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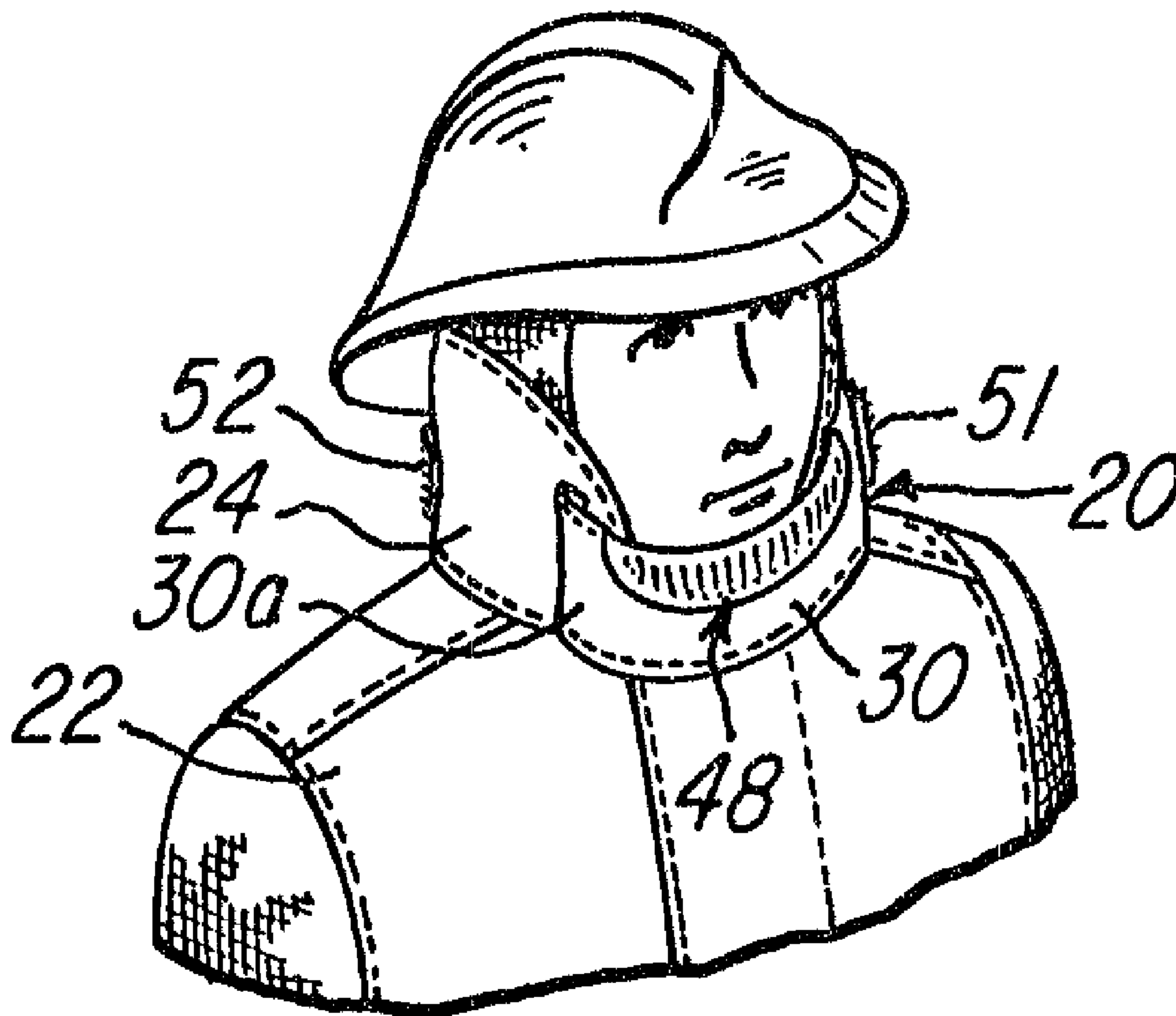
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(54) Titre : MENTIONNIERE UNIVERSELLE POUR IMPERMEABLE DE POMPIER

(54) Title: UNIVERSALLY ADAPTING COMFORT CHINSTRAP FOR A FIREFIGHTER'S COAT



(57) Abrégé/Abstract:

A firefighter's coat having a chinstrap which is universally adapting and which automatically properly fits the chin and neck region of a firefighter who wears the firefighter's coat and which is comfortable to the firefighter. The chinstrap has firefighting protective material in one or more layers of material. Each layer of firefighting protective material is capable of change in configuration to accommodate and fit properly the chin and neck region of the firefighter who wears the firefighter's coat. The material of the chinstrap which engages the chin and neck region of the firefighter is relatively soft and comfortable to the firefighter.

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Abstract of The Disclosure

A firefighter's coat having a chinstrap which is universally adapting and which automatically properly fits the chin and neck region of a firefighter who wears the firefighter's coat and which is comfortable to the firefighter. The chinstrap has firefighting protective material in one or more layers of material. Each layer of firefighting protective material is capable of change in configuration to accommodate and fit properly the chin and neck region of the firefighter who wears the firefighter's coat. The material of the chinstrap which engages the chin and neck region of the firefighter is relatively soft and comfortable to the firefighter.

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UNIVERSALLY ADAPTING COMFORT CHINSTRAP
FOR A FIREFIGHTER'S COAT

Background of The Invention

A firefighter's coat or jacket conventionally includes a chin strap member which protects the neck region of the firefighter from high heat exposure. The
5 chinstrap is conventionally attached to a turned-up collar of the coat or jacket.

Problems exist with regard to the conventional chinstrap. Individual firefighter's have various neck diameters. Chin structure and configuration of fire-
10 fighters varies significantly. It has been difficult or impossible to provide an adequately protective chinstrap which fits all firefighters comfortably. If a chinstrap is too wide for a firefighter, the chinstrap is uncomfortable. If the chinstrap is too narrow, the chinstrap
15 permits an unprotective gap in the firefighter's chin and neck region. It has been necessary to compromise between a wide chinstrap, for maximum protection, and a narrow chinstrap which may not properly protect the chin and neck region of the firefighters.

20 Also, a conventional chinstrap is constructed of good firefighting protection material, but the chinstrap is abrasive and uncomfortable rubbing occurs between the firefighter's neck and the chinstrap. If the chinstrap is reduced in dimensions so that it does not rub against

the firefighter's neck or chin, the chinstrap may be too small to provide proper protection to the firefighter's neck and chin region.

An object of this invention is to provide
5 a universally adapting chin and neck protective member or chinstrap for a firefighter's coat in which the chin and neck protective member properly covers and protects the neck and chin region of any firefighter who wears the coat, regardless of the shape and size of the fire-
10 fighter's neck and chin region.

Another object of this invention is to provide such a chin and neck protective member or chinstrap which is comfortable when used by any firefighter who wears the coat, regardless of the shape and size of the
15 firefighter's neck and chin region.

Another object of this invention is to provide such a chinstrap which has good firefighting protective qualities.

Another object of this invention is to provide
20 vide a chinstrap for a firefighter's coat which chinstrap properly and completely protects the chin and neck region of the firefighter but which does not interfere with the firefighter's mask or facepiece.

Another object of this invention is to provide
25 such a chinstrap which can be easily and readily constructed at relatively low costs.

Other objects and advantages of the firefighter's chinstrap of this invention reside in the construction of parts, the combination thereof, the method of production
30 and the mode of use, as will become more apparent from the following description.

Summary of The Invention

A chin and neck protective member or chinstrap of this invention is attached or attachable to a fire-
35 fighter's coat. The chinstrap includes firefighting protective material, such as thermal protective material

and moisture protective material. Preferably, the chin-
strap comprises an outer shell of flame resistant material.
The chinstrap also, preferably, includes moisture barrier
material and thermal barrier material which are carried
5 by the outer shell material. The outer shell has two
spaced-apart portions. Preferably, the two spaced-apart
portions are separated by a recess. The spaced-apart
portions are relatively movable. Between the spaced-
apart portions and within the recess is a section of
10 stretchable relatively soft thermal protective material.
Thus, the stretchable material may be stretched as it
engages the chin and neck region of a firefighter who
wears the firefighters' coat. Thus, the chinstrap is
universally adapting in shape and size to accomodate
15 firefighters who have necks and chins of various sizes
and shapes. Furthermore, the chinstrap is comfortable
to the firefighter while properly fitting the chin and
neck region of the firefighter and providing proper pro-
tection to the chin and neck region of the firefighter.
20 The moisture barrier material comprises a section of
moisture barrier material which is sufficiently large
to permit stretching of the stretchable material.

Brief Description of The Views of The Drawings

FIG. 1 is a perspective view showing a portion
25 of a firefighter's coat or jacket and showing a prior
art chinstrap as a part of the firefighter's coat.

FIG. 2 is a perspective view, similar to FIG.
1, showing a portion of a firefighter's coat or jacket
and showing a chin and neck protective member or chinstrap
30 of this invention as a part of the firefighter's coat.

FIG. 3 is a front view, drawn on a much larger
scale than FIGS. 1 and 2, showing a chinstrap of this
invention in a deactivated condition.

FIG. 4 is a front view, similar to FIG. 3, showing a chinstrap of this invention in an activated condition.

FIG. 5 is a front view with parts broken away and shown in section of a chinstrap of this invention.

5 FIG. 6 is an enlarged sectional view, taken substantially on line 6-6 of FIG. 5.

FIG. 7 is an exploded perspective view of a chinstrap of this invention.

10 FIG. 8 is a diagrammatic view showing means for selective adjustable attachment of a movable portion of the chinstrap of this invention to the collar of a firefighter's coat for proper fitting of the chinstrap and for proper protection of the chin and neck region of the firefighter.

15 FIG. 9 is a diagrammatic view, similar to FIG. 8, showing the chinstrap out of position for protection of the chin and neck region of the firefighter who wears the coat.

Detailed Description of The Preferred Embodiment

20 FIG. 1 shows a prior art chinstrap 10 which is attached to a collar 12 of a firefighter's coat 14. The firefighter's coat 14 and the collar 12 thereof conventionally include an outer shell layer, a thermal barrier layer, and a moisture barrier layer. The outer
25 shell is conventionally of abrasion resistant and flame resistant material. The outer shell has an inner surface which faces the chin and neck region of the firefighter. The outer shell has an outer surface which faces away from the neck and chin region of the firefighter. With-
30 in the outer shell and enclosed thereby are one or more layers of thermal protective material and moisture protective material.

The outer shell material is conventionally of the same abrasion resistant and flame resistant material
35 as the outer shell of the coat 14 and the collar 12. Therefore, the surface of the chinstrap 10 which engages

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the chin and neck region of the firefighter who wears the coat 14 has slight abrasion qualities, and engagement of the chinstrap 10 with the chin and neck of the firefighter is not comfortable to the firefighter. Furthermore, 5 the chinstrap is not designed specifically for the firefighter. Therefore, the neck dimensions and chin structure of the firefighter may be such that the chinstrap 10 does not fit properly upon the neck and chin region of the firefighter. Therefore, a conventional chinstrap, 10 in addition to being uncomfortable to the firefighter may not provide maximum protection to the neck and chin region of the firefighter.

A chinstrap 20 of this invention is shown in FIGS. 2-8. FIG. 2 shows a firefighter's coat 22 which 15 includes a collar 24. The firefighter's coat 22 and collar 24 include firefighting protective materials, such as abrasion resistant material and thermal barrier material and moisture barrier material. These materials may comprise one layer or two layers or three layers 20 or any desired number of layers.

The chinstrap 20 comprises a front panel 30 of abrasion resistant and flame resistant material, which for example, may be a material known as NOMEX*, sold by E. I. Dupont & Co., or the front panel 30 may be of any 25 other suitable firefighting protective material. The front panel 30 may be of the same material as that of the outer shell of the coat 22. The front panel 30 is shown as being elongate and provided with a pair of spaced-apart legs 30a and 30b which form a recess 32 between 30 the legs 30a and 30b. The recess 32 may be curved, as shown, or of any other suitable shape.

Partially covered by the front panel 30 is an intermediate panel 34. The intermediate panel 34 comprises any suitable moisture barrier layer and may 35 be, for example, a Neoprene* material or the like. The intermediate panel 34 is preferably, but not necessarily,

*Trademark

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a double layer of material. The intermediate panel 34 is provided with a plurality of generally vertical pleats or folds 34a.

Behind the intermediate panel 34 is a rear panel 40, which is preferably of the same material as the front panel 30, and, preferably, has substantially the same shape and dimensions as the front panel 30. The rear panel 40 has a pair of spaced-apart legs 40a and 40b which form a recess 42 in the rear panel 40. The intermediate panel 34 is larger in area than the front panel 30 and the rear panel 40 and extends across the recesses 32 and 42 of the panels 30 and 40.

Covering the recesses 32 and 42 of the panels 30 and 40, respectively, is a cover section 48, which is preferably, but not necessarily a double layer. The cover section 48 has a front part 48a which is attached to the front panel 30. The cover section 48 has a rear part 48b which is attached to the rear panel 40.

The cover section 48 is constructed of thermal barrier fiber material, such as NOMEX* or KEVLAR* fiber or the like. The fiber is knit and woven so that the cover section can be readily stretched from the condition thereof shown in FIG. 3 to the condition thereof shown in FIG. 4.

The front panel 30 and the intermediate panel 34 and the rear panel 40 and the cover section 48 are all attached together by stitches 47 or the like.

As best shown in FIG. 8, on the surface of the leg 40b of the rear panel 40 is an attachment member 49, which may be, for example, a hook and pile element. The left side of the collar 24 is provided with complementary hook and pile attachment member 50 to which the attachment member 49 is attachable to maintain the chin-strap 20 in the position illustrated in FIG. 2. On the surface of the leg 30b of the front panel 30 is an attachment member 51, which, for example, may be a hook and pile attachment element. As shown in FIG. 9, the attach-

*Trademark

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ment member 51 is attachable to a hook and pile element 52 which is carried by the collar 24. Thus, the chinstrap 20 can be attached to the collar 24 as shown in FIG. 2, or the chinstrap 20 can be released from the left side 5 of the collar 24 and attached to the right side of the collar 24 and along the right side of the head of the firefighter and away from the face and chin of the firefighter, as illustrated in FIG. 9.

As shown in FIG. 4, the legs 30b and 40b of 10 the panels 30 and 40, which are attached together, can be moved with respect to the legs 30a and 40a, which are attached together. Thus, the cover section 48 can be stretched as the legs 30b and 40b are moved to attach 15 the legs 30b and 40b to the left portion of the collar 24 and at the left side of the face of the firefighter. The cover section 48 is stretchable, as illustrated in FIG. 4. Therefore, the cover section 48 is stretched and the chinstrap 20 is automatically properly adjusted 20 in length as the chinstrap 20 is brought into engagement with the chin and neck region of the firefighter who wears the coat 22.

When the chinstrap 20 is positioned as shown in FIG. 2 the attachment element 49 of the leg 40b of the rear panel 40 is attached to the attachment member 25 50 of the collar 24, as illustrated in FIG. 2. The attachment member 50 has a significant area to permit the attachment member 49 to be attached to the attachment member 50 in any one of a plurality of positions upon the attachment member 50. Thus, the attachment member 30 50 has a sufficient area to permit the leg 40b of the rear panel 40 to be attached to the left side of the collar 24 in accordance with the desire of the firefighter who wears the coat 22. Thus, the spacing between the spaced-apart legs 40a and 40b is adjusted as desired 35 by the firefighter who wears the firefighter's coat. Thus, the chinstrap 20 changes in shape as desired by

the firefighter for obtaining a proper protective position of the chinstrap 20 with respect to the chin and neck region of the firefighter. Therefore, the chinstrap 20 is universally adapting and accommodates for any size and shape of a firefighter's neck and chin as the firefighter dons the coat 22 and positions the chinstrap 20. Also, due to the fact that the cover section 48 is of a relatively soft material, the chinstrap 20 feels comfortable to a firefighter as the cover section 48 engages the chin and neck region of the firefighter.

Thus, it is understood that a chinstrap 20 of this invention includes firefighting protective materials, while also providing a properly fitting and comfortable chinstrap.

Although the preferred embodiment of a chinstrap of this invention has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination of parts, and the manner of construction and use, which generally stated consist in a firefighter's chinstrap within the scope of the appended claims.

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CLAIMS

1. A chin and neck protective member for a firefighter's coat of the type provided with a collar which has opposed portions which are on the opposite sides of the head of the firefighter who wears the firefighter's coat, the chin and neck protective member extending between the opposed portions of the collar of the firefighter's coat and comprising:
- 5 a main panel of flame resistant material including an elongate section, which extends between the opposite portions of the collar, and
- 10 a pair of upturned leg portions at the end of each side of the elongate section, which forms a recess between both of the upturned leg portions, the upturned leg portions being relatively movable with respect to one another, each leg portion being deflectable from a normal first relative position outward toward a second relative position wherein the upturned leg portions are spaced further apart;
- 15 an intermediate panel of moisture resistant material coupled to the main panel and having parts which are expandable and extend into the recess formed between both of the upturned leg portions of the main panel;
- 20 a cover section of thermal barrier material coupled to the main panel, having parts which are expandable and extend into the recess formed between both of the upturned leg portions of the main panel and overlay at least the portion of the intermediate panel which similarly extends into the recess; and
- 25 means for attaching the chin and neck protective member to the opposed portions of the collar of the firefighter's coat, proximate the upturned leg portions of the main panel as the chin and neck protective member covers portions of the chin and neck regions of the firefighter.
- 30

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2. The chin and neck protective member of claim 1 in which the thermal barrier material of the cover section comprises stretchable material which permits the configuration of the chin and neck protective member to be changed as the chin and neck protective member is attached to opposed portions of the collar of the firefighter's coat.

3. A chin and neck protective member for a firefighter's coat which has an upper portion, the chin and neck protective member being adapted to be positioned at the upper portion of the firefighter's coat and adjacent the neck and chin region of a firefighter who wears the firefighter's coat, the chin and neck protective member comprising a first panel, the first panel being constructed of firefighting protective material, the first panel being generally elongate in shape and provided with a pair of spaced-apart sections with a space between the sections, the sections of the first panel being relatively movable, one of the sections of the first panel being attached to a part of the upper portion of the firefighter's coat, means for adjustably attaching the other section of the first panel to another part of the upper portion of the firefighter's coat and adjacent the neck and chin region of the firefighter who wears the firefighter's coat, a second panel, the second panel being positioned within the space between the spaced-apart sections of the first panel and attached to the spaced-apart sections of the first panel, the second panel including firefighting protective material which is stretchable, whereby the chin and neck protective member is capable of properly covering and protecting the neck and chin regions of any firefighter who wears the firefighter's coat as the spaced-apart sections are adjustably attached to the upper portion of the firefighter's coat and as the chin and neck protective

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member properly covers and protects the neck and chin regions of the firefighter.

4. The chin and neck protective member of claim 3 in which the first panel is constructed of flame resistant material, and in which the second panel is constructed of thermal protective material, and in which the chin and neck protective member includes a third panel, the third panel being expandible and constructed of moisture barrier material, and being positioned within the space between the spaced-apart sections of the first panel adjacent to the second panel and attached to the spaced-apart sections of the first panel.

5. The chin and neck protective member of claim 3 in which the first panel is constructed of flame resistant material, and in which the second panel is constructed of thermal protective material, and in which the chin and neck protective member includes a third panel, the third panel being constructed of moisture barrier material, the first panel comprising two layers of flame resistant material, the second panel comprising two layers of thermal protective material, at least a portion of the third panel being positioned between the two layers of the first panel and at least another portion of the third panel being positioned between the two layers of the second panel.

6. The chin and neck protective member of claim 3 in which the first panel is constructed of flame resistant material, and in which the second panel is constructed of thermal protective material.

7. A chin and neck protective member for a firefighter who wears a firefighter's coat, the chin and neck protective member being adapted to be attached to the firefighter's coat adjacent the chin and neck regions of

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the firefighter who wears the firefighter's coat, the chin and neck protective member comprising firefighting protective material including a layer of thermal barrier material and a layer of moisture barrier material, one of
5 the layers being a first layer and having spaced-apart portions which are relatively movable and which forms a recess, another of the layers being a second layer and having spaced-apart portions which are attached to the spaced-apart portions of the first layer, the second
10 layer being expandable in area, whereby the spaced-apart portions of the first layer are relatively movable for adjustable attachment to the firefighter's coat, and whereby the second layer expands in the recess area as the spaced-apart portions of the first layer are moved
15 one from the other, and whereby the chin and neck protector member accommodates for the size and shape of the chin and neck region of any firefighter who wears the firefighter's coat, such that the chin and neck protector member properly covers and protects the chin and neck
20 region of such firefighter.

8. The chin and neck protective member of claim 7 in which the second layer is thermal barrier material.

9. The chin and neck protective member of claim 7 which additionally includes a layer of flame resistant material
25 as part of the first layer having two spaced-apart portions, wherein the second layer includes the layer of thermal barrier material being expandable material and positioned between the two spaced-apart portions of the layer of flame resistant material.

30 10. A chin and neck protective member for a firefighter who wears a firefighter's coat, the chin and neck protective member being adapted to be attached to the firefighter's coat adjacent the chin and neck regions of the firefighter who wears the firefighter's coat, the

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chin and neck protective member comprising a body of firefighting protective material including thermal barrier material and moisture barrier material, the body of firefighting protective material having spaced-apart portions which are relatively movable, the body of the firefighting protective material having an expansible portion which is expansible and contractible in effective area, whereby the spaced-apart portions of the body of the firefighting material are relatively movable for adjustable attachment to the firefighter's coat, and whereby the expansible portion of the body of the firefighting protective material expands in effective area as the spaced-apart portions thereof are moved one from the other, and whereby the chin and neck protective member accommodates for the size and shape of the chin and neck region of any firefighter who wears the firefighter's coat, such that the chin and neck protective member properly covers and protects the chin and neck region of any firefighter who wears the firefighter's coat.

11. The chin and neck protective member of claim 10 in which the expansible portion of the body of firefighting protective material includes stretchable material.

12. The chin and neck protective member of claim 10 in which at least one of said layers of moisture barrier material and thermal barrier material includes stretchable material.

FIG-1
(PRIOR ART)

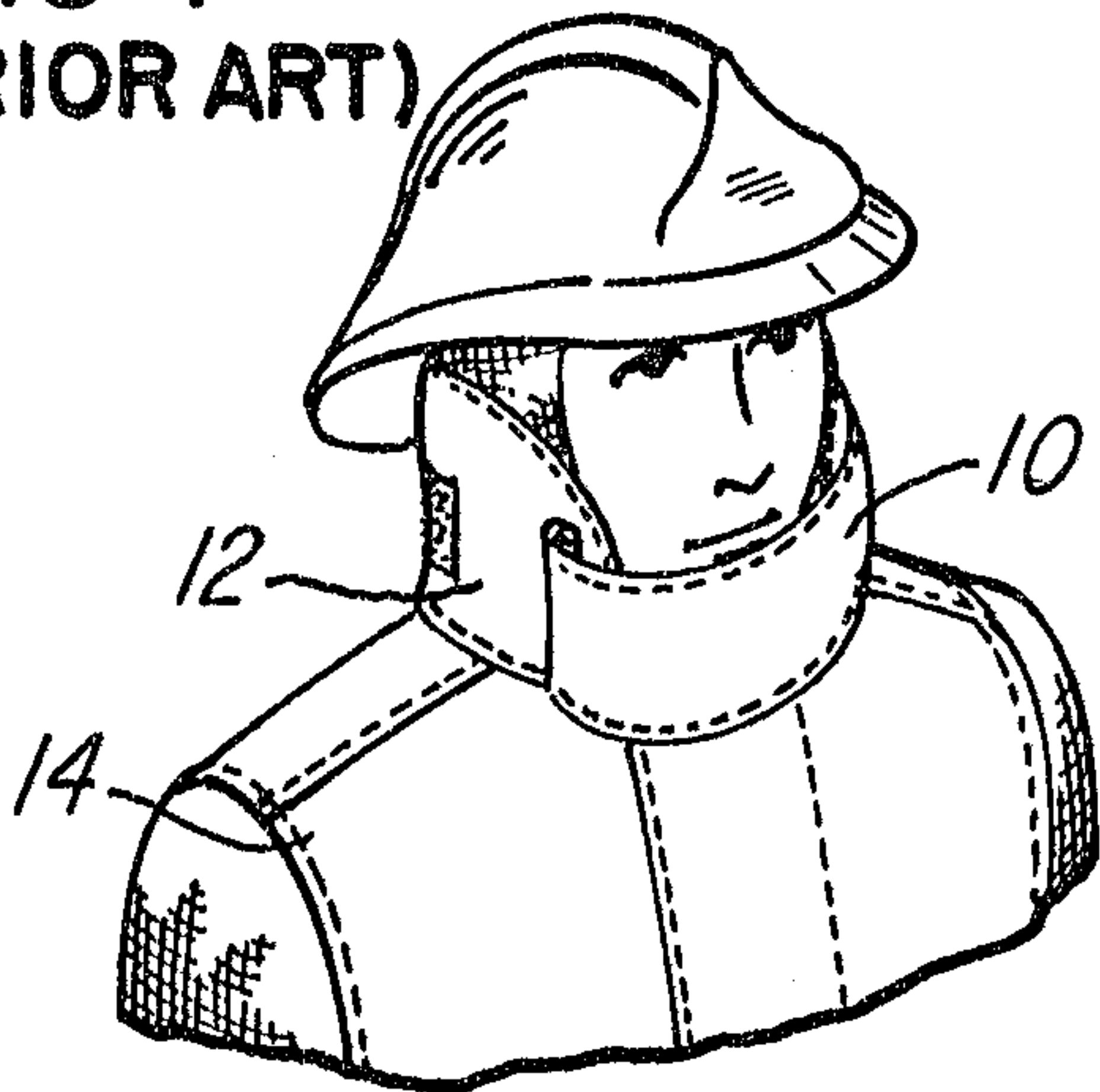


FIG-2

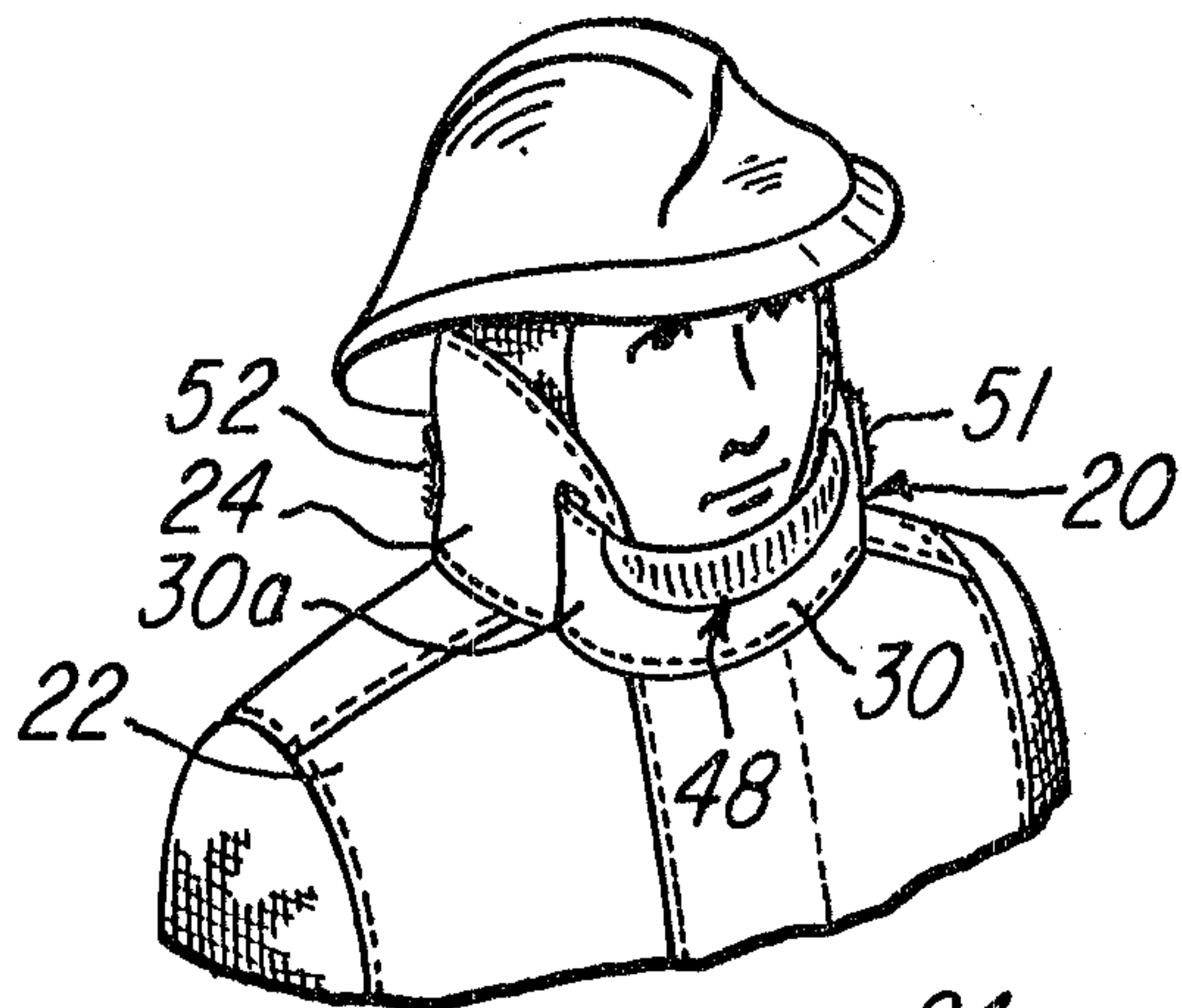


FIG-3

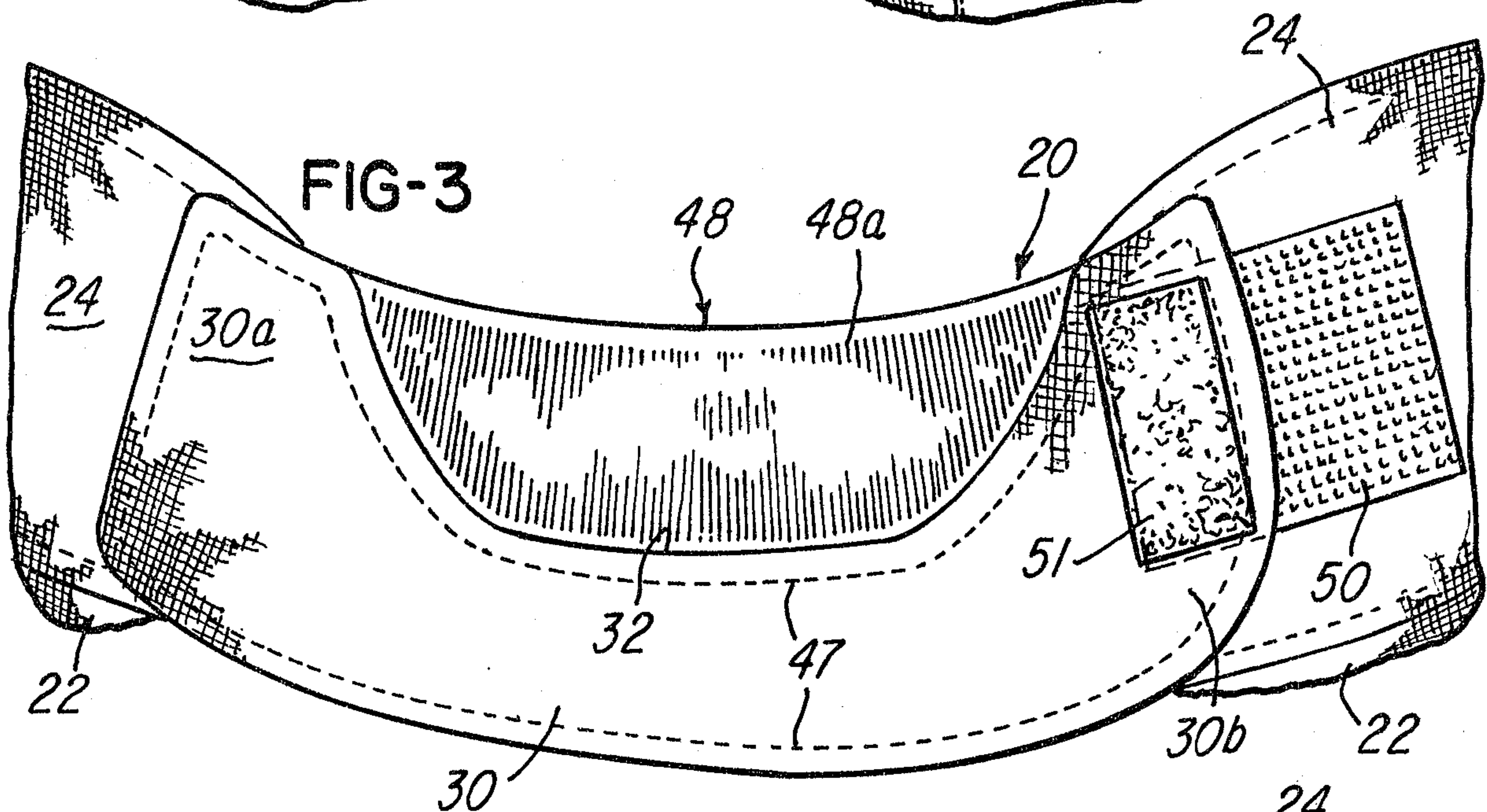


FIG-4

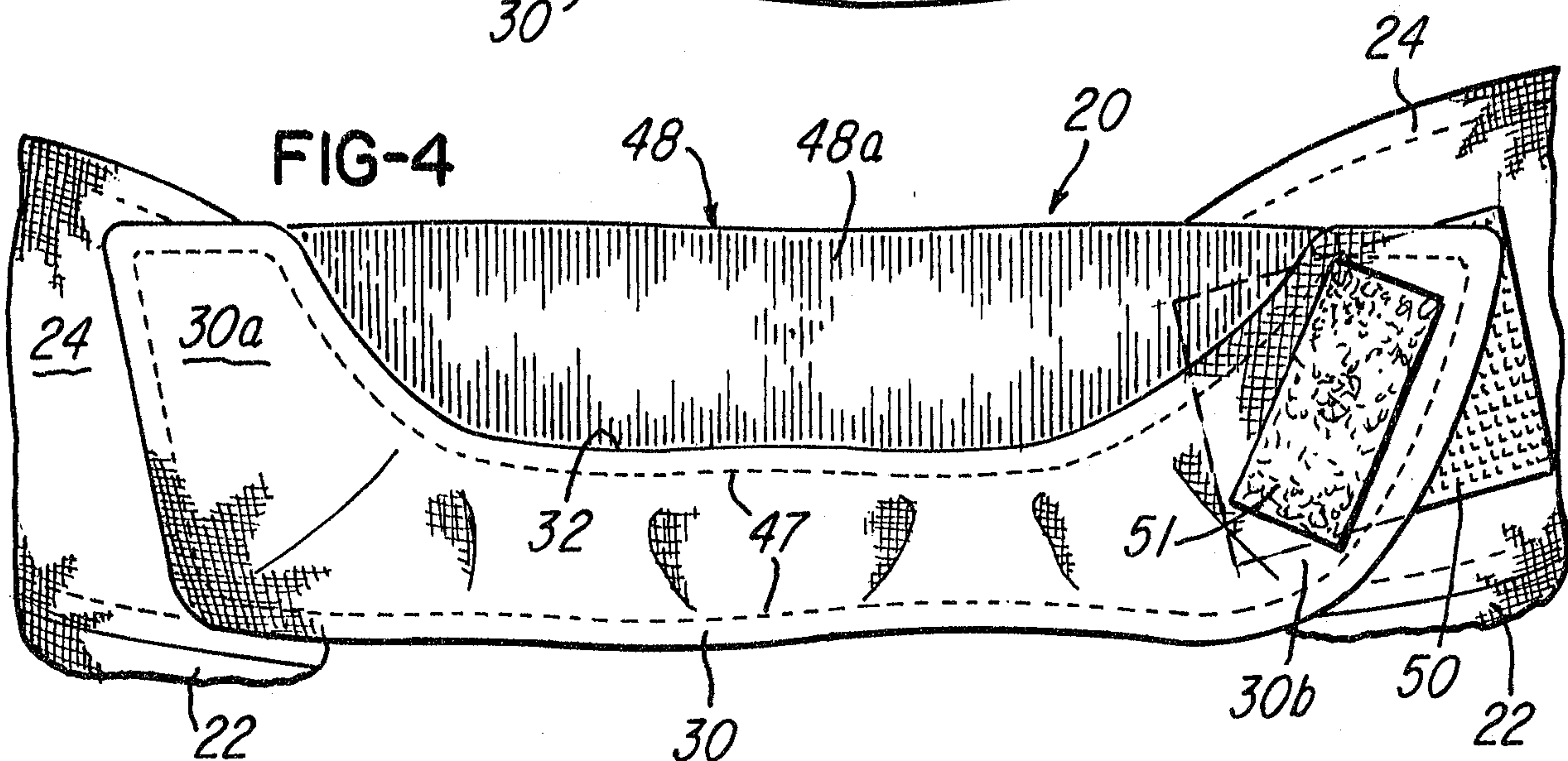


FIG-5

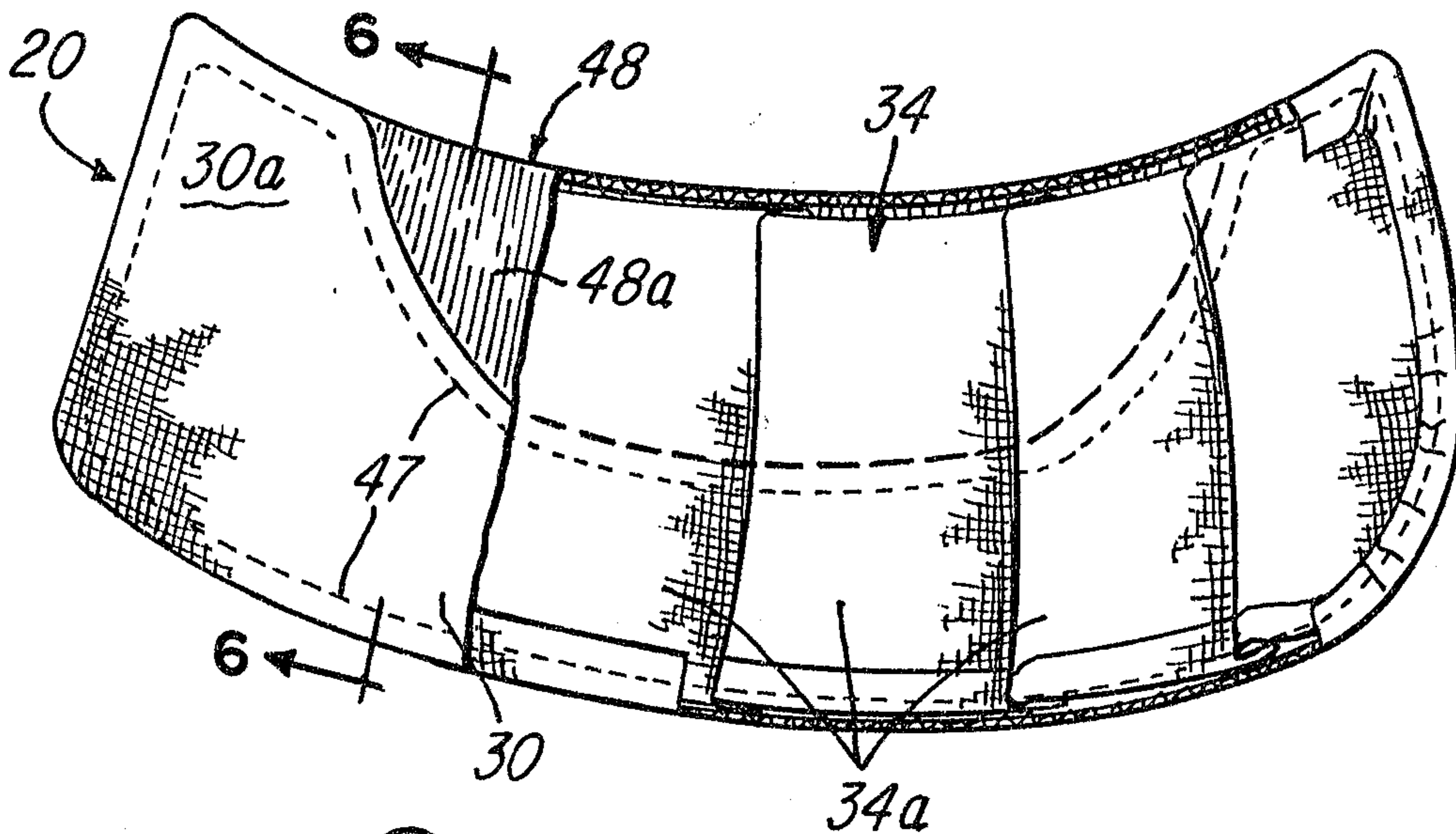


FIG-6

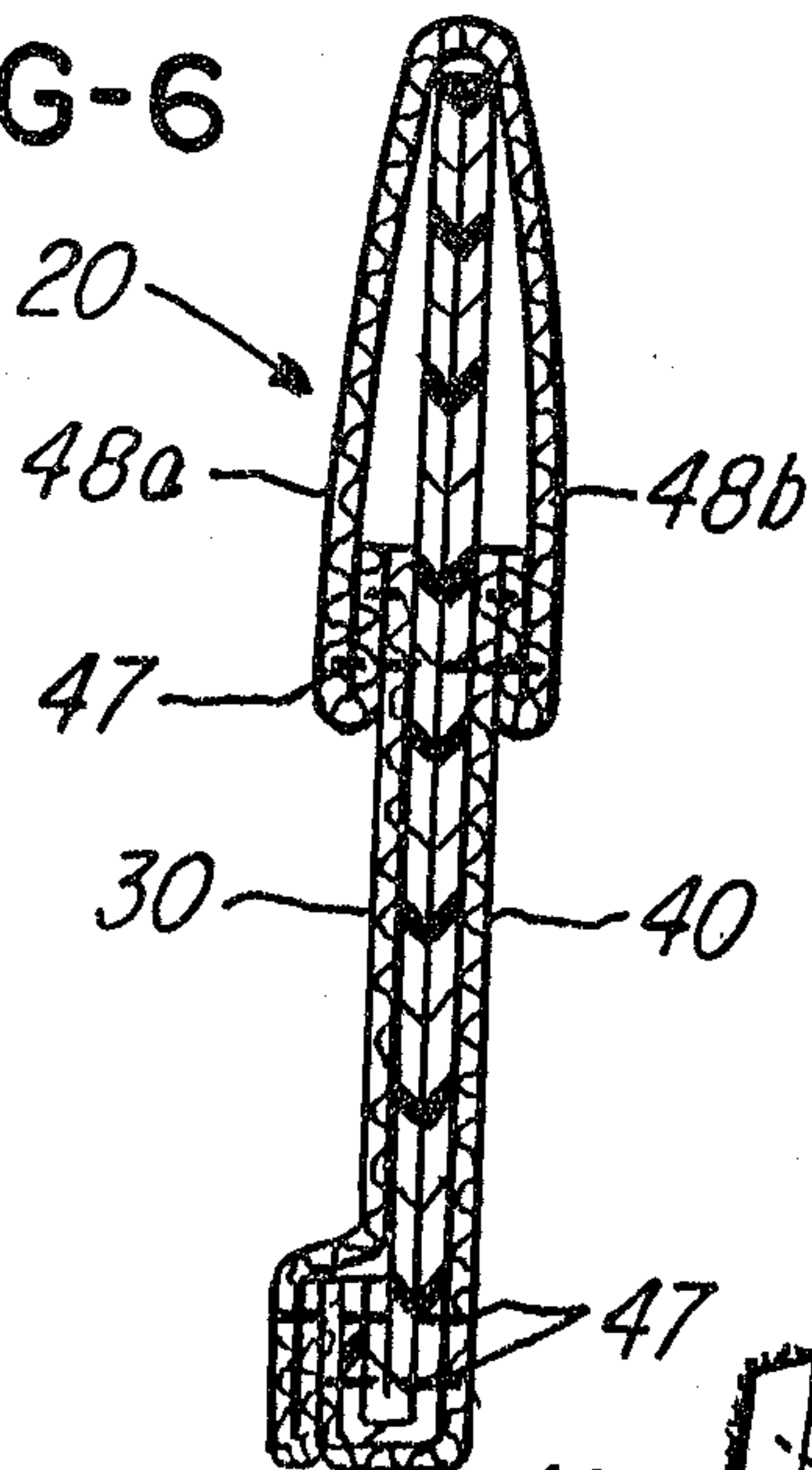


FIG-8

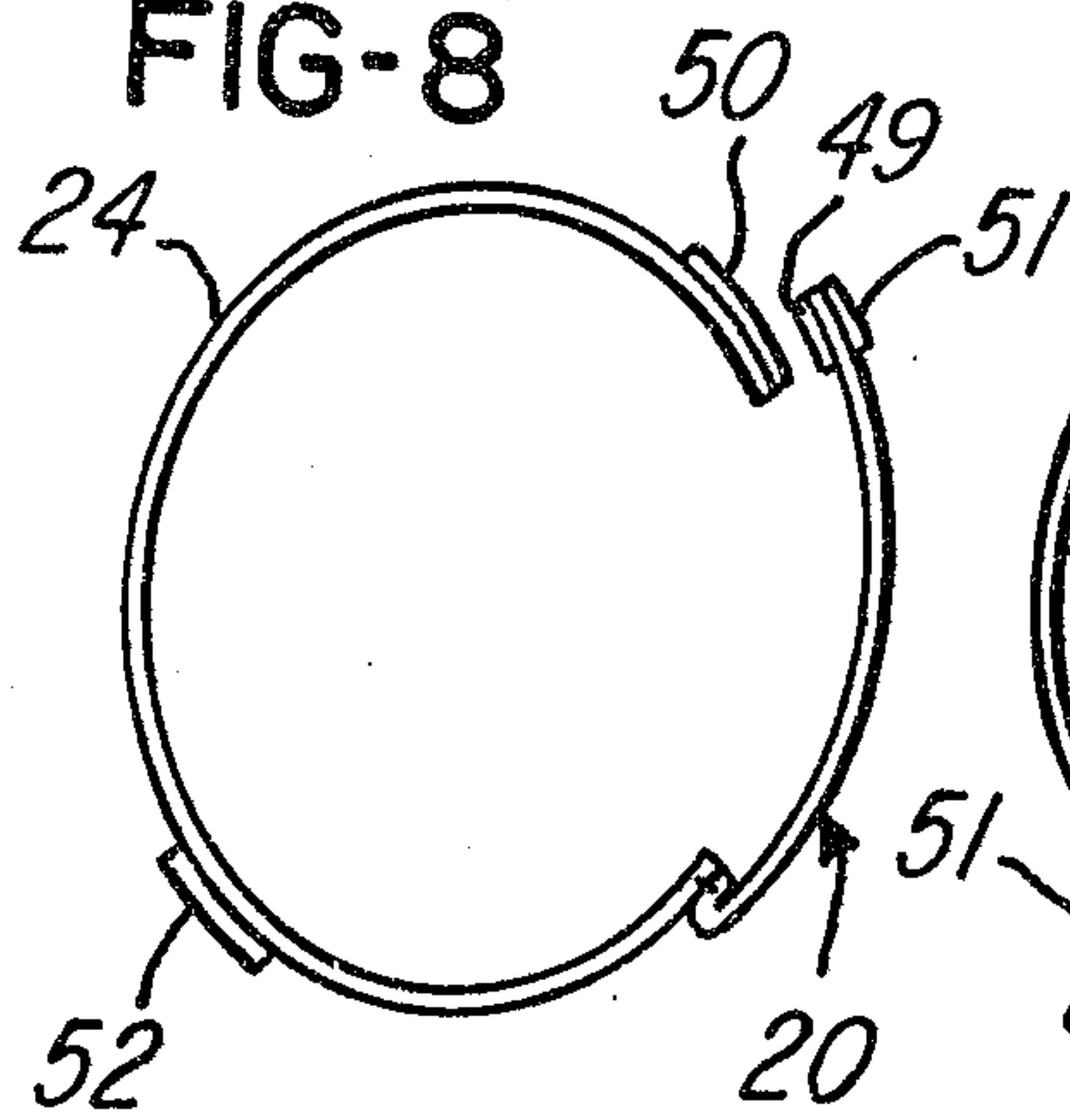


FIG-9

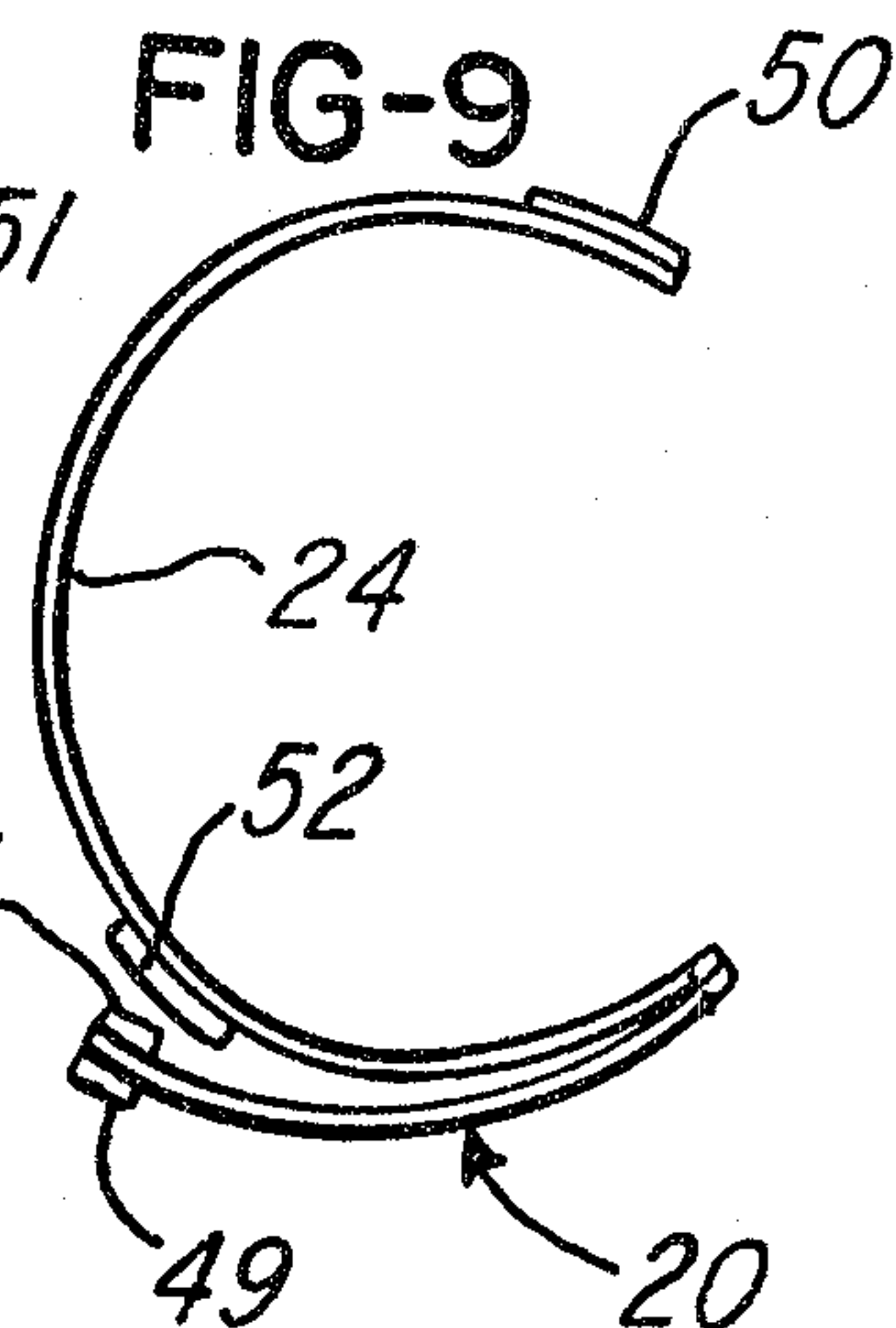


FIG-7

