

LLOREDA & CIA. S. A.
ABOGADOS



BOGOTA - COLOMBIA
OFICINA FUNDADA EN 1941
APARTADO AEREO 12304
TEL: 57-1-3264270 57-1-6069700
FAX: 57-1-3264271 57-1-6069701
CABLES: LLOREDA
CALLE 72 No. 5-83 5º. PISO
www.lloredacamacho.com
jlcco@lloredacamacho.com

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES

E. _____ S. _____ D. _____

Re: M1.-GONZALO MARTINEZ SANMARTIN.-Solicitud de Modelo de Utilidad para "FERULA PARA LA ARTICULACION TRAPECIO-METACARPIANA".-Clase A61F 5/01.-Expediente número 04-098.191.-

1. Me refiero a mi memorial de 22 de Noviembre de 2005.
2. Por medio del presente atentamente ruego a usted, se sirva pronunciarse en relación con la solicitud arriba nombrada, ya que desde el 22 de Noviembre de 2005, esto es hace más de un año y nueve meses, fue solicitado el examen de patentabilidad para la presente invención, sin que haya sido adelantado ningún otro trámite.
3. Cabe anotar que esta demora en el trámite acarrea grave perjuicio para mi representado.

Señor Superintendente,

ALICIA LLOREDA RICAURTE
T.P. 53.215

DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No 04-098191

EXTRACTO DE LA PRESENTE SOLICITUD DE **MODELO DE UTILIDAD**

NUMERO FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No

557 DE FECHA **31 DE OCTUBRE DE 2005** EL TERMINO HABIL SEÑALADO

POR LA LEY EXPIRA EL **15 DE DICIEMBRE DE 2005.**

NOTA: Dentro del plazo de los tres (3) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 y en concordancia con el artículo 85 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO **X** _____

United States Patent [19]

Aziz

[11] Patent Number: 4,883,073

[45] Date of Patent: Nov. 28, 1989

[54] REMEDIAL DEVICE FOR TREATMENT OF CARPAL TUNNEL SYNDROME

[76] Inventor: Farooq Aziz, 3755 Warrensville Center Rd., Apt. #3, Shaker Heights, Ohio 44122

[21] Appl. No.: 375,527

[22] Filed: Jul. 3, 1989

[51] Int. Cl.⁴ A61F 5/00

[52] U.S. Cl. 128/878; 128/87 R; 128/77

[58] Field of Search 128/877, 878, 879, 77, 128/87 R, 89 R

[56] References Cited

U.S. PATENT DOCUMENTS

3,829,090 8/1974 Ensinger 273/54 B
4,183,098 1/1980 Knowles, Jr. 2/16
4,584,993 4/1986 Nelson 128/77

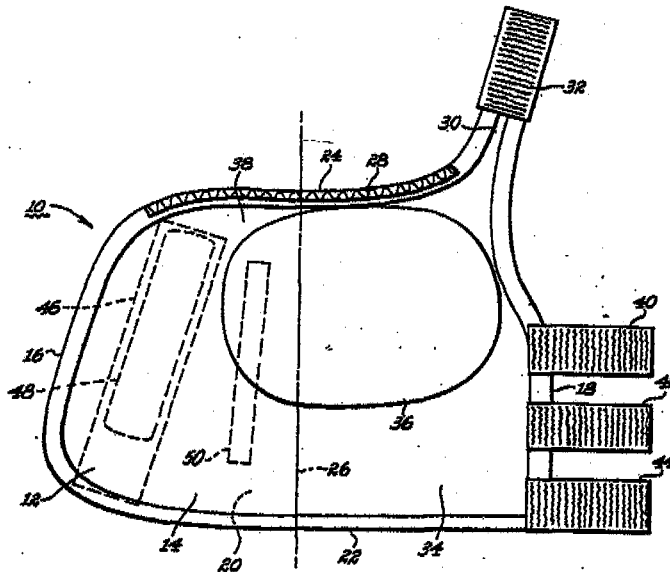
4,677,971 7/1987 Lindemann 128/87 R
4,716,892 1/1988 Brunswick 128/77

Primary Examiner—Richard J. Johnson
Assistant Examiner—Lynda M. Cofsky
Attorney, Agent, or Firm—John F. McDevitt

[57] ABSTRACT

A therapeutic wrist support is provided allowing a person with carpal tunnel syndrome to manipulate the wrist without further aggravating this ailment. The device employs a flexible substrate which includes integral splint elements physically positioned to allow limited wrist movement in both vertical and horizontal directions with respect to the longitudinal axis of the wearer's forearm. Positioning of the splint elements is also made dependent upon whether the left or right wrist of the wearer is involved.

18 Claims, 1 Drawing Sheet

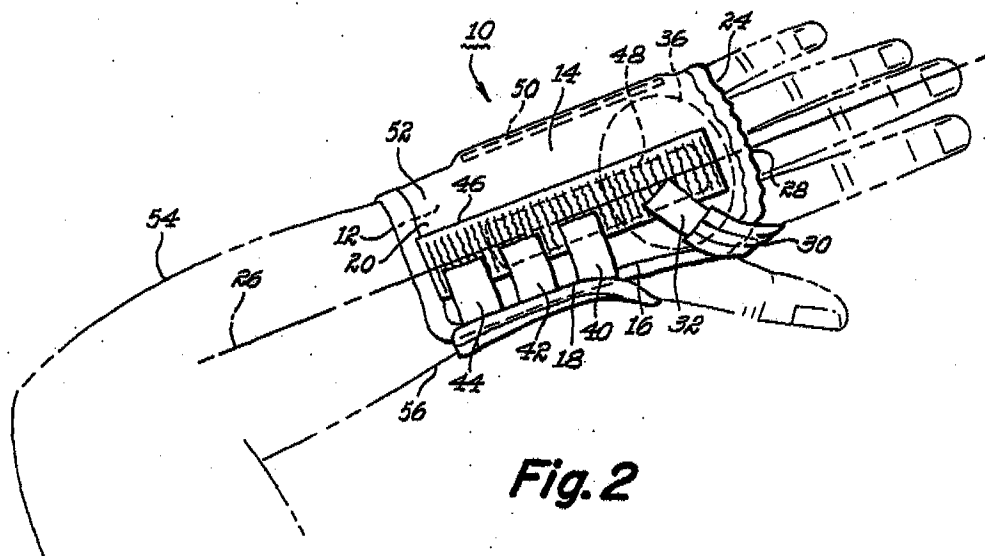
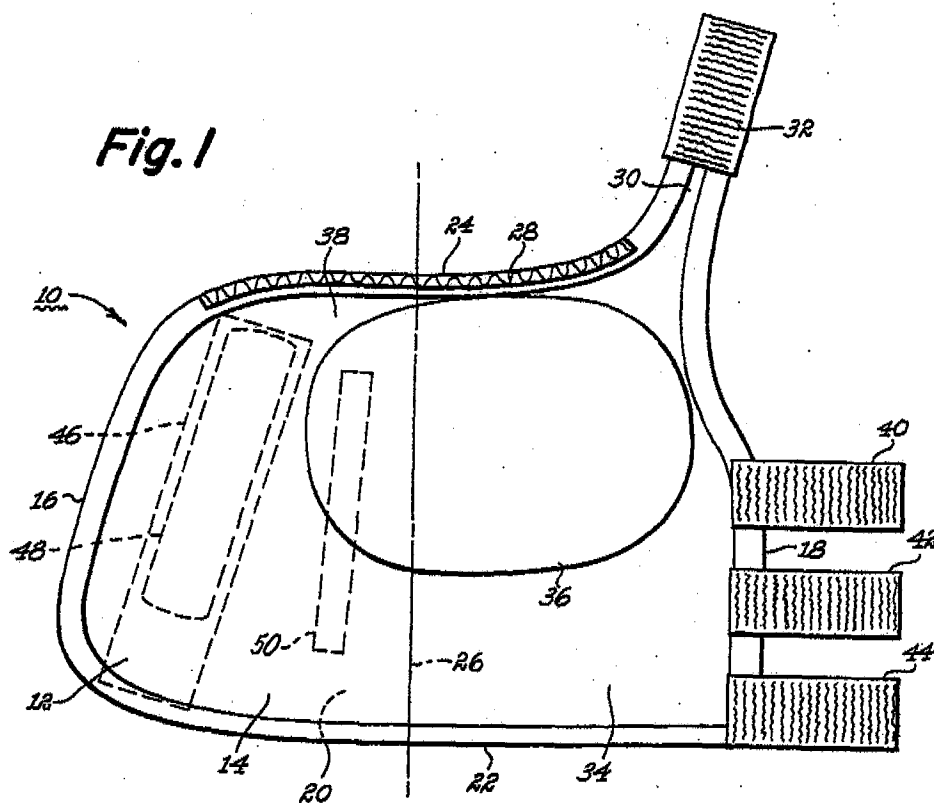


U.S. Patent

Nov. 28, 1989

4,883,073

Fig. 1



REMEDIAL DEVICE FOR TREATMENT OF CARPAL TUNNEL SYNDROME

BACKGROUND OF THE INVENTION

This invention relates generally to the medical treatment of carpal tunnel syndrome and more particularly to an orthopedic support device intended to help relieve pressure when the wearer manipulates the injured wrist.

Carpal tunnel syndrome is a common and troublesome condition that interferes with the use of the hand. It is caused when too much pressure is put on the nerve that runs through the wrist region of a person. A variety of anatomical abnormalities may be responsible for a vise-like pressure occurring in the wrist region causing considerable pain to the affected person with the condition frequently worsening and resulting in permanent nerve damage. However, carpal tunnel syndrome can be treated effectively, especially if diagnosed early, with various types of treatment being already known. Medical treatment of this ailment includes splinting, medication, or both, and with surgery also being employed if the ailment persists. Progressive pain and numbness also frequently occurs if carpal tunnel syndrome is not treated effectively with the pain, numbness and tingling being experienced anywhere and anytime. The affected person often is awakened from sleep and the untreated condition can also cause a person's grip to weaken to the point of dropping things. The seriousness of ineffective treatment for this ailment is further evidenced by the fact that both wrists of a person are frequently involved to the point even light hand tasks cannot be tolerated.

Recovery from this ailment is also recognized to be a slow process often requiring the ailing person to wear a wrist support for many months while still refraining from even simple hand movements. Because simple hand tasks can further aggravate this condition, repetitive hand movements are often proscribed despite having the wrist supported in this manner and with maintaining of the supported wrist in a neutral unflexed condition being further recommended. The conventional splinting arrangement for this condition employs a single splint member extending longitudinally along the wearer's forearm into the hand region to primarily restrain vertical wrist movement. While such restraint upon vertical movement only has been regarded adequate to relieve pressure upon the nerve, it has also been recognized that such non-surgical treatment helps only temporarily in many cases. Moreover, the single splint member for such conventional splinting arrangement is commonly secured to the wearer's arm with temporary means such as elastic bandaging or a glove support for each application and removal by the wearer. Such a multipart wrist support construction becomes prone to further movement when worn thereby failing to provide the relief sought and possibly causing aggravated further injury upon movement. Accordingly, it still remains needed to provide improvement treatment for this ailment with a modified wrist supporting construction.

It is an object of the present invention, therefore, to provide improved means for the treatment of carpal tunnel syndrome with a remedial wrist support.

It is another object of the present invention to provide such remedial wrist support means permitting limited wrist mobility in both vertical and horizontal direc-

tions with respect to the forearm longitudinal axis of a wearer.

Still another object of the invention is to provide improved treatment means with a wrist support construction better accommodating the particular wrist of the person affected by this ailment.

A still further object of the invention is to provide such wrist splinting device having all parts thereof integrally joined together so as to resist dislodgement while further enabling the wearer to easily apply and remove the device.

These and other objects of the present invention will become more apparent upon considering the following detailed description for the present invention.

SUMMARY OF THE INVENTION

In general and in accordance with one aspect of the present invention, an improved remedial device for treatment of carpal tunnel syndrome is now provided which permits limited wrist mobility by the wearer in both vertical and horizontal directions comprising in combination: (a) flexible substrate sized to fit entirely around the wearer's forearm to form upper, lower and side portions when secured in place and which extends longitudinally at one end from a location below the wearer's elbow to an opposite palm end approaching the metacarpal joints of the wearer's hand, the palm end further terminating in an elastic cuff gripping the wearer's hand while also including a projection extending forwardly therefrom at the wearer's thumb before the device is secured in place but extending backwardly therefrom when secured in place, (b) a cushioning pad joined to the flexible substrate in the palm region, (c) a first longitudinally extending splint restraining excess vertical mobility of the wearer's wrist and joined to the flexible substrate in the upper portion, (d) a second longitudinally extending splint restraining excess horizontal mobility of the wearer's wrist and joined to the flexible substrate in a predetermined side portion, and (e) releasable fastening means joined to the flexible substrate enabling the side portions to be secured together while also enabling the hand projection to be secured to the top portion. The permitted wrist mobility with such device can be about the same in both vertical and horizontal directions with respect to the forearm longitudinal axis of a wearer and with such mobility in at least one of said directions not exceeding about ten degrees from the identified axis. To still further illustrate a typical device having such mobility restraint, the splint members in the device allow about a seven degree movement of the wrist in both lateral and vertical flexure thereby permitting a wearer to carry out most work tasks without unduly risking further aggravation of the ailment being treated. A predetermined location of the second splint member in the present device is also fixed by the left or right wrist involved with the condition. More particularly, such device for treatment of the condition in the left wrist has the second splint member physically located on the left side portion of the flexible support when secured in place. Correspondingly, such device locates the second splint member on the right side portion of the flexible support again when secured in place for treatment of the condition in the right wrist. The releasable fastening means being employed in the present device to secure easy attachment to the wearer's wrist as well as a like removal typically employ cooperating strips at side locations. Such strip elements employ hook and loop type fasteners on the strip which engage

3

for ready connection, adjustment and release. In a preferred construction both splint members as well as the cushion pad in said device are permanently joined to the flexible substrate by conventional means. For example, a cloth substrate permits the splint members and cushioning pad to be sewn directly to the fabric along with a like joinder thereto of the elastic cuff located in the palm region of said cloth substrate. Pressure is relieved upon the ailing wrist with the present device by having the cushioning pad rest against the palm of a wearer.

In the above illustrated preferred embodiments, the flexible substrate overlaps the wearer's forearm with a plurality of releasable fastening strips being located on one side portion to join with a single cooperating strip located on the opposite side portion. A similar fastening arrangement can be employed to secure the thumb projection feature of said flexible substrate in place whereby one or more fastening strips extending therefrom can be joined to the same single strip being employed to fasten the releasable side strips thereto. The pliable nature of the flexible substrate along with the releasable fastening means being employed requires little effort by a wearer to secure it accurately in place while further enabling such device to be worn with maximum comfort and therapeutic benefit when the wearer performs customary work tasks. The elastic cuff provided at the palm end of the flexible substrate helps restrain physical movement of the applied device while further serving to block any entrance of dirt or other contamination during treatment. While many materials can be selected for suitable construction of the present flexible substrate to include natural and synthetic fabrics as well as comparable plastic materials, it is preferred that a selected material have sufficient porosity to provide some ventilation therethrough. Constructing an integral remedial device in the foregoing manner thereby affords relief to the wearer with minimum adjustment also being needed once such device has been secured firmly in place.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view depicting the interior side of a typical remedial device according to the present invention before being applied to an ailing left wrist.

FIG. 2 is a plan view depicting the exterior side of the remedial device in FIG. 1 after having been secured to the ailing left wrist.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the FIG. 1, the depicted remedial device 10 is shown in a flat open position with its interior surface 12 facing upward. The device has a flexible substrate 14 of generally rectangular configuration with side portions 16 and 18 being readily visible. Top portion 20 of the flexible substrate in the depicted physical orientation rests intermediate the side portions 16 and 18, all of which can possibly better be perceived in FIG. 2. Lower end 22 of the flexible substrate 14 is intended to be secured to a person's left forearm with upper end 24 thereafter residing in the palm region of the person's left hand. When the flexible substrate 14 has been applied to an ailing left wrist in this manner its top or upper portion 20 can be seen to reside along the wearer's forearm longitudinal axis 26 as further depicted in FIG. 2. The palm or upper end 24 of the flexible substrate 14 further includes an elastic cuff portion 28 extending along its length together with a projection 30

4

extending forwardly therefrom. The projection 30 terminates with a releasable strip or tab 32 for the purpose of securing the palm end 24 of the flexible substrate 14 to the wearer. When secured in this manner, the projection 30 extends backwardly between the wearer's left thumb and forefinger as again shown in FIG. 2. Correspondingly, palm end 24 of the secured device can also be seen to terminate adjacent the metacarpal joints (not shown) of the wearer's hand. The flexible substrate 14 in the illustrated embodiment comprises a porous cloth material 34 to which is integrally joined still other essential features of the present device. A cushioning pad 36 is included in the palm region 38 of the flexible substrate 14 while releasable fastening means 40, 42 and 44 are joined thereto at side portion 18. Said releasable fastening strips engage a longitudinally extending releasable strip 46 disposed adjacent opposite side portion 16 of the flexible substrate 14 but which becomes aligned along its top or upper portion 20 when the device is applied to the wearer's wrist as shown in FIG. 2. Underlying strip 46 is a first splint member 48 which extends longitudinally along the wearer's point beyond the wrist. A second splint member 50 is integrally joined to the flexible substrate 14 adjacent to the first splint member but inward therefrom and which extends longitudinally in the same direction as the first splint member. When the device 10 is applied to the wearer's wrist said cooperating splint member 50 becomes aligned on the left side portion of said wrist as can be seen in FIG. 2. Accordingly, first splint member 48 primarily limits vertical movement of the wrist involved while splint member 50 cooperates in limiting lateral or horizontal wrist movement. Both splint members of a relatively rigid material such as metal or fiberglass can be sewn into enclosed pockets of the flexible substrate in a customary manner.

In FIG. 2 there is depicted a plan view of the FIG. 1 remedial device 10 which exposes its exterior surface 52. As shown, said device has been applied to an ailing left wrist of wearer 54 with the flexible substrate 14 fitting entirely around the wearer's forearm 56. Same numerals identify common features in said device 10 as previously employed in the FIG. 1 description. The applied device can be further seen to envelop the entire wrist region of a wearer extending beyond said wrist region in both longitudinal directions. Accordingly, the flexible substrate 14 is applied so that side portions 16 and 18 overlap with the releasable strip portions thereof 40, 42 and 44 being joined to a single releasable strip 46. Further engaging releasable strip 32 extending from projection 30 located at the palm end 24 of flexible substrate 14 to releasable strip 46 firmly secures device 10 in place. The cushioning pad 36 of flexible substrate 14 now rests against the left palm of the wearer while elastic cuff 28 effectively grips the wearer's hand around its entire periphery to avert contaminant entry. It also can be seen that first splint member 48 becomes positioned along the forearm longitudinal axis 26 when device 10 has been secured in place while cooperating second splint member 50 becomes aligned substantially coincident therewith on the left side of the wearer's wrist. A still further advantage achieved from constructing the flexible substrate of the illustrated device embodiment with cloth or plastic material is washability. Since this remedial device is customarily worn in a work environment over long periods, the relative ease with which such integral device can be readily washed represents a distinct improvement. It can further be

27
37

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES**

2020
Bogotá, D.C., 30-11-2007

Abogada
ALICIA LLOREDA RICAURTE

ASUNTO	Radicación	04098191
	Trámite	002
	Evento	001
	Actuación	430
	Oficio	15762
	Folios	11

Patente de Invención ☐ Patente de Modelo de Utilidad ☒

Vía Nacional ☒

Vía PCT (fase nacional) ☐ Cap. I ☐ Cap. II ☐

No. Sol. Internacional _____

Fecha de Presentación Internal. _____

Como resultado del examen de fondo, realizado con fundamento en el artículo 85 y con concordancia en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

- 1.1. Descripción: Folios: 5 a 11
- 1.2. Reivindicaciones: Folios: 12 a 13
- 1.3. Dibujos: Folios: 14 a 23

2. Objeto de la invención

- Título de la solicitud: "FERULA PARA LA ARTICULACION TRAPECIO-METACARPIANA" (folio 5).
- Objeto de la invención: este modelo de utilidad se refiere a una férula diseñada para aliviar el dolor y controlar la deformidad ocasionada por algunas patologías en las manos humanas. Un síntoma de la artrosis trapezio-metacarpiana es el dolor debido al desgaste progresivo de la articulación, localizada en la base del pulgar, a esto se suma la deformidad y la incapacidad funcional. Normalmente la solución para estas patologías es una cirugía, mayor o menor dependiendo el grado de destrucción de los ligamentos y/o deformaciones. Por eso si el paciente no se somete a esta intervención puede controlar el dolor y la deformidad mediante una férula. Las

férulas convencionales (según el autor) inmovilizan, además de esta articulación el puño (muñeca) y/o las articulaciones metacarpo falángica y la interfalángica. Por lo tanto la férula ideal es aquella que proporciona inmovilidad suficiente a la articulación afectada sin aumentar la incomodidad y la incapacidad por la inmovilización innecesaria de otras articulaciones. Para ajustarse a estas condiciones la presente solicitud propone una férula compuesta por una parte rígida que controla la aducción palmar, cubital y subluxan la articulación. Adicionalmente, la mitad de la circunferencia de la mano esta sujeta por correas ajustables, de manera que un solo tamaño de férula se adapta a diferentes tamaños de mano de acuerdo a los requerimientos del paciente. Esto permite fabricar de manera industrial tres o cuatro tamaños que cubren la gama de cualquier tipo de mano. La férula esta comprendida por dos elementos fundamentales: una parte rígida constituida por una asa o marco (1) de alambre en el que se acopla una pieza rígida (2) por medio de un sistema de surcos (3) y un aparte ajustable, comprendida por un juego de correas (4 y 5) unidos al asa o marco (1), que permiten que la férula pueda ser adaptada a cualquier mano.

- El objeto de la invención se catalogó como A61F5/01 según la Clasificación Internacional de Patentes (IPC.).

3. De la solicitud de Patente

3.1. Reivindicaciones (artículo 30 D 486)

Después de estudiar el capítulo reivindicatorio que consta de una (1) reivindicación independiente y nueve (9) dependientes se hacen las siguientes observaciones:

- La reivindicación independiente uno (1) es demasiado amplia y no incluye ningún elemento o característica que pueda darle novedad a la solicitud. Las reivindicaciones **SON LA PARTE MÁS IMPORTANTE** de la solicitud pues definen la invención a proteger y delimitan el alcance de esa protección.
- Se sugiere al solicitante presentar una nueva **CLAUSULA PRINCIPAL (reivindicación)** que defina de manera clara y precisa lo que se desea proteger con cláusulas seguidas que particularicen o amplíen el objeto, **se recomienda tener en cuenta las siguientes observaciones y recomendaciones:** - Hacer énfasis en la forma de la parte rígida, la forma del marco, la forma de la pieza rígida, - Hacer énfasis en la geometría de las dos piezas que componen la parte rígida, - Tener en cuenta la ubicación del elemento en la mano. A continuación se presenta un ejemplo de reivindicación independiente:

"Preforma para el dispensado de pañuelos de papel o similares con medios de posicionamiento interior que comprende una lamina central (2) de contorno poligonal extendido, definiendo un borde superior (3), un borde inferior (4), un borde izquierdo (5) y un borde derecho (6), dividida en cuatro secciones mediante tres líneas de plegado (7, 8 y 9) respectivamente, donde dichas cuatro secciones formadas por dichas tres líneas de plegado (7, 8 y 9), son una primera sección superior (10); una segunda sección media superior (11); una tercera sección media inferior (12); y, una cuarta sección inferior (13) caracterizado porque la superficie de la sección superior (10) esta definida por el borde superior (3), una primera porción del borde izquierdo (5), una primera porción del borde derecho (6) y la línea de plegado (7), donde a partir de dicha sección superior (10), por la porción del borde izquierdo (5) se

extiende una solapa adyacente de medios de posicionamiento (14) y donde la porción de borde izquierdo (5) comprende una línea de plegado (15) entre la sección superior (10) y los medios de posicionamiento (14), donde dicha solapa de medios de posicionamiento (14), se proyecta lateralmente, formando un panel de posicionamiento (16) y un primer panel de pegado (17) divididos por una línea de plegado transversal (18) y donde el panel de posicionamiento (16) comprende una superficie de configuración triangular de manera que su hipotenusa es la proyección de la línea de plegado transversal (18), de manera que a partir de la porción de la arista alejada del panel de posicionamiento (16), se proyecta una aleta de posicionamiento (19) en dirección paralela a la línea de plegado (15) hasta la línea proyectada del borde superior (3) y donde el primer panel de pegado (17) esta definido por la línea de plegado transversal (18) y la proyección del borde superior (3) cortada por un reborde paralelo y próximo al reborde de la aleta de posicionamiento (19), reborde paralelo que se extiende hasta un reborde diagonal que se proyecta perpendicular a la línea de plegado transversal (18)."

4. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de presentación nacional es el 1 de octubre de 2004, se encontró el siguiente documento relevante:

Nº	Documento	Título	Fecha de publicación*
D1	US4883073	REMEDIAL DEVICE FOR TREATMENT OF CARPAL TUNNEL SYNDROME	1989-11-28

5. Análisis de patentabilidad (artículo 14 D486)

5.1 Novedad (artículo 16 D486)

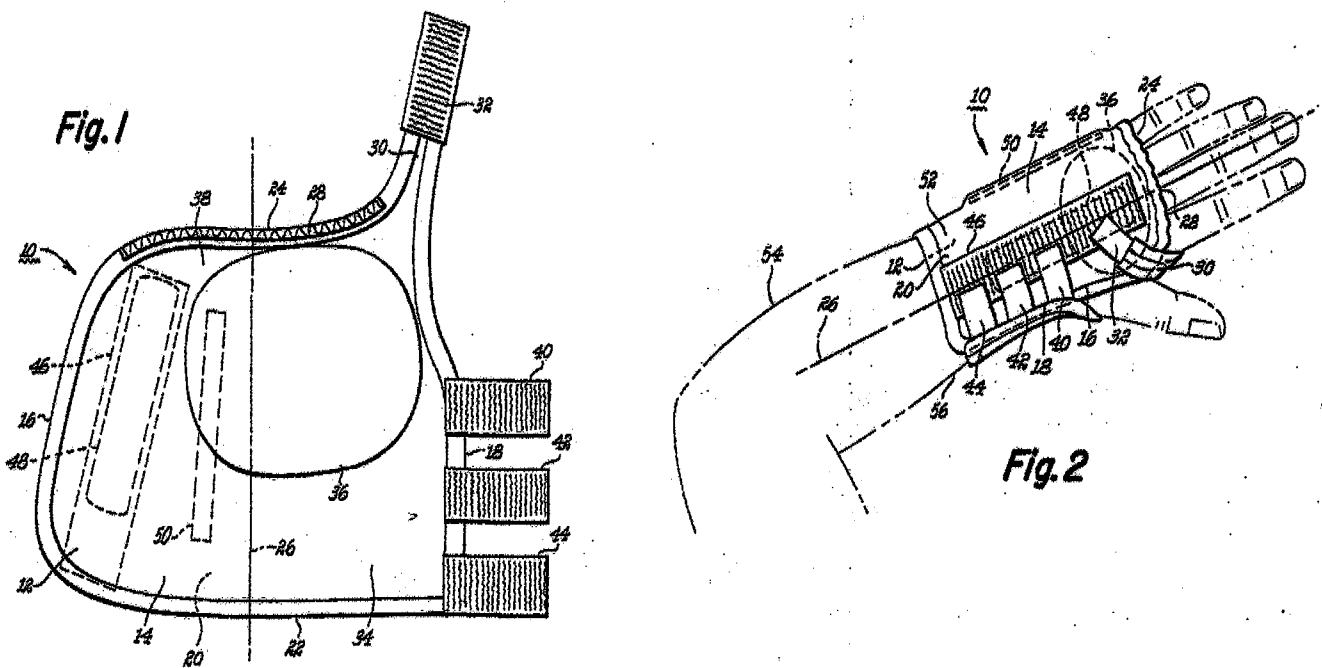
De acuerdo con la definición de novedad del Artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina y basándonos en el objeto de la invención se realizó el siguiente análisis:

1) La reivindicación 1 dice: "Una férula para la articulación trapecio-metacarpiana caracterizada porque comprende:

(a) una parte rígida, conformada por un asa o marco que controla la aducción palmar y cubital que deforman el pulgar y subluxan la articulación y una pieza rígida que evita que el asa o marco se hincque sobre la piel de la región metacarpo falángica y que distribuye esta presión sobre un área amplia de la masa tenar, y (b) una parte ajustable por medio de correas que la hacen adaptable apacientes con diferentes tamaños de mano, en donde los componentes de dicha parte rígida se pueden ensamblar de manera removible o permanente por medio de un sistema de surcos localizado sobre la pieza rígida en la cual el alambre es ensamblado."

2) El documento **US4883073** (llamado en adelante como documento D1) se refiere a un apoyo terapéutico para las personas que sufren del síndrome del túnel metacarpiano.

Figuras 1 y 2 del documento D1



3) Al comparar elemento por elemento de la invención **TAL COMO ESTA DEFINIDO EN LA REIVINDICACION UNO (1)**, con el documento D1, encontramos que el mencionado documento revela todos los elementos y las características de dicha reivindicación. Donde D1 contiene:

REIVINDICACION 1	D1
1) Marco que controla la aducción palmar y cubital que deforman el pulgar y subluxan la articulación	SI Elemento 14, figuras 14; ver resalte folio 36
2) Una pieza rígida que evita que el asa o marco se hinue sobre la piel de la región metacar pofalángica y que distribuye esta presión sobre un área amplia de la masa tenar	SI Elementos 36, figura 1; ver resalte folio 36
3) Una parte ajustable por medio de correas que la hacen adaptable apacientes con diferentes tamaños de manos	SI Elementos 32, 40, 42 y 44, figuras 1, 2; ver resalte folio 36

De acuerdo con lo anterior, todos los elementos que forman parte del “FERULA PARA LA ARTICULACION TRAPICIO-METACARPIANA” mostrados en la reivindicación 1, ya fueron divulgados en D1, por lo cual se podría considerar que **carece de novedad.**

4) El capítulo reivindicatorio no muestra en forma concisa lo nuevo que se pretende aportar a la técnica ni aporta diferencias a lo ya existente. El análisis anterior permitiría afirmar que la presente solicitud no cumpliría con lo estipulado en el artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US4883073	1-10	NOVEDAD

En cumplimiento del art. 85 y en concordancia con el art.45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de 30 días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha

CONCEPTO TÉCNICO No.2370	EXAMINADOR TÉCNICO Código No.202086
--------------------------	--

xe