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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Prows, et al.	)	
U.S. Patent No. 6,345,402 B1	)	Attorney Docket No: 13850-9
Issued: February 12, 2002	)	
Based on U.S. App. No: 09/533,531	)	
Filed: March 23, 2000	)	
For: HINGED PANELS FOR A THERMAL SUPPORT APPARATUS	)	

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Atom Medical International, Inc.

Petitioner

v.

Draeger Medical Systems, Inc.

Patent Owner

Patent No. 6,345,402

Issue Date: February 12, 2002

Title: HINGED PANELS FOR A THERMAL SUPPORT APPARATUS

PETITION FOR *INTER PARTES* REVIEW

OF U.S. PATENT NO. 6,345,402

PURSUANT TO 35 U.S.C. § 312 AND 37 C.F.R. § 42.104

Case No. IPR2014-00232

TABLE OF CONTENTS

TABLE OF AUTHORITIES

STATUTES

REGULATIONS

I. INTRODUCTION

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. Part 42, Atom Medical International, Inc. ("Atom") ("Petitioner") respectfully requests *Inter Partes* Review ("IPR") of claims 1, 2, 5, 7, 8, 15, 17, 22, 32, 34, 35, 38, 39, 40, 45, and 46 (collectively the "asserted claims") of U.S. Patent No. 6,345,402 ("the 402 patent"), filed March 23, 2000, and issued February 12, 2002, to D. Scott Prows et al., and currently assigned to Draeger Medical Systems, Inc. ("Draeger") ("Patent Owner") according to the U.S. Patent and Trademark Office ("the USPTO") assignment records. For the reasons set forth below, there is a reasonable likelihood that Petitioner will prevail with respect to each of the asserted claims.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. REAL PARTY IN INTEREST (37 C.F.R. § 42.8(B)(1))

Petitioner Atom is the real party-in-interest.

B. RELATED MATTERS (37 C.F.R. § 42.8(B)(2))

The 402 patent is currently one of seven patents that are the subject of the following litigation brought by Draeger: *Draeger Med. Sys., Inc. v. Atom Med. Int'l, Inc. and Philips Elecs. N. Am. Corp., d/b/a Philips Healthcare*, Case No. 2:12-cv-00512-UA-DNF, filed in the U.S. District Court for the Middle District of

Florida on September 17, 2013 (hereinafter "district court litigation").[1] Service of the complaint was effective on Atom no earlier than January 2, 2013, and on Phillips no earlier than January 8, 2013. Other than this district court litigation, the Petitioner is unaware of any other pending judicial or administrative matter that would affect, or be affected by, a decision in this proceeding.

In the district court litigation, Draeger asserts infringement of the asserted claims of the 402 patent. Accordingly, and in reliance upon Draeger's acquiescence that none of the other claims of the 402 patent are allegedly infringed, Atom seeks *inter partes* review of the asserted claims only.

C. NOTICE OF LEAD AND BACKUP COUNSEL

Pursuant to 37 C.F.R. §§ 42.8(b)(3) and 42.10(a), Petitioner provides the following designation of counsel:

Lead Counsel	Back-up Counsel
Ralph J. Gabric, Reg. No. 34,167 rgabric@brinksgilson.com	Tadashi Horie, Reg. No. 40,437 thorie@brinksgilson.com

[1] The seven patents currently at issue in the district court litigation are U.S. patent nos. 6,296,606; 6,345,402; 6,483,080; 6,540,660; 6,746,394; 6,761,683; and 7,335,157. Petitioner filed a request for *inter partes* review of the 080 patent on October 25, 2013, Case IPR 2014-00095, and the 157 patent on November 27, 2013, Case IPR 2014-00194.

Postal and Hand-Delivery Address: Brinks Gilson & Lione NBC Tower, Suite 3600 455 North Cityfront Plaza Drive Chicago, IL 60611-5599 Telephone: (312) 321-4253 Fax: (312) 321-4299	Manish K. Mehta, Reg. No. 64,570 mmehta@brinksgilson.com Postal and Hand-Delivery Address: Brinks Gilson & Lione NBC Tower, Suite 3600 455 North Cityfront Plaza Drive Chicago, IL 60611-5599 Telephone: (312) 321-4253 Fax: (312) 321-4299

Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this Petition.

D. SERVICE INFORMATION (37 C.F.R. § 42.8(B)(4))

Service information for lead and back-up counsel is provided above in the designation of lead and back-up counsel. Service of any document via hand-delivery or mail may be made at the postal mailing address of the respective lead or back-up counsel designated above. Electronic service may be made at the above-designated email addresses.

III. PAYMENT OF FEES (37 C.F.R. § 42.15(A))

The undersigned authorizes the Office to charge the filing fee for this Petition, as well as any other fees that may be required in connection with this Petition or these proceedings on behalf of Petitioner, to the deposit account of Brinks Gilson & Lione, Deposit Account No. 23-1925.

IV. GROUND FOR STANDING (37 C.F.R. § 42.104(A))

Pursuant to 37 C.F.R. § 42.104(a), Petitioner hereby certifies that the 402 patent (Ex. 1001) is available for IPR and that Petitioner is not barred or estopped from requesting an IPR challenging the claims of the 402 patent on any of the grounds identified in this Petition.

V. IDENTIFICATION OF CHALLENGE (37 C.F.R. § 42.104(B))

A. THE CLAIMS (37 C.F.R. § 42.104(B)(1))

Pursuant to 37 C.F.R. § 42.104(b), the precise relief sought by Petitioner is that the Patent Trial and Appeal Board ("PTAB") review and invalidate claims 1, 2, 5, 7, 8, 15, 17, 22, 32, 34, 35, 38, 39, 40, 45, and 46 of the 402 patent under 35 U.S.C. § 103.

B. THE SPECIFIC ART AND STATUTORY GROUND(S) ON WHICH CHALLENGE IS BASED (37 C.F.R. § 42.104(B)(2))

This IPR of the 402 patent is requested based upon the following prior art references and the following grounds:

1. The Specific Art

Inter Partes Review of the 402 patent is requested in view of the following prior art references:

Exhibit	Description	Publication or Effective Filing Date	Type of Prior Art
Ex. 1002	Int'l Pub. No. WO 97/11664 ("Goldberg")	April 3, 1997	§ 102(a)

Ex. 1003	U.S. Patent No. 4,625,731 ("Quedens")	Dec. 2, 1986	§ 102(b)
Ex. 1004	U.S. Patent No. 5,542,152 ("Crompton")	Aug. 6, 1996	§ 102(b)
Ex. 1005	U.S. Patent No. 5,079,799 ("Rude")	Jan. 14, 1992	§ 102(b)
Ex. 1006	U.S. Patent No. 5,491,874 ("Lowry")	Feb. 20, 1996	§ 102(b)
Ex. 1007	U.S. Patent No. 5,330,415 ("Storti")	July 19, 1994	§ 102(b)

2. Grounds On Which Challenge Is Based

This IPR of the 402 patent is requested based on the following two grounds:

a. Ground 1

Claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Goldberg in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) as obvious in further view of Crompton and either Rude or Lowry.

b. Ground 2

Claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Storti in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) as obvious in further view of Crompton and either Rude or Lowry.

C. HOW THE CHALLENGED CLAIMS ARE TO BE CONSTRUED (37 C.F.R. § 42.104(B)(3))

A claim subject to IPR receives the "broadest reasonable construction in light of the specification of the patent in which it appears." 37 C.F.R. § 42.100(b).

This interpretation should control regardless of how a court may eventually interpret the claims. Moreover, should the Patent Owner contend that the claim has a construction different from its broadest reasonable interpretation, the appropriate course is for the Patent Owner to seek to amend the claim to expressly correspond to its contentions in this proceeding. *See* 77 Fed. Reg. 48764 (Aug. 14, 2012). Any such amendment would only be permissible if the proposed amended claim complies with 35 U.S.C. § 112.

Further, any interpretation or construction presented below, either implicitly or explicitly, should not be viewed as constituting, in whole or part, Petitioner's own interpretation or construction of such claims. Petitioner expressly reserves the right to present its own interpretations or constructions, which may differ, in whole or part, from those reflected herein.

D. THE ADMITTED PRIOR ART OF THE 402 PATENT

In the "Background and Summary of the Invention," the 402 patent acknowledges that "[t]hermal support devices, such as infant warmers and incubators, having an isolation chamber" where known at the time of the alleged invention. (Ex. 1001, 1:17-21). It was well known at the time to provide "various systems [to] maintain the isolation chamber at a controlled temperature and humidity to facilitate the development of a premature infant . . . ." (*Id*. at 1:18-21). To control the temperature and humidity within the isolation chamber, such "thermal support devices . . . typically include[d] a control panel that caregivers use[d] to enter environmental control parameters, such as desired temperature and humidity levels." (*Id*. at 1:61-65). Thus, the patentees acknowledge that control monitors were used to monitor environmental conditions within the isolation chamber and control systems were used to adjust the environmental conditions, such as temperature and humidity levels within the isolation chamber. These devices were well known at of the time of the alleged invention.

E. SUMMARY OF THE ALLEGED INVENTION OF THE 402 PATENT

The alleged invention of the 402 patent is generally directed to a user interface panel for a thermal support apparatus that can pivot about a generally vertical axis and is angled with respect to the patient support about a generally horizontal axis. (Ex. 1001, Abstract, 16:27-42). This permits the caregiver to adjust the user interface panel to the desired viewing position. (Ex. 1008, Declaration of Michael D. Leshner, P.E. (hereinafter "Leshner Decl."), ¶ 43).

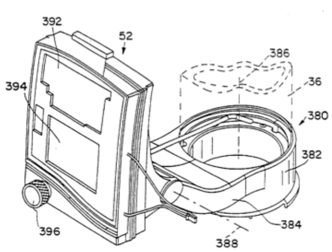


FIG. 24

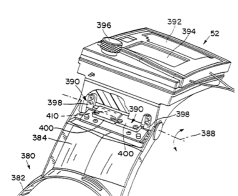


FIG. 25

With reference to Figures 24 and 25 above, the user interface panel 52 is connected to the thermal support apparatus via a pivot collar 380 that has a cylindrical portion 382, which is rotatably coupled to an arm 36 of the thermal support apparatus and an arm 384 that extends from the cylindrical portion 382 and attaches to the panel 52. (Ex. 1001, 16:27-42; Ex. 1008, Leshner Decl., ¶ 44). The user interface panel 52 can pivot about a vertical axis 386 so as to be positioned on either side of the support apparatus 20. *Id*. The user interface panel 52 can also pivot about a horizontal axis 388. *Id*. The user interface panel 52 is coupled to arm 384 by a pair of resistive hinges 390. *Id*. This permits pivoting of the user interface panel 52 about a horizontal axis 388 to vary the angle at which the display is viewed by the user. (Ex. 1001, 16:27-42; Ex. 1008, Leshner Decl., ¶ 44). The "preferred" resistive hinges were available from CEMA Technologies, Inc. (Ex. 1001, 16:65-67).

F. THE EXHIBIT NUMBER OF THE SUPPORTING EVIDENCE RELIED UPON TO SUPPORT THE CHALLENGE AND THE RELEVANCE OF THE EVIDENCE TO THE CHALLENGE RAISED, INCLUDING IDENTIFYING SPECIFIC PORTIONS OF THE EVIDENCE THAT SUPPORT THE CHALLENGE

1. International Pub. No. WO 97/11664 ("Goldberg")

International Publication No. WO 97/11664 to Goldberg published on April 3, 1997 (Ex. 1002), and qualifies as prior art under 35 U.S.C. § 102(a). Goldberg was not of record during the prosecution of the 402 patent.

2. U.S. Patent No. 4,625,731 ("Quedens")

United States Patent No. 4,625,731 issued on December 2, 1986 (Ex. 1003), and qualifies as prior art under 35 U.S.C. § 102(b). Quedens was not of record during the prosecution of the 402 patent.

3. U.S. Patent No. 5,542,152 ("Crompton")

United States Patent No. 5,542,152 ("Crompton") issued on August 6, 1996 (Ex. 1004), and qualifies as prior art under 35 U.S.C. § 102(b). Crompton was not of record during the prosecution of the 402 patent.

4. U.S. Patent No. 5,079,799 ("Rude")

United States Patent No. 5,079,799 issued on January 14, 1992 (Ex. 1005), and qualifies as prior art under 35 U.S.C. § 102(b). Rude was not of record during the prosecution of the 402 patent.

5. U.S. Patent No. 5,491,874 ("Lowry")

United States Patent No. 5,491,874 ("Lowry") issued on February 20, 1996 (Ex. 1006), and qualifies as prior art under 35 U.S.C. § 102(b). Lowry was not of record during the prosecution of the 402 patent.

6. U.S. Patent No. 5,330,415 ("Storti")

United States Patent No. 5,330,415 issued on July 19, 1994 (Ex. 1007), and qualifies as prior art under 35 U.S.C. § 102(b). Storti was of record during the prosecution of the 402 patent, but did not form part of any of the rejections made during the prosecution of the 402 patent.

G. THE CHALLENGED CLAIMS ARE UNPATENTABLE UNDER THE STATUTORY GROUNDS IDENTIFIED IN PARAGRAPH (B)(2) OF 37 C.F.R. § 42.104

Unpatentability is proven by a preponderance of evidence. 35 U.S.C. § 316. The level of ordinary skill in the art applicable to this petition is set forth by Michael D. Leshner at ¶ 46 of his Declaration. (Ex. 1008, Leshner Decl., ¶ 46).

1. Ground 1

Claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Goldberg in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) as obvious in further view of Crompton and either Rude or Lowry.

Goldberg discloses a convertible infant thermal support device ("patient support apparatus") that includes, *inter alia*, a patient-support portion 12 ("patient support") for supporting an infant, a base portion 16 ("base") below the patient-support portion 12, a canopy 24 that along with the patient-support portion 12 form a substantial enclosure ("isolation chamber"), and a rotating display 160 ("user interface panel"). (Ex. 1002, 12:14-27, 17:32-18:5, 24:7-14, 25:21-28, 4:1-9, 6:2-6, 6:32-34; Ex. 1008, Leshner Decl., ¶ 62). As shown in Figure 17, the rotating display 160 is in communication with a controller 200 ("controller") of the thermal support device. (Ex. 1002, 33:14-19, Fig. 17). The rotating display 160 allows a user to input information into the controller 200 so as to regulate certain environmental conditions, such as the air temperature set point. When the controller 200 is in the Baby Mode, the user can set the "baby setpoint," which is the control point temperature of the incubator. (*Id*. at 33:29-34:20). The rotating display 160 displays information received from the controller 200, such as air temperature and baby temperature within the incubator, to the caregiver. (*Id.*, 32:34-33:13, Fig. 17; Ex. 1008, Leshner Decl., ¶ 63).

Goldberg further discloses detail regarding the manner in which the user interface 160 is attached to the patient support apparatus. "[R]otating display 160 as shown in FIGS. 1 and 2 . . . is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16." (Ex. 1002, 17:32-18:5). The display 160 is pivotably mounted to canopy-support arm 22 and can pivot from side to side of device 10 about "a generally vertical axis," and can be positioned in a variety of locations, such as outside of inner deck 158. (Ex. 1002, 17:32-18:5; Ex. 1008, Leshner Decl., ¶ 64). Figures 1 and 4 of Goldberg are provided below:

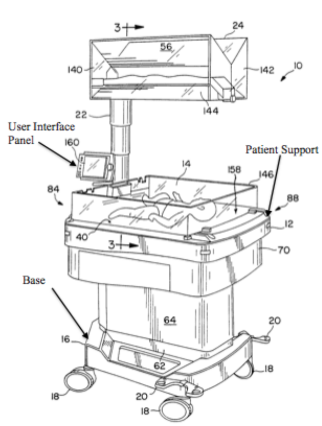


FIG. I

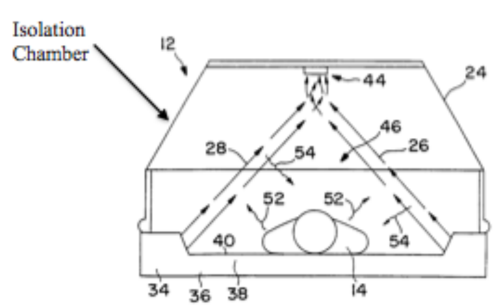
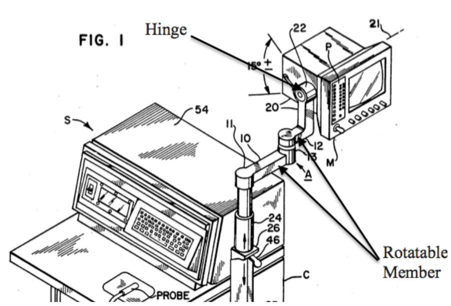


FIG. 4

Quedens is directed to an articulated mounting structure for mounting a display, such as a monitor. (Ex. 1003, Abstract). The articulated mounting structure of Quedens allows for the monitor to "assume virtually any desirable position with respect to the patient." (*Id.* at 7:55-56). With reference to Figures 1 (below) and 1a, Quedens discloses an articulated mounting structure having a first arm 10 and a second arm 12 that are pivotally connected to one another via a pivot assembly 13 and are movable about first and second vertical axes, 16 and 18, respectively. (*Id*. at Abstract, 4:45-66). The first and second arms 10, 12 and pivot assembly 13 form a "rotatable member" that allows a monitor to pivot about a generally vertical axis. *Id*. The first arm 10 is mounted to a base portion of a console C via pivot assembly 11, and a portion of the second arm 12 is coupled to a journaling structure 22 ("hinge") that is coupled to a monitor and permits the monitor to tilt (angle) about a substantially horizontal axis 21. (Ex. 1003, Abstract, 4:45-66; Ex. 1008, Leshner Decl., ¶ 65).



Based upon the teaching of Quedens, it would have been obvious to a person of ordinary skill in the art at the time of the invention of the 402 patent to modify

Goldberg by attaching the user interface 160 to the canopy-support arm 22 of Goldberg using the hinge (journaling structure 22) and rotatable member (arms 10, 12 and pivot assembly 13) of Quedens for the art-recognized benefit of achieving an optimal viewing positioning of the user interface. (Ex. 1003, 2:27-62, 7:46-67; Ex. 1008, Leshner Decl., ¶ 66). There is nothing unexpected in the functionality or properties of the combination. (Ex. 1008, Leshner Decl., ¶ 66).

With respect to the hinge connecting the user interface to the rotatable member, Quedens discloses a journaling structure 22 for providing angling movement of the monitor about a generally horizontal axis. (Ex. 1003, 4:52-58, 7:9-12, Figs. 1-3). The journaling structure 22 allows for 30 degrees (i.e., +/-15 degrees from horizontal) of angular freedom for optimal viewing. (*Id.*).

One of ordinary skill in the art would have understood that the journaling structure 22 of Quedens necessarily includes some type of resistive hinge-like mechanism to allow the user to select the optimal viewing angle while simultaneously preventing unintended angular movement of the monitor under the gravitational force on the monitor itself. (Ex. 1008, Leshner Decl., ¶¶ 67-68).

Indeed, Quedens itself provides the motivation for incorporating a resistive hinge-like structure in the journaling structure 22 for the Quedens-recognized benefit of inhibiting unintended monitor movement. (Ex. 1008, Leshner Decl., ¶¶ 69, 70, 71, 74). Quedens discloses the use of frictional damping structures (i.e., a resistive hinges) at vertical axes 16 and 18, respectively, for the purpose of frictionally inhibiting unintended monitor movement about a vertical axis between deliberate operator adjustments. (Ex. 1003, Abstract, 3:12-19, 6:23-56, 7:56-61). It would have been obvious to use a dampening structure in the journaling structure 22 to also prevent unintended monitor movement about horizontal axis 21. (Ex. 1008, Leshner Decl., ¶¶ 69, 70, 71, 74). As discussed above, a person of ordinary skill in the art would have understood that the monitor is subject to various forces (such as, for example, gravity) during typical operation that could result in unintended movement of the monitor about a horizontal axis. (*Id.*).

The dampening structure of Quedens is further illustrated in Figure 9 of Quedens, which is annotated (right). (Ex. 1003, 6:23-24; Ex. 1008, Leshner Decl., ¶ 72). The first

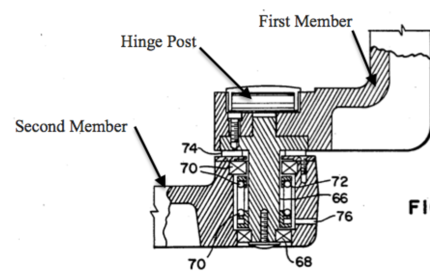


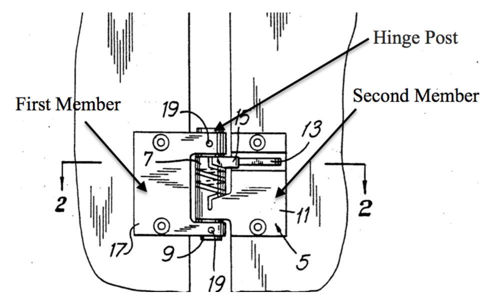
FIG. 9

arm 10 ("second member") and second arm 12 ("first member") are coupled by a pivot shaft 66 ("hinge post"). The pivot shaft 66 extends through the center of the pivot assembly. A duplex ball bearing assembly 68, 70 facilitates rotation of the pivot shaft 66, and adjustable spring 72 loads the pivot shaft against friction surface 74. (Ex. 1003, 6:26-33). The dampening apparatus is "interposed between interconnected portions of arms [10, 12] to frictionally inhibit unintended monitor movement between deliberate operator adjustments," such that "[o]nce the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention." (Ex. 1003, 3:12-19, 7:55-61; Ex. 1008, Leshner Decl., ¶¶ 71-73).

Further motivation for providing resistive hinges in the journaling structure of Quedens is provided by Crompton. Crompton discloses a tilt adjustment mechanism designed to have sufficient resistive force to withstand touch-actuating forces that are typically applied to a touch screen display. (Ex. 1004, 1:26-29, 4:15-21, 4:60-67). Crompton recognizes that the tilt adjustment mechanism for the display must have a resistive force that is sufficient to prevent the unintended movement of the tilt mechanism/display that could be caused by the "touch force" exerted on the touch screen display yet still allow deliberate operator adjustments for optimal viewing and reduced glare. (*See, e.g.*, Ex. 1004, 1:26-29, 4:15-21, 4:60-67; Ex. 1008, Leshner Decl., ¶ 75). In one embodiment, Crompton contemplates that the tilt adjustment mechanism must be able to withstand 5 pounds of touch force on the touch screen display without moving it in the downward direction. (Ex. 1004, 4:15-21, 6:60-67; Ex. 1008, Leshner Decl., ¶ 75).

Based on the teachings of Quedens and Crompton, one of ordinary skill in the art would have been motivated to preset the friction dampening torque in the dampening structure of Quedens, as incorporated by Goldberg, to resist unintended angular movement of the monitor under typical button-actuating forces yet permit angular movement when forces exceed these actuating forces, such as when the user deliberately seeks to change the angular position of the monitor. (Ex. 1008, Leshner Decl., ¶¶ 76, 77).

Similarly, it would have been obvious to a person of ordinary skill in the art to use other types resistive hinges for providing such resistive forces. (*Id*. at ¶ 78). By the time of the alleged invention of the 402 patent, resistive hinges were well known in the art for providing resistive force. Exemplary resistive hinges are disclosed in, for example, Rude and Lowry. (*Id*.).



With reference to Figure 1 of Rude (right), the resistive or friction hinge 5 includes a plate 17 ("first member") and plate member 11 ("second member") that are fixedly attached to part 1 and part 3, respectively. (Ex. 1005, 3:19-30, 35-37). A spiral portion 7 is disposed around a pintle 9 ("hinge post"), which is a post that is inserted through the plate member 11 and plate 17. (*Id*. at 3:26-37). To keep the band 7 tightly wrapped around the pintle 9, a spring 13 is provided around the pintle 9 that provides a force between the plate member 11 and tail portion 15 of the band 7. (*Id*. at 3:30-32). In operation, the spring 13 provides resistance force when moving the hinge from the position illustrated in Figure 2 to the position illustrated in Figure 3 because the direction of rotation is opposite to the direction of the moment applied by the spring 13. (*Id*. at 3:56-60). Less force is required to move the hinge 5 in the opposite direction because no restraining force is provided by the spring 13. (Ex. 1005, 3:64-68; Ex. 1008, Leshner Decl., ¶ 79).

Similarly, Lowry, which is assigned to CEMA Technologies, Inc., the supplier of the preferred resistive hinges identified in the 402 patent (Ex. 1001, 16:65-67), discloses a hinge assembly 30a for rotatably coupling a first member to a second member. (Ex. 1006, Abstract, 4:40-45).

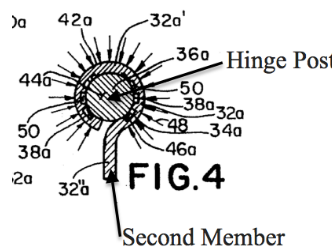


FIG.4

With reference to Figure 4 (right), the hinge assembly 30a includes a "friction element [32a] which controls the angular position of the first member with respect to the second member." (*Id*. at 1:8-10, 4:56-61). The "friction element 32a [is] secured to a first member" (*Id*. at 4:57-59) and a "pintle 44a [is] secured to the second member" (*Id*. at 5:55-57), where the pintle 44a is positioned within a cavity 36a formed by the friction element 32a with an interference fit (*Id*. at 5:65-6:6). As illustrated in Figure 4 below, the portion of the hinge that connects to the pintle 44a is the "first member," friction element 32a is the "second member," and the pintle 44a is the "hinge post," coupled to the first member and extending therefrom into the second member. The interference fit between the pintle 44a and friction element 32a generates frictional forces when the friction element 32a is moved relative to the pintle 44a that provides a resistive force in the angular direction when the first member is rotated relative to the second member. (Ex. 1006,1:41-49, 5:65-6:6, 9:35-45; Ex. 1008, Leshner Decl., ¶¶ 80-82).

Lowry acknowledges that such resistive hinges are often used when it is necessary to control the angular position of the first member relative to the second member, and are used in laptops, notebooks, and palmtop computers “to allow a user to position the liquid crystal display screen” relative to the base such that it can remain in an angular position. (Ex. 1006, 1:16-23; Ex. 1008, Leshner Decl., ¶ 82). It would have also been obvious to include in the hinge or journaling structure 22 of Quedens, as incorporated in Goldberg, the resistive hinges as taught by Quedens, Crompton, Rude or Lowry. (Ex. 1008, Leshner Decl., ¶¶ 70-83).

Moreover, the selection of the hinge, including the amount of resistance to include, for allowing deliberate angular movement of the user interface while simultaneously preventing unintended angular movement under typical operating forces (such as those present when a button is actuated on the face of the monitor) would have been a matter of routine design choice. (*Id*. at ¶¶ 83, 84). As disclosed in Quedens, Crompton, Rude, and Lowry, hinges with varying resistance were known in the art at the time of the alleged invention of the 402 patent. (*Id*.). Each of Quedens, Crompton, Rude, and Lowry recognize the benefits of resistive hinges in maintaining the selected, relative positions of two items under the forces these items may typically encounter during use. (Ex. 1003, Abstract, 3:12-19, 6:23-56, 7:56-61; Ex. 1004, 4:8-20; Ex. 1005, 1:8-17; Ex. 1006, 1:13-23; Ex. 1008, Leshner Decl., ¶ 84).

The teachings of Quedens and/or Crompton would have suggested resistive hinges, such as those described in Rude and Lowry, for the journaling structure 22 of Quedens in order to achieve the art-recognized benefit of permitting angling of the user interface into the desired viewing position while also resisting inadvertent angular movement under other typical operating forces, such as from the gravitational force on the user interface or the force applied when the user actuates a button on the user interface. (Ex. 1008, Leshner Decl., at ¶ 85). There is nothing unexpected in the functionality or properties of placing a resistive hinge in the journaling structure 22 of Quedens for preventing unintended angular movement of the display. (*Id.*).

Finally, although Crompton expresses a preference for a tilt adjustment mechanism that provides a touchscreen actuating counter-force in one direction, a person of ordinary skill in the art would have been motivated to provide resistive hinges in the journaling structure 22 of Quedens, as applied to Goldberg, for providing a button actuating counter-force in two directions. (*Id.* at ¶ 86). The touch screen actuating force described in Compton is a downward force applied above the horizontal axis of rotation of the tilt screen tending to cause unintended downward rotation of the tilt screen. (Ex. 1004, Abstract, Figures 9B and 9C; Ex.

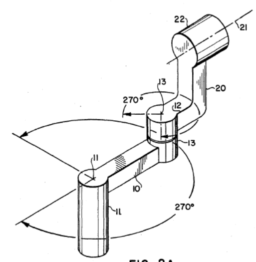
1008, Leshner Decl., ¶ 86). Thus, a one direction resistive counter-force (i.e., a resistive counter-force directed in the upward direction) is sufficient to prevent unintended downward movement of the tilt screen when a touch screen-actuating force is applied. In contrast, the display of Quedens has buttons positioned on the display both above and below its horizontal axis of rotation. (Ex. 1003, Figures 1A and 1B). As such, a person of ordinary skill in the art would have readily appreciated that a button-actuating force could cause the display of Quedens to rotate in either direction about the horizontal axis, depending on whether the button actuated is positioned above or below the horizontal axis. (Ex. 1008, Leshner Decl., ¶ 86). Accordingly, it would have been obvious to include resistive hinges in the journaling structure 22 of Quedens to provide resistive counterforce in both directions of rotation, which would prevent unintended rotation of the display about the horizontal axis regardless of which button is actuated. (*Id*. at ¶ 86).

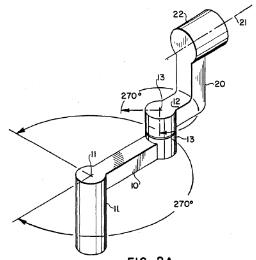
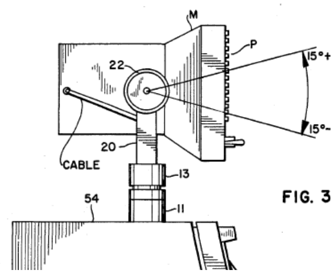
As shown in the claim chart below, claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Goldberg in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) in further view of Crompton and either Rude or Lowry. (*Id*. at ¶ 87).

U.S. Patent No. 6,345,402	**Goldberg (Ex. 1002) and Quedens (Ex. 1003) and, to the extent necessary, in further view of Crompton (Ex. 1004) and either Rude (Ex. 1005) or Lowry (Ex. 1006)**
1. A patient-	The 402 patent discloses “[t]hermal support devices, such as

support apparatus comprising	infant warmers and incubators, having an isolation chamber and various systems that maintain the isolation chamber at a controlled temperature and humidity to facilitate the development of a premature infant are known." (Ex. 1001, 1:17-21). Goldberg discloses "[a] patient support and environmental control apparatus (10) is provided." (Ex. 1002, Abstract).
a base,	Goldberg discloses "[d]evice 10 includes a patient-support portion 12 for supporting a patient 14. For purposes of this specification, patient 14 is broadly defined to include anyone under the medical supervision of a physician. A base portion 16 having castors 18, brake/steer pedals 20 coupled to castors 18, and a canopy-support arm 22 supporting a canopy 24 is mounted to patient-support portion 12." (Ex. 1002, 12:14-23).
a patient support carried above the base,	Goldberg discloses "[d]evice 10 includes a patient-support portion 12 for supporting a patient 14." (Ex. 1002, 12:14-17).
an isolation chamber on the patient support,	The 402 Patent discloses that "[i]nfant thermal support devices conventionally include a patient-support surface for supporting the infant in the isolation chamber . . . ." (Ex. 1001, 1:21-23). Goldberg discloses that "[p]atient thermal support device 10 in accordance with the present invention can also be provided with side wall 146 including side wall portions 148, 150, 152, 154, 156 as shown in FIGS. 1-6 to provide additional protection for patient 14. Side wall portions 148, 150, 152, 154, 156 are pivotable between an upward enclosed position as shown diagrammatically in FIG. 4 for side walls 150, 154, and a down-out-of-the-way position shown diagrammatically in FIG. 3 maximizing the access of the caregiver to patient 14." (Ex. 1002, 24:32-25:5).
a system for monitoring at least one environmental condition in the isolation chamber,	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Goldberg discloses a "[c]ontroller 200 [that] is a

	microprocessor based controller having an internal memory. The controller 200 receives various inputs. A baby temperature probe or sensor 202 is attached to the baby 14 to provide a measured baby temperature output signal to the controller 200 on line 204. In addition, an air temperature probe or sensor 206 is positioned near the baby 14 to provide a measured air temperature output signal. The air temperature sensor 206 is connected to the controller 200 by line 208." (Ex. 1002, 29:24-32).
a user interface panel having at least one button for entering system inputs and displays for observing system outputs, the user interface panel being rotatively mounted to the patient support through a rotatable member for pivoting movement about a generally vertical axis, and	Goldberg discloses "[a] user interface 160 permits the caregiver to input information into controller 200. The user interface 160 may be separate input devices such as devices 210, 214, and 218. The user interface 160 permits the caregiver to input information to controller 200 related to the operation mode, the air temperature set point, the baby temperature set point, a real time clock, and an alarm silencer. Illustratively, a rotatable control wheel 257 is used to scroll through various menu control options. It is understood that any type of control input device may be used. Controller 200 outputs information related to an alarm code, air temperature, and baby temperature to the user interface 160. User interface 160 includes a display 255 so that control information can be displayed to the caregiver." (Ex. 1002, 32:34-33:13). The user interface 160 as illustrated in Figure 1 has at least one button. (*Id*. at Fig 1). Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of device 10, and is positioned to lie outside of inner deck 158." (*Id*. at 17:32-18:5). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to

	a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16. The second arm 12 is pivotally coupled to the outer end of the first arm 10 by a pivot assembly 13 for rotation about a second vertical axis 18, which is movable and displaced from the first axis 16. The second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M. The second arm 12 and journaling structure 22 support the monitor M for tilting motion about a substantially horizontal axis of rotation 21." (*Id*. at 4:45-58). The first arm 10 is pivotally coupled to the second arm 12 by way of the pivot assembly 13. The first and second arms 10, 12 and the pivot assembly 13 form a "rotatable member" that allows the user interface to pivot about a generally vertical axis.  FIG. 2A (Ex. 1003, Fig. 2A).
a hinge connecting the user interface panel to the rotatable member to permit angling of the user interface panel with respect to the patient support.	Quedens discloses that as shown in Figure 3, that "[t]he second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M." (*Id*. at 4:52-58). "The pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66). The journaling structure 22 and its associated shaft are the "hinge."

	 FIG. 2A  FIG. 3 (*Id*. at Figs. 2A, 3).
2. The patient-support apparatus of claim 1, wherein the hinge is a resistive hinge configured to resist pivoting of the user interface panel in response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating	Quedens discloses that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66). Quedens further discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (*Id*. at Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred

forces.	embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).
5. The patient-support	Quedens teaches that "[t]he detailed structure of the pivot assemblies 11, 13 at the axes 16, 18 is illustrated in FIG. 9. A

apparatus of claim 2, wherein the resistive hinge includes a first member coupled to the user interface panel and a second member coupled to the arm, a hinge post being coupled to the first member and extending therefrom into the second member.	pivot shaft 66 extends through the center of the pivot assembly. The pivot shaft 66 is fixed to one of the arms [10, 12] which are interconnected at the pivot and rotates with that arm. A duplex ball bearing assembly 68, 70 facilitates rotation of the pivot shaft 66 relative to the arm to which it is not positively connected. An adjustable spring 72 is situated between the ball bearings and loads the pivot shaft against a friction surface 74 between the two arms which are interconnected at the pivot." (Ex. 1003, 6:23-33). The second arm 12 is the "first member," the first arm 10 is the "second member," and the pivot shaft 66 is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at 4:45-66, 6:23-33, Fig. 9). Rude teaches that the friction hinge assembly includes "[h]inge element 5, which is attached to part 3 with screws or rivets, or other appropriate means, has a spiral portion or band 7, comprised of several turns disposed about pintle 9, and a flat portion for attachment, plate member 11. Spring 13 keeps band 7 tightly wrapped about pintle 9 by applying a force between plate member 11 and tail 15 of band 7. On the other side of the hinge assembly, plate 17 is irrotatably attached to pintle 9 by pins or other appropriate means. Plate 17 is attached to part 1." (Ex. 1005, 3:26-35). "Assembly is accomplished by inserting pintle 9 through plate 17 and band 7 before the installation of spring 13. Pins 19 hold pintle 9 in plate 17 and prevent relative movement." (*Id*. at 3:38-41). The plate 17 is the "first member," the plate member 11 is the "second member," and the pintle 9 is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at Fig. 1). Lowry teaches that "hinge assembly 30a includes a friction element 32a for being secured to the first member. The friction element 32a includes an internal surface 34a. As best shown in FIG. 4, the internal surface 34a of the friction element 32a defines a generally cylindrical cavity 36a having a first diameter." (Ex. 1006, 4:57-62). "Referring now to FIG. 4, the first hinge assembly 30a further includes a generally

	cylindrical pintle 44a for being secured to the second member. The pintle 44a includes an external surface 46a and is positioned within the cavity 36a with the external surface 42a of the pintle 44a in facing frictional engagement with the internal surface 34a of the friction element 32a such that substantially uniform forces are created between the external surface 46a of the pintle and the internal surface 34a of the friction element 32a to provide torque transfer and angular positional control of the pintle 44a with respect to the friction element 32a." (*Id*. at 5:55-65). "As shown in FIG. 4, the external surface 46a of the pintle 44a defines a second diameter. The second diameter is greater than or equal to the first diameter of the cavity 36a such that the pintle 44a is positioned within the cavity 36a with an interference fit." (*Id.* at 5:66-6:3). "In use, with respect to the first hinge assembly 30a, the friction element 32a is rotated with respect to the pintle 44a. The internal surface 34a of the friction element 32a is in substantial facing frictional engagement with the external surface 42a of the pintle 44a. Thus, the contact area between the friction element 32a and pintle 44a is maximized and the pressure between the internal surface 34a of the friction element 32a and the external surface 46a of the pintle 44a is relatively low, which in turn promotes reduced wear and higher torques for the same axial length of similar non-uniform strength frictional elements." (*Id*. at 9:35-45). The portion of the hinge that connects to the pintle 44a is the "first member," friction element 32a is the "second member," and the pintle 44a is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at Fig. 4).

7. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.
a system for monitoring at least one environmental condition in the isolation chamber,	*See* claim 1.
a user interface panel having at least one button for entering system inputs and displays for observing system outputs, the user interface panel being rotatively mounted to the patient support	*See* claim 1.

through a rotatable member for pivoting movement about a generally vertical axis, and	
a hinge connecting the user interface panel to the rotatable member to permit angling of the user interface panel with respect to the patient support, the angling constituting pivoting about a generally horizontal axis.	*See* claim 1. Quedens teaches that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66).
8. The patient-support apparatus of claim 7, wherein the hinge is a resistive hinge configured to resist pivoting of the user interface panel in response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating forces.	*See* claim 2.
15. The patient-support apparatus of claim 8, wherein the resistive hinge includes a first member coupled to the user interface panel and a second member coupled to the arm, a hinge post being coupled to the first member and extending therefrom into the second member.	*See* claim 5.
17. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.
a controller configured to control at least one function in the isolation chamber, and	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Goldberg discloses a "[c]ontroller 200 [that] is a microprocessor based controller having an internal memory. The controller 200 receives various inputs" as shown in Figure 17. (Ex. 1002, 29:24-31:17, Fig. 17). "A baby temperature probe or sensor 202 is attached to the baby 14 to

	provide a measured baby temperature output signal to the controller 200 on line 204. In addition, an air temperature probe or sensor 206 is positioned near the baby 14 to provide a measured air temperature output signal. The air temperature sensor 206 is connected to the controller 200 by line 208. An air temperature set point input device 210 is coupled to controller 200 by line 212. The air temperature input device allows a caregiver to set a desired air temperature setpoint." (*Id*. at 29:26-30:1). "A baby temperature set point input device 218 is coupled to controller 200 by line 220. The baby temperature input device 218 permits a caregiver to select the desired temperature for the baby 14." (*Id*. at 30:5-9). "Controller 200 therefore controls heater 76 and fan 78 to supply a correct amount of convective heat to the infant thermal support device 10 to warm the baby 14 as illustrated diagrammatically by arrows 226." (*Id*. at 30:13-16).
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	Goldberg discloses "[a] user interface 160 permits the caregiver to input information into controller 200. The user interface 160 may be separate input devices such as devices 210, 214, and 218. The user interface 160 permits the caregiver to input information to controller 200 related to the operation mode, the air temperature set point, the baby temperature set point, a real time clock, and an alarm silencer. Illustratively, a rotatable control wheel 257 is used to scroll through various menu control options. It is understood that any type of control input device may be used. Controller 200 outputs information related to an alarm code, air temperature, and baby temperature to the user interface 160. User interface 160 includes a display 255 so that control information can be displayed to the caregiver." (Ex. 1002, 32:34-33:13). The user interface 160 as illustrated in Figure 1 has at least one button. (*Id*. at Fig 1).
the user interface panel being coupled to the patient support by a resistive hinge configured to resist pivoting of the user interface panel in	Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of

response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating forces.	device 10, and is positioned to lie outside of inner deck 158." (Ex. 1002, 17:32-18:5). Quedens discloses that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66). The Petitioner incorporates by reference the teachings of a "hinge" as set forth in claim 1 and a "resistive hinge" as set forth in claim 2. (*See* claims 1, 2).

22. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.
a controller configured to control at least one function in the isolation chamber, and	*See* claim 17.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel being pivotally mounted to the patient support to provide pivotal movement of the interface panel about more than one axis.	Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of device 10, and is positioned to lie outside of inner deck 158." (Ex. 1002, 17:32-18:5). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first

	vertical axis 16." (*Id*. at 4:45-49). As shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66, Figs. 2A, 3). The user interface can pivot both about the vertical and horizontal axes. (*Id*.).

32. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.

a controller configured to control at least one function on the patient support, and	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Goldberg discloses a "[c]ontroller 200 [that] is a microprocessor based controller having an internal memory. The controller 200 receives various inputs" as shown in Figure 17. (Ex. 1002, 29:24-31:17, Fig. 17). "A baby temperature probe or sensor 202 is attached to the baby 14 to provide a measured baby temperature output signal to the controller 200 on line 204. In addition, an air temperature probe or sensor 206 is positioned near the baby 14 to provide a measured air temperature output signal. The air temperature sensor 206 is connected to the controller 200 by line 208. An air temperature set point input device 210 is coupled to controller 200 by line 212. The air temperature input device allows a caregiver to set a desired air temperature setpoint." (*Id*. at 29:26-30:1). "A baby temperature set point input device 218 is coupled to controller 200 by line 220. The baby temperature input device 218 permits a caregiver to select the desired temperature for the baby 14." (*Id*. at 30:5-9). "Controller

	200 therefore controls heater 76 and fan 78 to supply a correct amount of convective heat to the infant thermal support device 10 to warm the baby 14 as illustrated diagrammatically by arrows 226." (*Id*. at 30:13-16).
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.
the user interface panel pivotally mounted to the patient support from at least one hinge to provide pivotal movement of the user interface panel about more than one axis,	Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of device 10, and is positioned to lie outside of inner deck 158." (Ex. 1002, 17:32-18:5). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16." (*Id*. at 4:45-49). As shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66, Figs. 2A, 3; *see* claim 22).
the hinge resisting movement in response to force required to	Quedens discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (Ex. 1003, Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the

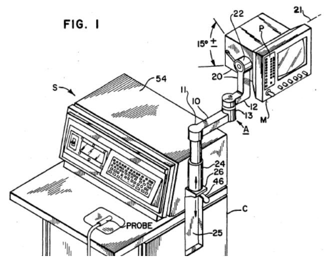
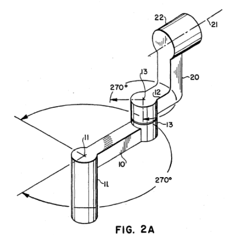
actuate the at least one button but permitting movement in response to force greater than the force required to actuate the at least one button.	monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.).

	Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id.* at 1:15-23, 4:57-5:19).

34. The patient-support apparatus of claim 32, wherein the user interface panel pivots about perpendicular axes.	Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of device 10, and is positioned to lie outside of inner deck 158." (Ex. 1002, 17:32-18:5). Quedens discloses that "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [element 21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, at 4:52-66). Figure 1A illustrates that the user interface can pivot about the vertical axes 16, 18, and the horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (*Id.* at Fig. 1A; *see* claim 22).

35. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.

a patient support carried above the base,	*See* claim 1.
a support arm mounted for movement on the patient support,	Goldberg further discloses that the "rotating display 160 as shown in FIGS. 1 and 2. Display 160 is located generally at the waist level of an adult caregiver although the vertical position of display 160 is adjustable with changes in height of base portion 16. In preferred embodiments, rotating display 160 is pivotably mounted to canopy-support arm 22 to pivot from side to side of device 10, and is positioned to lie outside of inner deck 158." (Ex. 1002, 17:32-18:5). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16. The second arm 12 is pivotally coupled to the outer end of the first arm 10 by a pivot assembly 13 for rotation about a second vertical axis 18, which is movable and displaced from the first axis 16. The second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M. The second arm 12 and journaling structure 22 support the monitor M for tilting motion about a substantially horizontal axis of rotation 21." (*Id*. at 4:45-58). As shown in Figure 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66, Figs. 1, 2A, 3).

	  (Ex. 1003, Figs. 1, 2A).

a controller configured to control at least one function on the patient support, and	*See* claim 32.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel coupled to the support arm, the support arm including a resistive hinge coupled to the user interface panel, the hinge configured to resists movement in response to force required to actuate the at least one button but permit movement in response to force greater than the force required to actuate the at least one button.	Quedens discloses that as shown in Figure 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, at 4:52-66). Quedens further discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (*Id*. at Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56).

	Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that the hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a

	notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).
38. The patient-support apparatus of claim 35 wherein the user interface panel is support for movement about more than one axis.	Quedens discloses that, as shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:52-66, Figs. 2A, 3; *see* claim 22).

39. The patient-support apparatus of claim 38 wherein the user interface panel is supported for movement about perpendicular axes.	As shown in Figure 1A of Quedens, the user interface can pivot about the vertical axes 16, 18, and the horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (Ex. 1003, Fig. 1A; *see* claim 34).

40. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support	*See* claim 1.
a support arm mounted for movement on the patient support,	*See* claim 35.
a controller configured to control at least one function in the isolation chamber, and	*See* claim 17.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel coupled to the support arm, the support arm	Quedens discloses that as shown in Figure 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply

configured to hold the user interface panel stationary in response to in response to force required to actuate the at least one button but permit movement in response to force greater than the force required to actuate the at least one button.	positioning the monitor M manually." (Ex. 1003, 4:52-66). Quedens further discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (*Id*. at Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17).

	Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).
45. The patient-support apparatus of claim 40 wherein the user interface panel is supported for movement about more than one axis.	*See* claim 38.
46. The patient-support apparatus of claim 45 wherein the user interface panel is pivotally supported for movement about perpendicular axes.	Quedens discloses that "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [element 21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, at 4:52-66). Figure 1A illustrates that the user interface can pivot about the vertical axes 16, 18, and the horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (*Id*. at Fig. 1A; *see* claim 34).

2. Ground 2

Claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Storti in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) as obvious in further view of Crompton and either Rude or Lowry.

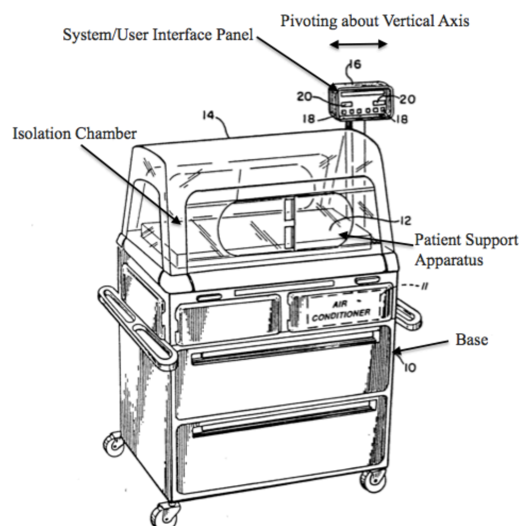


FIG. 1

With reference to Figure 1 (right), Storti discloses an infant incubator that includes, *inter alia*, an infant support 12 ("patient support apparatus") for supporting an infant, a base 10 ("base") below the infant support 12, a hood 14 that along with the base 10 form an enclosure ("isolation chamber"), and a control and display module 16 (collectively a "system" and a "user interface panel") that has a plurality of controls 18 for controlling the temperature, humidity, oxygen content, and circulation rate of the conditioned air that enters into the hood 14. (Ex. 1007, 2:19-29, 2:49-61; Ex. 1008, Leshner Decl., ¶ 89). The control and display module 16 is mounted by a means of a vertically disposed post 22 that permits the module 16 to be pivoted about a vertical axis to allow a user to position the module 16 in a manner that suits the needs of those attending the infant in the incubator. (Ex. 1007, 3:3-13; Ex. 1008, Leshner Decl.,

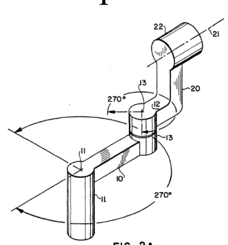
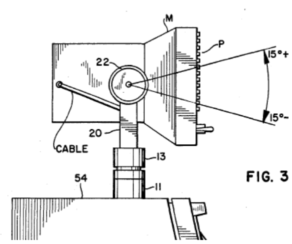
¶ 89).

The teachings of Quedens, Crompton, Rude, and Lowry are discussed above in Section V.G.1. It would have been obvious to a person of ordinary skill in the art at the time of the alleged invention to combine the teachings of Quedens, Crompton, Rude and/or Lowry with Storti for at least the same reasons discussed above with respect to Goldberg. (Ex. 1008, Leshner Decl., ¶¶ 65-86, 90).

As shown in the claim chart below, claims 1, 7, and 22 of the 402 patent are invalid under 35 U.S.C. § 103(a) as obvious over Storti in view of Quedens, and claims 2, 5, 8, 15, 17, 32, 34, 35, 38, 39, 40, 45, and 46 are invalid under 35 U.S.C. § 103(a) as obvious in further view of Crompton and either Rude or Lowry. (Ex. 1008, Leshner Decl., ¶ 91).

U.S. Patent No. 6,345,402	**Storti (Ex. 1007) and Quedens (Ex. 1003) and, to the extent necessary, in further view of Crompton (Ex. 1004) and either Rude (Ex. 1005) or Lowry (Ex. 1006)**
1. A patient-support apparatus comprising	The 402 patent discloses "[t]hermal support devices, such as infant warmers and incubators, having an isolation chamber and various systems that maintain the isolation chamber at a controlled temperature and humidity to facilitate the development of a premature infant are known." (Ex. 1001, 1:17-21). Storti discloses "[a]n infant incubator . . . ." (Ex. 1007, Abstract).
a base,	Storti discloses that the "incubator . . . includes a base 10 . . . ." (Ex. 1007, 2:19-23).
a patient support carried above the base,	Storti discloses that the "incubator . . . includes a base 10 having an infant support 12 . . . ." (Ex. 1007, 2:19-23).
an isolation	The 402 Patent discloses that a "patient-support surface for

chamber on the patient support,	supporting the infant in the isolation chamber . . . ." (Ex. 1001, 1:22-23). Storti discloses that the "incubator . . . includes a base 10 having an infant support 12 and a hood 14 mounted on the base 10 and adapted to enclose [the] infant support 12." (Ex. 1007, 2:19-23).
a system for monitoring at least one environmental condition in the isolation chamber,	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Storti discloses "a control and display module 16 for controlling the environment with hood 14 and displaying the conditions of the environment within the hood and the condition of an infant within the hood. Control and display module 16 has a plurality of controls 18 which can control, for example, the temperature, humidity, oxygen content and circulation rate of the conditioned air which is introduced into hood 14. Control and display module 16 also has a plurality of displays 20 which can display the various parameters of the hood environment and the physical condition of the infant. The circuitry for effecting the desired controls and developing the desired displays can be of conventional construction and operation." (Ex. 1007, 2:50-63).
a user interface panel having at least one button for entering system inputs and displays for observing system outputs, the user interface panel being rotatively mounted to the patient support	Storti discloses that the "[c]ontrol and display module 16 has a plurality of controls 18 which can control, for example, the temperature, humidity, oxygen content and circulation rate of the conditioned air which is introduced into hood 14. Control and display module 16 also has a plurality of displays 20 which can display the various parameters of the hood environment and the physical condition of the infant." (*Id*. at 2:54-61). The module 16 has at least one button for entering system inputs. (*Id*. at Fig. 1). Storti further discloses that the "control and display module 16 is mounted by means of a vertically disposed post 22 which is attached at its lower end to base 10 and has the

through a rotatable member for pivoting movement about a generally vertical axis, and	control and display module attached to its upper end. In the preferred embodiment of the invention, control and display module 16 is mounted for pivotal movement about a vertical axis." (*Id*. at 3:3-9). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16. The second arm 12 is pivotally coupled to the outer end of the first arm 10 by a pivot assembly 13 for rotation about a second vertical axis 18, which is movable and displaced from the first axis 16. The second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M. The second arm 12 and journaling structure 22 support the monitor M for tilting motion about a substantially horizontal axis of rotation 21." (*Id*. at 4:45-58). The first arm 10 is pivotally coupled to the second arm 12 by way of the pivot assembly 13. The first and second arms 10, 12 and pivot assembly 13 form the "rotatable member" that allows the user interface to pivot about a generally vertical axis.   (Ex. 1003, Figs. 2A, 3).
a hinge connecting the user interface panel to the rotatable member to permit angling	Quedens discloses that as shown in Figure 3, that "[t]he second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M." (*Id*. at 4:52-58). "The pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure

of the user interface panel with respect to the patient support.	22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66). The journaling structure 22 and its associated shaft are the "hinge."
2. The patient-support apparatus of claim 1, wherein the hinge is a resistive hinge configured to resist pivoting of the user interface panel in response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating forces.	Quedens discloses that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66). Quedens further discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (*Id*. at Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move

	the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).
5. The patient-support apparatus of claim 2,	Quedens teaches that "[t]he detailed structure of the pivot assemblies 11, 13 at the axes 16, 18 is illustrated in FIG. 9. A pivot shaft 66 extends through the center of the pivot assembly. The pivot shaft 66 is fixed to one of the arms [10,

wherein the resistive hinge includes a first member coupled to the user interface panel and a second member coupled to the arm, a hinge post being coupled to the first member and extending therefrom into the second member.	12] which are interconnected at the pivot and rotates with that arm. A duplex ball bearing assembly 68, 70 facilitates rotation of the pivot shaft 66 relative to the arm to which it is not positively connected. An adjustable spring 72 is situated between the ball bearings and loads the pivot shaft against a friction surface 74 between the two arms which are interconnected at the pivot." (Ex. 1003, 6:23-33). The second arm 12 is the "first member," the first arm 10 is the "second member," and the pivot shaft 66 is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at 4:45-66, 6:23-33, Fig. 9). Rude teaches that the friction hinge assembly includes "[h]inge element 5, which is attached to part 3 with screws or rivets, or other appropriate means, has a spiral portion or band 7, comprised of several turns disposed about pintle 9, and a flat portion for attachment, plate member 11. Spring 13 keeps band 7 tightly wrapped about pintle 9 by applying a force between plate member 11 and tail 15 of band 7. On the other side of the hinge assembly, plate 17 is irrotatably attached to pintle 9 by pins or other appropriate means. Plate 17 is attached to part 1." (Ex. 1005, 3:26-35). "Assembly is accomplished by inserting pintle 9 through plate 17 and band 7 before the installation of spring 13. Pins 19 hold pintle 9 in plate 17 and prevent relative movement." (*Id*. at 3:38-41). The plate 17 is the "first member," the plate member 11 is the "second member," and the pintle 9 is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at Fig. 1). Lowry teaches that "hinge assembly 30a includes a friction element 32a for being secured to the first member. The friction element 32a includes an internal surface 34a. As best shown in FIG. 4, the internal surface 34a of the friction element 32a defines a generally cylindrical cavity 36a having a first diameter." (Ex. 1006, 4:57-62). "Referring now to FIG. 4, the first hinge assembly 30a further includes a generally cylindrical pintle 44a for being secured to the second member. The pintle 44a includes an external surface 46a and is positioned within the cavity 36a with the external

	surface 42a of the pintle 44a in facing frictional engagement with the internal surface 34a of the friction element 32a such that substantially uniform forces are created between the external surface 46a of the pintle and the internal surface 34a of the friction element 32a to provide torque transfer and angular positional control of the pintle 44a with respect to the friction element 32a." (*Id*. at 5:55-65). "As shown in FIG. 4, the external surface 46a of the pintle 44a defines a second diameter. The second diameter is greater than or equal to the first diameter of the cavity 36a such that the pintle 44a is positioned within the cavity 36a with an interference fit." (*Id.* at 5:66-6:3). "In use, with respect to the first hinge assembly 30a, the friction element 32a is rotated with respect to the pintle 44a. The internal surface 34a of the friction element 32a is in substantial facing frictional engagement with the external surface 42a of the pintle 44a. Thus, the contact area between the friction element 32a and pintle 44a is maximized and the pressure between the internal surface 34a of the friction element 32a and the external surface 46a of the pintle 44a is relatively low, which in turn promotes reduced wear and higher torques for the same axial length of similar non-uniform strength frictional elements." (*Id*. at 9:35-45). The portion of the hinge that connects to the pintle 44a is the "first member," friction element 32a is the "second member," and the pintle 44a is the "hinge post" that is coupled to the first member and extends therefrom into the second member. (*Id*. at Fig. 4).

7. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.
a system for monitoring at least one environmental condition in the isolation chamber,	*See* claim 1.
a user interface panel having at least one button for entering system inputs and displays for observing system outputs, the user interface panel being rotatively mounted to the patient support through a rotatable member for pivoting movement about a generally vertical axis, and	*See* claim 1.

a hinge connecting the user	*See* claim 1.

interface panel to the rotatable member to permit angling of the user interface panel with respect to the patient support, the angling constituting pivoting about a generally horizontal axis.	Quedens teaches that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66).

8. The patient-support apparatus of claim 7, wherein the hinge is a resistive hinge configured to resist pivoting of the user interface panel in response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating forces.	*See* claim 2.
15. The patient-support apparatus of claim 8, wherein the resistive hinge includes a first member coupled to the user interface panel and a second member coupled to the arm, a hinge post being coupled to the first member and extending therefrom into the second member.	*See* claim 5.
17. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.

a controller configured to control at least one function in the isolation chamber, and	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Storti discloses "a control and display module 16 for controlling the environment with hood 14 and displaying the conditions of the environment within the hood and the condition of an infant within the hood. Control and display module 16 has a plurality of controls 18 which can control, for example, the temperature, humidity, oxygen content and circulation rate of the conditioned air which is introduced into hood 14." (Ex. 1007, 2:50-57).

a user interface panel including a display and	Storti discloses that the "[c]ontrol and display module 16 also has a plurality of displays 20 which

at least one button configured to provide an input signal to the controller,	can display the various parameters of the hood environment and the physical condition of the infant." (*Id*. at 2:54-61). The module 16 includes at least one button to provide an input as shown in Figure 1. (*Id*. at Fig. 1).
the user interface panel being coupled to the patient support by a resistive hinge configured to resist pivoting of the user interface panel in response to normal actuating forces applied to the at least one button of the user interface panel and configured to allow pivoting of the user interface panel in response to forces applied to the user interface panel that exceed the normal actuating forces.	Storti further discloses that the "control and display module 16 is mounted by means of a vertically disposed post 22 which is attached at its lower end to base 10 and has the control and display module attached to its upper end. In the preferred embodiment of the invention, control and display module 16 is mounted for pivotal movement about a vertical axis." (*Id*. at 3:3-9). Quedens discloses that "[t]he journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:61-66). The Petitioner incorporates by reference the teachings of a "hinge" as set forth in claim 1 and a "resistive hinge" as set forth in claim 2. (*See* claims 1, 2).

22. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support,	*See* claim 1.
a controller configured to control at least one function in the isolation chamber, and	*See* claim 17.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel being pivotally mounted to the patient	Storti discloses that the "control and display module 16 is mounted by means of a vertically disposed post 22 which is attached at its lower end to base 10 and has the control and display module attached to its upper end. In the preferred embodiment of the invention, control and display module 16 is mounted for pivotal movement about a vertical axis." (Ex. 1007,

support to provide pivotal movement of the interface panel about more than one axis.	3:3-9). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16." (*Id*. at 4:45-49). As shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66, Figs. 2A, 3).

32. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.

a controller configured to control at least one function on the patient support, and	The 402 Patent discloses that "[i]nfant thermal support devices having various systems that maintain the isolation chamber at a controlled temperature and humidity typically include a control panel that caregivers use to enter environmental control parameters, such as desired temperature and humidity levels." (Ex. 1001, 1:61-65). Storti discloses that "[c]ontrol and display module 16 has a plurality of controls 18 which can control, for example, the temperature, humidity, oxygen content and circulation rate of the conditioned air which is introduced into hood 14." (Ex. 1007, 2:54-57).

a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel pivotally	Storti discloses that the "control and display module 16 is mounted by means of a vertically disposed post 22 which is attached at its lower end to base 10 and has the control and display module attached to its upper end. In the preferred

mounted to the patient support from at least one hinge to provide pivotal movement of the user interface panel about more than one axis,	embodiment of the invention, control and display module 16 is mounted for pivotal movement about a vertical axis." (Ex. 1007, 3:3-9). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16." (*Id*. at 4:45-49). As shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (*Id*. at 4:52-66, Figs. 2A, 3; *see* claim 22).
the hinge resisting movement in response to force required to actuate the at least one button but permitting movement in response to force greater than the force required to actuate the at least one	Quedens discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (Ex. 1003, Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be

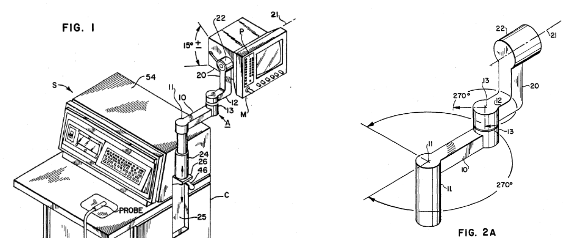
button.	rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1: 15-

	23, 4:57-5:19).

34. The patient-support apparatus of claim 32, wherein the user interface panel pivots about perpendicular axes.	Quedens discloses that "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [element 21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, at 4:52-66). Figure 1A illustrates that the user interface can pivot about the vertical axes 16, 18, and the horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (*Id*. at Fig. 1A; *see* claim 22).

35. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.

a support arm mounted for movement on the patient support,	Storti discloses that the "control and display module 16 is mounted by means of a vertically disposed post 22 which is attached at its lower end to base 10 and has the control and display module attached to its upper end. In the preferred embodiment of the invention, control and display module 16 is mounted for pivotal movement about a vertical axis." (Ex. 1007, 3:3-9). Quedens discloses that "[t]he monitor M is movably and supportively coupled to a base or frame portion of the console C by means of an articulated support structure A. See FIGS. 1, 1A, 2, 2A and 3." (Ex. 1003, 4:34-37). As shown in Figure 2A, "[t]he articulated arm structure A includes a first arm 10, and a second arm 12. The first arm 10 is pivotally coupled to a base or frame portion of the console C by a pivot assembly 11 for rotation about a first vertical axis 16. The second arm 12 is pivotally coupled to the outer end of the first arm 10 by a pivot assembly 13 for rotation about a second vertical axis 18, which is movable and displaced from the first axis 16. The second arm 12 is generally L-shaped in configuration. Its upstanding leg portion 20 is coupled by means of journaling structure 22 to one side of the television monitor M. The second arm 12

	and journaling structure 22 support the monitor M for tilting motion about a substantially horizontal axis of rotation 21.” (*Id*. at 4:45-58). As shown in Figure 3, “[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually.” (*Id*. at 4:52-66, Figs. 1, 2A, 3).  (Ex. 1003, Figs. 1, 2A).

a controller configured to control at least one function on the patient support, and	*See* claim 32.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface panel coupled to the support arm, the support arm including a resistive hinge coupled to the user interface panel, the hinge configured to resists movement in	Quedens discloses that as shown in Figure 3, “[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually.” (Ex. 1003, 4:52-66). Quedens further discloses that “[d]amping apparatus frictionally inhibits unattended movement of the monitor.” (*Id*. at Abstract). “In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable.” (*Id*. at 3:12-19). Quedens teaches that “[t]he

response to force required to actuate the at least one button but permit movement in response to force greater than the force required to actuate the at least one button.	monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67). Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a

	second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).

38. The patient-support apparatus of claim 35 wherein the user interface panel is support for movement about more than one axis.	Quedens discloses that, as shown in Figures 2A and 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:52-66, Figs. 2A, 3; *see* claim 22).

39. The patient-support apparatus of claim 38 wherein the user interface panel is supported for movement about perpendicular axes.	Figure 1A of Quedens illustrates that the user interface can pivot about the vertical axes 16, 18, and the horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (Ex. 1003, Fig. 1A; *see* claim 34).

40. A patient-support apparatus comprising	*See* claim 1.
a base,	*See* claim 1.
a patient support carried above the base,	*See* claim 1.
an isolation chamber on the patient support	*See* claim 1.
a support arm mounted for movement on the patient support,	*See* claim 35.
a controller configured to control at least one function in the isolation chamber, and	*See* claim 17.
a user interface panel including a display and at least one button configured to provide an input signal to the controller,	*See* claim 17.

the user interface	Quedens discloses that as shown in Figure 3, "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18

panel coupled to the support arm, the support arm configured to hold the user interface panel stationary in response to in response to force required to actuate the at least one button but permit movement in response to force greater than the force required to actuate the at least one button.	defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, 4:52-66). Quedens further discloses that "[d]amping apparatus frictionally inhibits unattended movement of the monitor." (*Id*. at Abstract). "In accordance with another specific feature, damping apparatus is interposed between interconnected portions of arms to frictionally inhibit unintended monitor movement between deliberate operator adjustments. Once the operator positions the monitor, the friction damping means causes it to remain stationary until moved again by operator intervention. No positive locks are needed. The damping torque is adjustable." (*Id*. at 3:12-19). Quedens teaches that "[t]he monitor can easily be manually adjusted by the operator, and, once the operator has desirably positioned the monitor, the friction damping structure will maintain it in that position until the operator chooses to intervene and readjust the monitor position. There is no need for the operator to adjust or set any locks to secure the monitor in position." (*Id*. at 7:56-61, *see id.* at 6:37-56). Crompton discloses that "[i]n order to provide for varying operator requirements and suitable glare resistance, touch displays must be rotated up and down within a certain range. This tilt adjustment helps compensate for operator height variations and ambient glare on the glass of the display surface. The touch display requires the use of touch for operator input so the tablet must withstand a touch force without moving." (Ex. 1004, 1:22-28). "[I]n the preferred embodiment the tilt adjustment mechanism must withstand a 5 lb touch force without moving in the downward direction." (*Id*. at 4:18-21). "A relatively high force is desired to move the upper housing in a downward direction. This prevents the operator's touches on the touch screen display or display tablet, mounted to the upper assembly as shown in FIG. 9, for data input purposes to cause the tilt adjustment mechanism and thus the touch display to move in the downward direction. A force of approximately 5 lbs should be necessary to cause the display to move in the downward direction." (*Id*. at 4:60-67).

	Rude teaches that in "some applications . . . it is desirable that a hinge have a certain amount of resistance to movement," such as a "[s]creens on portable computers . . . ." (Ex. 1005, 1:8-17). Rude is directed to an "improved friction hinge" as "a means for mounting and rotatably positioning computer screens or other objects" with a certain amount of resistance. (*Id*. at 1:41-51). The friction hinge will provide sufficient "friction needed to maintain the angular opening of a hinge" yet have "controllable friction in a hinge without lost motion when changing directions." (*Id*.). Lowry teaches that "[t]he present invention relates generally to a hinge assembly [30a] for rotatably coupling a first member to a second member and, more particularly, to a hinge assembly having a friction element [32a] which controls the angular position of the first member with respect to the second member." (Ex. 1006, 1:5-10). Lowry acknowledges that "[a] common application of such a hinge would be in [a] laptop, notebook, and palmtop computers to allow a user to position the liquid crystal display screen. In a notebook computer, for example, the hinge housing [30a] is normally structurally fastened to the base of the computer and the shaft [(pintle 44a)] is connected to the screen of the computer. When the screen is rotated, it is held in any angular position by the torque generated between the friction elements [(fiction element 32a)] in the hinge [32a] and the shaft [(pintle 44a)]." (*Id*. at 1:15-23, 4:57-5:19).
45. The patient-support apparatus of claim 40 wherein the user interface panel is supported for movement about more than one axis.	*See* claim 38.
46. The patient-support apparatus of claim 45 wherein the user interface panel is pivotally supported for movement about perpendicular axes.	Quedens discloses that "[t]he pivotal motion of the first and second arms 10, 12 about vertical axes 16, 18 defines a horizontal plane in which the monitor M can be moved. The journaling structure 22 adds a degree of rotative freedom of the monitor about a horizontal axis [element 21] such that the monitor screen may be tilted upwardly or downwardly as desired. An operator can effect the described monitor motion by simply positioning the monitor M manually." (Ex. 1003, at 4:52-66). Figure 1A illustrates that the user interface can pivot about the vertical axes 16, 18, and the

	horizontal axis 21, where the vertical and horizontal axes are perpendicular to one another. (*Id*. at Fig. 1A; *see* claim 34).

H. SECONDARY CONSIDERATIONS

Petitioner reserves the right to address any secondary considerations that Patent Owner may assert. Petitioner is currently unaware of any secondary considerations having a nexus to the claims of the 402 patent that may overcome the showing of obviousness. Petitioner is also unaware of any long-felt, but unsatisfied need for the alleged invention of the 402 patent.

VI. CONCLUSION

Based on the above, there is a reasonable likelihood that Petitioner will prevail in its challenge of patentability for at least one of claims 1, 2, 5, 7, 8, 15, 17, 22, 32, 34, 35, 38, 39, 40, 45, and 46 of the 402 patent. For the reasons set forth in this Petition, it is respectfully requested that the Petition for *Inter Partes* Review of the 402 patent be granted.

Dated: December 23, 2013

Respectfully submitted,

/Ralph J. Gabric/_____
Ralph J. Gabric
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CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 6,345,402 and supporting materials (Exhibit List, Exhibits 1001-1008, and Power of Attorney) have been served in its entirety this 23rd day of December 2013, by Federal Express on:

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