

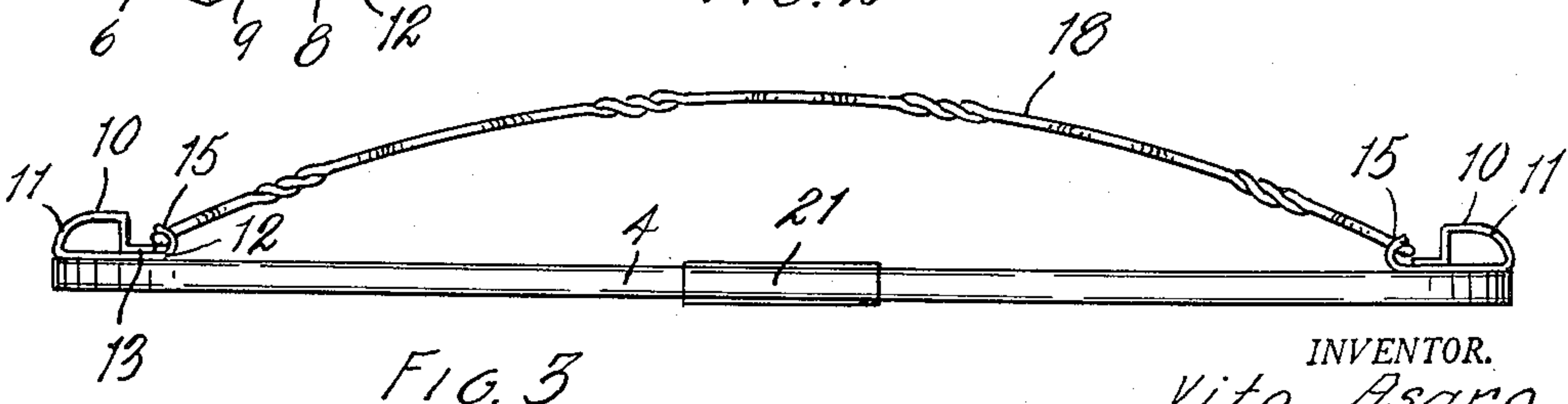
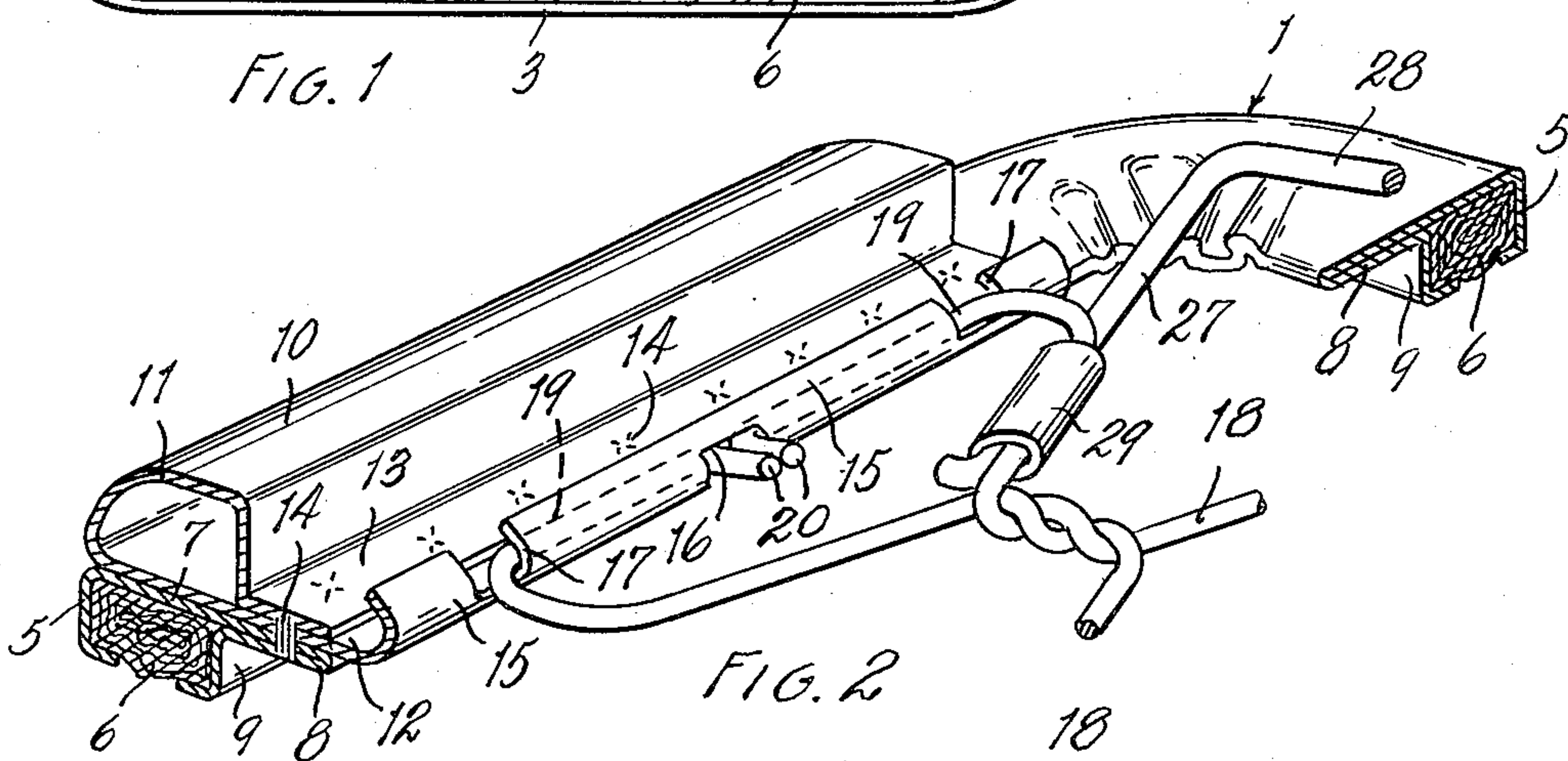
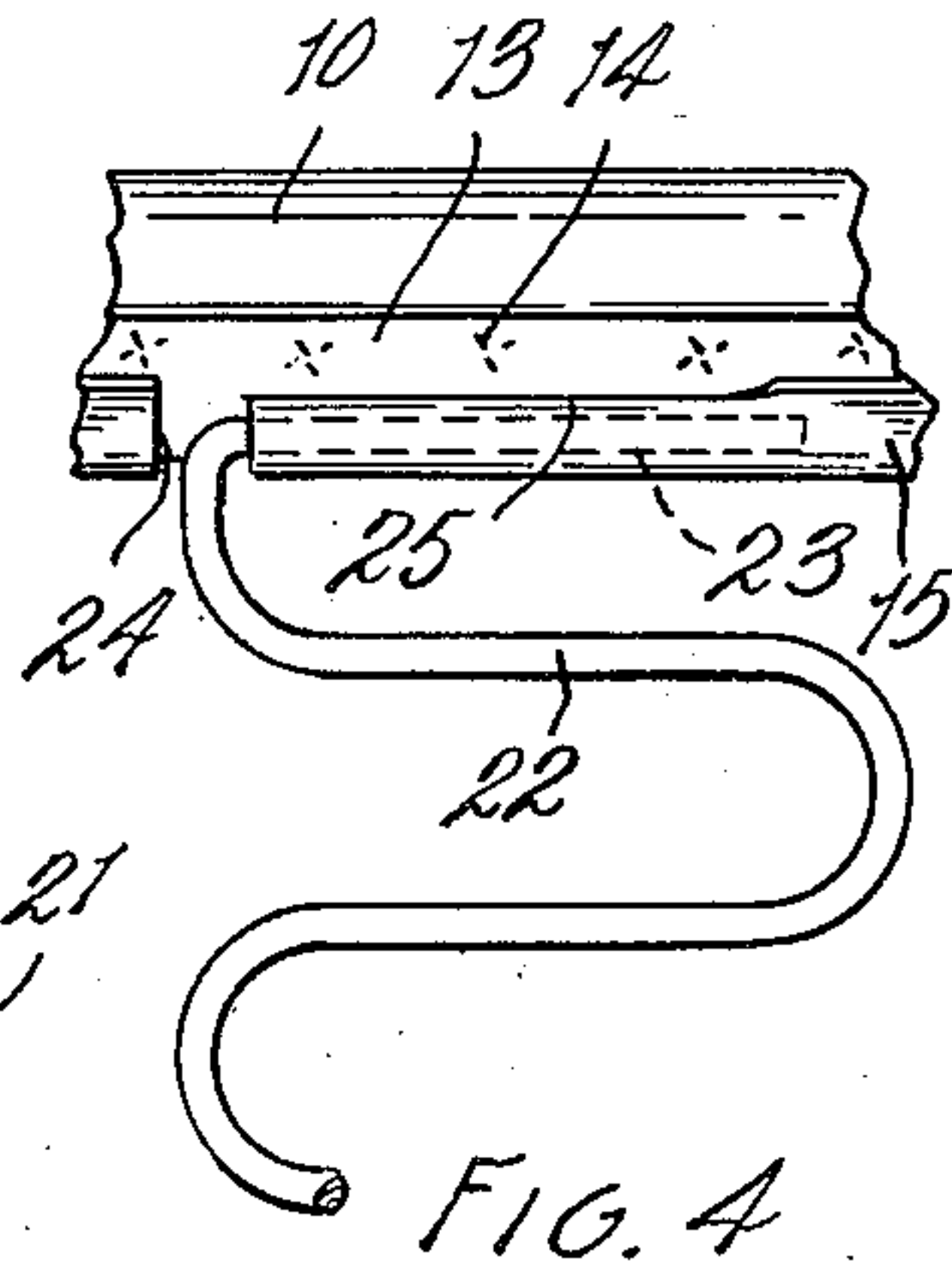
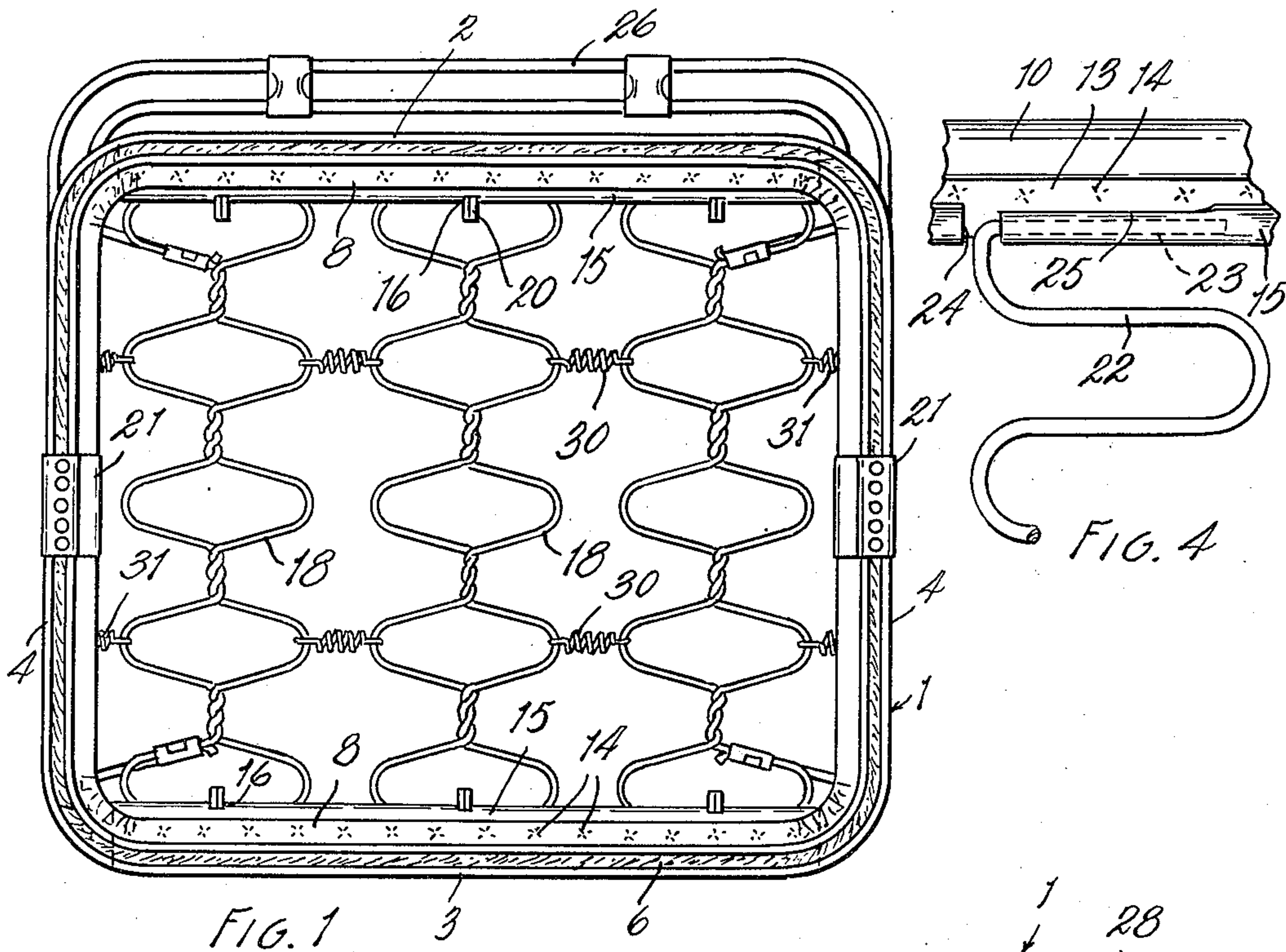
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V. ASARO

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SPRING CUSHION STRUCTURE

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INVENTOR.
Vito Asaro
BY *[Signature]*
Attorney.

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SPRING CUSHION STRUCTURE

Vito Asaro, Detroit, Mich., assignor to L. A. Young Spring & Wire Corporation, Detroit, Mich.

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This invention relates to spring cushion structures.

The main objects of this invention are:

First, to provide a spring cushion structure of the type embodying springs of the bowed zig-zag type in which such springs are effectively supported and at the same time may be easily and quickly engaged with the supporting frame.

Second, to provide a base frame which is very rigid and at the same time may be formed of relatively light materials and constitutes means for attachment of upholstery thereto.

A structure which embodies the features of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is an inverted view of a spring structure embodying my invention, the topper or mat springs and upholstery being omitted.

Fig. 2 is an enlarged fragmentary perspective view of the base frame and one end of one of the bowed body springs in operative engaged position therewith.

Fig. 3 is an end view of the structure shown in Fig. 1 with portions of the top border frame shown in Fig. 1 omitted.

Fig. 4 is a fragmentary plan view of a slightly modified embodiment of my invention.

The structure illustrated is especially designed for the support of bowed springs generally classified as zig-zag springs, although desirable for use in supporting other types of springs. The springs illustrated in the embodiment shown in Figs. 1, 2 and 3 are those illustrated in the Stuart Patent No. 2,291,004, issued July 23, 1942. In spring structures embodying springs of this zig-zag type, the base frame or frame on which the springs are mounted is subjected to very heavy load stresses and it is important that the frame shall not spring or be distorted. It is also important to provide a structure permitting the rapid and effective mounting of the springs. In the structure illustrated no consideration has been given to dimensions but it will be understood that the dimensions are varied according to the purpose of the spring structure or unit.

The base frame in the embodiment illustrated designated generally by the numeral 1 comprises a front member 2, rear member 3 and end members 4 constituting the bottom member of a frame, this bottom member being formed of sheet metal folded upon itself to provide the downwardly facing channel 5 in which the tacking strip 6 is disposed, the tacking strip providing means for the attachment of the upholstery, not illustrated. The web 7 of the bottom member is

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extended and folded upon itself to provide the inwardly projecting double-ply flange 8, the inner edge of the under-ply of this flange being conformed to provide the inner arm 9 of the channel.

Top members 10 are secured to the front and rear bottom frame members. These top members are formed of sheet metal conformed to provide tubular body portions 11 which are superimposed upon the channel portions 5 of the bottom members. The edges of the strip from which the top members are formed are extended to provide inner and upper plies 12 of inwardly projecting flanges 13 which are superimposed upon the flanges 8 of the front and rear members and fixedly secured thereto desirably by spot welding as indicated at 14. The under-ply of the flanges 13 is extended inwardly and turned upwardly and outwardly to provide spring attaching member 15. These spring attaching members have longitudinally spaced holes 16 therein and notches 17 at each side of and adjacent to the holes. The body springs 18 illustrated in Figs. 1, 2 and 3 are of the structure shown in the Stuart patent hereinbefore referred to. These springs are upwardly bowed and terminate in arms 19 which are inserted in the notches 17, the arms terminating in lugs 20 arranged through the holes 16. The body springs 18 may be quickly engaged with the frame and are effectively supported thereby so that the frame receives and withstands the springing stresses.

It will be noted that the front, rear and side members of the bottom frame member are formed in two sections joined by the couplings 21. The top members 10 are provided only at the front and rear of the structure and they constitute effective reinforcing means for the base member and also provide means for the attachment of the body spring members.

In the modification shown in Fig. 4 the spring elements 22 are single spring elements as distinguished from the double spring elements shown in Figs. 1, 2 and 3. The spring elements terminate in arms 23 which are disposed through the notches 24 in the spring attaching flange and retained therein by clamping the flange around the arm as indicated at 25. It will be understood that the body springs are usually provided with a topper unit which may be made up in the form of a mat of coiled springs provided with a front border frame 26 constituting what is commonly designated as a front extension and serving to support the upholstery in an extended relation to the bottom of the cushion.

The structure illustrated is designed to have the upholstery secured by tacking to the tacking strip or insert.

In the structure illustrated tie or anchoring members 27 are provided at the corners of the frames, these having arms 28 welded to the bottom member of the frame and being secured to the end bowed spring elements by means of clips 29. Spring tie members 30 are provided for adjacent spring elements, the outer spring elements being connected to the bottom frame of the top-
per assembly by similar tie members 31.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe certain modifications and adaptations which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

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

1. In a spring structure the combination of a base frame comprising a bottom border frame member formed of sheet metal folded upon itself to provide a downwardly facing channel, the web of the channel being extended inwardly and folded upon itself to provide a double-ply flange of substantial width, the inner edge of the under ply of the flange being turned downwardly to provide the inner arm of the channel, a top border frame member formed of sheet metal folded upon itself to provide a tubular body portion disposed above the channel portion of the bottom member, the edges of the strip being extended in a side-by-side overlapping relation to provide a double-ply flange which is superimposed upon and welded to the flange of the bottom member, the inner-ply of the top member flange being extended beyond the upper ply thereof and terminating in an outwardly facing spring attaching hook having longitudinally spaced holes therethrough and notches adjacent the holes, bowed spring elements having arms at their ends disposed through said notches and terminating in inwardly projecting lugs disposed through said holes, and a tacking strip in said channel.

2. In a spring structure the combination of a base frame comprising a bottom border frame member formed of sheet metal folded upon itself to provide a downwardly facing channel, the web of the channel being extended inwardly and folded upon itself to provide a double-ply flange of substantial width, the inner edge of the under ply of the flange being turned downwardly to provide the inner arm of the channel, a top border frame member formed of sheet metal folded upon itself to provide a tubular body portion disposed above the channel portion of the bottom member, the edges of the strip being extended in a side-by-side overlapping relation to provide a double-ply flange which is superimposed upon and welded to the flange of the bottom member, the inner ply of the top member flange being extended beyond the upper ply thereof and terminating in a spring attaching flange, bowed spring elements having arms at their ends engaged with said spring attaching flange, and a tacking strip in said channel.

3. A base frame for a spring structure comprising a bottom border frame member formed of sheet metal folded upon itself to provide a channel having a tacking insert therein, the web of the channel being extended inwardly and folded upon itself to provide a double-ply flange of sub-

stantial width, the inner edge of the under ply of the flange being turned downwardly to provide the inner arm of the channel, and a top border frame member formed of sheet metal folded upon itself to provide a tubular body portion disposed above the channel portion of the bottom member and a flange portion superimposed upon and welded to the flange of the bottom member, the edge of the top member flange terminating in a spring attaching member having longitudinally spaced holes therethrough and notches adjacent the holes adapted to receive the springs to be supported.

4. A base frame for a spring structure comprising a bottom border frame member formed of sheet metal folded upon itself to provide a channel having a tacking insert therein, the web of the channel being extended inwardly and folded upon itself to provide a double-ply flange of substantial width, the inner edge of the under ply of the flange being turned downwardly to provide the inner arm of the channel, a top border frame member formed of sheet metal folded upon itself to provide a tubular body portion disposed above the channel portion of the bottom member and a flange portion superimposed upon and welded to the flange of the bottom member, the edge of the top member flange terminating in a spring attaching member, and springs engaged with said spring attaching member.

5. In a spring structure the combination of a base frame member comprising a bottom border frame member of downwardly facing channel section having a tacking strip therein, the web of the channel being conformed to provide an inwardly projecting double-ply flange of substantial width, a top border frame member comprising a tubular body portion disposed upon the bottom member and having a double-ply flange superimposed upon and fixedly secured to the flange of the bottom member, the inner ply of the top member flange being extended beyond the upper ply thereof and terminating in an outwardly facing flange having longitudinally spaced notches therein, and bowed spring elements having arms at their inner ends disposed through said notches and engaged with said spring attaching flange.

6. In a spring structure, the combination of a frame member comprising a bottom border frame member of channel section having a tacking strip therein, the web of the channel being conformed to provide an inwardly projecting flange, a top border frame member comprising a tubular body portion disposed upon the bottom member and having a flange superimposed upon and fixedly secured to the flange of the bottom member and provided with spring engaging projections, and bowed spring elements having arms at their inner ends engaged with said projections.

7. A frame for a spring structure comprising a bottom border frame member of channel section having an inwardly extending flange, and a top border frame member superimposed on said bottom member and having an inwardly projecting flange welded to the flange of the bottom member, said top member flange terminating in a spring attaching arm having longitudinally spaced holes therethrough and notches adjacent the holes, said flange of the bottom member comprising an extension of one of the walls of the bottom member folded upon itself and integrally connected with an adjacent wall of the bottom member, the plies of the folded extension being in abutting relation.

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8. A frame for a spring structure comprising a bottom border frame member of channel section having an inwardly extending flange, and a top border frame member superimposed on said bottom member and having an inwardly projecting flange welded to the flange of the bottom member, said top member flange terminating in spring attaching members, said flange of the bottom member comprising an extension of one of the walls of the bottom member folded upon itself and integrally connected with an adjacent wall of the bottom member, the plies of the folded extension being in abutting relation.

9. In a spring structure, the combination of a frame comprising a bottom border frame member of channel section having an inwardly extending flange, a top border frame member superimposed on said bottom member and having an inwardly projecting flange welded to the flange of the bottom member, said top member flange being provided with spring attaching elements, and springs engaged with said elements, said flange of the bottom member comprising an extension of one of the walls of the bottom member folded upon itself and integrally connected with an adjacent wall of the bottom member, the plies of the folded extension being in abutting relation.

10. In a spring structure the combination of a spring supporting frame comprising a bottom border frame member provided with upholstery attaching means and having an inwardly projecting flange, a top border frame member superimposed on said bottom member and having an inwardly projecting flange fixedly secured to the flange of said bottom member and having a laterally offset edge portion provided with longitudinally spaced notches, and bowed spring elements having portions disposed through said notches terminating in arms disposed in retaining engagement with said laterally offset edge, portions of the laterally offset edge being clamped over the arms of said springs.

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11. In a spring structure the combination of a spring supporting frame comprising a bottom border frame member provided with upholstery attaching means and having an inwardly projecting flange, a top border frame member superimposed on said bottom member and having an inwardly projecting flange fixedly secured to the flange of said bottom member and having a laterally offset edge portion provided with longitudinally spaced notches, and bowed spring elements having portions disposed through said notches terminating in arms disposed in retaining engagement with said laterally offset edge.

12. In a spring structure the combination of a spring supporting frame comprising a bottom border frame member provided with upholstery attaching means and having an inwardly projecting flange, a top border frame member superimposed on said bottom member and having an inwardly projecting flange fixedly secured to the flange of said bottom member and provided with spring attaching means, and springs engaged with said attaching means, said flange of the bottom member comprising an extension of one of the walls of the bottom member folded upon itself and integrally connected with an adjacent wall of the bottom member, the plies of the folded extension being in abutting relation.

VITO ASARO.

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