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NOTICE OF ALLOWANCE AND FEE(S) DUE

15979 7590 11/04/2019
Steven M. War
McNeely, Hare & War LLP
5335 Wisconsin Ave, NW, Suite 440
Washington, DC 20015

Table with 2 columns: EXAMINER (RODDEN, JOSHUA E), ART UNIT (3649), PAPER NUMBER (9839)

DATE MAILED: 11/04/2019

Table with 5 columns: APPLICATION NO. (15/799,391), FILING DATE (10/31/2017), FIRST NAMED INVENTOR (ROBERT JAMES MACLEAN), ATTORNEY DOCKET NO. (RM1010.001), CONFIRMATION NO. (9839)

TITLE OF INVENTION: ANTI - TERRORISM / ANTI - PERSONNEL MOBILE COMMERCIAL PASSENGER AIRCRAFT PHYSICAL FLIGHT DECK / COCKPIT SECONDARY BARRIER GALLEY CART / AIRCRAFT SECONDARY BARRIER CART ((ASBC)

Table with 7 columns: APPLN. TYPE (nonprovisional), ENTITY STATUS (MICRO), ISSUE FEE DUE (\$250), PUBLICATION FEE DUE (\$0.00), PREV. PAID ISSUE FEE (\$0.00), TOTAL FEE(S) DUE (\$250), DATE DUE (02/04/2020)

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**

By fax, send to: (571)-273-2885

**INSTRUCTIONS:** This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

15979                      7590                      11/04/2019  
**Steven M. War**  
**McNeely, Hare & War LLP**  
**5335 Wisconsin Ave, NW, Suite 440**  
**Washington, DC 20015**

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/799,391	10/31/2017	ROBERT JAMES MACLEAN	RM1010.001	9839

**TITLE OF INVENTION:** ANTI - TERRORISM / ANTI - PERSONNEL MOBILE COMMERCIAL PASSENGER AIRCRAFT PHYSICAL FLIGHT DECK / COCKPIT SECONDARY BARRIER GALLEY CART / AIRCRAFT SECONDARY BARRIER CART ((ASBC))

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	\$250	\$0.00	\$0.00	\$250	02/04/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
RODDEN, JOSHUA E	3649	244-121000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

4a. Fees submitted:  Issue Fee  Publication Fee (if required)  Advance Order - # of Copies \_\_\_\_\_

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- Electronic Payment via EFS-Web  Enclosed check  Non-electronic payment by credit card (Attach form PTO-2038)
- The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. \_\_\_\_\_

5. Change in Entity Status (from status indicated above)

- Applicant certifying micro entity status. See 37 CFR 1.29
- Applicant asserting small entity status. See 37 CFR 1.27
- Applicant changing to regular undiscounted fee status.

**NOTE:** Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.  
**NOTE:** If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.  
**NOTE:** Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

**NOTE:** This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 15/799,391, 10/31/2017, ROBERT JAMES MACLEAN, RM1010.001, 9839
Row 2: 15979, 7590, 11/04/2019, Steven M. War, McNeely, Hare & War LLP, 5335 Wisconsin Ave, NW, Suite 440, Washington, DC 20015
Row 3: EXAMINER RODDEN, JOSHUA E
Row 4: ART UNIT 3649, PAPER NUMBER

DATE MAILED: 11/04/2019

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**Notice of Allowability**

<b>Application No.</b> 15/799,391	<b>Applicant(s)</b> MACLEAN, ROBERT JAMES	
<b>Examiner</b> JOSHUA E RODDEN	<b>Art Unit</b> 3649	<b>AIA (FITF) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1.  This communication is responsive to 10/17/19.  
 A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
- 2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 3.  The allowed claim(s) is/are 1-16. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
- 4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

- a)  All      b)  Some      \*c)  None of the:
  - 1.  Certified copies of the priority documents have been received.
  - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 5.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
 including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
- 6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- 1.  Notice of References Cited (PTO-892)
- 2.  Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 10/17/19.
- 3.  Examiner's Comment Regarding Requirement for Deposit of Biological Material \_\_\_\_\_.
- 4.  Interview Summary (PTO-413), Paper No./Mail Date. 10/24/19.
- 5.  Examiner's Amendment/Comment
- 6.  Examiner's Statement of Reasons for Allowance
- 7.  Other \_\_\_\_\_.

/JOSHUA E RODDEN/  
Primary Examiner, Art Unit 3649

## DETAILED ACTION

### *Notice of Pre-AIA or AIA Status*

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

## EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Authorization for this examiner's amendment was given in an interview with Steven War on 10/24/19. The application has been amended as follows:

3. The claims as filed on 10/17/19 have been amended as follows:

(1) Claim 8, Line 5, before "tightened", replace "at" with --are--

(2) Claim 8, Lines 7-9, replace "additional retractable cables wherein said two additional retractable cables are tightened by a second ratcheting system ." with --sewn-in net safety hooks affixed to said bulkheads.--

(3) Claim 14, Line 1, replace "consisting of" with --comprising--

(4) Claim 14, Lines 3-4, replace "an aircraft" with "the aircraft"

(5) Claim 14, Line 5, before "flight deck" replace "a" with --the--

(6) Claim 16, Line 2, replace "tightening a second ratcheting system." with --sewn-in net safety hooks affixed to said bulkheads.--

4. The specification:

(7) The clean version of the specification as filed on 10/17/19 is the specification to be entered into the resulting patent.

(8) The clean copy of the specification as filed on 10/17/19 has been amended as follows:

(9) Page 1, Line 20, replace "known" with --known--

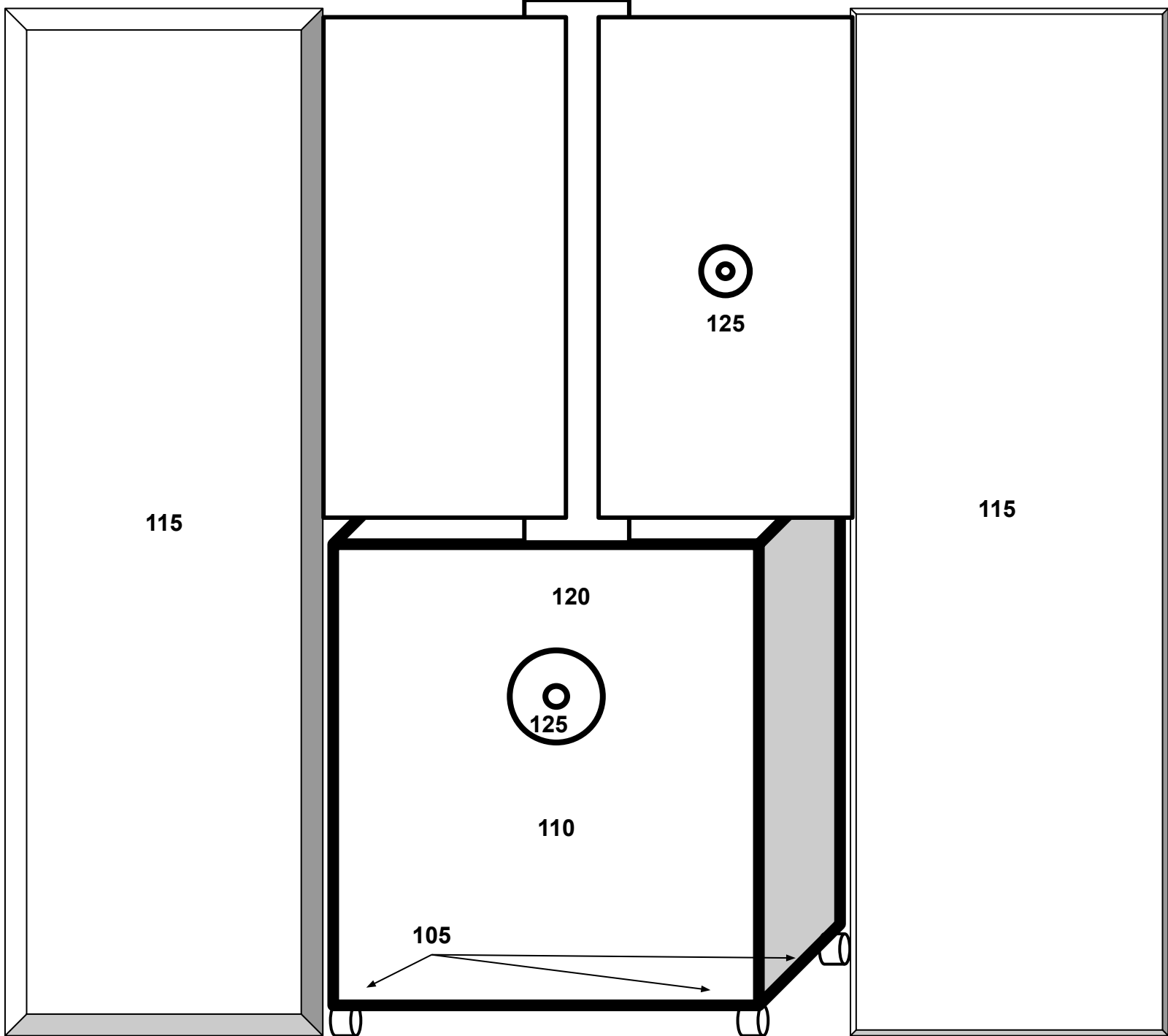
(10) Page 6, Line 1, replace "is\_long" with --is long--

(11) Page 7, Line 17, replace "deployed," with --deployed;--

(12) Page 8, Last Line, replace "125 has" with --125 has--

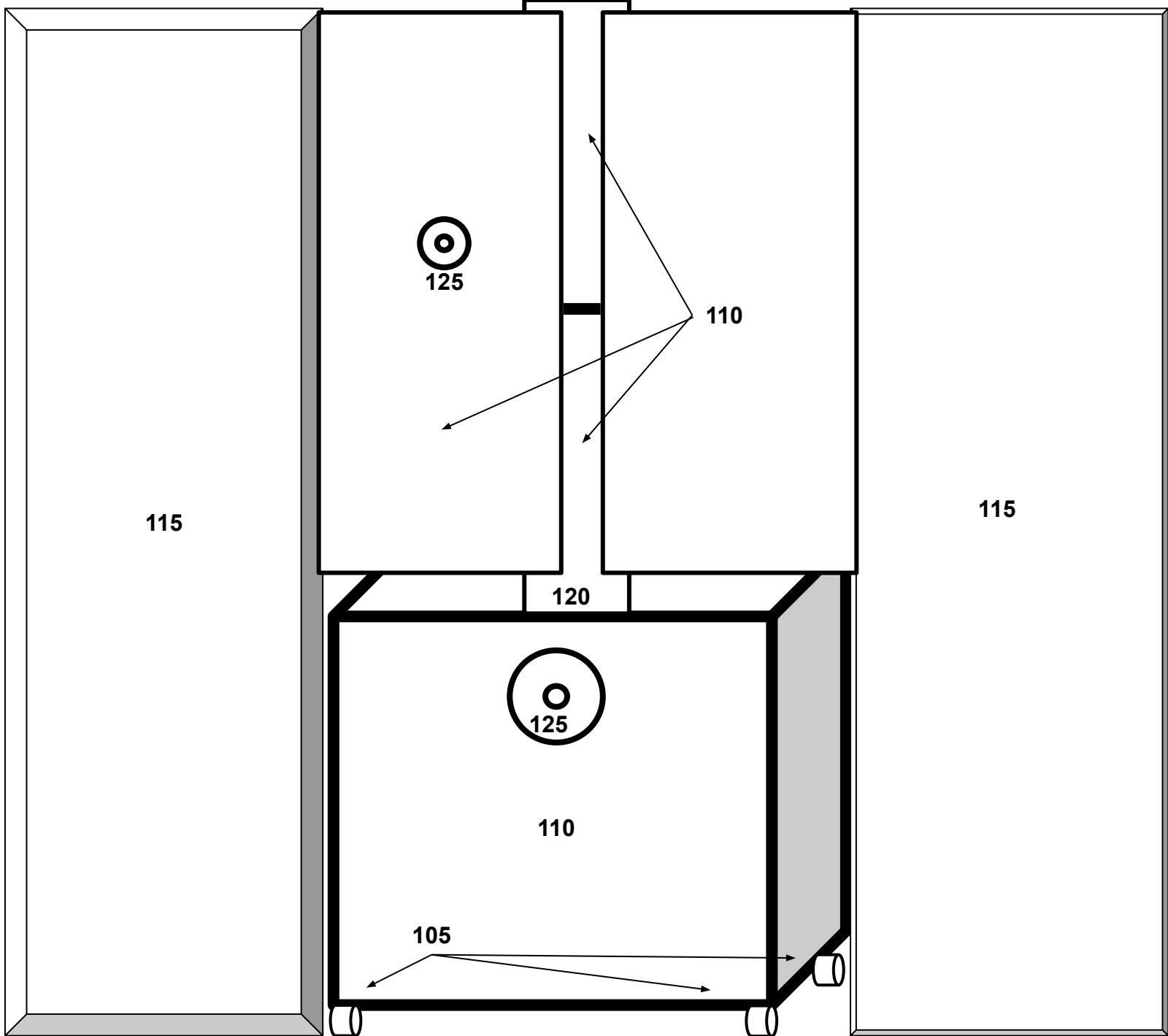
(13) Page 9, Line 13, delete "215"

/JOSHUA E RODDEN/  
Primary Examiner, Art Unit 3649



**Collapsible Rigid Bullet-Proof Modular Cockpit Flightdeck Secondary Barrier Concept**



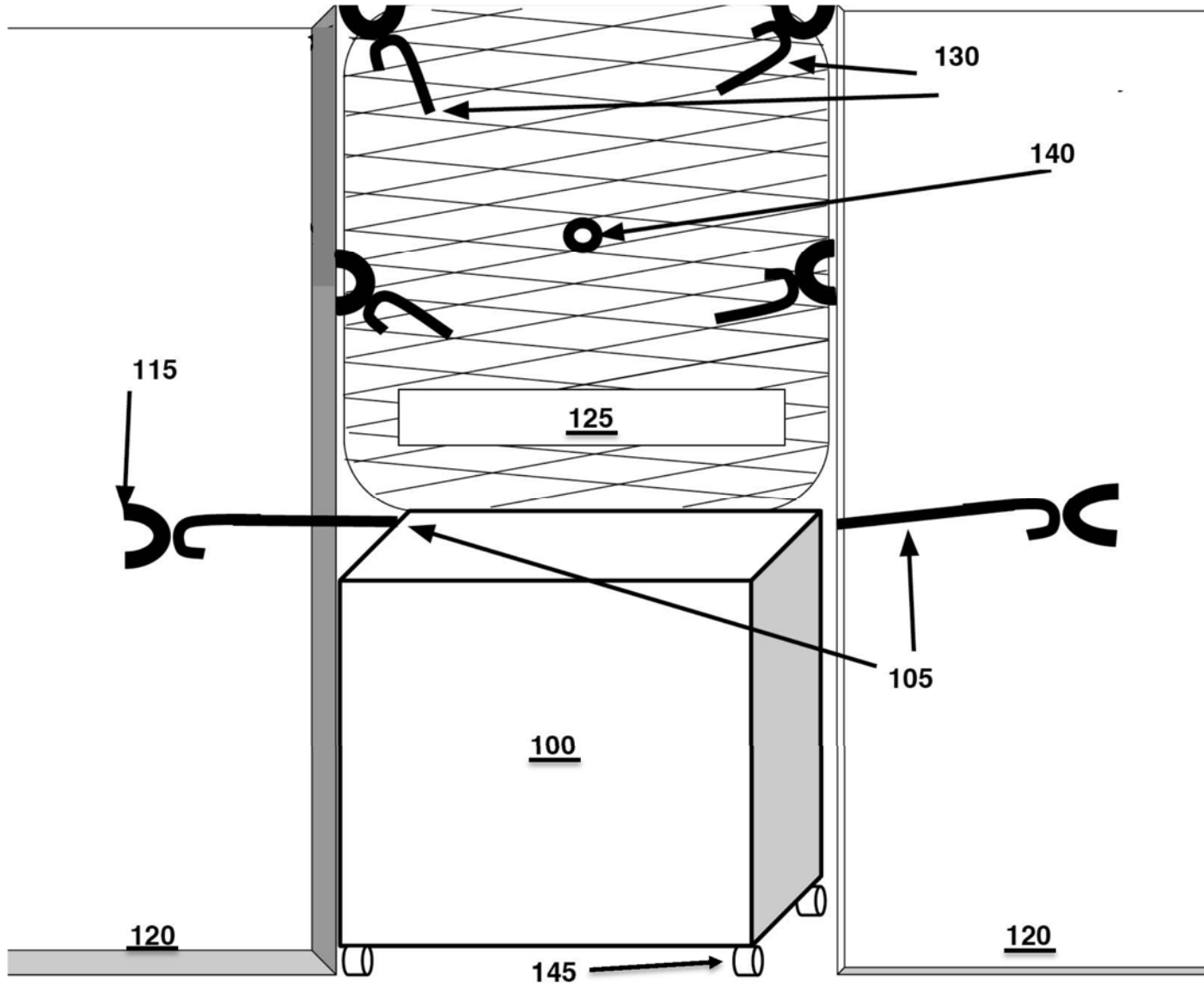


**Collapsible Rigid Bullet-Proof Modular Cockpit Flightdeck Secondary Barrier Concept**

REPLACEMENT SHEET

1/2

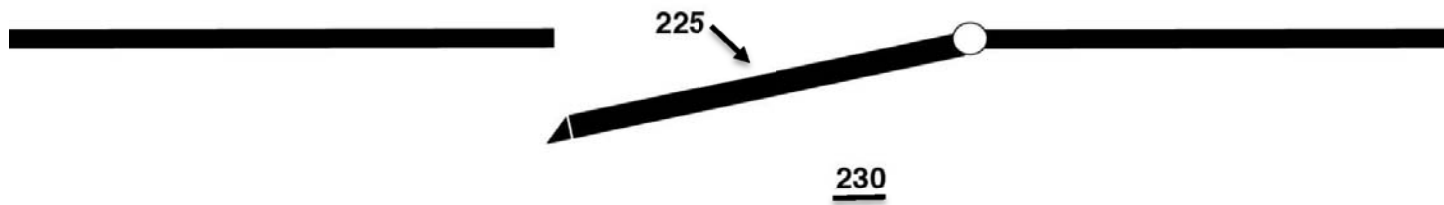
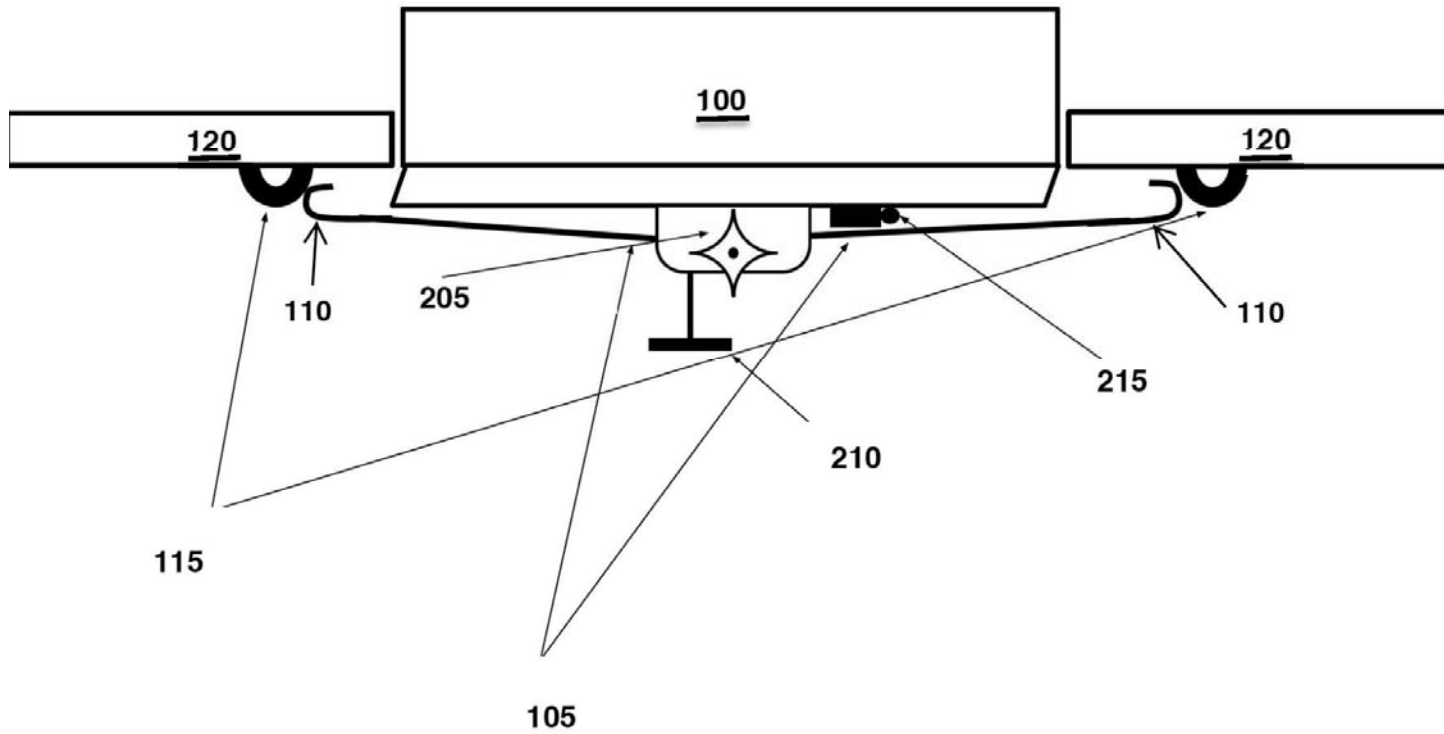
Figure 1



REPLACEMENT SHEET

2/2

Figure 2



Anti - Terrorist Anti - Personnel Mobile Commercial Passenger Aircraft Physical Flight Deck / Cockpit Secondary Barrier Forward Galley Cart / Aircraft Secondary Barrier Cart (ASBC)

Description:

Solo suicidal terrorist attacks, also known as “lone-wolf attacks,” are becoming more common daily. “Lone-wolf attacks” are delivered by such means as Improvised Explosive Devices (IED) worn on the body or contained in a vehicle, or driving a speeding vehicle into a crowd of victims.

Suicidal “lone-wolf attacks” on commercial passenger aircraft (aircraft) are a very real threat because of the inability of detection by airport security screening machines, airport screeners, law enforcement, and the Intelligence Community. Firearms pose less of a threat because of their detectable metallic parts, the fear of extinguishing all ammunition and being restrained, and the limited killing ability—a standard semiautomatic pistol’s 18 rounds cannot neutralize a single-aisle aircraft of over 100 passengers. Building, hiding, and smuggling IEDs requires special material, numerous experts, and planning—such a major operation and its operatives are likely to be detected.

After the September 11, 2001 terrorist attacks (9/11), a pilot will not risk total destruction of the aircraft by unlocking the Flight Deck under duress.

Sprinting and diving into a Flight Deck, also known as a “cockpit,” only needs one attacker and one opportunity when a pilot enters the cabin during flight to use the lavatory, obtain sustenance, or crew-rest.

This perfectly effective inflight security invention is a relatively inexpensive mobile commercial passenger aircraft galley cart physical secondary barrier to stop an individual from sprinting and diving into an unlocked flight deck in order to destroy the aircraft during flight.

Technical Field:

Currently most commercial passenger aircraft (aircraft) do not have a secondary barrier system to prevent an individual from sprinting and diving into the Flight Deck during flight.

Background Art:

NOT APPLICABLE

Summary of Invention:

A mobile secondary barrier system to prevent an individual from sprinting and diving into a commercial passenger aircraft Flight Deck in order to destroy the aircraft while in flight.

Technical Problem:

Most commercial passenger aircraft do not have a secondary barrier system to prevent an individual from sprinting and diving into a Flight Deck in order to destroy the aircraft while in flight.

Despite 9/11, air carriers do not build Flight Deck secondary barriers into the vast majority of newly manufactured aircraft. Until there is a regulatory or legal mandate to build barriers into brand new cabins, thousands of existing aircraft cannot be cost effectively retrofitted.

A Flight Deck secondary barrier is needed to stop an attacking individual for at least five seconds so that a pilot can close the Flight Deck door and emergency land the aircraft. Due to 9/11, all Flight Deck doors can withstand—a strong individual trying to break it down—long enough to emergency land.

Inward-opening Flight Deck doors are exceptionally more vulnerable to an attack because the door swings against a pilot the moment he/she opens it. An attack on an outward-opening door gives a crew member the chance to use his/her backside to close it in which the frame reinforces the door. An attack on an outward-opening doored Flight

Deck requires the attacker to have to wedge himself between the door and the frame if he cannot dive into the Flight Deck semi-impeded or unimpeded. Only spring-latches protect Flight Decks with an inward-opening door. There are approximately 1,187 existing aircraft with inward-opening doors.

Most aircraft that fly over large bodies of water are wide-body (two aisles). It is more difficult to attack the Flight Deck on a wide-body aircraft than a single-aisle one due to the extra distance between the Flight Deck entrance and the first row in the cabin.

The existing Garofani Installed Physical Secondary Barrier (GGIPSB) system (Patent Publication No. US20060000946 — Inventors Primo, Dante, and Renato Garofani) is expensive to manufacture, install, and maintain due to its relatively excessive weight and bulkiness, and the fact it has to be built into the aircraft.

The GIPSB is installed in the busiest choke-point of the aircraft: to the right of the main aircraft entry door and inside of the forward galley entrance.

Once the GIPSB has been installed, it gets degraded after being subjected to usage during DT deployments. The GIPSB stows into the forward galley entrance causing it to protrude into the aisle hence causing it to be exposed to all of the passengers, luggage, and galley carts. Due to it being in the busiest transit area of the aircraft, the GIPSB also gets damaged by passengers accidentally hitting it with their carry-on luggage or the flight crew running into it with sustenance galley carts.

An inoperable GIPSB not only leaves the aircraft vulnerable to destruction, but it takes the aircraft out of service for an extended duration: While an GIPSB maintenance order is drafted and transmitted by an aircrew member, an GIPSB technician gets dispatched, a technician assesses the damage, a technician orders the GIPSB parts, the parts may have to be manufactured if not in stock, and finally, the time it takes to repair and/or replace the GIPSB. Because the GIPSB has to be glued, riveted, or screwed into the aircraft cabin, there also exists the potential of damage to the cabin which would also need repair.

An inoperable GIPSB takes an aircraft temporarily out of service and reduces air carriers' profits.

Another danger posed the GIPSB's very large main-housing attached to the cabin can collapse during severe turbulence or a hard-landing and prevent emergency egress through the aircraft's main choke-point and exit.

Most aircraft rely on the current inferior method of a flight attendant standing in front of the Flight Deck door with or without a standard sustenance galley cart in front of him/her. There is also a reliance of government air marshals who are rarely on flights and when they are aboard, they cannot respond fast enough to an attacker sprinting and diving into the Flight Deck.

Between 2009 and 2011, the volunteer, non-profit organization, "Radio Technical Commission for Aeronautics" (RTCA) conducted a study and issued a report on September 28, 2011 titled, "Aircraft Secondary Barriers and Alternative Flight Deck Security Procedures (RTCA DO-329)."

RTCA DO-329 concluded that not having a secondary barrier physically mounted or mechanically attached to the cabin could result in an attacker crashing an aircraft. The method of an aircrew member standing in front of a standard sustenance galley cart or no cart was defeated by padded-up role players who were likely unwilling to attack a simulated flight deck at full speed and strength and subject themselves to injury. The role-player U.S. Department of Homeland Security / Transportation Security Administration (TSA) / Federal Air Marshal Service (FAMS) Federal Air Marshals (FAM) also anticipated a sprint-dive-attack. FAMs in a real world scenario are subjected to cabin noise, seat-belted, distracted with reading or watching video, or are taking an authorized nap.

The results of RTCA DO-329 were so disturbing, the TSA and the U.S. Department of Transportation / Federal Aviation Administration redacted the report and marked it as "SENSITIVE SECURITY INFORMATION."

Until March 2, 2016, the unredacted RTCA DO-329 was withheld from TSA-FAMS

Supervisory Federal Air Marshals in charge of field offices' training divisions, TSAFAMS trainers, and rank-and-file TSA FAMs who routinely fly protective missions while armed with firearms.

Four of the five role-player FAMs in the RTCA DO-329 study are supervisory or managerial FAMs, some of whom have since been promoted.

While the RTCA DO-329 invited air carrier representatives, and pilots and flight attendants union representatives, it did not invite any professional law enforcement non-union organizations who lobby on behalf of FAMs. Such organizations are the Fraternal Order of Police, the Federal Law Enforcement Officers Association, and the Air Marshal Association. FAMs cannot form common bargaining-unit unions that have contracts with U.S. Government agency senior leadership.

Due to human error, sometimes pilots exit and enter the Flight Deck without establishing any type of human or combination of human and standard sustenance galley cart barrier.

The RTCA DO-329 study concluded that an installed physical secondary barrier needs to only stop an attacker for at least five seconds so that a pilot can lock the reinforced Flight Deck door, begin emergency landing, and potentially armed himself/herself with a Federal Flight Deck Officer firearm in its locked container in the case the attacker breaches both the barrier and the door.

Solution to Problem:

Anti-Terrorist Anti-Personnel Mobile Commercial Passenger Aircraft Physical Secondary Barrier Forward Galley Cart — Aircraft-Secondary-Barrier-Cart (ASBC) is 100% effective in stopping an attack on the Flight Deck and is exceptionally more inexpensive than the GIPSB.

As proven by the RTCA DO-329 study, a Flight Deck installed physical secondary barrier does not need to be impenetrable, it only needs to stop an attacker for at least



five seconds which is long enough for the pilot to lock the reinforced Flight Deck door and quickly emergency land. If the attacker breaks down the ASBC and the reinforced Flight Deck door, enough time will have elapsed for the pilot to unlock a Federal Flight Deck Officer firearm's container, load it with ammunition, and have it ready for a Flight Deck breach.

The ASBC looks very similar to a sustenance galley cart except that it locks into the forward galley entrance, its top opens, inside is an expandable rigid or fabric/net barrier, the barrier then can be folded out (rigid) and/or hooked around (fabric/net) the top portion of the forward galley entrance.

A fabric/net barrier is more advantageous to a rigid one to its light weight and ability to easily see an imminent attack through it. A rigid barrier would need to be clear plexiglass or require a peep-hole.

The ASBC transforms into a commercial aircraft forward galley entrance physical secondary barrier that can instantly be replaced after landing if it malfunctions. The ASBC will not only save on government armed air marshal deployment costs, but will 100% eliminate the danger to aircraft flight decks — also known as cockpits — during inflight Flight Deck entries or exits during flight. The dividend would also substantiate allowing more FAMs to detect “lone-wolf attackers,” and conduct IED prevention, counterterrorism, and insider--threat search activities in our mass-transit centers.

Advantageous Effects of Invention:

The ASBC system is considerably less expensive than the GIPSB's for the fact the cabin would only need a tiny alteration: the two small loops installed into the galley entrance to lock the ASBC into place, and the three loops to hook a fabric net into the cabin ceiling.

Maintenance of the ASBC saves air carrier costs because it can be instantly replaced after landing without a technician, parts order, cabin repair, and the time needed to

repair or replace a damaged or inoperable GIPSB.

Due to the GIPSB over-engineering, i.e. retractable cables and female/male locking mechanisms, air turbulence could also cause it to become inoperable during flight.

Due to an GIPSB being in the area of the highest passenger, carry-on luggage, and sustenance galley cart traffic that could accidentally damage and render it inoperable, it presents a vulnerability to the Flight Deck due to the fact it cannot be repaired or replaced until after landing.

The ASBC is stowed in the forward galley and cannot be damaged by passenger and equipment traffic.

Premeditating his attack, an attacker can chemically (glue) or mechanically sabotage an GIPSB while crew members and passengers are distracted, or when cabin lights are dimmed or off. Such an opportunity is likely while the attacker stands next to the GIPSB waiting to use the lavatory inside of the forward galley.

Brief Description of Drawings:

Figure 1 shows the ASBC's main-housing, as seen from the main cabin, which can be an oval cylinder or rectangular box on wheels with a hinged lid to top that folds toward the Flight Deck when deployed,

Figure 2 shows an aerial view of the ASBC's main-housing constructed of a combination of steel, high-grade polymer, alloy, and carbon-fiber.

On the side that faces the Flight Deck when it is deployed, the Aircraft Secondary Barrier Cart (ASBC)'s main-housing 100 has two retractable cables 105 with metallic safety-hooks 110 at the ends that connect to the two female loops 115 behind each bulk-head 120 on each side of the ASBC. Once the two retractable cables 105 are deployed, it becomes more difficult for an attacker to tip the ASBC 100 over like a standard sustenance galley carts used for the current method. The female loops 115 may be spring-loaded recessed D-rings and are used for connecting the ratcheting system cables. Preferably two female loops 115 would be located inside the galley. The

retractable cables 105 are ratcheting system stretching steel cables with safety-hooks 110 and are located inside the galley.

The two ASBC retractable (main-housing) cables have a ratcheting system 205 (Figure 2) in order to stabilize and strengthen the ASBC's stability after deployment. The ratcheting system 205 is on the backside of the ASBC facing the Flight Deck. The ratcheting system 205 has a release lever to disengage the ASBC's two main-housing cables before stowage.

In the case that the ratcheting system 205 malfunctions and cannot be disengaged, an emergency "T"-handle Hex Key tool 210 is attached to the Flight Deck door side of the ASBC's main-housing and can be used to release the ratcheting system's locking mechanism. Figure 2 shows the Emergency Release Hex Key 210 in an "engaged" position.

The ratcheting system 205 should be concave for easier stowage. Figure 2 (the aerial view drawing) reflects a convex system for easier comprehension.

Inside of the ASBC 100 is an attached folding-barrier 125 made of steel, alloy, ceramic, carbon fiber, polymer, clear plexiglass, or a cloth-type curtain or a cloth-type net; the folded barrier 125 may be a combination of the aforementioned materials.

If the ASBC's folding-barrier 125 is made of a cloth-like curtain or net, it has elastic and polymer safety-hooks 130 sewn in. When the curtain or net 125 gets expanded, its safety-hooks 130 attach to several female loops 135 riveted into the upper portion of the forward galley entrance. The female loops may be spring-loaded recessed D-rings. The rigid version of the folding-barrier 125 includes a peep-hole 140.

A cloth-like folding-barrier has drawstrings that can be pulled to stiffen the ASBC's 100 barrier.

A rigid ASBC folding-barrier 125 has to be tall enough to prevent an attacker from diving

over it and into an unlocked Flight Deck. On the bottom of the ASBC 100 wheels 145 are included to easily move the ASBC 100.

An air carrier has the option to request that the ASBC's folding-barrier 125 be projectile-proof from firearms or an IED.

Due to the numerous different types of aircraft and cabin configurations, the size of the ASBC's main-housing and folding-barriers vary.

The ASBC 100 main-housing's height should be a minimum of 100 cm and width of 25 cm.

The ASBC 100 has a panic-button covered with a protective hinged cover 215. The panic-button would allow a crewmember to engage a very loud electronic alarm so that the pilot can lock the Flight Deck and emergency land.

The aerial view of the ASBC 100 (Figure 2) shows the positioning of the ASBC 100 between the main passenger cabin 215 and the forward galley area 220 so that the ASBC 100 is positioned in front of the flight deck door 225 (Figure 2 shows an inward facing flight deck door) which leads to the flight deck 230.

Industrial Applicability:

Commercial Passenger Aircraft



## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	37492636
<b>Application Number:</b>	15799391
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9839
<b>Title of Invention:</b>	Anti - Terrorism / Anti - Personnel Mobile Commercial Passenger Aircraft Physical Flight Deck / Cockpit Secondary Barrier Galley Cart / Aircraft Secondary Barrier Cart ((ASBC)
<b>First Named Inventor/Applicant Name:</b>	ROBERT JAMES MACLEAN
<b>Customer Number:</b>	15979
<b>Filer:</b>	Steven M. War/Christine Kenedy
<b>Filer Authorized By:</b>	Steven M. War
<b>Attorney Docket Number:</b>	RM1010.001
<b>Receipt Date:</b>	17-OCT-2019
<b>Filing Date:</b>	31-OCT-2017
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<b>Application Type:</b>	Utility under 35 USC 111(a)

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1	Drawings-only black and white line drawings	Figure1_CABIN_VIEW_with_numbers_only_20191016.pdf	135116	no	1
			7f753b4ab6ab354dd803f0a76d18a936c1c99a37		

**Warnings:**

**Information:**

2	Drawings-only black and white line drawings	Figure2_aerial_view_numbers_only_changes_20191016.pdf	100179	no	1
			e0a3ef82305d442ece0ed899ac0f419494ddfc6b		

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4	Specification	RM1010001_CleanSubSpec_ResptoOA.pdf	80852	no	10
			db151222a376d37cb586f1b5fcf1e47dff175fe7		

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5	Information Disclosure Statement (IDS) Form (SB08)	RM1010011_IDS.pdf	114015	no	1
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6	Non Patent Literature	RTCA_DO_329.pdf	105377	no	1
			499d75f1a5ddd5c91b97e6ac2286769712b3642e		

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7	Amendment/Req. Reconsideration-After Non-Final Reject	RM1010001_ResponsetoOA_10172019.pdf	44666	no	9
			8afee0880b9f1c9f02742850592849cf28e4f586		

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8	Fee Worksheet (SB06)	fee-info.pdf	32975	no	2
			95dafbc676cf499c8bb3b9c5c6f73afa0a2f85fa		

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**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**