

[72] Inventors **Fritz Georg Pohl;**
Arnold Keller, both of Kiel-Dietrichsdorf,
Germany
 [21] Appl. No. **649,254**
 [22] Filed **June 27, 1967**
 [45] Patented **June 8, 1971**
 [73] Assignee **Austenal Europa, Inc.**
Kiel-Dietrichsdorf, Germany

FOREIGN PATENTS

774,689 5/1957 Great Britain..... 128/305

Primary Examiner—Richard C. Pinkham
Assistant Examiner—Richard J. Apley
Attorney—Beaman & Beaman

[54] **DERMATOME**
6 Claims, 8 Drawing Figs.

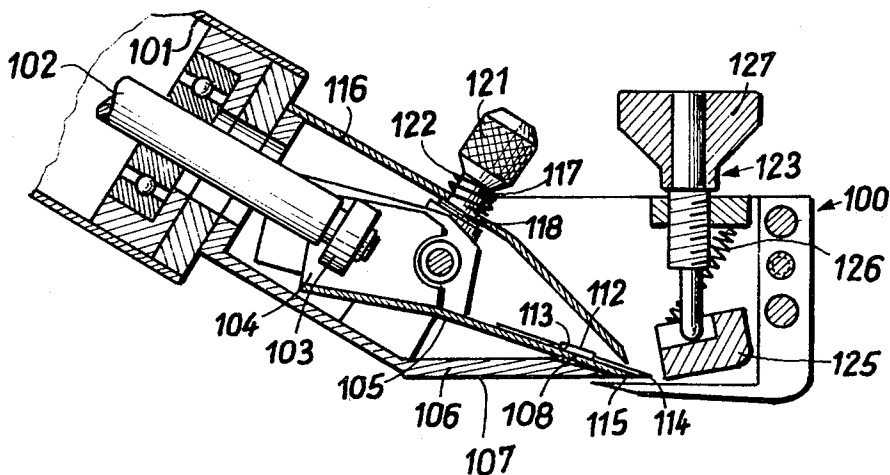
[52] **U.S. Cl.**..... **128/305**
 [51] **Int. Cl.**..... **A61b17/322**
 [50] **Field of Search**..... **128/305,**
305.5, 303.14; 145/10, 15, 20

[56] References Cited

UNITED STATES PATENTS

2,730,100	1/1956	Hood.....	128/305
2,787,272	4/1957	Groom.....	128/305
3,428,045	2/1969	Kratzsch et al.	128/305
1,467,558	9/1923	Okill.....	33/166X
2,395,154	2/1946	Thulin.....	33/148
2,502,038	3/1950	Fletcher.....	33/166X
2,691,377	10/1954	Hood.....	128/305
3,327,711	6/1967	Vallis.....	128/305

ABSTRACT: The invention relates to a dermatome as used for surgical purposes to sever a strip of skin from a patient's body prior to transplantation. The invention lies in an adjustment device having an adjustment screw received in a threaded bore of a crossmember connecting the sidewalls of the cutting head of the dermatome. The lower extremity of the adjustment screw loosely engages a recess formed in a pivotally mounted gauge bar disposed forwardly of the cutting blade. This gauge bar with its recess is constantly urged by spring action, assisted by the contact pressure during operation of the dermatome, against the lower extremity of the adjustment screw. The gauge bar is drivingly connected via a leverage transmission with an indicator journaled on the cutting head and cooperating with a stationary scale. In a preferred embodiment the cutting blade is loosely placed in the cutting blade holder and prevented against shifting by positioning means. The cutting blade is resiliently clamped against the cutting blade holder by a pivotal cover engaging the cutting blade near its cutting edge. This cover does not move during the cutting operation of the dermatome and forms a guiding ramp for the severed strip of skin.



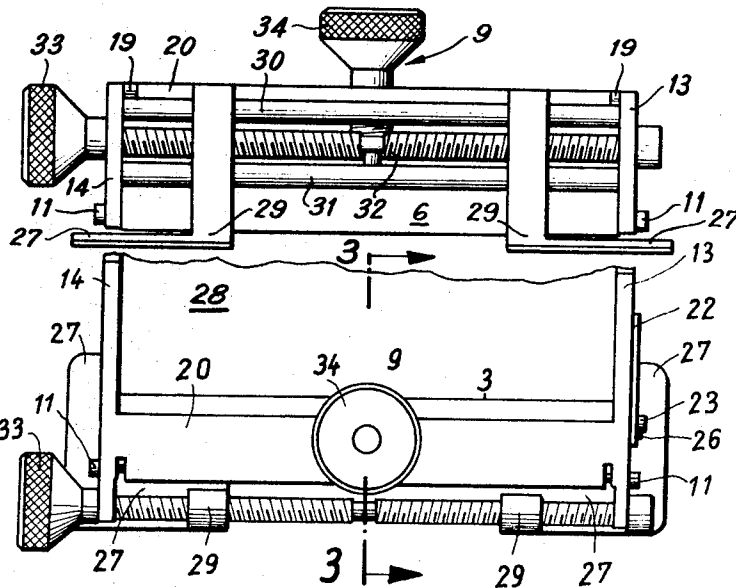


Fig. 1

Fig. 2

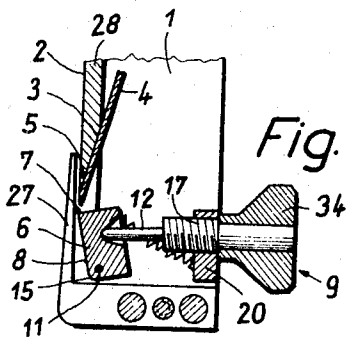


Fig. 3

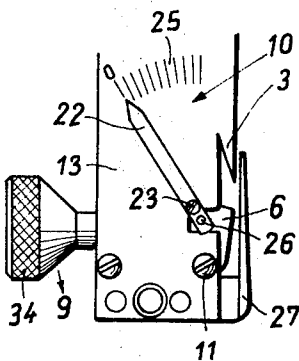


Fig. 4

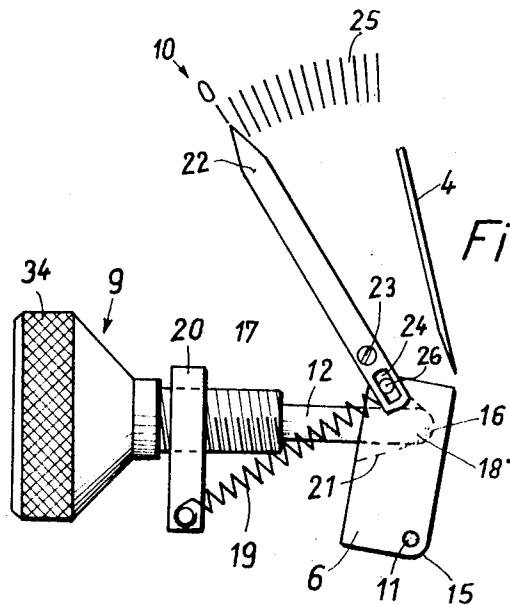


Fig. 5

INVENTORS
 Fritz Georg Pohl
 Arnold Seiler
 By Deaman & Deaman Attys

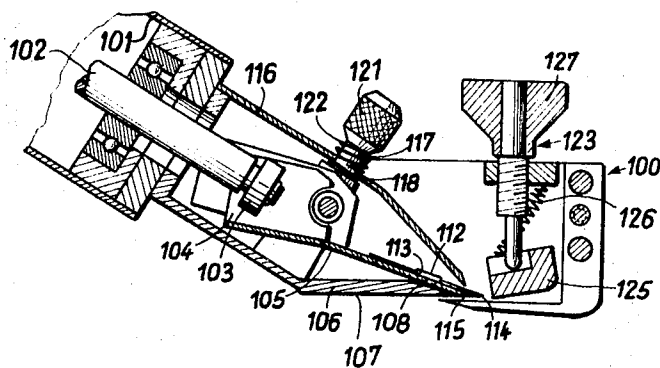


Fig. 7

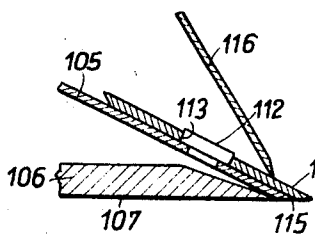


Fig. 8

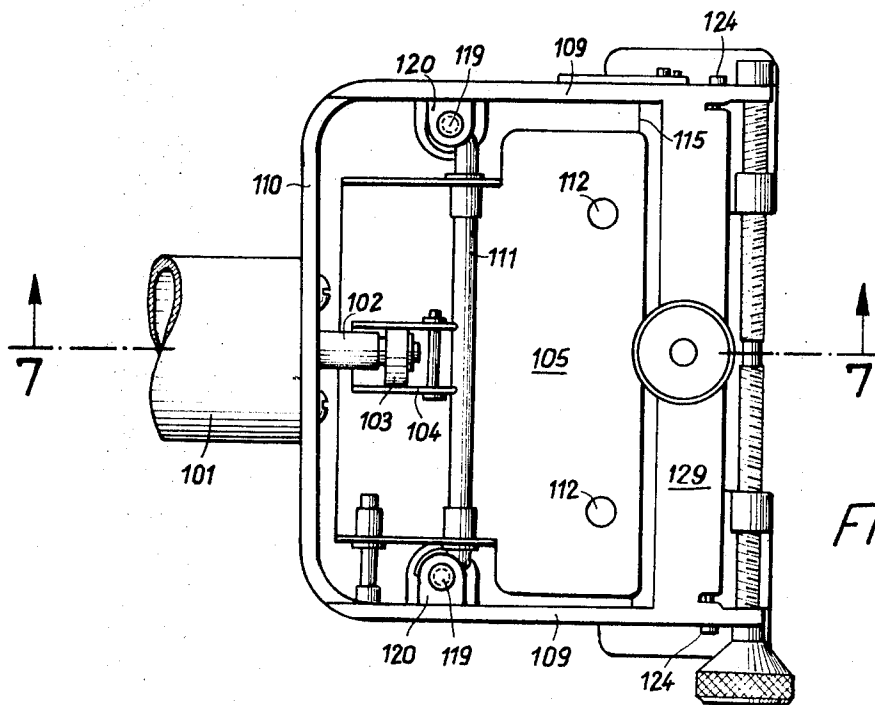


Fig. 6

INVENTORS
 Fritz Georg Kohl
 Arnold Jeller
 By Deaman Deaman Atty's

DERMATOME

DESCRIPTION OF THE PRIOR ART

Dermatomes of this type are known which comprise: a cutting head the underside of which forming a sliding surface sliding along over the skin during the cutting procedure, this sliding surface being defined forwardly by a sharp edge extending transversely to the direction of sliding; a cutting blade supported in the cutting head and arranged obliquely relative to the sliding surface, abutting the sharp edge, and projecting with its cutting edge into the cutting surface defined by the sliding surface; a gauge bar arranged within the cutting head forwardly of the sharp edge with respect to the direction of sliding, and including a gauge edge extending in spaced parallel relation to the sharp edge, and defining a guide surface extending in a forward direction therefrom, said gauge bar being pivotally supported about an axis extending in parallel relation to said gauge edge; adjustment means for pivoting said gauge bar arranged in a crossmember connecting the sidewalls of the cutting head, and including an adjustment screw engaging said gauge bar in spaced relation from said pivot axis; and indicating means for the cutting depth defined by the normal distance between said gauge edge and said cutting surface.

This known dermatome has a gauge bar with a curved sliding surface, the lowermost point of which being disposed approximately at the cutting edge of the cutting blade. When a strip of skin is severed the rounded sliding surface of the gauge bar causes bulging of the skin directly in front of the cutting edge of the cutting blade whereby the exact maintenance of the cutting depth is impaired, which may be prevented if a gauge bar with a planar sliding surface is used. But the essential drawback of this known dermatome must be seen in the adjustment device for the gauge bar, and also in the indicating device of the cutting depth. A micrometer screw serves as adjustment device mounted rotatably but axially nonshiftable in the crossmember connecting the sidewalls of the cutting head. The micrometer screw is screwed into a threaded bore of the gauge bar. Since the micrometer screw can only be rotated, but is otherwise fixed in its position relative to the crossmember, and since, upon adjustment of the cutting depth, the gauge bar is caused to pivot about its pivot axis, the axis of the threaded bore and the axis of the screw can only coincide in one position, but must include an obtuse angle in any other position. Therefore, it is necessary, if in this manner an adjustment of the cutting depth is to be obtained at all, to provide so much clearance either in the bearing support of the micrometer screw, or between the interior and exterior thread that a precise adjustment is impossible.

Another drawback is to be seen in the indicating device for the cutting depth. The end face of the head of the micrometer screw is provided with an angular graduation which, corresponding to the pitch of the thread, represents from scale mark to scale mark a defined adjustment measure of the cutting depth. If one starts out from the fact that a dermatome should have an adjustment range between 0 and 2 mm. then the pitch of the micrometer screw should be 2 mm., if the total adjustment range is to be covered with one revolution of the micrometer screw. A screw with such a high pitch cannot be considered as micrometer screw. However, if a lesser pitch of the thread is provided correspondingly more revolutions of the screw become necessary, if the cutting depth is to be adjusted over the total range. But in this case the operator of the apparatus does not know whether the screw had been adjusted already prior to its use out of the zero position so that this, being of the opinion that the micrometer screw had been in a zero position but in fact was not, might lead to serious mistakes. But even if this known dermatome provides an adjustment range and therefore a pitch of 2 mm., which would require a multiple thread, so as to avoid the aforementioned errors then this high pitch in connection with the first-mentioned drawback regarding the necessary clearance would cause a still greater inaccuracy regarding the fine adjustment.

In this known dermatome, from which the invention starts out, the cutting blade is screwed by hexagon head screws on the blade holder, the heads of which project beyond the upper surface of the holder. On the one hand the replacement of the cutting blade is in this construction cumbersome and not possible without using a spanner.

In addition, the upper surface of the blade holder forms a guide path for the severed strip of skin. Since the cutting knife in severing strips of skin reciprocates and, besides this, the mounting screws of the blade project into the guide path of the severed strip of skin, it is necessary, for avoiding damages of the strip of skin, that the latter is seized by a second person immediately upon severance and kept clear of the upper blade surface.

In another known dermatome one has chosen a construction of the adjustment device for the gauge bar inverted to that one of the above-described dermatome. In this case the adjustment screw is screwed into the crossmember connecting the sidewalls of the cutting head. The end of the adjustment screw is formed as a tenon provided with a circumferential groove. The tenon engages a bore of the gauge bar and is secured thereto rotatably but axially nonshiftable by a pin provided in the gauge bar and extending tangentially through the circumferential groove. Also in this case the same drawback may be observed as in case of the prior-described dermatome, because, if the gauge bar is to be adjusted by pivoting motion, there must be ample clearance between the pin and the circumferential groove of the tenon so that, in view of such a loose connection, an exactly adjustable cutting depth and maintenance of the same cannot be expected. An indicating device for the cutting depth is not provided so that the cutting depth must be guessed, which should be avoided under all circumstances.

Further dermatomes are known in which the adjustment movement of the gauge bar is not pivotal but a linear movement in straight line guide. This is advantageous in that the guide surface of the gauge bar is always disposed in approximately parallel relation to the cutting plane, and in that the guidance and holding of the gauge bar is unobjectionable and free of play, however is afflicted with the disadvantage of substantially higher manufacturing costs, and the more difficult disassembly of the apparatus for the purpose of cleaning and sterilizing. In this it is known to provide a stationary adjustment scale at one of the sidewalls of the cutting head for predetermining the cutting depth. An indicator is moving above the scale simultaneously serving as actuator for the adjustment device. The indicator is rigidly mounted on an eccentric shaft, by rotation of which the gauge bar may be shifted upwardly or downwardly. This type of adjustment device is expensive in manufacture, because it requires precise machining of the cam surfaces cooperating with the eccentrics. In addition the eccentrics require accurate setting which is done by the manufacturer. A further drawback is to be seen in the fact that equal angular rotations of the eccentric shaft do not result in equal movements of the gauge bar, so that the spacings of the scale marks become uneven, if they are to indicate equal strokes of the gauge bar, and this again complicates the production.

This invention aims to improve the initially described dermatome in such a manner that, in spite of a simple construction, allowing a quick and easy disassembly for cleaning and sterilization, an essentially more precise adjustment and maintenance of the cutting depth is achieved, than is attainable in the known apparatus. In addition an indicating device for the cutting depth is to be provided having a range from 0 to 2 mm., in which errors of the adjustment are avoided, and in which equal movements of the gauge bar are transmitted into equal movements of the indicator, so that the indicating scale has marks evenly spaced. Further, in a preferred embodiment a novel mounting of the cutting blade is to be provided which is very simple in construction, allows an easy and quick replacement of the cutting blade, without requiring any tools, and which, at the same time, provides a smooth not movable

guide and sliding surface for the severed strip of skin extending over the entire width of the apparatus, thereby requiring only one person for its operation.

SUMMARY OF THE INVENTION

According to the invention the problem is solved in that the adjustment screw of the adjustment means is screwed, in a manner known per se, into a threaded bore of the cross-member of the cutting head, and that the lower end of the adjustment screw loosely engages a recess formed in the gauge bar, which latter is urged in constant abutment against the adjustment screw by the contacting pressure of the apparatus, assisted by spring means, and that the indicating means for the cutting depths comprise a stationary scale, known per se, and an indicator journaled on the cutting head and drivingly connected by a leverage transmission with the gauge bar.

A very suitable embodiment which prevents bulging of the skin immediately in front of the cutting edge of the blade and which assures that the skin is severed accurately with an even thickness is obtained when the gauge bar has a planar guide surface defined at the side opposite of the adjustment edge by a rounded, chamfered edge extending in parallel relation to the adjustment edge, and when the pivot axis is arranged adjacent the rounded, chamfered edge and is formed by axle journals extending through the sidewalls of the cutting head and engaging into bores provided in the gauge bar. In this an advantageous effect is achieved when at a maximum cutting depth, the guide surface of the gauge bar is disposed substantially in parallel relation to the sliding surface of the cutting head and includes an obtuse angle with the sliding surface at smaller cutting depths.

A preferred construction of the indicating means provides that the indicator of the indicating means and the scale are arranged, in a manner known per se, at one of the sidewalls of the cutting head, and that the indicator is rotatably supported at the sidewall on an axis extending in parallel spaced relation to the pivot axis of the gauge bar adjacent its adjustment edge, and further that an indicator drive pin extending in spaced relation to the indicator axis and secured to the gauge bar extends through an aperture of the sidewall and projects into an elongated hole of the indicator, and that the length of the indicator and the spacings of the axes between the pivot axis of the gauge bar and the indicator drive shaft, as well as between the latter and the indicator axis are chosen in accordance with a defined transmission ratio.

In order to facilitate the width adjustment of the skin to be severed the invention provides that the cutting head is provided in a manner known per se, with adjustment sliding shoes for adjusting the width of the cut.

An especially suitable embodiment of the invention which allows operation of the dermatome by a single person and yet avoids with certainty that the severed skin is damaged by the oscillating cutting blade is characterized in that the cutting blade is loosely insertable into the cutting blade holder and is held in its position by positioning means, and that a cover is provided arranged above the cutting blade holder and is pivotally supported about an axis extending in parallel, rearwardly spaced relation to the cutting edge of the blade, the forward edge of said cover engaging resiliently the cutting blade arranged therebelow, and that the upper surface of the cover forms a stationary guide path for the severed strip of skin. In this embodiment the sidewalls of the cutting head are provided with bosses having threaded bores formed therein into which screws extending through the cover are threaded, a compression spring being arranged between each head of the screws and the cover, whereby the cutting blade is resiliently urged against the oscillating cutting blade holder.

The positioning means for the cutting blade of this embodiment may comprise two spacedly arranged projections provided on the cutting blade holder and engaging corresponding apertures provided in the cutting blade.

Suitable embodiments of the subject matter of the invention shall now be explained by way of example in connection with the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 shows a front elevational view of the cutting head of a dermatome in accordance with the invention;

FIG. 2 shows a top view of the cutting head according to FIG. 1;

FIG. 3 shows a cross-sectional view along the line 3-3 of FIG. 2;

FIG. 4 shows a side view of the dermatome cutting head shown in FIG. 1 to 3;

FIG. 5 shows in a diagrammatic manner the important members of the cutting head according to the invention, substantially in correspondence with FIG. 3, but in an enlarged scale;

FIG. 6 shows a longitudinally sectional elevation of a dermatome in accordance with the invention, however, in a modified and improved, preferred embodiment;

FIG. 7 shows a partial longitudinal sectional view in an enlarged scale of the dermatome illustrated in FIG. 6; and

FIG. 8 shows a top view of the apparatus according to FIGS. 6 and 7 with the cover removed.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawings FIGS. 1 to 5 the illustrated cutting head comprises a baseplate 28, the underside of which forming a sliding surface 2. The forward end of this baseplate forms a knife edge 3 on which a cutting blade 4 rests, which is supported in the cutting head and projects with its cutting edge 5 into the cutting plane defined by the sliding surface. The mounting means of the cutting blade 4 are not shown in the drawings. Sidewalls 13 and 14 extend upwardly from the lateral edges of the baseplate 28, and project forwardly beyond the knife edge 3, the upper edges of the sidewalls 13 and 14 are connected by a crossmember 20. Rearwardly, the sidewalls 13 and 14 are connected by a crossmember 20. Rearwardly, the sidewalls 13 and 14 extend to holding means for the cutting head (not shown). Below the crossmember 20 a substantially square gauge bar 6 is pivotally supported by axle journals extending through the sidewalls 13 and 14 and projecting inwardly into bores of the gauge bar 6. The axle journals may, for example, form parts of screws screwed through threaded bores of the sidewalls 13 and 14. The gauge bar 6 is disposed in sliding direction forwardly of the knife edge 3 and the cutting edge 5, and includes an adjustment edge 7 extending substantially in parallel, spaced relation to the knife edge 3 and the cutting edge 5 of the blade 4, which adjustment edge 7 may be lifted, or lowered respectively, relative to the cutting edge 5 of the blade 4 by pivoting the gauge bar 6 about the axis 11. The underside of the gauge bar 6, extending forwardly from the adjustment edge 7, forms a guide surface smoothening the skin bulging in front of the dermatome during the cutting operation, and thereby feeding the skin in a proper manner to be cut towards the cutting edge 5 of the blade 4. The normal distance between the adjustment edge and the cutting plane formed by the sliding surface 2 defines the cutting depth. The cutting width is determined by two sliding shoes 27 extending on either side over the lateral edges of the knife edge and the cutting edge 5 of the blade. The sliding shoes 27 are mounted on two supports 29. Each support 29 includes an upper and a lower bore through which guide rods 30 and 31 extend, and a threaded bore is disposed between the guide bores of each support 29 and receives a threaded spindle common for both supports 29. This threaded spindle is over each half of its length provided with right- and left-hand threads, whereby, upon rotation of the threaded spindle by means of the knurled knob 33, the two supports 29 and thus the two sliding shoes 27 are moved simultaneously in opposite directions. The guide rods 30 and 31, as well as the threaded

spindle 32 are supported in the forward ends of the side walls 13 and 14.

The adjustment of the gauge bar 6 is achieved by means of an adjustment device 9. This adjustment device 9 comprises as an essential member an adjustment screw disposed in a threaded bore 17 of the screw member 20, and provided at its upper end with a knurled knob 34. The adjustment member proper is formed by a downward extension 12 of the adjustment screw. The lower end of the adjustment member 12 seats on an abutment point 16 within a recess 21 of the gauge bar 6. This abutment point 16 is, with respect to the pivot axis 11 of the gauge bar 6, rearwardly spaced. The gauge bar 6 is urged against the adjustment member 12 of the adjustment screw by two tension springs 19. These springs 19 are secured with their one ends to the gauge bar 6 at points rearwardly spaced with respect to the pivot axis 11, in the same manner as the abutment point 16, and with their other ends to fixed points of the cutting head. In this zone an indicator drive pin 26 extends cutting process one of the side surfaces of the gauge bar 6 and projects through an aperture in one of the sidewalls 13 beyond its other surface, where it drivingly engages into an aperture of the indicator 22. The indicator 22 is rotatably journaled in the sidewall 13 about an axis 23, for example formed by a threaded pin, and moves over a scale 25 arranged on this sidewall. Depending on the chosen distance between the indicator drive pin 26 and the indicator axis a more or less greater transmission ratio, and thus a more or less spaced scale graduation is obtained. As particularly evident from FIG. 3, the sliding surface 2 and the guide surface 8 of the gauge bar include an obtuse angle when the cutting depth is set to zero, i.e. a disappearingly normal distance between the adjustment edge of the gauge bar 6 and the cutting edge 5 of the blade 4. However, at a maximum cutting depth the guide surface 8 and the sliding surface 2 extend substantially in parallel relation. By means of this change of the angle of approach between the sliding surface and the guide surface the bulging skin caused during the cutting process in front of the cutting head is pressed together in such a manner that at any cutting depth a smooth, continuous cut is achieved.

The mounting means of the cutting blade 4 (in FIG. 1 to 5 not illustrated) is attached in a known manner, to drive means laterally reciprocating the cutting blade 4.

As may be seen from FIGS. 6 to 8 a preferred improved embodiment of the dermatome according to the invention consists of a cutting head 100 to which a handle 101 with a built-in motor (not shown) is secured. On the freely projecting end of the motor shaft 102 and eccentric roll is journaled engaging into a fork 104 of a cutting blade holder 105, to be described in detail yet, so as to drive the same in a laterally reciprocating manner.

The cutting head 100 is construed in form of a shovel, comprising a baseplate 106 the underside of which forming a sliding surface 107 with which the dermatome is slidably guided across the skin to be severed. The forward end of the baseplate is chamfered under an acute angle toward the sliding surface 107, thereby forming a backing surface 108 on which the forward end of the cutting blade holder 105 rests which is also chamfered so as to form a continuation of the sliding surface 107 of the base plate 106 of the cutting head 100.

The cutting head further includes side walls 109 and a rear wall carrying the handle 110. On an axis 111 extending transversely to the sidewalls 109 the cutting blade holder 105 is slidably and pivotally supported. Adjacent the forward end the cutting blade holder is, according to the invention, provided with two upwardly projecting pins 112 spaced relative to each other, which pins serve to receive and position the cutting blade 114 provided with corresponding apertures, similar to a razor blade of a shaving apparatus, wherein the cutting edge of the blade 114 projects a small distance beyond the forward edge 115 of the cutting blade holder 105.

According to the invention a cover 116 is provided above the cutting blade holder 15 extending between the sidewalls

109 of the cutting head 100 over its entire width. The cover 116 is secured to the cutting head 100 by two screws 117 with knurled heads one arranged on either side. These screws extend through corresponding holes 118 in the cover 116 and are screwed into threaded bores 119 of eyes 120 provided on the sidewalls 109. Compression springs 122 are arranged between the knurled heads 121 of the screw 117 and the upper surface of the cover 116 resiliently urging the cover 116 downwardly. The cover extends slantedly downwardly towards the cutting blade and engages with its forward end resiliently the cutting blade a small distance rearwardly spaced from the cutting edge of the cutting blade 114, which in this way is clamped between the reciprocatingly driven cutting blade holder 105 and the stationary cover 116.

Thus on the one hand the cover serves as a clamping element for holding the cutting blade 114, but on the other hand it also forms a stationary guiding ramp for the strip of skin severed by the cutting blade, past which the same may slide unobstructedly, so that damages of the trip of skin, the thickness of which may vary between 0.2 and 2 mm., are surely avoided. Further, it is not necessary anymore that, as was common practice, a second person has to seize the strip of skin immediately upon severance by the cutting blade and to lift it free of the reciprocating cutting blade in order to avoid damages of the skin.

An adjustment device 123 for adjusting the cutting depth is arranged in front of the cutting blade 114, and includes a gauge bar 125 supported to pivot about an axis 124 extending in parallel relation to the cutting edge of the cutting blade. This gauge bar 125 is pulled into abutting engagement against the face of an adjustment screw 127 by tension springs 126. The adjustment screw 127 extends through a threaded bore 128 provided in a crossmember 129 connecting the two sidewalls 109 of the cutting head. The gauge bar 125 is drivingly connecting via a lever arrangement with an indicator moving over a scale provided on one of the sidewalls 109.

The adjustment device 123, and the indicating device for the cutting depth cooperating therewith, have been described in detail with regard to the embodiment shown in FIGS. 1 to 5.

It is to be understood that modifications within the limits of the attached claims are possible without departing from the scope of the invention. Thus, instead of the two positioning pins 112 also an elongated ledge may be provided engaging into a corresponding slot of the cutting blade. Also, the arrangement could be inverted by providing the positioning means on the cutting blade and the receiving aperture, or apertures respectively, in the cutting blade holder. Further, it is possible to construct the mounting means of the cover 116 in a different way, for example by pivotally hooking the cover to the cutting head and urging it downwardly by lead springs, adapted to be moved out of the way.

What we claim is:

1. A dermatome comprising in combination, a cutting head, a sliding surface defined on said head adapted to engage and slide over the skin during the cutting procedure, said surface intersecting a sharp edge extending toward and transversely to the direction of sliding, a cutting blade supported in said cutting head and arranged obliquely relative to said sliding surface engaging said sharp edge and including a cutting edge disposed adjacent said sharp edge of said sliding surface, an elongated gauge bar pivotally mounted on said cutting head forwardly of said sharp edge and said cutting edge with respect to the direction of operative movement, a flat, planar, gauge edge defined on said gauge bar extending in spaced parallel relation to said sharp and cutting edges defining a guide surface, said gauge bar being pivotally supported on said head about an axis parallel to said gauge edge and cutting edge, adjustment means mounted on said head for pivoting said gauge bar about said axis to vary the relationship of said gauge edge to said cutting edge, indicating means mounted on said head indicating the angular relationship of said gauge bar to its pivot axis to indicate the relationship of said gauge edge to said cutting edge and the depth of cut being taken, said in-

dicating means including an indicator drive pin affixed to said gauge bar offset with respect to said gauge bar pivot axis, an indicator pivotally mounted upon said cutting head, indicia defined on said cutting head adjacent said indicator, and connecting means interconnecting said indicator drive pin and said indicator wherein pivotal movement of said gauge bar about said axis is indicated by said indicator.

2. A dermatome as in claim 1 wherein said adjustment means includes an adjustment screw threaded upon said cutting head, said screw having a lower end disposed toward said gauge bar, a recess defined in said gauge bar offset with respect to said pivot axis receiving said screw lower end, and biasing means pivoting said gauge bar in a direction maintaining said screw lower end in engagement with said recess wherein adjustment of said screw adjusts the angular relationship of said gauge bar to its axis.

3. A dermatome as in claim 1 wherein said gauge bar includes a forwardly disposed rounded, chamfered edge extending parallel to said gauge edge, and said pivot axis is disposed adjacent said rounded, chamfered edge and is defined by axle journals extending through sidewalls defined upon said cutting head and received within bores defined in ends formed on said gauge bar.

4. A dermatome as in claim 1 wherein said cutting head includes a central forward region disposed forwardly of said gauge bar and cutting edge with respect to the direction of operative movement, a pair of cutting edge protective shoes slidably mounted upon said cutting head, a shoe being located at each lateral side of said head with respect to said central region and forwardly of said cutting edge preventing engagement of said cutting edge with the skin being cut at the location of said protective shoes and adjusting means for simultaneously moving said protective shoes toward and away from said central region.

5. In a dermatome as in claim 1, means mounted upon said cutter head for laterally reciprocating said cutting blade, a

cover mounted upon said cutting head disposed adjacent and above said cutting edge, and rearwardly therefrom with respect to the direction of operative movement for receiving the skin being cut, said means supporting said cutting blade supporting said cover in a stationary manner with respect to said cutting head.

6. A dermatome comprising, in combination, a cutting head, a sliding surface defined on said head adapted to engage and slide over the skin during the cutting procedure, said surface intersection a sharp edge extending toward and transversely to the direction of sliding, a cutting blade supported in said cutting head and arranged obliquely relative to said sliding surface engaging said sharp edge and including a cutting edge disposed adjacent said sharp edge of said sliding surface, an elongated gauge bar pivotally mounted on said cutting head forwardly of said sharp edge and said cutting edge with respect to the direction of operative movement, the rear and bottom planar surfaces of said gauge bar converging in a sharp gauge edge extending in spaced parallel relation to said sharp and cutting edges defining a guide surface, said gauge bar being pivotally supported on said head about an axis parallel to said gauge edge and cutting edge, adjustment means mounted on said head for pivoting said gauge bar about said axis to vary the relationship of said gauge edge to said cutting edge, indicating means mounted on said head indicating the angular relationship of said gauge bar to its pivot axis to indicate the relationship of said gauge edge to said cutting edge and the depth of cut being taken, said indicating means including an indicator drive pin affixed to said gauge bar offset with respect to said gauge bar pivot axis, an indicator pivotally mounted upon said cutting head, indicia defined on said cutting head adjacent said indicator, and connecting means interconnecting said indicator drive pin and said indicator wherein pivotal movement of said gauge bar about said axis is indicated by said indicator.

40

45

50

55

60

65

70

75

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,583,403 Dated June 8, 1971

Inventor(s) Fritz G. Pohl and Arnold Keller

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Abstract, line 9, cancel "b" and substitute --
by --

In claim 6, column 8, line 10, cancel "intersection"
and substitute --intersecting --

Signed and sealed this 26th day of October 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Acting Commissioner of Patents