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2016-17

Paper IV - Abuse of Patents (Practical)

Time: 2 ½ hours

Total Marks: 100

INSTRUCTIONS TO CANDIDATES

- 1. The question paper to be interpreted as given and no clarification can be sought from the invigilator.**
- 2. Answers in illegible handwriting will not be taken into consideration.**

You are a registered patent agent. You receive a letter from a client as follows:

Dear Patent Agent

We are a small Singapore company in the business of designing, manufacturing and selling of various types of hand tools. One of the new products we recently developed is a hand knife as shown and explained in the attached (Document 1).

We have received positive feedbacks from our potential customers shortly after our launch of the product; hence we decided to market this hand knife in Singapore. We started mass production on 1 December 2014 and the first batch of products was on the shelves of many stationary and hardware stores in Singapore on 1 June 2015.

While we are excited to wait for success, on 1 July 2015 we received a letter from this company KnifeX Pte Ltd, claiming that the hand knives of the type we have been selling have infringed a patent, Singapore patent No. SG201201 ("SG01") that they own. They asked us to respect their intellectual property and request us to stop making and selling of our hand knives, and surrender all the remaining products to them failing which they will bring legal actions against us.

Upon comparison, we think that our product is quite different from that shown in their patent SG201201 drawings. Hence we do not believe that we infringed their patent. We have never heard of this company in the first place, nor any of the patents they claim that they own.

In fact, our product was developed based on an old pocketknife, with great improvements which makes our product working better than theirs. This old pocketknife has been known to the public long time before SG201201 patent date.

Therefore we believe that their patent should be invalid in view of this old pocketknife. I enclose a copy of the relevant information about this old pocketknife, as seen in Document3.

We conducted a search and discovered another patent, US 0002 (Document 4), which was published before SG201201's (Document 2) filing date, and may be relevant to the validity of SG201201 patent.

Document 1 - Client's Product – Pocket Knife

The knife shown comprises a hollow elongate shell 1 with a retractable blade 2 whose position is controlled by means of an enlarged knurled head or knob 3 of a screw whose shank 6 is slidably mounted along an elongate slot 4 in a rigid stainless steel side plate 5 and a registering elongate slot 4' in shell 1. The shank 6 passes through a hole 12 in a blade-supporting carriage 7 and its threaded free end is screwed into a nut 8 which can slide, but not rotate, in a channel 9 opening into the outer face of shell 1, this channel communicating with slot 4' and being provided with a rigid metallic support plate 23.

The carriage 7 (FIG. 4) is formed by a metal plate with its upper and lower edges bent over perpendicularly to form rails slidably engaged in cooperating channels 19 in shell 1. The upper edge (looking at FIG. 4) also has two bent over catches 14. A resilient tongue 13 is cutout in the central part of carriage 7 and is curved to normally slightly protrude out of the plane of the plate towards the same side as the upper and lower edges and catches 14.

A blade 2 having two rounded notches 15 in its shorter, non-sharpened parallel edge is fitted in carriage 7 by engagement of one of its notches 15 in the forward most catch 14, and with its rear edge resting against the rearmost catch 14. This blade 2 can be inserted into carriage 7 through an inclined slot 10 formed between the tapered nose end 11 of shell 1 and plate 5 when the screw head 3 is loosened sufficiently. As the head 3 is tightened, resilient tongue 13 is deformed by blade 2 until the position shown in FIG. 2 is reached, in which the blade 2 (and carriage 7) are tightly held in slot 10 between nose 11 and plate 5, and the shank 6 is so tightly screwed in nut 8 as to prevent movement of the shank 6 along slots 4 and 4'. In this position, the protruding blade 2 can be used with the inclined face of slot 10 acting as a bearing surface. The tight gripping provided by screw head 3 avoids any unwanted deformation of slot 10 or shaking of blade 2.

When the screw head 3 is slightly loosened, the shank 6 can be slide along slots 4 and 4' to another position, and the blade 2 and carriage 7 set in this new position by tightening screw head 3. However, by further loosening screw head 3, the tongue 13 can push blade 2 away from the body of carriage 7 until notch 15 is disengaged from catch 14. The blade 2 can then be removed and replaced, or turned around and reinserted with its other notch 15 engaging with catch 14, without a need to fully dismantle plate from shell 1.

A spare blade support or magazine 16 is slidably snap-fit in a recess in the rear end of the shell 1, and may be drawn out or detached from shell 1 for reloading of new blades.

At the end portion 20 of magazine 16, there is formed of a recess 28 opening to one side 15 surface 29 of end portion 20. When the knife is installed with a blade of the type having break-off weakening cuts 27 (see Fig. 1), and when it is desired to have a new, sharp tip, magazine 16 may be detached from shell 1 and using recess 28 to receive a worn tip of the blade 2 and break off the worn tip, so that a fresh, sharp tip can be obtained without the need of sharpening the worn or blunt blade.

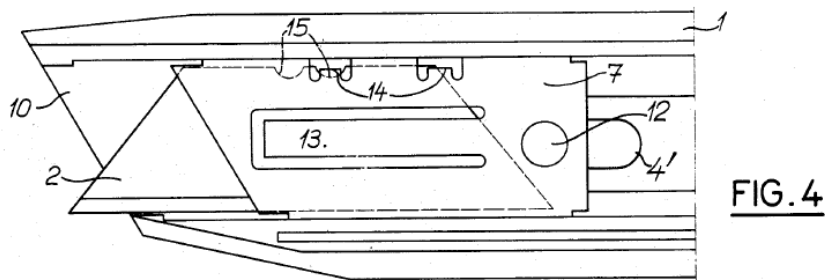
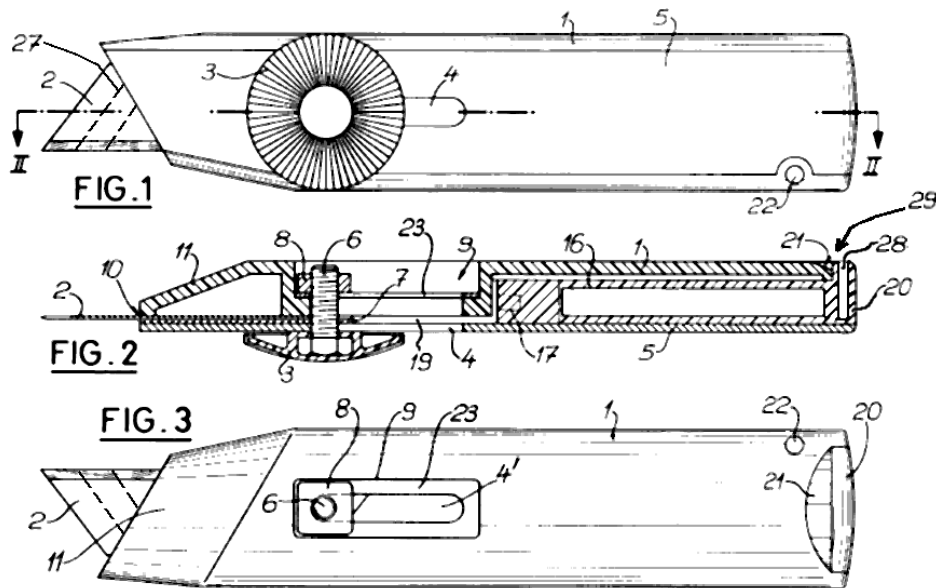
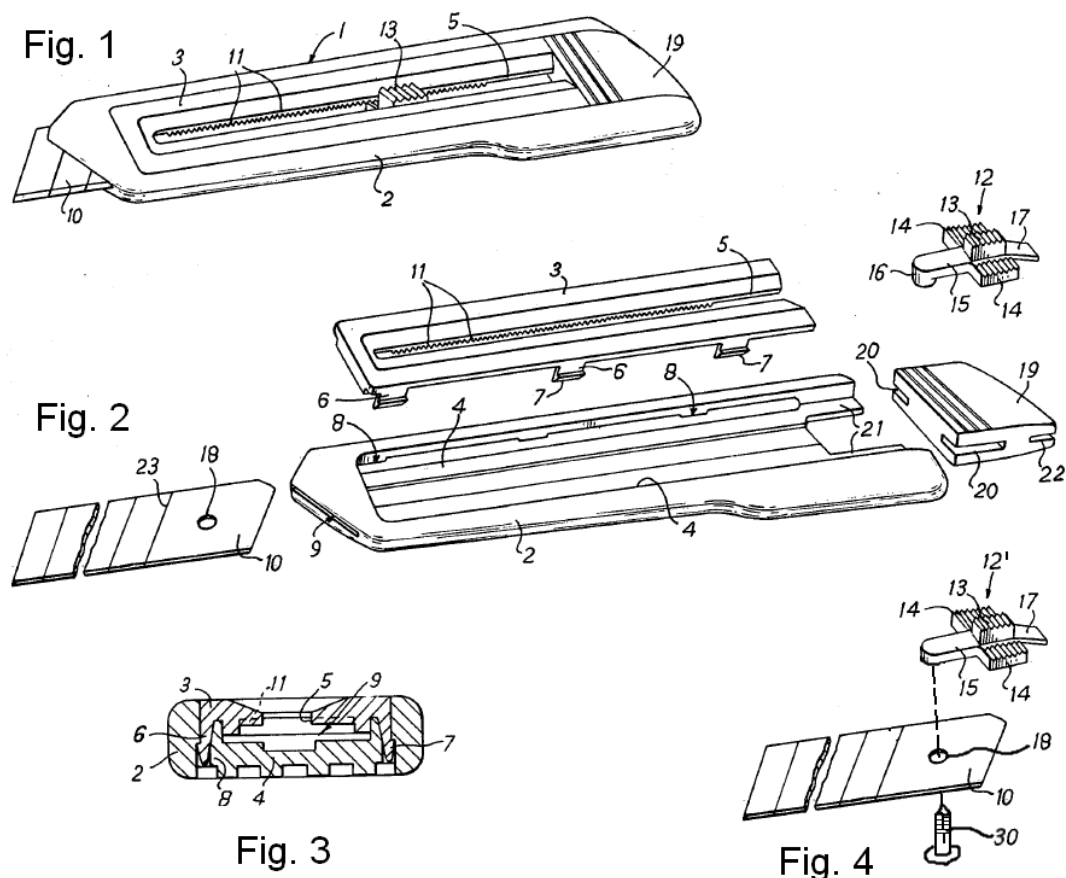


FIG. 1 is an elevational view of one side of a knife;

FIG. 2 is a cross-section taken along line II-II of FIG. 1;

FIG. 3 is an elevational view of the other side of the knife.

FIG. 4 is an enlarged scale elevational view similar to FIG. 1 but with a side plate of the knife handle removed.



HAND KNIFE

BACKGROUND OF THE INVENTION

Provision is made in known knives of this type for adjusting the position of the blade relatively to the hand grip to vary the amount of projection of the tip of the blade from the leading end of the grip but this has involved the dismantling and opening up of the hand grip in something of a laborious operation to allow the blade to be re-set.

BRIEF SUMMARY OF THE INVENTION

It is a first object of the present invention to furnish an arrangement in which the amount of projection of the blade can be adjusted by the hand of the user in a simple operation without any dismantling of the hand grip.

A second object is to provide in very simple fashion for adjustment of the length of projecting blade to a range of tip sizes.

Thus the present invention provides, for a hand knife having renewable blade portions, a hand grip in the form of an elongated body defining therein a longitudinal passageway for the strip blade, having a longitudinal slot in communication with at least a portion of the length of said passageway which receives and permits the movement along the grip of a

blade shifting element, and a set of fixed detent formations in said body co-operating with complementary formations on said knife-shifting element to engage and locate the shifting element in a selected adjusted position.

The required disengagement and re-engagement of the interlocking formations on the hand grip body and the shifting element is, in a preferred embodiment of the invention, implemented by making this element of a stiffly flexible plastics material which is sufficiently rigid to cater for the required interlocking in adjusted status but will yield under finger pressure to deform and release the interlocking engagement. In this arrangement the formations referred to may be interengaging parallel serrations or teeth on the shifting element and/or the body.

To cater for quick insertion of a fresh blade strip into the hand grip without need to dismantle the latter entirely, in accordance with a further feature of the invention the trailing end portion of the hand grip body is made as a quickly-removable push-in fit providing access to the open rear end of the blade-receiving passageway for the insertion of a blade. As a further adjunct, this removable body end portion is furnished with a slit which, when the end portion is removed from the remainder of the body, can be used to receive, engage and, when the end portion is twisted, break off the leading end of a blade strip in the grip body to remove a worn or damaged section from the latter and present a fresh unworn leading end section of blade.

Claims

1. A hand knife comprising: a cutting element; an elongated housing defining therein a longitudinal passageway for the cutting element; a shifting element connected to the cutting element and the housing; the longitudinal passageway arranged to guide movement of the shifting element and the cutting element, the shifting element being engageable to the housing to locate the shifting element in a selected adjusted location; wherein the cutting element is movable relative to the housing between a first position at which the front end of the cutting element extends out of the housing such that the hand knife can be used for cutting operations, and a second position at which the front end of the cutting element is retracted into the housing when the hand knife is not in use.
2. The hand knife as recited in claim 1, further comprising a means to lock the shifting element to the housing in selected adjusted location.
3. The hand knife as recited in claim 2, wherein the means to lock the shifting element to the housing includes a set of fixed detent formations in said housing cooperating with complementary formation on said blade-shifting element to engage and locate the shifting element in the selected adjusted position.
4. The hand knife as recited in claim 1, wherein the cutting element is provided with parallel lines of scoring transverse to its length to represent zones of weakness which can be broken to remove a worn tip of the cutting element and expose a fresh tip as and when require
5. The hand knife as recited in claim 1, wherein the shifting element is provided with a

projection or stud connected to an aperture in the cutting element.

6. The hand knife as recited in claim 1, wherein further comprising a detachable end component push-in fitted to a rear end of the housing, the end component including a back-facing slot formed thereon for receiving a tip of the cutting element and to break off the tip.

Document 3 - Prior Art #1 - Old Pocket Knife US Patent 0001

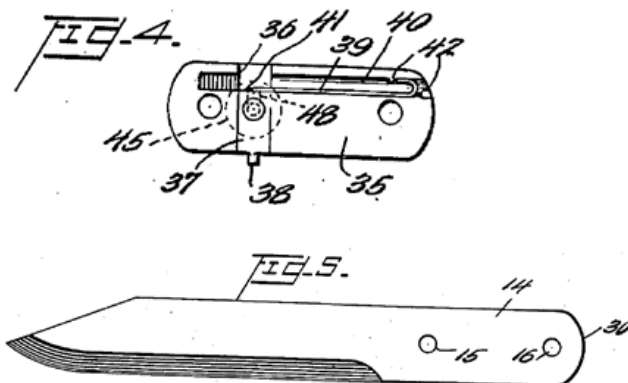
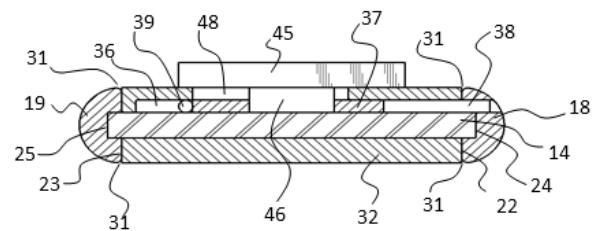
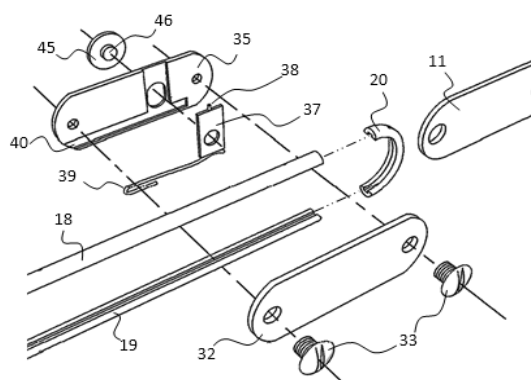
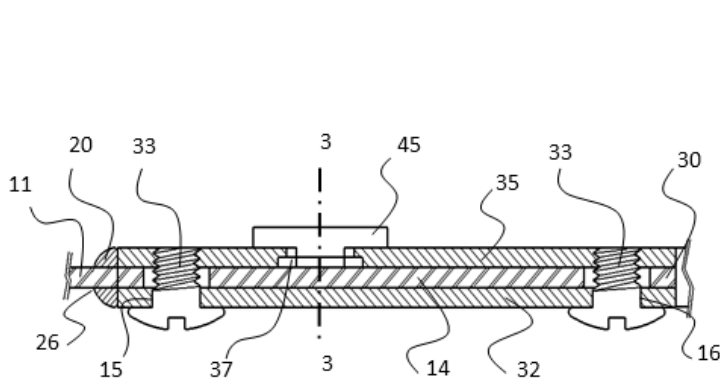
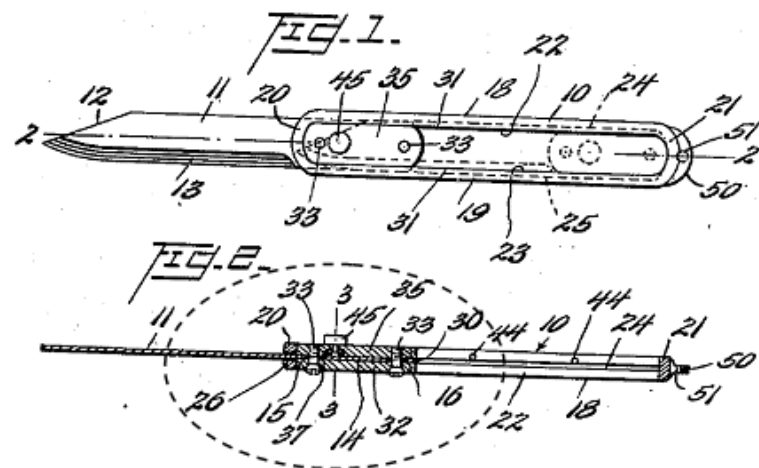


Figure 1 is a side view of a pocketknife according to the present invention shown with the blade extended in solid lines and in dotted lines with the blade retracted;

Figure 2 is a longitudinal central section taken on line 2-2 of Figure 1;

Figure 2A is a partial enlarged view of Figure 2;

Figure 2B is an exploded perspective view of Figure 1;

Figure 3 is a transverse section taken on line 3-3 of Figure 2;

Figure 4 is a view, on an enlarged scale, of the inner face of the block intended to be mounted on the shank of the blade; and

Figure 5 is an enlarged view of the blade shown removed from the handle.

The present invention contemplates the provision of a simple pocket knife which can be very cheaply made to-sell at a low price; which has a blade which can, if desired, be removed and replaced by a new one when dull or worn and in which the blades can be made so cheaply and replaced so readily that changing is simpler than sharpening, very much as in the case of the present-day safety razor.

As shown in the drawing, the knife comprises two essential parts, an open sided handle 10 and a blade 11. As shown in dotted lines in Figure 1 the blade 11 can be completely housed within the handle 10 or it can be projected beyond one end of the handle 10 for use as shown in Figures 1 and 2 in full lines. As seen in Figure 5, the blade 11 comprises a suitable strip of steel of substantially uniform width and thickness clipped at one end as at 12 to provide a suitable shape for the blade point and sharpened on one edge at 13 for a portion of its length to provide a cutting edge. The remaining portion 14 to the right of the sharpened part is the shank and this is perforated with two holes 15 and 16. The Shank is guided in the handle and remains within the same when the blade is extended to form a rigid connection between the handle and the blade.

The handle 10 may be defined as open sided, i.e., the two faces thereof are open and in fact the whole handle consists in a simple loop having a pair of straight, spaced, track members 18 and 19 and the connecting end members 20 and 21 which are conveniently accurate to give a configuration to the closed knife of desirable contour with no corners to catch in the pocket. This loop including parts 18, 19, 20 and 21 is formed from a single piece of strip or bar stock of substantially semi-circular cross-section as seen at 18 and 19 in Figure 3.

The track members 18 and 19 are grooved centrally of their inner flat faces 22 and 23, as at 24 and 25 to such a depth and of such a width as to snugly receive the shank of the blade and to guide the same for longitudinal movement therein. The end 20 of the handle is slotted at 26 for its full width and in alignment with the grooves to permit the blade to protrude through this end and to provide a guide for the flat faces of the same.

The rear end 30 of the shank is curved to the same curvature as the inner face of end member 21 of the handle. Applied to each face of the shank is a metal block of such thickness that the outer faces thereof are in substantially the same planes with edges 31 of

the bar forming the handle. One of these blocks 32 is perfectly plain and is perforated to pass the shanks of screws 33, the heads of which are countersunk into this block. These screws pass through openings 15 and 16 in the blade shank and are threadably engaged in the companion block 35. The rear ends of blocks 32 and 35 are shaped to the same configuration as the end of the blade shank and their forward ends are given a similar configuration so that when the blade is extended to its full length these forward ends abut neatly against end member 20 of the handle and limit outward movement of the blade as seen in Figure 1. These blocks provide a convenient grip for the fingers in sliding the blade to its various positions and at the same time block 35 houses' locking mechanism, which selectively secures the blade in any of a number of positions.

Figure 4 clearly shows the structure of this locking mechanism. The inner face of the block 35 is transversely grooved at 36 and in this groove slides locking lug 37 carrying locking pin 38. The lug is biased to the position shown in Figure 4 by means of leaf spring 39, fitting in longitudinal groove 40 in block 35, and having a long and a short leg, the end of the long leg bearing on the rear face 41 of the locking lug while the short leg binds against the outer wall of groove 40 and with the struck-in parts 42 of the metal of the block serves to hold the spring in position.

The locking pin 38 is adapted to be engaged in any one of holes 44 on the inner face of track member 18 just slightly to one side of the groove therein. Preferably there is a hole 44 to hold the blade in its fully retracted position, one to hold it in its fully extended position and one or more to hold it in intermediate extended positions if this is found desirable.

In order to withdraw the locking pin there is provided button 45 transversely movable across the upper face of block 35 and connected to lug 37 by means of shank 46 passing through slot 48 in the block and secured in a hole in the lug.

In order to operate the knife, it is only necessary to hold the handle in the fingers of one hand, and move it laterally to release the locking pin, and at the same time apply longitudinal movement to the button to slide the blade in either direction desired, releasing the button where it is wished to stop the blade.

As before mentioned, the handle is made from a single strip or bar of metal bent to the form of a loop. Conveniently the two ends of the bar meet at the centerline of end 21 and are there welded together. If desired, during the construction, a slot may be formed in end 21 the same as in end 20 and tab 50 inserted therein and secured in position by the same material that welds the two ends of the bar together. A hole 51 in this tab then provides a convenient means for hanging the knife from a watch chain or similar device to prevent it from being lost.

Since the width of the blade of the knife is substantially the same as that of the shank it will be seen that the back of the blade will be guided in the slot in one of the track members and will help to support the blade when pressure is put on the edge during cutting so that there will be no canting of the same with a tendency to wear the corners of the shank and the track groove.

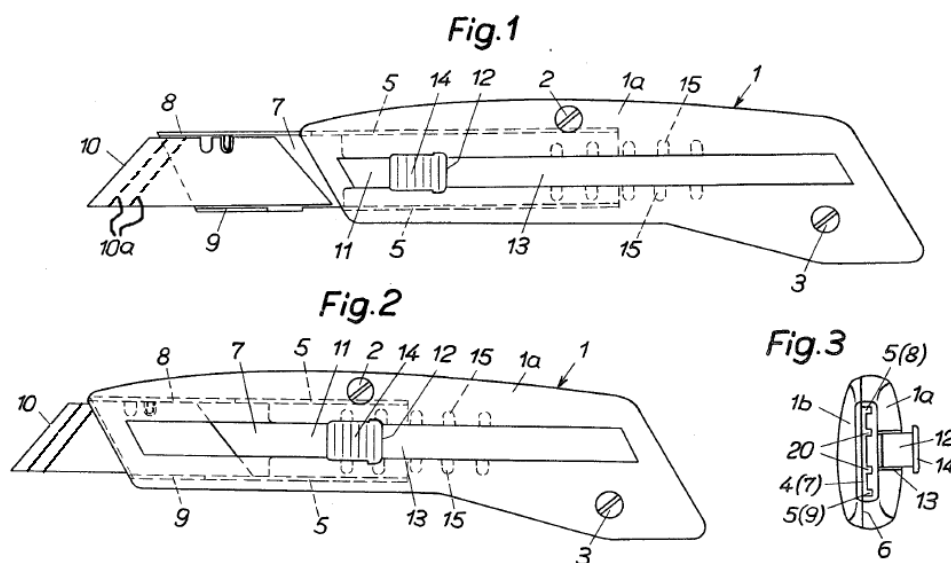


FIG. 1 is a side view of a cutter designed according to the invention with the blade slide pushed out or extended for purposes of exchanging the blade;

FIG. 2 illustrates the cutter in its position of use wherein the blade slide is retracted into the cutter handle or grip; and

FIG. 3 is a view of the front end of the cutter handle or grip.

Describing now the drawing, the cutter or knife implement depicted in FIGS. 1-3 will be understood to comprise a cutter handle or grip 1 composed of two handle halves or handle portions 1a and 1b (FIG. 3) detachably assembled together by means of screws 2 and 3 or equivalent fastening expedients. Between both handle halves 1a and 1b a guide slot 4 extends along the central lengthwise extending portion of the cutter handle 1. The guide slot 4 is widened at its lengthwise extending edges in that at such lengthwise extending edges there are formed grooves 5 at the cutter handle portion 1a of the cutter handle 1, as best seen by referring to FIG. 3. The parting or separation plane 6 between both of the cutter handle halves or portions 1a and 1b of the cutter handle 1 extends through the guide slot 4 and is flush with its lower surface.

In the guide slot 4 there is displaceably guided for to and-fro movement a blade or knife slide 7 which, as best seen by referring to FIG. 1, possesses a substantially trough-shaped construction through the provision of two side edges or walls 8 and 9, in order to thus receive the blade 10 between such side edges. Both of the side edges 8 and 9 are guided in the grooves 5 of the cutter handle 1. These grooves, according to the showing of FIG. 1, extend up to the front end of the cutter handle, so that the blade slide 7, even in the position where it is forwardly extended or ejected for the purpose of exchanging the blade, is at least guided by means of the one side edge or wall 8 in the associated groove 5. The rear portion or part 11 of the blade slide 7 forms a narrower tongue member which is resilient and upwardly flexed or bent at its end, as indicated by reference character 12, extending by means of such flexed portion 12 forwardly through a slot 13 provided at the cutter handle portion 1a and at that location is again flexed into a key or actuation tab 14. With the aid of

this key or tab 14 the blade slide 7 can be forwardly and rearwardly shifted within the cutter handle 1 and locked or engaged at different positions, wherein not further illustrated projections at the part 11 of the blade slide releasably engage with recesses 15 at the cutter handle 1.

In order to be able to use blades of different width with the same cutter, the blade slide 7 illustrated in the drawing must be exchangeable for a narrower blade slide, which has not been particularly shown, but is similar in construction to the illustrated blade slide. For this purpose there are provided at the cutter handle portion 1a two further grooves 20 possessing a smaller mutual spacing from one another and intended to guide a narrower blade slide.

The blade 10 may also have narrow cuttings 10a along transverse direction. Such narrow cuttings allows break-off of the blade 10 at the location of these cuttings, hence when a tip is worn off , it can be broken off to obtain a new tip for better cutting operation without the need of sharpening the blade.

As a Patent Agent you are required to give a note to the client on the following:

1. Whether your client's product will infringe directly or by doctrine of equivalents the Singapore Patent? Explain the concepts to the client and also enumerate comparing the claims of the Singapore patent with the features of your client's product.

35 marks

2. In the light of the document 3 of the earlier US patent – do you think the Singapore patent itself can be invalidated – explain this perspective to your client based on the claims of the US Patent.

35 marks

3. Any other aspects not mentioned above but you believe that we should consider solving our problem and / or improving the situation of your client?

30 marks

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