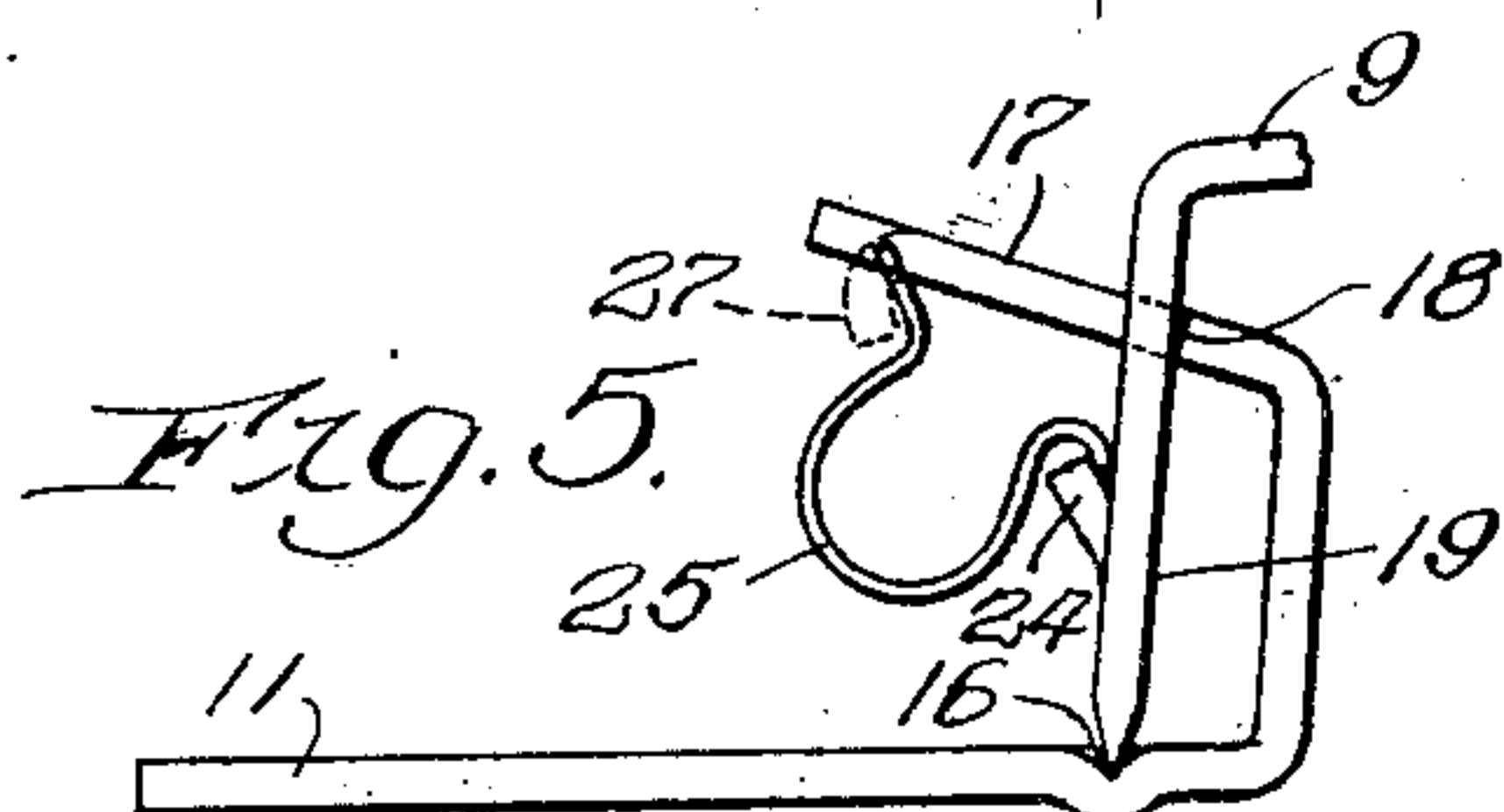
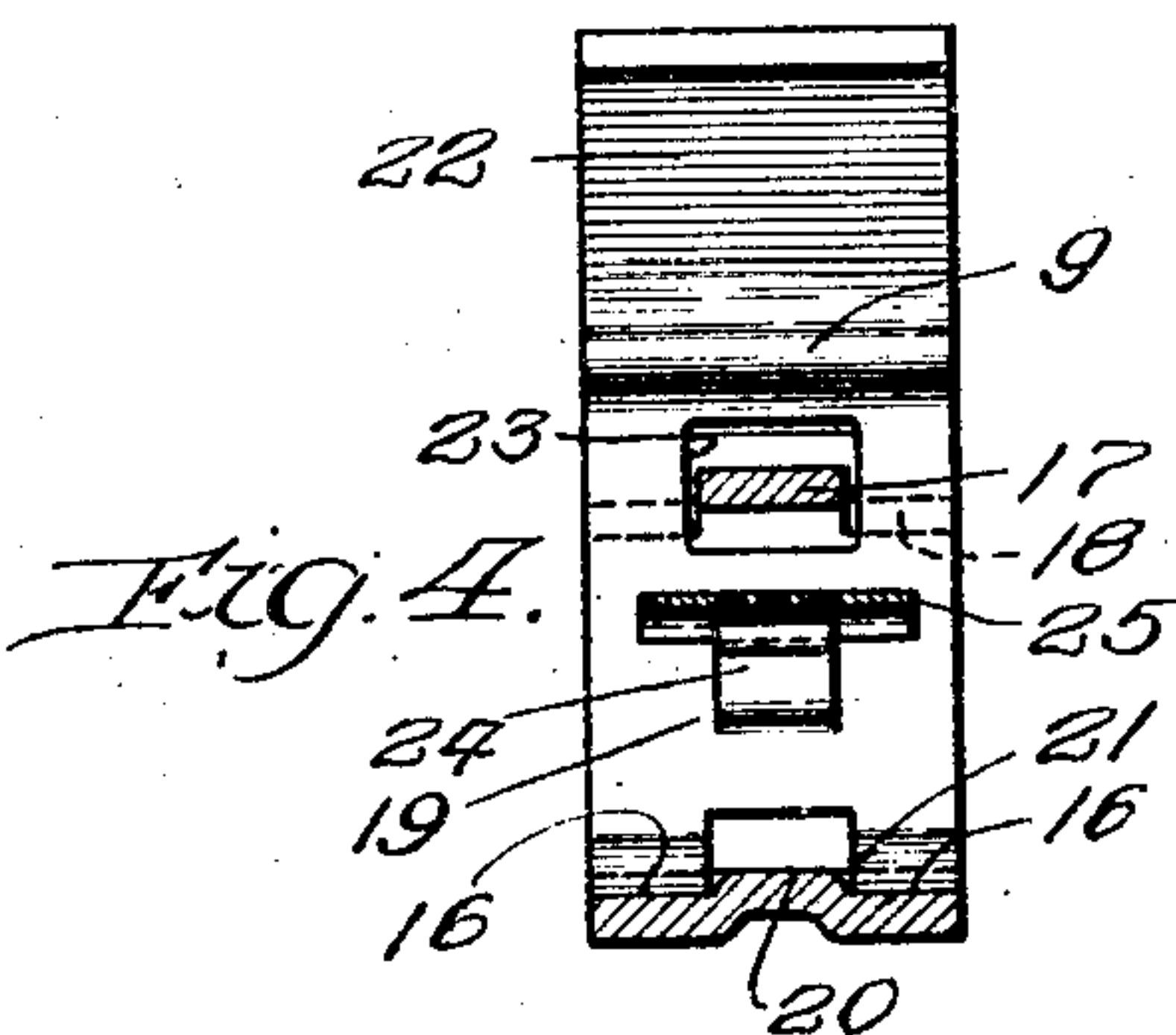
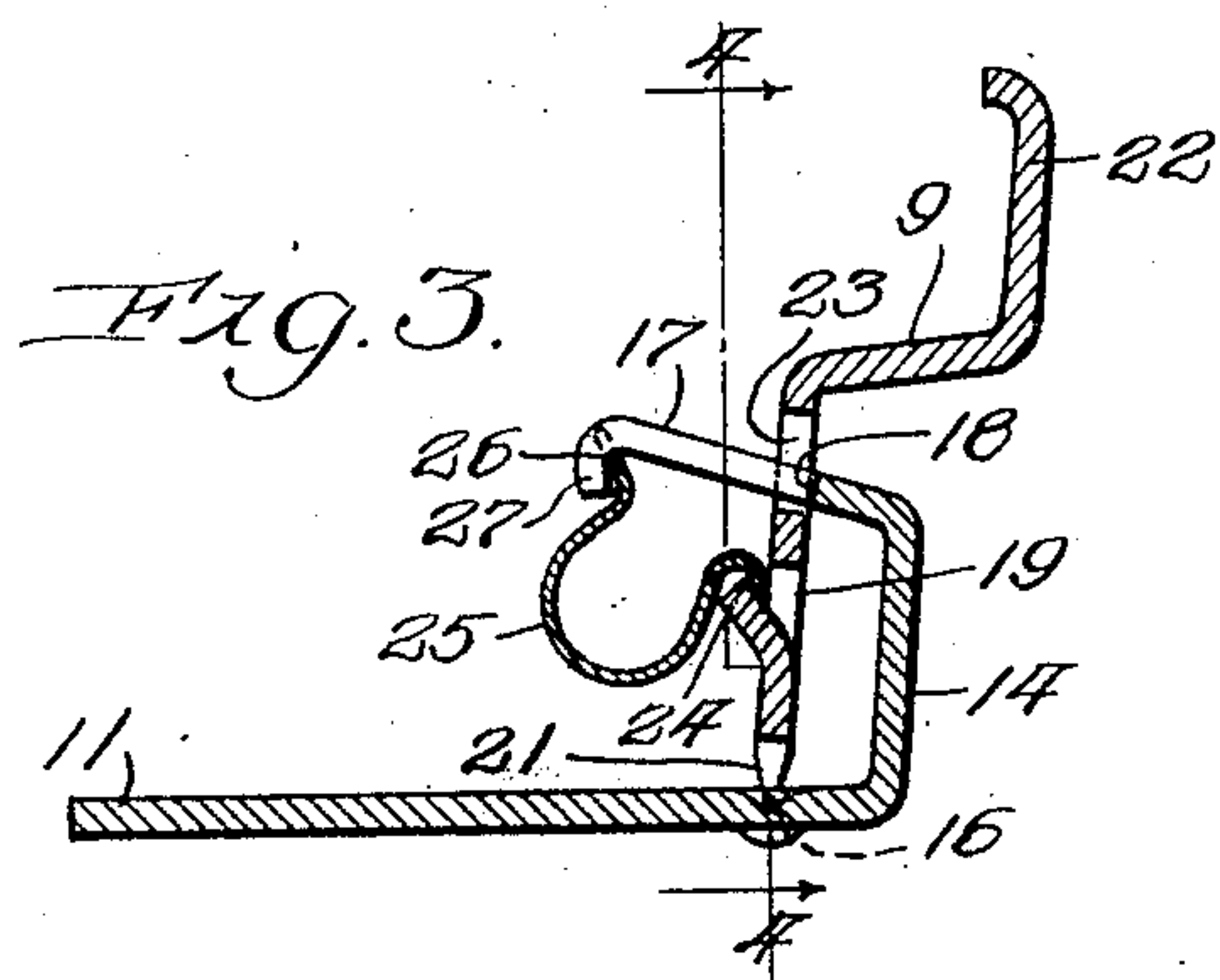
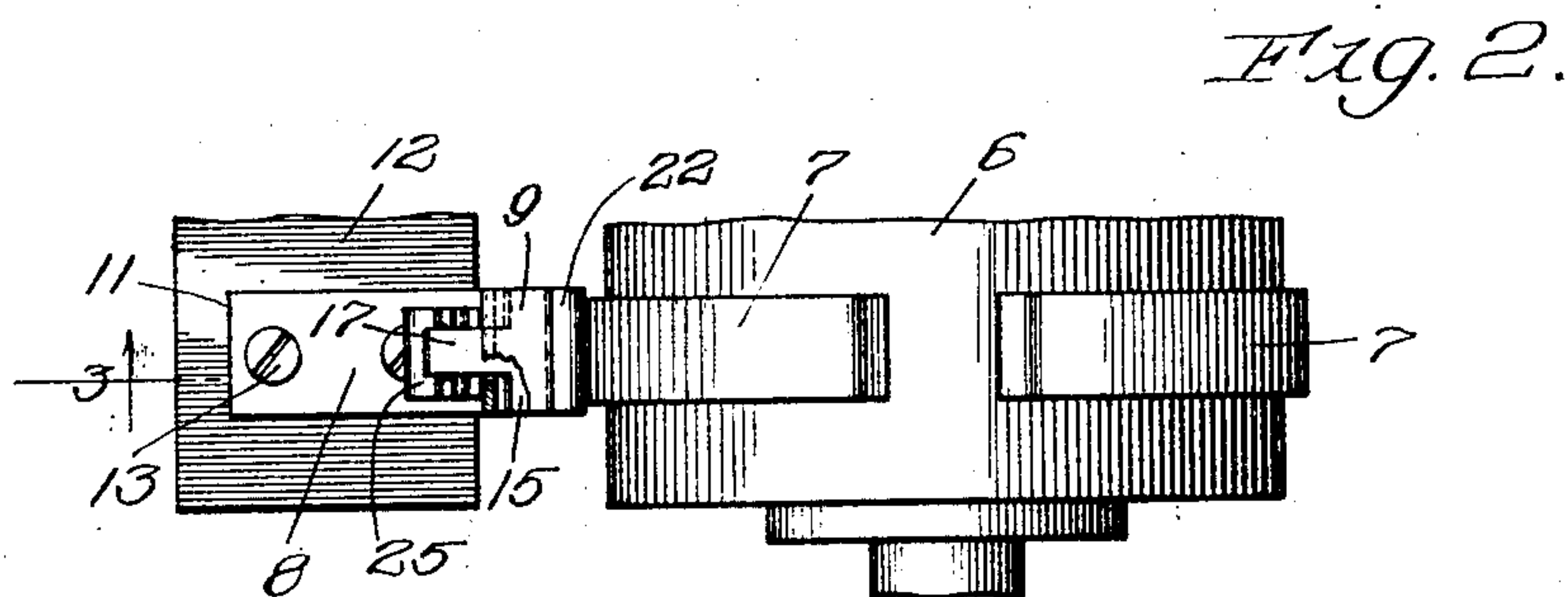
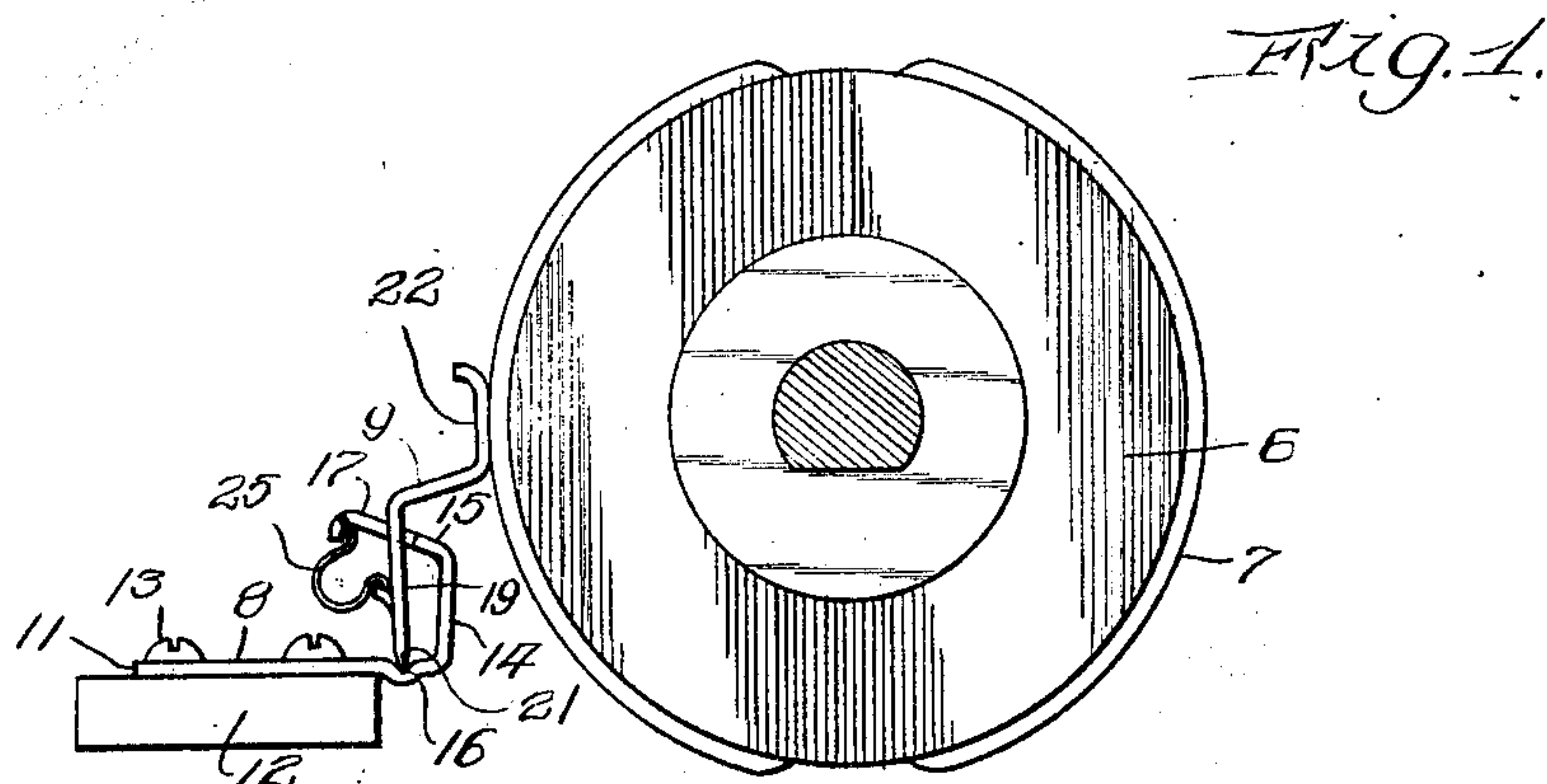


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J. T. JANETTE
ELECTRICAL CONTACT

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UNITED STATES PATENT OFFICE.

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ELECTRICAL CONTACT.

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This invention relates to electrical contacts which are adapted for use in various places, as for instance, in switches, controllers, relays, or other devices in which yielding contacts are desired.

The objects of this invention are to provide a yielding contact which will be extremely simple and cheap in construction, but which will be durable and efficient in operation; to provide a yielding contact which may be formed from sheet metal; to provide a yielding contact in which the pressure on the contact point will not be materially increased as the contact is made; to provide a contact device having a resilient toggle joint pressure arrangement; and to provide such other novel features of construction and advantages as will appear more fully hereinafter.

In the accompanying drawings illustrating this invention,

Figure 1 is an end view of a controller showing my improved contact;

Figure 2 is a side view of the same;

Figure 3 is an enlarged sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a sectional view taken on the line 4—4 of Figure 3; and

Figure 5 is a fractional side view illustrating the method of assembling.

As shown in these drawings, the controller drum 6, which is provided with contacts 7, which coact with my improved contacts, illustrates one method or combination in which my improved contacts are adapted to be used. These contacts comprise a fixed or supporting member 8 and a movable member 9, which is secured thereto in a novel manner, and is held by means of a spring 25. The fixed or relatively stationary member 8 comprises a strip of metal having a branch or arm 11, which for convenience in description, may be considered as a horizontal portion and which is adapted to be secured to an insulating base or support 12 by means of screws 13. The strip 8 has an upwardly extending branch 14 at one end which is approximately at right angles to the branch 11, and a rearwardly extending branch 15, which is at an obtuse angle to the branch 14, or bent backwardly as shown in Figures 3 and 5. Transverse grooves 16 are formed on each side of the branch 11 adjacent to its inner end. The sides of the branch 15 are cut away to provide a tongue 17 having shoulders 18 at one end thereof.

The movable member 9 also comprises a

strip of metal such as sheet brass, or the like, and which will be a good conductor of electricity. This member has a substantially straight vertical portion or branch 19, which is bifurcated at the lower end to fit over the hump or projection 20 between the grooves 16 and the lower edges are preferably sharpened, as shown at 21, so that they will engage with the grooves to make a joint or bearing for the movable member. The upper end of the movable member is bent outwardly to form a brush like or contact branch 22, which is adapted to make contact with any suitable contact member such as the segment 7 on the controller 6. The portion 22 is bent outwardly a sufficient distance to prevent arcing between the stationary member and the controller segment. The branch 19 has a hole 23 for receiving the tongue 17 which fits freely therein. The branch also has an integrally formed lip 24 for receiving one end of the spring 25, the other end of the spring abutting against the end of the branch 17. The spring 25 is preferably made of sheet spring metal and is bent to an approximately U-shape or horseshoe form, as clearly shown in the drawings. The upper end of this spring has a slot 26 for receiving the tongue 17, and the end 27 of this tongue is bent over the end of the spring for fastening the parts together.

When the device is to be assembled, the stationary member 8 and the movable member 9 are brought together as shown in Figure 5, and the spring 25 is placed in position as shown, with its upper end embracing the tongue 17. The end 27 of the tongue is then bent over the end of the spring, as shown in dotted lines in Figure 5, and thereupon, all of the parts will be securely locked together.

When the parts are thus assembled, it would be seen that the expansive action of the spring tends to press the movable member 9 against the shoulders 18 or to normal position. The spring together with the lower end of the movable member form a toggle, the lower end of the toggle being the pivot 21, the center or joint being the lip 24, and the upper end at the hook or abutment 27. When the outer or contact end 22 of the movable member is engaged by a coacting contact, as for instance the segment 7 on the drum 6, it will be swung backwardly so that the toggle action tends to compress the spring 25. However, as the center of the toggle or the point 24 approaches the line between the

ends of the toggle, the pressure required on the end of the arm or lever 9 for compressing the spring will be gradually reduced so that the arm or movable member will maintain suitable contact without having an increase in pressure as is customary where an ordinary spring is used to provide the necessary pressure between the contacts. In other words, where an ordinary compressing spring is used, the continued pressure usually requires greater force, whereas in the present device, the proper movement is provided without requiring extra force for compressing this spring.

My improved contact device may be made in various sizes and shapes in order to adapt it for the different uses above suggested and for this reason I do not wish to be limited to the exact arrangement or details of construction herein shown and described, except as specified in the following claims, in which I claim:

1. An electrical contact device comprising a fixed member, a movable contact arm pivotally mounted on the fixed member, and a spring pressed toggle joint between the two members.

2. An electrical contact device comprising a fixed member, a contact arm pivoted to the fixed member, and a compression spring interposed between the movable member and the fixed member and forming a toggle with a portion of the movable member.

3. A contact device comprising a strip of metal having a rearwardly bent portion at one end, said portion being cut away at the sides to form a central tongue, said strip also having grooves in the surface thereof with a projection between the same, a movable mem-

ber having a bifurcated lower end engaging with said grooves and having a slot for receiving the tongue, said movable member having a lip adjacent to the pivot, and a spring engaging with the lip and the outer end of the tongue, and tending to hold the movable member in normal position.

4. An electrical contact comprising a strip of metal having a main straight branch, a second branch bent at substantially right angles thereto, and a third branch which is bent back toward the main branch, the latter branch being cut away at the sides to form a tongue with shoulders at one end thereof, said main branch having grooves in the upper surface thereof, a movable member comprising an arm having a bifurcated lower end engaging with said grooves to form a pivot, and having a hole for receiving the tongue, said arm also having an outwardly projecting contact portion, a lip formed integrally with the movable member adjacent to the pivot, a substantially U-shaped spring formed of sheet metal, having one end engaging with said lip and having a slot in the opposite end for engagement with the tongue, the end of the tongue being bent over the adjacent portion of the spring when the parts are assembled, in order to lock the parts together.

5. A contact device as per claim 1, having a yielding toggle coacting with the movable member and arranged so that as the movable member is swung from normal position, the arms of the toggle will be moved toward their central position, whereby the force necessary to move the movable member will be lessened.

JOHN T. JANETTE.