

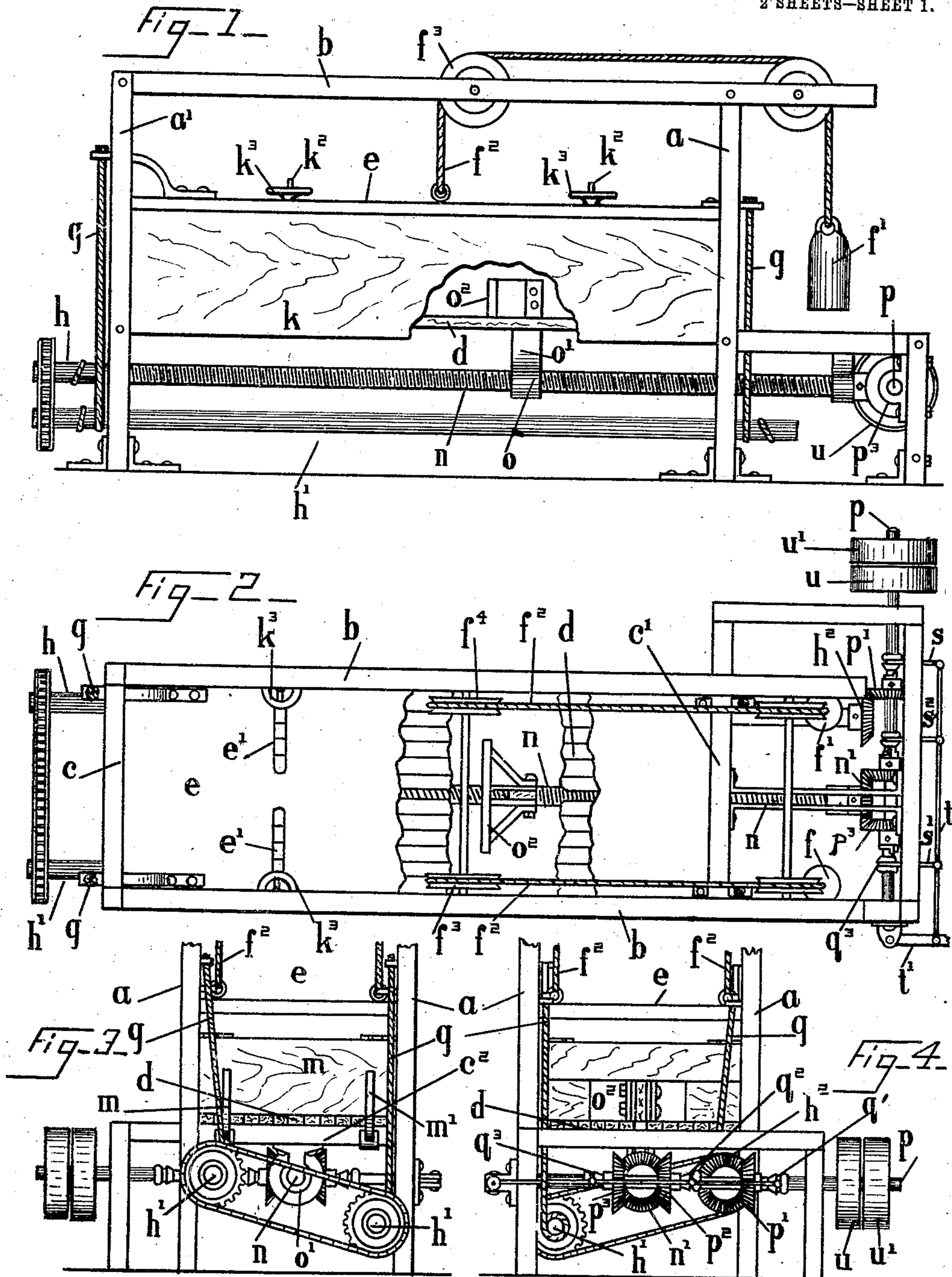
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PATENTED JAN. 29, 1907.

A. A. SCHIMMEL.  
MACHINE FOR COMPRESSING FILLING FOR MATTRESSES.

APPLICATION FILED JAN. 26, 1906.

2 SHEETS—SHEET 1.



Abraham A. Schimmel, Inventor,

Witnesses  
May J. Ritchie.  
Frank C. Palmer.

by *Frank H. Allen*

Attorney

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Fig - 5 -

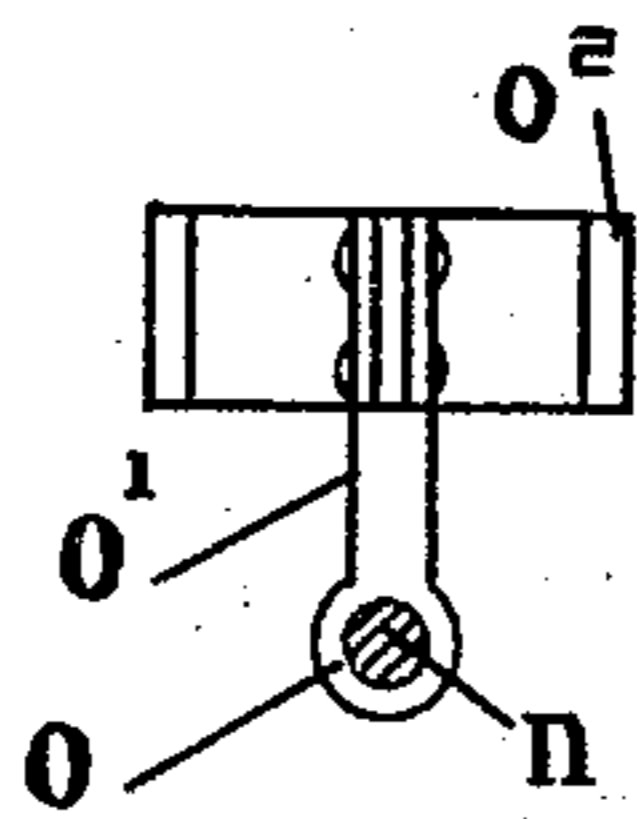


Fig - 6 -

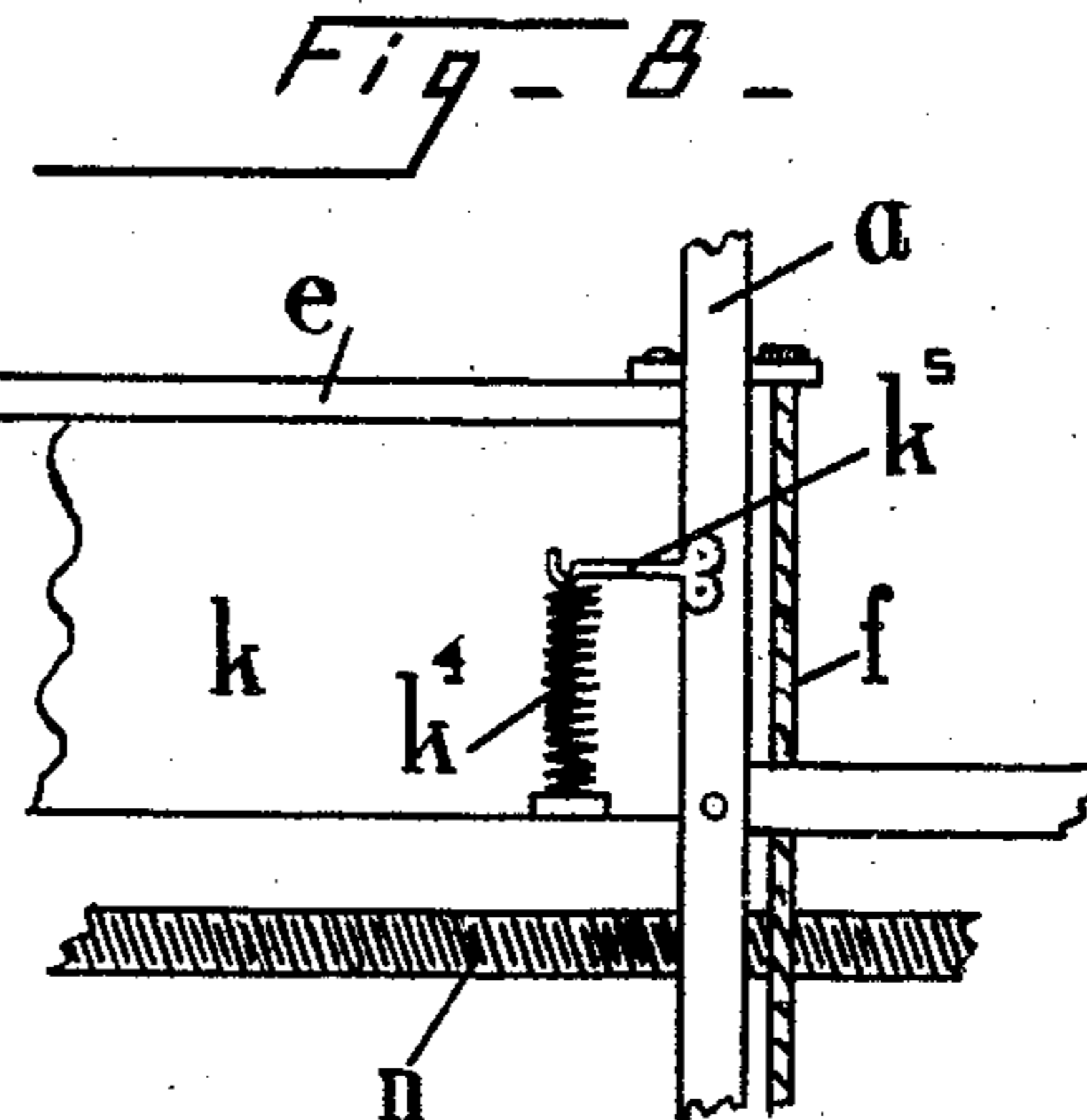
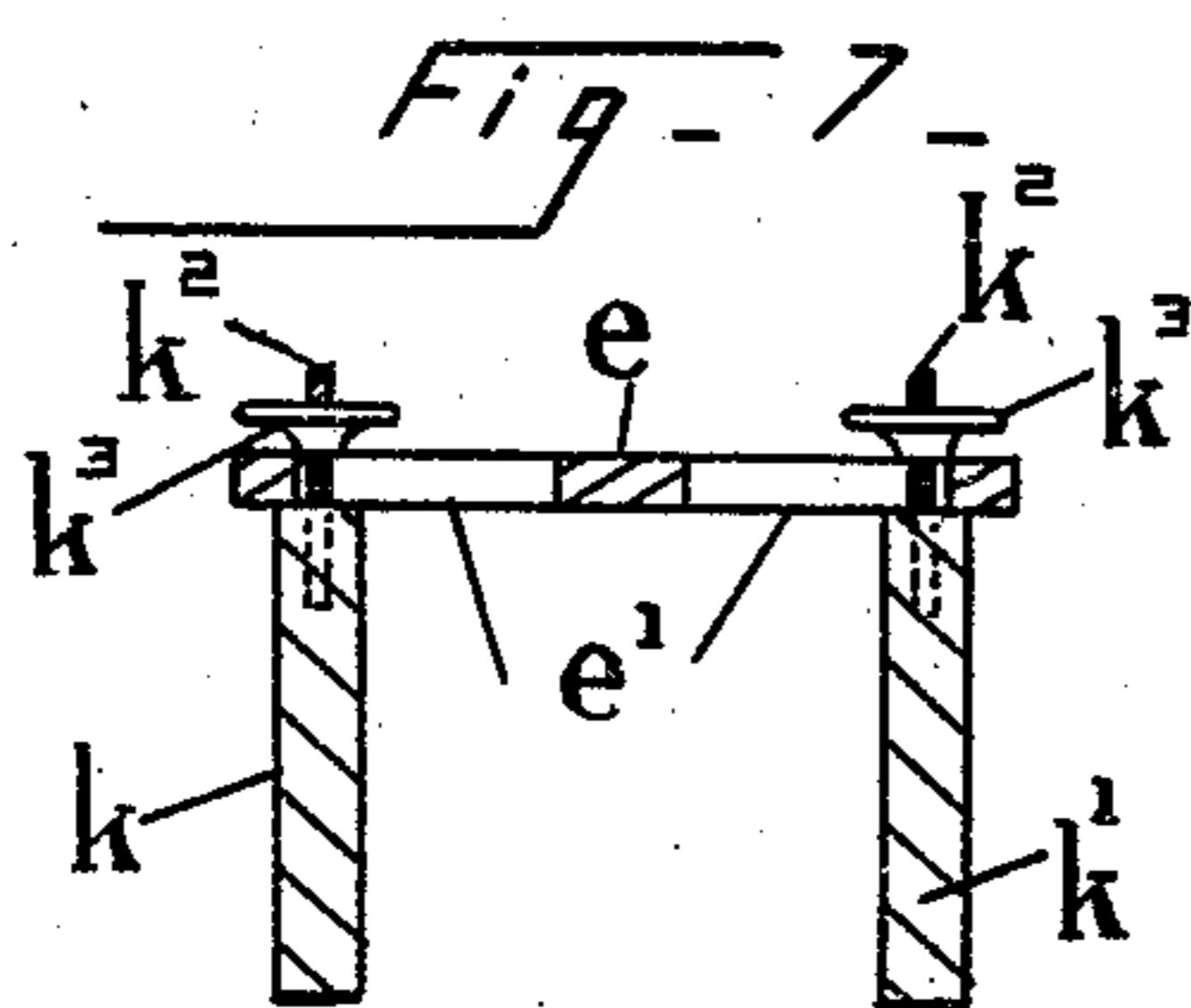
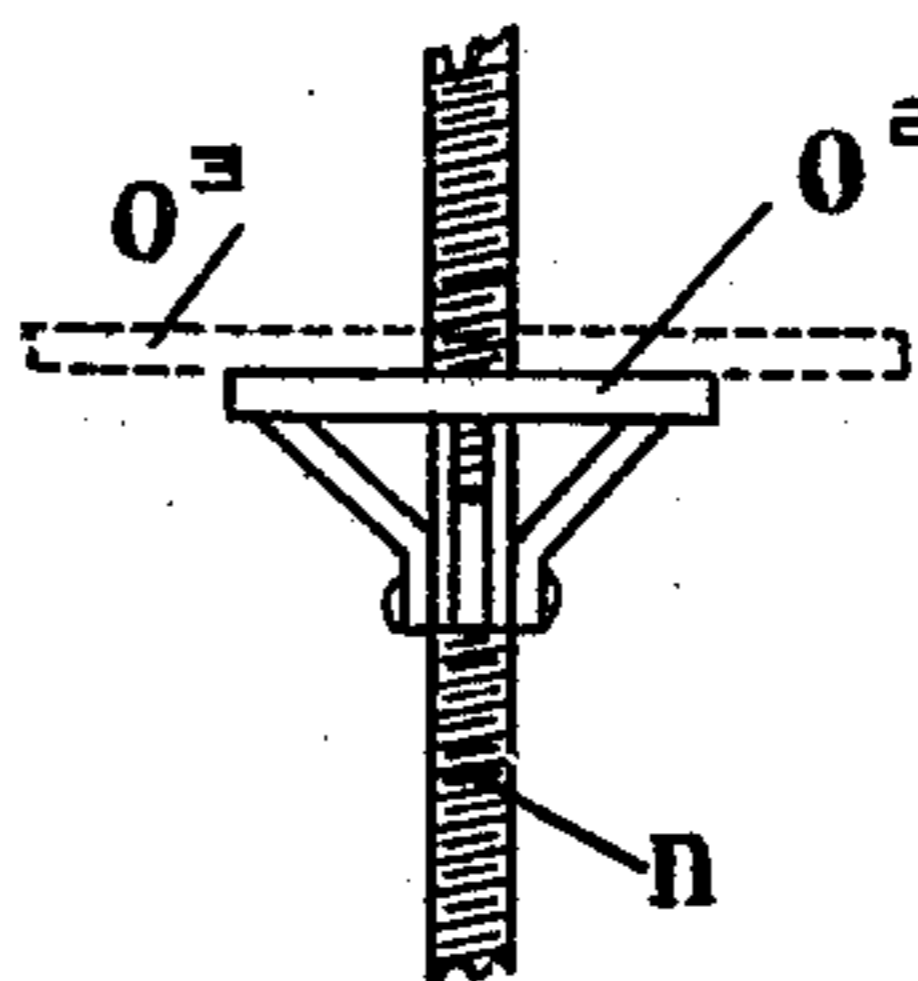
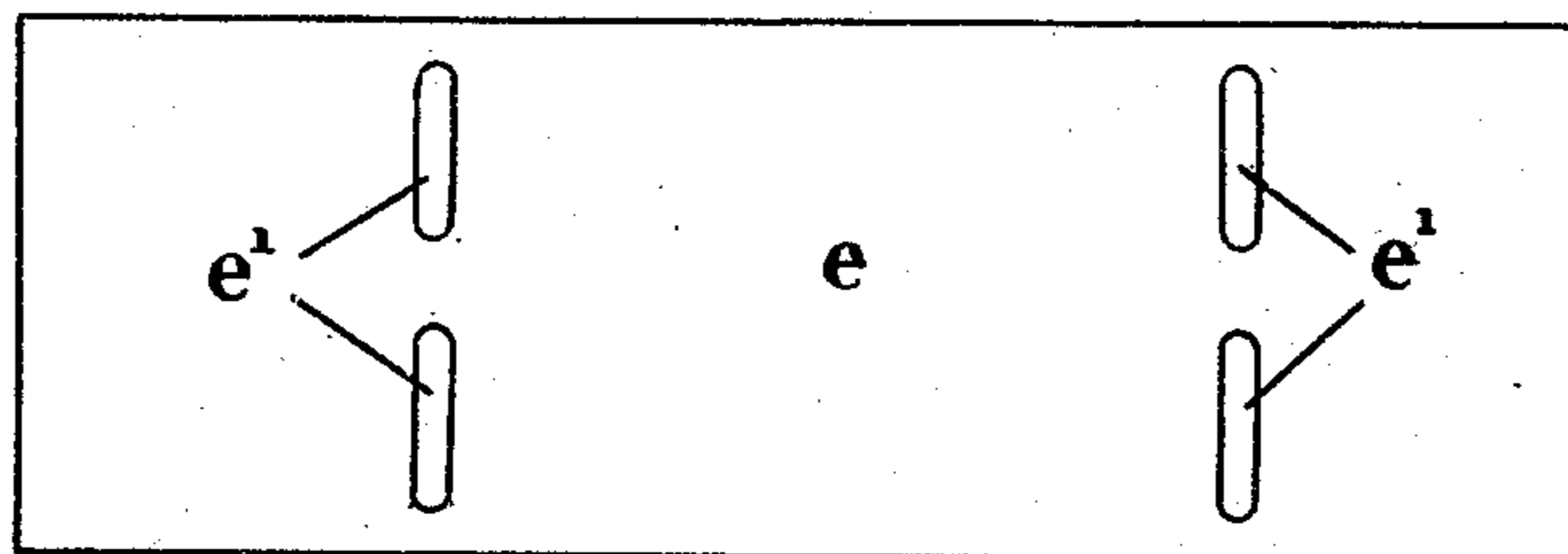


Fig - 9 -



Abraham A. Schimmel, Inventor,

Witnesses  
May L. Ritchie  
Frank C. Palmer.

by Frank H. Allen  
Attorney

# UNITED STATES PATENT OFFICE.

ABRAHAM A. SCHIMMEL, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR COMPRESSING FILLING FOR MATTRESSES.

842,344.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed January 26, 1906. Serial No. 298,042.

*To all whom it may concern:*

Be it known that I, ABRAHAM A. SCHIMMEL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Machines for Compressing Filling for Mattresses, of which the following is a specification.

This invention relates to machines for compressing filling for use in mattresses, my present purpose being to provide a powerful, convenient, and simple form of press that may be operated by a single attendant and which may be quickly adjusted so as to compress the filling to any desired size within the limits of the said machine.

My said invention is illustrated in the accompanying drawings, Figure 1 being a side elevation of a press embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is an elevation of said machine from the left-hand end of Fig. 1, and Fig. 4 is an elevation of the same as viewed from the right-hand end of Fig. 1. Fig. 5 is an end elevation of the plunger  $o^2$ , by means of which the filling is compressed; and Fig. 6 is a plan view of the same, illustrating also the manner of attaching thereto pressure-boards of different lengths in order to temporarily increase the width of said plunger. In Fig. 7 I have shown a cross-sectional view of the top pressure-board and of the side boards adjustably connected thereto; and in Fig. 8 I have shown in side elevation portions of the top board, bottom board, and side board of the pressure-box, the side board in this instance being disconnected from the top board and supported by springs in such manner that when the top board rises the side boards will be drawn upward by said springs. Fig. 9 is a detached plan view of the top board of the form shown in Figs. 1, 2, 3, 4, and 7.

Referring to the drawings, it will be seen that my said press consists, essentially, of a box-like receptacle having a movable top and sides and having one end adapted to operate as a plunger within said box, the whole being supported in and by a suitable frame. As here shown, said frame consists of corner uprights  $a a'$ , (at each side of the machine,) which uprights are connected by horizontal bars  $b$  at the top of said uprights. The said uprights are further connected and stiffened, at the ends of the machine, by cross-bars  $c c'$ .

The ends of the bottom boards of the press

rest upon the cross-bars  $c^2$ , and said bottom is made up of a plurality of narrow strips  $d$ , preferably three inches wide, so that the press-box may be reduced in width when it is desired to produce a narrow mattress by simply removing one or more of the strips  $d$  from each side of the bottom—that is to say, if it is desired to produce a mattress six inches less in width it is only necessary to remove a three-inch board from each side of the bottom, thus narrowing up the bottom six inches.

If it is desired to produce a mattress one foot narrower, two of the three-inch boards should be removed from each side of the bottom.

The top pressure-board is indicated by the letter  $e$  and is arranged to move vertically, the machine-uprights serving as guides for said top.

The top is held in its elevated or normal position by counterweights  $f f'$ , that are connected with said top by means of chains or cords  $f^2$ , that run over score-pulleys  $f^3 f^4$ , as is perhaps best seen in Fig. 1 of the drawings.

During the operation of compressing the filling material within the described press the top  $e$  is drawn downward by chains or cords  $g$ , said chains or cords being connected at one end to the corners of top  $e$  and at their other (lower) ends to shafts  $h h'$ , which shafts are journaled in bearings secured to the machine-uprights.

Shafts  $h h'$  are connected by sprocket wheels and chains, as is best seen in Fig. 3, and are thus caused to revolve in unison, shaft  $h$  being the driver. When these shafts are revolved in one direction, the cords  $g$  are wound thereupon, thus drawing the top board  $e$  forcibly downward, and when the said shafts are revolved in the opposite direction the described counterweights and cords  $f^2$  draw the said top upward as the cords  $g$  unwind from shafts  $h h'$ .

The letters  $k k'$  indicate side boards that are arranged to move downward and upward with the described top board  $e$ . In the form of machine illustrated in Figs. 1, 2, 3, 4, and 7 the side boards are secured to and are carried by the top board, the side boards being provided in their upper edges with bolts  $k^2$ , that lie in transverse slots  $e'$  in the top board, (see Fig. 7,) and the sides and top are securely clamped together when the machine is in use by means of nuts  $k^3$ , that are here shown as hand-wheels.

It will now be understood that by partially

unscrewing the hand-wheels  $k^3$  and then adjusting the side boards toward or away from each other the width of the press-box may be materially changed.

5 In Fig. 8 I have shown the side boards supported by springs  $k^4$ , one end of each spring being attached to the side board and the other (upper) end being secured to one of the machine-uprights by a bracket  $k^5$ .

10 During the operation of the machine the side boards are forced downward by the top board  $e$ , which overhangs said sides, the springs  $k^4$  yielding meanwhile as the sides descend; but so soon as the top rises again the  
15 said springs lift the sides and cause them to follow the upward movement of the top.

The fixed end board of the press-box is indicated by the reference-letter  $m$  and may be removably secured in position by any suitable means. As here shown, it is slipped  
20 down behind strong iron brackets  $m'$ , that are fastened to the machine cross-bar  $c^2$ . (See Fig. 3.) This end board may be readily removed whenever it is desired to fill the  
25 press-box or to remove the compressed filling.

The letter  $n$  denotes a screw-shaft that extends from end to end of the machine and has mounted thereon a nut  $o$ , which has an  
30 upwardly-extending portion  $o'$ , that lies in a slot in the bottom board  $d$ , and secured to the upper end of the portion  $o'$  is a transverse plate  $o^2$ , that serves as the plunger of my press, the length of said plunger being equal  
35 to the narrowest width to which the press-box is to be adjusted and the height of said plunger being equal to the least depth to which the said box is to be adjusted. When it becomes necessary or desirable to increase  
40 the width or depth of said box, a board  $o^3$  of the proper length and height is placed in front of the plunger and secured thereto, if desired, as indicated by dotted lines in Fig. 6.

Having described that portion of my machine that serves as the compression-box and the mechanism immediately connected therewith, I will now describe the mechanism by means of which the shafts  $n$  and  $h$  are re-  
45 volved and controlled. These shafts are extended somewhat beyond the machine-uprights at one end and are provided, respectively, with bevel-gears  $n'$  and  $h^2$ . The gear  $h^2$  meshes with a bevel-gear  $p'$ , loosely mounted upon a shaft  $p$ , located at one end of the  
55 machine and extending at right angles thereto. The gear  $n'$  meshes with bevel-gears  $p^2$   $p^3$ , loosely mounted upon shaft  $p$  at opposite sides of said gear  $n'$ , as is best seen in Figs. 2 and 4 of the drawings. Splined upon the  
60 shaft  $p$  are clutch-sections  $q'$   $q^2$   $q^3$ , that are adapted to cooperate with companion clutch-sections formed within or upon the hubs of gears  $p'$ ,  $p^2$ , and  $p^3$ , respectively, and said splined clutch-sections are controlled by  
65 forks  $s$   $s'$   $s^2$ , carried by a longitudinally-mov-

able rod  $t$ , that is controlled by a lever-arm  $t'$ . The shaft  $p$  bears upon one end fast and loose pulleys  $u$   $u'$ , by means of which the said shaft may be driven. Assuming now that the shaft  
70  $p$  is set in revolution and that a quantity of mattress-filling has been placed in the described compression-box through the opening at the rear end of said box and also that said opening has been closed by placing the end  
75 board  $m$  in its operative position, the rod  $t$  is moved so as to slide the clutch-sections  $q'$  and  $q^2$  into operative connection with their companion sections, thus setting in revolution the gears  $p'$  and  $p^2$  and their connected  
80 shafts  $h$  and  $n$ . Simultaneously the sliding of rod  $t$  throws the clutch-section  $q^3$  out of clutch with its companion sections, and thus allows the gear  $p^3$  to be revolved idly. The revolving screw-shaft  $n$  causes the nut  $o$  and  
85 connected plunger to move forward—that is to say, toward the end board  $m$ —and at the same time the revolving shafts  $h$   $h'$  and attached cords or chains  $g$  draw the top and side boards of the compression-box downward, thus forcibly compressing the contents  
90 of the box into the desired size and shape. The rod  $t$  is then moved so as to throw out the clutch-sections  $q'$   $q^2$ , thus allowing the shafts  $h$   $n$  to stop, when the counterweights  $f$   $f'$  immediately lift the top board to its high-  
95 est position. Continued movement of the rod  $t$  throws the section  $q^3$  into clutch with its companion section and sets the gear  $p^3$  in revolution, thus revolving gear  $n'$  and shaft  $n$  backward and causing the nut  $o$  and plunger  
100 to travel back to their initial position. The end board  $m$  may then be removed and the compressed filling drawn out from the compression-box and slipped into any suitable or desired form of cover or ticking.  
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Many of the non-essential details of my described machine may be changed without departing from the spirit and principle of my invention—as, for example, the particular  
110 form of clutches employed is not material or the manner of supporting the end board  $m$ .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mattress-making machine, a compression-box having a bottom formed of removably-supported strips, a fixed end, a movable end, a top, sides depending from said top and adjustable therein to and from each other, and means for positively moving said top downward.  
115 125

2. In a mattress-making machine, a compression-box having a bottom formed of removably-supported strips, a fixed end, a movable end, a top, sides depending from said top and adjustable therein to and from each other, means for positively moving said top downward, and springs acting upon said sides.  
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3. In a mattress-making machine, the combination with the relatively fixed bottom, a  
130

fixed and movable end, of a movable top, a frame in which said top is guided, sides depending from said top and mounted therein for adjustment toward and from each other, and springs secured at one end to said sides and at the other ends to said frame.

4. In a mattress-making machine, a compression-box having a bottom formed of removably-supported strips, a fixed end, a movable end, a top, sides depending from said top and adjustable therein to and from each other, means for positively moving said top downward, a plunger movable lengthwise of said box, means for guiding the top and sides in a direct vertical plane, and means for conjointly actuating said plunger and top.

5. In a mattress-making machine, a compression-box having a bottom formed of removably-supported strips, a fixed end, a mov-

able end, a top, sides depending from said top and adjustable therein to and from each other, means for positively moving said top downward, springs acting upon said sides, a screw-shaft, a plunger, a nut carrying the same and engaging said screw-shaft, shafts parallel with the screw-shaft and connected to move in unison, and means for conjointly actuating said plunger and top to move them simultaneously in directions at right angles to each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ABRAHAM A. SCHIMMEL.

Witnesses:

BARNETT WHITE,  
FRANK H. ALLEN.