(No Model.) 4 Sheets—Sheet 1.

L. P. ROSS.

FOLDING BED.

No. 318,806. Patented May 26, 1885.

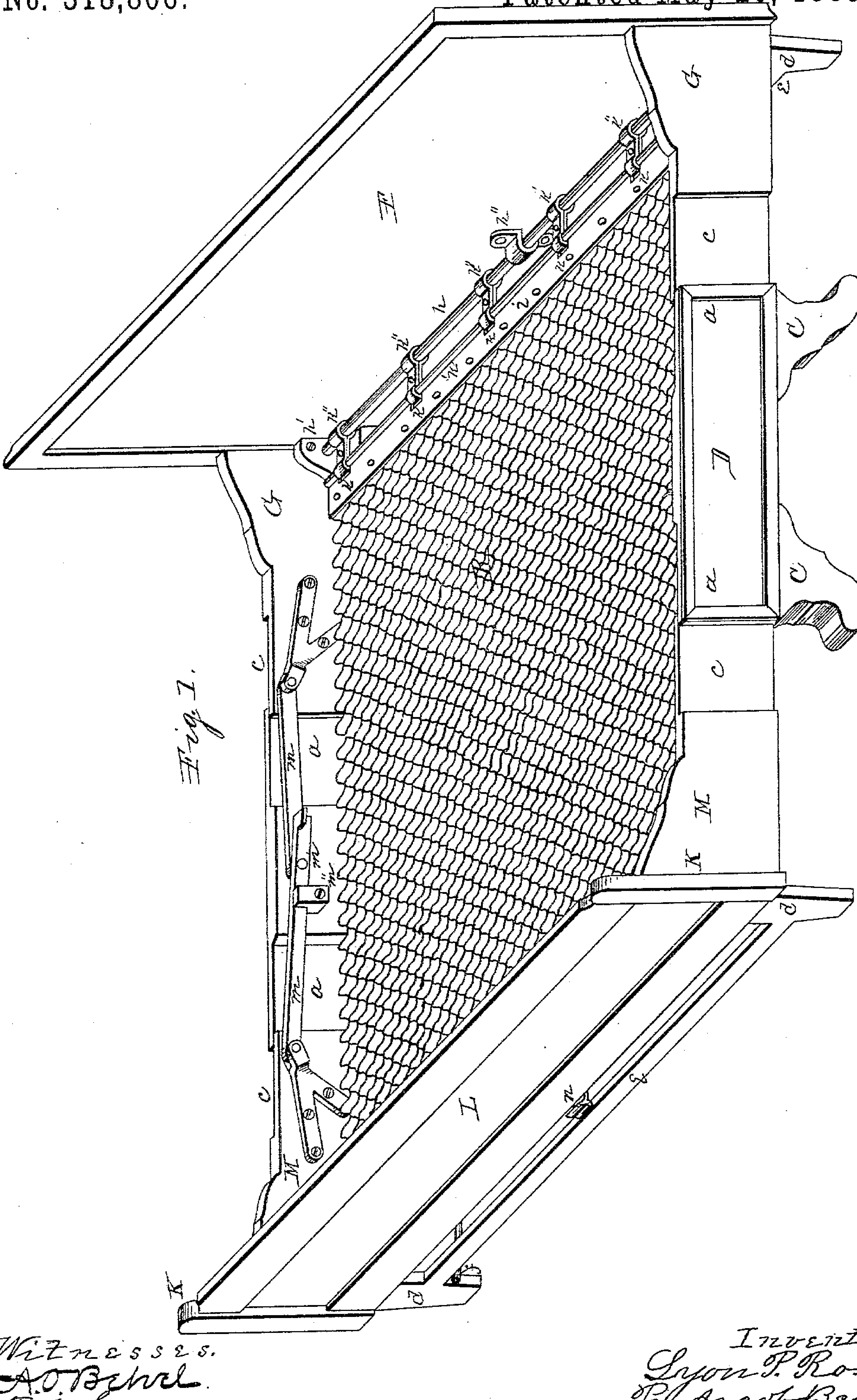

Fig. 1.

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(No Model.)

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Fig. 2.

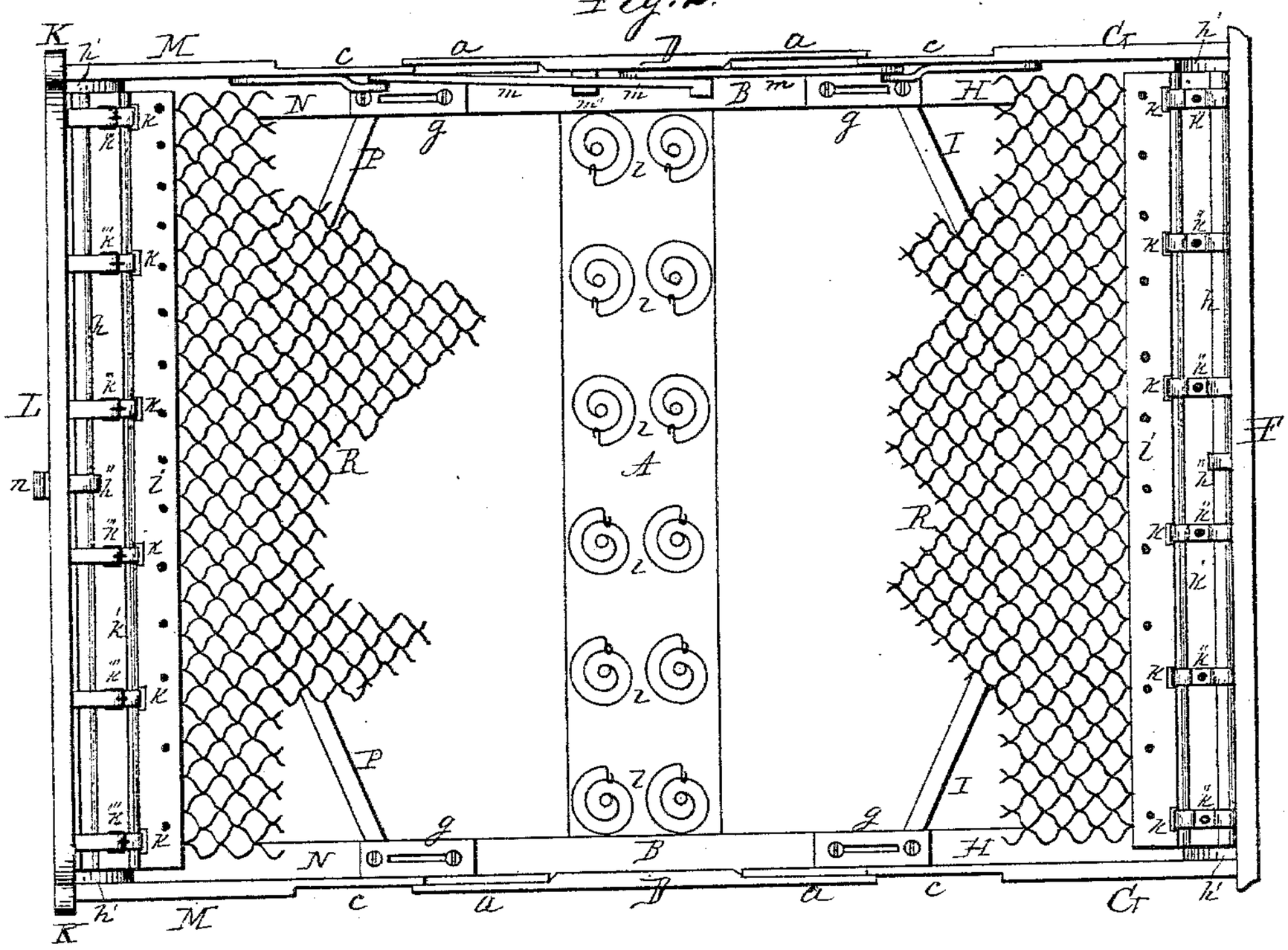
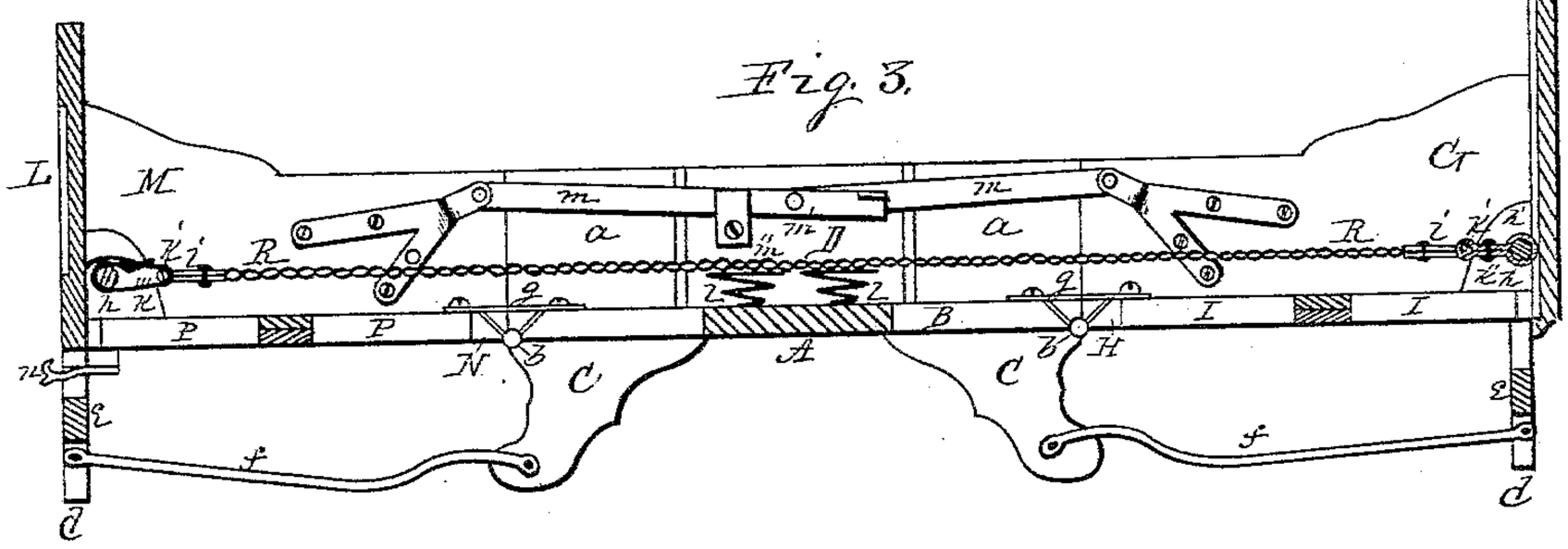


Fig. 3.



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4 Sheets—Sheet 3.

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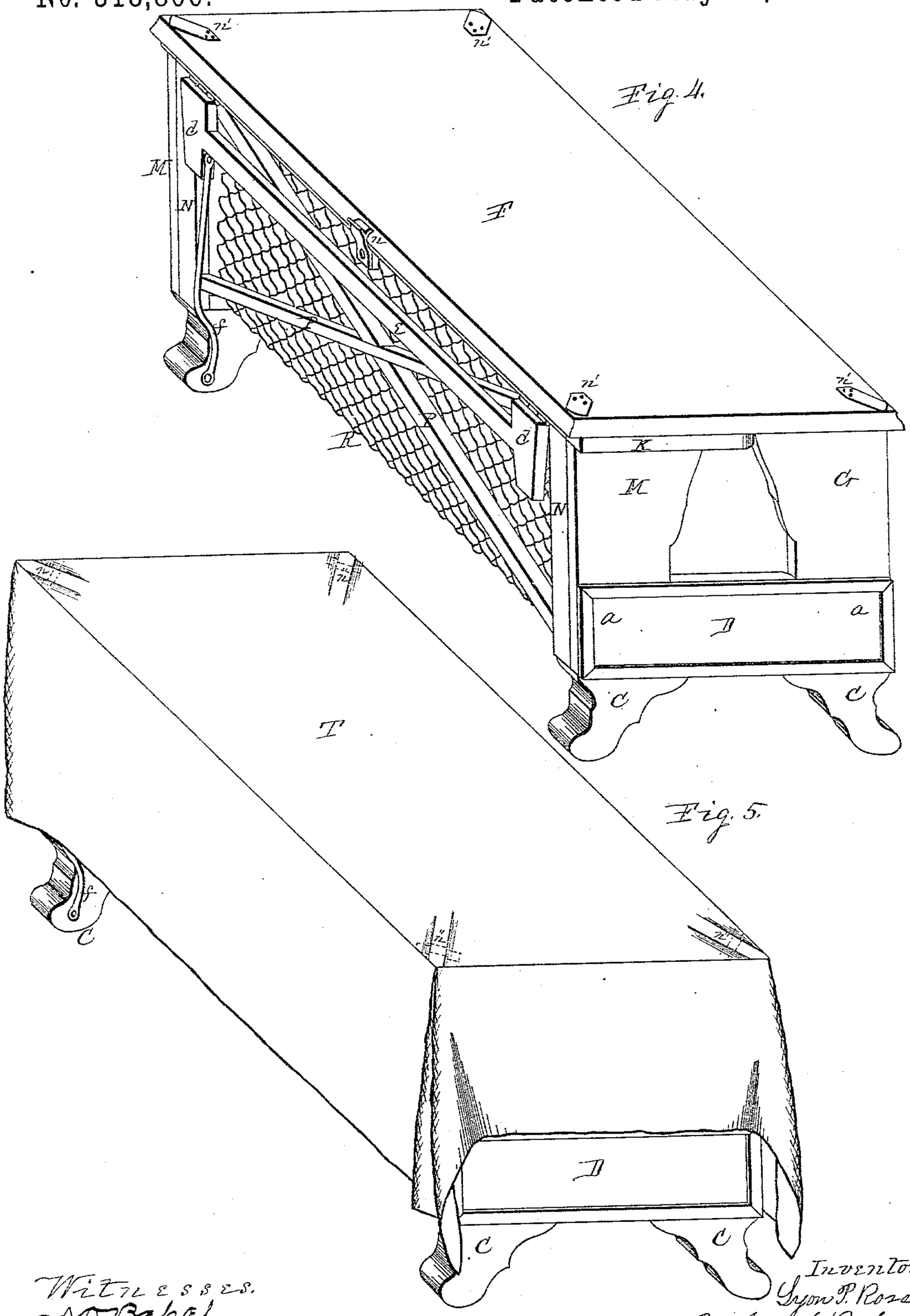

Fig. 4.

Fig. 5.

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FOLDING BED.

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Fig. 6.

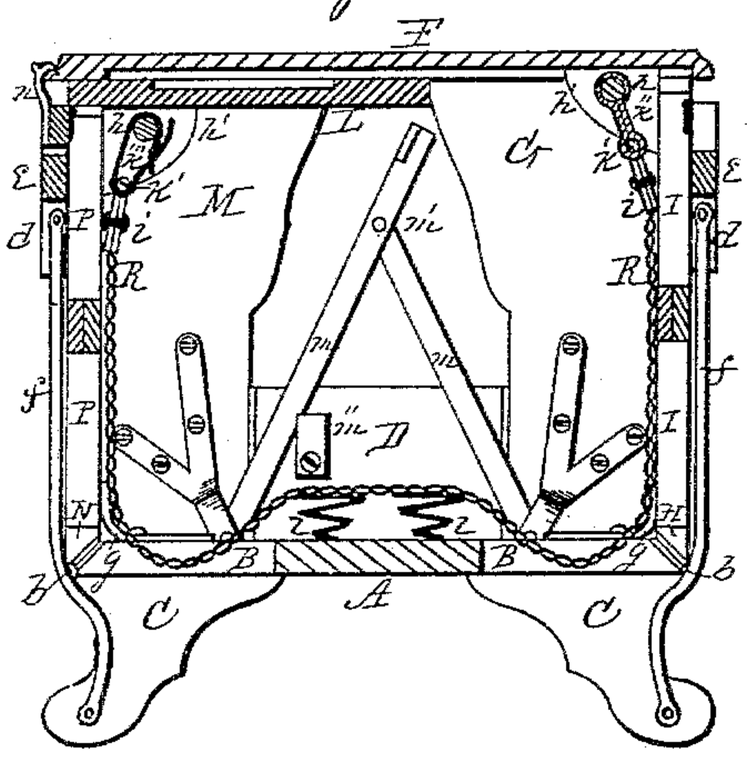


Fig. 8.

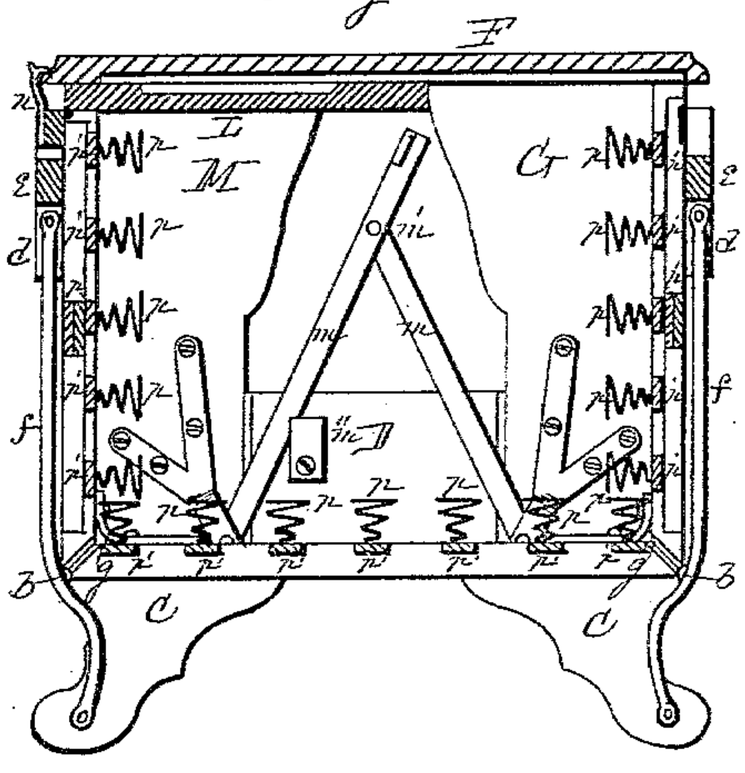
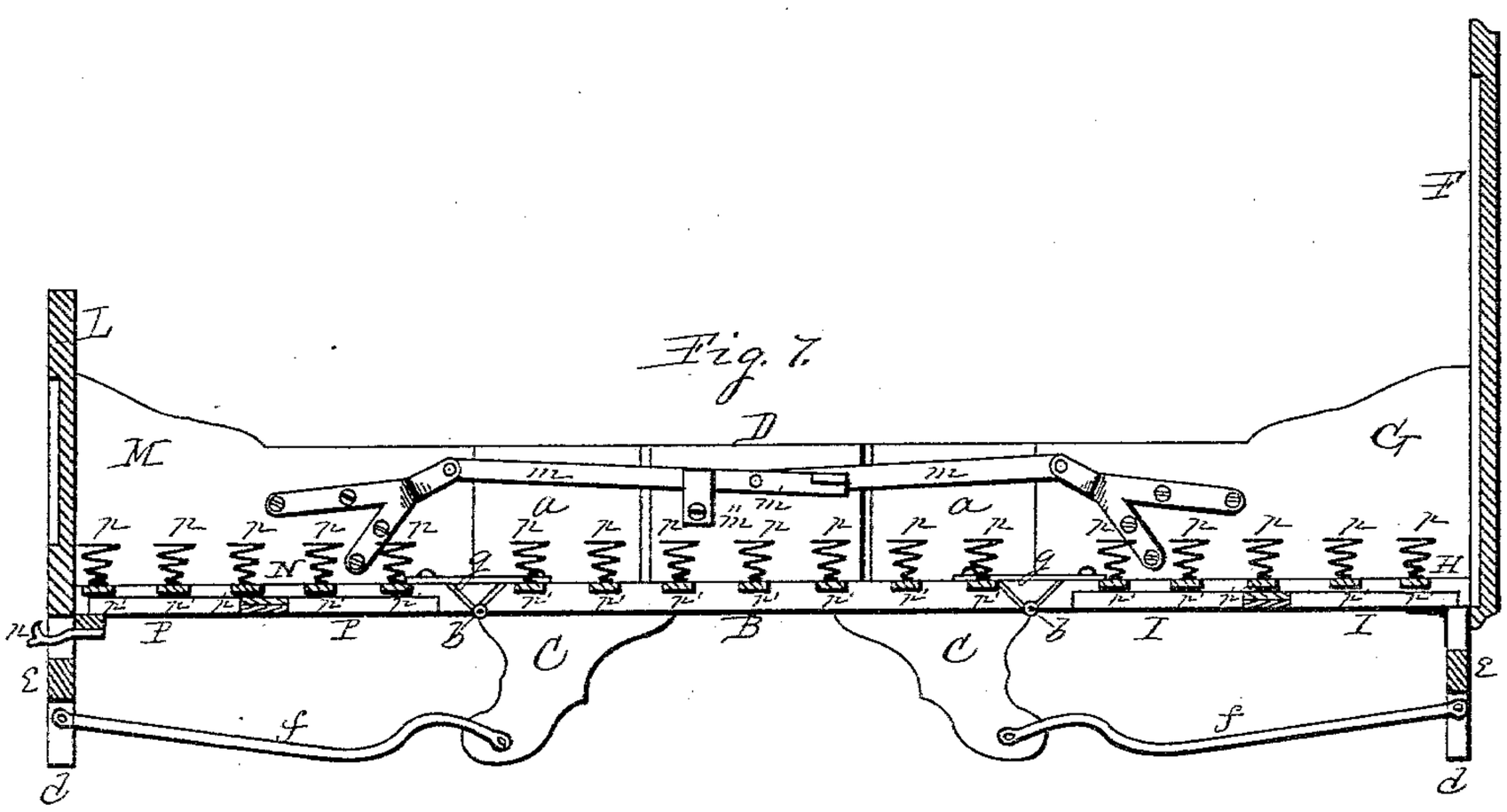


Fig. 7.



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UNITED STATES PATENT OFFICE.

LYON P. ROSS, OF ROCKFORD, ILLINOIS.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 318,806, dated May 26, 1885.

Application filed August 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, LYON P. ROSS, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Beds, of which the following is a specification.

This invention relates to that class of beds known as "folding beds," and its object is to produce a reliable folding bed at a small cost; and it consists in a novel construction and arrangement of the parts to produce a bed capable of folding endwise into rectangular form, resembling a table or desk. To this end I have designed and constructed the bed represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of a bed embodying my invention. Fig. 2 is a plan view, with part of the mattress broken away. Fig. 3 is a lengthwise vertical section. Fig. 4 is an isometrical representation of my improved bed folded. Fig. 5 is also an isometrical representation of my improved bed folded, with a covering-cloth in place thereon. Fig. 6 is a lengthwise central vertical section in its folded position. Fig. 7 is a lengthwise central vertical section of my improved bed constructed with spiral springs, and Fig. 8 is also a lengthwise central vertical section in its folded position.

As will readily be seen from an inspection of the drawings, my improved bed is produced in three sections—a central section, a head-section, and a foot-section. The main frame of the center section consists of a central transverse beam, A, having the central portion, B, of the side rails of the frame securely fixed to its ends. This frame is supported on feet C, fixed to the end portions and under face of the side rails, B.

At D is represented the central portion of the vertical side rail, produced from suitable material, and in width is about the same as bed-rails are usually constructed. The end portions of these side rails, D, are gained or reduced on their inner sides at *a* to about one-half their thickness. These central portions of the rails D have their lower edge portions fixed to the outer face of the rails B, from which they rise in a vertical position.

The head and foot end portions of my improved bed are substantially the same in construction, but differ in some of their dimensions. The head end portion consists of the head-board F, head end portion of the vertical side rails, G, and head end portion of the side rail, H, of the frame, all of which are suitably joined to each other by framing or otherwise, and the side rails are supported in their relative position with each other and with the head end by means of the brace-bars I, placed in X form, having their ends framed into or otherwise securely fixed to the side rails, H, of the frame. The foot end portion of my improved bed consists of the corner-posts K, foot-board L, vertical side rails M, and foot end portions of the side rails N of the frame, all of which are joined or fixed to each other in the same manner that like portions of the head end are joined, as hereinbefore described, and the side rails of the foot end portions are supported in their relative position with each other and with the foot-board by means of the X brace-bars P, having their ends framed or otherwise fixed to the side rails N of the frame. These end portions of the bed have a hinge-joint connection with the central portion by means of suitable hinges, *b*, fixed to the end portions of the side rails of the frame of the different sections in such a manner as to permit the end sections to fold upward and inward toward each other over the center section. The end portions, *c*, of the vertical side rails of these end sections are gained or reduced on their outer face to about one-half their thickness in such a manner as to pass within the gained portions *a* of the vertical side rails of the central section in folding, producing a lap-joint of these sections of the vertical side rails when folded. The relative length of these sections and the height of the foot and head boards are such that when folded the head-board overlaps the foot-board and forms the upper surface of the bed folded in table or desk form.

At *d* are represented feet joined in pairs by means of a bar, *e*, framed into the feet. These feet are hinged to the under face and outer end of the end sections in such a manner as to support the outer ends of the bed when in its horizontal position, and are capable of folding in a plane parallel with the lengthwise side rails of the bed. These hinged feet are connected with the fixed feet C of the center section by

means of connecting-rods *f*, having a pivotal connection of its ends with the hinged and fixed feet in such position thereon that when the bed is folded the hinged feet will be folded in a vertical position, as shown in Figs. 4, 6, and 8, and the unfolding of the bed will place and hold them in their vertical position, as shown in Figs. 1, 3, and 7.

At *g* is represented a plate of leather or other flexible material placed over the hinge-joint in the side rails of the frame, and are slotted lengthwise to permit of an endwise-sliding movement in its connection with the side rails in such a manner as to prevent the bed-clothes entering the joint, and not interfere with the free folding of the bed.

At *h* are represented rods or bars, in this instance of iron, extending across the bed at each end, having their ends supported in brackets *h'*, fixed in the corners of the bed. The center portions of these rods, at one or more places between their end fastenings, are supported in clasp-loops *h''*, fixed to the end boards of the bed.

At R is represented a woven-wire mattress, of the usual construction, having its ends securely fixed in metallic bindings *i*, folded to embrace the ends of the mattress, to which it is fixed by riveting or in other suitable manner. The folded edges of these metallic bindings are provided at proper intervals with openings *k* cut therein, and within their folded edges is placed a rod, *k'*, extending the length of the binding.

At *k''* are represented metallic or other suitable links, which embrace the rods of the mattress and bed at one end to fix the mattress to the bed.

At *k'''* are represented buckle-straps employed to embrace the rods of the mattress and bed at one end in such a manner that by means of the buckle greater or less tension may be given the mattress. The center portion of this mattress in this instance is supported on spiral springs *l*, fixed at proper intervals on the transverse bar A of the central section.

At *m* are represented toggle-jointed levers, having a hinged or pivotal connection of their outer ends with the inner ends of the vertical side rails of the end sections, near their upper edges. When the jointed center of these levers at *m'* is depressed below the plane of their pivotal connections with the side rails to rest on a support, *m''*, the end sections will be held in their horizontal position, and by this device any degree of tension within the strength of the parts may be given to the mattress. From this arrangement it will be seen that, if the levers at their center joint-connection, *m'*, are raised above the plane of their pivotal connection with the vertical side rails, the end sections will be free to be folded upward and inward in the positions shown in Figs. 4, 5, 6, and 8, in which position the toggle-jointed levers will be in the elevated position shown in the folded, Figs. 6 and 8.

At *n* is represented a spring-clasp fixed to the center portion of the under edge of the foot-board, having its free end of hook form to spring over the upper edge of the head-board when folded, operating to hold the parts in their closed position when folded in a manner to be disengaged by an outward pressure on its free hook end.

At *n'* is represented plate-spring catches, fixed to the several outer corners of the head-board in such a manner as to leave their outer ends free to receive a loop of tape, ribbon, or other suitable material (represented at *n''* in dotted lines) fixed to the under side of a suitable cloth or cover, T, (represented in place on the folded bed in Fig. 5,) to hold the cover in place when the bed is unfolded.

In the use of my improved folding bed it is designed to employ a hair, wool, or other suitable mattress, to be placed upon the woven-wire mattress, and to employ other clothes, including pillows, in the usual manner, all of which may remain in place in the folded bed.

In the foregoing I have described my improved folding bed employing a woven-wire mattress, to the use of which it is well adapted; but it is also capable of use with spiral springs, as represented in Figs. 7 and 8, in which the spiral springs *p* are supported upon transverse slats *p'*, having their ends supported in gains formed in the inner upper corner of the side rails, B, N, and H, of the frame.

My improved bed is also well adapted to be used as the ordinary slat-bed, for which purpose the spiral springs may be omitted. Its use, however, is not confined to these particular forms of spring bottoms or mattress, as it is capable of use with many other forms of mattress, and with slight mechanical changes in the bed and mattress perhaps nearly all varieties may be successfully employed in my improved folding bed.

In this instance I have represented my improved folding bed with but one set of toggle-jointed levers upon but one side of the bed, which in most cases will be found sufficient; but when required they may be employed on both sides of the bed substantially as shown and described in this instance on the one side.

This construction of a folding bed offers ample facilities for ventilation, having the under side of the mattress fully exposed and a large central opening by which the upper side of the mattress and the bed-clothing is exposed to the action of the air to insure complete ventilation or airing of the bedding.

I claim as my invention—

1. The combination, in a folding bed, of the central section provided with the vertical side pieces, the head and foot sections provided with corresponding side pieces pivoted to the ends of the sides of the central section by a lap-joint, the stop secured to the inner face of the central section, and the toggle-levers pivoted at their outer ends to the end sections, and one of said levers engaging said stop, substantially as set forth.

2. The combination, with the non-folding

central section provided with fixed supporting-legs, of a foot-section pivoted thereto by a lap-joint and provided with a foot-board having pivoted legs, as described, a head-section pivoted to the central section by a lap-joint and having a head-board attached thereto of sufficient height to overlap the foot-board when the bed is folded, and a clasp to connect the head and foot sections, substantially as set forth.

3. In a folding bed, the combination, with the overlapping head-board, of corner-clasps secured to the outer side of the head-board, substantially as set forth.

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Witnesses:
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A. O. BEHEL.