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(54) **ARM SUPPORT FOR BLOOD PRESSURE MONITORING**

(71) Applicant: **Chester Tozeski**, Shrewsbury, MA (US)

(72) Inventor: **Chester Tozeski**, Shrewsbury, MA (US)

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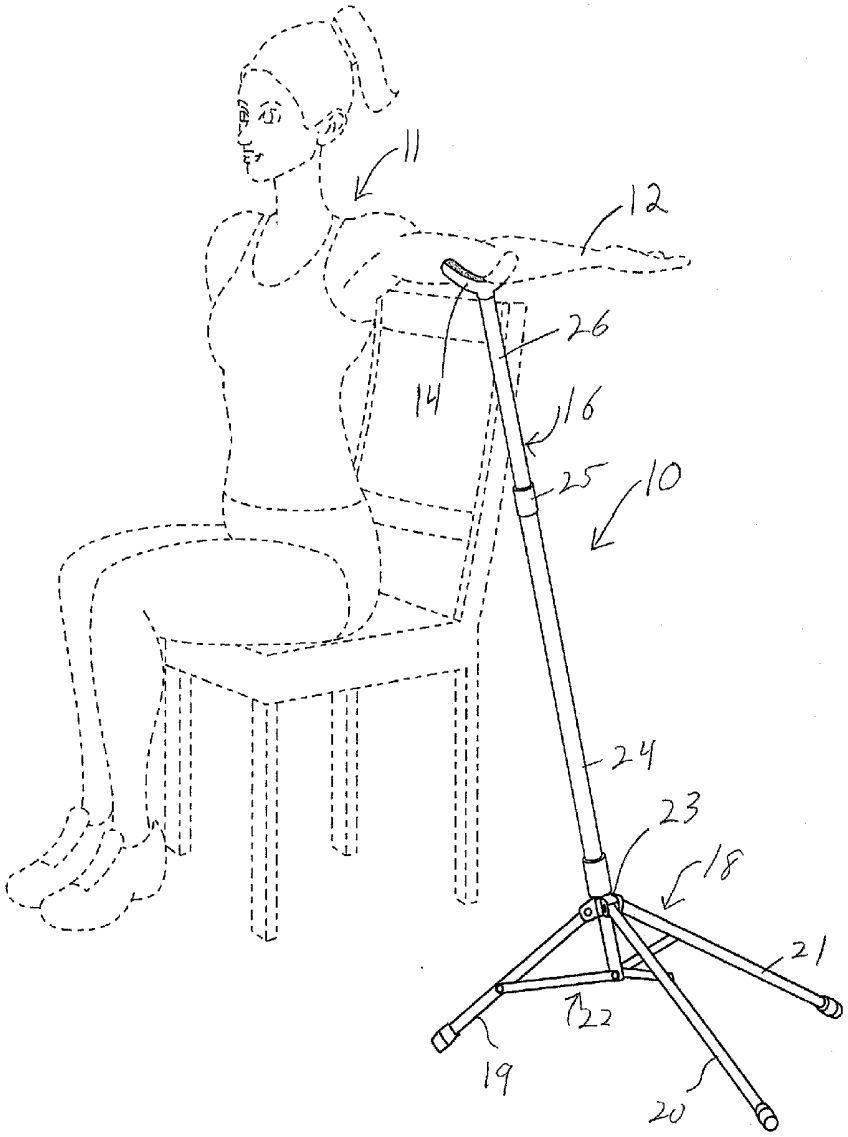
(52) **U.S. Cl.**

CPC ***A61B 5/702*** (2013.01); *A61B 2560/0431* (2013.01); ***A61B 5/02141*** (2013.01)

(57) **ABSTRACT**

An arm support for blood pressure monitoring, including an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis, an arm-supporting saddle that is carried at the top of the post, wherein the saddle has an upper arm-support surface that is configured to support an arm of a user at around the elbow region, and wherein the top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a horizontal position.



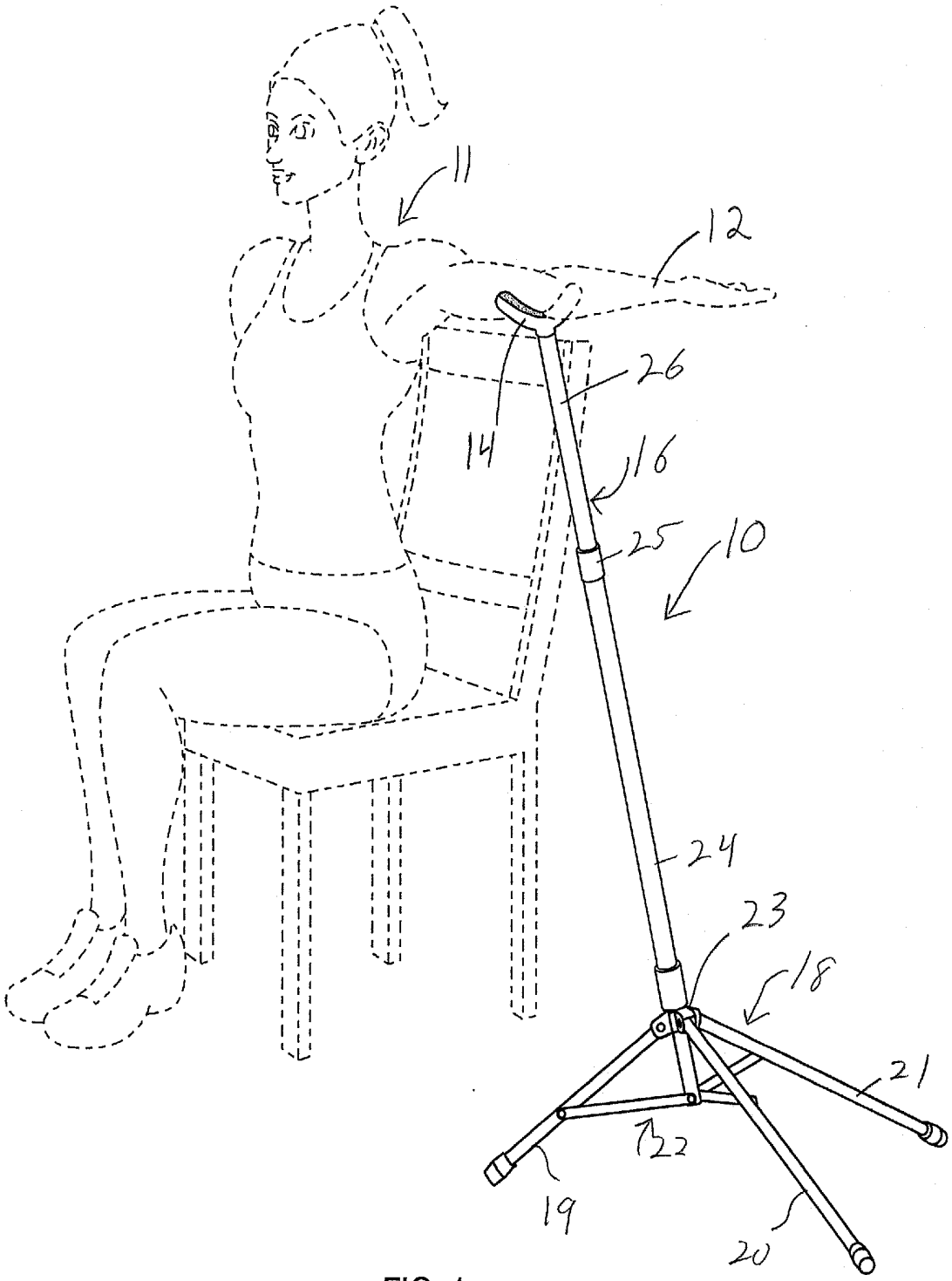


FIG. 1

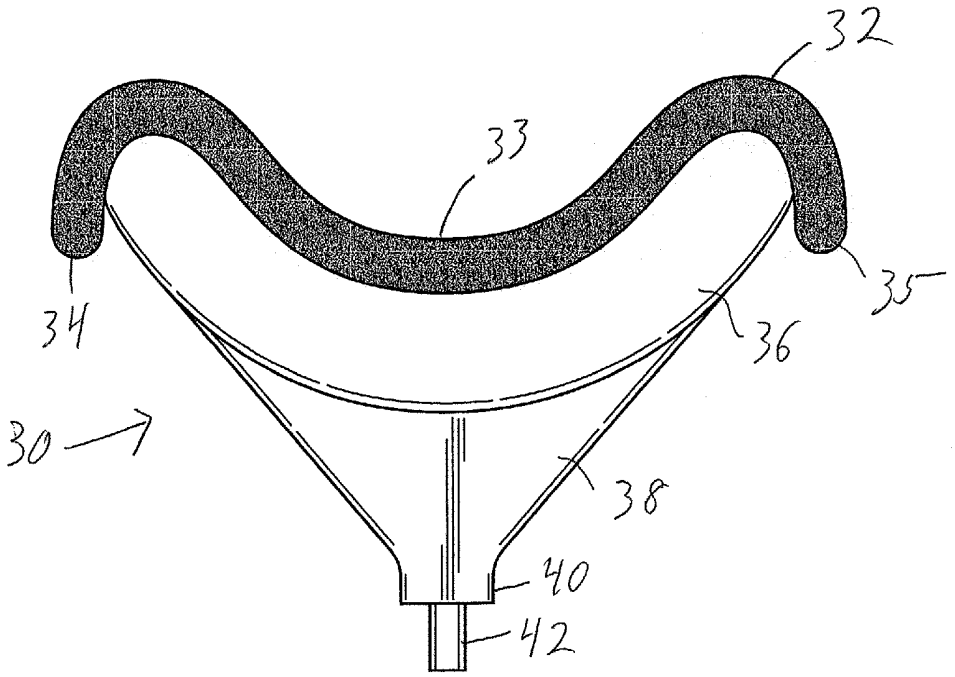


FIG. 2A

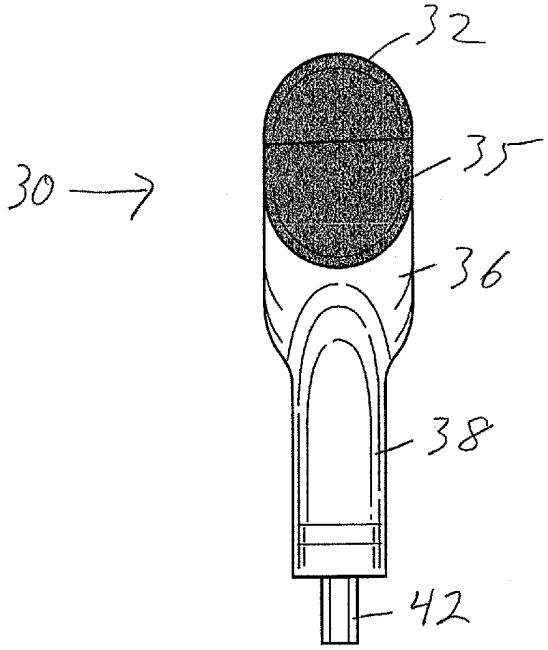


FIG. 2B

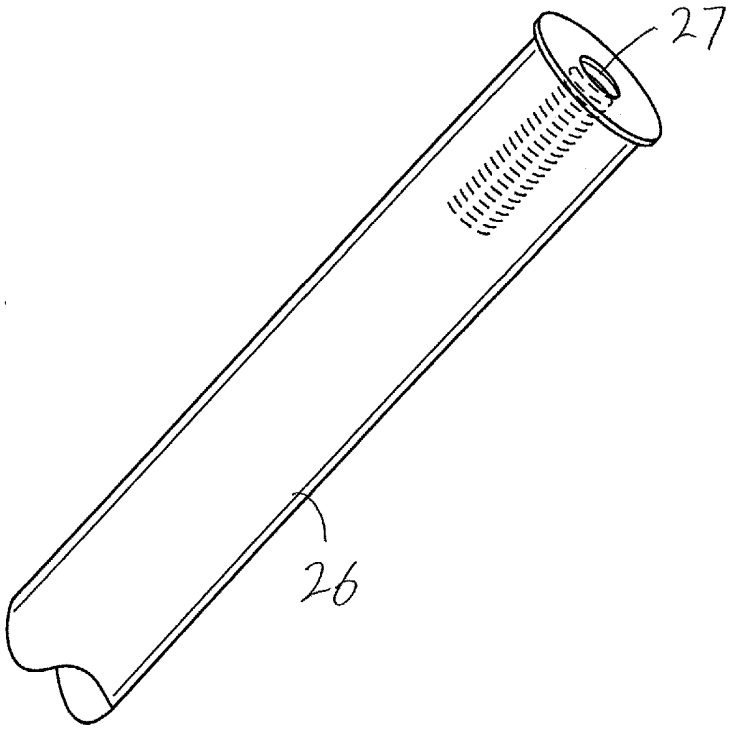


FIG. 3

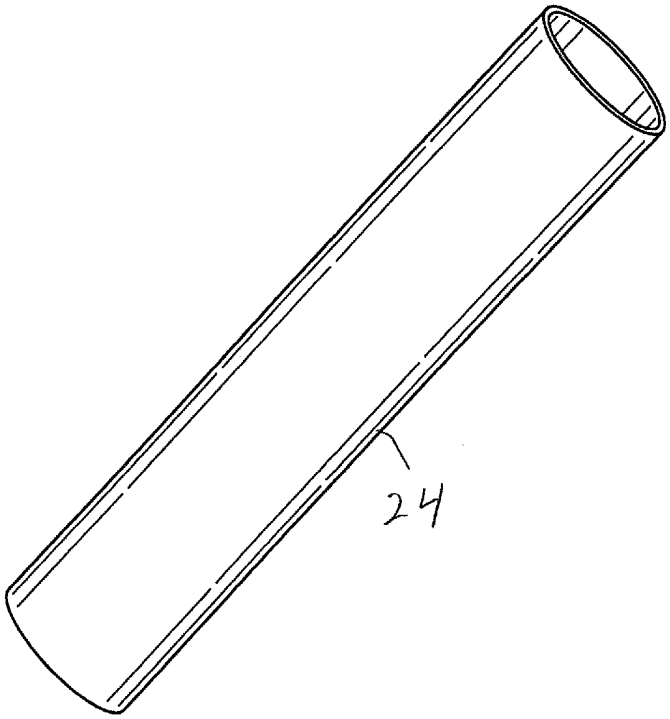


FIG. 4

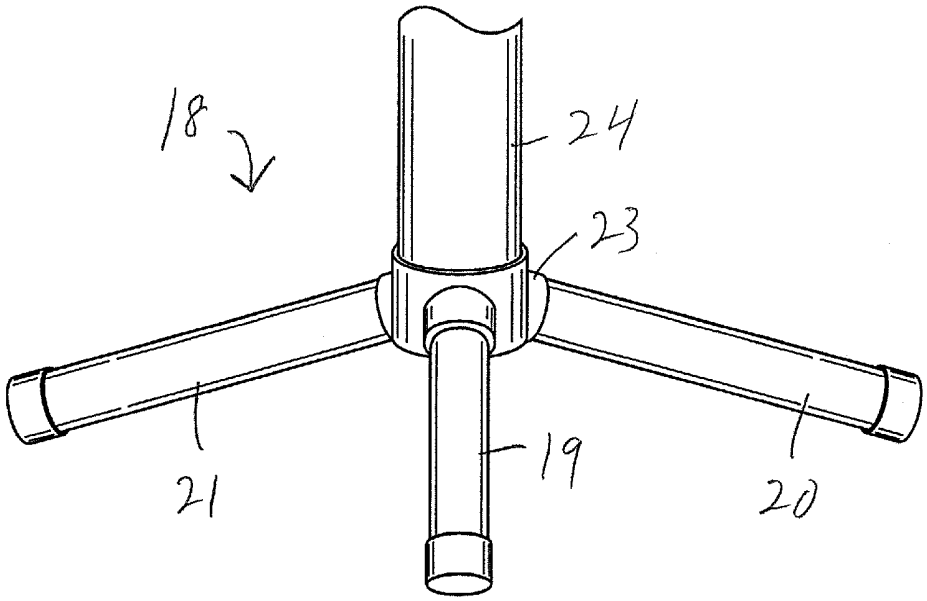


Fig. 5A

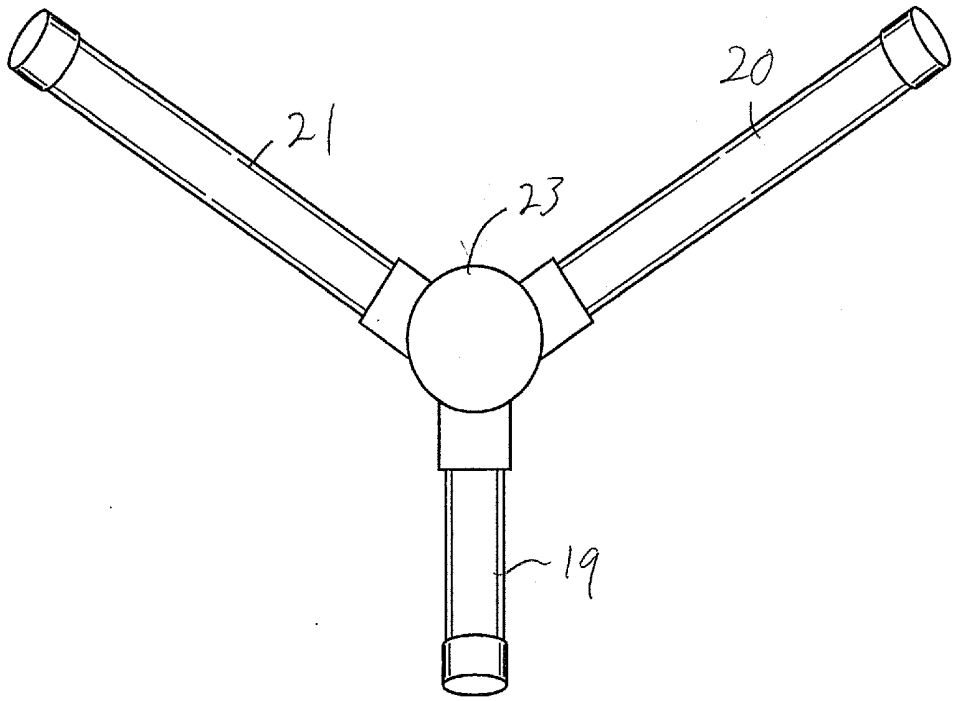


FIG. 5B

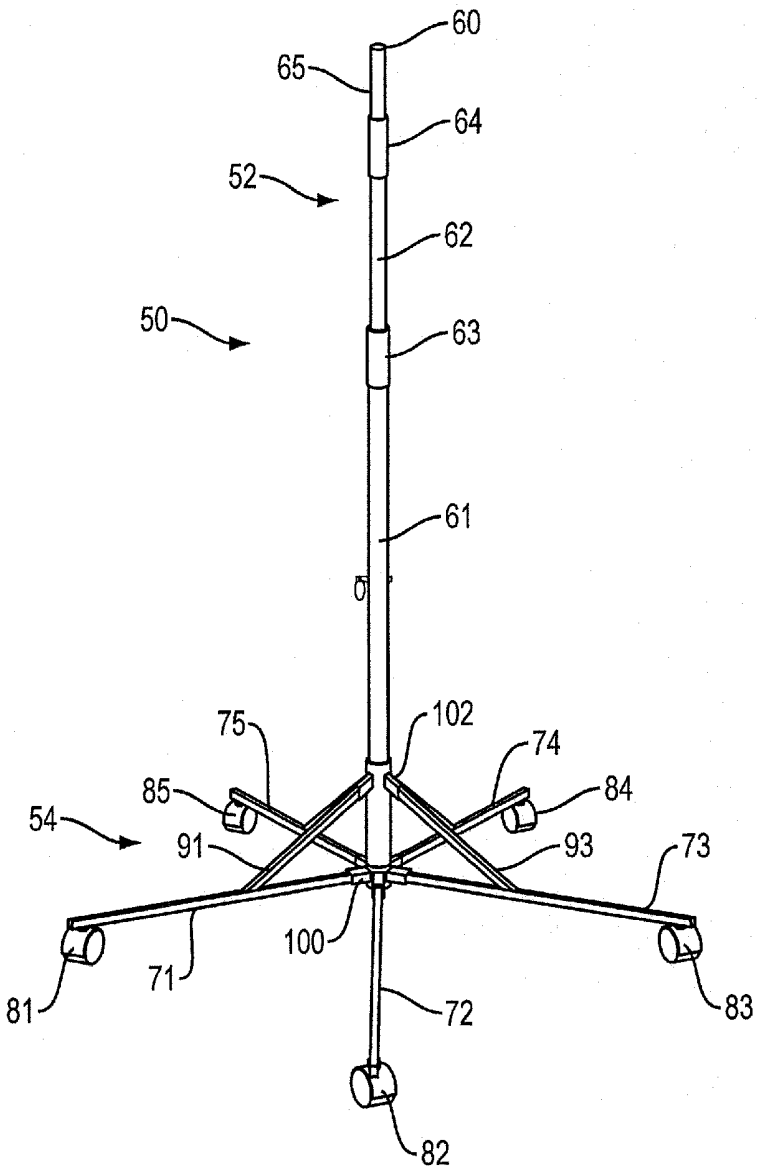


FIG. 6

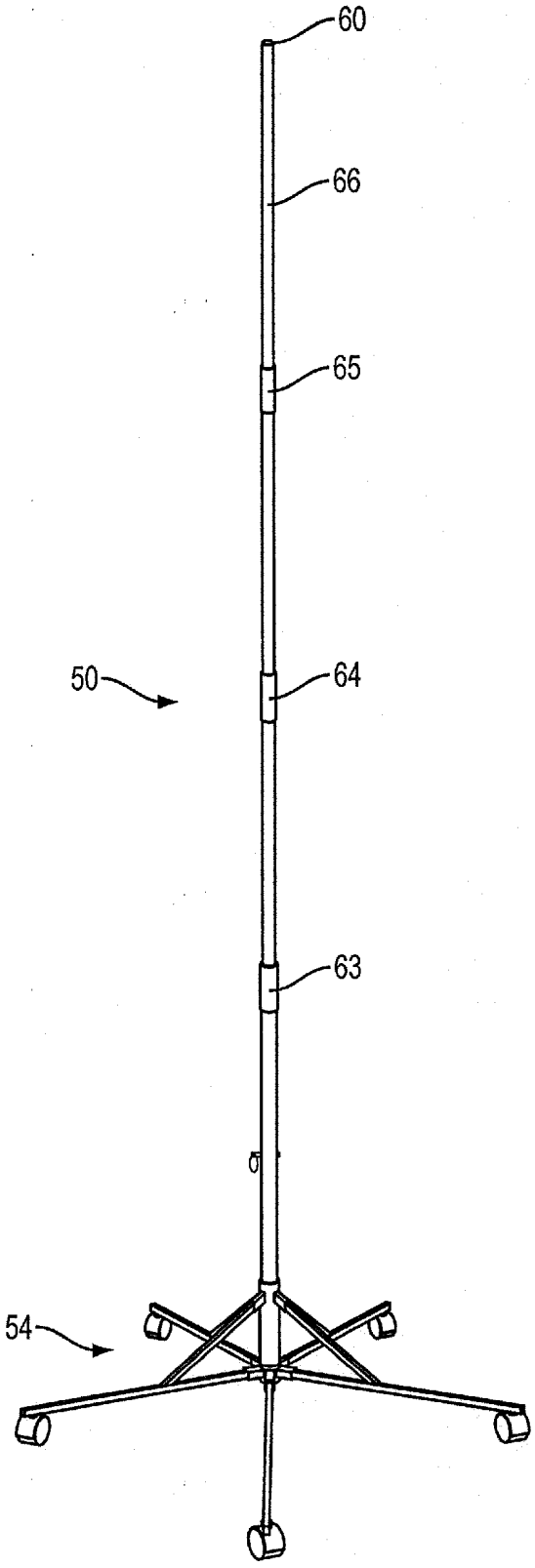


FIG. 7

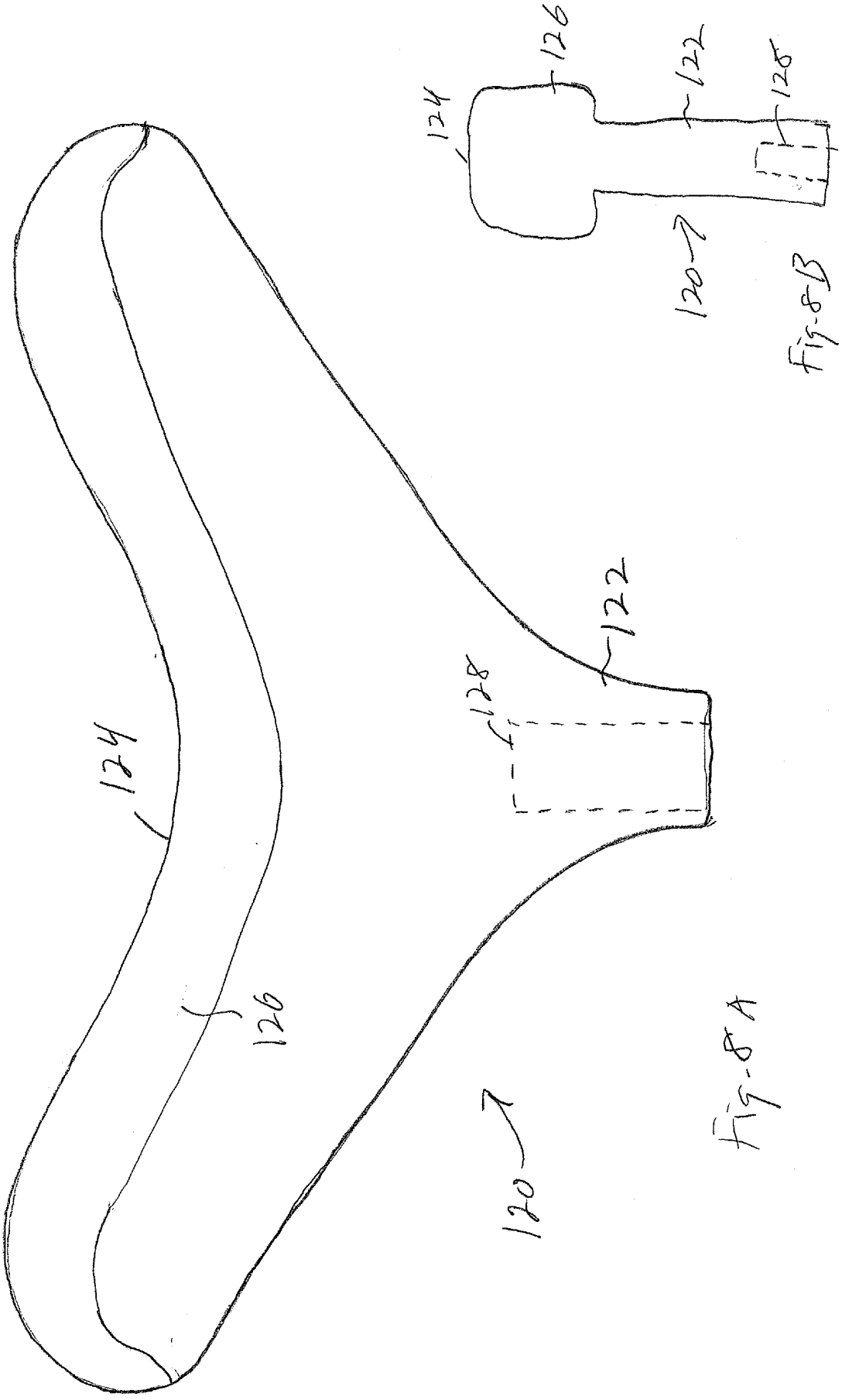


Fig-8B

Fig-8A

ARM SUPPORT FOR BLOOD PRESSURE MONITORING

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to Provisional Patent Application 62/711,881, filed on Jul. 30, 2018.

BACKGROUND

[0002] This disclosure relates to an adjustable-height stand that supports an arm around the elbow region while the person's blood pressure is being taken using a cuff that is engaged with the upper arm.

[0003] When blood pressure is being taken using a sphygmomanometer, with the cuff placed over the upper arm, the arm should be supported in a horizontal position, with the upper arm free for use by a medical professional to take the blood pressure. It is known that if the arm is not horizontal the blood pressure reading will be incorrect. Accuracy can be critical when it comes to diagnosing and treating medical conditions (such as high blood pressure) that are related to or associated with a measured blood pressure.

SUMMARY

[0004] Featured in this disclosure is an arm support for blood pressure monitoring. The stand can accommodate a sitting or standing user, and comfortably support the arm at about shoulder height. The stand is thus very helpful to taking an accurate blood pressure reading. Also, the stand allows the user to be in the same position each time a blood pressure reading is taken, and thus helps to ensure repeatable readings.

[0005] The arm support has an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis. There is an arm-supporting saddle at the top of the post, wherein the saddle is configured to support an arm of a user at or just above or below the elbow region. The top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a horizontal position.

[0006] The saddle may be approximately 4 inches high, 1.5 inches thick and 7.5 inches wide. The saddle may be generally "U"-shaped along its width, to define a low point in the middle of the width that is configured to support the user's arm. The saddle may be generally "V"-shaped from a side view. The saddle may comprise a padded region that supports the arm. The saddle padded region may comprise a textured upper surface, to provide some grip of the arm.

[0007] The post may comprise a plurality of interconnected post sections that fit together telescopically, to accomplish the adjustable height. The post longitudinal axis may be vertical. The post longitudinal axis may be angled from the vertical. The post longitudinal axis may be angled toward the user, so that the legs are farther from the user than is the saddle.

[0008] In one aspect, an arm support for blood pressure monitoring includes an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis, an arm-supporting saddle that is carried at the top of the post, wherein the saddle has an upper arm-support surface that is configured to support an arm of a user at around the elbow region, and wherein the top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a horizontal position.

[0009] Examples may include one of the above and/or below features, or any combination thereof. The saddle may be generally "U"-shaped along its width, to define a low point in the middle of the width that is configured to support the user's arm. The saddle may be thicker at a top portion that defines the arm support surface than it is at a lower portion that is coupled to the post, to define a wide arm-support surface. The saddle may be generally "V"-shaped from a side view. The saddle may comprise a region that supports the arm. The arm-support surface of the saddle may be textured, to provide some grip of the arm. The saddle may be approximately 4 inches high, 1.5 inches thick and 7.5 inches wide.

[0010] Examples may include one of the above and/or below features, or any combination thereof. The post may comprise a plurality of interconnected post sections that fit together telescopically, to accomplish the adjustable height. The post longitudinal axis may be vertical. The post longitudinal axis may be angled from the vertical. The post longitudinal axis may be angled toward the user, so that the legs are farther from the user than is the saddle.

[0011] In another aspect, an arm support for blood pressure monitoring includes an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis, an arm-supporting saddle that is carried at the top of the post, wherein the saddle has an upper arm-support surface that is configured to support an arm of a user at around the elbow region, wherein the saddle is generally "U"-shaped along its width, to define a low point in the middle of the width that is configured to support the user's arm, wherein the saddle is thicker at a top portion that defines the arm support surface than it is at a lower portion that is coupled to the post, to define a wide arm-support surface, wherein the saddle is generally "V"-shaped from a side, and wherein the arm-support surface of the saddle is textured, to provide some grip of the arm, and wherein the top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a generally horizontal position, wherein the post comprises a plurality of interconnected post sections that fit together telescopically, to accomplish the adjustable height, and wherein the post longitudinal axis is configured to be generally vertical.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** is an illustration of an arm support for blood pressure monitoring.

[0013] FIG. **2**A is a front view and FIG. **2**B is a side view of a saddle for the arm support for blood pressure monitoring.

[0014] FIG. **3** is a partial view of the top of a pole of the arm support for blood pressure monitoring.

[0015] FIG. **4** is a partial view of a pole of the arm support for blood pressure monitoring.

[0016] FIG. **5**A is a partial front view and FIG. **5**B is a bottom view of a stand for the pole of the arm support for blood pressure monitoring.

[0017] FIG. **6** shows a different stand, without the arm support

[0018] FIG. **7** shows the stand of FIG. **6** extended higher.

[0019] FIG. **8**A is a front view and FIG. **8**B a side view of another saddle for an arm support for blood pressure monitoring.

DETAILED DESCRIPTION

[0020] Arm support for blood pressure monitoring **10** is shown in FIG. **1**. Arm support **10** includes collapsible stand **18** that supports adjustable-height post **16**. Arm-supporting saddle **14** is carried at the top of post **16**. Saddle **14** is generally "U"-shaped so as to accommodate and support arm **12** of user **11**. Generally the arm should be supported in the elbow region as shown. This leaves the upper arm free for use by a medical professional to take the blood pressure. Generally, a sphygmomanometer is used, and the cuff can be placed over the free upper arm. Since the height of saddle **14** is adjustable, arm support **10** is able to be adjusted such that the arm is horizontal, as shown in the drawing. It is known that if the arm is not horizontal the blood pressure reading will be incorrect. Accordingly, a stand that can accommodate a sitting or standing user, and comfortably support the arm at about shoulder height, is very helpful to taking an accurate blood pressure reading. Accuracy can be critical when it comes to diagnosing and treating medical conditions (such as high blood pressure) that are related to or associated with a measured blood pressure. Also, the stand allows the user to be in the same position each time a blood pressure reading is taken, and thus helps to ensure repeatable readings.

[0021] Stand **18** in this non-limiting example includes legs **19-21** that are supported from central knuckle **23** by pivoting arms set **22**. This arrangement allows the legs to be folded up so that their ends (which normally sit on the floor) are closer to the longitudinal axis of the post **16**, to present a more narrow form factor, for storing the collapsed arm support stand. See also FIG. **5**.

[0022] Height adjustment is accomplished by pole **16** being adjustable in length. Length adjustability can be accomplished in a desired fashion. In this non-limiting example pole **26** is telescopically received in pole **24**. Twist lock **25** locks and releases pole **26** to allow it to be moved up and down as necessary to place saddle **14** at the correct height. Saddle **14** is carried at the end of pole **26**. The interconnection of the saddle and the support pole can be accomplished in a desired manner, for example as is depicted in FIGS. **2** and **3**. Saddle **30** has lower stub or pin **42** (FIG. **2**) that fits into cavity **27** at the top end of pole **26** (FIG. **3**). Alternatively, the saddle can have a cavity into which the top of the pole fits. Cavity **27** can be threaded and stub **42** can be threaded, or not. It is preferable to make saddle **30** removable from the pole, in part so that the saddle can be replaced if necessary. Or, the saddle can be permanently mounted to the pole by any mechanical means.

[0023] Saddle **30** comprises support cushion **36** that is topped by textured surface **32** with ends **34** and **35** that roll over the ends of the cushion, as shown, which can improve the appearance. Low point **33** is typically where the user's elbow would rest. Support structure **38** tapers evenly to lower area **40** from which stub **42** projects. The wide, tapered support structure lends more stability to the arm support.

[0024] The arm support can alternatively have a post that is vertical, as shown in FIGS. **6** and **7**. Stand **50** is collapsed in FIG. **6** and extended in FIG. **7**. Pole **52** is vertical rather than tipped. A vertical pole can allow the stand to be located closer to the user's chair. Also, it takes less floor space that an arm support with a tilted pole. Arm support **50** includes stand **54** with legs **71-75** that have casters **81-85**, to allow the arm support to be rolled/moved around. Knuckles **100** and **102** support the legs and the intermediate supports **91** and **93**, to allow the legs to be collapsed and deployed. Pole **50** is telescopic and includes interfitted poles with releasable locks **63**, **64** and **65** between them. Upper pole **60** is configured to interface to and support a saddle, not shown in FIGS. **6** and **7**, at the top **60** thereof.

[0025] FIGS. **8**A and **8**B illustrate another saddle **120** with lower portion **122** that defines cavity **128** that receives the top of the post (not shown). Upper surface **124** is configured to support the arm; it can be textured to better grip the arm. Upper lip **126** can define a wider section that offers more support for the arm but maintains a lower thickness (profile) of lower portion **122**. Saddle **120** can be molded from plastic and it can be permanently or removably attached to the top of the post.

[0026] A number of implementations have been described. Nevertheless, it will be understood that additional modifications may be made without departing from the scope of the inventive concepts described herein, and, accordingly, other embodiments are within the scope of the following claims.

What is claimed is:

1. An arm support for blood pressure monitoring, comprising:

an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis;

an arm-supporting saddle that is carried at the top of the post, wherein the saddle has an upper arm-support surface that is configured to support an arm of a user at around the elbow region; and

wherein the top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a horizontal position.

2. The arm support of claim **1**, wherein the saddle is generally "U"-shaped along its width, to define a low point in the middle of the width that is configured to support the user's arm.

3. The arm support of claim **2**, wherein the saddle is thicker at a top portion that defines the arm support surface than it is at a lower portion that is coupled to the post, to define a wide arm-support surface.

4. The arm support of claim **1**, wherein the saddle is generally "V"-shaped from a side view.

5. The arm support of claim **1**, wherein the saddle comprises a region that supports the arm.

6. The arm support of claim **1**, wherein the arm-support surface of the saddle is textured, to provide some grip of the arm.

7. The arm support of claim **1**, wherein the post comprises a plurality of interconnected post sections that fit together telescopically, to accomplish the adjustable height.

8. The arm support of claim **1**, wherein the post longitudinal axis is vertical.

9. The arm support of claim **1**, wherein the post longitudinal axis is angled from the vertical.

10. The arm support of claim **9**, wherein the post longitudinal axis is angled toward the user, so that the legs are farther from the user than is the saddle.

11. The arm support of claim **1**, wherein the saddle is approximately 4 inches high, 1.5 inches thick and 7.5 inches wide.

12. An arm support for blood pressure monitoring, comprising:

an adjustable-height stand comprising a plurality of legs that support an upwardly-extending post that lies along a longitudinal post axis, wherein the legs are configured to be collapsed and deployed relative to the post, wherein when the legs are deployed they are spaced radially from the bottom end of the post and their ends are spaced from the post axis, and when the legs are collapsed their ends move closer to the post axis;

an arm-supporting saddle that is carried at the top of the post, wherein the saddle has an upper arm-support surface that is configured to support an arm of a user at around the elbow region, wherein the saddle is generally "U"-shaped along its width, to define a low point in the middle of the width that is configured to support the user's arm, wherein the saddle is thicker at a top portion that defines the arm support surface than it is at a lower portion that is coupled to the post, to define a wide arm-support surface, wherein the saddle is generally "V"-shaped from a side, and wherein the arm-support surface of the saddle is textured, to provide some grip of the arm; and

wherein the top of the post is adjustable in height relative to the legs, to allow the saddle to be positioned at an appropriate height such that the user's arm when supported by the saddle is in a generally horizontal position, wherein the post comprises a plurality of interconnected post sections that fit together telescopically, to accomplish the adjustable height, and wherein the post longitudinal axis is configured to be generally vertical.

* * * * *

专利名称(译)	手臂支持血压监测		
公开(公告)号	US20200054286A1	公开(公告)日	2020-02-20
申请号	US16/524126	申请日	2019-07-28
发明人	TOZESKI, CHESTER		
IPC分类号	A61B5/00 A61B5/021		
CPC分类号	A61B5/702 A61B2560/0431 A61B5/02141 A61B5/022 A61H3/02		
优先权	62/711881 2018-07-30 US		
外部链接	Espacenet USPTO		

摘要(译)

一种用于血压监测的手臂支架，包括高度可调节的支架，该支架包括多个腿，所述多个腿支撑沿着纵向支柱轴线放置的向上延伸的支柱，其中，所述腿被配置为相对于所述支柱折叠和展开，其中 当腿部展开时，它们与立柱的底端径向间隔开，并且其末端与立柱的轴心间隔开；当腿部折叠时，其端部靠近立柱的轴线移动，手臂支撑鞍座在 支柱的顶部，其中，鞍座具有上臂支撑表面，该上臂支撑表面构造成在肘部区域附近支撑使用者的手臂，并且其中支柱的顶部相对于腿的高度可调节，以允许 将鞍座定位在适当的高度，以使使用者的手臂在受到鞍座支撑时处于水平位置。