



US009796077B2

(12) **United States Patent**
Perkins

(10) **Patent No.:** **US 9,796,077 B2**
(45) **Date of Patent:** **Oct. 24, 2017**

(54) **TOOLBOX**

(71) Applicant: **James Perkins**, Sudan, NM (US)

(72) Inventor: **James Perkins**, Sudan, NM (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/951,486**

(22) Filed: **Nov. 24, 2015**

(65) **Prior Publication Data**

US 2016/0144502 A1 May 26, 2016

Related U.S. Application Data

(60) Provisional application No. 62/083,388, filed on Nov. 24, 2014.

(51) **Int. Cl.**

B65D 85/28 (2006.01)

B25H 3/02 (2006.01)

B25H 3/04 (2006.01)

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

CPC **B25H 3/028** (2013.01); **B25H 3/023** (2013.01); **B25H 3/04** (2013.01)

(58) **Field of Classification Search**

CPC B25H 3/02; B25H 3/025; B25H 3/023; B25H 3/04; A47B 96/00; A47B 96/16

USPC 206/349, 372, 373, 374-379; 312/271, 312/270.2, 304, 325, 327, 328, 350

See application file for complete search history.

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Primary Examiner — J. Gregory Pickett

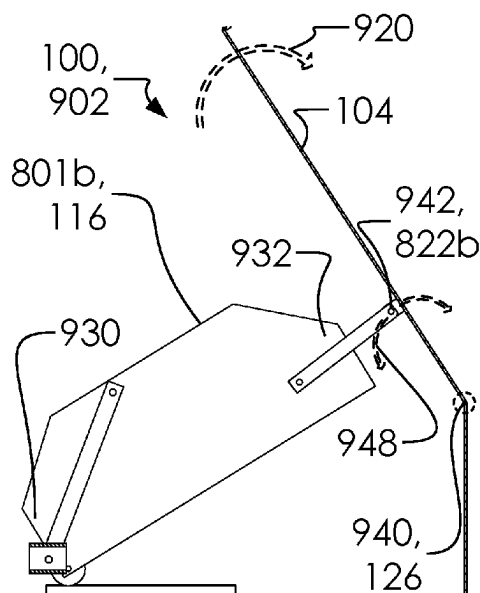
Assistant Examiner — Rafael Ortiz

(74) *Attorney, Agent, or Firm* — Shannon L Warren

(57) **ABSTRACT**

A toolbox is disclosed. The toolbox comprises a body, a one or more supports and a pivoting rack. The body comprises a lid, a bottom plate, a faceplate, a back plate, a first side, a second side. The toolbox is configured for selectively transitioning between an expanded configuration and a closed configuration. The expanded configuration of the toolbox comprises an expanded height. The body selectively opens and closes between the expanded configuration and the closed configuration. With the toolbox in the closed configuration the body comprises a substantially rectangular shape and encases the tool box with the first side and the second side on its sides, the lid and a bottom plate at its top and bottom, and the faceplate and a back plate at its front and back sides. The lid selectively rotates on a first hinge relative to the back plate. The faceplate selectively rotates on a second hinge relative to the lid rack. With the toolbox in the expanded configuration, the one or more supports a portion of the toolbox. With the toolbox in the closed configuration the faceplate selectively rotates on the second hinge to provide access within the toolbox. A portion of the body wraps around the pivoting rack including the bottom plate which is attached to the back plate, the lid which is rotatably attached to the back plate, and the faceplate which is rotatably attached to the lid.

12 Claims, 11 Drawing Sheets



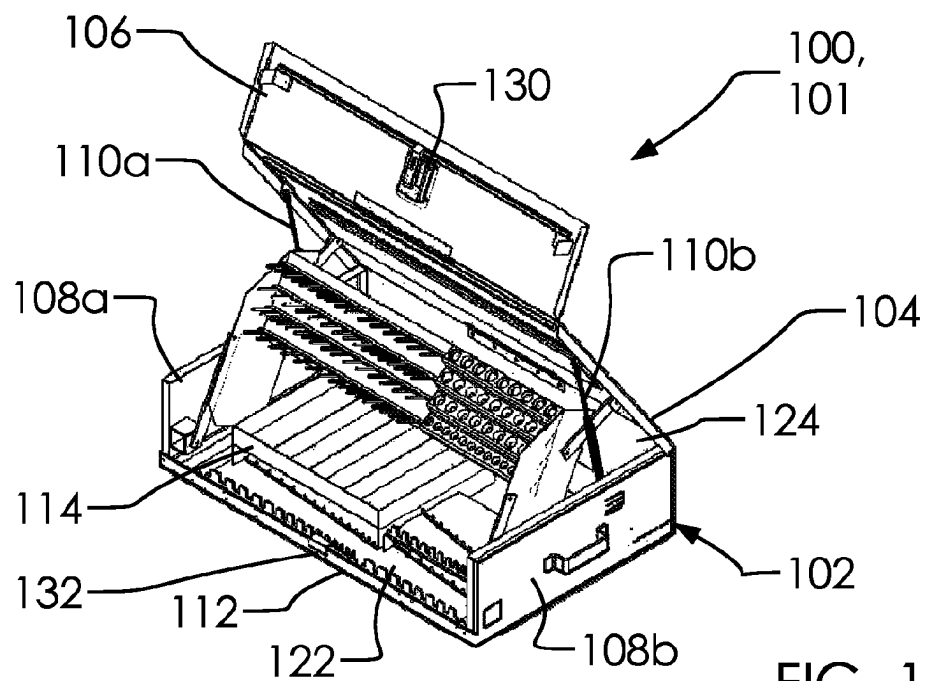


FIG. 1A

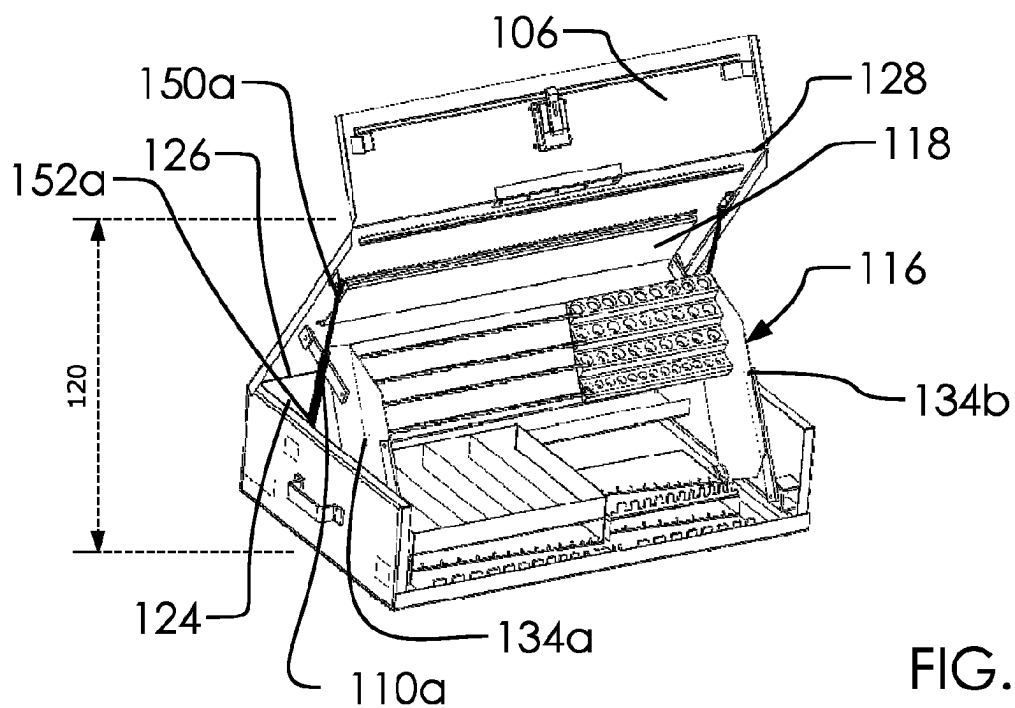


FIG. 1B

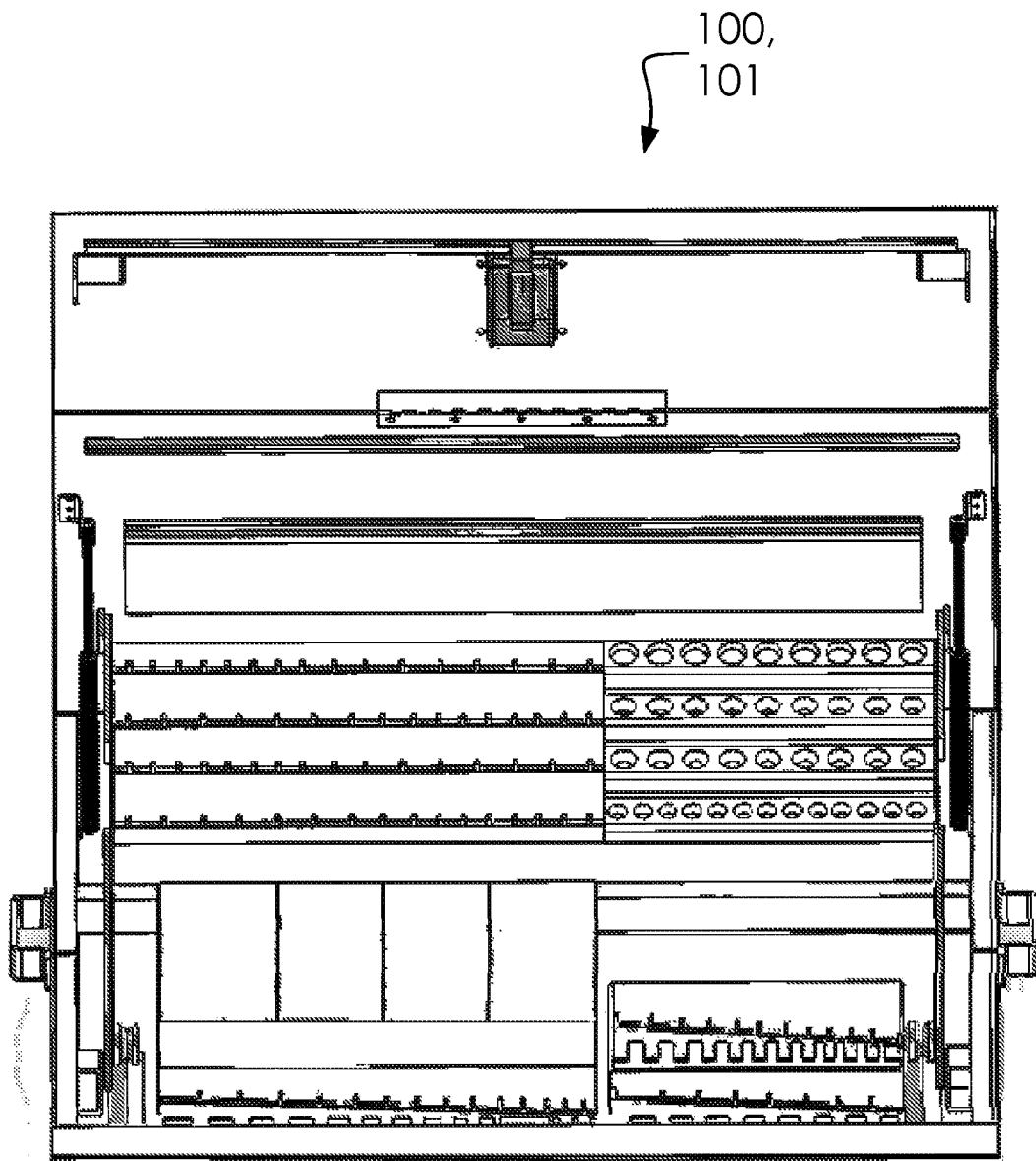


FIG. 2

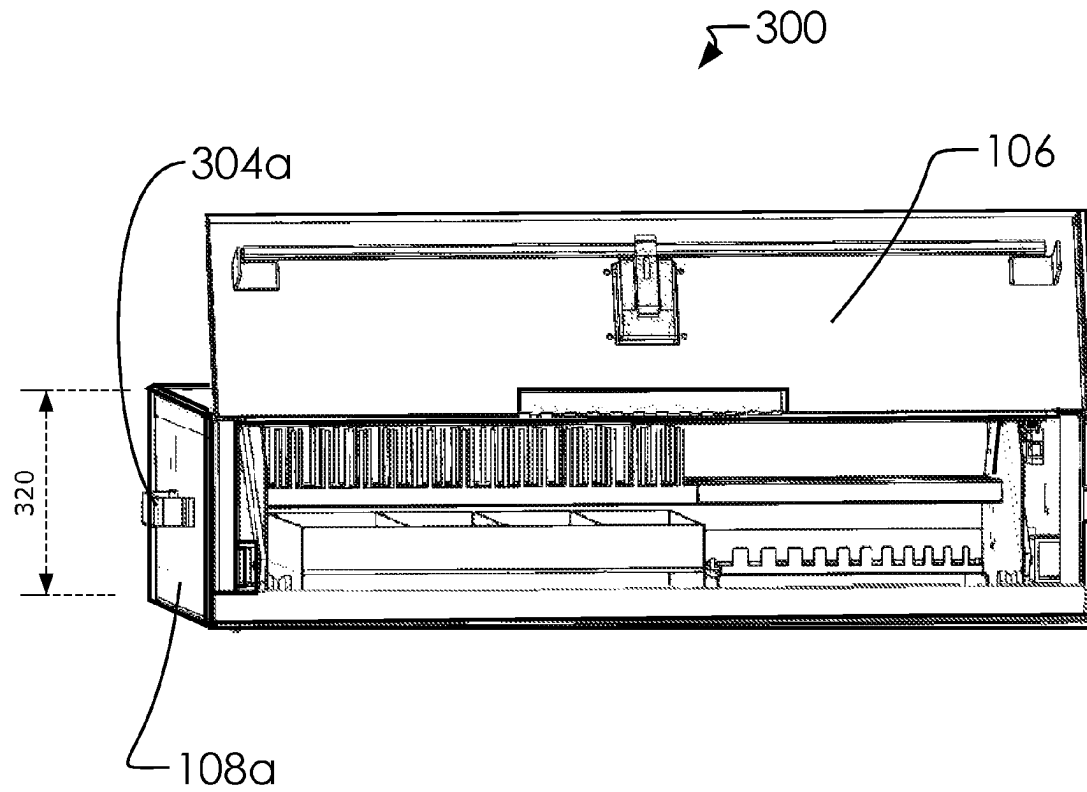


FIG. 3

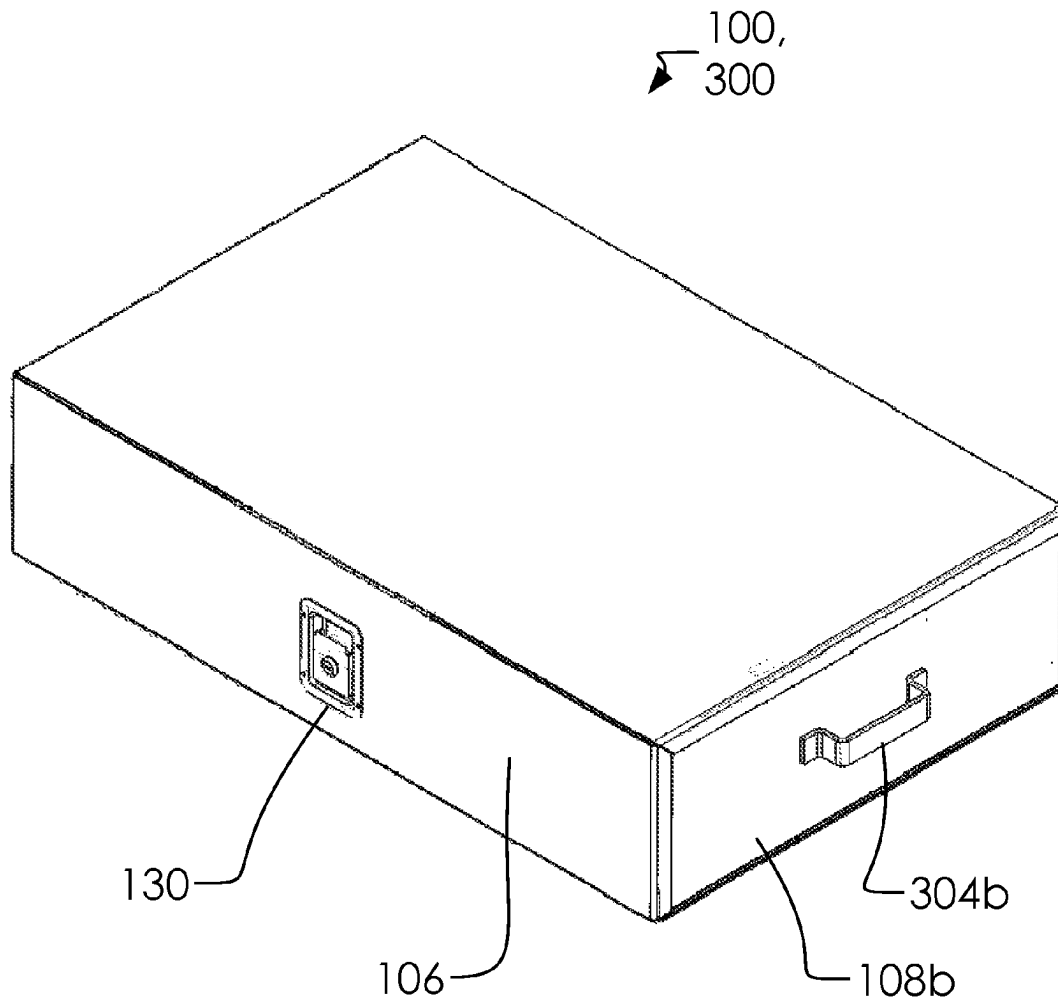


FIG. 4

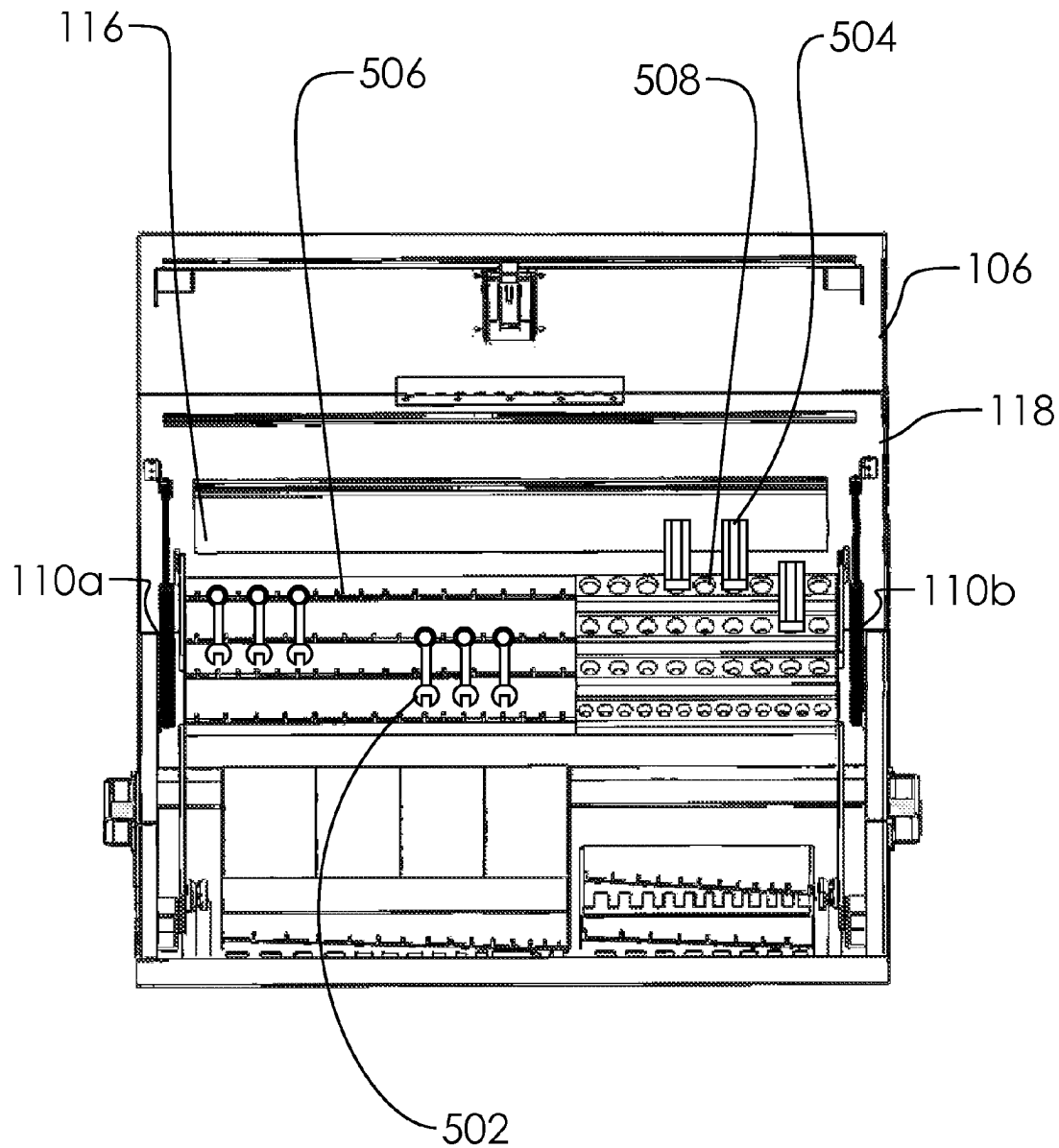


FIG. 5

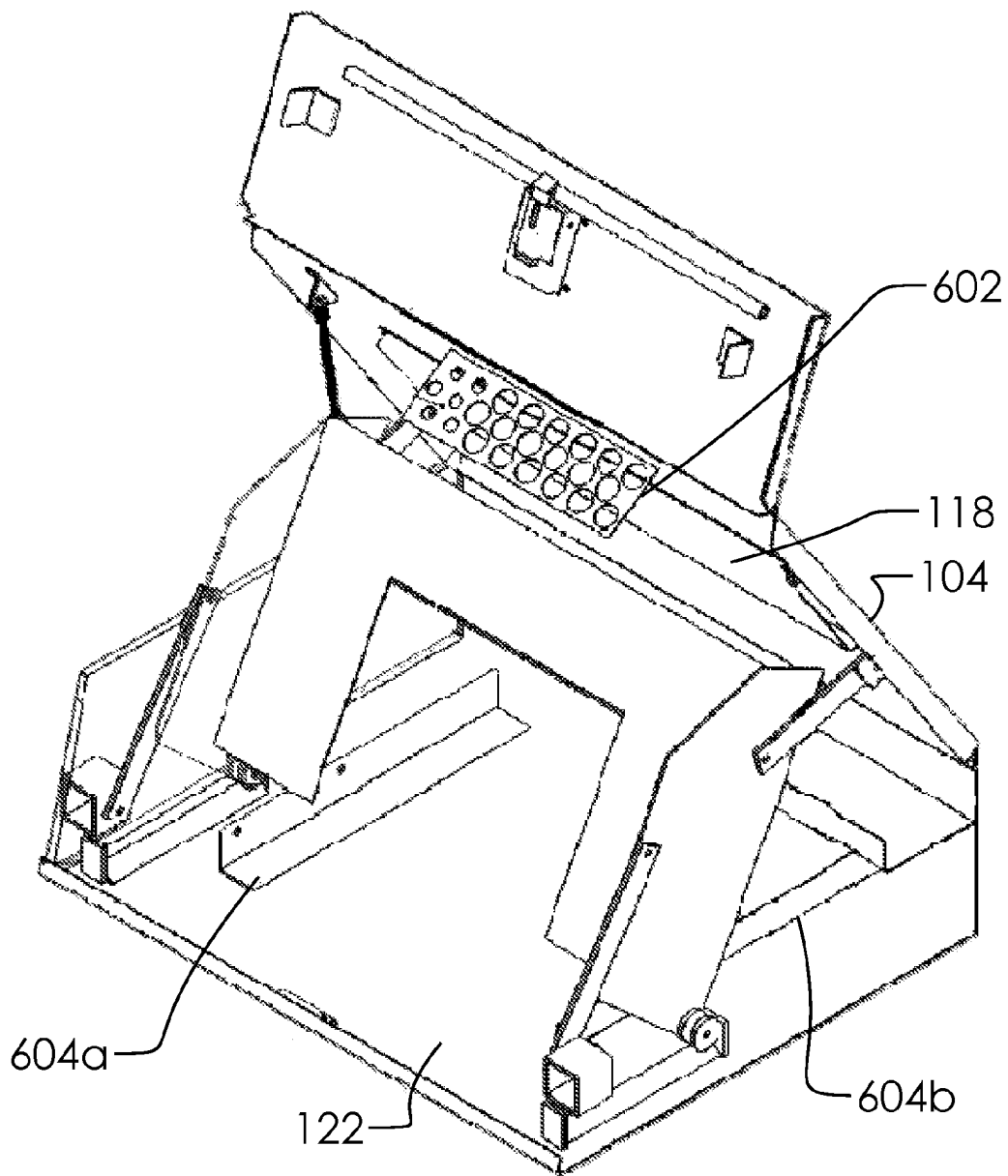


FIG. 6

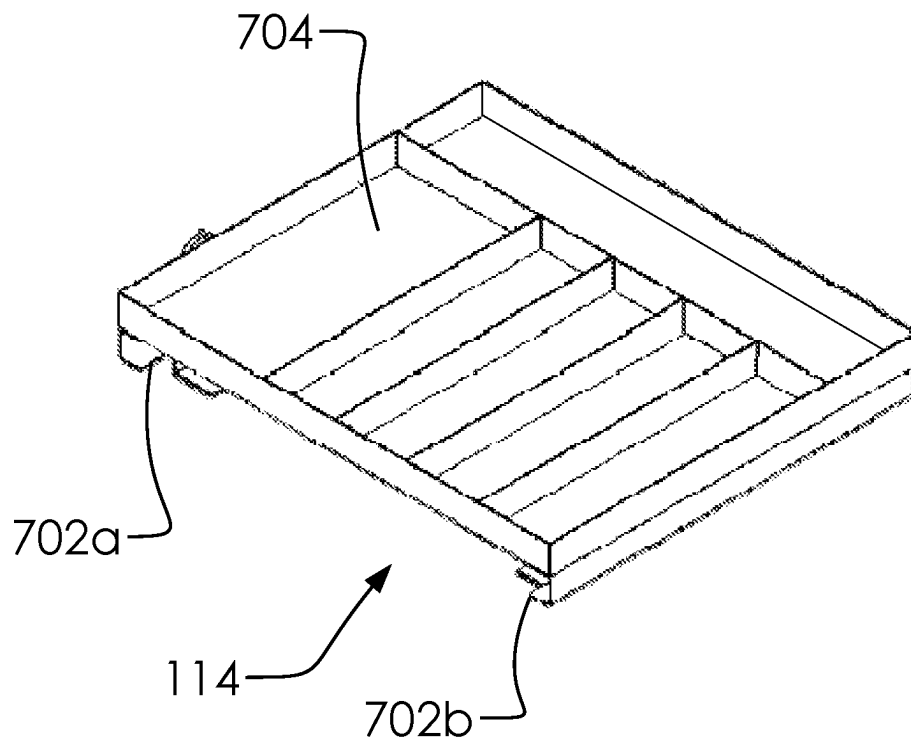
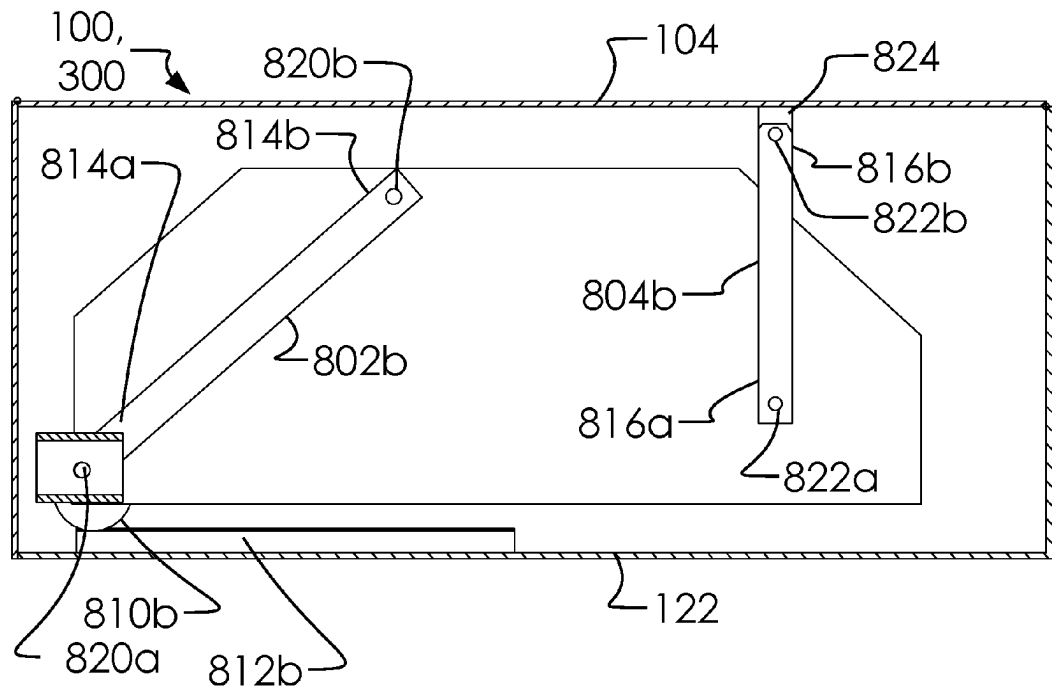
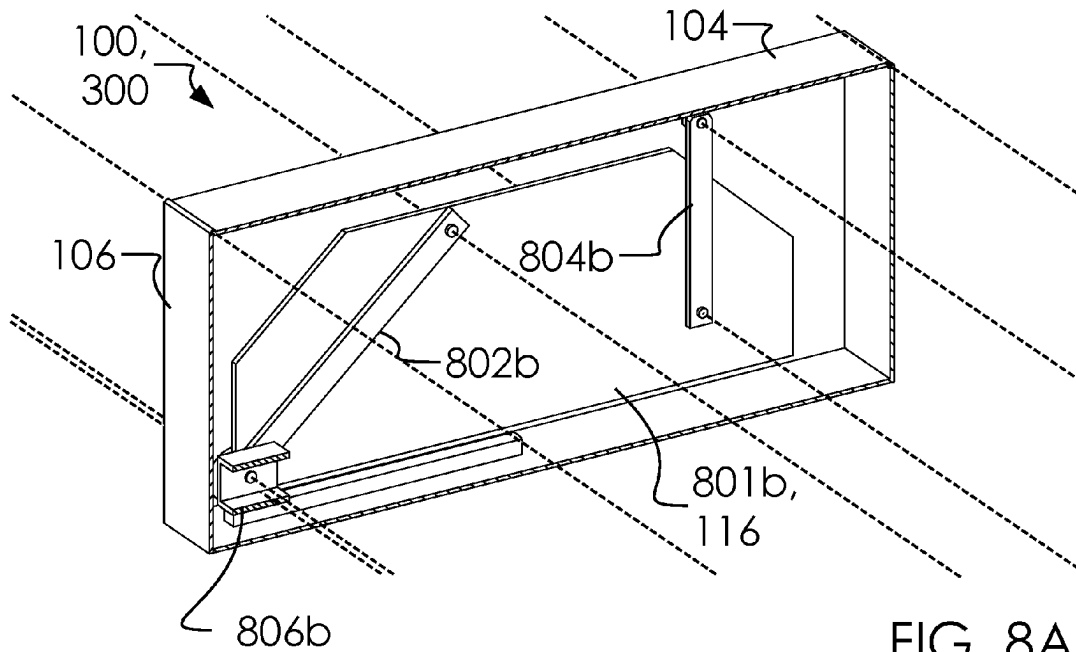


FIG. 7



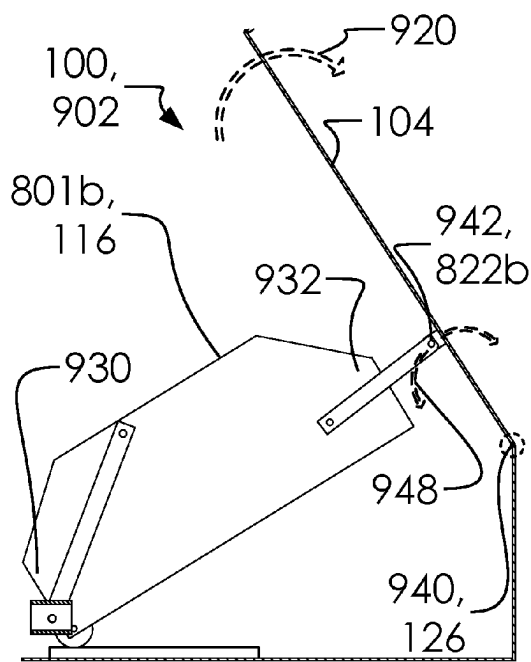


FIG. 9A

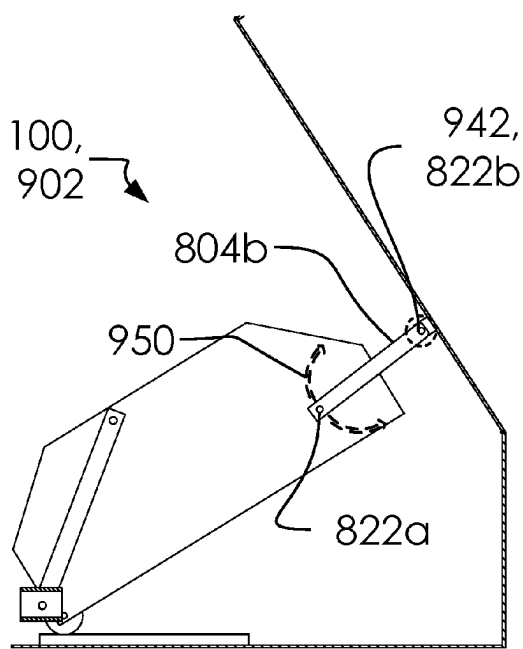


FIG. 9B

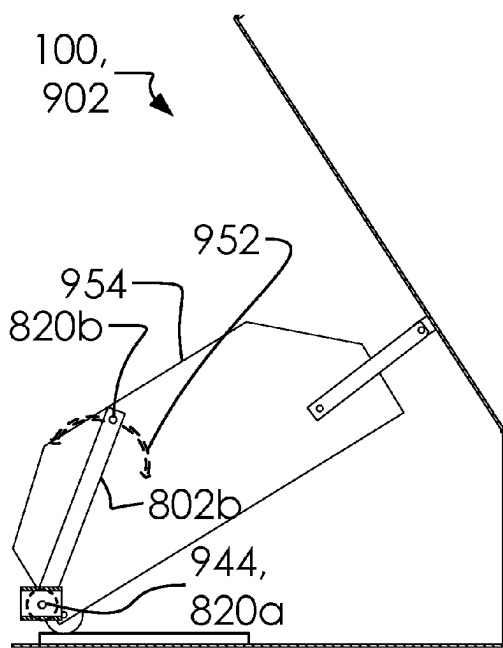


FIG. 9C

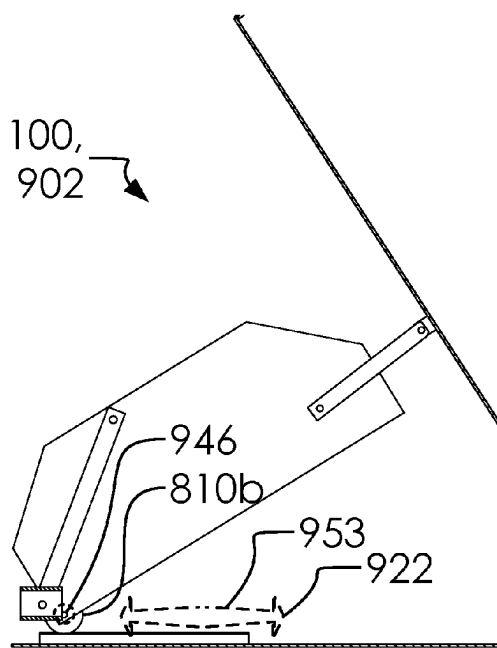


FIG. 9D

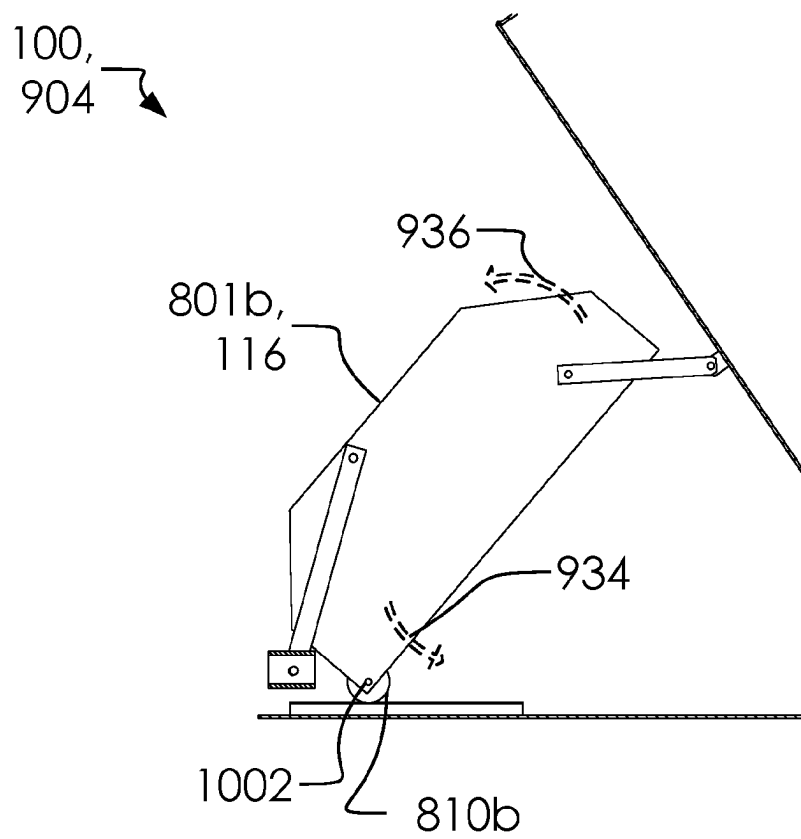


FIG. 10

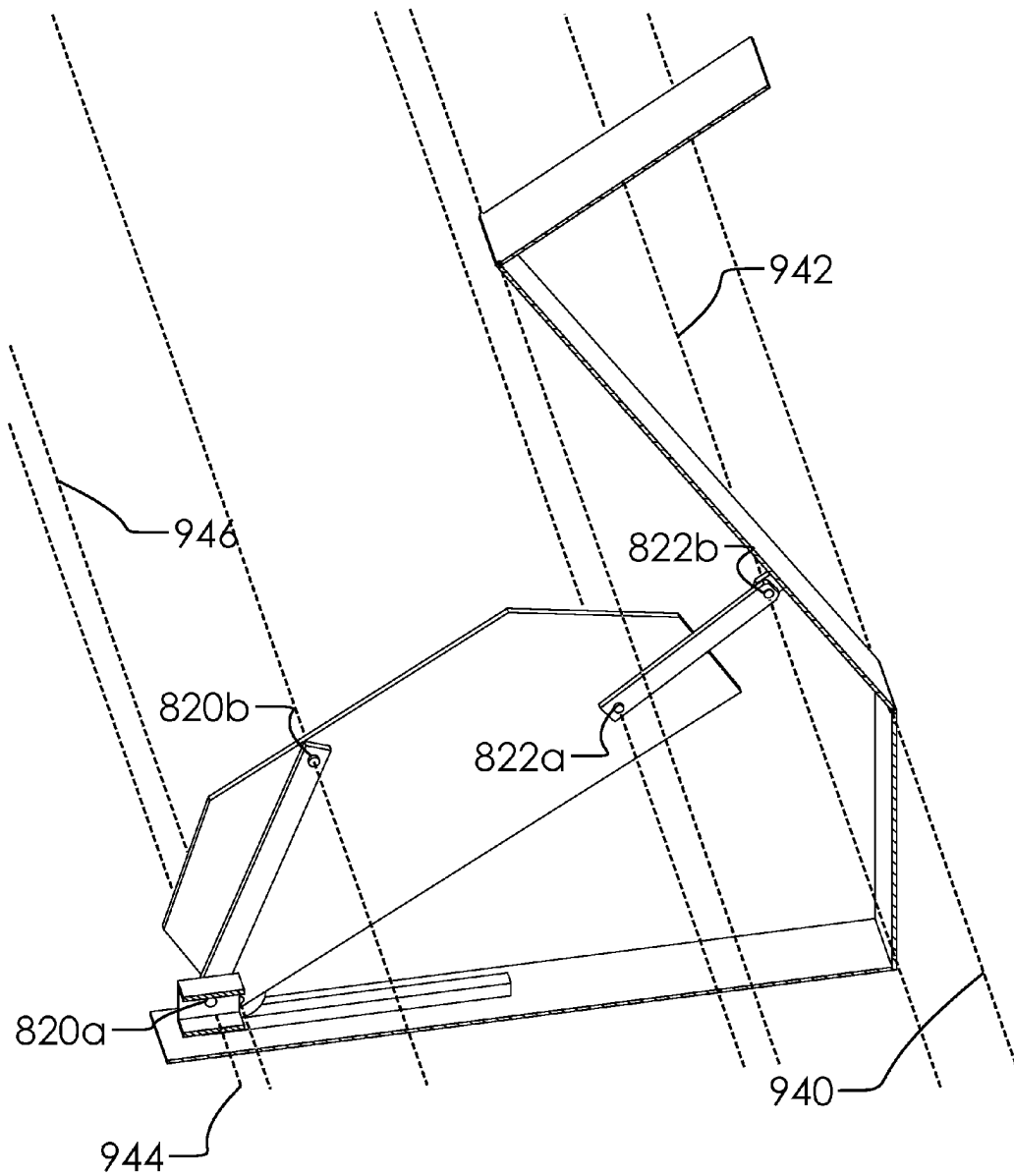


FIG. 11

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TOOLBOX

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims benefit to U.S. Patent Application No. 62/083,388, filed Nov. 24, 2014 which was one year prior to the filing of this application. All rights in the earlier application are claimed and incorporated by reference hereby.

PETITION TO MAKE SPECIAL

Submitted herewith is USPTO form PTO/SB/130 (07-09) establishing the Applicant's entitlement to make this application special based on the age of the Applicant.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT (IF APPLICABLE)

Not applicable.

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISC APPENDIX (IF APPLICABLE)

Not applicable.

BACKGROUND OF THE INVENTION

This disclosure relates generally to an improved toolbox. Examples of similar disclosures can be found at U.S. Pat. No. 7,510,078 B2. However, none of the known inventions and patents, taken either singularly or in combination, is seen to describe the instant disclosure as claimed. Accordingly, an improved toolbox would be advantageous.

BRIEF SUMMARY OF THE INVENTION

A toolbox is disclosed. The toolbox comprises a body, a one or more supports and a pivoting rack. The body comprises a lid, a bottom plate, a faceplate, a back plate, a first side, a second side. The toolbox is configured for selectively transitioning between an expanded configuration and a closed configuration. The expanded configuration of the toolbox comprises an expanded height. The body selectively opens and closes between the expanded configuration and the closed configuration. With the toolbox in the closed configuration the body comprises a substantially rectangular shape and encases the tool box with the first side and the second side on it sides, the lid and a bottom plate at its top and bottom, and the faceplate and a back plate at its front and back sides. The lid selectively rotates on a first hinge relative to the back plate. The faceplate selectively rotates on a second hinge relative to the lid. With the toolbox in the expanded configuration, the one or more supports a portion of the toolbox. With the toolbox in the closed configuration the faceplate selectively rotates on the second hinge to provide access within the toolbox. A portion of the body wraps around the pivoting rack including the bottom plate which is attached to the back plate, the lid which is rotatably attached to the back plate, and the faceplate which is rotatably attached to the lid.

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BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIGS. 1A and 1B illustrate an elevated first side and second side overview of a toolbox 100 in an expanded configuration 101.

FIG. 2 illustrates an elevated front side view of said toolbox 100 in said expanded configuration 101.

FIG. 3 illustrates an elevated front side view of said toolbox 100 in a closed configuration 300 with said faceplate 106 opened.

FIG. 4 illustrates an elevated second side overview of said toolbox 100 in a closed configuration 300 with said faceplate 106 closed.

FIG. 5 illustrates an elevated front side view of said toolbox 100 in said expanded configuration 101 with a one or more tools.

FIG. 6 illustrates an elevated second side overview of said toolbox 100 in an expanded configuration 101 being partially disassembled without said second side 108b and with said drawer 114 removed.

FIG. 7 illustrates an elevated second side overview of said drawer 114.

FIGS. 8A and 8B illustrate an elevated first side cross-section view of said toolbox 100 in said closed configuration 300, first as a perspective overview and then as an elevated side view, respectively.

FIGS. 9A, 9B, 9C and 9D illustrate for annotated versions of an elevated first side cross-section view of said toolbox 100 in said a first position 902.

FIG. 10 illustrates an elevated front view said toolbox 100 in said second position 904.

FIG. 11 illustrates a perspective overview of said toolbox 100 in said second position 904.

DETAILED DESCRIPTION OF THE INVENTION

Described herein is an improved toolbox. The following description is presented to enable any person skilled in the art to make and use the invention as claimed and is provided in the context of the particular examples discussed below, variations of which will be readily apparent to those skilled in the art. In the interest of clarity, not all features of an actual implementation are described in this specification. It will be appreciated that in the development of any such actual implementation (as in any development project), design decisions must be made to achieve the designers' specific goals (e.g., compliance with system- and business-related constraints), and that these goals will vary from one implementation to another. It will also be appreciated that such development effort might be complex and time-consuming, but would nevertheless be a routine undertaking for those of ordinary skill in the field of the appropriate art having the benefit of this disclosure. Accordingly, the claims appended hereto are not intended to be limited by the disclosed embodiments, but are to be accorded their widest scope consistent with the principles and features disclosed herein.

FIGS. 1A and 1B illustrate an elevated first side second side overview of a toolbox 100 in an expanded configuration 101.

In one embodiment, said toolbox 100 can comprise a body 102, a lid 104, a faceplate 106, a sides (which can comprise a first side 108a and a second side 108b), a one or more supports (which can comprise a first support 110a and a second support 110b), a lower tray 112, a drawer 114, a

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pivoting rack **116**, and a lid rack **118**. In one embodiment, said expanded configuration of said toolbox **100** can comprise an expanded height **120**. In one embodiment, said body **102** can encase said toolbox **100** with: said first side **108a** and said second side **108b** on its sides; said lid **104** and a bottom plate **122** at its top and bottom; and said faceplate **106** and a back plate **124** at its front and back sides. In one embodiment, said lid **104** rotates on a first hinge **126** relative to said back plate **124**; and said faceplate **106** rotates on a second hinge **128** relative to said lid **104**. Said pivoting rack **116** comprises a first side **134a** and a second side **134b**. In one embodiment, each among said first support **110a** and said second support **110b** can comprise a first end (such as a first end **150a**) and a second end (such as said second end **152a**). In one embodiment, said first end **150a** of said first support **110a** rotateably attaches to said lid **104**, and said second end **152a** of said first support **110a** rotateably attaches to said first side **108a**. In one embodiment, said first support **110a** and said second support **110b** can comprise a two supports; wherein, said two support selectively hold said lid **104** in said expanded configuration.

In one embodiment, said toolbox **100** can comprise a latching system which can comprise a latch **130** and a strike plate **132**; further, said latching system can comprise a locking mechanism as is known in the art.

In one embodiment, said lid **104** and said faceplate **106** can be held up by said first support **110a** and said second support **110b**.

FIG. **2** illustrates an elevated front side view of said toolbox **100** in said expanded configuration **101**.

FIG. **3** illustrates an elevated front side view of said toolbox **100** in a closed configuration **300** with said faceplate **106** opened.

In one embodiment, said first side **108a** can comprise a first handle **304a** on said first side **108a**, and a second handle **304b** (not illustrated here) on said second side **108b**. In one embodiment, said toolbox **100** can comprise a one or more handles (which can comprise said first side **108a** and said second side **108b**).

In one embodiment, said collapsed configuration **300** can allow for access to tools within said toolbox **100**. For example, in one embodiment, said faceplate **106** can open with said toolbox **100** in said collapsed configuration **300**; thereby, said drawer **114** (for example) can be rolled out and accessed with said toolbox **100** in a low profile (that is, said collapsed configuration **300**). This feature can be a substantial value add to users of said toolbox **100**, because they can stack tools and equipment on top of said toolbox **100** and still access a portion of its contents. Further, said toolbox **100** can be constructed to withstand heavy weights on top of said lid **104**. The combination of these features amounts to a more useful tool box than the prior art because it is compact and still accessible, but none the less can fold up and expose a complete tool set when desired.

FIG. **4** illustrates an elevated second side overview of said toolbox **100** in a closed configuration **300** with said faceplate **106** closed.

FIG. **5** illustrates an elevated front side view of said toolbox **100** in said expanded configuration **101** with a one or more tools.

In one embodiment, said one or more tools can comprise a wrench **502**, a screwdriver **504**. In one embodiment, said pivoting rack **116** can comprise a one or more pegs **506** which can hold said wrench **502**; and a one or more slots **508** which can hold said screwdriver **504**.

In one embodiment, said first support **110a** and said second support **110b** can support said faceplate **106** and said

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lid **104** when said toolbox **100** is in said expanded configuration **101** and/or said closed configuration **300**. In one embodiment, said first side first side **108a** and said second side **108b** can comprise pneumatic cylinders.

FIG. **6** illustrates an elevated second side overview of said toolbox **100** in an expanded configuration **101** being partially disassembled without said second side **108b** and with said drawer **114** removed.

In one embodiment, said lid **104** can comprise a one or more tool slots **602**, capable of holding one or more tools such as said screwdriver **504**. In one embodiment, said bottom plate **122** of said toolbox **100** can comprise a one or more tracks which can comprise a first track **604a** and a second track **604b**. In one embodiment, said one or more tracks can be arranged as perpendicular with said faceplate **106** with said toolbox **100** in said closed configuration **300**. In one embodiment, said drawer **114** can ride on said one or more tracks, as is known in the art.

FIG. **7** illustrates an elevated second side overview of said drawer **114**.

In one embodiment, said drawer **114** can comprise a one or more runners which can comprise a first runner **702a** and a second runner **702b**. In one embodiment, said one or more runners can releaseably attach to said one or more tracks; wherein, said drawer **114** can move relative to said bottom plate **122** on said one or more tracks. In one embodiment, said one or more runners can comprise bearings, wheels, or a friction surface allowing said drawer **114** to slide there along. In one embodiment, said drawer **114** can comprise a one or more compartments, such as a compartment **704**.

FIGS. **8A** and **8B** illustrate an elevated first side cross-section view of said toolbox **100** in said closed configuration **300**, first as a perspective overview and then as an elevated side view, respectively.

In one embodiment, said pivoting rack **116** can comprise a first side portion **801a** (not illustrated) and a second side portion **801b**. In one embodiment, said second side portion **801b** can comprise a substantially vertical planar surface attached to said body **102** with a second front arm **802b** and said lid **104** with a second rear arm **804b**, as discussed to follow. Likewise, said first side portion **801a** can be attached to said lid **104** with a first rear arm **804a** and said body **102** with a first front arm **802a** (not illustrated). As disclosed, “first” rear and front arms are located on said first side and “second” rear and front arms are on said second side of said toolbox. In one embodiment, a two front arms can comprise said first front arm **802a** and said second front arm **802b**, and a two rear arms can comprise said first rear arm **804a** and said second rear arm **804b**.

In one embodiment, said toolbox **100** can further comprise a two outer brackets which can comprise a first outer bracket **806a** (not illustrated) and a second outer bracket **806b**. In one embodiment, said two outer brackets can attach to said pivoting rack **116** to said first side **108a** and said second side **108b**.

In one embodiment, said first front arm **802b** can comprise a first end **814a** and a second end **814b**. In one embodiment, said first end **814a** can rotateably attach to said second outer bracket **806b** with a first hinge **820a**. In one embodiment, said second end **814b** can rotateably attach to said second side portion **801b** with a second hinge **820b**. In one embodiment, said second rear arm **804b** can comprise a first end **816a** and a second end **816b**. In one embodiment, said first end **816a** can rotateably attach to said second side portion **801b** with a third hinge **822a**. In one embodiment, said lid **104** can comprise a lid support **824**, which can comprise a substantially vertical element suspended from

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and attached to said lid **104** being substantially parallel with said second rear arm **804b**. In one embodiment, said second end **816b** can rotateably attach to said lid support **824** of said lid **104** with a fourth hinge **822b**.

In one embodiment, said pivoting rack **116** can move horizontally on a one or more tracks on said bottom plate **122**, which can comprise a first track **812a** (not illustrated) and a second track **812b**. In one embodiment, said one or more track can comprise two tracks (said first track **812a** and said second track **812b**). In one embodiment, said pivoting rack **116** can comprise a one or more wheels, which can comprise a first wheel **810a** (not illustrated) and a second wheel **810b**. In one embodiment, said first wheel **810a** can roll on said first track **812a**, and said second wheel **810b** can roll on said second track **812b**. In one embodiment, said first wheel **810a** and said second wheel **810b** can roll on said one or more tracks, as illustrated and as is known in the art.

FIGS. **9A**, **9B**, **9C** and **9D** illustrate for annotated versions of an elevated first side cross-section view of said toolbox **100** in said a first position **902**.

In one embodiment, said first position **902** and a second position **904** (not illustrated here) can comprise two configurations of said toolbox **100** in transition from said closed configuration **300** to said expanded configuration **101**.

In one embodiment, said pivoting rack **116** can move according to a four axes comprising a first axis **940**, a second axis **942**, a third axis **944** a fourth axis **946**. In one embodiment, said first axis **940** can comprise said first hinge **126** and can comprise an axis about which said fourth hinge **822b** rotates. Thus, by lifting said lid **104** in said upward direction **920**, said fourth hinge **822b** can rotate about said first axis **940** in a first path **948**.

In one embodiment, said second axis **942** can comprise said fourth hinge **822b** and can comprise an axis about which said third hinge **822a** rotates. Thus, when said fourth hinge **822b** is moved by lifting said lid **104** with said upward direction **920**, said third hinge **822a** can be moved through a second path **950**, as illustrated. Thus, said second rear arm **804b** can rotate like a lever around said second axis **942**, as illustrated.

In one embodiment, said third axis **944** can comprise said first hinge **820a** and can be fixed to said body **102**. In one embodiment, said first front arm **802b** can rotate around said third axis **944** as a lever. In one embodiment, said second hinge **820b** can rotate at the far end of said first front arm **802b**. Accordingly, since said second side portion **801b** is attached to said second hinge **820b**, a top surface **954** said front side **930** can be shifted according to a third path **952**.

In one embodiment, said fourth axis **946** can comprise a center axis of said second wheel **810b**; wherein, said first wheel **810a** and said second wheel **810b** move in a fourth path **953**, which can comprise a forward and a backward direction **922**.

FIG. **10** illustrates an elevated front view said toolbox **100** in said second position **904**.

In one embodiment, transitioning said toolbox **100** from said closed configuration **300** to said expanded configuration **101** can comprise: opening said lid **104** in an upward direction **920**; pulling said one or more wheels in said backward direction **922**; rotating a front side **930** of said pivoting rack **116** in a down and back direction **934**; rotating a back side **932** of said pivoting rack **116** in an up and forward direction **936**. Said pivoting rack **116** comprises a bottom corner **1002**. Said first side wheel **810a** and said second side wheel **810b** can be attached to said bottom corner **1002** of said pivoting rack **116**.

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FIG. **11** illustrates a perspective overview of said toolbox **100** in said second position **904**.

Various changes in the details of the illustrated operational methods are possible without departing from the scope of the following claims. Some embodiments may combine the activities described herein as being separate steps. Similarly, one or more of the described steps may be omitted, depending upon the specific operational environment the method is being implemented in. It is to be understood that the above description is intended to be illustrative, and not restrictive. For example, the above-described embodiments may be used in combination with each other. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled. In the appended claims, the terms “including” and “in which” are used as the plain-English equivalents of the respective terms “comprising” and “wherein.”

The invention claimed is:

1. A toolbox comprising:

said toolbox comprises a body and a pivoting rack;
said body comprises a lid, a bottom plate, a faceplate, a back plate, a first side, a second side;
said toolbox is configured for selectively transitioning between an expanded configuration and a closed configuration;
said expanded configuration of said toolbox comprises an expanded height;
said body selectively opens and closes between said expanded configuration and said closed configuration;
with said toolbox in said closed configuration said body comprises a substantially rectangular shape and encases said tool box with
said first side and said second side on it sides,
said lid and a bottom plate at its top and bottom, and
said faceplate and a back plate at its front and back sides;
said lid selectively rotates on said first hinge relative to said back plate;
a portion of said body wraps around said pivoting rack including
said bottom plate below said pivoting rack,
said lid, above said pivoting rack,
said back plate behind said pivoting rack,
said faceplate in front of said pivoting rack, and
said sides on either side of said pivoting rack;
said bottom plate comprises a horizontal portion of said toolbox being attached to said sides and said back plate;
said back plate and sides are substantially perpendicular to said bottom plate and attached at three sides of said bottom plate;
said back plate is rotateably attached to said lid;
said faceplate is attached to said lid;
said toolbox further comprises a one or more tracks mounted to said bottom plate;
said pivoting rack comprises a one or more wheels configured to selectively roll on said one or more tracks and support a weight of said pivoting rack;
said pivoting rack comprises a first side and a second side;
said toolbox further comprises a two front arms and a two rear arms, wherein,
said two front arms comprise a first front arm, a second front arm,
said two rear arms comprise a first rear arm and a second rear arm,

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said first front arm and said first rear arm are rotateably attached to said first side of said pivoting rack, and said second front arm and said second rear arm are rotateably attached to said second side of said pivoting rack; 5

said two front arms each comprise a first end and a second end, wherein
 said first end of said two front arms each comprise a first hinge, and
 said second end of said two front arms each comprise a second hinge; 10

said two rear arms each comprise a first end and a second end;
 said first end of said two rear arms each comprise a third hinge, and
 said second end of said two rear arms each comprise a fourth hinge; 15

said first hinge rotateably attaches said two front arms to said sides of said toolbox, wherein
 said two front arms rotate about said first hinge and remain attached to said sides of said toolbox; 20

said second hinge rotateably attaches said two front arms to said sides of said pivoting rack, wherein
 said pivoting rack and said two front arms selectively rotate relative to one another around said second hinge; 25

said third hinge rotateably attaches said two rear arms to said sides of said pivoting rack, wherein
 said two rear arms and said pivoting rack rotate relative to one another around said third hinge; 30

said fourth hinge rotateably attaches said two rear arms to said lid, wherein
 said two rear arms and said lid rotate relative to one another around said fourth hinge; 35

said pivoting rack selectively moves horizontally on said one or more wheels;
 transitioning said toolbox from said closed configuration toward said expanded configuration causes
 said one or more wheels to roll back toward said back plate of said toolbox, and 40

said third hinge to raise up relative to said bottom plate; said one or more wheels support a portion of the weight of said pivoting rack without substantially stressing said two front arms and said two rear arms; and said tool box further comprises two supports comprising a first support and a second support; said two support each comprise a first end and a second end; said first ends of said two supports rotateably attach to said sides of said toolbox, wherein said first end of said first support is attached to said first side of said toolbox, and said first end of said second support is attached to said second side of said toolbox; and said second ends of said two supports rotateably attach to said lid of said toolbox; said two supports selectively hold said lid in an open position in said expanded configuration. 55

2. The toolbox of claim 1 further comprising:
 said one or more tracks are arranged as perpendicular with said faceplate with said toolbox in said closed configuration.

3. The toolbox of claim 1 further comprising:
 said body further comprises a one or more handles.

4. The toolbox of claim 1 further comprising:
 said toolbox further comprises a lower tray.

5. The toolbox of claim 1 further comprising:
 said toolbox further comprises a drawer. 60

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6. The toolbox of claim 1 further comprising:
 said toolbox comprises a latching system which comprises a latch and a strike plate; and
 further, said latching system comprises a locking mechanism.

7. The toolbox of claim 1 further comprising:
 and said faceplate selectively rotates on a second hinge relative to said lid;
 with said toolbox in said closed configuration said faceplate selectively rotates on said second hinge to provide access within said toolbox;
 said closed configuration allows for access to tools within said toolbox; and
 said faceplate opens with said toolbox in said closed configuration which allows a drawer to be rolled out and accessed with said toolbox in a low profile.

8. The toolbox of claim 1 further comprising:
 said pivoting rack comprises a one or more pegs and/or a one or more slots which are configured to selectively hold a one or more tools.

9. The toolbox of claim 1 further comprising:
 said toolbox further comprises a drawer;
 said drawer comprises a one or more runners;
 said one or more runners releaseably attach to a one or more tracks within said body; and
 said drawer is configured to selectively move relative to said bottom plate on said one or more tracks.

10. The toolbox of claim 1 wherein:
 said two front arms and said two rear arms comprise planar levers fixed between portions of said body and are configured to guide a movement path of said pivoting rack as between said closed configuration and said expanded configuration.

11. The toolbox of claim 1 wherein:
 said toolbox further comprise a two brackets;
 said two brackets attach to said sides of said body and comprise a first outer bracket and a second outer bracket;
 said first outer bracket attaches to said first side of said body and said second outer bracket attaches to said second side of said body; and
 said first hinge of said two front arms attach to said two brackets in order to rotateably attach to said sides of said body, wherein
 said first outer bracket attaches to said first side of said body and said first end of said first front arm at said first hinge, and
 said second outer bracket attaches to said second side of said body and said first end of said second front arm at said first hinge.

12. The toolbox of claim 1 wherein:
 said pivoting rack comprises a front side and a back side;
 said second hinge of said two front arms rotateably attach to said front side of said pivoting rack;
 said one or more wheels are attached to a bottom corner of said pivoting rack on said front side of said pivoting rack
 said third hinge of said two rear arms rotateably attach to said back side of said pivoting rack; and
 with said pivoting rack in said expanded configuration, said front side is rolled back toward said back plate on said one or more wheels and
 said back side of said pivoting rack is elevated up toward said lid of said body.

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