(No Model.) 7 Sheets—Sheet 1.

W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

No. 597,446. Patented Jan. 18, 1898.

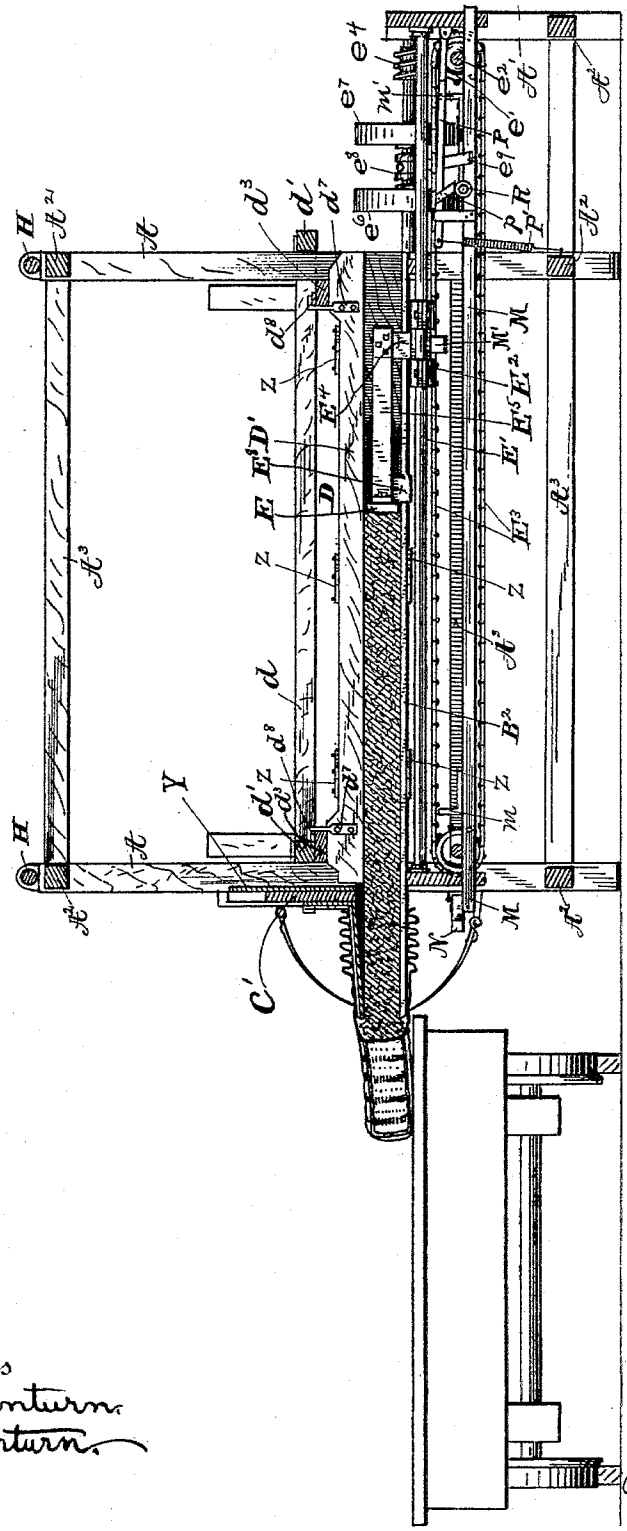


Fig. 1.

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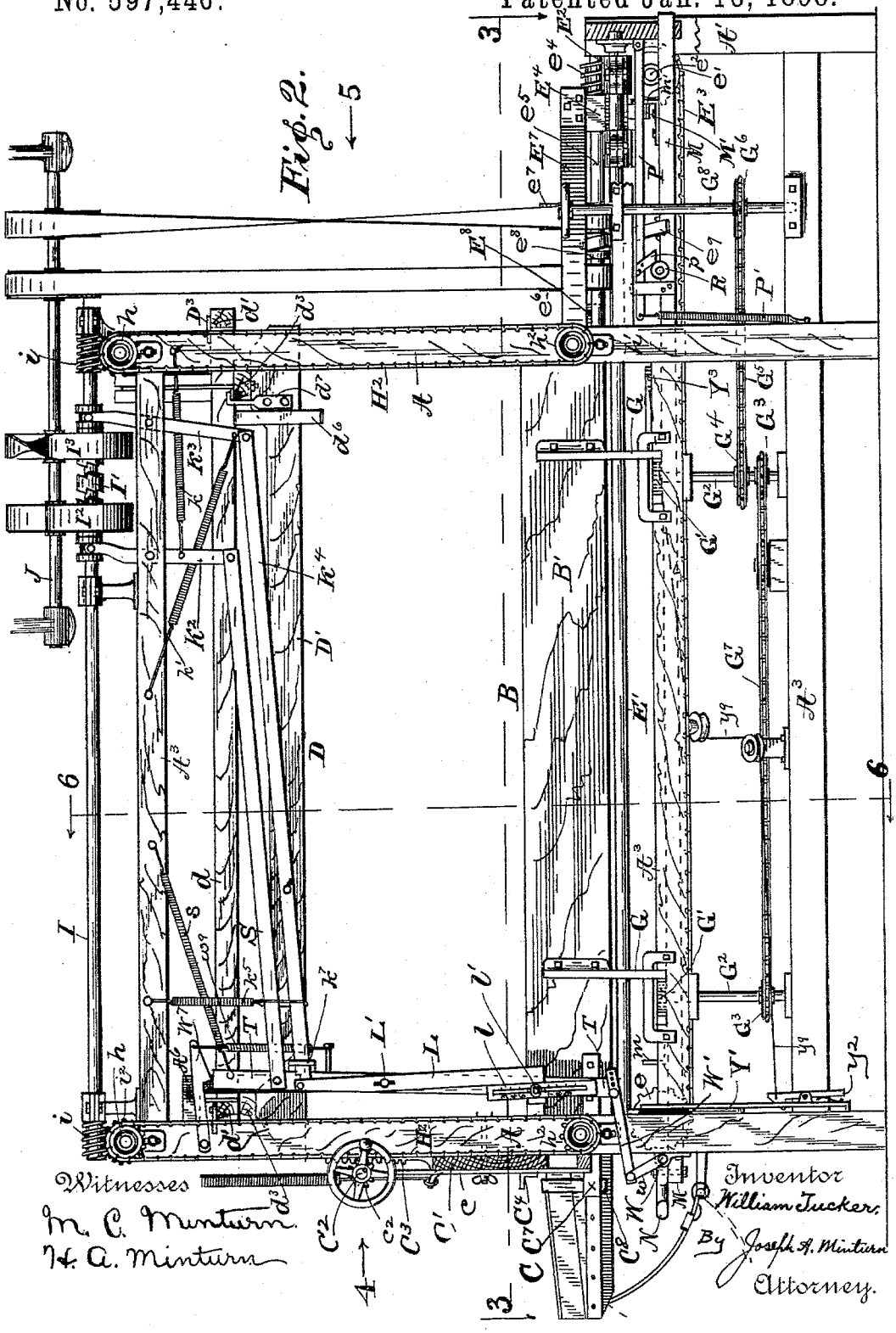
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W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

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Fig. 2.



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(No Model.) 7 Sheets—Sheet 3.

W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

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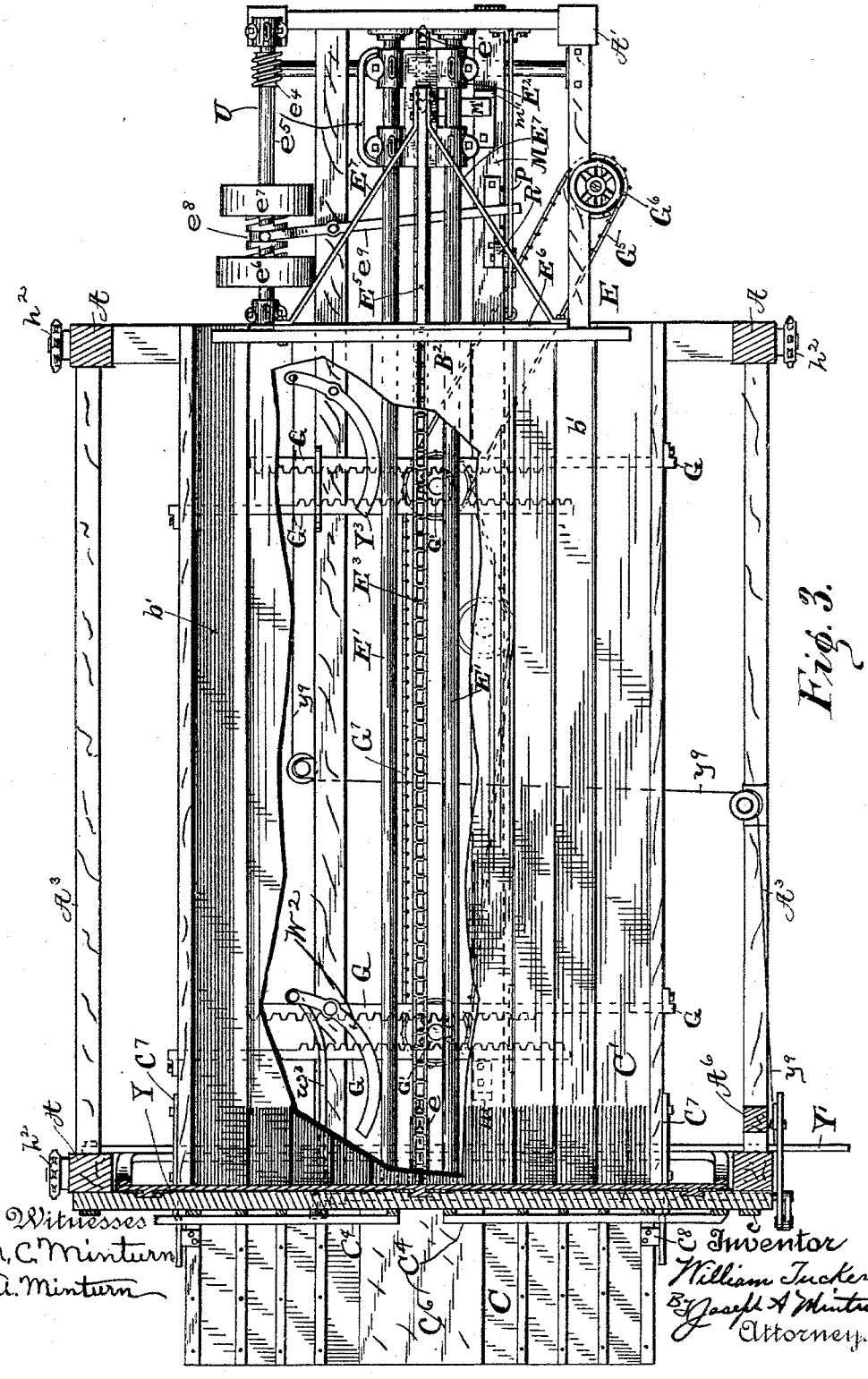


Fig. 3.

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(No Model.) 7 Sheets—Sheet 4.

W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

No. 597,446. Patented Jan. 18, 1898.

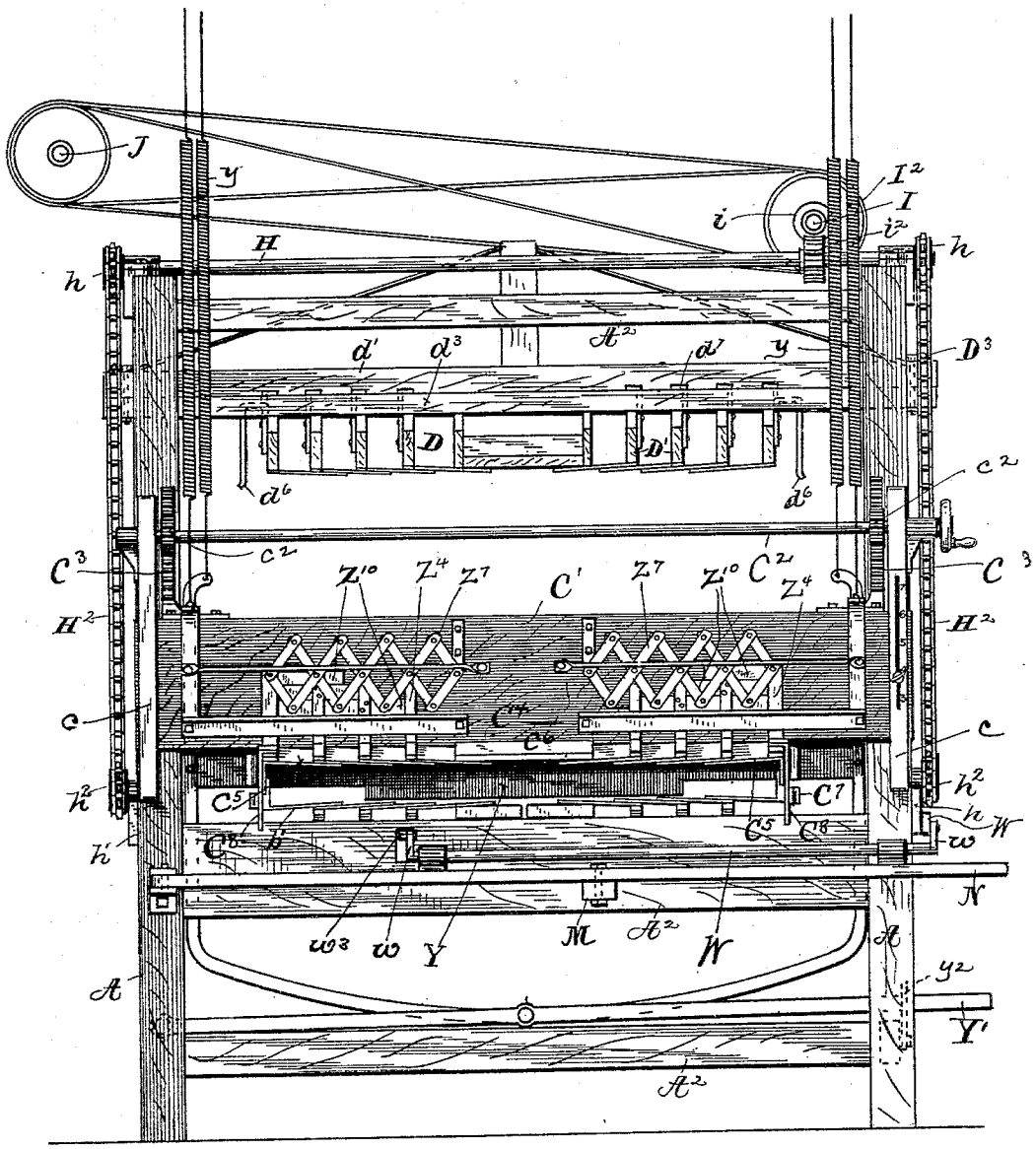


Fig. 4.

Witnesses
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(No Model.) 7 Sheets—Sheet 5.

W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

No. 597,446. Patented Jan. 18, 1898.

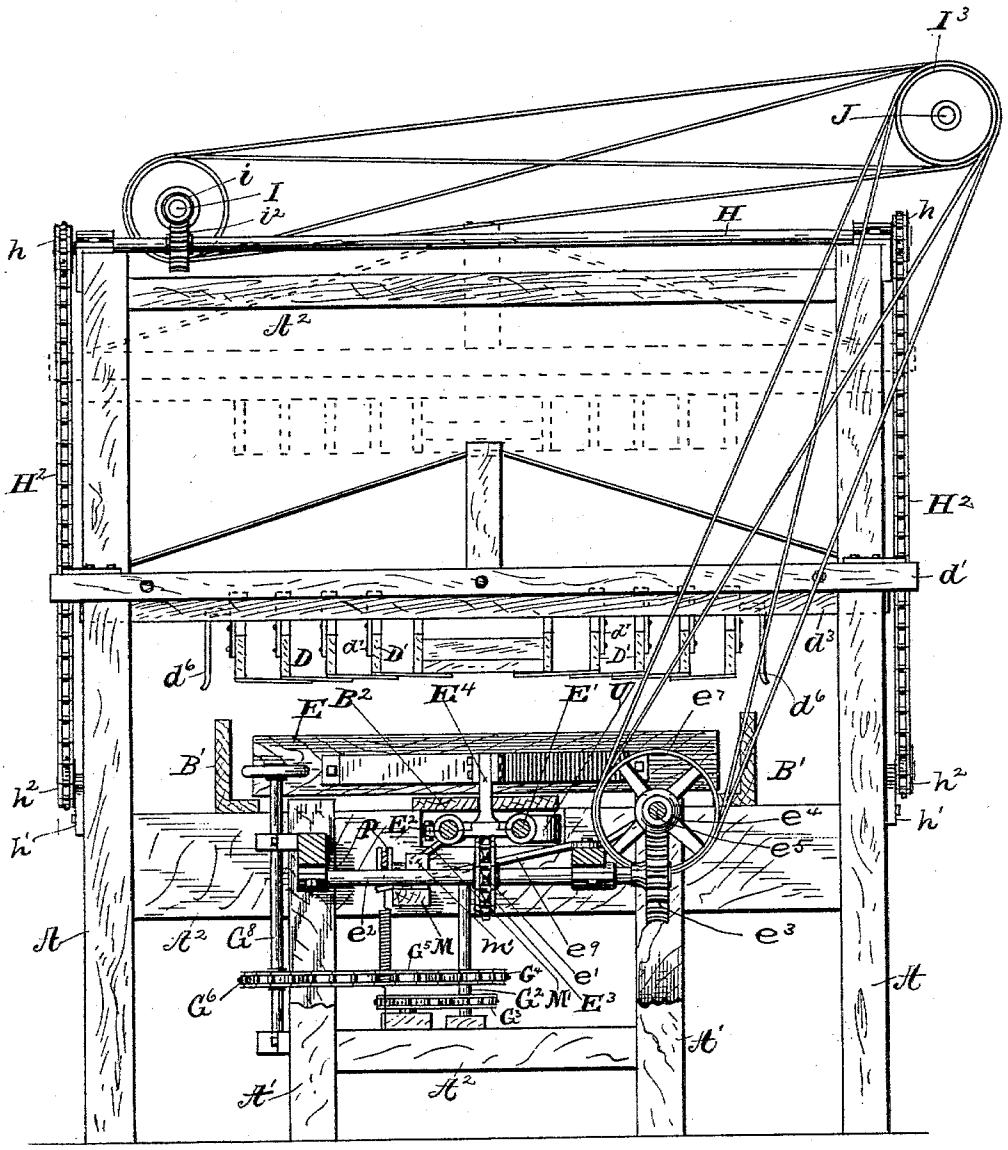


Fig. 5.

Witnesses
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W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

No. 597,446. Patented Jan. 18, 1898.

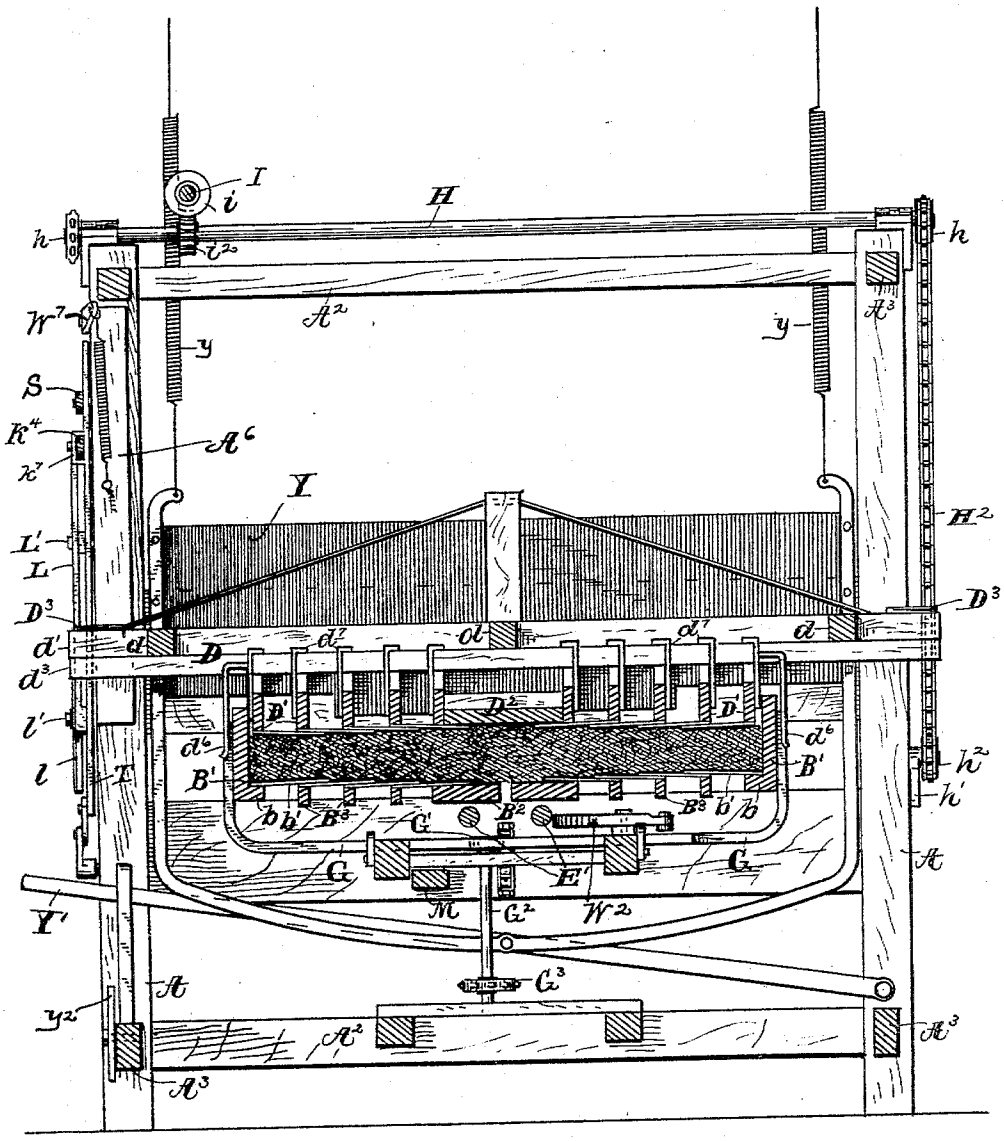


Fig. 6.

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(No Model.) 7 Sheets—Sheet 7.

W. TUCKER.

MACHINE FOR STUFFING MATTRESSES.

No. 597,446. Patented Jan. 18, 1898.

Fig. 7.

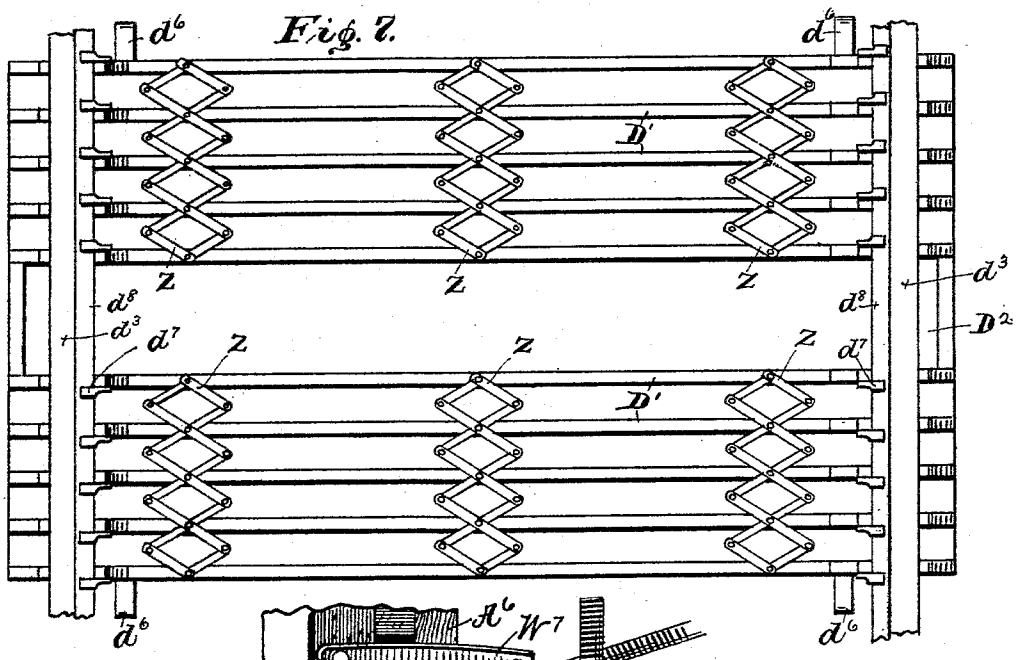
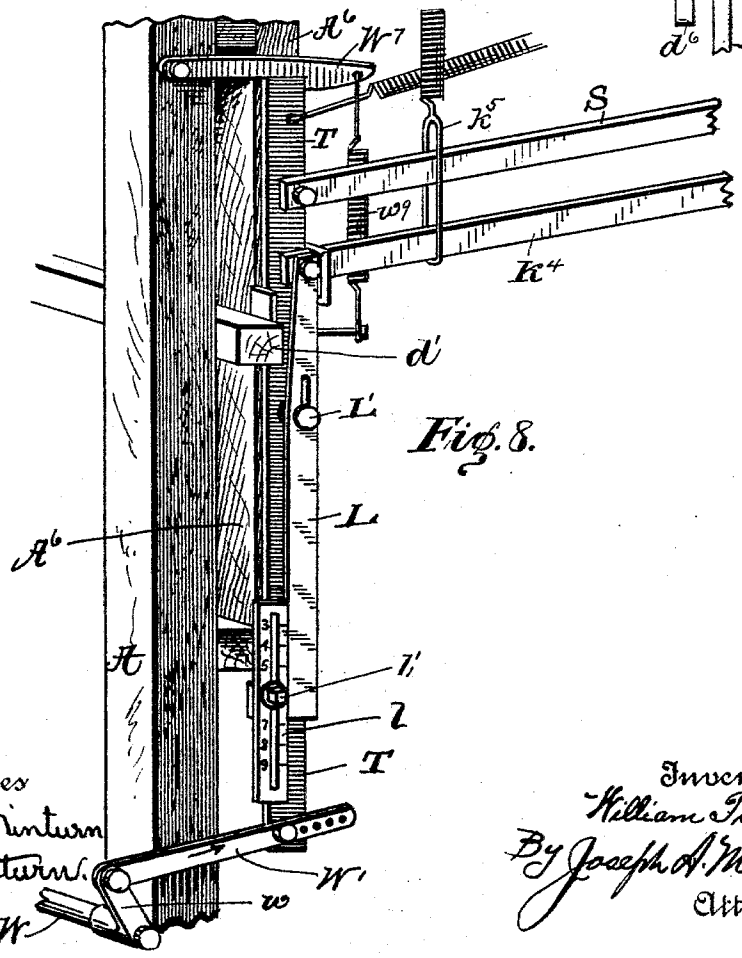


Fig. 8.



Witnesses
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UNITED STATES PATENT OFFICE.

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MACHINE FOR STUFFING MATTRESSES.

SPECIFICATION forming part of Letters Patent No. 597,446, dated January 18, 1898.

Application filed July 24, 1897. Serial No. 645,849. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TUCKER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Machines for Stuffing Mattresses, of which the following is a specification.

The object of this invention is to enable the material—such as hair, husks, cotton, excelsior, and the like—with which mattresses are filled to be laid out in uniform thickness and of either uniform material or of layers of diversified material, according to requirements, and then compressed a predetermined amount and deposited in the cloth envelop or tick in this compressed condition without bunching or disturbing the mass.

Another object of the invention is to provide a machine which will automatically compress the filling material, deposit it in the cloth covering, and return again into position for a new discharge; and the further object of the invention is to provide a machine which can be set to fill mattresses of different widths, thicknesses, and different densities of material and to provide a machine which will be easily repaired and free from danger to the operator.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in longitudinal vertical section of my machine, showing the truck onto which the filled mattress is deposited and showing a mattress partially filled; Fig. 2, a view in side elevation of my machine, showing the frame broken away in part at the driving end and showing the machine ready to commence the operation of filling a mattress; Fig. 3, a horizontal section on the line 3 3 of Fig. 2 looking in the direction of the arrows and showing the bottom of the box broken away in part to show the underlying mechanism; Fig. 4, an end elevation of the machine looking in the direction of the arrow 4 of Fig. 2; Fig. 5, an end elevation, partially in section, of the driving end of the machine looking in the direction of the arrow 5 of Fig. 2 and showing the lid part way down in full lines and in dotted lines in its highest elevation; Fig. 6, a transverse vertical section on the line 6 6 of Fig. 2, showing the bed as containing the filling material with the lid resting on and compressing the material and showing the gate open; Fig. 7, a detail in plan view of the lid, showing the braces whereby a parallel lateral movement is secured to the adjustable sections of the lid; and Fig. 8 is a detail in perspective of one of the front vertical posts and its attached levers.

Similar letters of reference indicate like parts throughout the several views of the drawings.

The frame which supports the mechanism of my device comprises the four vertical posts A and two shorter posts A′, which are connected by transverse horizontal braces A^2 and longitudinal horizontal braces A^3, the exact construction of which frame is immaterial so long as it is sufficiently strong and rigid to stand the strain which it will be called upon to bear.

B represents the bed, inside of which the material for filling the mattress is distributed. The horizontal position of the bed is fixed, but it is adjustable in width in the manner as will be hereinafter fully described. The bed at one of its ends opens into a four-sided mouthpiece C, which tapers outwardly and is adjustable in width and height conformably with the dimensions in cross-section of the proposed mattress, as will also be hereinafter described. The cloth covering for the mattress is drawn onto this mouthpiece.

D is a lid which has reciprocating movement and is adapted to descend into the bed and compress the mattress material which has been previously deposited therein.

E is a plunger which pushes the compressed filling into the cloth covering and forces the latter off of the mouthpiece as it is filled, depositing the mattress on the truck F, whereby by moving the truck along the track F′ the mattress can be readily carried to a sewing-machine and the open end of the cover sewed up and the truck returned in time to receive the next mattress as it comes from the filling-machine.

Referring now to the bed in which the filling for the mattress is first deposited, B′ are the side boards, which rest on the lateral

braces of the frame and are each bolted to the upwardly-cranked ends of a pair of inwardly-projected horizontal rack-bars G. The two opposite rack-bars at each end of the bed have the teeth on their adjacent sides, and the bars are placed close enough together to engage the teeth on a pinion G′, which is placed between them. When the pinions are rotated, the rack-bars will be moved in opposite directions to each other. Mounted on the vertical shafts G^2, which carry the pinions G′, are the sprocket-wheels G^3 of equal diameter, and G^7 is a chain belt connecting the two sprocket-wheels. One of the shafts has the additional sprocket-wheel G^4, which is connected by the chain belt G^5 with a sprocket-wheel G^6 on the shaft G^8. The upper end of the last-mentioned shaft has a hand-wheel at its upper end, by which it is rotated. By the mechanism as thus described both of the side boards B′ can be moved simultaneously in opposite directions by turning the hand-wheel.

The bottom of the bed comprises the longitudinally centrally slotted stationary board B^2 and the laterally-adjustable pieces B^3, placed between the center board B^2 and the side boards B′. (Here shown as three in number on each side of the center board.) The pieces are kept equidistant from each other and from the center and side boards by a system of crossed and pivoted levers exactly similar to those shown at Z, Fig. 7, for giving the same movement to the similarly-constructed lid. The arrangement of the levers is similar to the construction used in what is well known as "lazy-tongs," with the addition that the same pivot which connects the intersecting levers also connects the levers with the pieces B^3.

As shown in Fig. 6, the side boards B′ have inside bottom flanges *b*, and the spaces between these flanges, the pieces B^3, and the center board are closed by the sheet-metal strips or plates *b*′, which have one of their longitudinal edges secured to one of the strips or a flange, while their loose edges rest upon and overlap the next inside strip, with the innermost one resting on the center board, thereby providing an expansible bottom. The mattress-filling is laid out in even layers on this bottom, the distance between the side boards being previously fixed to suit the width of the proposed mattress. The next step is to compress the filling material, and this is accomplished by forcing the lid D down onto the mass contained in the bed, the lid in its normal position being sufficiently elevated to afford free access in placing the filling material in the bed. The posts A serve as guides. Mounted at their upper ends are the transverse shafts H, which terminate at each of the four ends of the shafts with the sprocket-wheels *h*. Secured to the posts A a suitable distance below are the brackets *h*′, which support the sprocket-wheels h^2. Chain belts H^2 connect the upper and lower sprocket-wheels on the same post together. The lid D is connected to these four chains, whereby they will carry the lid up or down, according to the direction of movement of the belts. I will first describe the construction of the lid and then the mechanism by which the movement of the lid is controlled.

The longitudinal pieces *d d* and two transverse pieces *d*′ *d*′ constitute a frame, of which the pieces *d d* are against the inner side of the posts A and the transverse pieces *d*′ *d*′ are long enough to contact with the sides of the posts A at right angles to the sides of the posts against which the longitudinal pieces have their bearings, as shown in Fig. 1. Secured to the under side of the frame thus formed are the transverse supports d^3 d^3, from which a series of longitudinal and laterally-adjustable pieces D′ are suspended by means of the hooks d^7. A metal bearing-surface d^8 on each of the supports d^3 will add to the durability of the mechanism. A stationary center board D^2 is provided and the adjustable pieces D′ are arranged on each side of it and are connected therewith by the crossed and pivoted levers Z, as shown in Fig. 7. The two outside ones of the adjustable pieces D′ are provided with the hooks d^6, which, when the lid is lowered into the bed, engage the side boards B′. When it is desired to change the width of the bed and of the lid to correspond with it, the lid is first lowered into the bed and then by the action of the hooks when the width of the bed is changed the lid will be changed in width to fit. Metal fingers D^3, bolted to the frame and engaging the chain belts, cause the lid D to travel up and down with the corresponding movement of the belts.

The mechanism for driving the shafts H, which actuate the chain belts controlling the movement of the lid D, will now be described.

I is a shaft mounted longitudinally of the machine above the shafts H and having a worm *i* at each end to engage the cogs of the toothed wheels i^2 on the shafts H.

I′ is a collar, with both ends notched to form the halves of two oppositely-acting clutches. The collar occupies a fixed position on the shaft.

I^2 and I^3 are pulleys mounted loosely on the shaft I on opposite sides of the collar I′. Their hubs adjacent to the collar are notched to form the opposite halves of clutches, which work into the other clutch-half provided by the collar.

J is a line-shaft driven by any convenient motor. It carries driving-pulleys, one of which is connected by a straight belt with the pulley I^2 and another by a crossed belt with the pulley I^3, whereby a like and a reverse movement can be transmitted from the line-shaft J to the shaft I. The pulleys I^2 and I^3 are shifted by the levers K^2 and K^3, which levers are pivoted to the frame of the machine and are drawn by the springs *k* and *k*′ in the direction to disengage the pulley-hubs from the collar I′. In the construction as here shown when the shaft I is revolved

by the pulley I^3 the direction is such as to lower the lid. Pivoted to the end of the lever K^3 is the shifting-bar K^4, which works through a vertically-slotted guide k^7. The bar K^4 has a notch to engage the top of the guide and hold the bar from longitudinal movement when the lever is in the required position to couple the pulley with the collar, and a spring k^5 draws the bar up and holds the notch against the guide; but the moment the guide is out of the notch the spring k', acting on the lever K^3, uncouples its pulley, thereby of course stopping the descent of the lid.

L is a lever which is pivoted to the end of the shifting-bar K^4 and is fulcrumed to a fixed pin L', and the lower end of the lever has an adjustable plate l, which stands in the path of the transverse bar d' of the frame of the lid. The lever is slotted longitudinally at its fulcrum for the passage of the pin L', whereby when the frame of the lid strikes the plate l the shifting-bar K^4 will be drawn down and its notch disengaged from the guide. As the amount of compression imparted to the contents of the bed depends on the travel of the lid, and as this will be controlled by the contact with the plate l, it is obvious that a vertical adjustment of the plate provides means for regulating the pressure. To this end the plate will be secured to the lever by a bolt l', and the bolt will be projected through a longitudinal slot in the plate, which enables the plate to be raised or lowered. A graduated scale, as shown, will enable the plate to be set for mattresses of different thicknesses as well as density.

As the return of the lid to its highest elevation occurs only after the filling has been pushed out of the bed into the tick, and that operation depends somewhat on the mechanism for operating the plunger, the latter mechanism will be next described.

E' represents two non-revoluble parallel shafts mounted in the same horizontal plane close under the bed of the machine. These shafts pass through boxes in the head E^2 and serve as guides for the head, which has a reciprocating travel along the shafts, impelled by the link belt E^3. Sprocket-wheels e and e', mounted at opposite ends of the machine, give support to the chain belt E^3. The wheel e' is mounted on the revoluble shaft e^2, and the shaft e^2 also carries the toothed wheel e^3, which meshes with the worm e^4 on the shaft e^5. The shaft e^5 has the two loose pulleys e^6 and e^7, the former of which is driven by a straight belt from a pulley on the line-shaft J and the latter by a crossed belt from an additional pulley on said line-shaft. While the pulleys e^6 and e^7 are loosely mounted on the shaft e^5, they are secured against longitudinal movement, and between them is the sliding clutch e^8, which is splined to the shaft and can be thrown into engagement with the notched hub of either one of the pulleys or disengaged from both by means of the lever e^9. The lever e^9, as shown in Fig. 3, is pivoted to the frame of the machine and is connected with the sliding bar M, whereby when the bar M is moved longitudinally the lever will be shifted. When the lever is shifted so as to cause the pulley e^6 to drive the shaft e^5, the chain belt E^3, which is connected with the under side of the head E^2, will be driven in a direction to cause the head to travel along the shafts E' toward the front of the machine, and when the lever is shifted in the opposite direction to cause the shaft e^5 to be driven by the pulley e^7 the direction of movement of the chain belt E^3 will be reversed and the head E^2 will travel back to the starting-place at the driving end of the machine. Secured to the head E^2 is the upwardly-projected plate E^4, which enters the longitudinal slot formed in the board B^2 of the compression-bed, and bolted to the plate above the bottom of the bed is the horizontal bar E^5, having the cross-head E^6, to which the plunger-board E is bolted. The board E is removably secured, whereby it can be removed and boards of different width and length substituted when the machine is set to fill different-sized mattresses.

E^7 are diagonal braces to stiffen and strengthen the cross-head, and E^8 is a flange which is projected from the front end of the bar E^5 down into the slot in the board B^2 of the bed of the machine. The flange E^8 increases the bearing in the slot, thereby preventing unequal side pressure on the plunger from breaking its supports or causing the mechanism of the plunger to bind.

N is a hand-lever which is pivoted to the frame of the machine and to the front end of the sliding bar M, and by moving the sliding bar toward the driving end of the machine the lever e^9 will be shifted, whereby the connected mechanism will cause the head E^2 to begin its travels, and I will now describe the mechanism by which the direction of movement of the head will be automatically reversed when it reaches the front end of the bed and automatically stopped when it reaches the place of beginning at the driving end of the machine.

M' is a striking-bar secured to and moving with the head E^2, and m and m' are lugs fixed to the bar and projecting up into the path of the bar M'. Their position on the bar is such that the longitudinal movement given to the bar will throw the pulley on the shaft e^5 out of gear and stop the head E^2 just at the right place, where the change in the direction of the stroke is desired or where it is desired that the head should stop at the end of the return movement. The striking-bar M', acting on the lugs m and m', only serves to stop the machine. The initial starting of the machine is effected through the agency of the lever N, as previously described; but after the head stops at the front of the machine it is started back by the action of the lever P, which is pivoted to the frame at the driving end of the machine and has an inclined downward extension p, which bears against a roller R,

mounted on the sliding bar M. The loose end of the lever P is drawn down by the spring P′ with sufficient force to move the bar longitudinally by the action of the inclined extension against the roller. When the sliding bar M (see Fig. 2) is first moved by the lever N, the roller R raises the lever and assumes the position under the extension p, as shown in Fig. 1, and then the pull of the spring on the lever is resisted by the horizontal end of the extension resting on the roller, as shown, which condition remains unchanged until the striking-bar M, by striking the front lug m, moves the sliding bar M forward and leaves the roller R in contact with the sloping side of the extension p. Then the action of the spring P′ forces the bar M an increased distance sufficient to move the lever e^9 and bring the pulley e^7 into action, which reverses the direction of movement of the head. At the same time that the plunger and the head which carries it are moving back after the plunger has done its work it is desirable that the lid, which has been down until this time, should move up to allow the bed to be refilled. This will be accomplished by throwing the pulley I^2 into engagement with the clutch, which transmits its movement to its shaft, and I will now describe the automatic means for doing this.

A^6 is an extension of the frame of the machine, which forms a support for the pin L′, and between the lever L and the extension A^6 is a lever T, which is also fulcrumed on the same pin L′ which forms the fulcrum for the lever L. The lever T is connected with the lever K^2 by means of the shifting-bar S.

W is a rocking shaft mounted transversely of the machine and having two crank-arms w and w'. The arm w is connected by the bar w' with the lower end of the lever T, a series of holes being provided in the end of the bar and of the lever for the pivotal bolt, whereby an adjustment of the parts can be secured.

W^2 is a horizontal lever which is pivoted to one of the longitudinal braces of the machine-frame. The short outer arm of the lever is connected with the crank-arm w' by means of the connecting-rod w^3, and the long inner arm of the lever projects into the path of the striking-plate U, which is a lateral projection from the head E^2. The lever W^2 is placed where the striking-plate will act on it when the head is at the end of its stroke at the front of the machine, and the movement imparted to it will couple the pulley I^2 to the shaft I and cause the lid to ascend by the mechanism thereby set in motion. The spring s, acting on the lever T, and the spring k, acting on the lever K^2, have a combined effect of uncoupling the pulley I^2 from its shaft I, and as soon as the head E^2 has moved on its return far enough to release the lever W^2 from the action of the striking-plate the force of the springs s and k will act and stop the hoisting mechanism of the lid before the raising of the lid is completed. To avoid the premature arrest of the lid, I provide the notched lever W^7, which is drawn down by the spring w^9 and hooks over the upper end of the lever T and locks it against the action of the springs until the frame of the lid reaches the lever W^7, and by elevating it in the manner shown in Fig. 2 releases the lever T, thereby allowing the springs to act and stop the machine.

Y is a gate which temporarily closes the front end of the compression-bed while the latter is being filled and during the compression of the filling. It is held in its elevated and normal position by the springs y y and is held down in its closed position by the lever Y′, to which it is connected in the manner shown in the drawings. The lever is held down by the spring-latch y^2 and may be liberated by a pressure of the operator's foot against the lower end of the latch, or it can be liberated automatically by connecting a second lever Y^3, similar to the lever W^2, with the latch y^2, by means of the cord y^9, in the manner as shown in the drawings, whereby when the striking-plate U on the traveling head E^2 reaches the lever Y^3 it will move the lever enough to throw the latch and liberate the gate-lever Y′.

I will now describe the construction and manner of adjustment of the mouthpiece C, mentioned at the beginning of the specification.

The bottom of the mouthpiece is a continuation of the bottom of the compression-bed and is changed in width at the same time and in the same manner that the width of the bed is changed. The top is made in adjustable sections, which are supported by the board C′. The board C′ has vertical adjustment in the guides c, whereby the sections will all be simultaneously raised or lowered. The vertical movement of the board will be effected by engagement of the pinions c^2 on the stationary shaft C^2 with rack-bars C^3, projected up from the board.

C^4 are angle-bars, between which and the board C′ the vertical bars Z^4 are placed. The bars Z^4 have the lateral plates Z^{10} riveted to them to increase the bearing-surface against the board and keep the bars from twisting. The bars Z^4 are connected with each other in two series (one on each side of the center of the machine) by the "lazy-tongs" levers Z^7, and these levers are connected with the board at one end of each series, whereby the bars Z^4 will maintain an equidistant relation to each other. The lower ends of the bars are continued and are bent out forward of the machine and provide the supports for the plates C^5, which have one of their edges riveted to the bars, while the other opposite edges are underlapped in the manner as is clearly shown in the drawings. The center board C^6 is fastened to the board C′. The outside plates of both top and bottom of the mouthpiece are extended and bent to form telescoping closures for the sides of the mouthpiece. Bars

C^7 are bolted to the side boards of the compression-bed and extend forward alongside the mouthpiece C and between the bar on each side, and to the end of the mouthpiece a bar C^8 is inserted. The upper ends of the bars C^8 (there are two of them, one for each side of the mouthpiece) are fastened to the outside bar Z^4 and are the means whereby the top of the mouthpiece is made to adjust itself in width to conform to the width of the bottom when the latter is changed. A graduated scale enables the board C′ to be set at any predetermined height, and a set-screw provides means for holding it where it is set.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. In a mattress-filling machine, the combination with a horizontal, fixed, compression-bed, of a vertically-moving, constantly-horizontal lid, a revoluble shaft reversible in its movement, mounted longitudinally of the machine, means for moving both ends of the lid coordinately from this shaft, oppositely-driven pulleys mounted loosely on the shaft, clutch mechanism for alternately connecting either pulley with the shaft, levers connected with the pulleys and actuated by springs in a direction to throw them out of driving connection with the shaft, catches to engage the levers and resist the springs, said catches being located in the path of the lid at positions to determine the upward and downward movement thereof, and a plunger working between the lid and the bed-bottom, substantially as described.

2. In a mattress-filling machine, the combination with a horizontal, fixed, compression-bed, of a horizontal, vertically-reciprocating lid, adjustable automatic stops actuated by the lid to stop the descent of the lid at a predetermined point, a horizontally-reciprocating plunger and levers connected with the lid-raising mechanism and adapted to be set in motion by contact with the plunger mechanism whereby the lid will be raised simultaneously with the return of the plunger, substantially as described.

3. In a machine for filling mattresses, a compression-box, a frame with four vertical corner-posts to support the box, a vertically-reciprocating lid supported and guided by the posts, a shaft connected with the lid whereby, when the shaft is rotated the lid will be raised or lowered according to the direction of rotation of said shaft, said shaft having two oppositely-moving pulleys mounted loosely thereon, means whereby the operator can connect one of the pulleys with the shaft causing the shaft to rotate in a direction to lower the lid, means whereby the descending lid will disconnect the pulley from the shaft at a predetermined position of the lid, a horizontally-reciprocating plunger, means, substantially as shown, whereby the plunger mechanism preceding its return, will couple the other pulley to the shaft thereby causing the lid to ascend, and means whereby the ascending lid will uncouple the last-mentioned pulley and stop the lid, all combined substantially as described and for the purposes specified.

4. In a mattress-filling machine, the combination with a compression-bed and a plunger, of vertical posts supporting each of the four corners of the bed and forming guides for a horizontal lid, a horizontal lid, a pair of shafts mounted on the posts, and means, such as belts, from the shafts to the lid, whereby the lid will be supported and will be raised and lowered by the rotation of the shafts, a second shaft geared to the first two whereby the first two shafts will be rotated, said last-mentioned shaft having two oppositely-rotating pulleys loosely mounted thereon, a collar fixed to the shaft intermediate of the loose pulleys and having notched ends to engage the notched hubs of the pulleys, shifting-levers to move the pulleys, springs to influence the levers in a direction to separate the pulleys from the clutch-collar, a shifting-bar pivotally secured to one of the levers and notched at its opposite end, a fixed pin to engage the notch and hold the bar in a position which couples the pulley to its shaft, a spring to press the notched bar against the pin and a lever pivoted to the bar and capable of longitudinal movement and having an adjustable portion which stands in the path of the lid-frame, substantially as described.

5. In a mattress-filling machine, the combination with a compression-bed and a plunger, of vertical posts supporting each of the four corners of the bed and forming guides for a horizontal lid, a horizontal lid, a pair of shafts mounted on the posts, and means, such as belts, from the shafts to the lid, whereby the lid will be supported and will be raised and lowered by the rotation of the shafts, a second shaft geared to the first two whereby the first two shafts will be rotated, said last-mentioned shaft having two oppositely-rotating pulleys loosely mounted thereon, a collar fixed to the shaft intermediate of the loose pulleys and having ends to engage the notched hubs of the pulleys, shifting-levers to move the pulleys, springs to influence the levers in a direction to separate the pulleys from the clutch-collar, a shifting-bar pivotally secured to one of the levers and notched at its opposite end, a fixed pin to engage the notch and hold the bar in a position which couples the pulley to its shaft, a spring to press the notched bar against the pin, a lever pivoted to the bar and capable of longitudinal movement and having an adjustable portion which stands in the path of the lid-frame, a second shifting-bar pivotally secured to the shifting-lever which controls the other pulley, a vertical lever fulcrumed to the machine-frame, to which the shifting-lever is pivoted, a rocking bar mounted on the machine-frame and having crank-arms, one of which is connected by a rigid link-bar with the lower end of the vertical lever, a plunger-head having recip-

rocating movement under the compression-bed, and having a laterally-projected striking-plate, a horizontal lever fulcrumed to the machine-frame in the path of the striking-plate and having one of its arms connected with one of the arms of the rocker-shaft, a spring-pressed hook to engage and hold the vertical lever, said hook intersecting the path of the lid-frame whereby the lid will be elevated by the ascending lid thereby releasing the vertical lever, all substantially as described and for the purposes specified.

6. In a mattress-filling machine, the combination, with a laterally-expansible compression-bed, means for simultaneously moving the side boards of the bed in a lateral direction, a vertically-moving constantly-horizontal lid which is adjustable laterally in unison with the bed, a discharge-mouth having its bottom integral with the bed-bottom and having a top separate from the lid, a vertically-adjustable board to which the top of the mouthpiece is secured, a top for the mouthpiece in a plurality of laterally-adjustable sections on each side of a non-adjustable section like the lid, bars or hooks secured to the adjustable top and engaging the bottom whereby the top will be adjusted in unison with the bed.

7. In a mattress-filling machine, the combination with the bed having a longitudinal slot, the movable lid, the discharge-mouth, parallel guide-rods underneath the bed, a head having reciprocating movement on the guide-rods, a plunger secured to the head by a vertical connecting-plate which travels through the slot in the bed, a belt fastened to the head, wheels at each end of the bed to support the belt, means for rotarily driving one of the wheels and for reversing the direction of its movement, all substantially as described and specified.

8. In a mattress-filling machine, the combination with the bed having a longitudinal slot through its bottom, the movable lid, the discharge-mouth, parallel guide-rods underneath the bed, a head having reciprocating movement on the guide-rods, a vertical plate above and integral with the guide-rods, a horizontal bar supported by the plate and having a cross-head, and also having a flange near the cross-head, said vertical plate and flange working in the longitudinal slot in the bed in the manner and for the purposes specified, and a plunger bolted to the cross-head and working in the bed beneath the lid.

9. In a mattress-filling machine, the combination with the bed having a longitudinal slot through its bottom, the movable lid, the discharge-mouth, parallel guide-rods underneath the bed, a head having reciprocating movement on the guide-rods, a plunger secured to the head by a vertical connecting-plate which travels through the slot in the bed, a belt fastened to the head, wheels at each end of the bed to support the belt, a counter-shaft having two oppositely-driven pulleys mounted loosely thereon, means for coupling the pulleys to the shaft, a second shaft geared to the counter-shaft and carrying one of the wheels of the belt which moves the head, a sliding clutch between the pulleys on the counter-shaft, a shifting-lever connected with the clutch and a shifting-bar connected with the shifting-lever, substantially as described.

10. In a mattress-filling machine, the combination with the bed having a longitudinal slot through its bottom, the movable lid, the discharge-mouth, parallel guides underneath the bed, a head having reciprocating movement on the guides, and having a depending striking-bar, a plunger secured to the head by a vertical connecting-plate, a belt fastened to the head, wheels at each end of the bed to support the belt, a counter-shaft having two oppositely-driven pulleys mounted loosely thereon, means for coupling the pulleys to the shaft, a second shaft geared to the counter-shaft and carrying one of the wheels of the belt which moves the head, a sliding clutch between the pulleys on the counter-shaft, a shifting-lever connected with the clutch, a shifting-bar connected with the shifting-lever, said shifting-bar extending the entire length of the machine and having lugs to contact with the striking-bar on the head, whereby the shifting-bar will be moved into position to stop the machine.

11. In a mattress-filling machine, the combination with the bed having a longitudinal slot through its bottom, the movable lid, the discharge-mouth, parallel guides underneath the bed, a head having reciprocating movement on the guides and carrying a striking-bar, a plunger secured to the head by a vertical connecting-plate, a belt fastened to the head, wheels at each end of the bed to support the belt, a counter-shaft having two oppositely-driven pulleys mounted loosely thereon, means for coupling the pulleys to the shaft, a second shaft geared to the counter-shaft and carrying one of the wheels of the belt which moves the head, a sliding clutch between the pulleys on the counter-shaft, a shifting-lever connected with the clutch, a shifting-bar connected with the shifting-lever, said shifting-bar extending the entire length of the machine and having lugs to contact with the striking-bar on the head whereby the shifting-bar will be moved into position to stop the machine, a roller mounted on the shifting-bar, a lever pivoted to the frame of the machine and having a diagonal portion to contact with the roller and a spring to press the lever against the roller, substantially as described.

12. In a mattress-filling machine, the combination with the bed, the vertically-reciprocating lid, the plunger, and the discharge-mouth, of the vertically-sliding gate moving intermediate the box and discharge-mouth, springs to normally raise the gate, a lever to

lower the gate and a hook to engage the lever, said hook being pressed into engagement by a spring, substantially as shown.

13. In a mattress-filling machine, the combination with the bed, the vertically-reciprocating lid, the plunger and the discharge-mouth, of the vertically-sliding gate moving intermediate the box and discharge-mouth, springs to normally raise the gate, a lever to lower the gate, a spring-pressed hook to engage the lever and automatic means for withdrawing the hook and releasing the lever, consisting of a horizontal lever connected with the hook and located in the path of the traveling head whereby, by the contact of the head with the lever the hook will be withdrawn, substantially as shown.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 12th day of June, A. D. 1897.

WILLIAM TUCKER. [L. S.]

Witnesses:

JOSEPH A. MINTURN,

J. F. LINDLEY, Jr.