

No. 745,345.

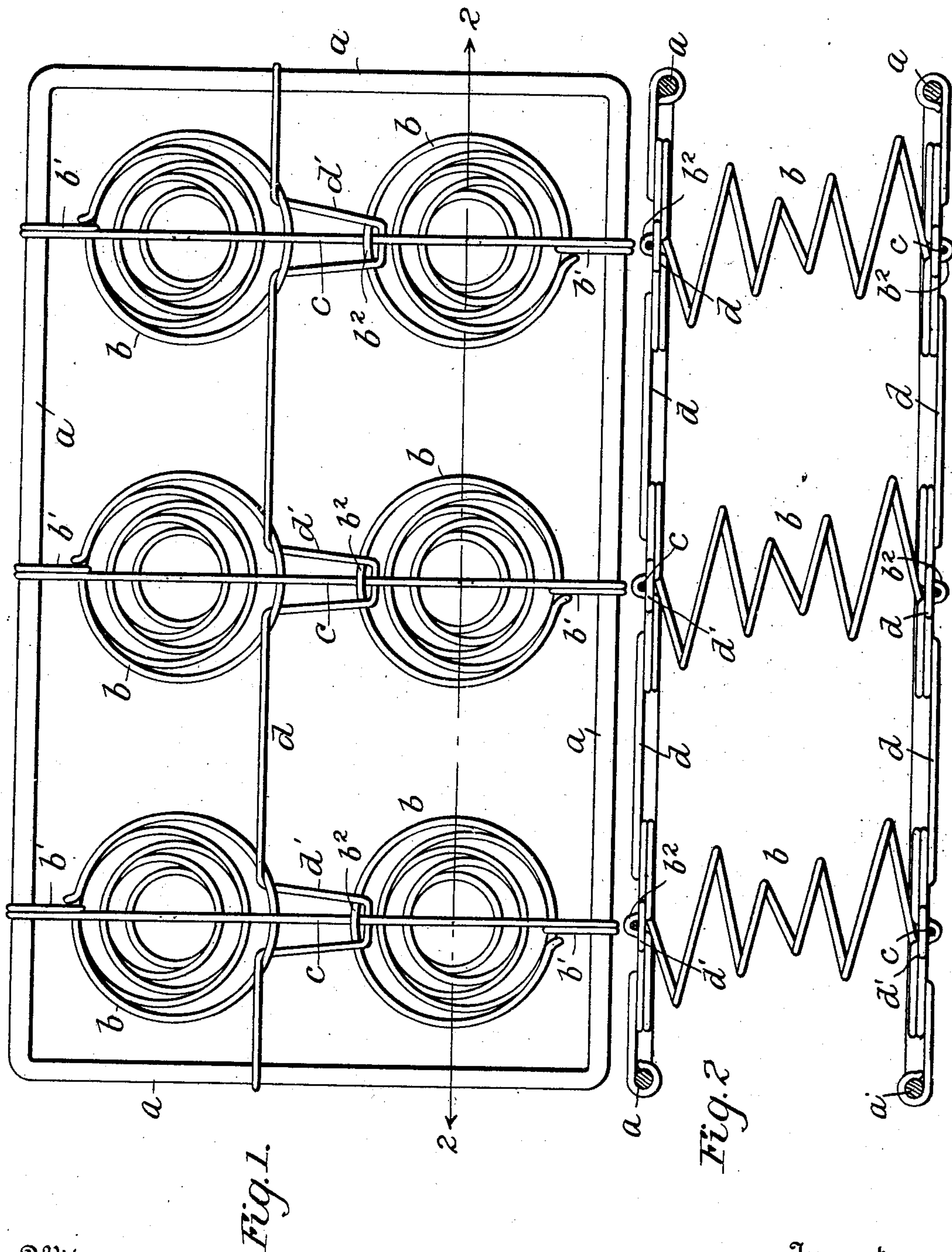
PATENTED DEC. 1, 1903.

I. H. HAAS & J. W. CROW.
SPRING BED.

APPLICATION FILED JULY 26, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
J. J. Hinkel
E. Hammer

Inventors
Isaac H. Haas
John W. Crow
By *Forster & Freeman*
Attorneys

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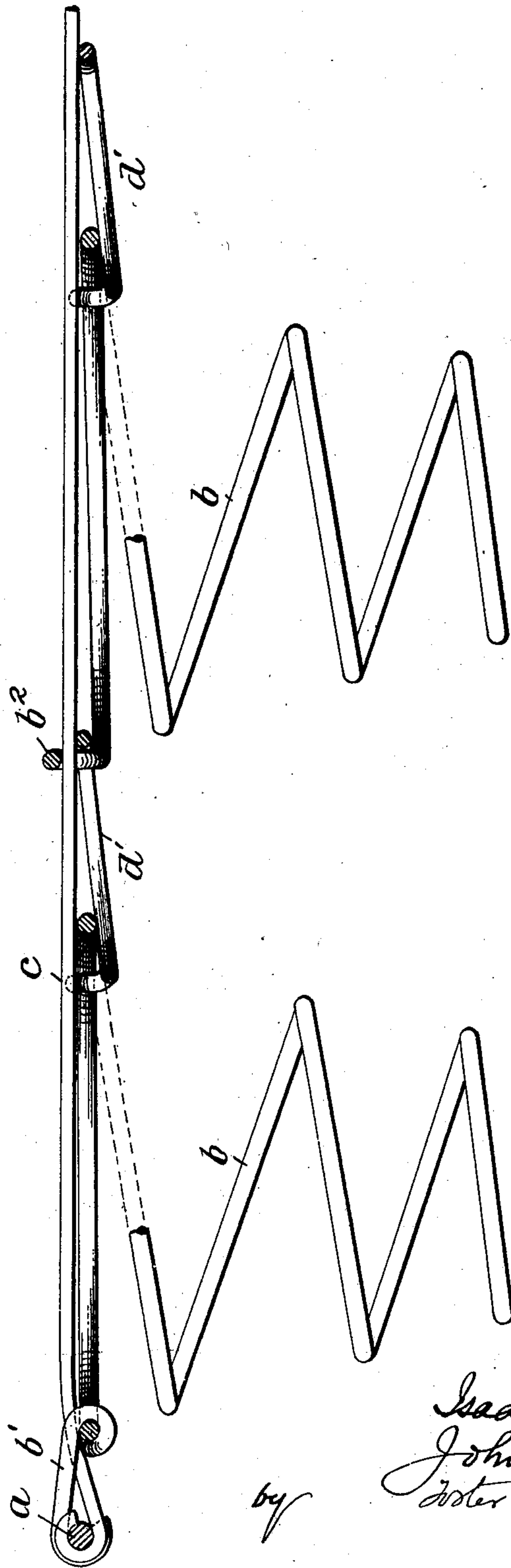
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2 SHEETS—SHEET 2.

Fig. 3.



Witnesses
J. G. Stuckel
H. M. Gillman, Jr.

by

Inventors
Isaac H. Haas
John W. Crow
Robert Truman Atton
Attorneys

UNITED STATES PATENT OFFICE.

ISAAC H. HAAS AND JOHN W. CROW, OF ATLANTA, GEORGIA.

SPRING-BED.

SPECIFICATION forming part of Letters Patent No. 745,345, dated December 1, 1903.

Application filed July 26, 1902. Serial No. 117,193. (No model.)

To all whom it may concern:

Be it known that we, ISAAC H. HAAS and JOHN W. CROW, citizens of the United States of America, and residents of Atlanta, in the county of Fulton and State of Georgia, have invented a certain new and useful Spring-Bed; and we do hereby declare the following to be a full, clear, and exact description of our 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to spring-beds formed of vertical helical springs, the object of the invention being to provide suitable means whereby the ends of said springs may be prevented from moving relatively to one another and to do this in such a manner that no noise will result from the working of the parts due to the movements of a superincumbent person.

The invention is shown in the accompanying drawings, in which—

Figure 1 is a plan view, and Fig. 2 is a sectional view on the lines 2 2, Fig. 1. Fig. 3 is an enlarged cross-sectional view.

Like reference characters are uniformly employed in the designation of corresponding parts in all the views.

The upper and lower frames *a a* are preferably of metal, consisting, as shown, of heavy wire or rods each rectangular in shape, and the springs *b* are arranged within the limits of these frames in parallel rows and substantially equidistant. These springs may be of any suitable construction of wire spring, ordinary hour-glass springs being shown, each terminating at each end in a ring.

In order to hold and maintain the springs in position, we make use of two sets of cross-wires *c d* at right angles to each other, connected at their ends to the ends and sides of the frame, and to prevent any shifting of the ends of the springs from the positions in which they should occupy we crimp or bend the ring portion at each end of each spring to form a loop *b²*, through which passes one of the wires *c*.

In order that each wire may be retained in its loop *b²* without slipping therefrom under the stress of the weight and movements of

the weight upon the springs, each of the wires *d* is formed into a loop *d'*, which passes beneath the ring of one spring and extends laterally over the ring of the adjacent spring, on opposite sides of the loop *b²* thereof, and then under the wire *c*, which is in said loop. It will be seen that as thus arranged the end of the loop *d'* is prevented from rising by the crossing of the wire *c* and from descending, because it rests upon the ring of the spring *b*, and that the wire *c* cannot slide or change its position in respect to the ring of the spring, because it is maintained by the loop *d'* within the loop *b²*, and, further, that the spring cannot be turned upon its axis, because the loop *b²* extends upward between the legs or sides of the loop *d'*.

From the above it will be seen that the construction described holds all the parts firmly in position, so that each spring is practically locked in place and can have substantially no other than a vertical movement, but that it is perfectly free to move vertically, so as to afford the desired elastic support. It will also be seen that a part of each spring extends to and grasps the cross-wire *c* and also limits the movements of the other wire *d*, while the tie-wire *d* and its loop grasps the ring of each spring.

It is not absolutely necessary that all of the springs should be provided with the loops *b²*. For instance, those adjacent to the sides of the frames may have rings which are not provided with loops, said rings being connected to the side frames by hooks *b'* or otherwise.

Without limiting ourselves to the precise construction and arrangement shown, we claim—

1. The combination in a spring bed-bottom, of springs arranged in rows separated from each other, each spring having a terminal ring bent to form a U-loop *b²* extending outwardly from the ring, cross-wires *c* each extending across the springs and through the loops of springs in line with each other, and cross-wires *d* extending at right angles to the cross-wires *c*, each tangential to a row of springs and with lateral loops *d'* each passing through the ring of one spring, extending across the space to the next spring and on opposite sides of the loop *b²* thereof with its end

bearing against the inner side of said loop below the wire c , substantially as set forth.

2. A bed-bottom having rows of separated springs each consisting of wire coiled to form
5 a terminal ring with a bend forming an outwardly-extending loop b^2 , combined with tie-wires each with loops engaging the rings of one row of springs extending across the space between the rows and engaging the inner
10 sides of the loops b^2 of the adjacent row, substantially as set forth.

3. The combination in a spring bed-bottom, of springs arranged in rows separated from each other, each spring having a terminal ring
15 bent to form a U-loop b^2 extending perpendicular to the plane of the ring, cross-wires c

each extending across the springs and through the loops of springs in line with each other, and cross-wires d extending at right angles to the cross-wires c and having lateral loops
20 d' each passing through the ring of one spring, extending across the space to the next spring to straddle the loop b^2 thereof with its end bearing the inner side of said loop below the wire c , substantially as set forth. 25

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

ISAAC H. HAAS.
JOHN W. CROW.

Witnesses:

LAMBERT KUHN,
EDWD. P. WOOD.