



(11) **EP 2 103 386 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
14.11.2012 Bulletin 2012/46

(51) Int Cl.:
B24D 15/08 (2006.01) B24D 15/06 (2006.01)

(21) Application number: **09155284.4**

(22) Date of filing: **16.03.2009**

(54) **Two step abrasive sharpener**

Zweistufiger Schleifschärfer

Affûteuse à deux étapes

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL
PT RO SE SI SK TR**

(30) Priority: **14.03.2008 US 69649 P**

(43) Date of publication of application:
23.09.2009 Bulletin 2009/39

(73) Proprietor: **Smith Abrasives, Inc.
Hot Springs, AR 71902-5095 (US)**

(72) Inventor: **Smith, Richard
Hot Springs, AR 71912 (US)**

(74) Representative: **Desrois, Julie et al
Cabinet Chaillot
16-20 Avenue de l'Agent Sarre
BP 74
92703 Colombes Cedex (FR)**

(56) References cited:
US-S1- D 299 308

EP 2 103 386 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description**BACKGROUND OF THE INVENTION**

[0001] This application claims priority to provisional application, S. N. 61/069,649 filed March 14, 2008.

Field of the Invention

[0002] This invention relates to abrasive sharpeners, and more particularly, more particularly, to a two-step abrasive sharpener having a bottom with a V-shaped groove.

Summary of the Prior Art

[0003] It is well known to use sharpeners for knives having two steps of sharpening, namely a course grind and fine sharpening grind. One problem associated with such sharpeners occurs when a sharpening operation is performed on a surface, such as a table or counter. During the normal sharpening stroke through abrasive elements, the blade of the knife being sharpened often strikes the counter to damage the already sharpened blade and the counter. Such damage requires the user to repeat the sharpening of the blade. Therefore, it is desirable in the prior art to provide an abrasive sharpener capable of avoiding impact between the knife being sharpened and the sharpener support surface.

[0004] Document USD 289 308 discloses an abrasive sharpener having two contact surfaces each with a pair of flat spaced surfaces being separated by an open ended V-shaped groove.

SUMMARY OF THE INVENTION

[0005] It is therefore an objective of the invention to provide an improved two-step sharpener that avoids impact between the sharpener support surface and the blade being sharpened. The sharpener here employs two abrasive stations created by crossed carbide abrasive blades and crossed ceramic rods. The base of the sharpener of the invention includes a V-shaped open groove on which the sharpener base can be supported on the edge of a counter and the like during a sharpening operation. Such a positioning of the sharpener further provides for a more natural, comfortable sharpening stroke by an individual. The object of the invention is an abrasive sharpener according to claim 1. The dependent claims 2-4 describe further embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS**[0006]**

Fig. 1 is a front elevational view of two step abrasive sharpener of the invention;
Fig. 2 is an end elevational view of the sharpener of

Fig. 1;

Fig. 3 is an bottom plan view of the sharpener of Fig. 1; and

Fig. 4 is an opposite end elevational view of the sharpener of Fig 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0007] Referring now to Figs. 1-4, there is illustrated the two-step abrasive sharpener of the invention, generally designated by reference numeral 2. The sharpener 2 has a housing 4 formed with opposite concave cut-out portions 6 (Figs. 1 and 2) to provide handle areas to permit a user to grasp and support the sharpener 2 while sharpening a knife. A pair of upper slots 10a, 10b (Fig 1) are created in upper portion 12 of housing 4 and respectively have V-slots in the form of a pair of crossed ceramic abrasive rods 14 and a pair of crossed carbide abrasive blades 16. The abrasive rods 14 and the abrasive blades 16 are respectively mounted in slots 10a and 10b in a conventional manner well known in the art. The rods 14 provide a fine sharpening cut for straight or serrated edges as the blade is pulled through slot 10a, while blades 16 perform a more course sharpening cut to a blade. The blade having an edge being sharpened is pulled across the housing in either slots 10a or slot 10b for sharpening while the handle areas 6 are manually gripped.

[0008] The bottom 20 of housing 4 has a pair of spaced flat base surfaces 22 extending the length of housing 4. The flat surfaces 22 are centrally separated by a V-shaped open groove or slot 24 that extends the length of base 4 generally perpendicular to the direction of movement of the blade being sharpened through slots 10a or 10b and has open ends as seen in Figs 1-3. The V-groove 24 includes a pair of sloped flat surfaces 26 and 28 lying at a selected angle, such as 90° to each together, and the surfaces 26 and 28 are of generally equal widths that are alternatively arranged to bear directly against a support surface (not shown) such as a table, counter, bench or the like, at its edge during a sharpening operation. Either surface 26 or surface 28 may be used to contact the edge of the support surface as desired. It should be apparent that the base is supported on either surfaces 26 or surface 28 of groove 24 as the sharpener 2 bears against the counter or table edge while the sharpener 2 is held by the user in one hand. The user can then move a knife (not shown) through a selected slot 10a or slot 10b with the other hand. Because of the positioning of the sharpener 2 at the edge of the table or counter, damaging contact between a knife and a counter during a sharpening stroke is avoided. Further, a more natural, comfortable sharpening stroke for the user occurs as a result of sharpener being on the edge of the counter or table. The sharpener 2 can also be supported on a flat surface by housing surfaces 22 in an orientation flat on a table, bench, counter, and the like.

Claims

1. An abrasive sharpener comprising
a housing (4) having a pair of sharpening slots (10a, 10b), abrasive sharpening elements (14, 16) being
respectively mounted in said pair of sharpening slots (10a, 10b), said housing (4) having at the bottom
thereof a pair of flat spaced surfaces (22) extending
along the length of the housing (4) for contacting a
support surface during sharpening,
said pair of flat spaced surfaces (22) being separated
by an open ended V-shaped groove (24), **characterised in that** said groove (24) extends along the
length of said housing (4) between said pair of
spaced surfaces (22), said groove (24) being formed
by a pair of flat intersecting surfaces (26, 28) dis-
posed at 90° to each other to bear directly on the 90°
corner of the support surface upon which said hous-
ing (4) bears, wherein said V-shaped groove (24)
extends along an axis generally perpendicular to
said at least one sharpening slot.
2. The abrasive sharpener according to Claim 1 where-
in the housing (4) is formed with opposite concave
cut-out portions (6) to provide handle areas to permit
a user to grasp and support the sharpener (2) while
sharpening a knife.
3. The abrasive sharpener according to Claim 2 where-
in said flat intersecting surfaces (26, 28) have equal
widths.
4. The abrasive sharpener according to Claim 3 where-
in said first sharpening elements (14) are a pair of
crossed ceramic rods and said second sharpening
elements (16) are a pair of crossed carbide abrasive
blades.

Patentansprüche

1. Schleifschärfer, umfassend
ein Gehäuse (4), das ein Paar Schärfschlitz (10a, 10b) aufweist, wobei Schleifschärfelemente (14, 16)
jeweils in dem Paar Schärfschlitz (10a, 10b) mon-
tiert sind, wobei das Gehäuse (4) am Boden davon
ein Paar ebener beabstandeter Flächen (22) auf-
weist, die entlang der Länge des Gehäuses (4) ver-
laufen, um während des Schärfens eine Auflageflä-
che zu berühren, wobei das Paar ebener beabstan-
deter Flächen (22) durch eine offene V-förmige Nut
(24) getrennt ist,
dadurch gekennzeichnet, dass die Nut (24) ent-
lang der Länge des Gehäuses (4) zwischen dem
Paar beabstandeter Flächen (22) verläuft, wobei die
Nut (24) von einem Paar ebener sich schneidender
Flächen (26, 28) gebildet ist, die zueinander unter
90° angeordnet sind, um direkt an der 90°-Ecke der

Auflagefläche anzuliegen, an der das Gehäuse (4)
anliegt, wobei die V-förmige Nut (24) entlang einer
Achse im Allgemeinen senkrecht zu dem minde-
stens einen Schärfschlitz verläuft.

2. Schleifschärfer nach Anspruch 1, wobei das Gehä-
use (4) mit gegenüberliegenden konkaven ausge-
schnittenen Abschnitten (6) gebildet ist, um Griffbe-
reiche bereitzustellen, um einem Benutzer zu er-
möglichen, den Schärfer (2) während des Schärfens
eines Messers zu greifen und zu halten.
3. Schleifschärfer nach Anspruch 2, wobei die ebenen
sich schneidenden Flächen (26, 28) dieselbe Breite
aufweisen.
4. Schleifschärfer nach Anspruch 3, wobei die ersten
Schärfelemente (14) ein Paar gekreuzter Keramik-
stäbe sind und die zweiten Schärfelemente (16) ein
Paar gekreuzter Carbid-Schleifklingen sind.

Revendications

1. Machine à affûter par abrasion comprenant :

un boîtier (4) ayant une paire de fentes d'affû-
tage (10a, 10b), des éléments d'affûtage abra-
sifs (14, 16) étant respectivement montés dans
ladite paire de fentes d'affûtage (10a, 10b), ledit
boîtier (4) ayant à sa partie inférieure deux sur-
faces plates espacées (22) s'étendant le long
de la longueur du boîtier (4) pour venir en contact
avec une surface de support durant l'affûtage,
lesdites deux surfaces plates espacées (22)
étant séparées par une rainure (24) en forme de
V à extrémités ouvertes,

caractérisée par le fait que

ladite rainure (24) s'étend le long de la longueur
dudit boîtier (4) entre lesdites deux surfaces es-
pacées (22), ladite rainure (24) étant formée par
deux surfaces plates sécantes (26, 28) dispo-
sées à 90° l'une par rapport à l'autre pour s'ap-
puyer directement sur le coin à 90° de la surface
de support sur laquelle ledit boîtier (4) s'appuie,
ladite rainure (24) en forme de V s'étendant le
long d'un axe généralement perpendiculaire à
ladite au moins une fente d'affûtage.

2. Machine à affûter par abrasion selon la revendication
1, dans laquelle le boîtier (4) comporte des parties
découpées concaves opposées (6) pour fournir des
zones de poignée afin de permettre à un utilisateur
de saisir et de supporter la machine à affûter (2) pen-
dant l'affûtage d'un couteau.
3. Machine à affûter par abrasion selon la revendication
2, dans laquelle lesdites surfaces plates sécantes

(26, 28) ont des largeurs égales.

4. Machine à affûter par abrasion selon la revendication 3, dans laquelle lesdits premiers éléments d'affûtage (14) sont deux tiges en céramique croisées et lesdits seconds éléments d'affûtage (16) sont deux lames abrasives en carbure croisées.

10

15

20

25

30

35

40

45

50

55

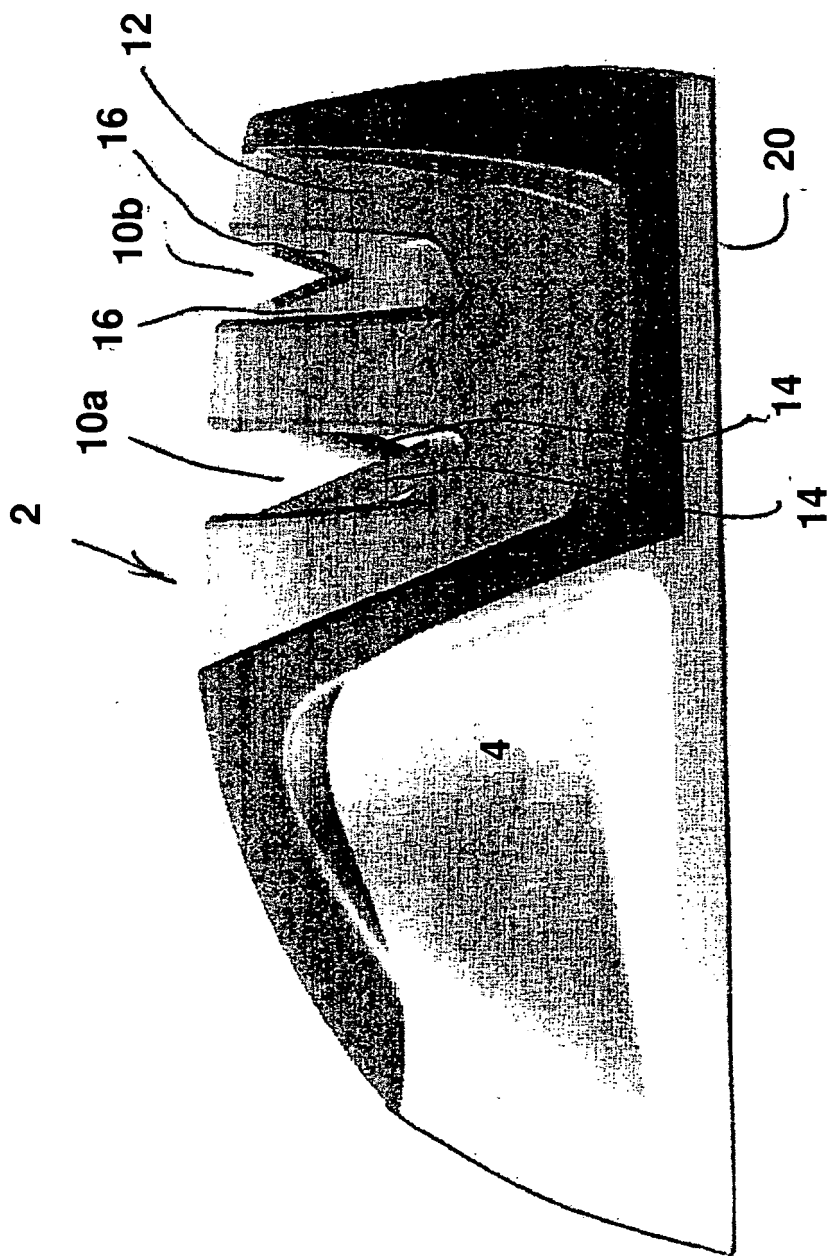
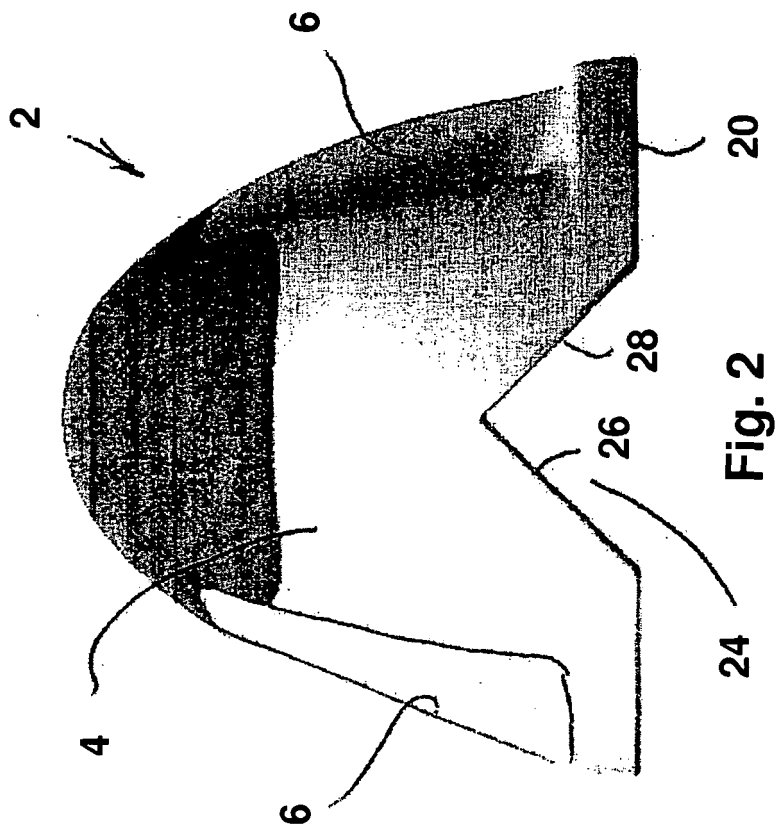


Fig. 1



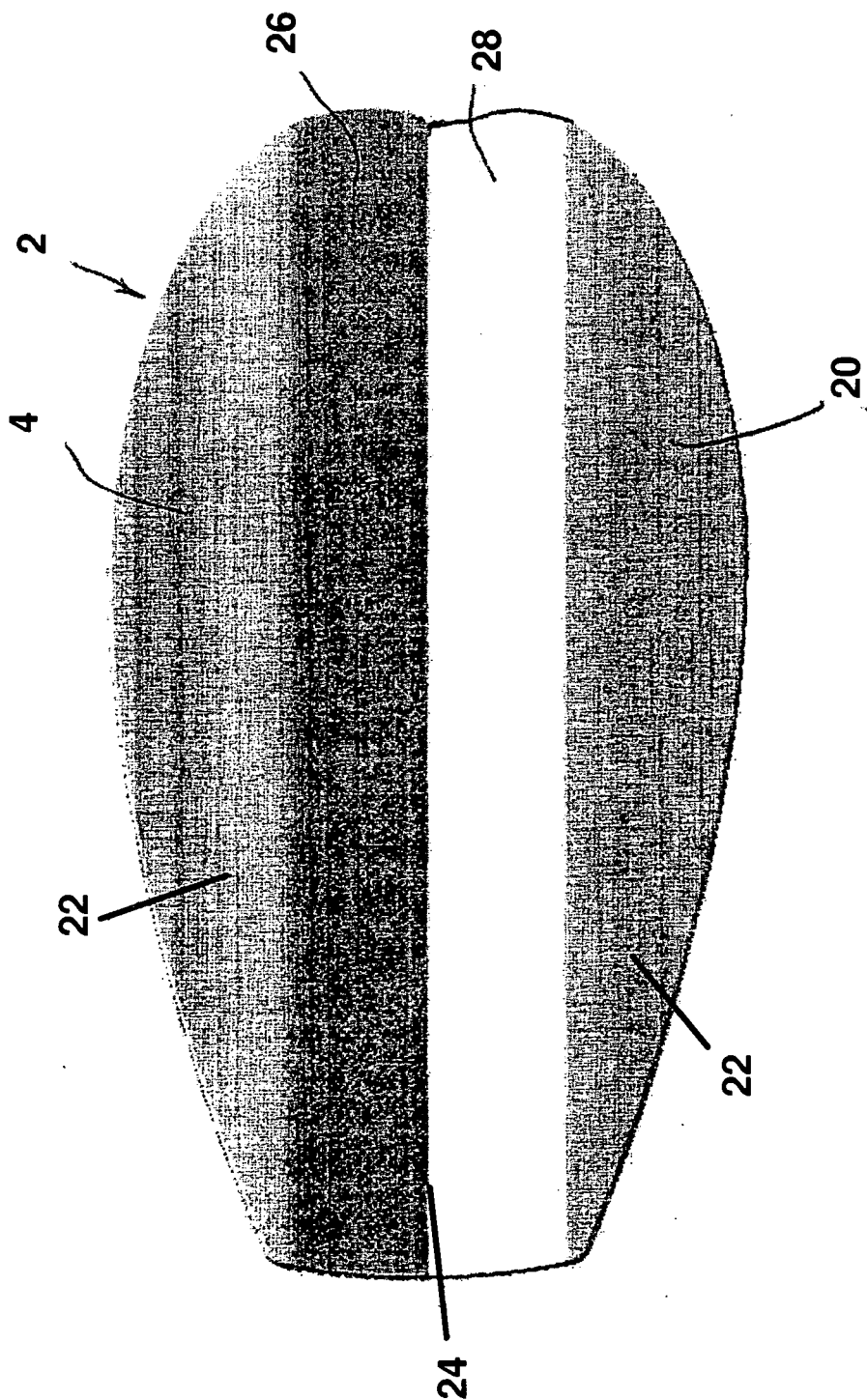


Fig. 3

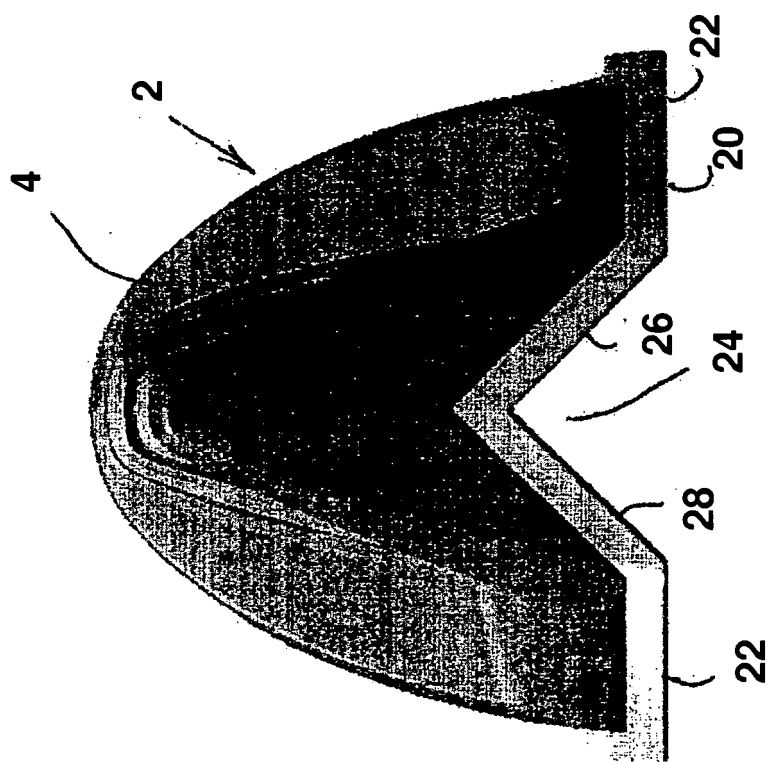


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US SN61069649 A [0001]