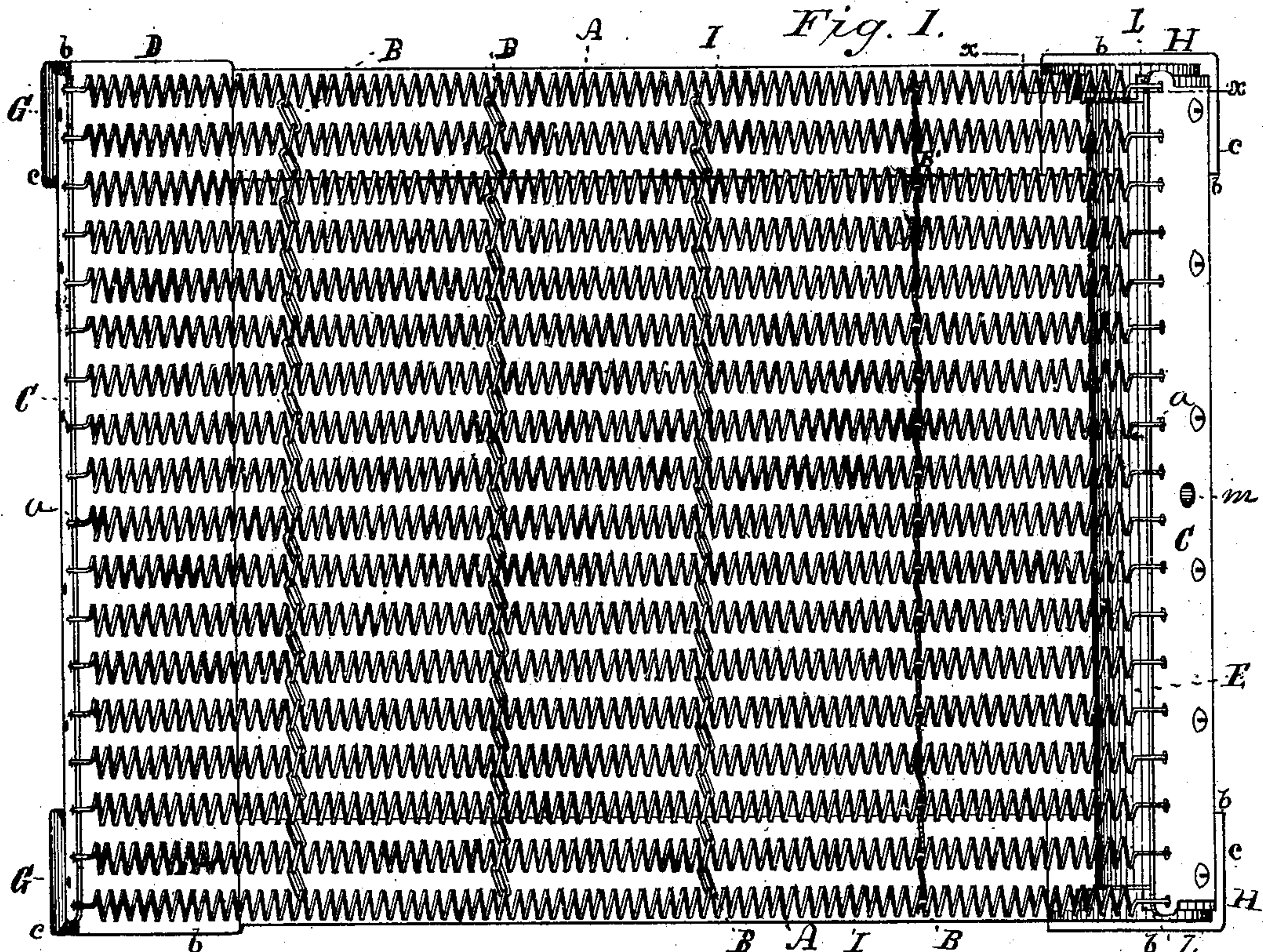


(Model.)

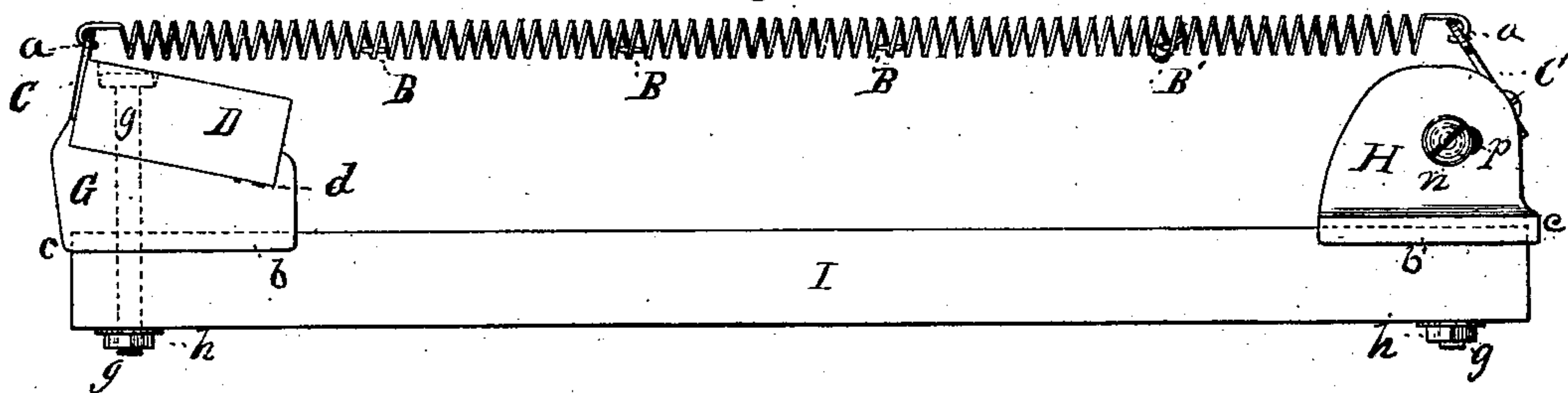
J. SHOREY.  
Bed Bottom.

**No. 243,317.**

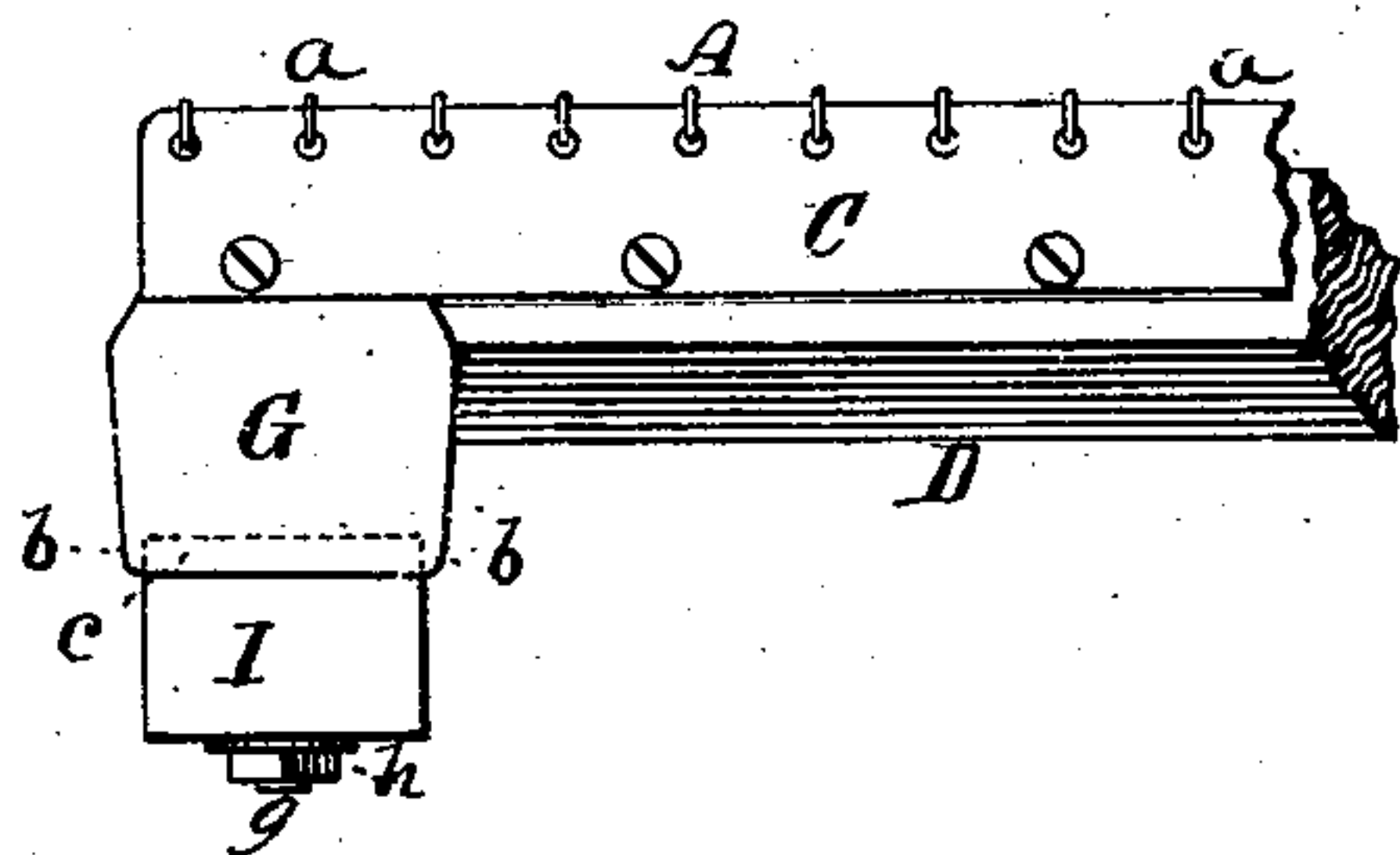
**Patented June 21, 1881.**



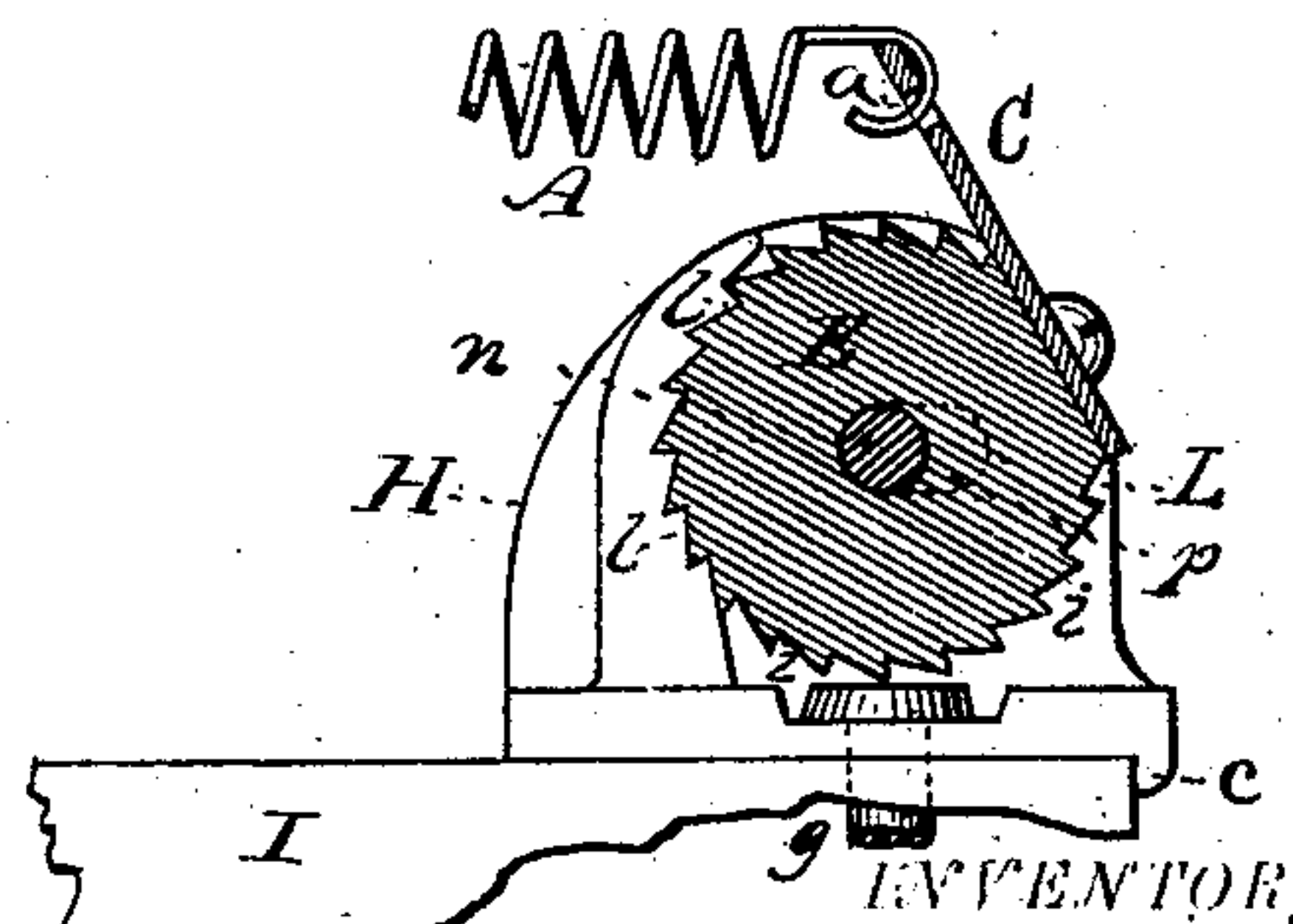
*Fig. 2.*



*Fig. 3.*



*Fig 4.*



## WITNESSES

J. C. Orr  
permanently ill

By His Attorney,

John Shovey,  
J. S. Brown.



# UNITED STATES PATENT OFFICE.

JOHN SHOREY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE SHOREY  
SPRING BED AND SHADE ROLLER COMPANY, OF SAME PLACE.

## BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 243,317, dated June 21, 1881.

Application filed December 6, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN SHOREY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented an Improved  
5 Bed-Bottom; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a top view of the bed-bottom;  
10 Fig. 2, a side view of the same; Fig. 3, a partial end view thereof; Fig. 4, a partial section in a plane indicated by the line *x x*, Fig. 1.

Like letters designate corresponding parts in all of the figures.

15 This invention is an improved elastic bed-bottom; and for the bottom proper I employ a series of parallel coiled springs, A A, extending from end to end of a suitable frame.

In practice I have found the following to be  
20 a proper construction of the springs, although I do not absolutely confine myself thereto. For a full-sized bed use, say, No. 15 steel wire, the coils being about one-half of an inch in diameter, and opened one-fourth of an inch apart,  
25 the springs to be made about eight inches shorter than the length of their reach when attached, and then to be stretched to their attachments, requiring for that purpose each a pulling force of, say, thirty pounds. To connect  
30 them with their attachments their end coils may be simply formed into hooks *a a*.

Although longitudinal coiled springs have been before used, there are difficulties and disadvantages in their use, unless overcome by  
35 the invention of suitable means effectual for that purpose. The principal difficulties in the way of their proper working are, first, their tendency to spread apart, and, second, when held in place by transverse stays, the tendency  
40 to draw down or out of place adjacent springs when a certain number of them are pressed downward by the person or persons lying upon them, producing thereby a tendency to roll  
45 toward the middle of the bed, and when two persons of different weights occupy the bed at the same time, causing the lighter to roll toward the heavier person. I overcome these objections by employing transversely-connecting links B B between adjacent coiled springs,  
50 substantially as shown in Figs. 1 and 2. These metallic links are not connected tightly with

and between the springs, but are slightly longer than necessary to make the connections, as indicated, sufficient to allow one, two, or more of the coiled springs to sag below the adjacent springs as far as required in  
55 their use without drawing any of the said adjacent springs downward or laterally out of their proper positions to any appreciable extent. Instead of metallic connecting-links  
60 thus applied, I may use as a modification of, and nearly equivalent thereto, transverse cords, as at B', Fig. 1, they being tied successively to the several coiled springs, and being a little loose between the adjacent springs, as  
65 indicated in the drawings, and to the same effect as the links arranged as above set forth. For a cheaper construction this serves nearly as well as the links, but is not so durable and  
70 reliable. Thus, while I effectually prevent the lateral displacement of the springs, one or more of them are perfectly free to sag or bend downward without affecting the other springs, being nearly independent of one another in  
75 their action.

The coiled springs are hooked into holes in the upper edge of a preferably metallic plate, C, attached to each end bar, D or E, of the bed-bottom frame. These plates are attached  
80 to the outer sides or edges of the respective end bars and project somewhat above the same, so that the springs will be entirely free from contact with the said end bars; and, besides, the end bars are inclined inward, as shown by  
85 the head-bar D, Figs. 2 and 3, so that in bending downward the springs still will never come in contact therewith; or if, as is sometimes preferable, a round or roller end bar is used, as shown by the foot-bar E in the drawings, the upward projection of the attaching-plate,  
90 in connection with the cylindrical form of the bar, produces a similar effect. By this construction I am enabled to extend the coiled springs substantially the entire length of the bed-bottom and of the inside of the bedstead  
95 in which the bed-bottom is placed, thereby securing a longer range of elasticity for the same, and leaving no unoccupied space at the ends thereof.

The end bars, D E, of the frame are mounted  
100 in corner-irons G G H H, of peculiar construction, and arranged in a peculiar manner. Each



corner-iron is formed with side flanges, *b b*, and one end flange, *c*, extending below the bottom thereof, so as to embrace the sides and end of the side bar or rail, *I*, of the bed-bottom frame, on which it is secured. If flat inwardly-inclined end bars, as *D*, are used, then an oblique seat, *d*, is used to hold each end of the said bars, as shown in Fig. 2; but if a roller or cylindrical form of end bar is used, as *E*, then a proper concave or segmental curved socket, *f*, is used, as seen in Figs. 2 and 4. A bolt, *g*, is inserted down through the bar, the corner-iron, and the rail, when a flat end bar is used, and secured by a nut, *h*, under the rail, thereby avoiding the use of screws, which are not so reliable as bolts. If a roller end bar is used then the bolt *g* only extends down through the corner-iron and rail. The flanges *b b* hold the corner-iron secure and free from side turning and the flange *c* from end-thrust.

Though generally flat or square bars may be put at both ends of the bed-bottom, the coiled springs, when first attached by stretching, being ordinarily sufficiently strong without further straining, yet there are some cases and some uses when it is desirable to vary or increase the force of the springs. For this purpose the roller or cylindrical bar *E* is employed. Upon the ends of this roller I secure short ratchet cylinders or disks *L L*, Figs. 1 and 4, with ratchet-teeth *i i* in their peripheries, and in the inner concave of the corner-irons *H H* I form corresponding counter ratchet-teeth *l l*, into which the ratchet-disks fit, tooth by tooth, and lock therein when the two parts are brought together. The force of the coiled springs drawing on the roller keeps it securely locked in the concaves. A lever or handle inserted into a hole, *m*, in the roller serves as a means of turning the same and stretching the springs more. To allow the roller a sufficient lateral movement to couple with and uncouple from the ratchet concaves, the journals or axes *n n* of the roller are mounted in oblong bearings or

slots *p p* in the corner-irons, as shown in Fig. 2. For simplicity and cheapness I use large screws for the roller-journals, as represented, the heads thereof, outside of the bearings, serving to prevent any spreading of the frame, or any headed journals may be used.

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

1. In a bed-bottom, the combination of the series of longitudinal coiled springs *A A* and the series of transverse loose connecting-links *B B*, arranged in lines opposite to one another, substantially as and for the purpose herein specified.

2. The end bars, *D*, provided with upwardly-projecting attaching plates or flanges *C* at their outer upper edges, in combination with the coiled springs *A A*, whereby the latter are held above the bars and are allowed to be stretched the full length of the bed-bottom, substantially as and for the purpose herein specified.

3. The end bars, *D*, having their upper surfaces inwardly inclined, in combination with the springs *A A*, attached at the outer upper edges thereof, substantially as and for the purpose herein specified.

4. The combination of the corner-irons *G G*, having flanges to embrace both the sides and ends of the rails, the end bar, *D*, situated in open flanged seats on the top of the said corner-irons, and bolts *g g*, extending through the bar, the corner-irons, and the rails, substantially as and for the purpose herein specified.

5. In combination with the roller or end bar *E* and its ratchet-teeth *i i*, the corner-irons *H H*, provided with ratchet-concaves *l l* and oblong bearings *p p*, substantially as and for the purpose herein specified.

The foregoing specification signed by me this 1st day of December, 1880.

JOHN SHOREY.

Witnesses:

ALBERT M. MOORE,  
HARLAN P. YOUNG.