

I. J. WEINBERG.

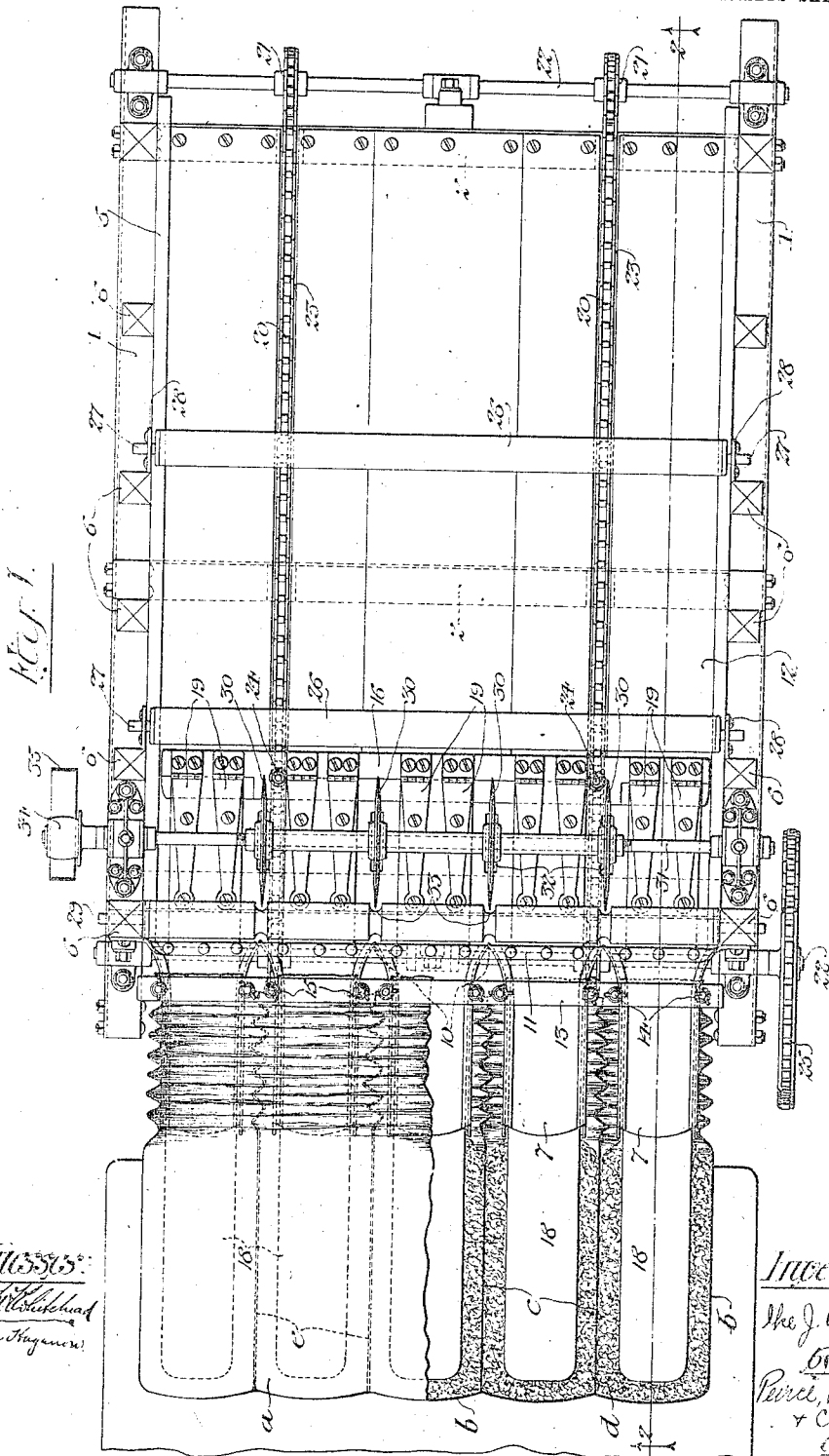
PROCESS FOR FORMING AND STUFFING COMPARTMENT MATTRESSES.

APPLICATION FILED NOV. 15, 1913.

1,133,686.

Patented Mar. 30, 1915.

2 SHEETS-SHEET 1.



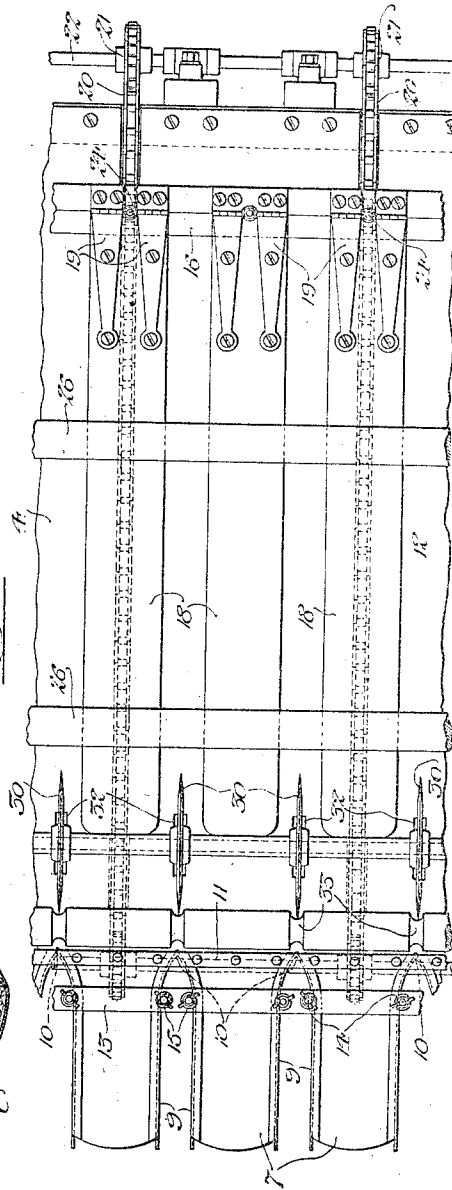
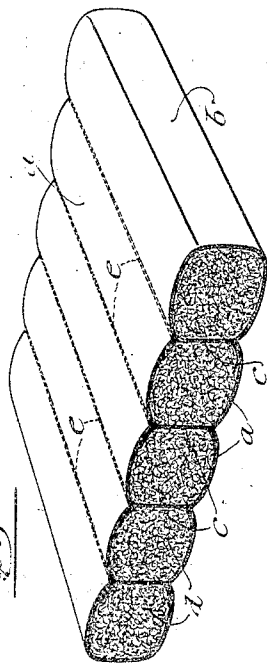
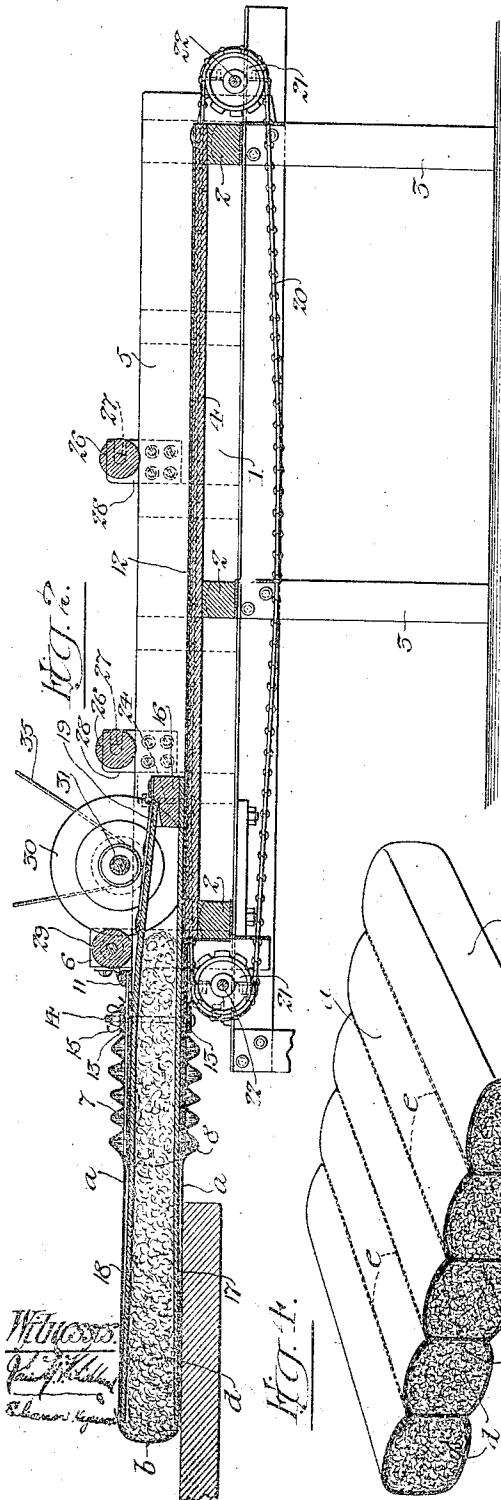
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Inventor:-
Ike J. Weinberg
By: Pierce, Picher & Clapp
Attys.

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.

PROCESS FOR FORMING AND STUFFING COMPARTMENT-MATTRESSES.

1,133,686.

Specification of Letters Patent.

Patented Mar. 30, 1915.

Application filed November 15, 1913. Serial No. 801,152.

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 Processes for Forming and Stuffing Compartment-Mattresses, of which the following is a full, clear, and exact description.

The invention relates to processes for forming and stuffing compartment mattresses and consists in the features of improvement hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings which illustrate a machine for carrying out the improved process, Figure 1 is a plan view illustrating the manner of filling the compartment mattress and in which a portion of the mattress is broken away. Fig. 2 is a cross-section on the line 2—2 of Fig. 1. Fig. 3 is a partial plan view of the machine showing the sectional carrier in retracted position. Fig. 4 is a perspective view partly in section of a compartment mattress.

In forming an ordinary mattress, the ticking is filled with material, such as layers of cotton fiber or the like, and the filling material is then placed under compression and is held in place by "tufting" the mattress, i. e., by connecting the opposite side walls of the ticking by tufting stitches. In a compartment or tuftless mattress, the opposite side walls of the ticking are connected along parallel lines to form a series of long, narrow compartments extending between the opposite side edges of the mattress and such compartments are subsequently stuffed or filled; and in such constructions, the filling material is held under compression and against displacement within the narrow compartments. Inasmuch as the mattress is not tufted, after it is filled, the material must be inserted within the narrow compartments under considerable pressure, so as to snugly and compactly fill the same. Heretofore such compartment mattresses have been stuffed by filling one compartment at a time.

In accordance with the present invention, a charge of filling material sufficient to stuff the entire mattress is divided into sections and all of the sections under pressure are

simultaneously advanced and deposited 55 within the compartments of the ticking. Preferably, the compartment ticking is puckered over a row of spouts which are spaced apart to receive the portions of the ticking which separate the compartments 60 between them, and the charge of filling material is compressed and is deposited within the compartments by means of a sectional carrier which is adapted to be projected through the row of spouts.

In the drawings, Fig. 4 illustrates one form of compartment mattress in which the opposite side walls *a* are connected together at the edges of the mattress by edge walls *b*, and between the edge walls by a series of partition walls *c*, these parts being formed of suitable fabric. The connected partition walls serve the place of the ordinary tufting stitches to hold the filling material *d* under pressure and against displacement. 75 But, of course, the partition walls cannot be placed in position after the mattress is filled, but must be sewed to the side walls along the lines *c* before the filling material is placed in the ticking. Preferably, the partitions *c* and the compartments extend transversely of the mattress between the side edges thereof and the ticking is first completed, except that the ends of the compartments are left open at one of the side edges. 85 The ticking is then preferably puckered over a row of spouts which are spaced apart to admit the partitions *c* between them. The charge of filling material is compressed and divided into sections within a suitable sectional carrier and the latter is then advanced through the spouts and into the compartments of the tick to simultaneously deposit all of the compressed sections of the charge within the same. 95

By preference, the sectional carrier is mechanically operated. The drawings illustrate a machine which is set forth and claimed in an application filed by me November 10, 1911, Serial No. 661,410.

The body of this machine is mounted on a frame comprising side bars 1 connected by cross bars 2 and mounted upon suitable supporting uprights 3. The horizontal and longitudinal cross bars 1 and 2 support a floor or bed 4 and vertical side walls 5, the latter being fixed to posts 6 that extend upwardly from the horizontal side bars 1. The bed 100

and side walls 5 form a box-like body for receiving a charge of filling material sufficient to completely fill the mattress.

A horizontal series or row of spouts are arranged at one end of the box-like body. These spouts are preferably rectangular in section and have top and bottom walls 7 and 8 and opposite vertical side walls 9. The spouts are spaced apart from one another, as shown, and the side walls 9 thereof are provided with flaring inner ends. The inner flaring ends of each pair of adjacent spouts meet at an angle and are preferably secured together to form a series of relatively sharp or beveled deflectors 10 between the spouts. The flaring end portions of the outside spouts of the series overlap and are secured to the posts 6 at the adjacent end of the machine frame. The spouts are also preferably braced and held in position by a bar 11 which extends between the end posts 6 and which extends over and is secured to the inner portions of the top wall 7 of the row of spouts.

The bed plate 4 of the box-like body is preferably provided with a sheathing 12 of sheet metal, and this sheathing is preferably extended through the spouts and over the bottom walls 8 thereof, as shown in Fig. 2.

The spouts are of such size and are so spaced apart that the compartment ticking, when puckered over the same, fits snugly thereon with the partition walls *c* between the spouts. The inner open end portion of the ticking is preferably clamped to the spouts by a pair of bars 13 which extend transversely above and below the spouts and are connected by a series of bolts 14 arranged between the spouts and having thumb nuts 15 on their upper ends.

The sectional carrier comprises a sliding cross-head or bar 16 which is mounted upon the floor or bed 4 between the side walls 5. Upper and lower sets of thin flexible presser boards are connected to the sliding cross-head or bar 16. The lower presser boards 17 are fixed to the bar 16 and the upper presser boards 18 are connected thereto by hinges 19. The upper portions are arranged in line with the lower boards, so that the carrier is divided to correspond with the transverse row of spouts and to the compartments of the ticking. When the carrier is advanced, one pair of boards is adapted to pass through each of the spouts, as indicated in Figs. 1 and 2.

The sectional carrier is mechanically driven by connecting the cross bar 16 to a pair of drive chains. In the form shown, these chains 20 extend over sprocket wheels 21 on shafts 22 at opposite ends of the machine frame. The upper portions of the chains pass through slots 23 formed in the bed 4 and are connected to the cross-head 16

by bolts 24. In the form shown, the shaft 22 at the front end of the machine is provided with a large sprocket 25 which may be driven in opposite directions from any suitable source of power. When the sectional carrier is completely withdrawn from the spouts, the upper sets of presser boards 18 can be raised and the entire charge of filling material is placed within the box-like body of the machine upon the lower boards 17. The upper boards are then lowered to compress the charge of filling material and the upper boards are mounted in position to hold the charge under pressure by a series of transverse rollers 26. These rollers are provided with pintles 27 at their ends and these pintles removably engage slotted seats formed in brackets 28 fixed to and projecting upwardly from the side walls 5. Preferably, also, an additional pressure roller 29 is arranged adjacent the inlet ends of the spouts.

The charge of material is divided into sections either before or as it is advanced into the ticking. In the machine illustrated, a series of circular knives 30 are mounted upon a cross shaft 31 that is journaled at its end in suitable brackets rising from the side bars 1 of the machine frame. These knives are arranged in line with the V-shaped deflectors 10 between the inner ends of the spouts and the lower edges of the knives extend through slots 32 in the machine. Preferably, also, as shown, the pressure roller 12 is provided with notches 33 to clear the edges of the knives. The shaft 31 is provided at one end with a pulley 34 on which passes a belt 35. By this means the knives are continuously rotated during the operation of the machine.

In carrying out the improved process, the compartment ticking is first completely formed, as described, except that the compartments are left open along one of the side edges thereof. The ticking is then drawn over and puckered upon the transverse row of spouts with the partitions *c* between the spouts. The pressure rollers 26 are then removed and the upper boards 18 of the sectional carrier, which has previously been withdrawn, are raised and the charge of material sufficient to stuff the entire mattress is placed within the box-like body of the machine. The upper presser boards are then lowered to compress the charge and the rollers 26 are replaced into position to hold the charge under compression, and the sectional carrier is then advanced to move the presser boards through the spouts and into the compartments of the ticking. The charge is divided into sections, either by the rotary cutters 30 as it is advanced or, before it is advanced, by aid of the longitudinal partition boards arranged within the box-like body of the machine frame. As the sections of the

carrier and of the charge are advanced through the spouts, the upper and lower walls 7 and 8 of the latter engage the upper and lower presser boards and aid in maintaining the vertical pressure on the sections of the charge. Furthermore, the flaring deflectors at the inner ends of the side walls of the spouts serve to separate and compress the sections of the charge in lateral direction. Preferably, however, the pressure is relieved to some extent upon the sections of the charge as they pass from the spouts. As the sections of the charge make their exit from the spouts, they will expand laterally, since they are confined against lateral expansion only by the side walls of the spouts. Furthermore, as the presser boards are thin and flexible, the expansive tendency of the compressed filling material will spring the free ends of the boards apart, as indicated in Fig. 2 of the drawings and thus, in a measure, permit the charge to expand vertically. This expansion of the charge sections 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. This expansion of the charge sections, as they are deposited within the compartments of the ticking, is advantageous, since it is necessary to relieve the pressure on the charge before the sectional carrier is withdrawn. When the presser or clamping boards of the sectional carrier are completely inserted within the compartments of the ticking, the filling material will have expanded along its side edges sufficiently to engage the partition of the ticking with sufficient friction to prevent the charge sections being withdrawn with the clamping boards, this action being assisted by the springing apart of the clamping boards at their free ends, thereby not only relieving the pressure to permit the withdrawal of the carrier, while the charge is frictionally sustained in place, but permitting the simultaneous withdrawal of all portions of the carrier. This avoids complication of mechanism which would be required if it was necessary to withdraw the carrier portion-wise.

It is obvious that numerous changes may

be made in the details set forth without departure from the essentials of the invention as defined in the claims.

I claim as my invention:—

1. The method of forming tuftless mattresses which consists in connecting the opposite sides of the ticking to form a series of narrow compartments, and subsequently stuffing the same by compressing the charge of filling material and simultaneously advancing all portions thereof under pressure and in separate sections into the compartments of the ticking.

2. The method of forming tuftless mattresses which consists in connecting the opposite sides of the ticking to form a series of narrow compartments, and subsequently stuffing the same by simultaneously advancing the separate sections of the charge of filling material into the compartments of the ticking while holding each charge section both under vertical and lateral compression.

3. The method of forming tuftless mattresses which consists in connecting the opposite sides of the ticking to form a series of narrow compartments, and subsequently stuffing the same by dividing a charge of filling material sufficient to fill the entire mattress into sections, compressing the charge sections and simultaneously advancing the same into the respective compartments of the ticking.

4. The method of stuffing compartment mattresses which consists in compressing the entire charge of filling material, advancing the compressed charge, simultaneously dividing the same into separate sections, and depositing the charge sections in the compartments of the ticking.

5. The method of stuffing compartment mattresses which consists in vertically compressing the charge of filling material, simultaneously advancing all portions of the compressed charge in separate sections into the compartment of the ticking, and laterally compressing the separate charge sections as they are advanced into the respective tick compartments.

IKE J. WEINBERG.

Witnesses:

J. G. ANDERSON.

ELEANOR HOGEMON.