesses
J. R. Pina

N. Koblauer

Inventor
Charles E. Martin

by *A. B. Wilson & Co.*
Attorneys

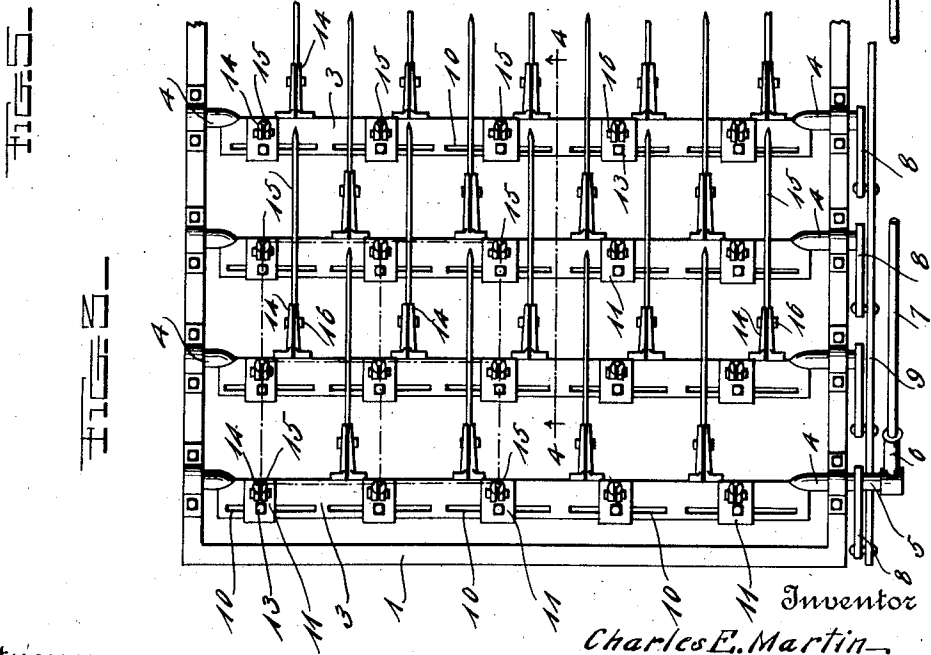
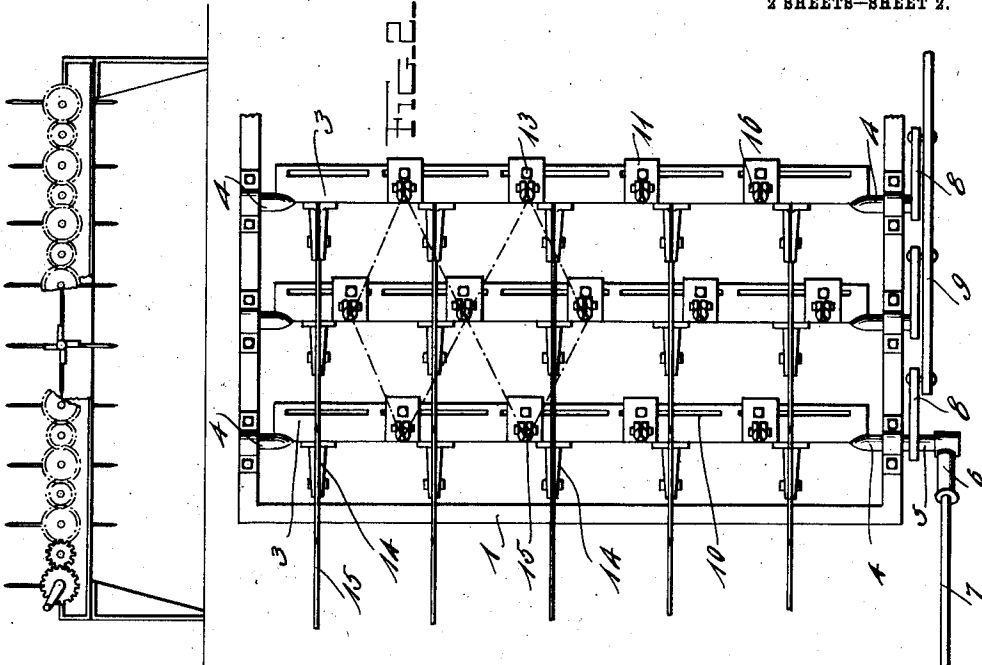
C. E. MARTIN.
TUFTING MACHINE.

APPLICATION FILED NOV. 27, 1911.

1,037,786.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 2.



Witnesses
J. R. Pira

J. L. Rodamer

Inventor
Charles E. Martin.

By *H. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES E. MARTIN, OF HAMMOND, INDIANA.

TUFTING-MACHINE.

1,037,786.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed November 27, 1911. Serial No. 662,725.

To all whom it may concern:

Be it known that I, CHARLES E. MARTIN, a citizen of the United States, residing at Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Tufting-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sewing machines, and more especially to those devices which are used for tufting articles such as mattresses, cushions, and the like; and the object of the same is to produce a machine of this character wherein there is a plurality of sets of needles movably mounted in a single frame, and mechanism for throwing any desired set into position to be used.

In tufting mattresses and the like the needles are ordinarily disposed in a bank or set, being often arranged in rows across the same at right angles to each other so that the tufting shall be done in squares, but at times it becomes desirable to vary the disposition of the needles so that the tufting shall be done in larger or smaller squares or in other geometric figures such as diamonds. Heretofore it has been necessary on occasions of this character to adjust the needles individually on their supporting bars, and possibly to remove certain of the bars or to adjust the bars themselves with relation to each other.

The object of the present invention is to avoid the time and labor necessary to make such changes, and to produce a machine wherein the bars ever present therein will carry a number of sets of needles already arranged so as to do the tufting in the geometrical figures which are most common and therefore oftenest required. This and other objects are accomplished by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side elevation of this machine, partly broken away; Figs. 2 and 3 are plan views (each of one end) of the machine, the former showing the needles set so as to tuft in the form of diamonds and the

latter showing them set for tufting in the form of squares; Fig. 4 is an enlarged longitudinal section through three of the rock bars for the purpose of elaborating the illustration of certain details; Fig. 5 is a diagrammatic side elevation partly broken away, showing an amplification of this idea which may be employed when four sets of needles are used, although the means herein illustrated could be employed for rocking the bars when a lesser number of needles was employed.

In the drawings the numeral 1 designates a frame which is herein shown as rectangular and will be of a size sufficient to carry a machine that will tuft an ordinary mattress, the frame being mounted on suitable supports herein shown as legs 2. Across the frame at intervals are disposed bars 3 which in this case are shown as of right-angular cross section, and at the extremities of each bar are stub shafts 4 whose axes are coincident with the angle between the two plane surfaces of the bar 3. All said stub shafts are journaled in the side bars of the frame 1, and one of them is continued as at 5 and carries a socket 6 in which is mounted a lever 7. At one side of the frame levers 8 are fastened on all of the stub shafts 4, and the outer ends of all the levers 8 are connected by a link 9 so that they will be caused to move in unison as the bars 3 are rocked in the bearings wherein their stub shafts 4 are journaled. Obviously the hand lever 7 is useful for rocking the levers, and although I have shown an ordinary straight lever inserted in the socket 6 it might be replaced by a crank handle or similar device.

Each bar throughout its length is slotted at intervals as at 10, the slots by preference passing through both leaves of the L-shaped bar and being arranged in staggered relation to each other or wherever necessary to produce the geometric forms hereinafter referred to. For each of said slots is provided a clamp, also of L-shaped structure, one arm of which consists of a foot 11 adapted to lie across said slot and a toe 12 at its outer extremity adapted to hook over the edge of a rock bar 3; and a bolt 13 passes through the foot and slot and holds the former to the bar 3. The other arm of the clamp com-

prises a pair of fingers 14 slightly spaced and curved along their contiguous faces as to inclose the needle 15, and a bolt 16 draws these fingers together to clamp the needle in place. In the embodiment of my invention herewith illustrated, the clamps are right-angular in side elevation and the rock-bars are right-angular in cross section, and when the foot of a clamp is secured upon one leaf of the rock bar as described the fingers of the clamp stand in alinement with the other leaf thereof as shown. When these clamps are secured along a rock bar in staggered relation to each other by means of the bolts 13 passing through the slots 10, it will be obvious that the needles can be adjusted longitudinally of the bars so as to space them farther apart or closer together in any one row. With the right-angular disposition of parts above described, it will also be obvious that when the bar is rocked in its bearing for ninety degrees, the needles in one row will be moved from a horizontal to a vertical position; and as all the bars are connected by the levers 8 and link 9, they rock in unison as will be clear. Hence the operator may set the needles in one group so as to produce squares, and those in the other group so as to produce diamonds, or he may dispose the needles in the two groups so as to produce rectangles of different shape, according to the requirements of his trade. It is not impossible that a third and even a fourth set of needles could be carried by bars of this character if the shifting mechanism herein were replaced by gearing connecting the various shafts and the hand lever 7 were replaced by a crank on a master gear. The details of construction will not be further elaborated in this specification, nor will it be necessary to go into the use of this device further than to explain that, as is common in machines of this character, the mattress to be tufted is supported upon a bed which is of skeleton structure and by means of which it is let down over the needles after the latter have been adjusted, then the tufting done, and the mattress finally raised by and removed from said bed.

The gist of the invention lies in disposing the needles in groups or series and mounting them on rock bars with means for turning the latter through ninety degree arcs so as to bring one set of needles uppermost or another.

I do not limit myself to the precise details, nor to the sizes, proportions or exact construction of parts.

What is claimed as new is:

1. In a tufting machine, the combination with a frame, a series of parallel rock bars having stub shafts journaled in said frame, the bodies of the bars being of angular cross section and their leaves having longitudi-

nal slots, a plurality of series of angular clamps, each having one arm connected by adjustable means with one of said slots and its other arm outstanding radially from the bar, and a needle carried by the last-named arm; of means connected with the stub shafts of the various bars for turning the latter in unison.

2. In a tufting machine, the combination with a frame, a series of parallel rock bars having stub shafts journaled in said frame, the bodies of the bars having a plurality of series of longitudinal slots, a plurality of angular clamps, each having one arm connected by adjustable means with one of said slots and its other arm outstanding radially from the bar, and a needle carried by the last-named arm; of levers carried by the stub shafts of the various bars, a link pivotally connecting all the levers, and means for moving the link to turn the bars in unison.

3. In a tufting machine, the combination with a frame, a series of bars having stub shafts journaled in said frame, the bodies of the bars being of right-angular cross section, two series of right-angular clamps whereof the inner arms of those in one series are attached to one leaf of said bars and the similar arms of those in the other series are attached to the other leaf thereof, and needles carried by the last-named arms; of means for turning the bars in unison through a one-quarter revolution.

4. In a tufting machine, the combination with a series of rock bars each having two of its leaves disposed at right angles to each other and slotted longitudinally of the bar, and means for turning all the bars in unison through a one-quarter revolution; of two series of right-angular clamps all having needle-holders on their outwardly projecting arms and their inner arms formed into feet adapted to lie across said slot and toes at the extremities of the feet adapted to hook over the edges of the rock-bars, the feet of the clamps in one series being disposed on one leaf of the bars and those of the clamps in the other series on the other leaf thereof, and bolts passing through all the feet and adjustably holding the clamps in said slot.

5. In a tufting machine, the combination with a series of rock bars, and means for turning them all in unison through a one-quarter revolution; of two series of clamps attached to each bar and all having needle-holding fingers projecting radially outward therefrom, and two series of needles held in said fingers, those in one series standing at right angles to those in the other.

6. A rock bar of angular cross section having the adjacent faces of its two leaves disposed at a true right angle to each other, stub shafts at the extremities of a line

through said angle, bearings in which said stub shafts are mounted, and shifting mechanism for turning said bar through a one-quarter revolution; combined with clamps mounted on and projecting from the different faces of said bar, and two rows of needles carried by said clamps.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES E. MARTIN.

Witnesses:

J. W. WEIT,
W. O. CONNELL.