

Oct. 25, 1949.

S. OVERBY

2,485,650

SPRING SEAT CONSTRUCTION

Original Filed Oct. 15, 1943

Fig. 1

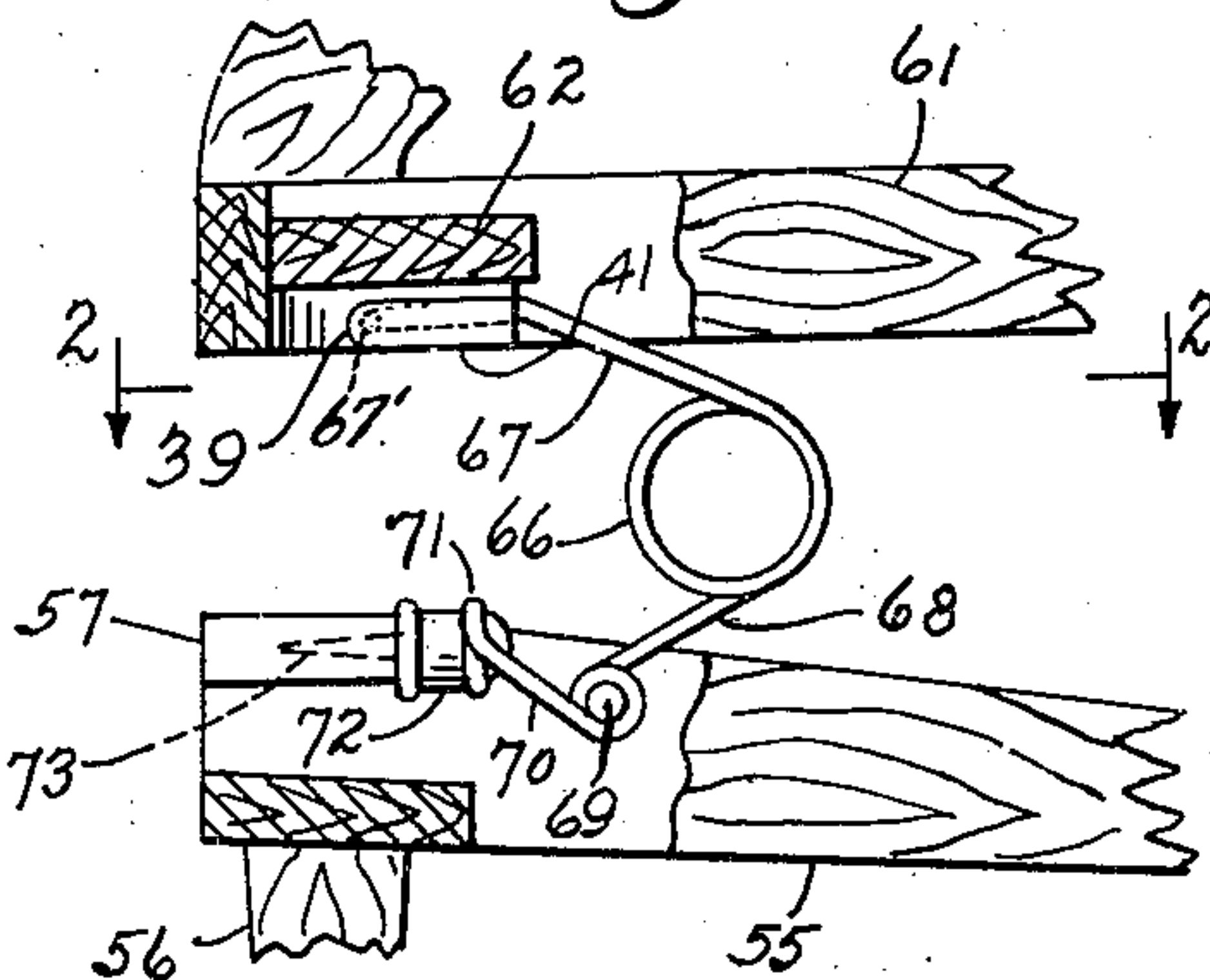


Fig. 6

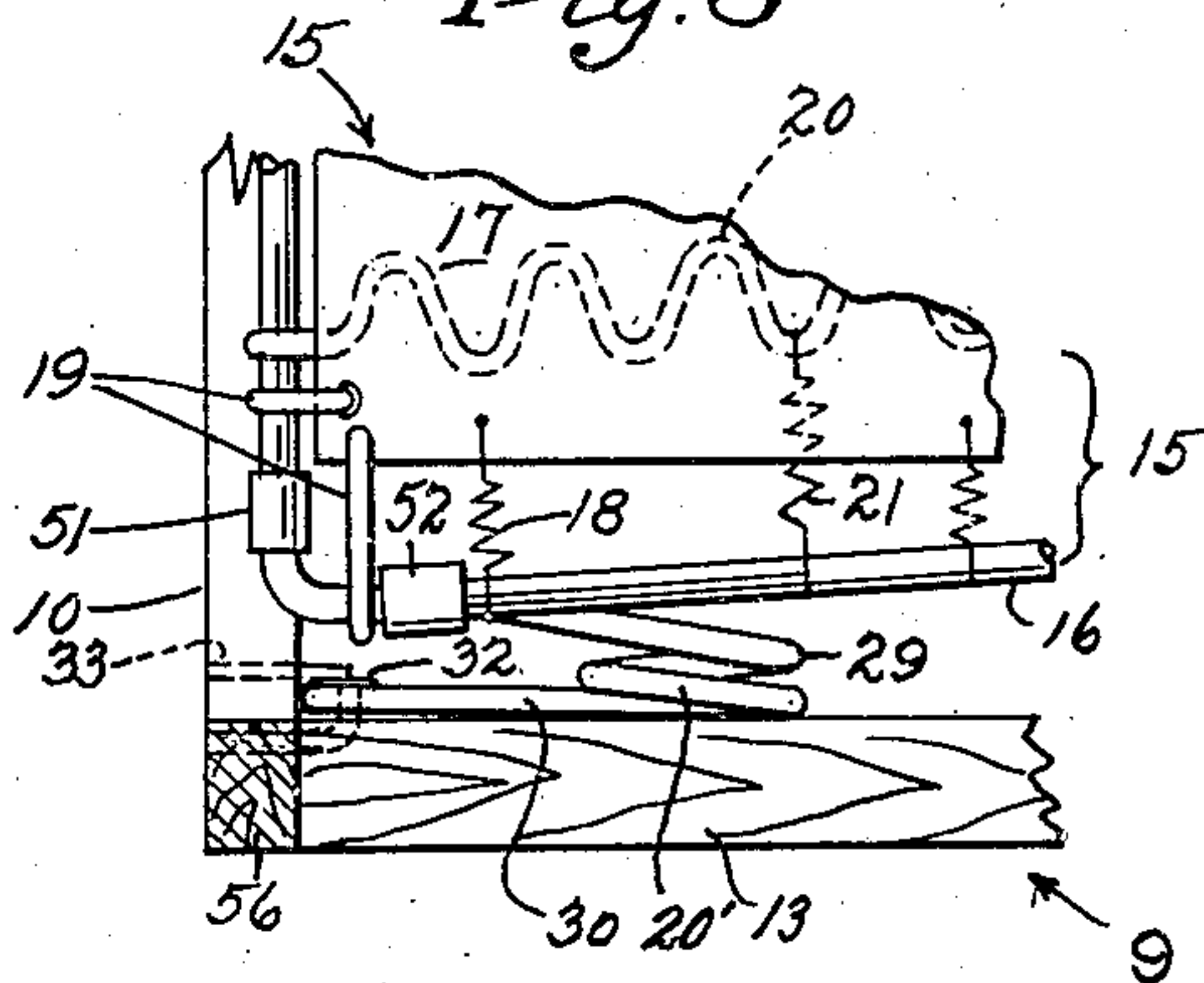


Fig. 2

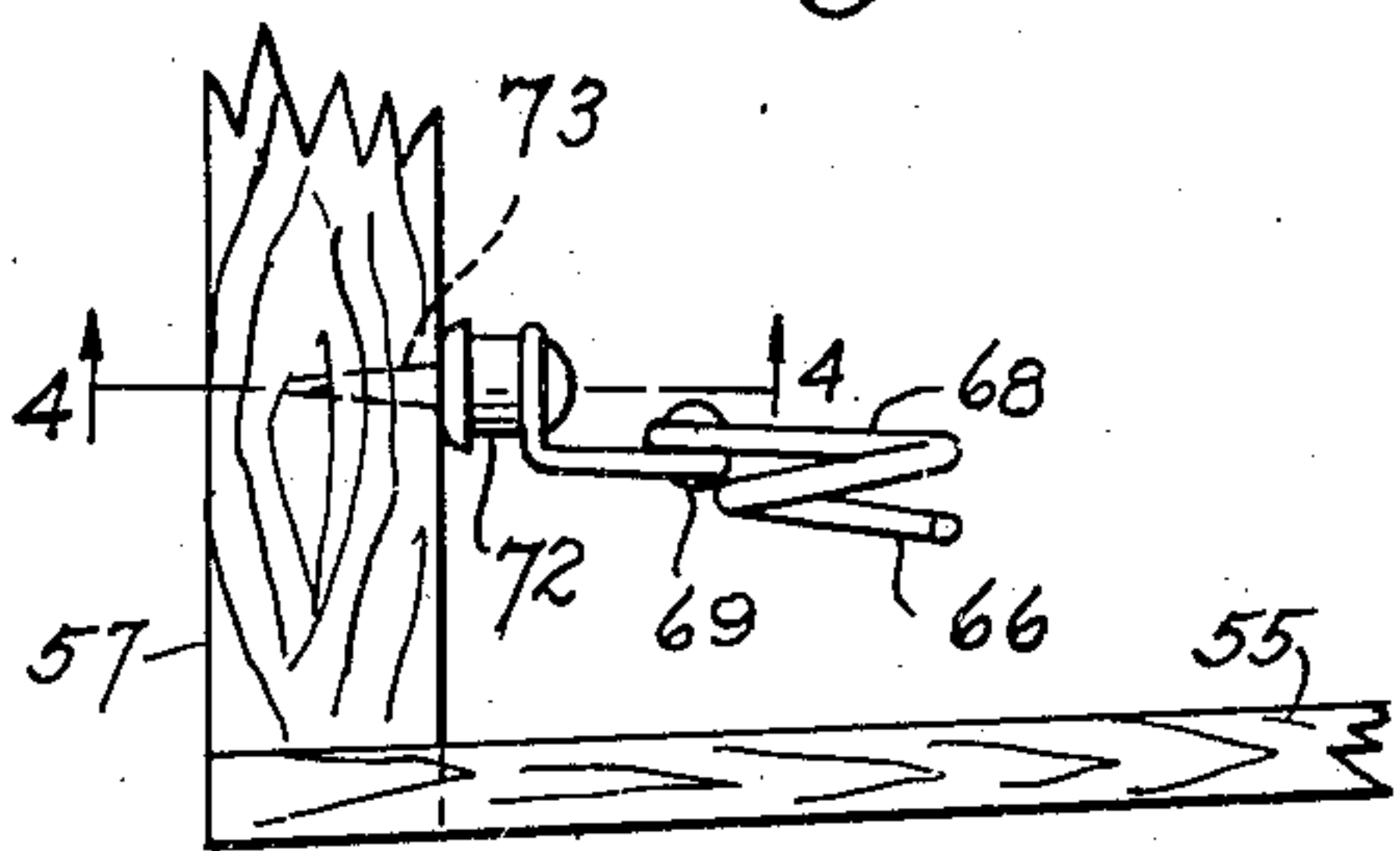


Fig. 7

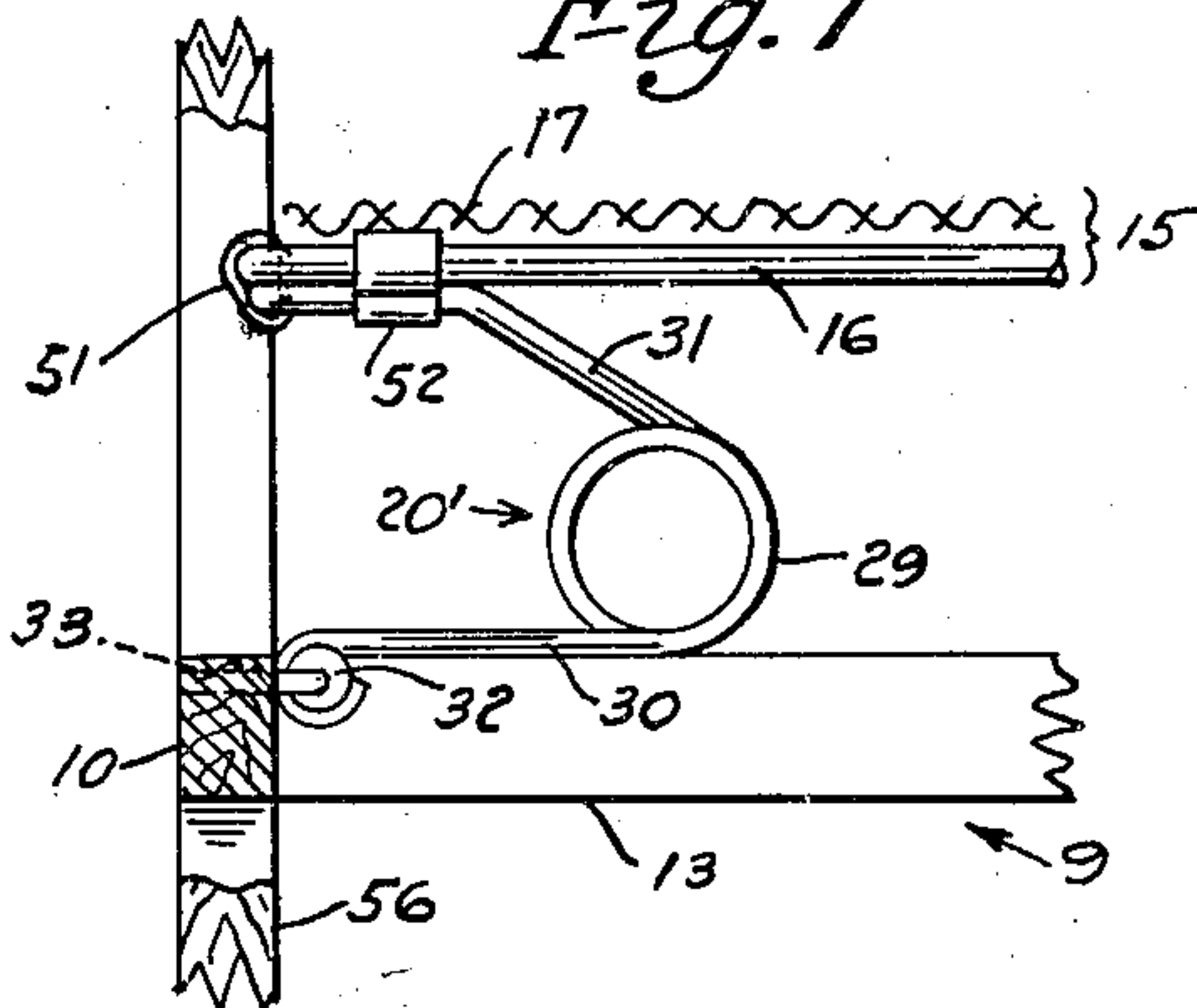


Fig. 3

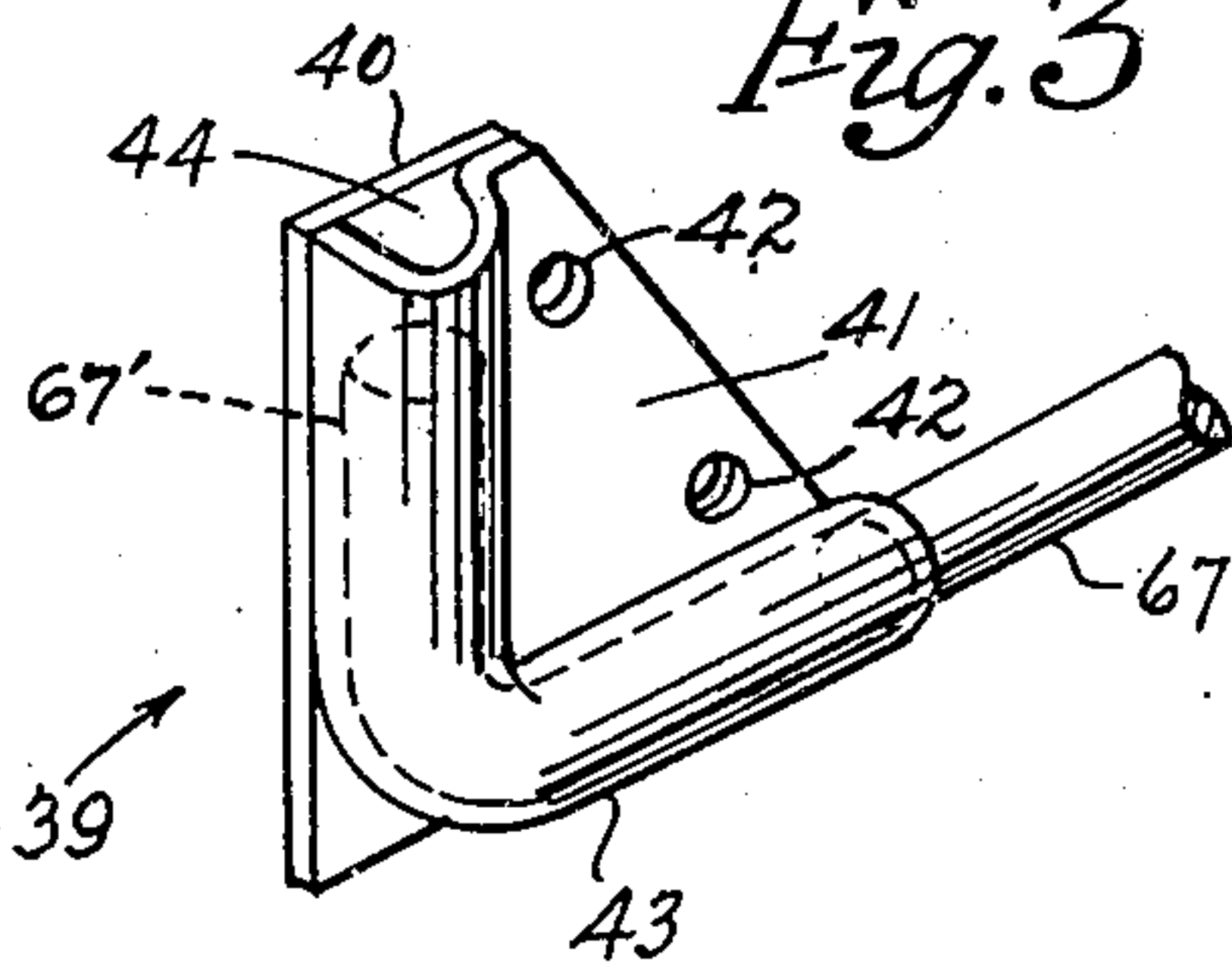


Fig. 4

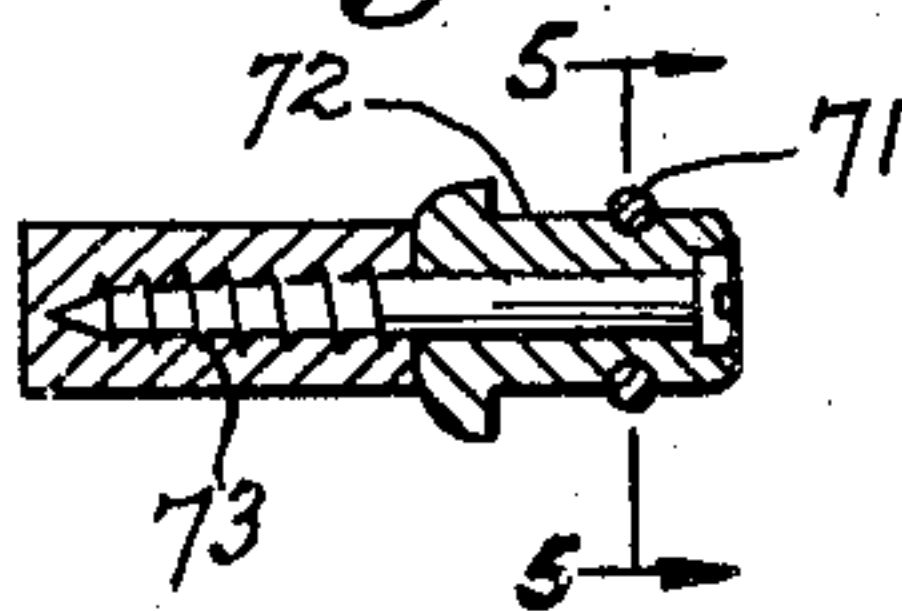
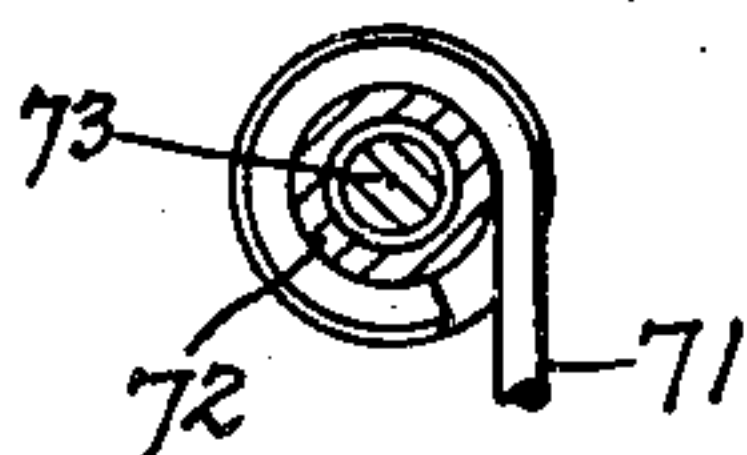


Fig. 5



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## UNITED STATES PATENT OFFICE

2,485,650

## SPRING SEAT CONSTRUCTION

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Original application October 15, 1943, Serial No. 506,328. Divided and this application December 20, 1944, Serial No. 569,018

6 Claims. (Cl. 155—179)

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This invention relates to spring seats for articles of furniture, the construction including a platform supported by spring means upon a framework.

The principal objects of the invention include that of providing an improved construction of spring seats that will result in increased comfort and resiliency; yet in economy in manufacture; and which will be of general superiority and serviceability with relative simplicity, inexpensiveness of construction, and general overall efficiency and improvement.

My invention also aims to provide means of this classification which will be positive in operation, convenient in use, easy to install into its working position and equally easily disconnected therefrom; simple and economical in fabrication, and of general superiority.

The invention also comprises novel details of construction; novel parts and the combinations and arrangements of same, as will more fully appear hereinafter. However, the drawings attached, and the description appended, merely disclose embodiments of the invention, presented for purposes of clarification only, the invention being limited in the embodiments it can take, only by the scope of the sub-joined claims.

This application is a division of application, Serial No. 506,328, filed October 15, 1943, entitled "Spring seat construction," the same issued as Patent No. 2,437,119, on March 2, 1948.

In the accompanying drawings, in which like reference characters designate like parts in the several views:

Fig. 1 is a detailed fragmentary side elevation, partially in section, of a certain embodiment of my invention.

Fig. 2 is a substantially horizontal section, taken on line 2—2 of Fig. 1, sighting in the direction of the arrows.

Fig. 3 is an isometric perspective view of one of the components of the present construction, here shown as a bracket or anchorage.

Fig. 4 is an enlarged sectional detail on line 4—4 of Fig. 2, sighting in the direction of the arrows.

Fig. 5 is also an enlarged sectional detail, but taken on line 5—5 of Fig. 4.

Fig. 6 is a horizontal fragmentary detail of another embodiment of our invention.

Fig. 7 is a side elevation of the construction shown in Fig. 6.

Referring more in detail to the various constructions shown in the drawings, and particularly to Fig. 1, the inventive concepts are embodied in a chair having a base frame indicated at 55 supported upon four legs, a portion of one of which is partially represented at 56. The base frame has a front rail 57, and also a rear rail and a middle rail (not shown).

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The chair also includes a seat frame, partially shown at 61 in Fig. 1. The seat frame has front and rear rails, the front one of which is shown at 62.

Front coil springs 66 resiliently support the front of the seat frame, spaced vertically from the front rail 57. The upper arms 67 of the springs 66 terminate in portions 67' bent at right angles to the rest of the upper arms. These right-angul- 10 arly bent ends are fixedly mounted in brackets 39, attached to the underside of the front rail 62 of the seat frame.

The lower ends of the arms 68 of the coil springs 66 have pivotal connections 69 with the free ends of arms 70, that are provided with loops 71 which swivel on grooved posts 72. The arms 70 are flexible between the pivots 69 and loops 71. The pivotal connections 69 operate on axes parallel with the front rail 57. The posts 72 are 15 screwed to the front rail 57, as shown at 73. The posts 72 are mounted adjacent opposite front ends of base frame 55.

As best seen in Fig. 3, the bracket group 39 comprises a back-plate 40 and a front-plate 41, the two plates being provided with aligned screw-openings 42. The front plate 41 has a channel the members 43 and 44 of which are disposed 25 substantially at right angles to each other, for holding respectively the arm 67 and the bent end 67' of that arm.

By virtue of this construction and arrangement of parts, any tendency of the coil 66 to turn laterally, or twist, is overcome.

The specific details of the construction and mounting of posts 72 is shown in Figs. 4 and 5, 30 form two other aspects.

Referring now to the embodiment illustrated in Fig. 6, numeral 9 designates, generally, a part of the framework of a chair-seat or other seat. The framework includes a front rail 10, a rear rail (not shown), and side rails 13.

On this framework is mounted, in a mode hereinafter particularized, a platform 15. The platform is supported within a frame 16 by any suitable desired means; coiled springs 18 are the means here shown by way of example. Members 19, here shown as hooks, are looped around frame 16 and engaged through the fabric 17 around all edges of the fabric; or, the hooks 19 may be employed only at the corners of the fabric. 45

The frame 16 also carries a plurality of coplanar, sinuous springs 20, arranged in parallelism and hooked over the front and rear members of the frame 16. The springs 20 are preferably formed as a series of hairpin turns lying in the one horizontal plane. Certain coiled springs 21 are engaged over the side members of the frame 16 and connect with loops in the turns of springs 20, as best seen in Fig. 6.

60 Front springs 20' are provided for supporting



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the front portion of frame 16 and these springs are helically looped as at 29. The springs 20' have legs 30 and 31 projecting tangentially from the helix. When at rest, the leg 30 lies substantially horizontally and leg 31 lies inclined upwardly at an acute angle to the horizontal.

The outer end of the leg 30 is bent around a bearing 32 which is rotatably mounted upon a staple 33 driven into the back of the front rail 10. The bearing 32 may be made of compressed fibrous material impregnated with a lubricant such as graphite, so that the rotary connection between the bearing 32 and the staple 33 is lubricated at all times, preventing squeaking during use. It will be noted that the width of the bearing 32 is only slightly less than the distance between the legs of the staple 33 so as to substantially eliminate side motion of the bearing. The upper leg of the spring extends around under the corner of the frame 16. It is clamped to member 16 by clamps 52 and 51, respectively.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, it is to be understood, susceptible of being modified variously without departing from the spirit and scope of my invention. I, therefore, do not hereby restrict myself to the specific forms of construction herein illustrated and described, but preempt to myself, all modifications that fall within the scope of the appended claims.

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

1. In a seat construction, a framework; an angularly cornered frame for supporting a seat; resilient means for supporting the frame on the framework, said means including spring elements each of which comprises a vertically-disposed coil spring having upper and lower tangential legs, the upper leg being provided with an angular, horizontal extension having similar angularity to a corner of the frame, the angular horizontal extension of the upper leg extending around the corner of the frame in parallel relation to the two sides of the frame adjacent the corner; means clamping the extension to the frame at opposite sides of the corner in said parallel relation; a bearing on the framework, a flexible member swiveled at one end to said bearing, and a pivot connecting the lower leg of said coil to the other end of said member.

2. In resilient construction for a chair and the like, framework, a seat frame, post means mounted upon the framework, arms having swivel connections with the post means, circular coils having upper extensions secured to the seat frame, and lower extensions, and means pivotally connecting the lower extension with the swiveled arms, permitting resilient movement of the coil means in planes substantially at right angles to each other.

3. In seat construction, a framework including a seat frame, and resilient means supporting the frame on the framework, post means mounted upon the framework, arms having swivel connections with the post means, said resilient means comprising vertically disposed coil spring means having upper ends for resiliently supporting the seat frame, and lower ends and substantially horizontal pins pivotally connecting the lower ends of the coil spring means with the outer, swinging ends of the swiveled arms, permitting

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resilient movement of the coil means in planes substantially at right angles to each other.

4. In seat construction, a framework, a seat frame, and resilient means to support the seat frame on the framework, including vertically disposed circular coils having upper and lower tangential extensions, the upper extensions being bent upon themselves and disposed to lie against the under side of the seat frame corners, means to secure said bent ends in position to prevent side sway of the coils, resilient elements connected to the framework to swivel in a plane transverse to the general planes of the coils, and a pivotal connection between the latter elements and the ends of the lower extensions.

5. In a seat construction, a framework, an angularly cornered seat frame, resilient means for supporting the seat frame on the framework, said means including spring elements each of which comprises a vertically disposed coil spring having upper and lower diverging legs, the upper leg being provided with a horizontal portion and with an angularly directed horizontal extension of said portion, the angularity between said portion and extension being similar to the angularity of a corner of the seat frame and said portion and extension being respectively parallel to the two sides of the seat frame defining said corner, a bracket having an embossment in which said portion and extension are housed, said bracket being affixed to the seat frame within said corner thereof, and resilient members carried by the framework and each having a portion pivotally connected to the lower leg of each coil spring.

6. A seat construction comprising a framework, a seat frame thereabove, means connecting the seat frame and the framework for resilient support of the former, said means comprising a vertically disposed coil spring at each corner of the seat construction, each coil spring having angularly diverging upper and lower arms, each upper arm having a bent end, a bracket fixed to and within each seat frame corner and comprising a pair of plates clamping each respective bent end therebetween whereby the spring coils are held vertically disposed, a resilient member carried by the framework within each corner thereof, a pivotal connection between each resilient member and the lower arm of each respective coil spring, and a swivel mounting for each resilient member.

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