

✓
AMENDED SPECIFICATION

Reprinted as amended in accordance with the Court Order dated the twelfth day of July 1974, under Section 30, of the Patents Act, 1949.

PATENT SPECIFICATION

(11) **1 160 543**

1 160 543



DRAWINGS ATTACHED

Inventor: BERNARD STEPHEN HANSOM

Date of filing Complete Specification (under Section 3 (3) of the Patents Act 1949) 22 April, 1966

Application Date 29 April, 1965 No. 40110/68

Application Date 22 July, 1965 No. 40111/68

(Divided out of No. 1,160,542)

Complete Specification Published 6 Aug., 1969

Index at Acceptance:—B4 B(31B, 33D1, 33E, 34B)

Int. Cl.:—B26b 21/06

**Improvements in and Relating to Shaving Units and Razors
Incorporating such Shaving Units**

(71) We, WILKINSON SWORD LIMITED, a British Company of 16, Pall Mall, London, S.W.1., do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to shaving units and razors incorporating such shaving units. It will be made clear hereafter what is meant in the present specification by the term "shaving units".

At the present time the majority of shaving is by the use of thin double-edge razor blades which are fitted by the user in a razor frame, the blades being replaced when they are no longer fit for further use. Such razor frames are provided with a so-called "guard" which is often formed like a comb to admit hairs between its teeth, and which in use is moved over the skin at an angle to the skin such that the cutting edge of the blade cuts into the hairs immediately above the level of the skin. This angle will be referred to as the "shaving angle".

For satisfactory shaving the shaving angle must be large enough to enable the blade to cut into the hairs rather than bending them over, but not so large that the cutting edge ends to dig into the face and cut the skin. It will be understood that the shaving angle is determined by the relative position of the cutting edge and the surface of the guard.

In an attempt to achieve optimum positioning of the cutting edge relative to the guard surface razor frames are on sale in which the flexing of the blade, when clamped in the

razor frame, can be varied to a limited extent in order to adjust this spacing. However, because of tolerances in blade manufacture and between different makes of razor blades it is not always possible to adjust to the optimum condition and readjustment may be necessary each time a blade is replaced.

There have been proposals in patent specifications for a type of razor which would not suffer from this disadvantage. This consists of a complete razor frame moulded in a plastics material with the razor blade permanently secured in the head of the razor. With this construction it would be possible to set the spacing between the guard surface and the cutting edge during manufacture of the razor. However, with such razors, when the blade is no longer fit for use the complete frame must be discarded.

It is an object of the present invention to obtain the benefits of having a preset spacing between the guard surface and the cutting edge whilst avoiding the disadvantage of having to store complete replacement razors for replacement of the existing razor when the blade thereof is no longer fit for use.

According to the present invention there is provided a shaving unit for use with a supporting handle, comprising a member of plastics material providing a guard surface for contact with the skin and a blade having a cutting edge, said blade being permanently fixed to said plastics member with its cutting edge at a predetermined spacing from said guard surface, said plastics member having one or more projections or recesses adapted to engage with a co-operating surface of said

[Price 33p]

Price 33p

This is the replacement sheet

Date:

supporting handle for positive engagement therebetween, and means which locate said shaving unit prior to use such that the said supporting handle may be applied to the shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand.

The invention also provides a razor comprising a blade having a cutting edge, said blade being secured in a permanent manner to a substantially rigid member, a head in which the substantially rigid member and the blade are located, and a handle for holding the head so that said cutting edge is in the appropriate position for shaving, the substantially rigid member and the head being so formed that the head is adapted to be applied to the substantially rigid member (when the substantially rigid member is located prior to use in means provided therefor) without the blade or the substantially rigid member being touched by hand, one edge of said substantially rigid member projecting beyond the side of the head to provide a guard surface at a spacing from said cutting edge, which spacing is predetermined in manufacture when the blade is secured in the permanent manner to said substantially rigid member.

The invention further provides a razor comprising a shaving unit having a substantially rigid member providing a guard surface for contact with the skin and an elongated blade having a cutting edge, said blade being permanently fixed to said substantially rigid member with its cutting edge at a predetermined spacing from said guard surface, a handle, and means which locate said shaving unit, such that the handle may be applied to said shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand, the handle having a transverse support for receiving said substantially rigid member and having locating surfaces for predetermined positioning of said shaving unit thereon, said substantially rigid member having co-operating surfaces for engagement with said locating surfaces.

Preferably, the shape of the shaving units is chosen so that a number of them can be stored compactly in a dispenser which is so designed that a handle can be applied to a shaving unit to withdraw it from the dispenser for use. When the blade is no longer fit for use the shaving unit can be discarded or returned to a portion of the dispenser designed to receive used shaving units. Another shaving unit can then be withdrawn by means of the handle.

At no time is it necessary for a shaving unit to be handled. By contrast with conventional razors it is necessary to handle the razor blade at least partially to eject them from their dispenser before they can be further withdrawn by hooking them onto the razor

frame. Likewise they must be handled to insert them into the used blade compartment.

There is an obvious hygienic advantage in replacing the complete head, or at least that part of the head which comes into contact with the face during shaving, at each replacement of a blade.

Reference has been made to the advantage of being able to fix the spacing between the cutting edge of the blade and the guard member during manufacture of the shaving units. Such shaving units may be manufactured with more than one relative setting of cutting edge to guard member and in this case the head may be marked in some way, for example by colour coding, to indicate the particular blade setting. Thus, there might be three blade settings, one designed to provide a very close shave, the second a normal shave and the third a less close shave.

That surface of a shaving unit which normally comes into contact with the face of the user may be treated to provide it with a predetermined coefficient of friction and, here again, shaving units may be provided with a different coefficient of friction duly indicated by suitable coding. Thus, where a user prefers the portion of the shaving unit which contacts the skin to slide freely over the skin the surface may be given a low coefficient of friction. This can be done, for example, by ensuring that this portion of the surface is of a material having a low coefficient of friction, for example polytetrafluoroethylene. On the other hand some users may prefer the surface in contact with the skin to have a high coefficient of friction in order to stretch the skin and in this case the surface may be suitably treated to ensure that it has a relatively high coefficient of friction.

Several embodiments of shaving units and razors incorporating such shaving units will now be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is an end view of a shaving unit,

Figure 2 is a plan view of a shaving unit,

Figure 3 is an underside plan view of a shaving unit, whilst

Figure 4 is a sectional view along the line IV—IV in Figure 3;

Figure 5 is a rear view of a handle for holding a shaving unit,

Figure 6 is a sectional side view of the handle, whilst

Figure 7 is a plan view of the handle;

Figure 8 is a sectional side elevation of part of a further possible construction of handle in use with a dispenser housing shaving units, with the head of the handle in a position to withdraw a shaving unit,

Figure 9 is a similar view to Figure 8 but with the head of the handle released from a used shaving unit,

Figure 10 is a plan view of the modified

This is the replacement sheet

Date:

shaving unit suitable to be stored in the dispenser of Figure 8,

Figure 11 is an elevational view of the handle, and

Figure 12 is a plan view of the dispenser of Figure 8.

Referring now to Figure 1 this shows a shaving unit 10 of a plastics material, for example polystyrene, in which the blade 10a is moulded so that its cutting edge 10b is pre-fixed relative to the guard surface 10c. Channels 10d are provided in the unit to facilitate rinsing of the exposed portion of the blade after use. A locating groove 10e is provided in the underface of the unit to locate with a corresponding projection provided on the razor frame, as will be described hereafter, whilst a step 10f is provided on the upper face of the unit to engage a movable clamp on the frame, as will also be described hereafter.

As mentioned above the shaving units may be manufactured with various settings of the cutting edge relative to the guard member and with the surface 10c having an appropriate co-efficient of friction.

Referring now to Figures 5 to 7 these show a shaving unit 10 mounted in the handle 11 with the groove 10e of the underface mating with an elongated projection 11b on the seat 11a of the handle. The rear end of the unit 10 abuts against a step 11c at the rear end of the seat 11a. The shaving unit 10 is held in position on the seat 11a by a pivoted clamp 12 whose forward upper end is urged downwardly onto the step 10f on the upper face of the unit 10 by a leaf spring 13 bearing on the lower limb of the clamp. The unit is freed by pressing on a thumb plate 12a of the clamp thereby pivoting the clamp against the reaction of the spring 13.

A further construction of handle for use with shaving units and a dispenser housing such units will now be described with reference to Figures 8 to 12. The shaving units 30 to be stored in the dispenser 31 are of generally similar construction to those shown in Figures 1 to 4 and have a blade 30a. However, instead of the groove 10e a keyway 30b of limited length is provided and the step 10f is omitted, the rear portion of the shaving unit being somewhat tapered. The shaving units 30 each have forward and rearward projections 30c, 30d projecting from each end. The handle 32 has a head 32a providing an elongated opening for receiving a shaving unit 30, the width of the head being such that the forward and rearward projections 30c, 30d of the shaving unit project beyond the respective ends of the head 32a. The handle 32 has a projection 32b at each end of the head 32a for a purpose to be described hereafter. A detent 33 is urged outwardly by a spring 34 to project into the opening in head 32a.

The dispenser 31 consists of a base 31a and side walls 31b and has an open top. For withdrawal of a shaving unit 30 the head 32a of the handle is pushed downwardly over that shaving unit 30 which is at the left hand end of the dispenser 31 until the spring-loaded detent 33 in the head 32a is depressed by contact with the upper edge of the shaving unit 30.

After further downward movement of the head 32a the detent 33 clicks into position in engagement with the keyway 30b in the shaving unit, as shown in Figure 8, to secure the shaving unit in the head so that the shaving unit 30 can be withdrawn by upward movement of the head 32a. A spring 35 in the dispenser then moves the next shaving unit 30 into the withdrawal position.

To return a used shaving unit to the dispenser the head 32a with the shaving unit 30 fixed therein is fed into the right hand end of the dispenser. The engagement of the projections 32b on the head 32a with cam surfaces 31c on each wall 31b together with the engagement of the lower end of the shaving unit with a step 31d in the base of the dispenser cause separation of the head 32a from the shaving unit 30 which is retained by the abutment of the rearward projections 30d with the underside of the flange 31b1 on the side walls 31b. During the movement of the used shaving unit into the dispenser keys 31e formed in the inside faces of the side walls 31b are depressed and then return after sufficient inward movement to retain the shaving unit in the dispenser. In this way the handle is freed from the used shaving unit and can then be used to pick up a shaving unit from the other end of the dispenser.

It will be understood that the handle may take many other forms, the principal requirement being that it has means for ready engagement and eventual disengagement from a shaving unit, the latter being so formed and located in the dispenser that a selected shaving unit can be engaged by the handle to remove it from the dispenser so that the razor is ready for use without the blade being touched by hand.

The dispenser may also take many other forms. For example the dispenser may be designed so that the selected shaving unit is removed by transverse movement in a slot with light friction holding the shaving unit in position prior to selected removal or it may be held by a light pinch grip which is overcome by tension on the handle.

In yet another construction of dispenser when a used shaving unit is returned the handle may be released from the shaving unit by sideways movement, the used shaving unit being prevented from moving sideways with the handle due to abutment of the relative end of the shaving unit with a side wall of the dispenser.

This is the replacement sheet

Date:

In any of the above described constructions of dispenser the spring-loaded detent, or other portion of the handle which secures the handle to a shaving unit, may have an externally protruding portion. When a used shaving unit is being returned to the used compartment of the dispenser the protruding portion of the handle engages a co-operating part on the dispenser so that the detent is operated to release the used shaving unit and allow withdrawal of the handle.

The dispensers herein described are the subject of the Complete Specification of cognate patent applications 18177/65, 31179/65 and 10239/66 (Serial No. 1160542).

WHAT WE CLAIM IS:—

1. A shaving unit for use with a supporting handle, comprising a member of plastics material providing a guard surface for contact with the skin and a blade having a cutting edge, said blade being permanently fixed to said plastics member with its cutting edge at a predetermined spacing from said guard surface, said plastics member having one or more projections or recesses adapted to engage with a co-operating surface of said supporting handle for positive engagement therebetween, and means which locate said shaving unit prior to use such that the said supporting handle may be applied to the shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand.

2. A shaving unit according to claim 1, wherein said member is shaped adjacent said guard surface to facilitate washing away of cut hairs from the cutting edge.

3. A shaving unit according to either claim 1 or 2, wherein said guard surface is treated to provide it with a predetermined co-efficient of friction.

4. A shaving unit substantially as described herein.

5. A razor comprising a blade having a cutting edge, said blade being secured in a permanent manner to a substantially rigid member, a head in which the substantially rigid member and the blade are located, and a handle for holding the head so that said cutting edge is in the appropriate position for shaving, the substantially rigid member and the head being so formed that the head is adapted to be applied to the substantially rigid member (when the substantially rigid member is located prior to use in means provided therefor) without the blade or the substantially rigid member being touched by hand, one edge of said substantially rigid member projecting beyond the side of the head to provide a guard surface at a spacing from said cutting

edge, which spacing is predetermined in manufacture when the blade is secured in the permanent manner to said substantially rigid member.

6. A razor according to claim 5, further comprising a securing member for holding the substantially rigid member in the head.

7. A razor comprising a shaving unit having a substantially rigid member providing a guard surface for contact with the skin and an elongated blade having a cutting edge, said blade being permanently fixed to said substantially rigid member with its cutting edge at a predetermined spacing from said guard surface, a handle, and means which locate said shaving unit such that the handle may be applied to said shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand, the handle having a transverse support for receiving said substantially rigid member and having locating surfaces for predetermined positioning of said shaving unit thereon, said substantially rigid member having co-operating surfaces for engagement with said locating surfaces.

8. A razor according to claim 7, wherein said handle has a securing member for engaging the substantially rigid member and holding it thereon.

9. A razor according to either claim 6 or claim 8, further comprising a finger or thumb operated member for moving said securing member to or from a position in which it no longer secures said substantially rigid member in place.

10. A razor according to claim 9, further comprising a resilient member urging said securing member into a position at which it secures said substantially rigid member in place.

11. A razor according to any one of claims 5 to 10, wherein said substantially rigid member has a keyway or other projection or recess for interlocking with a co-operating portion of the head.

12. A razor according to any one of claims 5 to 11, wherein said substantially rigid member is shaped adjacent said guard surface to facilitate the washing away of cut hairs from the cutting edge.

13. A razor according to any one of claims 5 to 12, wherein said guard surface is treated to give it a low coefficient of friction.

14. A razor substantially as described herein.

MATHISEN & MACARA,
Chartered Patent Agents,
Lyon House, Lyon Road,
Harrow, Middlesex.
Agents for the Applicants.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1975.
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

This is the replacement sheet

Date:

In any of the above described constructions of dispenser the spring-loaded detent, or other portion of the handle which secures the handle to a shaving unit, may have an externally protruding portion. When a used shaving unit is being returned to the used compartment of the dispenser the protruding portion of the handle engages a co-operating part on the dispenser so that the detent is operated to release the used shaving unit and allow withdrawal of the handle.

The dispensers herein described are the subject of the Complete Specification of cognate patent applications 18177/65, 31179/65 and 10239/66 (Serial No. 1160542).

WHAT WE CLAIM IS:—

1. A shaving unit for use with a supporting handle, comprising a member of plastics material providing a guard surface for contact with the skin and a blade having a cutting edge, said blade being permanently fixed to said plastics member with its cutting edge at a predetermined spacing from said guard surface, said plastics member having one or more projections or recesses adapted to engage with a co-operating surface of said supporting handle for positive engagement therebetween, and means which locate said shaving unit prior to use such that the said supporting handle may be applied to the shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand.

2. A shaving unit according to claim 1, wherein said member is shaped adjacent said guard surface to facilitate washing away of cut hairs from the cutting edge.

3. A shaving unit according to either claim 1 or 2, wherein said guard surface is treated to provide it with a predetermined co-efficient of friction.

4. A shaving unit substantially as described herein.

5. A razor comprising a blade having a cutting edge, said blade being secured in a permanent manner to a substantially rigid member, a head in which the substantially rigid member and the blade are located, and a handle for holding the head so that said cutting edge is in the appropriate position for shaving, the substantially rigid member and the head being so formed that the head is adapted to be applied to the substantially rigid member (when the substantially rigid member is located prior to use in means provided therefor) without the blade or the substantially rigid member being touched by hand, one edge of said substantially rigid member projecting beyond the side of the head to provide a guard surface at a spacing from said cutting

edge, which spacing is predetermined in manufacture when the blade is secured in the permanent manner to said substantially rigid member.

6. A razor according to claim 5, further comprising a securing member for holding the substantially rigid member in the head.

7. A razor comprising a shaving unit having a substantially rigid member providing a guard surface for contact with the skin and an elongated blade having a cutting edge, said blade being permanently fixed to said substantially rigid member with its cutting edge at a predetermined spacing from said guard surface, a handle, and means which locate said shaving unit such that the handle may be applied to said shaving unit to engage the latter in the appropriate position for shaving without the shaving unit being touched by hand, the handle having a transverse support for receiving said substantially rigid member and having locating surfaces for predetermined positioning of said shaving unit thereon, said substantially rigid member having co-operating surfaces for engagement with said locating surfaces.

8. A razor according to claim 7, wherein said handle has a securing member for engaging the substantially rigid member and holding it thereon.

9. A razor according to either claim 6 or claim 8, further comprising a finger or thumb operated member for moving said securing member to or from a position in which it no longer secures said substantially rigid member in place.

10. A razor according to claim 9, further comprising a resilient member urging said securing member into a position at which it secures said substantially rigid member in place.

11. A razor according to any one of claims 5 to 10, wherein said substantially rigid member has a keyway or other projection or recess for interlocking with a co-operating portion of the head.

12. A razor according to any one of claims 5 to 11, wherein said substantially rigid member is shaped adjacent said guard surface to facilitate the washing away of cut hairs from the cutting edge.

13. A razor according to any one of claims 5 to 12, wherein said guard surface is treated to give it a low coefficient of friction.

14. A razor substantially as described herein.

MATHISEN & MACARA,
Chartered Patent Agents,
Lyon House, Lyon Road,
Harrow, Middlesex.
Agents for the Applicants.

