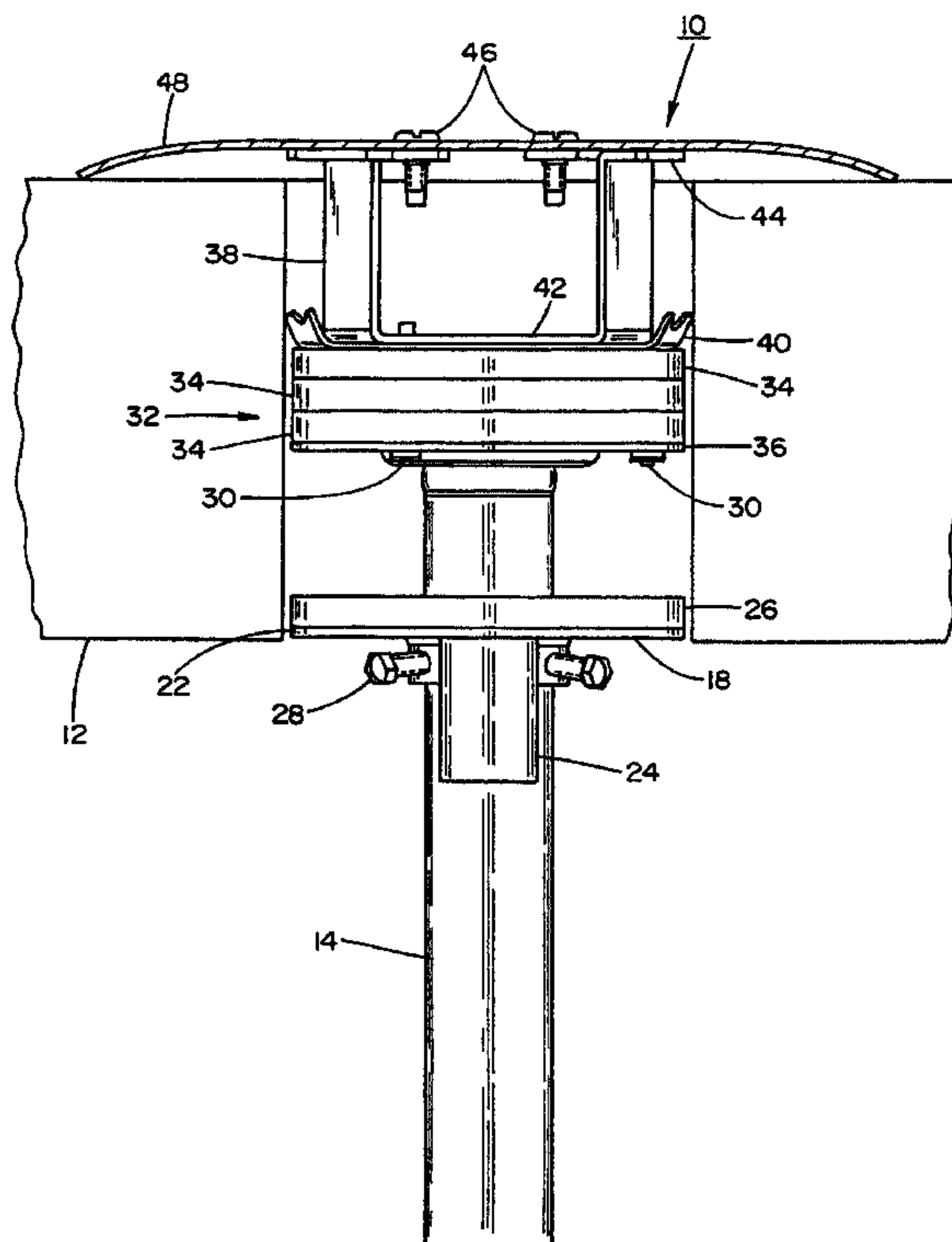




(22) Date de dépôt/Filing Date: 1993/10/28  
 (41) Mise à la disp. pub./Open to Public Insp.: 1994/09/16  
 (45) Date de délivrance/Issue Date: 2005/07/12  
 (30) Priorité/Priority: 1993/03/15 (08/031,349) US

(51) Cl.Int.<sup>5</sup>/Int.Cl.<sup>5</sup> H02G 3/22, H01R 19/44  
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(54) Titre : DISPOSITIF DE CABLAGE A AUTOANCRAGE POUR LA TRAVERSEE DES PLANCHERS EN BETON  
 (54) Title: SELF-ANCHORING POKE-THROUGH WIRING DEVICE



(57) **Abrégé/Abstract:**

A self-anchoring flush-type poke-through electrical wiring fitting which is adapted to be positioned in a floor aperture which is formed in a concrete building floor, for enabling the conducting of electrical power and telecommunication signals between the work spaces of multi-storied buildings. A retainer clip is engaged between a floor cup structure and disc-shaped fire barrier inhibiting displacement of the retainer clip. The retainer clip is constructed of a cold-worked stainless steel material, preferably such as type 302 or 304 annealed stainless steel possessing a minimal degree of resilience.

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SELF-ANCHORING POKE-THROUGH WIRING DEVICE  
ABSTRACT OF THE DISCLOSURE

A self-anchoring flush-type poke-through electrical wiring fitting which is adapted to be positioned in a floor aperture which is formed in a concrete building floor, for enabling the conducting of electrical power and telecommunication signals between the work spaces of multi-storied buildings. A retainer clip is engaged between a floor cup structure and disc-shaped fire barrier inhibiting displacement of the retainer clip. The retainer clip is constructed of a cold-worked stainless steel material, preferably such as type 302 or 304 annealed stainless steel possessing a minimal degree of resilience.

1           SELF-ANCHORING POKE-THROUGH WIRING DEVICEBACKGROUND OF THE INVENTION1. Field of the Invention

          The present invention relates to a poke-through  
5 wiring device and, more particularly, pertains to a self-  
anchoring flush-type poke-through electrical wiring  
fitting which is adapted to be positioned in a floor  
aperture which is formed in a concrete building floor,  
for enabling the conducting of electrical power and  
10 telecommunication signals between the work spaces of  
multi-storied buildings.

          Basically, during the erection of various types  
of building structures; for instance, especially such as  
modern multi-storied office buildings possessing concrete  
15 floors, it is frequently necessary, and also commonly  
accepted building practice, to normally provide fire-  
rated poke-through fittings and devices for conducting  
insulated conductors, wires, cables and the like for the  
transmission of electrical power and telecommunication  
20 signals through suitable holes or apertures which are  
formed in the concrete building floors. Hereby, this  
enables electrical power and other kinds of signals, such  
as telecommunication signals, to be readily transmitted  
from a suitable source; for instance, from a junction box  
25 located at or proximate one face, ordinarily the lower  
surface of the concrete floor through the intermediary of  
the poke-through fitting through the aperture in the  
concrete building floor to a suitable outlet or service  
head which is located at the opposite, generally upper  
30 face of the floor. Thus, in order to accomplish the  
foregoing purpose; essentially, the positioning in a

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1 floor aperture of a poke-through wiring device or fitting  
of the type described herein, the service head, under  
various circumstances, is intended to incorporate a  
carpet flange which is to be mounted flush on the upper  
5 surface of the floor or on a carpet which covers the  
floor; and in which the device may be equipped with  
suitable gripping structure enabling the poke-through  
wiring device or fitting to be inserted from above into  
the floor aperture formed in a concrete floor so as to  
10 resultingly anchor itself in a predetermined orientation  
in the aperture, inhibiting withdrawal of the fitting  
therefrom, while suspending a junction box below the  
floor aperture, as may be required.

Heretofore, under various circumstances, the  
15 poke-through wiring fitting, which generally incorporates  
fire barrier structure, usually intumescent-material  
discs, adapted to be located within the confines of the  
floor aperture, at the end thereof opposite the floor  
surface mounting the service head, incorporated a  
20 suitable toggle arrangement proximate the junction box  
for clamping engagement with the lower surface of the  
concrete floor, so as to enable the fitting to be  
anchored in the floor aperture. Such a toggle  
arrangement generally included plate members having  
25 axially oriented screw members threadingly extending  
therethrough oriented coextensive with the axial  
alignment of the fitting, and which contact against the  
lower surface of the concrete floor structure so as to  
draw the poke-through wiring fitting downwardly into a  
30 flush-mounted engagement at the upper end thereof with  
the opposite surface of the floor.

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1           Various types and designs of floor fittings of  
this kind eliminate the need for such toggle arrangements  
by providing for clip-like anchoring or gripping  
structure as a component of the poke-through fitting,  
5 which structure normally biasingly engages the  
circumferential wall surface of the floor aperture in  
order to firmly anchor and secure against withdrawal of  
the poke-through fitting in predetermined axially and/or  
radially adjusted positions within the floor aperture.  
10 In essence, as a consequence of eliminating the toggle  
arrangement, this imparts the poke-through wiring device  
or fitting with the capability of being introduced into  
the floor aperture from above and enabling it to be  
anchored in a predetermined oriented position within the  
15 floor aperture while eliminating the need for the  
services of cooperating electricians having to work in  
tandem on the floors above and below the floor aperture  
in order to obtain an appropriately oriented installation  
of the poke-through fitting; in effect, permitting the  
20 work to be carried out by a single unaided electrician or  
installer, thereby significantly reducing attendant labor  
costs.

          Although numerous type of structures have been  
heretofore proposed and are currently in widespread use  
25 in this technology for the purpose of anchoring poke-  
through wiring devices or fittings in concrete floor  
apertures, not all of these structures have been able to  
completely satisfactorily meet the requirements in being  
able to not only anchor the poke-through fitting in the  
30 floor aperture through the intermediary of a novel clip  
structure, but also impart a capability to the upper end

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1 portion of the fitting of mounting a detachable  
installation plate which is to be employed as a template  
for the cutting and laying of floor carpeting about the  
floor aperture and to thereafter enable the replacement  
5 of the installation plate with a suitable carpet flange  
and receptacle assembly, and by application of foot  
pressure downwardly to the carpet flange, push the poke-  
through fitting downwardly into the floor aperture into  
its final flush-mounted anchored position.

10 2. Discussion of the Prior Art

At this time, various types of anchoring  
devices are known to provide for the self-anchoring of  
poke-through wiring fittings in floor apertures of multi-  
storied buildings, and all of which effectively eliminate  
15 the need for so-called toggle assemblies for clamping the  
poke-through wiring devices or fittings in position  
generally through the employment of spring clips which  
engage the wall structure of the floor apertures.

In order to provide for the self-anchoring of  
20 the poke-through fittings or wiring devices or fitting in  
the floor apertures it has heretofore been contemplated,  
pursuant to a specific instance, to compress fire-  
resistant discs, such as are ordinarily made of an  
intumescent material, between two metal plates in a  
25 sandwich structure, and to thereby squeeze the  
intumescent discs so as to cause them to expand radially  
outwardly into contact with the perimeter of an aperture  
wall in a concrete floor to thereby securely retain the  
fittings therein. Although that type of structure  
30 imparts a self-anchoring feature to the fittings, it does  
not facilitate orienting the wiring fittings in their

1 appropriate angular positions so as to enable installing  
the wiring devices or poke-through fittings in the floor  
apertures without the need for cooperating electricians  
working on opposite building floors. Devices of that  
5 type are described, for example, in Carroll, et al. U. S.  
Patent 4,272,643.

An anchoring structure for poke-through wiring  
devices or fittings of the general type considered herein  
is set forth in Shine U. S. Patent 4,323,724, in which,  
10 fastened to a fire-retarding intumescent disc assembly, a  
split notched, ring-shaped resilient dished spring washer  
has anchoring surfaces adapted be wedged against the  
perimeter wall surface of a concrete floor aperture so as  
to securely anchor in the entire poke-through wiring  
15 device or fitting therein in a predetermined angular  
orientation relative to the axis of the aperture.  
Although the fitting as elucidated in this patent  
publication imparts an essentially adequate self-  
anchoring feature to the poke-through fitting, in order  
20 to be able to remove the fitting from its installed  
position in the concrete floor aperture, this  
necessitates the entire fitting having to be forcibly  
pulled out, thereby practically either completely  
destroying or seriously damaging structural components  
25 thereof, necessitating expensive replacement thereof, in  
addition to entailing high labor costs in installing a  
new poke-through fitting.

Another structure for the anchoring of a poke-  
through wiring device or fitting in a concrete floor  
30 aperture is described in Spencer U. S. Patent 4,496,790,  
wherein a pair of substantially diametrically oppositely

1 arranged resilient clips protrude beyond the diameter of  
a fire retarding plate-sandwich structure of a poke-  
through fitting on which they are mounted by means of  
screw fasteners so as to contact, in a gripping manner,  
5 the perimeter of an aperture wall formed in a building  
floor which is constituted of a concrete material,  
thereby enabling the device to anchor itself in a  
predetermined angular orientation upon insertion therein,  
while facilitating removal and repositioning of the  
10 fitting through loosening of the screw fasteners and,  
resultingly, of the clips.

However, although the foregoing anchoring  
structure incorporating resilient clips improves upon the  
structure described in Shine U. S. Patent 4,323,724 by  
15 enabling the clips to be removed through the loosening of  
the screw fasteners, and enabling the repositioning of  
the fitting subsequent to its being withdrawn from the  
floor aperture, the utilization of resilient clips which  
are of an essentially V-shaped configuration and in which  
20 the freely-flexible clip leg portion of the V-shape  
contacts the concrete wall fails to provide for an  
adequate gripping engagement with the wall of the  
concrete floor aperture, since the considerable  
flexibility and delicate nature inherent to this  
25 particular clip design does not allow for the exertion of  
a strong radial gripping force to be produced by this  
anchoring structure of the poke-through wiring device.

A poke-through connector assembly incorporating  
a resilient spring clip which is attached to the lower  
30 surface of a basket containing intumescent material is  
disclosed in Bloom U. S. Patent 5,032,690, wherein the

1 material expands to fill the aperture when the floor is  
subjected to fire and heat, and in which the spring clip  
resiliently engages the wall surface of the floor  
aperture through the intermediary of radially outwardly  
5 extending prong members so as to essentially anchor the  
poke-through fitting in the aperture. However, this  
resilient type of clip structure does not provide for the  
necessarily firm anchoring action which will inherently  
prevent any displacement of the fitting when the upper  
10 end thereof, which may consist of a carpet flange or the  
like service head structure, is subjected to rough  
handling.

Finally, Castellani, et al. U. S. Patent  
4,770,643 provides for a retaining member which is  
15 essentially of a disc-shape and is attached to the lower  
surface of intumescent material discs and support plate  
structure and which provides for circumferentially spaced  
prongs of a plate-like clip member of an inherently  
resilient nature engaging the wall surface of the floor  
20 aperture. Although this provides for an anchoring effect  
for the poke-through wiring fitting, there is no force of  
sufficient magnitude being exerted by the prongs against  
the wall surface of the floor aperture to securely  
prevent rotational or upward axial displacement of the  
25 wiring fitting.

#### SUMMARY OF THE INVENTION

Accordingly, it is a primary aspect of the  
present invention to provide a flush-type poke-through  
wiring fitting of the kind described herein which will  
30 incorporate a retainer clip of novel construction and  
material possessing unique properties for securely

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1 anchoring the fitting within a floor aperture of a  
concrete floor, and wherein the retainer clip is engaged  
between a floor cup structure and disc-shaped fire  
barrier inhibiting displacement of the retainer clip.  
5 This will enable the poke-through fitting or wiring  
device to be introduced and extended downwardly into the  
floor aperture to a specified extent to enable carpet to  
be installed on the floor surface above the aperture by  
employing a dished detachable installation plate fastened  
10 to the upper end of the floor cup as a template for  
cutting specified hole in the carpet above the floor  
aperture. Hereby, the installation plate is dished to  
provide a dimension in height which will maintain the  
upper end of the poke-through wiring fitting somewhat  
15 raised above the upper floor surface when pushed into the  
floor aperture and anchored therein by the retainer clip  
such that, subsequent to the installation plate having  
served its intended function as a template, this will  
enable the installation of the receptacle assembly for  
20 the wiring connectors and receptacles, and replacement of  
the installation plate by a carpet flange. Thereafter,  
the carpet flange-equipped poke-through wiring fitting  
can then be pushed downwardly into the floor aperture for  
the remaining distance in which the lower surface of the  
25 flange contacts the carpeting, so as to be firmly  
anchored through the retainer clip in its final installed  
position within the floor aperture.

Alternatively, pursuant to a modified  
embodiment of the present invention, in lieu of an  
30 installation plate being temporarily mounted on the floor  
cup during the initial insertion of the flush-type poke-

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1 through wiring fitting into the floor aperture, and  
thereafter causing the installation plate to be detached  
and replaced by a carpet flange prior to final  
positioning of the fitting in the floor aperture, it is  
5 contemplated that the carpet flange be mounted on the  
floor cup prior to the installation of the poke-through  
fitting, the latter of which is inserted into the floor  
aperture subsequent to the laying the carpet on the  
floor. This, in effect, eliminates the operating step of  
10 having to initially attach and thereafter detach an  
installation plate from the fitting, and then replacing  
the plate with a carpet flange.

Pursuant to a further aspect of the invention,  
there is provided a flush-type poke-through wiring  
15 fitting of the type described herein, in which the  
retainer clip comprises an annealed stainless steel plate  
member including upwardly and radially outwardly angled  
or bent prongs at opposite distal ends thereof which are  
adapted to firmly grip the wall structure of the floor  
20 aperture in a manner to prevent the fitting from being  
pulled upwardly through exerting a strong radial gripping  
force against the wall of the floor aperture; but which  
nevertheless enable the fitting to be pushed downwardly  
into the floor aperture under an only relatively low  
25 axial force, such as foot pressure and firmly secure the  
fitting within the floor aperture resistant to upward  
dislodgement. For this purpose, the retainer clip is  
constructed of an annealed stainless steel material,  
preferably such as type 302 or 304 annealed stainless  
30 steel possessing a minimal degree of resilience.

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The invention in a claimed aspect provides a self-anchoring poke-through wiring device for insertion into a passage extending through a concrete floor aperture of a building structure to facilitate transmission of electrical power and telecommunication signals between a service head and a junction box located at opposite sides of the floor. The wiring device comprises a cover plate structure positionable above the upper face of the floor so as to cover the floor aperture. Channel means extend through the floor aperture for conducting insulated wires and telecommunication signals through said floor aperture between said junction box and said service head. Fire retarding structure is fixedly connected to at least the upper end of the channel means for sealing the aperture in response to encountered heat and fire to form a fire barrier in the floor aperture and a floor cup is provided for the receipt of electrical connectors extending between the fire retarding structure and the cover plate structure. The floor cup has a disc-shaped base fastened to the fire retarding structure and upstanding leg portions extending from the base having free distal ends fastenable to the cover plate structure. Generally rigid non-resilient metallic retainer clip means is interposed between the floor cup and the fire retarding structure, the retainer clip means including diametrically opposite end portions frictionally engageable with the wall surface of the floor aperture for securely anchoring the wiring device in the floor aperture against rotational movement and upward displacement while enabling downwardly displacement of the fitting. Outer end portions of the retainer clip means have prongs formed thereon for engaging the wall surface of the floor aperture in frictional contact. The outer end portions of the retainer clip means are each bent upwardly at an angle of between about 40° to 50° relative to the plane of a flat center portion of the clip means, the retainer clip means being constituted of a corrosion-resilient annealed stainless steel having cold-worked portions in at least the bent portions of the retainer clip means.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing objects, features and further advantages of the invention may now be more readily ascertained from the following detailed description of a preferred embodiment of a flush-type, poke-through wiring device, taken in conjunction with the accompanying drawings; in which:

Figure 1 illustrates an elevational sectional view through a poke-through wiring device or fitting incorporating the inventive retainer clip and an installation plate constructed pursuant to the invention;

Figure 2 illustrates a top plan view of a collar structure for mounting EMT tubes utilized in conjunction with the wiring device;

Figure 3 illustrates a sectional view taken along line 3 - 3 in Fig. 2;

Figure 4 illustrates a bottom view of the collar structure of Fig. 2;

Figure 5 illustrates a side view of the collar structure showing an intumescent-material disc attached thereto;

Figure 6 illustrates a plan view of a retainer clip for the wiring device;

Figure 7 illustrates a side view of the retainer clip;

Figure 8 illustrates, on an enlarged scale, a sectional view taken along line 8 - 8 in Fig. 6;

Figure 9 illustrates a fragmentary view taken in the direction of arrow 9 in Fig. 8; and

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1           Figure 10 illustrates a top plan view of the  
bottom plate of a floor cup of the wiring device, showing  
the retainer clip positioned therebeneath.

DETAILED DESCRIPTION

5           Referring now in more particular detail to the  
drawings, and specifically to Fig. 1, there is disclosed  
a flush-type poke-through wiring fitting 10 which is  
mountable so as to extend through a floor aperture 12  
formed in a concrete floor of a building structure, as is  
10 well known in the technology. Generally, the floor  
aperture 12 is of a smooth-walled cylindrical  
configuration, for instance, a 3-inch diameter core-  
drilled hole, and is adapted to receive the therewith  
coaxially arranged tubular channel 14 of the wiring  
15 fitting 10 for conducting the respective insulated  
electrical wiring and signal lines for electrical power  
transmission and telecommunications equipment extending  
from one floor space to a superimposed upper floor space  
of the building structure. Hereby, the channel 14 may be  
20 constituted from metallic tubing or a conduit and the  
like, as is known in the building construction  
technology. Arranged on the tubing 14 is a fire barrier  
and collar assembly 18, described in further detail  
hereinbelow with references to Figs. 2 through 5, and  
25 wherein the assembly 18 essentially consists of a  
metallic collar structure 20 and flange 22 having EMT  
tubes 24 fastened thereto so as to enable the  
communication wires to be enclosed by either rigid EMT  
conduits or flexible metal conduits (not shown) when  
30 specified for installation purposes. Superimposed on and  
fastened to the collar assembly 18 is a fire-barrier disc

1 member 24 constituted from an intumescent material. The  
entire arrangement 18 may be clamped to the tube 14 by  
means of suitable screw fasteners 28, as shown in Figs. 4  
and 5, which engage threaded holes in collar structure  
5 20.

At the upper end of the tubular channel 14, the  
latter is connected through the intermediary of suitable  
screw-type fasteners 30 to a fire barrier structure 32  
which, as illustrated by way of example, may consist of a  
10 plurality (in this instance three) of superimposed  
intumescent-material disc members 34 which are sandwiched  
between a lower metallic support plate 36 and a floor cup  
38, with the inventive retainer clip 40 being positioned  
sandwiched between the uppermost disc member 34 and floor  
15 cup 38. The retainer clip 40 embodying an aspect of the  
inventive concept, is fastened between the uppermost  
intumescent-material disc 34 and the floor cup 38 through  
the intermediary of the plurality of fastening screws 30  
which extend from beneath the support plate 36 through  
20 the intumescent-material disc members 34 and the retainer  
clip 40, and engage cooperating threaded apertures in a  
bottom plate 42 of the floor cup 38.

The upper end of the floor cup 38 is equipped  
with horizontal flanges 44 which are adapted to have  
25 fastened thereto, by means of suitable screw fasteners  
46, either a dished installation plate 48 or,  
alternatively, a carpet flange (not shown), as discussed  
in more specific detail further on hereinbelow.

In essence, the inventive retainer clip 40, as  
30 shown in more specific detail in Figs. 6 through 9 of the  
drawings, consists of a plate member 50 of predetermined

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1 width having parallel sides 52, 54 and including a  
central aperture 50 to enable the passage therethrough of  
the various electrical conduits and wires. The retainer  
clip 40 has opposite curvilinear ends 58, 60 of  
5 diametrical dimensions generally  $\frac{1}{4}$  inch or more larger  
than that of the floor aperture 12. The diametrically  
opposite ends 58, 60 of the retainer clip 40 each  
incorporate a plurality of prongs 62 arranged adjacent  
generally arcuate or semi-circular cutouts 64, and with  
10 radially outer end portions of the clip ends 58, 60 each  
being bent upwardly, as shown in the drawings, preferably  
at approximately an angle of about  $45^{\circ} \pm 5^{\circ}$  relative to  
the extent of the flat central plate section 50 of the  
retainer clip 40.

15 The retainer clip 40 is produced from an  
essentially non-resilient annealed Type 302 or 304  
stainless steel, possessing unique and advantageous  
mechanical properties. Hereby, the upwardly bent end  
portions 58, 60 possessing the radially outwardly and  
20 upwardly projecting prongs 62 are produced by being  
stamped and formed into shape without any spring-back,  
whereas when the  $45^{\circ}$  bends are produced, as shown in Fig.  
8, through cold working of the stainless steel in this  
region, this results in imparting a considerably higher  
25 tensile and yield strength to the steel.

This treatment of the retainer clip material  
enables the prongs 62 to be upwardly deflected (as shown  
in Fig. 1) during contacting of the concrete wall surface  
of floor aperture 12 during the downward inserting  
30 movement of the wiring fitting 10 into the floor  
aperture, while concurrently causing extremely high

1 lateral or radial forces to be exerted by the prongs 62  
against the concrete wall of the floor aperture,  
generally in a magnitude of several thousands of pounds,  
thereby inhibiting the wiring fitting 10 from being  
5 upwardly dislodged and concurrently restricting any  
rotational movement thereof within the floor aperture 12.  
Nevertheless, due to the extremely low frictional  
resistance between the prongs 62 of the retainer clip 40  
and the surface of the smooth-core drilled concrete hole,  
10 the poke-through wiring fitting 10 only necessitates the  
application of a light foot pressure thereon by an  
installer to be able to push the fitting downwardly  
through the floor aperture 12 into its intended position.

In essence, the installation of the assembled  
15 wiring fitting 10, as shown in Figs. 1 and 2, only  
requires a single worker or installer operating from the  
upper floor to push the poke-through wiring fitting 10  
downwardly into the floor aperture 12; and when equipped  
with the dished installation plate 48, will permit the  
20 wiring fitting to be inserted into the floor aperture  
until the installation plate 48 has its lower edge  
contact the surface of the building floor above the floor  
aperture. This enables the installation plate 48 to be  
employed as a template for cutting a suitable opening in  
25 carpeting being laid on the floor about the floor  
aperture. Thereafter, the installation plate 48 is  
detached from the floor cup 38 of the wiring fitting 10  
through the removal of the screw fasteners 46 attaching  
the installation plate 48 to the flange 44 of floor cup  
30 38, and replacement of the installation plate by a  
suitable carpet flange, as is known in the technology.

1 Subsequently, upon attachment of the carpet flange (not  
shown) and effecting the necessary wiring connections and  
the like procedures, the installer need merely apply  
downward foot pressure to the carpet flange to move the  
5 wiring fitting 10 further downwardly and firmly seat the  
fitting in the floor aperture in a flush-type  
installation in which the lower surface of the carpet  
flange is flush positioned on the installed floor  
carpeting.

10 Alternatively, pursuant to a modification of  
the above-described embodiment, instead of employing an  
installation plate 48 which is temporarily mounted on the  
floor cup 38, it is possible to initially mount a carpet  
flange on the poke-through wiring fitting 10 prior to  
15 installation of the latter in the floor aperture 12,  
especially in instances where carpeting, wood flooring or  
tile has already been laid or installed on the floor, or  
the latter has been suitably finished, and appropriate  
cutouts have been previously formed therein about the  
20 floor aperture 12. This eliminates the installation step  
of the previous embodiment of having to initially mount  
and thereafter detach an installation plate 48, and to  
subsequently attach a carpet flange to the floor cup 38  
of the wiring fitting 10, and then push the fitting  
25 further into the floor aperture into its final installed  
position. For the remainder, the procedure in the  
installation of the wiring fitting 10 is identical with  
that of the preceding embodiment.

The clamping of the retainer clip 40 between  
30 the uppermost intumescent-material disc member 34 of the  
fire barrier structure and the bottom plate 42 of the

1 floor cup 38, as shown in Fig. 10, whereby the floor cup  
38 is equipped with position-defining notches 70 for  
orienting the retainer clip 40 therebetween, also ensures  
that the wiring fitting 10 will be inserted in a correct  
5 rotational position within the floor aperture 12, and  
whereby the frictional engagement of the prongs 62 with  
the concrete wall surface of the floor aperture, although  
permitting downward axial displacement of the wiring  
fitting responsive to downward foot pressure being  
10 exerted thereagainst by an installer, will inhibit  
rotation of the wiring fitting or upward dislodgement  
thereof within the floor aperture so as to cause the  
fitting to be firmly anchored in place in its final  
installed condition in the floor aperture.

15 The foregoing structure not only ensures a  
simple and firmly anchored installation of the flush-type  
poke-through wiring fitting 10, possessing the superior  
anchoring qualities of the non-resilient, stainless steel  
retainer clip 40 in comparison to those currently being  
20 employed in the technology, but also eliminates the need  
for a toggle assembly which has heretofore been widely  
employed in conjunction with such kinds of wiring  
fittings, and the latter of which necessitate the  
anchoring of the wiring fitting in the floor aperture by  
25 two cooperatively working installers, one working from  
above and one from below the floor aperture. Moreover,  
the elimination of the toggle assembly also reduces the  
number of components and thereby renders the entire  
wiring fitting not only more economical on the basis of a  
30 simpler installation, but also from the viewpoint of its  
manufacturing costs.

1           While there has been shown and described what  
are considered to be preferred embodiments of the  
invention, it will, of course, be understood that various  
modifications and changes in form or detail could readily  
5 be made without departing from the spirit of the  
invention. It is, therefore, intended that the invention  
be not limited to the exact form and detail herein shown  
and described, nor to anything less than the whole of the  
invention herein disclosed as hereinafter claimed.

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**WHAT IS CLAIMED IS:**

1. A self-anchoring poke-through wiring device for insertion into a passage extending through a concrete floor aperture of a building structure to facilitate transmission of electrical power and telecommunication signals between a service head and a junction box located at opposite sides of the floor; said wiring device comprising a cover plate structure positionable above an upper face of said floor so as to cover the floor aperture; channel means extending through said floor aperture for conducting insulated wires and telecommunication signals through said floor aperture between said junction box and said service head; fire retarding structure being fixedly connected to at least the upper end of said channel means for sealing the aperture in response to encountered heat and fire to form a fire barrier in said floor aperture; a floor cup for the receipt of electrical connectors extending between said fire retarding structure and said cover plate structure, said floor cup having a disc-shaped base fastened to said fire retarding structure and upstanding leg portions extending from said base having free distal ends fastenable to said cover plate structure; and generally rigid non-resilient metallic retainer clip means being interposed between said floor cup and said fire retarding structure, said retainer clip means including diametrically opposite end portions frictionally engageable with a wall surface of said floor aperture for securely anchoring said wiring device in said floor aperture against rotational movement and upward displacement while enabling downwardly displacement of the device, outer end portions of the retainer clip means having prongs formed thereon for engaging the wall surface of the floor aperture in frictional contact, said outer end portions of the retainer clip means each being bent upwardly at an angle of between about 40° to 50° relative to the plane of a flat center portion of said retainer clip means, said retainer clip means being constituted of a corrosion-resistant annealed stainless steel having cold-worked portions in at least the outer end bent portions of said retainer clip means.

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2. A poke-through wiring device as claimed in claim 1, wherein said retainer clip means comprises a central flat plate member, the opposite outer end portions of said plate member frictionally engaging the wall structure of the floor aperture being each angled upwardly so as to inhibit upward dislodgement of said wiring device within the floor aperture.

3. A poke-through wiring device as claimed in claim 2, wherein said outer end portions of the retainer clip means are arcuately configured in conformance with the diametral curvature of the wall structure of the floor aperture.

4. A poke-through wiring device as claimed in claim 1, wherein said retainer clip means facilitates positioning of said wiring device in interior vertical positions with the floor aperture and subsequent downward displacement of the device into the final installed position thereof in the floor aperture.

5. A poke-through wiring device as claimed in claim 1, wherein said cover plate structure comprises a dished installation plate detachably fastened to the upper end of said floor cup.

6. A poke-through wiring device as claimed in claim 5, wherein said installation plate is replaceable by a carpet flange.

7. A poke-through wiring device as claimed in claim 5, wherein said installation plate comprises a template for the installation of carpeting on the floor about the floor aperture.

8. A poke-through wiring device as claimed in claim 1, wherein said cover plate structure comprises a carpet flange.

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9. A poke-through wiring device as claimed in claim 1, wherein said fire retarding structure comprises disc means consisting of an intumescent material, said retainer means being fastened intermediate said disc means and the base of said floor cup.

10. A poke-through wiring device as claimed in claim 1, wherein a collar structure is mounted on said device below the fire retarding structure, said collar structure including means for attaching EMT tubes.

11. A poke-through wiring device as claimed in claim 10, wherein said collar structure includes a collar member and a flange integrally formed therewith, said collar member including fastener means for attaching said collar structure to said wiring device; and fire-barrier means being positionable on said flange.

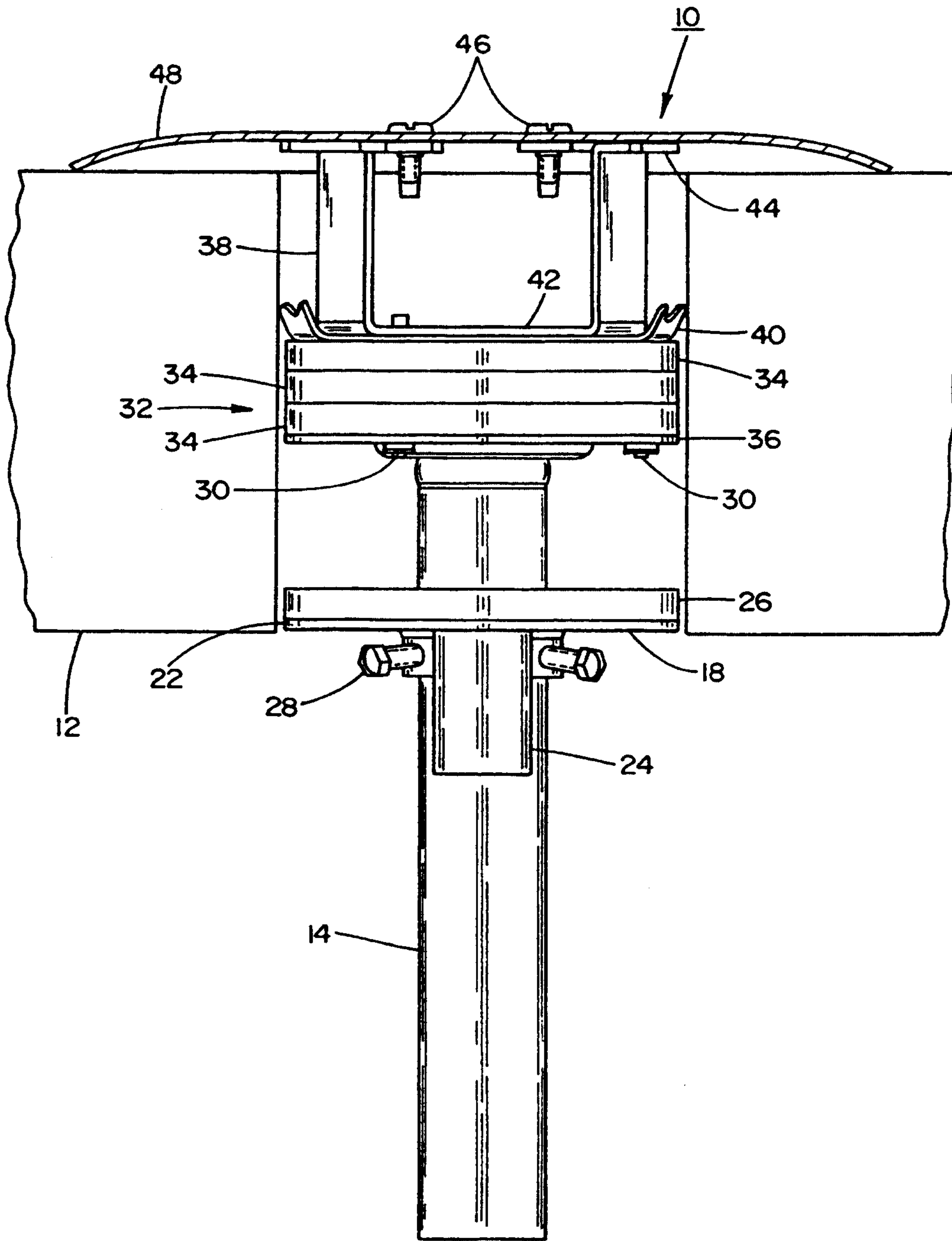


FIG. 1

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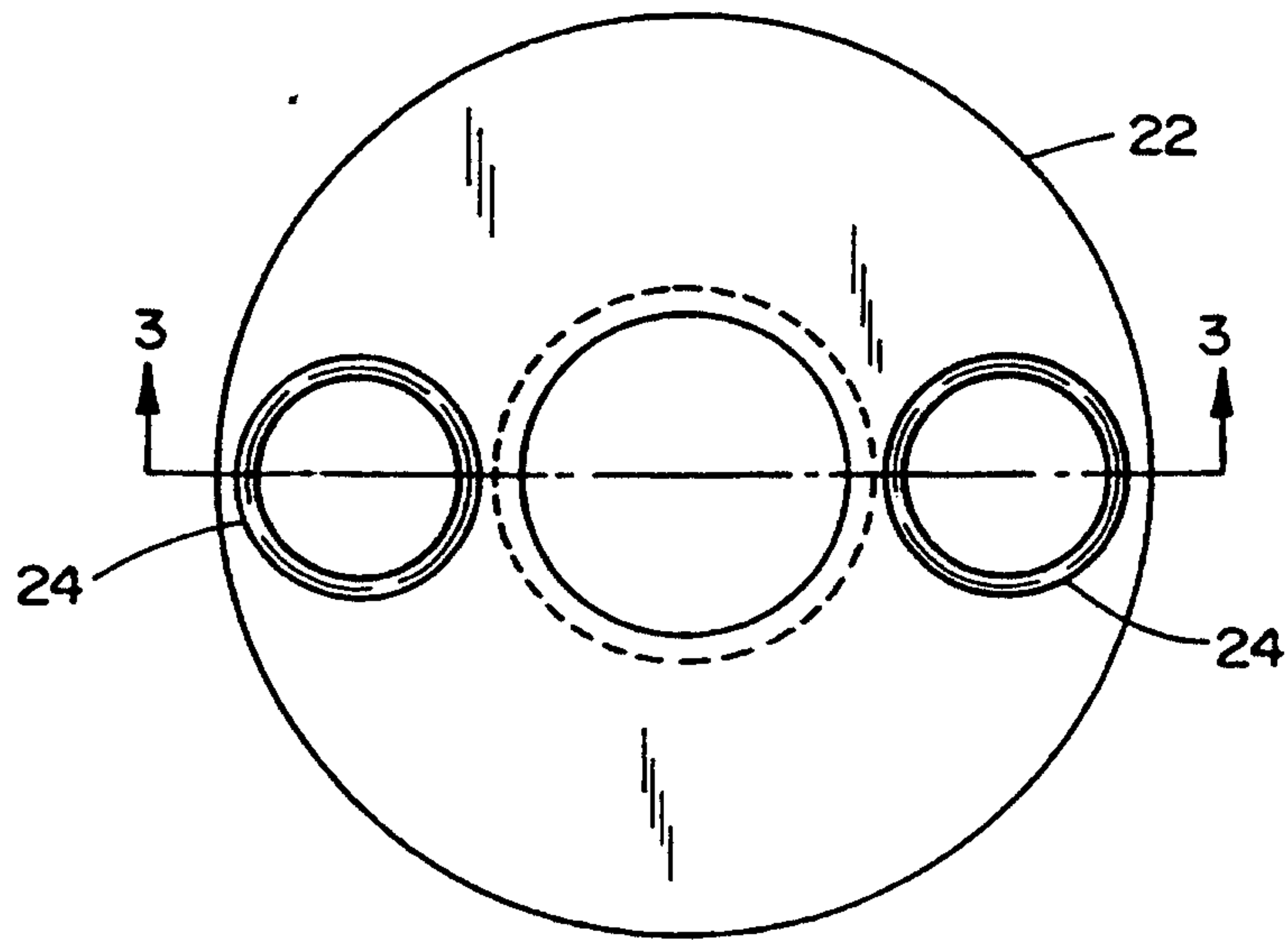


FIG. 2

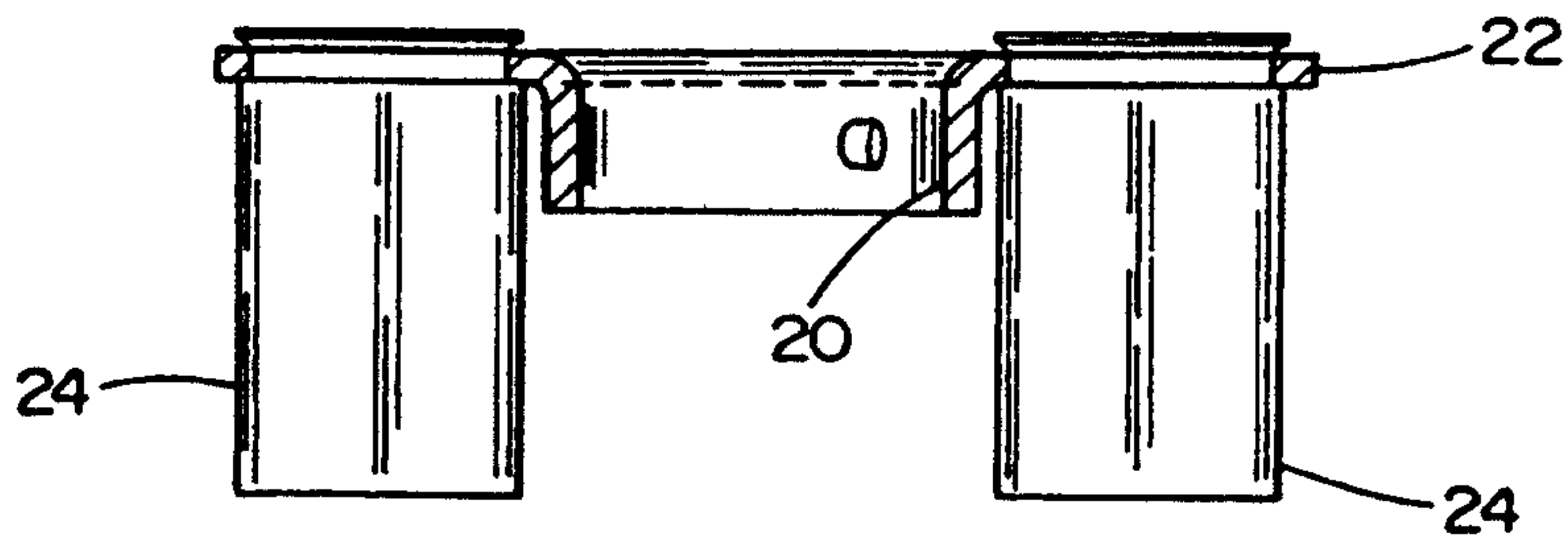


FIG. 3

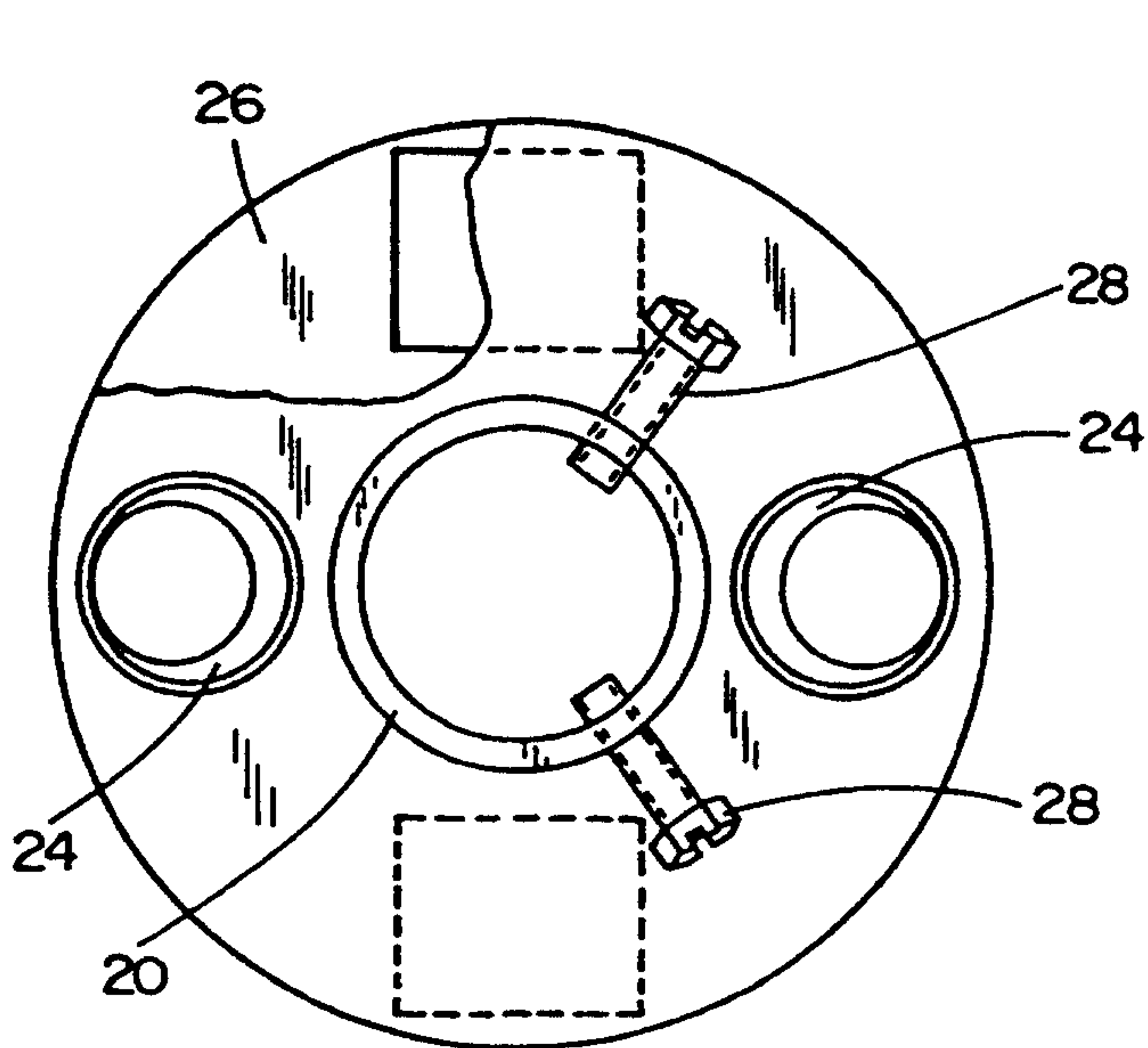


FIG. 4

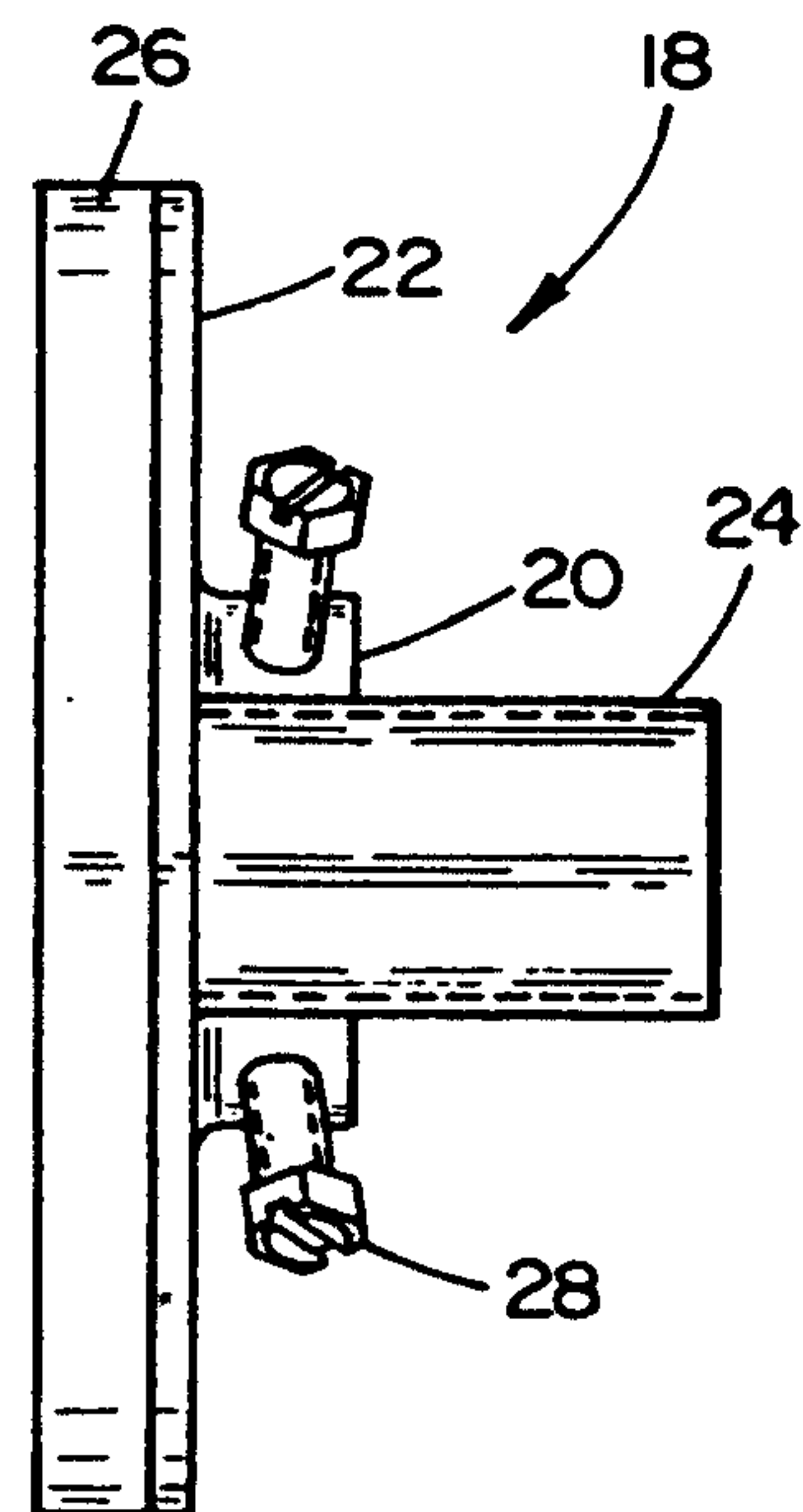


FIG. 5

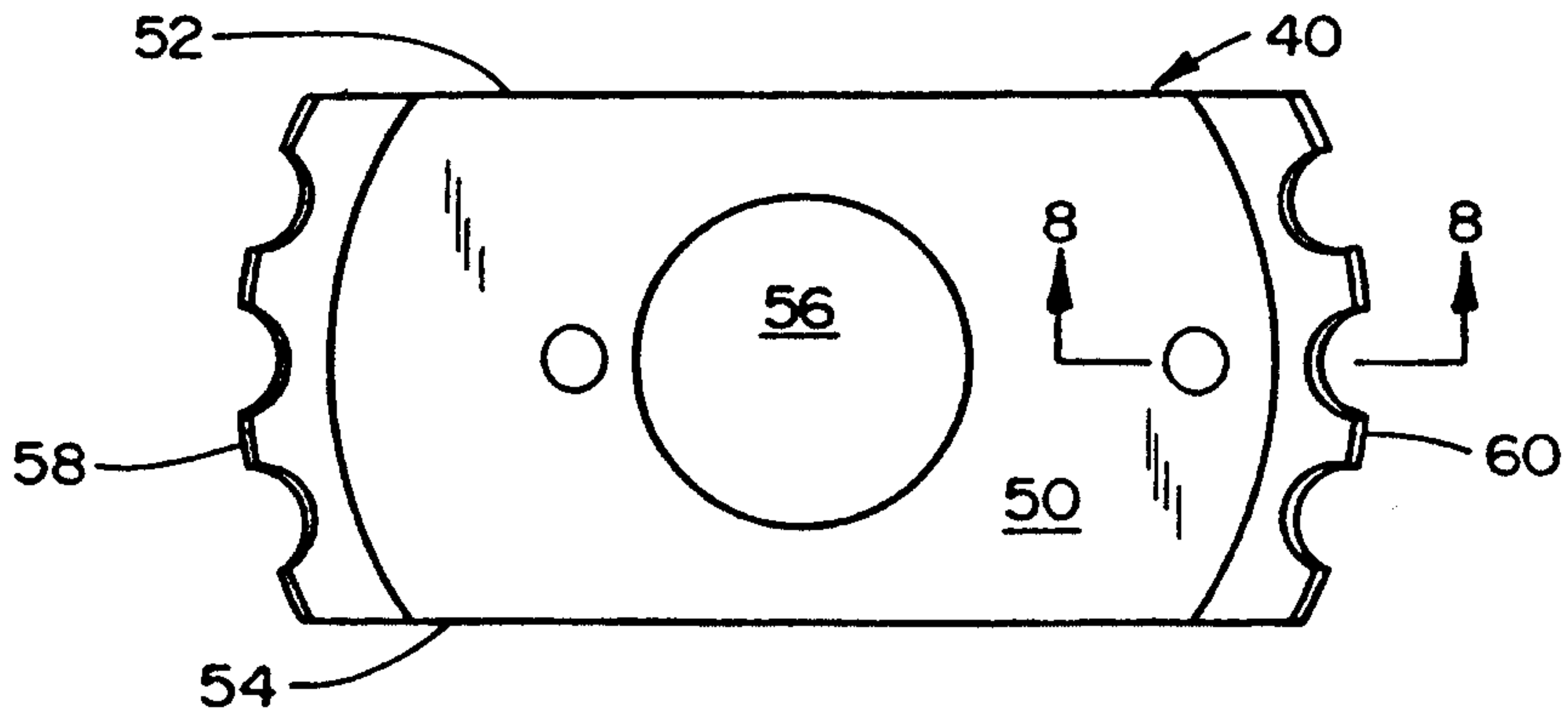


FIG. 6

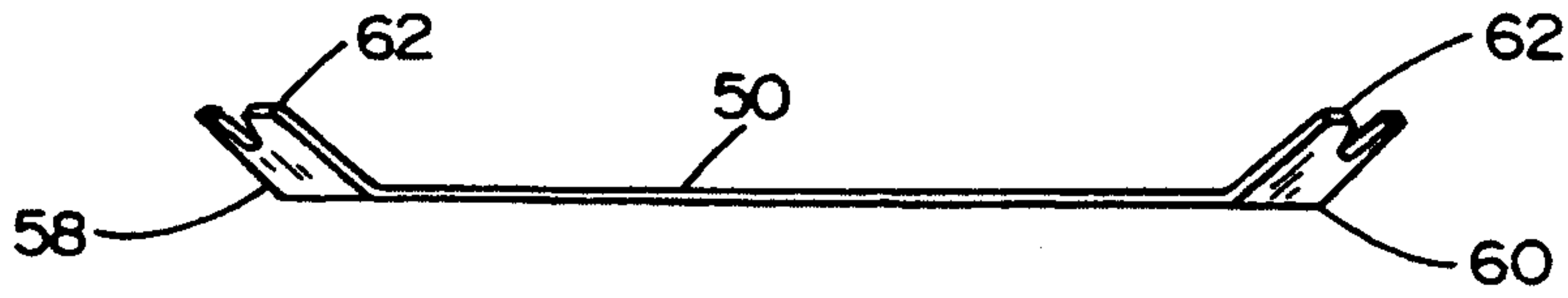


FIG. 7

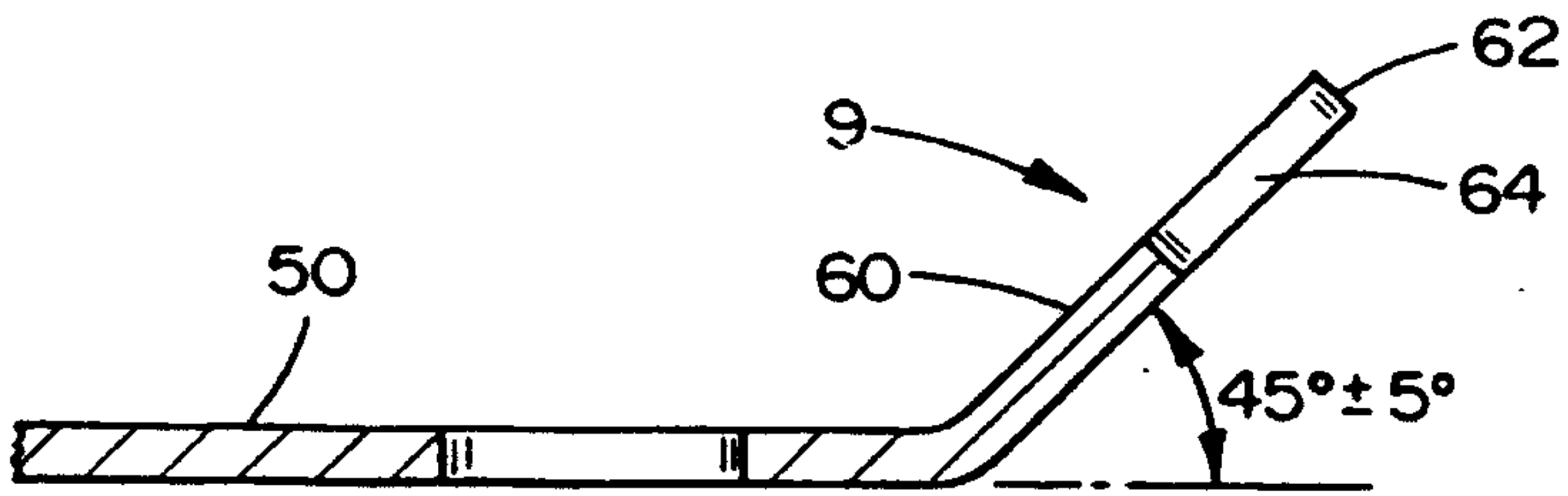


FIG. 8

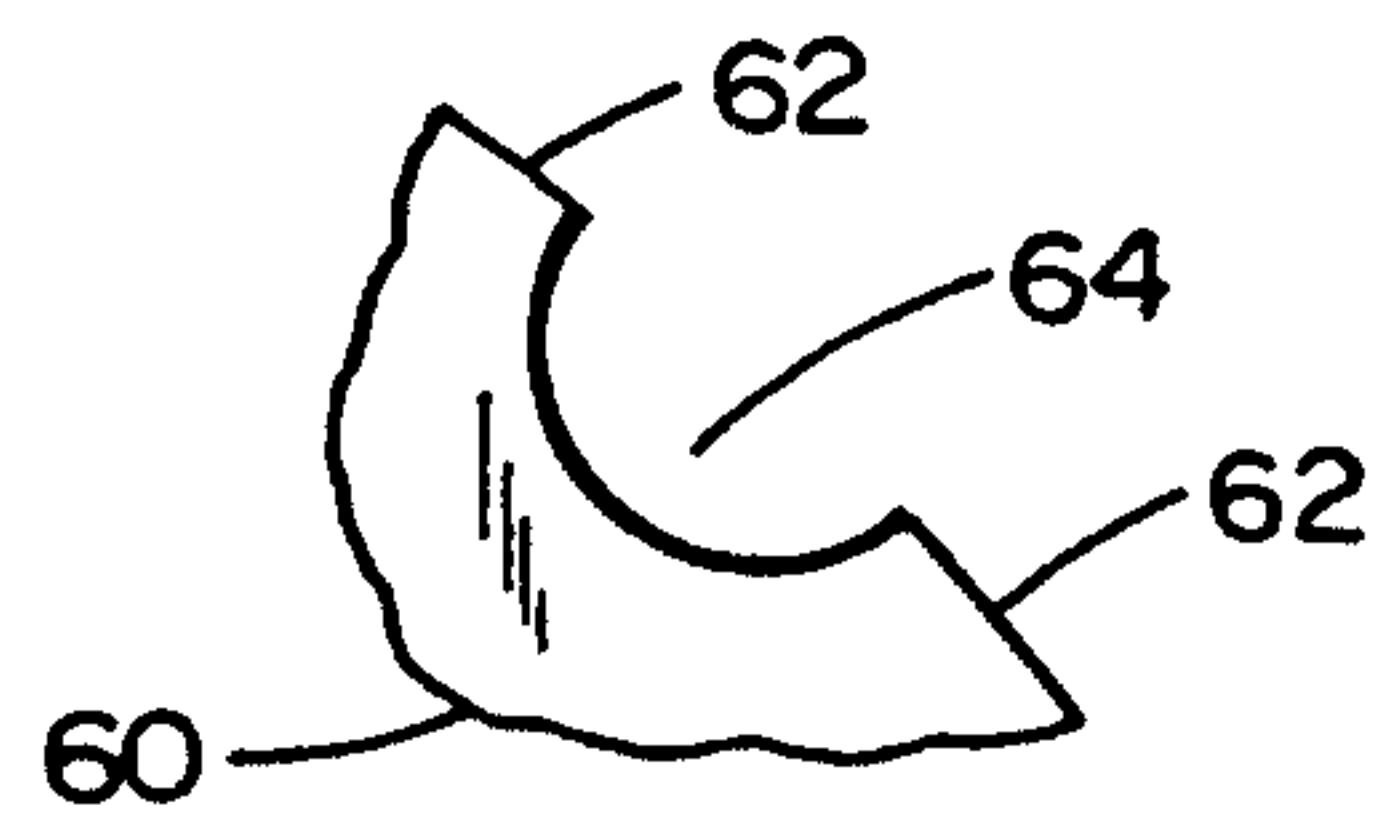


FIG. 9

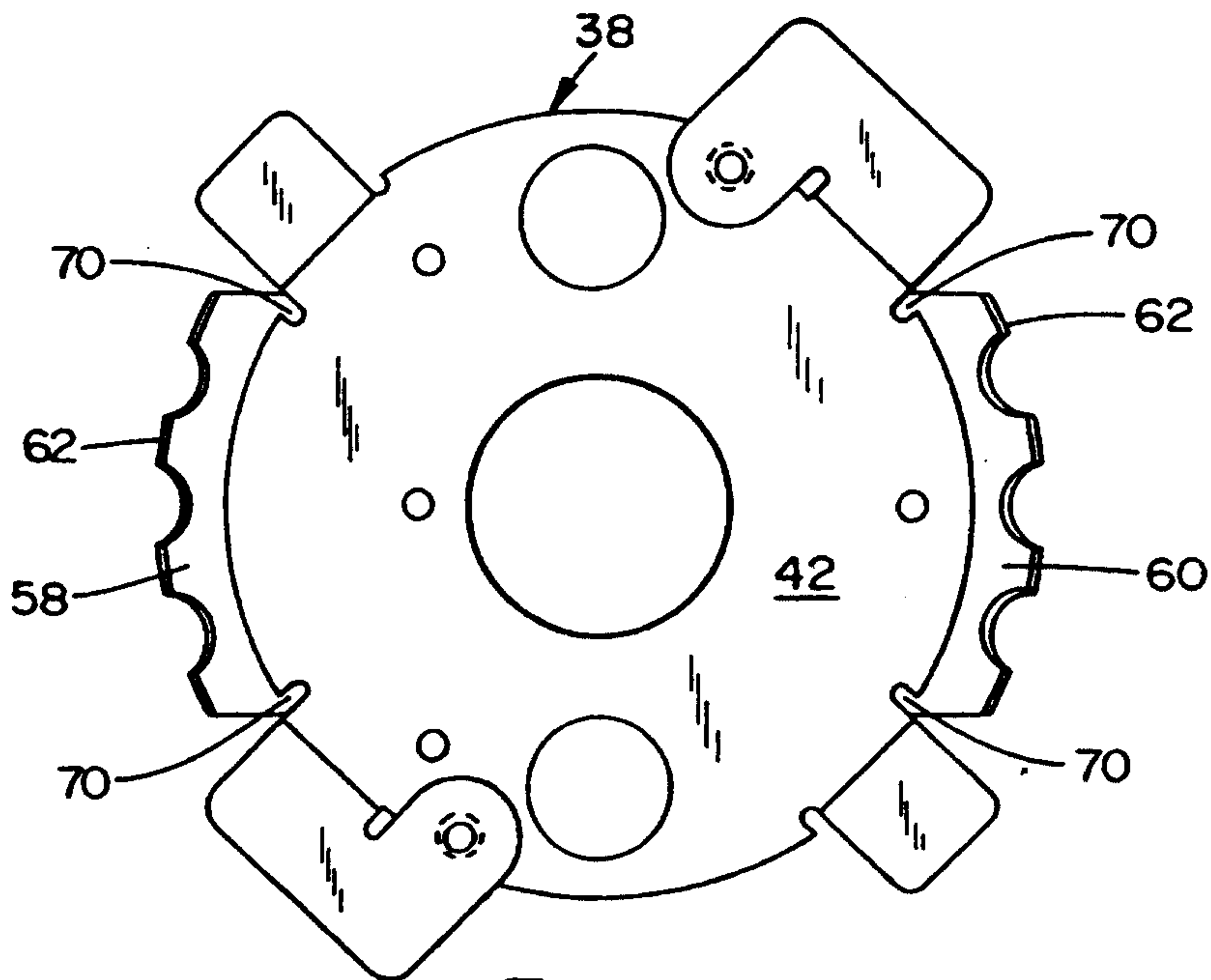


FIG. 10

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