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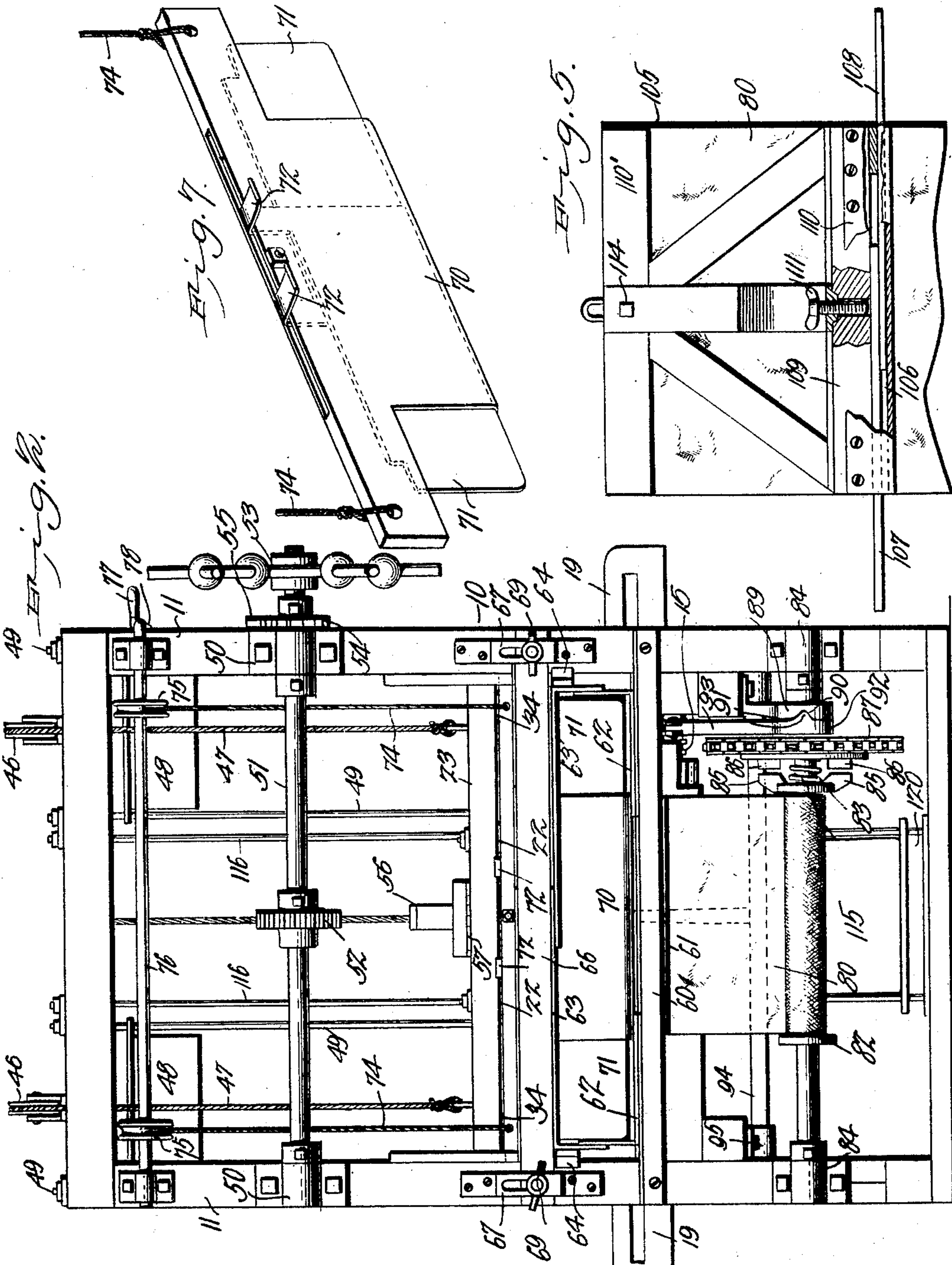
Patented Dec. 30, 1902.

W. S. ALLENDER & T. STOCKER.
MATTRESS STUFFING MACHINE.

(Application filed June 4, 1902.)

(No Model.)

4 Sheets—Sheet 2.



Witnesses
[Signature]
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W. S. Allender & T. Stocker, Inventors
by *[Signature]* Attorneys

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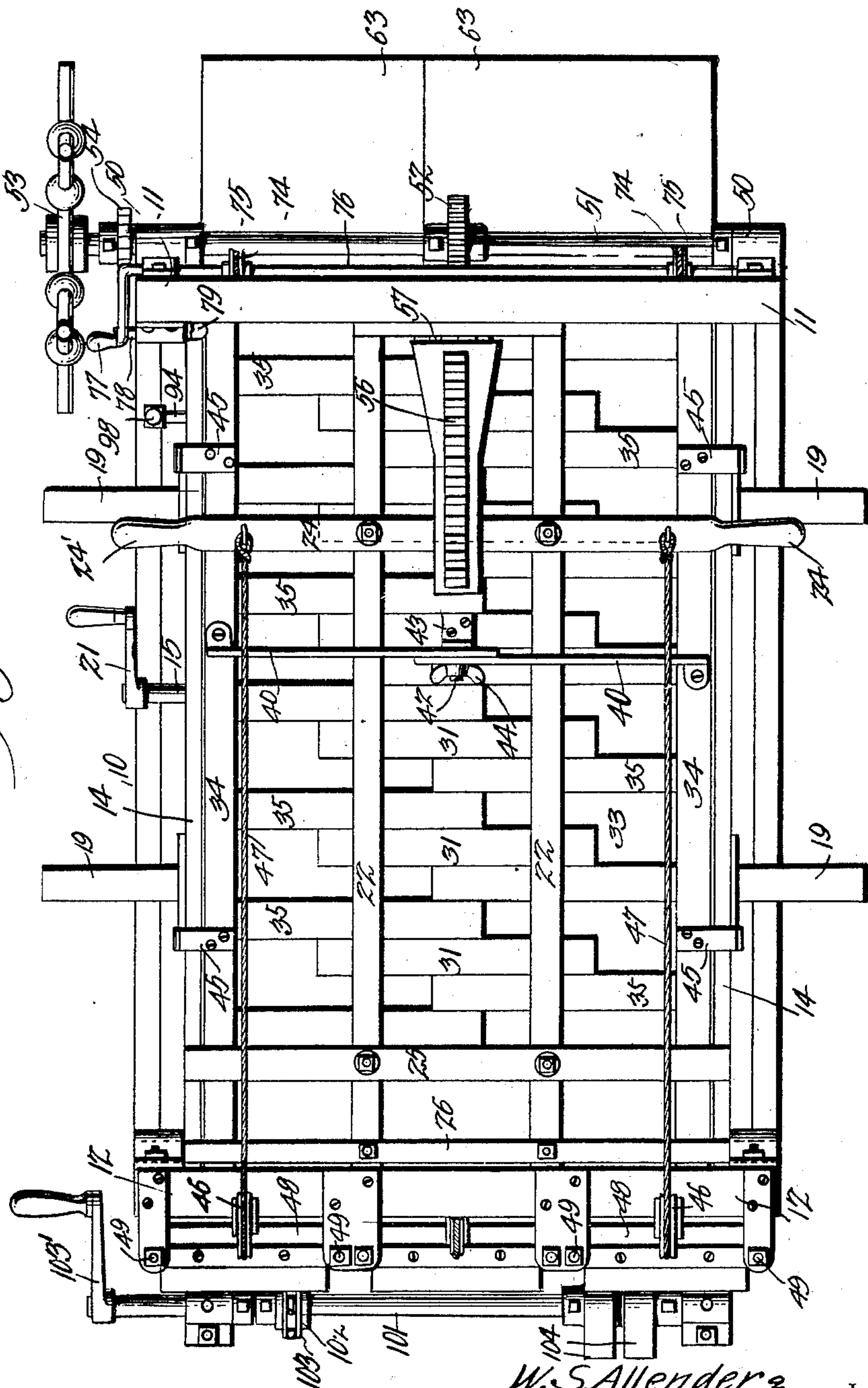
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Fig. 3.



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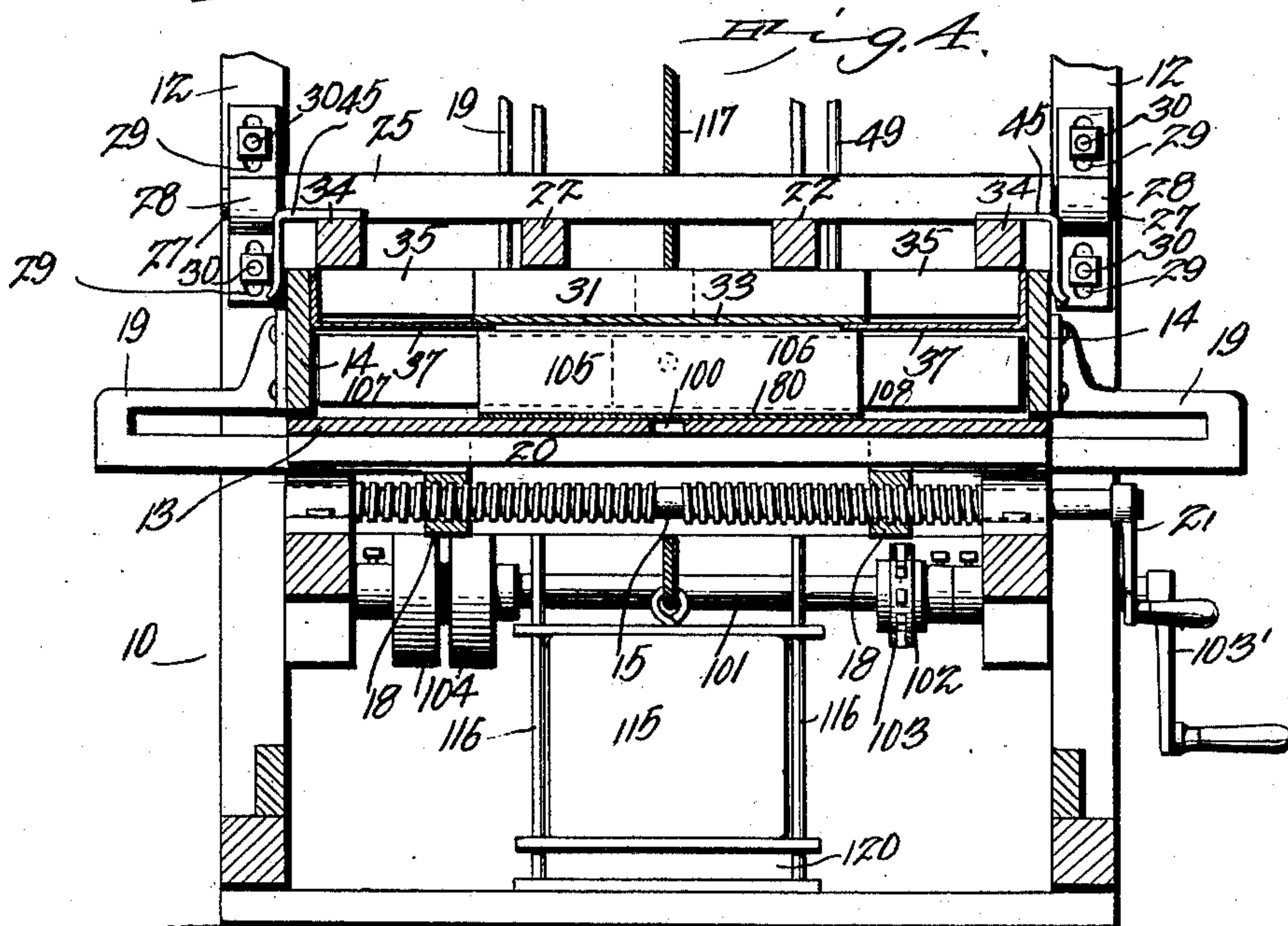
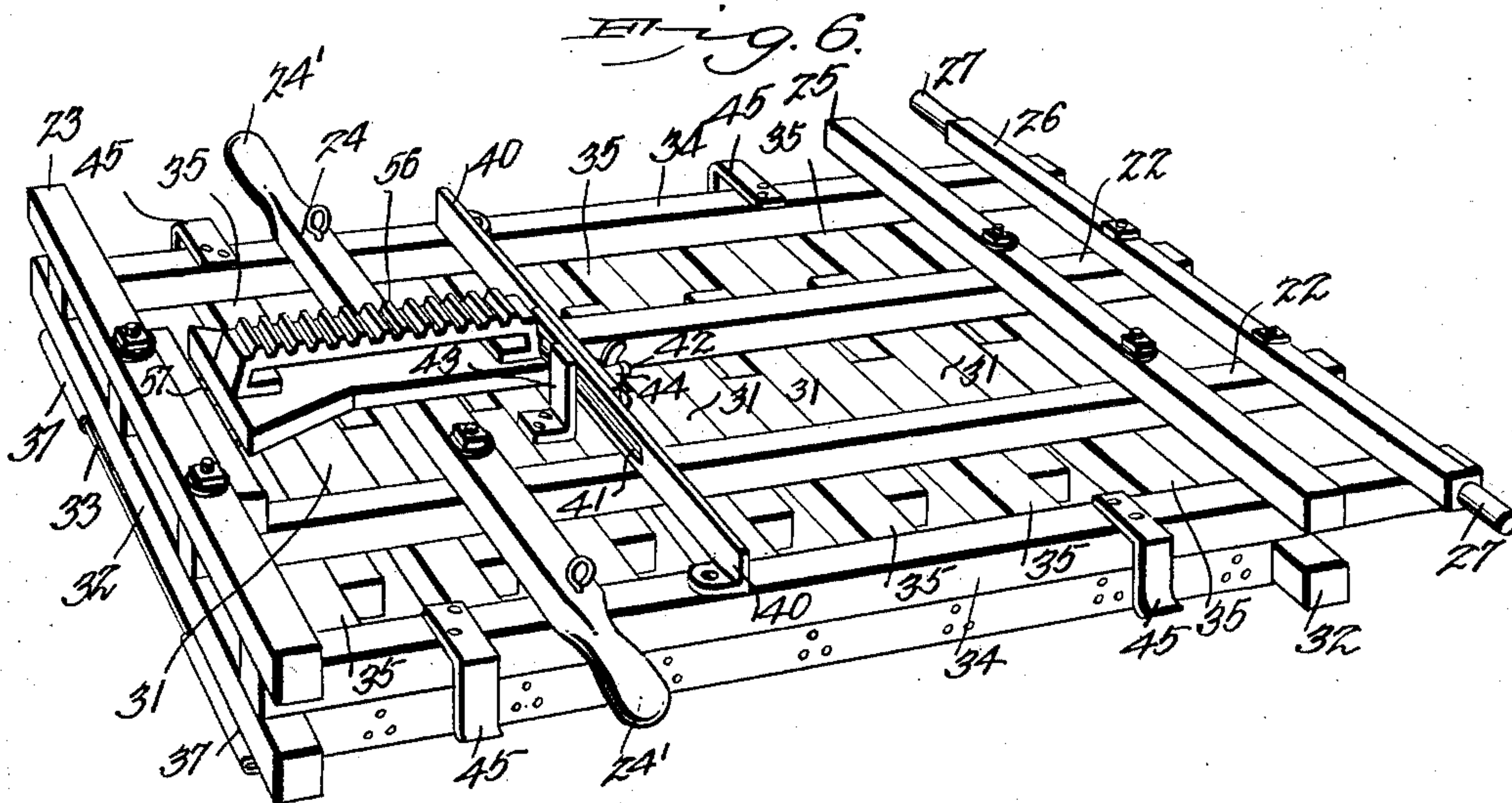
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Witnesses

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UNITED STATES PATENT OFFICE.

WALTER S. ALLENDER AND THEODORE STOCKER, OF MARIETTA, OHIO.

MATTRESS-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 717,064, dated December 30, 1902.

Application filed June 4, 1902. Serial No. 110,198. (No model.)

To all whom it may concern:

Be it known that we, WALTER S. ALLENDER and THEODORE STOCKER, citizens of the United States, residing at Marietta, in the county of Washington and State of Ohio, have invented a new and useful Mattress-Stuffing Machine, of which the following is a specification.

This invention relates to certain improvements in mattress-stuffing machines, and has for one of its objects to provide for the adjustment of the various members of the press-box at a single operation in order to manufacture a mattress of any desired size.

A further object of the invention is to provide, in a device of this class, for the automatic return of the plunger and conveyer-apron to initial position after the filling of a tick.

A still further object is to provide for the ready movement of the cover of the press-box to either open or closed position and to so construct the cover that it may act with equal effect on either a narrow or a wide mattress-stuffing.

A still further object of the invention is to provide an improved form of guard or shield for shaping the forward end of the mattress at the entrance of the spout, to provide for the adjustment of said guard or shield with the sides of the press-box, and to permit of the movement of the same to inoperative position after the press-box has been closed.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a longitudinal sectional elevation of a mattress-stuffing machine constructed in accordance with our invention. Fig. 2 is a front elevation of the same. Fig. 3 is a plan view of the machine. Fig. 4 is a transverse sectional elevation of the same on the line 4 4 of Fig. 1. Fig. 5 is a detail view of the plunger or follower, a portion being broken away in order to more clearly illustrate the adjustable side wings. Fig. 6 is a detached perspective view of the press-box cover. Fig. 7 is a detail perspective view of the guard or shield which is placed in advance of the delivery-spout to

hold the stuffing material before the movement of the ejecting-plunger. Fig. 8 is a view of a detail of construction.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The supporting-frame 10 is of any suitable construction, the end standards 11 and 12 extending for a considerable distance above the press-box for the support of various operating parts of the mechanism, more specifically referred to hereinafter.

The bed 13 is made of a width sufficient to accommodate the largest-size mattress, and at the opposite edges thereof are arranged the vertically-disposed side plates 14 of the press-box, said plates being movable simultaneously toward and from each other to adjust the machine for the manufacture of a mattress of any desired width.

At a point under the bed 13 is a threaded shaft 15, adapted to suitable bearings carried by the supporting-frame, said shaft being provided with right and left hand threads, each adapted to engage in a threaded opening in a longitudinally-disposed bar 18, one of such bars being arranged under the table at a point near each edge thereof and the opposite ends of said bars being connected to U-shaped arms 19, the upper inner ends of which are secured to the side plates 14. The arms 19 are adapted to guideways formed between bars 20, and their peculiar shape permits an extensive inward movement of the side plates before the outer portions of the bars come into contact with the sides of the table. At one end of the threaded shaft 10 is a crank-handle 21, which may be turned to effect the movement of the side plates toward and from each other, and thus adjust the machine for the manufacture of any desired width of mattress.

The cover of the press-box, as best illustrated in Fig. 6, comprises a relatively stationary frame formed of a pair of longitudinally-disposed parallel bars 22 and a series of transversely-disposed bars 23, 24, 25, and 26, the bars 26 being extended some distance beyond the remaining portion of the frame and having rounded ends 27, adapted to pivot-openings formed in brackets 28, carried by the rear standards 12. The brackets are pro-

vided with elongated vertically-disposed slots 29, through which pass bolts 30 to unite the brackets to the frame or standards, the slots permitting of the vertical adjustment of the pivot-bar in accordance with the thickness of the mattress being manufactured. To the under side of the longitudinally-disposed bars 22 are secured a series of transverse bars 31, spaced at equidistant intervals throughout the length of the cover, the end bars 32 of this series being of the same length as the end bars 23 and 25 and situated, respectively, below said bars in order to form guides for the movable portions of the cover. To the under side of the several bars 21 and 22 is secured a metallic plate 33 of sufficient strength to prevent buckling or bending under pressure at points between the bars. At each side of the cover is a bar 34, guided between the transversely-disposed bars 23 and 32 at one end and the bars 25 and 32 at the opposite end, and to each of such bars 34 is secured a series of equidistantly-spaced bars 35, movable between the bars 31 of the main portion of the cover, the arrangement being such that each of the relatively stationary bars 31 is in contact on one side with the transverse bars of one side of the frame and the opposite side of said bar 31 is in contact with a transverse bar carried by the opposite side of the frame. Each of the movable side members of the cover carries a sheet-metal plate 37, the inner edge of which extends under the lower surface of the plate 33, the outer edge of said plate 37 being bent upwardly and secured to the movable side bars 34 or to the ends of the transverse bars forming part of the movable side members of the cover. To each of the movable side members is secured a bar 40, having an elongated slot 41, the adjacent slotted ends of said bars being locked together in any adjusted position by a screw 42, carried by a fixed bracket 43 and having a suitable thumb-nut 44. The opposite edges of the cover during the adjustment of the width of the press-box are disposed within the sides 14, and any movement of the sides toward the center of the bed or table will result in a corresponding movement of the side members of the cover if the thumb-nut 44 be first loosened to permit of this movement. In order to increase the width of the cover when the side plates 14 are moved toward the edge of the bed or table, each of the cover members is provided with an outwardly-extended depending arm 45, adapted to engage the outer surface of a side plate 14, so that the outward movement of the latter may be transmitted to the side members of the cover and all portions of the press-box be adjusted simultaneously.

At the top of the rear standards 12 are sheaves 46, over which pass flexible chains or cords 47, connected at one end to eye bolts at the opposite end portions of the bar 24 of the cover. The opposite ends of the chains or cords are connected by counterbalance-weights 48, hav-

ing suitable guiding-rods 49 to maintain them in proper position. The weights are sufficient to move the cover-box to open position after the latter has been given an initial swinging movement on its pivot-studs 27 and to maintain the same in open position while the mattress-stuffing is being placed in the press-box. For convenience in opening and closing the cover the opposite ends of bar 24 are extended out beyond the sides of the cover to form handles 24'.

On the standards 11, at the front of the frame, are secured bearing-boxes 50 for the reception of a shaft 51, carrying a pinion 52 at a point about midway of its length and provided at one end with a hand-wheel 53. On this shaft is also secured a ratchet-wheel 54, with which engages a pawl 55 to hold the shaft after being turned by the hand-wheel. The pinion intermeshes with a rack 56, pivoted at 57 to the press-box cover, said rack being adjustable to either a vertical or horizontal position. When in the vertical position and intermeshing with the pinion, the hand-wheel may be turned and the cover depressed to any desired extent to compress the mattress-filling, this pressure being maintained by the engagement of the pawl-and-ratchet wheel as the material is forced from the press-box and through the filling-spout to the tick. When it is desired to raise the cover to supply a new filling to the press-box, the rack is thrown back to a horizontal position, its teeth being disengaged from the pinion and allowing free movement of the press-box cover.

Extending transversely across the front of the frame is a bar 60, having its upper edge about level with the top of the bed or table. To this bar is secured the central plate 61 of the lower portion of the spout. The outer and lower side members of the spout are formed of sheets of metal bent at a right angle, as shown in Fig. 2, the vertical portion thereof being secured to the front end of the adjustable side plates 14 and moving with said side plates to adjust the width of the spout in accordance with the adjustment of the width of the press-box. The upper half of the spout is formed of two sheet-metal sections 63, bent into suitable form, the vertical portions of such members extending between the outer faces of the lower corner members 62 and small holding-plates 64, carried by and movable with the adjustable side plates 14, in order to permit the adjustment of the width of the upper portion of the spout. The rear ends of the plates 63 pass upwardly between a pair of clamping-bars 65 and 66, the upper edges of the plates being bent over the top of the bar 66 and arranged in such manner that they may slide to and fro on the bar to increase or decrease the width of the spout. The ends of the bars 65 and 66 are guided between the front face of the frame and slotted brackets 67, secured to said frame. The rear bar 65 carries a screw which projects through an opening in the bar 66 and thence

through the slot of the bracket, said screw being provided with a suitable thumb-nut 69 to lock the bars in any vertical position to which they may be adjusted. The members 62 and 63 of the spout overlap for a distance sufficient to permit any necessary adjustment of the spout for the production of mattresses of any desired thickness.

In order to properly shape the front ends of the mattress-stuffing and to prevent any premature discharge of the stuffing through the spout before or during compression, we employ a guard-plate 70, formed of a sheet of metal bent upon itself and forming a guide for the reception of two adjustable wings or plates 71, which extend out to the adjustable side plates 14, the ends of said plates 71 being disposed between the front ends of the plates 14 and the rear portions of the small holding-plates 64, the plates 64 serving, in connection with the rear portion of the spout members 62, to prevent outward movement of the guard-plate under pressure. The plates 71 are adjusted toward each other by contact with the plates 14 when the latter are moved inwardly; but to provide for outward movement, as when a wider mattress is to be made, each plate is provided with a small operating-handle 72, extending above the main plate 70. The extreme ends of the guard-plate 70 are adapted to guideways 73, secured to the inner faces of the standards 11, and to said plate are secured flexible chains or cords 74, extending to winding drums or sheaves 75, carried by a shaft 76, adapted to suitable bearings at the upper portion of the standards 11. At one end of the shaft 76 is a handled crank 77, by which the shaft may be turned to wind the connecting cords or chains on the drums and raise the guard-plate from position after the mattress-stuffing has been compressed. On the rear face of one of the standards is a spring-pressed locking-latch 78, adapted to engage with and lock the crank 77 in position after the latter has been moved to elevate the plate 70, and when it is desired to return this plate to initial position the latch-bar is released by pressing on the releasing-lever 79, the weight of the plate serving to unwind the chains or cords from the drum and allow the plate to return to its lowest position.

On the bed or table 13 is placed a movable apron 80, on which the stuffing is placed during the formation of the mattress. The front end of the apron passes over a guiding-roller 81, arranged between the front end of the table and the rear end of the spout, and thence down to a winding-drum 82, carried by a shaft 83, adapted to bearings 84 on the standards 11. At one end of the drum are two clutching-dogs 85, adapted to be engaged by a pair of similar dogs 86, projecting from one face of a sprocket-wheel 87, the sprocket-wheel being loose on the shaft and the clutching-dogs being normally held from engagement by a coiled compression-spring 88 be-

tween the end of the drum and the sprocket-wheel. Surrounding the shaft at a point adjacent to one of the bearings 84 is a fixed collar 89, having recesses 90, into which extend projections 91 on a movable collar 92. The collar 92 is connected to or secured integral with an arm 93, which may be moved in such manner as to cause the disengagement of the projections or cams 90 from the recesses of the fixed collar and move the sprocket-wheel in the direction of the winding-drum until the clutch-dogs 85 and 86 are in engagement. At a point under the bed or table at some distance from the front of the machine is a rock-shaft 94, held in suitable bearings 95 on the frame, having three arms 96, 97, and 98, the arm 97 being connected to the lever 93 by a link 99 and the arm 98 being provided with a suitable operating-handle, which may be grasped to throw the clutch into or out of engagement by hand. The arm 96 is arranged centrally of the length of the rock-shaft and extends up through a slot 100, formed in the bed or table of the machine.

At the rear portion of the frame are suitable bearings for the reception of a shaft 101, having a sprocket-wheel 102, over which passes a link belt 103 to the sprocket-wheel 87 at the front of the machine. The shaft 101 may be turned by hand, a handled crank 103' being provided for the purpose, and on said shaft are fast and loose pulleys 104 to permit the operation of the machine by steam or other power.

To the rear end of the apron 80 is secured the plunger or follower 105, the latter being in the form of a trussed frame having at its front end a guide-box 106 for the reception of a pair of laterally-adjustable wings 107, 108, extending out to the inner faces of the adjustable side plates 14. The guiding-box is formed by a sheet of metal bent into the form of a channel-bar and having its upper and lower edges rigidly secured to the upper and lower faces of the front bar 109 of the plunger. The adjustable wings are of sufficient thickness to occupy the full width of the guiding-box, and to additionally brace the forward wing 108 the outer portion of the box is provided with a fixed plate 110. As the two wing members are in contact with the side plates 14, they may be readily moved with the side plates when the latter are being adjusted for the formation of a narrow mattress and locked in adjusted position by a thumb-screw 111. When adjusting the machine for the formation of a wider mattress, the thumb-screw is first loosened, and the side wings are moved by hand until their outer ends are in contact with the previously-adjusted side plates 14 and then locked by the screw 111. The rear end of the apron 80 is secured to the rear bar 110' of the plunger, so that when the latter is fed forward to its fullest extent the bar 109 and the side wings will be projected into the spout. The rear bar 110' carries a lug 114, extending into the

slot 100 in the bed or table 13, said lug coming into contact with the arm 96 on rock-shaft 94 as the plunger nears the limit of its forward movement. The traveling lug serves to move arm 96 to a distance sufficient to bring the projection 91 and recess 90 into alignment, the spring 88 thereupon moving the sprocket-wheel 87 and its clutching-dogs 86 out of engagement with the clutch-dogs of the winding-drum, thus automatically stopping the forward movement of the plunger and apron and preventing an excessive forward feed, which would tend to damage the apron. In order to automatically return the plunger and apron to initial position after the clutch has been released, we employ a counterweight 115, having vertical guides 116, carried by the rear standards 12, said weight being connected to the rear bar of the plunger by a chain or cord 117, passing over sheaves 118 and 119. As the rearward movement of the plunger occurs the weight descends on the guide-rod 116 and comes to rest on a suitable cushion 120 on the base of the machine.

In the operation of the machine, the parts being in the position shown in Fig. 1, the cover of the press-box is depressed on the material forming the stuffing of the mattress. The guard-plate 70 is elevated in order to place the press-box in communication with the spout, after which the operator throws the clutch members 85 and 86 into engagement by means of the operating-lever 98. Motion from the power-shaft 101 is then transmitted to the winding-drum, and the apron 80 is wound on said drum until the lug 114 comes into contact with the upper end of rocker-arms 96, which acts to effect the disengagement of the clutch members. At this time the front bar 109 of the plunger has fully entered the delivery-spout to effect the discharge of the stuffing therefrom. On the release of the drum the weight 115 descends and draws the plunger back to its initial position. To open the press-box, the rack 56 is thrown down to horizontal position, after which one or other of the handles 24' is grasped to effect the initial upward movement of the cover, the counterweights 48 completing this movement and holding the cover up in the position illustrated in dotted lines in Fig. 1 in order to place a fresh supply of filling material in the press-box.

The various adjustments of the members of the press-box, the plunger, the guard-plates, and spout have been previously described and permit of the use of the machine in the formation of mattresses of any desired size.

While the construction herein described, and illustrated in the accompanying drawings, is the preferred form of the device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described our invention, what we claim is—

1. The combination with a press-box having a slotted bed, of a movable apron, a winding-drum for said apron, means for revolving the drum, a plunger secured to one end of the apron and movable therewith, mechanism for releasing the winding-drum when the plunger reaches its limit of forward movement, and means for automatically returning the plunger and apron to initial position.

2. The combination with a press-box, of a movable apron supported by the bed of the press-box, a winding-drum for said apron, means for revolving the drum, an elongated plunger secured at its rear end to the apron and movable therewith, mechanism operated by the plunger for releasing the winding-drum when the plunger reaches its limit of forward movement, and means for automatically returning the plunger and apron to initial position when the drum is released.

3. The combination with a press-box and discharge-spout, of a slotted bed, a movable apron supported thereby and forming a carrier for the stuffing material, a plunger secured at its rear end to the apron and free to move within the spout after leaving the forward end of the press-box, means for moving the apron and plunger to effect the discharge of the stuffing material, and means for automatically returning the plunger and apron to initial position after each operative movement.

4. The combination with a press-box having a slotted bed, of a discharge-spout, a movable apron supported on the bed, a winding-drum for said apron, means for revolving the drum, a plunger secured to one end of the apron and movable therewith, a drum-releasing lug carried by the plunger and extending through the slot of the bed, and means for returning the plunger and apron to initial position when the drum is released.

5. The combination with a press-box having a slotted bed, of a movable apron, a plunger secured to the apron and having a depending lug extending through the slot in said bed, a winding-drum to which the front end of the apron is secured, driving mechanism for the drum, a clutch for connecting the drum to the driving mechanism, a clutch-shifting lever disposed in the path of movement of the depending lug of said plunger, and means for automatically returning the plunger and apron to initial position when the drum is released.

6. The combination of the press-box having a slotted bed, a discharge-spout arranged in front of the press-box, a movable apron supported by the bed, a winding-drum to which the front end of the apron is secured, driving mechanism for the drum, a clutch for connecting the drum and driving mechanism, a rock-shaft operatively connected to the clutch, a rocker-arm carried by said shaft and extending into the slot of the bed, a plun-

ger secured at its rear end to the apron and movable into the discharge-spout, and a depending lug carried by the plunger and adapted to engage the rocker-arm when the plunger reaches its limit of forward movement.

7. The combination with the press-box, of a movable apron carried thereby, a winding-drum for effecting the forward movement of the apron, a plunger secured to said apron, means for automatically releasing the drum when the plunger has reached its limit of forward movement, counterweights for withdrawing the plunger and apron, and flexible connections extending between the counterweights and the rear end of the plunger.

8. The combination of the press-box having a pivoted cover, of a rack carried by the cover and movable to operative and inoperative positions, and a gear-wheel adapted to intermesh with said rack to depress said cover.

9. The combination with a press-box having a cover pivoted at its rear end to a supporting device, of a rack pivoted to the front end of the cover and adjustable to operative and inoperative positions, a gear-wheel intermeshing with said rack to depress the cover, and a counterbalance adapted to maintain the cover in elevated position, substantially as described.

10. In a mattress-stuffing machine, a press-box cover comprising a pair of relatively stationary bars, transversely-disposed bars secured thereto and spaced from each other, a bottom plate secured to said transverse bars, adjustable side sections each comprising spaced bars connected together and guided between said transversely-disposed bars and the movable bars forming part of the opposite side section, plates secured to the bottom portions of said side sections, the lower faces of all of the transverse bars of the cover being disposed in substantially the same horizontal plane, substantially as specified.

11. In a mattress-stuffing machine, the combination with a press-box, of a cover comprising a centrally-disposed stationary portion and movable side sections, a bracket secured to the stationary section, a screw carried thereby, slotted bars secured to the side sections, and fitted over said screw, and a thumb-nut for clamping the bars and brackets to lock the sections in adjusted position.

12. In a mattress-stuffing machine, the com-

bination with a fixed bed, of a movable apron resting on the bed and adapted to receive the stuffing material, adjustable side plates supported by the fixed bed and adjustable laterally thereof, longitudinally-disposed bars arranged under the bed and having threaded openings, a screw-shaft having right and left hand threads engaging said openings, and a pair of U-shaped bars secured to each of the longitudinal bars and to the side plates, substantially as specified.

13. The combination in a mattress-stuffing machine, of the bed, longitudinal bars arranged under said bed and provided with centrally-disposed threaded openings, a right and left hand screw-shaft engaging said openings, adjustable side plates supported on the bed and movable transversely thereof, and U-shaped bars secured at each end of the longitudinal bars and having guides below the bed, the upper portions of said arms extending over the edges of the bed and carrying the said side plates.

14. In a mattress-stuffing machine, a plunger comprising a body portion having a guiding-box at its front end, adjustable plates carried thereby, an auxiliary block forming a brace or backing for the front plate, and means for locking said plates in adjusted position.

15. In a mattress-stuffing machine, the combination with a press-box and delivery-spout, of a guard comprising a hollow body portion, adjustable plates guided therein, and vertically-disposed guides engaging the ends of the body portion.

16. In a mattress-stuffing machine, the combination with a press-box and delivery-spout, of a guard comprising a hollow body portion, adjustable plates guided therein, vertically-disposed guides for the ends of the guard, a shaft, winding-drums thereon, flexible cords extending between the drums and end portions of the guide, and means for locking the shaft with the guard in elevated position.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WALTER S. ALLENDER.

THEODORE STOCKER.

Witnesses:

W. E. SYKES,

FRED L. MAURY.