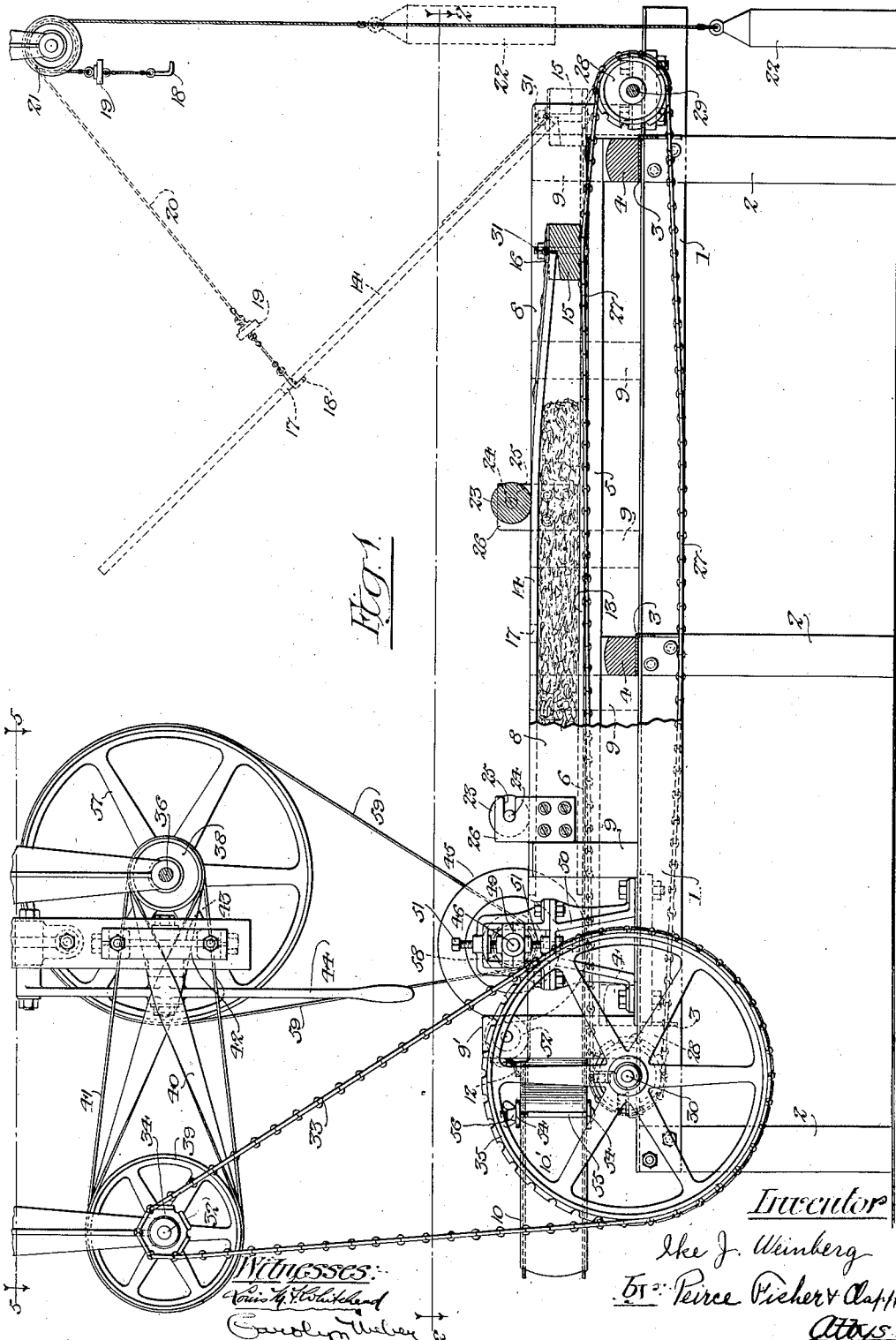


I. J. WEINBERG.
MACHINE FOR FILLING COMPARTMENT MATTRESSES.
APPLICATION FILED NOV. 20, 1911.

1,093,668.

Patented Apr. 21, 1914.

4 SHEETS—SHEET 1.

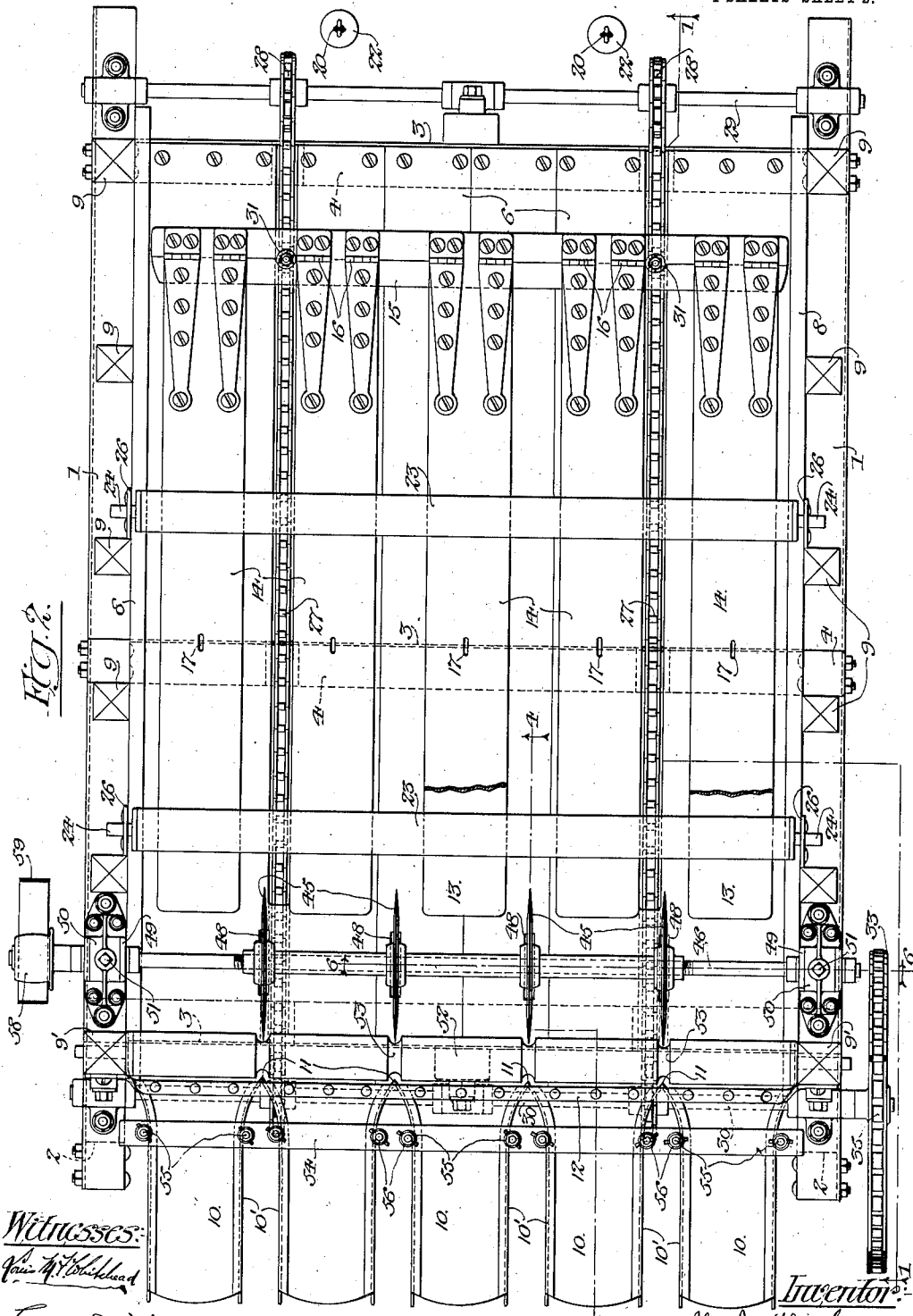


I. J. WEINBERG.
 MACHINE FOR FILLING COMPARTMENT MATTRESSES.
 APPLICATION FILED NOV. 20, 1911.

1,093,668.

Patented Apr. 21, 1914.

4 SHEETS—SHEET 2.



Witnesses:

John W. Blackhead

Gardner Weber

Inventor:

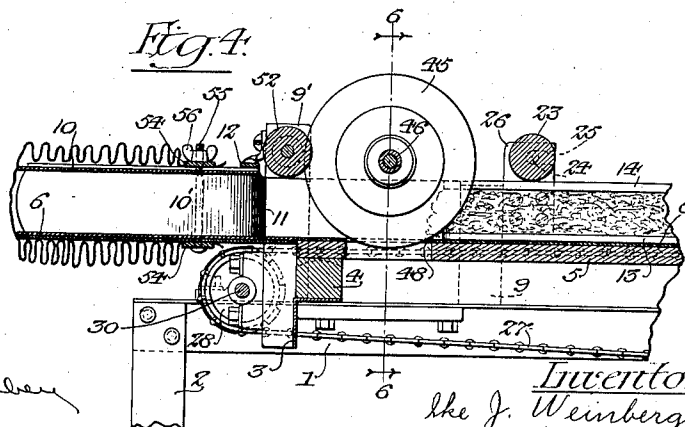
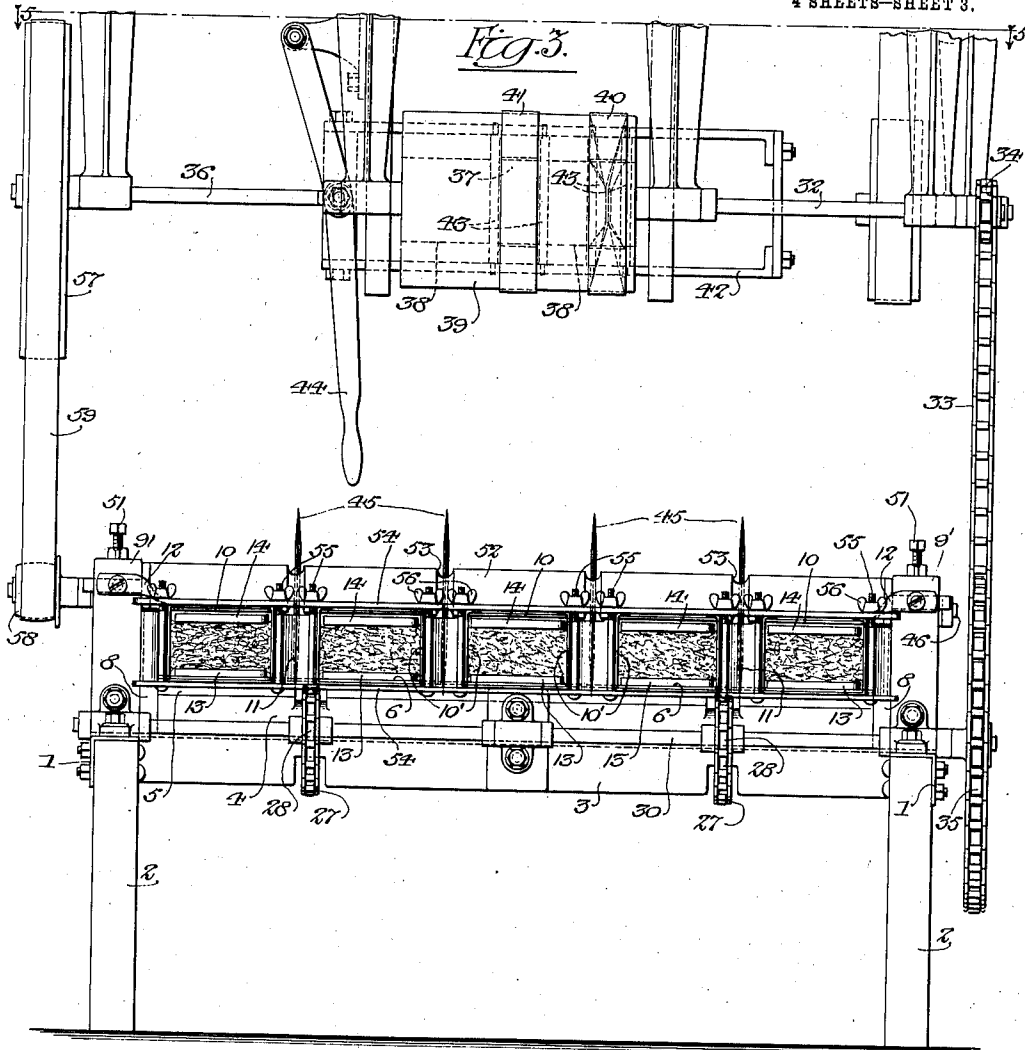
I. J. Weinberg
By: Pierce, Fisher & Co. Attys.

I. J. WEINBERG.
MACHINE FOR FILLING COMPARTMENT MATTRESSES.
APPLICATION FILED NOV. 20, 1911.

1,093,668.

Patented Apr. 21, 1914.

4 SHEETS—SHEET 3.



Witnesses:-

Wm. H. Wickhead

Samuel M. Weber

Inventor:-

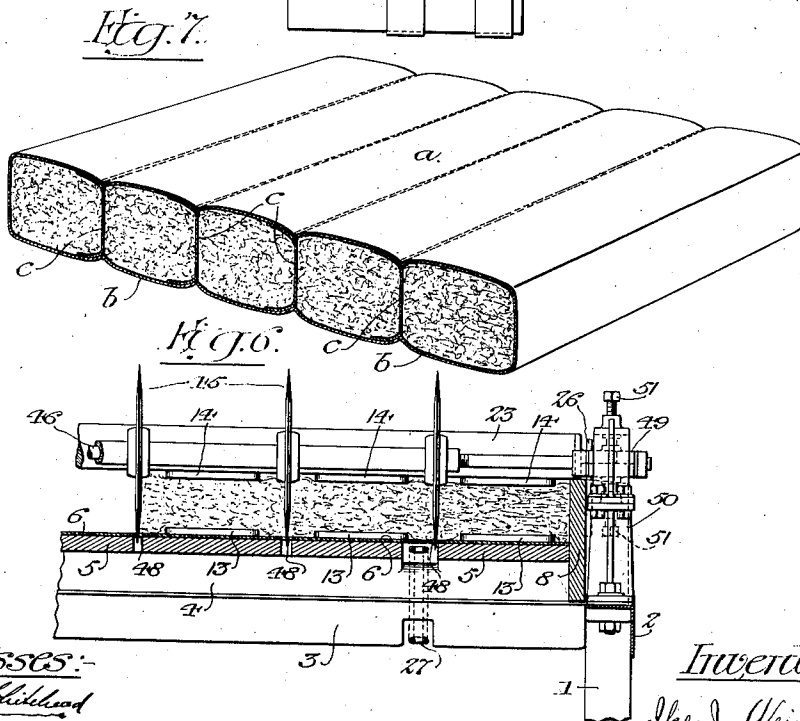
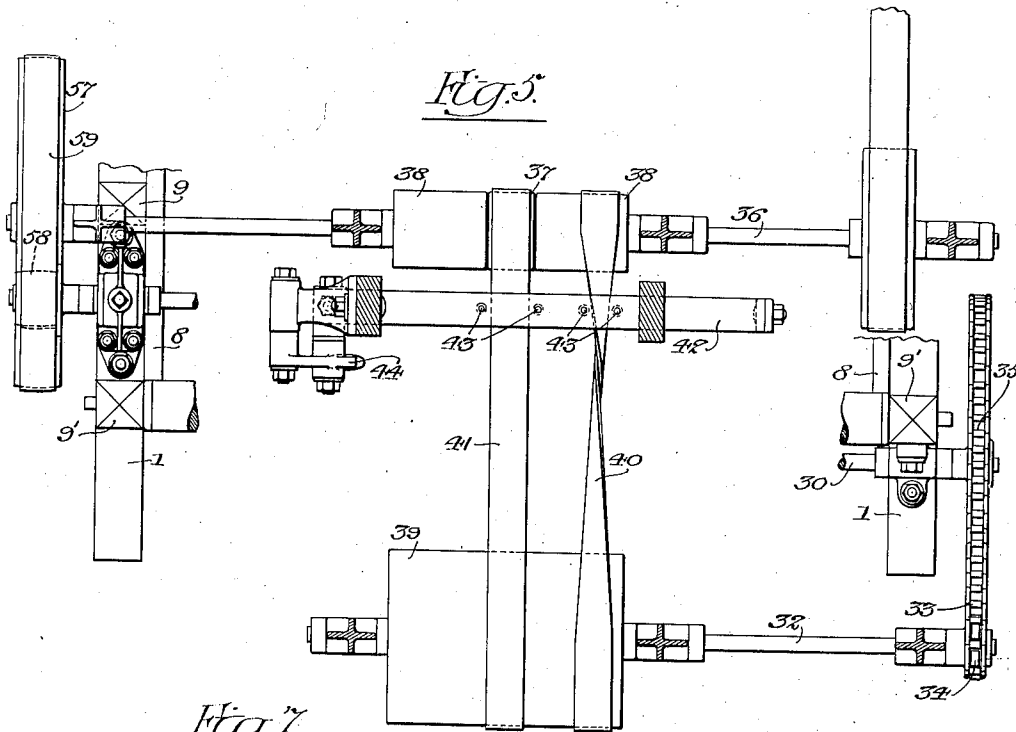
Ike J. Weinberg
By: Pierce, Fisher & Clapp, Attys.

I. J. WEINBERG.
MACHINE FOR FILLING COMPARTMENT MATTRESSES.
APPLICATION FILED NOV. 20, 1911.

1,093,668.

Patented Apr. 21, 1914.

4 SHEETS—SHEET 4.



Witnesses:
Wm. H. Whithead
Samuel Weber

Inventor:
I. J. Weinberg
By: Pierce, Fisher & Clapp
Attys.

UNITED STATES PATENT OFFICE.

IKE J. WEINBERG, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
DIXIE COTTON FELT MATTRESS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION.

MACHINE FOR FILLING COMPARTMENT-MATTRESSES.

1,093,668.

Specification of Letters Patent.

Patented Apr. 21, 1914.

Application filed November 20, 1911. Serial No. 661,410.

To all whom it may concern:

Be it known that I, IKE J. WEINBERG, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Machines for Filling Compartment-Mattresses, of which the following is a full, clear, and exact description.

The invention relates to mattress filling machines and seeks to provide an improved machine for rapidly and effectively filling the separate chambers of compartment mattresses.

The invention also comprises a bed, a transverse series of spouts or the like over which the compartment tick is placed and a reciprocating filling carrier on the bed comprising upper and lower sets of presser bars or like devices, which are separable to receive the filling material, and which are arranged to move through the spouts and into and out of the compartments of the tick.

The invention consists in the features of improvement hereinafter set forth, illustrated in the preferred form in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view partially in side elevation and partially in longitudinal section of the improved machine.

Fig. 2 is a plan view with parts in section on the line 2—2 of Fig. 1. Fig. 3 is an end elevation. Fig. 4 is a vertical section on the line 4—4 of Fig. 2. Fig. 5 is a plan section of the driving mechanism on the lines 5—5 of Figs. 1 and 3. Fig. 6 is a vertical section on the lines 6—6 of Figs. 2 and 4. Fig. 7 is a perspective view of a portion of a compartment mattress.

The preferred embodiment of the invention illustrated in the drawings comprises a table frame formed of side bars 1 supported on uprights or legs 2 and connected by a series of transverse bars 3. As shown in the drawings, the side bars 1 and cross-bars 3 are formed of angle iron and the ends of the cross-bars overlap and are suitably secured at their ends to the side bars. A series of wooden cross-bars 4 on the bars 3 support a floor or bed 5 which is preferably covered with a metal sheathing 6. Upright walls 8 are arranged at the sides of the floor or bed 5 and are fastened to upright posts 9 which are secured to the ends

of the cross-bars 3 and 4. The posts 9' at the left hand end of the machine extend above the edge of the side walls 8. The floor or bed 5 and the side walls 8 form a box-like body for receiving a charge of filling material sufficient to completely fill the mattress.

A series of spouts 10 are arranged at the left hand end of the box-like body. These spouts are formed of sheet metal and are preferably of rectangular section. The spouts are spaced one from another, but the side walls 10' thereof are flaring at their inner ends, as most clearly indicated in Fig. 2. The inner flaring ends of the side walls 10' of each pair of adjacent spouts meet at an acute angle and are preferably secured together to form a series of relatively sharp or beveled deflectors 11 between the spouts. The flaring side walls of the outside spouts overlap and are secured to the posts 9'. The sheathing 6 of the floor or bed 5 is preferably extended through the spouts and over the bottom walls thereof, as shown in Fig. 4. The spouts are further supported in position by a cross-bar 12 which extends over and is secured to the upper, inner end portions of the spouts and the ends of which bar are fastened to the upper ends of the posts 9'.

A reciprocating carrier for the filling material is mounted upon the floor or bed 5 and between the side walls 8. This carrier comprises a lower set of bars 13 and an upper set of presser bars 14, all connected at their inner or right hand ends to a transverse bar or cross-head 15. The bars 13 and 14 are preferably formed of thin boards or plates of hardwood or metal and are somewhat flexible. The lower set of bars 13 and the cross-bar 15 slide upon the surface of the bed of the machine and the lower set of bars are fixed to the cross-bar. The upper set of bars 14 are connected thereto by hinges 16. The upper and lower set of bars are arranged in pairs. That is to say, each bar of the upper set is above one of the bars of the lower set and the pairs of bars are so arranged that, as the filling carrier is shifted over the bed, one pair of bars will enter each of the spouts 10.

A charge of material sufficient to fill the entire mattress is placed within the box-like body and preferably a single bat of mate-

rial is placed therein and is compressed between the upper and lower sets of presser bars. To facilitate the placing of the bat of material in position, the upper bars 14 are preferably hinged, as described, to the cross-head 15, so that the upper set of bars may be elevated and the bat of filling material placed in position upon the lower set of bars and between the side portions 8. For convenience in holding the set of bars in elevated position, as indicated in dotted lines in Fig. 1, these bars are provided with openings 17 arranged to be engaged by a series of hooks 18 on a cross-bar 19.

Ropes 20 connected to the cross-bar 19 extend over elevated pulley 21 and are provided with a weight 22 at their opposite end. By engaging the hooks 18 with openings 17 of the bars 14, the latter will be elevated and held in elevated position by the weights 22. After the bat of filling material is placed in position, the presser bars 14 are disconnected from the hooks 18 and lowered upon the bat. A pair of rollers 23 are then placed in engagement with the presser bars 14 to thereby compress the filling material. The rollers 23 are preferably formed of wood and provided with pintles or journals 24 at their ends which are arranged to engage notches 25 in pairs or plates 26 secured to the side boards 8. The rollers 23 may be readily removed by disengaging the pintles 24 from the notches 25, and thus permit the elevation of the presser bars 14 to receive the filling material. But after the material has been placed in position between the sets of bars 13 and 14, the rollers are replaced in the machine and act upon the upper surfaces of the presser bars 14, so that the latter serve to compress the filling material and hold it under pressure as it is carried into the ticking of the mattress. The notches 25 of the plates 26 open rearwardly so that the pintles 24 will not be disengaged from the notches as the carrier bars are advanced.

The filling carrier is reciprocated by a pair of endless chains 27 which extend over sprockets 28 mounted on shafts 29 and 30 at opposite ends of the machine. The cross-bars 4 and the bed or flooring 5 with the sheathing 6 thereon, are cut away or recessed to form narrow longitudinal spaces for the passage of the upper portions of the chains 27, and the latter are connected to the cross-bar 15 of the filling carrier by bolts 31. The shaft 30 is driven from an over-head countershaft 32 through the medium of a chain 33 which passes over a relatively small sprocket 34 on the countershaft 32 and over a relatively large sprocket 35 on the shaft 30. The shaft 32 and parts connected thereto are driven from a second over-head shaft 36 through the medium of suitable reversing mechanism.

In the construction shown, the shaft 36 is provided with a narrow fixed pulley 37 arranged between two relatively wide, loose pulleys 38 thereon, and these pulleys are connected to a wide drum pulley 39 on the shaft 32 by a crossed belt 40 and an open belt 41. A belt shifter 42 is provided with pins 43 engaging the belts and the shifter is operated by a lever 44. The shaft 36 constitutes the main drive shaft of the machine and the parts are so arranged that both belts 40 and 41 may be on the loose pulleys 38 or one on the fixed pulley 37 and the other upon one of the loose pulleys. By shifting the belts the filling carrier may be started and stopped and reciprocated in opposite directions to project the pairs of bars 13 and 14 through the spouts 10 and withdraw them therefrom.

When a bat of filling material is used, it is divided into sections as the carrier is advanced by a series of rotary knives 45 mounted upon a cross-shaft 46. The lower portions of the knives preferably extend through slots 48 in the floor or bed 5 of the machine and in the sheathing thereof, and the cutter shaft 46 is preferably mounted in adjustable bearings 49. These bearings are mounted in suitable guide-ways on the upper ends of a pair of standards 50 that rise from the side bars 1 of the machine. Set screws 51 engage the bearings and serve to adjust the height of the shaft 46, so that the knives can be adjusted and properly positioned with reference to the bed plate of the machine and with reference to the slots 48 therein.

The knives 46 are arranged adjacent and in line with the deflectors 11 between the spouts 10 and out of line with the spouts. That is to say, the knives are arranged between the paths of movement of the pairs of carrier bars 13 and 14 and serve to divide the bat of filling material into sections as the carrier is advanced. A roller 52 is preferably arranged between the set of knives 45 and the upper portions of the spouts 10, the roller being journaled in the upper ends of the posts 9'. This roller is preferably provided with a series of annular grooves 53 within which the rotary circular knives 45 extend. The roller engages the upper boards 14 as the latter are advanced and assists in holding the filling material under compression. The roller also assists in clearing the knives from the filling material. The knives and knife shafts are driven at high speed by a comparatively large pulley 57 on the main drive shaft 36 which is connected to a relatively small pulley 58 on the knife shaft by a belt 59. The connection between the main drive shaft 36 and the shaft 30 is such that the carrier is driven at relatively slow speed.

In operation the ticking of the compart-

ment mattress is first formed, the compartments of the ticking being left open at one end. Such a compartment ticking is then drawn over the spouts 10 with one of the spouts extending into each compartment of the ticking. The ticking is held in place by a pair of clamp bars 54 extending over the upper and lower faces of the spouts, and connected by a series of bolts 55 extending between the spouts and having thumb screws 56 on their upper ends. The clamp bars engage the portion of the ticking adjacent the open mouths of the compartments, while the rest of the ticking is placed over the spouts and is puckered, as indicated in Fig. 4. The filling material is placed in position by withdrawing the carrier toward the right hand end of the bed of the machine, removing the rollers 23 and raising the upper bars 14. The bars 14 are then lowered and the rollers 23 replaced to hold the filling material under compression. The drive mechanism for the carrier is then started to advance the carrier and project the pairs of bars 13 and 14 between the knives 45, below the roller 52 and through the spouts 10 into the compartments of the ticking. The bat of filling material is thus held compressed in vertical direction and is advanced between the knives which serve to divide it into sections. One section is passed by each pair of boards 13 and 14 through one of the spouts 10 into one of the compartments of the ticking. The separation of the sections of the filling material is effected by the pointed or V-shaped deflectors 11 between the inner ends of the spouts. These deflectors also serve to compress the sections of filling material in lateral direction as they are forced through the spouts. The sections of filling material are thus compressed both vertically and horizontally, as they are forced through the spouts and into the compartments of the ticking to simultaneously fill all of the compartments at a single advance movement of the compressing and feeding devices. As the material is forced into the compartments of the tick, the latter, of course, is progressively drawn off of the spouts. When the material is in the ticking, the carrier is withdrawn. The friction of the walls of the compartments upon the material is sufficient to hold the material in place, so that as the boards 13 and 14 are withdrawn, the material remains in the ticking. One form of compartment mattress is shown in Fig. 7. In this mattress, the opposite sides *a* and *b* of the tick are connected by partition walls *c* to form a series of long, narrow compartments. In stuffing the tick, it is drawn over and puckered upon the spouts 10, with the partition walls *c* disposed in the spaces between the spouts. As the pairs of bars and filling material carried thereby pass through the

spouts into the compartments, the greater portion of the tick is drawn off the spouts. The carrier bars are then withdrawn, as described and the filled tick is removed from the machine.

It is obvious that any suitable reversible driving mechanism can be employed for reciprocating the filling carrier and that other changes may be made without departure from the essentials of the invention as defined in the claims.

While the filling material is preferably placed in the machine in a pad sufficient to fill the entire mattress, it is obvious that the material may be first divided or formed in sections and that then the knives may be dispensed with.

It will be observed that as each pair of clamping boards 13, 14 pass beyond the compression feed roll 52 the respective upper and lower faces of these boards engage the respective upper and lower inner faces of the spout, and these faces of the spout being flat and parallel they serve not only to guide the boards but also to maintain the compression on the filling material while it is passing through the spout; and further that by reason of the fact that these spouts have considerable length they afford a sufficiently extensive support for the boards to maintain sufficient vertical compression on each charge until the charge is properly positioned in its compartment. It will be observed therefore that the spouts have important functions other than that of serving as a support for the puckered tick and that therefore it is within the spirit of this invention to fill the mattress without puckering the tick upon the spouts. It will be observed also that as the charges of filling material make their exit from the spouts they will begin at once to laterally expand since they are confined laterally only by the side walls of the spouts, and that further as the boards (they being thin and flexible) emerge from the ends of the spouts the expansive tendency of the filling material will spring the free portions of the boards apart and thus in a measure permit the charge to expand vertically. This lateral spreading of the charges cannot interfere with the proper filling of the compartments since by puckering the tick upon the spouts the charges are deposited in the extreme inner ends of their compartments as they emerge from the spouts. As a matter of fact this lateral expansion of each charge after it emerges from its spout is greatly advantageous in that by the time the clamping boards are started on their return movements the filling material will have expanded along its side edges sufficiently to engage the partitions of the tick with sufficient friction to prevent the charges being withdrawn with the clamping boards, this action being

assisted by the springing apart of the clamping boards toward their inner ends, thereby rendering it possible to withdraw both the top and bottom boards simultaneously and thus avoid the complication of mechanism that would necessarily follow if the boards were withdrawn successively.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In a machine for filling compartment mattresses, the combination with means for holding the tick, of a reciprocating carrier for receiving and compressing a bat of filling material, and means for dividing the bat into sections as said carrier is advanced to convey such sections into the compartments of the tick.

2. In a machine for filling compartment mattresses, the combination with means for holding the tick, of upper and lower sets of bars arranged in pairs for receiving a bat of filling material, means for advancing said bars into the compartments of the tick, and means for dividing the bat into sections as said bars are advanced.

3. In a machine for filling compartment mattresses, the combination with a frame having means for holding a tick, of a reciprocating carrier comprising upper and lower sets of bars arranged in pairs and adapted to receive a bat of filling material, means for reciprocating said bars into and out of the compartments of the tick, and a series of knives arranged between the paths of movement of the bars for severing the bat into sections as said bars are advanced.

4. In a machine for filling compartment mattresses, the combination with a frame having means for holding a tick, of a reciprocating carrier comprising upper and lower sets of bars arranged in pairs and adapted to receive a bat of filling material, means for reciprocating said bars into and out of the compartments of the tick, rollers arranged to engage the upper set of bars for compressing the bat, and a set of knives arranged between the paths of movement of said bars for dividing the bat into sections.

5. In a machine for filling compartment mattresses, the combination of a series of spouts over which the ticking is placed, a number of pairs of bars for receiving a bat of filling material and arranged to reciprocate through said spouts and into the compartments of the ticking, and a set of knives in advance of said spouts and between the paths of movement of said pairs of bars for severing the bat into sections.

6. In a machine for filling compartment mattresses, the combination of a series of rotary knives for dividing a bat of filling material into sections, a series of spouts arranged in line with the spaces between said knives and over which the ticking is placed,

and means for compressing a bat of filling material and for feeding the same past said knives and through said spouts into the compartments of the ticking.

7. In a machine for filling compartment mattresses, the combination of a series of rotary knives, a shaft whereon said knives are mounted, a series of spouts arranged in line with the spaces between the knives below the shaft, pointed deflectors between the inner ends of said spouts, and a filling carrier comprising a number of pairs of bars movable below said shaft, between said knives and through said spouts.

8. In a machine for filling compartment mattresses, the combination with a bed, a series of circular rotary knives at one end of said bed, said bed having slots through which the lower portions of said knives extend, a series of spouts at the end of said bed in line with the spaces between said knives, and means for feeding a bat of filling material over said bed, between said knives and through said spouts.

9. In a machine for filling compartment mattresses, the combination with a bed, a series of circular rotary knives at one end of said bed, said bed having slots through which the lower portions of said knives extend, a shaft whereon said knives are mounted, bearings for said shaft, means for adjustably supporting said bearing, and means for compressing a bat of filling material and feeding the same over said bed, between said knives and through said spouts.

10. In a machine for filling compartment mattresses, the combination with a bed, of a filling carrier movable over said bed and comprising a cross bar and upper and lower sets of bars connected at one end to said cross bar and arranged to receive a bat of filling material, means for reciprocating said carrier, means for holding a ticking at one end of said bed, and means for dividing the bat into sections as said carrier is advanced.

11. In a machine for filling compartment mattresses, the combination with a bed having side boards, of a filling carrier movable over said bed between said side boards, and comprising a cross bar, a lower set of bars connected to said cross bar and an upper set of bars hinged thereto, rollers removably mounted above said upper set of bars, means for holding a ticking at one end of said bed, and a series of knives arranged between the paths of movement of said pairs of bars.

12. In a machine for filling compartment mattresses, the combination with a bed, of a filling carrier movable over said bed and comprising upper and lower sets of bars arranged in pairs, rollers engaging the upper set of bars for compressing the filling material, means for reciprocating said bars, a series of spouts at one end of

said bed through which said pair of bars are movable, and a set of rotary knives arranged between the paths of movement of said pairs of bars.

5 13. In a machine for filling compartment mattresses, the combination of a box-like body for receiving a charge of filling material sufficient to completely fill the mattress, a transverse row of spouts at one
10 end of said box-like body over which said compartment ticking is puckered, said spouts being spaced apart to receive the partitions of the ticking between them, feeding and compressing devices for advancing the
15 entire charge of filling material under pressure and on separate sections through said spouts to simultaneously fill all of the compartments of the ticking, and means in the spouts for guiding the sections of filling-
20 material into the respective spouts.

14. In a machine for filling compartment mattresses, the combination of a row of spouts over which the compartment ticking is puckered, said spouts being spaced
25 apart to receive the partitions of the ticking between them, and feeding and compressing devices for vertically compressing the charge of filling material and for simultaneously advancing separate sections there-
30 of through said spouts and into the compartments of the ticking, said spouts having a series of V-shaped deflectors between their inner ends for separating and laterally compressing the sections of the charge as they
35 are fed through said spouts.

15. In a machine for stuffing compartment mattresses, the combination of a box-like body for receiving a charge of filling material sufficient to stuff the entire mat-
40 tress, a transverse row of spouts at one end of said box-like body over which the ticking is puckered, said spouts being spaced apart to receive the partitions of the ticking between them, feeding and compressing
45 devices for vertically compressing the charge of feeding material and for simultaneously advancing separate sections thereof through said spouts and into the compartments of the ticking, the side walls of
50 said spouts having flaring inner portions meeting at their edges to form a series of V-shaped deflectors for separating and laterally compressing the sections of the charge as they are forced through said spouts, and
55 mechanism for operating said feeding and compressing devices, substantially as described.

16. In a machine for stuffing compartment mattresses, the combination of a row of
60 spouts over which the compartment ticking is puckered, said spouts being spaced apart to receive the partitions of the ticking between them, compressing and feeding means comprising a set of devices movable through
65 said spouts and into and out of the com-

partments of the tick for advancing the entire charge of filling material in separate sections to simultaneously fill all of the compartments of the tick upon a single advance movement of said feeding devices, 70 and means between the spouts for guiding the sections of filling-material into the respective spouts.

17. In a machine for stuffing compartment mattresses, the combination with a
75 box-like body for receiving a charge of filling material sufficient to stuff the entire mattress, of a transverse row of spouts at one end of said box-like body over which the ticking is puckered, said spouts being spaced
80 apart to receive the partitions of the ticking between them, compressing and feeding means comprising a set of devices movable through said series of spouts and into and out of the compartments of the ticking for
85 advancing the entire charge of filling material in separate sections to simultaneously fill all of the compartments of the ticking, said spouts having a series of intermediate V-shaped deflectors at their inner ends
90 for separating and laterally compressing the sections of the charge as they are forced through said spouts, and mechanism for reciprocating said feeding devices.

18. In a machine for stuffing compartment mattresses, the combination of a row
95 of spouts over which the ticking is puckered, said spouts being spaced apart to receive the partitions of the ticking between them, a reciprocating feeding carrier comprising upper and lower sets of presser bars
100 separable to receive the charge of filling material and movable together through said spouts to advance the entire charge of filling material under pressure and in separate
105 sections through said spouts and into the compartments of the ticking, and means between the spouts for guiding the sections of filling material into the respective spouts.

19. In a machine for stuffing compartment mattresses, the combination of a box-
110 like body for receiving a charge of filling material sufficient to stuff the entire mattress, of a transverse row of spouts at one end of said box-like body over which the ticking is puckered, said spouts being
115 spaced apart to receive the partitions of the ticking between them, a reciprocating feeding carrier between the sides of said box-like body and comprising upper and lower sets of presser bars separable to re-
120 ceive the filling material and movable together through said spouts to advance the entire charge of filling material under pressure and in separate sections into the compartments of the ticking, said spouts hav-
125 ing a series of intermediate V-shaped deflectors at their inner ends for separating and laterally compressing the sections of filling material as they are forced through

said spouts, and mechanism for reciprocating said filling carrier.

20. In a machine for filling compartment mattresses, the combination with the bed, a series of spouts extending transversely of said bed and through which the compartment ticking is puckered, said spouts being spaced to receive the partitions of the ticking between them, a reciprocating filling carrier on said bed comprising upper and lower sets of bars arranged in pairs, said bars being separable to receive the filling material and arranged to move through said spouts and into and out of the compartments of the ticking, mechanism for simultaneously advancing and withdrawing said upper and lower sets of presser bars, and means between the spouts for guiding the sections of filling-material into the respective spouts.

21. In a machine for filling compartment mattresses, the combination of a row of spouts spaced apart to receive between them the partitions of the ticking, feeding and compressing devices for advancing the charge of filling material under pressure and in separate sections through said spouts, said devices embodying a series of pairs of

presser boards and each pair being adapted to enter one of the spouts and be guided by the walls thereof, and means between the spouts for guiding the sections of filling-material into the respective spouts.

22. In a machine for stuffing compartment mattresses, the combination with a bed, tick-holding means extending transversely of said bed, reciprocating compressing and feeding means on said bed comprising upper and lower sets of presser boards arranged in pairs, said boards being separable to receive the charge and movable together to advance the same under pressure and in separate sections through said tick holding means, a series of stationary, vertical deflectors for separating the sections of the charge as they are advanced, said pairs of boards being spaced apart to clear said deflectors and the partitions of the ticking and each pair being movable into and out of one of the compartments thereof, and mechanism for simultaneously advancing said pairs of boards.

IKE J. WEINBERG.

Witnesses:

HARRY L. CLAPP,
KATHARINE GERLACH.