

No. 618,489.

Patented Jan. 31, 1899.

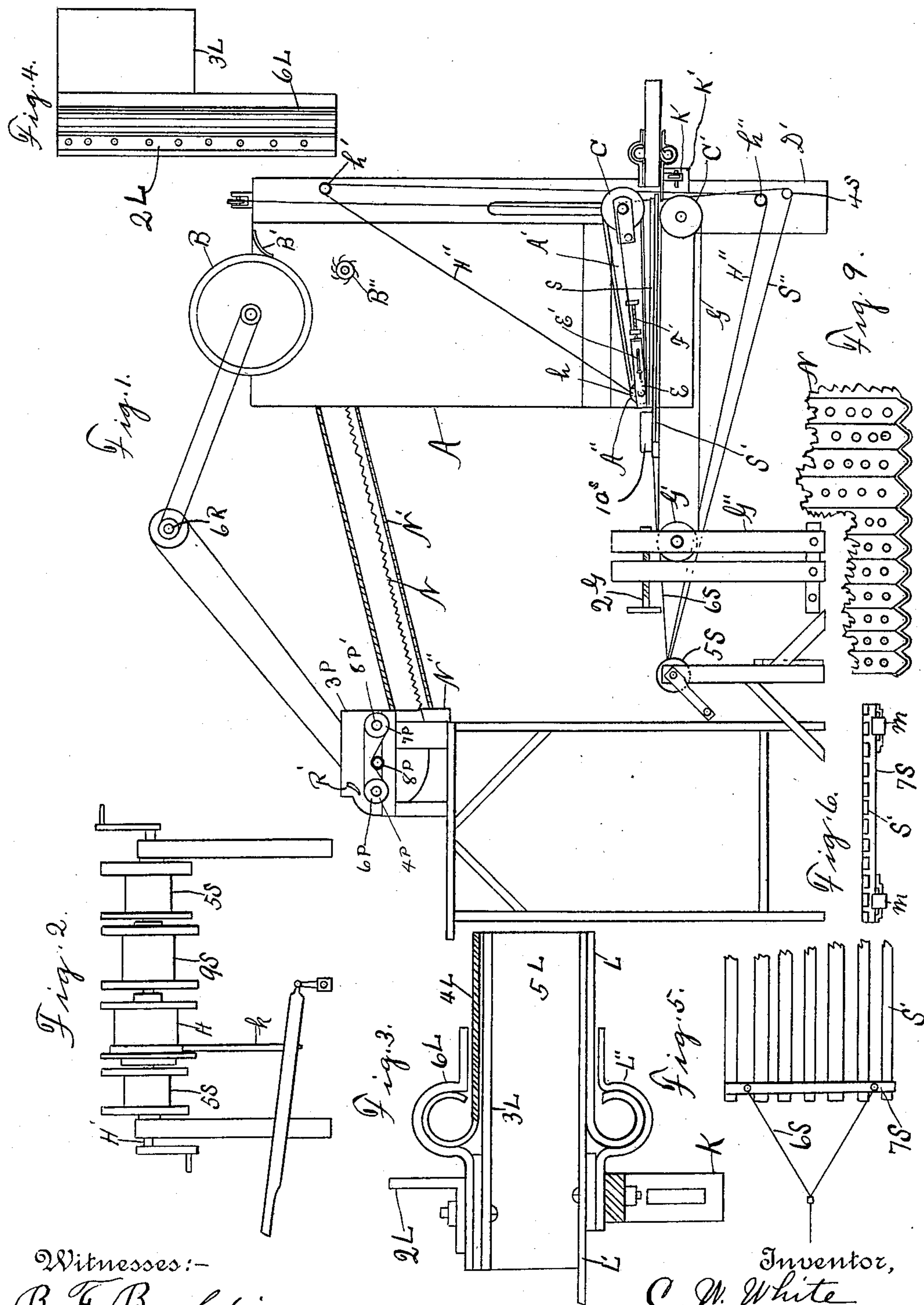
**C. W. WHITE.**

**MATTRESS STUFFING MACHINE.**

(Application filed Jan. 25, 1898.)

(No Model.)

**3 Sheets—Sheet 1.**



Witnesses:-  
B. F. Bouldin.  
O. H. Buck.

Inventor,  
C. W. White  
By his Attorney,  
A. L. Jackson.

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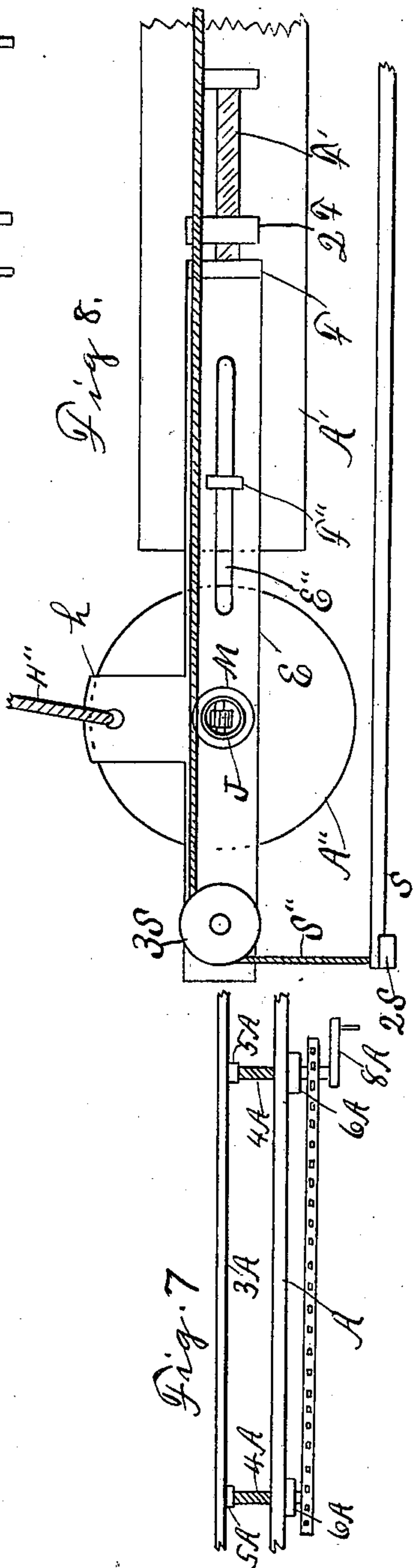
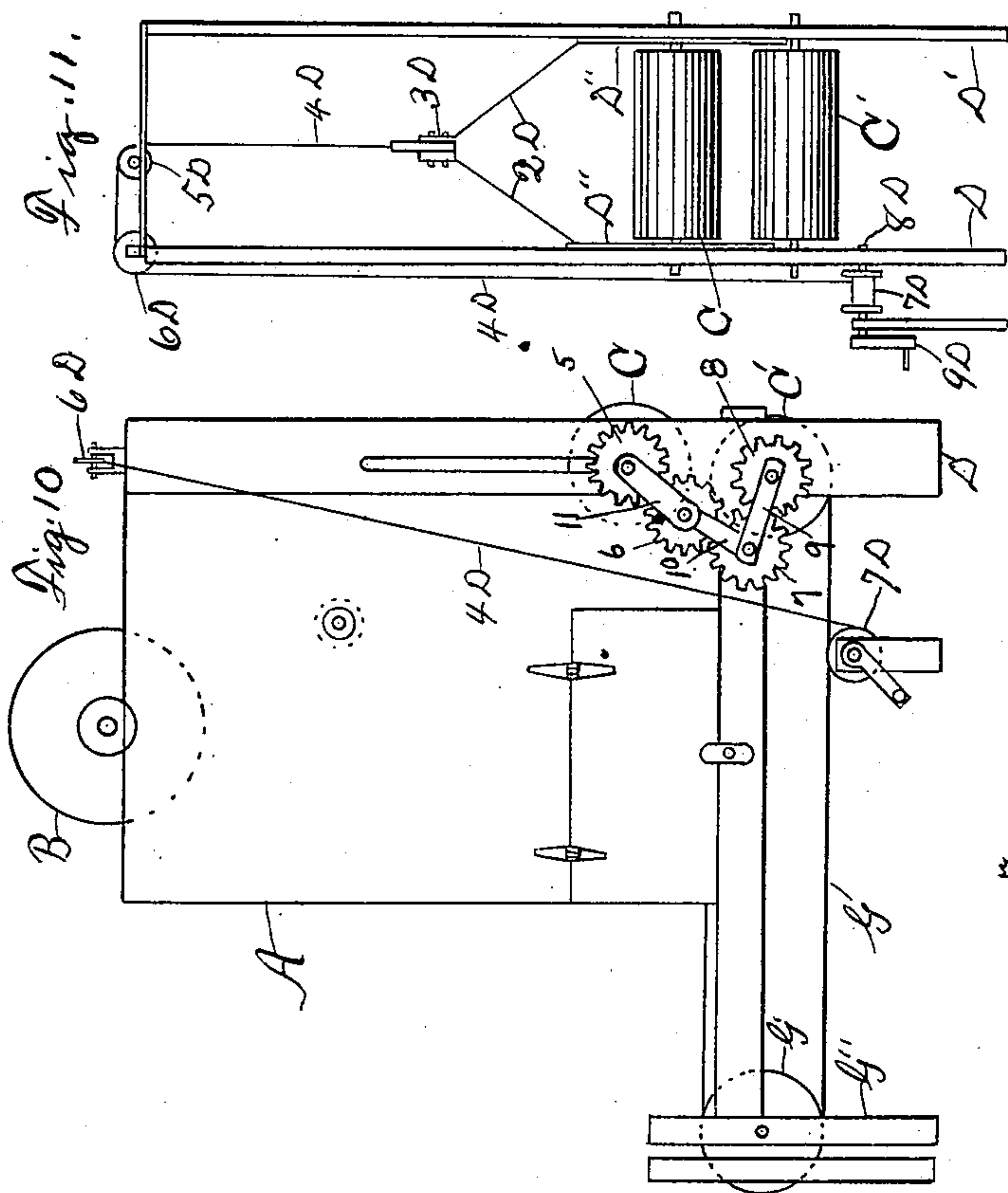
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B. F. Bauldin.  
O. H. Buck.

Inventor,  
C. W. White.  
By his Attorney,  
A. L. Jackson.

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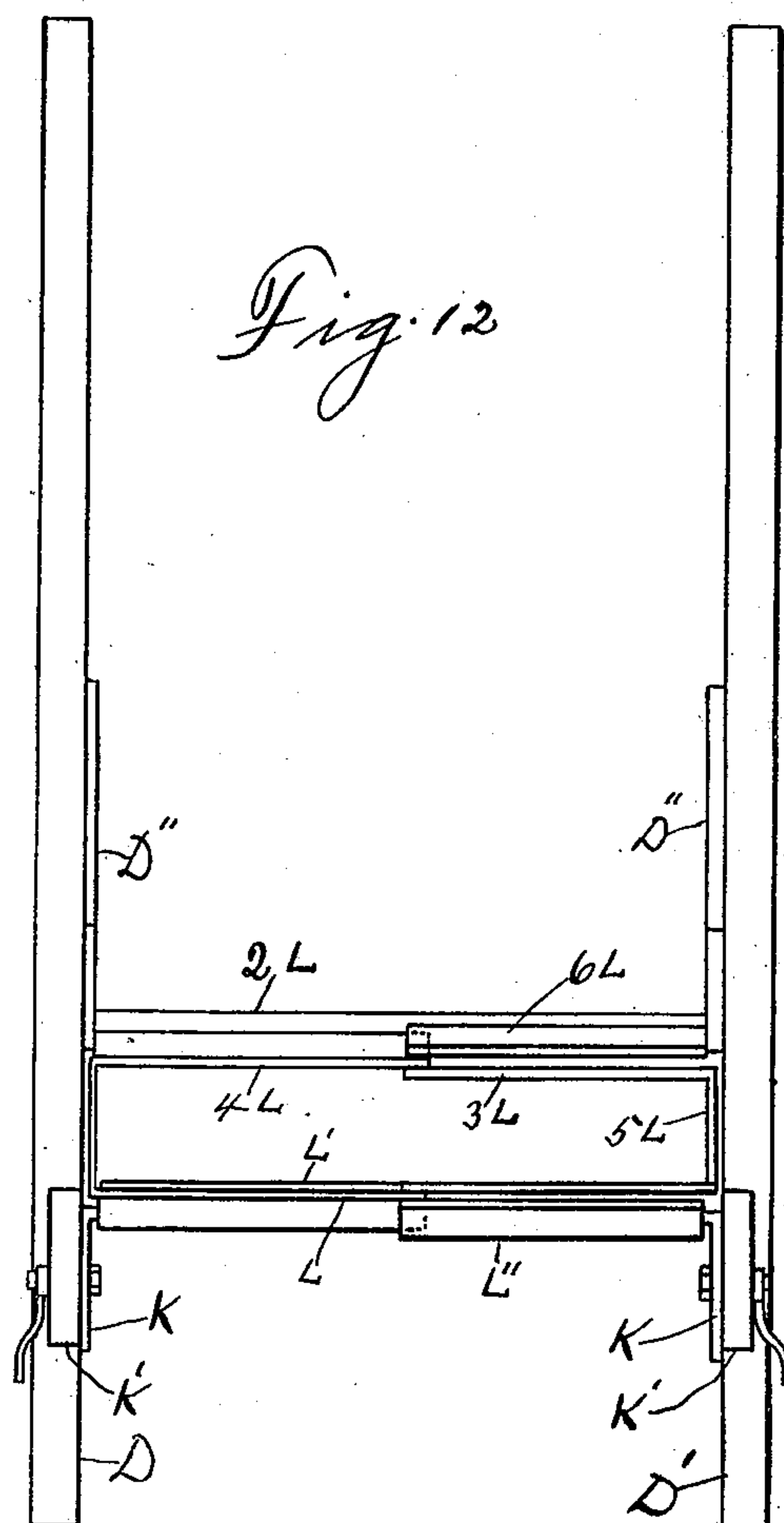
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3 Sheets—Sheet 3.



WITNESSES:

*J. M. Mothershead*  
*B. F. Bouldin.*

INVENTOR,

*C. W. White.*

BY

*A. L. Jackson.*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

CHARLES W. WHITE, OF WACO, TEXAS, ASSIGNOR TO MARY J. WHITE, OF  
SAME PLACE.

## MATTRESS-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 618,489, dated January 31, 1899.

Application filed January 25, 1898. Serial No. 667,888. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. WHITE, a citizen of the United States, residing at Waco, Texas, have invented certain new and useful  
5 Improvements in Methods of and Apparatus for Cleaning Cotton and Making Mattresses, of which the following is a specification.

My invention relates to machinery for making mattresses; and it consists in devices for  
10 picking and cleaning the material for mattresses and in devices for improving the operation of the invention set forth in my patent for cotton-cleaning and mattress-stuffing machines, No. 599,049, issued February 15,  
15 1898; and the object is to provide machinery for manufacturing mattresses in one continuous operation from the raw material until the mattress is put in the tick.

The following is a full, clear, and accurate  
20 description of my improvements, which will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings, forming a part of this specification.

Figure 1 is a side elevation of the invention  
25 with the side of the collector and cleaner box taken off to show the interior arrangement, and the side of the chute is taken off to show the corrugated bottom and the dirt-box. Fig. 2 illustrates the drums for winding the cables  
30 for drawing up pressure-frame and withdrawing the slats from the tick and replacing same. Fig. 3 is a vertical longitudinal section of the tick-holder. Fig. 4 is a plan view of the part which does not move transversely. Fig. 5 is  
35 a plan view of the bottom slats in section or broken. Fig. 6 is an end view of same, showing the antifriction-rollers. Fig. 7 illustrates the manner of moving the adjustable sides of the stuffing-box to make mattresses or bats of  
40 different widths. Fig. 8 is a detailed view illustrating the manner of regulating the tension of the traveling apron or belt on the pressure-frame. Fig. 9 is a perspective view of a part of the bottom of the chute. Fig. 10 is a side  
45 elevation of the stuffing-box, showing a cable for raising upper roller and how running-gear may be arranged. Fig. 11 is an end elevation of the frame of the stuffing-box, showing manner of raising the upper roller. Fig.  
50 12 is an end view of the tick-holder attached

to the uprights and to the side pieces of the frame.

Similar characters of reference are used to indicate corresponding parts throughout the several views.

The collector and cleaning box A is mounted on any suitable supports. A drum or roller B is mounted in the top of box A. This roller is covered with perforated material, so that dust may escape from box A. A piece of  
55 rubber B' may be nailed to box A in such a way as to brush the surface of roller B and scrape off any cotton that may cling to this roller. As the material falls in the box A it comes in contact with a roller B'', which is  
60 provided with teeth curved backward. This roller, with the rods, beats and disintegrates the material, the dust going out through roller B and the stuffing material falling in box A in a loose condition, forming an incomplete bat.  
65 Rollers B and B'' can be operated by any suitable means. Two compression-rollers C and C' are mounted in the uprights D and D' of box A. Roller C is mounted in movable bearings D'', and slots are made in uprights D and D'  
70 for the shaft of roller C. The bearings D'' consist of suitable upright pieces in which roller C is journaled, so that this roller may be raised by means hereinafter described. A pressure-frame A' is journaled on the shaft  
75 of roller C. A drum A'' is mounted at the other end of frame A', and a bearing E is attached to each side of this frame for the shaft of drum A''. A traveling apron or belt E' is mounted on roller C and drum A''.  
80 The tension of this belt is regulated by means of the devices shown in Fig. 8. The bearings E are adjustably attached to frame A'. The piece having bearing E has a slot E'' and a swivel connection F for a rod F'. A  
85 stationary bolt F'' is inserted in frame A' and operates in slot E''. A stationary nut 2<sup>F</sup> is mounted on frame A' for the threaded bolt F'. Drum A'' can be drawn nearer or moved farther away from frame A' by turn-  
90 ing the bolts F'. Frame A' is raised up while material is being thrown in the box A to form the bat. For this purpose a drum H is mounted on a shaft H'. A cable H'', to be wound on drum H, is attached to each side of frame  
100



A'. The cables H'' are attached to lugs h h' on the bearings E and then passed over pulleys h' on the uprights D and D' near the top and under pulleys h'' near the bottom of said uprights and then to drum H. A traveling apron or belt G is mounted on roller C' and on a drum G'. This drum is mounted in a pivoted support G'', and the tension of the apron is regulated by a hand-screw 2<sup>a</sup>, mounted in a rigid screw-threaded support and having a swivel connection with support G''. Apron G runs through the lower part of box A.

A tick-holder is mounted at the exit-pass of rollers C and C', over which the tick is stretched to receive the completed bat. This tick-holder is made adjustable as to height by means of the tick-holder frame K, which is provided with a slot in each leg, and in the frame-pieces K', also provided with slots and suitable clamps for clamping frame K to the frame-pieces K'. By the means thus described and illustrated the bottom part of the tick-holder is made adjustable both as to height and to length. The bottom part of the tick-holder serves as a scraper to receive the bat from roller C'. The tick-holder is made in sections telescoping one into the other in order that a narrower or wider bat may be forced into a tick of the proper dimension. Fig. 3 shows the tick-holder in detail. The movable part is indicated by the letter L and the stationary part by L'. The part L' is attached to the frame K, and the part L operates in a support L''. The support L'' is attached to the frame K and has a groove formed by bending the outer part, as illustrated. The inner end of part L is curved to conform to the groove in part L''. The tick-holder is preferably constructed of thin sheet metal, and the top part is strengthened by a piece of angle-iron 2<sup>L</sup>. The top stationary part is indicated by 3<sup>L</sup> and the movable part by 4<sup>L</sup>. The part 3<sup>L</sup> and the side 5<sup>L</sup> are integral, and the part 4<sup>L</sup> and the other side are integral. The part 4<sup>L</sup> is provided with a support 6<sup>L</sup> and is operated in a manner similar to the part L.

Box A is provided with a movable side that may be adjusted for the purpose of making bats of different widths. The movable side must be on the same side as the adjustable side of the tick-holder, above described. In Fig. 7 a part of one side of box A is shown, and the movable side 3<sup>A</sup> is connected to box A by means of threaded bolts 4<sup>A</sup>. These bolts are connected to the movable side 3<sup>A</sup> by means of swivels 5<sup>A</sup>. Nuts are made stationary on box A for said bolts. Small sprocket-wheels are rigidly mounted on said bolts, and a sprocket-chain 7<sup>A</sup> operates said wheels. One of said bolts is provided with a crank 8<sup>A</sup>. Turning crank 8<sup>A</sup> will revolve the sprocket-wheels, and thus turn bolts 4<sup>A</sup> in nuts 5<sup>A</sup>, and thus adjust the movable side 3<sup>A</sup>.

The pressure-frame is to be raised to an upright position, and this frame, with roller C, is to be raised up when material is to be put in the box A. For this purpose cables 2<sup>D</sup>

are attached to the bearings D'' and then attached to a block 3<sup>D</sup>. A cable 4<sup>D</sup> is attached to block 3<sup>D</sup> and passed over pulleys 5<sup>D</sup> and 6<sup>D</sup>, mounted on top of box A, and then to a drum 7<sup>D</sup>. This drum is mounted on a shaft 8<sup>D</sup>, and this shaft is provided with suitable supports and a crank 9<sup>D</sup>.

Rollers C and C' may be rotated by any suitable gearing, such as that illustrated in Fig. 10. Cog-wheels 5 and 8 are mounted on the shafts of rollers C and C', and cog C is driven by the intermediate cogs 6 and 7, which are mounted in swinging arms 11, 10, and 9. Any suitable driving-wheel may be mounted on the shaft of roller C' and operated by any suitable motive power.

In order to prevent frame A' from binding against the sides of box A, antifriction-rollers J are mounted in the ends of the shaft M of the drum A''. This shaft is preferably made of piping, and the rollers J are mounted loosely, somewhat like the rollers of a bed or table.

The chute leading from the picker is provided with a partition N, of corrugated perforated sheet metal, as shown in Figs. 1 and 9. The dirt and dust fall through this partition on the bottom N' of the chute and thence into dirt-box N'', whence they are removed. It will be seen that most of the dirt and dust are thus taken out of the material during the passage through the chute, and more dust is taken out by means of the rollers B and B''. For this purpose I have provided two sets of slats, one set, S, for the top of the bat and the other set, S', for the bottom of the bat. Both sets go into the tick with the bat. The slats S are withdrawn from the tick and replaced by means of cables S''. When the upper slats are being withdrawn from the tick, they will have to follow the frame A' in its upward motion. When said frame starts up, the slats are in the tick, and consequently are not drawn up with frame A'', although they are being drawn up at the same time that said frame is being raised up and reach the upright position at the same time that said frame reaches the upright position. For this reason the upper slats must be made flexible. When so made, they will not break when bent to follow the angle made by said frame with the loose ends of said slats. Flexible slats will follow the curvature of roller C, although the bend in the slats must be constantly changing as they are being drawn up. Cables S'' are attached to the cross-piece 2<sup>S</sup>, which holds the slats in position, passed over pulleys 3<sup>S</sup>, mounted on projections from the bearings E, over the shaft of roller C, under pulleys 4<sup>S</sup>, mounted near the bottom of uprights D and D', thence to drums 5<sup>S</sup>, on which they are to be wound when they are to be withdrawn from the tick and replaced. The upper slats run in contact with and are carried by the belt or apron E' and forced into the tick with the bat. The lower slats S' are carried by belt G and are forced into the tick with the



bat. Cables 6<sup>s</sup> are attached to cross-piece 7<sup>s</sup> and united at 8<sup>s</sup> and thence pass to drum 9<sup>s</sup>, on which this cable is to be wound to withdraw slats S' from the tick-holder and replaced to commence a new bat. A pad 10<sup>s</sup> is attached to the slats S' to aid in forcing the bat into the tick. This pad, with the slats, takes the place of the follower used in other mattress-making machines for forcing material into ticks, the slats going in the tick with the material and the pad going up to the end of the tick. This pad is useful and necessary to prevent the light fluffy cotton-down from flying out behind when the pressure-frame is let down on the incomplete bat by cable and drum. It also holds the cotton up in square shape, which gives it proper form in the tick. The pad is composed of a flexible covering and a suitable stuffing of cotton or other material. The cross-piece 7<sup>s</sup>, to which the lower slats are attached, is provided with anti-friction-rollers *m*.

The drums 5<sup>s</sup>, H, 9<sup>s</sup>, and 5<sup>s</sup> are loosely mounted on shaft H' and are capable of independent rotation. Each drum is provided with a ratchet-wheel and a dog for locking it to the shaft when desirable. The drum H for raising the pressure-frame A' is provided with a friction-brake *k* and a suitable bearing for said brake in order to let the pressure-frame A' down gradually. As there is a longer cable to be wound on this drum than on the other drums, it must be larger than the other drums. For the same reason drums 5<sup>s</sup> must be larger than drum 9<sup>s</sup>. When these drums are properly arranged, the pressure-frame can be raised and the slats withdrawn from the tick and replaced all at the same time.

While I have described my machine as receiving material from a picker, I do not confine myself to this mode of making mattresses, as the material can be put in the collector and cleaner and condenser box A by hand. The machine is adapted to stuff any suitable material into mattresses, whether put into the box by machinery or by hand.

The operation may be described as follows: To commence a new mattress, the pivoted frame A' is raised to an upright position by means of cables (shown in Fig. 1) and then raised vertically out of the way of the bat by means of cables and a drum. (Shown in Figs. 10 and 11.) The upper slats follow this frame. The pad 10<sup>s</sup> is placed on the lower slats at the front end of the machine. This pad prevents the escape of the fluffy cotton, prevents the cotton from sliding on the slats, and gives a good shape to the bat. Lint cotton is placed in a picker or gin and is there thoroughly separated almost to single fibers and blown through the chute into the collector and cleaner and condenser box. In passing through the chute dirt and dust escape by falling through the perforated bottom of the chute. More dust and dirt are taken out in the cleaner-box by the roller B''.

The dust and dirt pass out through the perforated roller or drum B, and the cotton falls in the condenser-box. When enough cotton has been picked to form a mattress, the frame A' is let down on the cotton and pressed down with the cotton between the slats almost to the right thickness. The machine is then put in operation by the gearing shown in Fig. 10. By the time the cotton passes between the rollers C and C' the cotton is the proper size and is forced into the tick, which is stretched on the tick-holder. All that is necessary to complete the mattress is to sew up one end of the tick. Before sewing up the tick the slats which have been forced into the tick must be withdrawn by means of the cables and the drum. (Shown in Fig. 1 and further explained by Figs. 2 and 8.) By this operation the mattress is made of one piece of cotton, in which the fiber is thoroughly felted.

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

1. A mattress-making machine having a suitable box for collecting and condensing material to form bats, a stationary compression-roller, a compression-roller mounted in movable bearings, a pressure-frame pivotally mounted at one end on the shaft of said movable roller, a drum mounted in the other end of said frame, a traveling apron mounted on said drum and movable roller, said frame operating in said box, and a traveling apron mounted on said stationary roller and running through said box.

2. In a mattress-making machine provided with means for collecting and compressing material into bats and a tick-holder, two sets of slats for forcing the completed bat into a tick, means for forcing said slats into the tick with said bat, and means for drawing said slats from said tick and replacing same to receive a new bat, one set of slats being placed above the bat and the other set below the bat.

3. In a mattress-making machine provided with means for collecting and compressing material into bats and a tick-holder, two sets of slats adapted to guide the bats into the ticks, means for forcing said slats into ticks with the bats, and a drum and cables for withdrawing said slats from the ticks and replacing same to receive new bats, one set of slats being placed above the bat and the other set below the bat.

4. In a mattress-making machine provided with means for collecting material to form bats and a compression-roller having fixed bearings and a compression-roller having movable bearings, a pressure-frame pivoted at one end on the shaft of said movable roller and having a drum in the other end and an endless apron running on said roller and drum, a set of flexible slats under said frame adapted to conform to the curvature of said movable roller, and an endless traveling apron forming the bottom of said machine.

5. In a mattress-making machine provided



with means for collecting material to form bats, a tick-holder, and a pressure-frame having a traveling endless apron mounted thereon, flexible slats over said material, a second  
5 traveling endless apron forming the bottom of said machine, and slats thereon, said slats being adapted to guide bats into the tick.

6. In a mattress-making machine provided with compression-rollers and endless aprons  
10 adapted to convey batting between said rollers; two sets of slats between said aprons for aiding said aprons to force the completed bat into a tick, the upper slats being flexible and the lower slats being provided with antifric-  
15 tion-rollers.

7. In a mattress-making machine provided with a collector and cleaner and condenser box; a movable side for said box for determining the widths of mattresses and means  
20 for adjusting said side consisting of threaded bolts provided with stationary nuts attached to the side of said box, sprocket-wheels mounted rigidly on said bolts, a sprocket-chain for driving said wheels, and means for turning  
25 one of said bolts, said bolts having swivel connections with said movable side.

8. In a mattress-making machine provided with a collector and cleaner box and means for compressing material into bats; a tele-  
30 scoping tick-holder for holding ticks of different widths, said holder consisting of a movable side, a stationary side, a sectional top and a sectional bottom, the sections of the top and bottom adjacent to the stationary side  
35 being stationary and the other sections of the

top and bottom being adapted to telescope on the stationary sections, the ends of said telescoping sections being curved, and supports having curved ends for engaging the curved  
40 ends of and guiding said telescoping sections.

9. In a mattress-making machine provided with a collector and cleaner box and upper and lower compression-rollers and a traveling feed-apron; a pressure-frame pivotally mount-  
45 ed on the upper one of said rollers and cables having a suitable drum and pulleys for raising said frame to an upright position.

10. In a mattress-making machine provided with a collector and cleaner box and upper and lower compression-rollers and a traveling  
50 feed-apron; a pressure-frame pivotally mounted on the upper one of said rollers, cables having a suitable drum and pulleys for raising said frame to an upright position, and cables having a suitable drum and pulleys for  
55 raising said frame and upper roller.

11. In a mattress-making machine provided with compression-rollers and endless aprons adapted to convey batting between said rollers; two sets of slats between said aprons for  
60 aiding said aprons to force the completed bat into a tick and a pad on the lower one of said sets of slats.

In testimony whereof I set my hand, in the presence of two witnesses, this 15th day of  
65 January, 1898.

CHARLES W. WHITE.

Witnesses:

W. K. RICE,

CHAS. E. RAUSSEN.