B. D. COURTS.

PROCESS OF FILLING MATTRESSES.

APPLICATION FILED JUNE 3, 1909.

1,021,971.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

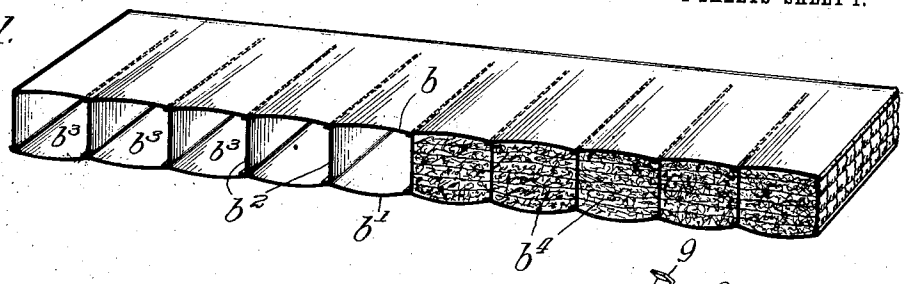
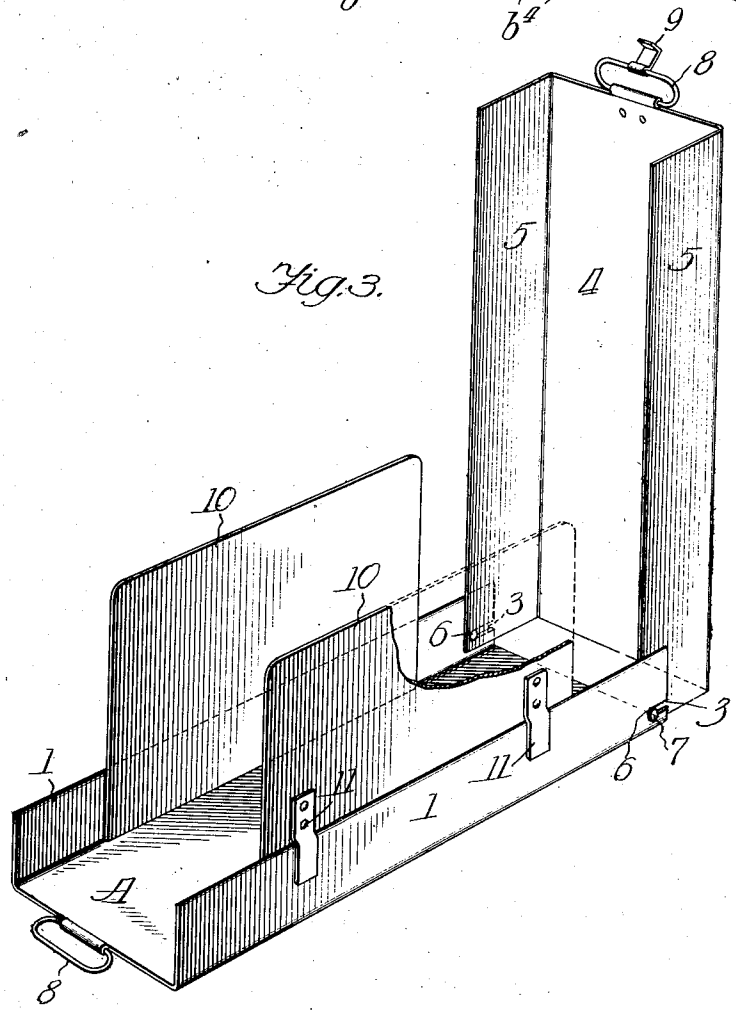


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 2.

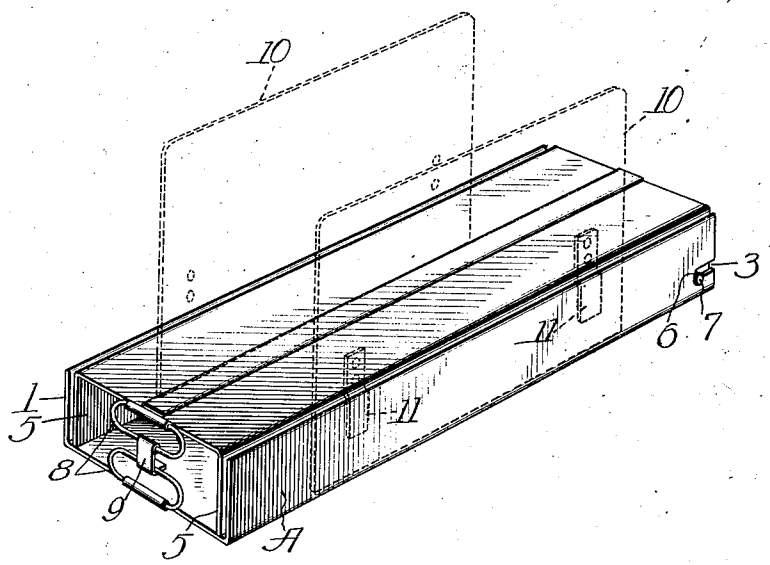
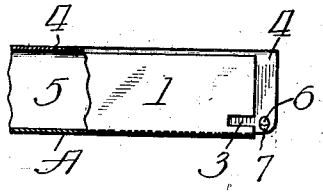


Fig. 4.



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UNITED STATES PATENT OFFICE.

BENJAMIN D. COURTS, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO DIXIE COTTON FELT MATTRESS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PROCESS OF FILLING MATTRESSES.

1,021,971. Specification of Letters Patent. Patented Apr. 2, 1912.

Application filed June 3, 1909. Serial No. 499,952.

To all whom it may concern:

Be it known that I, BENJAMIN D. COURTS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Process of Filling Mattresses, of which the following is a specification.

This invention relates to mattresses and relates particularly to an improved process of filling mattresses of the type comprising a plurality of compartments formed by connecting the sides of the mattress by partitions, usually by stitching opposite edges of strips of suitable fabric to opposite sides of the mattress at proper distances apart to form compartments of desired size. Owing to the manner in which the sides of the mattress are connected in mattresses of this type, it is obvious that they are much stronger and more durable than ordinary tufted mattresses. Heretofore, so far as I am aware, the manner of filling or stuffing mattresses of this type has consisted in inserting the filling material into the different compartments in separate quantities each insufficient to fill said compartments, respectively, until said compartments are filled to the extent desired. This method of filling results in the filling material being distributed unevenly; being packed tighter in some parts than in others, and also, almost unavoidably, results in the filling material being rolled or wadded together, thus rendering the mattress lumpy and uncomfortable for use. For the foregoing reasons, mattresses of this type have been received with little favor by the trade and have been practically unused.

The object of the present invention is to overcome the foregoing objectionable features in mattresses of this type by providing an improved process for filling said mattresses, whereby they may be filled conveniently and economically; whereby the filling material will be distributed evenly, and the filling material for each compartment will form a substantially continuous section of uniform density, thus eliminating all lumpiness from the mattress and rendering the same very comfortable in use.

To this end my improved process of filling mattresses of this type consists of the various steps and operations hereinafter described and claimed.

In the accompanying drawings,—Figure 1 is a longitudinal sectional view of a compartment mattress for filling which my improved process is particularly designed. Fig. 2 is a perspective view of a sheath or casing particularly designed and especially adapted for filling compartment mattresses such as shown in Fig. 1, said sheath or casing being shown in closed position ready to be inserted into a compartment of the mattress. Fig. 3 is a perspective view of said sheath or casing in open position preparatory to inserting a charge of filling material therein; and Fig. 4 is a detail view illustrating preferred means for detachably connecting the sections of said sheath or casing at one end.

To render the description of my improved process clearer and to bring out the features thereof which render it practically impossible to fill such mattresses in a statisfactory manner by means of any process or apparatus for filling mattresses heretofore in use, I will first briefly describe the construction of compartment mattresses of the type for filling which my improved process is particularly designed and adapted, reference being had to Fig. 1 of the drawings. Said mattress comprises two pieces b, b^1 of suitable material, which form the top and bottom sides, respectively, of the tick of the mattress. The top and bottom sides are connected at intervals of a few inches, say $7\frac{1}{2}$ inches, by transverse partitions b^2 of suitable fabric, the opposite edges of which are stitched or otherwise secured to the top and bottom sides b, b^1 of the tick and which extend substantially entirely across the same. Said partitions will divide the space between the top and bottom sides of the tick into a plurality of separate compartments b^3, substantially equal in length to the width of the mattress and which are relatively very narrow. As shown, part of said compartments b^3 are filled with suitable charges of filling material b^4, the others being shown as distended but not filled. The extreme narrowness of said compartments renders it impossible to fill said compartments by any process or apparatus heretofore known, at least of which I have any knowledge, whereby the filling material will be distributed evenly and the filling material in different compartments will form substantially continuous sections of uniform density. One particular feature of such prior methods and apparatus is found in the fact that the

filling material was not confined at its lateral edges during the process of inserting it into the tick. Thus, the lateral edges thereof will bulge out under the pressure to which it is subjected, thereby increasing the width of said body of filling material, making it considerably wider than the width of the tick. While with mattresses of the ordinary type, which comprise but a single large compartment, the stretch of the tick will permit the body of filling material to enter said compartment, notwithstanding the frictional resistance due to the bulging lateral edges thereof, in compartment mattresses the stretch of each compartment is so slight as to render it practically impossible to insert the bulged filling material into said compartments, or this can be done, if at all, only with the exercise of such great force as to render it altogether impractical. My improved process, which I will now describe, overcomes the foregoing objectionable features and renders the filling of compartment mattresses relatively simple and practical and very effective.

My improved process is as follows:—A quantity or charge of filling material sufficient to fill each of the compartments of the mattress is separately incased in a sheath which is proportioned to enter the compartments of the mattress and which is closed on its four lateral sides. Said charge of filling material is then compressed within said sheath, the closed lateral sides of which will prevent said filling material from bulging at its sides or edges and will confine it to the size of the compartments of the mattress so that said sheath with the charge of filling material inclosed therein may be readily inserted into said compartments with the exercise of so little force that a boy can readily insert the same by hand. Said charges of filling material incased and compressed within said sheath, as aforesaid, are then inserted separately into different compartments of the mattress, the compression being maintained until said charges are fully inserted. The pressure on said charges of filling material is then released, thus permitting them to expand and fill the different compartments of the mattress. Said inclosing sheath is then withdrawn, completing the process.

While my invention contemplates the use of any desired or approved form of inclosing sheath and compressing device, I prefer the form shown in Figs. 2, 3 and 4 of the drawings and which I will now describe. Said device, which forms a combined sheath and pressure device adapted for incasing the charges of filling material on their four lateral sides and for subjecting said charges to compression within said sheath, consists of a base section A, provided with sides 1 provided with slots 3 at their ends designed to be inserted into the compartments of the mattress, and of a top section 4 of the same shape and length as the base section—but slightly narrower than said base section. The sides 5 of said top section 4 are provided with trunnions 6 adapted to engage the slots 3 in the sides 1 of the base section, said trunnions preferably having heads 7 adapted to prevent them from pulling through said slots 3. Handles 8 are connected to the ends of said sheath sections opposite to the ends thereof having the slots 3 and trunnions 6, which are adapted to be connected together by a latch 9. For convenience in inserting charges of filling material into said sheath, sheet metal plates or side boards 10 are provided, which are adapted to be positioned inside of lateral sides 1 of the base section A and to form upward extensions thereof. As shown, said side boards 10 are provided with clips 11 adapted to engage the upper edges of the sides 1 of the base section to support said side boards in operative position. After a suitable quantity of any desired filling material has been inserted loosely into the base section A between the side boards 10, the top section 4, with the trunnions 6 thereon in engagement with the slots 3 in the sides of the base section, is turned pivotally downward between the sides of the base section A, operating to compress the filling material contained in said base section and to inclose the upper side thereof. The handles 8 are then connected together by means of the latch 9 and the side boards 10 withdrawn. The sections A and 4, when connected in the manner described form a sheath which incloses the charge of filling material contained therein on its four lateral sides, effectually preventing said filling material from bulging laterally when compressed, which would so increase the width of the charge as to prevent it from entering the compartment of the mattress, or if it would enter the compartment of the mattress, would produce such friction between the bulging lateral sides of said charge and the side walls of the compartments of the mattress as to render it very difficult and in many cases impossible to force said charges into said compartments. By properly proportioning the size of the sheath to the size of the compartments to be filled, the charges, inclosed and compressed within said sheath, as aforesaid, may be quickly and conveniently inserted into the compartment of the mattress, the filling material forming said charge being maintained under compression until fully inserted. After fully inserting said sheath with its inclosed and compressed charge into a compartment of the mattress, the handles 8 are disconnected and the base section A withdrawn, the initial movement of said base section operating to disengage

the slots 3 from the trunnions 6, thus releasing the charge of filling material contained therein and permitting it to expand and fill the compartment. The top section 4 is then withdrawn which completes the process. This cycle of operations is repeated for each compartment of the mattress.

It will be observed that a feature of importance in my method is that the expansive force of the released charge of filling material is utilized to anchor the charge in its compartment during the act of withdrawing the casing members, the withdrawal of these members being accomplished in such manner that the mass of filling material will not be disturbed in the least, thus rendering it possible to properly position the charge in the compartment and prevent it being pulled apart or displaced or disturbed as to uniformity of density. When the casing members are released after the charge is properly positioned in the compartment, the expansive tendency of the charge causes the casing members to separate and respectively press with considerable force against the upper and lower walls of the compartment, and this expansive tendency creates sufficient friction against the tick to enable the lower casing member A to be slid out of the compartment without disturbing the mass of material and without employing an abutment board or block to hold the filling material in position. As said member A is withdrawn, the filling material is released at the inner end of the compartment and allowed to bulge outwardly and engage the adjacent surface of the tick and this bulging action takes place progressively as the member A is withdrawn, so that when the upper member 4 is withdrawn subsequently the mass of filling material is in contact throughout its length with the tick surface and this insures the secure anchorage of the mass of material in the compartment during the withdrawal of said member 4. A further important advantage derived by building up the charge out of layers or bats of felted filling material is that when the charge is thus built up the withdrawal of the casing members or sheaths does not pull or tear apart the filling mass as would be the case if the charge consisted of filling material in a loose state. This manner of building up the charge by layers of material is also advantageous in that a uniform density of the filling charge can be secured.

I claim:—

1. The process herein described of filling mattresses of the type comprising a plurality of long narrow compartments, which consists in forming fibrous filling material into bats or layers, superposing a sufficient number of these bats or layers in separate batches to fill and distend the separate compartments of the mattress, then separately compressing these batches sufficiently to readily pass into the respective compartments, then inserting these batches separately into the compartments, the pressure being maintained throughout their entire length until they are fully inserted, and then removing the pressure from the batches progressively from the inner end and thus permitting them to separately expand and distend the respective compartments of the mattress, the friction against the tick caused by the expansion of the batch of material being sufficient to anchor or hold the batch in position during the withdrawal of the compressing means.

2. The method of forming a tuftless mattress which consists in first connecting the opposite sides of a tick by flexible division walls to form a series of narrow transverse compartments and subsequently stuffing each compartment by inserting therein a predetermined charge of material adequate to completely fill the compartment, said charge of material being held compressed within a carrier during the act of inserting it into the compartment, and then withdrawing the carrier while the charge is retained in position in the compartment by friction of the charge against the walls of the compartment, this friction being caused by the expansive tendency of the released charge.

3. The method of forming a mattress which consists in first connecting the opposite sides of the tick by division walls to form a series of narrow, transverse compartments and subsequently stuffing each compartment by inserting therein a predetermined charge of material adequate to completely fill the compartment and inclosed and compressed over the entire area of its four lateral sides within a sectional sheath, releasing the pressure on the charge when fully inserted, withdrawing the portion of the sheath upon one lateral side of the charge and finally withdrawing the portions of the sheath inclosing the other lateral sides while the charge is frictionally held in position within the compartment, substantially as described.

In testimony, that I claim the foregoing as my invention, I affix my signature in presence of two subscribing witnesses, this 29th day of May, A. D. 1909.

BENJAMIN D. COURTS.

Witnesses:

K. A. COSTELLO,

W. H. JONES.