

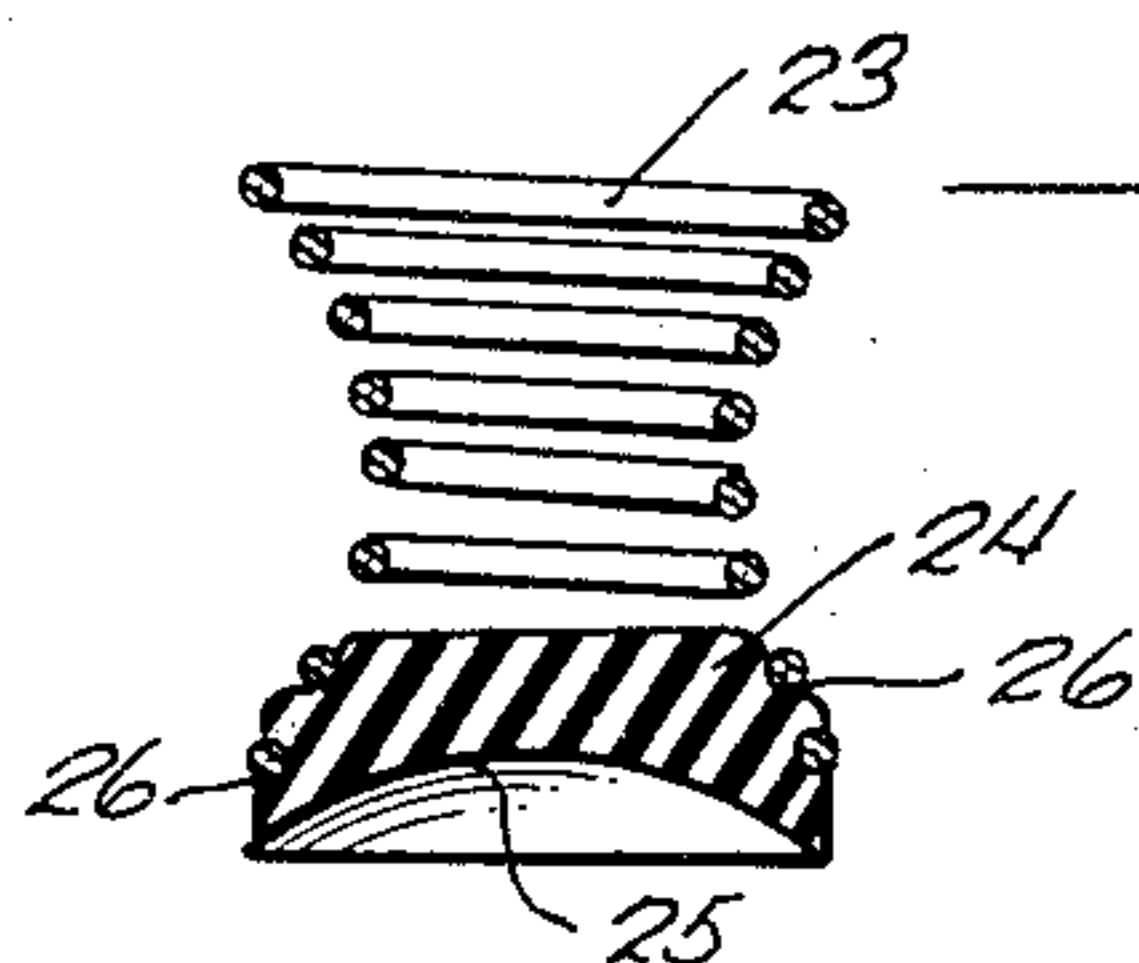
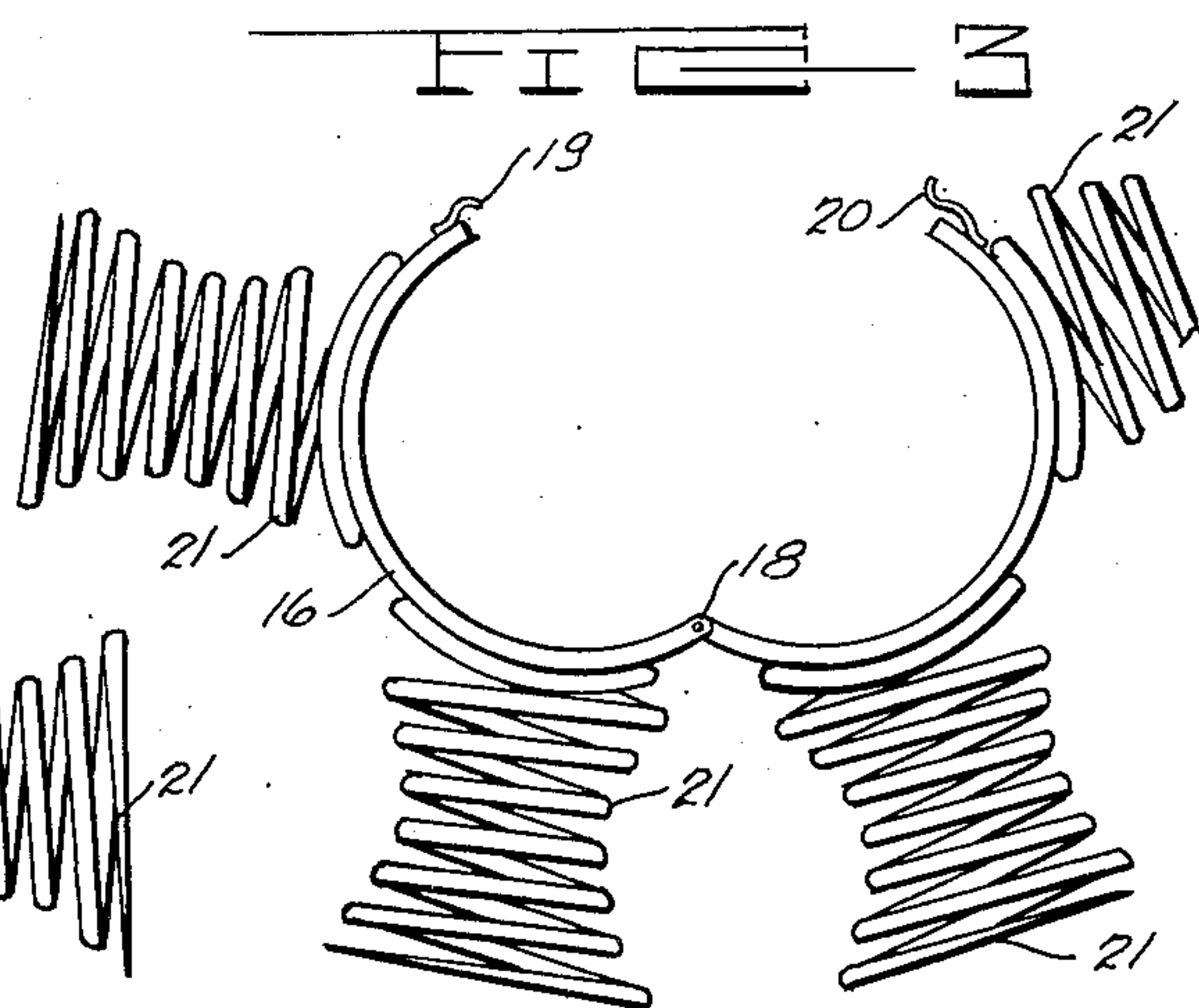
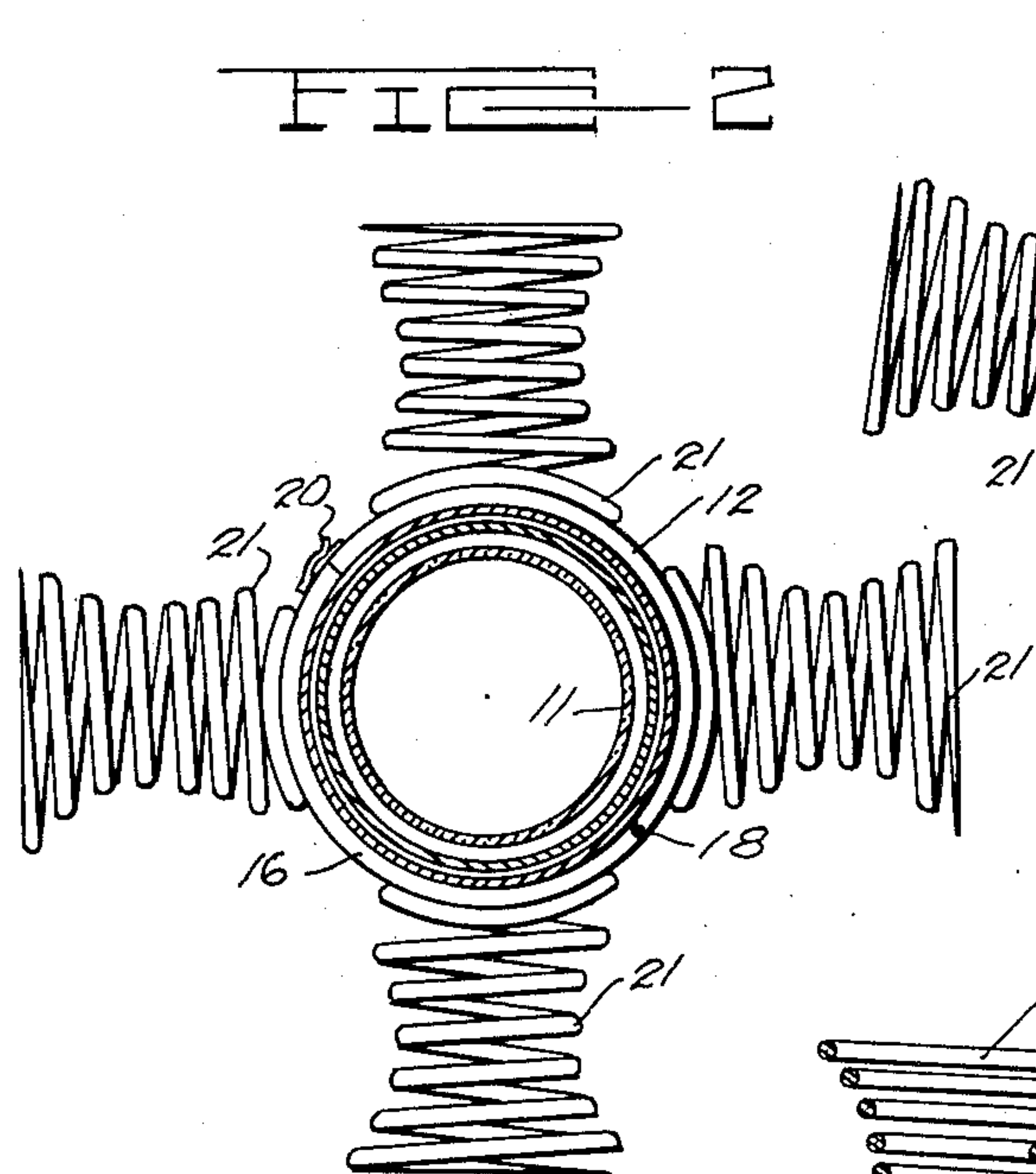
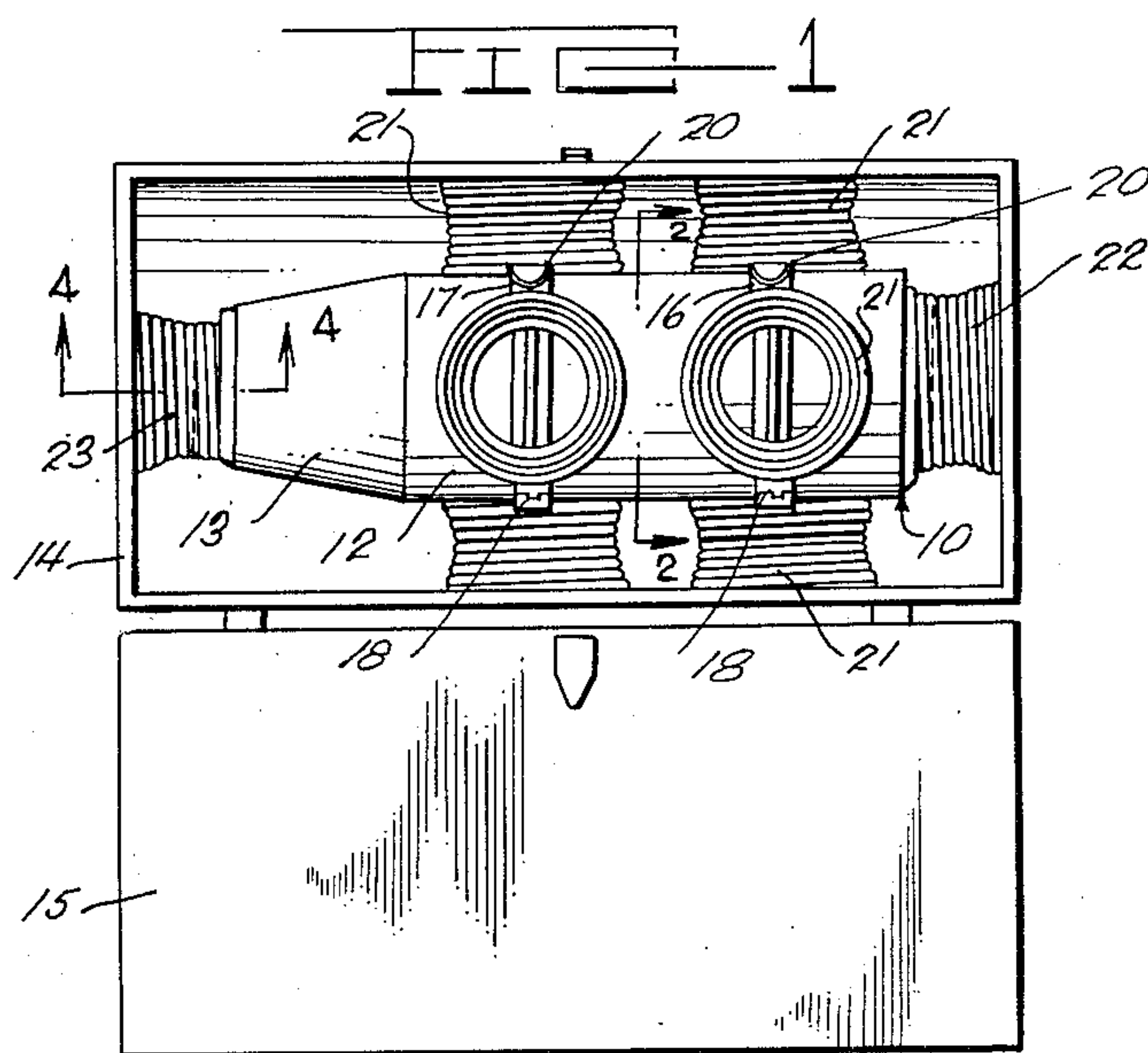
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J. L. GIBBS

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RESILIENT SUPPORT FOR CONTAINERS

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INVENTOR.
JOSEPH L. GIBBS

BY

McMorrow, Berman & Davidson
ATTORNEYS

UNITED STATES PATENT OFFICE

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RESILIENT SUPPORT FOR CONTAINERS

Joseph L. Gibbs, Mount Vernon, N. Y.

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4 Claims. (Cl. 215—100)

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This invention relates to supports for containers, and more particularly to a resilient support for a fragile container, such as a conventional vacuum bottle.

It is among the objects of the invention to provide an improved vacuum bottle and resilient support assembly so constructed and arranged that the resilient support or protector is firmly secured to the vacuum bottle and the bottle is fully protected on all sides so that it may be jarred, struck or dropped without damage, and will be resiliently mounted in a carrier, such as a lunch box, so that impacts or pressure on the lunch box will not damage the vacuum bottle, in which the resilient support components can be easily removed from the bottle for convenience in washing and sterilizing the bottle, if desired, can be quickly and easily applied to a conventional vacuum bottle without modification of the bottle, and which support or protector is strong and durable in construction, economical to manufacture, and does not interfere with the normal use of the vacuum bottle.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing, wherein:

Figure 1 is a bottom plan view of the top or cover of a lunch box showing a vacuum bottle equipped with a resilient support illustrative of the invention resiliently mounted in the lunch box cover;

Figure 2 is a transverse cross-section on an enlarged scale of the vacuum bottle and resilient support with the lunch box cover omitted, and is taken substantially on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2, but showing the spring-retaining band partly open and with the vacuum bottle omitted;

Figure 4 is a longitudinal cross-section on an enlarged scale of an end support for the vacuum bottle, and is taken substantially on the line 4—4 of Figure 1.

With continued reference to the drawing, the conventional vacuum bottle, generally indicated at 10, comprises a double-walled glass bottle 11 enclosed in a cylindrical cover 12 provided at one end with an end wall and at its opposite end with screw threads upon which the conventional hollow cap 13 is threaded. The vacuum bottle may be carried in the hollow top or cover 14 of a conventional lunch box and supported in such cover by the hinged flap 15.

The resilient supporting means or protector

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comprises two circular bands 16 and 17 which encircle the cylindrical cover 12 of the vacuum bottle at spaced-apart locations intermediate the ends of the cover. Each of these bands comprises two separate, substantially semi-circular parts hinged together at adjoining ends, as indicated at 18, and provided on their opposite ends with snap or buckle components 19 and 20 which are manually releasable, so that the bands can be removed from the bottle, if desired, for washing and sterilizing the bottle. The bands are quickly and easily applied to the bottle by bringing the two semi-circular portions of each band around the bottle and snapping the resilient components 19 and 20 together in interlocking engagement with each other.

In the arrangement illustrated, four coiled compression springs 21 are secured to each band. Each spring has, at one end, a curved end portion shaped to the contour of the associated band 16 or 17, which spring end portion is in contact with the band and permanently secured thereto by welding, brazing or other suitable means. Each spring is thus permanently connected at one end to a respective band and projects radially outwardly from the band. The four springs attached to each band are angularly spaced apart, an angle of approximately 90° being included between the longitudinal center lines of each two adjacent springs.

While four springs are illustrated as applied to each band, it is to be understood that three, four or more springs may be used, as may be found desirable, without in any way exceeding the scope of the invention. The springs 21 are preferably formed of light spring wire, so that the springs are not excessively stiff, and the springs are double conical in longitudinal shape, so that they may be highly compressed without becoming solid. For a practical construction, it has been found desirable to provide springs of such stiffness that the bottle with the springs attached can be dropped a distance of at least three feet without damage to the bottle.

A coiled compression spring 22, similar to the springs 21, is attached to the end wall of the casing 12, and projects outwardly from the end wall in substantially perpendicular relationship thereto. The spring 22 is attached to the casing end wall by a suction cup of resilient material having a concave face secured to the end wall by vacuum between such face and the end wall, and which cup is received in the loops at the adjacent end of the spring 22. The suction cup may be peripherally grooved or threaded to receive

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the end loops of the spring, as particularly illustrated in Figure 4.

A spring 23, similar in all respects to the springs 21 and 22, is secured at one end to the outer end of cap 13, and projects outwardly from the end of the cap in substantially perpendicular relationship to the cap end wall. The spring 23, as clearly illustrated in Figure 4, is of double conical shape, and is attached to the end wall of the cap 13 by a suction cup 24 of rubber or other suitable resilient material having a concave face 25 opposed to the outer surface of the cap end wall, the cup being secured to the cap by vacuum between the end wall of the cap and the concave face of the cup. The cup is provided in its annular or peripheral surface with grooves or screw threads 26 which receive the coils of the spring 23 adjacent the cup to firmly secure the spring to the suction cup.

With the springs 21, 22 and 23 attached to the vacuum bottle, the bottle may be placed in the hollow cover 14 of a lunch box by compressing all of the springs. The bottle is then resiliently supported or suspended in the lunch box cover and will not be damaged if the lunch box is struck, jarred or dropped. When the bottle is removed from the lunch box, the springs will expand, and in this condition the bottle may also be dropped or jarred without damage to the bottle.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. The combination with a vacuum bottle having a cylindrical body provided with an end wall, and a removable cap on said body at the end thereof opposite said end wall, of resilient support means for said bottle comprising bands encircling said cylindrical body at spaced-apart locations between the ends of said body, coiled compression springs secured each at one end to a respective band, a plurality of springs projecting outwardly from each band at angularly-spaced-apart locations therearound, a coiled compression spring secured at one end to said body end wall and projecting outwardly therefrom in substantially perpendicular relationship to said end wall, and a spring similar to said end wall-attached spring secured to said cap and projecting outwardly therefrom.

2. The combination with a vacuum bottle having a cylindrical body provided with an end wall, and a removable cap on said body at the end thereof opposite said end wall, of resilient support means for said bottle comprising bands encircling said cylindrical body at spaced-apart locations between the ends of said body, coiled compression springs secured each at one end to a respective band, a plurality of springs project-

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jecting outwardly from each band at angularly-spaced-apart locations therearound, a coiled compression spring secured at one end to said body end wall and projecting outwardly therefrom in substantially perpendicular relationship to said end wall, and a spring similar to said end wall-attached spring secured to said cap and projecting outwardly therefrom, each of said band-attached springs having at its band-connected end a portion curved to the contour of the band disposed in contact with and permanently attached to said band.

3. The combination with a vacuum bottle having a cylindrical body provided with an end wall, and a removable cap on said body at the end thereof opposite said end wall, of resilient support means for said bottle comprising bands encircling said cylindrical body at spaced-apart locations between the ends of said body, coiled compression springs secured each at one end to a respective band, a plurality of springs projecting outwardly from each band at angularly-spaced-apart locations therearound, a coiled compression spring secured at one end to said body end wall and projecting outwardly therefrom in substantially perpendicular relationship to said end wall, and a spring similar to said end wall-attached spring secured to said cap and projecting outwardly therefrom, each of said bands comprising two substantially semi-circular portions hinged together at adjoining ends and provided at their opposite ends with manually-releasable interengaging means for detachably securing the bands upon a vacuum bottle.

4. The combination with a vacuum bottle having a cylindrical body provided with an end wall, and a removable cap on said body at the end thereof opposite said end wall, of resilient support means for said bottle comprising bands encircling said cylindrical body at spaced-apart locations between the ends of said body, coiled compression springs secured each at one end to a respective band, a plurality of springs projecting outwardly from each band at angularly-spaced-apart locations therearound, a coiled compression spring secured at one end to said body end wall and projecting outwardly therefrom in substantially perpendicular relationship to said end wall, and a spring similar to said end wall-attached spring secured to said cap and projecting outwardly therefrom, and means securing the associated springs to said end wall and said cap comprising suction cups of resilient material received in end coils of the respective springs.

JOSEPH L. GIBBS.

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