

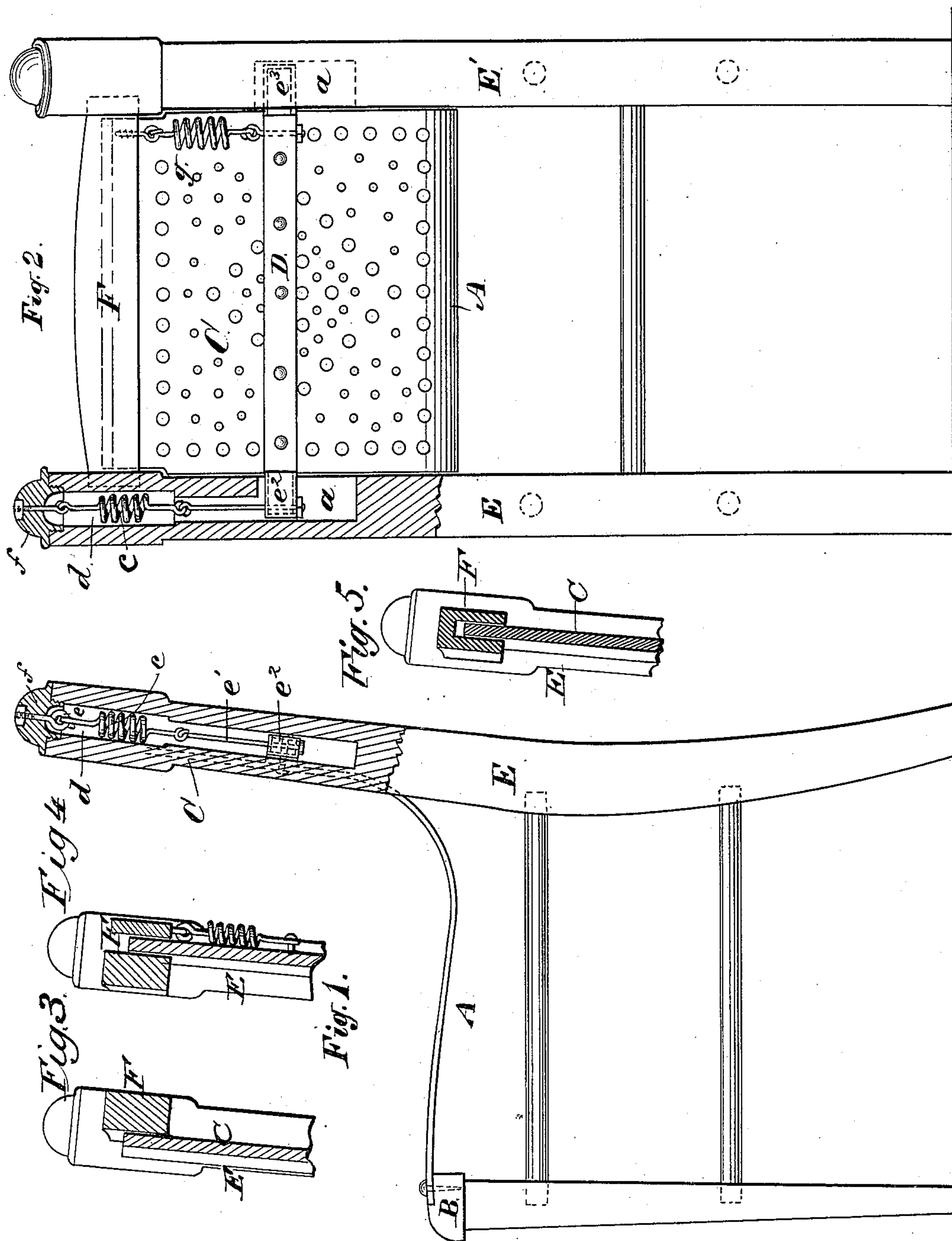
(No Model.)

G. C. WINCHESTER.

CHAIR.

No. 308,226.

Patented Nov. 18, 1884.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE C. WINCHESTER, OF ASHBURNHAM, MASSACHUSETTS.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 308,226, dated November 18, 1884.

Application filed March 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. WINCHESTER, of Ashburnham, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Chairs and other articles to sit upon, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same—

10 Figure 1 being a side elevation, partly in section, of a chair containing my improvements; Fig. 2, a rear elevation of the same, also partly in section; and Figs. 3, 4, and 5, cross-sections of the upper cross-bar and edge
15 of the back, illustrating several equivalent arrangements of the same.

The invention relates to chairs and other articles to sit upon having a seat or seat and back sustained by springs; and it consists of
20 a frame having a seat attached rigidly to its front bar at the forward side and sustained at its rear side by a spring or springs; in a seat or seat and back attached to the front bar of the chair-frame and connected at the rear side
25 with a vertically-moving cross-bar guided by the posts or frame of the chair and sustained by a spring or springs; in arranging the edge of the movable back to extend at all times above the lower edge of the stationary cross-bar of the back frame, and in other details
30 hereinafter explained.

A represents the seat, the front edge of which is fixed by screws or otherwise to the front rail, B. The seat and back are preferably formed of one piece, curved upward at the
35 rear of the seat proper, as shown in the drawings. The rear surface of the back is shown in Fig. 2 and in dotted lines in Fig. 1. When the front edge of the seat is thus made fast to
40 the rail B, it is intended that the seat shall itself be made of such thickness and material that, while suitable to serve the purposes of a seat, it shall at the same time be sufficiently flexible to permit it to yield or spring along
45 back from its front edge and in the curved portion connecting the seat proper and the back when both are made of one piece.

The permanent or rigid attachment allows all necessary movement of the seat to take
50 place through the elasticity of the seat, and is advantageous in that, besides being cheap,

strong, and neat in appearance, it presents no open joint in which garments may be caught, as where the seat is hinged to the frame, as proposed by others.

D is a cross-bar secured to the back C, the ends of which extend into mortises *a a* in the side rails or posts, E E'. The cross-bar D, as will be seen by referring to Fig. 2, is located below the top of the back and in proper position to support the back of the occupant of the chair to advantage, preventing the back from being pressed outward by the weight or pressure of said occupant. This feature is of especial importance where a back is employed
60 lacking sufficient stiffness to be self-supporting.

c is a spiral spring, which is located in a chamber or recess, *d*, made in the upper end of the post by boring into it. The wire of the
70 spring at the upper end is looped into a staple or eyebolt, *e*, which is made fast to a cap, *f*, fixed on the top of the post over the recess *d*. The wire of the lower end of the spring is looped into another eyebolt, *e'*, the lower end
75 of which passes through and is made fast to the end *e''* of the cross-bar D.

A similar spring similarly arranged may be located in the opposite post, E'; or, if preferred, the springs may be located exteriorly
80 of the posts, as seen at *g*, the upper ends being secured to the upper cross-bar, F, of the back and the lower ends to the cross-bar D, in the angles formed by the back C and the posts.

I do not, of course, limit myself to the special
85 form of spring described.

If preferred, rubber may be used as the elastic material, and may be arranged to act either by extension or compression, as found desirable.

90 Blocks or other pieces of rubber may be placed in the lower ends of the mortises *a a'*, so that the ends *e'' e'''* may rest upon them. The ends *e'' e'''* of the bar D should be provided with metal caps, through which the bolts *e'* shall
95 pass, thus securing the required strength in the said ends, and also protecting them against wear from contact with the sides of the mortises in the posts, which should also be faced with metal.

The upper edge of the back C is extended
100 above the lower edge of rail F, and may bear

against the front of said rail, as shown in Fig. 3; or it may extend into a slot or groove formed in the lower edge of said rail, as shown in Fig. 5; or it may extend up in rear of the top rail, 5 F, as shown in Fig. 4, in which case an additional rail or bar should be placed in rear of the back, for it to rest against, and to which the springs may be attached, if desired, this latter being essentially the same as that shown 10 in Fig. 5, except that the groove or space in which the upper end of the back rests is left open, while in the other case it is closed.

If it be desired to make the back and seat of separate parts, the seat will be suspended at 15 its rear side from the springs by simply extending the rods from the lower ends of the springs down and connecting them to the rear side of the seat, in which case the back itself need not move; but in all cases the top of the 20 back should be extended, so as to cover the springs and protect the person from contact therewith.

It is also obvious that when the back is made of material sufficiently rigid the cross-bar D 25 may be dispensed with, the lower ends of the springs in such cases being connected directly to the back, as shown in Fig. 4, or in any suitable manner, these being matters of mere mechanical detail which the manufacturer may 30 vary at will, the result and operation being the same.

It will be observed that in all cases the back extends upward above the point where the springs are connected to it or to the seat, and 35 thereby covers them and prevents contact of the person with them, and that the springs are either concealed by the posts or on their front by the back. In the case of upholstered chairs they will also be hidden from view on the back 40 side by the covering material.

By each of the above arrangements an opening between the cross-bar and the upper edge of the back is obviated, and an even surface and neat finish are secured.

45 It is obvious that thus suspending the seat and back upon springs located above the seat, as described, will give to the seat and the back an agreeable vertically-yielding spring motion, the seat vibrating on its front edge as a 50 center of motion, thus forming substantially a spring-bottom chair, without the expensive upholstering, with springs, commonly used.

The seat and back herein referred to are made of material which retains substantially 55 the same form under all circumstances—that is to say, that although to a certain degree flexible, and therefore capable of yielding to

the weight or pressure put upon it, it is at the same time elastic and of sufficient stiffness to retain the form into which it is originally bent 60 or pressed, and hence is of substantially permanent form.

Having thus described my invention, what I claim is—

1. In a chair or seat, the combination of a 65 frame having slotted back posts, a seat of elastic material, substantially such as described, adapted to retain a given shape, and rigidly secured to the front rail of the frame, a back connected with the seat, a cross-bar connected 70 with the back extending into the slots of the back posts, and adapted to sustain the back, and supporting-springs applied to the ends of the cross-bar, all substantially as shown and described.

2. The combination, in a chair or other article to sit upon, of a seat, A, the rail B, the back C, the cross-bar D, the posts E E', provided with recesses *d* and mortises *a*, and the 75 springs *c*, located in said recesses and connected to said cross-bar, as and for the purpose described. 80

3. In a chair, the combination of a frame provided with a stationary cross-bar at the back, a seat, back-supporting springs, and a 85 vertically-movable back connected with the seat and having its upper edge extended above the lower edge of the cross-bar, substantially as shown and described, whereby it is adapted to rise and fall without producing an opening 90 between the back and cross-bar, as explained.

4. In a chair, the combination of a frame having slotted back posts, a vertically-movable elastic seat and back, sustaining-springs 95 for said seat and back, and a cross-bar secured to the back below its top, and having its ends extended into the slots of the back posts, whereby it is adapted to support the back against the weight or pressure of the occupant, while permitting it to freely rise and 100 fall.

5. In combination with a chair-frame having a back frame, a seat connected at its front with the chair-frame, springs connecting the seat and the back-frame, and a back extend- 105 ing from the seat upward above the said springs to protect the clothing of the occupant of the chair from contact therewith, substantially as described.

Witness my hand February 26, 1881.

GEO. C. WINCHESTER.

In presence of—

A. S. FITCH,

A. G. N. VERMILYA.