extract

Interior with new additions and other features of placement and the previously published finding that I need help with tactile grasping object information for blind people under number NL 1029561 and NL 1029665 for blind or partially sighted people to be able to grasp objects designed or obstacles. This invention via an elastic band over the fingers on the back of the hand moved.
The new invention is meant for practical disadvantages of the previously published invention to improve and also to new ideas, adding that the device is universal. There is a light sensor with grayscale detection added alongside or integrated into the remote sensor. It can detect differences in color intensity. There is also a compass and guide through the GPS system and added a clock showing the time by touch pass to the visually impaired. The place on the body has changed.
The design of these new additions to the touch, gripping aid can be placed above the left or right forearm near the wrist.
An even more handy little device can be moved to an index finger of one hand.
Both devices have the ability to be combined with a cane equipped with a remote sensor on the bottom of the stick and a remote sensor close to the handle of the stick. The identified barriers are passed to the touch-gripping aid.

New Attacks-Grab adjustment help with object information for blind people.

The new findings are based on the earlier I published invention affects grip-aid with object information for blind people under number NL 1029561 which aims to blind and visually impaired people through pads that vibrate and stimulate controlled by a remote sensor system, obstacles and approaching them to feel and to avoid or objects and accessing them to feel it to intervene. The object information obtained by the RFID system published under number NL 1029665. The invention via an elastic band over the fingers on the back of the hand moved.
The new invention is meant for practical disadvantages of the previously published invention to improve and also to new ideas, adding that the device is universal. The biggest problem of the invention described above is that the visually impaired using a fixed device that has certain daily activities such as hand washing, toileting, difficult.
The new finding relates to a tactile gripping aid in my example on the right forearm as close to the wrist is placed. The size of this unit there is also room for functions other than as described in my publication under number NL 1029561 and NL 1029665. There is a light sensor with grayscale detection added alongside or integrated into the remote sensor. It can detect differences in color intensity. Furthermore, a compass and guide through the GPS system and added a clock showing the time by touch pass to the visually impaired. Also, there may be other, not further described features such as mobile telephony, voice recorder, ipod, connected to a computer, etc., in the device to add.
The new finding also relates to a tactile gripping aid in my example is slid to the right forefinger and easy to take and store in pocket or purse such a garment.
Both devices have the ability to be combined with a cane equipped with a remote sensor on the bottom of the stick and a remote sensor close to the handle. By means of a plug or contact point on the handle of the cane connects to the pads of the touch-gripping aid. Obstacles in height or depth from the remote sensors on the cane passed to the pads of the touch-gripping aid to the forearm or finger which, as the front pads vibrate or excite, the visually impaired know it's an obstacle in the height For example, a curb or a staircase. When vibrating or stimulation of the posterior pad knows that a blind or visually impaired obstacle in depth is such a foothold, a staircase end, a hole in the road. During vibration of the middle of the touch pad to support the index finger and the vibration of the pads on the side of the forearm with the aid affects the visually impaired know that it is an obstacle at head height. A similar finding is known as patent number NL1001500.
The device on the right forearm was extended to four in operation tactile pads in the shape of a cross, which a path is felt on the left side of the forearm, a path at the top of the wrist area of the forearm, a path on the right side of the forearm and a path to the top of the forearm towards elbow. The pads, such as small vibrating motors, small pools or other magnetic devices that stimulate the skin and felt on the skin to skin contact or are positioned to take effect felt on the skin. These pads are using an operating system and software in connection with a GPS system that, by one or two pads to vibrate or excite, direction angles of forty five degrees to the visually impaired can pass. In this way, in a certain route indicated or blind or partially sighted right or left turn. A similar finding was recently published by the media. The object of this invention is similar to using a GPS system, the blind or visually impaired lead the way by a rotating arrow on the handle of a cane that is felt with the thumb.
The device on the forearm with the four operating tactile pads can also serve as a compass, which miter the blind or sighted a fixed position point shows the direction in which one stands or walks through the vibrating or stimulating an- or two tactile pads which always indicate the north.
The time can these tactile pads to the visually impaired passed through a certain pattern. An example of a pattern can be AM (midnight) that is felt by the path at the top of the forearm near the wrist. At PM (after noon), the felt pad on the top of the forearm towards elbow. After a short break to give the pads then the hours. The pads vibrate than in pulses, for example vibrating units with pauses in between. The pad at the top of the forearm near the wrist gives a pulse to twelve hours, one hour to two pulses and three pulses for two hours. Next, the path on the right side of the forearm with a pulse that is three hours, four hours two pulses and three pulses five hours. Then the path to the top of the forearm towards elbow with a pulse six hours, seven hours with two pulses and three pulses for eight hours. The path that is felt on the left side of the forearm arm gives a pulse to nine hours, ten hours in two pulses and three pulses for eleven hours.
After another short break on one and the same minute in packages of five minutes indicated. The pad at the top of the forearm near the wrist gives a pulse to zero minutes, this is the hour. Then it's five minutes to two pulses and three pulses at ten minutes past the hour. Then the path on the right side of the forearm with a pulse fifteen minutes, twenty minutes to two pulses and three pulses to twenty-five minutes past the hour. The pad at the top of the forearm towards elbow gives a pulse to thirty minutes, on two pulses and three pulses thirty-five minutes to forty minutes past the hour. The path that is felt on the left side of the forearm shows a pulse forty-five minutes, fifty minutes to two pulses and three pulses to fifty-five minutes past the hour.
In summary, the sequence of sense: first determine whether the AM or PM, then the number of hours and then the minutes.
Besides the remote unit, or integrated in, a light sensor added grayscale detection by reason of the fact that in finding objects on a table, desk, kitchen counter and in cases objects on the floor of the remote unit, especially if the visually impaired that obliquely directed, too much information gets into the pads on the distance to the object that is also continuous because the surface of the table and so felt. Because objects have a color, the light sensor and convert it to grayscale differences by giving them to the pads on the sides (left and right) of the forearm down. If the light sensor only works without the remote sensor can also be given different shades of gray from light to dark or vice versa eg the pads normally used in remote sensor, the distance to an obstacle or to propagate to the pads. With the help of touch grab it on the forearm of the six touch pads and the finger-gripping aid to the four pads. This feels the blind and sighted by the signals from the pads acting (vibrate, vibrate, tickle, etc.) the difference between, for example on a table, desk, kitchen sink, standing between objects and object instances on the floor. The light sensor can either simultaneously or separately from the remote sensor works.
The full potential of the device to operate a switch to the unit that the blind or visually impaired can switch on or off. There is also a quick switch made that the function of the touch-grip support 'the obstacle and object feel "in and out by moving the hand hinged at the wrist far upwards, and with the back of the hand switch button. Pressing the hand hinged at the wrist far upwards, and with the back of the hand to press the switch again, the function of the touch-grip support 'the obstacle and object-feeling "off. This eliminates the blind or visually impaired do not always use another hand to touch the switch on the grip-aid "the obstacle object and feel" on or off.
The tactile gripping aid to the forearm can be combined with a white stick that in, close to the tip of the cane, a remote sensor is adjustable mounted and remote sensor close to the handle that connects to one of the handle incoming wire and attached plug in the touch-gripping aid can be inserted. This is the sensor of the touch-off and help grip, the distance sensor of the cane on the job. The remote sensor at the bottom of the cane and the remote sensor near the handle giving through a beam detects an obstacle, it through the pads of the touch-grab aid then felt for the blind or visually impaired.
Besides the touch-gripping aid to the affected forearm is a gripping aid developed in this example the forefinger of the right hand is moved. This may also be incorporated into a glove. In my example I am from a device on the finger. It is a small and handy device for the blind or visually impaired that is easy to install and easy to do or. The operation as described in my publication

number 1029561 is similar except that fewer pads used the distance and coming closer to an obstacle or an object. The tangible help to the finger grip is made of elastic and rigid materials
On the finger is slid to an elastic sleeve (assuming that the number one knuckle of the finger is the top) phalanges two and three cover. The sensitivity of the fingertip to maintain it is not covered. On top of the cover are two rigid parts confirmed by the elastic sleeve relative to each other, with the phalanges are pin. These rigid parts are the pads and the operating system with the rigid structure of the second phalanx of the remote sensor. The rigid part of the third phalanx comprises an upper portion of the finger pads which are in operation and felt a ring where, under the ring, a contact (female) is that contact with a contact (male) on the handle of a cane. If the blind or partially sighted grabs the handle is automatically contacted through the contact with the male and female distance sensors of the cane. This is the remote sensor of the touch-aid off and grab the remote sensors take the cane on the job. The remote sensor at the bottom of the cane and the remote sensor near the handle giving through a beam detects an obstacle, it through the pads of the touch-grab aid then felt for the blind or visually impaired. For example, an obstacle in the height stair or curb work the pads of the second phalanx. For example, an obstacle in the depths down steps or sidewalk sound works the pads of the third phalanx. With an obstacle at head height to work the middle of the four pads. With the thumb allows the device on or off quickly.
The invention will be further detailed to put the basis of the embodiment shown in the figures of the construction of the invention.
Fig. 1 shows a top and side view of the tactile aid to grasping the forearm.
Fig. 2 shows a front view of the tactile aid to grasping the forearm.
Fig. 3 shows schematically the position of the pads again.
Fig. 4 shows the tangible aid to grasping the forearm again combined with a cane.
Fig. 5 shows a side view of tangible help to grab the index finger.
Fig. 6 shows the tangible aid to grasping the finger again combined with a cane.
Figure 7 shows the addition next to the remote sensor of the light sensor.
Figure 8 shows the scanning of objects on the table and so on.
Figure 9 shows a scanning table.
Figure 10 shows the scan of an object by the light sensor.
Figure 11 shows scanning a small object by the light sensor.
Description and operation of the figures.
Fig.1 The frame 4 is a sensor 2 hinged in and out bed. Unfolded, the radius 12 is less hindered by the back of the hand 11. The frame 4 with Velcro strap 10 or 10 with closure attached to the forearm. With switch 5, the tactile grip and put standbij help with the quick switch 5a by using 11 upwards, the switch in position 11a 5a pressed and thus "the obstacle and object feel" turned on. With this switch 5a again by pressing the hand 11 in position 11a to turn "the obstacle and object feel" off.
In the frame 4 are six pads 3 to 12 depending on the radius distance from the distance sensor 2 palpable vibration, ranging from the 3 side of the elbow pads to the pads close to the wrist according to whether one object or obstacle 14 is approaching 14. Shown in Figure 3 from 3a to 3b, 3c, 3d, 3e, 3f. Every sensible skip from one to another path 3, for example from 3a to 3b corresponds to a certain distance of the emitted beam 12 by the distance sensor 2 and by reflection on an object 14 or barrier 14 again captured beam 12 by the distance sensor 2 this angle by calculation determines.
Fig. By June 1 switch to press, the compass through a GPS system on the north and indicated in the miter pads 1a, 1b, 1c, 1d.
Fig. 3. If the north toward the pad vibrates 1a 1a, as north direction A is vibrating pads 1a and 1b at the same time. If the north toward the pad vibrates 1b 1b, as north to B is vibrating pads while 1b and 1c, 1c and north into the path 1c is vibrating, and north to C vibrations pads 1c and 1d at the same time, and north towards the path 1d 1d is vibrating, and north into the pads vibrating D 1a and 1d at the same time. Fig. When pressed again, a switch 6 is turned off the compass.
By pressing switch 7 in the guide to miter with a GPS system and a pre-programmed route enabled.
Fig. 3 The direction is the same as the compass. Gets the display to the visually impaired 1a direction to go than the pad vibrates 1a, given the blind or visually impaired designation to A to go beyond the pads vibrate 1a and 1b, etc. By simultaneously switch 7 in Figure 1 again pressing the sign off.
By switch 8 to push the time pulses (vibrating units with breaks in between), represented by the pads 1a, 1b, 1c, 1d. Fig. 3. First, determine whether it is AM or PM. If the path 1a vibrates AM. Vibrates path 1c is the PM. After a short pause, the hours indicated. 1a shows the path a pulse it is twelve hours, one hour to two pulses and three pulses for two hours. 1b shows the path a pulse it is three hours, four hours at two pulses and three pulses for five hours. 1c shows the path a pulse it is six hours, seven hours with two pulses and three pulses for eight hours. 1d shows the path a pulse it's nine hours, ten hours in two pulses and three pulses for eleven hours. After a short pause, the minutes indicated in packets of five minutes. 1a shows the path a pulse it is zero, with two pulses at three and five minutes Pulz ten minutes. 1b shows the path a pulse it's fifteen minutes, twenty minutes to two pulses and three pulses so twenty-five minutes to sixty minutes. Fig .. Switch by pressing 8 again, the time display off.
By switch 9 to press the RFID system, object information, as I had published under number 1029665, on. Switch 9 by again pressing the RFID system is turned off.
In frame 4 is an entrance to this 13 via a connector 13a Fig. 4 of 11 white stick, that they be able to close.
Fig. 4 On the cane 11 is among close to the point a distance sensor 2a adjustable fitted and a distance sensor 2b close to the handle 17, which slopes upwards and together via a wire 16 in the cane 11 runs to switch 15 in the handle 17 and then from the handle 17 is attached to it a connector 13a. 2a The sensor is adjustable as dependent on the personal way and walk the length of blind or visually impaired, the angle of the remote sensor radius 2a and 12a must be adjusted. If the plug into the socket 13a 13 Figure 1 is inserted, turn the distance sensor 2 of the touch-down and can help grab at rest folded down position. The distance sensors 2a and 2b Figure 4 take the role of distance sensor 2 fig.1 on and shows the obstacles found by the remote unit 2a through the pads 3, 3a t / m 3f of the tactile gripping assistance and the obstacles found by 2b by the remote sensor on the pads or 1b and 1d.
Fig. 4 An obstacle in depth through 18, this radius 12a of the sensor, the sensor 2a and reported it to the pads 2a 3a and 3b in Figure 3. Fig. 4. When an obstacle is in the air 19 through the beam 12a of the sensor, the sensor 2a and reported it to the pads 2a 3f and third in Figure 3. To Fig.4 palpable distinction between the barriers 18 and 19, the middle pads 3d and 3f in fig.3 not used. In fig.4 a flat road without obstacles and normal use of the cane is to reflect the beam 12a, length and duration towards the receiver, set so that the pads 3a t / m 3f in fig.3 not vibrate. Fig.4 The obstacles at head height are indicated by the radius of the distance sensor 12b 2b, and distributes it to the pads 1b and 1d in fig.3
Fig. 5 On the index finger 20 is a flexible plastic sleeve 22 which pushed the finger tip is not covered. On the cover 22 above the second and third phalanx frame 21 and 21a confirmed independently with the finger joints can take. On frame 21a above the second phalanx, the distance sensor 2 fixed and two pads 3c and 3d so built that they function properly felt by the finger 20. Frame 21a through a flexible bridge with frame 21. In frame 21 above the third phalanx are two pads 3a and 3b so built that they function properly felt by the finger. Against these four pads 3a, 3b, 3c, 3d is on the other side of the finger pad 1f. In frame 21, a

switch 5 mounted with the thumb-grip touch support on or off. Under the frame 21, the ring portion, an input 23 (female) is applied as the blind or visually impaired the handle of the fig.6 25 cane 11 tackles, makes contact with the handle 25 standing contact 24 (male). The contact 24 via switch 15 is connected to the remote sensors 2a and 2b. The remote sensor 2a is adjustable as dependent on the personal way and walk the length of blind or visually impaired the angle of the sensor beam 2a and 12a must be adjusted. Liaison with 23 (female) fig. 5 and 24 (male), the distance sensor 2 fig.6 fig.5 by touch-grip help take off and the remote sensors 2a and 2b of the cane 11 fig.6 this task and by the remote unit radius 2a and 12a identified obstacles transferred to the pads 3a t / m 3d. Obstacles at head height are indicated by the radius of the distance sensor 12b 2b and passed to the pads 3b and 3c.
Fig.6 An obstacle in depth through 18, this radius 12a of the remote sensor 2a shows the distance and pointed it to the sensor pads 2a 3a and 3b above the third phalanx. When an obstacle in the air 19, such a step, it is through the beam 12a of the sensor, the sensor 2a and 2a reported this to the pads 3c and 3d above the second phalanx. The palpable difference between the barriers 18 and 19 through the pads 3a, 3b and 3d, 3c from the application of the different phalanges. For a flat surface with no obstacles 18 and 19 and normal use of the cane 11 is the reflection of the beam 12a, length and duration towards the receiver, set so that the pads 3a t / m 3d does not vibrate.
Fig.7 Besides the distance sensor 2 and incorporated herein, is a light sensor with grayscale detection added 26. It can detect differences in color intensity.
Fig.8 When scanning an object 27 in the horizontal position of the beam 12 by the distance sensor 2 receives the blind or visually impaired a clear signal to the felt pads on the distance the object is located.
Fig.9 When scanning in an oblique position of the radius of 12 distance sensor 2 over a substrate 28, a table, or feel the visually impaired too much information into the pads 3 fig.7 and can then become a standing object thereto difficult.
Fig.10 When scanning in the same oblique position of the beam 29 of a light sensor 26 may differ from color to grayscale 27 objects detected relative to the substrate 28 and these differences are passed on to the felt pads 1b and 1d. Fig.7 Each color difference found vibrating pads again Fig. 10, this is the information that 27 objects are located relative to the substrate 28 marked for blind or partially sighted and may hereafter, by the information of the distance sensor 2 and the tactile Fig.7 3 pads then an object caught.
Fig.11 Small objects, in my example, a spoon 30 may be normal by the gross distribution of a beam 12 of a distance sensor 2, for example by touch-gripping aid to the poor, in six pieces, spread over the six pads 3, unfelt be. A light sensor can detect color differences the small object 30 is in comparison with the surface 28 and pass this on to the pads 1b and 1d fig.7 which the blind or partially sighted this by using the distance sensor 2 and the tactile pads 3 Then a grip.

Conclusions

1. Interior with new additions and other features of the placement and published by me under number NL 1029561 invention for blind or partially sighted people to grasp objects designed or obstacles. This device with new additions to the touch, gripping aid is placed above the left or right forearm near the wrist, in my description on the right arm, which can be added, in a cross-mounted, four tactile pads which can include vibrating motors small vibrating magnet pools, or other devices that the skin stimulate or felt and which are placed in the device, with a path on the left side of the forearm, a path at the top of the forearm near the wrist, a path the right side of the forearm, and a path to the top of the forearm towards elbow.
2. Device according to claim 1 that the four pads for a single or excite and vibrate together in pairs of two pads simultaneously excite or vibrate.
3. Device according to claim 1, prove that the pads vibrate in time and thus forms a pulse and, with pauses between vibrations, multiple pulses are used by the blind or visually impaired as such felt that he / she can clearly distinguish whether one, two or multiple pulses are felt.
4. Device according to claim 1 characterized in that the remote unit by folding up so does the radius of the remote sensor is not obstructed by the back of the hand and if no use is made of folded, and thus less space.
5. Device according to claim 1 wherein the touch-gripping support a standby and a quick switch are fitted with the quick switch is placed in the device close to the wrist and is operated by hand hinged at the wrist upwards and that this switch from the back of the hand pressed and thus the distance sensor works. By pressing the hand up to run and thus the switch will activate the remote sensor off.
6. Device according to claim 1 wherein the touch-gripping aid to the forearm with a white stick together works by an adjustable proximity sensor near the tip of a cane, to take a remote sensor close to the handle of the cane in place via a connection to a switch on the handle of the cane, and then through a wire from the end of the handle it comes with a plug. By placing them in the loaded input of tactile gripping help stabbing the remote sensor of the touch-gripping aid off and take the distance sensors on the cane to the function of the distance sensor of the touch-grip support on which obstacles in the depth and height eg stair and head height can be felt through the pads of the touch-gripping aid, except that when obstacles in the depths of the two pads vibrate towards elbow and obstacles in the height example stair, the two pads near the wrist shake and obstacles at head height to the the touch-pads help to grab the arm on the side of the forearm felt.
7. Device according to claim 1 wherein the tactile gripping aid is placed on the index finger of one hand, in my example the right, through an elastic sleeve that, if the finger is slid, the finger tip is not covered and where on the cover, above the second and third phalanx, a frame is confirmed, independently, with the finger it is pinned by a flexible bridge and communicate with each other. In the frame above the second phalanx is a proximity sensor mounted and felt by the finger, when in operation, two placed pads in the longitudinal direction of the finger in the frame, with the tip towards the palm, a ring above and to the third phalanx felt by the finger, when in operation, two placed pads in the longitudinal direction of the finger on the side switch with the thumb can be controlled and subject to the ring one input (female) to contact able to make a white stick.
8. Device according to claim 1 and 6 that the touch-gripping aid to the index finger with a white stick together works by an adjustable proximity sensor near the tip of a cane, to take a remote sensor close to the handle of the cane through connection to a switch the handle of the cane and then through a contact (male) to the handle and input (female) of the tactile grip assistance, contact and thus the distance sensor of the touch-gripping aid off and the distance sensors on the cane the function of the remote sensor of the touch-grip help take over, causing obstructions in the depth and height can be felt through the pads of the touch-gripping aid, except that when obstacles in the depths of the two pads vibrate above the third phalanx and obstacles in the height example stair, the two vibrating pads above the second phalanx creating a clear distinction is made between deep and high obstacles by using the sense of the pads at different phalanges. The obstacles at head height is sensed by a path on the side of the finger across the four pads on the side of the finger.
9. Device according to claim 1, 2, 3, 4, and 5 showing the remote unit or integrated in a light sensor placed that color intensity to observe and converts them to grayscale (grayscale detection) and separately or concurrently with the remote sensor to operate.
10. Device according to claim 9 in which the light sensor and 1,2,3,4,5 objects and obstacles to scanning color intensity and converts them into grayscale data and passes them to the blind or visually impaired through tactile touch pads in the gripping aid that can consist of vibrating motors, small vibrating magnet pools, or other devices that stimulate the skin.

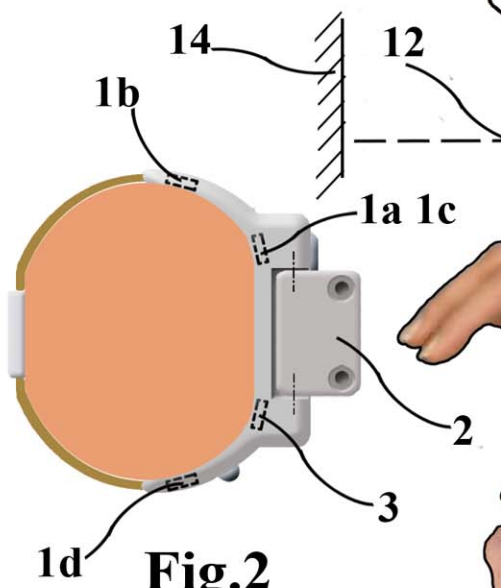
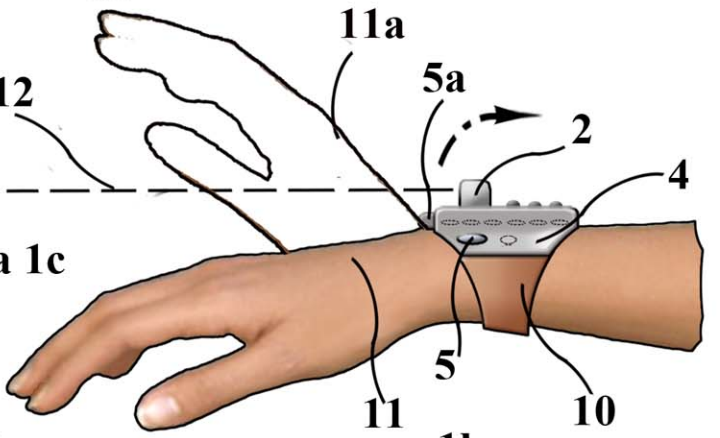


Fig.2



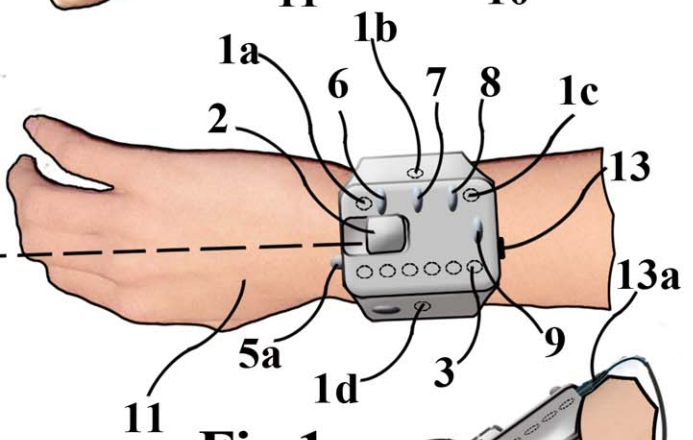


Fig.1

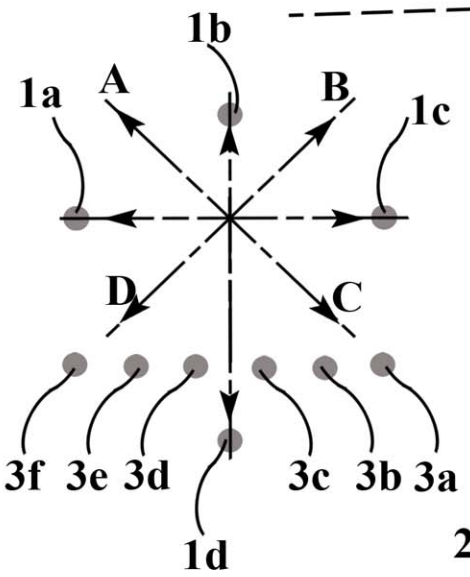
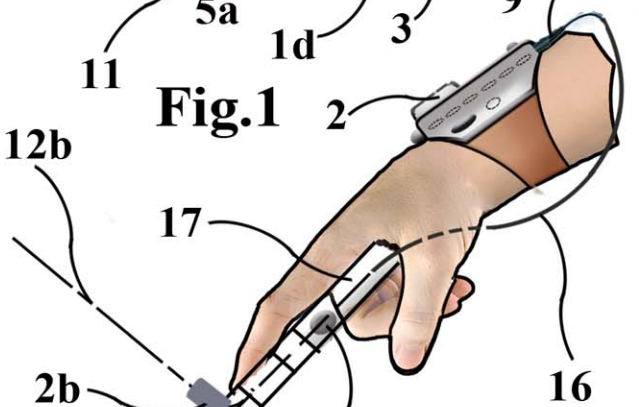


Fig.3



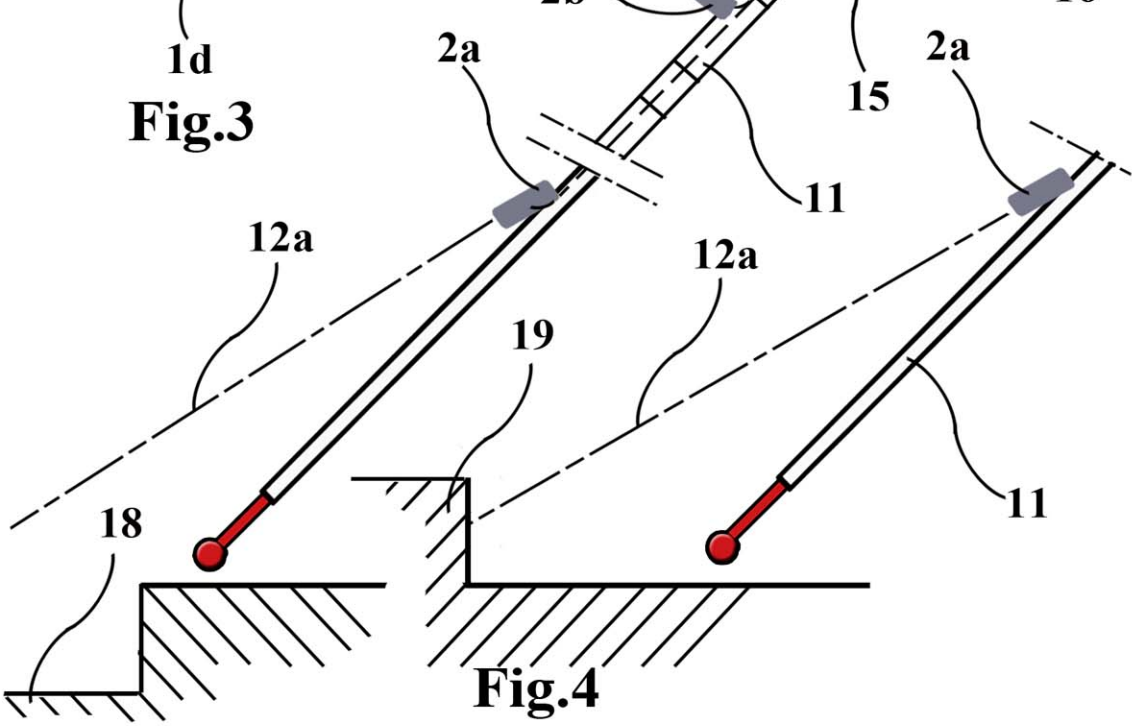


Fig.4

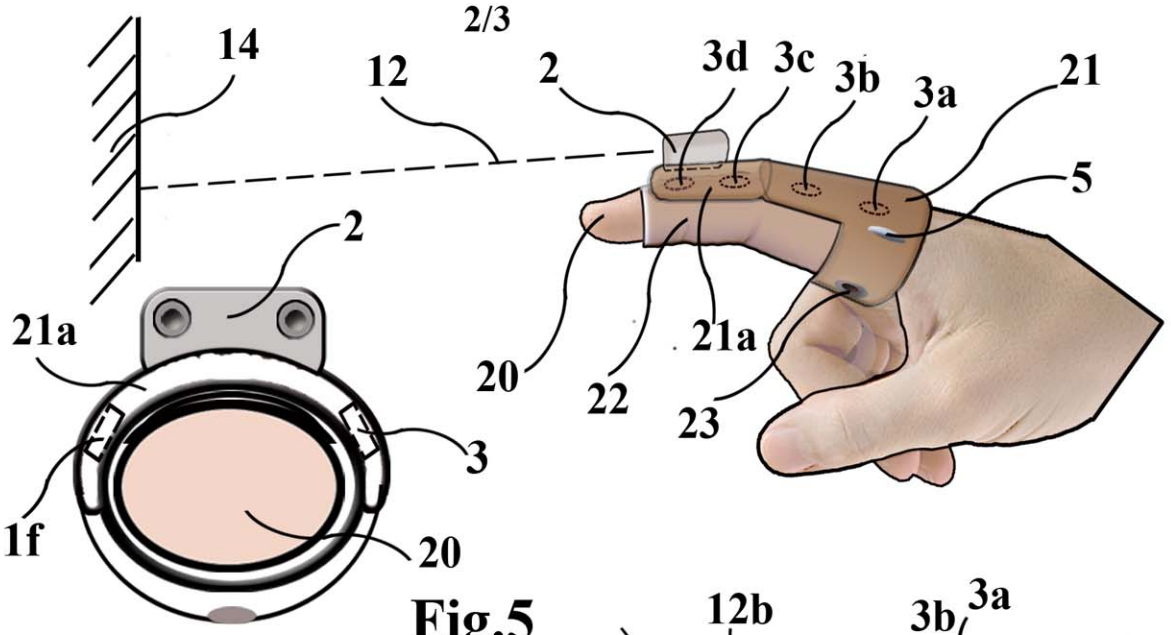
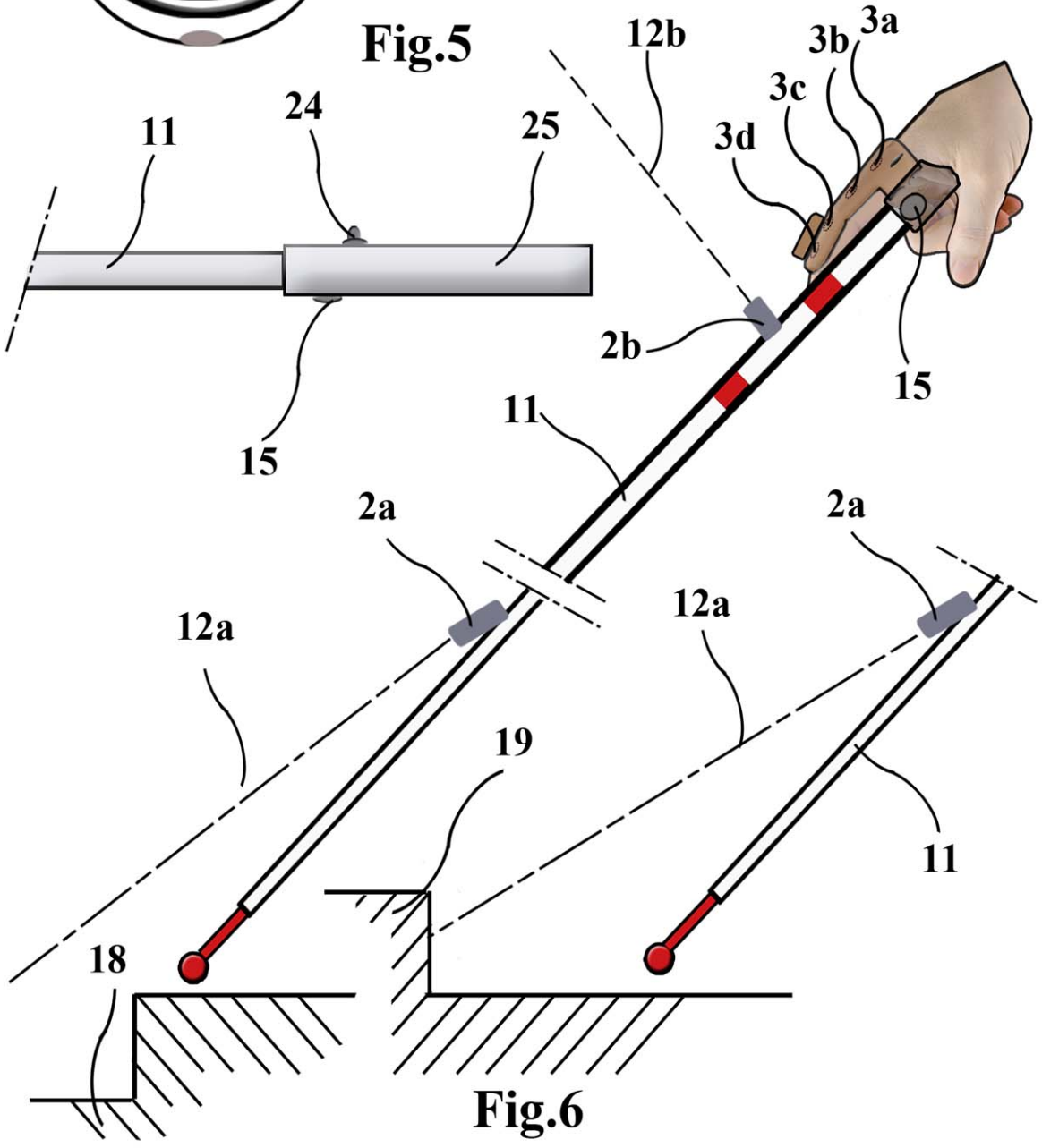

14
12
2
3d
3c
3b
3a
21
5
2
21a
20
22
21a
23
3
1f
20

Fig.5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3a
3c
3d
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24
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11
2a
2a
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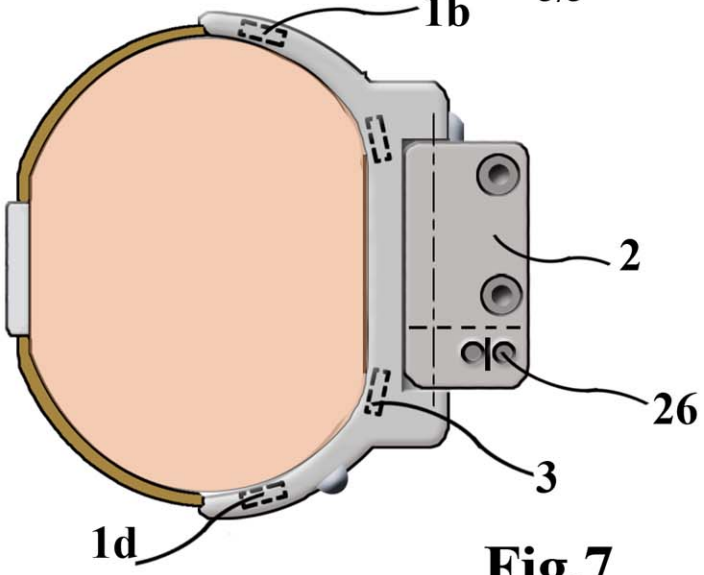
19
11
18

Fig.6



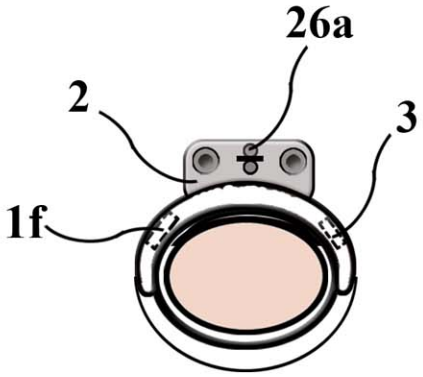


Fig.7

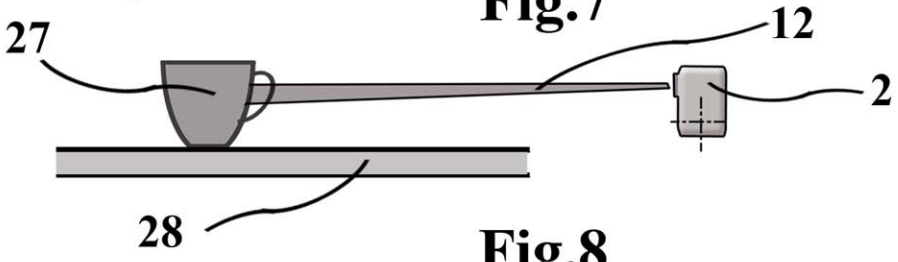


Fig.8

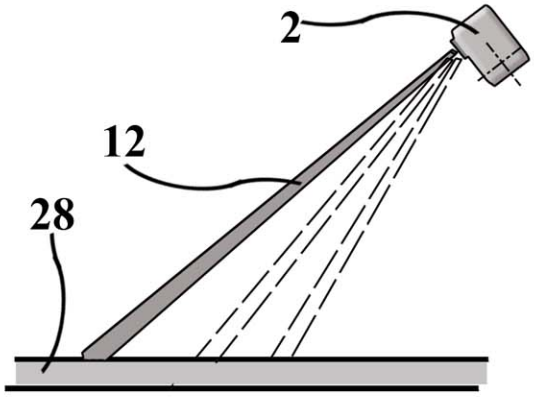


Fig.9

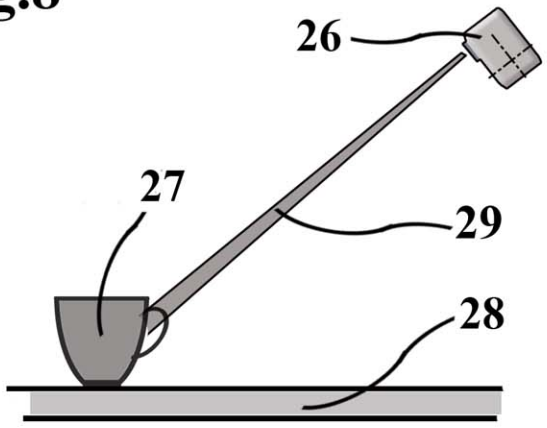
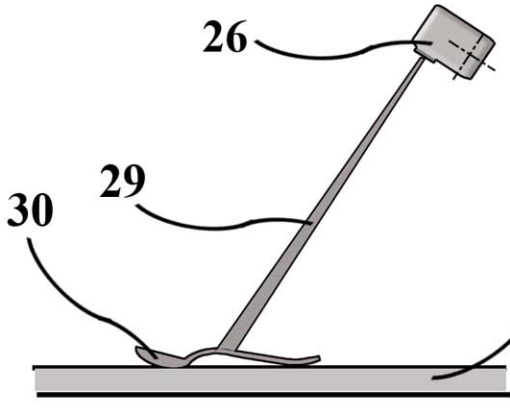


Fig.10



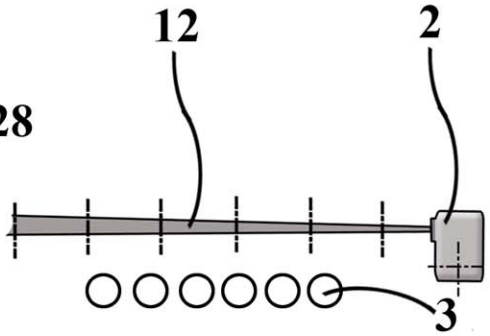
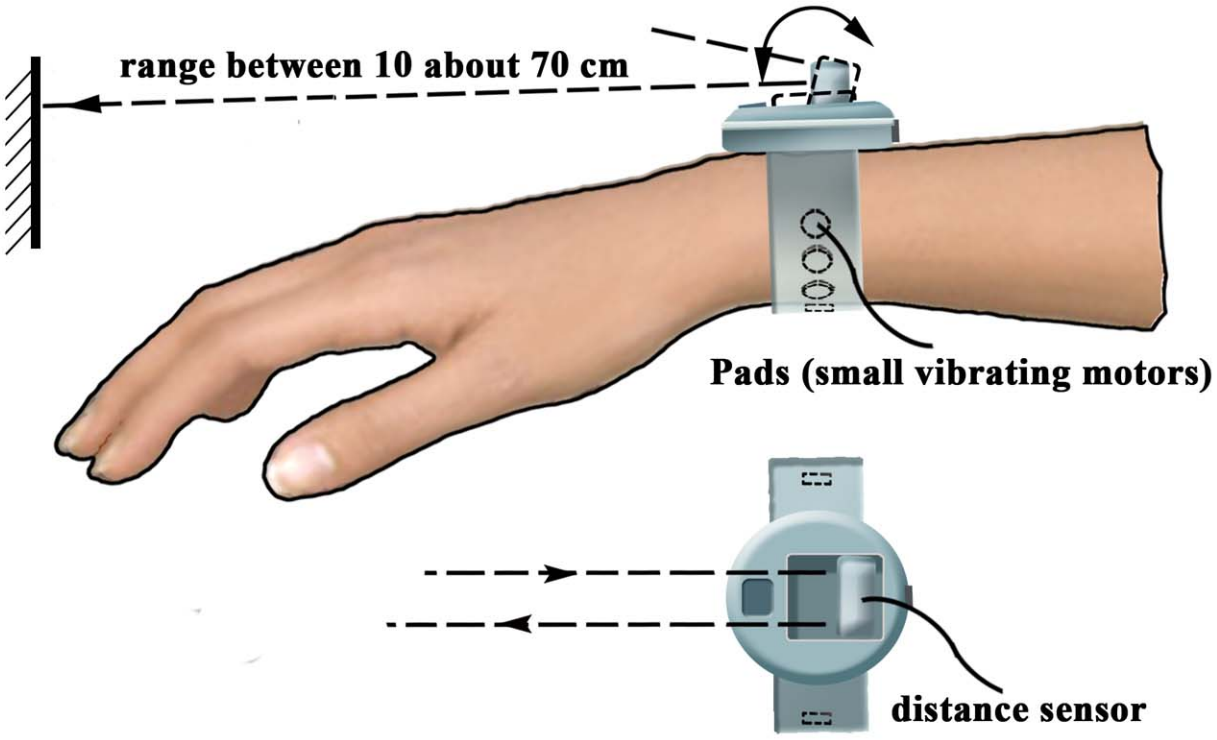


Fig.11

Drawing 3

Smaller touch-grab aid for blind people



the pads to be tangible of A to G by the approaching the obstacle or object
if necessary also the intensity of the vibrations of the pads can increase of A to G.

the sensor is adjustable by turning so that the blind person or visually handicapped does not have stretch the arm by the feeling obstacles