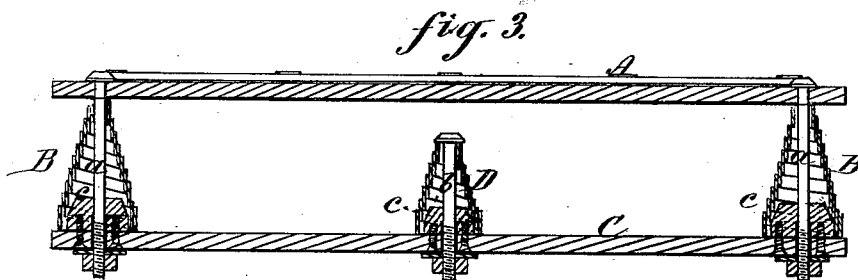
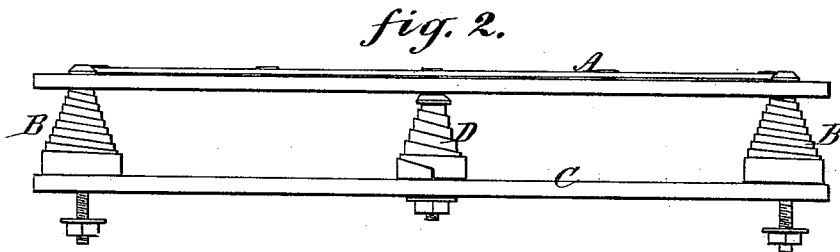
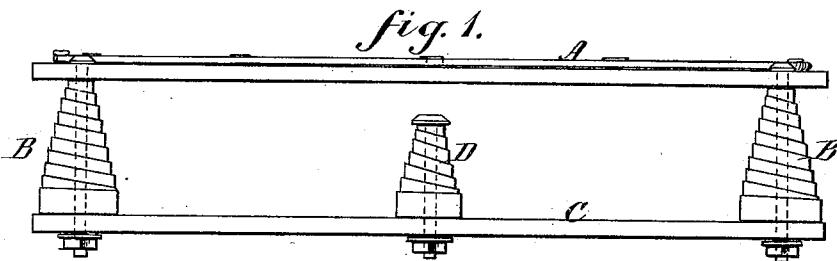


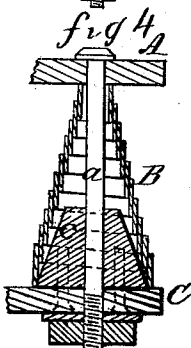
L. BIRK.
BED-BOTTOM.

No. 179,257.

Patented June 27, 1876.



Witnesses:
Wm. Wagner
J. H. Rutherford



Inventor:
Lewis Birk
By Johnson & Johnson
Attorneys

UNITED STATES PATENT OFFICE.

LEWIS BIRK, OF CANAJOHARIE, NEW YORK, ASSIGNOR OF ONE-HALF HIS
RIGHT TO GEORGE D. GEBAUER, OF SAME PLACE.

IMPROVEMENT IN BED-BOTTOMS.

Specification forming part of Letters Patent No. **179,257**, dated June 27, 1876; application filed
March 8, 1876.

To all whom it may concern:

Be it known that I, LEWIS BIRK, of Canajoharie, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Spring Bed-Bottoms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My improved bed-bottom is designed to afford increased resistance to an increase of the weight, and the arrangement of the springs is designed for that purpose, the prime supports for the bed-bottom being corner volute springs, and with these intermediate volute springs of a height at least one-third less than the corner springs are used, and only come in spring resistance when additional weight is carried by the bed. These springs rest upon a base-frame, and are secured in place by loose rods passing through them, and by which the bed-bottom and the base-frame are connected. The top coils of the volute springs embrace these rods snugly, and are thereby held from twisting out of line at the top. As these springs are of greater diameter at their base, to allow their coils to fold one within the other when compressed, they would be liable to shift from a vertical central line and cause the spring to stand crooked and on one edge at its base, and hence become jammed when compressed. To avoid this, I combine with the volute spring and its central confining-rod a base-retainer, through which the confining-rod passes, and which, being concentric with the lower fold of the spring, forms an interior side bearing and support for the largest end of the volute and braces, and keeps it in position concentric with the upper end, so that the compression of all the springs will be free and without liability to be injured or broken, as would be the case without the concentric base-retainer, to preserve the vertical bearing positions of these springs. Especially are the central bracing base-retainers of advantage with the intermediate springs, as these are

supported in position by free headed rods, and would thereby be liable to get out of central position, and be crushed by the bed-bottom striking upon the free head of the holding-rod. These intermediate springs act in conjunction with the corner-springs, and are designed only to support the increased weight of two persons, whereby a more uniform spring bed-bottom is obtained, than when all the springs are arranged to act at once.

In the accompanying drawings, Figure 1 represents a side view of my improved bed-bottom, with the springs at rest; Fig. 2, a similar view, with all the springs in play to resist a greater weight; and Fig. 3, a section through the line of volute springs, showing the base concentric retainers in connection with the central holding-rods, by which the base of the springs are kept in line and braced at the enlarged base coils.

The sacking bottom A, or bottom proper, is supported at its four corners by volute springs B, confined in position by rods *a*, which pass through said springs and through holes in the bed-bottom frame A, and the base spring-supporting frame C, coincident therewith, or with the bedstead-frame itself. The bases of the springs B rest upon this frame C, while they yield to the pressure from the frame A above. Intermediately between these corner-springs B, and upon the side bars of the frame C, are volute springs D, of less height by about one-third than the corner-springs, and they are confined vertically by loose rods *b*, which, however, only pass through the lower frame, and their length does not exceed the height of the springs which surround them, so that the pressure of the bed-frame is received directly upon the heads of these bolts.

The upper coils of the volute springs fit quite close around the bolts *a* *b*, and are thus held from twisting out of line; but as the base-coils are of increased diameter, they would be liable to shift out of line and bear only at one side of the rod, and the spring thereby becomes jammed when compressed, and stand oblique, so that it would be comparatively useless. This I avoid by combining with the base of the spring and the central holding-rods *a* *b*, an interior concentric retaining-core,

c, held in place upon the base-frame C by the rod which passes through it, and forming a bearing-support against the inner surface of the base-coil, so that the spring cannot move out of center with the rod, while both the spring and the rod are braced laterally and rendered more secure and durable.

The spring-retaining cores *c* are of such height as not to interfere with the action of the springs, and they may be made slightly tapering. They are fastened to the base-frame C, and thereby serve the additional advantage of preventing the frame splitting where the rods pass through it.

I may use one or more of the short springs D at proper intervals, and at the ends as well as at the sides. I find, however, in practice, that the two free springs D, one upon each side of the bed-bottom, sufficiently answer the purpose, which is to accommodate different weights without destroying the springy resistance, so much desired. The rods for con-

fining the springs are provided with screw-nuts, for holding them in place.

I claim—

1. In a spring bed-bottom, the combination of the corner volute spring B, supported by rods *a*, and the intermediate short springs D, held by loose rods *b*, as described, for the purpose of compensating for different weights and still preserving the desired springy resistance, as set forth.

2. The combination, with the volute springs, the central connecting-rods, and the base-frame C, of the interior supporting and bracing cores *c*, for the base-coils of said springs, as described.

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

LEWIS BIRK.

Witnesses:

ABM. NELLIS,
GEORGE SWARTS.