

Nov. 2, 1926.

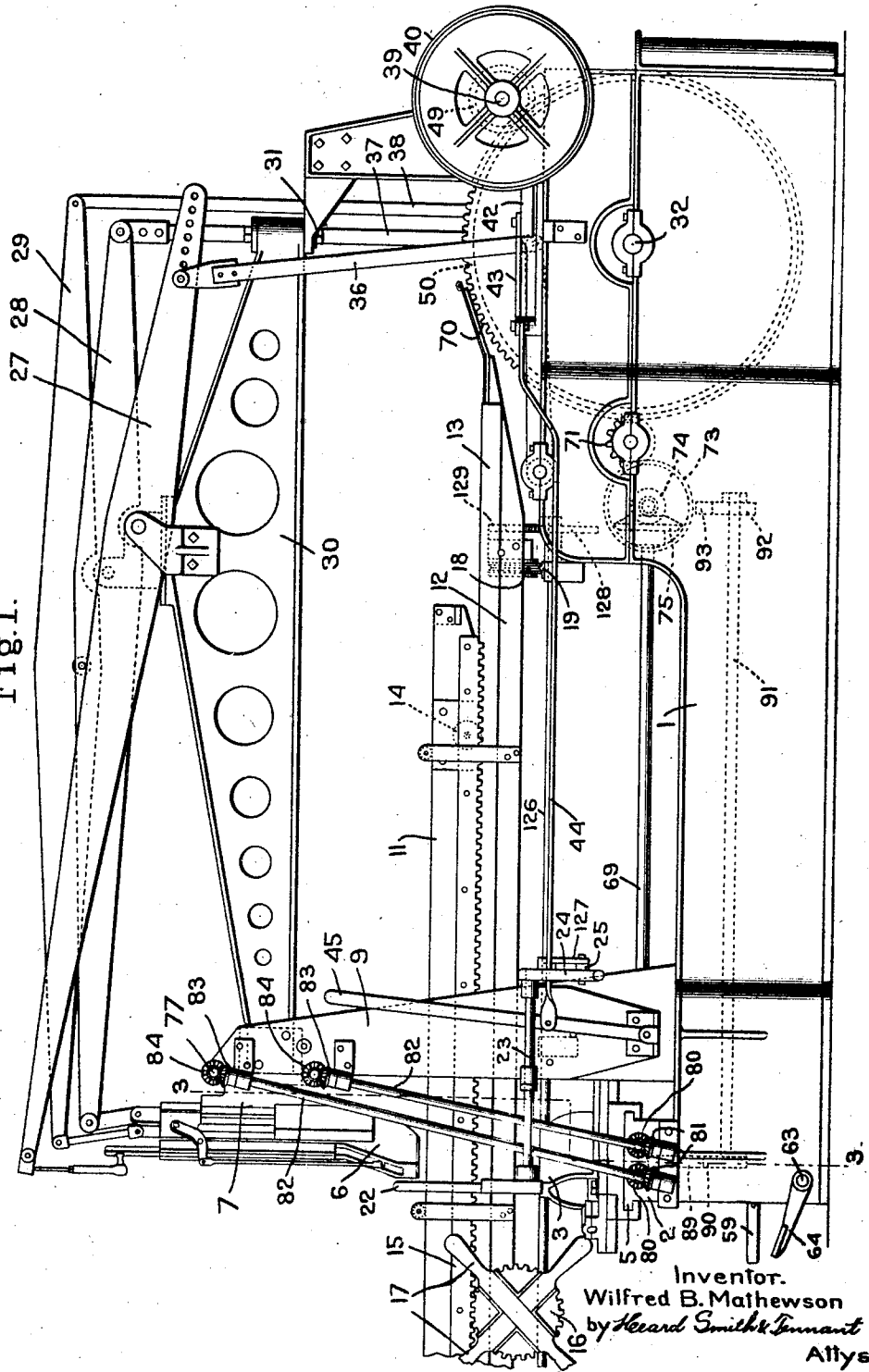
W. B. MATHEWSON
MATTRESS TUFTING MACHINE

1,605,124

Filed March 31, 1922

8 Sheets-Sheet 1

Fig. 1.



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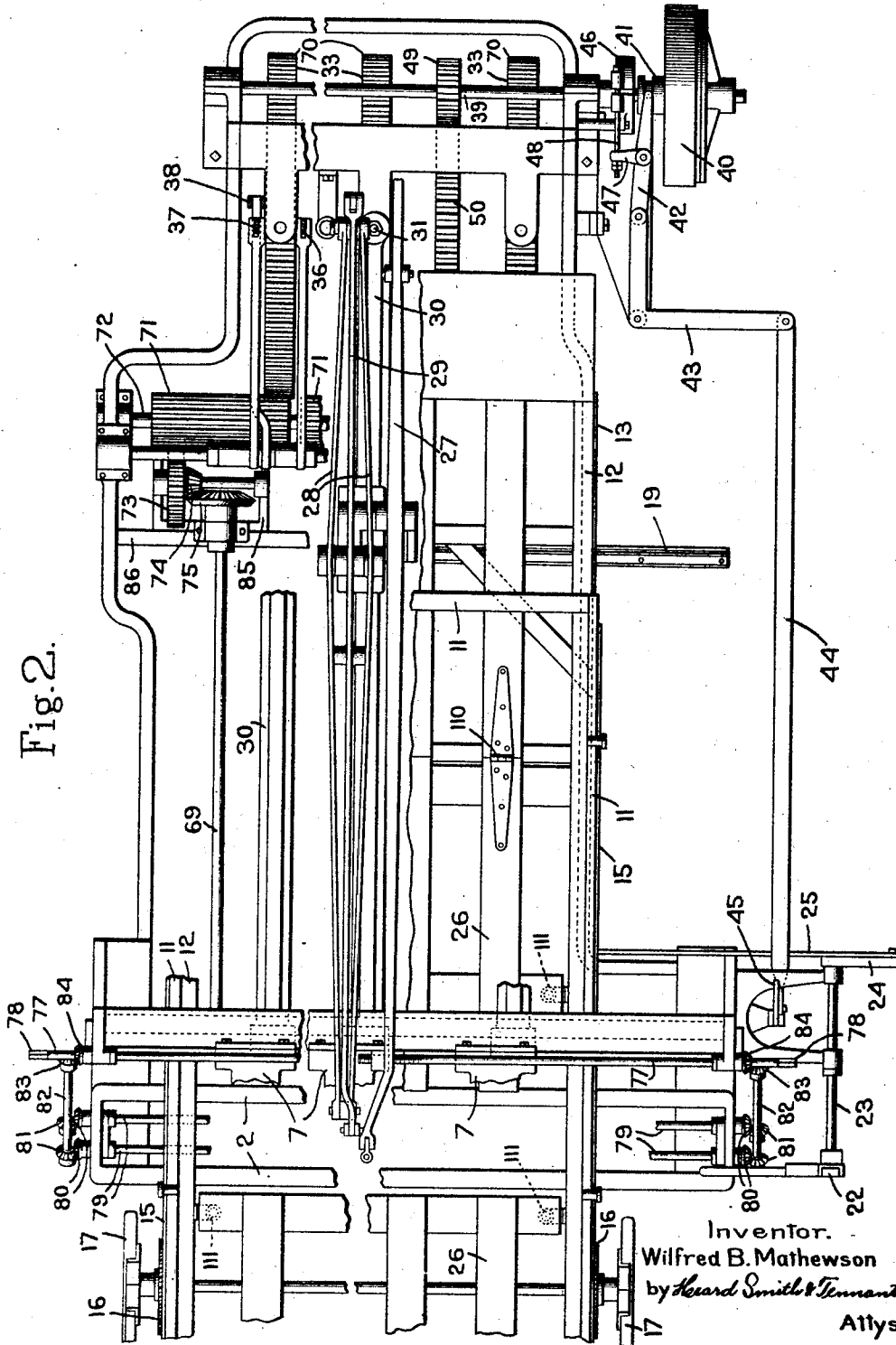
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8 Sheets-Sheet 2

Fig. 2.



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8 Sheets-Sheet 3

Fig. 3.

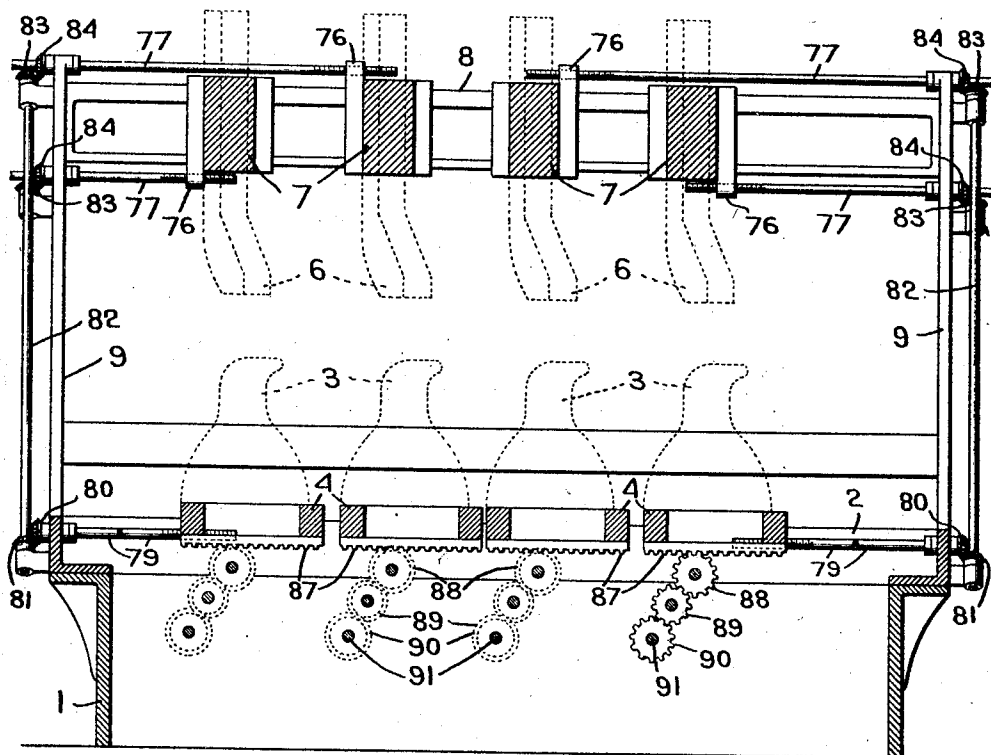


Fig. 4.

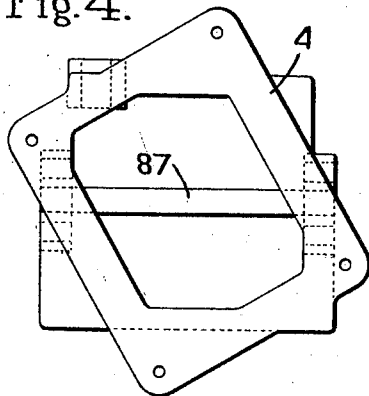
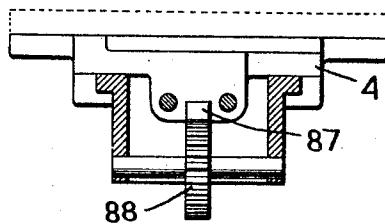


Fig. 5.



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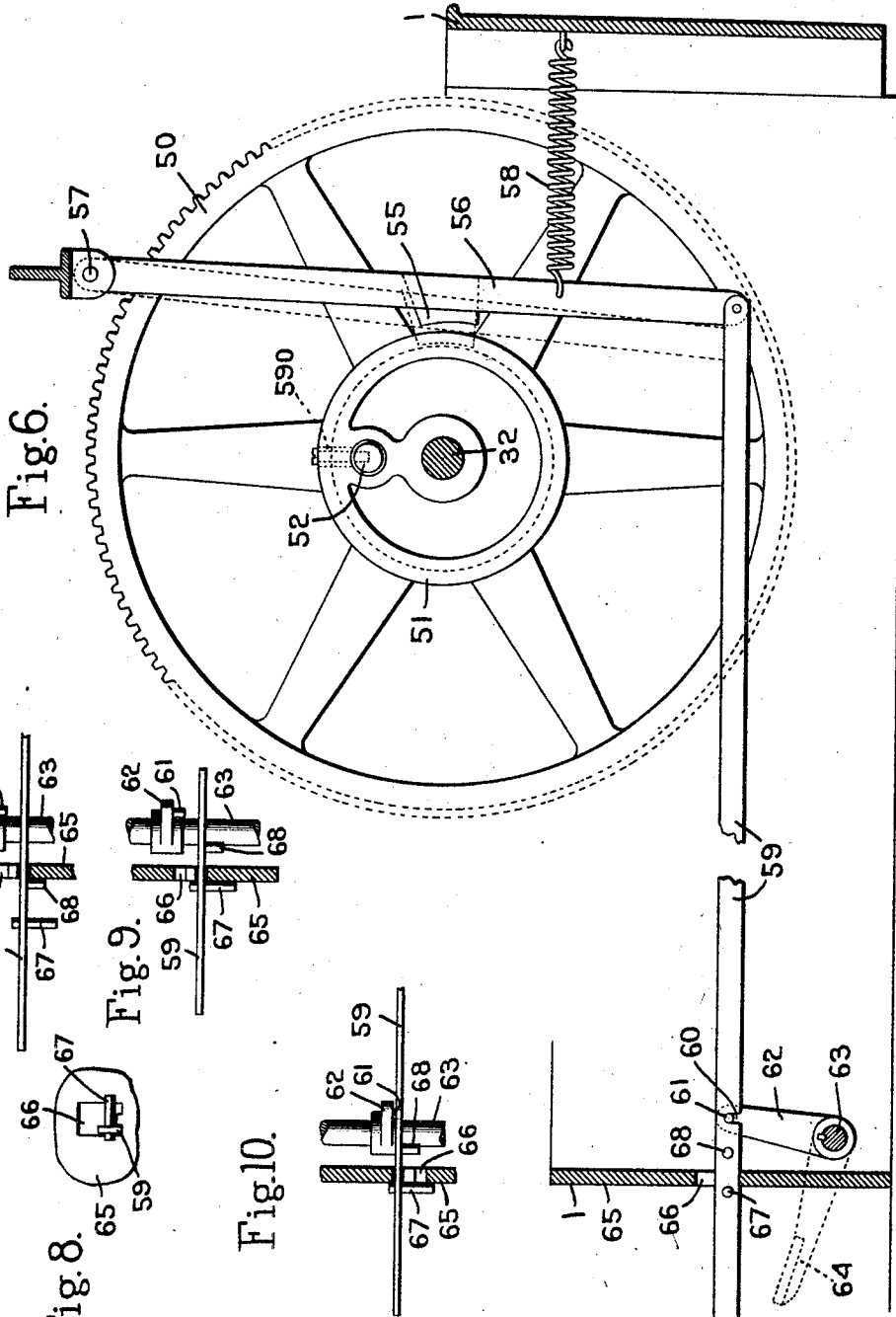
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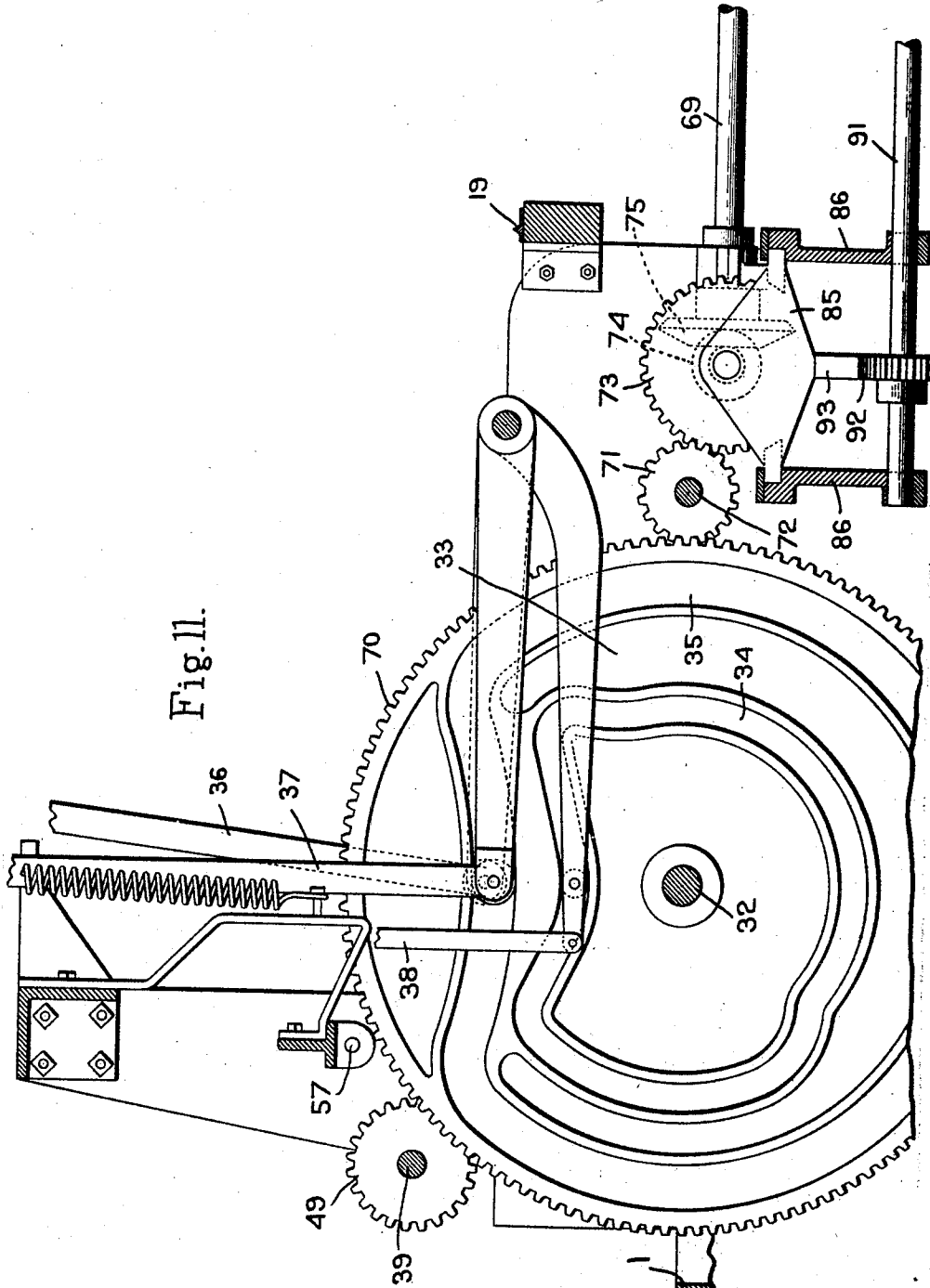
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MATTRESS TUFTING MACHINE

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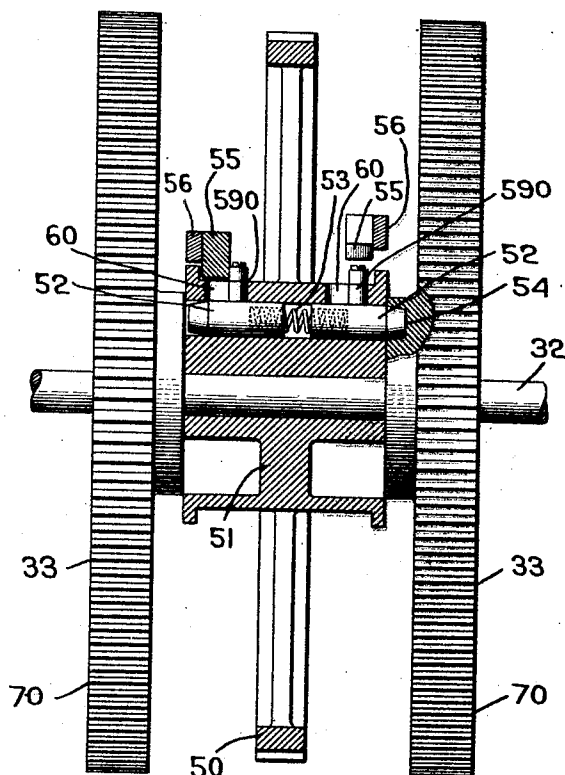
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8 Sheets-Sheet 6

Fig. 12.



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8 Sheets-Sheet 7

Fig. 13.

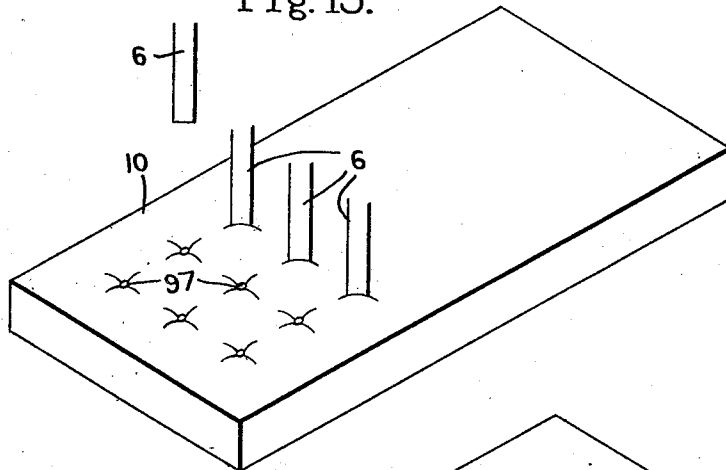


Fig. 14.

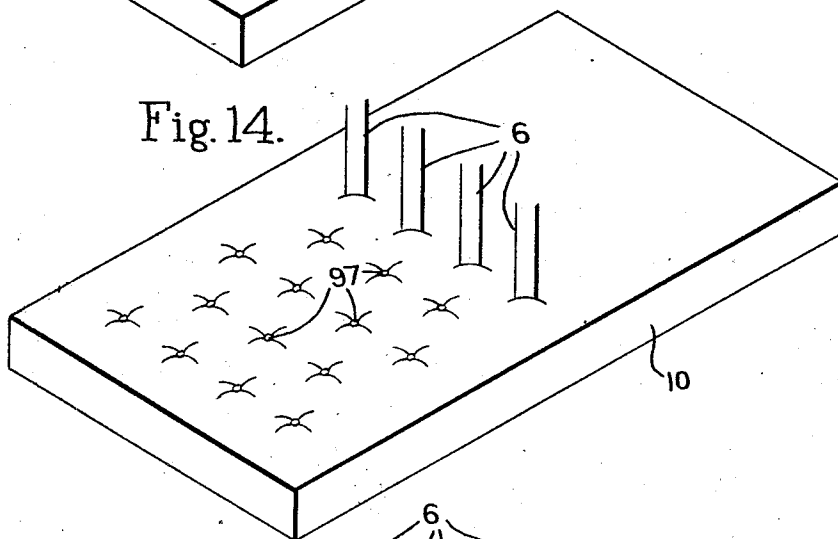


Fig. 15.

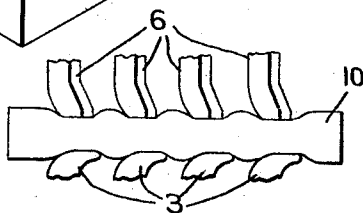
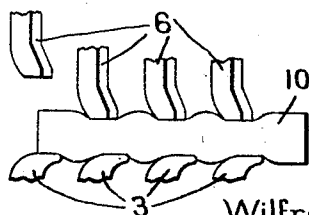


Fig. 16.



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UNITED STATES PATENT OFFICE.

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MATTRESS-TUFTING MACHINE.

Application filed March 31, 1922. Serial No. 548,508.

This invention relates to mattress tufting machines of that type having a plurality of separate tufting devices constructed to be operated simultaneously so that a plurality of tufts may be formed in the mattress at the same time.

One of the objects of the invention is to provide a gang mattress tufting machine which is constructed so that the tufting devices can be selectively operated thus providing for the insertion of the tufts singly or in groups as desired.

Still another object of the invention is to provide a gang mattress tufting machine which is constructed so that the tufting devices can be adjusted relative to each other to provide for different spacing of the tufts.

Another object of the invention is to provide a mattress tufting machine so arranged that the twine which ties in the tufts will be anchored by both warp threads and filling threads of the ticking, thereby making a more secure anchorage for the tuft.

Other objects of the invention are to improve generally mattress tufting machines of this character all as will be more fully hereinafter set forth.

In order to give an understanding of the invention I have illustrated in the drawings a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a side view of a mattress tufting machine embodying my invention;

Fig. 2 is a plan view with a part broken out;

Fig. 3 is a vertical sectional view on substantially the line 3—3, Fig. 1;

Fig. 4 is a view of the carriage on which each individual knotter is supported;

Fig. 5 is a sectional view showing the means for adjusting each individual knotter;

Fig. 6 is a sectional view showing the clutch-operating means;

Figs. 7, 8, 9 and 10 are detail views showing the means by which the clutches are selectively operated;

Fig. 11 is a fragmentary sectional view showing the operating means for each tufting device;

Fig. 12 is a fragmentary sectional view showing the clutch for clutching each tufting device to the driving element;

Figs. 13 and 14 are diagrammatic views showing different ways in which the machine operates;

Fig. 15 is a diagrammatic sectional view showing all the tufting devices operating simultaneously;

Fig. 16 is a similar view showing one of the tufting devices inoperative, and three of them operative, said view corresponding to Fig. 13;

Fig. 17 is a perspective diagrammatic view showing the frame or support for the mattress;

Fig. 18 is a sectional view through one of the tufts;

Fig. 19 is an enlarged diagrammatic view showing the way in which each tuft is anchored to both the warp threads and the filling threads of the ticking;

Fig. 20 is a fragmentary view showing the means for shifting the carriage 12.

As stated above the present invention includes a plurality of separate tufting devices arranged to be operated either simultaneously, singly or in groups. These tufting devices are supported on a suitable frame, and so far as the present invention is concerned they may have any suitable or preferred structure. I have herein chosen to illustrate tufting devices similar to that shown in Patents No. 819,954, May 8, 1906, and No. 1,193,708 dated August 8, 1916. The tufting device shown in these patents comprise a knotter element situated beneath the mattress and a compression head operating above the mattress. In tying in the tuft the compression head is brought down against the mattress thereby compressing the latter between the compression head and knotter, tufting material is fed into place both above and below the mattress by means associated with the compression head and knotter, and a needle mounted on the compression head operates to insert tufting twine 101 through the mattress in such a way as to tie tufts 97 to the top and bottom of the mattress and the knotter underneath the mattress ties a knot in the twine thus anchoring the tufts in place. Inasmuch as my present invention does not relate to the details of the tufting mechanism but to the gang arrangement thereof, I have not thought it necessary to illustrate the knotter and compression head in any great detail. Each

of the tufting devices herein illustrated, however, includes both a knotter beneath the mattress and a compression head and its associated parts operating above the mat-

5 tress. These tufting devices are supported on a suitable frame 1, said frame having a cross piece 2 on which the individual knotters, indicated generally at 3, are mounted. Each
10 knotter is secured to and mounted on a carriage 4 which slides on ways 5 formed on the cross piece 2. The compression heads of the tufting devices are indicated generally at 6 and each is vertically slidable in a guide
15 block 7 that is carried by a cross head 8 extending transversely of the frame and supported by suitable uprights 9.

In the present embodiment of the invention there is a gang of four tufting elements, but the number in the gang can be varied without departing from the invention. The mattress in which the tufts are to be tied is indicated at 10 and this is supported on a table or carrier which can be
25 moved both transversely and longitudinally of the frame. This table or carrier comprises a box-like frame 11 adapted to receive the mattress 10 and which is also mounted on a carriage 12 for movement lon-
30 gitudinally of the frame or in a direction at right angles to the row of tufting devices. The carriage 12 is mounted on the frame 1 for movement transversely thereof or in a direction at right angles to the movement of
35 the frame 11 of the carriage.

The carriage 12 is shown as having tracks 13 thereon and the frame 11 is provided with rollers 14 operating on said tracks. This frame is provided with a rack 15 mesh-
40 ing with a gear 16 journaled in the carriage and having handles 17 by which it may be turned. The carriage 12 is provided with rolls 18 operating on tracks 19, 20 extending transversely of the frame 1, the track 19 being supported by the frame 1 and the track
45 20 being supported on a separate support 21. The carriage is moved on its tracks by means of a lever 22 which is fast on a rock shaft 23, the latter having a crank arm 24 to which is connected one end of a link
50 25, the other end of said link being connected to an arm 127 fast on a rock shaft 126. This rock shaft has a gear 128 fast thereon which meshes with a rack 129 carried by the carriage 12. With this arrangement swing-
55 ing movement of the lever 22 will shift the carriage 12 back and forth on its tracks 19 and 20.

The carriage 12 is provided with a slotted
60 bottom to support the mattress, said bottom having an opening 98 above the knotters 3 and through which the knotters operate. The sections of the bottom either side of this opening are indicated at 26 and said
65 sections are vertically yieldable to allow for

the downward movement of the mattress at the points where the compression heads 6 operate thereon. This is provided for by pivoting the sections 26 to the main portion of the carriage as shown at 110, and sup-
70 porting the free ends of the pivoted sections on springs 111.

The box-like frame 11 will preferably be long enough to have a full length mattress, and wide enough to take a mattress having
75 the maximum width.

In order to accommodate narrower mat-
80 tresses I provide the ends of the frame 11 with vertical grooves 112 to receive a board 113 which forms in effect a movable side of the frame. If the mattress to be tufted is a narrow one then the side board 113 may be placed in the appropriate groove 112 so as to provide a space of the proper size to
85 receive the narrow mattress.

Each compression head is provided with a tuft gripper for feeding the tuft 97 into place, and cutters for cutting the tuft and a needle for inserting the tufting twine 101, and each compression head is also movable
90 vertically in its guide block 7 all as shown in the above-mentioned patents.

This vertical movement of each compression head and the operation of the tufting grippers, needle and other parts are secured by means of a plurality of levers 27, 28, 29, all as illustrated in said patents, there being a group of levers for each compression head. Each group of levers is pivotally mounted upon a stringer or bridge element 30 which
95 is pivoted at its rear end to the frame as shown at 31 and the front end of which is connected to the corresponding guide block 7. These actuating levers are in turn operated by suitable cams mounted on a cam
100 shaft 32 supported in the frame.

This cam shaft 32 has mounted thereon a cam element for each tufting device, there being four such cam elements in the present embodiment of the invention. These cam
105 elements are indicated at 33 and each is provided with three cam grooves, two on one face thereof, as shown at 34 and 35 in Fig. 11, and one on the opposite face thereof. Each cam groove has a follower therein and the followers are connected to the levers 27,
110 28, 29 through links 36, 37, 38. The cam elements are driven from a drive shaft 39 and means are provided for selectively connecting each cam element to the drive shaft. This drive shaft 39 is shown as having a driving pulley 40 thereon and the latter is
115 connected to or disconnected from the driving shaft by a suitable clutch 41. This clutch is controlled by a clutch-controlling member 42 which is connected through a bell crank lever 43 and link 44 to an operating or control lever 45. The driving shaft 39 is also provided with a contracting brake
120 46 that encloses the brake drum fast on said

shaft and the clutch lever 42 has an arm 47 rigid therewith which is connected to the brake by a connection 48 so that when the clutch is disengaged the brake will be applied while when the clutch is engaged the brake will be released.

The driving shaft 39 is shown as having two pinions 49 thereon each of which meshes with and drives a gear 50 which is rigid with a clutch element 51 loosely mounted on the cam shaft 32.

In the present construction I have shown one clutch element 51 co-operating with two cam elements. Each clutch member 51 is situated between two cam elements 33 and is provided with two clutch pins 52, one for each cam element. These clutch pins 52 are acted upon by springs 53 tending to force them outwardly and each cam element is provided with a notch or recess 54 to receive the pin. When any cam element is clutched to the clutch member 51 by the clutch pin 52 then the cam element will rotate with the clutch element. Each clutch pin is disengaged by means of a clutch controller in the form of a cam 55 which is carried by a lever 56 pivoted to the frame at 57 and acted upon by a spring 58 tending normally to hold it in its inoperative position shown in full lines Fig. 6. Each clutch pin 52 is provided with a laterally-extending projection 590 operating in a slot 60 and projecting beyond the periphery of the clutch hub 51. When the clutch-controlling cam 55 is in its inoperative position in full lines, Fig. 6, it is out of the path of movement of the projection 590 and, therefore, the clutch is operative. When the clutch-controlling cam 55 is moved into the dotted line position, Fig. 6, it is then in its operative position and is in a position to be engaged by the projection 590 as the clutch hub turns. The engagement of the projection 590 with the cam 55 will withdraw the clutch pin from the cam member, as shown at the left in Fig. 12, thereby disengaging the cam member from the clutch member. Each cam member has one recess 54 only and, therefore, so long as any clutch-controlling cam 55 is in its operative position shown in dotted lines, Fig. 6, the corresponding cam member 33 will be disengaged from the clutch hub and will, therefore, be inoperative. When, however, any controlling cam is moved into inoperative position shown in full lines Fig. 6 then the corresponding cam element is automatically clutched to the clutch hub 51 and will be rotated thereby.

It will be understood from a study of the above-mentioned patents that one rotation of each cam member will cause the corresponding tufting element to perform one cycle of operations.

Means are provided whereby all of the cam elements may be simultaneously

clutched to their clutch hubs 51 and thus operated simultaneously, or any one or more of the cam elements may be disconnected therefrom and thus rendered inoperative. The tufting devices, therefore, may be selectively operated either singly or in groups. The means for thus selectively operating the clutches is constructed so that they can be manipulated or controlled by the attendant who stands within convenient reach of the hand wheel 17 and levers 22, 45. Each lever 56 has a link 59 pivotally connected thereto which extends forwardly to the front of the frame and is provided with a notch 60 adapted to receive a pin 61 carried by an arm 62 fast on a rock shaft 63. There is one such arm 62 with its pin 61 for each link 59. The rock shaft 63 has a foot treadle 64 fast thereon so that by depressing the treadle the arms 62 will be moved toward the left Fig. 6. When the notches 60 of all four links 59 are engaging the corresponding pins 61 then a downward movement of the treadle 64 will carry all of the controlling cams 55 into their operative position shown in dotted lines Fig. 6. Each link 59 extends through an opening 66 in the end wall 65 of the frame 1, this opening having a sufficient transverse dimension to permit the link to be moved laterally to an extent to disengage it from the pin 61 as shown in Figs. 7 and 9. Each link 59 is also provided with two stop pins 67, 68, the stop pin 67 being longer than the transverse dimension of the opening 66 and the pin 68 being short enough to allow it to pass through this opening. The stop pin 67 is for the purpose of limiting the movement of the link 59 due to the action of the spring 58.

Each link 59 can be readily shifted by hand into any one of the positions shown in Figs. 7, 9 and 10. When the link is in the position shown in Fig. 10 then it is operatively connected with the arm 62 by the reason of the pin 61 occupying the notch 60 and the corresponding clutch-controlling cam 55 is, therefore, controllable from the treadle 64. When the link 59 has been pulled forwardly into the position shown in Fig. 7 to carry the stop pin 68 through the opening 66 and has also been shifted laterally to disengage the pin 61 from the notch 60 and to carry the stop pin 68 against the front of the wall 65, then the corresponding clutch-controlling cam 55 will be locked in its forward operative position, shown in dotted lines Fig. 6 and will not be under the control of the foot treadle. When in this position the corresponding cam element is continuously rendered inoperative and is held disconnected from the corresponding clutch hub 51. On the other hand when the link 59 is shifted into the position shown in Fig. 9 wherein it is in its rearward position but disconnected from the pin 61, then it is not

subject to control by the treadle 64 and the corresponding controlling cam 55 is held in its inoperative position so that the corresponding cam member will be continuously 5 clutched to the clutch hub.

The operative parts of each knotter derive their movement from a shaft 69 extending longitudinally of the machine, and each shaft is connected to and driven by the corresponding cam member 33. For this purpose 10 each cam member is in the form of a gear having gear teeth 70 on its periphery and each cam gear member meshes with and drives an intermediate pinion 71 mounted 15 on a transverse shaft 72. Each intermediate pinion meshes with and drives another gear 73 having rigid therewith a bevelled gear 74 which in turn meshes with and drives a bevelled gear 75 on the corresponding shaft 20 69. It will be seen, therefore, that the compression head and knotter of each tufting element is operated from the same cam element 33.

The tufting devices are adjustably 25 mounted on the frame so that they can be spaced different distances apart and means are provided for adjusting said tufting devices relative to each other. These adjusting devices are also constructed so that the 30 compression head and knotter of each tufting device are adjusted simultaneously thereby keeping them always in alignment. One means suitable for effecting this adjustment is shown in Figs. 1 and 3 of the draw- 35 ings. Each guide block 7 is provided with a nut element 76 through which is screw-threaded an adjusting screw 77 that is provided at its end with a squared portion 78 40 for the reception of a wrench. When any one of these adjusting screws is turned the corresponding guide block 7 with its compression head will be adjusted longitudinally of the cross piece 8. For effecting simul- 45 taneously the adjustment of the corresponding knotter I provide each carriage 4 with an adjusting screw 79 which is screwed therinto and each adjusting screw 79 is geared to the corresponding adjusting screw 77 so as to operate simultaneously therewith. 50 For this purpose each adjusting screw 79 has a bevelled gear 80 thereon meshing with a bevelled gear 81 on an inclined shaft 82, and each shaft 82 has a bevelled gear 83 thereon meshing with a bevelled gear 84 on 55 the corresponding adjusting screw 77. When, therefore, any adjusting screw 77 is turned to adjust the compression head the corresponding knotter will be simultaneously adjusted and to an equal extent.

60 The operative connections between the cam gears 33 and the corresponding knotter and compression head are such that they are not affected by this adjustment and are operative in all adjusted positions of the tufting de- 65 vice. It will be remembered that the girders

or bridge members 30 are pivotally connected at their rear ends to the frame as shown at 31 and this pivot is directly over the cam shaft 32. Therefore when any compression head is adjusted laterally the front end of 70 each girder which is connected to the guide block 7 will swing laterally and as the operating levers 27, 28, 29 are mounted on the bridge the connections between the cam element and the compression head will not be 75 disturbed by such adjustment.

In connection with the means for operating the knotter I have provided a device whereby when any knotter is adjusted on the frame the corresponding shaft 69 will be 80 bodily adjusted thus keeping it in proper alignment. Each intermediate gear 71 is a wide gear, as shown in Fig. 2, and each gear assembly 73, 74, 75 is supported on a carriage 85 which is slidable on guides 86 forming 85 part of the frame. Means are provided for shifting the carriage 85 simultaneously with the shifting of the carriage 4 for the knotter. For this purpose the carriage 4 is formed on its lower side with a rack 87 meshing with 90 a gear 88 and the latter meshes with an intermediate gear 89 which in turn meshes with a gear 90 on a shaft 91 that extends longitudinally of the frame. The rear end 95 of each shaft 91 has a gear 92 thereon meshing with a rack 93 on the under side of the carriage 85. With this arrangement any shifting of the knotter-supporting carriage 4 will cause a corresponding shifting movement of the carriage 85 and thus each oper- 100 ating shaft 69 will be maintained in its proper alignment.

The gears 71 are wide enough so that any necessary adjusting of the carriages 85 does not carry the gears 73 out of mesh with the 105 gear 71.

In the operation of the device a mattress will be placed in the frame 11 and the latter will be shifted so as to bring one end of the mattress in position to be operated on by 110 the tufting devices. If the mattress is to be tufted with rows of tufts each having four tufts therein then all of the tufting devices will be operative and all the links 59 will be shifted into the position shown in Fig. 9 in 115 which position they are out of the control of the treadle 64 and are in their rearward position with the cams 55 in their inoperative position. When the mattress has been properly positioned by the frame 11, the machine 120 is started in operation by actuating the control lever 45 to throw the clutch 41. The four tufting devices will then operate simultaneously to tie in four tufts in the mattress in a row extending transversely of the mat- 125 tress, and as the compression heads of the tufting devices are raised after the first row of tufts is tied in, the operator will shift the mattress to bring it into position to receive the second row of tufts, this operation being 130

repeated until the mattress has been completely tufted, at which time the machine may be stopped by disengaging the clutch 41.

If, however, it is desired to tuft the mattress as shown in Fig. 13, that is with rows of three tufts each then one of the links 59 will be adjusted into the position shown in Fig. 7, in which position the corresponding clutch-controlling cam is retained in its operative position and is not subject to control by the treadle 64. When the parts are in this position and the machine is operated then three only of the tufting devices will function to tie in simultaneously three tufts at each cycle of operations as shown in Fig. 13, the fourth compression head being retained in its elevated position and being, therefore, inoperative.

Again if it is desired to tuft the mattress as shown in Fig. 14, so that the tufts will be staggered with one row of tufts having four tufts therein and the next row having three tufts, then the link 59 for the end tufting device will be adjusted into the position shown in Fig. 10 with the notch 60 thereof engaging the pin 61 and all the other links will be adjusted into the position shown in Fig. 9. When the machine is started in operation it will during the first cycle of operations tie in four tufts simultaneously and when these tufts are being completed and as the compression heads are rising, the operator will depress the treadle 64 thus carrying the controlling cam 55 for the end tufting device into operative position and disengaging the clutch pin 52 controlling said tufting device. This operation of the treadle will not, however, affect any of the other tufting devices. When the compression heads are raised the operator shifts the mattress both longitudinally and transversely and during the next cycle of operations only three tufting devices will operate thereby to tie in three tufts. As the compression heads rise during the second cycle of operations wherein three tufts are tied in, the operator will release the treadle 64 thus throwing the fourth tufting device into operation again so that during the third cycle of operations four tufts will be tied in. These operations are repeated thereby tying in rows of four tufts alternating with rows of three tufts.

Sometimes it is desirable to tuft a mattress so that it will have rows of six tufts each and this can be done with my improvement by adjusting the link 59 so as to have one of the tufting devices permanently inoperative and then adjusting the other three tufting devices so that they will be spaced apart by distances equal to twice the distance desired between adjacent tufts. After this adjustment is made the device will be operated to insert three tufts and at the next operation the mattress is shifted in the direction of the

row of tufts so that the next three tufts will be put in midway between the tufts which were first inserted thus making a row of six tufts.

It will be obvious to those skilled in the art that there are various other ways in which these tufting devices can be selectively operated whereby the mattress may be tufted in any desired way.

One advantage which is secured in tufting a mattress in this way is that the mattress is not distorted during the tufting operation as frequently occurs where the tufts are tied in one at a time. The tying in of a tuft tends to shrink the mattress in the direction of the row of tufts and there is a greater shrinkage in the direction of the length of the mattress than in the direction transversely thereof.

In using a mattress tufting machine that ties in a single tuft at each operation it is customary to tie in the tufts in rows extending longitudinally of the mattress and during this operation the side of the mattress where the tufting begins will shrink as the first row of tufts is tied in thus distorting the mattress and rendering it difficult to properly tie in the subsequent rows of tufts. Where the tufting is done by tying in transversely extending rows of tufts and tying in the tufts of each row simultaneously, this difficulty is avoided and a better mattress can be secured.

It will be noted that both the compression heads and the knotters are set diagonally and the advantage of this arrangement is that the tufting twine will be anchored about both warp threads and filling threads of the ticking. This is illustrated in Figs. 18 and 19. In said figures the tufts 97 are shown as tied in by the tufting twine 101. In Fig. 19, which is a diagrammatic view indicates the warp threads of the ticking and 117 indicates the filling threads, these threads being shown widely separated to better illustrate the way in which the tufts are tied in. It will be observed that the loop of tufting twine 101 is arranged diagonally so that it embraces a plurality of both warp threads 116 and filling threads 117. The tufts are thus anchored to both filling threads and warp threads and a more secure anchorage is provided than if the tufts were anchored to filling threads only. While I have herein illustrated a selected embodiment of my invention I do not wish to be limited to the constructional features shown.

I claim:

1. In a mattress tufting machine, the combination with mattress-supporting means for supporting a mattress to be tufted, of a plurality of independent tufting devices each adapted to tie individual tufts in a mattress supported on said mattress-supporting

means, and means for operating said tufting devices selectively.

2. In a mattress tufting machine, the combination with mattress-supporting means for supporting a mattress to be tufted, of a plurality of separate tufting devices each adapted to tie individual tufts in a mattress supported on said mattress-supporting means, and means controlling the operation of said separate tufting devices by which each may be operated independently of the others.

3. In a mattress tufting machine, the combination with a plurality of independent tufting devices each adapted to tie individual tufts in a mattress, of means for selectively operating said devices.

4. In a mattress tufting machine, the combination with a plurality of independent tufting devices each adapted to tie individual tufts in a mattress, of selective operating means for actuating said devices by which they may be operated singly or in groups.

5. In a mattress tufting machine, the combination with a plurality of separate tufting devices each adapted to tie individual tufts in a mattress, of a driving element, and means for selectively connecting the tufting devices as complete units to the driving element.

6. In a mattress tufting machine, the combination with a plurality of separate tufting devices each adapted to tie individual tufts in a mattress, of a driving element, a separate clutch for connecting each tufting device as a unit to the driving element, and means for selectively controlling the clutches.

7. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices supported thereon and adjustable relatively to each other, and means for operating said devices independently.

8. In a mattress tufting machine, the combination with a frame, of a plurality of independent tufting devices supported thereon and adjustable relatively to each other, and means by which said devices may be operated either simultaneously or separately.

9. In a mattress tufting machine, the combination with a frame, of a plurality of independent tufting devices mounted thereon and capable of adjustment relatively to each other, of a driving element, and means for selectively connecting said tufting devices to the driving element.

10. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and capable of adjustment relative to each other, of a driving element, and means operative in any adjusted position of said tufting devices to selectively connect them to the driving element.

11. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon each adapted to insert individual tufts in a mattress, of means to adjust said tufting devices on the frame relatively to each other, a driving element, and means for selectively connecting each tufting device operatively with the driving element.

12. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and each comprising a compression head and a knotter between which the mattress to be tufted is inserted, means for adjusting the tufting devices relatively to each other, a driving element, and means for selectively connecting the tufting devices operatively to the driving element.

13. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and each comprising a compression head operating above the mattress and carrying a needle for inserting tufting twine through the mattress, and a knotter beneath the mattress, means for adjusting each tufting device independently toward or from an adjacent tufting device, and means for operating said tufting devices independently.

14. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and each comprising a compression head operating above the mattress and carrying a needle for inserting tufting twine through the mattress, means for adjusting simultaneously the compression head and knotter of each tufting device toward or from an adjacent tufting device, and means for operating said tufting devices selectively.

15. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and arranged in a row, means for selectively operating said tufting devices, a mattress supporting member comprising a carriage having an opening in its bottom in line with the tufting devices, said carriage being movable on the frame in the direction of the row of tufting devices, and a box-like frame adapted to encircle the mattress and mounted on the carriage for movement at right angles to the direction of the movement thereof.

16. In a mattress tufting machine, the combination with a frame, of a plurality of separate tufting devices mounted thereon and arranged in a row, means for selectively operating said tufting devices, a mattress supporting member comprising a carriage having an opening in its bottom in line with the tufting devices, said carriage being movable on the frame in the direction of the row of tufting devices, and a box-like frame

adapted to encircle the mattress and mounted on the carriage for movement at right angles to the direction of the movement thereof, said frame being adjustable as to its width.

17. In a mattress tufting machine the combination with a frame, of a plurality of separate tufting devices mounted thereon and arranged in a row, each tufting device comprising a compression head operating above the mattress and a knotter operating beneath the mattress, a support for the mattress comprising a carriage having an opening extending transversely across the same above the knotters, said carriage being movable on the frame in a direction parallel to the row of knotters, and a box-like member encircling the mattress and mounted on the carriage for movement in a direction transversely to the movement of the carriage.

18. In a mattress tufting machine the combination with a frame, of a plurality of separate tufting devices mounted thereon and arranged in a row, each tufting device comprising a compression head operating above the mattress and a knotter operating beneath the mattress, a support for the mattress comprising a carriage having an opening extending transversely across the same above the knotters, said carriage being movable on the frame in a direction parallel to the row of knotters, and a box-like member encircling the mattress and mounted on the carriage for movement in a direction transversely to the movement of the carriage, the portions of the bottom of the carriage

adjacent the transverse opening being vertically yieldable.

19. In a mattress tufting machine the combination with mattress supporting means for supporting a mattress to be tufted, of a tufting device comprising a compression head operating above the mattress and carrying a needle for inserting tufting twine through the mattress, and a knotter operating beneath the mattress, said compression head and knotter having a diagonal arrangement relative to the length of the mattress supported by said mattress-supporting means whereby the tufting twine is anchored about both warp threads and filling threads of the ticking of the mattress.

20. In a mattress tufting machine, the combination with a frame, of a plurality of independent tufting units mounted thereon, each comprising means operating above the mattress for inserting tufting twine there-through and a knotter beneath the mattress, and means for operating said tufting units independently.

21. In a mattress tufting machine, the combination with a frame, of a plurality of independent tufting units mounted thereon, each comprising means operating above the mattress for inserting tufting twine there-through and a knotter beneath the mattress, and means for selectively operating said units.

In testimony whereof, I have signed my name to this specification.

WILFRED B. MATHEWSON.