

May 9, 1933.

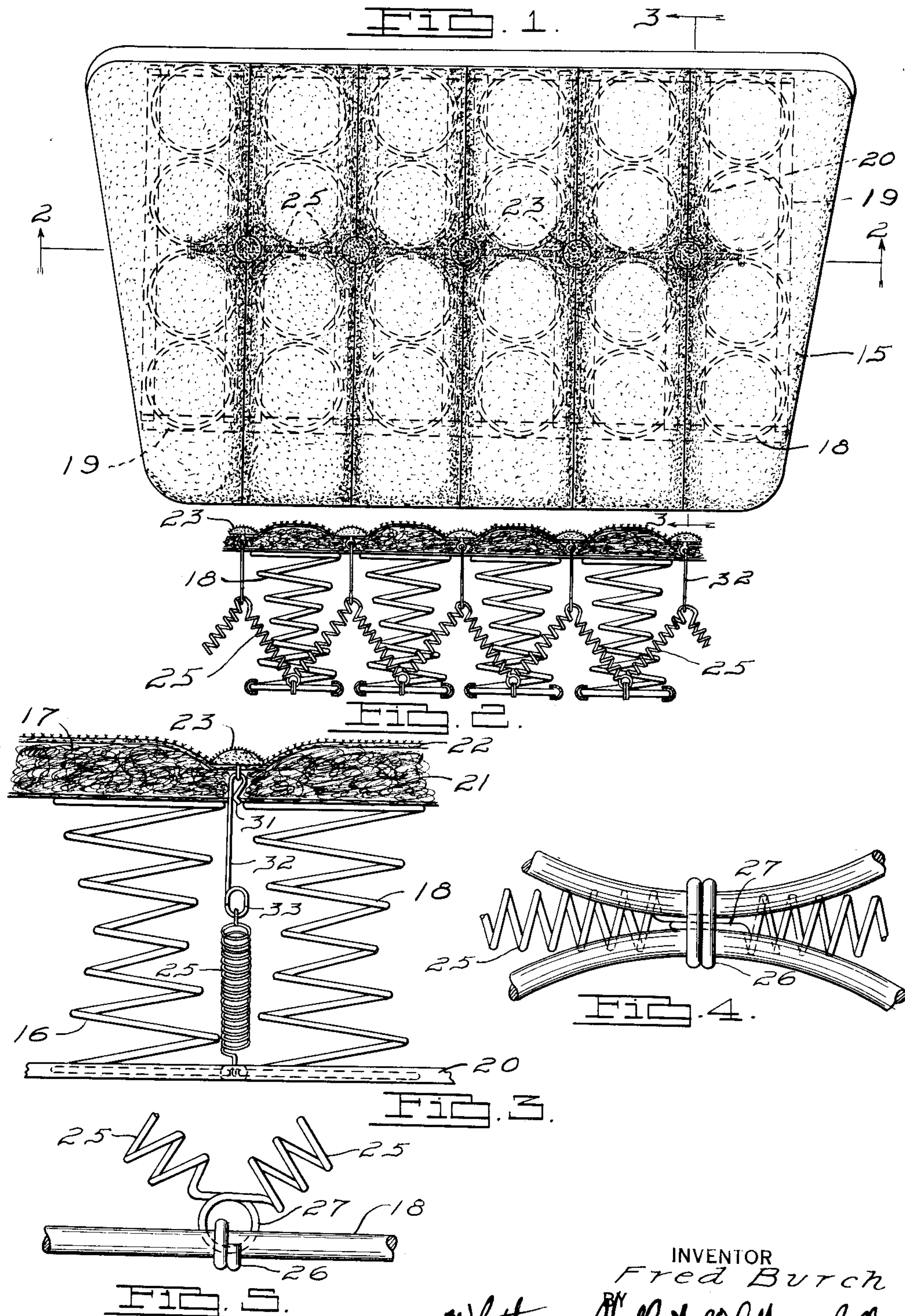
F. BURCH

1,907,732

CUSHION CONSTRUCTION

Filed Nov. 4, 1929

2 Sheets-Sheet 1



INVENTOR
Fred Burch
BY
Whittemore Hulbert Whittemore & Belknap
ATTORNEYS

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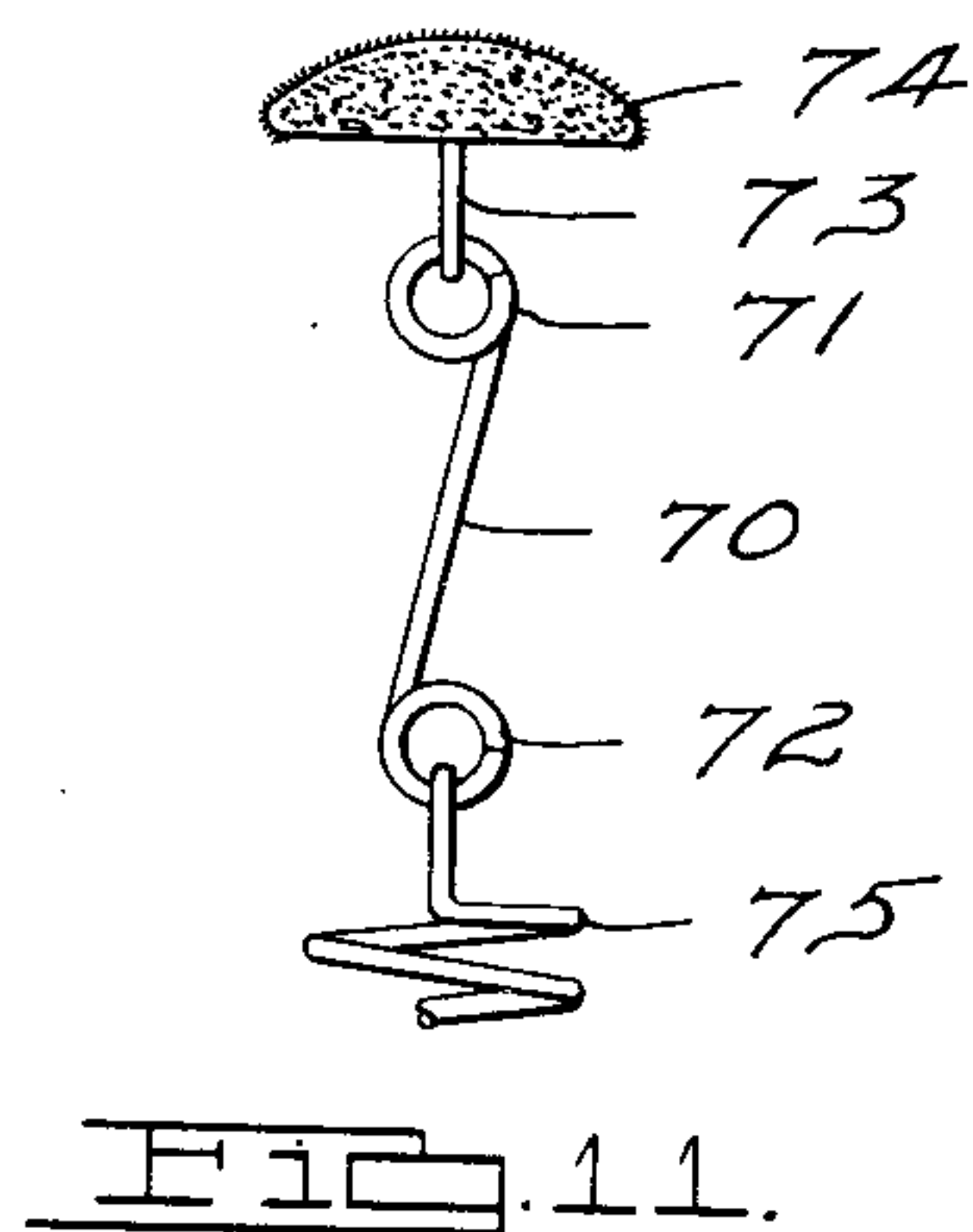
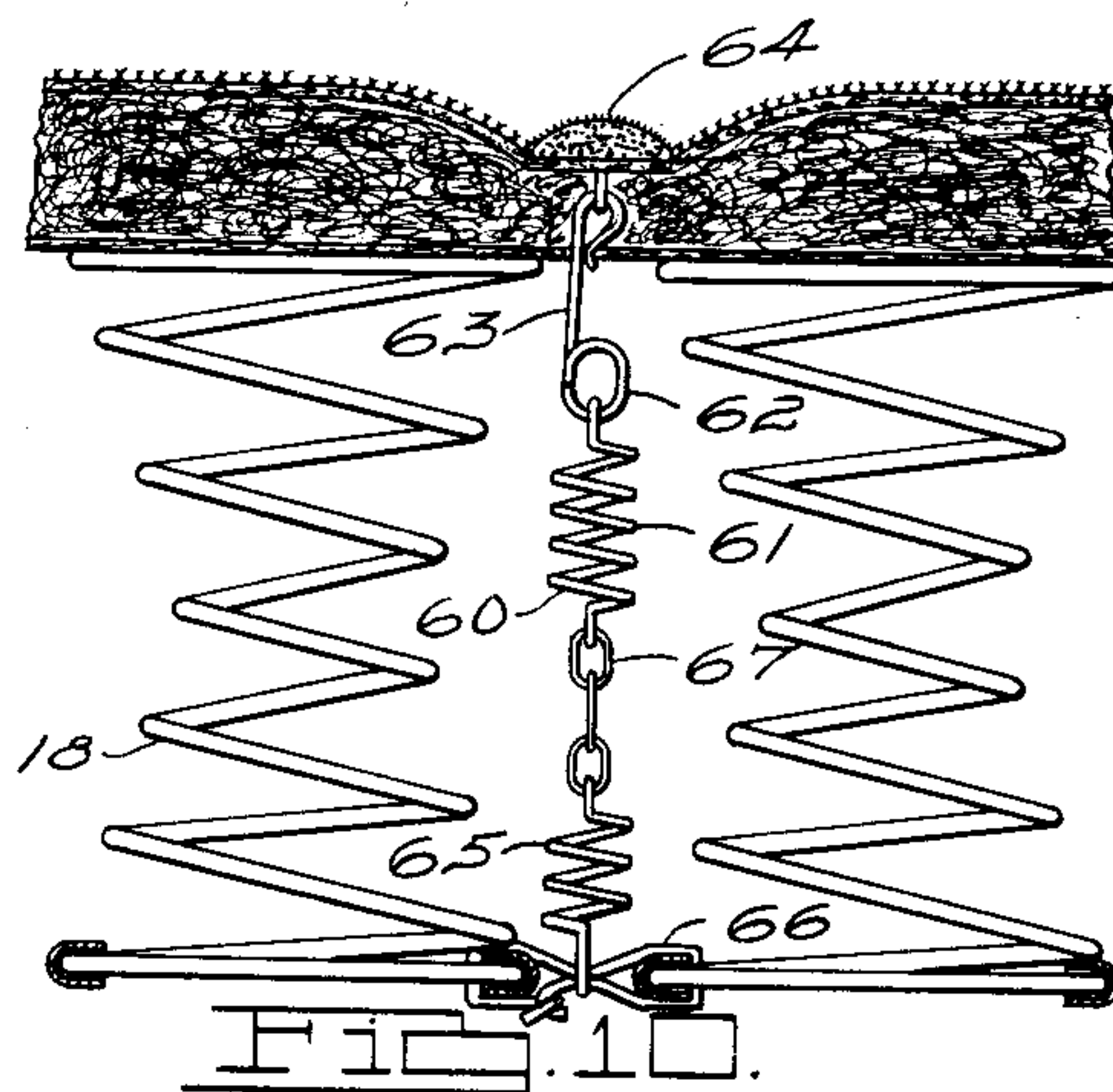
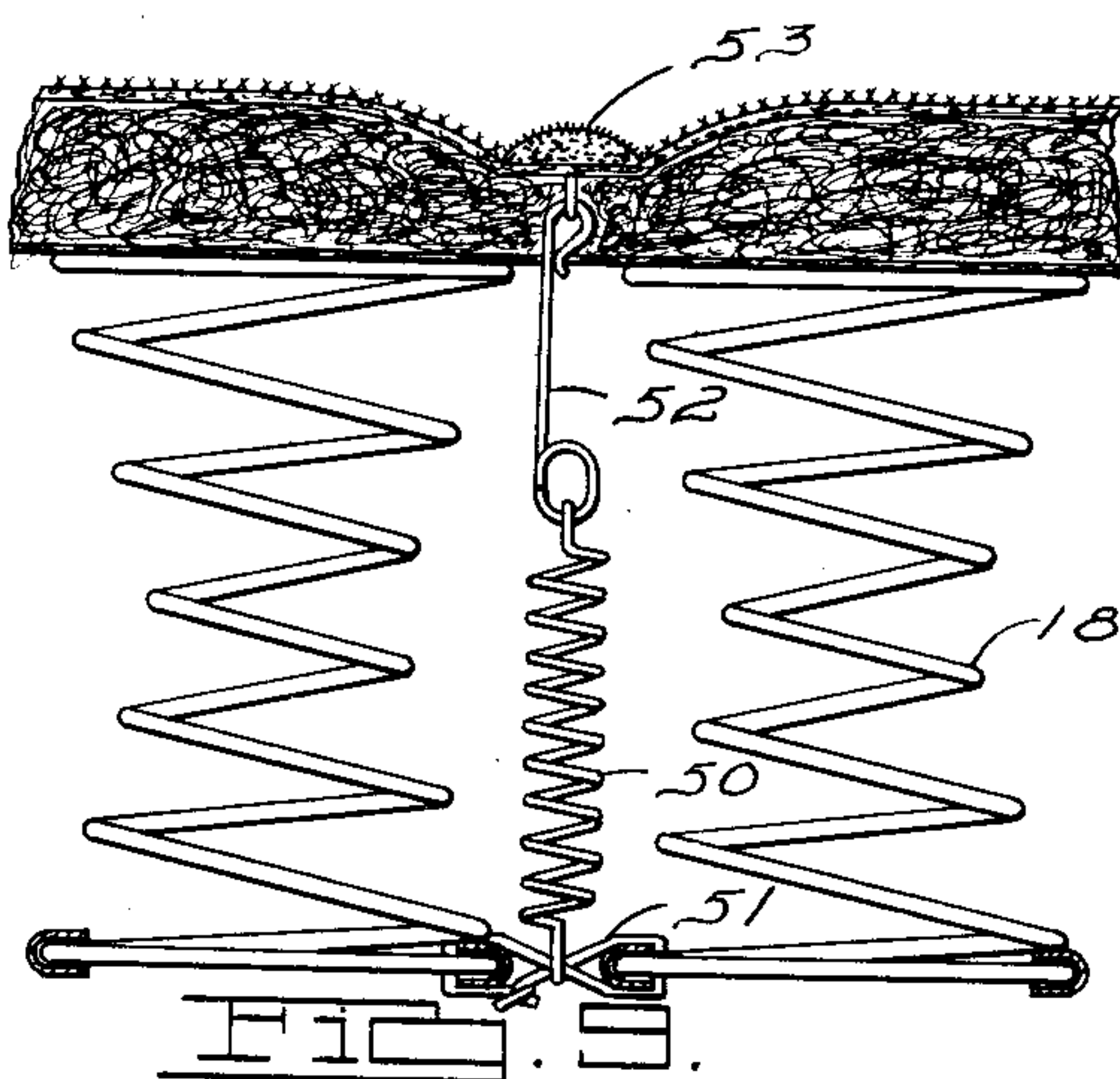
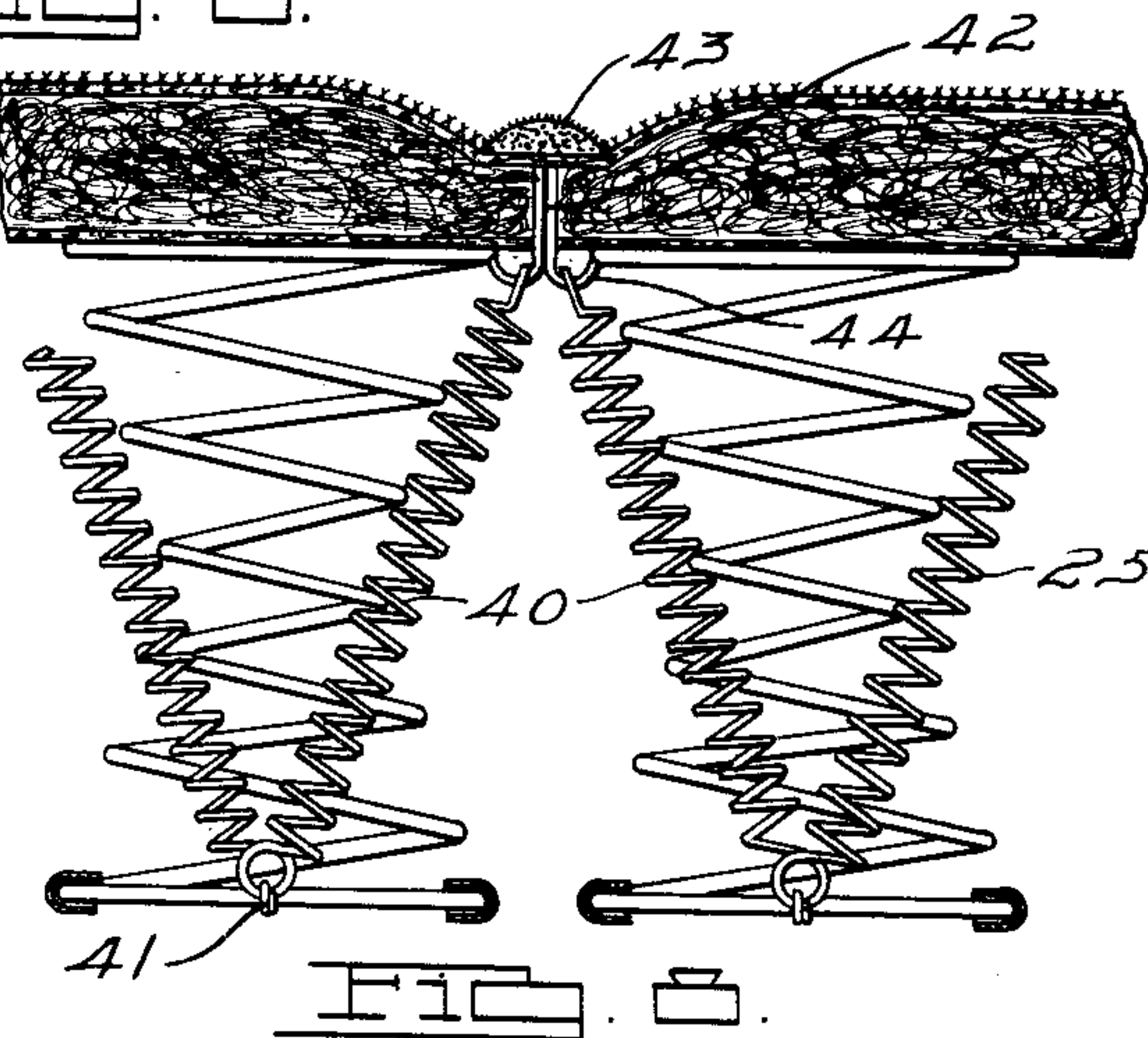
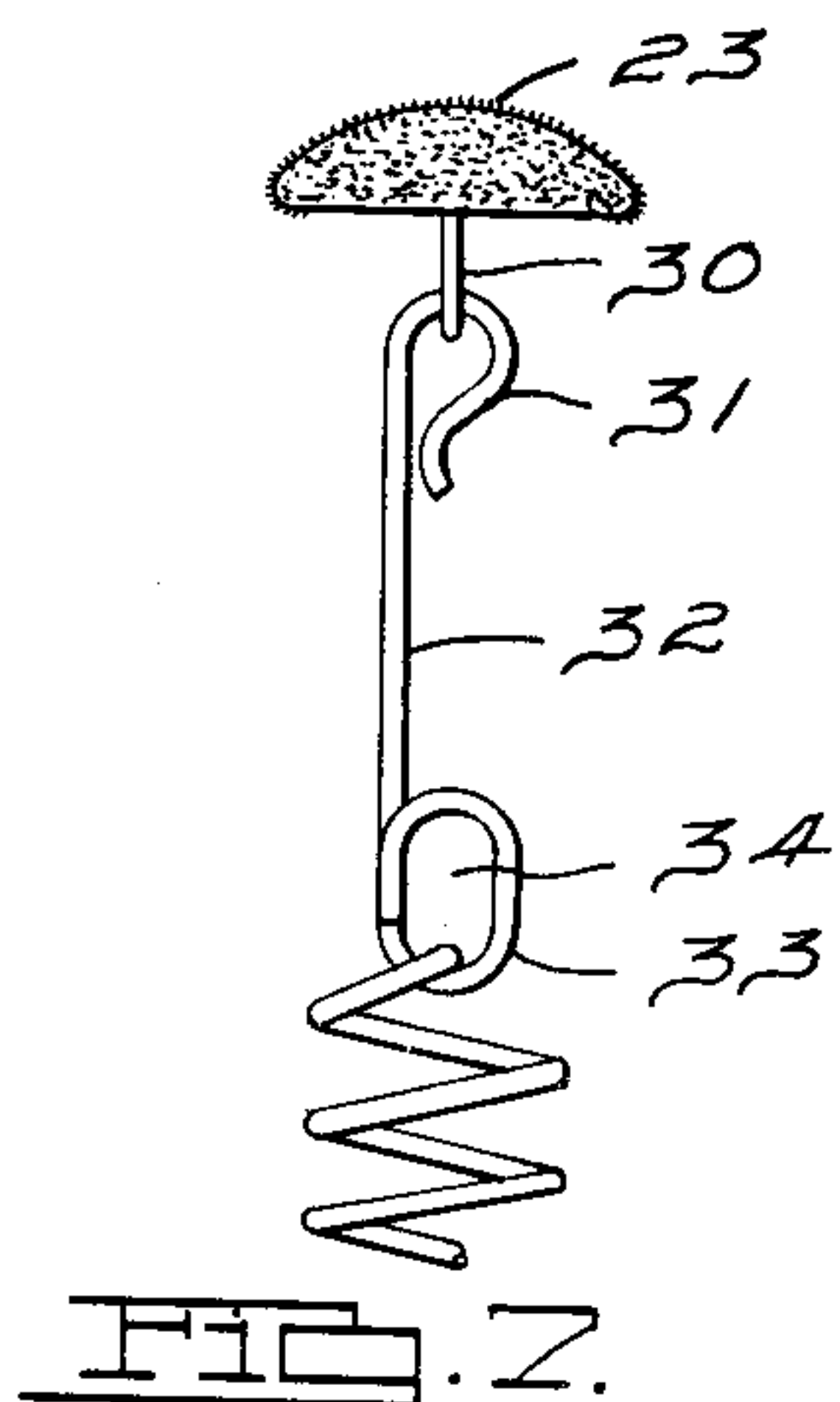
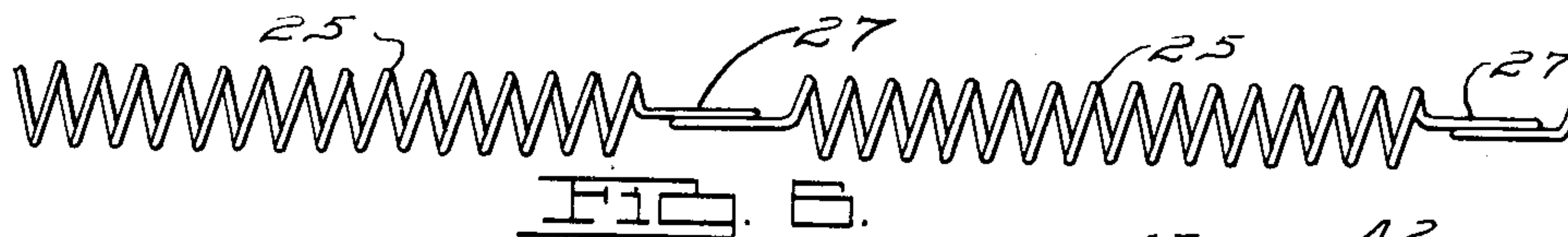
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2 Sheets-Sheet 2



INVENTOR

Fred Burch

BY

Whittemore, Hulbert & Whittemore

ATTORNEYS

UNITED STATES PATENT OFFICE

FRED BURCH, OF MILFORD, MICHIGAN, ASSIGNOR TO VAN DRESSER SPECIALTY CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN

CUSHION CONSTRUCTION

Application filed November 4, 1929. Serial No. 404,773.

This invention relates to cushion constructions and has particular reference to a cushion construction of the character used in vehicle seats or the like.

5 The invention has particular reference to a cushion construction in which the upholstering is held in position by means of buttons to give a tufted effect to the top of the cushion, and has as a primary object to provide a novel
10 means for anchoring these buttons to the body of the cushion.

The invention further contemplates the provision of a button attaching or anchoring construction which will constantly hold the
15 buttons tightly against the upholstery covering of the cushion, and the provision of numerous other advantageous and novel details of construction which will become more apparent as the following description proceeds,
20 particularly when reference is had to the accompanying drawings wherein—

Figure 1 is a top plan view of a cushion constructed in accordance with the teachings of this invention.

25 Figure 2 is a fragmentary sectional view taken substantially on the line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view taken substantially on the line 3—3 of Figure 1.
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Figure 4 is a fragmentary bottom plan view of a portion of the construction shown in Figure 1.

35 Figure 5 is a detail elevational view of a portion of the structure shown in Figure 4.

Figure 6 is a plan view of one of the elements forming a part of the button anchoring construction.

40 Figure 7 is a detail elevational view of a second portion of the button anchoring construction.

Figure 8 is a view similar to Figure 2 showing a slightly modified form of construction.

45 Figure 9 is a fragmentary sectional view showing another modified form of construction.

Figure 10 is a view similar to Figure 9 showing still a further form which the invention may assume; and

50 Figure 11 is a view similar to Figure 7

showing a modified form of the anchoring construction shown in Figure 7.

Referring then particularly to the drawings wherein like reference characters designate corresponding parts throughout all
55 views, the numeral 15 designates generally a cushion construction which includes the spring unit 16 and the cover pad 17. The spring unit 16 preferably comprises a plurality of coiled springs 18 arranged in rows
60 within a suitable framework, which includes the side frame members 19 and the intermediate cross members 20. It is to be understood that this spring unit may be of the construction described or of any other suitable
65 construction since the same forms no part of the present invention.

The pad 17 may in accordance with the usual practice include the packing 21 and the upholstery covering 22, which in the present
70 case is tufted by means of buttons 23. The present invention contemplates in particular the provision of means for so anchoring the buttons 23 to the cushion and particularly
75 to the spring unit thereof as to constantly hold these buttons against the upholstery covering 22 regardless of compression of the spring unit incident to the use of the same.

Referring then particularly to Figures 2 and 3 of the drawings it will be noted that
80 there is provided an elongated resilient member which as illustrated may be in the form of a coil spring 25 or any other elongated flexible member. This spring is arranged longitudinally of the cushion and preferably
85 adjacent the base thereof and is secured to the spring construction at a plurality of spaced points by means of clips 26 which engage the spring 25 and clamp the same to the lowermost convolutions of adjacent
90 springs 18. To facilitate the accurate spacing of the points of attachment of the spring 25 to the spring unit, the spring 25 may be provided at equally spaced points throughout its length with offset portions 27, it being
95 understood that in assembling the spring 25 with the spring unit one of the offset portions 27 is fastened to the lowermost convolutions of each pair of adjacent springs 18.

Each button is provided as illustrated in
100

Figure 7 of the drawings with an eye 30 adapted for hooked engagement with the end 31 of a link member or button-hook 32. The member 32 is preferably formed of wire and has its lower end coiled as at 33 to form a closed loop 34 for hooked engagement with the spring 25. Thus as clearly illustrated in Figure 2 of the drawings, the members 32 will be hooked to the buttons and to the spring 25, the spring 25 being drawn upwardly into the spring unit for this purpose.

From the above it is believed that the structures of this form of the invention will be clearly apparent. The spring 25 will be connected at spaced points to the base of the spring unit 18 by means of clips 26 and an equal length of the spring 25 will be arranged between each point of attachment by virtue of the offset portions 27 in the spring which are spaced equidistant throughout the length of the spring during the manufacture thereof. The buttons 23 having the members 32 depending from the same will be hooked to the spring 25 in the manner clearly illustrated in Figures 2 and 7 of the drawings whereby the spring 25 by virtue of its resiliency will maintain a constant pull on each button, thus holding each button tightly against the upholstery covering 22.

The spring 25 by exerting a resilient pull on the button will hold the button tightly against the upholstery covering and will thus hold the upholstery covering tight under all conditions of use. It has been found in actual practice that after a cushion has been in use for some time, the upholstery covering stretches and in the absence of means for holding the same under tension, wrinkles. The present invention, therefore, by providing means for exerting a continuous pull on the button 23, provides means for maintaining the covering 22 taut and smooth regardless of stretching of the same incident to the use of the cushion. Further, the spring 25 by pulling downwardly on the pad 17 functions to hold the springs 18 somewhat compressed particularly adjacent the buttons 23, thus aiding in shaping the cushion to give the desired tufted effect to the top thereof. Further, by holding certain of the springs 18 under a slight compression, the rebound of these springs is slightly checked, thus increasing the riding comfort of the cushion. It will further be apparent that even when the cushion is compressed incident to the use of the same, the spring 25 will compensate for the downward movement of the button and will thus at all times hold the button tightly against the upholstery covering.

In Figure 8 a slightly modified form of construction is disclosed wherein there is substituted for the spring 25 a spring 40 anchored at spaced points 41 to the base of the spring unit in the same manner as is the spring 25. In this form of invention, the members 32

are preferably eliminated and the shanks 42 of the buttons 43 are turned laterally as at 44 for direct engagement with the spring 40. Thus the spring 40 is directly connected to the shanks of the button and functions to hold the buttons tightly against the upholstery covering in the same manner as does the spring 25 in the first described form of construction.

In Figure 9 a still further form which the invention may assume is disclosed and it will be noted by reference to this figure that the spring 40 is eliminated and that a straight coil spring 50 is anchored at its lower end as at 51 to the lowermost convolutions of two adjacent springs of the spring unit and that the upper end of spring 50 is anchored to a member 52 similar to the member 32 in the first described form of construction. The opposite end of the member 52 is connected as at 53 to the button whereby the spring 50 exerts a direct resilient pull on the button to hold the same tightly against the upholstery covering.

A still further modification of the inventive idea is disclosed in Figure 10 wherein a sectional spring 60 is provided to take the place of the spring 50. The spring 60 comprises the upper section 61 connected as at 62 to a button-hook 63, which in turn is connected to the button as at 64 and a lower section 65 which is anchored as at 66 to the lowermost convolutions of a pair of springs of the spring unit. The adjacent ends of the sections 61 and 65 are connected by a flexible link chain 67 whereby the spring 60 will maintain a constant pull on the button but will readily flex laterally when the cushion is compressed incident to its use.

In Figure 11 a slightly modified form of button-hook is disclosed which comprises a strip of wire 70 coiled at its ends to form the eyes 71 and 72 one of which is adapted to be hooked to the eye 73 of the button 74 and the other of which is adapted to be hooked to the spring 75 which is similar to the spring 25. In both forms of button-hooks it will be noted that the attachment between the hook and the spring is such that the spring may not escape from the loop of the hook when the button and the hook is moved downwardly incident to use of the cushion. Thus the spring provided for exerting a continuous pull on the button will be connected with this button in such a manner that the same may not be accidentally disconnected during use.

From the above it is believed that the inventive principles embodied in this application will be clearly apparent. In each modification disclosed there is provided means for resiliently holding a button in engagement with the upholstery covering of a cushion pad. This means functions to permanently hold the upholstery covering smooth and taut regardless of stretching of the same incident

to use of the cushion and functions further to aid in shaping the spring cushion by compressing certain of the springs thereof and in rendering the spring cushion more comfortable in use by checking the rebound of certain of the springs. The construction disclosed will find particular utility in a cushion for a motor vehicle whether the same is used for the seat or the back of a seat construction but may find equal utility in a cushion construction of any character whatsoever.

While several embodiments of the inventive idea have been described with considerable detail it is to be clearly understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is therefore reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

What I claim as my invention is:

1. In a cushion, a plurality of coil springs arranged in rows to form a spring unit, an upholstery covering for said spring unit, a spring extending longitudinally of said spring unit and anchored at spaced points to the lowermost convolutions of said coil springs, buttons engaging said covering, and connections between said buttons and said longitudinally extending spring whereby the latter holds said buttons tightly against said covering.

2. In combination, a spring unit, an upholstery covering for the top of said unit, an elongated spring having a plurality of distorted portions spaced throughout its length, means connecting the distorted portions of said spring to the base of said spring unit, buttons engaging the top of said covering, and connections between said buttons and said elongated spring engaging said elongated spring intermediate said distorted portions, said elongated spring being operable to hold said buttons tightly against said covering.

3. In combination, a spring unit, an upholstery covering for the top of said unit, a coil spring having a plurality of offset portions spaced throughout its length, means connecting the offset portions of said coil spring to the base of said spring unit with the former extending longitudinally of the latter, buttons engaging the top of said covering, and a link connecting each button to said coil spring at a point intermediate two of said offset portions.

4. In combination, a spring unit, an upholstery covering for the top of said unit, a coil spring arranged longitudinally of said unit and fixed to the base thereof at a plurality of spaced points, buttons engageable with the top of said covering, and means connecting said buttons to said coil spring whereby

the latter holds said buttons tightly against the top of said covering.

5. In combination, a spring unit, an upholstery covering for the top of said unit, a coil spring arranged longitudinally of said unit and fixed to the base thereof at a plurality of spaced points, buttons engaging the top of said covering, and connections between said buttons and said coil spring, each connection including a strip of wire formed at its one end with a hook engageable with said button and formed at its other end with a loop engageable with said coil spring and locking said coil spring against displacement.

6. In a cushion, the combination with a spring unit and a covering for said unit, of a longitudinally extensible resilient member anchored at spaced points interiorly of said spring unit, and a connection between said resilient member at a point between its points of anchorage and said covering whereby said resilient member holds said covering under tension.

7. In combination, a spring unit, an upholstery covering for the top of said unit, a button engageable with the top of said covering, a longitudinally extensible resilient member mounted within said unit and extending at an angle to the axis of said button, and means connecting said button to said member whereby the latter holds said button tightly against the top of said covering.

8. In combination, a spring unit, a covering for the top of said unit, a longitudinally extensible resilient member within said unit and fixed thereto at a plurality of spaced points, buttons engageable with the top of said covering, and means connecting said buttons to said member intermediate the points of attachment of said member to said spring unit whereby the latter holds said buttons tightly against the top of said covering.

9. In combination, a spring unit, a covering for the top of said unit, a button engageable with the top of said covering, a coil spring connected at spaced points to said spring unit adjacent the base thereof and extending transversely to the axis of said button, and means connecting said button to said coil spring whereby the latter holds said button tightly against the top of said covering.

10. In a cushion, a plurality of coil springs grouped to form a spring unit, a covering for said unit, a spring anchored at spaced points within said unit, a button engaging said cover, and a connection between said button and said spring, said connection being secured to said spring at a point intermediate the points of connection of the spring to the spring unit.

11. In combination, a plurality of coil springs grouped to form a spring unit, a covering for the top of said unit, a button engageable with said cover, a coil spring an-

chored at spaced points within said spring unit and disposed at an angle to the axis of the button, and means connecting said button to said coil spring whereby the latter causes the button to maintain said covering under tension.

In testimony whereof I affix my signature.
FRED BURCH.

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