Sept. 23, 1924. 1,509,241

J. KRAMER

INNER SPRING MATTRESS AND CUSHION MAKING

Original Filed Nov. 29, 1920 4 Sheets-Sheet 1

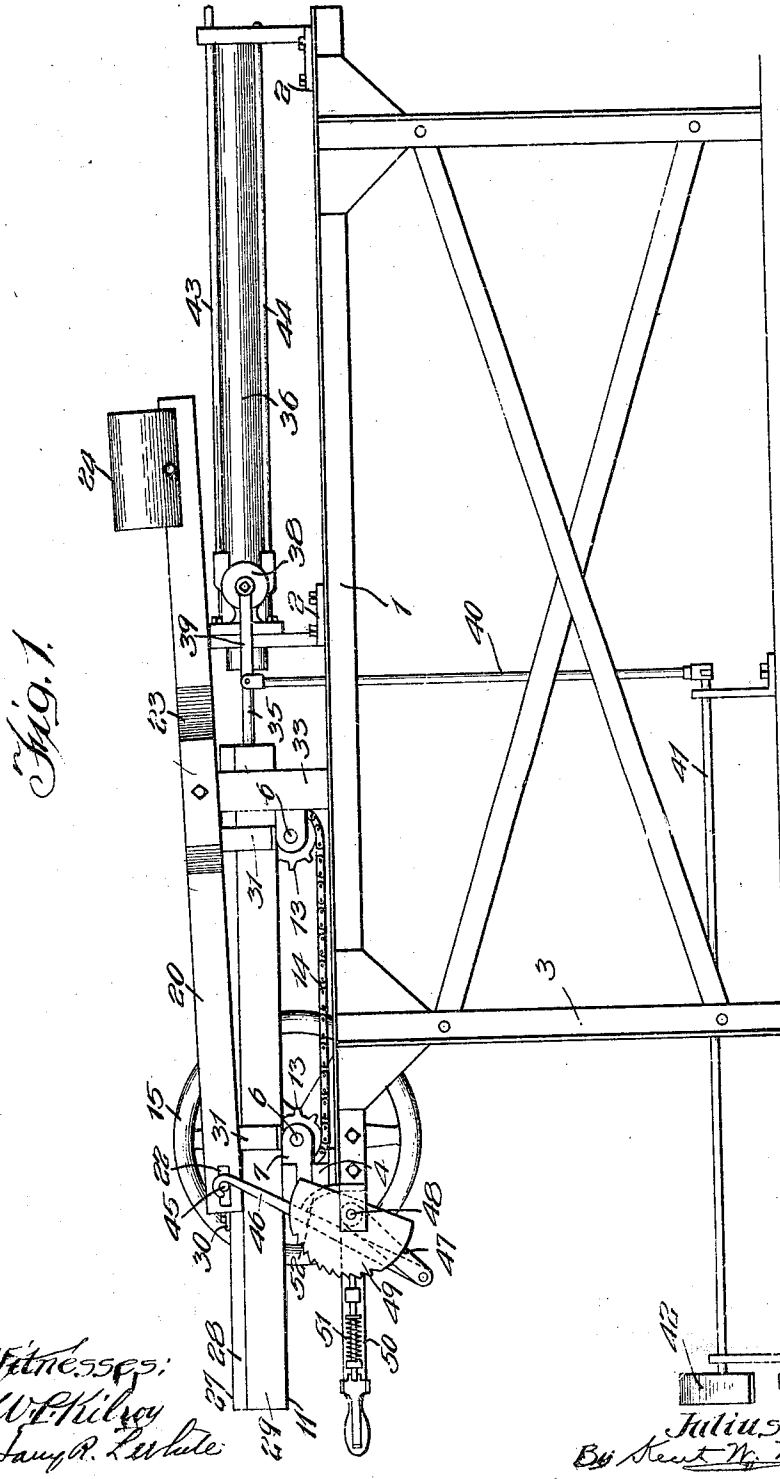


Fig. 1.

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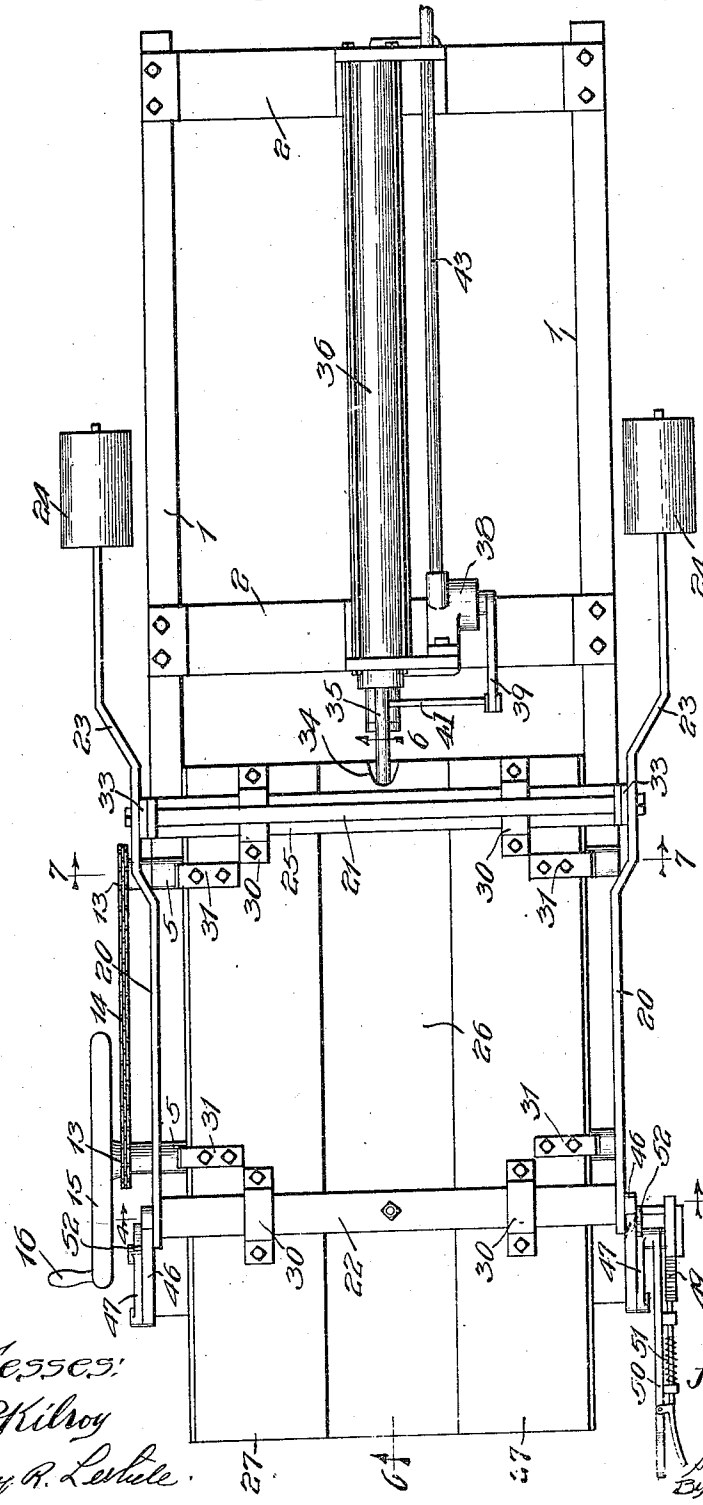
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Fig. 2.



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INNER SPRING MATTRESS AND CUSHION MAKING

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Fig. 3.

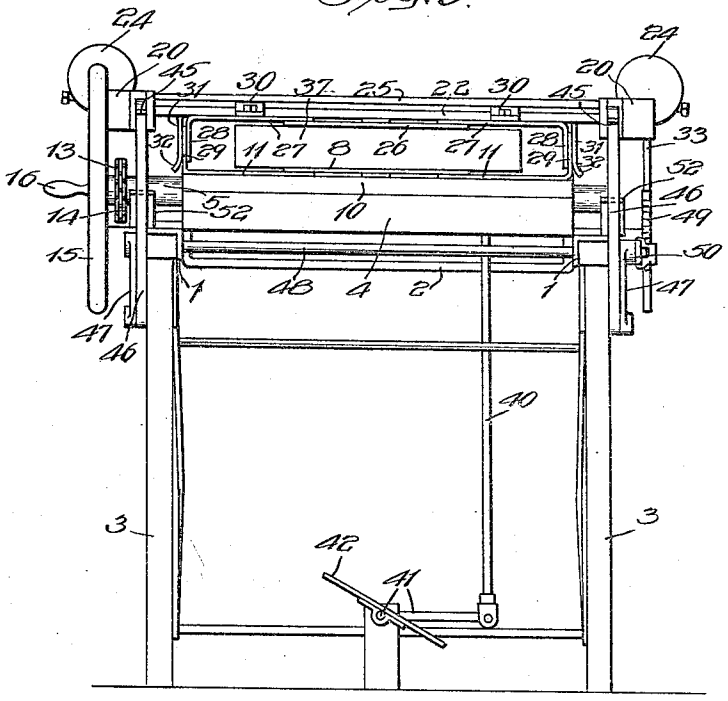


Fig. 4.

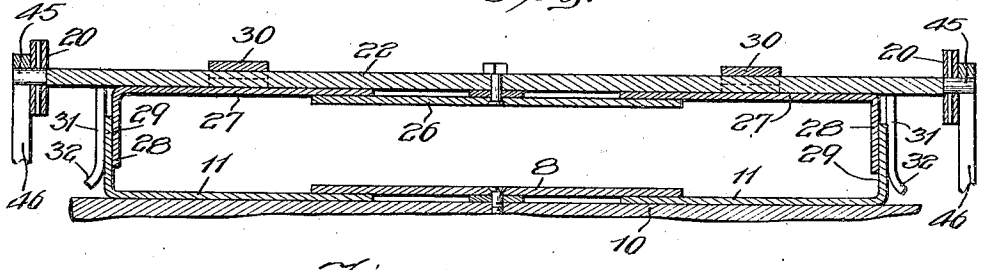
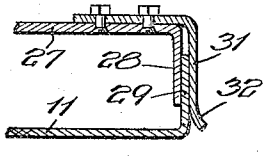


Fig. 5.



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INNER SPRING MATTRESS AND CUSHION MAKING

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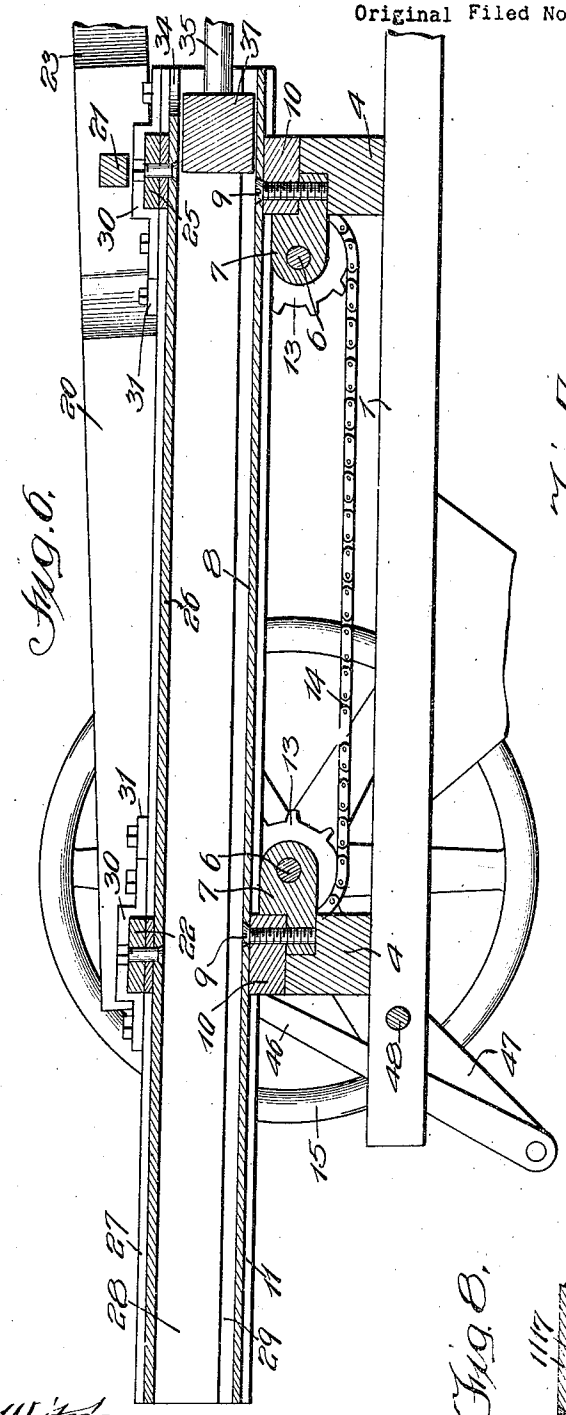


Fig. 6.

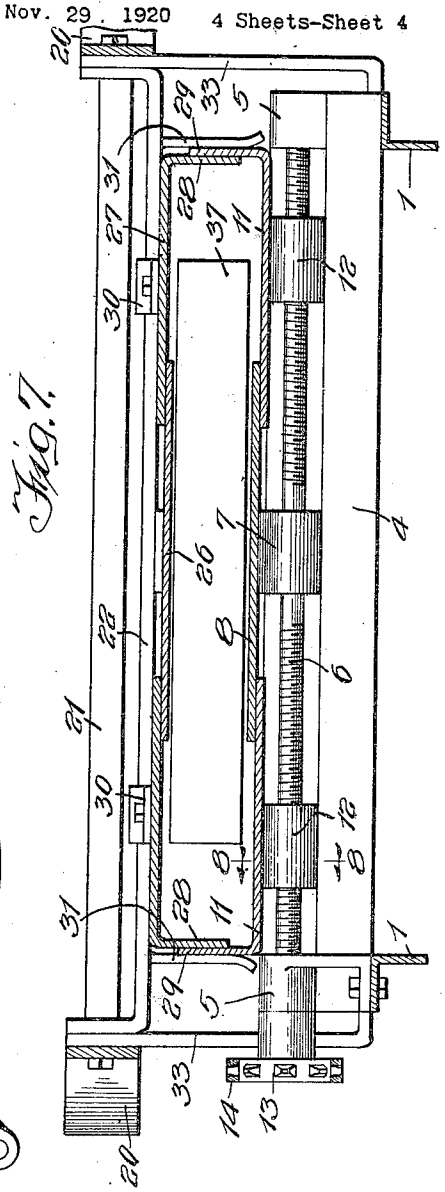


Fig. 7.

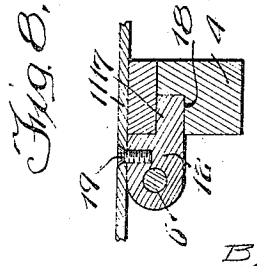


Fig. 8.

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Patented Sept. 23, 1924. 1,509,241

UNITED STATES PATENT OFFICE.

JULIUS KRAMER, OF CHICAGO, ILLINOIS, ASSIGNOR TO PULLMAN DAVENPORT & UPHOLSTERED FURNITURE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INNER-SPRING MATTRESS AND CUSHION MAKING.

Refiled for abandoned application Serial No. 427,151, filed November 29, 1920. This application filed November 17, 1922. Serial No. 602,919.

To all whom it may concern:

Be it known that I, JULIUS KRAMER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Inner-Spring Mattress and Cushion Making, of which the following is a specification.

This invention relates to a new and improved method and apparatus for making cushions, mattresses and the like, particularly designed and intended for use in connection with upholstered furniture although of course, they may be made for use separately or in other connections. The principal object of the invention is to provide a cushion making apparatus for making cushions of various sizes and for carrying out the improved method of making pillows of the class, as hereinafter set forth. The invention consists not only in the improved method for making cushions, but also in the construction, combination and arrangement of the several parts of the apparatus for making the cushions.

In the accompanying drawing, Fig. 1 is a side elevation of a machine constructed in accordance with the principles of this invention; Fig. 2 is a plan view; Fig. 3 is a view looking at the operating end of the machine; Fig. 4 is a section taken on the line 4—4 of Fig. 2; Fig. 5 is a detail section showing the overlapping edges; Fig. 6 is a section taken on the line 6—6 of Fig. 2; Fig. 7 is a section taken on the line 7—7 of Fig. 2; and Fig. 8 is a detail section taken on the line 8—8 of Fig. 7.

Cushions of the kind to which this invention relates are made by placing a number of short springs upright in rows of boxes formed by fabric partitions and then by covering the pad of springs thus formed on all sides with a layer of felt or cotton or any other suitable upholstering material, and in then compressing the filling thus formed and inserting it in a cover of a pillow slip which is then sewed up, forming a pillow or an upholstered cushion. Briefly stated, this is the function and operation of the apparatus, and is the method which is employed in making the cushions.

Referring now more particularly to the drawings, a suitable frame work is provided comprising side members 1 and cross pieces 2, supported by legs 3 which are suitably braced in any well known manner. This frame work is about the height of an ordinary table or so that it is freely accessible to an ordinary worker.

Mounted on the side frames 1 are supporting cross pieces 4 at the ends of which are bearings 5 for mounting shafts 6 therein. At the center of each shaft is a bearing member 7, as shown more clearly in Figs. 6 and 7, to which a flat central plate 8 is attached by means of a screw 9 and a block 10. An angular side plate 11 is attached to extend under each side edge of the central plate 8, and each angular side plate is mounted upon nuts 12 and are threaded upon the shafts 6, the shafts being oppositely threaded on the opposite side of the central block 7 thereof, so that the opposite angle plates 11 will be moved uniformly toward and from the central portion as the shaft 6 is rotated. Each of the nuts 12 has a projection 17 which slides along a groove 18 at the upper edge of the cross pieces 4, and each nut is secured to its side plate 11 by a screw 19. A sprocket wheel 13 is attached to one end of each shaft 6, and a sprocket chain 14 connects them for operation in unison. A hand wheel 15 provided with a crank 16 is attached to one of the shafts 6 for operating these side plates 11.

The upper portion of the mattress holders comprises side pieces 20 which are mounted intermediate their ends upon a shaft 21. The forward ends are connected by means of a cross piece 22, and adjustably mounted upon the rear ends which are preferably formed with offsets 23, are counterbalance weights 24 to provide for variation of the parts on shaft 21. Directly below the mounting shaft 21 is a cross piece 25 similar to the cross piece 22 and attached to these cross pieces is a central plate 26 corresponding with the lower central plate 8. Fitting closely over the edges of this central plate 26 are side plates 27 which are bent downwardly at their outer side edges 28 to fit within the upwardly bent sides 29 of the lower side plates 11.

These upper side plates 27 are mounted for sliding movement upon the cross bars 22 and 25 by means of the brackets 30, and their

movement is effected by means of the slide blades 31 which are attached to the side plates 27 in any suitable manner and overlapping the bent edges 29 of the lower side plates, as shown more clearly in Figs. 4 and 5, so that the edges 29 are caught between the edges 28 and the plates 31, the lower end 32 of each plate being bent outwardly so that it will more readily engage the edge 29 of the lower side piece 11.

The entire upper portion including the counter weights is mounted for pivotal movement upon the shaft 21 which is supported by the side brackets 33, and the rear end of the upper central plate 26 is formed with a notch 34 which becomes seated over a plunger rod 35 when the front edge of the pivoted superstructure is raised about the pivoting shaft 21.

At the rear of the cushion holder is a fluid pressure cylinder 36 for operating the plunger rod 35 which carries a plunger 37 at its forward end, as shown in Figs. 3 and 6, within the variable cushion holder. At one end of the cylinder 36 is a valve 38 with an operating arm 39 extending therefrom which is connected by means of a link 40 to a crank shaft 41, having a pedal 42 at its forward end adjacent the front of the machine so that the valve can be easily operated from that point. This cylinder will receive pressure at either end from a supply line 43 through the valve 38 and through a pipe 44, so that the plunger may be positively forced in either direction, and will be held in that position until the valve 38 is operated to move it into the opposite direction. In this connection it should be observed that any type of operating mechanism which will accomplish this same result is entirely satisfactory.

Projecting outwardly from each side member 20 at its forward end is a projection 45 which is adapted to be engaged by a hook 46 at one end of an arm 47, the other end of which is mounted upon a shaft 48 extending across the frame work below the lower side plates 11. At one end of this shaft is fixed a toothed segment 49, and attached to the shaft 48 at this end is a handle 50 with a spring pressed dog 51 for engaging the teeth of the segment. At each side of the frame is a guide 52 for engaging and limiting the rearward movement of the hook 46 so that whenever the pivoted superstructure is moved downwardly in the position shown in Fig. 1, the downward movement of the handle 50 will engage the hooks 46 with the projections 45. In order to disengage the hooks from the projections, it is necessary only to release the dog from the segment 49 and to move the handle upwardly. The arms 47 will raise the lower ends of the hooks moving the upper ends of the hooks inwardly free from engagement with the projections 45 so that the pivoted super-structure can then be raised upon its pivoting shaft 21 without danger of engaging the hooks. Of course, as soon as the super-structure is lowered, the downward movement of the handle 50 will draw the hooks 46 over the guides 52 moving them into engagement with the projections 45. In operation, the plunger 37 is moved to its rear-most position, the hooks 46 will disengage from the super-structure by moving the handle 50 upwardly, and the counterbalanced super-structure is then raised so that the lower plates are freely accessible. The cushion making material is then assembled in the lower plates by placing first a layer or pad of felt or similar material thereon, and in completely covering a pad of springs therewith. The super-structure is thereupon closed down over the cushion material thus assembled and drawn tightly against it by means of the hooks 46. This cushion material is then compressed laterally to the desired extent by rotating the hand wheel 15 which draws in the side plates 11 and 27 at the same time because of the engagement of the blades 31. A considerable lateral compression of the cushion material is possible because of the spring pad structure, and when the cushion material is compressed, a pillow clip or a cushion cover of any suitable material is placed over the forward ends of the movable side plates 11 and 27, clear to the bottom or end of the cushion cover. The valve 38 is then operated by means of the pedal 42, and the plunger 35 quickly forces the cushion filling into the cushion cover, filling the latter and ejecting the filling from the machine. The open edge of the pillow or cushion can then be sewn up and the cushion is ready for use.

The machine is made ready for the next operation by rotating the hand wheel 15 in the opposite direction to separate the side plates 11 and 27, and after they are suitably separated, the hooks 46 are disengaged and the super-structure raised as before. The plunger can be withdrawn by the operation of the valve at any time before the next cushion material is placed on the lower plates. It is obvious that various changes may be made in the construction, combination and arrangement of the several parts without departing from the spirit and scope of this invention.

I claim:

1. In a cushion making machine, a base comprising a fixed central plate and movable side plates extending under the opposite edges of the central plate, and with the outer edges of the side plates turned upwardly, in combination with a cover comprising a fixed central plate and slidable side plates engaging over the opposite edges of the central plate and having their outer edges turned downwardly, engaging blades at the outer

edges of the cover side plates whereby the upturned edges of the lower side plates are engaged on both sides thereof, and means including a hand wheel at one side of the machine for moving the side plates of the base laterally carrying with them the side plates of the cover in both directions of adjustment.

2. In a cushion making machine, a base upon which the cushion filling material is assembled, a cover pivoted at the rear of the base and movable downwardly to fit over the base, and means for clamping the cover in the downward position, said means comprising a shaft extending under the base, lateral projections from the sides of the cover, a pair of hooks adapted to engage the projections, an arm mounted at each end of the shaft and attached to one of the hooks, a guide behind each hook for moving it forwardly into engaging position when the shaft is rotated, and means for rotating and locking the shaft.

3. In a cushion making machine, a base with adjustable side plates, a cover pivoted at the rear of the base also having adjustable side plates, and having side members with outward lateral projections, means for moving the side plates of the base and cover when the cover is closed over the base, and means for drawing the front end of the cover downwardly after it is closed, said means comprising a shaft extending under the base, an arm mounted at each end of the shaft, a hook member pivoted to the outer end of each frame, a guide extending over the shaft against which the hook member normally rests for throwing the hook into engagement with the side projections of the cover when the shaft is rotated, a fixed toothed segment at one end of the shaft, and a handle attached to the shaft having a spring pressed pawl for engaging the teeth of the segment to lock the cover down when it is engaged by the hooks.

JULIUS KRAMER.