

No. 742,252.

PATENTED OCT. 27, 1903.

J. A. STAPLES.
FURNITURE.

APPLICATION FILED NOV. 15, 1901.

NO MODEL.

Fig. 1.

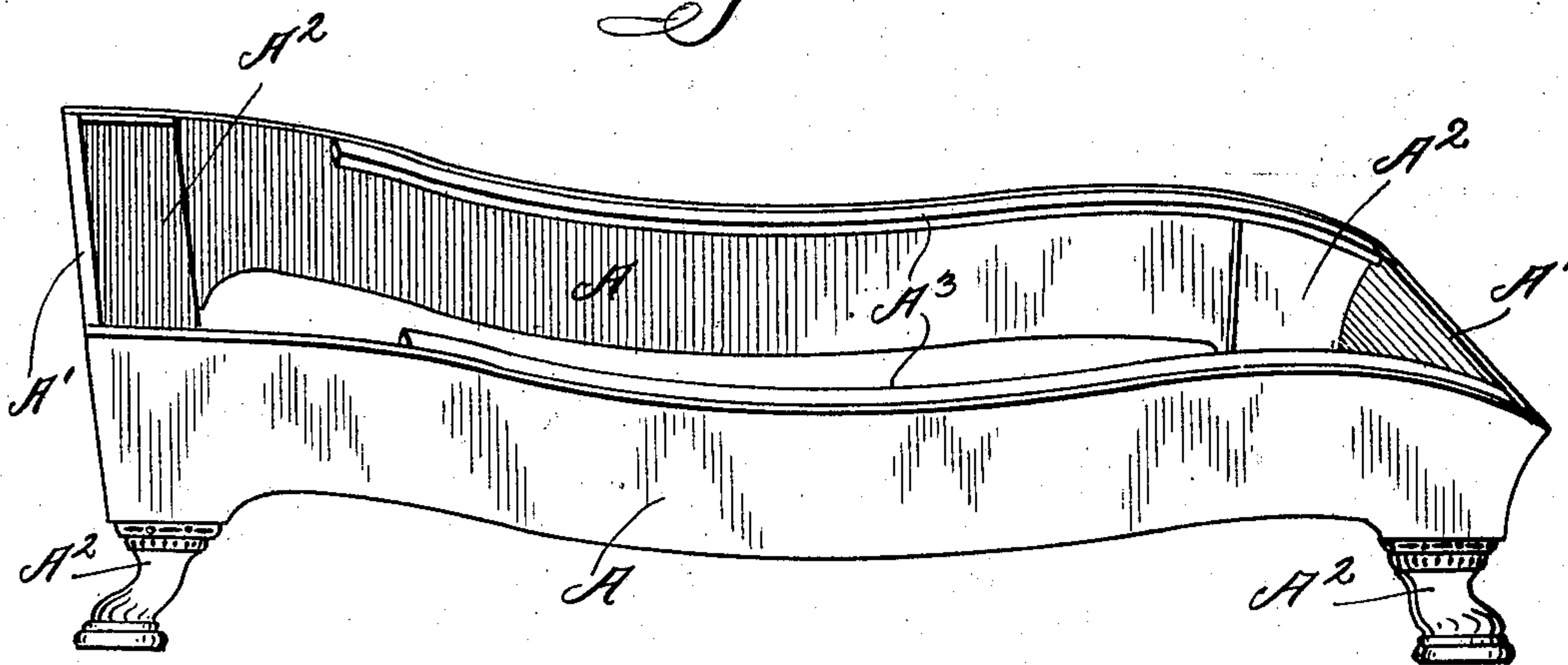


Fig. 2.

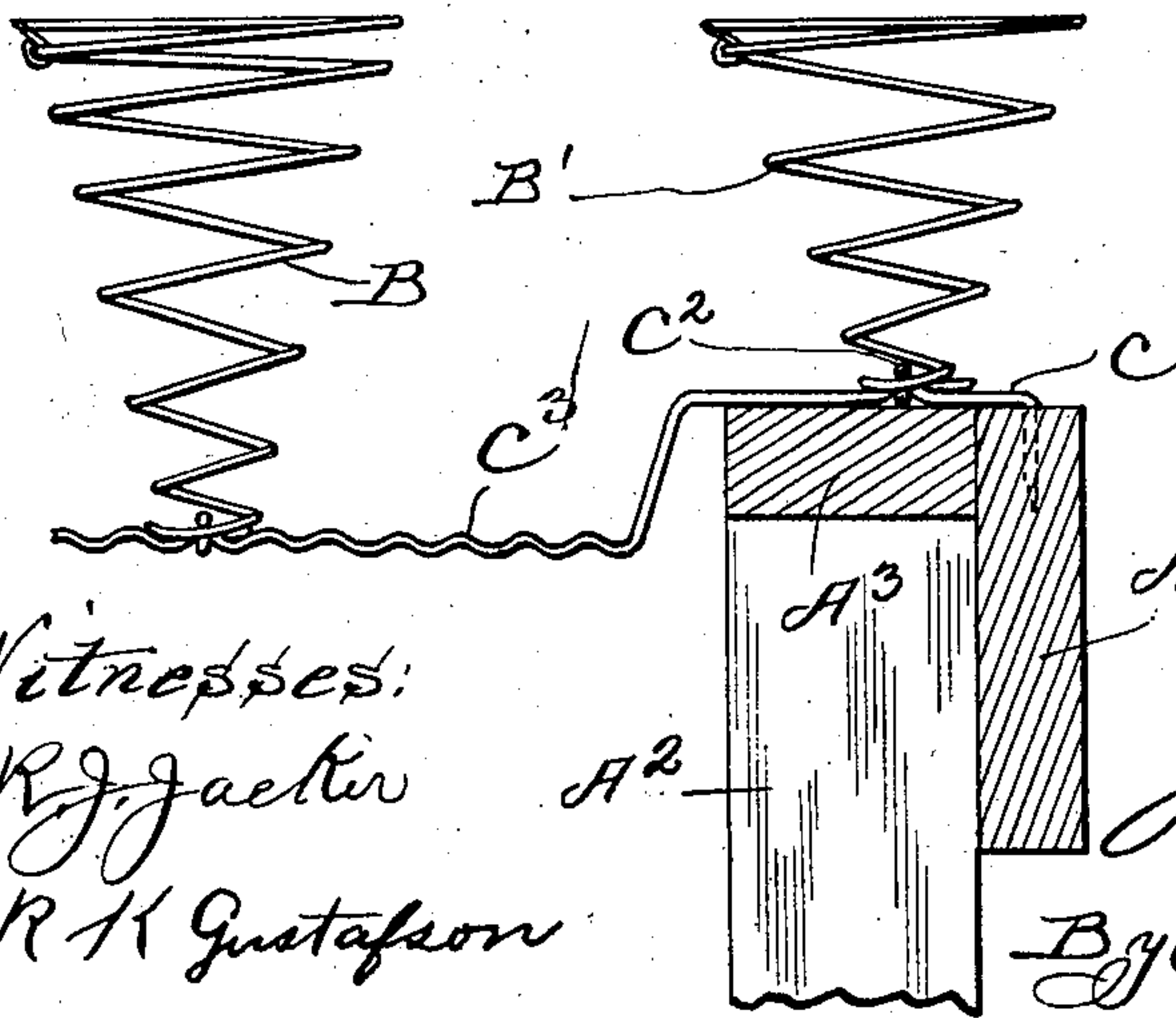
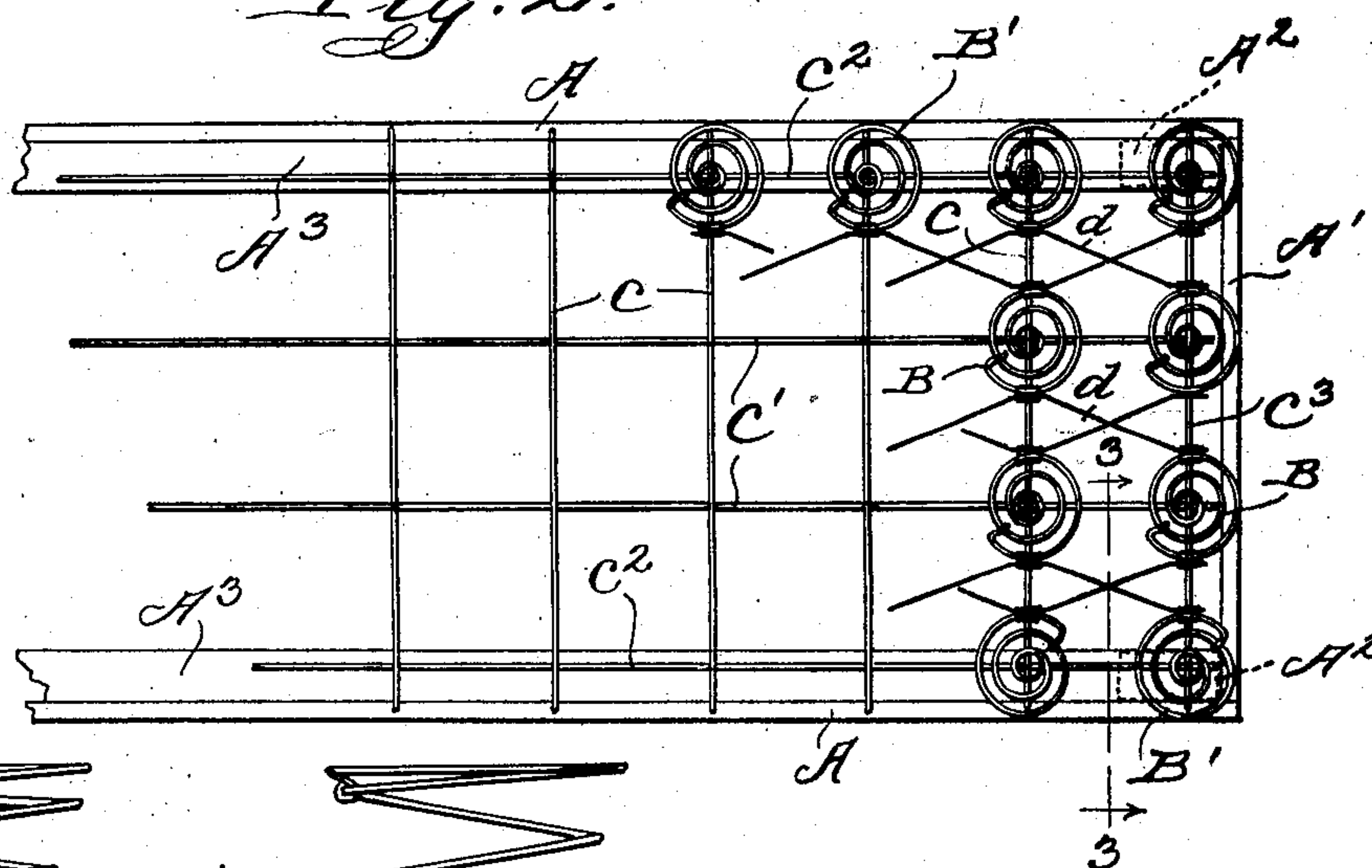


Fig. 3.

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UNITED STATES PATENT OFFICE.

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FURNITURE.

SPECIFICATION forming part of Letters Patent No. 742,252, dated October 27, 1903.

Application filed November 15, 1901. Serial No. 82,387. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. STAPLES, a citizen of the United States, residing at Newburgh, in the county of Orange and State of New York, have invented certain new and useful Improvements in Furniture, of which the following is a specification.

My invention relates to furniture, and especially to couches, sofas, box-mattresses, and similar articles of springwork.

In sofas, couches, and similar forms of springwork it is essential to provide what are known in the trade as "spring edges," or, in other words, to so arrange and dispose the outer rows of side springs as to bring their top coils substantially above the upper edges of the side rails to prevent the body of the occupant from coming in contact with these rails. In this class of furniture as now generally constructed all of the rows or ranges of springs are supported and have normal position within the opening of the frame, and it has been sought to obtain this spring-edge effect by drawing the tops of the edge rows of springs, whether single or double cone types, out of their normal perpendicular positions to unnatural positions over the rails and holding the same in this distorted relation by suitable means—such, for example, as tie cords or wires—which connect with the side rails of the frame. This is an objectionable arrangement, both on account of the extra time and labor involved in the operations required and as the distortion of the edge springs greatly weakens and impairs their carrying and wearing power, while the frequent breaking of the tie-cords renders the entire spring organization useless. Also as these springs are never compressed below the upper edge of the side rails such parts of their bodies as are below the upper edges of these rails have no spring function and are just so much waste material. Efforts have been made to accomplish the spring-edge effect by organizations intended to obviate these and other defects and objections incident to the formation of spring edges in the manner above described. For example, in my Patent No. 542,115, dated July 2, 1895, I provide auxiliary sets of brackets for the

edge rows of springs; but it has been found in practice that all such devices are impractical and inexpedient owing to the time consumed in assembling them and to their addition to the expense of the work. In furniture of this class the body-frames are composed of side and end pieces provided with legs at the inner faces of their meeting ends or corners. In "springing up" such frames or providing them with springwork where metal supports for the springs are employed, as is now universally the case in all high-grade work, it has heretofore been necessary to use supports for the end or extreme transverse rows or ranges of springs which differ from the other supports employed for the intermediate rows on account of the decreased width between the pairs of legs. In such constructions the two outer springs of the end rows are set inwardly even farther than the corresponding springs in the intermediate rows, and hence their distortion is even greater.

One of the objects of my present invention is to provide a frame for furniture of this class embodying supports for all of the springs composing the spring edges of the springwork by which the edge rows of springs are sustained in their normal upright positions and whereby shorter springs for the edge rows are employed than for the interior rows. Moreover, in this class of furniture braces are required to prevent the long side rails from drawing inwardly when pressure is put upon the springwork of the sofa, couch, &c. The provision of braces to hold the side rails against inward pressure is an important matter in the construction of devices of this class, in which the side rails are usually of considerable length and are subjected to an inward draw when weight is placed upon the springs.

My present invention is also designed and intended to provide an arrangement and organization of parts for furniture of this class wherein the support for springs composing one of the spring edges of the springwork acts as a brace for its associated side rail against the inward draw of the spring-supports.

A further object of my invention is to pro-

vide an improvement in this class of furniture which shall be especially adapted to receive metal supports of peculiar form adapted to support springs on their interior portions within the opening of the frame and also upon their end portions where the ends of the supports rest upon the braces or shelves of the frame.

The invention consists in the matters hereinafter described in connection with the accompanying drawings and more particularly pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a perspective view of the body-frame of a couch or sofa provided with supports or shelves for the springs constituting spring edges. Fig. 2 is a top plan view of a couch or sofa frame of the general type shown in Fig. 1 and partially "sprung up" or provided with springs, and Fig. 3 is a detail sectional view taken in the direction of the arrow on the line 3 3 of Fig. 2.

In the drawings accompanying this specification the reference-letters indicate the same or corresponding parts in the several views.

The frame is composed of suitable side pieces A and end pieces A' of any suitable size and shape, according to the character of the article to which the springwork is to be applied and as shown in Fig. 1 as designating a frame of the "dongola-couch" type. It is of course to be understood that the frame may be of any desired shape or type, varying according to the requirements of the manufacturer. The side and end pieces are joined at their ends in the usual manner, where they are provided upon their inner sides with legs or feet A². The side pieces A are provided along their inner faces and flush with their upper edges with inwardly-projecting strips or shelves A³, which extend more or less along the length of the side rails, according to the character of the article to be constructed. For example, in a couch or sofa provided with a head-piece these strips need not run to the end of the head of the frame, but may be terminated a little short thereof, at about the point where the head-rest frame begins, as shown in Fig. 1. It is obvious that in other forms of furniture, as where no head-rest frame is provided, these strips will preferably run the entire length of the side rails, and in either case they perform the functions and fulfil the requirements hereinafter ascribed to them.

The interior springs B are arranged in any suitable manner and are sustained by any suitable form of spring-support, these supports preferably consisting of lengths of wire each having a substantially horizontal portion of approximately the transverse measurement of the opening between the supports or shelves A³ and end portions extending upwardly and laterally to rest upon the upper surface of the strips or shelves and provided with means to secure them to the side rails of

the frame, preferably in the form of downwardly-projecting points to be driven into the frame, as clearly shown in Fig. 3. These drop-wires C are placed at such distances apart as are suitable for the character of the work to which they are applied, and the springs B are supported thereon in any suitable manner, preferably by providing the body portions of the supports with bends or corrugations adapted to receive transverse cross wires or keys C', which latter are preferably provided with corresponding bends or corrugations, whereby the springs B may be seated and sustained at the crossing-points by interweaving their lower coils with the wires in a manner now well understood in the art.

The springs B', which constitute the edge rows of springs, are supported upon the strips or shelves A³ in any suitable manner and extend along the length of these supports for such part of the length of the frame as the character of the work may require. By providing a support for the edge row of springs of the character shown and described the springs of the edge rows constitute and form spring edges, their bodies standing substantially above the upper line or plane of the support and their upper coils extending out to or beyond the line of the side rails to prevent the body of the occupant of the seat from coming in contact with the rails, as clearly shown in Figs. 2 and 3. By providing a support of this character the springs of the edge rows constitute spring edges, in which each springstands in its normal perpendicular position and without any distortion or the lateral displacement of any of its coils. Also smaller springs may be employed to form the edge rows constituting the spring edges, thereby saving a considerable part of the weight of the springs and utilizing all of the material of these edge springs for the purpose of resiliency and spring-pressure.

The springs B', constituting the spring edges, may be secured to the supports or strips A³ by any suitable means in any suitable manner, but I prefer to employ a form of supporting-wire such as shown in Fig. 3, wherein the end portions c, which rest on top of the strips or shelves, are provided with seats or rests for the springs B'.

The springs of the edge rows may be secured to the end portions of the spring-supports C in any suitable way, but preferably and for the purpose of making a uniform structure they are attached thereto by means of bends or corrugations and intersecting cross-wires C² in the same manner as the interior springs B. By utilizing the end portions of the wires C as an attaching means for the springs B' the entire springwork is in the form of an integral organization. It is of course understood that the material and form of the supports C may be varied, as these parts may be made from suitable lengths of wire, which constitute the preferred construc-

tion, or from any other suitable material, such as strap-iron or any flat metallic strip. Also the interior springs B may be supported directly upon the spring-supports, as in the manner shown in Fig. 2, and they may be provided with other suitable means of attachment or may rest upon the intersecting cross-wires, as any arrangement or organization of this part of the device is within the scope of my invention.

It will be observed that the shelves or strips A^3 extend inwardly over the legs or feet A^2 , and by this construction I am enabled to employ the same form of support for the end rows of springs at C^3 as are employed for the intermediate rows. By reason of this form of support or shelf the spring-supports employed throughout the structure are of uniform style and size. This is an important consideration, as heretofore the supports for the end rows of springs have of necessity been of an entirely different size and style from the supports of the intermediate rows by reason of the fact that the distance between the inner faces of the opposite pair of legs or feet was less than the distance between the inner faces of the side rails. Another important function of the strips or shelves A^3 is to form braces for the frame against the inward draw of the spring-supports. It is obvious that when weight or pressure is placed upon the springwork of the couch there is an inward draw upon the sides of the frame, which tends to separate the ends of the side rails from the other portions of the frame. Heretofore in this class of furniture this tendency of the side rails to move inwardly has been overcome by means of cross or transverse braces, consisting of strips of wood interposed at intervals between the side rails. By employing the longitudinal strips A^3 , I am enabled to dispense with these cross-braces, and these strips or shelves form effective braces to hold the side rails of the frame against the inward draw of the supports. It will be apparent, therefore, that the longitudinal strips A^3 perform the double function of constituting supports or backings for the edge rows of springs and braces for the frame.

By combining with the longitudinal shelves

or strips the spring-supports adapted to receive coil-springs upon their outer ends, where they rest upon the shelves or strips, as well as upon their interior portions, I am enabled to produce a construction in which the springs of the edge rows constitute spring edges formed as an integral part of the spring organization and are supported and backed by the frame or body of the structure at such portions of the springwork as are exposed to the greatest amount of wear and work.

The tops of the springs may be united or tied together by any suitable arrangement of tie-wires, as at d .

The outline of the frame may be varied to follow any pattern or style, and as the supports A^3 will correspond with the upper line of the side rails the upholstery will take the form and shape corresponding to the style of frame.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. In an article of furniture of the class described, the combination with a frame comprising end and side rails, and longitudinal bracing-strips on the side rails, of spring-supports having horizontal integral interior and end portions in different planes, springs supported on the interior portions, and springs on the end portions upon the strips and composing spring edges.

2. In an article of furniture of the class described, the combination of a frame comprising end and side rails, legs at the corners thereof, longitudinal bracing-strips secured on the inner faces of the side rails and extending inwardly above the legs, and springwork comprising interior springs and edge springs, the latter being above the bracing-strips and composing "spring edges," and spring-supports of uniform size having integral interior and end portions supporting the springs respectively above and below the bracing-strips.

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

JOHN A. STAPLES.

Witnesses:

JNO. WISE,

JAMES J. FLANAGAN.