



Atty. Dkt. No. 086554-1050

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kevin FITZPATRICK et al.

Title: MEDICAL EMAR CART

Appl. No.: Unassigned

Filing Date: November 12, 2003

Examiner: Unassigned

Art Unit: Unassigned



PROVISIONAL PATENT APPLICATION
TRANSMITTAL

Mail Stop PROVISIONAL PATENT APPLICATION

Commissioner for Patents

PO Box 1450

Alexandria, Virginia 22313-1450

Sir:

Transmitted herewith for filing under 37 C.F.R. § 1.53(c) is a provisional patent application.

Enclosed are:

- [X] Application Data Sheet (37 CFR 1.76) (3 pages).
- [X] Specification (25 pages).
- [X] Informal drawings (16 sheets (included within specification)).

The filing fee is calculated below:

	Rate	Fee Totals
Basic Fee	\$160.00	\$160.00
[] Small Entity Fees Apply (subtract ½ of above):	=	\$0.00
TOTAL FILING FEE:	=	\$160.00

- [X] A check in the amount of \$160.00 to cover the filing fee is enclosed.
- [X] The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Please direct all correspondence to the undersigned attorney or agent at the address indicated below.

Respectfully submitted,

Date November 12, 2003

By 

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NewellRubbermaidTM

INVENTION DISCLOSURE FORM

This Invention Disclosure is intended to provide the patent attorney with the information needed to determine the likelihood of obtaining a patent on the invention. This disclosure also will be used to prepare any patent application that may be filed on this invention. Please provide complete answers. Use as much additional space as you need and answer each question fully. Attach as many additional pages as necessary.

Description of the Invention

1. Were you trying to solve a problem when you created your invention? What were the problems? How was the problems identified and brought to your attention?

The Institute of Medicine estimates that medical error is responsible for 98,000 deaths annually, making it the 7th leading cause of death in the U.S. The scope of this project is to support the IT movement in patient safety by providing a medical computing cart, which facilitates the use of Electronic Medical Administration Record (EMAR) in nursing and respiratory therapy for the purposes of treatment, medication administration, and documenting/charting.

EMAR is an electronic record of medications and services administered by a healthcare professional through patient and medication identification via bar coding. Documentation at point-of-care has reduced the number of errors by ensuring that the right patient is receiving the proper medication at the correct time.

Currently, hospitals are using metal auto mechanic computer carts called Stingers. These carts were retrofitted to function as an EMAR cart but were not originally designed for this use.

Yes, the problems that I uncovered with the Stingers from end user research were:

- **Nurses' number one complaint is constant bending. Nurses constantly bend over to access medicine and supplies in lower bin. There is a need to design a solution with higher placement of the medication drawers for medicine to reduce bending.**
- **End users do not have sufficient workspace for medicine preparation and writing. Also, the work surface is too small to place a 8.5" X 11" sheet of paper, let alone, a full sized, three inch wide, three-ring medical binder.**
- **Laptop carts need an area to accommodate trash. End users tie polyliners to the handles to accommodate refuse. Refuse primarily consists of medication wrappers, medication bottles, and cups.**

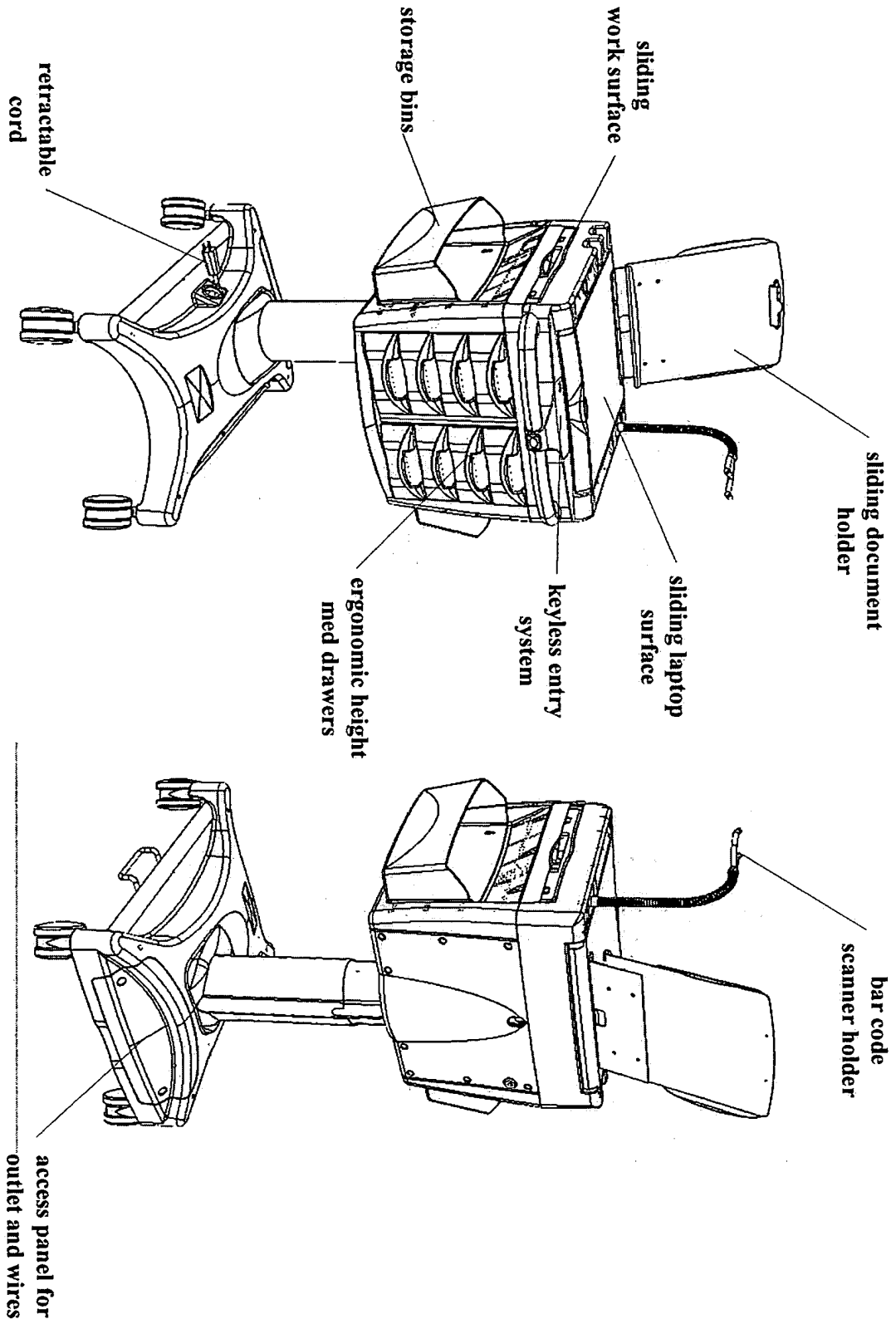
- Existing carts need better placement for the scanner holder. Competitive carts have the scanner holder located in the rear of the cart which is inconvenient for end users.
 - End users find existing laptop carts too difficult to maneuver due the absence of handles in some cases, and because of the heavy weight (approx. 125 lb) of the laptop cart.
 - Nurses do not have areas on their existing carts to store medical binders.
 - Nurses would like to use the carts in a seated position as well as standing position.
 - Nurses needed a cart that would secure medications.
2. Have others tried to solve this problem before you? What have they done? Why did you believe that a new solution was needed?

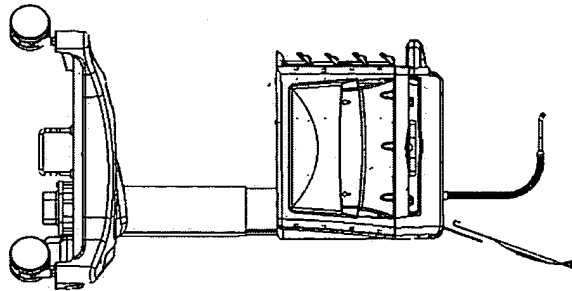
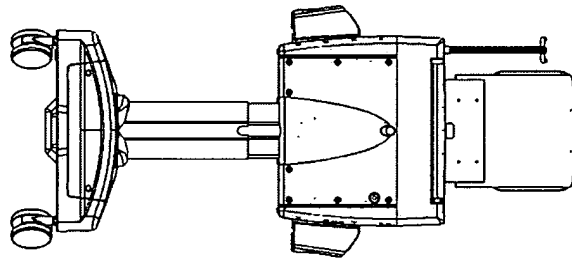
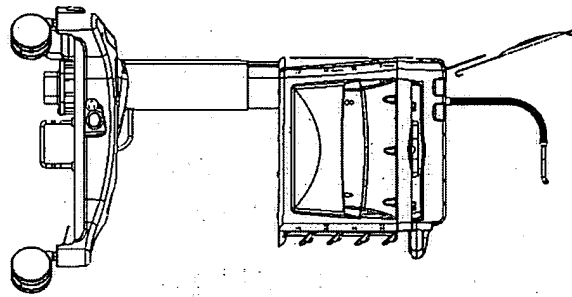
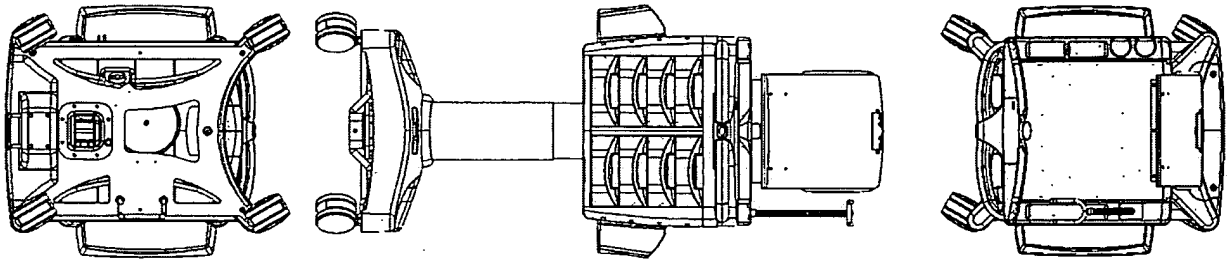
Hospitals have used carts such as the Stinger Carts. A new solution was needed because users need a user-centered design solution with improved ergonomics and aesthetics. Improving comfort and usability can help nurses complete medication administration with minimal stress and maximum efficiency. Competition offers a sharp metal cart that is an engineered solution and is not user friendly.

3. How did you solve that problem? In other words, describe what you consider to be the invention. Include sketches or drawings and examples in addition to a written description. Also provide pertinent experimental data. Attach sheets if necessary.

This unit is for EMAR applications at hospitals whose nurses are responsible for medication administration for up to 8 patients (hence the 8 drawers). This is a good solution because the med drawers are at an ergonomic height (reduced bending as compared to competitive carts), there is plentiful amount of workspace, there is an area to accommodate refuse if needed (accessory bins can be used as refuse receptacle), there is an adjustable bar code scanner holder within convenient reach, can be used in a standing and seated position, and has a keyless entry system with auto lock feature for security of meds.

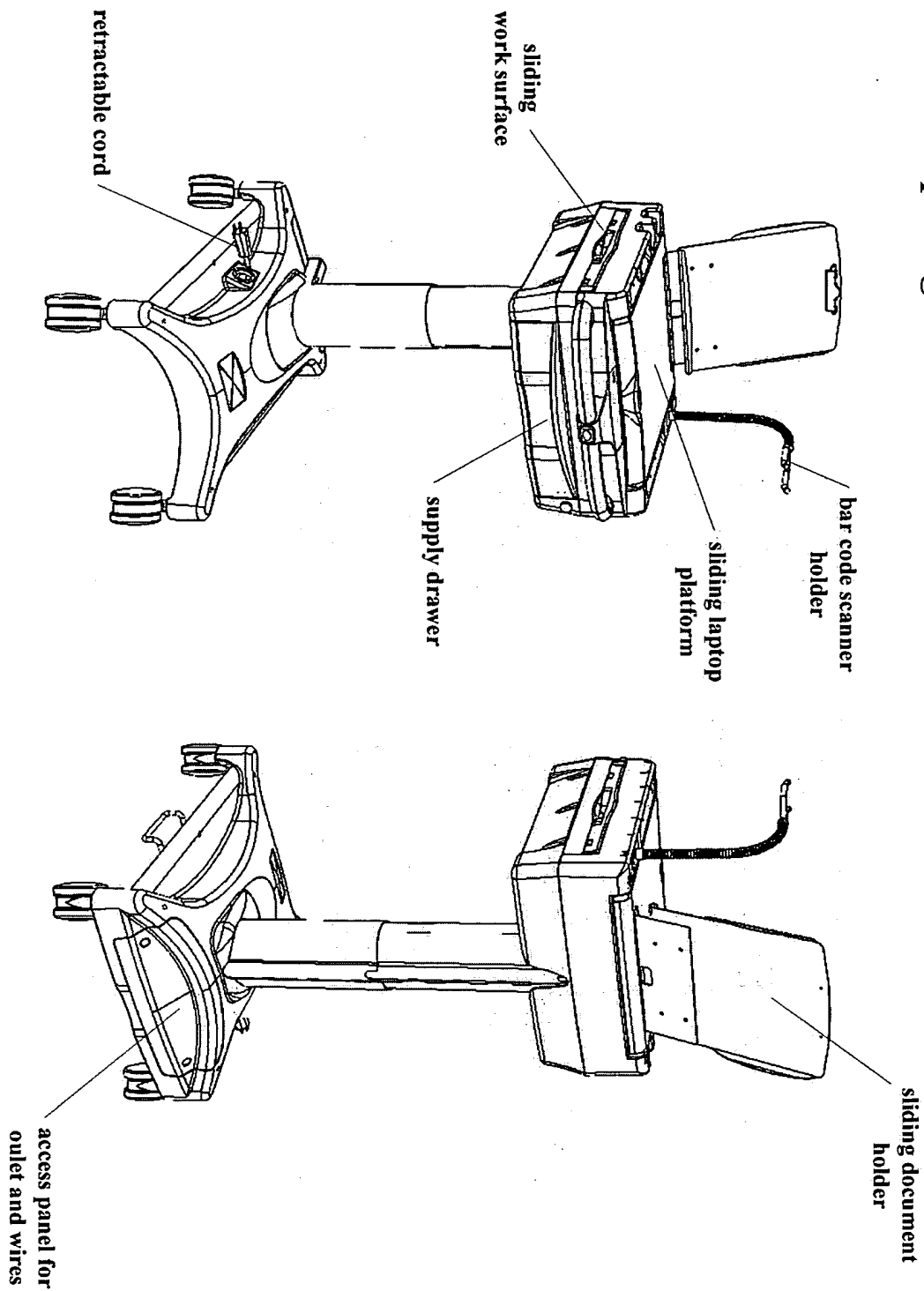
EMAR Computing Cart

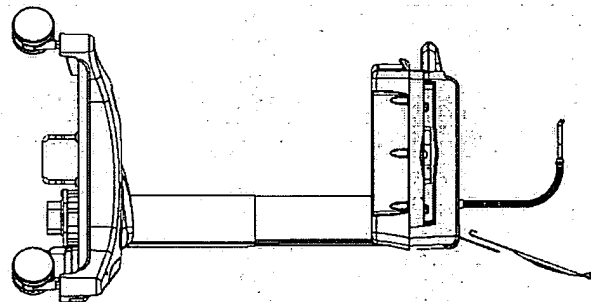
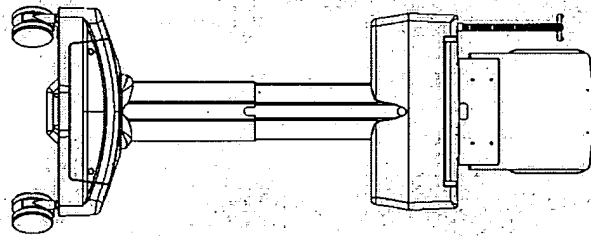
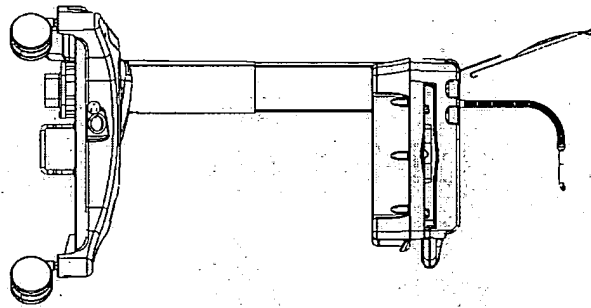
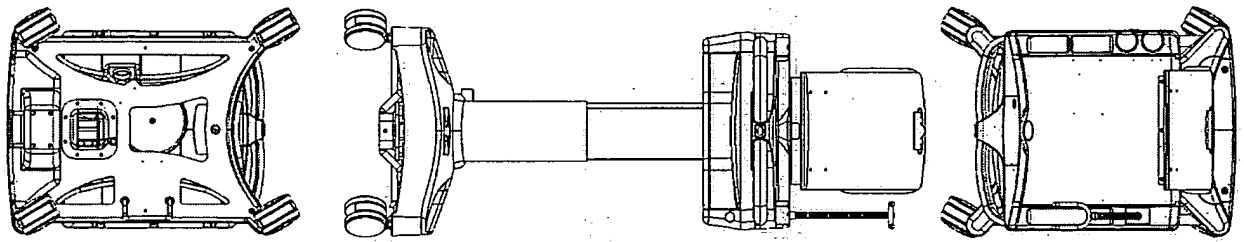




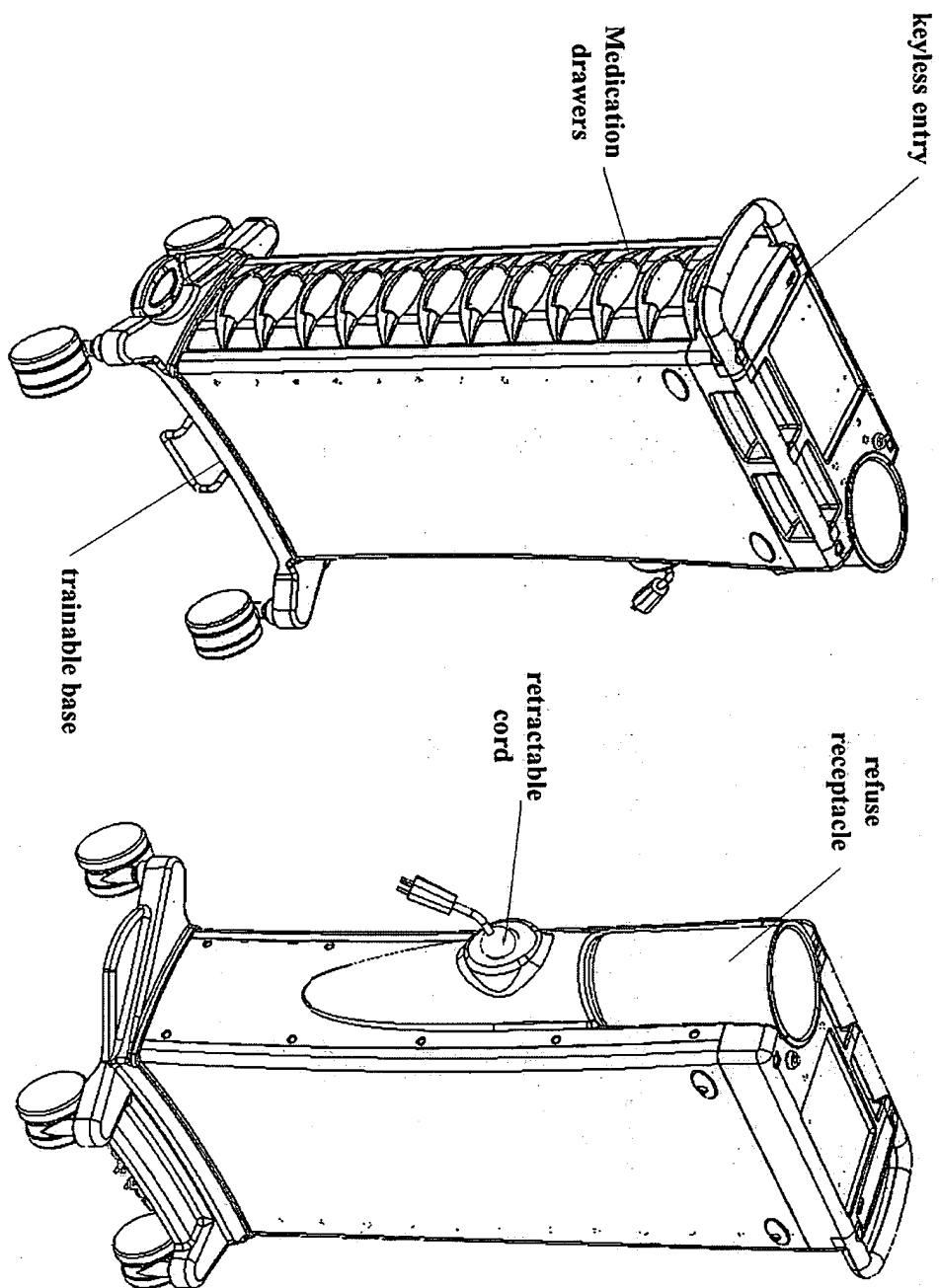
This unit is a basic laptop cart. The main purpose for this unit is for basic documentation and general laptop use purposes.

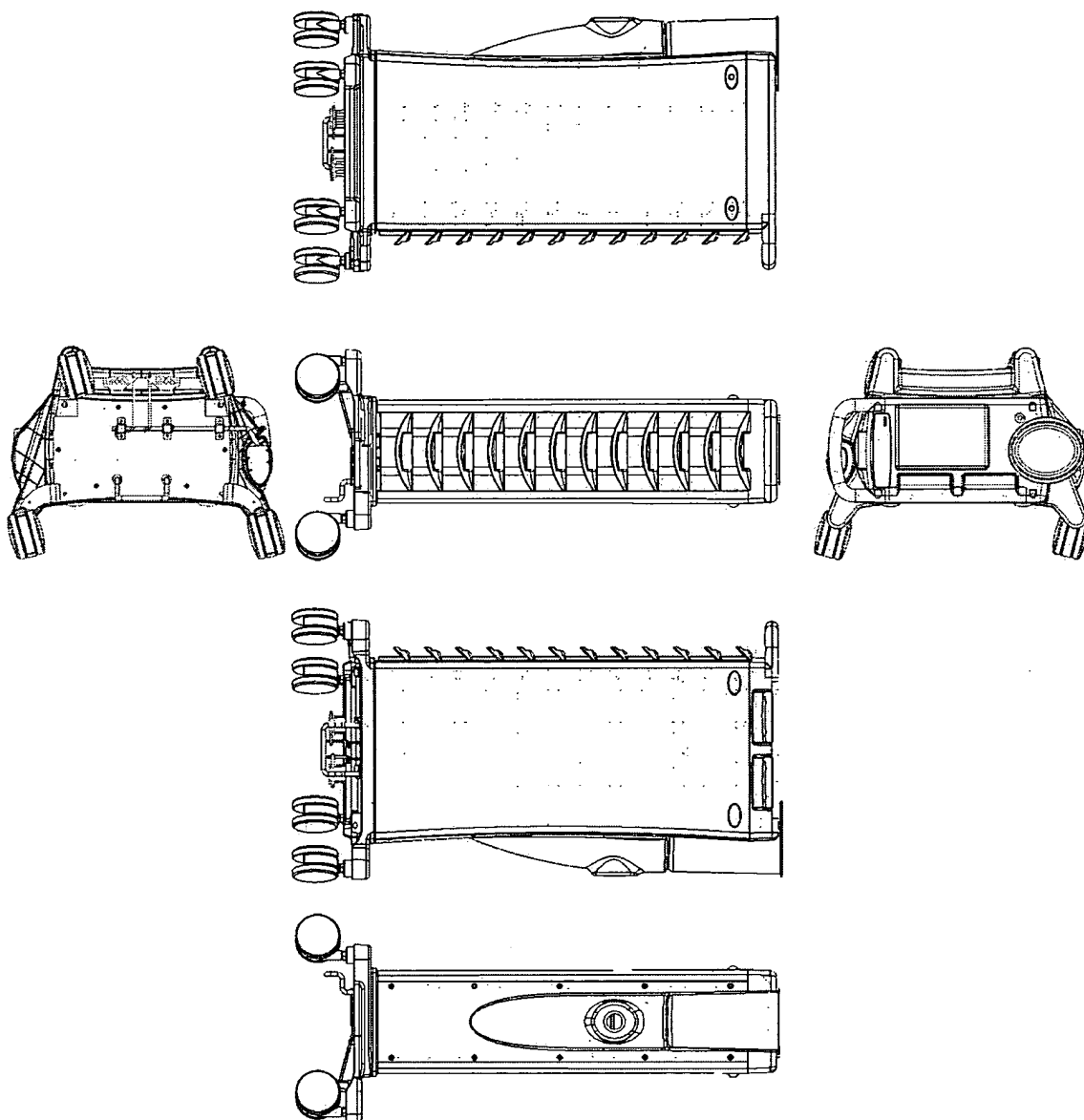
Basic Computing Cart



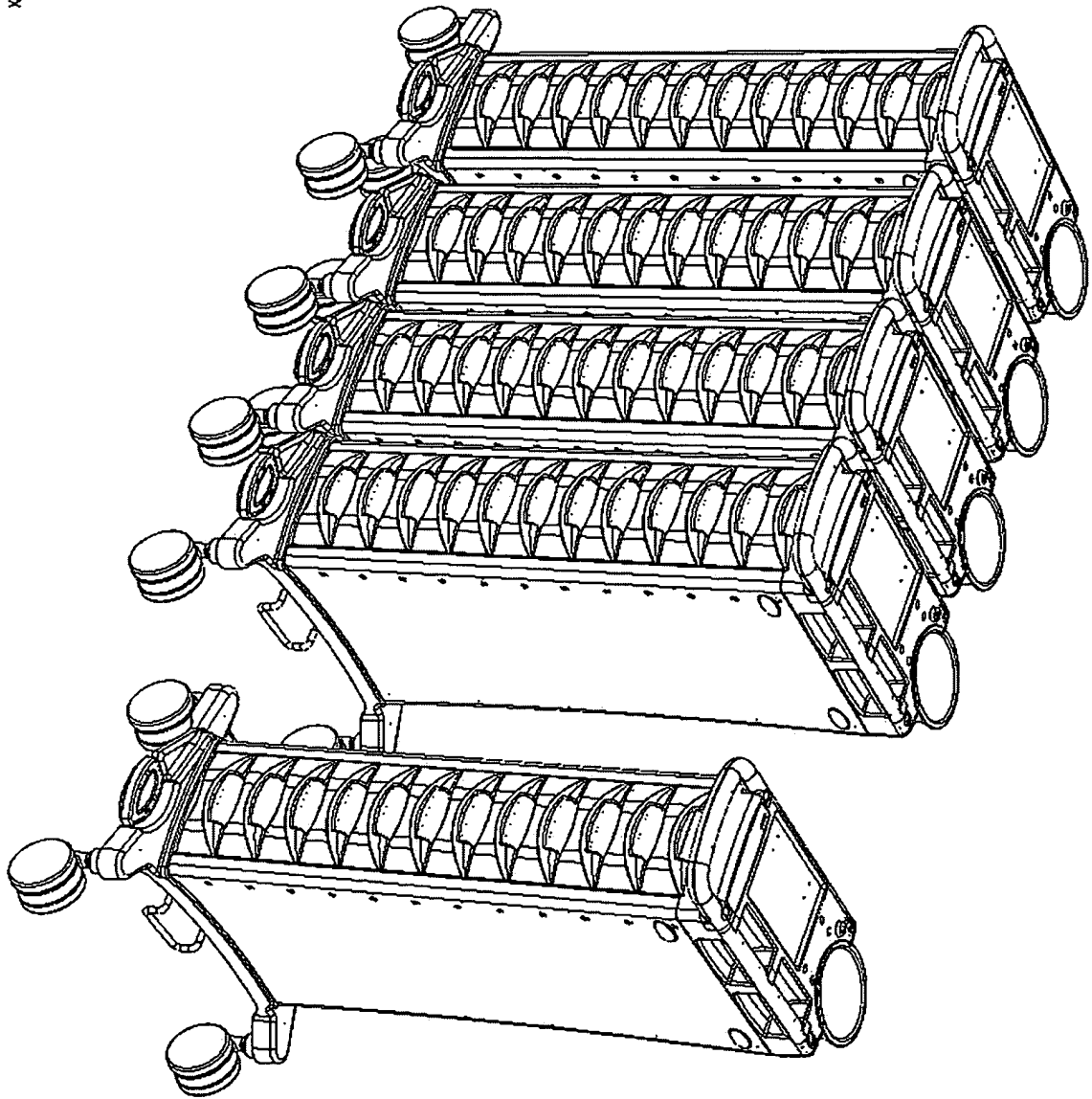


Medication Module





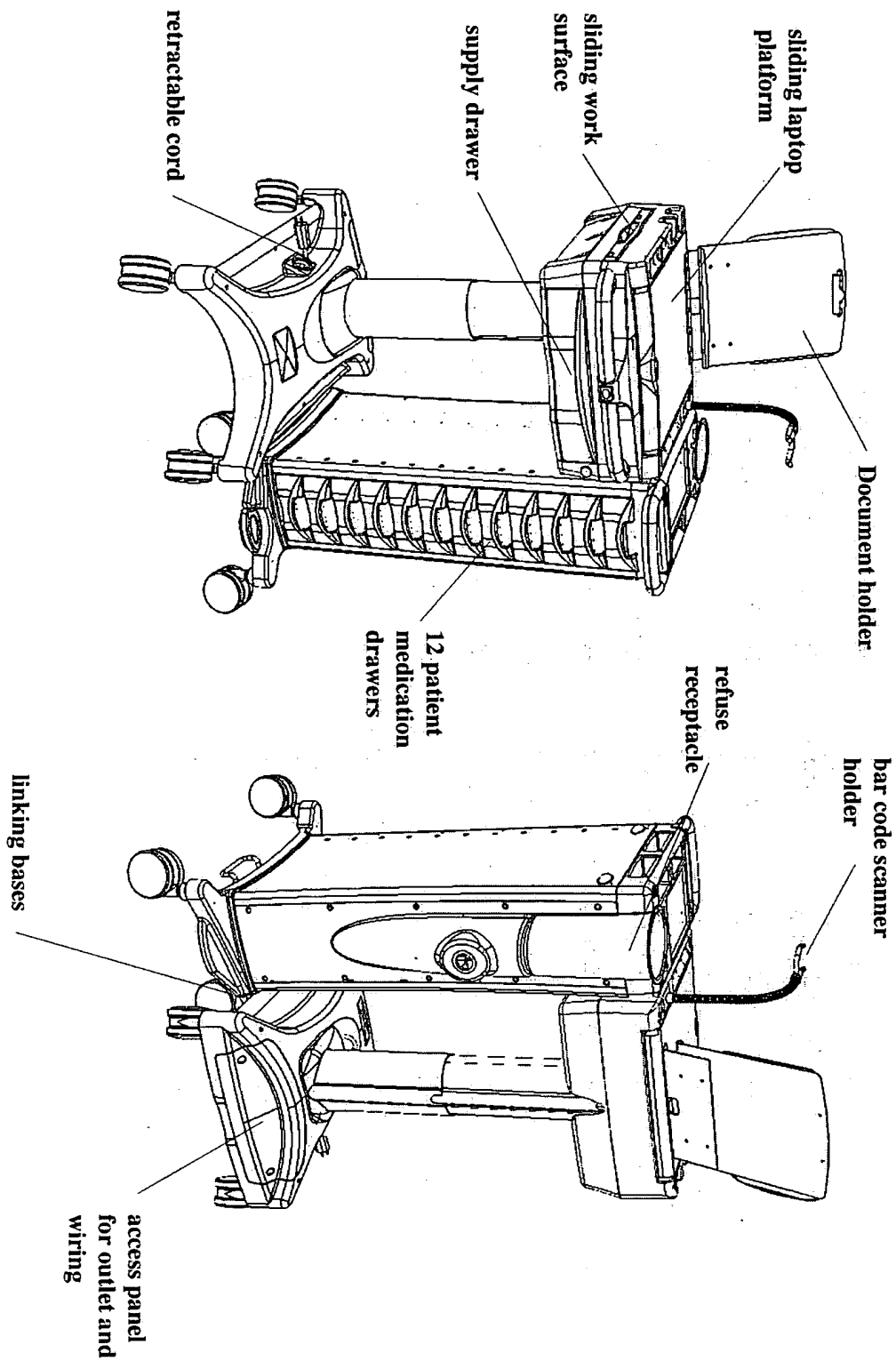
Medication modules are small agile carts that can be used for medication transport in hospitals. The modules can be linked together for convenient transport. By linking the modules together, this eliminates the need for a pharmacy transfer cart, which is used for this same purpose in certain hospitals.

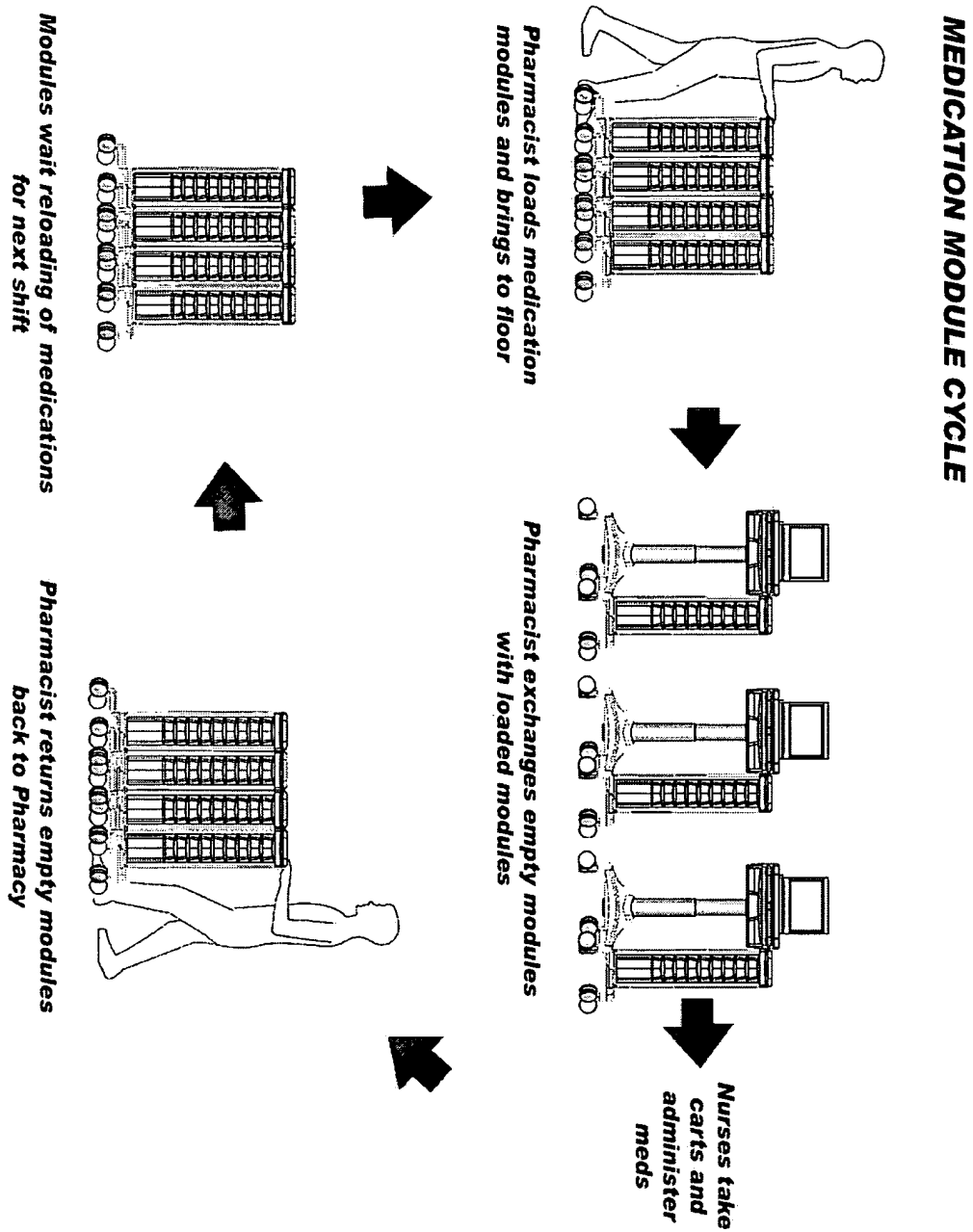


This next unit is the base cart used with the medication module. This unit is for

hospitals where the nurses are responsible for up to 12 patients.

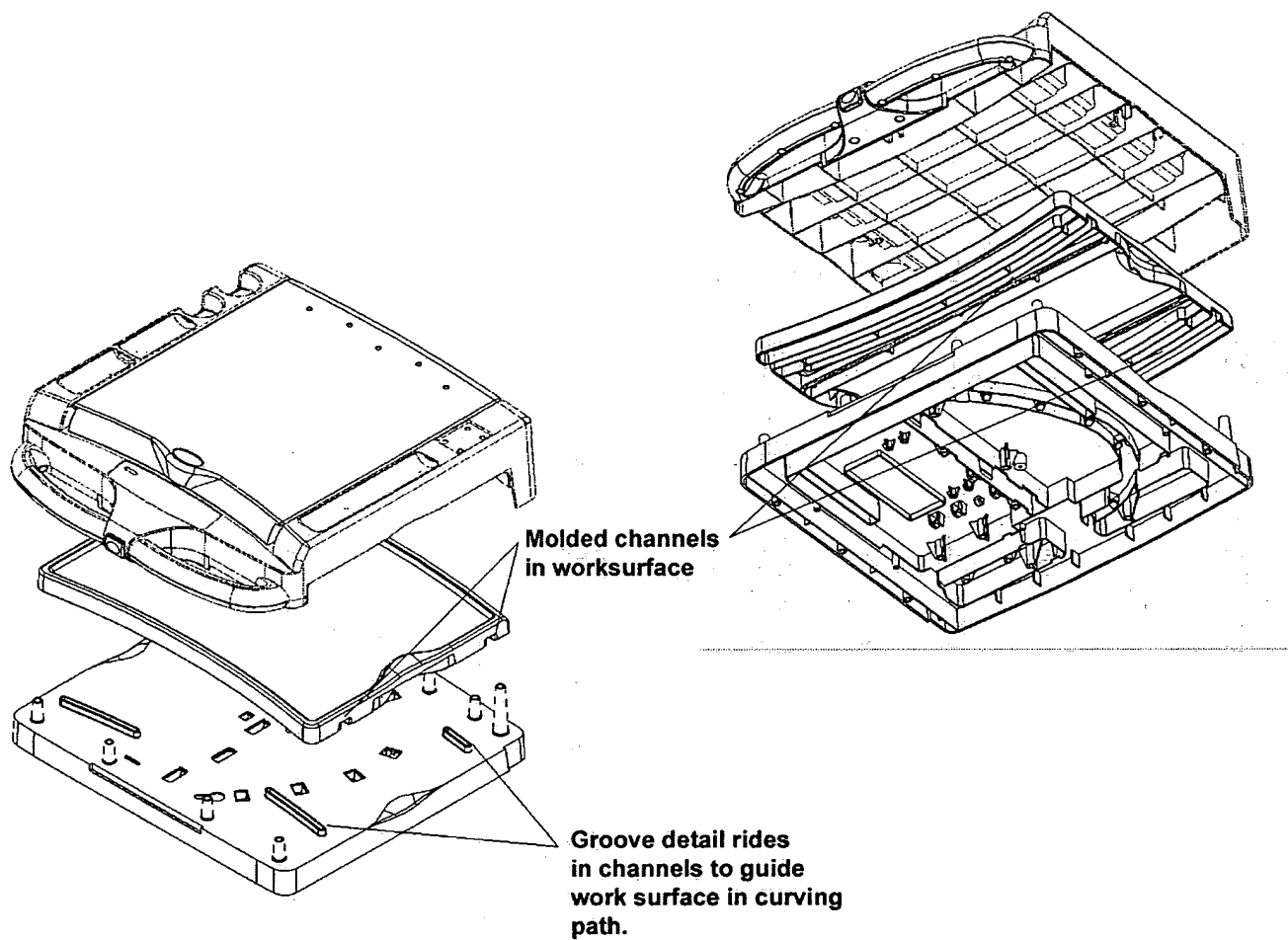
EMAR Computing Cart (high capacity) Base cart including med module



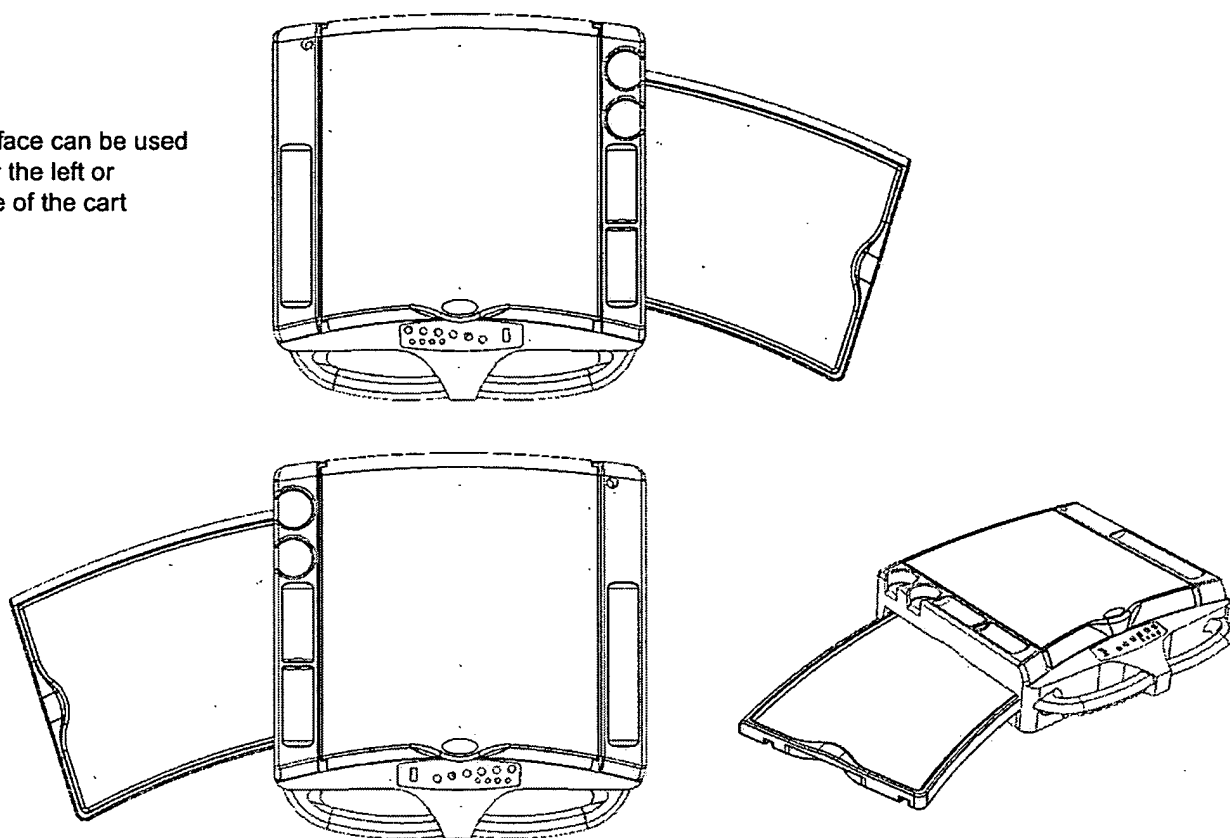


The use of the medication modules increases the efficiency of how medications are delivered to the floors for administration by the nurses.

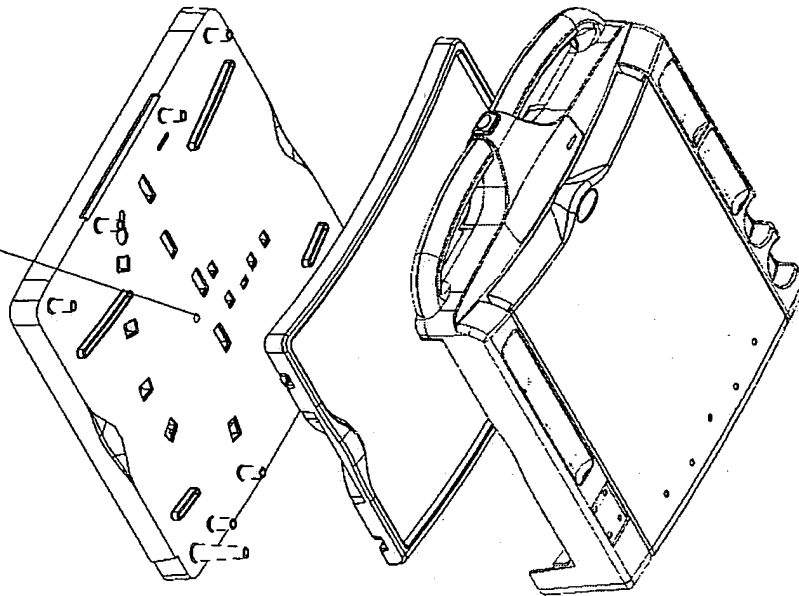
All units have an ergonomic curving work surface. The following images disclose how the curving work surface works within the EMAR cart units.



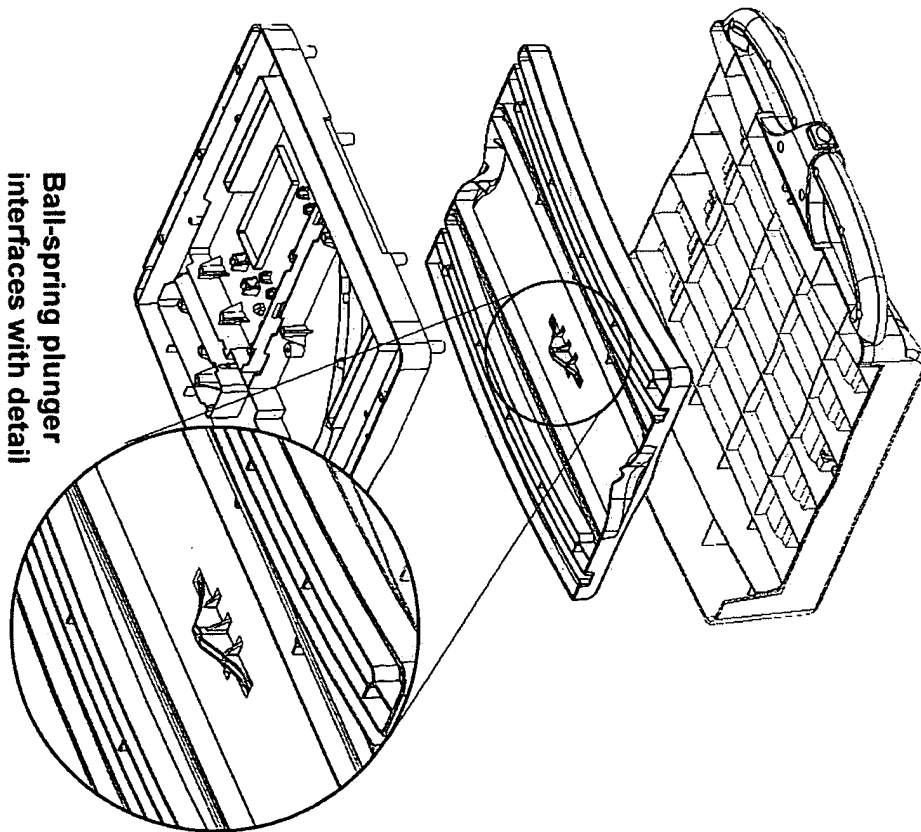
Worksurface can be used
on either the left or
right side of the cart



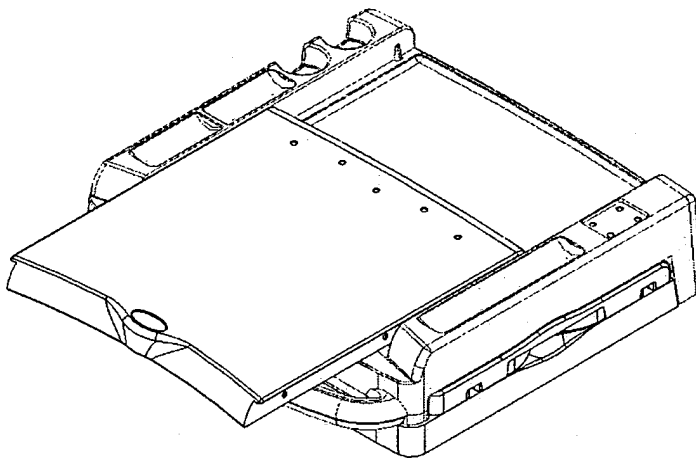
Area for ball-spring
plunger (not shown)



Ball-spring plunger
interfaces with detail
to keep worksurface in
locked position when
not in use

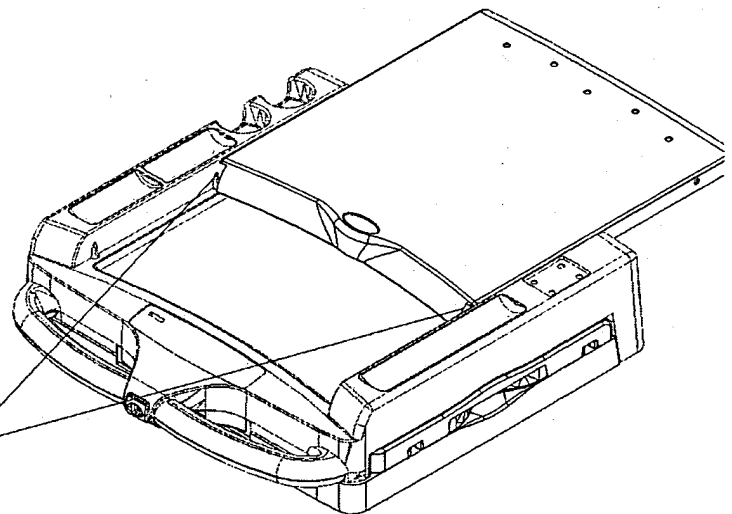


All units have a bi-directional sliding laptop platform. The purpose of the bi-directional function is to pull towards the user when in use during sitting. Also, the platform can be pushed away to free up workspace when needed.



Platform pulls towards the user when in use in the seated position

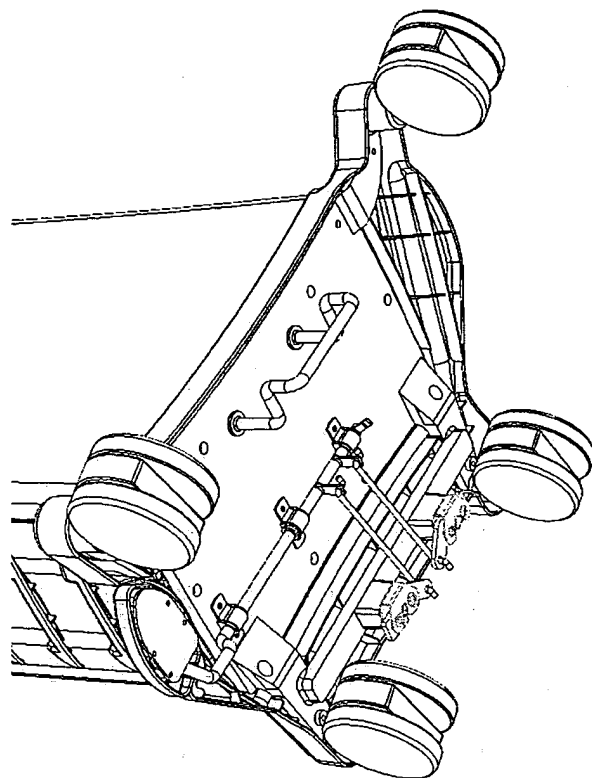
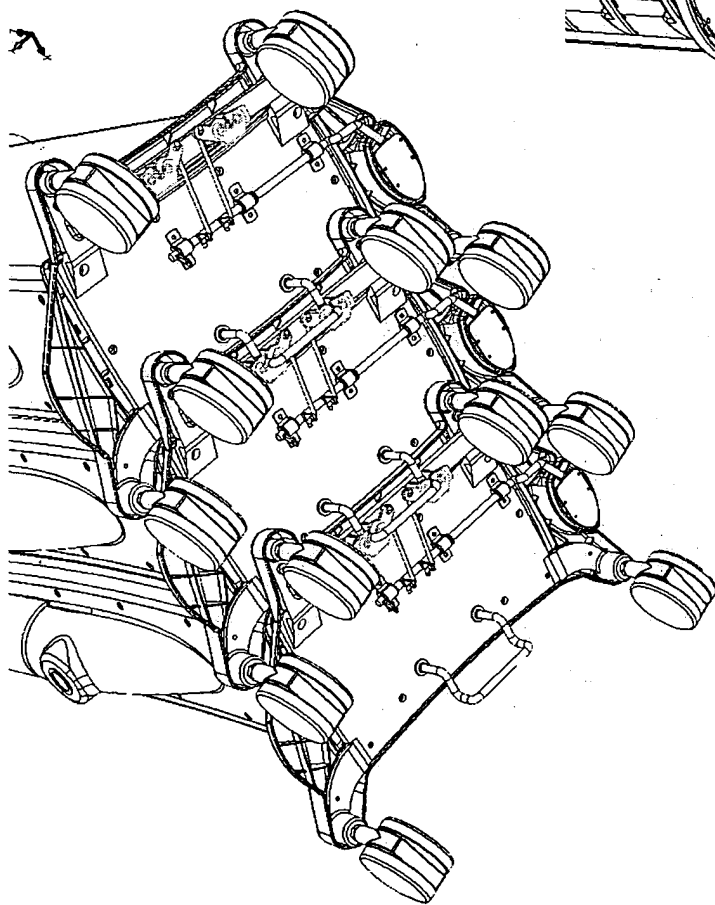
Platform slides backwards to free up work space in the center



Two bi-directional drawer slides (not shown) are used to achieve this movement which are attached to both sides of laptop platform

The following discloses how the medication modules link together and how the medication module links to the base cart to form the high capacity EMAR cart.

Linking Mechanism

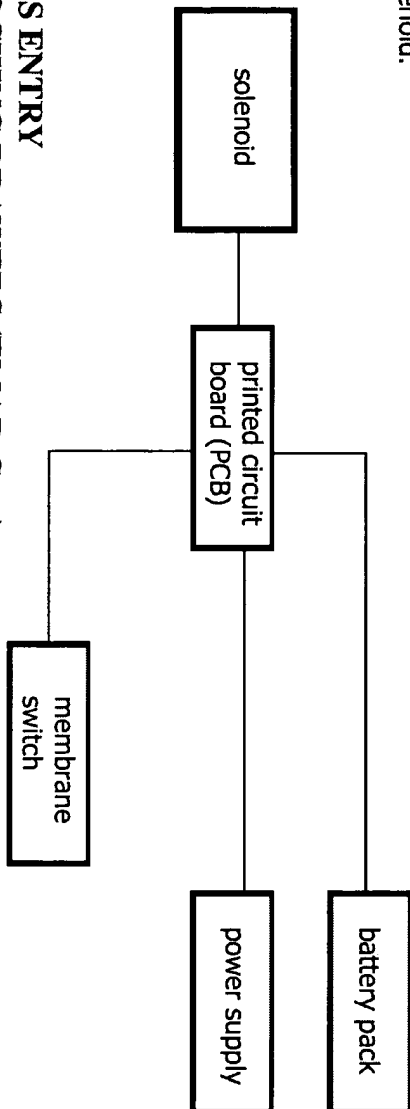


press pedal to unlink
modules from one
another

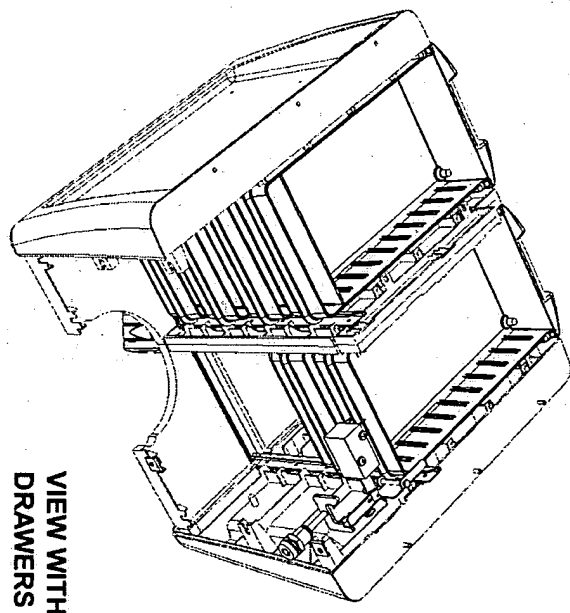
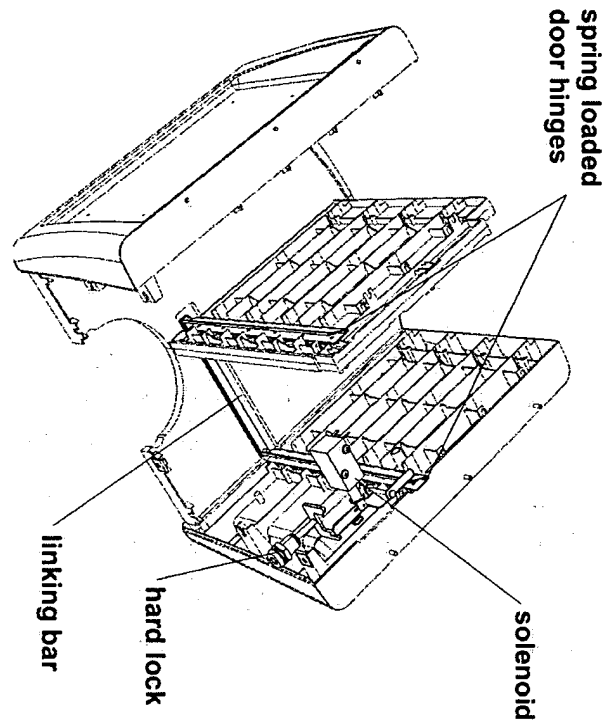
The following images disclose how the keyless entry system with self-locking drawers works within the EMAR Cart and the Medication module.

The following discloses the keyless entry system for the self- locking drawers.

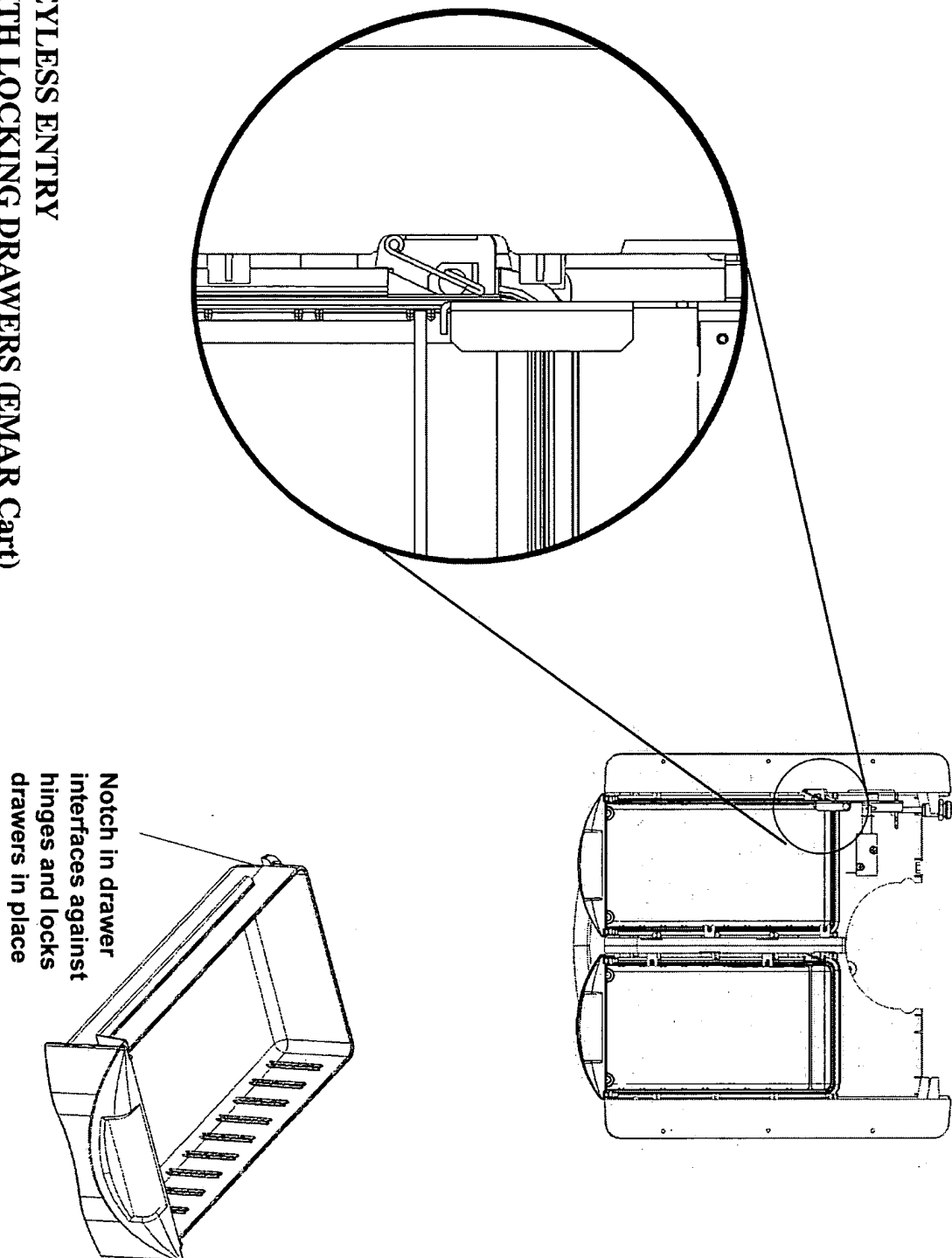
**KEYLESS ENTRY
WITH LOCKING DRAWERS (EMAR Cart)**



Membrane switch, PCB, power supply, and battery pack (not shown) connected to solenoid.



**KEYLESS ENTRY
WITH LOCKING DRAWERS (EMAR Cart)**



4. What written records are available to document the work that was done, e.g., lab notebooks, computer printouts or simulations, drawings, progress, periodic or special

reports, memos, etc.? Please list them and attach copies if useful to explain the invention.

Concept hand sketches dated and signed 02/03 in lab notebook.

Final design renderings dated and signed 04/03 in lab notebook.

SolidWorks CAD models dated 04/03.

5. What is the “best” way that you know how to make or use the invention? This could refer to materials, equipment, or design/engineering parameters. Use real examples as well as examples that you believe will work, even if you have not tested them. It isn’t necessary for you to test these examples before including them here.

Plastic components will consist of ABS molded through high-pressure injection molding process. Bases will consist of cast iron. Steel sub frames will be constructed of welded steel extrusions.

6. Describe the way you will practice the invention commercially, if different from the “best” way described above.

7. Are there other ways to practice your invention than those described above? Please include not only other workable alternatives that you would use, but even those alternatives that might not be used by our company. Describe substitute materials, ranges of conditions and structural or process variations that work, even if not as well as the best way. Are any of these alternatives based on theory, analogy, experience or actual experimental data?

Other plastic processes could be blow molding, rotational molding, and structural web. Other substitute materials could be polypropylene, polyethylene, and polystyrene. Substitute materials for steel parts could aluminum.

8. How is your solution of the problem (i.e., the invention) better than or different from the past solutions? Describe specifically any technical or economic advantage or disadvantages your invention may have over the past solutions, or whether you achieved unexpected results.

This is a good solution because the med drawers are at an ergonomic height (reduced bending as compared to competitive carts), there is plentiful amount of workspace, there is an area to accommodate refuse if needed (accessory bins can be used as refuse receptacle), there is an adjustable bar code scanner holder within convenient reach, can be used in a standing and seated position, and has a keyless entry system with auto lock feature for security of meds.

Development of the Invention

9. When was the complete invention first conceived? Describe any documents that confirm this event.

Lab notebook dated 4/25/03

10. (a) When was the first successful test of the invention? Describe any documents that confirm this event.

10/20/03 completion of engineering prototype with all working components.

- (b) Is there any continued testing? [X] YES [] NO

If so, please describe.

Testing of engineering prototype to test moving parts and mechanisms.

Disclosure of the Invention Outside the Company

IMPORTANT Any patent application **SHOULD** be filed **before** any public disclosure or commercial activity in order to preserve **world-wide** patent rights. Any patent application **MUST** be filed in the U.S. Patent and Trademark Office within **one (1) year** of the first offer for sale, commercial activity, or public disclosure to preserve U.S. patent rights.

11. Has the invention been used in a commercial environment or for a commercial test? ☒ YES ☐ NO

If YES, where and when? List each such occurrence starting from the earliest date and describe the circumstances.

Bowling Green, KY

Greenview Medical Center. Plans for user testing at hospital test sites are scheduled for 10/27 – 10/31.

12. Has the invention in some form been sold or offered for sale, for example, incorporated in equipment or in a composition or included in a project proposal or bid? For the purpose of answering this question, include any description of the invention or inventive concept in a sales presentation, whether or not you were actually prepared to deliver products embodying or using the invention.

☐ YES ☐ NO

If YES, list each sale or offer, giving the details and date of each.

13. Has the invention been described in any publication (e.g., technical article, news release, advertising brochure, etc.)? ☐ YES ☒ NO

If YES, list each publication giving the date of each. Please attach copies if available.

14. Has the invention been shown or described to persons not employed by the company in a technical meeting, presentation, talk, trade show or similar event?

☒ YES ☐ NO

If YES, describe the persons, dates, and circumstances of the disclosure.

Have confidentiality agreements in place with the following:

Patapsco (vendor for keyless entry system)

HCA (customer which collaborated to co-develop cart)

Sayers Group (Partner company that will integrate computer equipment onto cart)

Camalor (vendor for steel frames)

Golden's Foundry (vendor for cast bases)

Northern States Metal (vendor for extrusions)

15. Have plans been made to commercialize, use, sell, offer to sell, or disclose the invention outside the corporation? [X] YES [] NO

If YES, to whom and when.

Plans to introduce March 26, 2001

Prior Patents, Publications, and Merchandise

List all prior patents, publications, technical articles, etc. of which you are aware which relate to the invention, and enclose copies if available. Please look through your records for this information. Provide a brief description of how the invention differs technically from the prior patents and publications closest to your invention.

Also, please provide descriptions of merchandise sold or offered for sale by others, or in public use, that relate to your invention. These could include items that were considered during the design and development of your invention, as well as competitive merchandise.

Stinger , Ergotron, Lionville, and Artormick carts.

Inventorship

NOTE: Inventorship is a legal question that will be decided by the patent attorney after the application has been drafted. An inventor (in the legal sense) is a person who has contributed to the "conception" of the invention described by the "claims" of the patent. To help the attorney to make the determination of inventorship, please list the names of all persons who worked on the project that led to the invention. Add more name blocks as required.

- A. Full Name: Kevin Fitzpatrick
- Home Address: 325 George St. Winchester, VA 22601
- Citizenship: US
- Role in Invention: Inventor/Engineer
- _____
- _____
- B. Full Name: Rad Arceta
- Home Address: 10503 Lariat Ln #12 Manassas, VA 20109
- Citizenship: US
- Role in Invention: Inventor/Designer
- _____
- _____
- C. Full Name: Craig Rogers
- Home Address: 2664 Limestone Ct, Winchester, VA
- Citizenship: US
- Role in Invention: Inventor/Engineer
- _____
- _____

Will need to add inventors from Patapsco, vendor for keyless entry

* * *

The undersigned person(s) prepared this Invention Disclosure. It is believed to be

accurate and complete.

_____	_____	_____
Printed Name	Signature	Date

_____	_____	_____
Printed Name	Signature	Date

INVENTION DISCLOSURE REVIEWED BY_____

DATE OF REVIEW_____

DATE PROVIDED TO ATTORNEYS_____

NAME OF ATTORNEYS_____

Application Data Sheet

Application Information

Application Type::	Provisional
Subject Matter::	Utility
Suggested classification::	
Suggested Group Art Unit::	
CD-ROM or CD-R?::	None
Computer Readable Form (CRF)?::	No
Title::	MEDICAL EMAR CART
Attorney Docket Number::	086554-1050
Request for Early Publication?::	No
Request for Non-Publication?::	No
Suggested Drawing Figure::	
Total Drawing Sheets::	16 (included within specification)
Small Entity?::	No
Petition included?::	No
Secrecy Order in Parent Appl.?::	No

Applicant Information

Applicant Authority Type::	Inventor
Primary Citizenship Country::	US
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Given Name::	Kevin
Family Name::	FITZPATRICK
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State or Province of Residence::	Virginia
Country of Residence::	US
Street of mailing address::	325 George Street

City of mailing address:: Winchester
State or Province of mailing address:: VA
Postal or Zip Code of mailing address:: 22601

Applicant Authority Type:: Inventor
Primary Citizenship Country:: US
Status:: Full Capacity
Given Name:: Radmond
Family Name:: ARCETA
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City of mailing address:: Manassas
State or Province of mailing address:: VA
Postal or Zip Code of mailing address:: 20109

Applicant Authority Type:: Inventor
Primary Citizenship Country:: US
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State or Province of Residence:: Virginia
Country of Residence:: US
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City of mailing address:: Winchester

State or Province of mailing address:: VA
Postal or Zip Code of mailing address:: 22601

Correspondence Customer Number:: 22428
E-Mail address:: PTOMailWashington@Foley.com

Representative Information

Representative Customer Number::	22428	
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Domestic Priority Information

Application::	Continuity Type::	Parent Application::	Parent Filing Date::

Foreign Priority Information

Country::	Application number::	Filing Date::	Priority Claimed::

Assignee Information

Assignee name:: RUBBERMAID COMMERCIAL PRODUCTS
LLC

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

11/14/2003 HMEKONEN 00000134 60518649

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