

Sept. 29, 1953

W. H. CHURCHILL

2,653,687

BENDABLE TONGUE ATTACHING DEVICE

Filed June 15, 1949

FIG. 1.

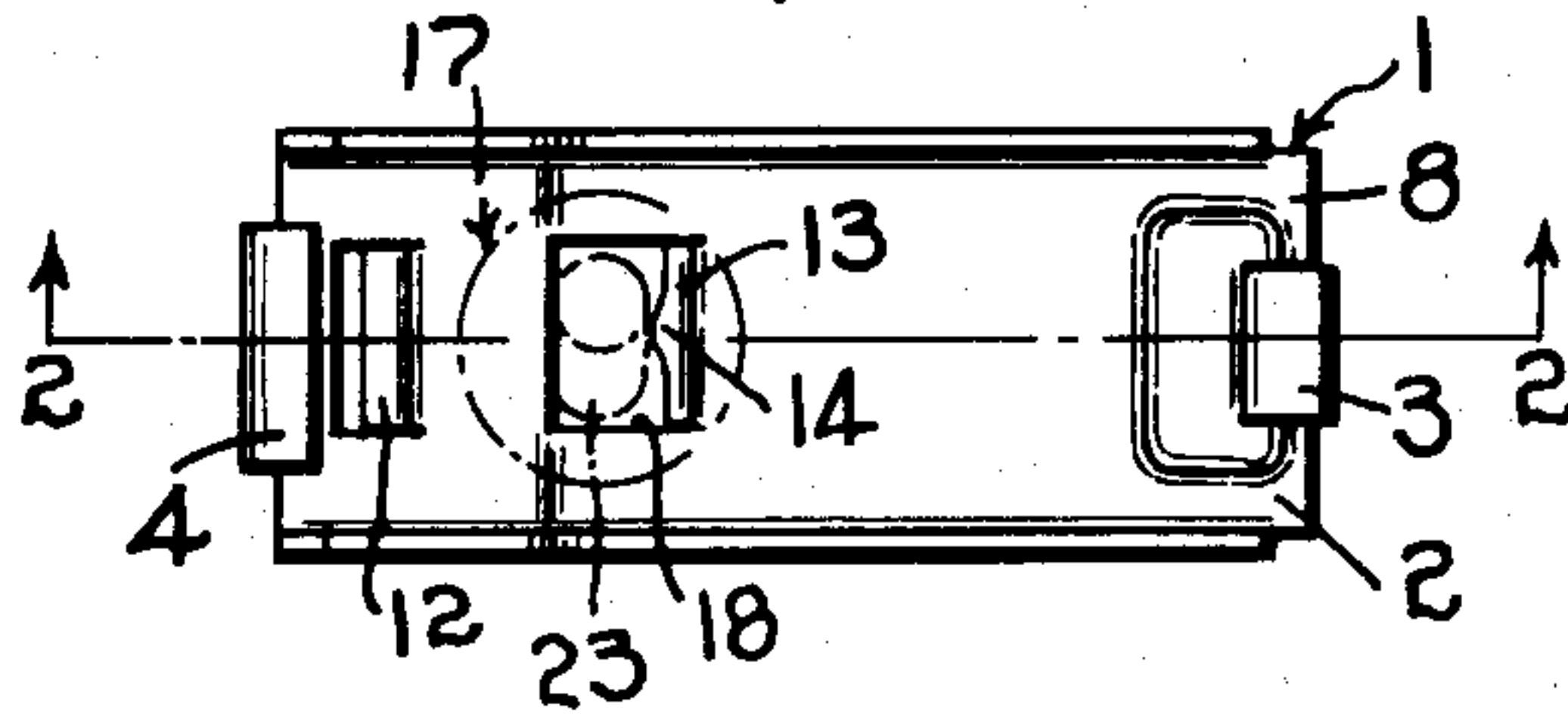


FIG. 2.

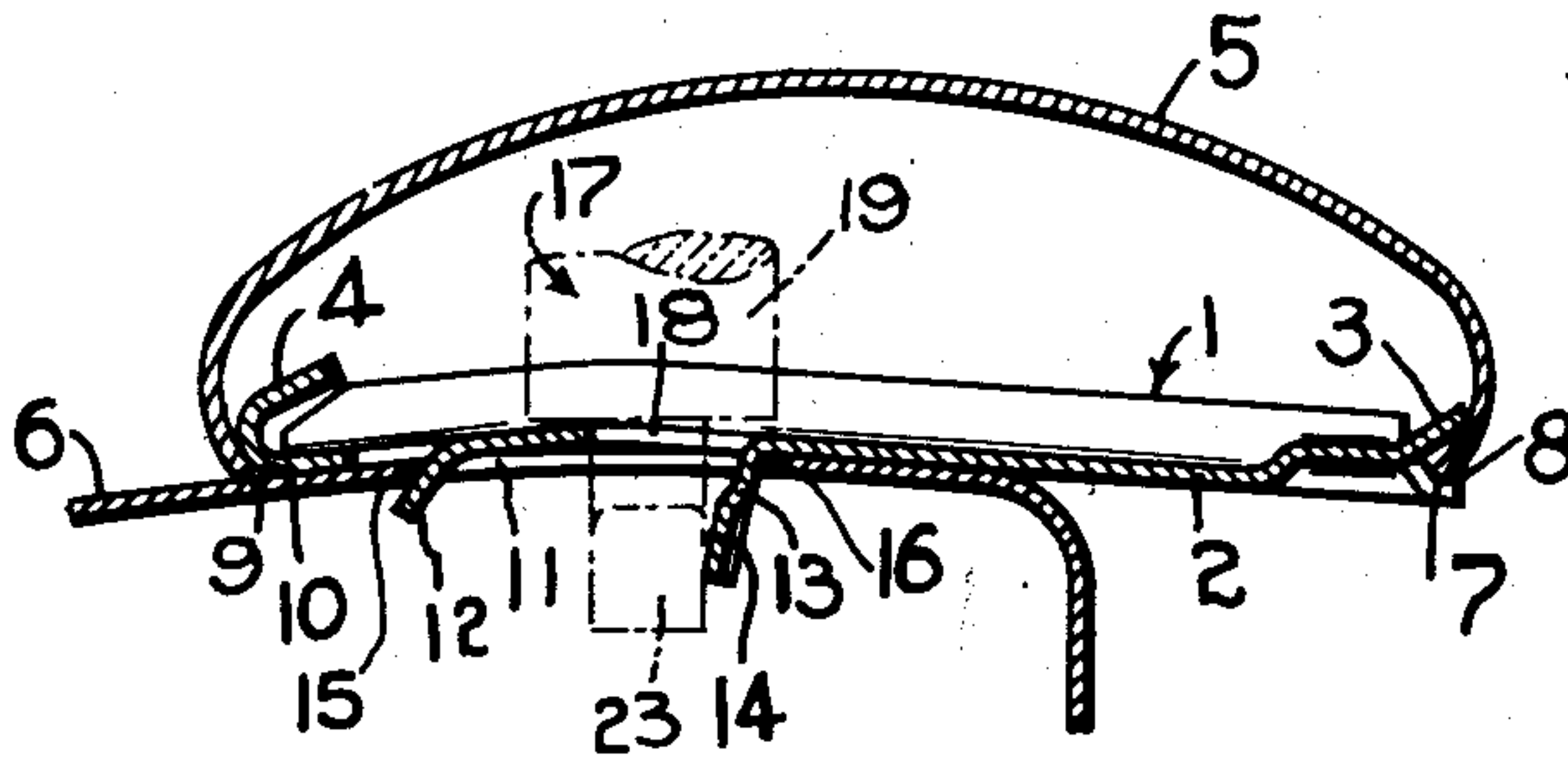


FIG. 3.

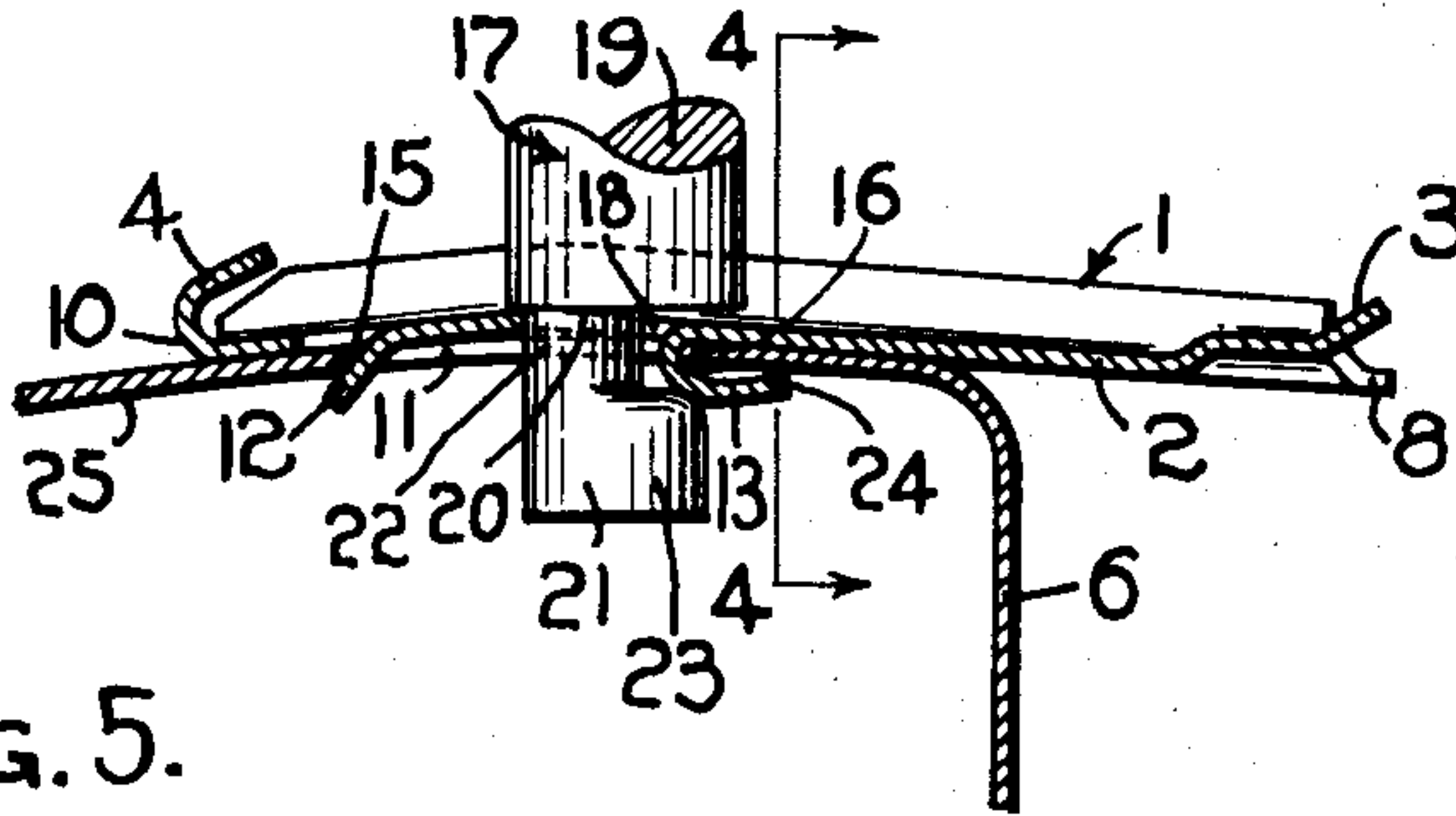


FIG. 5.

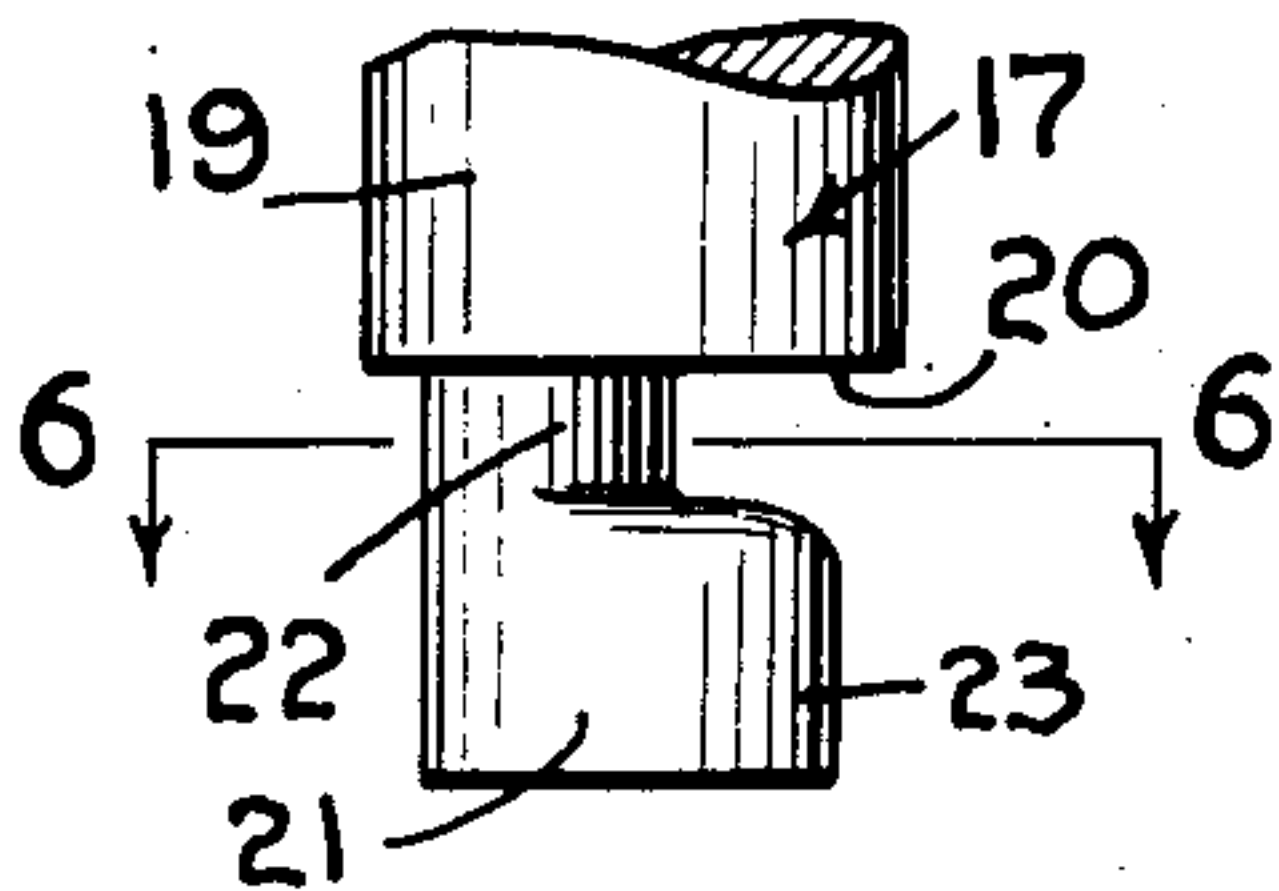


FIG. 6.

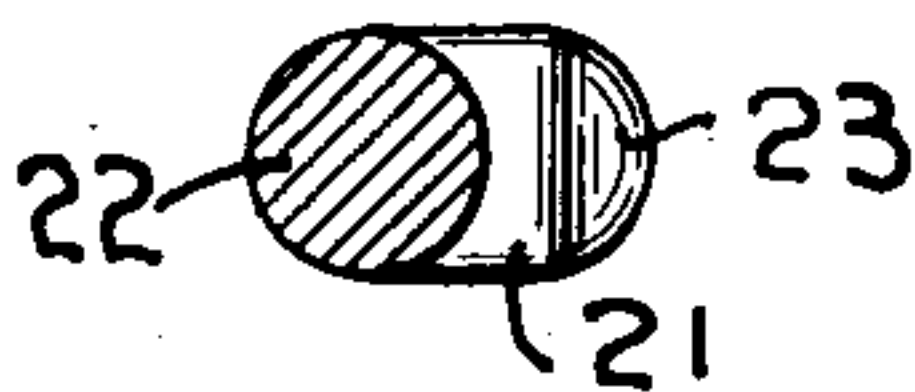
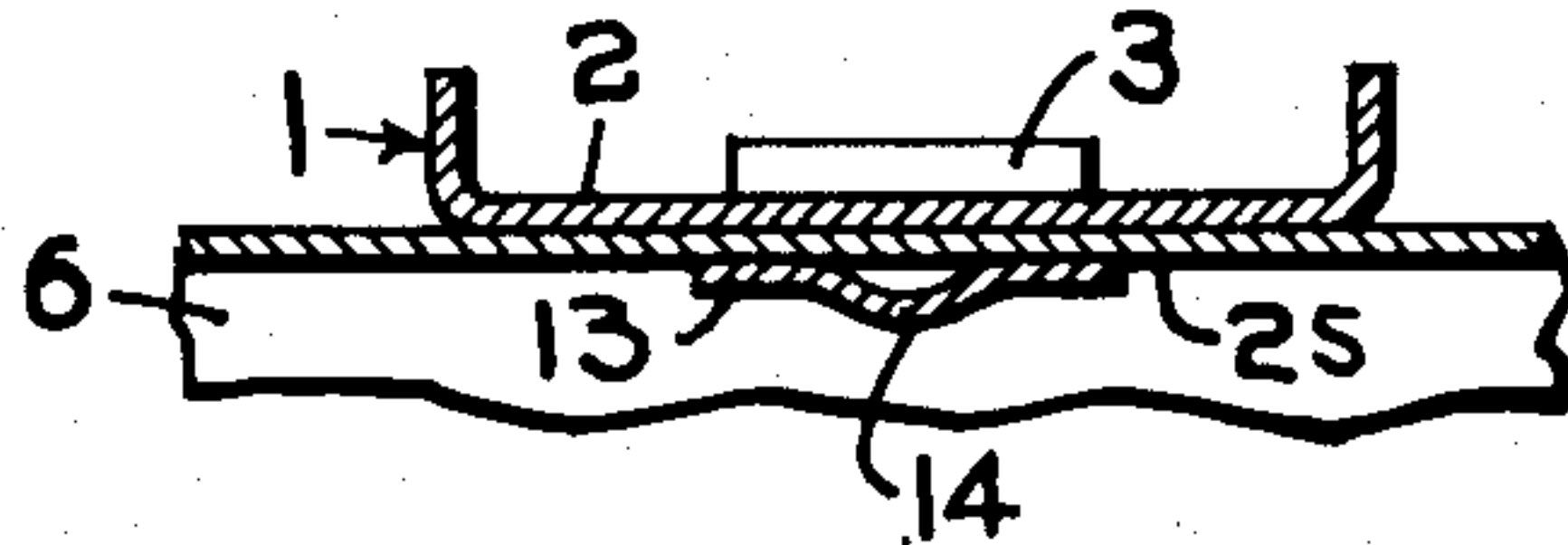


FIG. 4.



INVENTOR:
WILMER H. CHURCHILL,
By *John Todd*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,653,687

BENDABLE TONGUE ATTACHING DEVICE

Wilmer H. Churchill, Wellesley, Mass., assignor
to United-Carr Fastener Corporation, Cam-
bridge, Mass., a corporation of Massachusetts

Application June 15, 1949, Serial No. 99,294

2 Claims. (Cl. 189—36)

1

This invention relates to a fastener device for securing articles such as moldings and the like to a supporting plate where access may be had to one side only of the plate.

An object of my invention is the provision of a one-piece fastener member having a base with article-engaging means extending on one side of the base and support-engaging means extending on the other side. The invention relates particularly to the construction of the support-engaging means which are of simple and inexpensive form comprising a hook-like element for engaging one side wall of a plate opening and a flat lug disposed entirely on one side of the base and designed to be deformed by a suitable tool to lock behind the plate adjacent a side wall of the plate opening opposite that engaged by the hook-like element. While fastener members are known in the art providing a hook-like element and a deforming element, these are relatively more complicated in design and more expensive to tool. A fastener of the present invention is very simple in construction yet capable of efficient locking attachment to a supporting plate.

Other objects of my invention will be apparent to persons skilled in the art to which the invention relates from a consideration of the accompanying drawing and annexed specification illustrating and describing a preferred form of the invention.

Referring to the drawing which I have illustrated in my preferred embodiment of my invention:

Fig. 1 is a top plan view of my improved fastener member;

Fig. 2 is a section taken along the line 2—2 of Fig. 1 and showing the method by which the fastener member is secured to a supporting panel;

Fig. 3 is a section similar to Fig. 2 showing the fastener member in final attachment to the panel;

Fig. 4 is a section taken along the line 4—4 of Fig. 3;

Fig. 5 is a side view of the tool preferably used to secure the fastener member to a supporting panel; and

Fig. 6 is a section taken on the line 6—6 of Fig. 5.

The fastener member 1 as shown in the drawing is formed of one-piece relatively soft metal such as cold rolled steel and provides a base portion 2. Article-gripping elements extend from the base portion on one side thereof and comprise in my preferred form an angularly bent

2

element projecting out of the plane of the base at one end thereof and a camming element 4 at an opposite end of the base from the element 3. The elements 3 and 4 are designed to engage a conventional hollow molding 5 to secure it to the supporting panel 6 to which the fastener member is attached. The attaching method taught by the elements 3 and 4 are old in the art and operate to enable one edge 7 of the hollow molding to be inserted under the angularly extending element 3 so as to rest upon the ledge 8 adjacent the end of the base 2 after which the other edge 9 of the molding is cammed over the camming element 4 to engage behind the shoulder 10 of the element 4. In this method of attachment most of the resiliency which enables the molding to be snapped into engagement with the fastener is provided by the molding itself. It is understood that I do not wish to limit my invention to this form of article-attaching means because the fastener is capable of providing other constructions without departing from the spirit of the invention.

The support-engaging means of the fastener member which are adapted to be disposed through a rectangular opening 11 of the supporting panel 6 to engage securely the support comprise a hook element 12 and a deformable locking element in the form of a lug 13 which is spaced laterally from the element 12. The hook element 12 is struck from the material of the base 2 and projects outwardly from the base on the side away from the article-attaching elements 3 and 4 at an angle of about 45 degrees with respect to the base 2. The lug-shaped locking element 13 is also struck from the material of the base and extends outwardly from the base on the same side as the hook element 12 at an angle which approaches 90 degrees with respect to the base. The lug element 13 which is formed from the relatively soft material of the fastener is deformable so as to be bent along a transverse line disposed at a point spaced from the base a distance substantially equal to the thickness of the supporting panel 6. In order to insure that the lug bends at points substantially along the aforesaid line, a stiffening rib 14 is provided on the lug which extends from the outermost free end of the lug to a point substantially adjacent the line along which the lug is designed to bend.

In securing the fastener member to the supporting panel 6 the attaching elements 12 and 13 are inserted through the opening 11 of the panel so as to be disposed with the hook element

3

12 engaging a corner wall 15 of the opening 11 and the lug element 13 extending through the opening substantially adjacent the opposite wall 16. Next, a deforming tool 17 is moved through the opening 18 of the base 2 from which material was taken to form the lug 13. The tool 17 has a body 19 providing an abutment 20 adapted to engage the upper side of the base 2 and a deforming portion 21 which extends from the body 20 through the opening 18 of the base. The deforming portion 21 provides a narrow shank 22 having a laterally extending foot portion 23 at its end. In operation of the tool to lock the fastener to the supporting panel, the tool is disposed in initial position with the foot portion in substantially parallel adjacent relation to the lug element 13 as shown in Fig. 2. Then, the tool is rotated in a counterclockwise direction viewing Fig. 2 as a result of which the foot 23 presses the lug element 13 outwardly and upwardly so that it takes a position substantially as shown in Fig. 3 in generally parallel relation to the supporting panel with its outer end 24 in substantial engagement with the lower surface 25 of the panel. As a result of this deforming action the hook element 12 and the deformed lug 13 cooperate to secure the fastener firmly to the panel. It will be seen that the attaching method hereinabove described utilizes attaching elements which are very simple in construction and which require only a simple hand-operated tool to effect a secure locking attachment.

Although I have illustrated and described a preferred embodiment of my invention, I do not wish to be limited thereby as the scope of the invention is best defined in the appended claims.

I claim:

1. A fastener device comprising a base portion having at least two spaced openings therein, said base portion having means on one face thereof for fastener engagement with a part to be secured by said fastener, and attaching means extending from the opposite face of said base for securing said fastener device to a supporting part having an aperture, said attaching means comprising a tongue cut from the material of said base portion and extending integrally from the side edge of one of said openings adjacent to the other of said openings, said tongue being disposed at an angle to said base portion in superposed relation to said one opening to provide a hook for engagement behind a supporting part through an aperture therein, and a second tongue cut from the material of said base portion and extending integrally from the side edge of said other opening opposite the side edge thereof nearest said one opening and entirely beyond the same face of said base as said first

4

tongue, a reinforcing rib formed in said second tongue extending longitudinally thereof and terminating short of the junction of said tongue with said base, said second tongue extending substantially normal to said base to permit it to enter an aperture in a support adjacent one edge of such aperture while said first tongue is hooked over an opposite edge of such an aperture, said second tongue being adapted upon such insertion to be bent upon a transverse line to underlie such a support at such one edge.

2. A fastener installation including a supporting panel having an aperture and a fastener device comprising a base portion having at least two openings therein, said base portion having means on one face thereof for fastener engagement with a part to be secured by said fastener and attaching means extending from the opposite face of said base securing said fastener device to said supporting panel, said attaching means comprising a tongue cut from the material of said base portion and extending integrally from the side edge of one of said openings adjacent to the other of said openings, said tongue being disposed at an angle to said base portion in superposed relation to said one opening to provide a hook for engagement behind said supporting panel through the aperture therein, and a second tongue cut from the material of said base portion and extending integrally from the side edge of said other opening opposite the side edge thereof nearest said one opening into the aperture of said supporting panel adjacent an opposite edge thereof, a reinforcing rib formed in said second tongue extending longitudinally thereof and terminating short of the junction of said tongue with said base, said second tongue prior to assembly of said fastener device with said panel extending substantially normal to said base to permit it to be inserted into the aperture in the support panel adjacent said opposite edge of said aperture while said first tongue is hooked over said one edge of said aperture, said second tongue upon such insertion being bent upon a transverse line to underlie said support panel adjacent said opposite edge thereof.

WILMER H. CHURCHILL.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,970,335	Place	Aug. 14, 1934
2,168,721	Tinnerman	Aug. 8, 1939
2,319,678	Hall	May 18, 1943
2,404,372	Hallock	July 23, 1946
2,460,722	Waara	Feb. 1, 1949
2,476,207	Brown	July 12, 1949
2,511,805	Kral	June 13, 1950