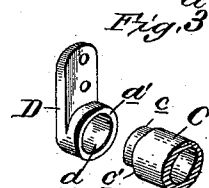
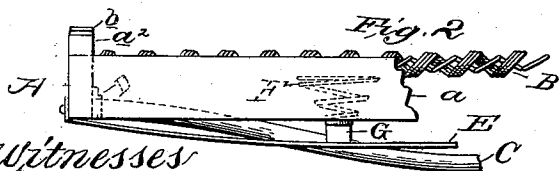
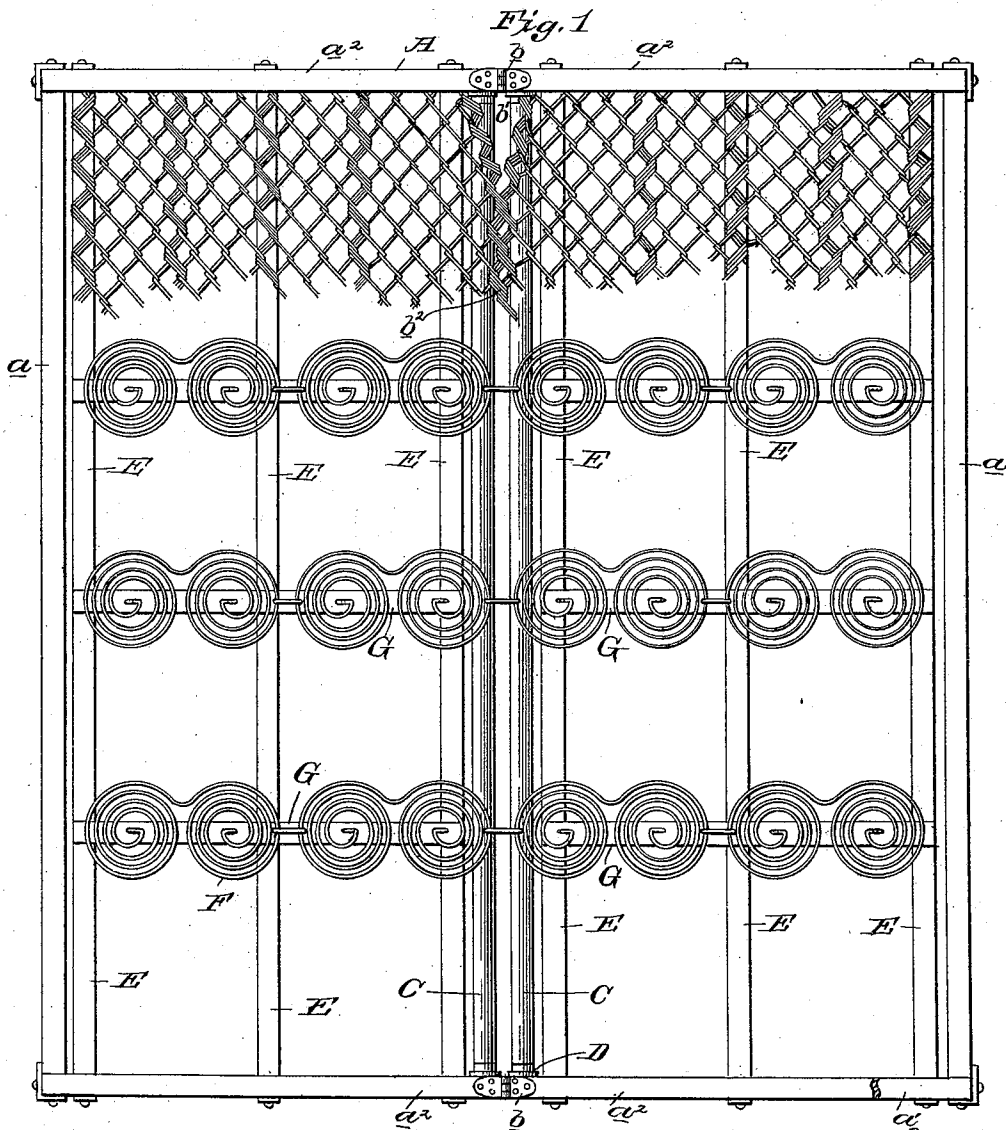


(No Model.)

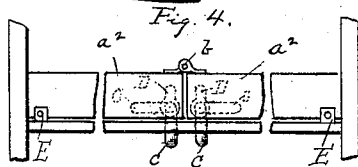
J. C. HOLDS.
FOLDING SPRING BED BOTTOM.

No. 466,305.

Patented Dec. 29, 1891.



Witnesses
A. P. Cornwall
G. M. Nichols



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UNITED STATES PATENT OFFICE.

JOHN C. HOLDS, OF BATTLE CREEK, MICHIGAN, ASSIGNOR OF TWO-THIRDS
TO DARWIN D. BUCK AND JOSEPH G. HOYT, OF SAME PLACE.

FOLDING SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 466,305, dated December 29, 1891.

Application filed December 27, 1890. Serial No. 375,928. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HOLDS, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Folding Spring Bed-Bottoms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has relation to folding spring bed-bottoms; and it consists in certain peculiarities in the construction, arrangement, and combination of the several parts thereof, substantially as hereinafter described, and particularly pointed out in the subjoined claim.

The objects of the invention are, first, to simplify the construction and increase the strength and durability of that class of folding spring bed-bottoms in which the fabric is supported on springs which themselves have a non-rigid support; second, to overcome the objectionable feature of sagging incident to all spring bed-bottoms of that class in which a normal convexity or crowning upward of the fabric is relied on to give sufficient play to the same.

In short, the object of my invention is to provide a spring bed-bottom which will possess all the advantages of both the non-folding and folding with the disadvantages of neither, and which will also possess certain other advantages not found in either the folding or non-folding bed-bottoms.

In the accompanying drawings, illustrating my invention, Figure 1 is a plan view of my improved bed-bottom, with a portion of the wire fabric thereof removed to show the under parts. Fig. 2 is an enlarged view of a portion thereof looking at the side, with certain parts shown in dotted lines and Fig. 3 is a detail view of one end of one of the brace-rods and the bracket for supporting the same. Fig. 4 is an end view of the bedstead with the bottom resting on the slat.

The same letters of reference are used to designate the same parts in the several figures.

A designates the main frame of the bed-bottom, and is formed of the longitudinal bars *a*, located solely at the sides thereof, the transversely-divided end bars *a'*, the supplemental transversely-divided strips *a²*, secured to the tops of said bars *a'* and joined by hinges, whereby one side of the device will fold over onto the other, and the inner longitudinal brace-rods *C*, hereinafter described.

B designates the elastic fabric, the ends of which are confined between the bars *a'* and strips *a²*, whereby they are protected from injury in folding the bed-bottom. This fabric *B* is preferably made of woven wire, but instead of being divided longitudinally and having the inner side of each of its parts secured to a portion of the main frame or the ends thereof connected by longitudinal strips which do not form a part of the main frame, it is formed in a continuous piece, which materially lessens the cost of the device, increases the usefulness of the fabric, and offers no breaks and dangerous obstructions, such as exist with the employment of longitudinally-divided fabrics. At its ends contiguous to the hinges *b* the fabric is formed with openings, as shown at *b'*, bounded on either side by a plurality of closely-located strands, which at the inner ends of the removed portions of the fabric are interwoven, those on one side with those on the other, and continues thence longitudinally of the fabric, as shown at *b²*, so that the inner ends of said removed portions are connected by a series of closely-located interwoven strands, (instead of by but two strands,) which are located directly at the point over which the bed-bottom folds, whereby the fabric is materially strengthened at this point, while the removed portions thereof act to prevent it from impeding the free folding of the bed-bottom, and also prevents the exertion of any strain or pulling on the ends of the fabric in folding the bed-bottom. The fabric at its sides and at suitable or desirable places between the same and its center is also formed with the series of closely-located strands, for the purpose of adding to its strength.

On reference to Fig. 1 it will be observed that instead of longitudinal wooden strips *I* have located at the center of the frame, on either side of the hinges *b*, longitudinal me-

tallic brace-rods C, which for lightness are preferably tube form, having reduced non-threaded ends *c* and offsets *c'*, said reduced ends being loosely received by openings *d*,
 5 formed in the lower ends of brackets D, which are secured to the inner sides of the transverse bars *a'*, adjacent to the points of division thereof, and the shoulders *c'* abut against corresponding shoulders *d'*, formed on said
 10 bracket and surrounding the mouth of said opening. The brackets or plates D are thick enough to permit of the ends of the brace-rods C being seated on them without having to extend the plates below or to secure them
 15 to the lower edges of the end bars *a*². In this manner the entire strain or end-thrust of the rods against the plates is taken up or supported by the flat surface of the end bar, and there is no strain upon the screws which secure the plates to the end bars, whereas if the
 20 plates were secured to the lower sides of the end bars the entire strain of the rods against the brackets or plates would come against the screw which holds the plate to the end bar, and consequently is not as strong as where
 25 the entire plate is supported between the end of the brace-rod and the inner surface of the end bar. The ends of these bars C are substantially level or parallel with the bed-bottom, as shown in dotted lines in Fig. 2, so
 30 that they provide rests for the bed-bottom on the end slats of the bedstead, and said bars between their ends are depressed or curved downward to afford room for full play of the
 35 fabric without contact therewith when in use.

When constructed as above described, the bed-bottom can be placed within the ordinary bedstead with its ends resting upon the ordinary
 40 slats of the bed, and there will be no need of any props or other devices to keep it from accidentally folding together, as would be the case if the central portion of the end pieces did not rest directly upon the bed-slats. The loose joint between the bar or rod
 45 C and the bracket D permits of the torsional or twisting movement of the end pieces of the bed-bottom when the frame is loaded or unloaded without the liability of breaking or straining the end of the rod, as is liable to
 50 happen when the end of the rod is passed through the bracket and abuts against a lug or stop. It also permits of each of the rods C being turned or rotated upon its axis so as to be turned down flush with the bottom of
 55 the frame when the frame is folded for transportation.

Extending longitudinally of the bed-bottom between the rigid bars C and the end bars *a* thereof, and suitably secured at their ends to the end pieces *a'*, are flexible stringers E, and
 60 interposed between said stringers and the elastic fabric are inverted conical springs F, the lower or small ends of which are secured to transverse strips G, which rest on said

stringers, and the upper or large ends of 65 which are in contact with the under side of the elastic fabric.

The construction of the frame—that is to say, with the bars C located at opposite sides of the center thereof and having the depressed 70 portions, the continuous fabric, and the stringers and coil-springs located as described—is of great importance, as the bed-bottom thus constructed possesses the greatest amount of elasticity, and at the same time said fabric 75 may be flat throughout its entire surface instead of crowning upward, as has heretofore been found necessary in similar bed-bottoms, in order that it may have sufficient play, and the objectionable feature of sagging heretofore 80 inseparably connected with those bed-bottoms having upwardly-curved or crowning fabrics is obviated.

I do not claim, broadly, a spring bed-bottom having longitudinal brace rods or bars 85 secured at their ends to the frame. Neither do I claim a spring bed-bottom in which the fabric is supported on springs which themselves have a non-rigid support; nor a continuous woven-wire fabric for folding spring 90 bed-bottoms having openings at its ends to permit of its being folded with the frame, since I am aware that, broadly considered, such constructions are not new.

Having now described my invention, what 95 I believe to be new, and desire to secure by Letters Patent, and what I therefore claim, is—

In a folding bed-bottom, the combination, with the rigid side pieces, of sectional end 100 pieces hinged together at the center, the lower surfaces of which are even with the bottom of the side pieces, whereby they may be supported their entire length upon the bed-slat and the liability of the movement at the 105 hinges be thereby prevented, a downwardly-bent brace-rod on each side of the hinge, each end of which brace-rod is straight and provided with a shoulder, a plate or bracket on the inner face of each end bar adjacent to 110 the hinge and between the bar and the end of the brace-rod, whereby the strain or end-thrust of the rod against the plate is taken up or supported by the inner face of the end bar, the plate being provided with a socket 115 in which the end of the rod is supported and which permits of the rod being rotated in the socket and of the plate being moved by the torsional movement of the end bar independently of the movement of the rod, and an elastic 120 fabric secured to the tops of the end pieces of the frame, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN C. HOLDS.

Witnesses:

LAMONT FOGG,
 MICHAEL NEALE.