

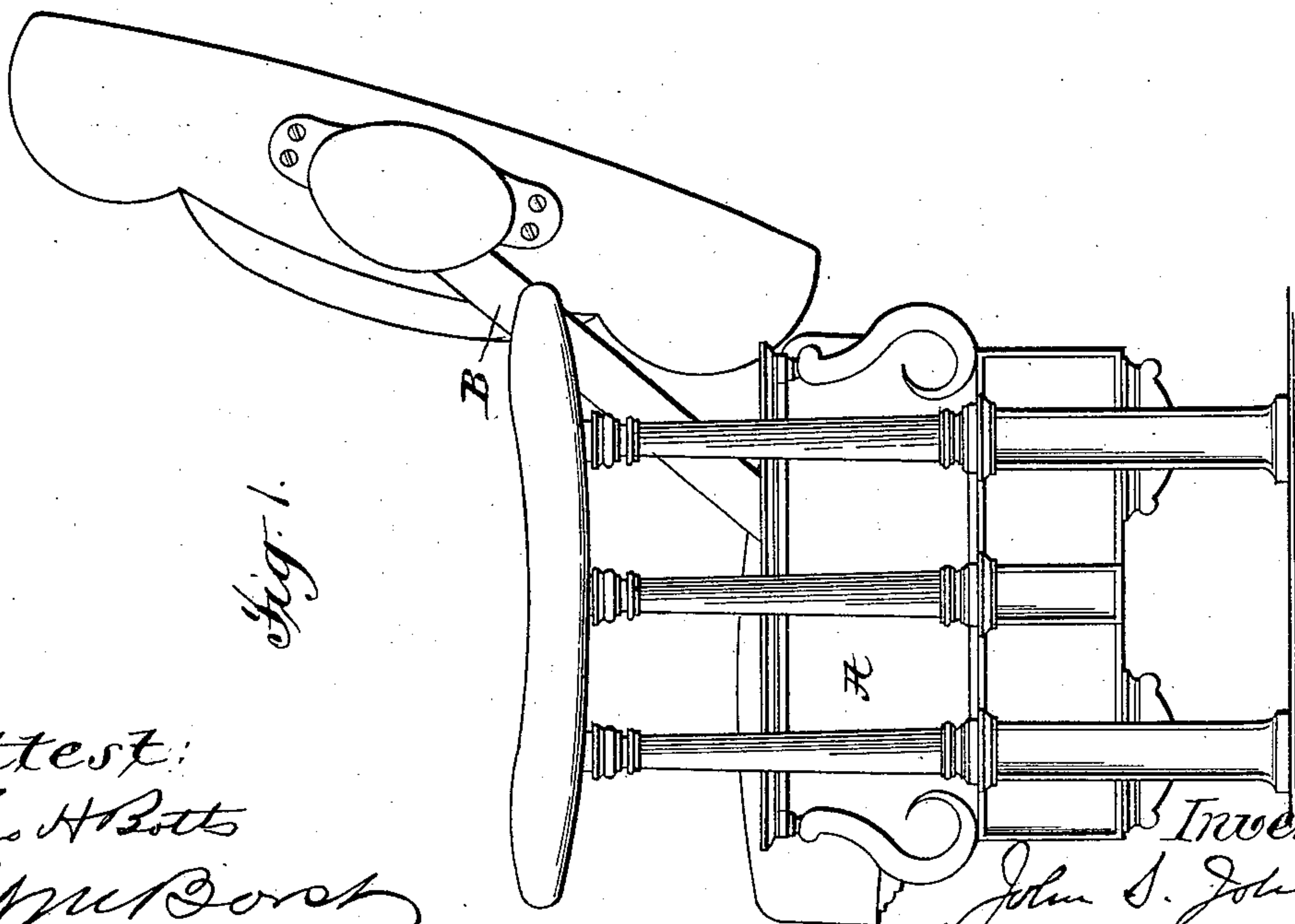
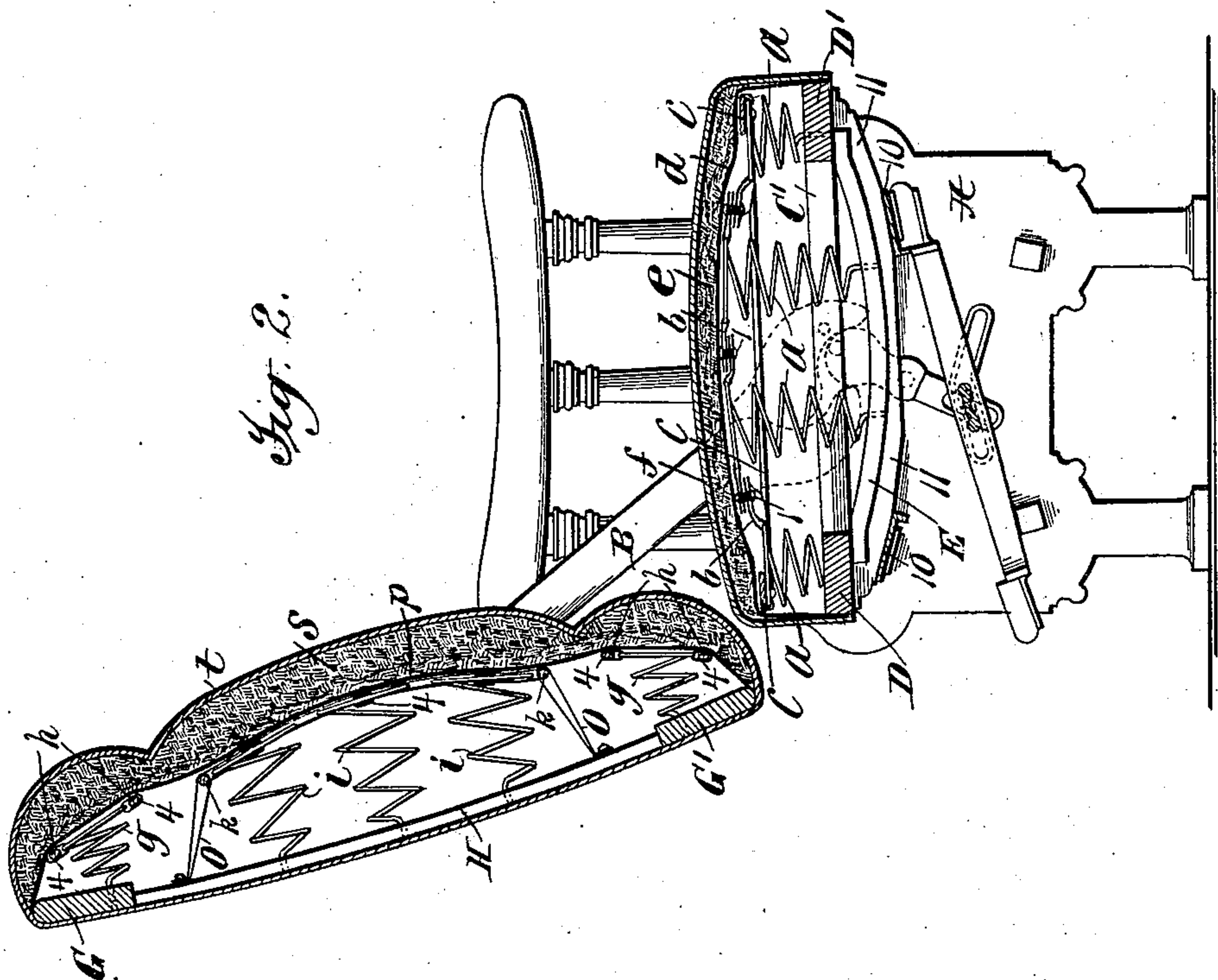
(No Model.)

2 Sheets—Sheet 1.

J. S. JOHNSTON.
SEAT.

No. 564,380.

Patented July 21, 1896.



Attest:

Geo H Botts

Lynd Borch

Inventor

John S. Johnston
By Philip Munson Thayer
Attys

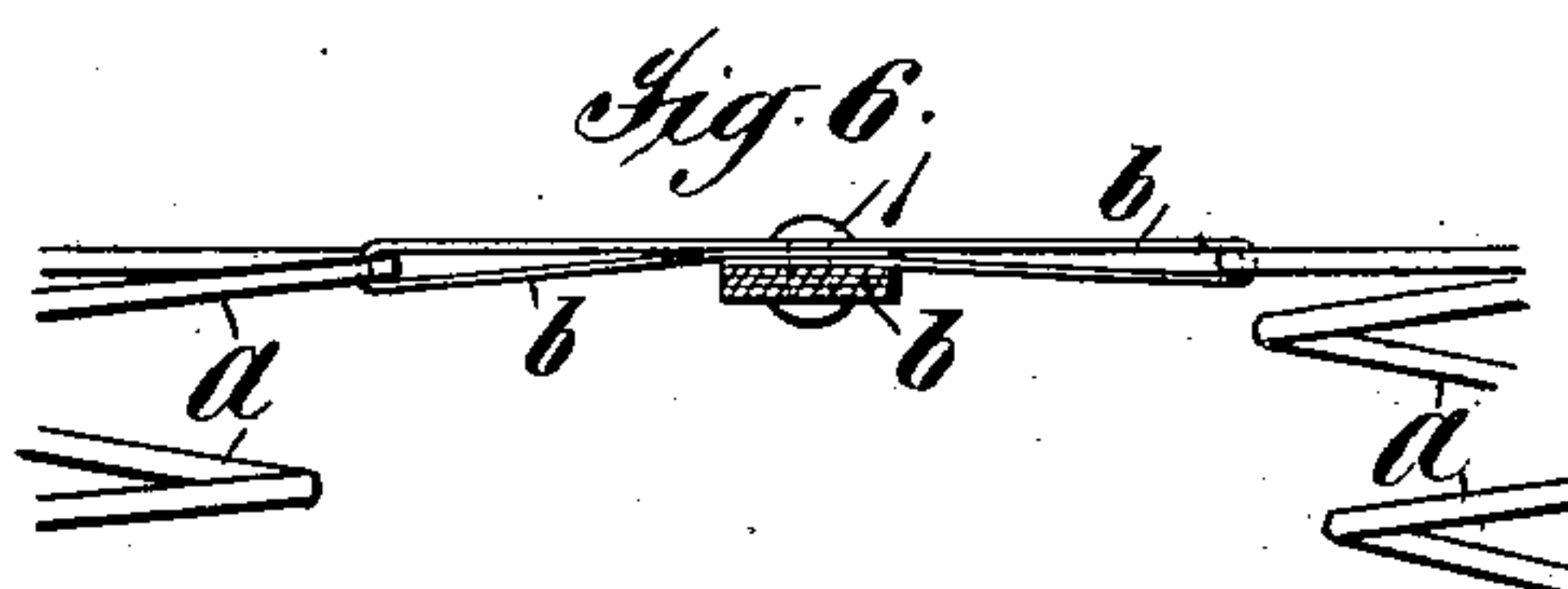
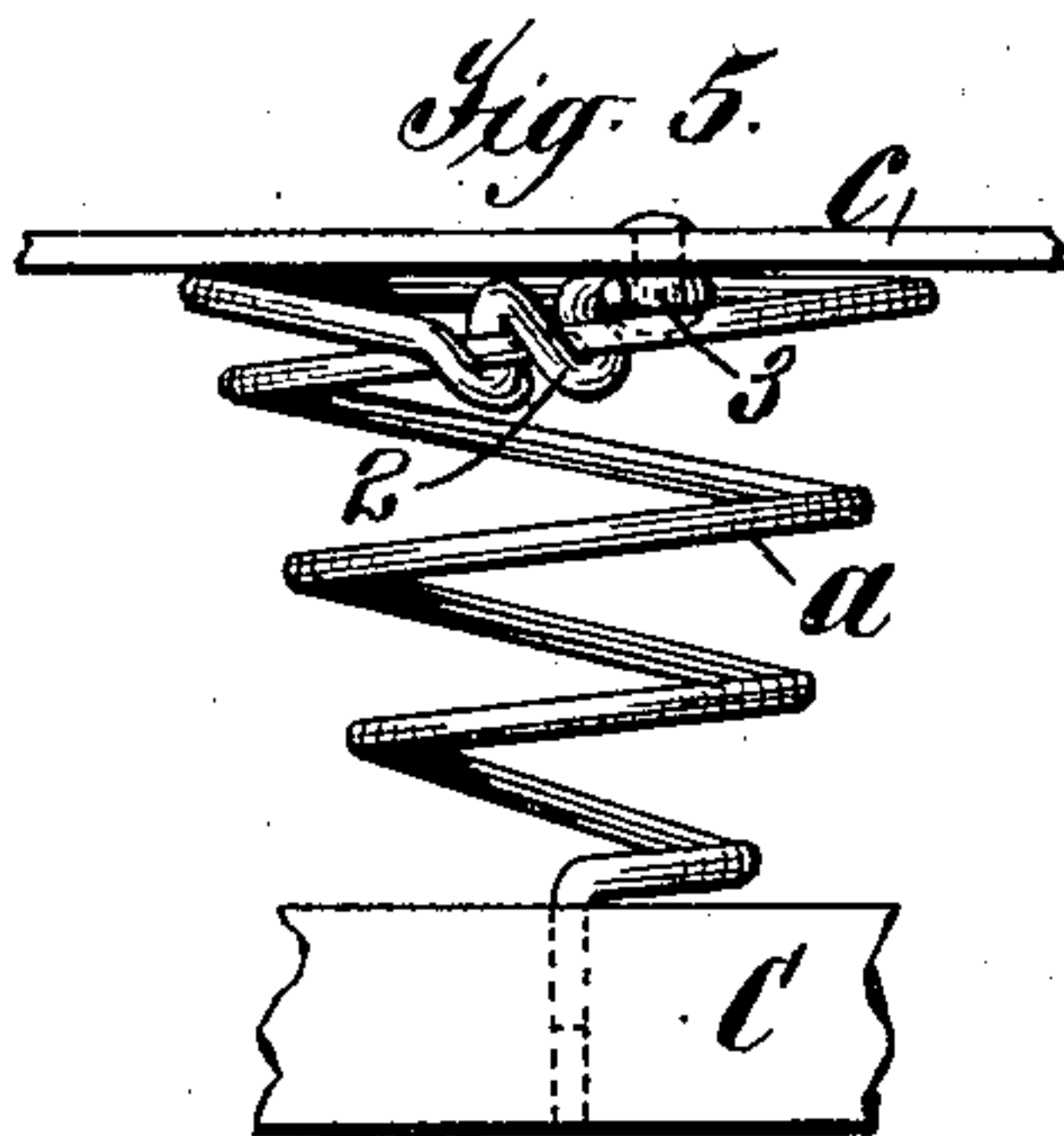
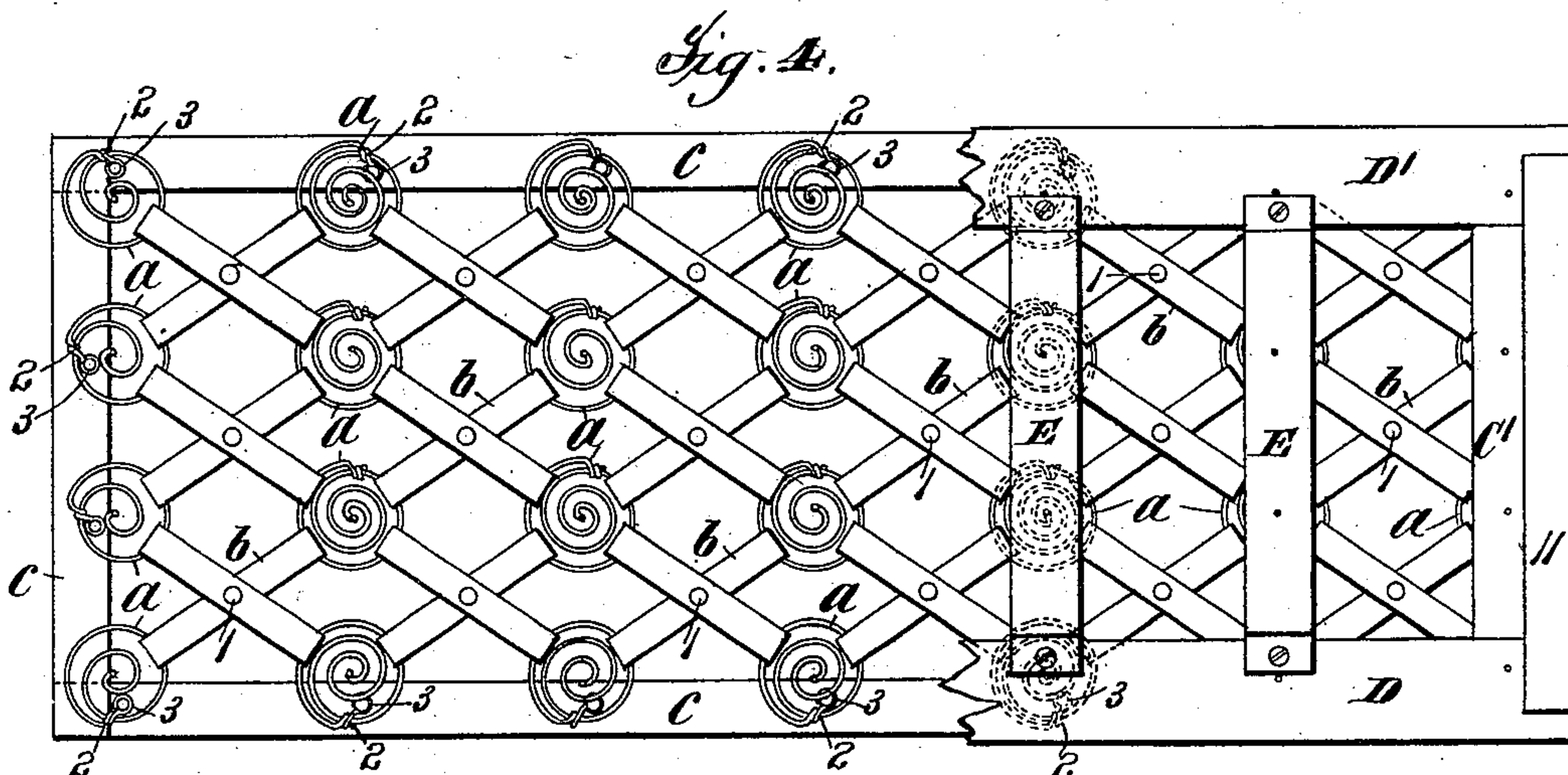
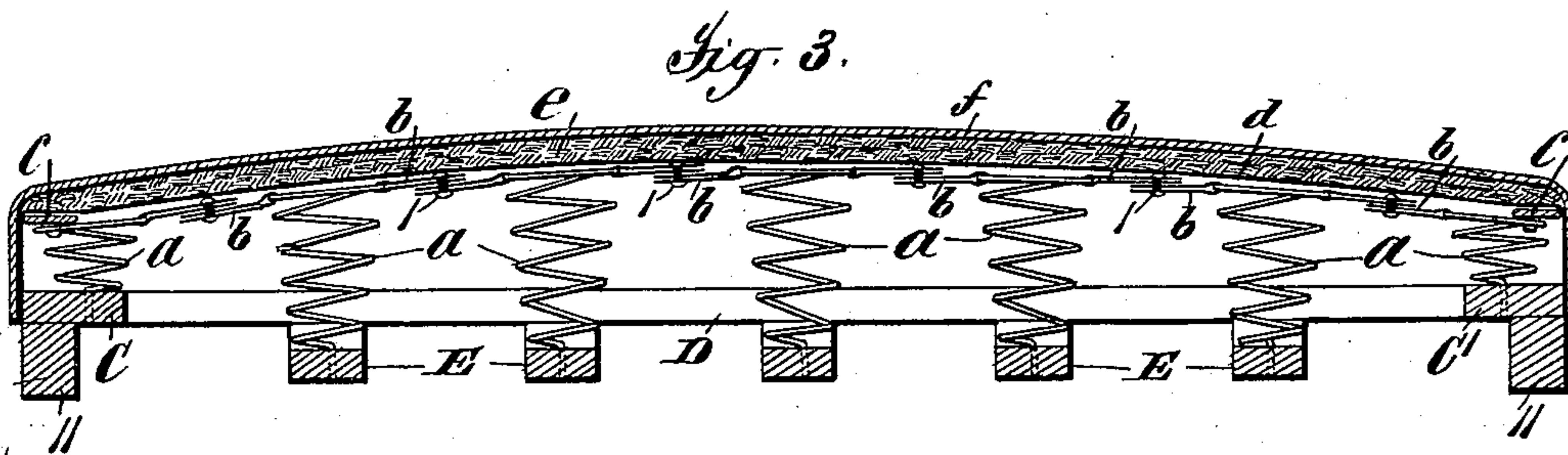
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2 Sheets—Sheet 2.

J. S. JOHNSTON.
SEAT.

No. 564,380.

Patented July 21, 1896.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

JOHN S. JOHNSTON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE POTTIER & STYMUS COMPANY, OF NEW YORK, N. Y.

SEAT.

SPECIFICATION forming part of Letters Patent No. 564,380, dated July 21, 1896.

Application filed November 6, 1894. Serial No. 528,035. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. JOHNSTON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Seats, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The especial object of the present invention is to provide an improved construction of seat-cushion especially adapted for car-seats and similar constructions in which the seat is reversed for facing in opposite directions, although a seat-cushion embodying the invention may be used also in other constructions.

For a full understanding of the invention, a detailed description of a reversible car-seat embodying all the features of the invention in their preferred form will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a side view of a car-seat of the preferred form embodying the invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a central longitudinal section of the seat-cushion. Fig. 4 is a bottom plan view of the same with the frame partially broken away. Fig. 5 is a detail view showing the preferred construction of the springs. Fig. 6 is an enlarged detail showing the preferred construction of the spring-plates connecting the springs.

Referring to said drawings, A is the frame, upon which is supported the seat proper or cushion by sills 10 and on which the back is reversibly mounted by reversing-arms B, the seat being provided with the usual inclined rockers 11, moving on the sills 10 for the purpose of raising the front edge of the seat and lowering the rear edge as the seat is shifted with the back in reversing, any suitable form of connection between the arms B and seat being used.

Referring now to the specific construction of the seat-cushion in which the present invention is embodied, C C' are the opposite end bars, and D D' the opposite side bars, of the seat-cushion frame, a series of cross-bars

or supports E, preferably curved downward to increase the capacity of the frame, as shown, connecting the side bars D D' between the end bars C C'. Upon each of the end bars C C' and each of the cross-bars E is mounted a row of vertical coiled springs *a*, having their smaller ends next the seat-frame and connected to the side bars and cross-bars, preferably by having their straight ends inserted into holes in the bars, the downward pressure on the springs being sufficient to retain them in place without clinching the ends. The top coils of the springs *a* are connected by means of spring-plates *b* looped about the top coils, the plates connecting four springs of a rectangle, preferably crossing each other and being secured together at their intersection by rivets 1, as shown. While these plates may be formed and secured to the springs in any other suitable manner, the construction shown is preferred, in which are used simple flexible plates of such length as to loop about the top coils of the springs and have their ends overlap between the springs, a single rivet 1 thus securing the ends of two plates at their intersection.

A simple construction with a smooth top surface is thus provided, the spring-plates *b* with the springs *a* securing a strong cushion, while at the same time insuring the desired elasticity at all points and in all directions.

The outside springs *a* all around the seat are secured to metal plates *c*, which, as shown, are of such width as to be rigid edgewise while flexible longitudinally under the weight of the seat occupant and are secured together at their ends, but supported solely by the springs, so as to form a complete spring edge. The springs *a* are preferably secured to these edge plates *c* in the manner shown, that is, the end of the larger or top coil of the spring is twisted about the next coil, as shown in detail in Fig. 5, so as to hold the top coil, and then the end 2 is carried inward and provided with an eye 3, by which it is riveted to the plate *c*.

Over the springs *a*, spring-plates *b*, and edge plates *c* a cover *d* of textile material, preferably canvas, is drawn and secured to the side and end bars of the seat, so as to hold the springs in place and under the

proper tension, the central springs being of greater length than the edge springs, so as to give the proper rounded form to the cushion.

Upon this canvas *d* the packing or stuffing *e* is supported, and outside this the plush or other cover *f*. It will be found that this construction provides a very efficient, comfortable, and durable spring-edge cushion.

The back-cushion shown in this application forms no part of the present invention, but is described and claimed in another application, Serial No. 551,058, filed May 31, 1895, now Patent No. 542,412, and it will be understood that any other suitable form of back-cushion may be used in a reversible seat having a seat-cushion embodying the present invention. As shown in Fig. 2, this seat-back has the top and bottom bars *G G'* and series of cross-bars *H*, on which bars are supported the top and bottom edge springs *g* and the body-springs *i*, these springs being shown as having their top coils connected to rods *h k* by clips *4* and held under tension by bands *o*, connecting these rods to the frame. Over the spring-body thus formed is a covering of textile material *p*, upon which is supported the fillings *s* and the plush or other covering *t*.

It will be understood that modifications may be made in the construction without departing from the invention, and I am not to be limited to the exact form or arrangement of the parts shown.

What is claimed is—

1. The combination with a cushion-frame consisting of side and end bars and a series of cross-bars, of coiled springs supported on said bars and arranged in rows, diagonal links connecting the springs in sets and crossing centrally of the sets of springs, edge plates secured to and supported by the outside springs and of such width as to be rigid side-wise while flexible longitudinally, said plates being secured together at their corners to form a frame extending about the cushion, and a flexible covering and upholstery supported on the spring-body thus formed, substantially as described.

2. The combination with a cushion-frame consisting of side and end bars and a series of cross-bars, of coiled springs supported on said bars and arranged in rows, diagonal spring-plates looped about the top coils of the springs in sets of four springs and inter-

secting centrally of the sets of four springs and secured together at their points of intersection, edge plates secured to and supported by the outside springs and of such width as to be rigid edgewise while flexible longitudinally, said plates being secured together at their corners to form a frame extending about the cushion, a flexible covering over the spring-body thus formed having its edges secured to the frame, and upholstery supported on the flexible covering, substantially as described.

3. The combination with end and side bars and cross-bars *E*, of coil-springs on said bars arranged in rows transversely and longitudinally of the cushion, diagonal spring-plates *b* connecting said springs in sets of four and crossing centrally of the sets of four springs, said plates being looped about the top coils of the springs and the ends of intersecting plates being secured together at the point of intersection, edge plates *c* flexible longitudinally and rigid edgewise extending about the cushion and carried by the outside springs and secured together at the corners to form a spring-frame extending about the cushion, substantially as described.

4. The combination with end and side bars and cross-bars *E*, of coil-springs on said bars arranged in rows transversely and longitudinally of the cushion, diagonal spring-plates *b* connecting said springs in sets of four and crossing centrally of the sets of four springs, said plates being looped about the top coils of the springs and the ends of intersecting plates being secured together at the point of intersection, edge plates *c* flexible longitudinally and rigid edgewise extending about the cushion and carried by the outside springs and secured together at the corners to form a spring-frame extending about the cushion, cover *d* of textile material extending over the springs and plates and having its edges secured to the bars, and upholstery on said cover, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN S. JOHNSTON.

Witnesses:

URIAH F. CARPENTER,
FRANK. R. PENTZ.