

No. 673,509.

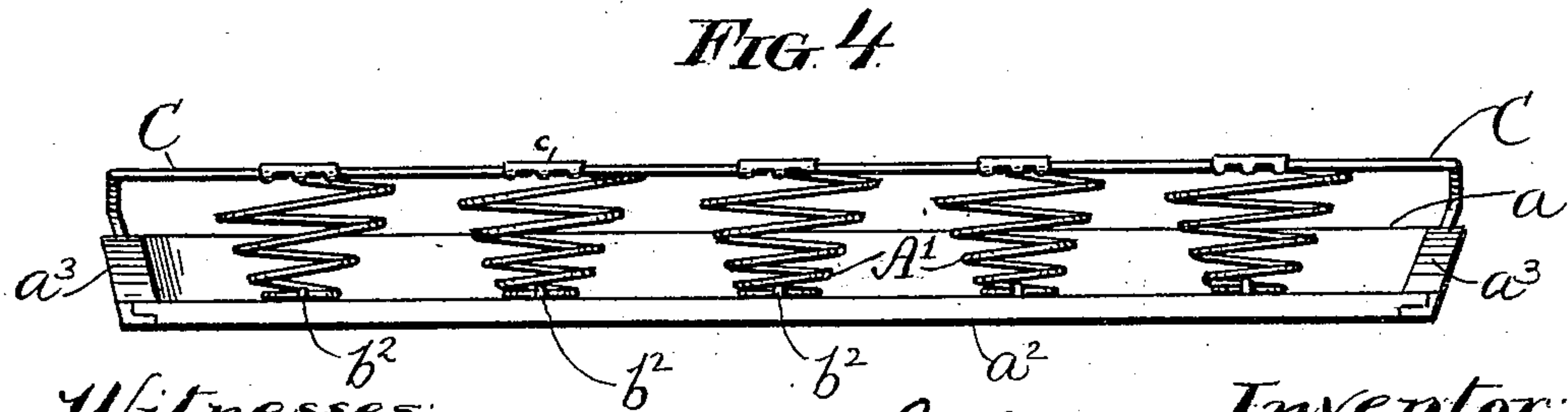
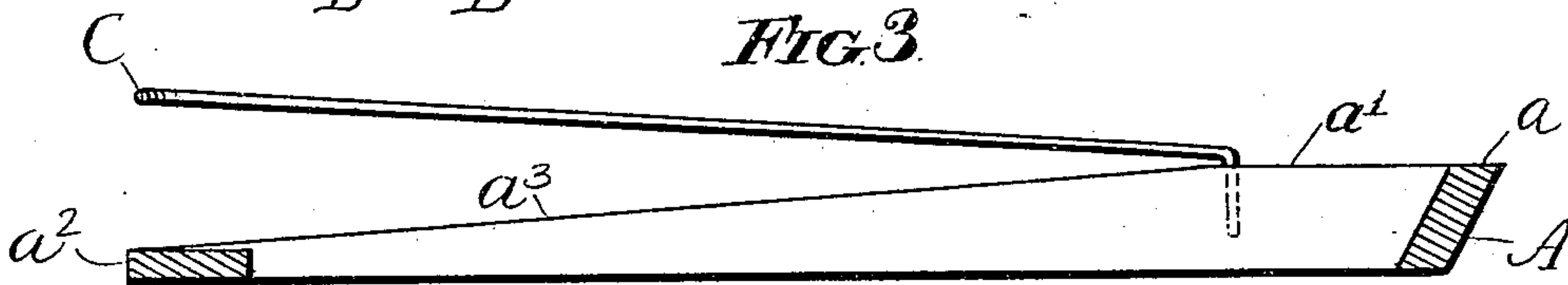
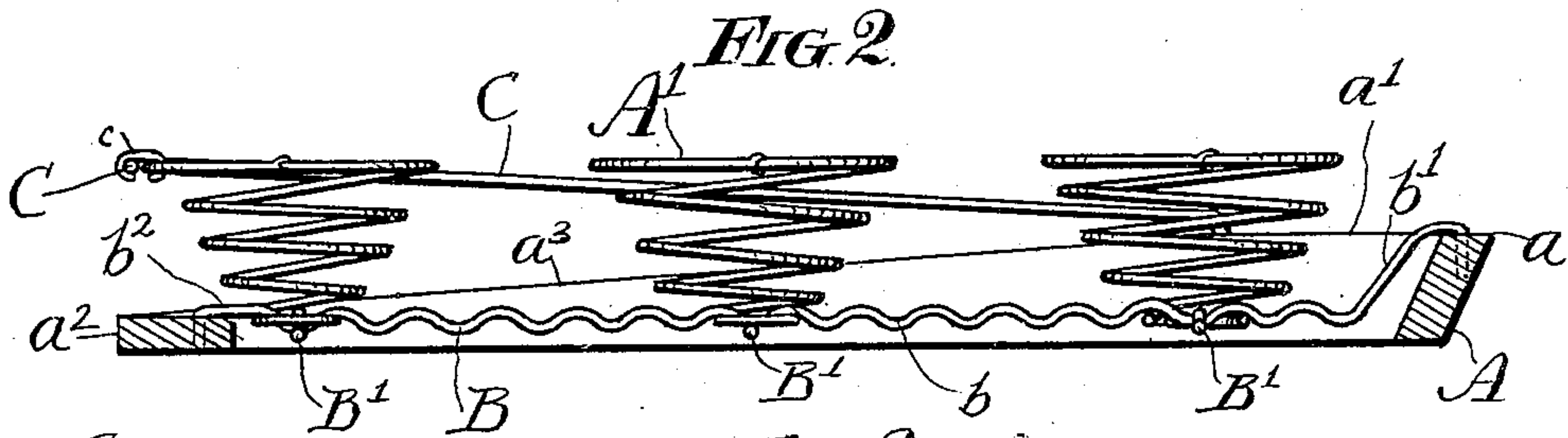
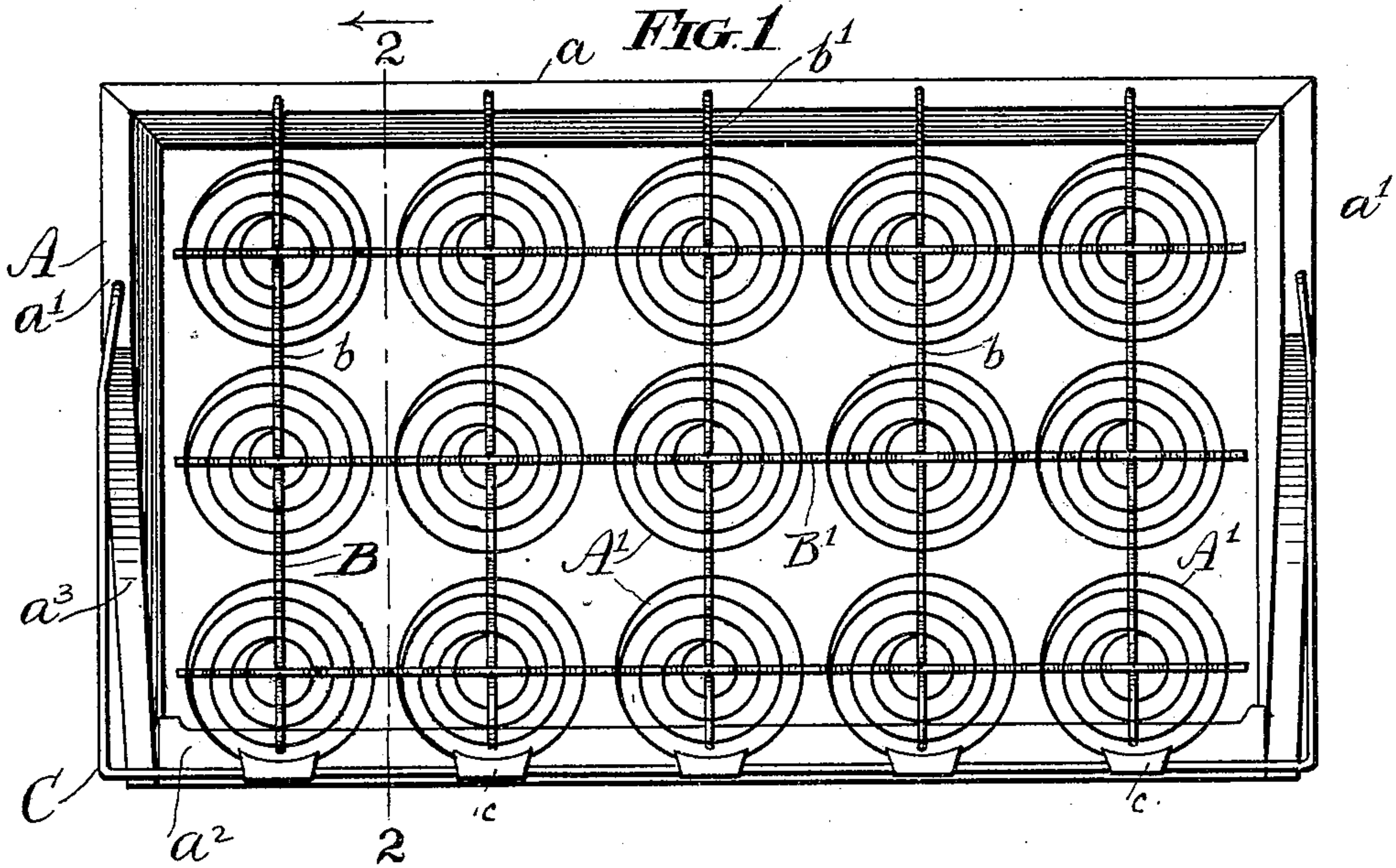
Patented May 7, 1901.

J. A. STAPLES.
SPRING EDGE SEAT.

(Application filed Dec. 28, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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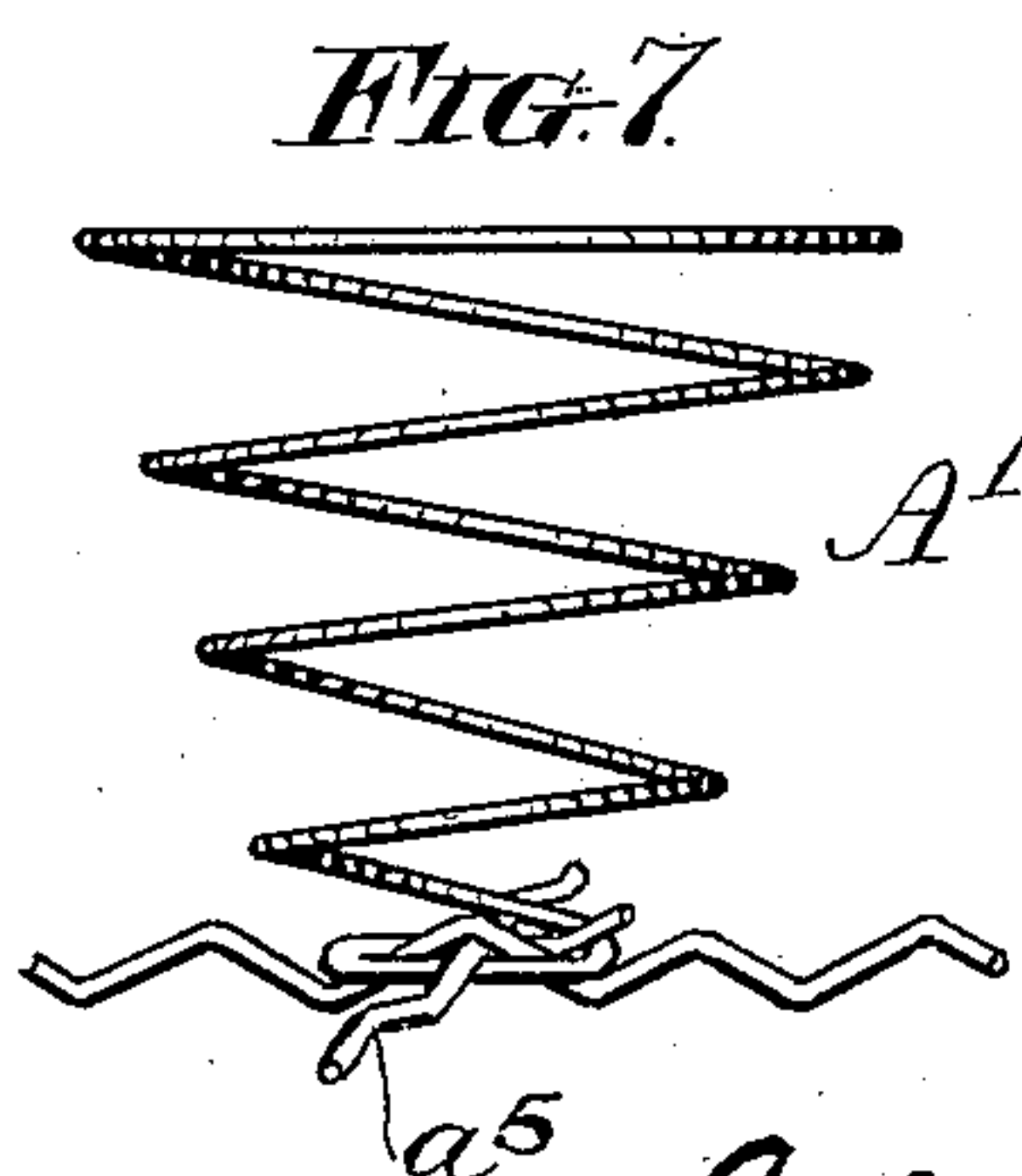
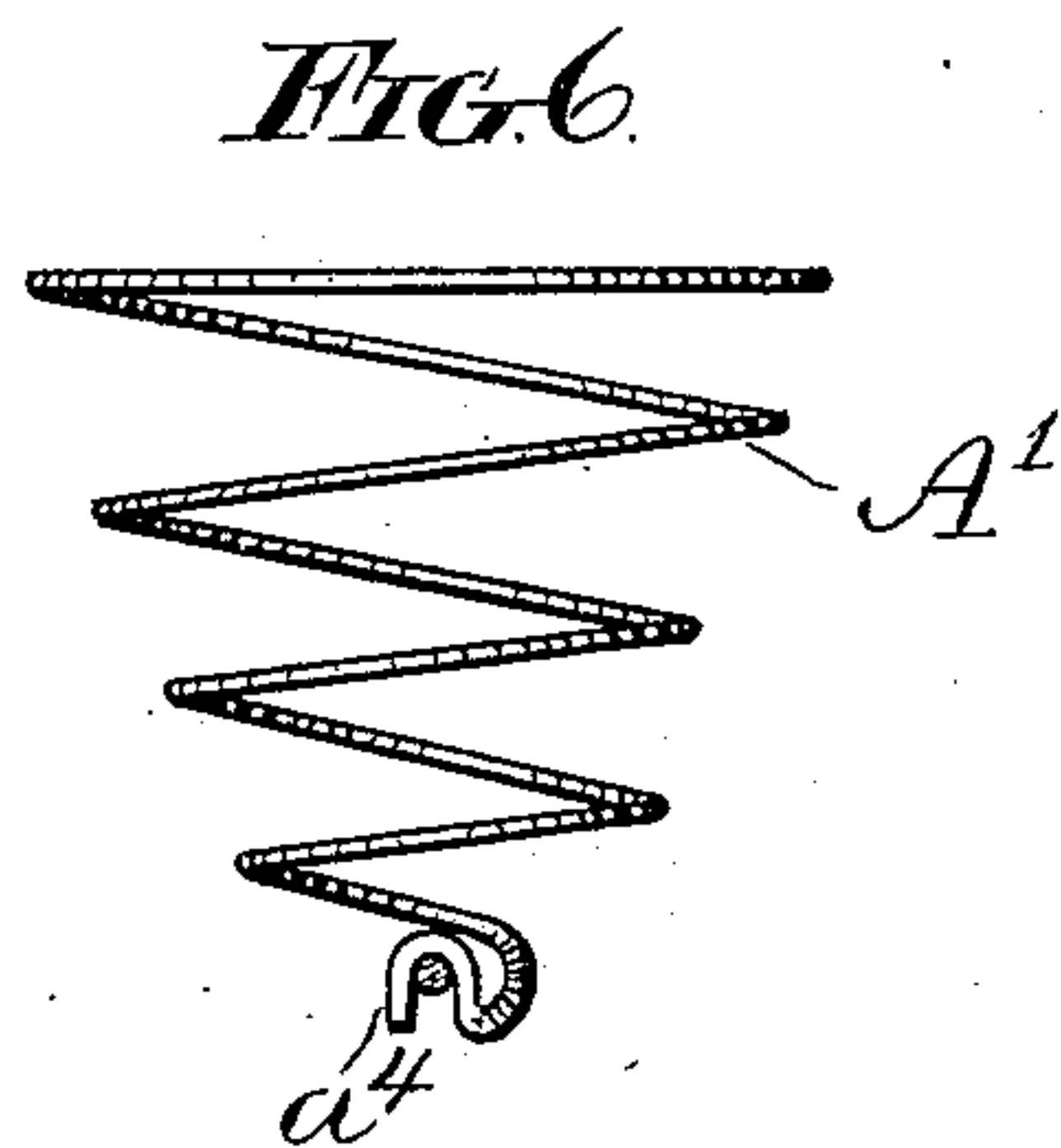
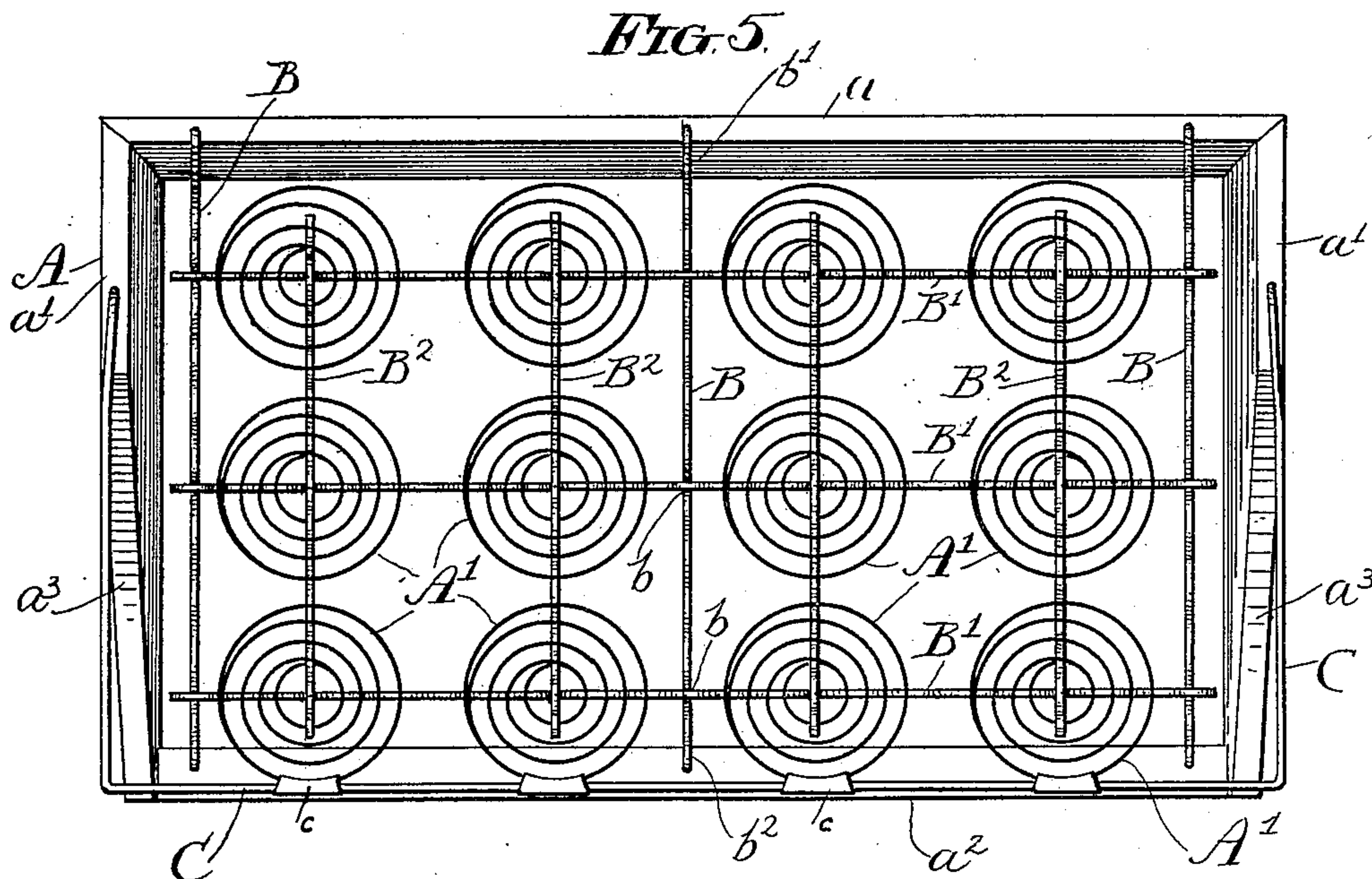
Patented May 7, 1901.

J. A. STAPLES.
SPRING EDGE SEAT.

(Application filed Dec. 26, 1900.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN A. STAPLES, OF NEWBURGH, NEW YORK.

SPRING-EDGE SEAT.

SPECIFICATION forming part of Letters Patent No. 673,509, dated May 7, 1901.

Application filed December 26, 1900. Serial No. 41,180. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. STAPLES, of the city of Newburgh, in the county of Orange and State of New York, have invented certain
5 new and useful Improvements in Spring-Edge Seats; and I do hereby declare that the following is a full, clear, and exact description of the construction and organization of the same, reference being had to the annexed
10 drawings, making a part of this specification, and to letters of reference marked thereon.

My invention relates to seats and is applicable to any seat or seat-frame employed in furniture, and is especially intended for vehicle or carriage seats.
15

The invention consists in the novel constructions and arrangements of the parts and devices hereinafter set forth, whereby a spring edge of simple and improved construction
20 and of great durability is provided as an improvement in the manufacture of seats.

In the drawings, Figure 1 is a top view of a carriage-seat embodying the features of my invention. Fig. 2 is a sectional view of the
25 same on the line 2 2 of Fig. 1, showing the form of the support and of the frame. Fig. 3 is a view similar to Fig. 2, showing the arrangement of frame and edge wire. Fig. 4 is a front view of the same. Fig. 5 is a top
30 view of a carriage-seat embodying my invention and showing a different arrangement of supports for the springs, and Figs. 6 and 7 are details of different forms of seats or connecting means that may be employed for securing the springs on the supports.
35

In the drawings the reference-letter A represents the cushion-frame or seat-frame, which is herein shown as adapted for carriage-seats and consists of four wooden strips which
40 are put together with the sides and back flared to fit the bevel of the seat. The back strip a is usually about one and one-half inches high. The sides a' correspond in height to the back strip at the points of attachment to the
45 back, and their tops are forwardly inclined or beveled, beginning at a point preferably slightly in the rear of the middle line of the seat and reduced to about one-half inch in thickness at their front ends, where they are
50 joined to the front rail a^2 of about the same thickness. The upholstery-frames as thus constructed have low or shallow front rails,

relatively deeper or higher rear rails, and beveled side rails.

The reference-letter A' represents the
55 springs, which usually in a carriage-seat frame consist of three rows or ranges, each having five individual springs therein. The lower ends of the springs are supported by wire supports, and the upper ends of the springs are
60 connected and held by cords or any other suitable means, whose ends are connected to the seat-frame in the usual manner. These connecting-cords are omitted from the drawings for greater clearness, as are also some of
65 the springs.

The reference-letter B represents my improved hanging wire supports. These wire supports have a horizontal portion b , which
70 is somewhat longer than the measurement of the opening of the frame, and the rear ends of these supports are bent upwardly to provide a deep drop, as at b' , and said ends are turned over and finished with points which
75 can be driven into the upper face of the rear rail or with eyes for attaching nails or screws securing the supports in place. The front ends b^2 of these supports, which are in effect substantially extensions or parts of the horizontal portions of the same, are provided with
80 similar attaching means; but they are not provided with drops or are not bent upwardly, being preferably straight, so far as this feature of construction is concerned. The horizontal portions of the hanging wire supports,
85 which are normally within the opening of the seat-frame when the parts are assembled, may be formed with any suitable means for supporting the springs. They may be corrugated throughout their lengths or they may
90 merely have eyes or bends at points in the lines of the ranges of springs. The springs may be supported directly upon the wires B, as by providing them with suitable seats to receive the lower ends of the springs in any
95 desired manner, or the springs may rest directly upon cross-wires B', which in turn rest upon and are supported by said drop-wires, or the springs may rest directly upon both
100 sets of wires at their points of crossing and may bind the wires together, as by interweaving therewith. Any arrangement and organization of this feature is within the scope of my invention. A form of connection that

has been found satisfactory in practical use is that shown in Fig. 1, where the supporting-wires B, suitably corrugated or bent upon their horizontal portions within the opening of the seat-frame, are arranged transversely of the frame, one at each transverse line of the several banks or ranges of the springs, and with their ends attached to the front and rear rails. The brace or cross wires B', which preferably also are corrugated or bent, are then placed upon the supporting-wires, resting in corrugations or bends of the same, one in the longitudinal line of each bank or range of springs, and the springs are connected to the wires at their crossing-points by rotating the springs to interweave their bottom coils with the wires in a manner now well understood. As before stated, other organizations or arrangements of these parts for supporting the springs may be employed. For example, some of the supporting-wires may be omitted, as by having only a pair of such wires, one wire at each end of the frame, or a plurality of these wires may be employed, arranged to come intermediate the transverse ranges or rows of springs, as in Fig. 5, in either of which cases the springs will be supported directly upon the wires B', to which they may be attached in any manner, as by hooks a^4 , as in Fig. 6, or by cross-keys a^5 , as in Fig. 7. Any disposition and arrangement of the supporting-wires and of the cross-wires may be made as desired without in any way departing from the scope of this invention, and any means of seating or attaching the springs to either or both of these wires, as desired, may likewise be employed, these features being capable of variation to suit the special requirements of the work to be done.

By employing supporting-wires in the form herein disclosed they may be used in combination with a frame having a high back rail and a relatively low front rail, so that the superficial area of the front range or row of springs will stand substantially above the upper line or plane of the front rail, as shown in Fig. 2, whereby this front range or bank of springs at all times and under all conditions of use provides a spring edge and prevents the body of the occupant of the seat from coming in contact with the front rail, the plane of the upper edge of this row always remaining above the upper face of the front rail. Also by employing this form of support the front range of springs may be set with their lower coils close against the inner face of the front rail, whereby the body of the springs will overhang this rail and increase the spring-edge effect of the structure, as shown in Fig. 2. It is also apparent that the angle of the drop at the rear end of each support may be changed as desired and that the front ends of the supports B may be straight or not provided with any drop at all or that they may have a shallow drop, if desired, which also permits the use of a low front rail and a spring edge. In other words,

the front end of the support B may, if desired, be provided with a drop that is considerably less in depth than the drop at the rear, or it may be extended in substantially the same line as the horizontal portion of the support within the area of the seat-frame.

The material and form of the parts B and B' may of course be varied, as they may be made of wire, which is the preferred form, or of strap-iron, or of any other suitable material. The supports B may be corrugated throughout their horizontal portions within the area of the frame, or they may be bent only at the points of reception of the springs or of the cross-wires B', or they may be straight throughout their entire horizontal portions, any form or configuration being within this invention. Likewise the cross-wires B', where such wires are used, may be of any desired shape adapted to produce the desired results.

A spring edge wire C may be applied around the front of the forward or spring-edge row of springs, being suitably fastened to the frame, preferably by its pointed ends being driven into the same. As shown, this edge wire is provided with a front portion extending the length of the range of springs and with rearwardly-extending sides, which are attached to the frame, preferably in rear of the bevels thereof. The edge wire is attached to the front row of springs in any suitable manner, as by the sheet-metal clips c.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the frame having a relatively low front rail, of supports each having a horizontal portion, a drop at one end provided with fastening means, means to fasten the other end to the low front rail, and springs supported thereby.

2. The combination, with the frame having a rear rail and a relatively low front rail, of supports formed of wire with horizontal portions having bends to support the spring-work and rear end portions extending upward and laterally to rest upon the upper surface of the rear rail and front portions resting upon the upper surface of the front rail in substantially the horizontal plane of the intermediate portions of the supports, and means to attach the ends of the supports to the rails.

3. In combination, a frame having a front rail whose upper face is below the plane of the upper face of the rear rail, of wire supports for springwork each having a drop at its rear end to accommodate the rear rail and downwardly-projecting ends to enter the frame.

4. In combination, a frame having a high rear rail and a relatively low front rail, of spring-supports formed of wire each having its rear end extending upward and laterally to rest upon the upper face of the rear rail and its front end resting upon the upper face

of the front rail, cross-wires supported upon the spring-supports, and ranges of springs in line with the cross-wires and connected thereto, the front range overhanging the front rail.

5 5. The combination with a frame, of spring-supports formed of wire with horizontal portions longer than the measurement of the opening of the frame and resting upon the front rail thereof, and rear drop portions extending upward and laterally to rest upon
10 the rear rail, and springwork carried by said supports.

6. In combination, a frame having a rear

rail, side rails corresponding in height therewith at their rear ends and beveled toward 15 their front ends, a front rail corresponding with the front ends of the side rails, supporting-wires having horizontal portions longer than the opening of the seat-frame and resting on the front rail and bent upward at their 20 rear ends to engage the rear rail.

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Witnesses:

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