

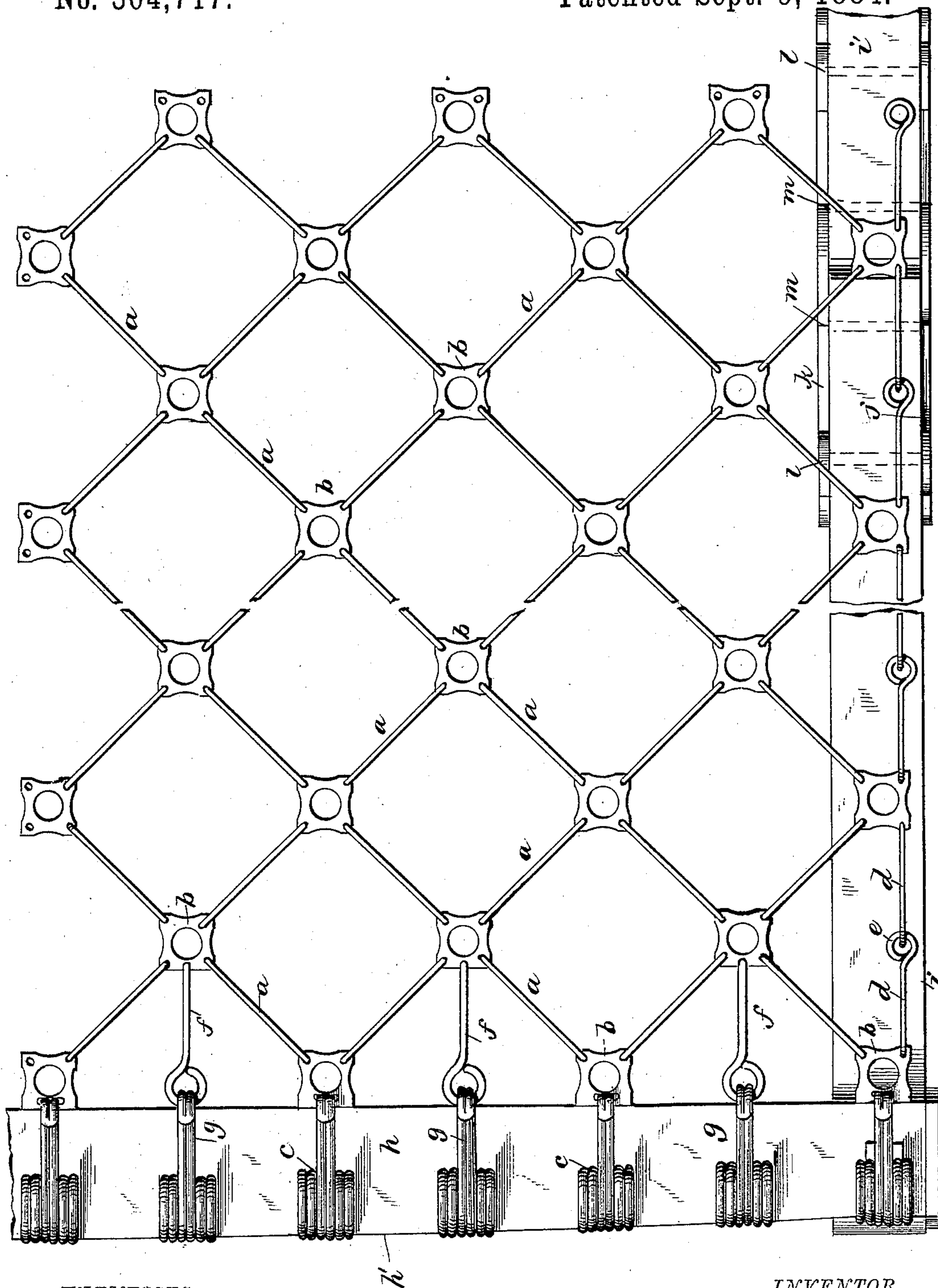
(No Model.)

2 Sheets—Sheet 1.

C. H. FITCH.
SPRING BED BOTTOM.

No. 304,717.

Patented Sept. 9, 1884.



WITNESSES

F. L. Ouraud,
Geom. Enckel.

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INVENTOR.

Calvin H. Fitch,
by Wm. V. Finckel Attorney.

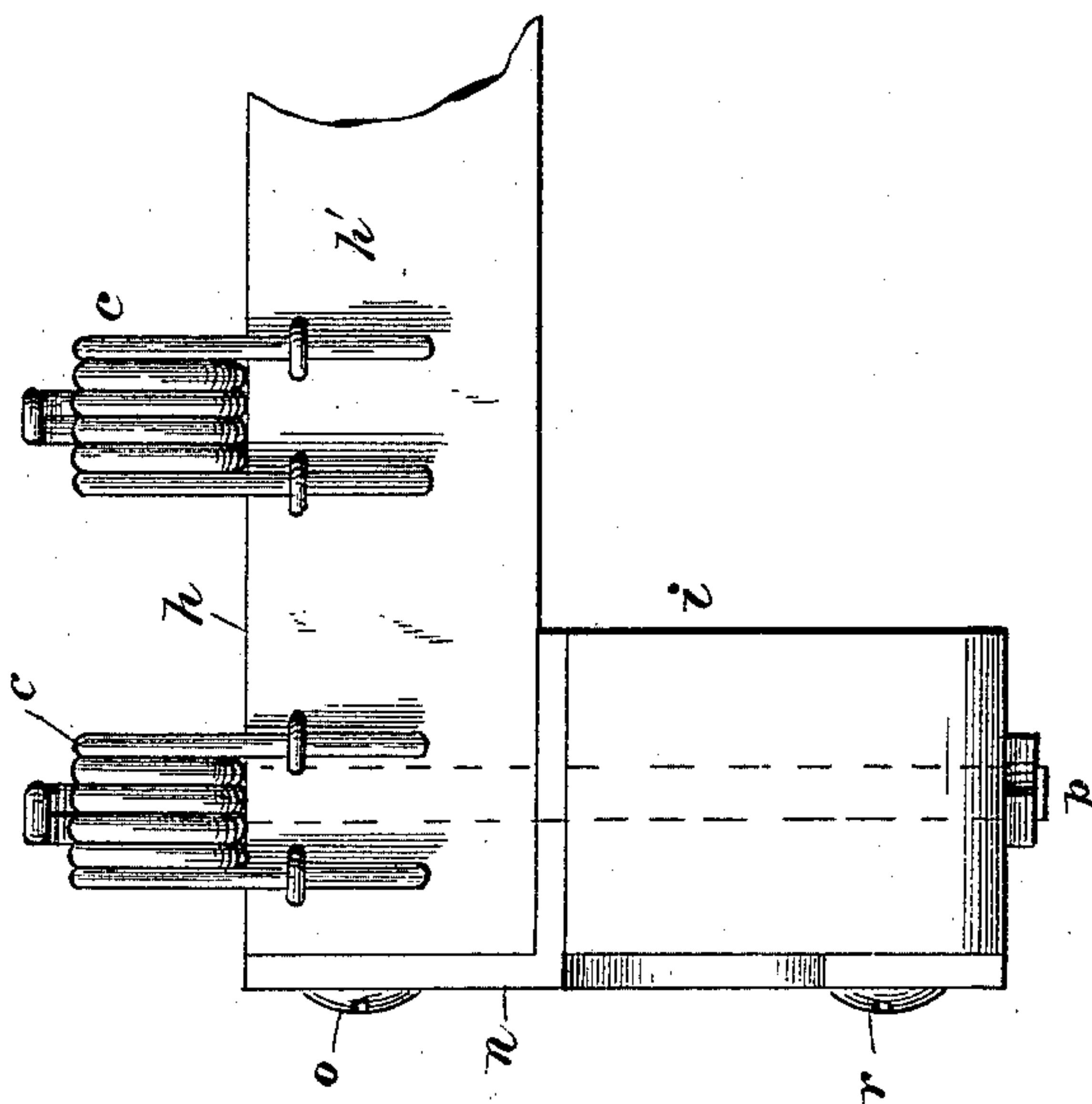
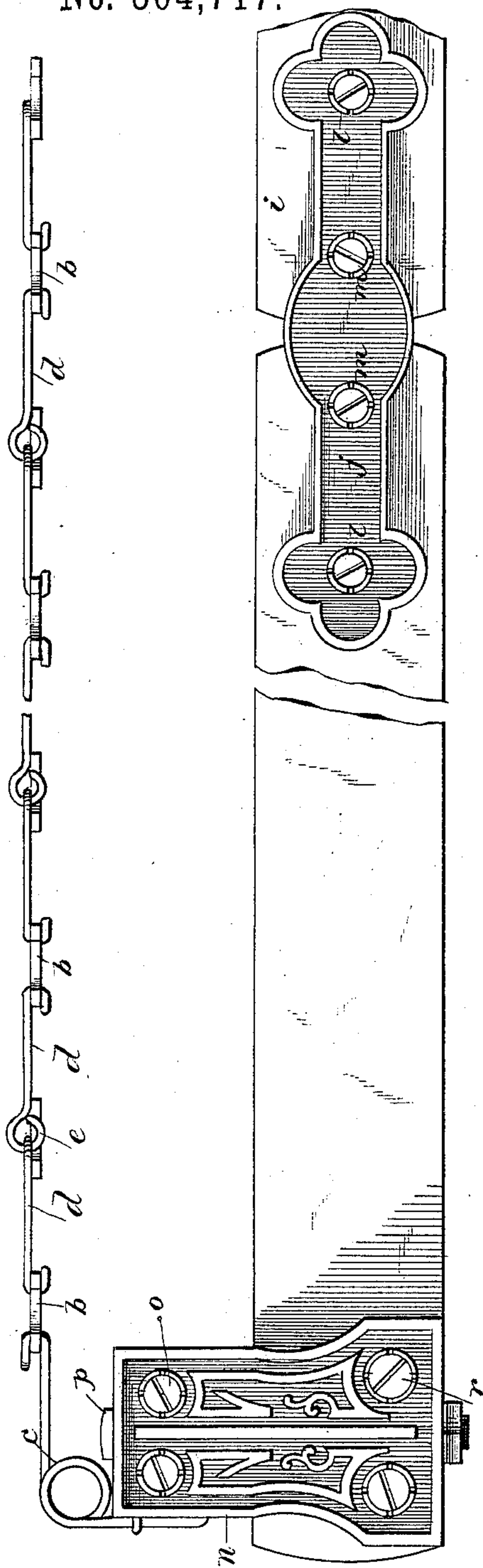
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2 Sheets—Sheet 2.

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SPRING BED BOTTOM.

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WITNESSES
F. L. Curran
Geo. M. Finckel
Fig. 2.

INVENTOR,
Calvin H. Fitch,
by Wm. A. Finckel
Attorney.

UNITED STATES PATENT OFFICE.

CALVIN H. FITCH, OF MIDDLETOWN SPRINGS, VERMONT, ASSIGNOR OF ONE-HALF TO BYRON S. FITCH, OF RICHMOND, VIRGINIA.

SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 304,717, dated September 9, 1884.

Application filed September 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, CALVIN H. FITCH, a citizen of the United States, residing at Middletown Springs, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Spring Bed-Bottoms, of which the following is a full, clear, and exact description.

This invention is in the nature of improvements in spring bed-bottoms, and the invention has special reference to the formation of that class of bed-bottoms composed of connected links secured by springs to the bedstead or a frame, the object of my improvements being to increase the comfortableness of such bottoms, to prevent their sagging, insure an equable distribution of the strain, and to provide an economical as well as readily operable and efficacious means for stretching the bottom in its frame to give to it the requisite tautness.

With this object in view the invention consists in the details of construction hereinafter specifically set forth and claimed.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view of sufficient of my bed-bottom to illustrate the invention. Fig. 2 is a side elevation thereof, and Fig. 3 is a detail in end elevation of the cross-rail fastening on a larger scale.

The bed-bottom proper is composed of wire links or hooks *a a*, of equal length, engaging rectangular eye-plates *b* at the four corners thereof, so as to form squares; the lines of links or hooks running diagonally to the frame. The bed-bottom terminates on its four sides in eye-plates, which at the head and foot engage spring *c* of the frame, and the longitudinal side eye-plates are connected by links *d*, jointed at *e*, in line with the intermediate transverse rows of eye-plates, so as to permit the movement of the edge of the bottom in the lines of said plates. The terminal rows of intermediate eye-plates at the head and foot are further engaged by links or hooks *f*, which are attached to springs *g*, like springs *c*, the series of links *f* being in row with the alternate longitudinal rows of eye-plates to

provide for direct longitudinal draft or strain. The eye-plates are staggered in straight rows or lines throughout the bottom, and thus give the alternate longitudinal and intermediate transverse rows. The links or hooks are of stout wire, bent at their ends to engage holes in the eye-plates, and said eye-plates may be malleable castings or of punched sheet or plate metal, or said links may have eyes to be engaged by hooks on the plate—an obvious equivalent.

The springs I employ are preferably such as covered by United States Patent No. 274,925, granted April 3, 1883; but, instead of attaching the springs by a forwardly-bent horizontal base to the cross-rails, as in that patent, I obtain better results and a stronger fastening by bending such base at right angles, or nearly so, to the hook end, and securing them vertically to the outer edge of the cross-rails. The cross-rails *h h* are curved on their outer faces *h' h'*, as shown, in order to counteract the tendency of the bed-bottom to sag in the middle—an evil experienced in all bed-bottoms of this class to me known, and which is entirely corrected by this construction of the end rails.

In order to economize in the construction of the side rails and to obtain a better means of stretching the bottom in its frame, I make each side rail of two pieces, *i i*, so that I can utilize shorter lengths of lumber and obviate the bowing sometimes experienced in this class of bed-bottoms, and I connect these rails on the inside and outside by straps *j k*, of metal, and bolts *l m*, passed transversely through them; and to provide for the lengthening of the bed-frame I make a series of holes either in the metal straps or preferably in the side-rails. When it is desired to stretch or strain the bottom, the bolts *j* on either side of the joint, and at both points on opposite sides of the bed, are removed, leaving the bolts *k* in position, and upon these bolts *k* the released end of the bed may be moved, as a lever upon its fulcrum, to bring the bottom out taut, the bolts *j* being then replaced.

The sockets *n* for the end rails are simply T-irons, to which the end rails are fastened by screws *o o*, and the end rails and sockets secured to the side rails by vertical bolts *p*, 100

passed through both, the sockets being additionally secured to the side rails, if desired, by screws *r r*.

The arrangement of the links and plates of my bed-bottom to form squares effects in practice a very largely-increased evenness and solidity of surface, and in no wise impairs the necessary yielding properties of the bed in the measure of comfort. The strain is both diagonal and longitudinal, and hence is uniformly distributed. The connection of the side edge eye-plates by links stiffens and sustains the bottom along those edges, and the making of these connections with joints permits all the requisite movement of the edges in lines coincident with the lines of movement of the intermediate portions of the bottom. The engagement of the springs by the eye-plates instead of by the links throughout, or, as heretofore, by specially-constructed links, is of great advantage in sustaining the bottom at those ends, and hence with my construction there is an increased preservation of the level of the bottom during use, the bottom being thus rendered more durable and capable of remaining longer in good shape.

In making up a bed-bottom of squares, as herein shown, there will be along the margin or edges more or less half-squares of *V* shape; but these are supported and closed along the sides by the jointed links and along the ends by the links *f* and springs *g*.

The making of the side rails in two pieces detachably hinged together enables the shipper to take the bed to pieces more readily and pack it in small compass, thereby reducing the cost of transportation.

What I claim is—

1. The combination of the eye-plates, connecting links or hooks arranged in squares and terminating at their margins in *V* shapes, the side lines of which squares and *V* shapes are diagonal to the points of support, jointed side

connecting - links, end links, supporting-springs, and a frame for receiving and sustaining the whole, substantially as shown and described. 45

2. The combination, in a bed-bottom, of the frame, the series of rows of staggered eye-plates, the links or hooks connecting such eye-plates, arranged in lines diagonal to the points of support, the jointed side links engaging eye-plates in intermediate transverse rows, the end hooks engaging eye-plates in alternate longitudinal rows, and the supporting-springs for sustaining the bottom by engagement with the end links and eye-plates, substantially as shown and described. 50 55

3. A bed-bottom frame consisting of end pieces and springs attached thereto, two-part or divided side rails connected with said end pieces and dividing the frame into two sections about centrally of its length, and hinging members uniting such sections, and consisting of the plates *j k*, applied on opposite sides of the two divided side rails at their meeting ends and connected to each other and connecting the said divided side rails by bolts *l m*, passed transversely through them, in combination with a flexible bed-bottom suspended on the springs in the frame, the said hinging plates and bolts, by proper adjustments of the bolts, substantially as set forth, admitting of the conversion of one end of the frame into a lever for tightening the bed-bottom in or on it, and also permitting the folding of the bed for compactness in stowing or transportation, all and severally substantially as herein shown and described. 60 65 70 75

In testimony whereof I have hereunto set my hand this 1st day of September, A. D. 1883. 80

CALVIN H. FITCH.

Witnesses:

E. F. KELLY,
GEO. B. MESSER.