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(54) Title: CORRECTIVE DEVICE FOR BREAST, SPINE, TORSO AND HANDS

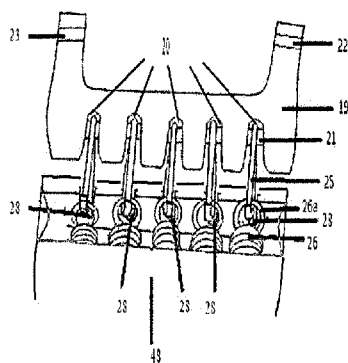


Fig 4

(57) Abstract: The corrective device to the chest, spine, torso and arms, which consists essentially of an upper supporting surface with a minimum curvature of the upper surface, a lower thrust surface having with rectangular form, the semicircular sphere which is fixed to the lower thrust surface with a glue, a soft circular handle, connecting elements and springs which serve to perform exercises with extension, compression and abduction.



**CORRECTIVE DEVICE FOR BREAST, SPINE , TORSO AND HANDS****Technical field to which invention relates**

5 The invention belongs to the class of human necessities, i.e. in the field of devices used for body exercises. More detailed in the section of devices for exercises which are especially adapted to certain parts of the body. According to the international patent classification, the invention can be classified with the sign A63B23 / 00.

**Technical problem solved by the invention**

10 This invention invention with its specific implementation of the elements on the device solves the problem of activating more targeted muscles groups while using of the device for exercises. Also, the only form of the device allows to be used by people with disabilities on the fingers and palms of hands which is a problem that was not been paid attention in the previous state of the art in this field.

**15 State of the art**

In the present state of the art are known more different types of devices for exercises, revealed in US 2007/049473 A1 (CHAPMAN JESSICA [US] ET AL) 1 March 2007 (2007-03-01) , US 2002/091048 A1 (CHEN CHIN - LIANG [TW] 11July 2002 (2002-07-11) , DE 200 02 582 U1 (RIEF ANTON MARIA [DE]) May 18, 2000 (2000-05-18), US2011 / 224056 A1  
20 (ALLEN C RALPH [US]) September 15, 2011 (2011-09-15).

However, although compact and functional, the devices which are revealed here do not contain elements that allow the performance of exercises with the extension ie the application of abduction force by the user. In addition, in the above-mentioned patented device US 2007/049473 A1 (CHAPMAN JESSICA [US] ET AL) March 1, 2007 (2007-03-01),  
25 at the time of performing exercises with compression , a supportive surface is required on which the device will be set, which is not case with the corrective device.

Furthermore, a common feature of the device from the existing invention and that already known state of the technique and revealed in the patent application US 2013/0065740 A1 is performance of exercises in two opposite directions (extension and compression), using  
30 abductive and adductive forces. But ,essential difference between these two devices is that while performing exercises on these two devices, different group of muscles are engaged from where resulted the different technical solution and set up of the basic elements arise. By doing so, during the exercising on these two devices will be achieve a different effect on the human body.

35 The difference on the device of the existing invention and the one already disclosed in the patent application US 2013/0065740 A1 is wherewith the shape of the handles (200,240) is ball form and the same are embracing with the fingers and part of the palm by performing the

exercises in two opposite directions (0005) (0006), where with are engage a diferent group of muscles. Such a form of the handles prevents or makes it dificult to use the device by persons with an injury or absence of a part of the fingers or palms and also the mentioned device can not be used to perform exercises with extension and compression of the lower  
5 extremities - legs . Still more, when exercises are performing with compression , the mentioned device does not have a supportive surface which would allow special stretched position of the palms.

After this brief description of the state of the technique it is clearly recognize the difference in the performance of this device and the functional advantages which she has in relation to  
10 the already known technical solutions. A technical solution that unites all the functionalities and additional solves the above described with activate on more targeted groups of muscle with using devices for bodily exercises and their use by persons with disabilities of fingers and palms of hands are not known to the applicant.

#### **Detailed description of the technical solution**

15 As addition to a description of the technical solution and help for a better understanding of the characteristics of the invention, in accordance and with an appropriate below cited example for the practical embodiment of the invention, in contribution are supply the following images:

Figure 1. Appearance of the device from the perspective

20 Figure 1a. Side appearance and side view of the upper support surface and the lower thrust surface

Figure 1b. Appearance of the back part of the upper support surface

Figure 1c. View from above of the metal ribbon , its apertures and bending places

Figure 1d. Side view of semicircular spheres within the lower thrust surface with the circular  
25 bulge, the aperture for Schrader valve and the clamp

Figure 2a. Frontal view of the soft circular handle

Figure 2b. Frontal view of the soft circular handle in assembly of a firm base

Figure 2c. Side view of the soft circular handle in assembly of the firm base by the buckle  
side

30 Figure 2g. Side view of the soft circular handle in assembly of the firm base on the side where there is no buckle.

Figure 3. Side view of the connecting elements

Figure 4. View of the firm base, spring catches , part of the springs and the lower thrust  
surface

35 Figure 5. View from above on the lower thrust surface

Figure 6. View of use of the device when performing compression exercises with smaller angulation

Figure 7. A view of device use in performing compression exercises with greater angulation

Figure 8. A view of device use in performing exercises with an extension.

From the attached drawings, it can be seen that components and the manner of applying the corrective device for the breasts, spine, torso, hands and legs with a unique technical solution, presented as a sublimation of two functional parts on which is performed a different complex of exercises, with compression and with extension.

The surfaces on which are performed exercises with compression, are in pair and identical in their shape and structural elements, while the surfaces as well as the constituent elements will be explained individually.

Figure 1a gives a detailed side view of one of the upper supporting surfaces.

The device consists of two supporting surfaces exactly identical to each other. For that will be describing the structure of only one of them.

The upper supporting surface (27) depicted in Figure 1a has a minimal rounding of the upper surface. On the image, is a visible circular aperture (29) through which passes the screw (44), which serves to fasten the metal strip (40) with the bolt (45) to the upper supporting surface whose ending surface toward the handles has a recess (32), and afterward the surface is raised and on the same end (33) is oval. On the back part, on the upper supporting surface are made the rectangular clippings (38) shown in Figure 1b.

Through these clippings, passes the connecting elements (25) shown in Figure 3.

Through the middle, along the upper supporting surface is a double-sided adhesive tape (30) on which a hook-fastener (51) is glued to which is fastened the loop-fastener (52) which is sewn on the cotton fabric (31) (Figure 1a). The upper supporting surface (27) has two lateral surfaces (39) and four triangular extensions with a circular aperture in the middle, two on each side (34 and 36) and (37 and 38) wherewith, on the triangular extension with aperture (34) is fastened one end of the metal camshaft (35) and on the other end if on the device are not performing exercises with compression is attached to the triangular extension with an aperture (36).

The upper supportive surfaces (27) shown in Figure 1a provide the required position and support of the palms when performing of exercises with compression-pressure as shown in Figures 6 and 7, thus enabling the engagement of a targeted group of muscles.

In the recess part (32) of the upper supporting surface is placed the initial part of the palm, and it provides comfort and guidance of the force while the exercises with compression are performed.

The ends of the upper support surface (27) are minimally raised and rounded and serve as a support for the root of the palms and the initial part of the wrist when performing exercises with compression.

The rectangular clippings (28) depicted in Figure 4 allow the passing only on the connecting elements (25) on which are attaching springs (26), which with their annular ends (26a) disable the movement of the upper supporting surface in performing exercises with an extension shown on Figure 8.

5 In Figure 4 it is apparent that the rectangular clippings (28) on Figures 1b allow the passage of the connecting elements (25) through the back side of the upper supporting surface to the metal bar (21 or 21a) and their free movement when removing or adding the springs.

The cotton textile (31) disabling slipping of the palms and allows the absorption of the sweat, and easily removed with detach of loop-fastener (52) from the hook-fastener (51) for  
10 maintaining of her hygiene.

The upper supportive surface (27) and the lower thrust surface (48) can be on simple way be separated from the device, by removing the connecting elements from the metal rod and their pulling out, thus allowing the use of the device to performing exercises with abduction on the legs.

15 On the FIG. 1a are shown the two side surfaces (39) that envelop the side part of the metal strip (40).

The triangular continuations with an aperture of the middle (34 and 36) serve to fasten the metal camshaft (35) when on the device are performed exercises with extension. The metal camshaft (35) which is attached in the circular aperture of the triangular continuation (38)  
20 serves for setting on the device beneath a sharp angle which can also be achieved by attaching a loops fastener through the front edges of the upper supporting surface, and fastened to hook fastener (52) in performing the compression exercises shown in Figure 6.

When attaching the metal camshaft (35) in the circular aperture of the triangular continuation (37), the device is placed in parallel position when performing the exercises in Figure 7. This  
25 kind of different position on the upper supporting surfaces while performing of exercise, allow to engage a different group of muscles. Fig.1a

In the middle of the outer sides of the lower thrust surfaces there is a circular protruding surface (47) whose upper edges are in the shape of the letter "r", and in the base there is an aperture of a canal (53) which is directed towards the middle of the circular protruding and  
30 exits on its face and through it via the Schlader valve - (54), air is injected into the semicircular sphere (50), the retention of which is secured by a clamp (55) which secures the lower edge of the semicircular sphere, which is placed on the upper edges of the circular protruding surface (47), Fig. 1d.

On Figure 5 is show the outlook of the lower thrust surfaces (48) who have a shape of a  
35 rectangle, and on the middle has a square metal plate (49) in the middle has a aperture with screw threads identical to the apertures (42 and 43) set at the ends of the metal strip (40) shown in Figure 1c. In Figure 1a it is evident that the said apertures are overlapping and a

bolt passes through them, (46) which is fixed with screw threads of the metal plate (49) for the lower thrust surfaces .

On the outer sides of the lower thrust surfaces with glue are fixed the wide surfaces of semicircular spheres(50) .

5 The lower thrust surfaces (48) enable stability and fastening of semicircular spheres (50) in performing compression exercises. In Figure 1, is shown a metal strip (40) which having a rectangular form , which at the places where it coincide with the side surfaces (39), follows their shape , and at the two ends of the metal strip there are two circular openings (42 and 43) that overlap each other. In Figure 1a it is visible that they are parallel on the aperture of  
10 the lower thrust surface (48) and through them passes the bolt (46) which is fixed with aperture with screw threads on square metal plate (49) while the third circular aperture (41) is parallel to the aperture of the upper supporting surfaces (29) through which the bolt passes (44) and is fixed with the rivet (45 ). The metal strip (40) is connecting the upper supportive surfaces (27) with the lower thrust surfaces (48 ) and provides their solid support and partial  
15 elasticity in performing exercises with compression.

Figures 2a, 2b, 2c and 2d showing the technical performance of a soft circular handle (1) in which envelope from cotton textile (4) is situated a sponge (3) , which in the middle has a rectangular space (8) through which a belt passing (2) , encircling the soft circular handle which passes through the rectangular spaces (22 and 23) on the side part of the solid base  
20 (19), thereby it attached the soft circular handle (1) to the solid base (19), while with the apertures (6) on the belt when enters in the buckle (7) , the volume of the circular handle (1) is adjusted .

Furthermore, the belt (2) at one end is bended and wraps the lower part of the buckle (7) until its end is fastened i.e. sewn to the other part of the belt, with a 3 rows of a solid thread  
25 (5) where on the last row is sewn and the beginning of the cotton envelope (9) which, along with the belt (2), passes through the aperture of the side part of the solid base (22) where the belt enters the central empty space of the sponge (8), ie its initial part (10).

The cotton sheath (4) covers the sponge (3) and together are coating the upper part of the solid base (19). Through the aperture of the outer part of the sponge (16 ) which temporarily  
30 ends (11) Figures 3 and 3a and the aperture of the cotton sheath (14) , the belt (2) passes through the side part of the solid base (23) and again through the aperture of the cotton envelope (15) enter in the spongy space (8) from where continue the outer part of the sponge (16) forming the upper soft vault of the circular handle (1) and the ending part of the cotton fabric (17) is fixed with the help of an glue and cover the ending part of the sponge  
35 (18) to its central free space (8) through which passes the remaining part of the belt (2) on which has apertures (6) which with help of the buckle (7) fixing the belt , whereupon the

circumference of the handle is adjusted (Figure 3a, 3b) and at the same time providing closing of the soft circular handle.

The semicircular handle covered with the sponge and cotton material allows for a good fixation on the wrist and prevents any kind of soft tissue injury during performing exercises.

5 The circular handles (1) are fixing the device for the wrists while exercises with extension are performing. At Fig. 4 is depicted as the circular handles together with the connecting elements (25) which passing through the rectangular spaces (28) at the back part of the upper supporting surface (27) serve as a support on the device when various exercises with compression are performing. If the upper supporting and lower thrust surfaces are removed,  
10 the circular handles can be placed on the ankle joints on the legs, whereupon the device can be serve for carrying out exercise with abduction.

On FIG. 4 is visible the solid base of a soft circular handle (19) who having a foundation and two lateral prolonged parts (12 and 13) visible in Figure 2b and 2d. The solid foundation of the soft circular handle is made of plastic or other solid material. The foundation in the upper  
15 part is flat and wider in relation to the lower part which have a ribs empty spaces (20) through which the metal bar (21) passes, which is further secured with two metal strips (24) visible in Figure 2b and 2g, placed in the side part on a solid foundation where the metal bar is wrapped in the lower part (21) and passes through lateral prolonged parts of the solid base and encircle the upper portions of the openings (22, 23) where they ending. Through the empty  
20 ribbed spaces (20) in the lower part of the solid base are attached the connecting elements (25) through which the springs (26) are indirectly fixed to the metal bar (21).

The solid base connects the soft circular handle with the rest part of the device through the side apertures. The upper part of the base is flat and wider from the base of the lower part in order to provide a more stable base of the soft circular handle. Wherewith the safe fixation of  
25 the metal bar is ensures (21) on which are attaching the springs (26) via the connecting elements (25).

The look of the connecting element (25) which is made of metal material is shown in Figure 3. In Figure 4, it is visible that on one side is attached to the metal bars (21) placed in the solid base (19) and on the other side to him are attaching the springs (26) shown in Figure  
30 4.

The connecting element (25) allows connection of the springs (26) with the solid base of the handle (19) shown in Figure 4 in performing the exercises with extension (Fig. 9).

On the FIG. 4 is shown a connecting element (25) who is attached to a metal bar (21) on one side and the spring (26) on the other side and passing through the rectangular clippings (28)  
35 of the upper supporting surface (27) near the handles and provide the support and stability on the device through the compression surfaces in carrying out the exercises with pressure, Figures 6 and 7. The connecting elements also allow the removal or addition of the springs

when exercises with extension are performing depending on the physical ability of the individual.

On Figure 4 are shown springs (26) with their ending horizontally placed annular endings (26a), which with help of the connecting elements (25) are attached to the metal bars (21) .

5 The springs are extending from one solid base of the handle (19) to the other (19a) passing between the upper supportive surface (27) and the lower thrust surface (48).

The springs serve for performing exercises with extension in opposite - diametrical direction, and the device with the handles are fixed to the wrists.

Ringest ends (26a) of the springs (26) which are attaching to the connecting elements allow  
 10 statics of the upper support surface (27) when exercises with an extension are performing .  
 An integral part of the device of the existing invention is the semicircular sphere shown in Figure 1d which is fixed on the lower thrust surface with clamp (55).

#### LEGEND

- 15 1 . Soft circular handle  
 2 . Belt  
 3 . Sponge  
 4 . Cotton textile  
 5 . 3 rows of a solid thread  
 20 6 . Aperture on the belt  
 7 . Bukle  
 8 . Rectangular space  
 9 . Cotton sheath  
 10 . Initial part of sponge  
 25 11 . Outer part of the sponge which temporarily ends  
 12,13 . Lateral prolonged parts  
 14,15 . Aperture of the cotton sheath  
 16 . Outer part of the sponge  
 17 . Ending part of the cotton fabric  
 30 18 . The ending part of the sponge  
 19 . Solid base  
 20 . Ribs empty spaces  
 21 or 21a . Metal bar  
 22,23 . Rectangular spaces  
 35 24 . Metal strips  
 25 . Connecting elements  
 26 . Springs

- 27 . Upper supporting surface
  - 28 . Rectangular clippings
  - 29 . Circular aperture
  - 30 . Double sided adhesive tape
  - 5 31 . Cotton fabric
  - 32 . Recess
  - 33 . Upper supporting surface ending
  - 34 , 36,3738 . Triangular extensions with a circular aperture in the middle
  - 35 . Metal camshaft
  - 10 39 . Lateral surfaces
  - 40 . Metal ribbon
  - 41 . Circular aperture
  - 42,43 . Aperture of the metal ribbon
  - 44 . Screw
  - 15 45 ,46 . Bolt
  - 47 . Circular protruding surface
  - 48 . Lower thrust surface
  - 49 . Circular aperture
  - 50. Semicircular spheres
  - 20 51 . Hook - fastener
  - 52 . Loop - fastener
  - 53 . Aperture of a canal
  - 54 . Schlader valve
  - 55 . Clamp
- 25

## PATENT CLAIMS

1. The corrective device for breast, spine, torso and arms **characterized by** an upper supporting surface with a minimal rounding of the upper surface, a lower thrust surface who having the shape of a rectangle, a semicircular sphere that is fixed for the lower thrust  
5 surface with glue , soft circular handle, connecting elements and springs, which is used for performing exercises with extension, compression and abduction.
2. The corrective device in accordance to claim 1 **characterized by** an upper supporting surface that is made a circular opening (29) through which passing a screw (44) which serves to fasten a metal strip (40) to the upper supporting surface, which ending surface  
10 towards the handles have a recess (32), and then the surface is elevated and on the end (33) is rounded, rectangular clippings (28) through which passing the connecting elements (25) and edges (30) which are raised in the shape of the letter "r" and in their empty space are placed the cotton fabric which allowing absorption of sweat from the palms which prevents their slipping.
- 15 3. The corrective device in according to claim 2 **characterized by** the rectangular clippings (28) shown in Figure 4 allow the passage of only the connecting elements (25) on which the springs (26) are attached , which with their annular ends (26a) are disabling the movement on the upper supporting surface in carrying out the exercises with extension, and at the same time allow the passage of the connecting elements (25) through the back part of the upper  
20 supporting surface to the metal bar (21 or 21a) and their free movement when removing or adding the springs.
4. The corrective device in according to claim 1 **characterized by** un upper supporting surface (27) that has two lateral surfaces (39) and four triangular extensions with a circular aperture in the middle, two on each side (34 and 36) and (37 and 38) wherewith, on the  
25 triangular extension with opening (34) is fastened one end of the metal camshaft (35) and on the other end if on the device are not performing exercises with compression is attached to the triangular extension with an opening (36).
5. The corrective device in according to claim 4 **characterized by** a triangular continuations with an opening of the middle (34 and 36) that serves to fasten the metal bar (35) when on  
30 the device are performed exercises with extension and the metal bar (35) which is attached in the circular aperture of the triangular continuation (38) serves for setting on the device beneath a sharp angle when performing the compression exercises with attaching the metal bar (35) in the circular aperture of the triangular continuation (37), the device is placed in parallel position when performing the exercises with compression.
- 35 6. The corrective device in according to claim 1 **characterized by** a lower thrust surfaces (48) who have a shape of a rectangle, and on the midle is set a circular opening (49) identical to the openings (42 and 43) set at the ends of the metal strip (40) whereupon the

said openings are overlapping and a bolt passes through them (46) which is fixed with the rivet (47) for the metal strip while on the outer sides of the lower thrust surfaces with glue are fixed the wide surfaces of semicircular spheres(50).

5 7. The corrective device in according to claim 6 **characterized by** a metal strip (40) with rectangular form, which at the places where it coincide with the side surfaces (39), follows their shape , and at the two ends of the metal strip there are two circular openings (42 and 43) that overlap each other and they are parallel on the lower thrust surface (48) and through them passes the bolt (46) which is fixed with the rivet (47), while the third circular opening (41) is parallel to the opening of the upper supporting surfaces (29) through which  
10 the bolt passes (44) and is fixed with the rivet (45 ) whereupon the metal strip (40) is connect the upper supportive surfaces (27) with the lower thrust surfaces (48 ) and provides their solid support and partial elasticity in performing exercises with compression.

15 8. The corrective device in according to claim 1 **characterized by** soft circular handle (1) in which envelope from cotton textile (4) is situated a sponge (3) , which in the middle has a rectangular space (8) through which a belt passing (2) , encircling the soft circular handle which passes through the rectangular spaces (22 and 23) on the side part of the solid base (19), thereby it attached the soft circular handle (1) to the solid base (19), while with the openings (6) on the belt when enters in the bukle (7) ,the volume of the circular handle (1) is adjusted.

20 9. The device in according to claim 8 **is characterized that** the belt (2) at one end is bended and wraps the lower part of the buckle (7) until its ending is fastened i.e. sewn to the other part of the belt, with a 3 rows of a solid thread (5) where on the last row is sewn the beginning of the cotton envelope (9) which, along with the belt (2), passes through the opening of the side part of the solid base (22) where the belt enters the central empty space  
25 of the sponge (8), ie its initial part (10)while the cotton envelope (4) covers the sponge (3) and together are coating the upper part of the solid base (19) whereupon the belt (2) passes through the side part of the solid base (23) and again through the opening of the cotton envelope (15) enter in the spongy space (8) from where continue the outer part of the sponge (16) forming the upper soft vault of the circular handle (1) and the ending part of the  
30 cotton fabric (17) is fixed with the help of an glue and cover the ending part of the sponge (18) to its central free space (8) through which passes the remaining part of the belt (2) on which has openings (6) which with help of the buckle (7) fixing the belt , whereupon the circumference of the handle is adjusts (Figure 3a, 3b) and at the same time providing closing of the soft circular handle.

35 10. The device in according to claim 8 **is characterized in** that the solid base of a soft circular handle (19) who having a foundation and two lateral prolonged parts in the upper part is flat and wider in relation to the lower part which have a ribs empty spaces (20) through

which the metal bar (21) passes, which is further secured with two metal strips (24) placed in the side part on a solid foundation where the metal bar is wrapped in the lower part (21) and passes through lateral prolonged parts of the solid base and encircle the upper portions of the openings (22, 23) where they ending whereof through the empty ribbed spaces (20) in the lower part of the solid base are attached the connecting elements (25) through which the springs (26) are indirectly fixed to the metal bar (21).

11. The corrective device in according to claim 1 is **characterized in that** the connecting element (25) attached on one side to a metal bars (21) and situated in the solid base (19) and on other side the springs are attached (26) and enabling connection on the springs (26) with the solid base of the handle (19) shown while carrying out the exercises with extension and also when is attached on the metal bar (21) from one side and the spring (26) on other side and passing through the rectangular clippings (28) of the upper supporting surface (27) near the handles , providing the support and stability on the device through the compression surfaces in carrying out the exercises with pressure.

12. The corrective device in according to claim 1 is **characterized** that the springs (26) with their ending horizontally placed annular endings (26a), which with help of the connecting elements (25) are attached to the metal bars (21) and are extending from one solid base of the handle (19) to the other (19a) passing between the upper supportive surface (27) and the lower thrust surface (48) and serve for performing exercises with extension in opposite - diametrical direction, and the device with the handles is fixed to the wrists.

## AMENDED CLAIMS

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1. Corrective device for breast, spine, torso and arms that allows performing of compression and extension exercises and is characterized with two identical halves to whom compression exercises are performed and are removable from the device and each composed of an upper support surface with a minimum curvature of the upper surface which with the metal stripe and bolts and rivets is fixed on the lower thrust surface with shape of a rectangle on which the semicircular sphere is fastened with a clamp, between the upper and lower surfaces, elastic springs passes whose ends parts through their connecting elements are attached to the metal bars on the two soft circular handles, which are diametrically arranged and with them the exercises with extension are performing.

2. The device in accordance to claim 1 wherein circular opening (29) is made on the upper supporting surface through which a screw (44) is passing that serves for fastening a metal strip (40) to the upper supporting surface, which is coated with cotton textile (31) disabling slipping of the palms and allows the absorption of the sweat, and easily removed with detach of loop-fastener (52) from the hook-fastener (51), ending surface towards the handles have a recess (32), and then the surface is elevated and on its end (33) is rounded, rectangular clippings (28) through which passing the connecting elements (25) .

3. The device in according to claim 2 wherein the rectangular clippings (28) allowing the passage of only the connecting elements (25) on which the springs (26) are attached, which with their annular ends (26a) are disabling the movement on the upper supporting surface in carrying out the exercises with extension, and at the same time allow the passage of the connecting elements (25) through the back part of the upper supporting surface to the metal bar (21 or 21a) and their free movement when removing or adding the springs.

4. The device in according to claim 1 wherein, the upper supporting surface (27) has two lateral surfaces (39) and four triangular extensions with a circular aperture in the middle, two on each side (34 and 36) and (37 and 38) wherewith, on the triangular extension with opening (34) is fastened one end of the metal camshaft (35) and on the other end if on the device are not performing exercises with compression is attached to the triangular extension with an opening (36).

5. The device in according to claim 4 wherein the triangular continuations with an opening of the middle (34 and 36) serve to fasten the metal camshaft (35) when on the device are performed exercises with extension and the metal camshaft (35) which is attached in the circular aperture of the triangular continuation (38) serves for setting on the device beneath a sharp angle when performing the compression exercises with attaching the metal camshaft (35) in the circular aperture of the triangular continuation (37), the device is placed in parallel position when performing the exercises with compression.

6. The device in according to claim 1 wherein the lower thrust surfaces (48) have a rectangular shape, and on the middle is set a circular opening (49) identical to the openings (42 and 43) set at the ends of the metal strip (40) whereupon the said openings are overlaping and a bolt passes through them (46) which is fixed with the rivet (47) for the metal strip while In the middle of the outer sides of the lower thrust surfaces there is a circular protruding surface (47) whose upper edges are in the shape of the letter "r", and in the base there is an aperture of a canal (53) which is directed towards the middle of the circular protruding and exits on its face and through it via the Schlader valve - (54), air is injected into the semicircular sphere (50), the retention of which is secured by a clamp (55) which secures the lower edge of the semicircular sphere, which is placed on the upper edges of the circular protruding surface (47).

7. The device in according to claim 6 wherein the metal strip (40) which having a rectangular form, which at the places where it coincide with the side surfaces (39), follows their shape , and at the two ends of the metal strip there are two circular openings (42 and 43) that overlap each other and they are parallel on the lower thrust surface (48) and through them passes the bolt (46) which is fixed with the rivet (47), while the third circular opening (41) is parallel to the opening of the upper supporting surfaces (29) through which the bolt passes (44) and is fixed with the rivet (45 ) whereupon the metal strip (40)

is connect the upper supportive surfaces (27) with the lower thrust surfaces (48 ) and provides their solid support and partial elasticity in performing exercises with compression.

8. The device in according to claim 1 wherein the soft circular handle (1) in which envelope from cotton textile (4) is situated a sponge (3) , which in the middle has a rectangular space (8) through which a belt passing (2) , encircling the soft circular handle which passes through the rectangular spaces (22 and 23) on the side part of the solid base (19), thereby it attached the soft circular handle (1) to the solid base (19), while with the openings (6) on the belt when enters in the bukle (7) ,the volume of the circular handle (1) is adjusted.

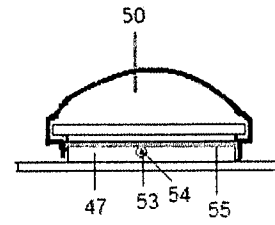
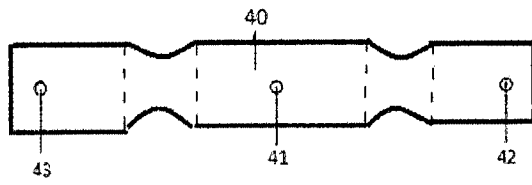
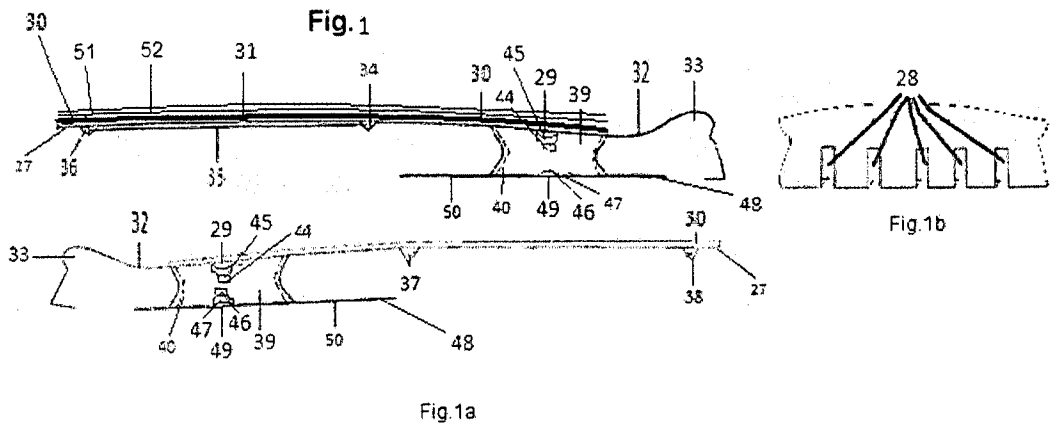
9. The device in according to claim 8 wherein the belt (2) at one end is bended and wraps the lower part of the buckle (7) until its ending is fastened i.e. sewn to the other part of the belt, with a 3 rows of a solid thread (5) where on the last row is sewn the beginning of the cotton envelope (9) which, along with the belt (2), passes through the opening of the side part of the solid base (22) where the belt enters the central empty space of the sponge (8), ie its initial part (10)while the cotton envelope (4) covers the sponge (3) and together are coating the upper part of the solid base (19) whereupon the belt (2) passes through the side part of the solid base (23) and again through the opening of the cotton envelope (15) enter in the spongy space (8) from where continue the outer part of the sponge (16) forming the upper soft vault of the circular handle (1) and the ending part of the cotton fabric (17) is fixed with the help of an glue and cover the ending part of the sponge (18) to its central free space (8) through which passes the remaining part of the belt (2) on which has openings (6) which with help of the buckle (7) fixing the belt , whereupon the circumference of the handle is adjusts (Figure 3a, 3b) and at the same time providing closing of the soft circular handle.

10. The device in according to claim 8 wherein the solid base of a soft circular handle (19) having a foundation and two lateral prolonged parts in the upper part is flat and wider in relation to the lower part which have a ribs empty spaces (20) through which the metal bar (21) passes, which is further secured with two metal strips (24) placed in the side part on a solid foundation where the metal bar is wrapped in the lower part (21) and passes through lateral prolonged parts of the solid base and encircle the upper portions of the

openings (22, 23) where they ending whereof through the empty ribbed spaces (20) in the lower part of the solid base are attached the connecting elements (25) through which the springs (26) are indirectly fixed to the metal bar (21).

11. The device in according to claim 1 wherein the connecting element (25) who is attached on one side to a metal bars (21) and situated in the solid base(19) and on other side on him the springs are attaching (26) and he enabling connection on the springs (26) with the solid base of the handle (19) shown while carrying out the exercises with extension and also when is attached on the metal bar (21) from one side and the spring (26) on other side and passing through the rectangular clippings (28) of the upper supporting surface (27) near the handles , providing the support and stability on the device through the compression surfaces in carrying out the exercises with pressure.

12. The device in according to claim 1 wherein the springs (26) with their ending horizontally placed annular endings (26a), which with help of the connecting elements (25) are attached to the metal bars (21) and are extending from one solid base of the handle (19) to the other (19a) are passing between the upper supportive surface (27) and the lower thrust surface (48) and serves for performing exercises with extension in opposite - diametrical direction, and the device with the handles are fixed to the wrists.



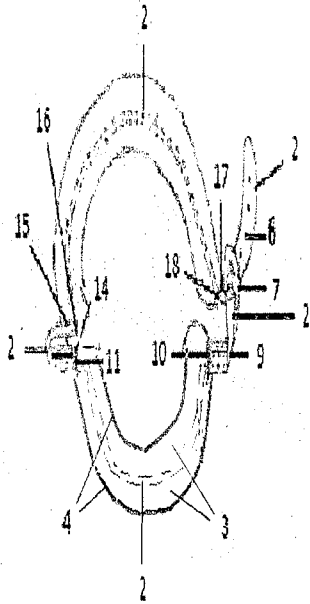


Fig 2a

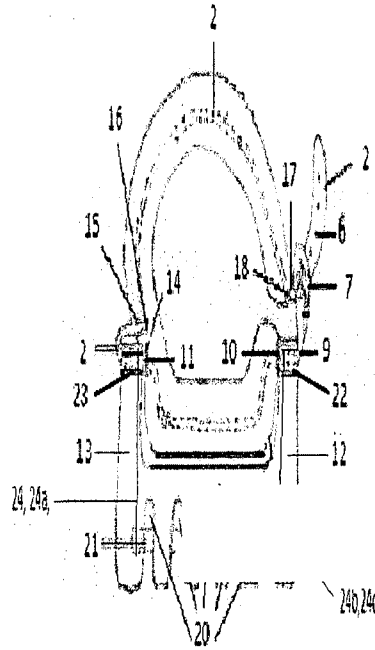


Fig 2b

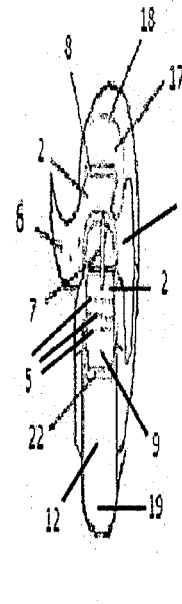


Fig 2c

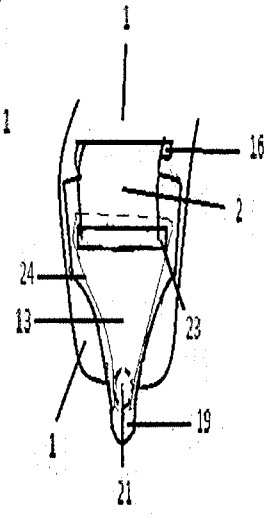


Fig 2d



Fig 3

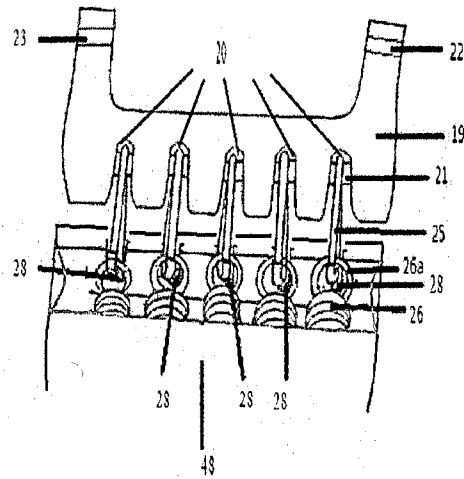


Fig 4

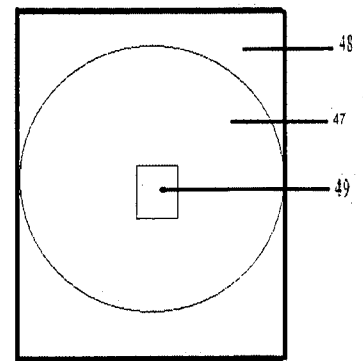


Fig 5

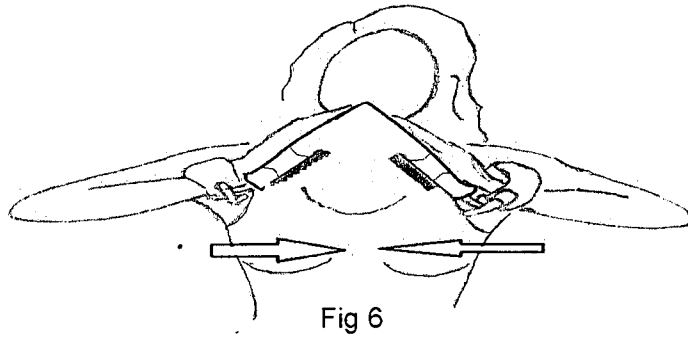


Fig 6

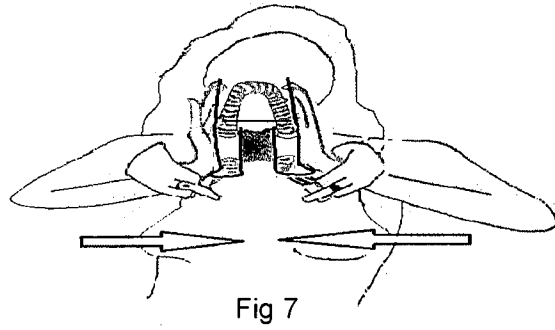


Fig 7

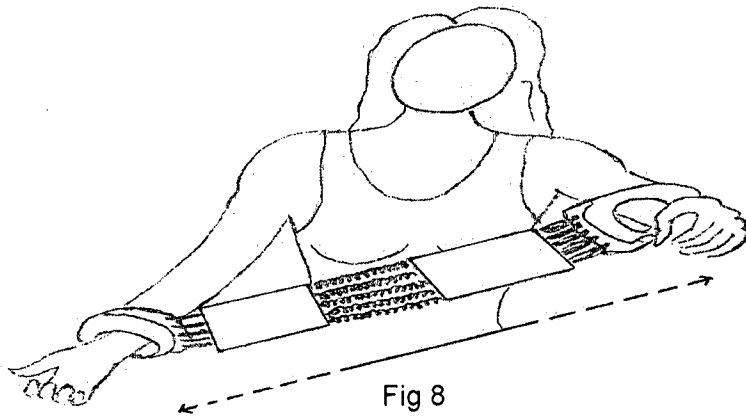


Fig 8



## INTERNATIONAL SEARCH REPORT

International application No  
PCT/MK2018/000004

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 507 591 A (GRANT DANIEL [GB]) 7 May 2014 (2014-05-07) page 4 - page 7; figures -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/MK2018/000004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4332380	A	01-06-1982	NONE	
US 2003134729	A1	17-07-2003	NONE	
CN 106492417	A	15-03-2017	NONE	
CN 202892771	U	24-04-2013	NONE	
GB 2507591	A	07-05-2014	NONE	