

No. 774,275.

PATENTED NOV. 8, 1904.

A. W. PYLE.  
FOLDING BED.

APPLICATION FILED APR. 9, 1904.

NO MODEL.

4 SHEETS—SHEET 1.

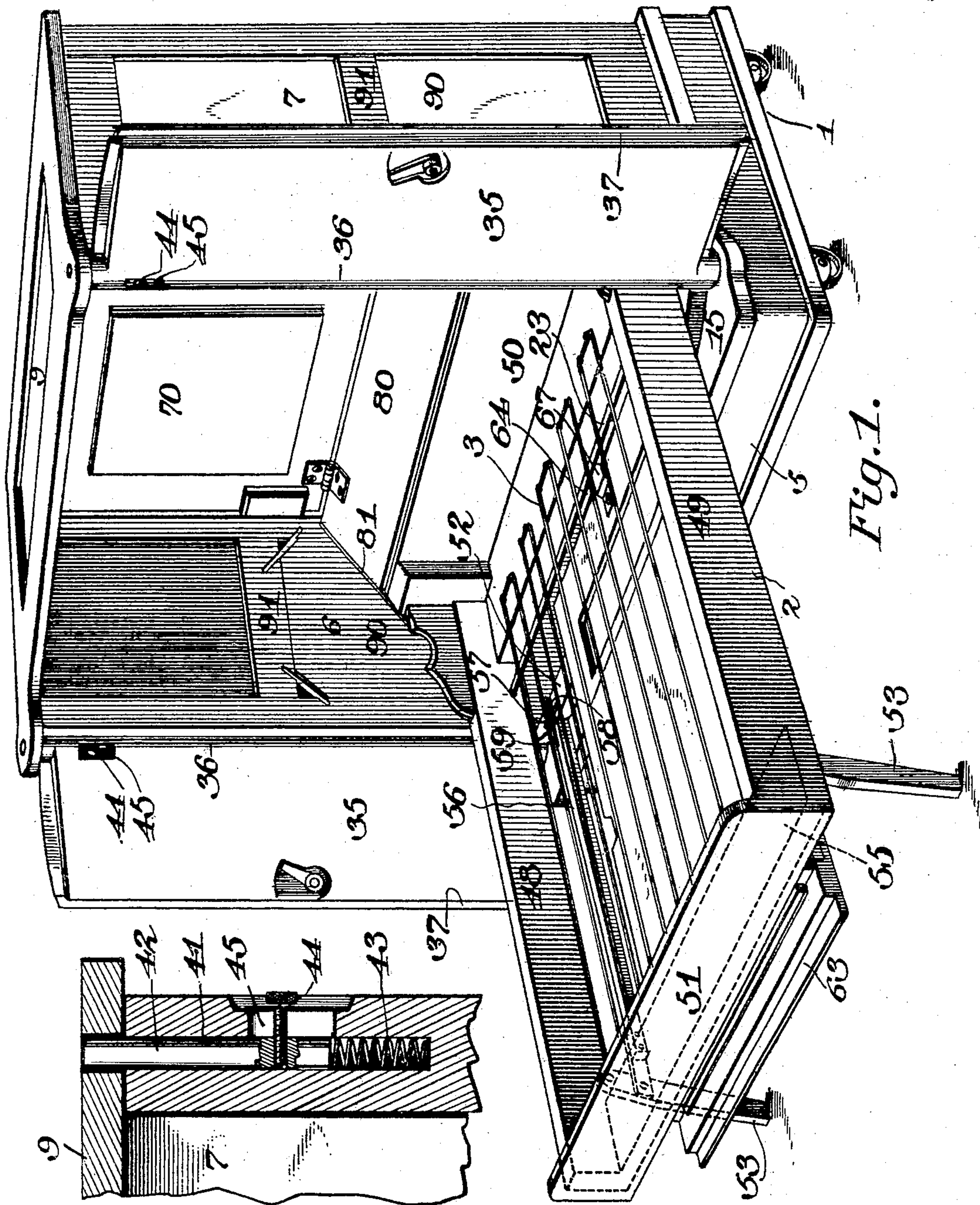


Fig. 1.

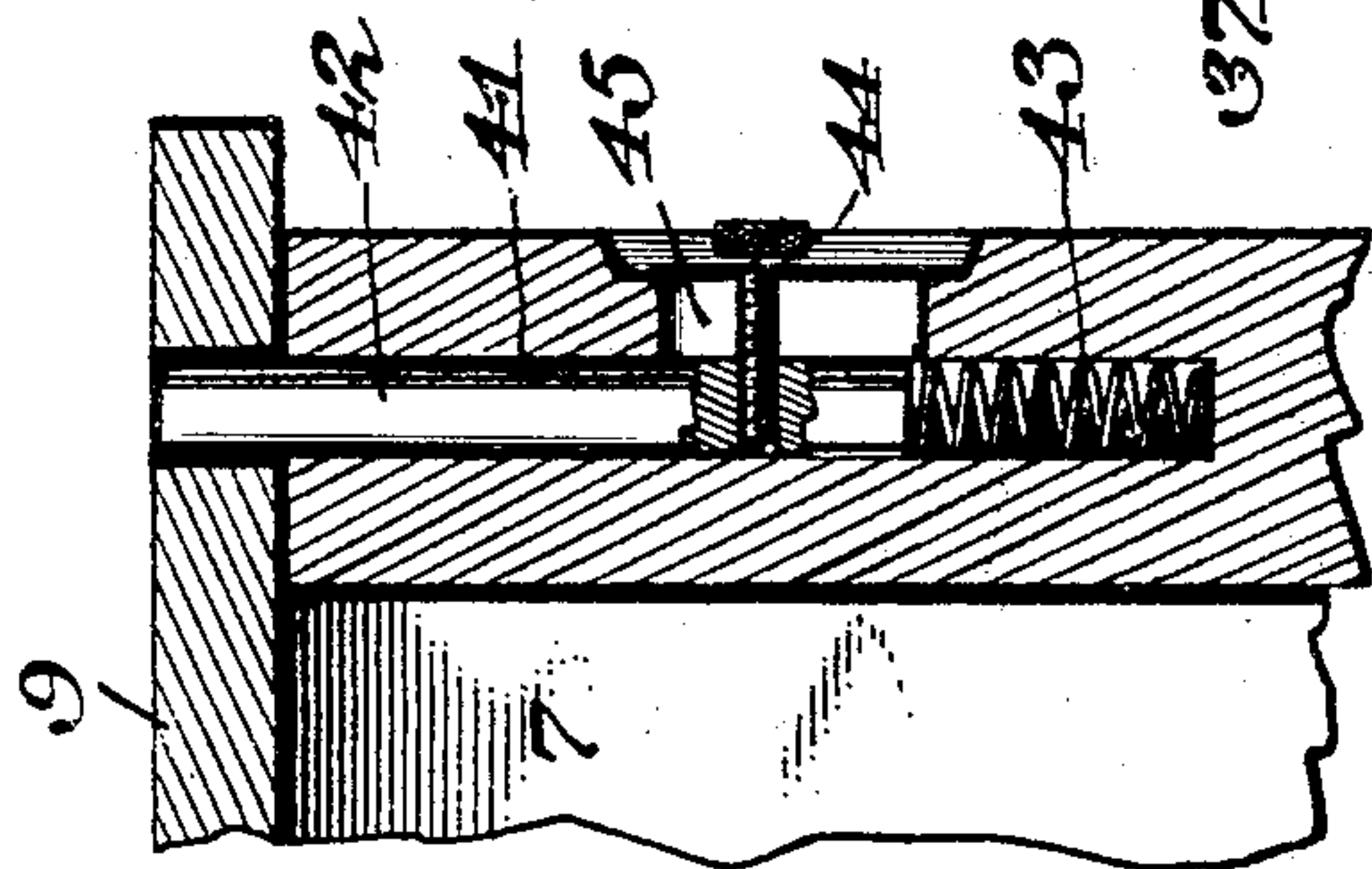


Fig. 9.

Witnesses

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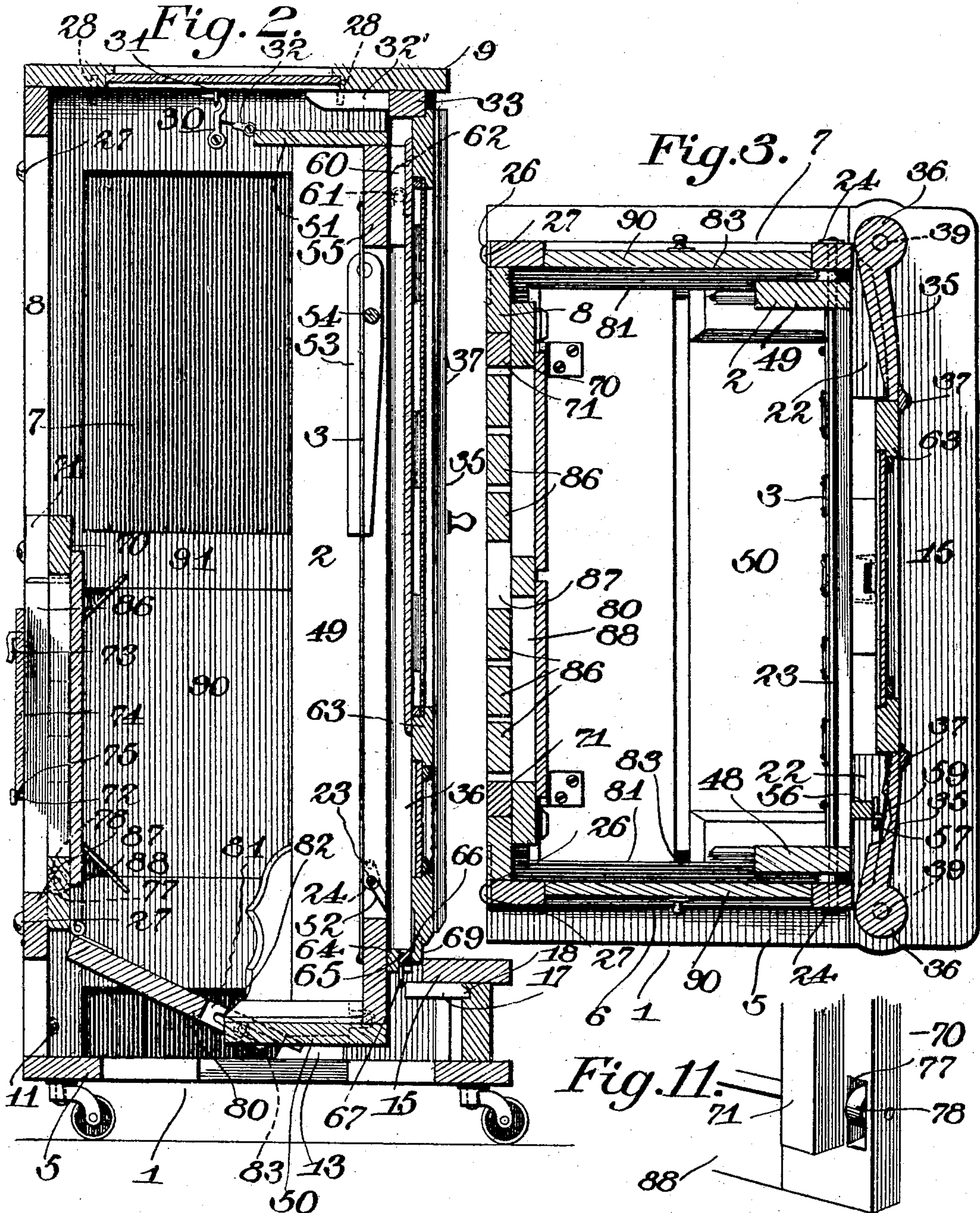


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4 SHEETS—SHEET 2.



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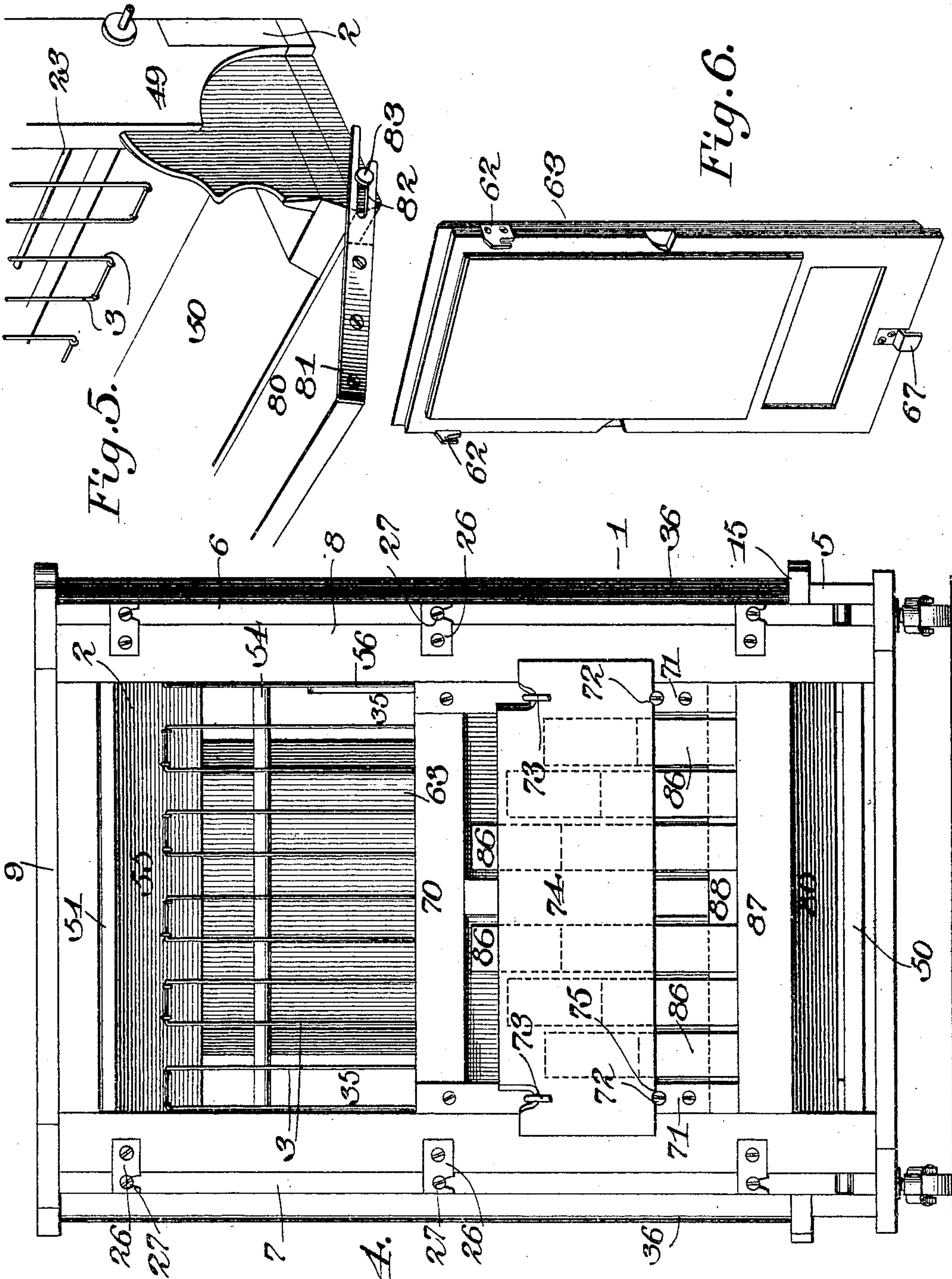
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4 SHEETS—SHEET 3.



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Fig. 4.

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4 SHEETS—SHEET 4.

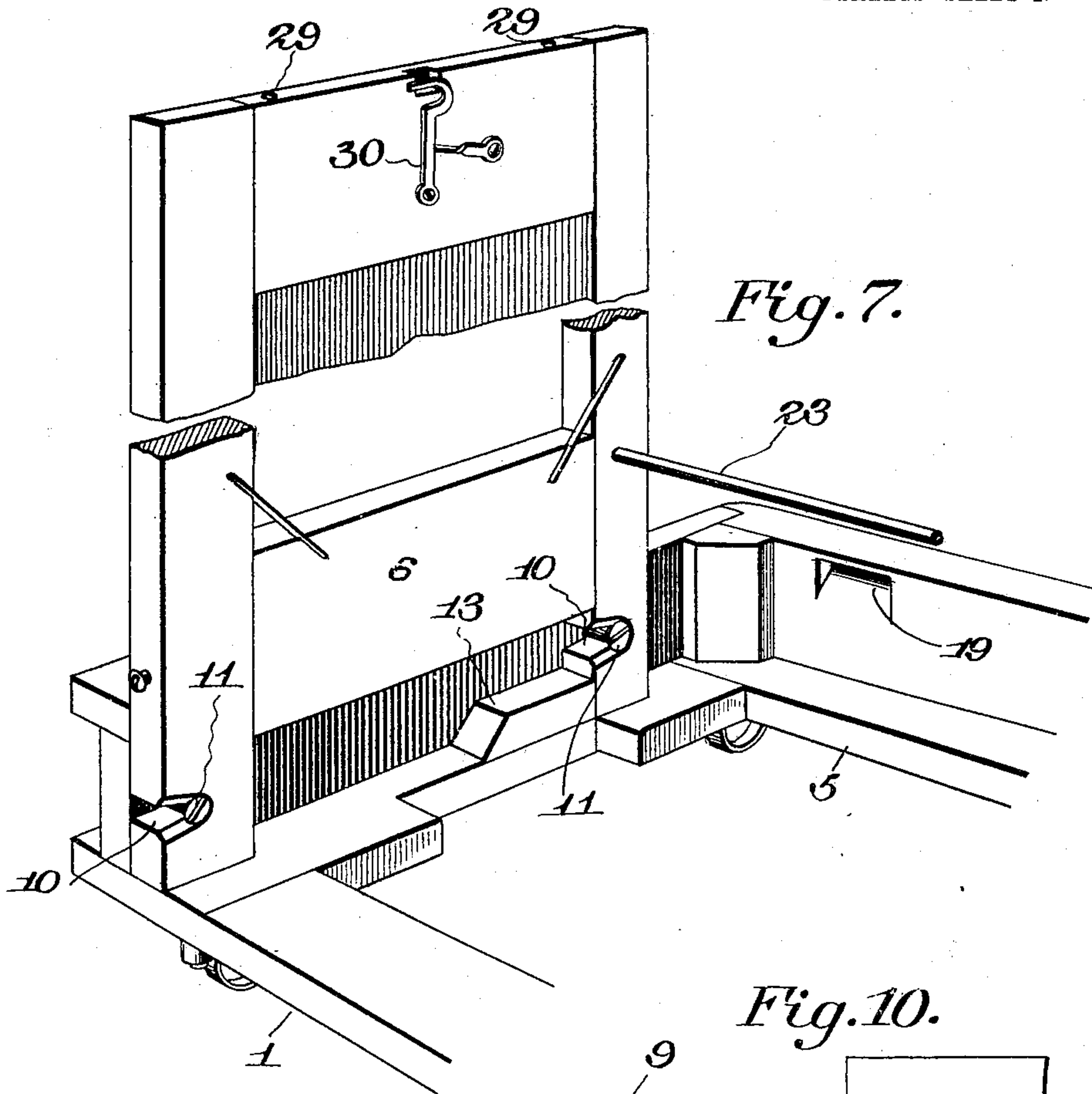


Fig. 7.

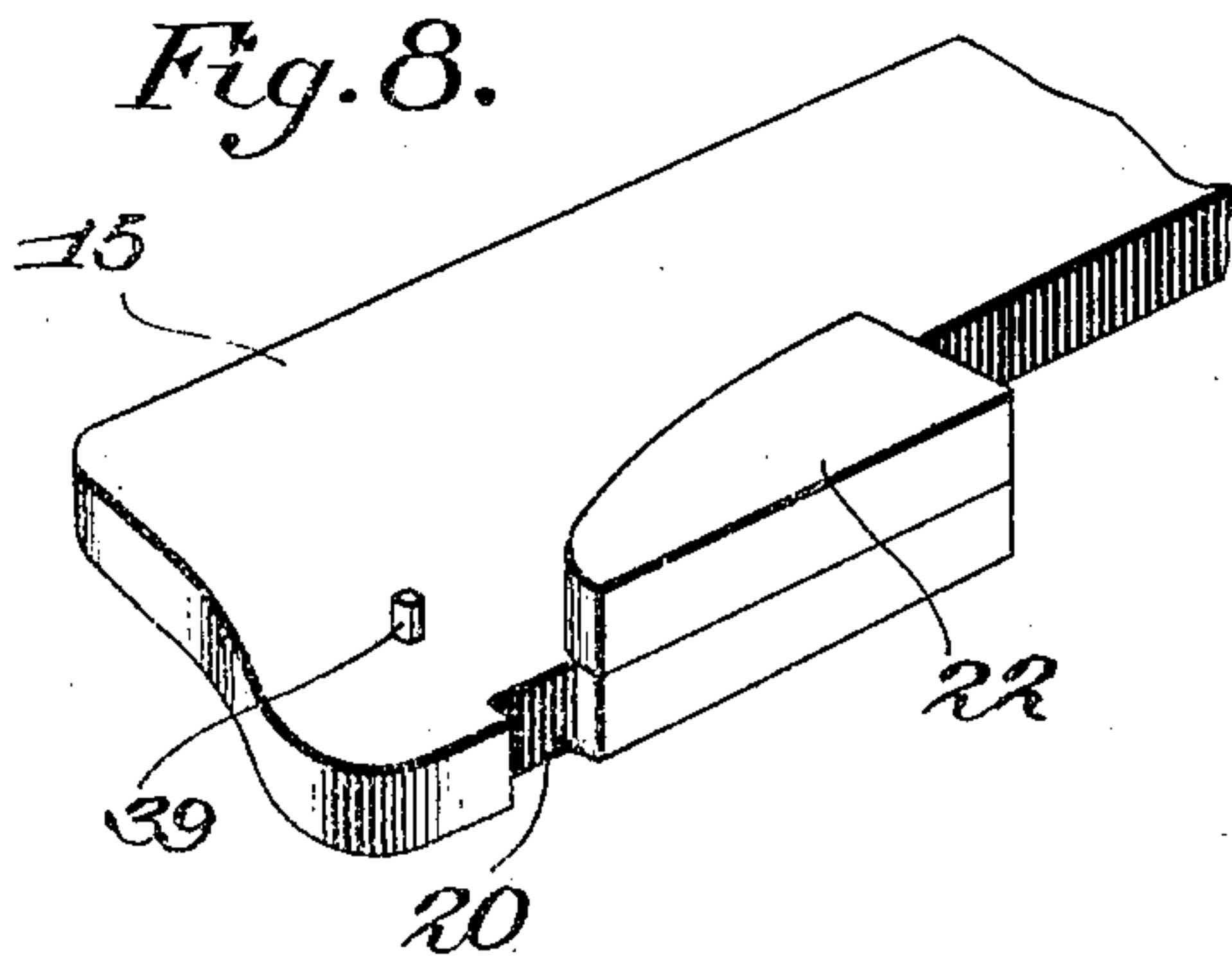


Fig. 8.

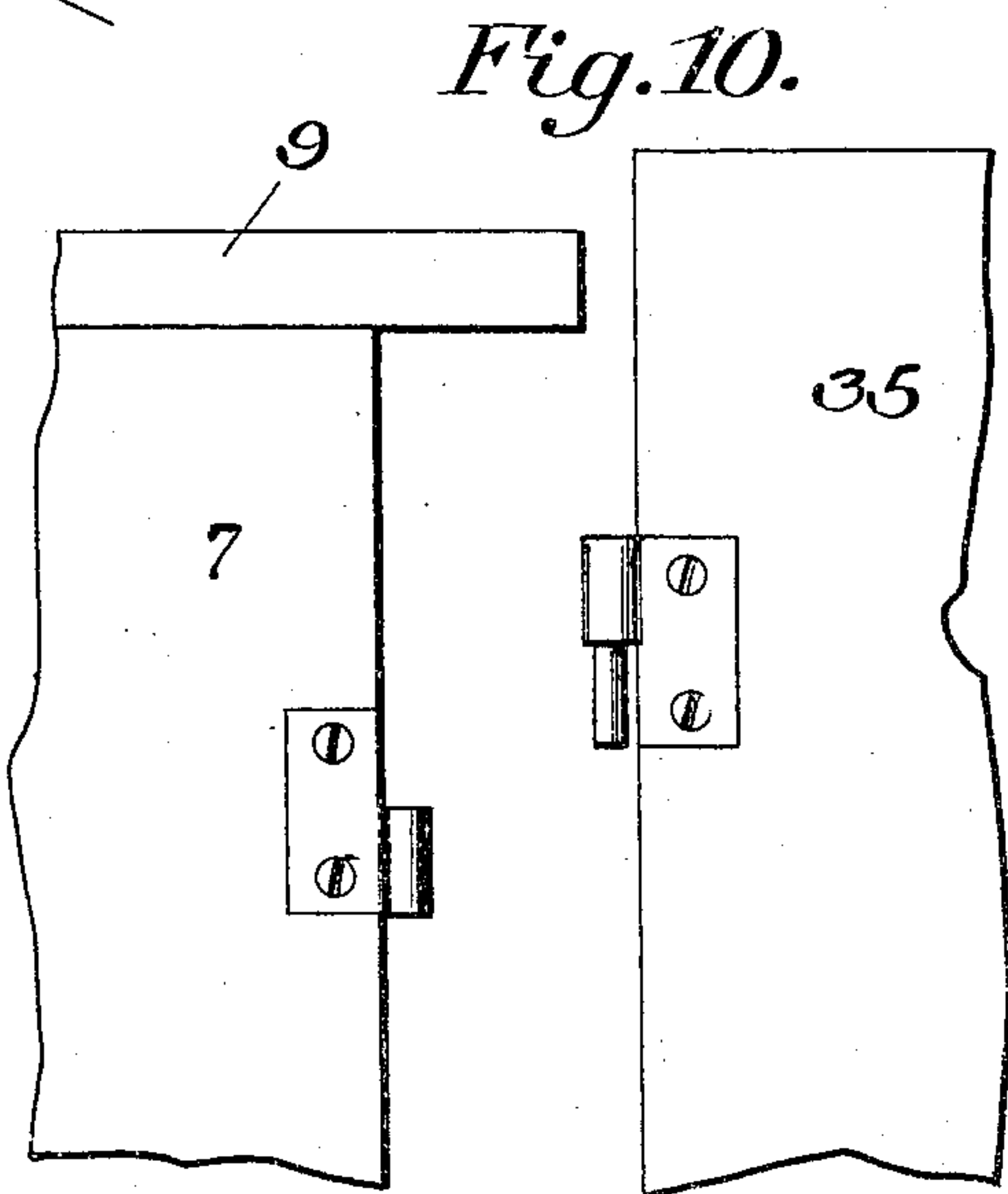


Fig. 10.

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# UNITED STATES PATENT OFFICE.

ABNER W. PYLE, OF HOPKINSVILLE, KENTUCKY.

## FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 774,275, dated November 8, 1904.

Application filed April 9, 1904. Serial No. 202,385. (No model.)

*To all whom it may concern:*

Be it known that I, ABNER W. PYLE, a citizen of the United States, residing at Hopkinsville, in the county of Christian and State of Kentucky, have invented a new and useful Folding Bed, of which the following is a specification.

This invention relates to improvements in folding beds of that general class in which the parts are so connected as to permit of their ready separation for convenience in transportation or storage; and the principal object of the invention is to provide a folding bed of the knockdown type in which all of the parts may be quickly assembled or separated without the exercise of any special skill or labor and without the use of tools.

A further object of the invention is to provide a bed of the cabinet type in which a portion of the cabinet is carried by a non-collapsible bed-frame in such manner that it may be readily removed when necessary, the remaining front portion being in the form of one or more doors which are comparatively small, so that they may be folded back and occupy but little space, said doors being so mounted as to permit of their ready disconnection when necessary.

A still further object of the invention is to provide for the automatic adjustment of the foot of the bed, said foot or feet being moved out to proper position as the bed is lowered and being swung back to position within the lines of the bed-frame as the latter is raised and moved within the cabinet.

A still further object of the invention is to provide a folding bed of that general class in which a slidable headboard acts as a counterweight with detachable connections between the bed and the headboard and provide for considerable lost motion during lowering movement of the bed structure before the weight of the headboard is imposed upon it, so that in starting the lowering movement of the bed the inertia of the weight will not have to be overcome until the bed has been pulled down for a short distance.

A still further object of the invention is to improve the construction of the back member of the cabinet and facilitate the introduction

and removal of the slidable headboard guided thereby.

A still further object of the invention is to improve and simplify the construction and arrangement of the several securing devices by which the sections of the cabinet are held together so as to facilitate assemblage or separation of the parts.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood 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.

In the accompanying drawings, Figure 1 is a perspective view of a folding bed constructed in accordance with the invention, the bed being shown in open position. Fig. 2 is a central vertical section of the same. Fig. 3 is a sectional plan view of the bed in folded position. Fig. 4 is a rear elevation of the bed. Fig. 5 is a detail perspective view of a portion of the headboard. Fig. 6 is a similar view of the front panel of the cabinet detached from the bed-frame. Fig. 7 is a detail perspective view of portions of the cabinet structure looking from the rear. Fig. 8 is a detail perspective view of a portion of the base detached. Fig. 9 is a transverse sectional elevation illustrating one of the spring-hinge pintles. Fig. 10 is a detail view illustrating a slight modification of the hinge connection between one of the cabinet-doors and the cabinet-frame. Fig. 11 is a detail view of a portion of the main headboard.

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

The device forming the subject of the present invention is one of that general class in which a non-collapsible bed-frame may be folded within a knockdown cabinet, the latter being formed of a plurality of readily-detachable parts which may be separated by an



unskilled person without the use of any tools whatever.

The cabinet proper, 1, serves to receive the non-collapsible bed-frame 2, which may be provided with a woven-wire spring 3 or any other suitable form of bed-bottom. The cabinet consists of a base-section 5, the side sections 6 and 7, the back section 8, and the cap 9, which together with a plurality of front members forms a cabinet which will wholly conceal the bed and which may be made as ornamental as desired.

The side sections 6 and 7 fit within the foot-section, and the lower portions of the side members of these end sections are each provided with notches 10, into which enter headed screws or pins 11, that project inward from the end walls of the base and serve as means for confining the end members in place. These end members are held from excessive rearward movement by suitable stops 13, which are secured in proper position to the inner walls of the base. The end sections are further held from independent movement by means of a shelf 15, having two lugs 17 on its under surface, said lugs having round tapered pointed ends 18, which are adapted to enter recesses 19, formed in the inner face of the front wall of the base, the shape of the lugs and the openings which they enter being such that the shelf is first placed at an oblique angle and turned gradually down until its rear edge abuts against the front edges of the end sections 6 and 7. The rear edge of the shelf is provided with notches 20 of a depth sufficient to receive the front edges of the end sections, and the walls of these notches serve as additional means for preventing lateral displacement of the end members, while contact of the bottoms of the notches or recesses with the front ends of such end sections will serve to prevent the latter moving toward the front of the cabinet and being separated from the holding pins or screws 11. To the top of the shelf 15 is also secured a pair of blocks 22, which by engagement with the inner faces of the recesses of the end sections serve to prevent inward movement of the latter.

The end sections serve as supports for a removable pivot-rod 23, which engages in slots formed at a point intermediate of the length of the bed-frame and forming the fulcrum on which the bed-frame turns from one position to the other. This pivot-rod extends through openings in the end members and is normally held in place by small pivoted plates 24, which may be swung out of the way when it is desired to remove the pivot-rod.

The back member of the cabinet is in the form of a skeleton frame that carries a plurality of projecting plates 26, that are notched to receive headed screws or pins 27, projecting from the rear edges of the end members, the engagement of these notched plates with the screws serving to rigidly hold the back

and end members, and any independent movement is prevented.

The top section or cap 9 is provided with a plurality of dowels 28, which enter openings 29, formed in the top of the end members, this dowel connection serving to permit the ready separation of the parts when necessary. The inner walls of the end members are provided with swinging hooks 30, adapted to engage eyes 31 on the lower surface of the cap-piece, and said hooks are held in place by pivotally-mounted locking-arms 32, carried by the end members. The cap-sections are further held in place by blocks 32, secured to its upper surface and adapted to fit against the inner walls of the end members and prevent end movement of said end members toward each other, and said cap-piece is further provided with a strip 33, which forms a stop for limiting the closing movement of the doors which form a part of the front wall of the cabinet.

The front doors 35 in the preferred construction are provided with pivoted posts 36, that are secured to or form a part of the doors, and at the free edge of each door is an ornamental molding 37, which projects over the edge of the bed-carried portion of the front of the cabinet when the bed is closed. The lower end of the pivot-post is provided with an opening for the reception of a pivot-pin 39, and in the upper end of said post is a vertical passage 41 for the reception of a longitudinally-movable pivot-pin 42, which is normally projected by means of a spring 43, the pivot-pin extending within a suitable opening formed in the cap-piece to receive it. Projecting from the pin is a knob or screw 44, which extends through a slot 45, formed in the post, so the pivot-pin may be moved downward against the stress of its spring and entirely disconnected from the cap-piece, after which the door may be readily lifted out of its place. This construction may be slightly modified by omitting the posts proper and having a detachable connection between the edges of the end walls of the cabinet and the doors, a suitable hinge for the purpose being that in which the leaves are detachable, (shown in Fig. 10,) so that the doors may be readily taken off when desired, or modifications may also be made in the construction of the end panel, inasmuch as the end members may be either hinged, pivoted, or otherwise secured in place.

The bed structure comprises side rails 48 and 49 and head and foot members 50 and 51, that are rigidly secured thereto. The side rails are provided with inclined notches 52 at a point intermediate of their length, and these notches serve to receive the pivot-bar 23. Near the outer ends of the side rails are pivoted supporting-feet 53, which are connected for mutual movement by a cross-bar 54, excessive outward movement being prevented by contact of the outer face of the feet with



a transverse spring-supporting rail 55. One of the supporting-feet is connected by a link 56 to a pin 57, that extends across a slot 58, formed in the upper surface of one of the blocks 22. The end of the link 56 has a notched plate 59, which fits in the slot and extends over the pin 57, the latter forming a fulcrum for swinging movement of the link, and its position with respect to the main fulcrum-bar 23 of the bed being such that as the bed is drawn down the link will be forced to move the supporting-legs to open position, so that they may automatically open for contact with the floor as the bed is lowered, and when the bed is closed the supporting-legs will be folded within the lines of the bed-frame. The construction, moreover, is such that in separating the parts the notched plate 59 may be readily lifted out of the slot and from engagement with the pin 57, so that there will be no delay in assembling or disconnecting.

On the bottom of the spring-supporting cross-rail 55 are secured two blocks 60, carrying headed pins or screws 61 to be engaged by blocks 62, carried by the sides of the main front section 63, and on the opposite spring-supporting rail, adjacent to the head of the bed-frame, is secured another block 64, having a recess 65 and provided with a pin or bracket 66, bridging the recess and adapted for the reception of a hook 67, carried by the lower portion of the main front member 63. The front member 63 may be paneled, or one of its panels may be in the form of a mirror, or the device may be otherwise ornamented as may be desired. This panel may be allowed to remain on the bed-frame when the latter is moved out of the cabinet and adjusted to horizontal position and will not be in the way, or it may be detached from the bed-frame, if desired. The lower edge of the removable member 63 of the cabinet is provided with a recess 69 for the reception of a portion of the rear wall of the shelf 15, so that all of the parts may be accurately fitted together and serve to mutually support each other.

The back 8 of the cabinet serves as a guide for a vertically-slidable weighted headboard 70, which is so arranged and connected to the inner end of the bed-frame that when the bed is in open position the weight of the headboard will tend to maintain the outer supporting-legs in firm contact with the floor; but as the outer end of the bed is raised in the closing of the bed the weight will be transferred to the opposite side of the fulcrum of the bed-frame and will tend to move the bed to closed position and will offer its resistance to the opening movement.

The main headboard 70 is provided at its rear face with a pair of blocks or bars 71, the distance between the outer edges of which is such as to permit the bars to be introduced

in the space between the vertical side bars of the skeleton back, and the thickness of such blocks or bars being approximately equal to that of the thickness of the back. The bars or blocks are each provided with a headed pin or screw 72 and a revoluble catch 73, these serving to hold an auxiliary retaining-plate 74 in position. The plate 74 is of a length greater than the distance between the inner edges of the vertical side bars of the back frame, and its lower edge is provided with notches 75 to receive the screws or pins 72, and after being placed in position the catches 73 are turned and extend over the upper edges of the strip 75 and hold the latter from movement, so that when this auxiliary back piece or strip has once been fastened in place the main headboard will be held from lateral play. In order to reduce frictional resistance to the slidable headboard, the latter is provided with openings 77, in which are pivotally mounted rollers 78, that bear against the inner surface of the side bars of the back section, and by the substitution of rolling for sliding friction will permit the opening and closing of the bed with less labor and time, as well as preventing the sticking which at times occurs in structures of this kind from the warping of the wood.

To the lower edge of the headboard is hinged an auxiliary headboard-section 80, and to the opposite ends of the section 80 are secured strips 81, which are provided with elongated slots 82, the two fingers formed by the slot being of unequal length in order to permit the strip to closely approach the bottom of the cabinet without danger of coming into contact therewith. At the opposite ends of the head piece or rail of the bed are projecting screws or pins 83, which extend into the slots 82 and slide freely therein during the preliminary opening movement of the bed, and when the parts are in the position shown in Fig. 2, with the bed-frame in vertical position, the head-rail of the bed structure will be at some distance from the lower and forward edge of the section 80, and the headed pins or screws 38 will be at some distance from the inner ends of the slots 82, so that during the first portion of the lowering movement of the bed there will be no resistance offered by the weighted headboard, and the foot-rail of the bed-frame may be pulled out for some distance before the pins reach the ends of the slots and the lowering movement of the bed is opposed by the weight of the headboard. The result of this construction is that the bed may be pulled out more readily and the lowering movement accomplished more quickly than where in an attempt to lower the bed the weight of the headboard opposes the lowering movement from its start.

As the lowering movement of the bed continues the apparent weight of the bed will in-



crease as it approaches a horizontal plane, and in order to properly proportion the resistance to the lowering movement a number of pick-up weights 86 are arranged at the  
 5 back of the cabinet, these weights being in two sets disposed, respectively, on the opposite sides of the center of the headboard and normally resting on the lower rail 87 of the  
 10 back section and being held from lateral displacement by means of the auxiliary plate or strip 74. The weights are of such nature that as the downward movement of the bed continues the shorter ends will first be caught  
 15 by the cross-bar 88 of the headboard and their inertia be imposed on the headboard, and this increases the resistance to the lowering movement of the bed. The intermediate weights, and finally the longer weights, may be gradually caught and elevated by the slidable head-  
 20 board, and during closing movement of the bed these weights will be gradually removed from the headboard and rest on the rail 87.

To provide for ventilation of the cabinet, which is desirable during the summer, the  
 25 panels 90 of the side members may be made detachable, the panels being provided with dowel-pins adapted to enter suitable openings formed in the end members and being held  
 30 as shown more clearly in Fig. 2.

Having thus described the invention, what is claimed is—

1. The combination with a pivotally-mounted bed, of a slidable weighted headboard,  
 35 strips connected to the headboard and provided with elongated slots, and headed pins carried by the bed and extending into said slots, the length of the slots being such as to permit the starting of the lowering movement

of the bed before the weight of the headboard 40 is imposed thereon.

2. The combination with a pivotally-mounted bed, of a knockdown cabinet, including a base and end members, the end members being fitted within the end portions of the base 45 and having each a plurality of slots, headed pins carried by the base and adapted to enter the slots, a removable shelf fitting within the top of the base, and notched for the reception of the front edges of the head-piece, a top, 50 back and front members connected to the end members and forming a completed cabinet.

3. The combination with a pivoted bed, of a cabinet including a skeleton back, a slidable headboard having vertically-arranged spaced 55 bars extending between the side members of the back, fastening devices secured to said bars, and a detachable auxiliary plate of a length greater than the distance between the outer edges of said bars, said plate being de- 60 tachably held in place by the fastening devices.

4. The combination with a cabinet, of a pivotally-mounted bed, supporting-legs pivoted to the front of the bed, a link connected 65 to one of the legs, a notched plate secured to the opposite end of such link and adapted to a slot at the front of the cabinet, and a pivoted bar extending across the slot and fitting within the notch of said plate. 70

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ABNER W. PYLE.

Witnesses:

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 D. F. SMITHSON.