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Patented Jan. 15, 1901.

M. H. NABER.

SPRING FOR CHAIRS.

(Application filed Feb. 20, 1900.)

155-54

(No Model.)

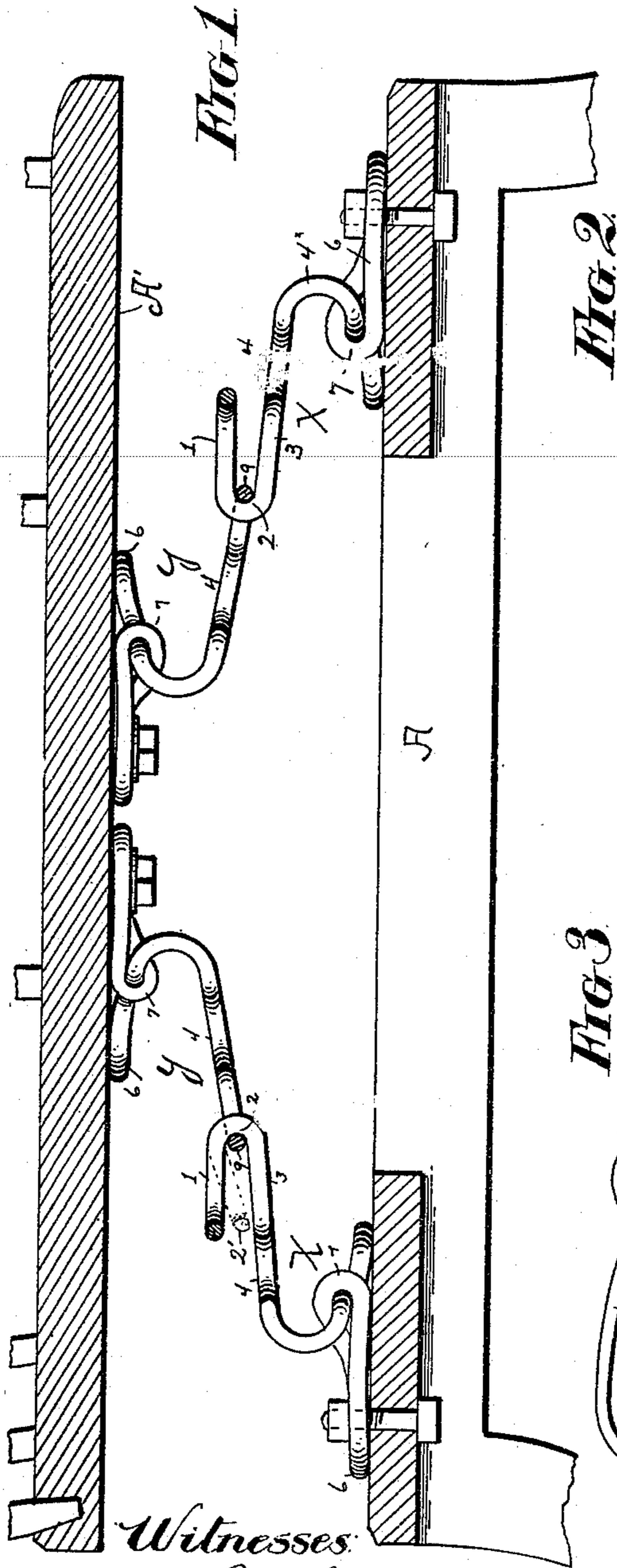
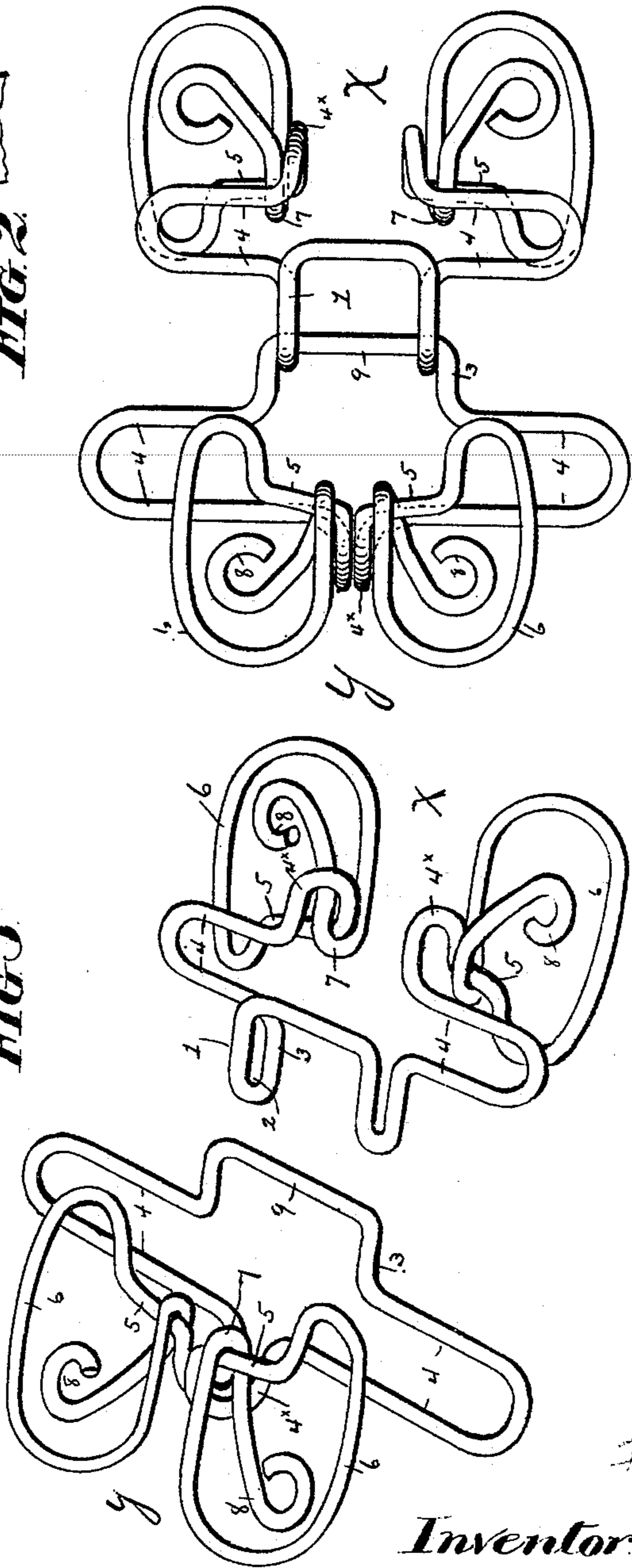


Fig. 3



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UNITED STATES PATENT OFFICE.

MOSES H. NABER, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDWARD G. PAULING, OF SAME PLACE.

SPRING FOR CHAIRS.

SPECIFICATION forming part of Letters Patent No. 666,062, dated January 15, 1901.

Application filed February 20, 1900. Serial No. 5,911. (No model.)

To all whom it may concern:

Be it known that I, MOSES H. NABER, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Springs for Chairs, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to make an improved spring adapted especially for use in chairs, engineers' seats, and analogous locations; and my invention consists in an improved form of spring employed in such relations.

In the accompanying drawings I have illustrated my improved spring, in which—

Figure 1 is a central vertical sectional view of a base and seat-frame having my springs attached. Fig. 2 is a top plan view of one of the springs; and Fig. 3 is a perspective view of the same, the sections being disassembled.

In Fig. 1 of the drawings I have shown my springs applied to the lower portions of a chair; but it is to be understood that they may be employed in any analogous location and for any similar use, such as in engineers' seats, without departing from the present invention, which contemplates their employment in any structure where it is desired to provide a seat having a rocking or tilting movement.

The reference-letter A designates a base, and A' a seat-frame, which may be of any desired construction. The springs are preferably made of steel wire and are arranged and disposed between the base and seat in any manner suitable for the use for which they are intended. The preferred arrangement is that shown in the drawings, wherein the springs are placed oppositely at the front and rear, each spring being preferably composed of sections or of a pair of separate springs. The lower section X of each pair is formed by bending a suitable length of wire to form the legs 1 and 3, the latter being formed by carrying the wire back upon itself, thereby constituting the seats 2 for a purpose to be described. At the ends of the legs 3 the wire is projected laterally to form the torsional U-

shaped loops 4, the sides of which are preferably at right angles to the legs 3, though, of course, either or both of the sides of the loops may be at a different angle to its leg. The wire is then bowed or curved at 4^x and the lateral arms 5 are formed, the wire of the arms being formed into wings 6, which rest upon the base or seat-frame and by which the springs are attached thereto. These wings are formed by curving the wire into substantially circular form, as shown in the drawings, the inner portions being carried beneath the arms 5 and bent around the same at 7 and the ends being extended to about the center of the wings, where they terminate in eyes to receive the attaching-bolts.

The upper section Y of each spring is preferably formed in all respects like the lower one, except that the seats 2 and legs 1 are omitted and the ends of the legs 3 are united by a cross-piece 9.

In applying the springs for use the lower sections X are attached to the base and the upper sections Y to the seat-frame, the cross-pieces 9 of the latter resting in the seats 2 of the former. These seats may be open, as shown in full lines in the drawings, so that the cross-pieces 9 may readily pass into and out of them, whereby the sections may be easily assembled when the springs are made of separable or removable sections; but each spring may be, in fact, a unitary structure, although composed of sections, by constructing the seats 2 so that they shall confine the cross-pieces. This may be done by slightly bending the legs 1 of the lower sections, as shown by the dotted lines at 2' at the left of Fig. 1, the seats then retaining the cross-pieces so that each spring is a complete entity composed of interlocked sections. This latter construction is preferred, as it renders the work of assembling the parts much easier. The wings of the sections are tightly held against the base and frame by bolts passing through the loops or eyes of the legs 8, which clamp the wings to the same, so that they act after the manner of large washers, thereby taking the strain partially from the bolts and distributing it around the peripheries of the wings. The legs 3 and loops 4 of each section constitute a free portion that

moves in relation to its wings upon the lateral arms 5 as pivots, acting against the torsional force or action of the material composing the arms. This action occurs when the movement of the seat is forward and back, as in a rocking or tilting motion of the seat. The loops 4 have a similar action during this motion, and in addition allow an easy side-wise movement of the seat, the sides of the loops yielding to the strain imposed by such motion and the base or curve thereof having a torsional action under the strain of the sides with relation to each other. As the springs are composed, preferably, of sections or pairs of springs, there is of course an easy movement at the junction of the members, the cross-pieces 9 rocking in their seats 2 to give additional yield.

The wings may be set near together or far apart, as shown in Fig. 3, to provide a wide or narrow spring, as the use may demand, and to regulate the torsional action. In some cases—for example, in engineer seats—a pair of springs or a spring composed of sections is provided for each of the four sides. In any arrangement or disposition of these springs the seat has an easy free movement in all directions. The seat may be given a rocking

motion, like a rocking-chair, or a movement at any angle.

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

1. A spring for chairs and the like consisting of sections, each section having a connecting device at one extremity, lateral torsional loops adjacent thereto, lateral torsional arms connected to the loops, and wings at the ends of the arms, secured to the chair by the ends of the section.

2. A seat having a base and seat-frame and intermediate springs, each spring consisting of sections each composed of a length of wire bent to form connections for the associated sections, thence bent laterally and back upon itself at each side to form torsional loops, thence curved to form lateral torsional arms terminating in wings, the ends of each section being bent around their associated arms to provide fastening means.

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

MOSES H. NABER.

Witnesses:

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J. McROBERTS.