JUDGE SPRIZZO

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

05 CV 5896

THE PENCIL GRIP, INC.

Plaintiff,

COMPLAINT

-against-

PATHWAYS FOR LEARNING PRODUCTS, INC., AND GC STATIONARY,
Defendants

PLAINTIFF'S COMPLAINT

Plaintiff, The Pencil Grip, Inc , files this Complaint against Pathways for Learning Products, Inc and GC Stationary

PARTIES

1. Plaintiff is a corporation of California, with an office at 560 Main Street, Suite 5A, Islip, New York 11751.
2. Upon information and belief Defendant, Pathways for Learning Products, Inc, is a North Carolina Corporation with its office at 2915 Providence Road, Charlotte, North Carolina 28211 (Pathways)
3. Upon information and belief, GC Stationary is a company in New York located at 81-10 37th Avenue, Jackson Heights, New York 11372. (GC Stationary)

JURISDICTION AND VENUE

4. The jurisdiction of this Court arises under 28 U.S.C. §1331 and U.S.C. §1338(a).
5. Venue is proper in this district pursuant to 28 U.S.C. §1391 and 28 U.S.C. §1400(b),

for the reasons, inter alia, that the Defendants do business in this district, and have committed acts of infringement in this district.

GENERAL ALLEGATIONS

6. On September 1, 1992, Patent No. 5,143,463 entitled Writing Aid (the '463 Patent), (Exhibit A) was duly and legally issued to Richard L. Pozil and Lois J. Provda as the inventors of the Patent, and assigned by Richard L. Pozil to Lois J Provda, and licensed to Plaintiff with the right to bring suit in its own name

7. Pursuant to 35 U.S.C. §282, the '463 Patent is presumed to be valid.

8. Defendant (Pathways) has infringed and upon information and belief, is infringing one or more of the claims of the '463 Patent by making, using, and selling writing aids as claimed in the Patent.

9. Defendant (GC Stationary) has infringed the claims of the '463 Patent upon information and belief by selling writing aids purchased from Defendant, Pathways.

10. Plaintiff notified Defendant, Pathways, of its Patent in accordance with 35 U.S.C §387, and Defendant has refused to cease such infringement.

11. Defendant, Pathways, is infringing by supplying and selling writing aids, as claimed in the Patent to sellers located in New York and this District, including GC Stationary.

12. Defendants' infringement has continued and has been willful, deliberate and intentional

FIRST CLAIM FOR PATENT INFRINGEMENT

13. This is a cause of action for Patent infringement under 35 U.S.C §271, et. seq.

14. Plaintiff realleges and incorporates by reference paragraphs 1 through 12 as if fully set forth herein.

15. As a direct consequence of Defendants' infringement, Plaintiff has sustained damages.

16. Defendants have unjustly profited from their infringement of the Patent, and have caused loss of profits Plaintiff would have made, but for Defendants' infringement.

SECOND CLAIM FOR DECLARATORY JUDGMENT

17 This is a cause of action for a Declaratory Judgment under 28 U.S.C. §2201 and §2202 declaring that U.S. Patent 6,908,245 ('245 Patent) (Exhibit B) owned by Pathways in invalid, unenforceable, and/or non-infringed.

18. Plaintiff realleges and incorporates by reference paragraphs 1-16 as if set forth fully herein.

19. This Court has jurisdiction and venue pursuant to 28 U.S.C. §§1331, 1338, 1391 and 1400 and 35 U.S.C. §271 et seq.

20. Plaintiff requests a declaratory judgment that the '245 Patent is invalid, non-infringed and/or unenforceable pursuant to 35 U.S.C §§101, 102, 103, and 112, and 35 U.S.C. §271, et. seq.

21 Defendant, Pathways, has charged Plaintiff with infringement of the '245 Patent.

22. An actual and justifiable controversy exists between Plaintiff and Defendant, Pathways, with respect to the '245 Patent

23. The claims of the '245 Patent are not infringed by the writing aids sold by Plaintiff.

24 The '245 Patent may be invalid under 35 U.S.C. §§101, 102, 103 based on prior

art, public disclosure of the invention, failure to properly disclose or describe the invention, or describe the best mode of the invention. Plaintiff reserves its right to prove such through further investigation and discovery.

25. The '245 Patent may be otherwise unenforceable, Plaintiff reserves its right to prove such through further investigation and discovery.

WHEREFORE, Plaintiff demands Judgment as follows:

A. A declaration that the '463 Patent is valid and enforceable;

B. A declaration that Defendants infringed of one or more of claims of the '463 Patent.

C. A permanent injunction that Defendants their successors, and assigns, and all persons and entities acting on their behalf, or in privity with them, or acting in concert with them, are enjoined from engaging in conduct which infringes the '463 Patent, pursuant to 35 U.S.C. §283;

D. A judgment that Defendants willfully infringed the '463 Patent, and an award of treble damages, pursuant to 35 U.S.C. §284 of at least $12,000,000 (Twelve Million Dollars);

E. A declaration that this is an exceptional case, pursuant to 35 U.S.C. §285, and that Plaintiff be awarded its attorney's fees, costs and expenses; and

F. A declaration that the '245 Patent is not valid or enforceable;

G A declaration that Plaintiff has not infringed one or more claims of the '245 Patent

H. An award of costs and attorney's fees; and

I An award of such other and further relief as this Court deems just and proper

JURY DEMAND

Plaintiff demands a trial by jury.

Dated: June 25, 2005

STEPHEN E. FELDMAN, P.C.

By: _____

Kenneth Feldman (KF-6003)
Stephen E. Feldman (SEF-5630)
12 East 41st Street
New York, New York 10017
(212) 532-8585

Exhibit A

US005143463A

United States Patent [19]

Pozil et al.

[11] Patent Number: 5,143,463

[45] Date of Patent: Sep. 1, 1992

[54] **WRITING AID**

[76] Inventors: **Richard L. Pozil**, 10333 Mississippi Ave., Los Angeles, Calif. 90025; **Lois J. Provda**, 208 Lasky Dr., Beverly Hills, Calif. 90212

[21] Appl. No.: **833,465**

[22] Filed: **Feb. 7, 1992**

Related U.S. Application Data

[63] Continuation of Ser. No. 632,811, Dec. 24, 1990, abandoned.

[51] **Int. Cl.**[5] **G09B 11/00**; A46B 5/02; B43K 3/00

[52] **U.S. Cl.** **401/6**; 434/166; 15/443

[58] **Field of Search** 401/6-8; 434/166, 162; 15/443, 445

[56] **References Cited**

U.S. PATENT DOCUMENTS

836,652	11/1906	Rosdahl	401/6 X
2,459,993	1/1949	Crain	401/6
2,782,764	2/1957	Lehman	15/443
2,996,044	8/1961	Parker	401/6 X
3,947,977	4/1976	Bishop	401/6 X
4,596,335	6/1986	Hull	401/6 X
4,832,604	5/1989	Rusk	401/6 X

FOREIGN PATENT DOCUMENTS

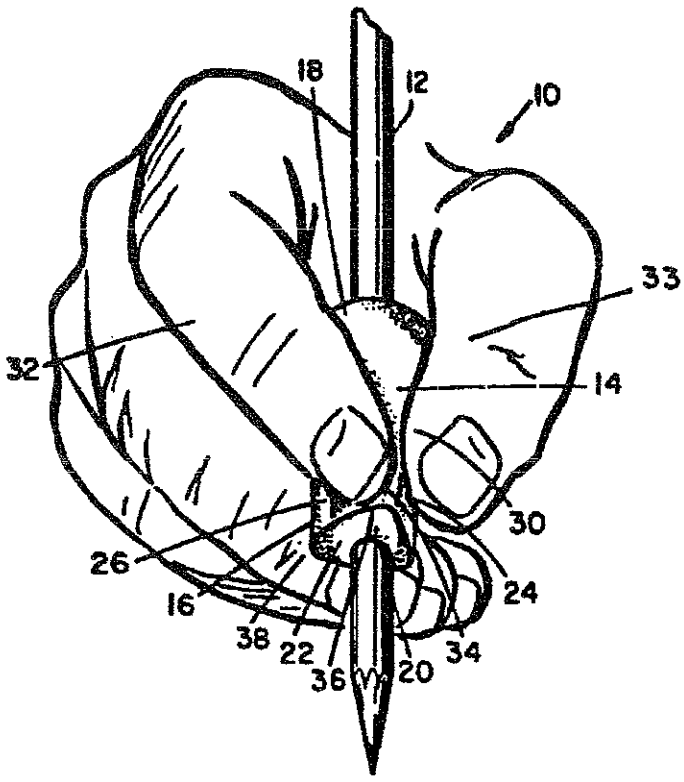
39911	9/1973	Australia	434/166
5880	10/1894	Sweden	15/443

Primary Examiner—Danton D. DeMille
Attorney, Agent, or Firm—Cislo & Thomas

[57] **ABSTRACT**

A writing aid is provided which facilitates the correct positioning of the hand of the user on a writing instrument and insures a relaxed, stress-free grip during the writing process. The writing aid comprises a small, generally pear-shaped body with a cylindrical hole running through the length thereof for insertion of the writing instrument, with the smaller end of the aid intended to be nearer the writing tip of the instrument. In a preferred embodiment the smaller end of the writing aid has a flat, truncated end surface. The larger end of the writing grip is bulbous and supports the first knuckle of the thumb and index finger to hold the fingers in extended position. First, second, and third concave depressions lie on lateral portions of the body, near the smaller end, spaced roughly 120 degrees apart, and are grasped by the thumb, index finger, and middle finger, respectfully, of a right-handed writer or the index finger, thumb, and middle finger, respectively, of a left-handed writer. The writing aid is preferably made of soft, resilient material, which provides a pliable surface and relaxes the fingers.

25 Claims, 1 Drawing Sheet



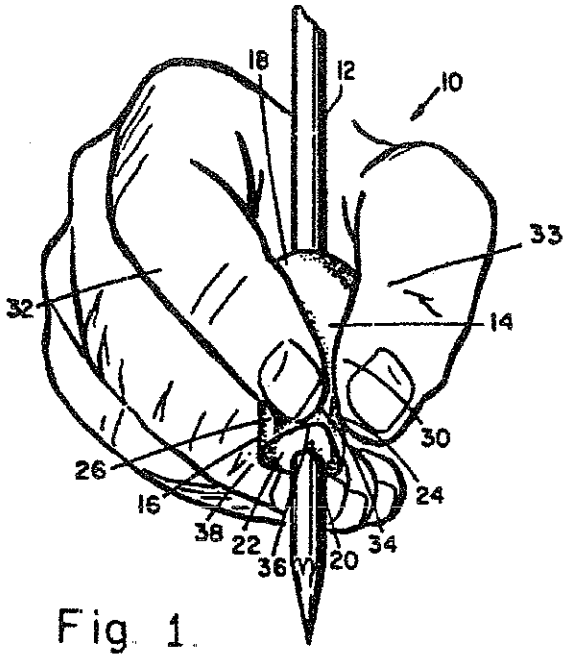


Fig. 1

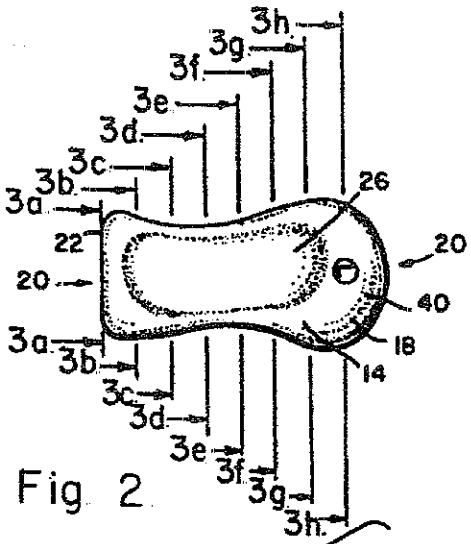
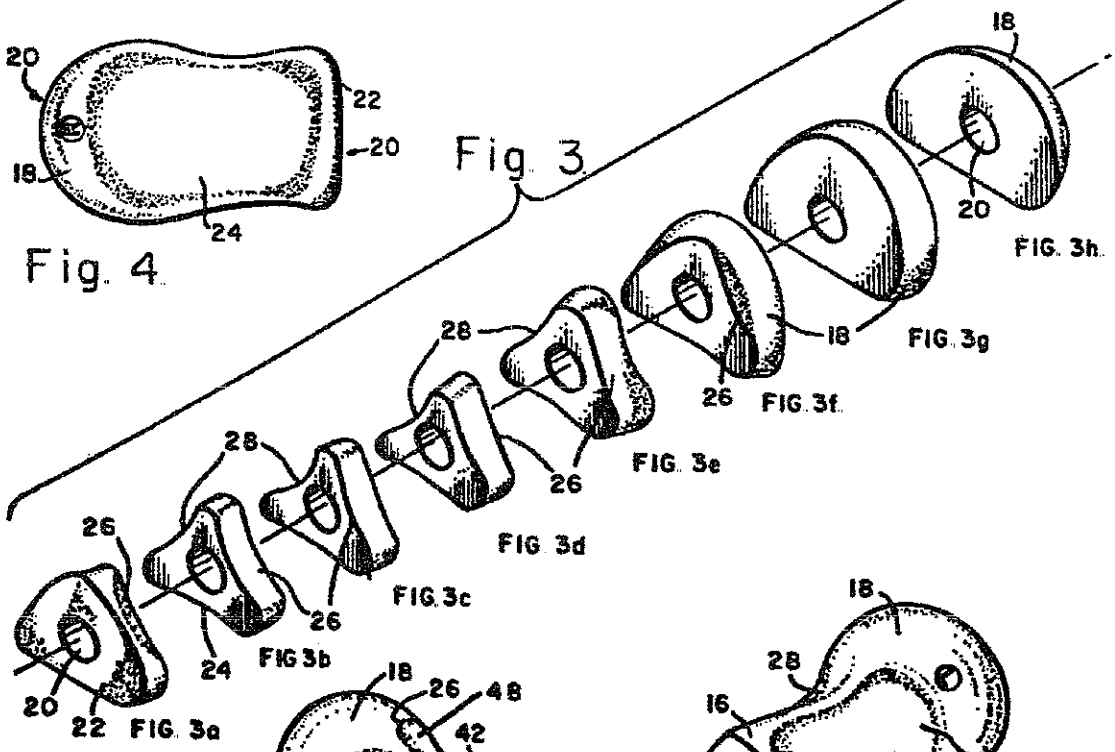


Fig. 2

Fig. 4

Fig. 3



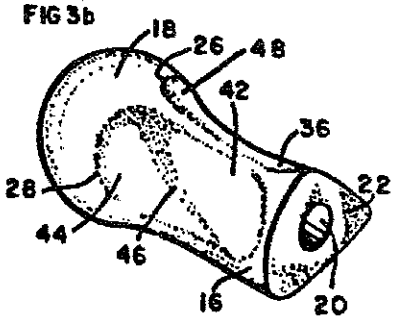


Fig. 5

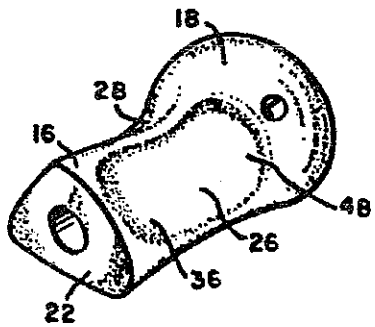


Fig. 6

WRITING AID

RELATED APPLICATION

This application is a continuation application of Ser. No. 07/632,811, filed Dec. 24, 1990, now abandoned.

BACKGROUND

Many patents have issued which are directed to the general topic of facilitating the gripping of writing instruments for the purposes of forming good habits by persons just learning to write and preventing muscular fatigue and cramping, even in those persons who already know how to write. Some examples of such writing aids are described below.

U.S. Pat. No. 843,767 to Plach is directed to an improved pen holder with three opposed surfaces adapted to fit the hand of the user. In addition to three curved grooves adapted to hold the fingers of the user in a correct writing position, the device comprises a curved portion adapted to that part of the hand between the thumb and the forefinger. This device is a penholder and not a writing aid designed to fit over a writing instrument.

U.S. Pat. No. 4,030,841 to D. Balasty is directed to a triangular shaped pen or pencil and a triangular shaped device for use and holding of a pen or pencil, such as by sliding the device over the length of the writing instrument and thereby facilitating the triangular shape of the fingers during writing.

U.S. Pat. No. 4,076,427 to Anderson is directed to a writing instrument such as a pen having a shaft for hand-held use. The shaft is formed with three elongated concave indentations in a generally equilateral triangular configuration with rounded vertices and at least one concave side as seen in cross section in the region normally grasped which form sockets to receive the thumb, index finger, and middle fingers respectively.

U.S. Pat. No. 4,149,811 to Coffman is directed to a style handle for writing and engraving instruments. The base portion of the style, gripped when the style is used, consists of three essentially flat surfaces arranged in a triadic spiral at a selected pitch conforming with an individual's finger grip when the style is held in a normal manner. The edges of the spiral lie in the grooved portions between the thumb and fingers with the thumb and fingers resting upon the flats of the spiral in a relaxed, natural manner.

U.S. Pat. No. 4,167,347 to Hoyle is directed to a removable finger grip adaptable to a wide variety and size of writing instruments. The finger grip is an elongate resilient body having a triangular cross-sectional shape and a cylindrical bore coaxial with the longitudinal axis of the writing instrument. The cylindrical bore has a plurality of ribs or ridges for accommodating a wide variety of sizes of writing instruments. The triangular shape provides three planar surfaces for gripping the device and also provides a thin web of materials in the planar gripping surfaces between them and the cylindrical bore at the center of the gripping surfaces.

U.S. Pat. No. 4,452,547 to Rusk is directed to a method for teaching persons how to hold writing instruments properly as well as a writing aid for facilitating the method of teaching. The device disclosed is very similar to the one disclosed in U.S. Pat. No 4,689,020 to Rusk.

U.S. Pat. No 4,689,020 to Rusk discloses a writing aid device. As can be seen in FIGS. 6 and 7, the forefinger is inserted into a depression on the writing aid **10**, which is apparently designed to be gripped by the hand **22** of the user and provides for three gripping surfaces **42/44/46**. The surface **42** receives the user's first finger **24** for positioning the user's finger **24** with respect to the pencil **12**. The second gripping surface **44** receives the user's index finger **26**. The third gripping surface **48** receives the user's finger **28**.

U.S. Pat. No. 4,832,604 to Rusk is a continuation of U.S. Pat. No. 4,689,020 to Rusk. In the continuation, it is disclosed that body **36** of writing aid **10** is preferably made of a soft, pliable plastic material.

U.S. Pat. No. 1,817,456 to Parsons is directed to a writing instrument comprising a sleeve **10** of "metal, wood, cork, or any composition" provided with a bore whose diameter is such that a pencil, pen, or other writing instrument can be frictionally engaged thereby. The outer periphery of the sleeve at one end is provided with a depression **11** which forms a seat for the end of the thumb, while depressions **12** and **13** provide seats for the index and second fingers, respectively. The other end of the sleeve forms a shoulder adapted to bear against the edge of the palm of the writer at the base of the thumb and first finger.

Australian Patent Specification 39,911 to Nagy is directed to a handwriting improver gadget comprising an attachment for a more comfortable and agreeable grasping of a writing instrument. Three grooves are formed on the gadget in such a way that normal, average human fingers lie snugly in them in their most natural position. This reference states that flexible materials seem to be more favorable than other materials because they may be attached to instruments of differing diameters and can be moved to a position on the instrument most comfortable to the individual user. The single figure of the drawing for this reference discloses a somewhat oblong device with its larger end nearest the point of the pencil inserted through the device. A rather extensive (in terms of surface area of the device) depression is provided for the thumb, and a deep but apparently smaller depression is provided for the third finger. The depression for the forefinger is hidden from view in the figure.

Taiwanese Patent Application **6925529** to Chun Yu Chang is directed to a ball-like body which is hollow and is attachable to a pen. The device has grooves on the gripping surface for transmitting the stress exerted by the fingers to the tip of the pen so as to induce a correct gripping method for children and to provide a means of gripping for those who cannot hold a standard pen. The drawing discloses a device with gripping surfaces that appear to be planar for the thumb and first fingers. The gripping surface for the middle finger is hidden from view in the figures. A sectional view through the device seems to indicate some sort of spring arrangement inside the device.

In addition to the patents described briefly above, the following U.S. patents may have some relevance to the present invention;

U.S. Pat. Number	Name of Inventor	Date Issued
217,499	C. R. Wells	July 15, 1879
249,893	J. S. Bulkeley	Nov. 22, 1881
447,873	C. Hanimann	March 10, 1891
794,329	W. A. Whitehouse	July 11, 1905
945,026	C. A. Faust	Jan. 4, 1910
1,184,155	W. W. Williams	May 23, 1916

-continued

U.S. Pat. Number	Name of Inventor	Date Issued
1 291 972	M. J. McGuigan	Jan 21, 199
1.793 945	J. Mauthe	Feb 24 1931
1.807.415	D J. La France	May 26, 1931
1 879 456	L. B Parsons	Sept 27 1932
2.173 451	C Lorber	Sept. 19, 1939
2,236 194	C. Lorber	March 25, 1941
2.870,740	T. B. H. Vogt	Jan. 27, 1959
3,501,849	M. E Olsen	March 24, 1970
3,947,977	Bishop	April 6 1976
4 035,089	Schwartz et al	July 12, 1977
4,056,325	Maruyama	Nov 1. 1977
4,601 598	Schwartz et al	July 22 1986
4,602,885	Bischoff et al	July 29, 1986
4,917,517	Ertz	April 17, 1990

None of the patents described or mentioned above discloses a writing aid as is provided by the present invention Writing aids with triangular gripping arrangements do not provide gripping surfaces that keep the first finger, second finger, and third finger in place and can therefore be gripped improperly Furthermore, triangular devices are not comfortable for the user because one edge of the triangular device digs into the hand when it is not gripped properly Other devices provide gripping surfaces for the fingers that are either too small or too hard, and those devices are difficult to grip properly

SUMMARY OF THE INVENTION

A writing aid for use with a pen or pencil is provided which facilitates the correct positioning of the hand of the user on the writing instrument and insures a relaxed, stress-free grip during the writing process. The writing aid comprises a small, generally pear-shaped body with a cylindrical hole running through the length thereof for insertion of the writing instrument.

When the writing aid is properly oriented on a writing instrument, the smaller end of the aid is nearer the writing tip of the instrument.

First, second, and third concave depressions lie on lateral portions of the body, near the smaller end, spaced roughly 120 degrees apart. The thumb, index finger, and middle finger of the hand of a right-handed user contact the first, second, and third depressions on the writing instrument In the case of a left-handed user, the second and third depressions are grasped by the thumb and middle fingers, respectfully, of the left hand

The writing aid is preferably made of soft rubber, which provides a pliable surface and relaxes the fingers. In a preferred embodiment the smaller end of the writing aid has a flat, truncated end surface The larger end of the writing grip is bulbous and supports the first knuckle of the thumb and index finger to hold the fingers in extended position. This discourages scribbling with fingers only and encourages full hand and arm action to reduce fatigue, improve handwriting, and prevent "white knuckling."

The first depression on the writing aid has a shape to fit that portion of the right-handed thumb comprising most of the ball and tip thereof on the side of the thumb nearer the index finger, and extending from near the tip of the thumb to the first joint The second depression has a shape to fit the index finger, with the lower fleshy part of the tip of the index finger resting on the main area of the depression and the distal end of the index finger being in contact with an upcurved portion of the depression adjacent the smaller end of the writing aid. The third depression has a shape to fit that portion of the middle finger at the first joint on a side nearer the index finger, with the middle finger oriented in a position roughly halfway between a direction along the longitudinal axis of the writing instrument and a direction at right angles thereto. The third depression has a slight diagonal crease which rests on the first joint of the middle finger of a right-handed user Although the roles of the first and second depressions are reversed in the case of a left-handed user, the device is found to be equally effective for both right-handed and left-handed users

The writing aid is provided in two sizes, one for regular and larger hands and one for small hands. The regular size has an overall length of about 5 cm, whereas the writing aid model for smaller hands has an overall length of about 3 5 cm. The bulbous end of the larger device has a circumference of about 8.5 cm, and the circumference of the bulbous end of the smaller device is about 7.5 cm.

Indicia on the writing aid indicate the proper orientation of the aid on a writing instrument and to indicate which finger of the user is to contact which portion of the aid.

Accordingly, it is an object of the present invention to provide a writing aid for use in combination with a writing instrument to promote the correct gripping thereof and to prevent writer's cramp

Another object of the present invention is to provide a writing aid which has a roughly pear-shaped body made of pliable rubber with a hole through the longitudinal axis of the body for the insertion of a writing instrument.

Yet another object of the present invention is to provide a writing aid with three concave depressions near the smaller end thereof which are in contact with the thumb, index finger, and middle finger of a user in a comfortable, relaxed position during the writing process.

Still another object of the invention is to provide a writing aid which can be used with equal facility and effectiveness by either a right-handed or left-handed person.

Another object of the present invention is to provide a writing aid which comes in two sizes, one for regular or larger hands and another for small hands.

One more object of the invention is to provide a writing aid having a bulbous larger end and a truncated, flat smaller end with three concave finger-gripping surfaces on lateral portions of the writing aid near the smaller end.

Yet another object of the invention is to provide a writing aid with a bulbous part of the grip supporting the first knuckle of the thumb and index finger and holding the fingers in extended position

Finally, it is an object of the present invention to provide a writing aid that reduces stress on the fingers to preclude "white knuckling," which causes writer's cramp and stress that discomforts the user and interferes with cognitive functioning.

These and other objects and features of the present invention will apparent from the following detailed description taken with reference to the figures of the accompanying drawing, wherein like elements are denoted by like reference numerals

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the writing aid of the present invention installed on a pencil and being used by a right-handed person;

FIG. 2 is a top plan view of the writing aid, the surface shown in FIG. 1 as being in contact with the index finger;

FIG. 3 is an exploded, multi-sectioned perspective view of the writing aid, with the sections as indicated in FIG. 2;

FIG. 4 is a side elevational view of the writing aid, the side shown in contact with the thumb in FIG. 1;

FIG. 5 is a perspective view of the writing aid, with the largest visible surface being that surface in contact with the middle finger in FIG. 1; and

FIG. 6 is a perspective view of the writing aid oriented at right angles to the view of FIG. 5, with the largest visible surface being that shown in the top plan view of FIG. 2.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, a writing aid **10** for use in conjunction with a writing instrument **12** is depicted being held in the right hand of a person using the writing aid **10**. Writing aid **10** comprises a generally pear-shaped body **14** having a first, smaller end **16** and a larger, second end **18**. A cylindrical hole **20** through body **14** allows passage of writing instrument **12** through writing aid **10**. In a preferred embodiment, smaller end **16** has a truncated, flat end face **22** which is at right angles to a longitudinal axis from first end **22** to second end **18** and centered on the central axis of cylindrical hole **20**.

On lateral portions of body **14** adjacent smaller end **16** are first, second, and third concave depressions **24**, **26**, and **28**, respectively, only two of which can be partly seen in FIG. 1. First depression **24** has a shape designed to fit that portion of a human thumb **30** comprising most of the ball and tip thereof on the side of thumb **30** nearer index finger **32**, and extending from near the tip of thumb **30** to a first joint **33** of thumb **30**. Concave depression **26** has a shape designed to fit index finger **32**, with a lower tip **34** resting on depression **26**, which has an upcurved portion **36** adjacent end surface **22** of body **14** in contact with distal portion of index finger **32**. Third concave depression **28** has a shape designed to fit that portion of a middle finger **38** at or near a first joint thereof, on a side nearer index finger **32**, with middle finger **38** oriented in a position roughly halfway between a direction along the longitudinal axis of writing instrument **12** and a direction at right angles thereto.

Concave depression **26** is shown clearly in the side view of FIG. 2 as having a shape somewhat like an elongated kidney bean, with an upcurved portion **36** near smaller end **22** of body **14** and a similar, though less prominently upcurved portion **40** near bulbous end **18** of body **14**.

As shown in the exploded, multisectioned view of FIG. 3, the slices of body **14** on which depressions **24**, **26**, and **28** lie are roughly equilaterally triangular in shape. Slice **3***a* shows end face **22** with **20** and the beginning of depression **26**. Slice **3***b* shows portions of depressions **24**, **26**, and **28** positioned approximately at 120-degree intervals in a circumferential traverse of the slice. Slices **3***c*–**3***e* include the major portions of concave depressions **24**, **26**, and **28**. Slice **3***f* shows a small remaining portion of depression **26** and the beginning of bulbous end **18** of body **14**. Slices **3***g* and **3***h* show the remaining major portion of bulbous end **18**.

Concave depression **24** is clearly shown in FIG. 4 as shaped somewhat like a lima bean or a slice from a loaf of bread. Since depression **24** is intended to accommodate the thumb of a user, it has the largest area of the three depressions **24**, **26**, and **28**. The deepest portions of depression **24** lie roughly along a line running from first end **16** to second end **18** of body **14**, in the middle of depression **24**.

FIG. 5 shows, in a perspective view, details of depression **28**, which consists of a first portion **42** curved upward toward end **16** and a second portion **44** curved upward toward end **18**. Portions **42** and **44** meet in a curved crease line **46** running diagonally across the area covered by depression **28**. Crease line **46** is in the shape of a curved line segment having an inflection point (as defined in analytic geometry) at the center of the segment. A line tangent to the curved line segment at the inflection point would make an angle of about **45** degrees with respect to a perpendicular projection of the longitudinal axis of cylindrical hole **20** onto a plane containing a portion of the curved line segment centered on the inflection point.

FIGS. 5 and 6 also show, in more detail than FIG. 2, the concave curvature of depression **26**. A first portion **48** slopes upward toward end **18** more gradually than portion **36** slopes upward toward end **16** of body **14**. The maximum depth of depression **26** occurs about a third of the way between the end of the depression **26** nearest end **16** and the end of the depression **26** nearest end **18**.

Preferably there are two model sizes of writing aid **10**: one for regular or larger hands and one for small hands. In the preferred embodiment for small hands, writing aid **10** has an overall length between first end **15** and second end **18** of body **14** of approximately 3 5 cm, a circumference of first end face **22** of body **14** of approximately 5.5 cm, and a largest circumference of body **14** at bulbous end **18** of approximately 7 5 cm. Depression **24** has a nearly constant length of about 2.5 cm and a nearly constant width of width of 1.0 cm. The length of depression **26** is about 2.2 cm, with a nearly constant width of about 1.0 cm. Third depression **28** has a nearly constant length of about 2.0 cm and a nearly constant width of about 1.7 cm.

In the preferred embodiment of writing aid **10** for regular or larger hands, body **14** has an overall length between first end **16** and second end **18** of approximately 5.0 cm, first end **16** at end face **22** has a circumference of approximately 5.5 cm, and a largest circumference of the body **14** at second end **18** is approximately 8.5 cm. Depression **24** has a nearly constant length of about 3.0 cm and a nearly constant width of width of 1.5 cm. The length of depression **26** is about 3.0 cm, with a width varying between about 1 0 cm and 1.3 cm. Third depression **28** has a nearly constant length of about 2.0 cm and a nearly constant width of about 1.7 cm.

In the preferred embodiment writing aid **10** comprises a soft, resilient, pliable material, such as soft rubber or a suitable synthetic plastic. Rubber of Shore weight density A **27** is a particularly suitable material for construction of writing aid **10**. The softness of the texture of body **14** made of such a material does not put pressure on the fingers of the writer and prevents slippage during use.

Indicia can provided on some suitable portion or portions of body **14** of writing aid **10** to indicate the proper orientation of the aid on a writing instrument and to indicate which finger of the user is to contact which portion of the aid. For example, as shown in FIGS. **2** and **4**, small circular depressions with raised letters "L" or "R" therein are provided in the preferred embodiment to indicate the position of the user's thumb for left- and right-handed individuals, respectively. In FIG. **2**, the raised letter "L" is provided inside a small concave circular depression near the second large depression to indicate that a left-handed person should place his or her thumb on second large depression **26**. In FIG. **4**, the letter "R" is provided inside a small concave circular depression as shown to indicate that a right-handed user should place the thumb on first large depression **24**. It would be desirable to avoid placing any raised or engraved indicia on the finger-gripping portions of writing aid **10** to avoid interference with the "feel" of the aid by preventing contact between the indicia and the fingers.

While specific embodiments of the invention have been described and illustrated, it should be understood that these embodiments are provided by way of example only, and that the invention is not to be construed as limited thereto, but only by the proper scope of the following claims. For example, the extreme end part of bulbous end **18** could be truncated or shaped slightly differently without altering the functionality of the bulbous end **18**. Although it has been found that the embodiment described and claimed can be used effectively by either right-handed or left-handed writers, it would be a simple matter to reverse the positions of first depression **24** and second depression **26** to preserve the mirror symmetry of the original conception. Also, the diameter of hole **20** can be varied to accommodate differently sized writing instruments. Minor modifications can be made to writing aid using methods and information well-known in the art without departing from the scope and spirit of the present invention.

We claim:

1. A writing aid comprising:

a generally longitudinally extending pear-shaped body defining a substantially triangularly contoured cross-sectional area having a first end section and second bulbous end section, said first end section having a cross-sectional area substantially less than a cross-sectional area of said second bulbous end section, said body having a longitudinally directed through passage for insert therethrough of a writing implement, said pear-shaped body consisting of first, second and third external surfaces for contiguous interface respectively with a user's thumb, index finger and middle finger, said first surface being continuously concave and extending from said first end section to said second bulbous end section for contiguous interface with substantially the entire contacting area of a first joint of said thumb of said user, said second surface being continuously concave and extending from said first end section to said second bulbous end section for contiguous interface with a first joint and at least a portion of a second joint of said index finger, said third surface being continuously concave in said longitudinal direction and located in said first end section for contiguous interface with said middle finger of said user, each of said surfaces defining a respective side of said triangularly contoured cross-sectional area of said pear-shaped body, whereby when said writing instrument is inserted through said passage in said longitudinally extending pear-shaped body with a writing tip extending therethrough and adjacent said first end section, said body acts as an aid in achieving a correct, relaxed writing position of the fingers and hand of said user.

2. The writing aid of claim **1** wherein said second end of said body comprises a generally ovoid, bulbous portion with a flattened region near said first concave surface which defines a first depression.

3. The writing aid of claim **1** wherein said first end is truncated from the general shape of a pear and has a flat end surface generally perpendicular to said longitudinal axis of said body.

4. The writing aid of claim **1** wherein said first depression has a shape to accommodate that portion of a human thumb comprising most of the ball and tip thereof on a side of said thumb nearer said index finger, and extending from near said tip of said thumb to a first joint of said thumb.

5. The writing aid of claim **4**, wherein said first depression has a shape roughly in the outline of an elongated lima bean, and a maximum depth between about 2 and 5 mm.

6. The writing aid of claim **1** wherein said second concave surface defines a second depression having a shape to accommodate the index finger of a human hand, with a lower tip of said index finger, opposite a nail of said index finger, resting on said second depression, said second depression having an upcurved portion adjacent said first end of said body in contact with a distal portion of said index finger.

7. The writing aid of claim **6** wherein said second depression has a shape roughly in the outline of an elongated kidney bean, with a maximum depth between about 2 and 7 mm.

8. The writing aid of claim **1** wherein said third concave surface defines a third depression having a shape to accommodate that portion of the middle finger of a human hand at a first joint thereof, on a side thereof nearer the index finger of the hand, with said middle finger oriented in a position approximately half way between a direction along said longitudinal axis and a direction transverse thereto.

9. The writing aid of claim **8**, wherein said third depression has a maximum depth of between about 5 and 9 mm and further has a diagonal crease roughly in the shape of a curved line segment having an inflection point at the center thereof, with a line tangent to said curved line segment at said inflection point making an angle of about 45 degrees with respect to a perpendicular projection of said longitudinal axis onto a plane containing a portion of said curved line segment centered on said inflection point.

10. The writing aid of claim **1** wherein said substantially triangularly contoured cross-sectional area defines first, second, and third included angles, said first angle being approximately 60 degrees.

11. The writing aid of claim **10** wherein said second angle is approximately 60 degrees.

12. The writing aid of claim **10** wherein said third angle is approximately 60 degrees.

13. The writing aid of claim **1** wherein said body has an overall length between said first and second ends of approximately 5.0 cm, said first end has a circumference

of approximately 5.5 cm, and a largest circumference of said body is approximately 8.5 cm.

14. The writing aid of claim **13**, wherein said first depression has a length of approximately 3 cm and a maximum width of approximately 2 cm.

15. The writing aid of claim **13**, wherein said second depression has a maximum length of about 3 cm and a minimum width of about 1 cm.

16. The writing aid of claim **13**, wherein said third depression has a length of about 2.5 cm and a minimum width of about 1.5 cm.

17. The writing aid of claim **1** wherein an overall length of said body between said first and second ends thereof is approximately 3.5 cm, a circumference of said first end of said body is approximately 5.5 cm, and a largest circumference of said body is approximately 7.5 cm.

18. The writing aid of claim **17**, wherein said first depression has a length of approximately 3 cm and a maximum width of approximately 2 cm.

19. The writing aid of claim **17**, wherein said second depression has a maximum length of about 3 cm and a minimum width of about 1 cm.

20. The writing aid of claim **17**, wherein said third depression has a length of about 2.5 cm and a minimum width of about 1.5 cm.

21. The writing aid of claim **1** wherein said body comprises a soft, resilient material.

22. The writing aid of claim **21**, wherein said material comprises rubber.

23. The writing aid of claim **21**, wherein said material comprises a synthetic plastic.

24. The writing aid of claim **1** further comprising indicia on said body to indicate a proper orientation of said body on said writing instrument and in said hand, said indicia being located on portions of said body excluding said first, second, and third depressions.

25. The writing aid of claim **24** wherein said indicia comprise first and second small circular depressions at said second end of said body near said first and second depressions, respectively, with a raised letter "R" inside said first small circular depression and a raised letter "L" inside said second small circular depression, said letters being oriented with their bases nearest the respective depressions to which they are adjacent.

* * * * *

Exhibit B

US006908245B1

(12) United States Patent
Schulken

(10) Patent No.: US 6,908,245 B1
(45) Date of Patent: Jun. 21, 2005

(54) GRIPPING AID

(75) Inventor: Toni M. Schulken, Charlotte, NC (US)

(73) Assignee: Pathways for Learning Products, Inc., Charlotte, NC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U S C 154(b) by 95 days

(21) Appl No.: 10/826,351

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(51) Int. Cl.[7] A46B 5/02
(52) U.S. Cl. 401/6; 15/443
(58) Field of Search 401/6, 7, 48; 15/435, 15/443, 444

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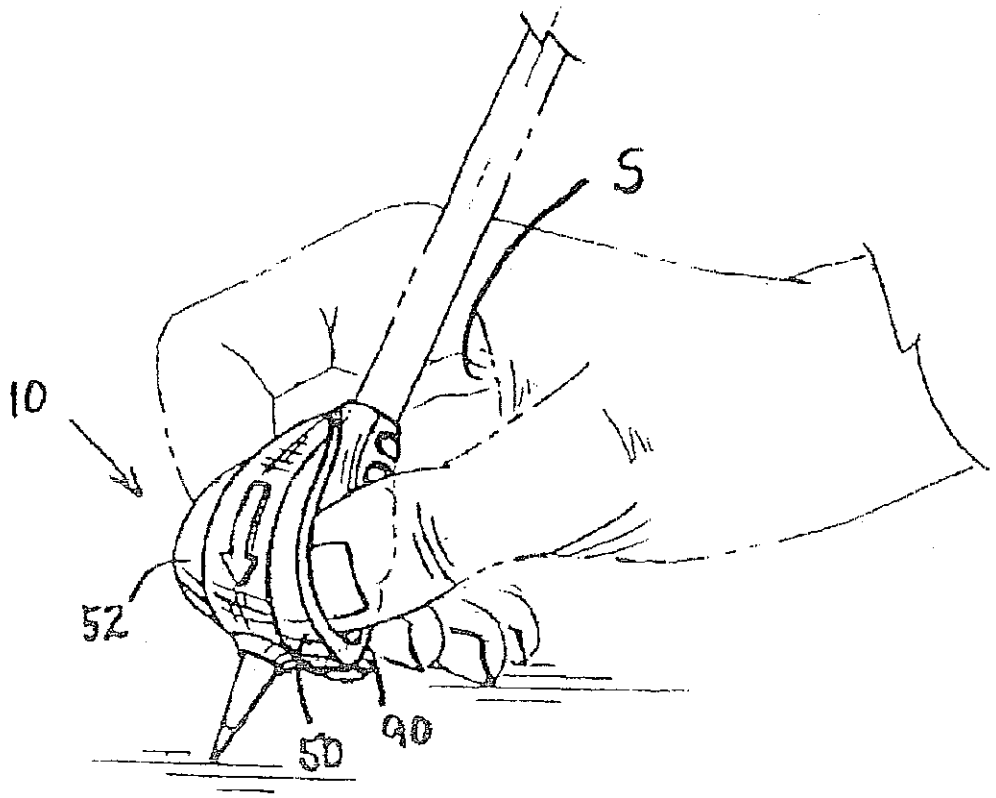
Assistant Examiner—Huyen Le
(74) *Attorney, Agent, or Firm*—Timothy R Kroboth

(57) ABSTRACT

A gripping aid to be mounted on a hand-held instrument, is provided that assures a dynamic tripod grasp The gripping aid beneficially includes oppositely extending thumb wrap-preventing rims, lesser rims each of which is spaced from the respective thumb wrap-preventing rim, and a longitudinally extending saddle.

18 Claims, 4 Drawing Sheets



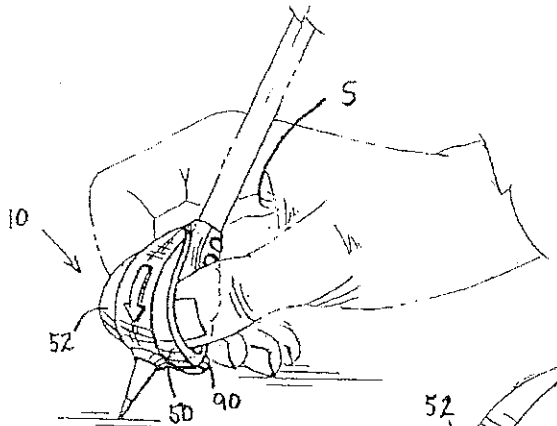


Fig. 1.

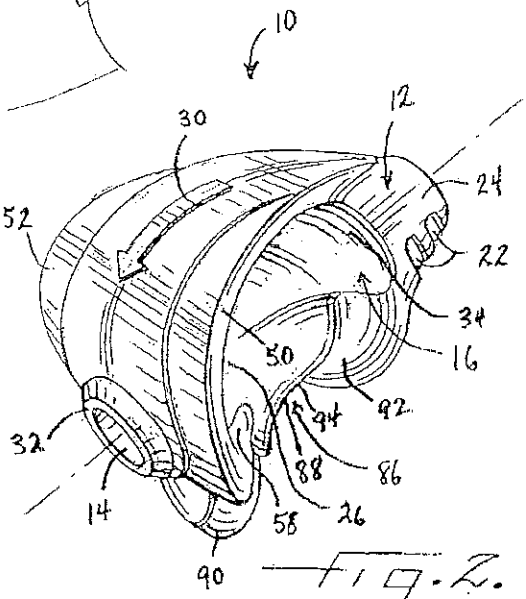


Fig. 2.

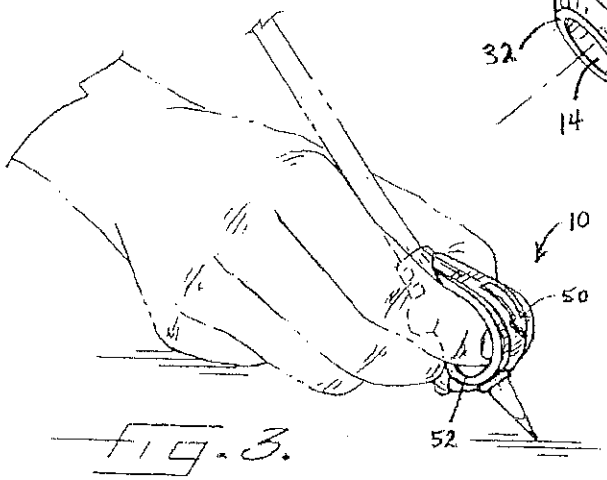
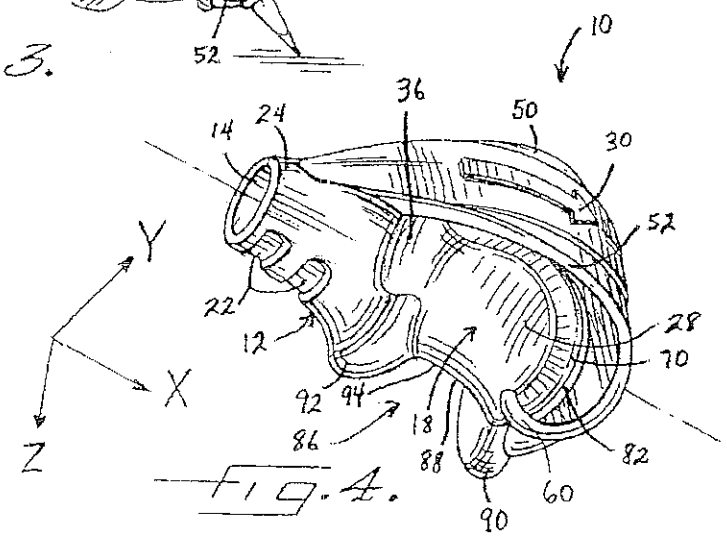


Fig. 3.



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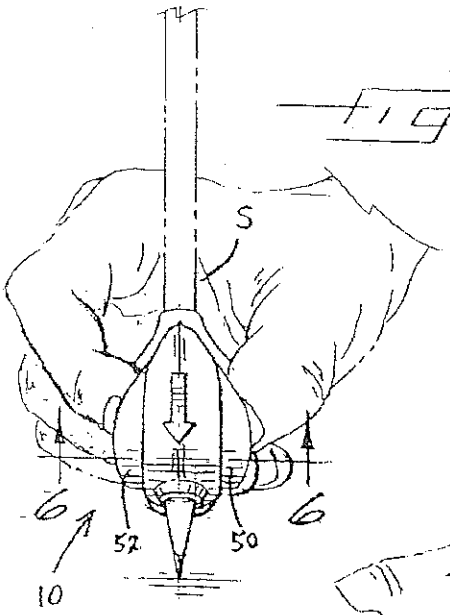

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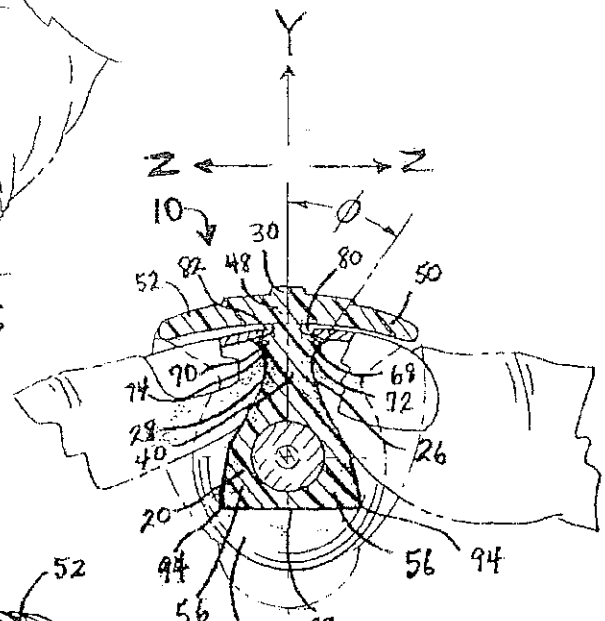

Fig. 6.

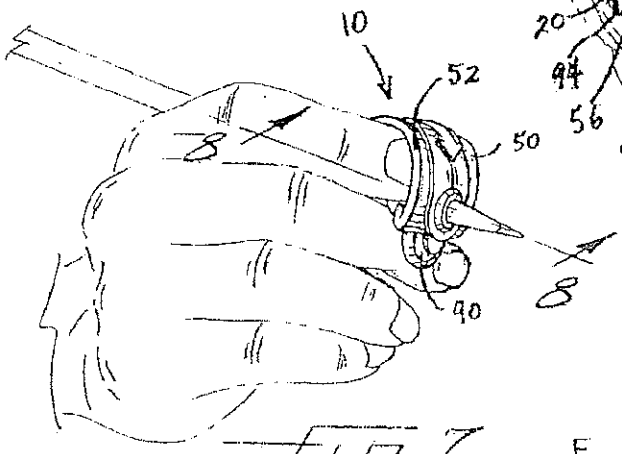

Fig. 7.

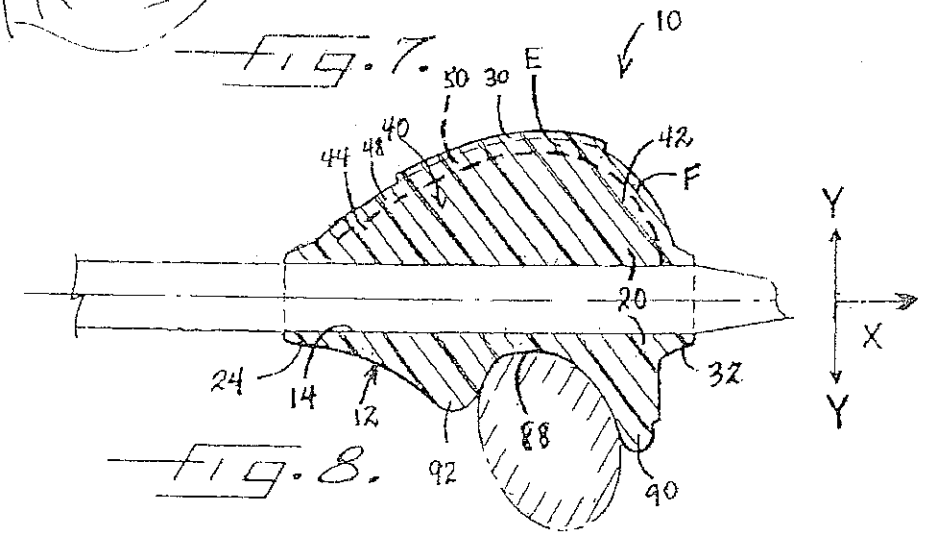

Fig. 8.

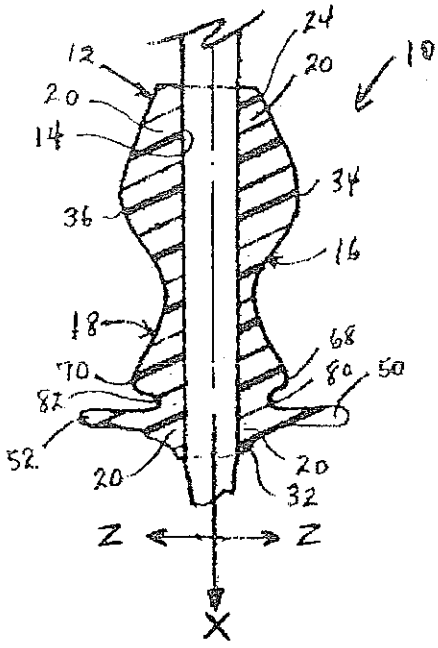

Fig. 9.

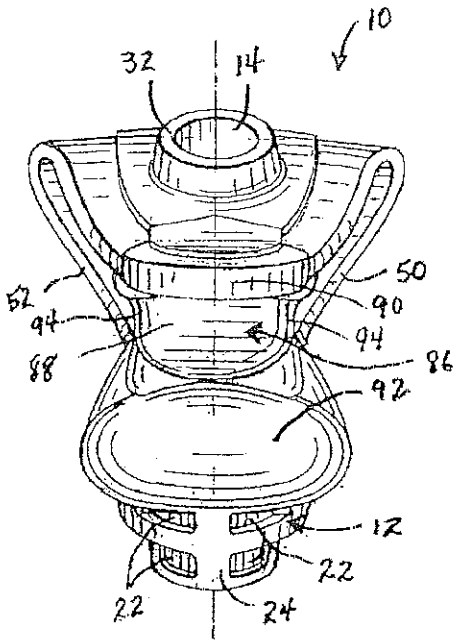

Fig. 10.

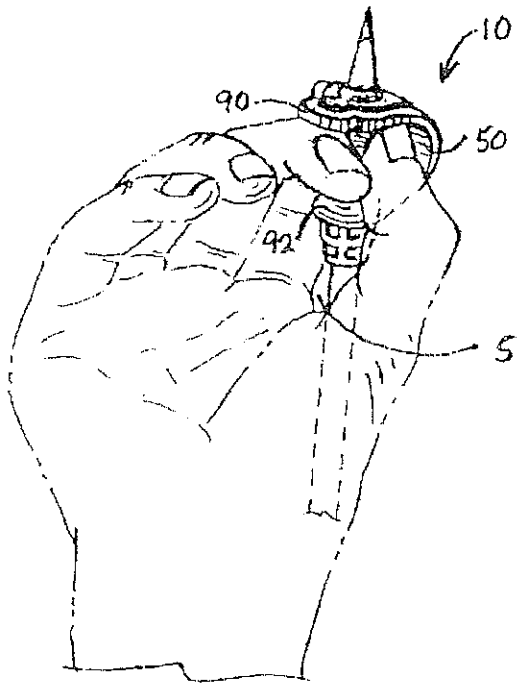

Fig. 11.

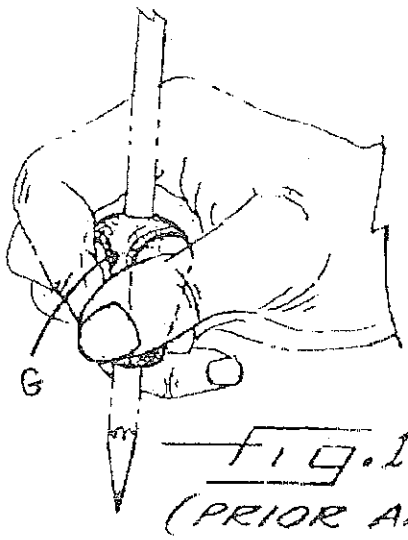

Fig. 12A.
(PRIOR ART)

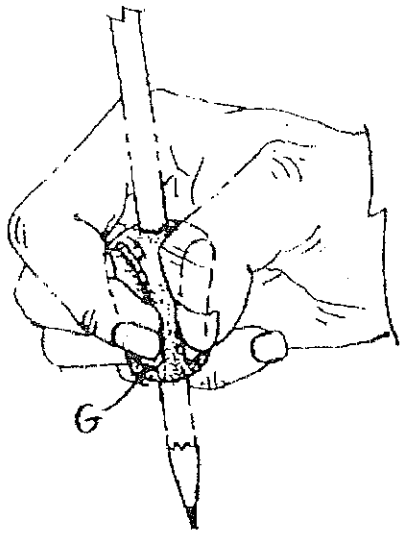

Fig. 12B.
(PRIOR ART)

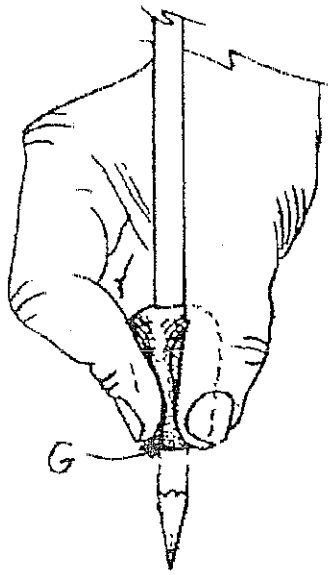

Fig. 12C.
(PRIOR ART)

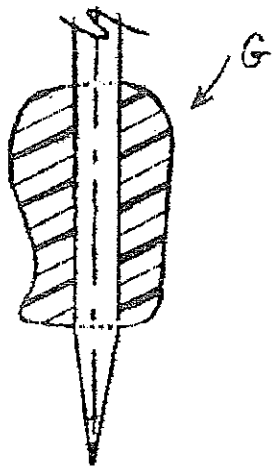

Fig. 13.
(PRIOR ART)

GRIPPING AID

FIELD OF THE INVENTION

This invention relates to an aid for proper gripping of a hand held instrument

BACKGROUND OF THE INVENTION

Persons and in particular young children learning how to write, often grip hand held instruments used for writing, drawing and painting improperly Absent instruction to the contrary, individuals will generally grasp a pencil in a manner that feels the most stable to him or her

Beginning at age three and through adulthood, the most stable grasp that still allows precision and proper pencil pressure, is a dynamic tripod grasp The dynamic tripod grasp requires separation of the radial and ulnar sides of the hand The radial side of the hand, namely the thumb, index finger and middle finger, are generally referred to as the precision side of the hand The ulnar side of the hand, namely the ring finger and little finger, are referred to as the power side of the hand

To achieve a dynamic tripod grasp, the individual pinches the instrument between the distal pads of the index finger and thumb, and then rests the instrument on the lateral distal interphalangeal (DIP) joint of the middle finger These three fingers together are the tripod These three fingers supported by arches in the palm of the hand, utilize precise movements of rotation, flexion and extension to achieve the small movements needed for letter formation or other fine motor activities requiring accuracy In addition, the space between the thumb and index finger, namely the web space, must be maintained in an open and circular manner to support the dynamic movements of the tripod fingers The ulnar side of the hand stays in a flexed and quiet position so as to provide a stable base of support from which the tripod can move

Many individuals develop improper grasping habits by gravitating towards seemingly more stable grasp patterns at the expense of precision For example, a common improper grasp pattern is the thumb wrap grasp, in which the thumb overlaps the instrument The result when using a pencil, is an inactive thumb that pulls in other muscles to compensate, and increased pencil pressure, decreased pencil control and increased hand fatigue when writing Other common improper grasping patterns include hyperextension at the DIP joints of the thumb and index finger, which causes increased instrument pressure and a tight grasp, resulting in hand fatigue; power grasp in which the instrument is held in a fisted manner with the ulnar side of the hand toward the paper, resulting in decreased precision and increased instrument pressure; four-finger digital grasp in which all four finger pads touch a pencil on one side and the thumb pad opposes the fingers on the other side of the pencil, resulting in decreased pencil control and decreased pencil pressure; and internal rotation and adduction of the thumb, resulting in a closed web space, increased instrument pressure, increased hand fatigue and poor instrument control

As a result of compensatory grasping patterns, learning how to write properly, legibly, neatly, efficiently and with enough endurance to complete tasks within a typical time frame, is hindered Furthermore, efficient use of other hand held instruments is impeded In addition, thumb and finger joints can be subjected to unnecessary stress

As exemplified by U S Pat No. 1,879,456 to Parsons U S Pat No 4 526,547 to Rusk, U S Pat No 5 143,463 to Pozil et al, U S. Pat No 5,626,430 to Bistrack, U S Pat No 6,254,293 to Citrenbaum, and Des. 228,418, and Patent Application Publications 2002/0034411 to Rusk and 2003/0231917 to Geddes et al, and by the START RIGHT pencil grip, gripping aids, and in particular writing aids, that are mounted on hand held instruments are known However, no prior art gripping aid is entirely satisfactory

For example, the asymmetrical Pozil grip, which has an elongated body provided with three concave surface depressions to be grasped by the thumb, index finger and middle finger, and which is commercially made of soft rubber, does not adequately prevent thumb wrap, thumb internal rotation or index finger DIP joint hyperextension Furthermore, it can be understood from col 3, lines 51–57, of the Pozil et al patent, that the Pozil grip is intended to reduce dynamic finger movements and increase full hand and arm action Although that result benefits an arthritic individual, it does not optimally benefit learning how to write properly

Beneficially, the START RIGHT pencil grip includes a thumb wrap-preventing guard that extends from a proximal body end to a distal body end, and that is generally perpendicular to the throughbore at the distal body end However, the START RIGHT pencil grip does not assure proper thumb and finger positioning

There therefore continues to be a need for an improved gripping aid, and in particular a grip that assures proper positioning of the tripod fingers and keeps them in place Beneficially, the gripping aid would assure fine motor control and dynamic movements of the tripod fingers. Moreover, it would be advantageous if the same gripping aid could be used by left handed and right handed users

SUMMARY OF THE INVENTION

In accordance with the present invention, there is provided a gripping aid for a hand held instrument, that includes a grip body provided with a bore for receiving the hand held instrument, wherein the bore defines an x-axis of an x-y-z coordinate system The grip body includes a first longitudinally extending surface that includes a generally concave surface located relatively near a distal end of the body, and advantageously a raised surface located relatively near a proximal end of the body and that is relatively more elevated than the generally concave surface.

Beneficially, the grip body further includes a first thumb wrap-preventing rim that extends generally in a z-direction from a border of a raised ridge, wherein the ridge border is elevated in a y-direction relative to the x-axis Advantageously, the rim is generally arched, and is relatively more elevated in the y-direction, near the distal body end than near the proximal body end Beneficially, the generally concave surface of the first longitudinally extending surface, rises in the direction of the rim to form a lesser rim that serves as a finger stop, and the lesser rim is spaced from the thumb wrap-preventing rim by a valley of suitable width and depth for receiving a fingernail

Preferably, the grip body is symmetrical on each side of an x-y plane parting line As a result, one side of the grip body includes the first longitudinally extending surface and the first thumb wrap-preventing rim, and the other side of the grip body includes a second longitudinally extending surface and a second thumb wrap-preventing rim

Advantageously, the grip body further includes a longitudinally extending saddle comprising a seat between a distal saddle lip and an opposing proximal saddle lip that extend generally in a y-direction opposite from the elevation direction of the ridge border

Additional advantages and beneficial features of the present invention are set forth in the drawing and detailed description, and in part will become apparent to those skilled in the art upon examination of the drawing and detailed description or may be learned by practice of the invention. In the drawing and detailed description, there is shown and essentially described only a preferred embodiment of this invention, simply by way of illustration of the best mode contemplated of carrying out this invention. As will be realized, this invention is capable of other and different embodiments, and its several details are capable of modification in various respects, all without departing from the invention. Accordingly, the drawing and the detailed description are to be regarded as illustrative in nature, and not as restrictive.

BRIEF DESCRIPTION OF THE DRAWING

Reference is now made to the accompanying drawing which forms a part of the specification of the present invention

FIGS. 1, 3, 5, 7 and 11 are different perspective views of a preferred embodiment of a gripping aid in accordance with the invention, mounted on a pencil and gripped by a right hand;

FIG. 2 corresponds to the perspective view of FIG. 1 without the pencil and right hand;

FIG. 4 corresponds to the perspective view of FIG. 3 without the pencil and right hand, and includes an x-y-z coordinate system for reference;

FIG. 6 is a cross-sectional view taken substantially along the line 6—6 of FIG. 5, more specifically through a y-z plane of the x-y-z coordinate system, that illustrates, inter alia, thumb and index fingernails in the nail spaces;

FIG. 8 is a cross-sectional view taken generally along the line 8—8 of FIG. 7, more specifically along the x-axis and through an x-y plane of the x-y-z coordinate system;

FIG. 9 is a cross-sectional view from the perspective of FIG. 5, taken along the x-axis and through an x-z plane of the x-y-z coordinate system, of the grip of FIG. 5, shown reduced in size relative to FIG. 10;

FIG. 10 corresponds to the perspective view of FIG. 11 without the pencil and right hand;

FIGS. 12A, 12B and 12C are perspective views illustrating improper grasp patterns allowed by a prior art pencil grip G provided with three concave surface depressions, and specifically illustrate thumb wrap (FIG. 12A), thumb internal rotation and adduction (FIG. 12B), and DIP joint hyperextension of the index finger (FIG. 12C); and

FIG. 13 is a cross-sectional view similar to that of FIG. 9 of the prior art pencil grip of FIG. 12

DETAILED DESCRIPTION OF THE INVENTION

In accordance with the present invention, there is provided an improved gripping aid that is mounted on a hand held instrument, to assure proper positioning of the thumb, index and middle fingers. Unlike existing gripping aids, once the thumb, index and middle fingers are in place, the gripping aid of the present invention, prevents a user from reverting to immature grasping habits Advantageously, this improved grip prevents thumb wrap, and discourages hyperextension of finger and thumb joints

Beneficially, a grip in accordance with the present invention, places and holds the hand in a mature tripod grasp, and discourages closing of the web space between the thumb and index finger Advantageously, the grip assures fine motor control and dynamic movements of the tripod fingers Thus, it is intended that the grip be mounted on hand-held instruments that require fine motor control and dynamic movements of the tripod fingers, such as a pen, pencil, crayon or x-acto knife Furthermore, the same grip can be used by right and left handed users

In the description of the invention, relative terms such as "upper", "underside" and the like have been used particularly with reference to the drawing to assist understanding. For simplification of the description and consistency with usage in this art, the term "finger" as used herein, sometimes means "thumb".

Referring to FIGS. 1, 3, 5, 7 and 11, a preferred grip **10** in accordance with the invention, mounted on a writing instrument shown in phantom except for the writing end of the instrument, is shown gripped by the thumb, index and middle fingers of a right hand, also shown in phantom The fingers are beneficially placed and held by grip **10**, in a natural ergonomic position that supports the joints to alleviate the need for increased pencil pressure From these Figures, it can be seen that a gripping aid in accordance with the invention, advantageously not only assures a dynamic tripod grasp, but also, referring particularly to FIG. 11, beneficially maintains arches in the palm of the hand In addition, referring particularly to FIGS. 1, 5 and 11, a gripping aid in accordance with the invention, advantageously maintains an open and circular web space S between the thumb and index finger. As a result, a gripping aid in accordance with the invention, assures fine motor control and dynamic movements of the tripod fingers. With reference now to FIGS. 2, 4, 8, 9 and 10, preferred grip **10** beneficially has an elongated body 12 provided with a mounting bore 14 (best shown in FIGS. 8 and 9) that extends through a long axis of the grip body for receiving a hand held instrument With reference to FIGS. 4, 8 and 9, mounting bore 14 defines an x-axis of an x-y-z coordinate system, in which x, y and z are oriented perpendicular to one another

With continued reference to FIGS. 6, 8 and 9, a grip body portion 20 surrounds the mounting bore. Conveniently, the mounting bore is circular in cross-section and has a diameter that is slightly smaller than the outer diameter of the hand-held instrument If desired, the mounting bore may be non-circular in cross-section, for example, hexagonal or octagonal

With reference now in particular to FIGS. 2, 4 and 10, indents 22 located at a proximal end 24 of the grip body advantageously reduce the body weight and enhance the look of the grip. A directional arrow 30 points toward a distal end 32 of the grip body to assist a user in correct mounting of the grip on the instrument

Although the grip body may be made from any suitable polymeric or resilient material, thermoplastic rubber is a preferred material Conveniently, the grip may be manufactured by a molding process

Preferably, in order to discourage hyperextension of the index finger DIP joint, the grip is manufactured from a material having an appropriate firmness In this regard, the material should have an A scale durometer value in excess of A 30, and beneficially in the range of A 40 to A 60, or should have a comparable firmness if A scale durometer values are inappropriate for the material By comparison, the softness of the commercially sold Pozil grip, which is believed to have an A 15 durometer value or a softness comparable to A 15 does not adequately prevent joint hyperextension

To avoid loss of the softness necessary for comfortable feel, the material used to make a grip in accordance with the present invention, should not exceed A 70 or comparable firmness. Similarly, it is advantageous that the grip material be sufficiently resilient so that the mounting bore can expand to receive and securely hold the instrument.

With continued reference to FIGS. 2 and 4 in particular, grip body 12 includes lateral surfaces 16,18 (lateral surface 16 incompletely shown), each of which includes a generally concave surface 26,28 (only concave surface 28 is completely shown) located relatively closer to distal body end 32 than to proximal body end 24. Concave surfaces 26,28 each have a shape and size suitable for receiving a portion of the distal phalanx of the thumb or index finger.

Beneficially, each of longitudinally extending surfaces 16,18 includes a raised surface 34,36, as shown, that is relatively more elevated in the respective z-direction (see FIGS. 4 and 9 in particular) than respective generally concave surface 26,28, and that is located relatively near proximal body end 24. Advantageously, each longitudinally extending surface progressively rises in elevation in the respective z-direction from the generally concave surface to the raised surface. Beneficially, the angle and height of this rise in elevation is appropriate to rotate the thumb and index finger out to assure proper positioning of the thumb and index fingers and create an open and circular web space, and for support of thumb and index finger joints to discourage joint hyperextension.

Advantageously, to provide use of the same grip by left and right handed users, longitudinally extending surfaces 16,18 are substantially identical to one another in shape and in position on the grip body. One longitudinally extending surface provides contact with the end of a thumb and a portion of the thumb between the thumb end and the adjacent thumb joint, and supports the thumb joint, whereas the other longitudinally extending surface provides contact with the distal phalanx, and supports the DIP joint, of the index finger.

Referring again to FIG. 8, grip body 12 advantageously includes a raised ridge 40 that has a distal end 42 that has a relatively more elevated cross-section in a y-direction relative to the x-axis, than a proximal end 44 thereof. As clearly shown by FIG. 8, raised ridge 40 is progressively more elevated in the y-direction as it extends from proximal ridge end 44 toward distal ridge end 42, until it reaches a locus E of maximum elevation in the y-direction located near distal ridge end 42. As illustrated, raised ridge 40 is generally arched.

With reference also to FIGS. 2, 4, 6, 9 and 10, grip body 12 advantageously includes thumb wrap-preventing rims 50,52. Unlike the START RIGHT pencil grip, which includes thumb wrap-preventing rims, prior art such as that of the Pozil et al and Citrenbaum patents, lacks a thumb wrap-preventing rim. Thus, the term "thumb wrap-preventing rim" as used herein, is intended to distinguish over the type of prior art gripping aids illustrated by the Pozil et al and Citrenbaum patents.

Referring in particular to FIGS. 2 and 4, rims 50,52 are advantageously generally arched, and extend from a ridge border 48 generally in opposite z-directions (best understood from FIGS. 6, 8 and 9). Like ridge 40, rims 50,52 are progressively more elevated in the y-direction relative to the x-axis until reaching locus E of maximum elevation in the y-direction. In short, the elevation of rims 50,52 relative to the x-axis follows the elevation of ridge border 48 from proximal body end 24 to distal body end 32.

Beneficially, at a locus F (shown in FIG. 8) of ridge border 48 located at the distal body end, rims 50,52 become generally perpendicular to the x-axis (shown in FIG. 9), and then adjacent the respective lower portion 56 (best seen in FIG. 6) of grip body portion 20, each includes (best seen in FIGS. 2 and 4) a rearward curl 58,60 and becomes generally parallel to the x-axis again. At distal body end 32, rims 50,52 extend generally in the respective z-direction, from grip body portion 20 that surrounds the mounting bore. From the foregoing description and in particular from FIG. 4, it can be recognized that rims 50,52 have a generally ear-shaped look when viewed from the side.

Advantageously, as can be best understood from FIGS. 4, 8 and 10, rims 50,52 are the most extended in the respective z-direction approximately from locus E of maximum elevation to locus F (see FIG. 8 for locus E and locus F), and the maximum rim extension in the respective z-direction exceeds the maximum elevation of respective raised surface 34,36 in the respective z-direction. Furthermore, from locus E toward proximate ridge end 44, and also from locus F toward and including the respective rearward curl, extension of rims 50,52 in the respective z-direction progressively decreases. Also, as can be understood from FIG. 6, as rims 50,52 extend in opposite z-directions from ridge border 48, particularly between locus E and locus F, each rim slopes gently toward the x-axis.

As can further be understood from FIGS. 4, 6, 8 and 9, rims 50,52 form a border of longitudinally extending surfaces 16,18. Thus, longitudinally extending surfaces 16,18 and rims 50,52 cooperate to assure proper placement of the thumb and index fingers by, inter alia, preventing thumb wrap and discouraging joint hyperextension.

With continued reference to FIGS. 4, 6 and 9, generally concave surfaces 26,28 each beneficially lead to, and are bordered by, a lesser rim 68,70 that extends generally in the respective z-direction only a short distance, for example, approximately one-sixteenth inch. As best understood from FIG. 4, each of these lesser rims has a contour that generally follows the contour of respective rim 50,52 until each intersects with respective rim curl 58,60 (intersection of lesser rim 70 with rim curl 60 shown).

Referring particularly to FIGS. 6 and 9, lesser rims 68,70 advantageously serve as finger stops, and each of concave surfaces 26,28 rises in the direction of its respective rim 50,52 to form the respective finger stop, and each finger stop is provided with a lower slope 72,74 defined by an angle ϕ from the y-axis (only the angle ϕ for lower slope 72 of rim 68 is depicted). Advantageously, the angle ϕ is in the range of from about 30 to 50° for comfort and effect.

With continued reference to FIGS. 6 and 9, each finger stop 68,70 is spaced apart from respective rim 50,52 by a respective valley 80,82 of longitudinally extending surfaces 16,18. Valleys 80,82 each have a depth and a width (defined by distance between rims 50,52 and the respective finger stop) suitable for receiving a thumbnail or index finger nail, as the case may be. As can be understood from comparison of FIGS. 5 and 6, FIG. 6 does not illustrate a thumb and index finger in the same angled relationship to the grip body as is shown in FIG. 5. Instead, FIG. 6 depicts, for sake of illustration, a thumb and index finger in an angled relationship that makes clear the use of valleys 80,82 for receiving nails.

Referring now to FIGS. 2, 4, 8 and 10 in particular, an underside of grip body 12 advantageously includes a longitudinally extending saddle 86 for receiving the middle finger at an about 90° angle to the long axis of the grip body,

and holding the finger in place. Beneficially, saddle 86 includes a seat 88 between a distal saddle lip 90 and an opposing proximal saddle lip 92, which generally extend in a y-direction opposite from (see FIG. 8) the y-elevation direction of rims 50,52 ("the opposite y-direction"). Advantageously, distal saddle lip 90 extends further than proximal saddle lip in the opposite y-direction.

Beneficially, the space defined by opposing saddle lips 90,92 for the middle finger, is selected to be sufficiently tight for stabilization and control, and proximal saddle lip 92 is ergonomically curved to provide natural, supported feel. Saddle 86 supports the DIP joint of the middle finger on both the palmar and dorsal surfaces, providing kinesthetic feedback to the joint, which serves as the stable base of the tripod grasp during movement. Thus, as shown in FIG. 7, it is intended that the DIP joint of the middle finger be held and remain between the opposing saddle lips during movement.

Advantageously, distal saddle lip 90 extends forwardly at an about 20 to 40° angle from the y-axis. With reference particularly to FIG. 10, it can be recognized that the portion of the grip body defined by rims 50,52 and the forwardly extending distal saddle lip, has the look of a head of a cobra poised to strike.

With reference particularly to FIG. 8, seat 88 is elevated the least in the opposite y-direction of any portion of the saddle. Advantageously, distal saddle lip 90 generally underlies distal ridge end 42, and seat 88 generally underlies the portion of raised ridge border 48 that is the most elevated in the y-direction.

From the foregoing and with reference again to FIG. 6, it can be understood that an upper surface portion (which includes lesser rims 68,70 and valleys 80,82) of each of longitudinally extending surfaces 16,18 is formed in a face of raised ridge 40, and that the longitudinally extending surfaces are in an appropriately spaced apart relationship from one another. Further, it can be understood that the longitudinally extending surfaces each intersect with seat 88 at the respective seat lateral edge 94. With reference also to FIG. 4, each longitudinally extending surface beneficially includes a y-z plane cross-section that decreases in elevation in the respective z-direction from the respective lateral edge 94 of seat 88 until the respective generally concave surface (26 or 28) rises in elevation to form the respective finger stop.

As can be appreciated by consideration of the foregoing description and the drawing, grip body 12 is beneficially symmetrical on each side of an x-y plane parting line. This symmetry benefits use by both left and right handed users. Referring to FIG. 13, comparison can be made between FIG. 9 and the body of the asymmetric Pozil grip.

The present invention may be carried out with various modifications without departing from the spirit or essential attributes thereof, and accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

What is claimed is:

1. A gripping aid for a hand held instrument comprising a grip body provided with a bore for receiving the instrument, wherein said bore defines an x-axis of an x-y-z coordinate system, wherein said grip body comprises a first longitudinally extending surface comprising a generally concave surface located relatively near a distal end of said grip body, and a relatively more elevated, raised surface located relatively near a proximal end of said grip body, wherein said grip body further comprises a first thumb wrap-preventing rim that extends generally in a z-direction from a border of a raised ridge, and the ridge border is relatively more elevated in a y-direction relative to said x-axis near said distal body end than near said proximal body end.

2. The gripping aid of claim 1, wherein said first thumb wrap-preventing rim is generally arched and has a locus of maximum elevation in said y-direction relatively near said distal body end.

3. The gripping aid of claim 2, wherein said first thumb wrap-preventing rim is the most extended in said z-direction approximately from said locus of maximum elevation to a locus at which said rim becomes generally perpendicular to said x-axis.

4. The gripping aid of claim 1, wherein at said distal body end, said first thumb wrap-preventing rim comprises a rearward curl and extends generally in said z-direction from a grip body portion that surrounds the mounting bore.

5. The gripping aid of claim 1, wherein said generally concave surface rises in the direction of said first thumb wrap-preventing rim to form a lesser rim that extends generally in said z-direction a shorter distance than said thumb wrap-preventing rim extends.

6. The gripping aid of claim 5, wherein said lesser rim is spaced from said first thumb wrap-preventing rim by a valley having a depth and a width suitable for receiving a fingernail.

7. The gripping aid of claim 5, wherein said first thumb wrap-preventing rim extends generally in said z-direction from a grip body portion that surrounds the mounting bore, and comprises a rearward curl, and said lesser rim intersects said rearward curl.

8. The gripping aid of claim 1, wherein said grip body further comprises a longitudinally extending saddle comprising a seat between a distal saddle lip and an opposing proximal saddle lip that extend generally in a y-direction opposite from the elevation direction of said ridge border.

9. The gripping aid of claim 8, wherein said distal saddle lip extends further than said proximal saddle lip in said opposite y-direction, and said distal saddle lip extends forwardly toward said distal body end.

10. The gripping aid of claim 8, wherein the saddle seat comprises lateral edges, and said first longitudinally extending surface comprises a y-z plane cross-section that decreases in elevation in said z-direction from the respective lateral edge of said saddle seat until said generally concave surface of said first longitudinally extending surface, rises in elevation to form a finger stop.

11. The gripping aid of claim 1, wherein said grip body is symmetrical on each side of an x-y plane parting line such that one side of said grip body comprises said first longitudinally extending surface and said first thumb wrap-preventing rim, and the other side of said grip body comprises a second longitudinally extending surface and a second thumb wrap-preventing rim.

12. A gripping aid for a hand-held instrument comprising a grip body provided with a bore for receiving the instrument, wherein said bore defines an x-axis of an x-y-z coordinate system, wherein said grip body comprises a first longitudinally extending surface comprising a generally concave surface located relatively near a distal end of said body, wherein said grip body further comprises a first a generally arched thumb wrap-preventing rim and a second generally arched thumb wrap-preventing rim that extend from a border of a raised ridge generally in opposite z-directions, and wherein said raised ridge comprises a proximal ridge end and a distal ridge end, the ridge border is elevated in a y-direction relative to said x-

13 The gripping aid of claim 12, wherein said grip body further comprises a longitudinally extending saddle comprising a seat between a distal saddle lip and an opposing proximal saddle lip that extend generally in a y-direction opposite from the elevation direction of said ridge border

14 The gripping aid of claim 13, wherein said distal saddle lip extends further than said proximal saddle lip in said opposite y-direction, and said distal saddle lip extends forwardly toward said distal body end.

15 The grip of claim 12, wherein said generally concave surface rises in the direction of said first thumb wrap-preventing rim to form a lesser rim that extends generally in the same z-direction a shorter distance than said first thumb wrap-preventing rim extends.

16. A gripping aid for a hand-held instrument comprising a grip body provided with a bore for receiving the instrument, wherein said bore defines an x-axis of an x-y-z coordinate system, wherein said grip body is symmetrical on each side of an x-y plane parting line such that each side of said grip body comprises a longitudinally extending surface comprising a generally concave surface located relatively near a distal end of said grip body, and a relatively more elevated, raised surface located relatively near a proximal end of said grip body, and further comprises a thumb wrap-preventing rim,

wherein the thumb wrap-preventing rims extend from a border of a raised ridge generally in opposite z-directions, and the ridge border is elevated in a y-direction relative to said x-axis, and wherein said grip body further comprises a longitudinally extending saddle comprising a seat between a distal saddle lip and an opposing proximal saddle lip that extend generally in a y-direction opposite from the elevation direction of said ridge border

17 The gripping aid of claim 16, wherein said generally concave surface rises in the direction of the respective thumb wrap-preventing rim to form a lesser rim that extends generally in the respective z-direction a shorter distance than the respective thumb wrap-preventing rim extends.

18. The gripping aid of claim 16, wherein said distal saddle lip extends further than said proximal saddle lip in said opposite y-direction, and said distal saddle lip extends forwardly toward said distal body end

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