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 DRY SHAVER SHEAR PLATE HAVING AN AXIAL MOVEMENT  
 IN RELATION TO A ROTARY CUTTER  
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2,952,908

FIG. 1

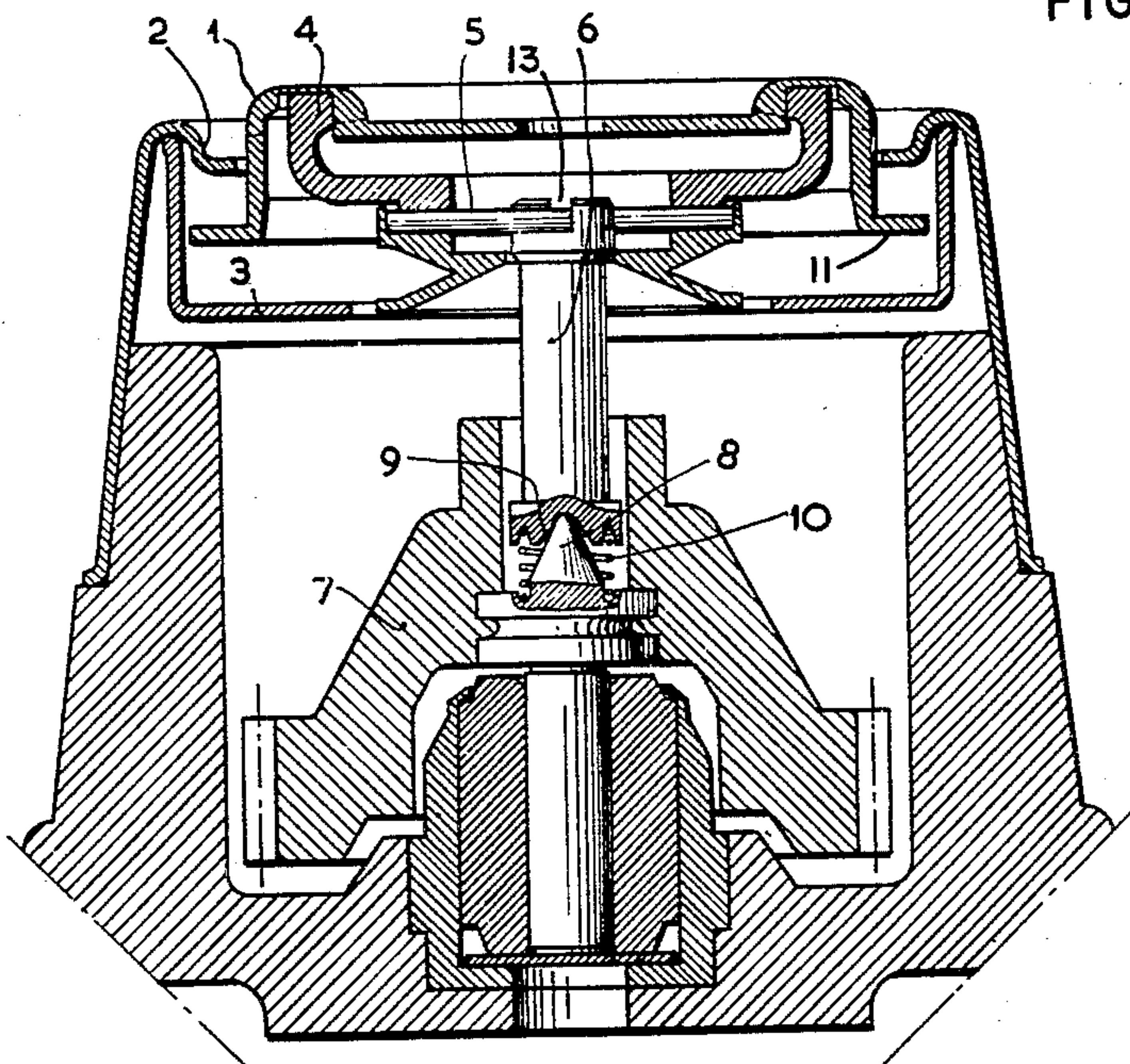
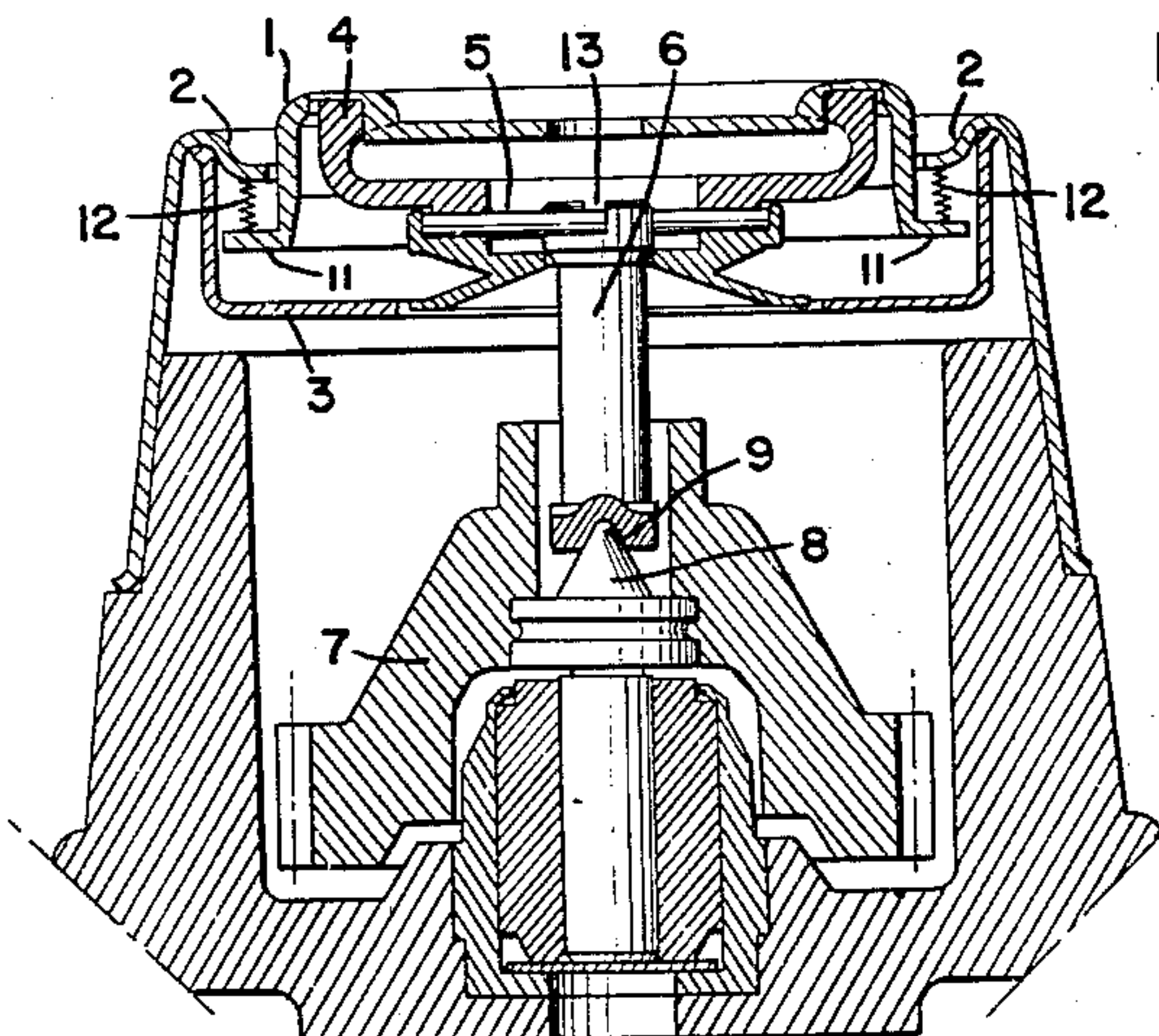


FIG. 2



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## DRY SHAVER SHEAR PLATE HAVING AN AXIAL MOVEMENT IN RELATION TO A ROTARY CUTTER

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3 Claims. (Cl. 30—43)

The invention relates to a dry-shaving apparatus having a shear plate which is displaceable in the axial direction and a movable cutting member which co-operates with the shear plate and supports it, this cutting member being rigidly journaled in the axial direction at least at a pressure exceeding a given value.

Due to the axial displaceability of the shear plate, in these dry-shaving apparatus there is a likelihood of play between the shear plate and the cutting member before the shear plate is held to the skin required to be shaved. When such a dry-shaving apparatus having a rotary cutting member is applied to the skin, the first hairs are not cut, but owing to the play, if this is smaller than the thickness of a hair, are gripped between the shear plate and the cutting member and pulled from the skin by the movement of the cutting member.

It is an object of the invention to overcome this disadvantage while retaining the possibility for the user to adjust the pressure between the shear plate and the cutting member.

According to the invention, the cutting member and the shear plate are urged toward one another by resilient means, even when no pressure is exerted on the shear plate.

This results in that there is sufficient pressure between the shear plate and the cutting member to ensure a cutting action before the shear plate is applied to the skin.

According to a further feature of the invention, the shear plate is held by resilient means against a cutting member which is rigidly journaled in the axial direction.

From a constructional point of view, however, it is simpler if the cutting member is arranged so as to be movable in the axial direction only through a certain distance and is held to the shear plate by resilient means. Thus the resilient means can be incorporated in the driving means of the cutting member in the usual manner, care must be taken only to ensure that a stop limits the movement of the cutting member in the axial direction. The resilient means may in this case be so proportioned that the cutting member is rigidly journaled when the force pushing it inward exceeds about 40 grams.

In order that the invention may readily be carried into effect, one embodiment thereof will now be described, by way of example, with reference to the accompanying drawing in which:

Fig. 1 is a sectional view of a shaving apparatus in accordance with the invention, the shear plate being depressed.

Fig. 2 is a sectional view of an alternate embodiment of the invention.

A shear plate 1 is displaceable in the axial direction between stops 2 and 3. A cutting member 4 co-operates with the shear plate 1 and supports it. In the axial direction, the cutting member 4 bears by means of

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a spindle 5 upon a driving shaft 6 which is displaceable in a toothed wheel 7 in the axial direction but is coupled thereto in the direction of rotation. The toothed wheel 7 is rigidly journaled in the apparatus in the axial direction and internally provided with a stud 8 having a pointed end which corresponds to a recess 9 in the end of the driving shaft 6. The stud 8 is surrounded by a helical spring 10 which is arranged between the driving shaft 6 and the toothed wheel 7 and tends to thrust the shaft upwards. It should be noted from examining the drawings that when the shear plate 1 is depressed to its most inward position the spindle 5 is rockable in slot 13 of driving shaft 6.

When no external pressure is exerted on the shear plate 1, this plate 1 is held against the stop 2 by the helical spring 10 and the driving shaft does not bear upon the stud 8. When the shear plate 1 is applied to the skin under normal pressure, the helical spring 10 is compressed until the position shown in Fig. 1 is reached. The force which the helical spring 10 can absorb is about 40 grams.

The helical spring 10 may alternatively be replaced by resilient elements 12 as seen in Fig. 2 arranged between the stop 2 and a rim 11 of the shear plate 1.

What is claimed is:

1. A dry shaver comprising a casing, a shear plate, means mounting said shear plate in said casing for limited axial movement, a cutting member, means mounting said cutting member for movement in the direction of its longitudinal axis as well as rotational movement, said shear plate being supported only by said cutting member in the most inwardly depressed position of the shear plate, and resilient means operatively connected to the cutting member and adapted to maintain said cutting member in supporting engagement with said shear plate.

2. A dry shaver comprising a casing, a shear plate, means mounting said shear plate in said casing for limited axial movement, two spaced stop members for said shear plate, a cutting member, means mounting said cutting member for movement in the direction of its longitudinal axis as well as rotational movement, said means including a two-part drive shaft having one part mounted for limited movement in an axial direction thereof, and a spring connecting one part of the drive shaft to the other part, said one part being movable in the direction of its longitudinal axis to abut the other part of the drive shaft before said shear plate contacts one of said stop members, said spring adapted to maintain said cutting member in supporting engagement with said shear plate.

3. A dry shaver comprising a casing, a shear plate, means mounting said shear plate in said casing for limited axial movement, a cutting member, means including a drive shaft and a spindle mounting said cutting member for movement in the direction of its longitudinal axis as well as rotational movement, said shear plate being supported only by said cutting member in the most inwardly depressed position of the shear plate, and resilient means operatively connected to the cutting member and adapted to maintain said cutting member in supporting engagement with said shear plate, said spindle being rockable on said drive shaft and carries said shear plate and cutting member along therewith.

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