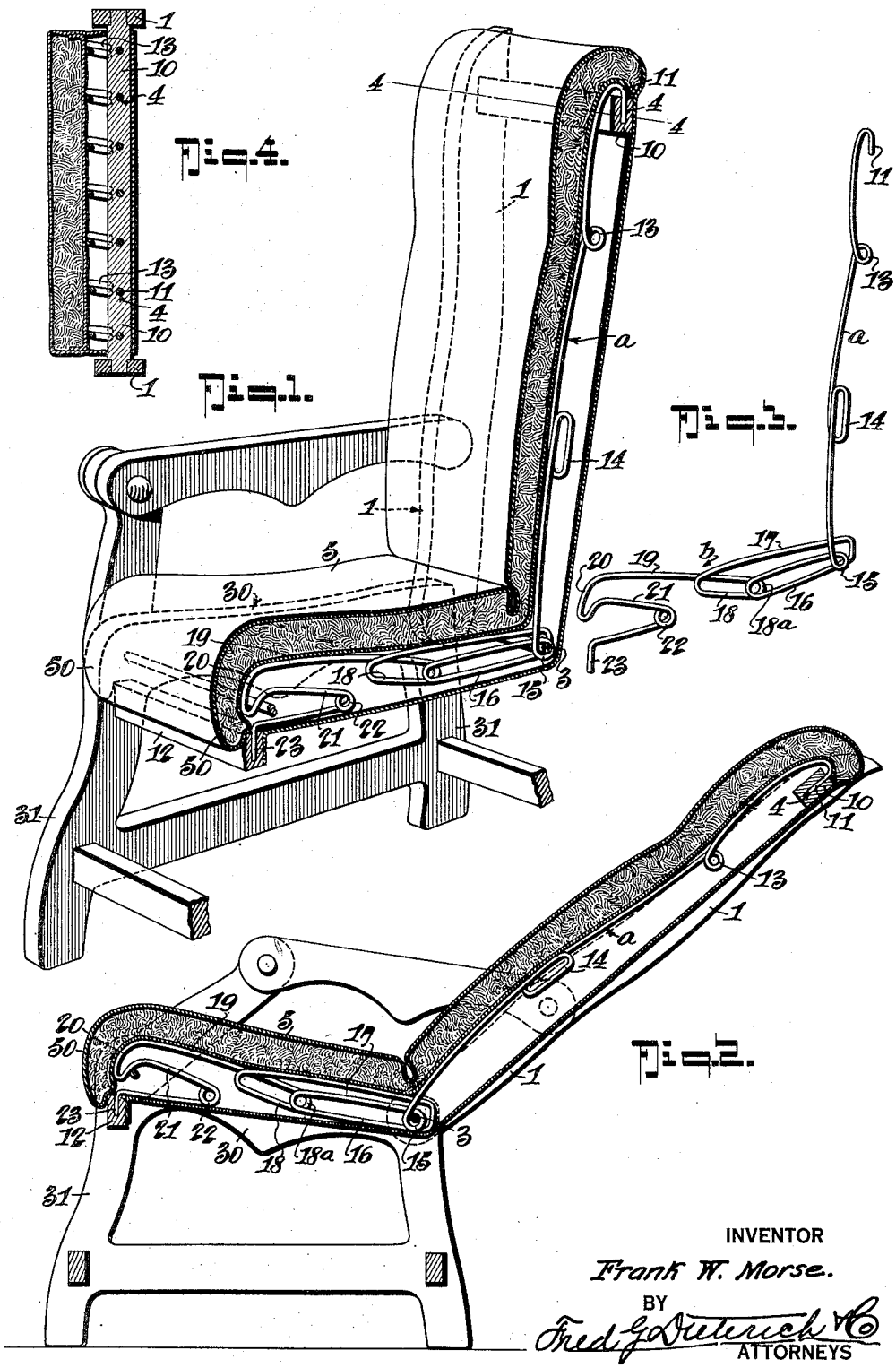
F. W. MORSE.

FURNITURE SPRING.

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FURNITURE SPRING.

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To all whom it may concern:

Be it known that I, FRANK W. MORSE, a citizen of the United States, residing at San Fernando, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Furniture Springs, of which the following is a specification.

This invention relates to an improved construction and application of spring devices for furniture and more particularly has reference to furniture springs usually applied to the seat and the back of furniture and primarily my said invention has for its object to provide a spring structure of the general type stated of a simple construction that can be easily formed into the desired shape and economically made, and which, when applied to the chairs provide springs that in actual use will conform to all parts of the body, at almost any position from an upright to the horizontal, which can be readily operatively applied on either upright or reclining chairs and particularly adapted for easy chairs since the spring devices are especially designed to give perfect support to the shoulders of the user in the sitting or reclining position upon the furniture.

Another object of my invention is to provide a spring device of the kind stated which may vary in size to suit the special sizes and shapes of seats of different articles of furniture, such for example as chairs, bed lounges and swinging seats and which, when applied to the chair frame, provides a spring cushioned chair or seat of a strong and durable nature and one that gives perfect conformity to the body resting thereon.

With other minor objects in view that will hereinafter appear, my invention comprehends an improved spring construction that is fully explained in the following detailed description, particularly stated in the appended claims and illustrated in the accompanying drawing, in which:—

Figure 1 is a partly perspective vertical section of a chair that embodies my improved construction of springs, the chair being in the upright position.

Figure 2 is a longitudinal section, of the chair equipped with my improved springs, the chair being shown at the reclining or substantially horizontal position.

Figure 3 is a detail perspective view of one of my improved furniture springs.

Figure 4 is a horizontal section of the chair back taken substantially on the line 4—4 on Figure 1.

In the drawings, I have illustrated my improved construction of furniture spring as especially designed for use in connection with a comfort chair and while but one complete spring member is shown and described, it is to be understood that the number of said springs used on the piece of furniture depends upon the size and the character of the furniture equipped with my type of spring.

Referring more particularly to Figure 1 of the drawing, 1 designates one of the back frames of the chair and 10 the head rail that passes across and joins the two back members 1 together.

30 designates one of the sides of the body frame of the chair and it has the usual leg portions 31—31 at the front and rear ends thereof, the two side members 30, in practice, being joined at their front end by the front or seat frame rail 12, as shown.

As stated, a number of my improved springs are used on the piece of furniture. In the present showing of my invention, I have illustrated a series of seven springs applied to a comfort chair construction and since the construction and application of the several springs are alike, a detail description of but one spring will be sufficient.

The springs (one of which is shown in detail in Figure 3) are each shaped up from a single strand of comparatively heavy spring wire and the said wire comprises a back portion which constitutes the resilient supporting elements for the chair back and a horiozntal portion that forms the resilient seat supporting elements, the said back and seat portions being so connected that the back portion is adapted for bending down to near a horizontal plane when the back frame of the chair is swung down to a reclining position, as generally indicated in Figure 2 of the drawings.

Each spring has the upper end of its back portion *a* formed with a turned back hook 11, which hook, when applying the spring to the chair frame, is inserted into and held, in any suitable manner, within a socket 4 in the head rail of the chair frame.

At a suitable point below the hook end

11, the back portion *a* of the spring wire is looped to form a spring coil 13, the coils 13 of the several springs constituting a resilient bearing for the shoulders of the occupant of the chair and, at a predetermined distance below the coil 13, the back member *a* of each spring is bent to form an elongated loop 14, the loops 14 of the several springs providing a long or resilient bearing for the small of the back of the chair occupant.

The lower end of the back portion *a* of the spring wire terminates in a coil 15, which takes around the hinge rod 3 that passes across from one side to the other side of the chair or body frame.

From the coil 15 that fits around the hinge rod 3, the spring wire extends substantially at right angles to the back portion *a* and forms the seat portion *b* of the spring and in the construction shown, the spring strand continues, after forming the loop 15 forwardly to nearly midway the length of the seat, at which point the said strand is bent back upon itself, to form a long spring loop 16 which curls over the hinge rod 3, extends forwardly and constitutes a bearing member for supporting the seat 5, the said member projecting to a point somewhat beyond the center of the seat 5 at which point it is again bent back to form a long loop 18, the rear end 18^a of which merges with a second seat supporting forward extension 19, the front end of which is bent into a loop 20 which is adapted to meet the front edge formation 50 of the seat body at which point the wire strand again extends backwardly into a loop 21 that terminates in a spring coil 22 from whence the strand passes to the front seat rail 12 of the chair frame, where it terminates in a pendent hook 23 adapted to be driven into or otherwise made fast in a socket provided therefor in the said rail 12, as shown.

From the foregoing description, taken in connection with the drawing, the complete construction, the manner in which my invention may be readily applied to any size and shape of furniture and the advantages attained in the practical application thereof will be readily apparent to those familiar with the manufacture and use of furniture.

The formation of each spring member is such that it can be easily connected with the chair frame and in case a spring breaks or otherwise becomes unfit for use, the single spring may be readily removed and a new spring substituted therefor.

It is obvious that the formation and location of the shoulder and the back loops on the back portion *a* of the spring are such that the springs readily adapt themselves for comfortably supporting the back of the chair occupant when the chair back is either at the upright or reclining positions, providing, as it were, a furniture spring especially well adapted for use on easy chairs, since a lady can sit in an upright position and sew with comfort because the spring coils on the upright portion of the spring strand conform to all parts of the body and especially give perfect support to the back and shoulders.

While I have shown and described my invention in a certain form, that is with a certain number of loops and coils bent up from the single wire strand at certain points along the said single strand, the said loops and the bends may be multiplied and the location thereof along the length of the strand changed to conform to the particular form of furniture frame to which the springs are to be applied with the location of such loops and coils arranged for conforming with the said specific form or type of furniture and in such way that perfect ease is secured by the use of a one piece back and seat, the spring bent to the desired shapes.

What I claim is:

1. A furniture spring composed of a single strand of spring wire bent upon itself between its ends to form a coil for fitting onto a fixed member of the furniture to which the spring is applied, one portion of the wire being located at substantially right angles to the other portion whereby to provide back and seat rest members, one end of the strand being shaped to fixedly connect with the upper portion of the chair back, and the other end being shaped to fixedly connect to the front rail of a chair, said coil constituting the hinge joint that connects the seat and back portions of the spring.

2. A furniture spring composed of a single strand of spring wire provided with loops, coils, bends and curves relatively so located along the strand whereby to give perfect ease to the body when applied to a chair frame, one end of the strand being shaped to fixedly connect with the upper end of the chair back and the other end shaped for being fixedly connected to the front seat rail of a chair, one of the said coils being located substantially midway the ends of the strand and adapted for engaging the fixed cross member of a chair frame and constituting the hinge joint that connects the seat and back portions of the spring.

3. A furniture spring consisting of a single strand of spring wire bent upon itself between its ends to form a coil for fitting onto a fixed member of the furniture to which the spring is applied, one portion of the wire being bent at substantially right angles to the other portion whereby to provide back and seat rest members, the back member having its free end provided with means for engaging the head rail of the furniture, and the other member provided with means for engaging the front rail of

the furniture, the said back member having a loop portion along the length thereof.

4. A furniture spring consisting of a single strand of spring wire bent upon itself between its ends to form a coil for fitting onto a fixed member of the furniture to which the spring is applied, one portion of the wire being bent at substantially right angles to the other portion whereby to provide back and seat rest members, the back member having its free end provided with means for engaging the head rail of the furniture, and the other member provided with means for engaging the front rail of the furniture, the said back member having a loop portion along the length thereof, the seat portion being also looped to constitute a resilient bearing for the seat.

5. A furniture spring consisting of a single strand of spring wire bent upon itself between its ends to form a coil for fitting onto a fixed member of the furniture to which the spring is applied, one portion of the wire being bent at substantially right angles to the other portion whereby to provide back and seat rest members, the back member having its free end provided with means for engaging the head rail of the furniture, and the other member provided with means for engaging the front rail of the furniture, the said back member having a loop portion along the length thereof, the seat portion being also looped to constitute a resilient bearing for the seat, and including a front bent portion shaped to form a resilient rest for the front edge of the seat member of the furniture.

6. A furniture spring composed of a single strand of spring wire bent upon itself between its ends to form a coil for fitting onto a fixed member of the furniture to which the spring is applied, one portion of the wire being located at substantially right angles to the other portion whereby to provide back and seat rest members, one end of the strand being shaped to fixedly connect with the upper portion of the chair back and the other end being shaped to fixedly connect to the front rail of a chair, said coil constituting the hinge joint that connects the seat and back portions of the spring, that portion of the strand which constitutes the seat rest member having a loop intermediate the front and back of the same, substantially as shown and described.

FRANK W. MORSE.