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Collins et al.

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(54) **SYSTEM FOR FACILITATING THE MEASUREMENT OF BLOOD PRESSURE AND METHOD OF MEASURING BLOOD PRESSURE UTILIZING THE SYSTEM**

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A61B 5/00 (2006.01)

A61G 5/10 (2006.01)

(52) **U.S. Cl.**

CPC **A61B 5/02233** (2013.01); **A61B 5/702** (2013.01); **A61G 5/10** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,124,328 A * 3/1964 Kortsch A47C 1/03
248/118

5,074,501 A * 12/1991 Holttä A47B 21/0371
248/118.3

5,181,515 A * 1/1993 Negishi A61B 5/022
600/485

D377,125 S * 1/1997 Adamsson D6/716.2

6,336,044 B1 * 1/2002 Ghiassi A61B 5/0059
250/316.1

7,207,944 B2 * 4/2007 Fumuro A61B 5/02233
600/490

7,427,268 B2 * 9/2008 Millay A61B 5/02233
600/499

2013/0334851 A1 * 12/2013 Hoell A47C 3/18
297/217.2

2014/0350418 A1 * 11/2014 Knopfel A61B 5/02141
600/490

FOREIGN PATENT DOCUMENTS

JP 2007130284 A * 5/2007

OTHER PUBLICATIONS

Machine Translation of JP2007-130284A, 2018, J-PlatPat.*

* cited by examiner

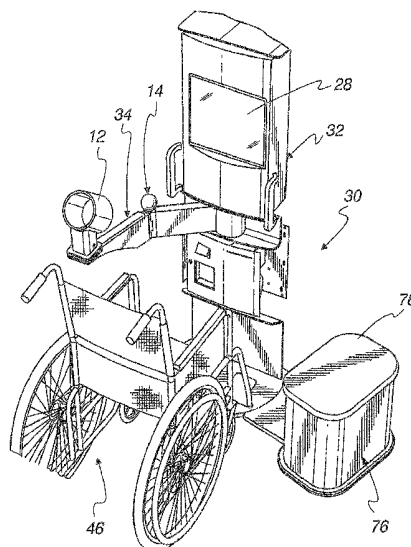
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(57) **ABSTRACT**

A system for facilitating measurement of a person's blood pressure having: a) a cuff that is configured to: i) be operatively situated in relationship to a person's arm; and ii) strategically exert different pressure on the person's arm to controllably restrict blood flow therein; and b) a base assembly that supports the cuff. The base assembly is configured to allow selective placement of the cuff in first and second different positions relative to the person with the person in a measurement taking position. The cuff in the first position is configured to be operatively situated in relationship to the person's left arm. The cuff in the second position is configured to be operatively situated in relationship to the person's right arm.

12 Claims, 10 Drawing Sheets



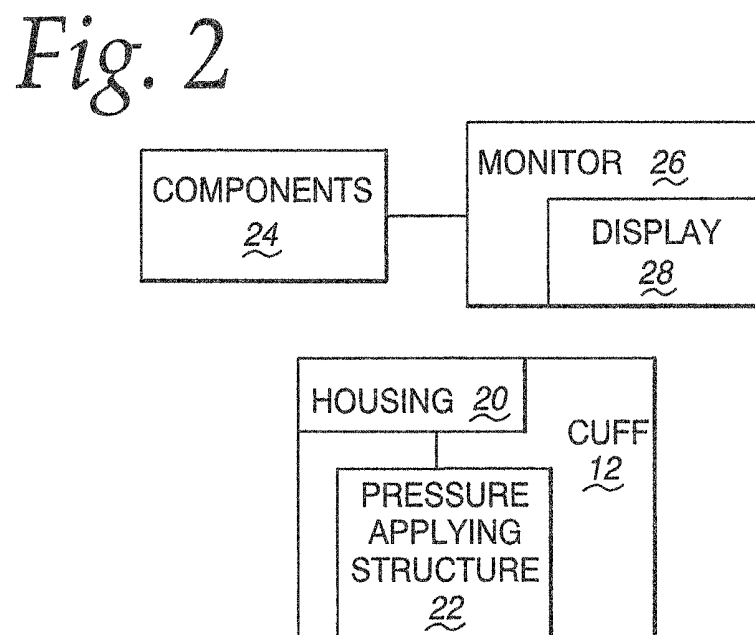
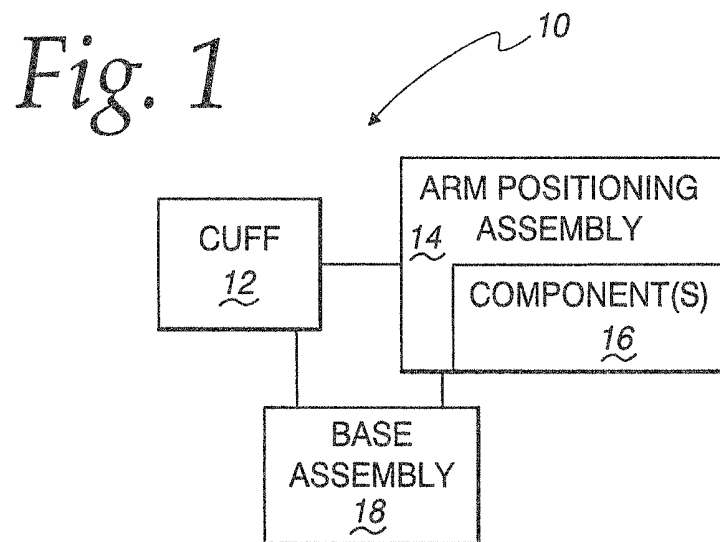


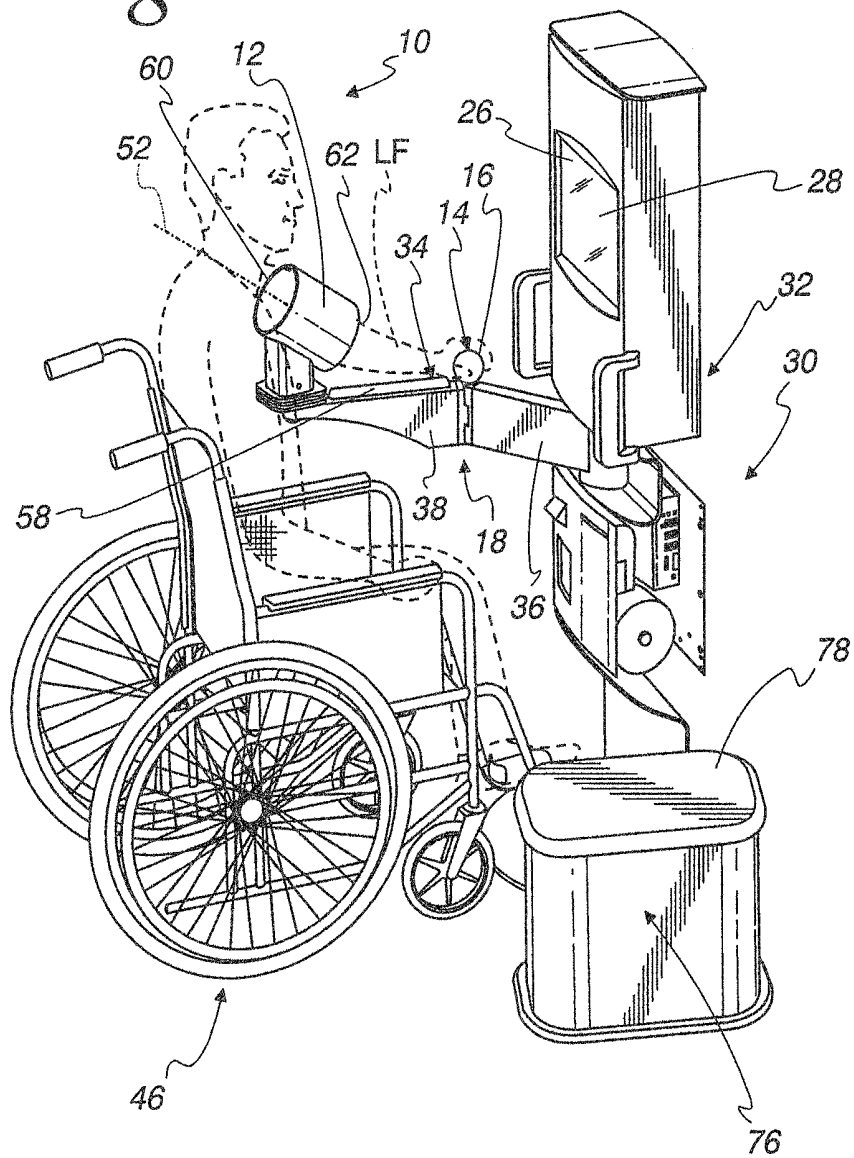
Fig. 3

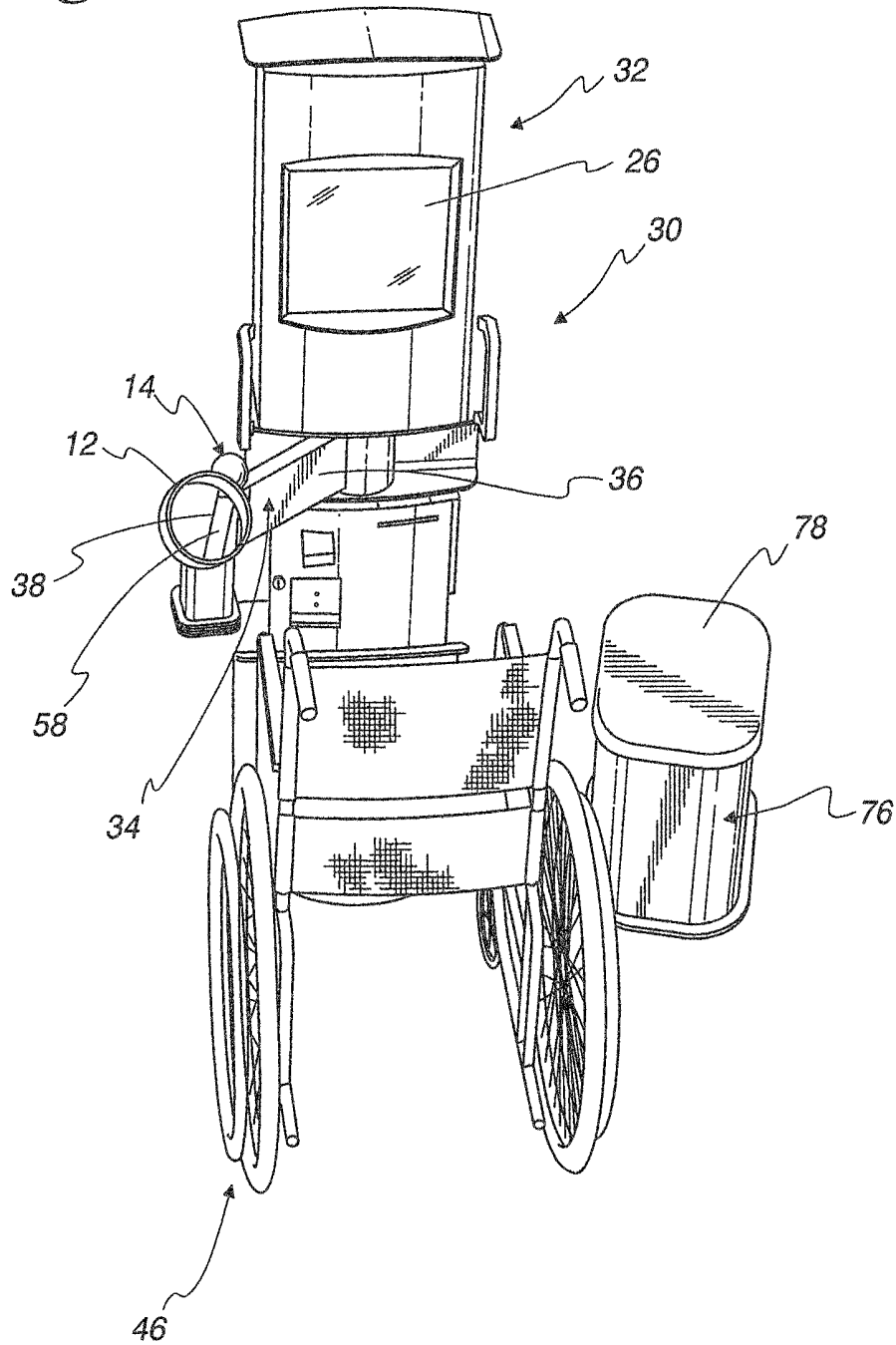
Fig. 4

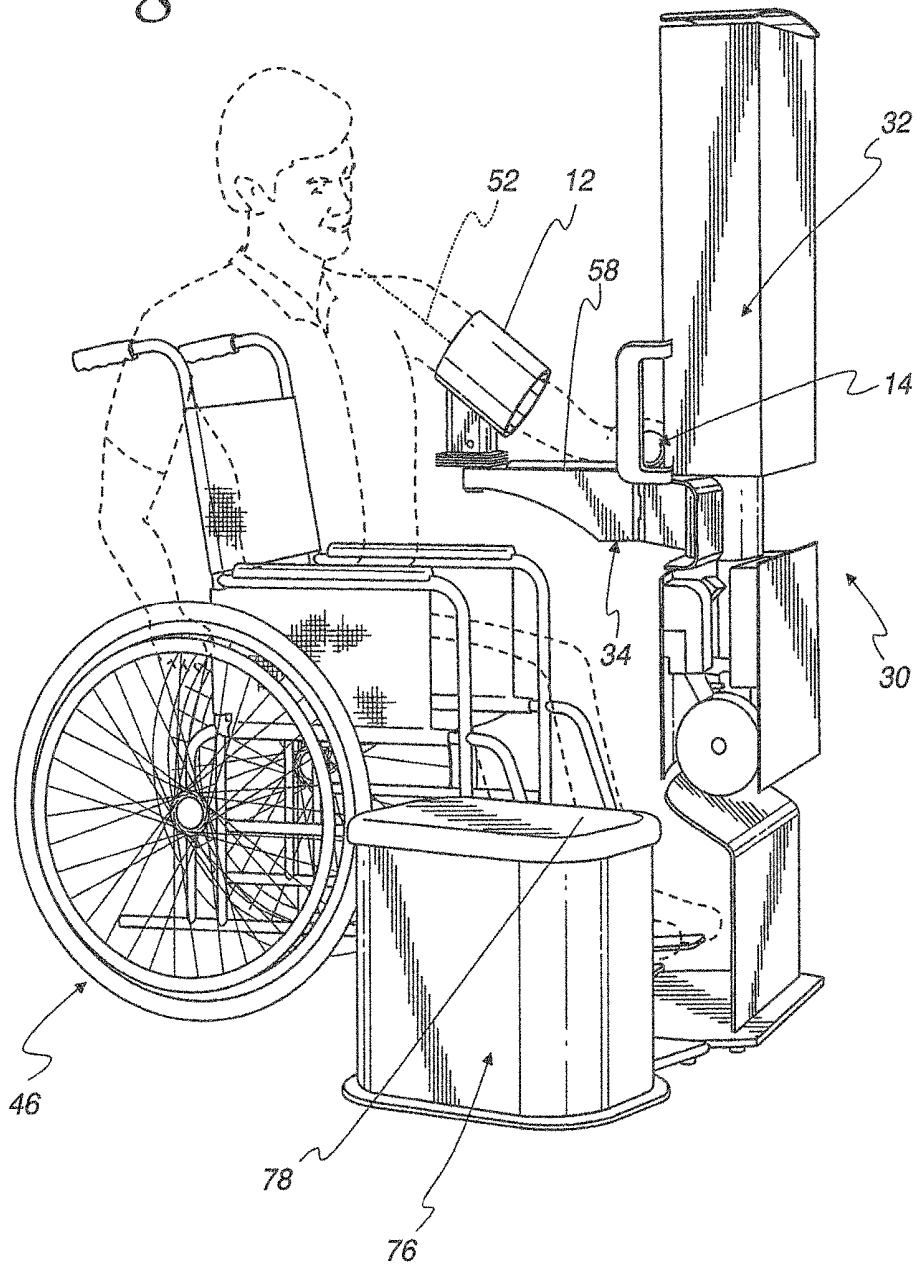
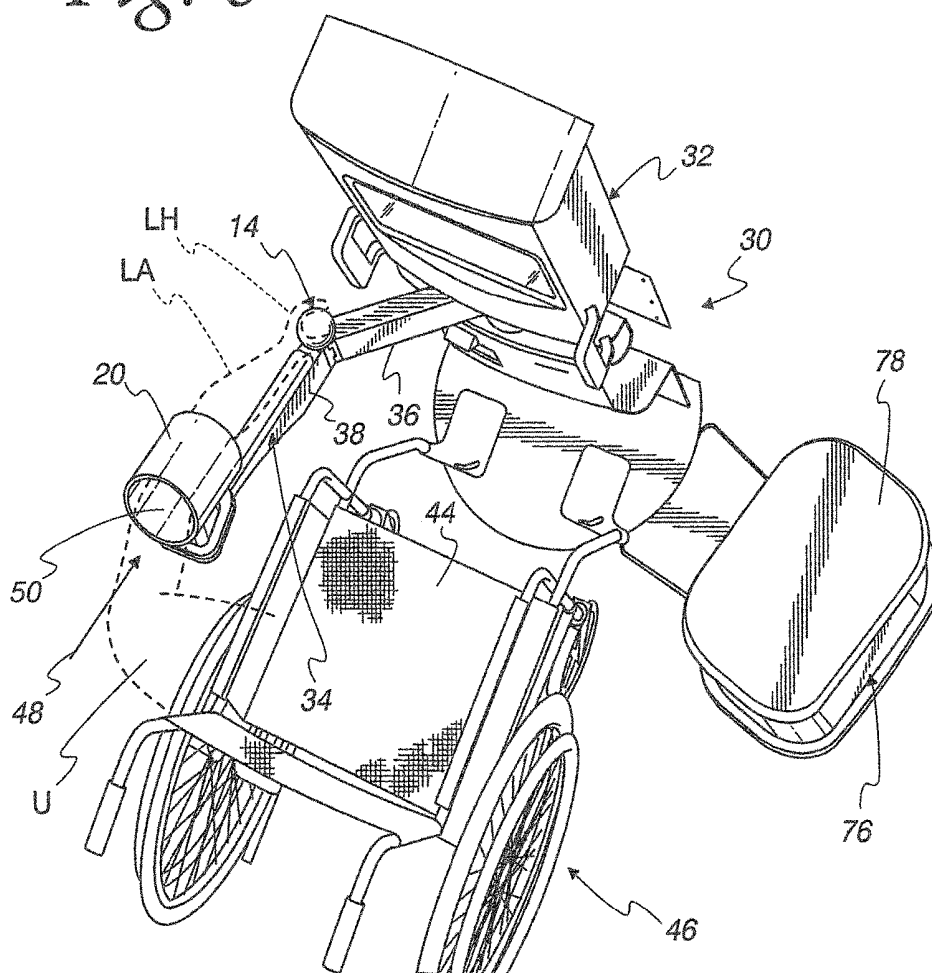
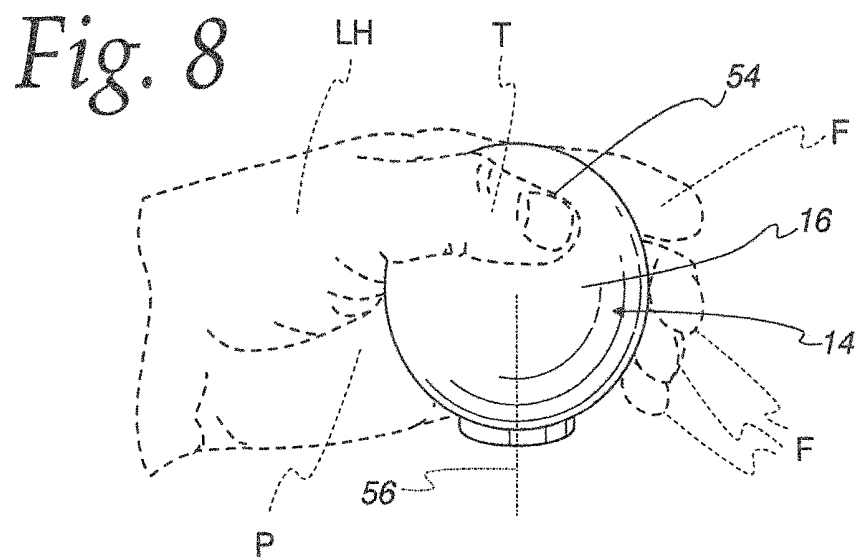
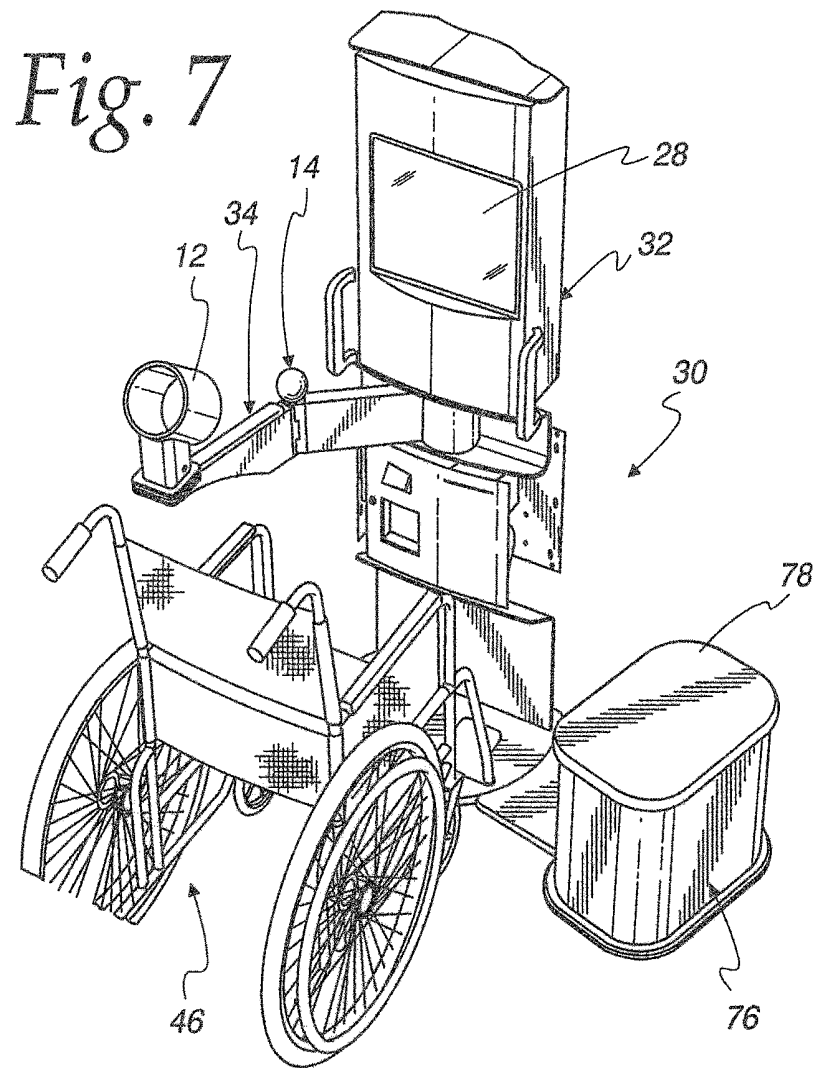
Fig. 5

Fig. 6





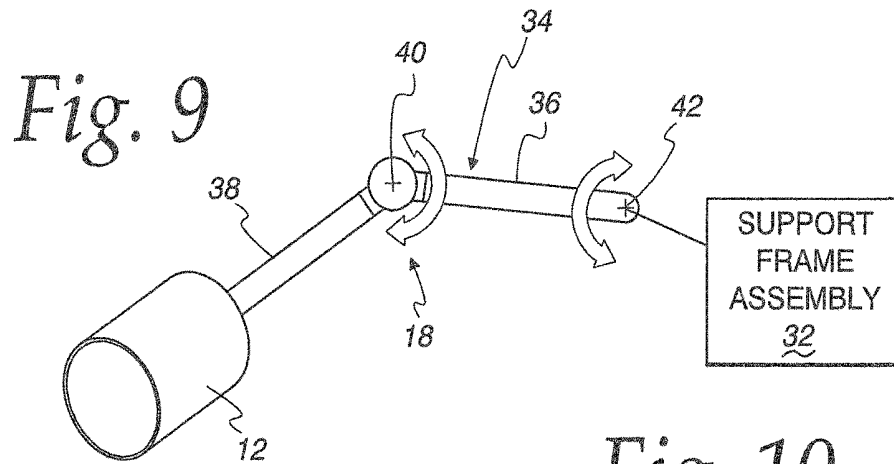


Fig. 10

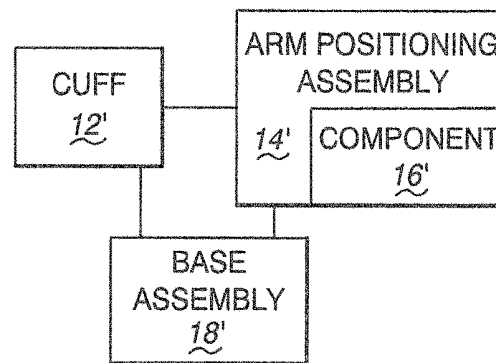


Fig. 11

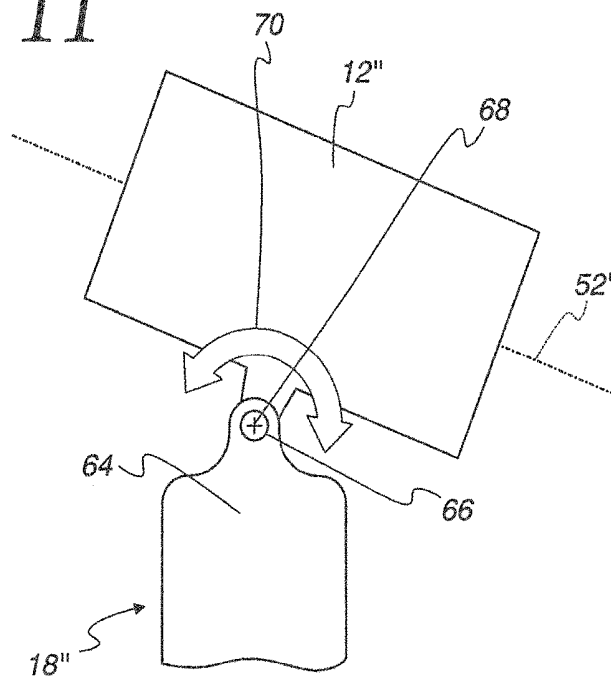


Fig. 12

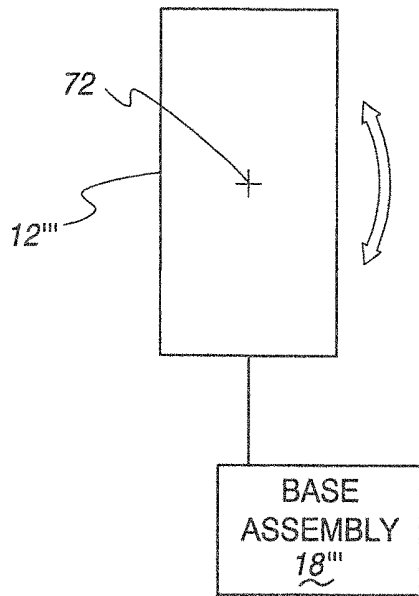


Fig. 13

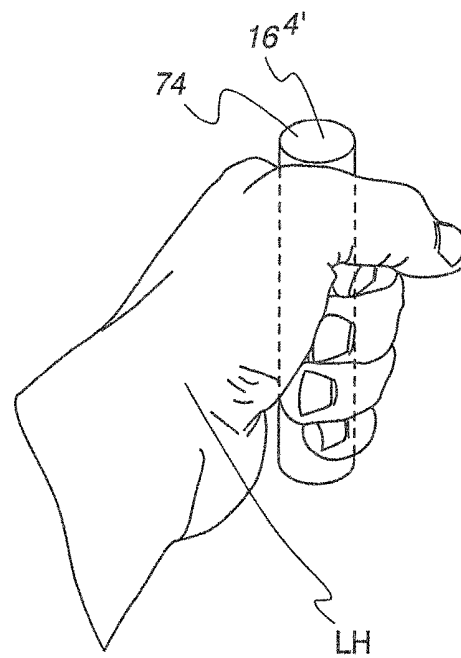


Fig. 14

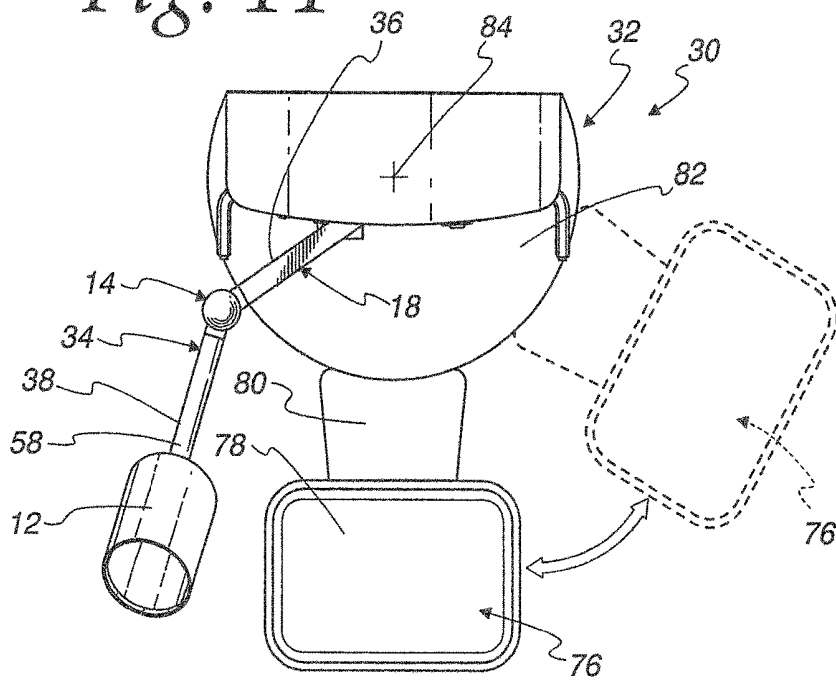


Fig. 15

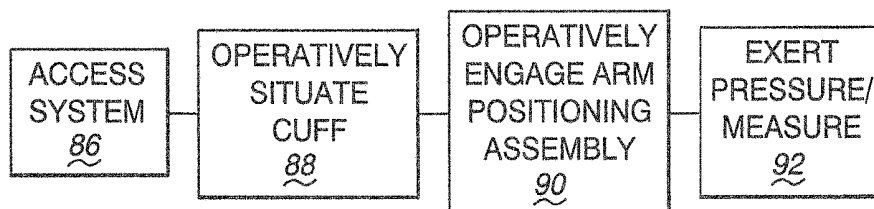


Fig. 16

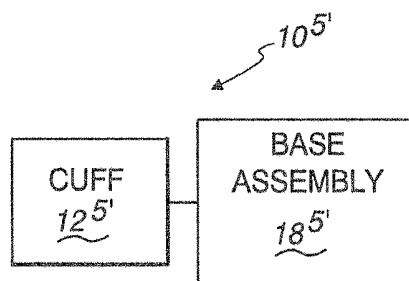


Fig. 17

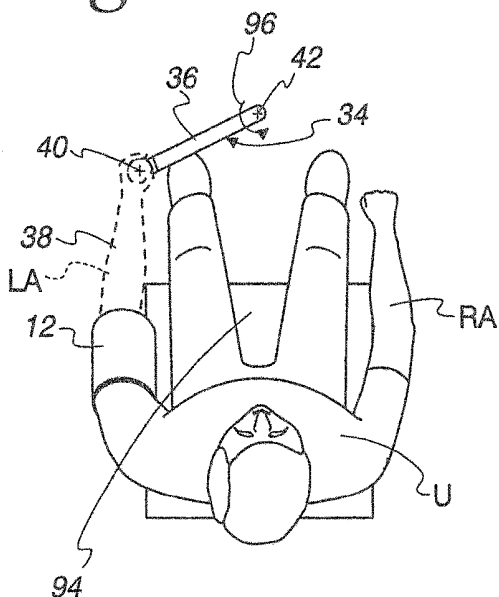


Fig. 18

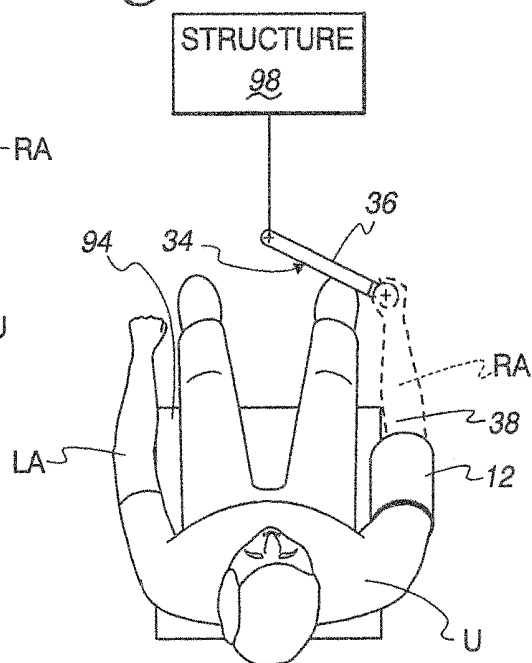
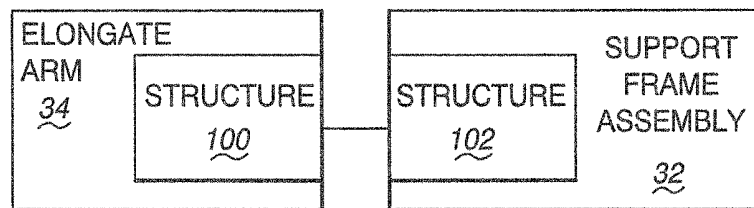
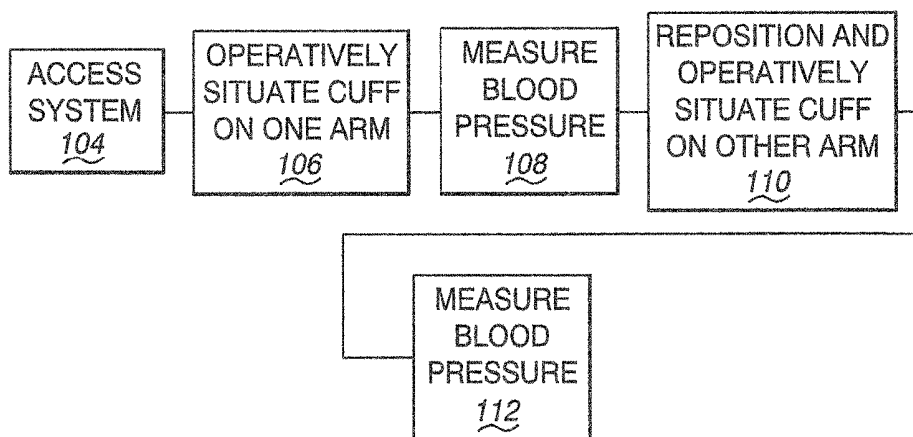


Fig. 19*Fig. 20*

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SYSTEM FOR FACILITATING THE MEASUREMENT OF BLOOD PRESSURE AND METHOD OF MEASURING BLOOD PRESSURE UTILIZING THE SYSTEM

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to blood pressure measuring equipment and, more particularly, to a system that utilizes a cuff that is extended around a limb of a user to controllably restrict blood flow in the user's limb as blood pressure measurements are being taken.

Background Art

The focus on improved personal health worldwide has led to the development of many different types of instruments that can be used, without the assistance of medical personnel, to take a measurement that relates to a person's state of health. Among these instruments are those used to measure blood pressure.

Most blood pressure measuring systems utilize the same basic model—that being to controllably restrict, blood flow through pressure application on a user's limb. With a manometer and other components, a user can detect and display his/her blood pressure as the flow impeding pressure is changed.

A growing trend is to provide health related measuring equipment, such as blood pressure measuring equipment, in non-medical, public settings, such as food stores, pharmacies, etc. Typically, a blood pressure measuring system is incorporated into a kiosk. The kiosk has a platform for supporting a cuff configured to be used in conjunction with one of a user's left or right arms.

These kiosks are designed so that an individual can either sit on a support, or use a wheelchair, to comfortably align to deploy the cuff. As a result, these kiosks become dedicated left- or right-handed. This construction has some significant limitations.

If a user has lost his/her arm on the side for which the kiosk is dedicated, it may be impossible for him/her to utilize the blood pressure cuff. Alternatively, the user must contort him-/herself to improvise and take a measurement utilizing the cuff. This may be a particular problem in the event that the individual is seated in a wheelchair.

A further problem with the above-described construction is that it may also limit the user's ability to take an accurate measurement. Recent medical research has suggested that blood pressure measurements may vary between a user's left and right arms. Still further, a most accurate measurement is believed to be taken by averaging blood pressure measurements for a user's left and right arms.

With existing systems, it is essentially impossible, or at best very difficult, to attempt to measure blood pressure on left and right arms with a conventional kiosk arrangement that is left- or right-hand dedicated. This limitation alone may make the kiosk usage less than desirable.

In light of the continuing trend to make self-assessment of certain health states without the intervention of medical personnel, the need for better systems to allow users to measure their blood pressure is increasingly important in what is becoming a highly competitive area. Designers in this area continue to seek such improvements out.

SUMMARY OF THE INVENTION

In one form, the invention is directed to a system for facilitating measurement of a person's blood pressure hav-

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ing: a) a cuff that is configured to: i) be operatively situated in relationship to a person's arm; and ii) strategically exert different pressure on the person's arm to controllably restrict blood flow therein; and b) a base assembly that supports the cuff. The base assembly is configured to allow selective placement of the cuff in first and second different positions relative to the person with the person in a measurement taking position. The cuff in the first position is configured to be operatively situated in relationship to the person's left arm. The cuff in the second position is configured to be operatively situated in relationship to the person's right arm.

In one form, the base assembly is in the form of an elongate arm.

In one form, the system is provided in combination with a support frame assembly and a support surface upon which the person can sit in the measurement taking position to take a blood pressure reading using the system. The base assembly is connected to the frame assembly.

In one form, the elongate arm is connected to the support frame assembly for pivoting movement around an axis. The cuff changes between the first and second positions as an incident of the elongate arm pivoting around the axis.

In one form, the elongate arm is cantilever mounted to the support frame assembly.

In one form, the axis is substantially vertical.

In one form, the elongate arm has an articulated construction including at least first and second relatively movable parts.

In one form, the first and second parts are movable relative to each other around a first axis.

In one form, the system is provided in combination with a support frame assembly and a support surface upon which the person can sit in the measurement taking position to take a blood pressure reading using the system. The arm is connected to the support frame assembly for movement relative thereto around a second axis that is substantially parallel to the first axis.

In one form, the support surface is defined on one of: a) a seating component configured to be fixed in relationship to the support frame assembly; and b) a wheelchair.

In one form, the seating component is configured to be moved relative to the support frame assembly between: a) an active position; and b) a stored position. The seating component in the stored position is situated so that a person in a wheelchair can move into the measurement taking position in which the person, while seated in the wheelchair, can operatively situate the cuff with respect to his/her arm.

In one form, the system is provided in combination with components to measure the person's blood pressure with the cuff operatively situated and pressure exerted on the person's arm through the cuff.

In one form, the system is provided in combination with: a) components to measure the person's blood pressure with the cuff operatively situated and pressure exerted on the person's arm through the cuff; and b) a monitor on the support frame assembly through which blood pressure measurements taken through the components are displayed.

In one form, there are components cooperating between the seating component and support frame assembly that guide the seating component in movement between the active and stored positions.

In one form, the first and second axes are substantially vertical.

In one form, the measurement taking position for the person is substantially the same with the cuff in the first and second positions and operatively situated on the person's left and right arms.

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In one form, there is structure cooperating between the elongate arm and the base assembly to consistently maintain the arm in first and second positions in which the cuff is respectively maintained in its first and second positions.

In one form, the invention is directed to a method of taking a person's blood pressure measurement. The method includes the steps of: accessing a system for facilitating measurement of the person's blood pressure as described above, together with components to measure the person's blood pressure; operatively situating the cuff on one of the user's arms with the user's one arm in a first resting position; with the user's one arm in the first resting position, causing: a) the cuff to controllably exert pressure on the user's one arm; and b) the components to measure the person's blood pressure through the person's one arm; after measuring the person's blood pressure through the person's one arm, repositioning the cuff and operatively situating the repositioned cuff on the other of the user's arms with the user's other arm in a second resting position; and with the user's other arm in the second resting position, causing: a) the cuff to controllably exert pressure on the user's other arm; and b) the components to measure the person's blood pressure through the person's other arm.

In one form, the measurement taking position for the person is substantially the same with the cuff in the first and second different positions.

In one form, the base assembly is an elongate arm that is pivoted about an axis to change the cuff between the first and second different positions.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic representation of a system for facilitating measurement of a person's blood pressure, according to the present invention;

FIG. 2 is a schematic representation of the system in FIG. 1 and additional components used to measure blood pressure and display measured blood pressure values;

FIG. 3 is a perspective view of a kiosk incorporating one form of the system in FIG. 1 and the additional components in FIG. 2 and showing a user in a wheelchair and his/her left arm positioned to take a blood pressure reading;

FIG. 4 is a view of the components in FIG. 3 from a different perspective;

FIG. 5 is a view as in FIGS. 3 and 4 from another different perspective;

FIG. 6 is a view as in FIGS. 3-5 from a still further different perspective;

FIG. 7 is a view as in FIGS. 3-6 from yet another different perspective;

FIG. 8 is an enlarged, fragmentary view of a component of an arm positioning assembly, on the system in FIG. 1 and on the kiosk in FIGS. 3-7, that is grasped by the hand on an arm of a user on which the cuff is operatively situated;

FIG. 9 is a partially schematic representation of separate articulating parts that make up a base assembly that supports the cuff and the arm repositioning assembly;

FIG. 10 is a schematic representation of a modified form of system, as shown in FIG. 1;

FIG. 11 is a fragmentary, side elevation view of a modified form of cuff and base assembly through which the cuff can be reoriented relative to the base assembly;

FIG. 12 is a partially schematic representation of a further modified form of cuff and cooperating base assembly that allow another dimension of movement of the cuff relative to the base assembly;

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FIG. 13 is a perspective view of a modified form of component, corresponding to that in FIG. 8, making up an arm positioning assembly that can be grasped in a different manner by a user;

FIG. 14 is a view similar to that in FIG. 6 and with the wheelchair removed and a seating component for a user in two different positions;

FIG. 15 is a flow diagram representation of a method of taking a blood pressure measurement according to the present invention;

FIG. 16 is a schematic representation of a modified form of system, according to the invention, for facilitating measurement of a person's blood pressure;

FIG. 17 is a plan view of the inventive system, as shown in FIGS. 1-16, and with an elongate arm, that is part of the base assembly, positioned to take a blood pressure measurement using the left arm of the person situated in a measurement taking position;

FIG. 18 is a view as in FIG. 17 wherein the elongate arm has been reconfigured to allow measurement of the person's blood pressure through the person's right arm with the person situated in the same measurement taking position;

FIG. 19 is a schematic representation of structure for releasably and consistently maintaining the elongate arm and support frame assembly in the two different relationships, as shown in FIGS. 17 and 18; and

FIG. 20 is a flow diagram representation of a method of taking a person's blood pressure measurement according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1, a system for facilitating measurement of a person's blood pressure, according to the present invention, is shown schematically at 10. The system 10 consists of a cuff 12 that is configured to: a) be operatively situated in relationship to a person's arm; and b) strategically exert pressure on the person's arm to controllably restrict blood flow therein to allow the person's blood pressure to be conventionally measured. The system further includes an arm positioning assembly 14, configured to be operatively engaged by a hand on the person's arm, to consistently place the person's arm in relationship to the cuff 12, with the cuff 12 operatively situated in relationship to the person's arm as a blood pressure measurement is taken. The arm positioning assembly 14 includes at least one component 16 that is engaged by a person's hand to facilitate the consistent placement of the arm relative to the cuff 12.

The cuff 12 and arm positioning assembly 14 are supported upon a base assembly 18. The base assembly 18 may be a single component or separate components.

In FIG. 1, as in other Figures described hereinbelow, the schematic showing of components is intended to encompass the specific components described herein in the preferred embodiments, and virtually an unlimited number of variations of these components and their interactions, as would be apparent to one skilled in the art with the present teachings in hand. The schematic showing is intended to encompass all such variations.

In FIG. 1, the generic showing of the component 16 is intended to broadly encompass virtually any type of component that the user's hand can abut or grasp to allow a user to consistently achieve the same relationship between the arm and the cuff 12, with the cuff 12 operatively situated. The component 16 might be an abutting wall to which the user's fingertip(s), clenched fist, etc. abuts. Alternatively,

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and more preferably, the component 16 is graspable as in the various preferred embodiments described herein below.

It is not necessary to understand the details of the components and instrumentation utilized to take an actual blood pressure reading to fully understand the present invention. Those basic components can be selected from the wide range of the same that are currently known and available, or become available.

As shown schematically in FIG. 2, the cuff 12 has a housing 20 that extends around the wearer's arm. A pressure applying structure 22 resides within the housing 20 and may be in the form of a bladder which is either manually or automatically filled to apply a peripheral pressure on the user's arm to impede blood flow therein.

Components 24 are shown in FIG. 2 and encompass manometers and other components used to sense the blood pressure with the pressure applying structure exerting different pressures and with that pressure relieved. The components 24 convey signals to a monitor 26 that has a display 28 upon which blood pressure values can be viewed. The monitor 26 may include processing components or, alternatively, the processing can be done by one or more of the components 24.

Referring now to FIGS. 3-14 and 16-19, alternative and specific forms of the inventive system 10, as shown schematically in FIGS. 1 and 2, will be described. The system 10 is shown as part of a kiosk 30; however, it is not a requirement that the system 10 be part of a kiosk arrangement. For purposes of illustration, the kiosk 30 will be the exemplary environment for the system 10.

The kiosk 30 consists of a support frame assembly 32 which incorporates the aforementioned monitor 26 having the display 28 for electronically displaying the blood pressure readings.

In this embodiment, the base assembly 18 is in the form of an elongate, cantilevered arm 34. The arm 34 supports the cuff 12 at one location and the arm positioning assembly 14 at a location spaced from the cuff 12 between the cuff 12 and support frame assembly 32.

The elongate arm 34 has an articulated construction, including first and second relatively movable parts 36, 38, respectively. The parts 36, 38 are shown to be connected for relative movement in one manner, with it being understood that other mechanisms are contemplated that will allow controlled repositioning of the cuff 12 relative to the support frame assembly 32.

In this embodiment, the first and second parts 36, 38 are movable relative to each other around a first axis 40 that extends substantially vertically. The first part 36 of the elongate arm 34 is connected to the support frame assembly 32 for movement relative thereto around a second axis 42 that is substantially parallel to the first axis 40. Through this mechanism, the cuff 12 can be moved selectively towards and away from the support frame assembly 32 and simultaneously shifted additionally in a lateral direction while maintaining a desired orientation of the cuff 12 that facilitates direction of a user's arm therethrough.

The kiosk 30 is configured so that the user U can sit on a support surface while a blood pressure measurement is taken. In one form, the support surface 44 upon which the person sits in the measurement taking position is defined upon a wheelchair 46 that can be advanced into a ready position as shown in FIGS. 3-7. With the wheelchair 46 in the ready position, the user can advance the hand LH on his/her left arm LA in the direction of the arrow 48 in FIG. 6 through an opening 50 bounded by the housing 20. The opening 50 has a central axis 52 which is parallel to the

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advancing direction of the user's left arm that is effected to operatively situate the cuff 12 in relationship to the person's left arm LA. A preferred location for the cuff 12 is in the region above the user's elbow, whereby the left forearm LF projects from the cuff 12 towards the arm positioning assembly 14.

In this embodiment, the component 16 on the arm positioning assembly 14 has a rounded, convex surface 54 that conforms generally to the person's palm P, thumb T, and fingers F, with the person's left hand LH in a cupped configuration as shown in FIG. 8. The user's hand thus grasps the component 16 much in the same way as he/she would grasp a baseball, preparatory to a pitch. The particular diameter of the component 16 is not critical, as repetitive grasping of different sizes thereof would consistently place the hand at the same distance from the cuff 12. As a result, by directing the hand through the cuff opening 50 and grasping the component 16, the cuff 12 will consistently align at the same lengthwise location on the user's arm.

In this embodiment, the component 16 is shown as a substantially spherical element that has a vertical central axis 56 that is adjacent to, or coincident with, the first axis 40.

It should be understood that while a substantially raised spherical shape for the component 16 is shown, many other different shapes are contemplated. What is preferred is that, whatever the shape is, a user would naturally consistently effect grasping thereof, as an incident of which the user's arm in a resting position is repeatedly placed in the same relationship with the cuff 12 as successive measurements are taken.

The second arm part 38 has an upwardly facing surface 58 configurable in different shapes and against which a portion of the user's forearm region, and potentially the elbow, can be rested. By supporting the weight of the user's arm, the user can be comfortably resting as the measurement is being taken. The forearm region of the resting arm may alternatively be spaced above the surface 58, bridging between the cuff 12 and component 16.

The cuff 12 is shown fixedly mounted to the second part 38 so as to move as one piece therewith. In the fixed orientation, the axis 52 for the cuff opening 50 declines between a rear cuff edge 60 and a front cuff edge 62. This angle is chosen to nominally match the normal angle of a user's upper arm directed into the cuff 12 with the user seated in a measurement taking position at the kiosk 30 and the arm in a resting position.

In this embodiment, the distance between the cuff 12 and component 16 is fixed. In an alternative form of base assembly, as shown at 18' in FIG. 10, the distance between a cuff 12' and a component 16' on an arm positioning assembly 14' may be varied to accommodate different arm lengths of users. Through the base assembly 18', the distance between the cuff 12' and component 16' can be selectively changed and fixed using well known components and mechanisms.

As shown in FIG. 11, a further modified form of base assembly at 18'' may incorporate a part 64 that cooperates with a cuff 12'' so as to allow the angular orientation of the cuff opening axis 52'' to be changed. As one example, a pin 66 can be used to connect the cuff 12'' and part 64 so that the cuff 12'' is movable around a generally horizontal axis 68 defined by the pin 66, as indicated by the double-headed arrow 70.

A still further modified form of base assembly **18"** is shown in FIG. **12** through which the cuff **12"** can be turned around a vertical axis **72** to further accommodate different body types and positioning.

As a further modification, a graspable component **16⁴**, as shown in FIG. **13**, may be used in place of the graspable component **16**. The graspable component **16⁴** is in the form of a cylindrical body **74** that can be horizontally situated, vertically situated, or angularly turned to a position therebetween to allow a user to grasp the body **74** generally as shown.

Another feature of the kiosk **30** is the ability to place a seating component **76** with a support surface **78** selectively in an active position, as shown in solid lines in FIG. **14**, and a stored position, as shown in dotted lines in FIG. **14** and in solid lines in FIGS. **3-7**. The seating component **76** has a mounting arm **80** that connects to a plate **82** at the bottom of the support frame assembly **32**. The plate **82** and support **80** have components thereon that cooperate so that the mounting arm **80** and associated seating component **76** turn about an axis **84** relative to the support frame assembly **32** in changing between the active and stored positions. The precise connection between the mounting arm **80** and plate **82** is not shown in any detail, as many different suitable connecting components might be incorporated to allow this interaction, or a similar interaction that permits controlled repositioning of the seating component **76**.

With the seating component **76** in the active position, the support surface **78** thereon supports the user in a measurement taking position for convenient access to the cuff **12**. With the seating component **76** in the stored position, a person in a wheel chair can move into the position shown in FIGS. **3-7**, as described above, to allow the user to assume essentially the same measurement taking position.

Alternatively, the arm **34** could be situated at a height such that the user can stand while taking a measurement.

With the above structure, a method of taking a person's blood pressure measurement can be carried out, as shown in flow diagram form in FIG. **15**.

As shown at block **86**, the user accesses any form of the system, as described above.

As shown at block **88**, the cuff is operatively situated on one of the user's arms.

As shown at block **90**, the user operatively engages the hand on the arm within the cuff with the arm positioning assembly to establish a resting position for the user's arm.

As shown at block **92**, with the user's hand in the resting position, the user causes: a) the cuff to exert pressure on the user's arm; and b) the components to measure the person's blood pressure.

The step of operatively engaging the arm positioning assembly may be simply abutting a part of the hand against the component or, more preferably, involves grasping that component.

In a preferred form of the method, the user continues to grasp the part of the arm positioning assembly as the cuff is exerting pressure and the components measure blood pressure.

Another aspect of the invention, in the form as described above, is shown generically in FIG. **16** and more specifically in FIGS. **17-19**. The specific structure shown in these Figures is part of the embodiments described hereinabove, with it contemplated that the features shown in FIGS. **16-19** could incorporate any and all the components heretofore described.

In a generic sense, the inventive system **10⁵** FIG. **16** has a cuff **12⁵** and base assembly **18⁵**, corresponding generally

to the cuff **12** and base assembly **18**, and variations thereof, as described above. The generic showing is intended to encompass the specific structures described above and below, and other structure that may perform the described function using different components that may interact differently.

The cuff **12⁵** is configured to: a) be operatively situated in relationship to a person's arm; and b) strategically exert pressure on the person's arm to controllably restrict blood flow therein. The base assembly **18⁵** supports the cuff **12⁵**. The base assembly **18⁵** is configured to allow selective placement of the cuff **12⁵** in first and second different positions relative to a person with the person in a measurement taking position. The cuff **12⁵** in the first position is configured to be operatively situated in relationship to the person's left arm LA. The cuff **12⁵** in the second position therefor is configured to be operatively situated in relationship to the person's right arm RA, in the same manner as described above.

More specifically, with the components hereinabove described, the elongate arm **34** can be reconfigured from the FIG. **17** position into the FIG. **18** position therefor, thereby to change the cuff **12** between its first position in FIG. **17** and its second position in FIG. **18**. The cuff **12** can be repositioned with the person/user U in substantially the same measurement taking position upon a support surface **94**, which is intended to generically represent the support surface that may be defined by the wheelchair **46**, the seating component **76**, or a subjacent surface upon which the person might be standing when a blood pressure measurement is taken.

In effecting repositioning of the cuff **12**, the first part **36** is pivoted about the axis **42** in the direction of the arrow **96** from the FIG. **17** position. At the same time, the parts **36**, **38** pivot relative to each other around the first axis **40** to assume the configuration in FIG. **18**. Each of the person's left and right arms LA, RA cooperates with the cuff **12** in substantially the same manner.

The elongate arm **34** cooperates with the other structures, including the support frame assembly **32**, as described above. Alternatively, as shown in FIG. **18**, the elongate arm **34** might cooperate with another type of structure, shown generically at **98** that permits reconfiguration of the elongate arm **34** relative to the person residing in a measurement taking position. Preferably, the measurement taking position for the user does not have to substantially change to allow measurements to be taken separately on left and right arms.

As shown in FIG. **19**, structure **100**, **102** may be provided separately on the elongate arm **34** and support frame assembly **32** that cooperates to consistently, but releasably, maintain the arm **34** in first and second positions, as shown in FIGS. **17** and **18**, in which the cuff **12** is respectively maintained in its first and second positions.

With the system as described above, and as seen most clearly with reference to FIGS. **16-19**, a method of taking a person's blood pressure measurement can be carried out as shown in flow diagram form in FIG. **20**.

As shown at block **104**, a system is accessed for facilitating measurement of the person's blood pressure, as described above, including components to measure the person's blood pressure.

As shown at block **106**, the cuff is operatively situated on one of the user's arms with the user's one arm in a first resting position.

As shown at block **108**, with the user's one arm in the first resting position, the cuff is caused to exert pressure on the

user's one arm and the components are caused to measure the person's blood pressure through the person's one arm.

As shown at block 110, after measuring the person's blood pressure through the person's one arm, the cuff is repositioned and operatively situated on the other of the user's arms with the user's other arm in a second resting position.

As shown at block 112, with the user's other arm in the second resting position, the cuff is caused to exert pressure on the user's other arm and the components are caused to measure the person's blood pressure through the person's other arm.

The foregoing disclosure of specific embodiments is intended to be illustrative of the broad concepts comprehended by the invention.

What is claimed is:

1. A system for facilitating measurement of a person's blood pressure, the system comprising:

a cuff that is configured to: a) be operatively situated in relationship to the person's arm; and b) strategically exert different pressure on the person's arm to controllably restrict blood flow therein;

a base assembly that supports the cuff having an elongated cantilevered arm with a first moving part, a second moving part, an upward facing surface configurable to support the person's elbow, and a hand grasping component configured to allow for grasping by either the patient's left hand or the patient's right hand;

wherein the upward facing surface is formed on the second moving part, wherein the first moving part is connected to the second moving part, wherein the hand grasping component is configured to be positioned where the first moving part and the second moving part are connected, and the hand grasping component is configured to extend upward perpendicularly from the first moving part and the second moving part;

the base assembly configured to allow selective placement of the cuff in first and second positions relative to the person with the person in a measurement taking position;

the cuff in the first position configured to be operatively situated in relationship to the person's left arm;

the cuff in the second position configured to be operatively situated in relationship to the person's right arm;

and the elongated cantilevered arm configured to selectively move the cuff towards and away from a support frame assembly.

2. The system for facilitating measurement of the person's blood pressure according to claim 1 further comprising the support frame assembly and a support surface upon which the person can sit in a measurement taking position to take a blood pressure reading using the system, the base assembly connected to the support frame assembly.

3. The system for facilitating measurement of the person's blood pressure according to claim 2 wherein the elongated cantilevered arm is connected to the support frame assembly for pivoting movement around an axis, the cuff changing

between the first and second positions based at least in part on the elongated cantilevered arm pivoting around the axis.

4. The system for facilitating measurement of the person's blood pressure according to claim 3 wherein the axis is substantially vertical.

5. The system for facilitating measurement of the person's blood pressure according to claim 2 wherein the support surface is defined as a seating component configured to be in an active position which allows for a fixed relationship to the support frame assembly, wherein the support surface is configured to be placed in a stored position such that the person can sit in a wheelchair in the measurement taking position to take the blood pressure reading using the system.

6. The system for facilitating measurement of the person's blood pressure according to claim 5, wherein the seating component is configured to be moved relative to the support frame assembly between the active and the stored positions, the seating component in the stored position situated so that the person in the wheelchair can move into the measurement taking position in which the person while seated in the wheelchair can operatively situate the cuff with respect to his/her arm.

7. The system for facilitating measurement of the person's blood pressure according to claim 2 further comprising: a) a manometer to measure the person's blood pressure with the cuff operatively situated and pressure exerted on the person's arm through the cuff; and b) a monitor on the support frame assembly through which blood pressure measurements taken through the manometer are displayed.

8. The system for facilitating measurement of the person's blood pressure according to claim 2 wherein the hand grasping component is configured to allow the positioning of the cuff respective to the person's left arm in the first position and the person's right arm in the second position to be consistently maintained.

9. The system for facilitating measurement of the person's blood pressure according to claim 2 wherein the cuff is configured to selectively move towards and away from the support frame assembly while simultaneously shifting in a lateral direction via the base assembly.

10. The system for facilitating measurement of the person's blood pressure according to claim 1 wherein the first and second moving parts are movable relative to each other around a first axis.

11. The system for facilitating measurement of the person's blood pressure according to claim 10 further comprising the support frame assembly and a support surface upon which the person can sit in a measurement taking position to take a blood pressure reading using the system, the elongated cantilevered arm connected to the support frame assembly for movement relative thereto around a second axis that is substantially parallel to the first axis.

12. The system for facilitating measurement of the person's blood pressure according to claim 1 further comprising a manometer to measure the person's blood pressure with the cuff operatively situated and pressure exerted on the person's arm through the cuff.

* * * * *

专利名称(译)	利用该系统促进血压测量的系统和测量血压的方法		
公开(公告)号	US10123708	公开(公告)日	2018-11-13
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[标]申请(专利权)人(译)	保持健康		
申请(专利权)人(译)	STAYHEALTHY INC.		
当前申请(专利权)人(译)	HIGI SH LLC		
[标]发明人	COLLINS JOHN R FLAMMER JEFFREY D		
发明人	COLLINS, JOHN R. FLAMMER, JEFFREY D.		
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外部链接	Espacenet		

摘要(译)

一种便于测量人的血压的系统，具有：a) 袖带，其被配置成：i) 可操作地位于与人的手臂相关的位置；ii) 策略性地对人的手臂施加不同的压力，以可控制地限制其中的血液流动；b) 支撑袖带的基座组件。基部组件构造成允许将袖带选择性地放置在相对于人处于测量位置的人的第一和第二不同位置。处于第一位置的袖带被配置成可操作地相对于人的左臂定位。处于第二位置的袖带被配置成可操作地相对于人的右臂定位。

