

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOUGHBUILT INDUSTRIES, INC.,
Petitioner

v.

MERIDIAN INTERNATIONAL CO., LTD.,
Patent Owner

Case IPR2025-01461
U.S. Patent No. 11,986,946

**DECLARATION OF J. MICHAEL MCCARTHY PH.D IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT
NO. 11,986,946**

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ToughBuilt EX1003
ToughBuilt v. Meridian
IPR2025-01461

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5.	[1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;	202
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I, Dr. J. Michael McCarthy, hereby declare as follows.

I. INTRODUCTION

1. I have been retained as an expert witness on behalf of Petitioner ToughBuilt Industries, Inc. (“Petitioner”) for the above-captioned *inter partes* review (IPR). I am being compensated for my time in connection with this IPR at my standard consulting rate.

2. I understand that this Declaration accompanies a petition for IPR involving U.S. Patent No. 11,986,946 (“the ’946 patent”) (EX1001), which resulted from U.S. Patent Application No. 18/518,200 (“the ’200 application”), filed on November 22, 2023. Based on Chinese Application 202210212862.5, I understand that the ’946 patent’s earliest possible priority date is March 4, 2022. I refer to this date throughout this Declaration.

3. In preparing this Declaration, I have reviewed the ’946 patent and each of the documents cited herein, in light of general knowledge in the art before March 4, 2022. In formulating my opinions, I have relied upon my experience, education, and knowledge in the relevant art. In formulating my opinions, I have also considered the viewpoint of a person of ordinary skill in the art at the time of the invention (“POSA”).

II. MY BACKGROUND AND QUALIFICATIONS

4. My complete qualifications and professional experience are described

in my Curriculum Vitae, a copy of which can be found in Exhibit 1004. The following is a brief summary of my relevant qualifications and professional experience.

5. I am a Distinguished Professor in Mechanical and Aerospace Engineering in the Henry Samueli School of Engineering at the University of California, Irvine. I am the past Director of UCI's Performance Engineering Program and former Director of the Center for Engineering Science in Design at the University of California, Irvine, which supports the design and execution of team engineering projects across the School of Engineering.

6. I received my B.S. in Mechanical Engineering from Loyola Marymount University, and received my M.S. and Ph.D. at Stanford University, both in Mechanical Engineering.

7. I have taught at Loyola Marymount University and the University of Pennsylvania before joining UCI in 1986. In winter 2018, I was a Visiting Professor at Stanford University and taught a graduate course in Kinematic Synthesis of Mechanisms.

8. From 2019-2024, I served as an elected member of the Executive Council of IFTOMM, the International Federation for the Promotion of Mechanisms and Machine Science. I am a co-founder and co-organizer of the Biannual USCToMM Symposium on Mechanical Systems and Robotics, and listed

in the 2020 Marquis Who's Who in America, 73rd Edition.

9. I have published over 250 articles and five books including The Geometric Design of Linkages (Springer 2000, 2nd Ed. 2010) and the recent Kinematic Synthesis of Mechanisms: a project based approach.

10. I have served as the Editor-in-Chief of the ASME Journal of Mechanical Design (2002-2007) and I am the founding Editor-in-Chief of the ASME Journal of Mechanisms and Robotics (2007-2014). I serve on the Technical Communications and Publications Committee of ASME International.

11. My research team is responsible for the Sphinx, Synthetica, and MecGen software packages, which extend computer-aided design to spherical and spatial linkage systems and integrate this process with geometric modeling. I have presented tutorials on the design of linkages and robotic systems at ASME and IEEE conferences, including the NSF sponsored 2012 Workshop on 21st Century Kinematics.

12. In addition to working on many projects for local industry, I served as Chief Technical Officer of Accuray Incorporated to assist the transition of a robotic radiosurgery system from research to market. I have served two terms as Chair of the Board of Governors for the Southern California Section of SAE international and as the Secretary for the Orange County Engineering Council.

13. Over the past 20 years at UCI, I have focused on developing

engineering leadership through student design and execution of major engineering projects. I introduced project engineering courses for graduate students, seniors, and freshman at UCI and provided course materials for racecar engineering courses in local high schools, including a Summer Program for Racecar Engineering. I organized the UCI Energy Invitational racecar energy time trial and the UCI Rescue Robotics competition for local High School engineering teams from 2010 until 2019.

14. My education, work, teaching and research have helped me develop a broad base of knowledge regarding machine design and the design of mechanical systems. This field of technology encompasses automotive and robotic systems, and includes articulated devices such as latches and closures.

III. SUMMARY OF OPINIONS

15. In forming my opinions about the '946 patent, I have considered the following grounds of unpatentability. Based on my review of the prior art references that form the basis of these grounds, it is my opinion that claims 1-16 of the '946 patent are invalid based on the following anticipation and obviousness grounds:

Ground	Basis	Claims	References
1A	§102	1-4, 7-12, 15	Li
1B	§103	1-4, 7-12, 15	Li

1C	§103	5-6, 13	Li, Burchia, Hammond
1D	§103	14, 16	Li, Davidian
2A	§102	1-4, 7-12, 15	Baruch
2B	§103	1-4, 7-12, 15	Baruch
2C	§103	5-6, 13	Baruch, Burchia, Hammond
2D	§103	14, 16	Baruch, Davidian

16. I have been asked to consider how a POSA would have understood the challenged claims in light of the disclosures of the '946 patent. I have also been asked to consider how a POSA would have understood the prior art references listed in the table above.

17. Further, I have been asked to consider and provide my technical review, analysis, insights, and opinions regarding whether a POSA would have found the claims 1-16 anticipated or obvious in view of the prior art references and combinations listed in the table above prior to March 4, 2022.

IV. MATERIALS CONSIDERED

18. In formulating my opinions, I have relied upon my training, knowledge, and experience that are relevant to the '946 patent. I have also reviewed and am familiar with the following documents and materials in addition to any other documents cited in this declaration:

Exhibit No.	Description
1001	U.S. Patent No. 11,986,946 B2 to Zhang et al., issued May 21, 2024 (“the ’946 patent”)
1002	File History of U.S. Patent No. 11,986,946
1004	<i>Curriculum Vitae</i> of J. Michael McCarthy, Ph.D.
1005	Chinese Patent Application No. 202210212862.5, filed March 4, 2022
1006	Chinese Patent Application No. 202320135456.3, filed January 13, 2023
1007	U.S. Patent Application Publication No. 2022/0396985 A1 to Li et al., published December 15, 2022 (“Li”)
1008	U.S. Patent Application Publication No. 2020/0329837 A1 to Burchia, published October 22, 2020 (“Burchia”)
1009	U.S. Patent Application Publication No. 2023/0340804 A1 to Hammond et al., published October 26, 2023 (“Hammond”)
1010	PCT Publication No. WO 2021/150410 A1 to Hammond et al., published July 29, 2021 (“Hammond PCT”)
1011	U.S. Patent Application Publication No. 2021/0221561 A1 to Davidian et al., published July 22, 2021 (“Davidian”)
1012	U.S. Patent Application Publication No. 2020/0298392 A1 to Baruch et al., published September 24, 2020 (“Baruch”)
1013	“Standard Handbook of Machine Design” by Shigley – 2 nd Edition
1014	“University Physics Volume 1” Ling et al. (OpenStax)
1015	Declaration of Timothy L. Tang
1016	U.S. Patent No. 5,934,466 to Loeffler, issued August 10, 1999 (“Loeffler”)

Exhibit No.	Description
1017	U.S. Patent Application Publication No. 2003/0094392 A1 to Meier et al., published May 22, 2003 (“Meier”)
1018	U.S. Patent Application Publication No. 2019/0291922 A1 to Gonitiner et al., published September 26, 2019 (“Gonitiner922”)
1019	U.S. Patent Application Publication No. 2019/0002004 to Brunner, published January 3, 2019 (“Brunner”)
1020	U.S. Patent No. 9,725,209 B1 to Ben-Gigi, issued August 8, 2017 (“Ben-Gigi”)
1021	U.S. Patent Application Publication No. 2023/0238755 A1 to Shabtai et al., published July 27, 2023 (“Shabtai”)
1022	U.S. Patent Application Publication No. 2020/0165036 to Squiers et al., published May 28, 2020 (“Squiers”)
1023	U.S. Patent Application Publication No. 2019/0315515 A1 to Gonitiner et al., published September 26, 2019 (“Gonitiner515”)
1024	Non-Infringement and Invalidity Report of J. Michael McCarthy, Ph.D., <i>Meridian Int’l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.)
1025	ToughBuilt – Opening Claim Construction Brief [91], <i>Meridian Int’l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jun. 9, 2025)
1026	Meridian – Opening Claim Construction Brief [92], <i>Meridian Int’l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jun. 9, 2025)
1027	ToughBuilt – Responsive Claim Construction Brief [94], <i>Meridian Int’l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jun. 23, 2025)
1028	Meridian – Responsive Claim Construction Brief [95], <i>Meridian Int’l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jun. 23, 2025)

Exhibit No.	Description
1029	ToughBuilt – Post-Hearing Claim Construction Brief [102], <i>Meridian Int'l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jul. 15, 2025)
1030	Meridian – Post-Hearing Claim Construction Brief [103], <i>Meridian Int'l Co., Ltd. v. ToughBuilt Industries, Inc.</i> , Civil Action No. 8:24-cv-01840 (C.D. Cal.) (Jul. 15, 2025)

19. To the best of my knowledge, the above-mentioned documents and materials are true and accurate copies of what they purport to be. An expert in the field would reasonably rely on them to formulate opinions such as those set forth in this declaration.

V. LEGAL UNDERSTANDING

20. I have also relied upon various legal principles (as explained to me by ToughBuilt's counsel) in formulating my opinions. My understanding of these principles is summarized below.

A. My Understanding of Claim Construction

21. I understand that during an *inter partes* review proceeding, claims are to be construed in light of the specification as would be read by a person of ordinary skill in the relevant art at the time the application was filed. I understand that claim terms are given their ordinary and customary meaning as would be understood by a person of ordinary skill in the relevant art in the context of the entire disclosure. A claim term, however, will not receive its ordinary meaning if

the patentee acted as his own lexicographer and clearly set forth a definition of the claim term in the specification. In this case, the claim term will receive the definition set forth in the patent.

B. My Understanding of Anticipation

22. I understand that a patent claim is unpatentable if every element is actually disclosed in a prior art reference as recited in the claims. The disclosure may be explicit, implicit, or inherent. I understand that a reference is read from the perspective of a person of ordinary skill in the relevant art (“POSA”) at the time of the invention.

C. My Understanding of Obviousness

23. I understand that a patent claim is invalid if the claimed invention would have been obvious to a POSA at the time the application was filed. This means that even if all of the requirements of the claim cannot be found in a single prior art reference that would anticipate the claim, the claim can still be invalid.

24. To obtain a patent, a claimed invention must have, as of the priority date, been nonobvious in view of the prior art in the field. I understand that an invention is obvious when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSA at the time the invention was made.

25. I understand that to prove that prior art or a combination of prior art

renders a patent obvious, it is necessary to:

(1) identify the particular references that, singly or in combination, render the patent obvious;

(2) specifically identify which elements of the patent claim appear in each of the asserted references; and

(3) explain how the prior art references could have been combined in order to create the inventions claimed in the asserted claim.

26. I also understand that prior art references can be combined under several different circumstances. For example, it is my understanding that one such circumstance is when a proposed combination of prior art references results in a system that represents a predictable variation, which is achieved using prior art elements according to their established functions.

27. I also understand that when considering the obviousness of a patent claim, one should consider whether a teaching, suggestion, or motivation to combine the references exists so as to avoid impermissibly applying hindsight when considering the prior art. I understand this test should not be rigidly applied, but that the test can be important to avoid such hindsight.

28. I understand that certain objective indicia can be important evidence as to whether a patent is obvious or nonobvious. Such indicia include:

(1) commercial success of products covered by the patent claims; (2) a long-felt

need for the invention; (3) failed attempts by others to make the invention; (4) copying of the invention by others in the field; (5) unexpected results achieved by the invention as compared to the closest prior art; (6) praise of the invention by the infringer or others in the field; (7) the taking of licenses under the patent by others; (8) expressions of surprise by experts and those skilled in the art at the making of the invention; and (9) the patentee proceeded contrary to the accepted wisdom of the prior art.

29. At this point, I am not aware of any secondary indicia of non-obviousness. But, I reserve the right to review and opine on any evidence of objective indicia of nonobvious that may be presented during this proceeding.

30. I also understand that “obviousness” is a legal conclusion based on the underlying factual issues of the scope and content of the prior art, the differences between the claimed invention and the prior art, the level of ordinary skill in the prior art, and any objective indicia of non-obviousness.

31. For that reason, I am not rendering a legal opinion on the ultimate legal question of obviousness. Rather, my testimony addresses the underlying facts and factual analysis that would support a legal conclusion of obviousness or non-obviousness, and when I use the term obvious, I am referring to the perspective of one of ordinary skill in the art at the time of invention.

D. A Person of Ordinary Skill in the Art

32. I understand that a person of ordinary skill in the relevant art (“POSA”) is presumed to be aware of all pertinent art, thinks along conventional wisdom in the art, and is a person of ordinary creativity—not an automaton.

33. I have been asked to consider the level of ordinary skill in the field that someone would have had at the time the claimed invention was made. In deciding the level of ordinary skill, I considered the following:

- the levels of education and experience of persons working in the field;
- the types of problems encountered in the field; and
- the sophistication of the technology.

34. My opinion below explains how a POSA would have understood the technology described in the references I have identified herein around the March 4, 2022 timeframe, which I have been advised is the earliest possible effective filing date for the ’946 patent. However, my opinions herein would not be affected if the ’946 patent is found to only be entitled to a later effective filing date.

35. Regardless of whether I use “I” or a “POSA” during my technical analysis below, all of my statements and opinions are to be understood to be based on how a POSA would have understood or read a document at the time of the alleged invention.

VI. BACKGROUND OF THE TECHNOLOGY

36. As I further explain in Section VII, the '946 patent describes modular storage boxes and connection mechanisms for attaching modular storage boxes to one another. The claims of the '946 patent broadly recite known features, such as modular boxes that connect via automatic locking parts, which include stopping parts that control the movement of these locking parts. See EX1001, Claims 1, 11, 15. Each of these features (i.e., modular storage boxes, automatic locking mechanisms, and stopping parts to regulate latch motion) were known in the art well before the alleged priority date of the '946 patent.

37. As I further explain below, modular storage boxes were widely known in various fields and widely adopted in both consumer and professional applications. Locking mechanisms that automatically engage or latch when boxes are stacked or joined were also common. Likewise, stopping parts to regulate the movement of such locking mechanisms were standard components in the design of latching or interlocking systems.

A. Stackable Storage Boxes Were Well Known in the Prior Art

38. Prior to the '946 patent, modular storage boxes, which are designed to be stacked or connected together, were widely known and commonly used. These boxes came in many configurations and were commonly used by tradespeople, hobbyists, and consumers for tool storage, transportation, and organization.

39. For example, by 1998, the concept of a “stackable interlocking toolbox” was already known in the art. EX1016, Title. For example, Loeffler—which was filed in January 1998—described “portable toolboxes which stack and interlock.” EX1016, 1:4-5. Loeffler explains that there already existed a well-known “need for a portable, stackable toolbox where several can be combined into a single unit for transportation.” EX1016, 1:45-46. Accordingly, Loeffler explains that:

The toolboxes should be available in a variety of sizes. It should be possible to combine the boxes in any order and in any combination. The *stacked toolboxes should interlock so that the combination can be handled as a single item. It should be possible to easily separate the individual toolboxes for access and so that they can be positioned and stored separately.* Ideally, the toolboxes, individually or as a stack, could be physically secured to a mounting device either in a vehicle or in the shop.

EX1016, 1:45-55 (emphasis added).

40. In view of these design considerations, Loeffler described a “toolbox which utilizes an interlocking configuration of the top and bottom of the sidewalls which allow them to mate together.” EX1016, 1:61-63. “A latching mechanism locks the adjacent boxes in their mating position and can be released to separate the boxes.” EX1016, 1:64-65. “Two boxes can be slid together, with their tongues and grooves matching to form a stacked unit which can be treated as one. By using

the same configuration on all boxes, they can be stacked in any combination and in any order.” EX1016, 2:2-5. Loeffler depicts an example of stacked boxes in Figure 10.

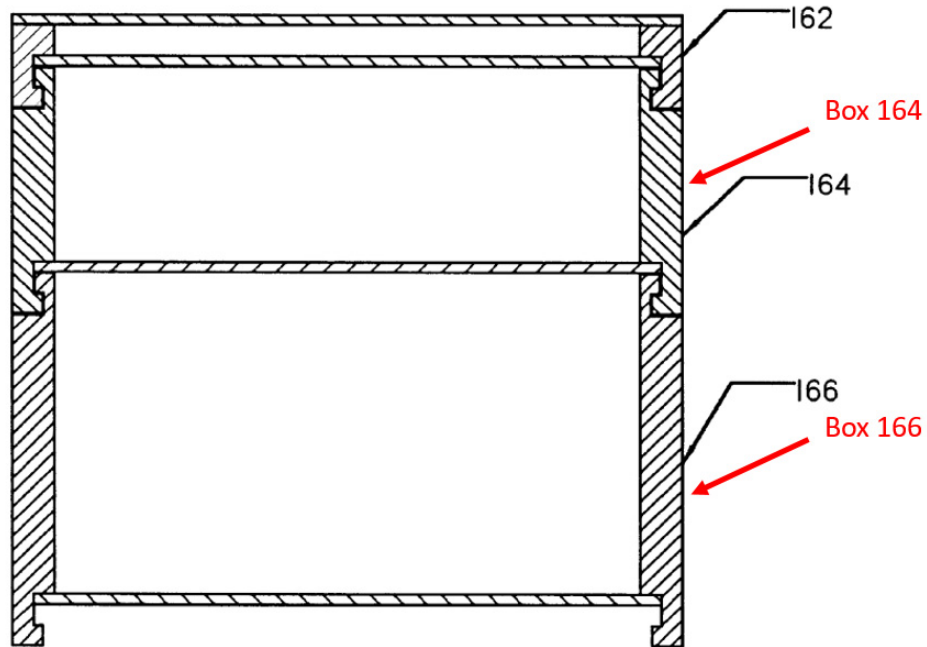


FIG. 10

EX1016, FIG. 10 (annotated).

41. Meier describes a similar “stacking tool case vertically stackable with additional stacking tool cases having an identical configuration.” EX1017, Abstract. Figure 2 from Meier depicts two tool boxes 34, 35 stacked on top of one another with a locking mechanism 23. EX1017, ¶34.

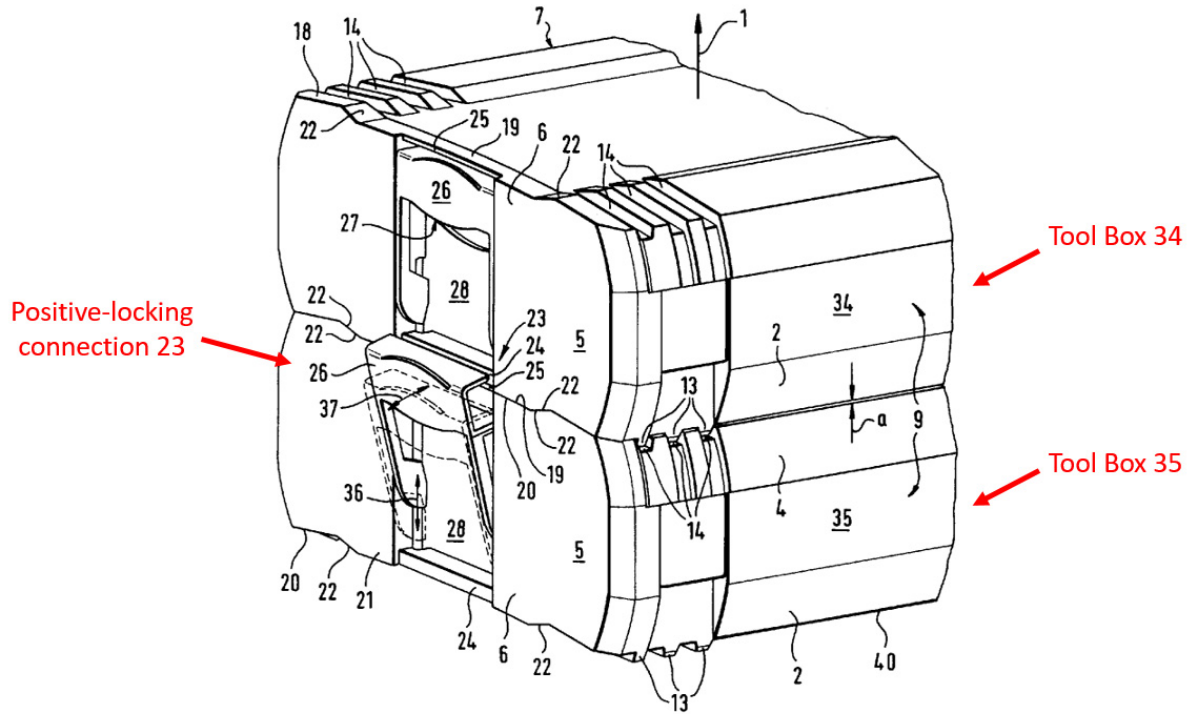
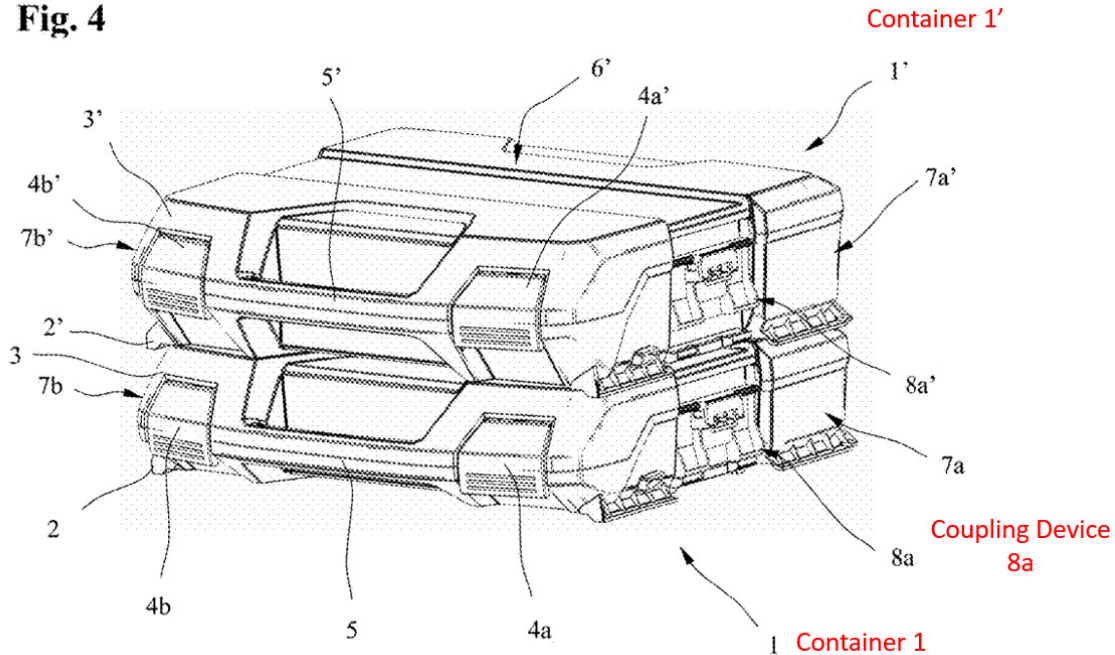


Fig. 2

EX1017, FIG. 2 (annotated).

42. Different configurations and shapes of stackable containers were also well known. For example, Gonitiner922 describes a “stackable system container” with flat-shaped containers. EX1018, FIG. 4, ¶¶37, 39.

Fig. 4



EX1018, FIG. 4 (annotated).

43. Additionally, modular storage systems designed for portability were also widely known and often comprised multiple storage boxes that could be stacked or interconnected into a single transportable unit. These portable systems allowed users to transport tools, equipment, and supplies efficiently, while locking mechanisms were frequently employed to prevent the boxes from separating or shifting during movement or handling.

44. One example of a portable modular storage system is described in Brunner. EX1019, ¶¶15, 28, 108. Brunner describes “at least two containers detachably attached to one another by locking arrangements.” EX1019, Abstract.

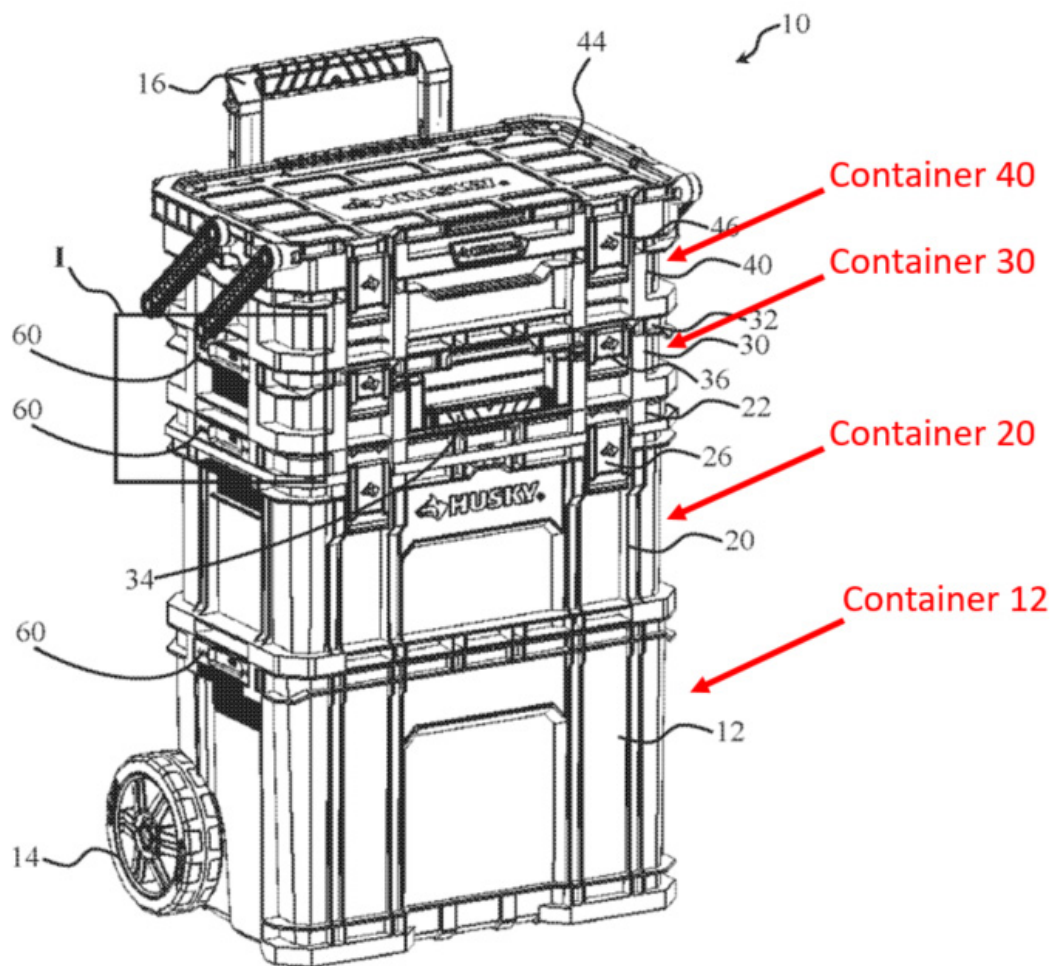


Fig. 1A

EX1019, FIG. 1A (annotated).

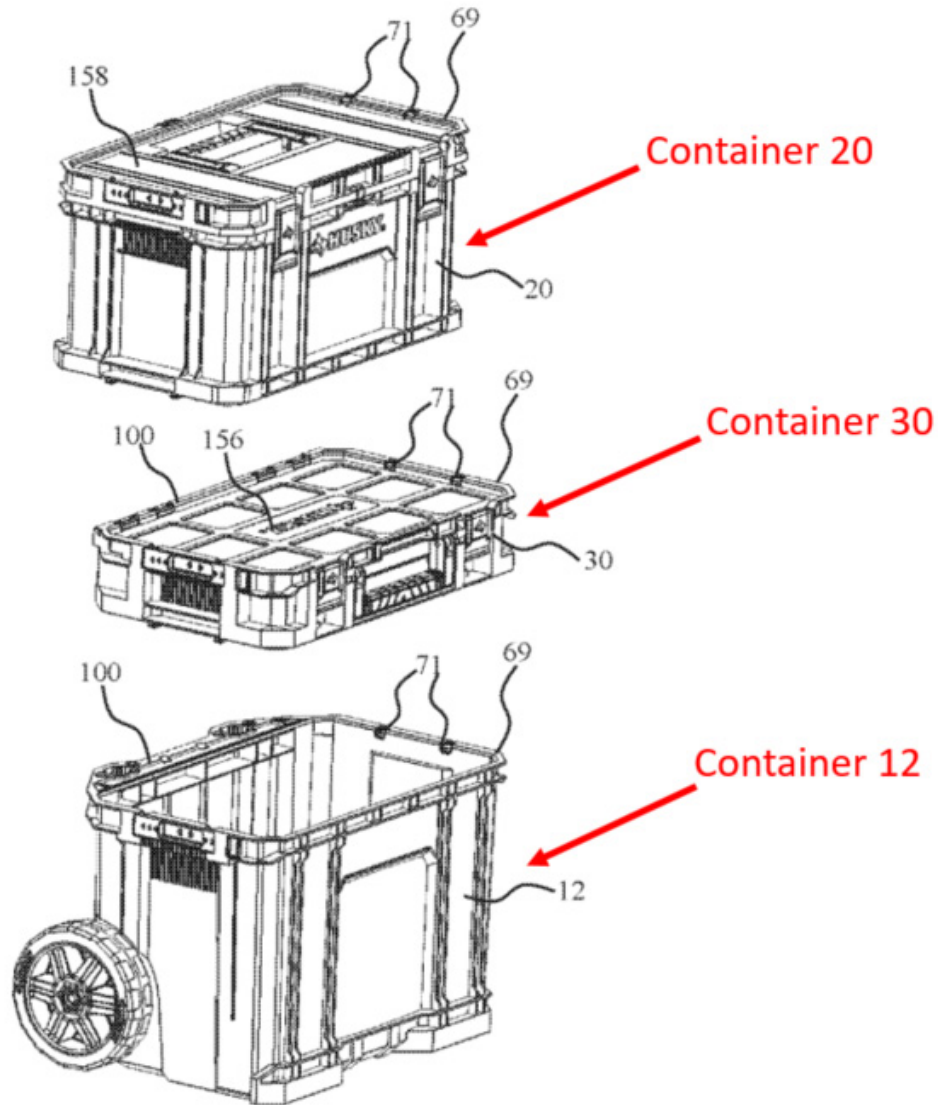


Fig. 8B

EX1019, FIG. 8B (annotated).

45. “The container assembly, generally designated 10, is a wheeled tool cart assembly comprising a wheeled base open top, bucket-like container 12, [and] fitted with wheels 14 at a bottom rear portion of the base container.” EX1019, ¶108. “The container assembly 10 further comprises a second bucket-like container

20 mounted over container 12.” EX1019, ¶109. Brunner further explains:

Over container 20 there is an organizer-type container 30 accommodating a plurality of removable storage boxes (not seen), said container 30 being configured with a pivotable lid 32 (the lid 32 being fitted with a carrying handle 34), said lid 32 secured by a pair of latches 36 at a front side of the container 30. Over container 30, there is provided yet an organizer container 40, being a double-deck cantilever-type organizer, fitted with a top cover 44 and securable at a closed position by a pair of locking latches 46.

EX1019, ¶109.

46. In this manner, Brunner describes multiple types of stackable boxes and a portable way of transporting such containers.

47. As I will further explain in the grounds of unpatentability below, Li and Baruch also teach stackable storage boxes. For example, Li describes vertically stackable modular storage carriers using elastic pull latches positioned on a lower carrier to securely couple with an upper carrier. EX1007, Abstract. Figure 6 of Li shows that “two boxes are stacked one on top of the other” and “securely latched together using two elastic pull latches 3.” EX1007, ¶36.

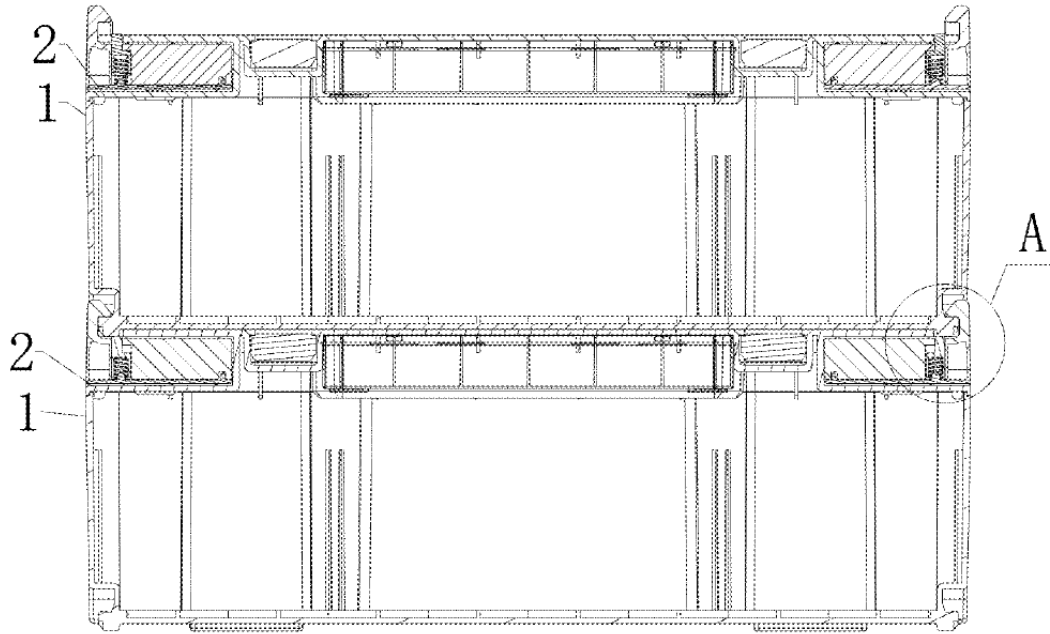


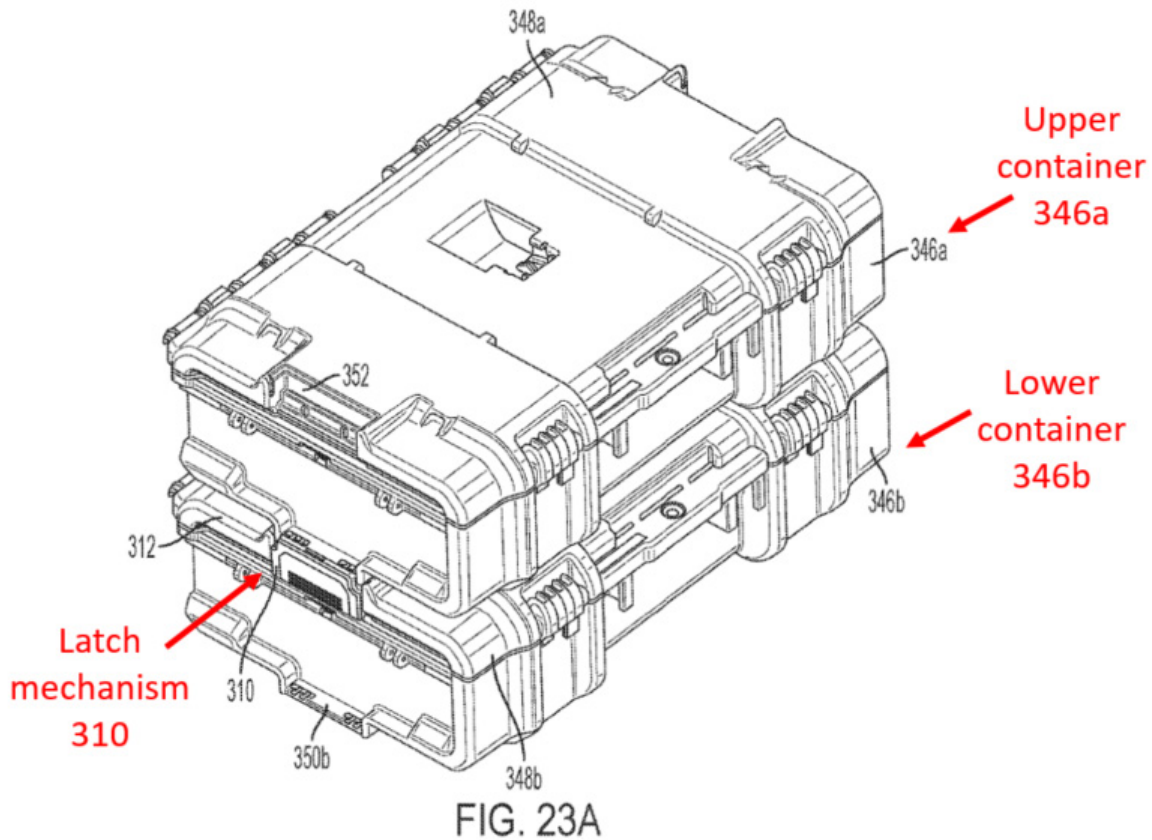
FIG. 6

EX1007, FIG. 6.

48. As shown in Figure 6 of Li, upper carrier is coupled to lower carrier using elastic pull latches 3. Li explains that “[w]hen at least two carriers of the same or similar structure are stacked one above another, the catch 12 at the bottom of an upper carrier is snapped into the latch groove 3211 of the elastic pull latch 3 on the upper cover 2 of the lower carrier.” EX1007, ¶30. “When in a locked position, the bottom of the catch 12 of the upper box is in contact with the top of the elastic boss 33 of the lower box.” EX1007, ¶36.

49. Another vertically stacked configuration is described in Baruch, which discloses modular containers coupled by latch mechanism 310. EX1012,

Abstract.



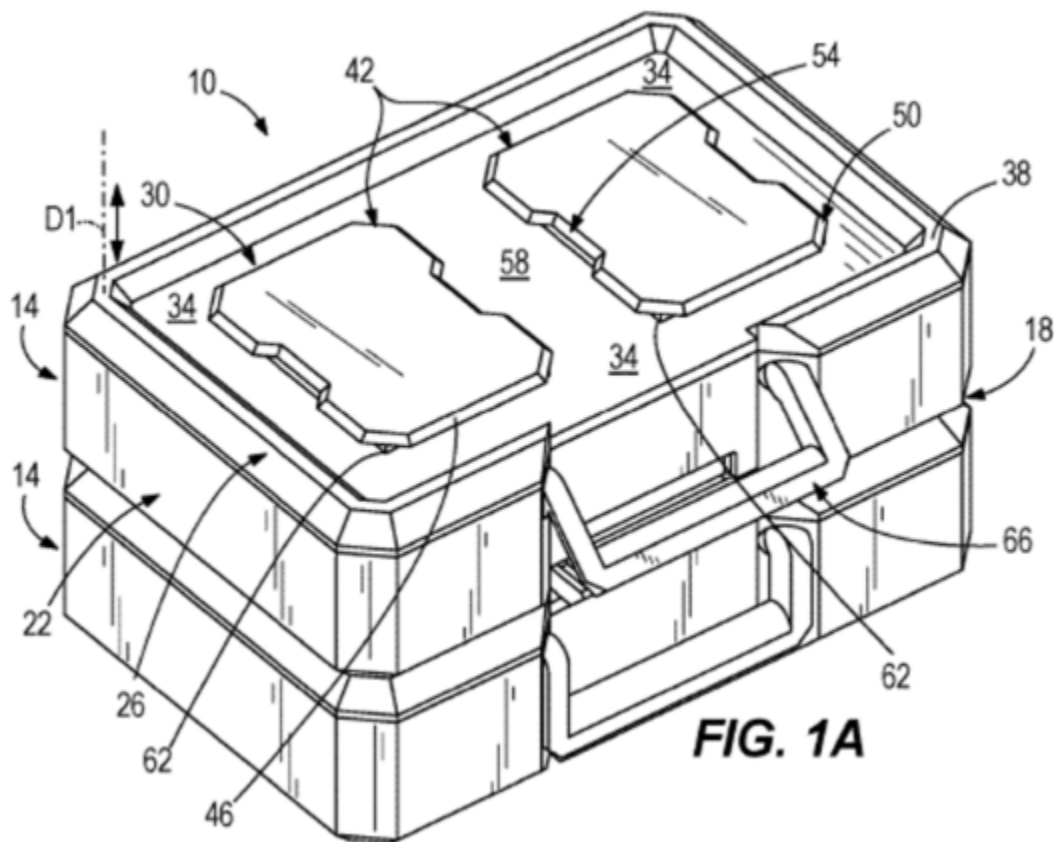
EX1012, FIG. 23A (annotated).

50. As shown in Figure 23A of Baruch, body 346a of an upper container is pressed downward onto lid 348b of a lower container, where latch mechanism 310 is disposed to engage a top portion of the lower container. EX1012, ¶56, FIG. 23A.

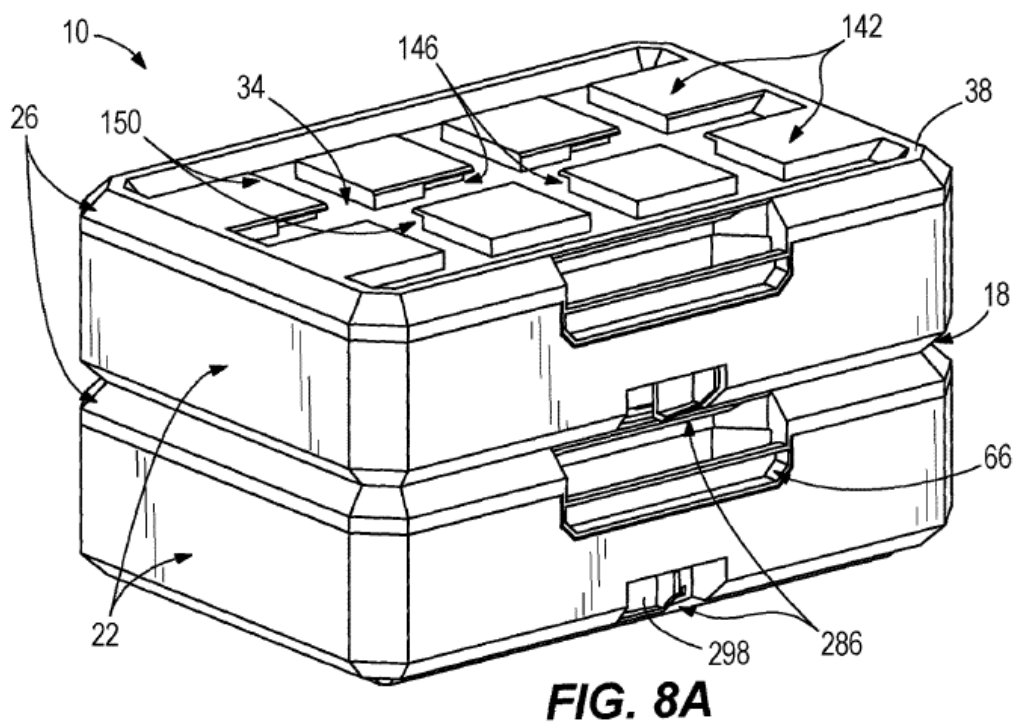
51. Baruch explains that latch mechanism 310 is configured to lockably retain the upper container 346a to the lower container 348b, such that the primary function of latch mechanism 310 is to secure two bodies to one another. EX1012, ¶¶56, 62, FIG. 23A. This vertical coupling allows one container to be positively

retained to another, enabling the two containers to be releasably connected in a locked state. EX1012, ¶¶56, 62.

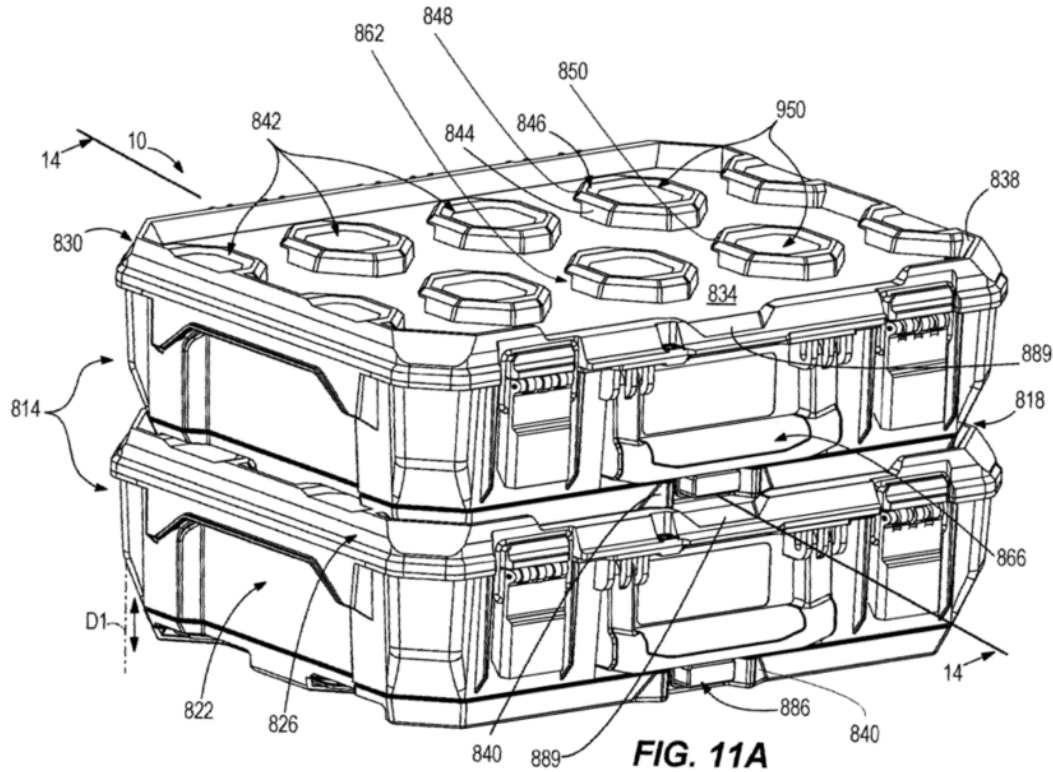
52. Davidian, which I also further describe below, describes a “stackable storage system” with several configurations of “projections” to aid in stacking storage containers together. EX1011, Title, Abstract, ¶¶2, 6. Davidian depicts several configurations of “projections” that limit shifting, sliding, or rotation between storage containers and cause the containers to be “more stable when stacked and [] less likely to become unstacked during use and/or transportation.” EX1011, ¶¶51, 53, 65, 72.



EX1011, FIG. 1A.



EX1011, FIG. 8A.



EX1011, FIG. 11A.

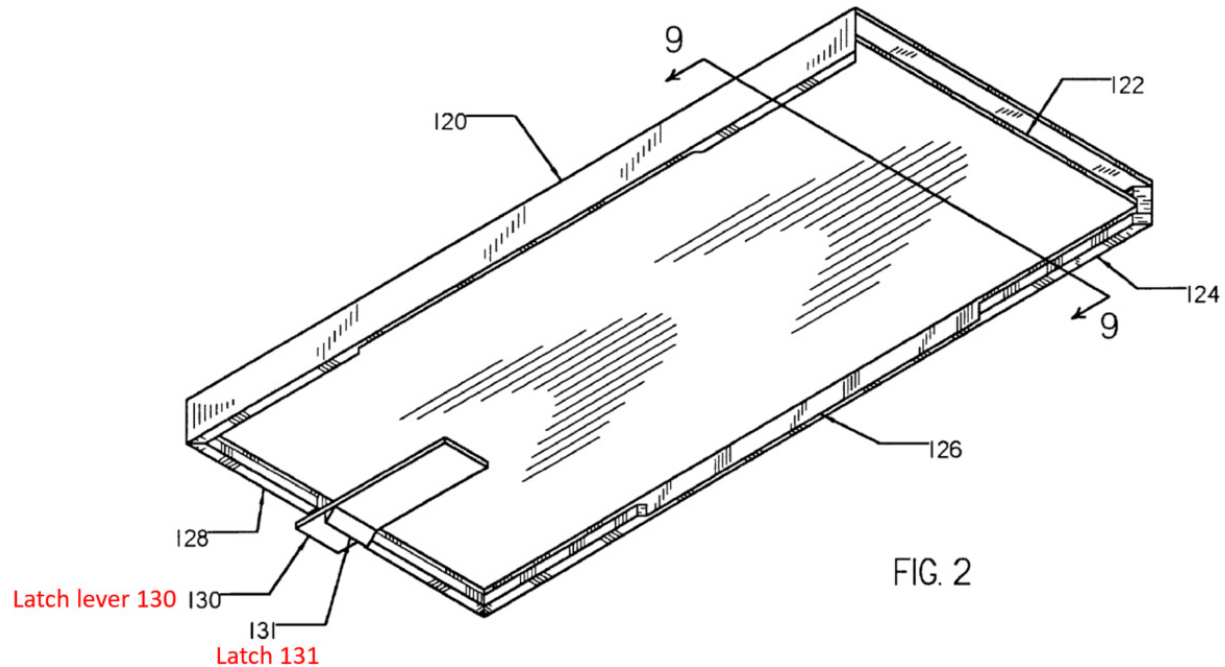
53. As seen from these references, stacking or interconnecting multiple modular storage boxes in a vertical arrangement was widely known and commonly practiced before the '946 patent. These modular systems often included structural features, such as grooves, protrusions, or latch mechanisms, to align and secure one box atop another. Such configurations allowed users to build customized storage stacks and were frequently equipped with locking features to prevent accidental separation during handling or transport.

B. Latching Mechanisms for Storage Boxes Were Well Known in the Prior Art

54. Before the '946 patent, latching mechanisms for connecting storage

boxes were widely known and commonly used in modular storage systems. These mechanisms allowed multiple boxes to be joined together in stacked arrangements and often included features for automatic engagement when the boxes were brought into contact. They were typically designed to permit quick release as well making it easy for users to unlock and separate connected storage units when needed.

55. Again, Loeffler demonstrates that using a latch mechanism for locking adjacent boxes was a concept known more than 20 years before the '946 patent. EX1016, Title. "A latching mechanism locks the adjacent boxes in their mating position and can be released to separate the boxes." EX1016, 1:64-65. Figure 2 depicts a latch 131 and latch lever 130 on the cover of box in a stack. EX1016, 3:59-4:8.



EX1016, FIG. 2 (annotated).

56. Loeffler explains:

Latch, 131, engages the front edge of the box when the cover is in place. It is released by moving lever, 130, upward. In the preferred embodiment, the lever is formed from a flexible material to also serve as a biasing means.

EX1016, 4:4-8.

The latch lever, 130, operates *the latch which serves to prevent unintentional sliding movement between two mating boxes by locking them in a fixed relative longitudinal position. This effectively locks the two boxes together* as the tongue and groove joint can be unmated only by sliding it apart. In the preferred embodiment a simple catch is used which is spring biased to engage the lip [] of the lower box. *Any*

of several well known means of preventing sliding motion, such as pins, pawls, or detents could also be used.

EX1016, 4:48-56 (emphasis added).

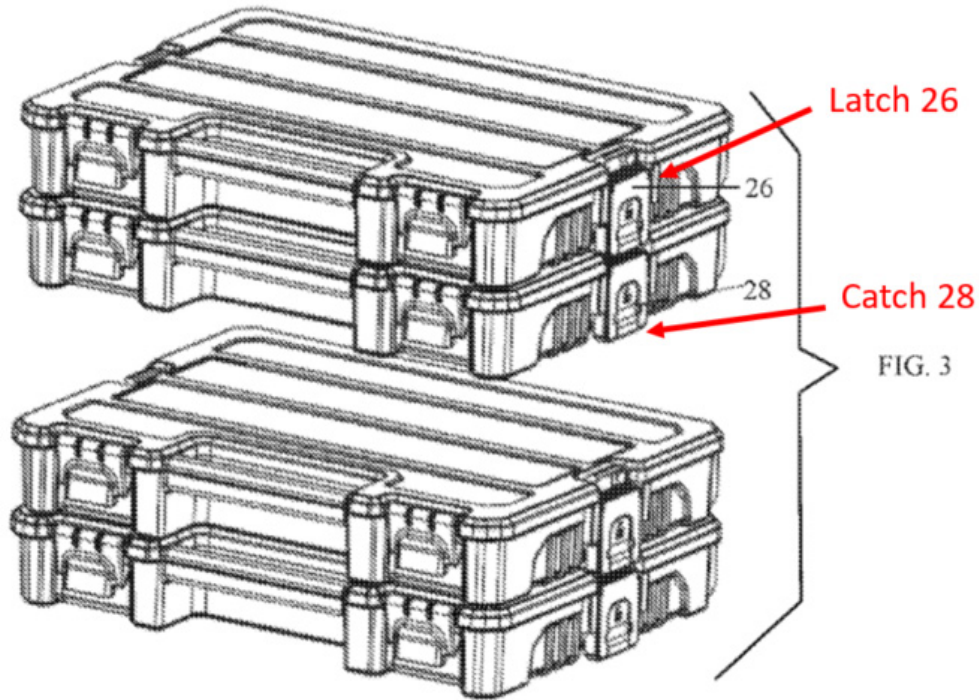
57. Loeffler provides the following example of how latches would be implemented with toolboxes:

As a tradesperson prepares to leave their workshop for a job site, they identify the set of tools needed for the specific task to be performed. The individual toolboxes containing those tools are located and removed from their rack mounts by releasing the latch, allowing them to be fully extracted. The boxes are then assembled into one or more stacks of boxes according to the users preference. ... After the tradesperson reaches the job site, the toolbox stacks are removed from the vehicle and taken to the work location. Then, they may be left stacked, or unstacked and arranged for easy access to the tools.

EX1016, 7:14-31; *see also* EX1016, 6:64-7:4 (describing a “single combined latch” for coupling boxes and coupling boxes to a rack).

58. In this manner, the concept of latching mechanisms for storage boxes was known in the art well-before the '946 patent.

59. Ben-Gigi further confirms this understanding and describes a “stackable tool box assembly” with “side latches with catches.” EX1020, Abstract.



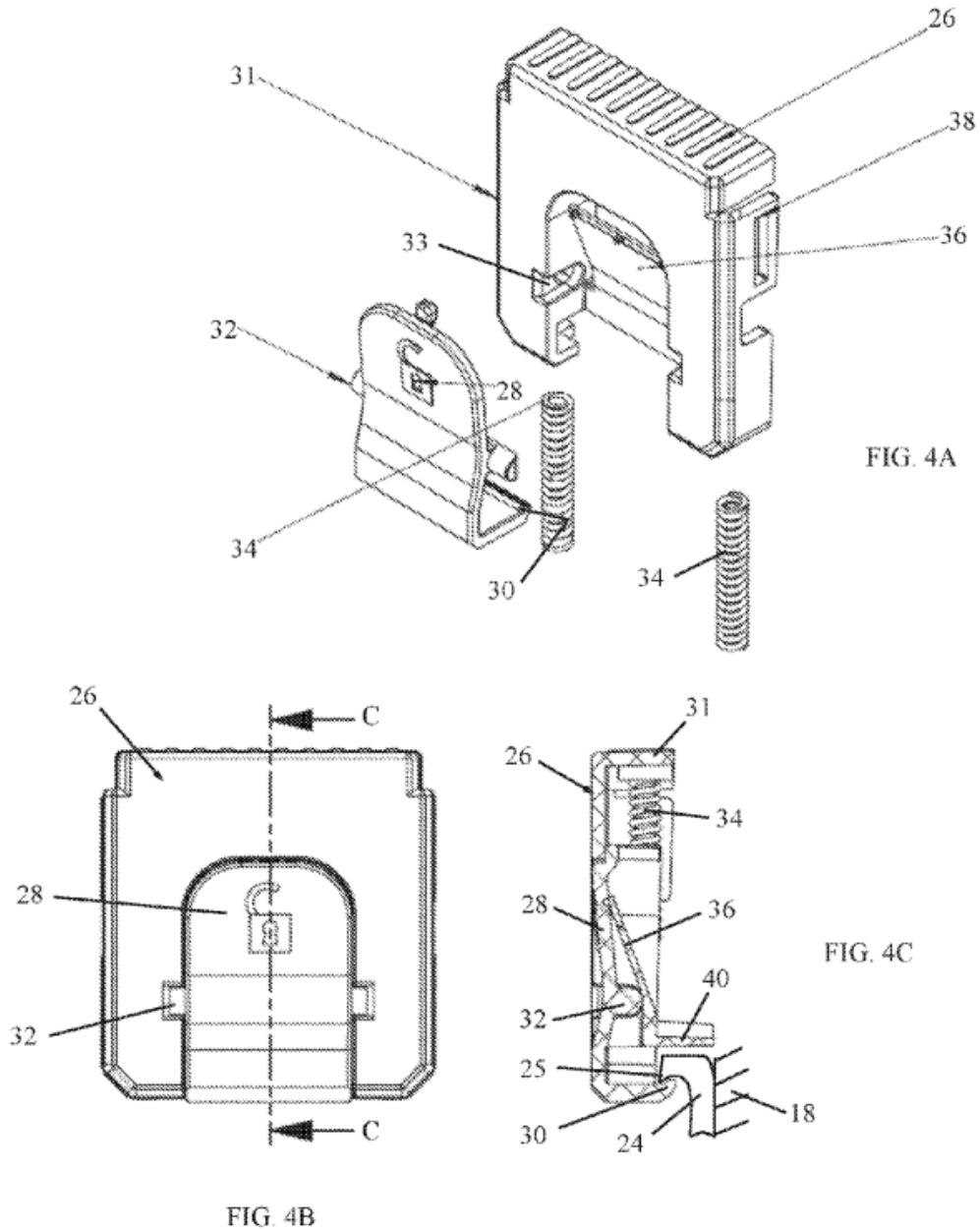
EX1020, FIG. 3 (annotated).

60. Ben-Gigi explains:

The first and second tool boxes have a stacked orientation in which the second tool box sits on top of the first tool box, and in which the *catch edge of the catch of the latch of the second tool box engages a lip of the first tool box to hold the first and second tool boxes together*. The first and second tool boxes have a released orientation from the stacked orientation in which the *catch edge of the catch of the latch of the second tool box is pivoted to disengage from the lip of the first tool box so that the first and second tool boxes are released from each other*.

EX1020, Abstract (emphasis added).

61. This latch mechanism can be seen from Figures 4A-4C:



EX1020, FIGs. 4A-4C.

62. “FIGS. 4A, 4B and 4C are simplified exploded, front view and sectional illustrations of a latch of the tool box.” EX1020, 2:40-44. “A latch 26 is arranged to slide along the side wall 18 towards and away from lip 24.” EX1020, 3:5-6. “Latch 26 is biased by a first biasing device 34 (such as, without limitation,

a pair of coil springs) configured to provide an urging force to urge latch 26 towards top portion 22.” EX1020, 3:12-15.

63. As I will further explain in the grounds of unpatentability below, Li and Baruch also teach latching mechanism for stackable storage boxes.

64. For example, Li describes a modular latching mechanism that connects stacked carriers. EX1007, Abstract, ¶¶29-31, 33, 36, 38.

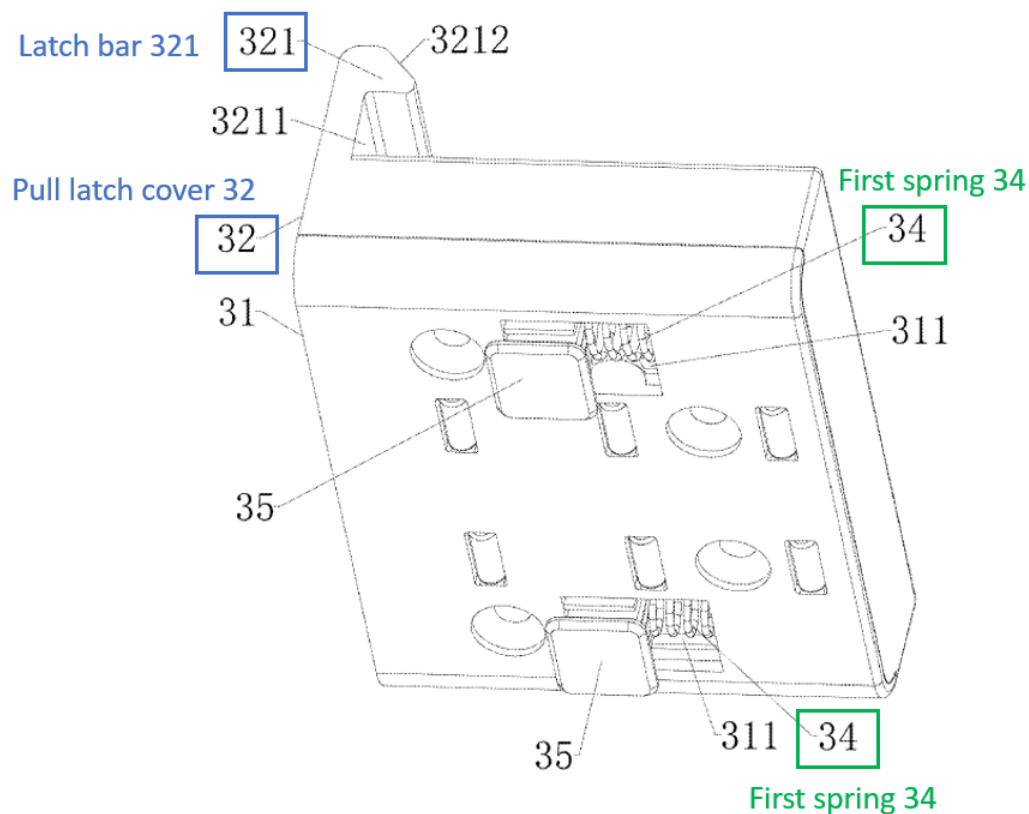


FIG. 3

EX1007, FIG. 3 (annotated).

65. As shown in Figure 3, the elastic pull latch 3 includes a pull latch cover 32 which is situated above a base 31 that houses other internal components

of the latch. EX1007, ¶33, FIG. 3. Li explains the pull latch cover 32 includes a latch bar 321 located at the outer end of the latch. EX1007, ¶33, FIG. 3. The latch groove 3211 is located on the inner side of the latch bar 321. EX1007, ¶33, FIG. 3.

66. As shown in Figure 4, two first springs 34 are mounted horizontally within the elastic pull latch 3. EX1007, ¶34, FIG. 4. Each spring 34 is retained between a stop piece 35 and an inner wall of the latch housing. EX1007, ¶34, FIG. 4. The bottom portion of the latch 3 includes two elongated through-holes 311, through which the lower ends of stop pieces 35 extend. EX1007, ¶34, FIG. 4. When the latch 3 is pulled outward, the stop piece 35 compresses springs 34 to temporarily retain the latch in the pulled-out position. EX1007, ¶34, FIG. 4.

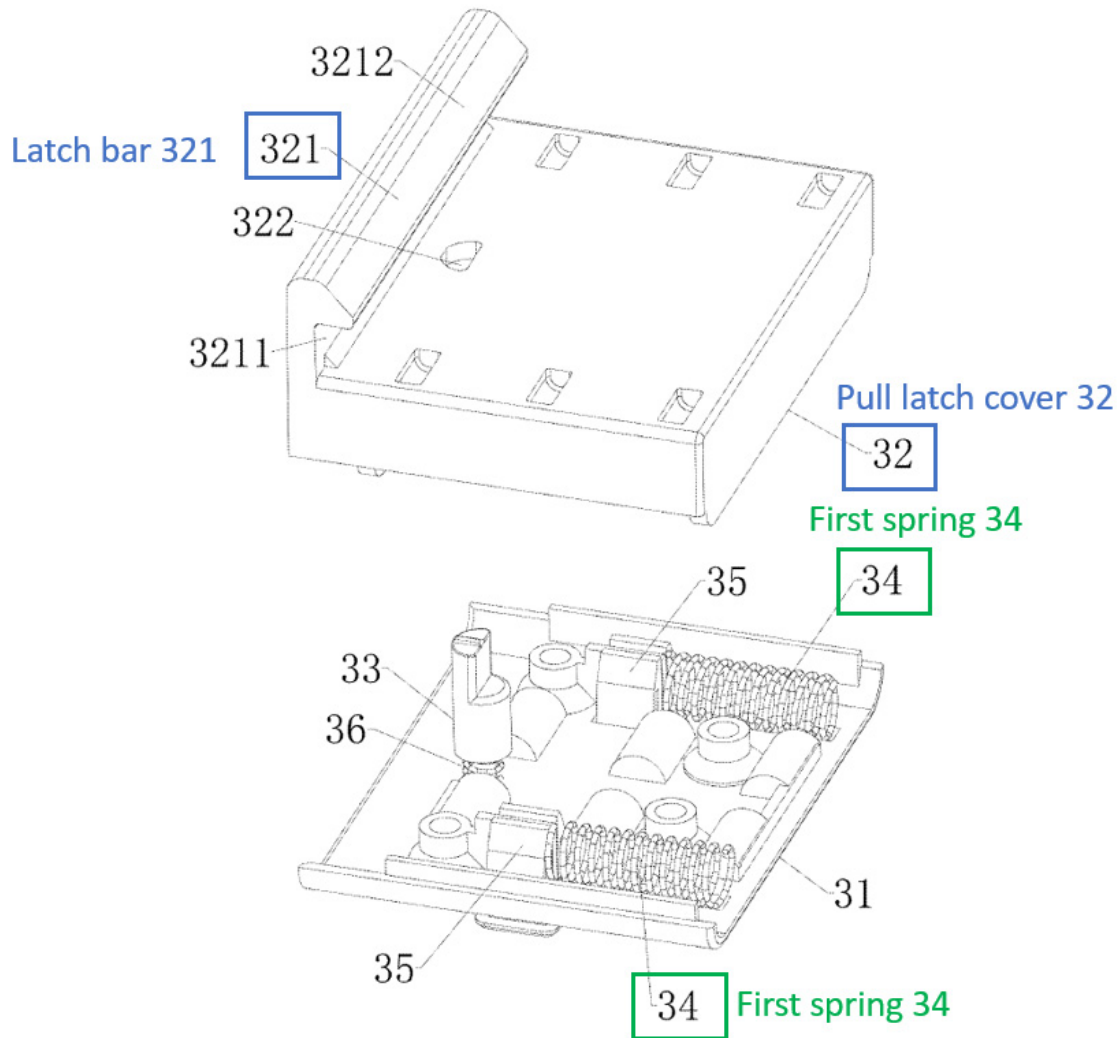
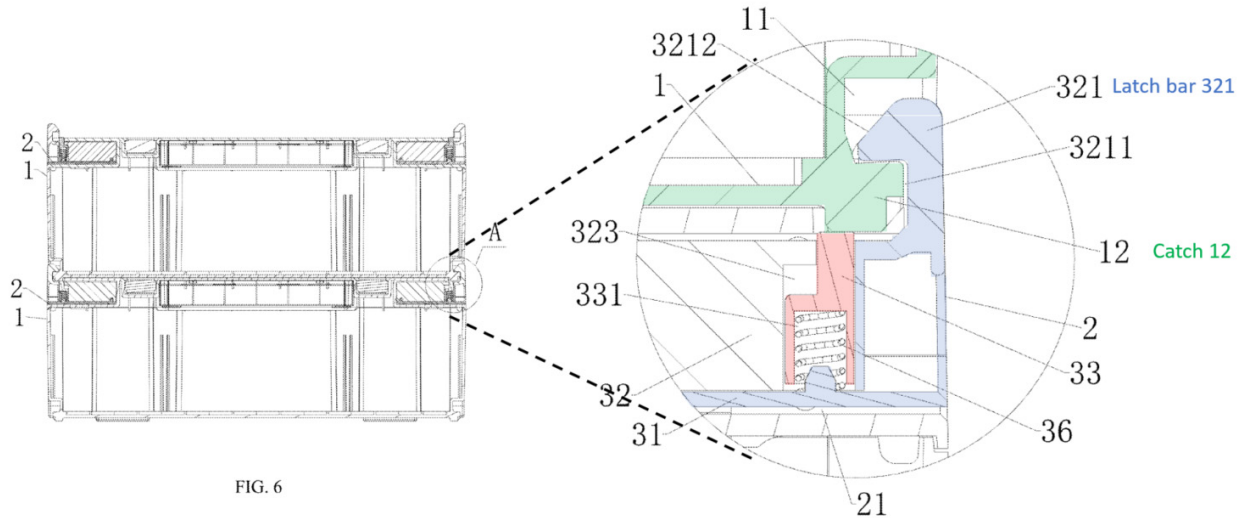


FIG. 4

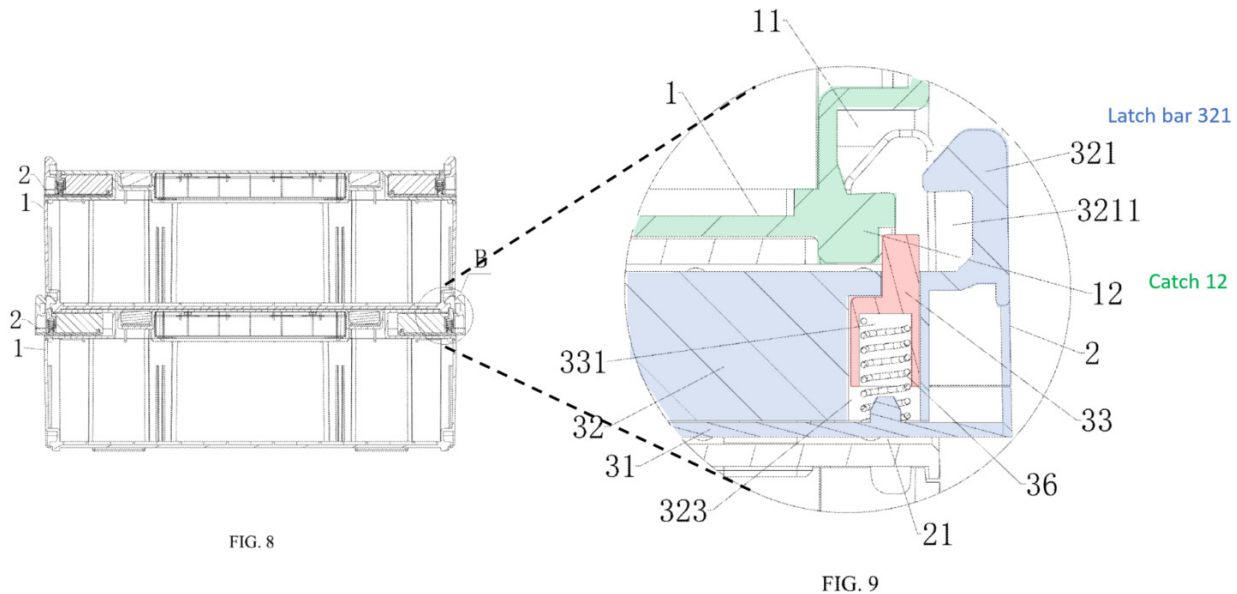
EX1007, FIG. 4 (annotated).

67. Figures 6 through 9 of Li depict the operation of the latch mechanism during stacking and unstacking. Figures 6 and 7, which have been annotated to highlight the relation between these figures, show “two boxes are stacked one on top of the other” and “securely latched together using two elastic pull latches 3.”
EX1007, ¶36.



EX1007, FIGs. 6-7.

68. When one carrier is stacked on another, the catch 12 at the bottom of the upper carrier automatically snaps into the latch groove 3211 of the elastic pull latch 3 positioned on the upper cover 2 of the lower carrier. EX1007, ¶30, FIGs. 6-7. In this locked position, the carriers are held together by the two elastic pull latches 3, which are spring-biased to remain engaged without requiring user input. EX1007, ¶36, FIG. 7. This automatic latching ensures secure coupling during stacking without any manual locking step.



EX1007, FIGs. 8-9 (annotated).

69. To release the latch, the elastic pull latch 3 is pulled outward, as shown in Figures 8 and 9, which have been likewise annotated to highlight the relation between these figures. EX1007, ¶36. When pulled out, the internal components, including elastic boss 33 and second spring 36, permit the latch to remain extended, and the stacked carriers can then be separated. EX1007, ¶36, FIG. 9.

70. Baruch also teaches that rotational latching mechanisms were well known and commonly used in modular storage systems to connect storage boxes before the '946 patent as well. These mechanisms typically operated by rotating a latch component about a pivot or axis to engage or disengage a locking feature between adjacent boxes. In modular tool storage systems, rotational latches were frequently employed to secure vertically stacked boxes by pressing or rotating the

latch into position to lock onto a lower box. These latches were typically designed to be quickly released by rotating or pivoting in the opposite direction, enabling fast disassembly of stacked storage units.

71. For example, Baruch describes a modular latch mechanism that rotates about a horizontal axis to secure vertically stacked storage boxes.

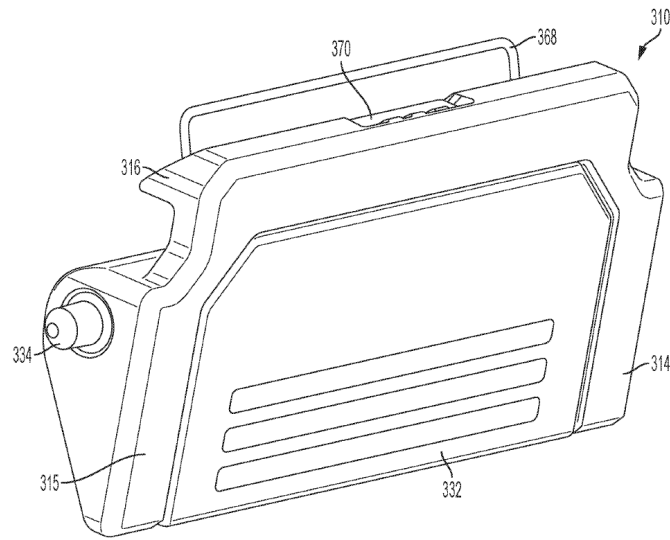


FIG. 20

EX1012, FIG. 20.

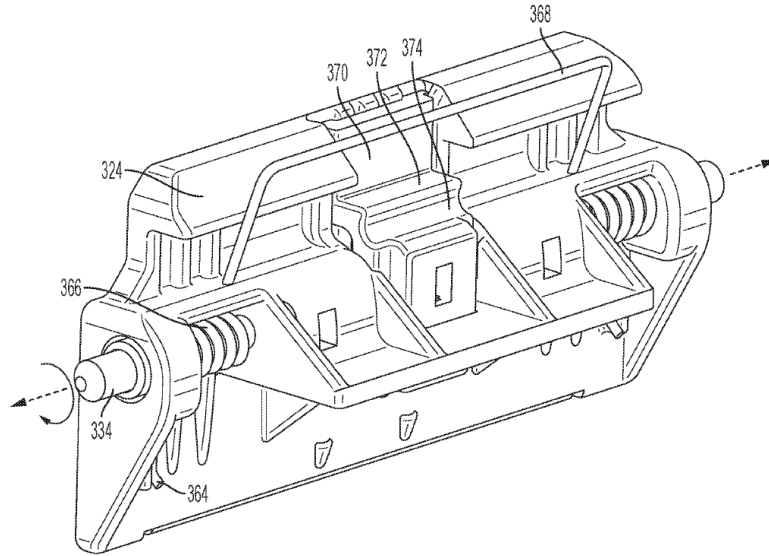


FIG. 21

EX1012, FIG. 21.

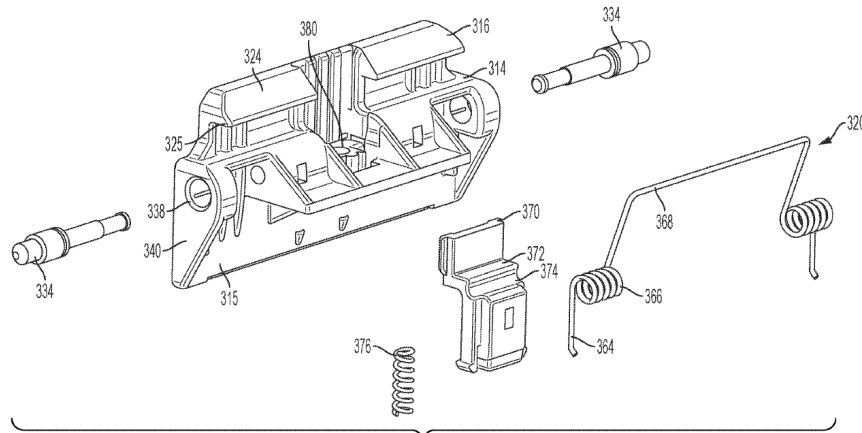


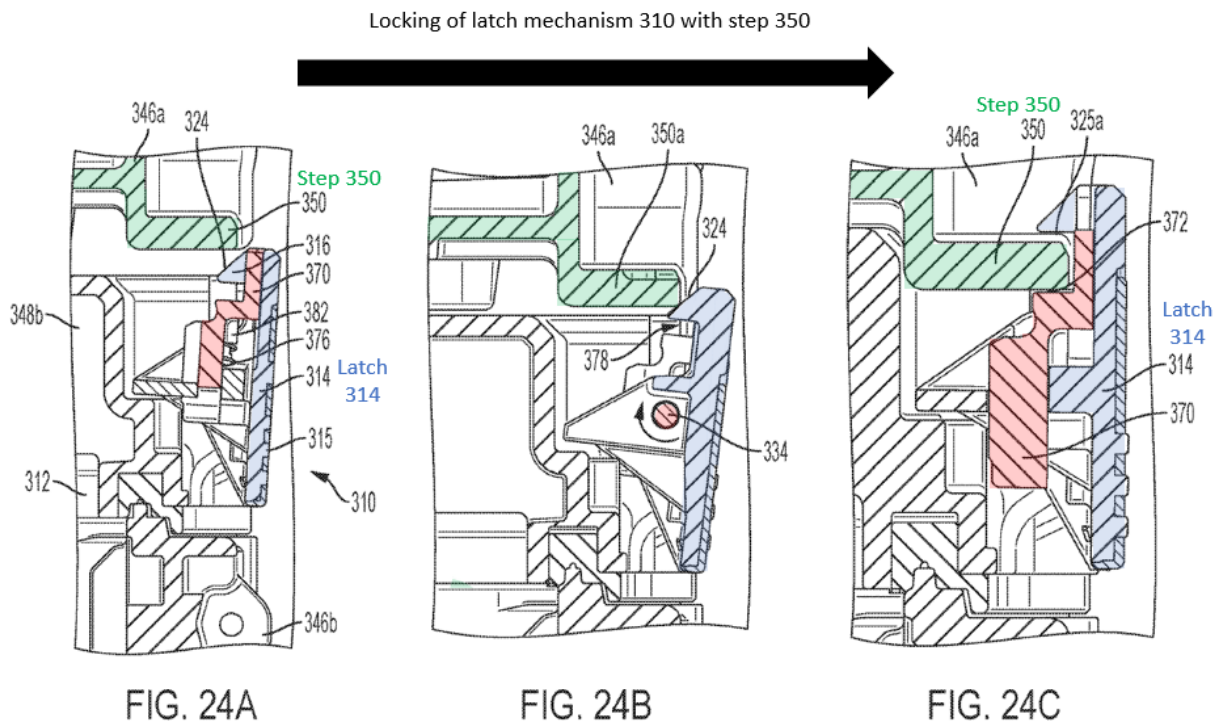
FIG. 22

EX1012, FIG. 22.

72. Figures 20-22 of Baruch disclose a rotational latch mechanism 310 that includes a latch 314 rotatably disposed within a housing 312. EX1012, ¶¶49-55. The latch 314 includes a main body 315 and a primary hook 316, and is biased toward a first position by a latch bias 320, which in a preferred embodiment is a

torsion spring. EX1012, ¶51. Rotational movement of the latch is facilitated by pins 334, which act as a pivot axis and pass through openings in the housing, torsion spring, and latch body. EX1012, ¶54. The primary hook 316 extends from the latch body 315 and includes a step receiving surface 324, which is angled to guide and automatically engage with a corresponding step on an adjacent container. EX1012, ¶50. The latch bias 320 applies rotational force to hold the latch in its default, locked position, enabling automatic locking upon stacking.

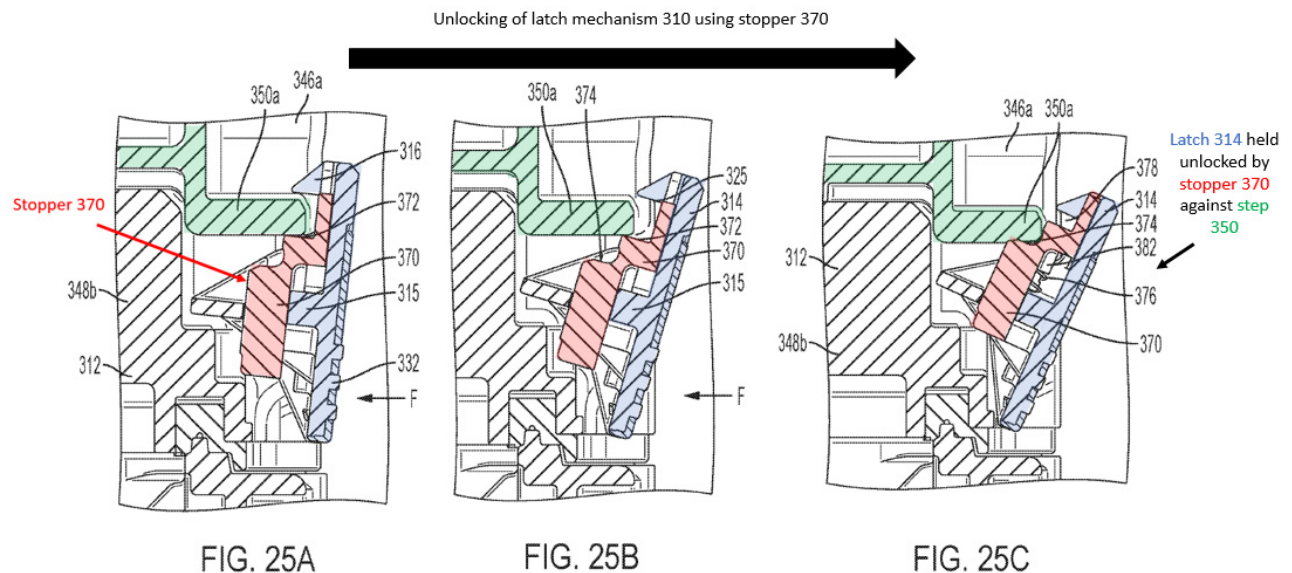
73. Baruch further explains the operation of the latch during stacking and unstacking in FIGS. 24A-C and 25A-D. EX1012, ¶¶62-63.



EX1012, FIGs. 24A-24C (annotated).

74. To couple two containers, the step 350a of the upper container is

aligned above the step receiving surface 324 and pressed downward. EX1012, ¶62, FIG. 24A. The angled surface on the hook causes the latch to rotate automatically against the torsion bias to a second position, allowing step 350a to pass beneath the primary hook 316. EX1012, ¶62, FIG. 24B. Once fully engaged, the torsion spring automatically returns the latch to the locked position, securing the containers together without user manipulation of the latch. EX1012, ¶62, FIG. 24C.



EX1012, FIGs. 25A-25C (annotated).

75. To release the latch, the operator applies pressure to the operator surface 332, rotating the latch away from the first position. EX1012, ¶63, FIG. 25A. As the latch rotates, the cantilevered and locking surfaces disengage from the step 350a, allowing stopper 370 to move downward and hold the latch in its second (open) position. EX1012, ¶63, FIGs. 25B-25C. Once the upper container is removed, the spring biases automatically return both the latch and stopper to their

default locked positions. EX1012, ¶63, FIG. 25D.

76. Similar to Baruch, another example of a rotational latch mechanism is described in Shabtai. Shabtai describes a rotational latch mechanism integrated into the sidewalls of modular storage boxes. EX1021, ¶¶40-42.

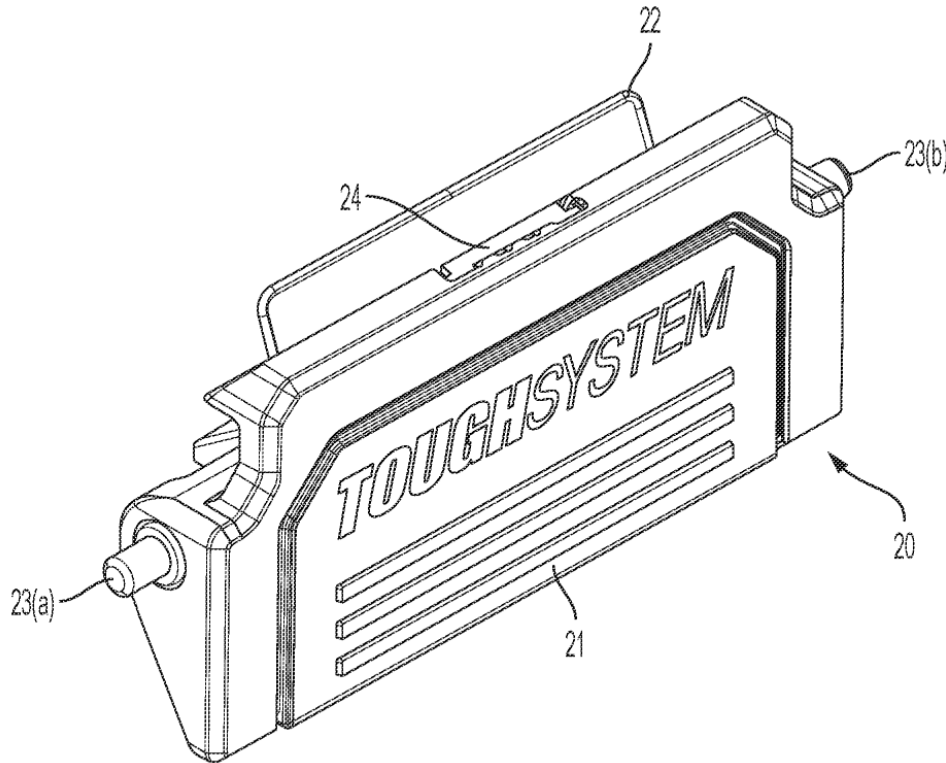


FIG. 11

EX1021, FIG. 11.

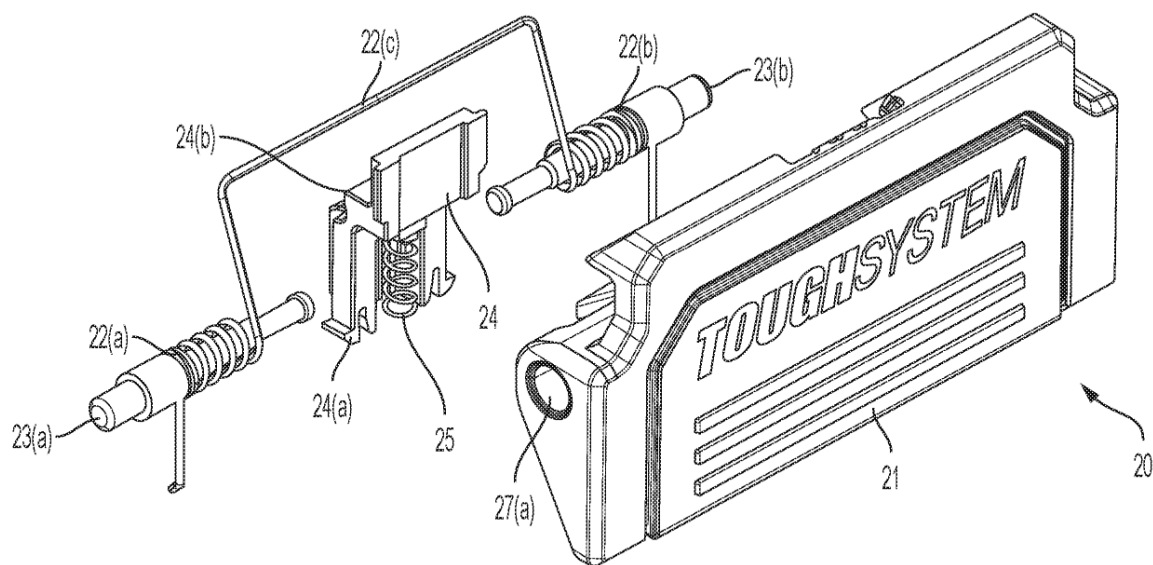


FIG. 12

EX1021, FIG. 12.

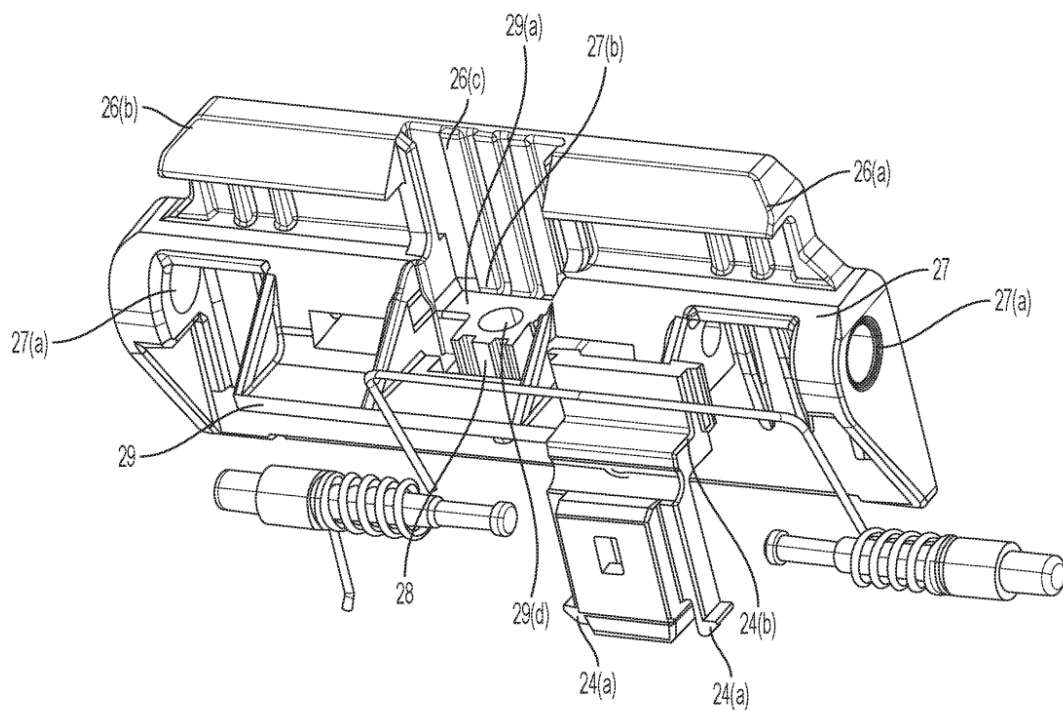


FIG. 13

EX1021, FIG. 13.

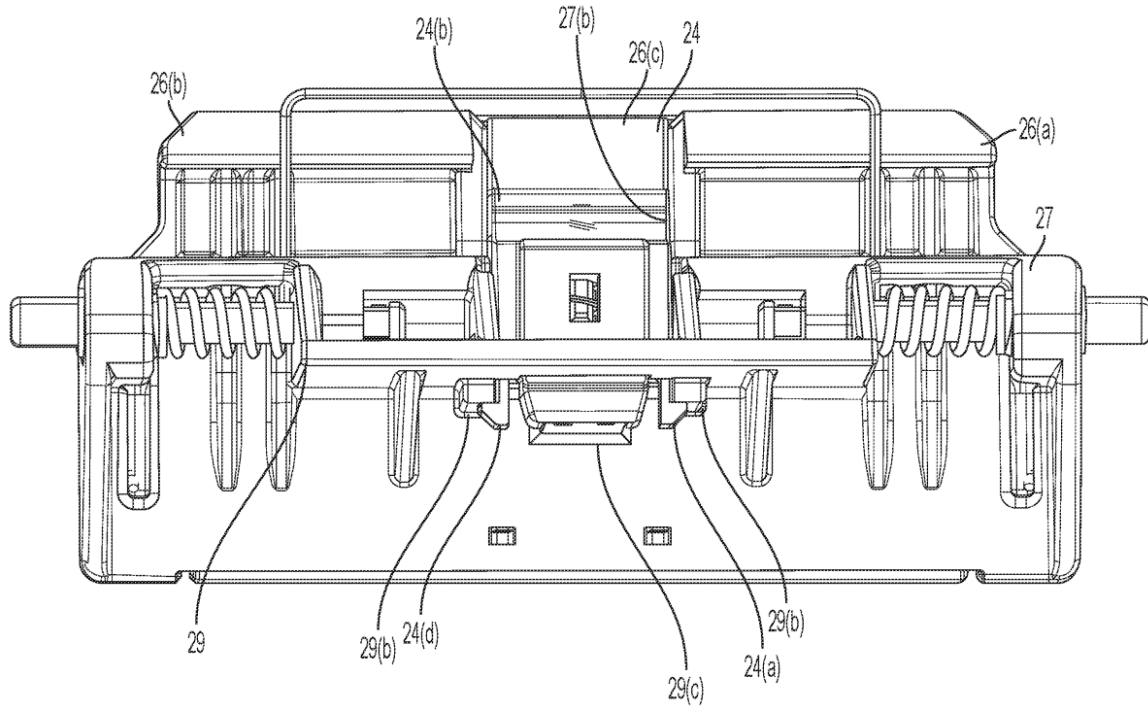


FIG. 14

EX1021, FIG. 14.

77. As shown in Figures 11–14, latch mechanism 20 is mounted to recessed area 3(a) of upper housing 3 and is configured to engage with step 4 of a lower container when the boxes are stacked. EX1021, ¶¶41–44. The latch mechanism 20 includes a pivatable latch body 21 that rotates about stacking pins 23(a), 23(b) when actuated by the user. EX1021, ¶41. The latch body includes primary hooks 26(a), 26(b) that extend inwardly to engage step 4 of the lower container. In the locked position, the hooks 26(a), 26(b) extend over step 4, thereby locking the upper container to the lower one. EX1021, ¶44.

78. Shabtai explains that when the stackable power outlet box 1 is placed onto the lower container 50 so that step 4 aligns with latch mechanism 20, the latch

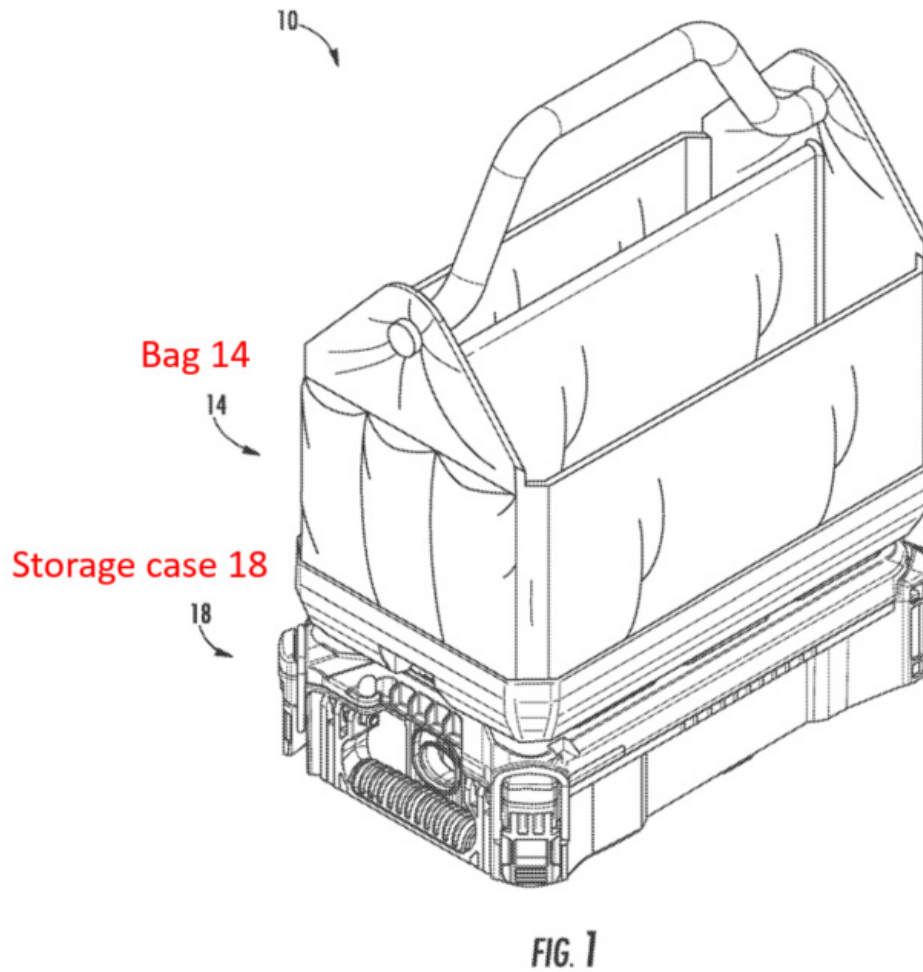
body 21 automatically pivots outward against spring 22 to allow step 4 to pass hooks 26(a), 26(b). EX1021, ¶44. Step 4 then rests on the upper contact surface 24(b) of latch stopper 24, with hooks 26(a), 26(b) returning inward under the spring bias to secure the step and lock the containers together without requiring the user to manipulate the latch. EX1021, ¶44. To release the latch, the user pushes inward on latch body 21 to pivot hooks 26(a), 26(b) away from step 4, while coil spring 25 biases latch stopper 24 upward against the step to prevent re-engagement. The upper container can then be lifted off the lower one. EX1021, ¶45. This configuration enables quick and automatic engagement during stacking, followed by manual disengagement when disassembly is desired.

79. As seen from these references, latching mechanisms were well known and commonly used in modular storage systems to connect stacked storage boxes. These mechanisms typically operated by moving a latch component to engage or disengage a locking feature on an adjacent box. Latches often included grooves, bars, or catches that would automatically align and engage when boxes were stacked. Once engaged, the latch would hold the boxes securely in place. These systems were also frequently designed to allow users to pull or rotate the latch outward to release the connection and separate the boxes, providing both secure locking and easy disassembly.

C. Stopping Components and Latch Retention Mechanisms to Regulate the Movement of Locking Mechanisms Were Well Known in the Prior Art

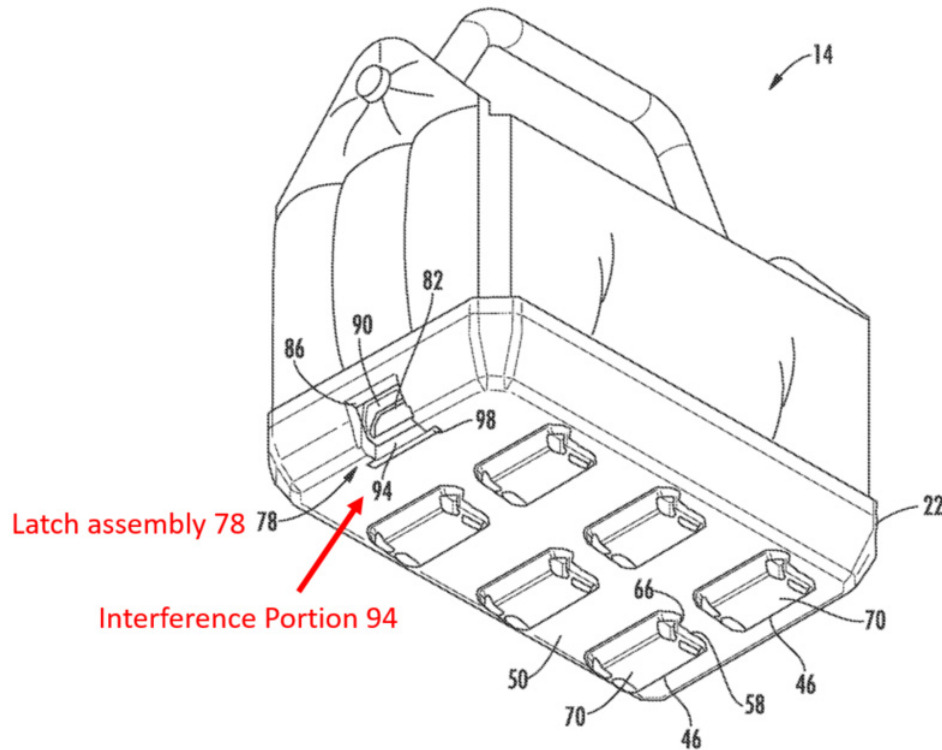
80. Finally, before the '946 patent, using stopping components or retention features to control latch movement and ensure reliable engagement and disengagement for storage boxes was also well known in the art. These stopping components were typically used to (i) temporarily hold a latch in an open or disengaged position during unstacking operations and (ii) return the latch to a default locked position when the boxes were stacked or released. Such mechanisms frequently relied on spring-biased members to achieve predictable, repeatable latch behavior and prevent accidental disengagement during use. These features contributed to safer handling and improved usability in modular storage systems.

81. For example, Squiers describes connecting storage containers using a “latch assembly” that includes an “interference portion 94.” EX1022, ¶122. Figure 1 depicts a bag 14 or “soft-sided storage device 14” connected to a storage case 18 or “hard-sided or rigid storage device 18.” EX1022, ¶119.



EX1022, FIG. 1 (annotated).

82. As seen from Figure 3, the bag 14 includes a latch assembly 78 and latch member 82. EX1022, ¶122. “The latch member 82 includes a grip portion 90 and an interference portion 94.” EX1022, ¶122.



EX1022, FIG. 3 (annotated).

83. Squiers explains that:

The *interference portion 94 selectively protrudes from the latch passage 86 through a slot 98* defined in the bottom surface 50 of the bottom member 22. ... The latch member 82 is movable between a first or locking position (FIG. 9) in which the interference portion 94 extends through the slot 98, and a second or unlocking position (FIG. 10) in which the interference portion 94 is retracted into the latch passage 86 and does not extend through the slot 98. The latch assembly 78 further includes a biasing member 106 (e.g., a compression spring) arranged to bias the latch member 82 into the locking position (FIG. 9). *The latch member 82 may be urged against the biasing member 106*

*to the unlocking position (FIG. 10) by pushing on the grip portion 90.
In the locking position, the interference portion 94 does not extend
beyond the planar surfaces 70 of the projections 46.*

EX1022, ¶122 (emphasis added).

84. Gonitiner515 also teaches the use of a “stop 23” to control the lateral movement of stackable containers. EX1023, ¶¶9-10, 44-45. For example, Gonitiner515 explains:

To further increase the stability of the coupling elements, these coupling elements, in the protruding position, can *adjoin a stop of the system container*. This causes the coupling elements, when in the protruding position, to be retained in a defined position and to be *especially effectively shored up against any lateral forces*.

EX1023, ¶9 (emphasis added).

The transmission of forces from the coupling elements into the system container can be especially effectively implemented in that the coupling elements in the protruding position engage the stop in the vertical direction from behind. This means that, in the vertical direction, a portion of a coupling element in the protruding position disposed above the stop engages the stop from below. As a result, *any vertically upwardly acting forces, such as occur especially when a plurality of stacked system containers are transported, can be especially effectively counteracted*. Thus, even relatively heavy system containers, connected to each other, can be transported as a unit by means of the grip on the system container positioned at the top.

EX1023, ¶10 (emphasis added).

85. Thus, it was well-known in the art to use stopper devices and especially ones biased by a spring to control the movement of latch mechanisms.

86. As I will further explain with reference to Li and Baruch in the grounds below, it was also obvious and well known in the art to use stopper devices to hold latch mechanisms in the unlocked state so allow decoupling of containers as well. Stop mechanisms in these configurations were often integrated to temporarily hold the latch in the open position after disengagement, preventing the latch from automatically returning to the locked position during unstacking. This temporary retention facilitated easier separation of the stacked boxes and improved the user experience. The stop components were commonly spring-loaded and cooperated with the motion of the latch body to ensure reliable operation and automatic resetting after the containers were separated.

87. For example, Li describes a stop mechanism (“elastic boss 33” and “second spring 36”) integrated into latching system. EX1007, ¶¶5-6, 12, 29-31, 35-36.

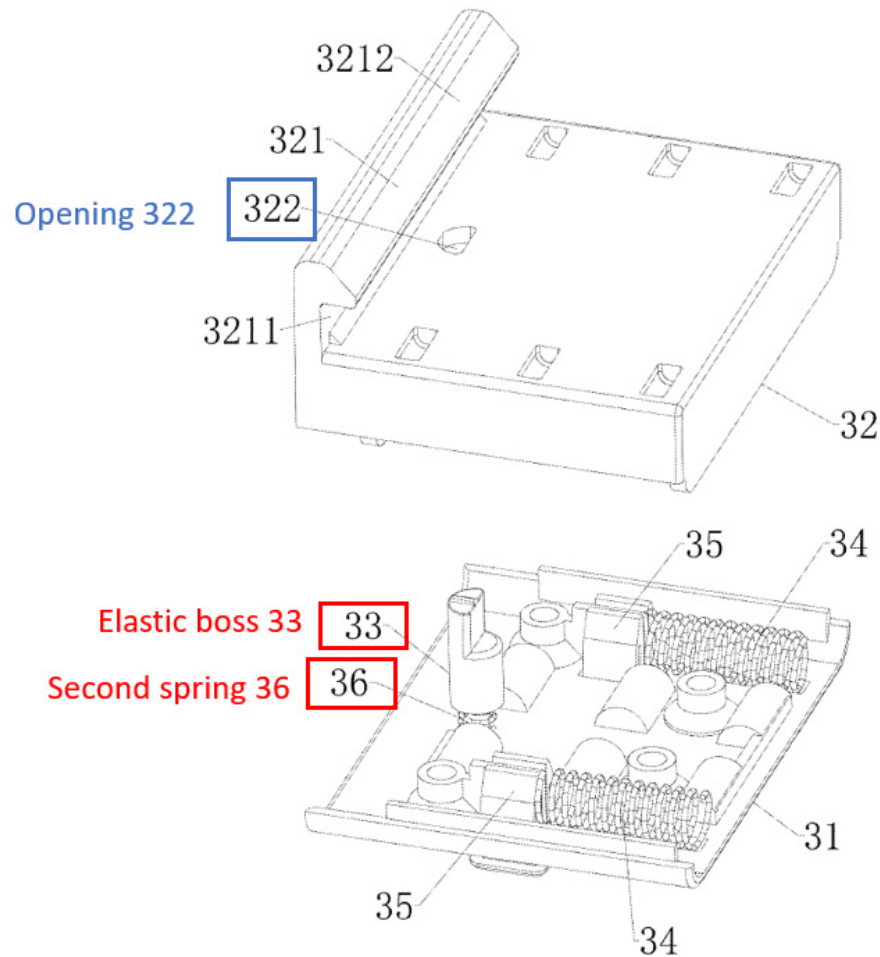


FIG. 4

EX1007, FIG. 4 (annotated).

88. As shown in Figure 4, elastic pull latch 3 includes a vertically mounted second spring 36, upon which an elastic boss 33 is situated. EX1007, ¶35. The elastic boss 33 extends through an opening 322 on the upper surface of the pull latch 3, allowing vertical movement relative to the latch body. EX1007, ¶35.

89. Figures 6-9 of Li depict the operation of the latch mechanism during stacking and unstacking. Figures 6-7 show two boxes stacked one on top of the other and securely latched together using two elastic pull latches 3. EX1007, ¶36.

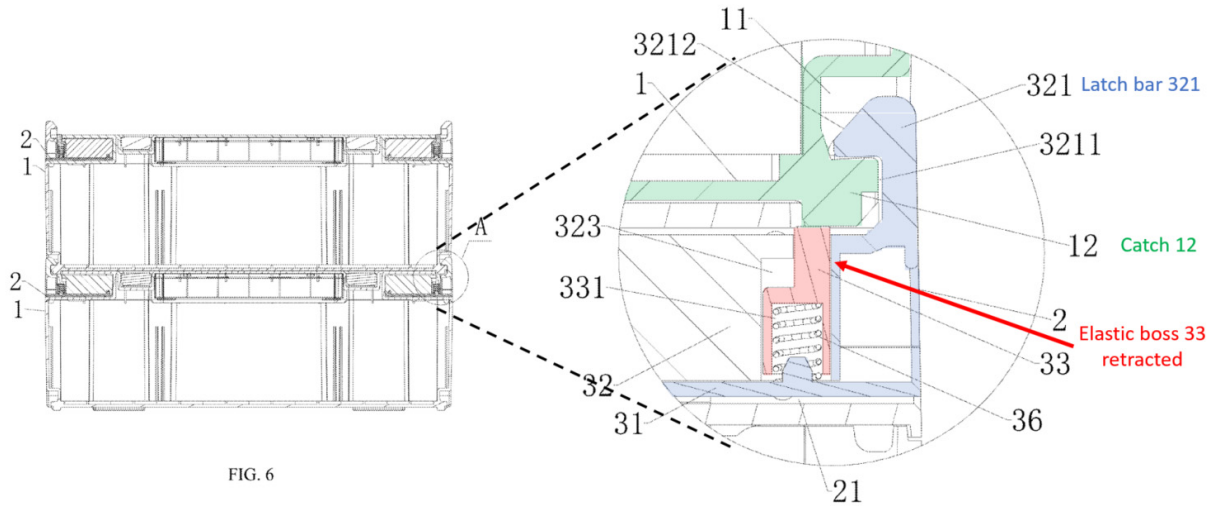
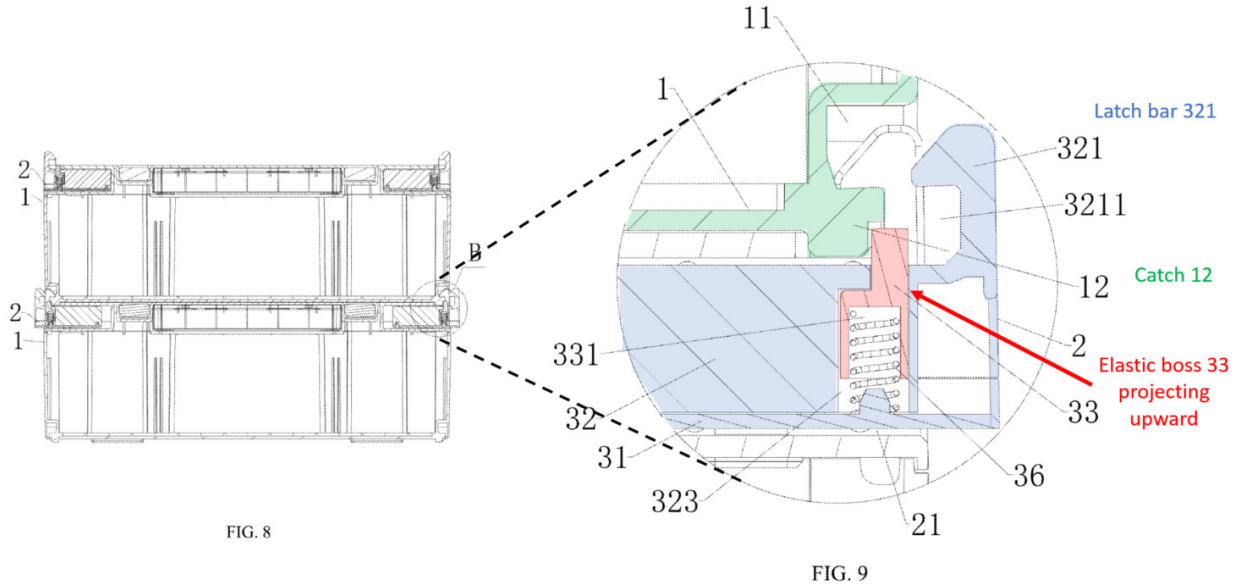


FIG. 6

EX1007, FIGs. 6-7 (annotated).

90. When two carriers are stacked, the catch 12 on the bottom of the upper carrier depresses the elastic boss 33 on the lower carrier, compressing the underlying second spring 36. EX1007, ¶¶30-31.

91. When pulled out, elastic boss 33 and second spring 36 prevent elastic pull latch 3 from retracting inward, thereby holding elastic pull latch 3 in an unlocked position as depicted in Figures 8-9. EX1007, ¶¶6, 30-31.



EX1007, FIGs. 8-9 (annotated).

92. Upon releasing the latch, the elastic pull latch 3 is pulled outward, causing the elastic boss 33 to move away from the catch 12. EX1007, ¶36. Once clear of the catch, the elastic boss 33 is pushed upward by the compressed second spring 36. EX1007, ¶36. In this released position, the elastic boss 33 remains positioned outside the catch 12, allowing the elastic pull latch 3 to stay extended and enabling separation of the carriers, facilitating easy disassembly while maintaining secure engagement during stacking. EX1007, ¶¶16, 38.

93. Baruch describes a similar stop mechanism integrated within its rotational latch system to control and limit latch movement. Figures 20-22 illustrates a stopper 370, which cooperates with the latch 314 to hold it in a designated open position during unstacking and ensures automatic return to the locked position when engaged. EX1012, ¶63.

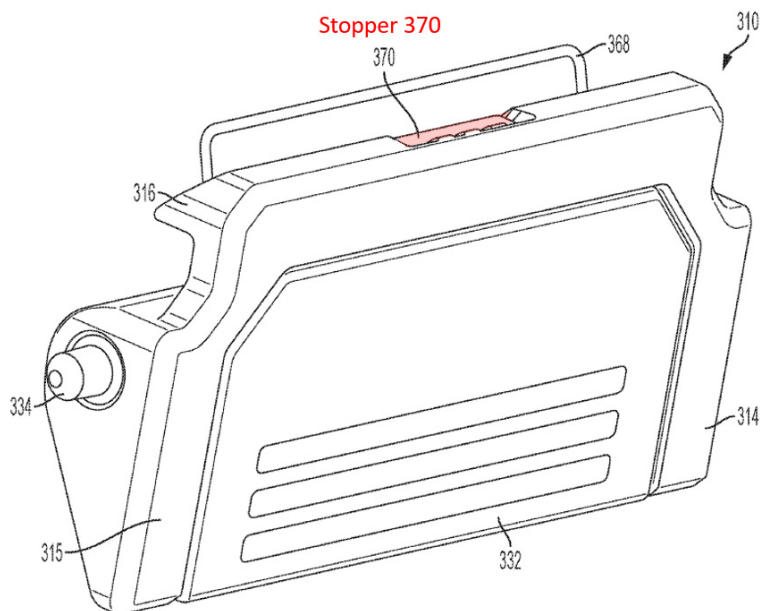


FIG. 20

EX1012, FIG. 20 (annotated).

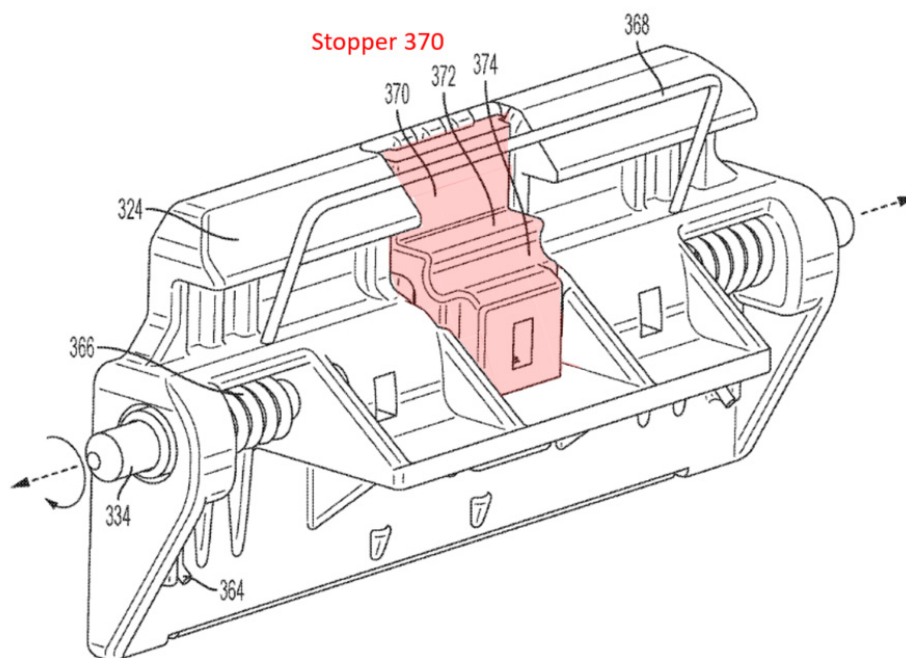
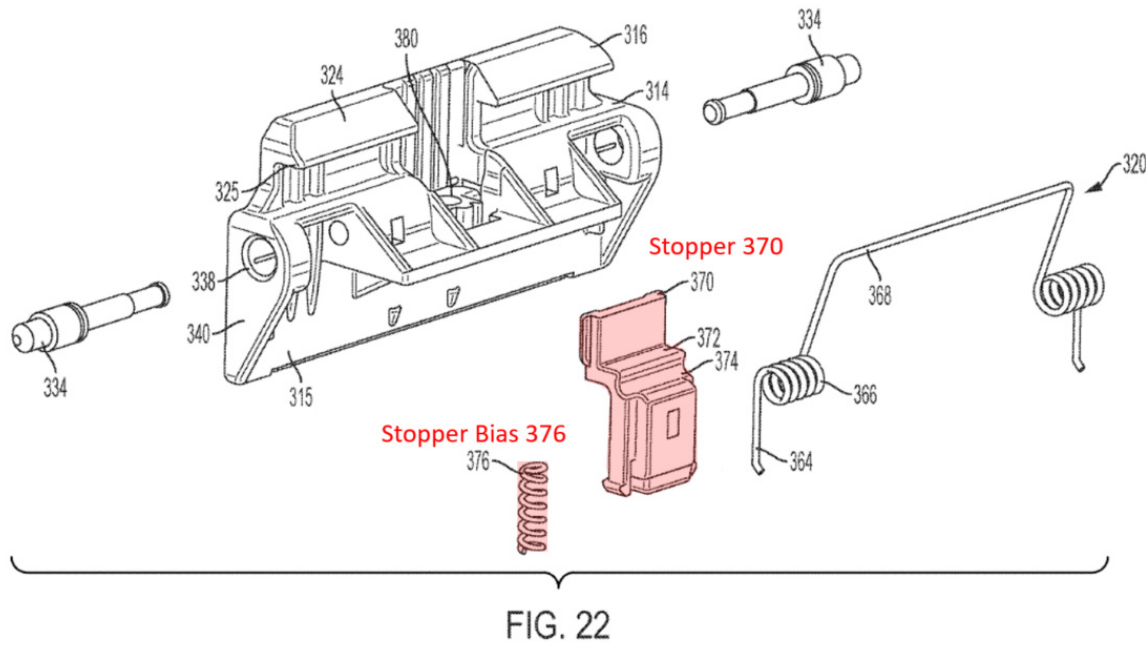


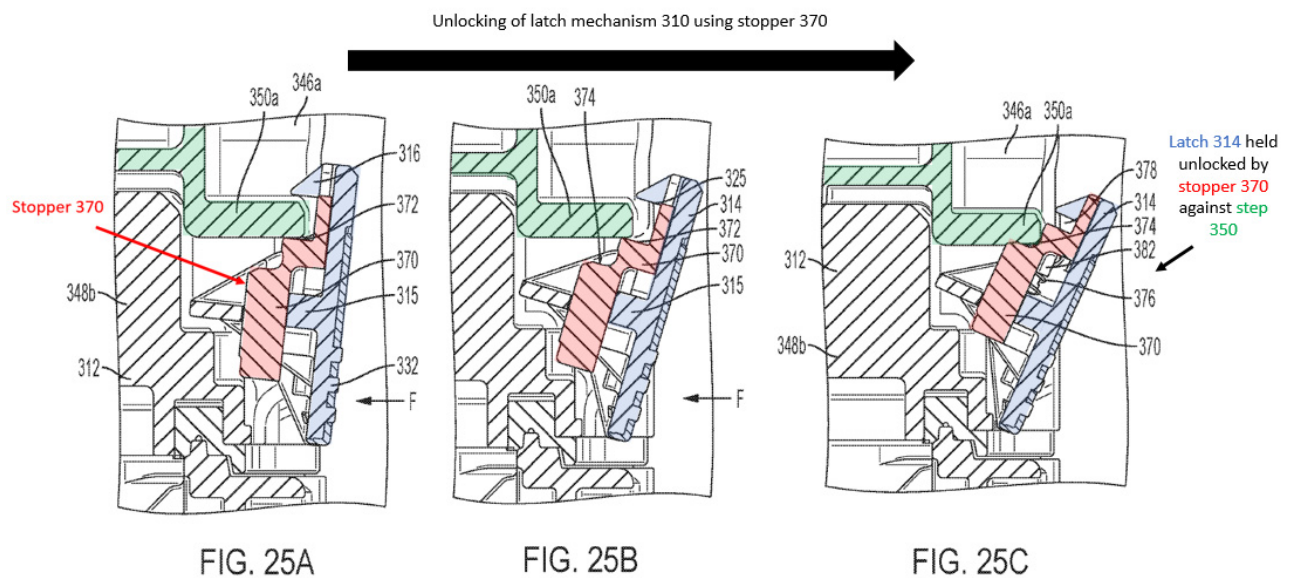
FIG. 21

EX1012, FIG. 21 (annotated).



EX1012, FIG. 22 (annotated).

94. Figures 25A-25D depict the operation of the latch and stopper during unstacking and resetting. EX1012, ¶63.



EX1012, FIGs. 25A-25C (annotated).

95. During unstacking, the operator presses the latch's operator surface 332, causing the latch 314 to rotate away from its default locked position. EX1012, ¶63. As the latch rotates, the stopper 370 moves upward and holds latch 314 in the open position, preventing it from returning prematurely. EX1012, ¶63. This temporary retention allows the user to separate the stacked containers easily. EX1012, ¶63. After the upper container is removed, latch 314 automatically returns to the default locked position, preparing the mechanism for the next stacking operation. EX1012, ¶63.

96. Shabtai provides another example of such a stop mechanism. As shown in Figures 11-14, stacking latch stopper 24 is a vertically movable member housed within the stacking latch body 21 and is biased upward by a coil spring 25 seated in a spring opening 29(d) on the latch body. EX1021, ¶42.

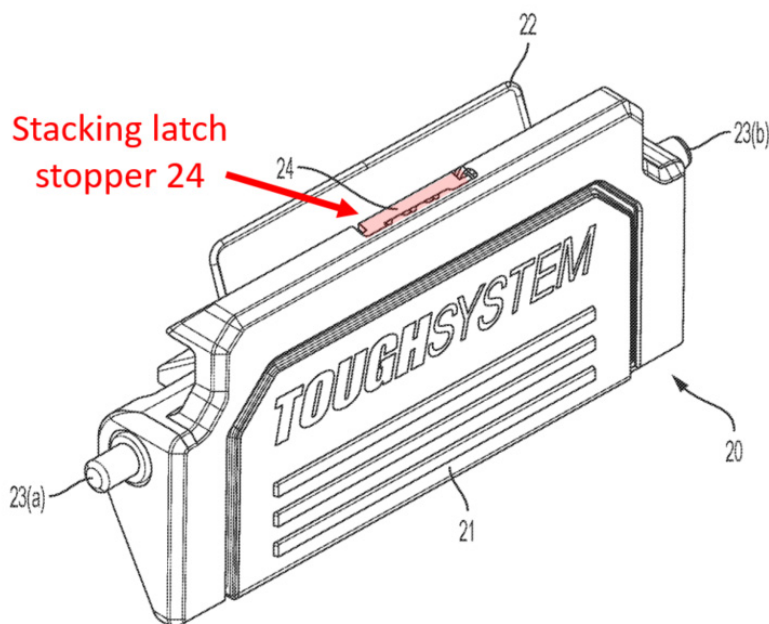


FIG. 11

EX1021, FIG. 11 (annotated).

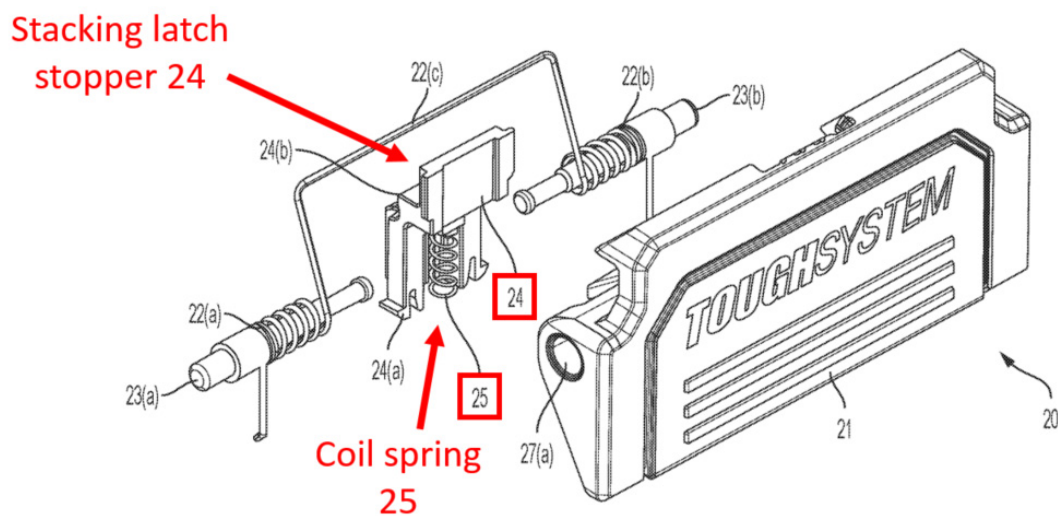
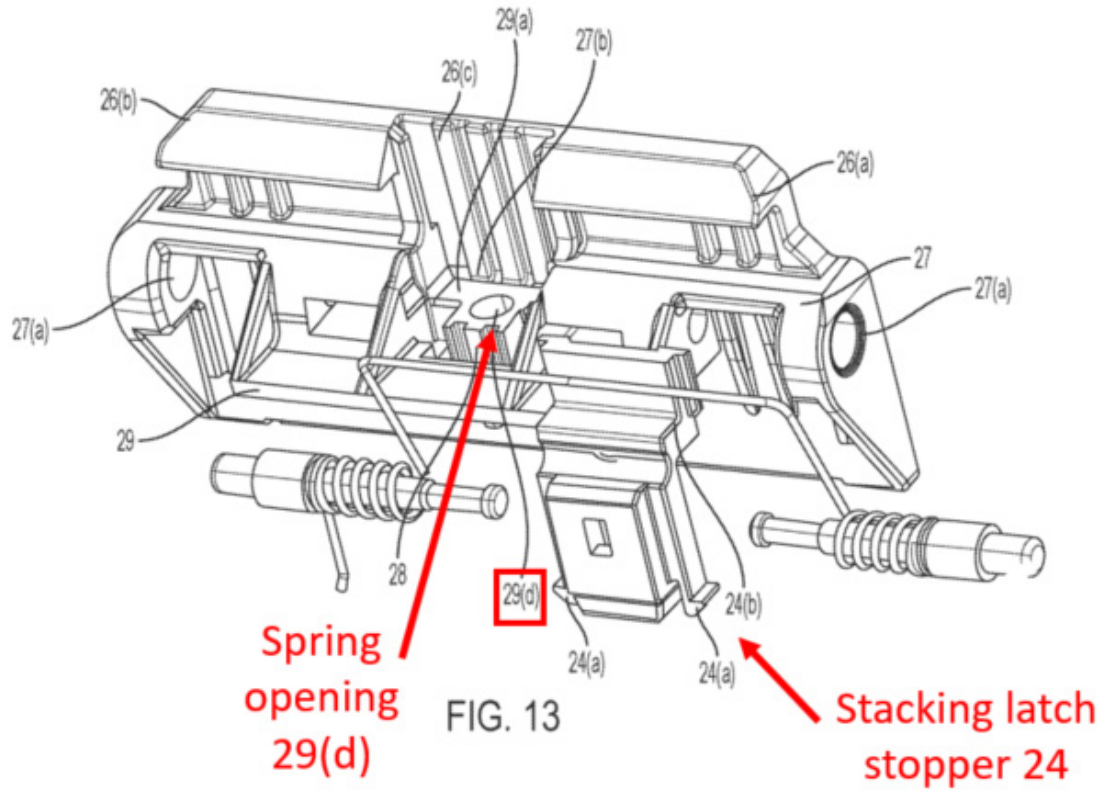
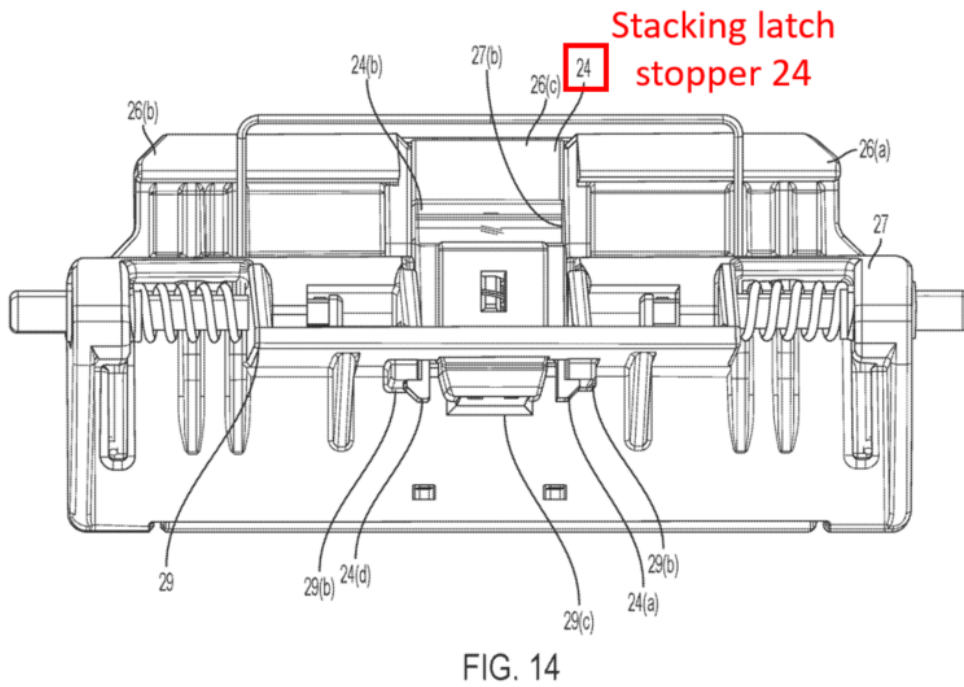


FIG. 12

EX1021, FIG. 12 (annotated).



EX1021, FIG. 13 (annotated).



EX1021, FIG. 14 (annotated).

97. The stopper 24 includes integrally formed spring tabs 24(a) that are inserted through openings in the latch body and retained beneath internal catch ledges 29(b), allowing stopper 24 to move vertically while remaining secured within the latch assembly. EX1021, ¶42. The upper surface 24(b) of stopper 24 serves as a contact surface for an adjacent structure and is positioned beneath vertical openings 26(c) and 27(b), enabling interaction with external components during stacking. EX1021, ¶42.

98. During stacking, step 4 of the stackable power outlet box presses down on the upper surface 24(b) of stopper 24, causing it to move slightly downward against the upward bias of coil spring 25. EX1021, ¶42. This movement is limited by stopper support surface 29(c), which prevents the stopper from disengaging. EX1021, ¶44. Upon unlatching, when the stacking latch body 21 is pushed inward at its lower portion, the hooks 26(a) and 26(b) in the upper portion are rotated away from step 4, and the coil spring 25 biases the stopper 24 upward. EX1021, ¶45. This upward motion slightly lifts step 4, allowing separation of the stacked boxes without requiring continuous user pressure on the latch. EX1021, ¶45.

99. In view of the references that I have discussed above, it was well known in the art that latching mechanisms would often included stopping components or retention features designed to control the movement of latch

elements, ensuring secure engagement and reliable disengagement. These stopping components typically served to (i) hold the latch in an open or disengaged position during unstacking, and (ii) automatically return the latch to a locked position when the boxes were stacked or released. Such mechanisms commonly utilized spring-biased members to provide consistent, repeatable rotational behavior, preventing accidental release while allowing quick and easy operation. These features improved both the safety and user experience of modular storage systems.

VII. OVERVIEW OF THE '946 PATENT

100. The '946 patent describes “modular storage boxes, and more specifically the connection mechanisms for attaching modular storage boxes.” EX1001, 1:22-24. At the outset, I note that the '946 patent explains that stacking and “interlocking storage boxes” was already well known in the art. EX1001, 1:28-41. The '946 patent alleges that one problem with existing locking mechanisms was the inability to interlock boxes have different lengths, widths, and sizes. EX1001, 1:42-48.

101. To address the alleged deficiencies in the art, the '946 patent describes a “connection structure” that allegedly “achieve[s] automatic locking, [with] unlocking and automatic reset functions.” EX1001, 1:52-67. To illustrate the '946 patent’s proposed connection mechanism, the '946 patent provides Figure 4, which depicts the connection of two boxes using a “locking part 12.” EX1001, 8:19-36.

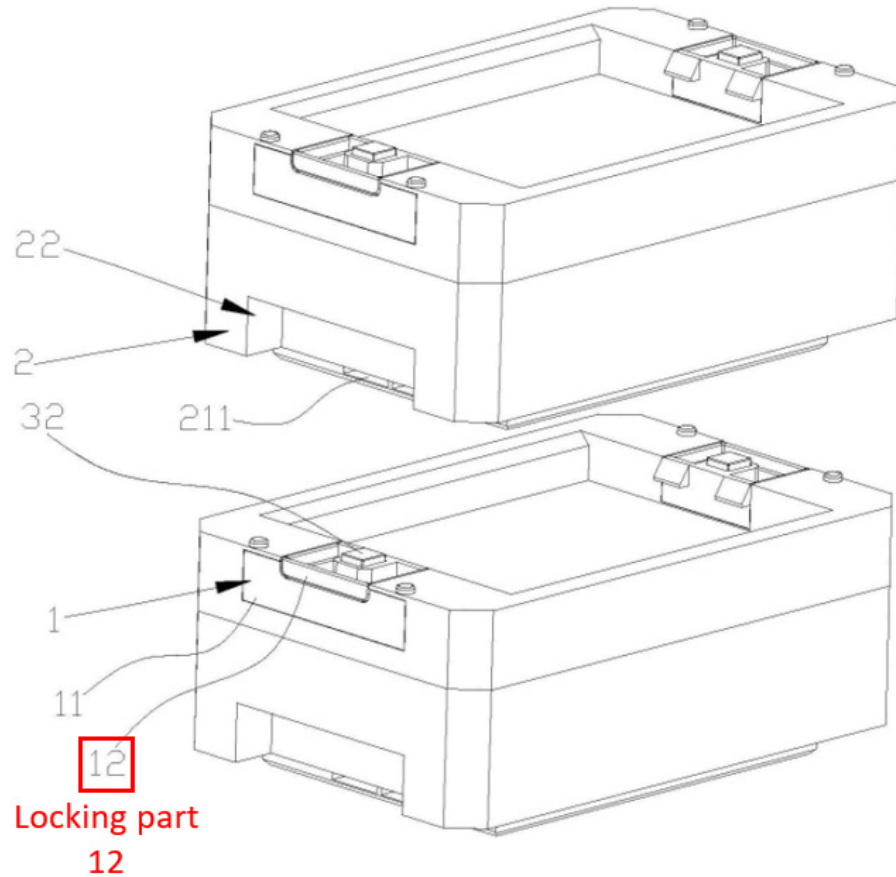
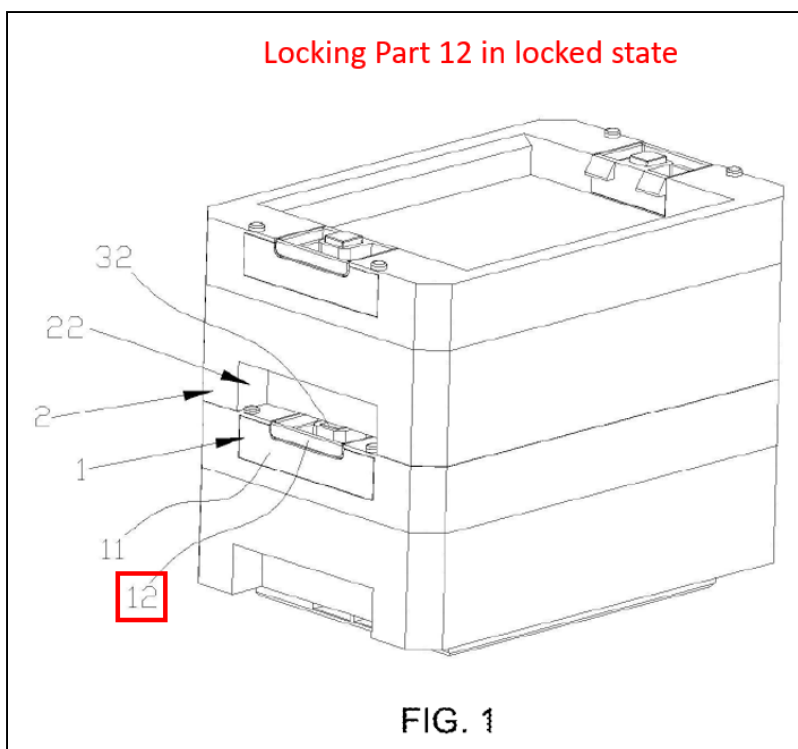


FIG. 4

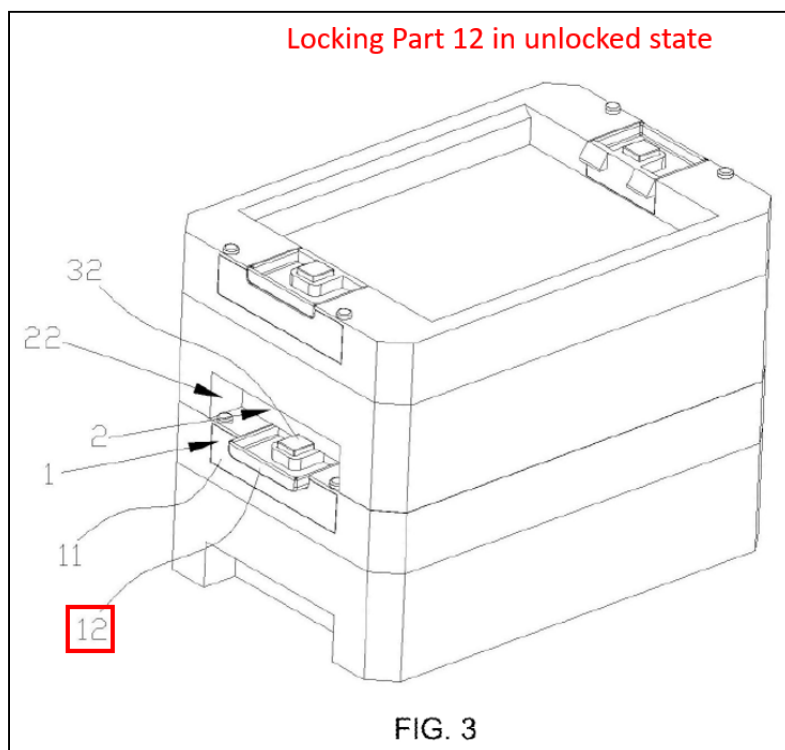
EX1001, FIG. 4 (annotated).¹

102. Additionally, the '946 patent provides Figures 1 and 3, which show two containers in a locked and unlocked state respectively based on the position of locking part 12. EX1001, 6:23-35, 8:9-17.

¹ For higher visual fidelity, I have used figures from EX1005 (CN116729770 / 202210212862.5) in place of the figures from the '946 patent. The '946 patent claims priority to EX1005 and the content of the figures is the same.



EX1001, FIG. 1 (annotated).



EX1001, FIG. 3 (annotated).

103. As depicted in Figure 1, when locking part 12 is pushed inward toward the center of the boxes, the boxes are locked together. EX1001, 8:9-36. As depicted in Figure 3, when locking part 12 is pulled outward and away from the center of the boxes, the boxes are unlocked. EX1001, 8:37-61.

104. The '946 patent further describes the locking and unlocking functionality based on the various components of locking part 12 as depicted in Figure 7 and a slot 211 on the bottom of a box as depicted in Figure 5. EX1001, 6:61-7:32, 7:52-8:17.

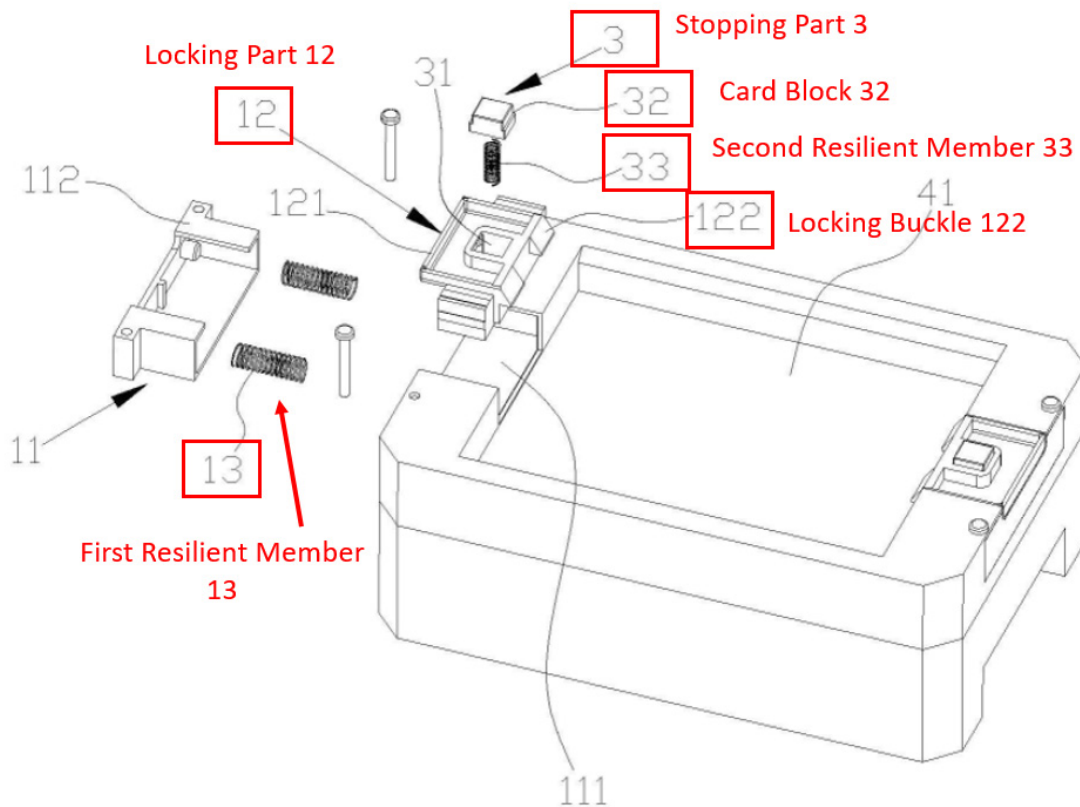


FIG. 7

EX1001, FIG. 7 (annotated).

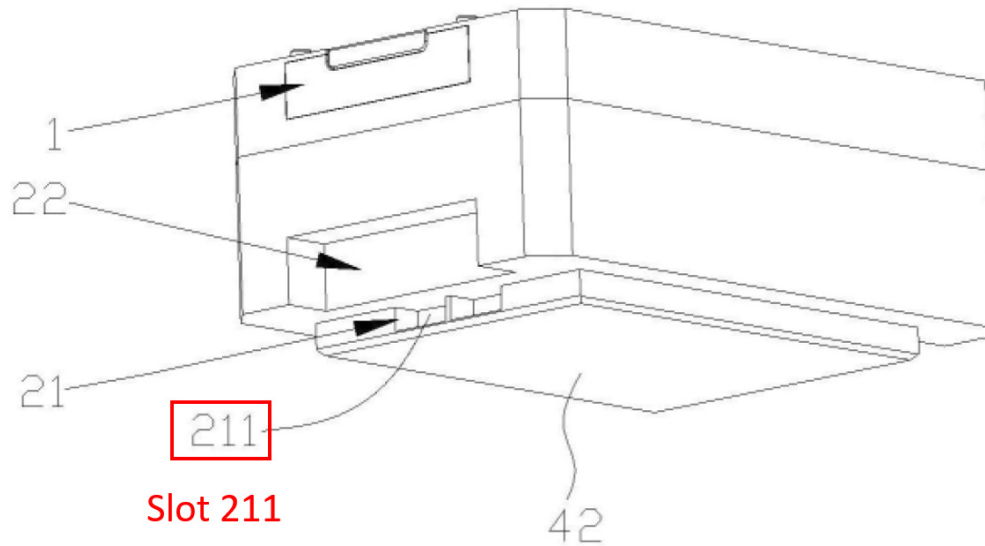


FIG. 5

EX1001, FIG. 5 (annotated).

105. The '946 patent explains that when a user wants to “lock two storage boxes,” the user presses downward on the upper storage box. EX1001, 8:19-26. Based on the spring action of first resilient member 13, pressing downward with the upper box initially moves locking buckle 122 outward and “away from the center of the storage box” until the locking buckle 122 aligns with slot 211 on the bottom of the upper box. EX1001, 7:29-32, 8:19-26. Once aligned, “the locking buckle 122 is driven by the first resilient member 13 [and] automatically stuck into the slot 211” thereby locking the boxes together. EX1001, 8:26-34.

106. When unlocking the two storage boxes, a user pulls “locking part 12 of the lower storage box outward.” EX1001, 8:37-44. This causes locking buckle 122 of the lower storage box to detach from the slot 211 of the upper storage box.

EX1001, 8:37-44. Additionally, this causes stopping part 3 and card block 32 to “automatically extend[] upward under the action of the second resilient member 33,” which may be another spring. EX1001, 8:44-54. When the card block 32 is extended upward as depicted in Figure 3, the locking part 12 is held in an “unlocked state.” EX1001, 8:9-17. “At this time, the upper and lower storage boxes can be easily unlocked and separated by simply pulling up the upper storage box.” EX1001, 8:51-54.

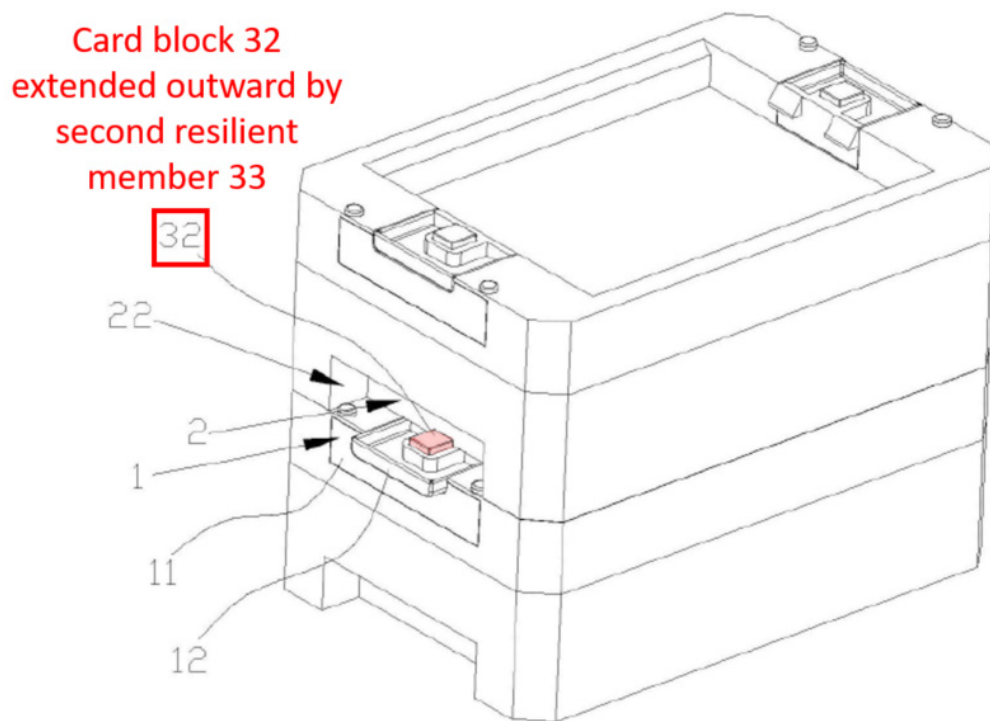


FIG. 3

EX1001, FIG. 3 (annotated).

107. In this manner, the '946 patent highlights “stopping part 3” and card block 32 to help with unlocking or uncoupling two storage boxes. EX1001, 7:58-

8:5, 8:9-17, 8:37-61. When card block 32 is projected outward, locking part 12 is held in an unlocked state. EX1001, 7:58-8:5, 8:9-17, 8:37-61. When in a locked state, card block 32 is compressed as depicted in Figure 1. EX1001, 7:58-8:5, 8:9-17.

108. As I further explain in the following section, I understand that aspects of the stop part functionality were deemed allowable during prosecution. EX1002, 520-529, 644, 649-660. As I previously explained, however, the use of a stop part and stop part functionality was already well known in the art prior to the '946 patent. Section VI.C. For that reason, the Examiner appears to have erred when allowing the '946 patent. As I further demonstrate in the grounds below and with reference to Li and Baruch, the '946 patent's proposed connection mechanism and stopping part were already well known in the art and a POSA would not have viewed such features as innovative or unique. Sections XII.A, XVI.A.

VIII. PROSECUTION HISTORY

109. I have reviewed the prosecution history of the '946 patent and understand that the application that issued as the '946 patent was the subject of a single Office Action that identified allowable subject matter. EX1002, 637-645. As I further explain with reference to the grounds below, a POSA would not have found the identified features innovative and instead would have found the elements of the claims to be taught and well-known in the prior art. Sections XII-XIX.

110. Based on my review, the '946 patent was the subject of a restriction requirement and one Office Action prior to allowance. EX1002, 637-645, 702-710. At the outset, the Examiner issued a restriction requirement identifying distinct species for examination. EX1002, 582-587.

Election/Restrictions

2. This application contains claims directed to the following patentably distinct species:

Species A-Figs.1-7

Species B-Figs.8-14

Species C-Figs. 15-19

IF species C is elected applicant must elect which local structure is being utilized:

Sub-species A-Figs.20-22

Sub-species B-Figs.23-24

Sub-speciesC-Figs.25-26

The species are independent or distinct because the claims to the different species recite the mutually exclusive characteristics of such species A and C are different as species C discloses a utility box that has different structure compared to species A box which also have different local structures. In addition, these species are not obvious variants of each other based on the current record.

EX1002, 584.

111. In response to this restriction requirement, I understand that the Applicant elected Species A corresponding to Figures 1-7 of the specification. EX1002, 588.

RESPONSE TO RESTRICTION REQUIREMENT

In response to the Restriction Requirement dated January 12, 2024, Applicant elects without traverse Species A (Figs. 1-7). Claims 1-5, 10-15, and 19-21 read on the elected species with Claims 1-5, 11-13, 15, 19, and 21 being generic.

EX1002, 588.

112. Following this election, the Examiner issued an Office Action, including one art-based §102 rejection in view of Ben-Gigi (US9,725,209). EX1002, 637-645. The Office Action also identified allowable dependent claims that were all directed to aspects of the “stop part.” EX1002, 520-529, 644 (identifying prosecution claims 2-5, 14, and 21 as allowable subject matter).

113. In response to this indication, the Applicant amended dependent claims into independent form. EX1002, 649-660. The list that I have provided below highlights the features that were deemed allowable and their subsequent incorporation into the issued independent claims:

- Issued Claim 1 = “wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part”
- Issued Claim 11 = “wherein the stop part moves perpendicular with

respect to a sliding path of the locking part”

- Issued Claim 15 = “wherein said locking part further comprises a holding slot opened on the locking part, and further comprising a second resilient member combined between the holding slot and the stop part, wherein the stop part is extended from the slot in the locking part when the stop part is in the unlocked state, and wherein the stop part is retracted in the slot in the locking part when the stop part is in the locked state.”

EX1002, 520-529, 644, 650-657. After rewriting the claims into independent form, the claims ultimately issued as claims 1, 11, and 15 of the '946 patent. EX1002, 649-660.

114. Based on my review, I note that each of the features identified above, however, were already well known in the art. *See* Section VI. For example, a stop part being extended in an unlocked state, compressed in a locked state, or moving perpendicular to a sliding path were already well-known features as I will further discuss with reference to Li and Baruch in the grounds below. Sections XII.A, XVI.A.

IX. LEVEL OF ORDINARY SKILL IN THE ART

115. A person of ordinary skill in the art (POSA) at the time of the '946 patent was filed would have had a bachelor's degree in mechanical engineering, or

industrial design, and would have had at least two years of industry or academic experience with connecting technologies or similar mechanisms.

116. I am familiar with the technology of the '946 patent during the March 2022 timeframe. By 2022, I had at least 30 years of experience pursuing university teaching and research, including working with industry, with applications to automotive and robotic systems, which included experience related to mechanical devices such as latches and closures. Based on my education, teaching, research and experience I am a person of more than ordinary skill in the art of the '946 patent, however in my analysis I have continually relied upon the viewpoint of a person of ordinary skill in the art.

X. CLAIM CONSTRUCTION

117. I have been informed that the challenged claims of the '946 patent are to be given their plain and ordinary meaning as understood by one of ordinary skill in the art at the time of the invention in light of the specification and the prosecution history pertaining to the patent.

118. I have been informed that ToughBuilt and Meridian agreed on the construction for the following claim terms in the district court proceeding.

EX1027, 3; *see also* EX1025, 3; EX1026, 24, EX1028, 10.

Claim Term	Agreed Upon Constructions
“other storage box”	Plain and ordinary meaning, and is used interchangeably with “another storage box”
“mounting part”	Plain and ordinary meaning, and is used interchangeably with “mounting body”
“slot”	Plain and ordinary meaning, not indefinite
“a locking part cooperating with the locking buckle” / “a locking part configured ... to cooperate with the locking buckle”	“a locking part including a locking buckle”

119. I have also been informed that the parties continue to dispute the following terms. ToughBuilt initially proposed the following claim constructions in the district court proceeding. EX1025, 3-17; EX1027, 4-22. Meridian initially indicated that the claim terms below should receive their plain and ordinary meaning. EX1026, 9-21; EX1028, 8-21.

Claim Term	ToughBuilt’s Construction Proposed at District Court
“configured to slide inward”	“designed to slide towards the center of the container”
“manual movement”	“moved by a user touching and applying force”
“stop part”	Governed by 35 U.S.C. § 112(f) Function: extending from retracted state with respect to locking path of

	locking part to prevent locking part from being automatically lockable and compressed by other storage box when the first connection part is in a locked state with the second connection part; Structure: Figs. 6/7, 7:66-8:5 (stopping part 3, including holding slot 31, card block 32 and resilient member 33); Figs. 9/13, 9:65-10:8 (stopping part 3, including fixing slot 34 and fixing block, second resilient member 33); Figs. 16/20, 12:26-34 (stopper 3000, including card block 1036 and second resilient member 1033); Figs. 25/26, 14:40-58 (stopper 3000 including card block 1036, second resilient member 1033) and equivalents Alternatively, if not a means-plus-function term, then a part that prevents the locking buckle from automatically locking with the mating part
“compressed”/ “compressed state”	“Shortened from its normal length along an axis by application of force along that axis”

120. Following a claim construction hearing, the parties submitted additional briefing with additional explanations and clarifications for these terms. EX1029, 1-10; EX1030, 4-13.

Claim Term	ToughBuilt’s Supplemental Briefing	Meridian’s Supplemental Briefing
“configured to	If Meridian’s interpretation	The specification’s discussion of

slide inward”	is adopted, then: “the locking buckle is configured to initially slide inward with respect to the mounting part during the attachment of one storage box to the other”	orientation language (e.g., “between,” “inward,” “outward,”) has no impact on the construction of the claims.
“manual movement”	“moving by hand” via “direct touching”	“movement that requires user involvement,” with no restriction on how direct the user involvement must be
“stop part”	If not construed as a means-plus-function element, should be construed as: “combination of a rigid blocking part and a resilient member that extends out from a slot on the locking part so as to physically block the locking part from connecting to the second connection part, and that is compressed and retracted out of the path to allow locking”	If a construction is needed: “a spring-biased mechanical interference device”
“compressed”/ “compressed state”	“shortening” or “squeezed” as a synonym	Being exposed to a compressive pressure

121. Based on my review of the challenged claims, no explicit claim constructions are required to determine that the claims are unpatentable in view of the prior art and grounds below. It is my opinion that the claims are unpatentable in view of the prior art and grounds of unpatentability presented below under any of the constructions proposed above, under the “plain and ordinary meaning” of the claim terms, or under any reasonable construction of the claim terms. Sections XII-XIX.

XI. OVERVIEW OF THE PRIOR ART

122. In this section, I provide an overview of the prior art that is ultimately used in the grounds of unpatentability that I further analyze below. *See* Sections XII-XIX. I note that the prior art references summarized below and applied in the grounds of unpatentability are analogous. Specifically, and as I further explain throughout this declaration, the prior art references are directed to stackable boxes and latching mechanisms. This is the same field of technology as the '946 patent and the claims of the '946 patent. I additionally note that all of the prior art references are pertinent to problems presented by the '946 patent. For example, the prior art references are all pertinent to addressing and achieving “automatic locking, keeping unlocking and automatic reset functions, so as to facilitate the user’s operation and use” of storage boxes. EX1001, 1:52-57.

A. Li

123. Li discloses a “latch structure comprising an elastic pull latch.”

EX1007, Abstract. The elastic pull latch securely connects a lower box to an upper box when the “two boxes are stacked together.” EX1007, Abstract. Specifically, elastic pull latch 3 on the lower box interconnects with catch 12 on the bottom side of the upper box “to securely connect the two boxes.” EX1007, Abstract, ¶¶29-31, 33, 36, 38.

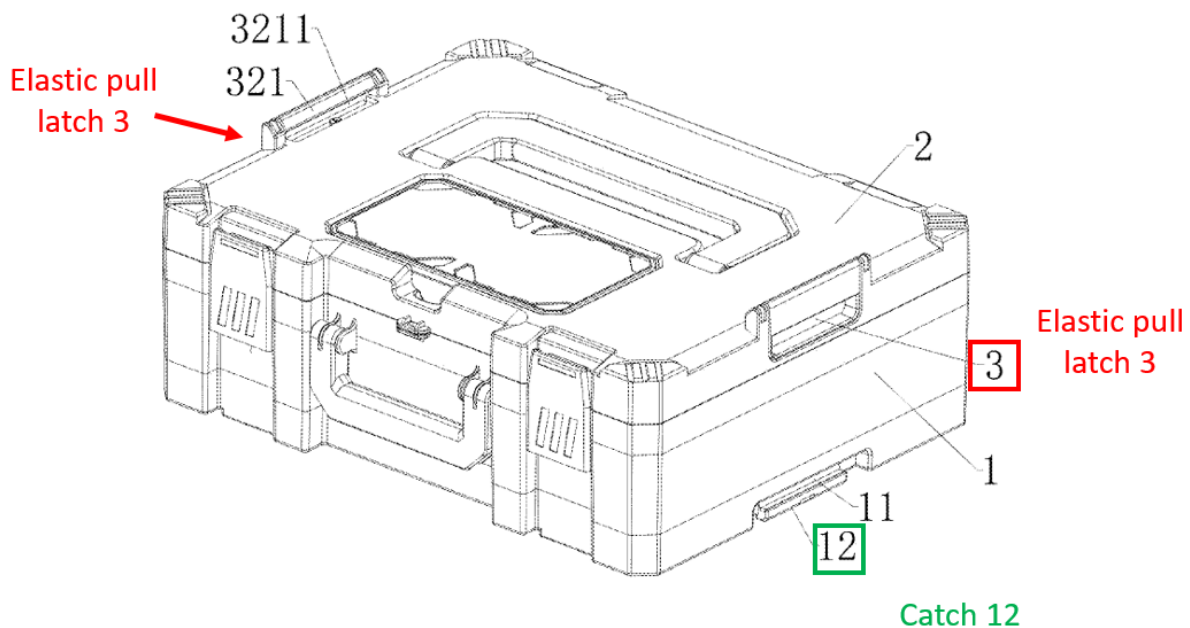


FIG. 1

EX1007, FIG. 1 (annotated).

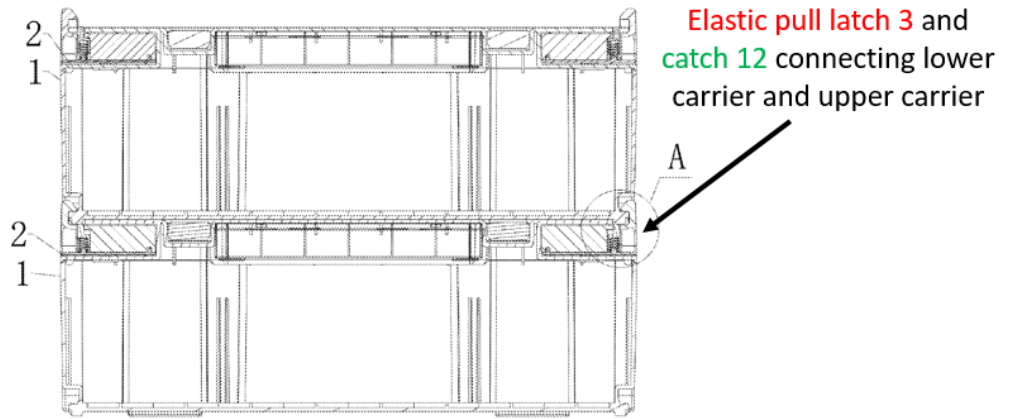


FIG. 6

EX1007, FIG. 6 (annotated).

124. For example, Figure 7 depicts latch bar 321 connected to catch 12 lock the upper and lower carriers together. EX1007, ¶¶29-33. “[C]atch 12 of an upper box can directly snap into the latch groove 3211 of a lower box.” EX1007, ¶¶38.

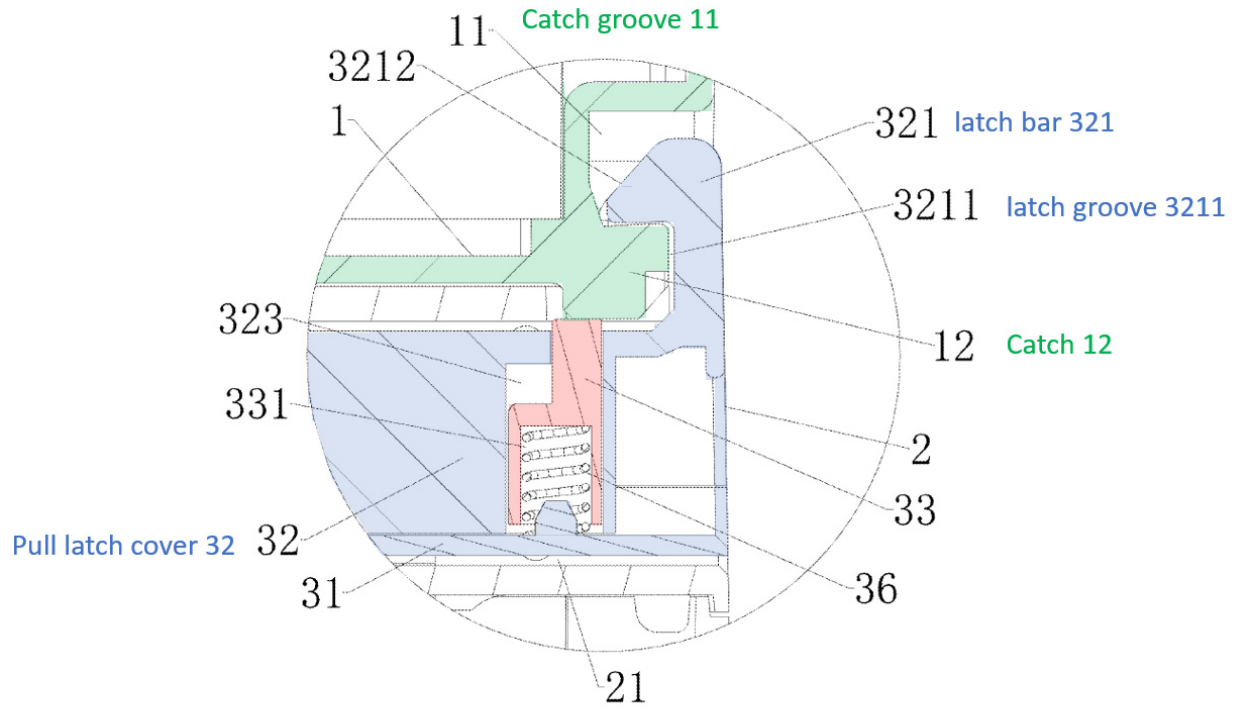


FIG. 7

EX1007, FIG. 7 (annotated).

125. When unlocking or decoupling the boxes, a user pulls elastic pull latch 3 outwards and away from the center of the connected boxes. EX1007, ¶¶5-6, 12, 16, 29-30, 35-36. The unlocking of the two boxes is depicted in Figure 8 and can also be seen as Figure 7 transitions to Figure 9. EX1007, ¶¶24-26, 30, 36.

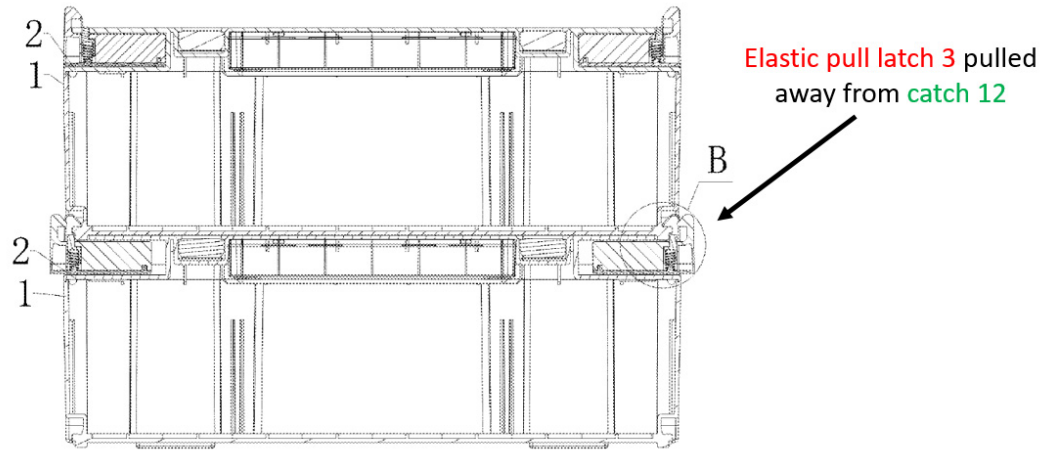
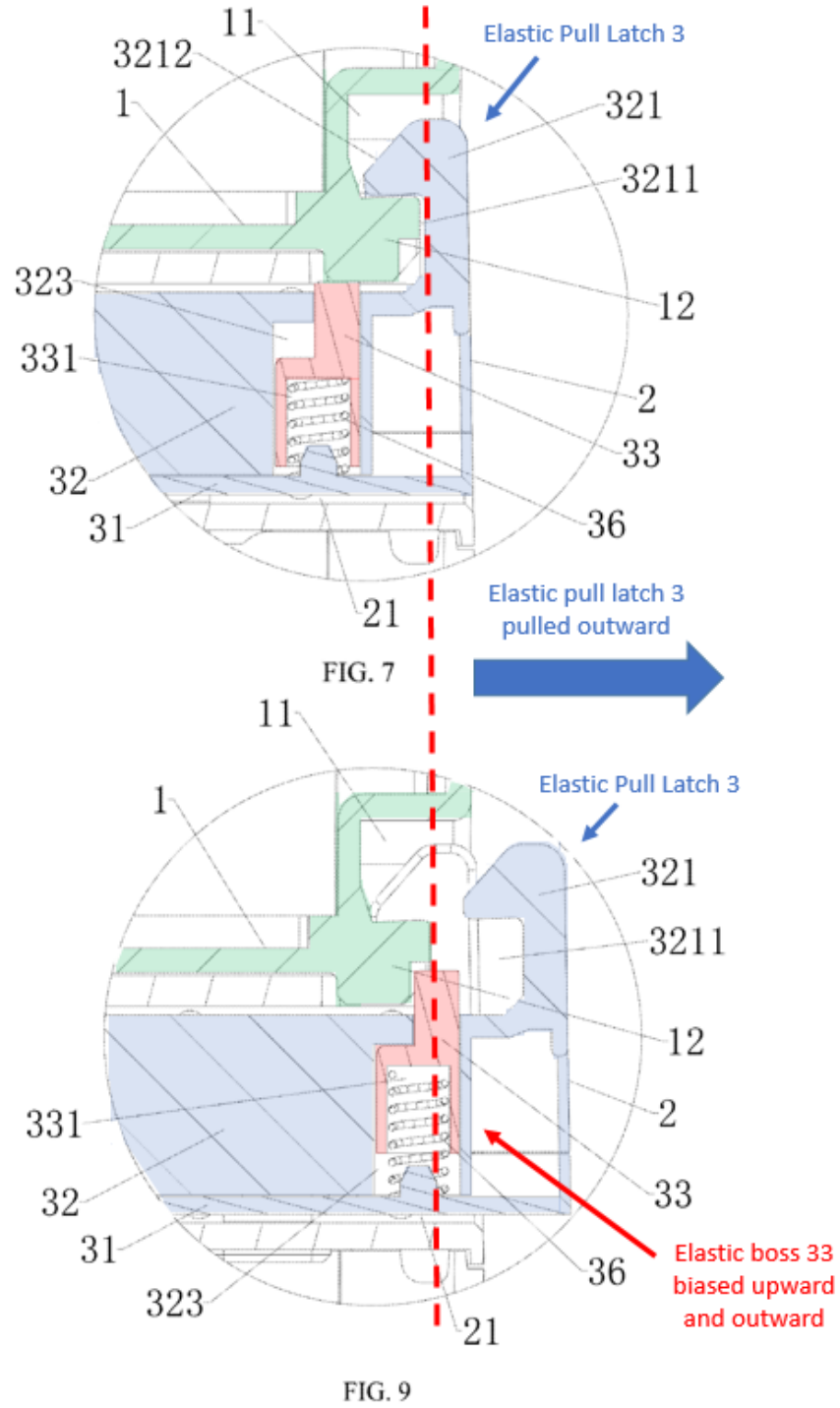


FIG. 8

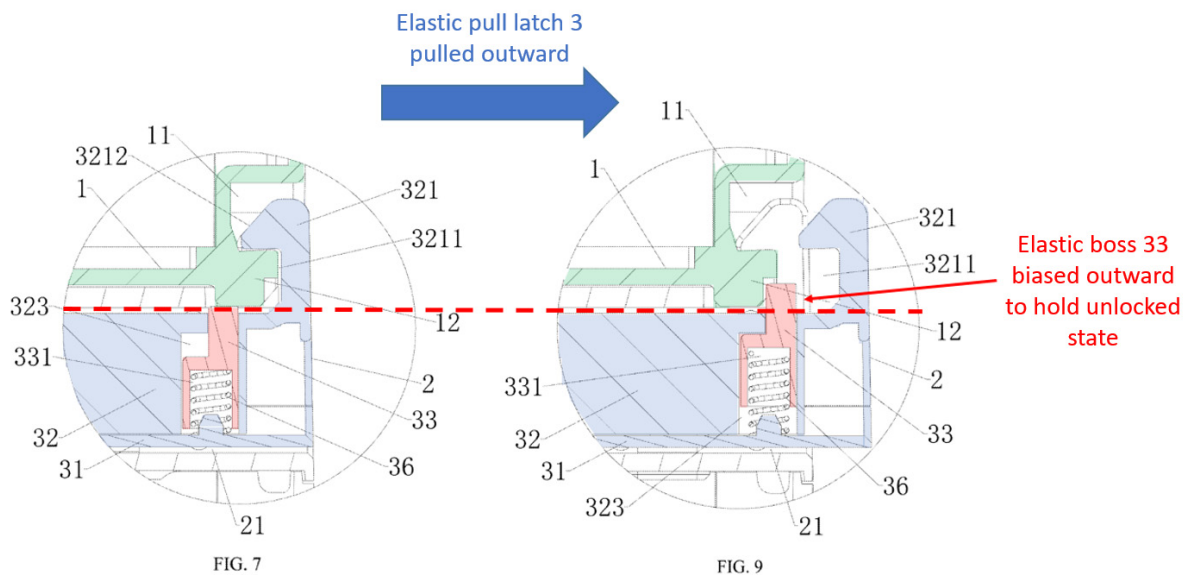
EX1007, FIG. 8 (annotated).



EX1007, FIGs. 7, 9 (annotated).

126. Figure 9 shows the extension of the elastic boss 33 projecting in the

outward direction to hold elastic pull latch 3 in an unlocked state. EX1007, ¶¶5, 12, 29-30, 36. When a user pulls the elastic pull latch 3 outward in the horizontal direction, elastic boss 33 projects upward in the vertical direction via spring 36. EX1007, ¶¶5-6, 12, 29-30, 35. “After the elastic pull latch of the lower carrier is pulled out, the elastic boss rises above and extends out of the upper surface of the latch so it becomes blocked by the catch.” EX1007, ¶¶6, 30.



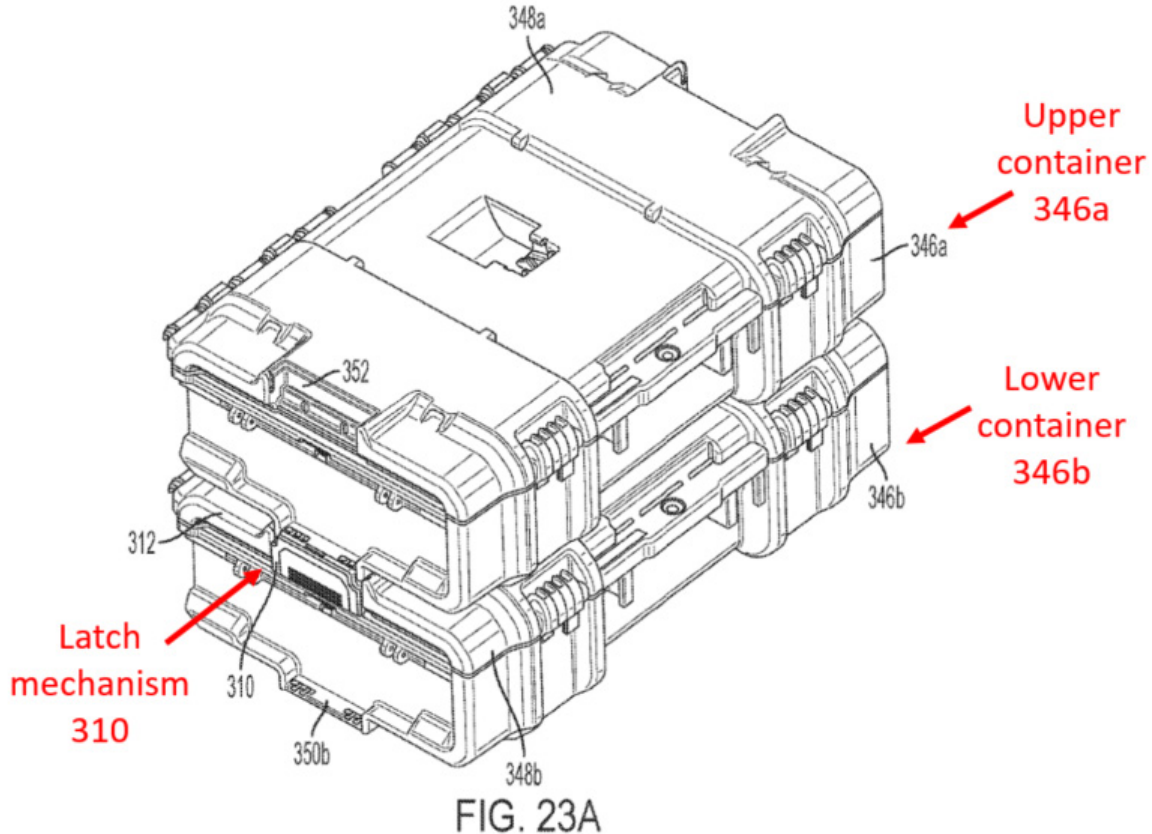
EX1007, FIGs. 7, 9 (annotated).

127. Specifically, “the elastic boss 33 is held on the outer side of the catch 12 and the elastic pull latch 3 remains in a pulled-out state.” EX1007, ¶36. After elastic boss 33 is extended, “pull latch 3 is being prevented from retracting inwards and is held on the outer side of the catch 12.” EX1007, ¶¶30-31. Li teaches that an advantage of this configuration is that “when stacked carriers need to be separated, each elastic pull latch can be pulled out using one hand and will remain in a pulled-

out state without retracting so that other elastic pull latches can be released one by one.” EX1007, ¶¶16, 38. As I further explained below, the functionality of elastic boss 33 discloses the same functionality described in the ’946 patent.

B. Baruch

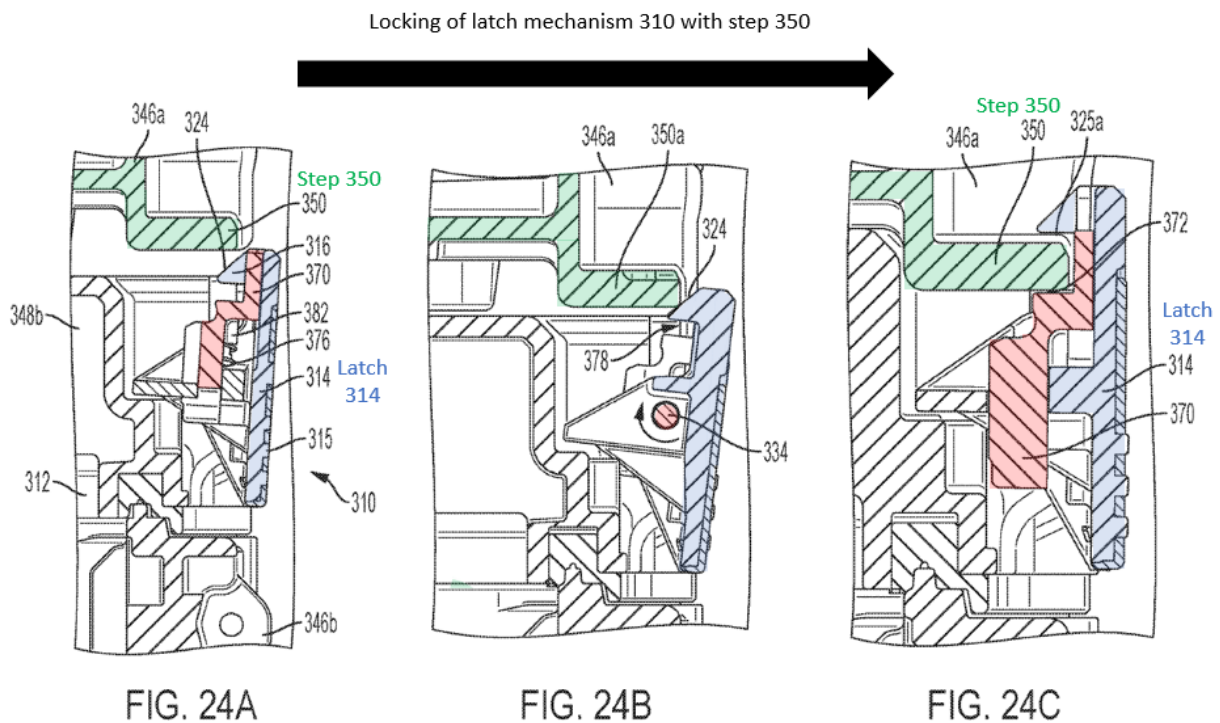
128. Baruch describes a “latch mechanism [] configured to secure two containers together.” EX1012, Abstract. I primarily focus on Baruch’s teachings from the “fourth embodiment,” but understand that Baruch is not limited solely to those teachings. EX1012, FIGs. 20-25D, ¶¶49-56, 62-63. In this embodiment, Baruch describes “two containers being held together by a latch mechanism.” EX1012, ¶¶33, 62.



EX1012, FIG. 23A (annotated).

129. Latch mechanism 310 is disposed on the lid of the lower container and interlocks with a lower portion of the upper container referred to as “step 350.”

EX1012, ¶¶62-63. The locking of the upper container to the lower container is depicted as Figure 24A transitions to Figure 24C. EX1012, ¶62.

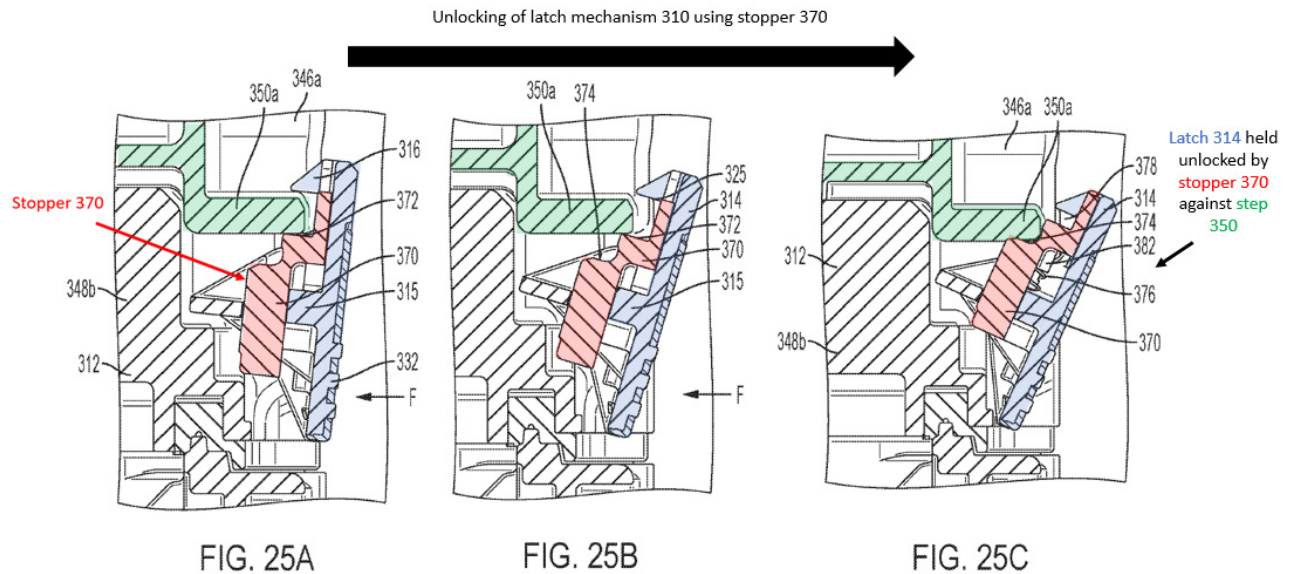


EX1012, FIGs. 24A-24C (annotated).

130. When an operator positions the upper container above the lower container and applies a “downward force,” the upper container displaces latch 314 until step 350 is positioned underneath a “primary hook 316” of the latch and locks the containers together. EX1012, ¶62.

131. Figures 25A-25C depict the unlocking of the two containers. EX1012,

¶63.



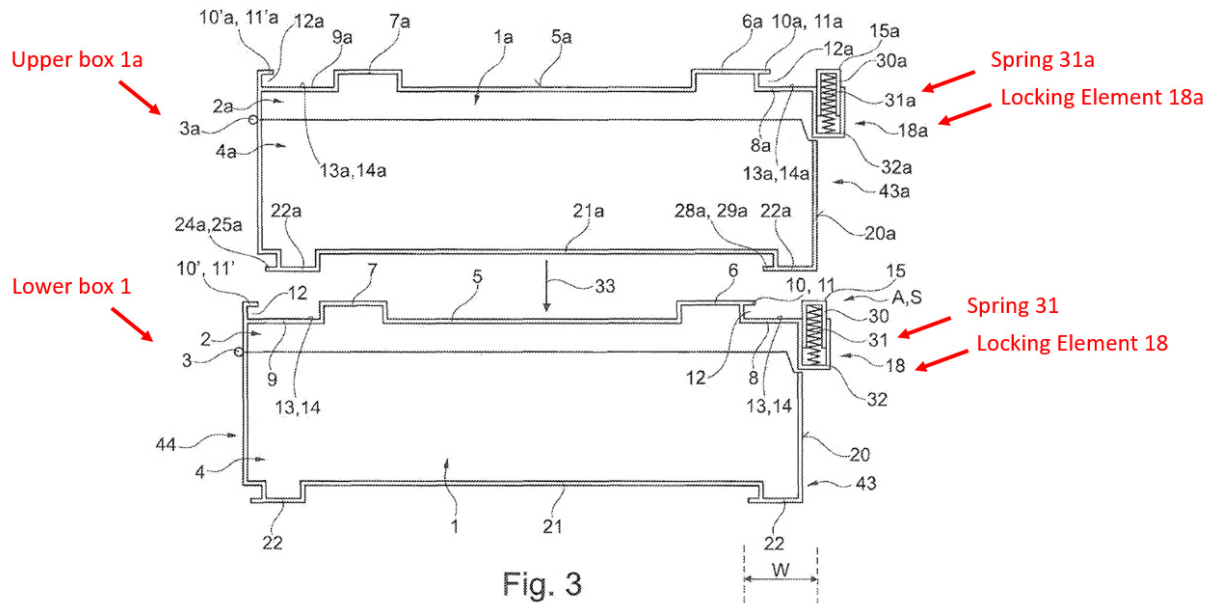
EX1012, FIGs. 25A-25C (annotated).

132. When an operator unlocks latch mechanism 310, stopper 370 is biased outward, holds latch 314 in an unlocked position, and prevents latch 314 from automatically re-locking. EX1012, ¶63. This allows an operator to easily lift and “fully disengage” the upper container from the lid of the lower container. EX1012, ¶63. As further explained below, this stopper functionality discloses the same functionality described in the ’946 patent.

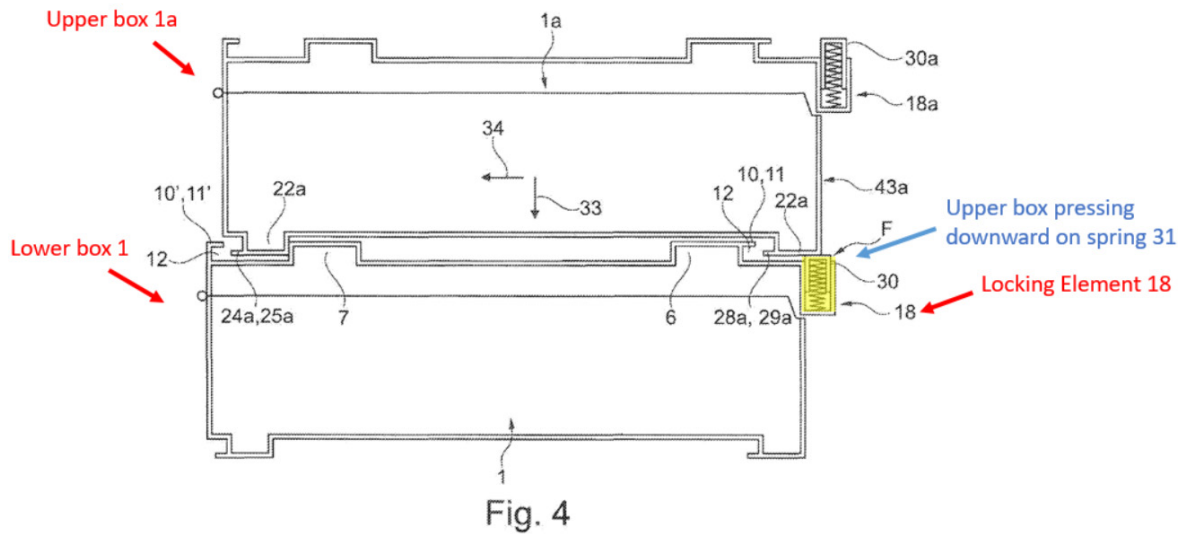
C. Burchia

133. Like the ’946 patent, Li, and Baruch, Burchia describes a “stackable box” and an “arrangement comprising at least two boxes stacked one on top of the other.” EX1008, Title, ¶¶1, 48-49. Figure 3 depicts an upper box 1a being lowered downward in the direction of arrow 33, and Figure 4 depicts the upper box 1a

stacking on top of a lower box 1. EX1008, ¶¶1, 53-54, 79-82.



EX1008, FIG. 3 (annotated).



EX1008, FIG. 4 (annotated).

134. As seen in Figure 4, when lowered downward, the bottom of upper box 1a presses downward onto “locking element 18” of the lower box 1. EX1008,

¶82. Locking element 18 compresses due to the inclusion of a “spring 31” and therefore “can be moved in spring-loaded manner.” EX1008, ¶¶11, 13, 76. When upper box 1a is moved leftward in the direction of arrow 44 or when upper box 1a is removed, locking element 18 extends once again and “automatically moves back due to the reset force of the pressure spring 31.” EX1008, ¶82. In this manner and like the ’946 patent, Burchia describes the use of a spring that moves vertically in a manner that locks stackable boxes together. EX1008, ¶¶11-14, 75-78, 82, 86-87, Cl. 6.

135. Notably, Burchia explains that several types of springs can be used and interchangeable for providing this vertical displacement:

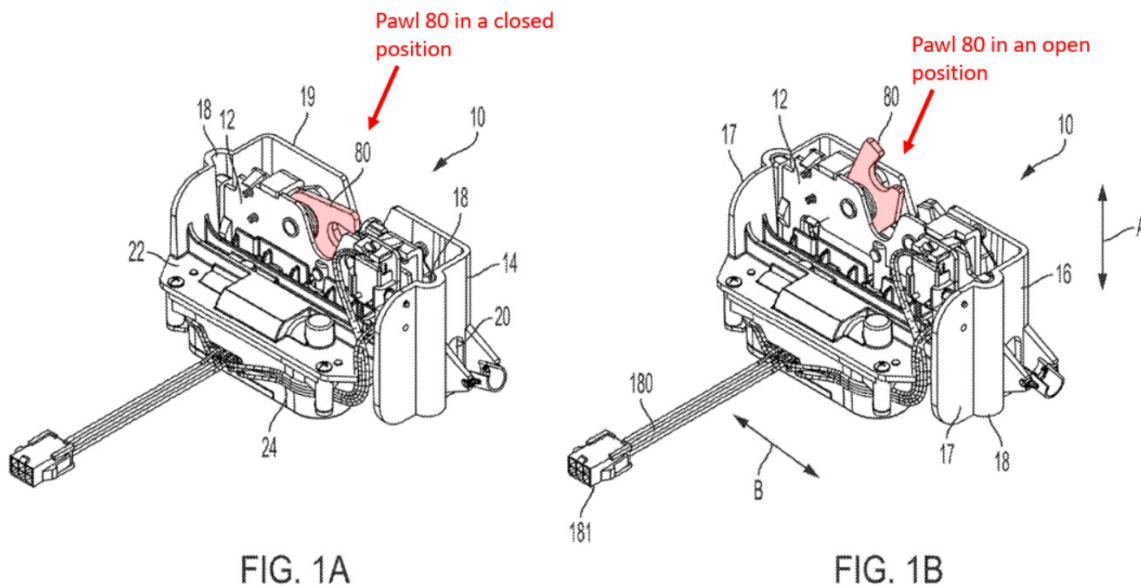
In order to be able to displace the locking element under spring stress, a spring element, for example, or another force storage unit is provided. *A pressure spring can be used.* Also, elastomer springs, leaf springs, helical springs or springs of a general nature can be used. *Likewise, torsion springs or plate springs can be used.*

EX1008, ¶14 (emphasis added).

136. In view of this description, Burchia teaches that many different types of springs, including pressure springs, plate springs, and torsion springs are interchangeable and usable in locking mechanisms for stackable boxes. EX1008, ¶14.

D. Hammond

137. Hammond describes a “compression latch assembly” that includes a “pawl pivotably connected to [a] frame and biased to move from a closed position to an open position.” EX1009, Abstract, ¶¶4-5, 54, 78. For example, Figure 1A depicts pawl 80 in a “closed and fully retracted state” while Figure 1B depicts pawl 80 in an “open and fully extended state.” EX1009, ¶¶8-9, 54.



EX1009, FIGs. 1A-1B (annotated).

138. Hammond explains that pawl 80 is biased toward the open/extended position via a torsion spring 48b. EX1009, ¶54 (“Spring 48b biases pawl 80 to the open position shown in FIG. 1B”), ¶78 (“Pawl 80 can auto-rotate to the open position under the bias of spring 48b”), ¶¶52, 55 (referring to springs 48 as “springs” and “torsion springs” interchangeably). Specifically, Figure 16 depicts pawl 80 while Figure 3C depicts the connection of torsion spring 48b to pawl 80.

EX1009, ¶¶50, 54, 57, 61.

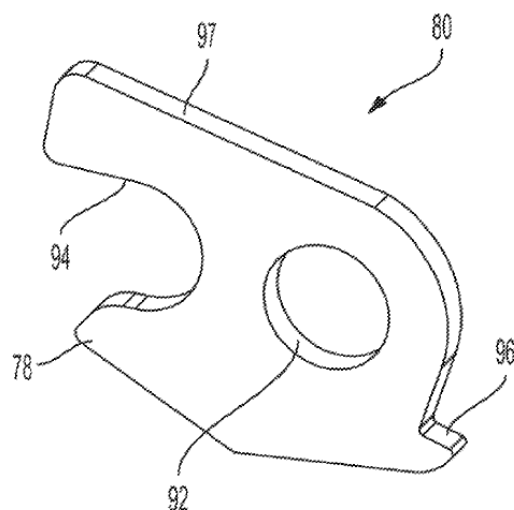


FIG. 16

EX1009, FIG. 16.

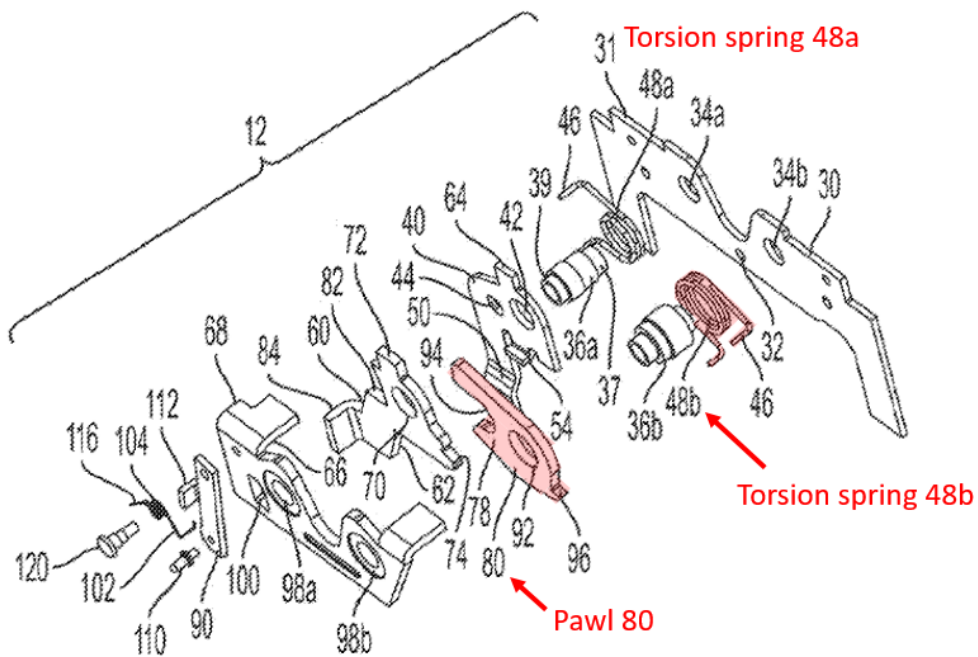


FIG. 3C

EX1009, FIG. 3C (annotated).

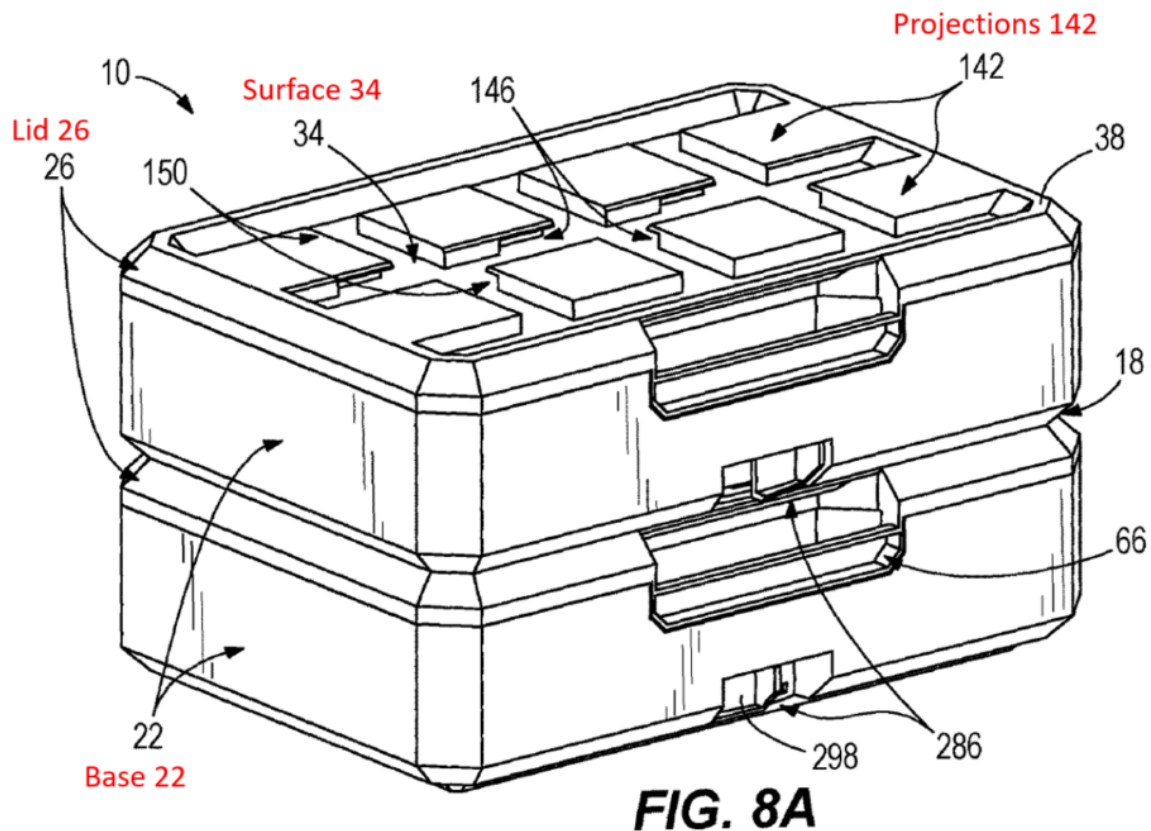
139. Hammond explains that “one leg 46 of spring 48b rests” on a tab or bearing surface of pawl 80. EX1009, ¶54. The other leg of the torsion spring 48b rests on a surface of a separate housing plate so that “[s]pring 48b biases pawl 80 to the open position shown in FIG. 1B.” EX1009, ¶54. To lift pawl 80 into the open position, torsion spring 48b is mounted onto pin 36b as seen from Figure 3C. EX1009, ¶¶50, 54, 57, 61. For example, pin 36b remains stationary while torsion spring 48b is “capable of pivoting or rotating with respect to the stationary component[.]” EX1009, ¶61. This movement of the torsion spring 48b automatically rotates and biases pawl 80 into the open position. EX1009, ¶¶54, 78, FIGs. 1A-1B.

E. Davidian

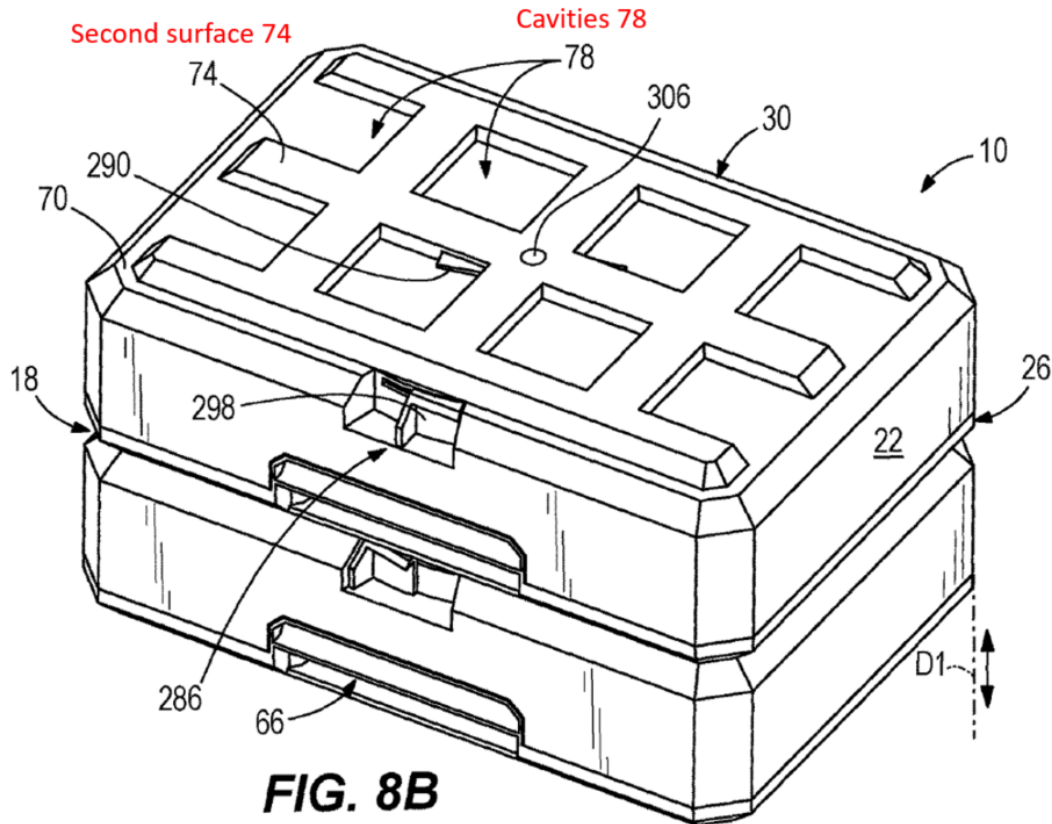
140. Davidian describes a “stackable storage system” with several configurations of “projections” to aid in stacking storage containers together. EX1011, Title, Abstract, ¶2. As Davidian explains, stackable storage systems with “multiple storage containers each having a lid and base” were well-known. EX1011, ¶3. Further, it was well known to place the “base of an upper container... on the lid of a lower container, and one of the containers may include a latch mechanism.” EX1011, ¶3.

141. To secure boxes that are stacked on top of each other, Davidian

depicts several configurations of “projections” that limit shifting, sliding, or rotation between storage containers and cause the containers to be “more stable when stacked and [] less likely to become unstacked during use and/or transportation.” EX1011, ¶¶51, 53, 65, 72. Figures 8A and 8B illustrate one example configuration where Figure 8A represents the top view of two boxes while Figure 8B represents the bottom view. EX1011, ¶¶21-22, 65-67.



EX1011, FIG. 8A (annotated).



EX1011, FIG. 8B (annotated).

142. As seen from Figure 8A, Davidian depicts a lid 26 that includes several projections 142. EX1011, ¶¶65-66. Projections 142 may slot into depressions or cavities 78, which are formed on the bottom of base 22 on an upper box as depicted in Figure 8B. EX1011, ¶67. Similarly, the bottom of base 22 also includes a “second surface 74 offset from the first surface 70.” EX1011, ¶67. The second surface 74 is a projection from the bottom of base 22 that can slot into the corresponding recesses on the lid of the lower box and contact surface 34. EX1011, ¶¶65-67. Namely, the recesses formed for surface 34 are created based on the projections 142 and outer lip 38. EX1011, ¶65.

XII. GROUND 1A: LI ANTICIPATES CLAIMS 1-4, 7-12, AND 15.

143. Li anticipates claims 1-4, 7-12, and 15. As I explain below, Li discloses each aspect of the claims. In particular, Li discloses the claimed “stop part” and the same stop part functionality described in the ’946 patent. I note that I provided the same opinion in a report that I provided in the district court proceeding. EX1024, 28-32. My opinions regarding Li that I present below in this declaration are consistent with the opinions that I provided regarding Li in my previous report. EX1024, 28-32.

A. Independent Claim 1

1. [1.P] A storage box comprising:

144. Li discloses [1.P]. Li describes a latch structure for a storage box, which Li refers to as a “carrier.” EX1007, ¶¶5, 15, 27, 29. The “carrier may be a box, a trunk, a crate, or a pallet.” EX1007, ¶15. As seen in Figure 1, Li’s carrier includes a box body 1 and a cover 2, which is provided as the carrier’s lid. EX1007, ¶¶27, 30, FIGs. 1, 5-6, 8. Thus, Li’s carrier discloses the claimed “storage box” recited in the preamble.

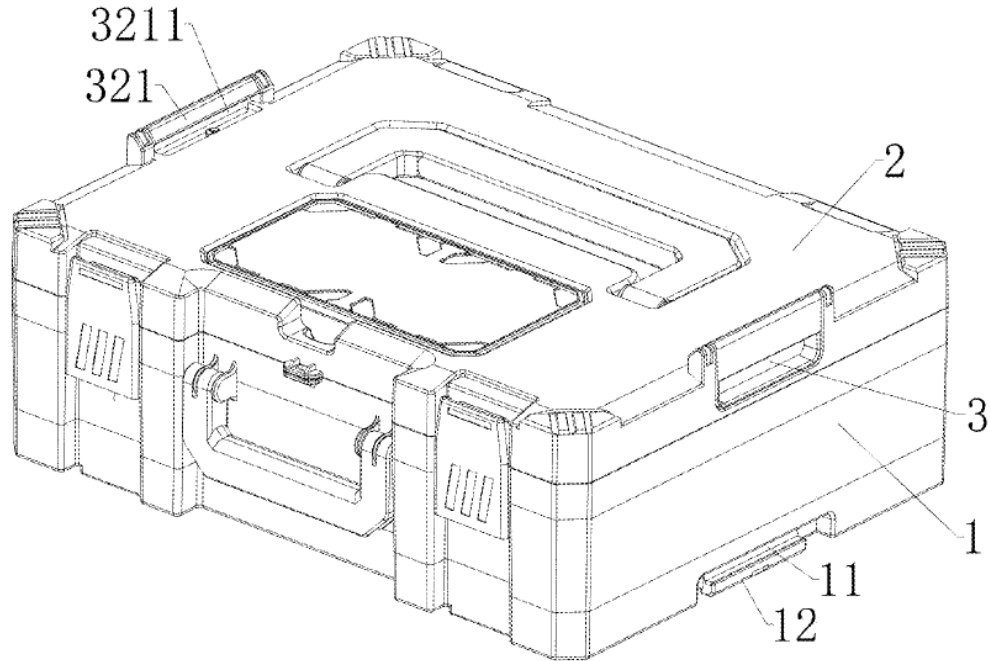


FIG. 1

EX1007, FIG. 1.

145. Li further explains that two of these storage boxes can be “stacked together” in a manner similar to the ’946 patent “to securely connect the two boxes.” EX1007, Abstract. For example, “FIG. 6 is a schematic diagram showing two boxes joined together by two latches.” EX1007, ¶¶23, 27, 36.

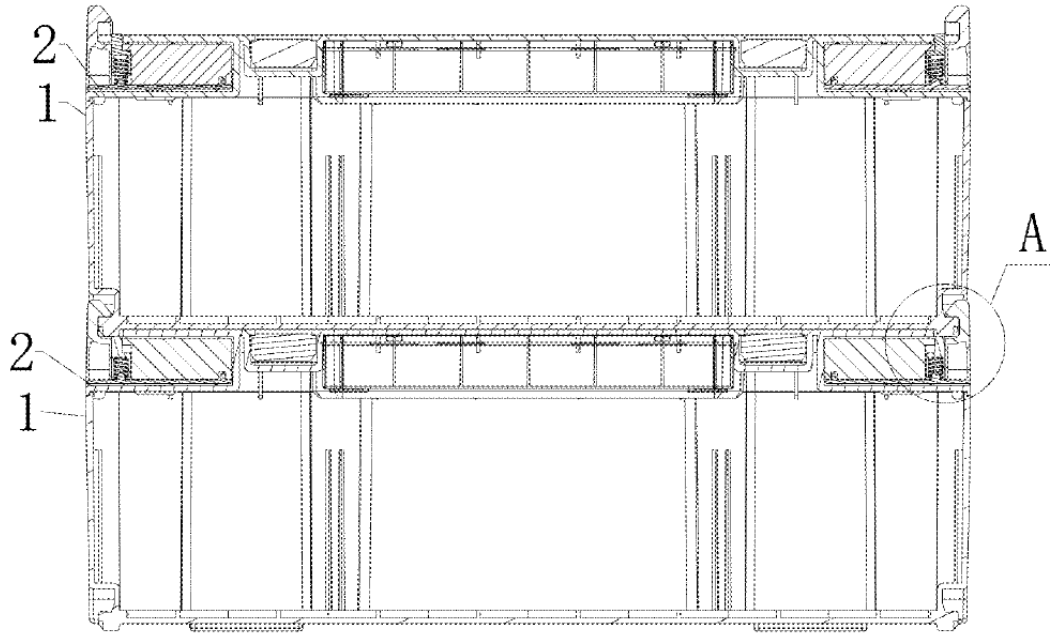


FIG. 6

EX1007, FIG. 6.

146. Thus, Li discloses the claimed “*storage box*” and stacking of storage boxes described in the ’946 patent.

2. [1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;

147. Li discloses [1.A]. Li’s “elastic pull latch 3” as installed in “chute 21” on “cover 2” discloses the claimed “*first connection part disposed on one area of said storage box connectable to a second connection part of another storage box.*” Li’s “elastic pull latch 3” as installed in “chute 21” on “cover 2” is disposed on an area of a storage box that is connectable to a second connection part of another

storage box as seen from Figures 1 and 5 from Li. EX1007, FIGs. 1, 5-7. I have annotated Figures 1 and 5 below to highlight elastic pull latch 3 and the positioning of elastic pull patch 3 in chute 21 on cover 2, which is the lid of a carrier. EX1007, ¶¶27, 30, FIGs. 1, 5-6, 8.

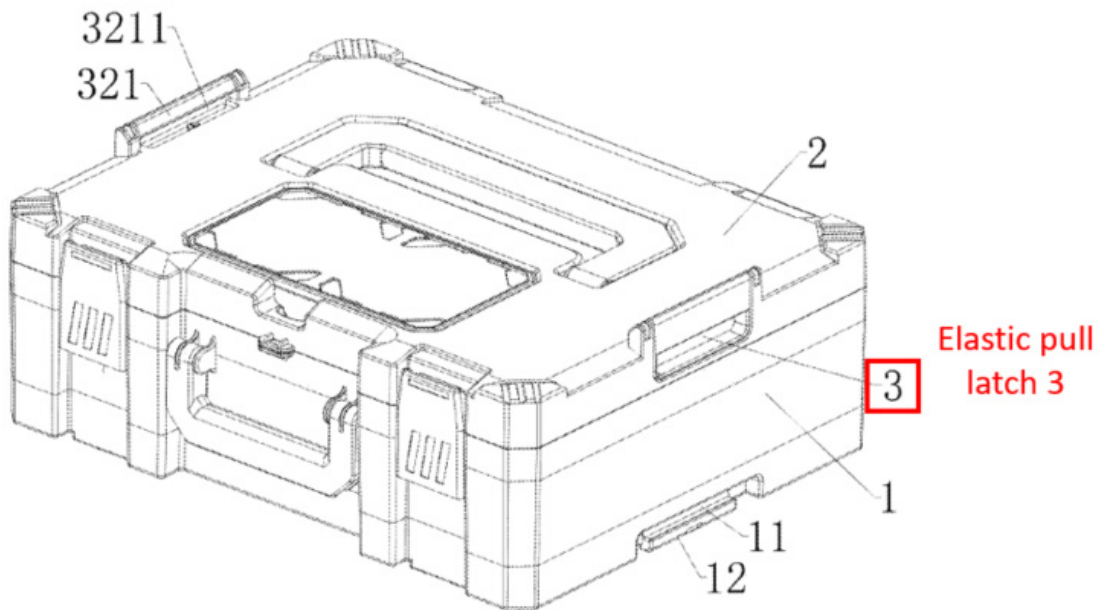


FIG. 1

EX1007, FIG. 1 (annotated).

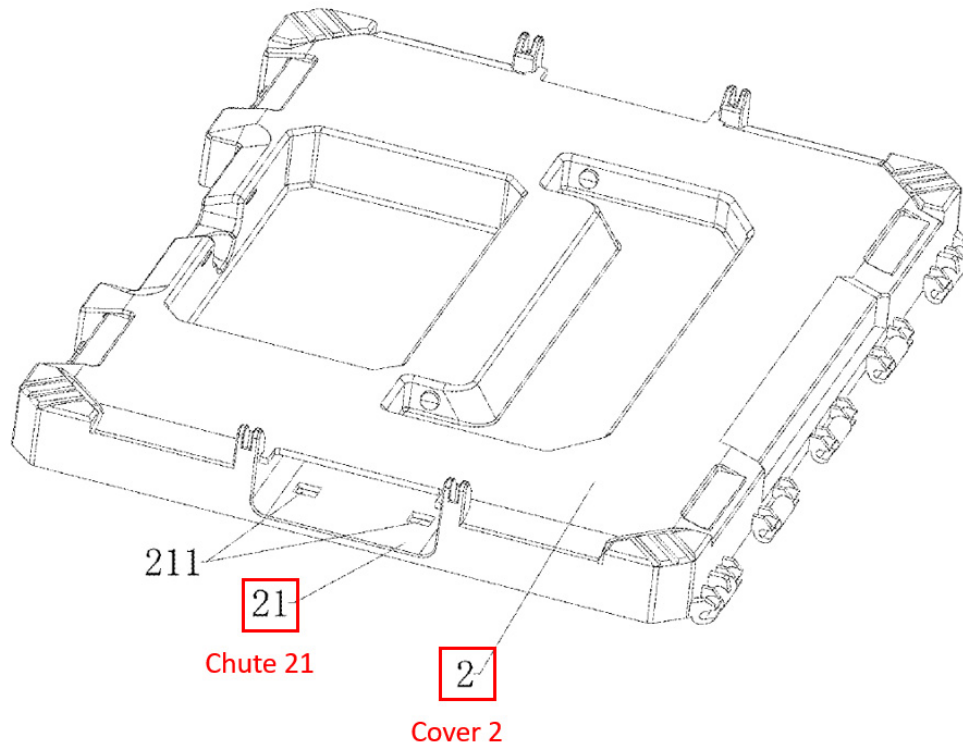


FIG. 5

EX1007, FIG. 5 (annotated).

148. Li explains that the “left and right sides of the cover 2 of the carrier are each provided with an elastic pull latch 3 that can extend outwards when pulled.” EX1007, ¶¶5, 31. Li’s elastic pull latch 3 as installed into chute 21 is therefore disposed on an area of storage box.

149. Li further explains that elastic pull latch 3 is “*connectable to a second connection part of another storage box*” as recited in [1.A]. Elastic pull latch 3 is disposed on a lower box and is used to connect the lower box to an upper box as depicted in Figure 6. EX1007, ¶36 (“boxes are securely latched together using two elastic pull latches 3”).

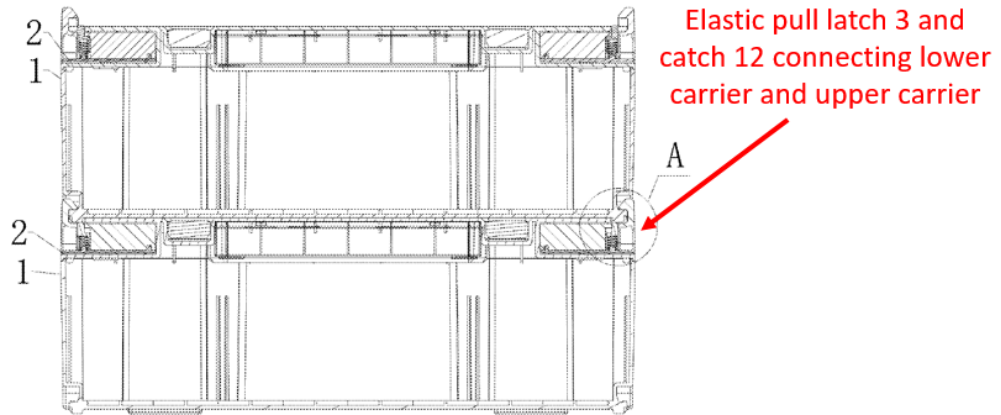


FIG. 6

EX1007, FIG. 6 (annotated).

150. Li further explains that when two carriers are “stacked one above another, the catch 12 at the bottom of an upper carrier is snapped into the latch groove 3211 of the elastic pull latch 3 on the upper cover 2 of the lower carrier.” EX1007, ¶¶30-31. Figure 7 shows this connection and “latch bar 321” attaching to “catch 12” to connect the two carriers. EX1007, ¶33 (“When one box is stacked above another box, the latch bar 321 of the lower box is snapped into the catch groove 11 of the upper box”), ¶29 (“A catch 12 resembling a rectangular block or a ridge is provided on the lower edge of the catch groove 11”).

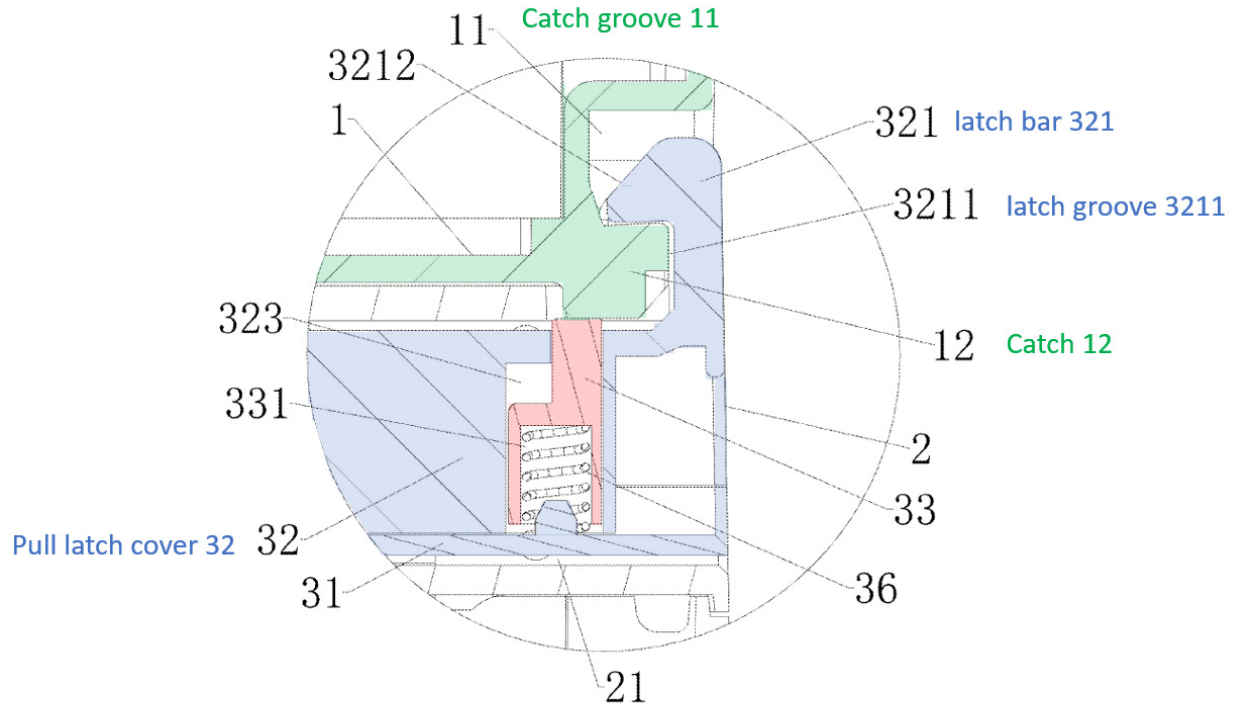


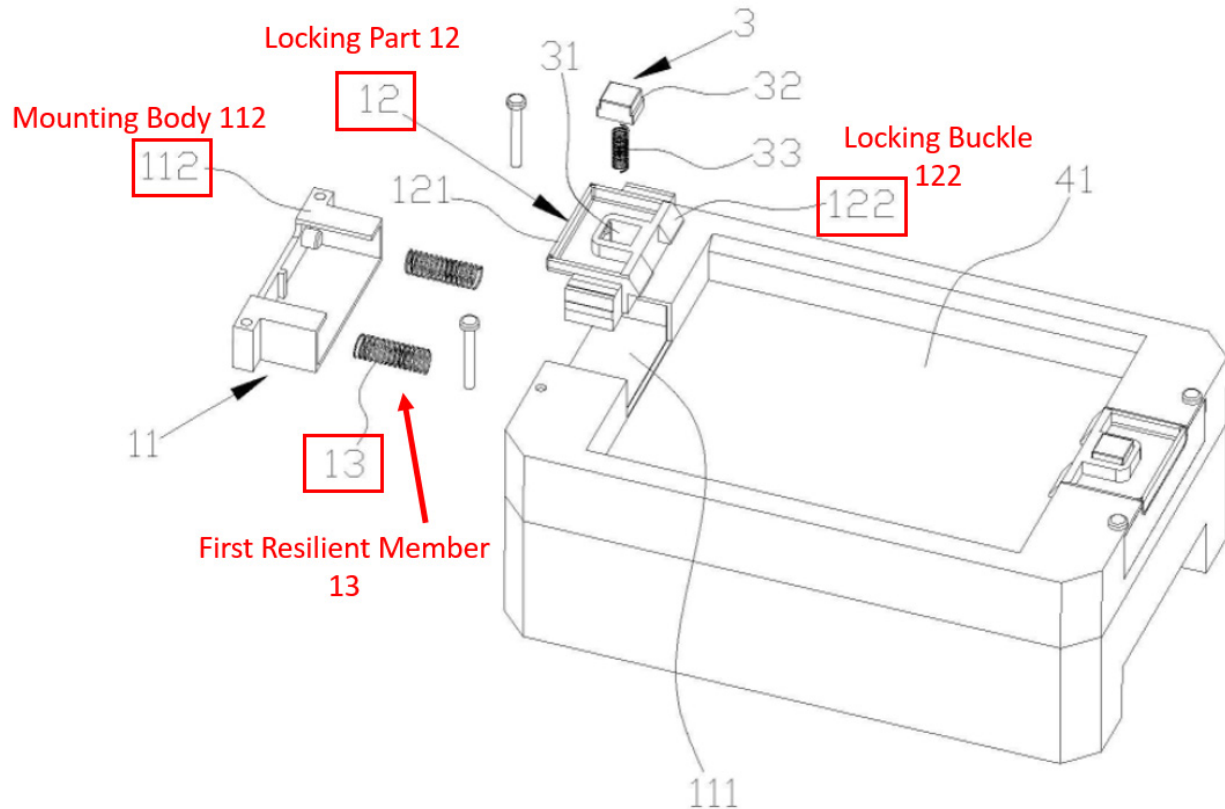
FIG. 7

EX1007, FIG. 7 (annotated).

151. As seen from Figure 7 and Li's description, Li's catch 12 and catch groove 11 collectively teach the claimed "*second connection part of another storage box.*" EX1007, ¶¶29-31, 33, 36, 38.

3. [1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;

152. Li discloses [1.B]. At the outset, the '946 patent depicts the following example of the components of a "first connection part" in Figure 7:



EX1001, FIG. 7 (annotated).

153. The '946 patent states that mounting body 112 can be “fixedly connected to the box lid.” EX1001, 6:53-60. Locking part 12—which includes “locking buckle 122”—is a “sliding latch that moves horizontally” relative to mounting body 112. EX1001, 6:61-7:20. When locking part 12 is pushed inward toward the center of the box, “locking buckle 122 extends into the positioning slot 41” to lock two boxes together. EX1001, 7:3-11, 8:19-36. When locking part 12 is pulled outward and away from the center of the box, “locking buckle 122 does not extend into the positioning slot 41,” which unlocks or disconnects two stacked boxes. EX1001, 7:14-17, 8:37-44.

154. To control the sliding of locking part 12 and locking buckle 122, the '946 patent describes "first resilient member 13," which can be a "compression spring" or a "torsion spring." EX1001, 7:29-32. When an upper storage box is pushed onto a lower storage box, "first resilient member 13 compresses and accumulates force." EX1001, 8:19-26. Then, when the opening slot 211 of the upper storage box becomes exposed, "the locking buckle 122 is driven by the first resilient member 13 [and] automatically stuck into the slot 211." EX1001, 8:27-34. Slot 211 is depicted in Figure 5 of the '946 patent.

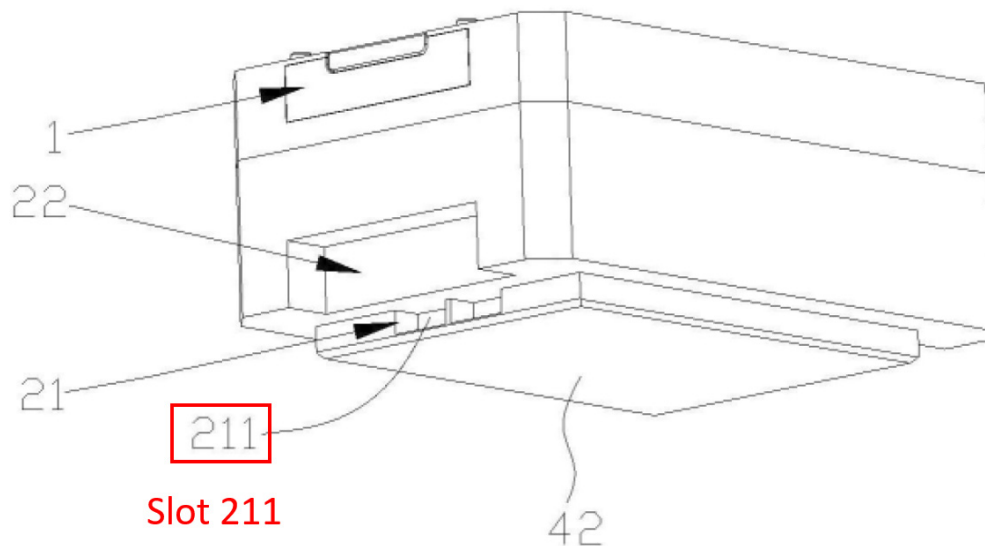


FIG. 5

EX1001, FIG. 5 (annotated).

155. With this understanding, Li describes the same components that operate in the same way described in the '946 patent. These components can be seen from Figures 3-5 from Li, which depict the "overall structure" and "internal

structure” of elastic pull latch 3 and how elastic pull latch 3 fits into the cover of a storage box (Li’s “cover 2”). EX1007, ¶¶20-21, 33-35. As I explained with reference to [1.A], Li’s “elastic pull latch 3” as installed into “chute 21” discloses the claimed “*first connection part.*” Section XII.A.2.

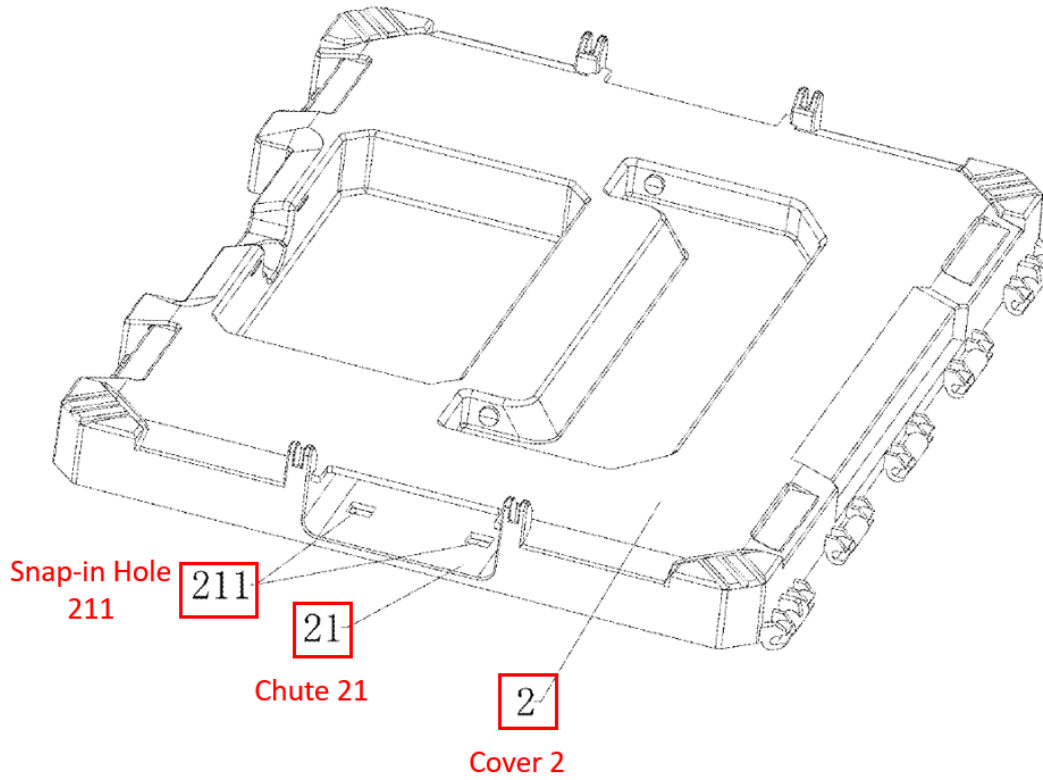


FIG. 5

EX1007, FIG. 5 (annotated).

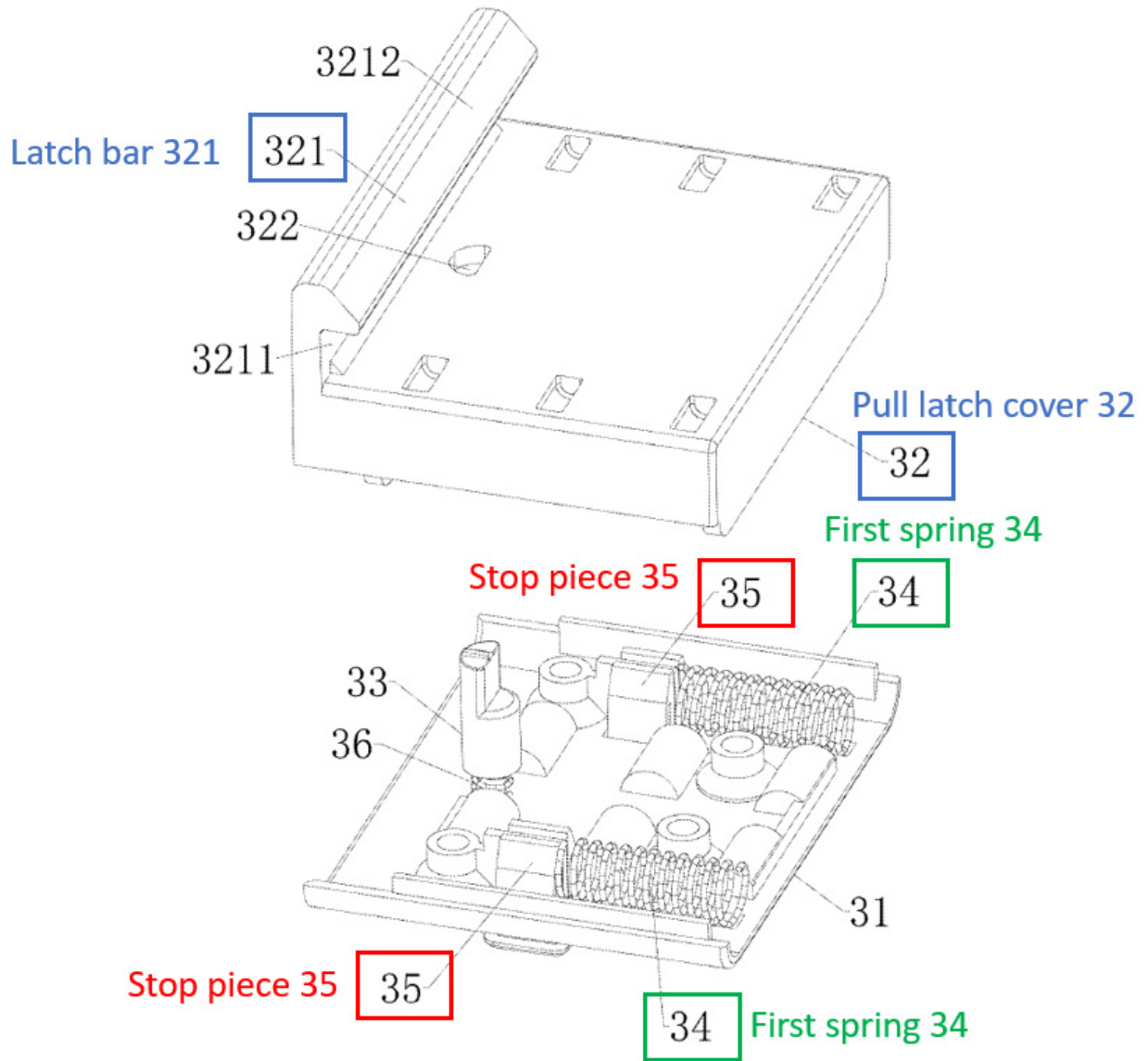


FIG. 4

EX1007, FIG. 4 (annotated).

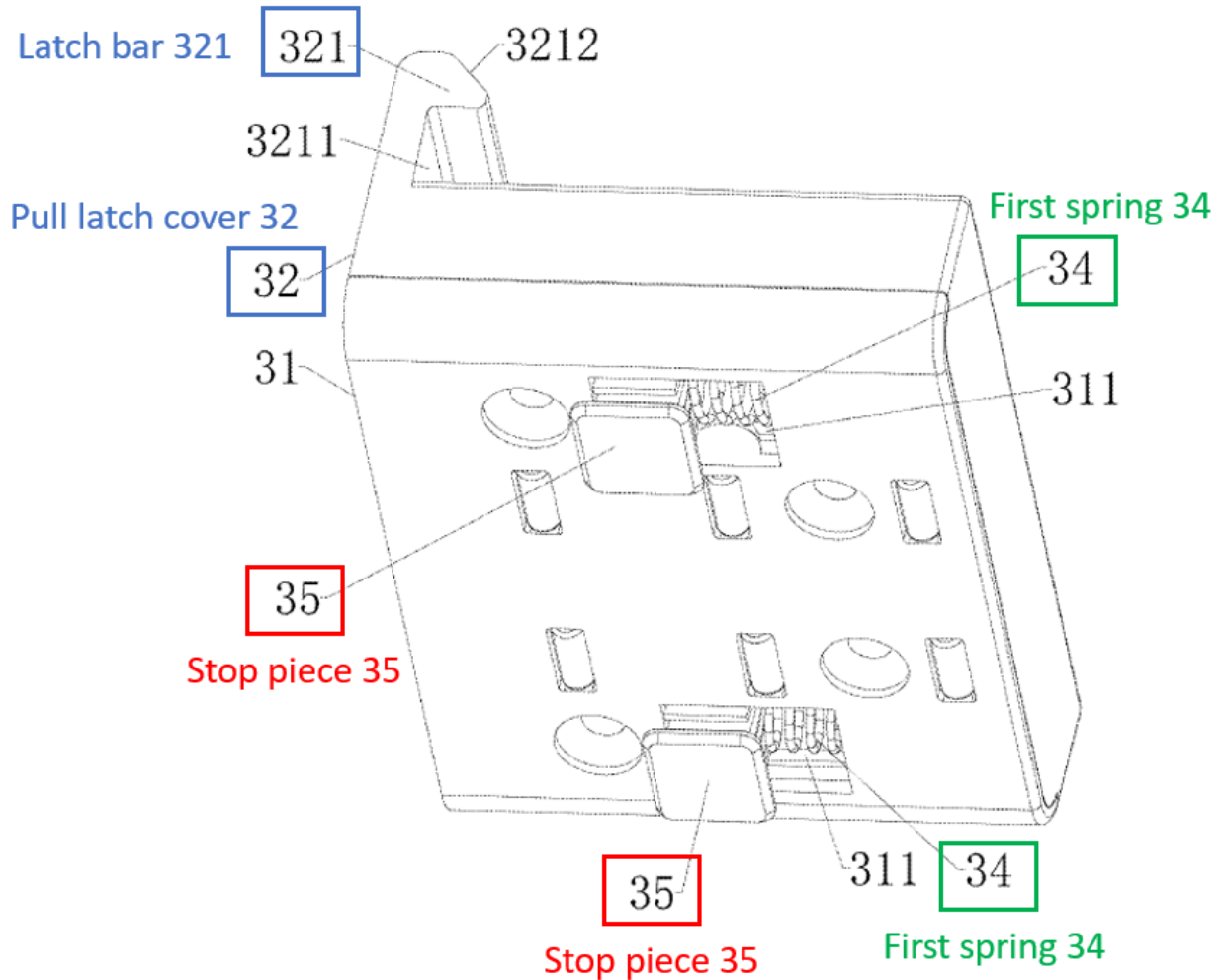


FIG. 3

EX1007, FIG. 3 (annotated).

156. With reference to Li's Figures 3-5, Li's "stop piece 35" as attached to "chute 21" via "snap-in hole 211" teaches the claimed "*mounting body*." EX1007,

¶34. Li explains:

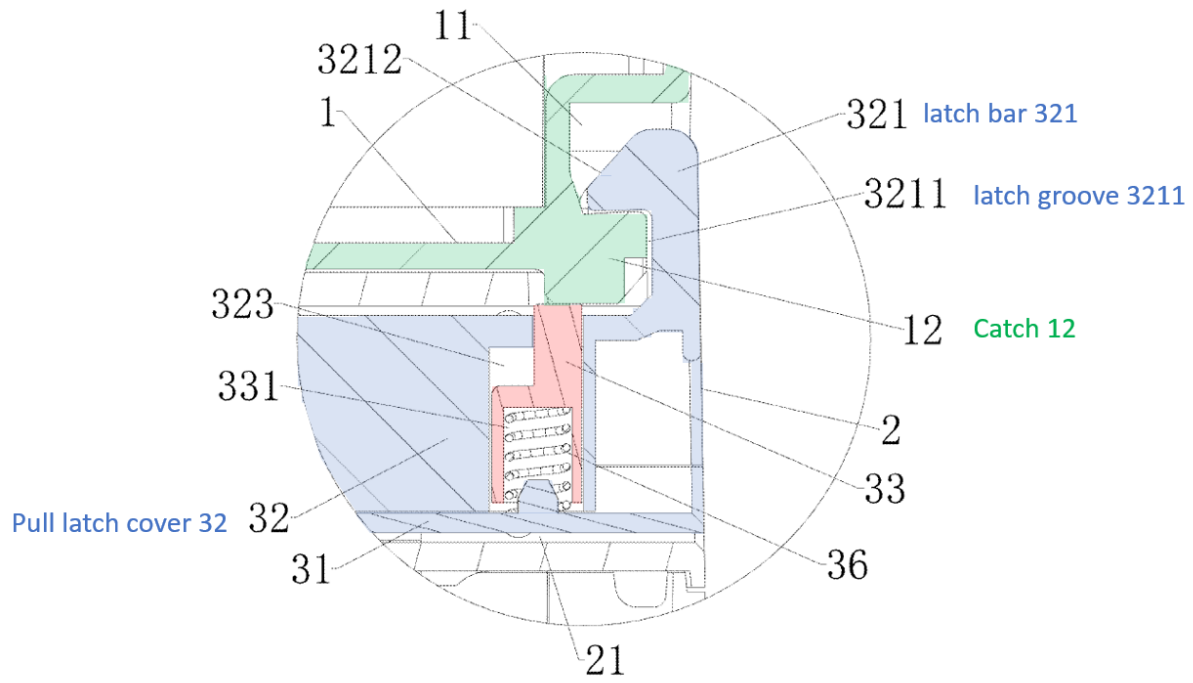
The chute 21 on the upper cover 2 of the box is internally provided with a snap-in hole 211 shaped to match the lower end of the stop piece 35. The lower end of the stop piece 35 can be snapped into the snap-in hole

211. When the elastic pull latch 3 is pulled outwards, the stop piece 35 stays inside the snap-in hole 211 and the first spring 34 becomes compressed.

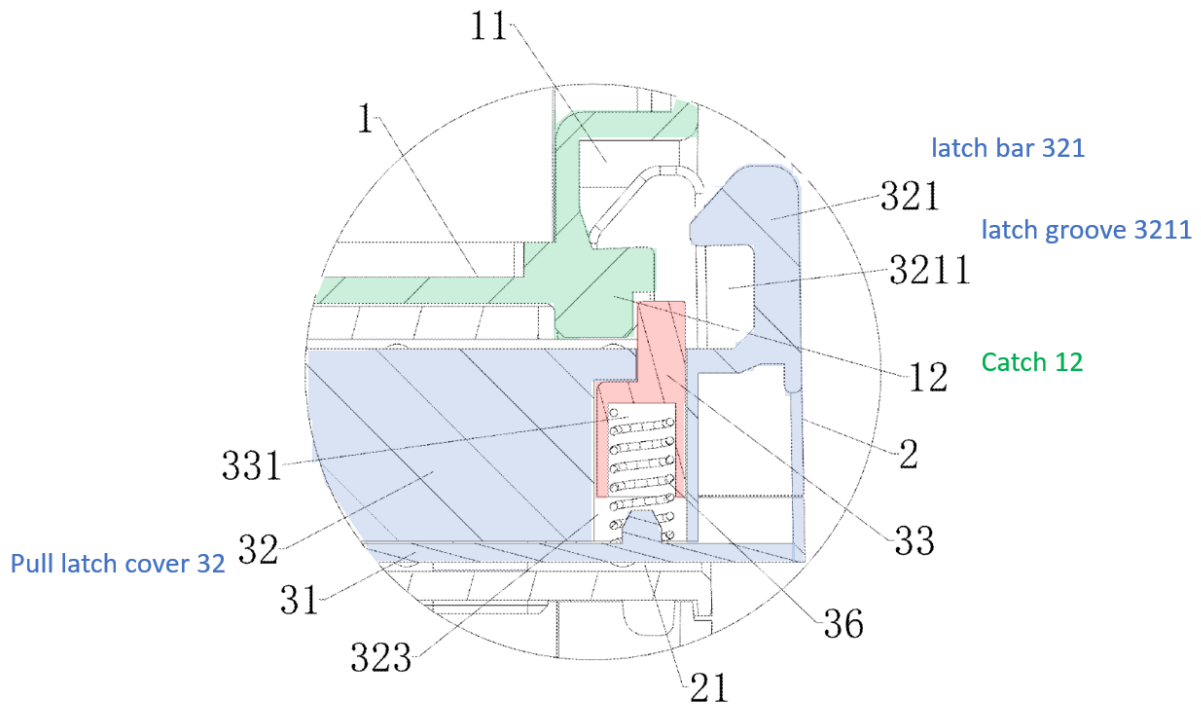
EX1007, ¶34.

157. Based on this description, stop pieces 35 attach to snap-in holes 211 within chute 21 and remain fixed while elastic pull latch 3 moves horizontally. EX1007, ¶34. This configuration, which allows for the mounting of elastic pull latch 3 to cover 2, teaches the claimed “*mounting body*.”

158. Li’s “pull latch cover 32” which includes “latch bar 321” teaches the claimed “*locking buckle movable with respect to said mounting body*.” EX1007, ¶33. “Pull latch cover 32” includes latch bar 321, slope 3212, and latch groove 3211, which all move horizontally with respect to stop piece 35 as attached to chute 21 when elastic pull latch 3 is pulled outward. EX1007, ¶36. Figures 7 and 9 depict the movement and movability of pull latch cover 32 and latch bar 321 as elastic pull latch 3 transitions from a locked state (Figure 7) to an unlocked state (Figure 9). EX1007, ¶¶23-26, 36.



EX1007, FIG. 7 (annotated).



EX1007, FIG. 9 (annotated).

159. Li explains that “[w]hen the elastic pull latch 3 is pulled outwards, the stop piece 35 stays inside the snap-in hole 211 and the first spring 34 becomes compressed.” EX1007, ¶34. In this manner, pull latch cover 32—which includes latch bar 321 and teaches the claimed “*locking buckle*”—is movable relative to Li’s stop piece 35 as attached to chute 21, which teaches the claimed “*mounting body*.” EX1007, ¶¶33, 37.

160. Li’s “first spring 34” additionally teaches the claimed “*first resilient member located between said mounting body and said locking buckle*.” As seen in Figures 3 and 4, “first spring 34” is positioned between Li’s stop piece 35 and pull latch cover 32. EX1007, ¶34. Specifically, as understood and depicted in Figure 4, first spring 34 contacts stop piece 35 and the front face of pull latch cover 32: “Each of the first springs 34 is retained between a stop piece 35 and an inner wall of the elastic pull latch 3.” EX1007, ¶34. Again, “[w]hen the elastic pull latch 3 is pulled outwards, the stop piece 35 stays inside the snap-in hole 211 and the first spring 34 becomes compressed” by the front face of pull latch cover 32. EX1007, ¶34.

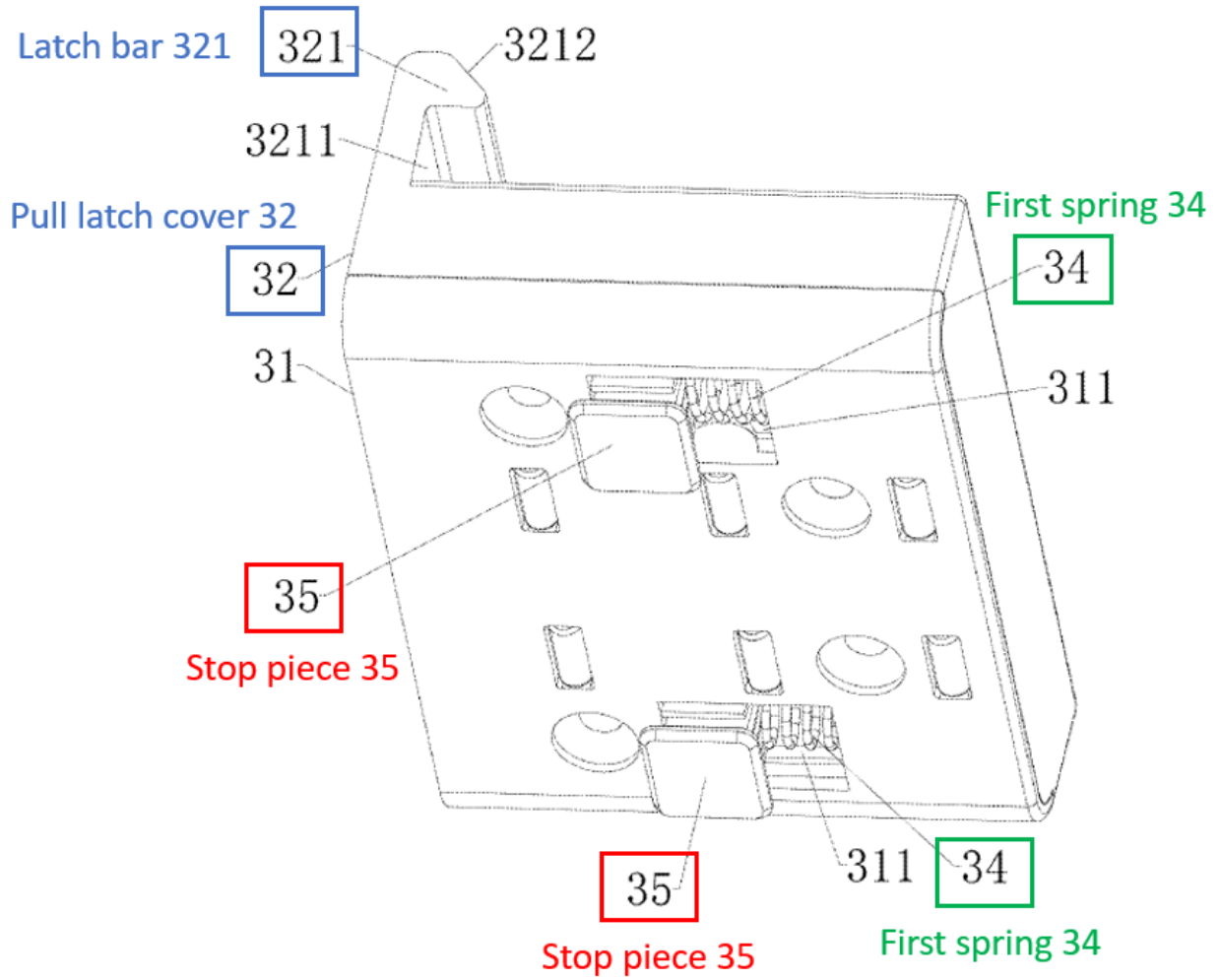


FIG. 3

EX1007, FIG. 3 (annotated).

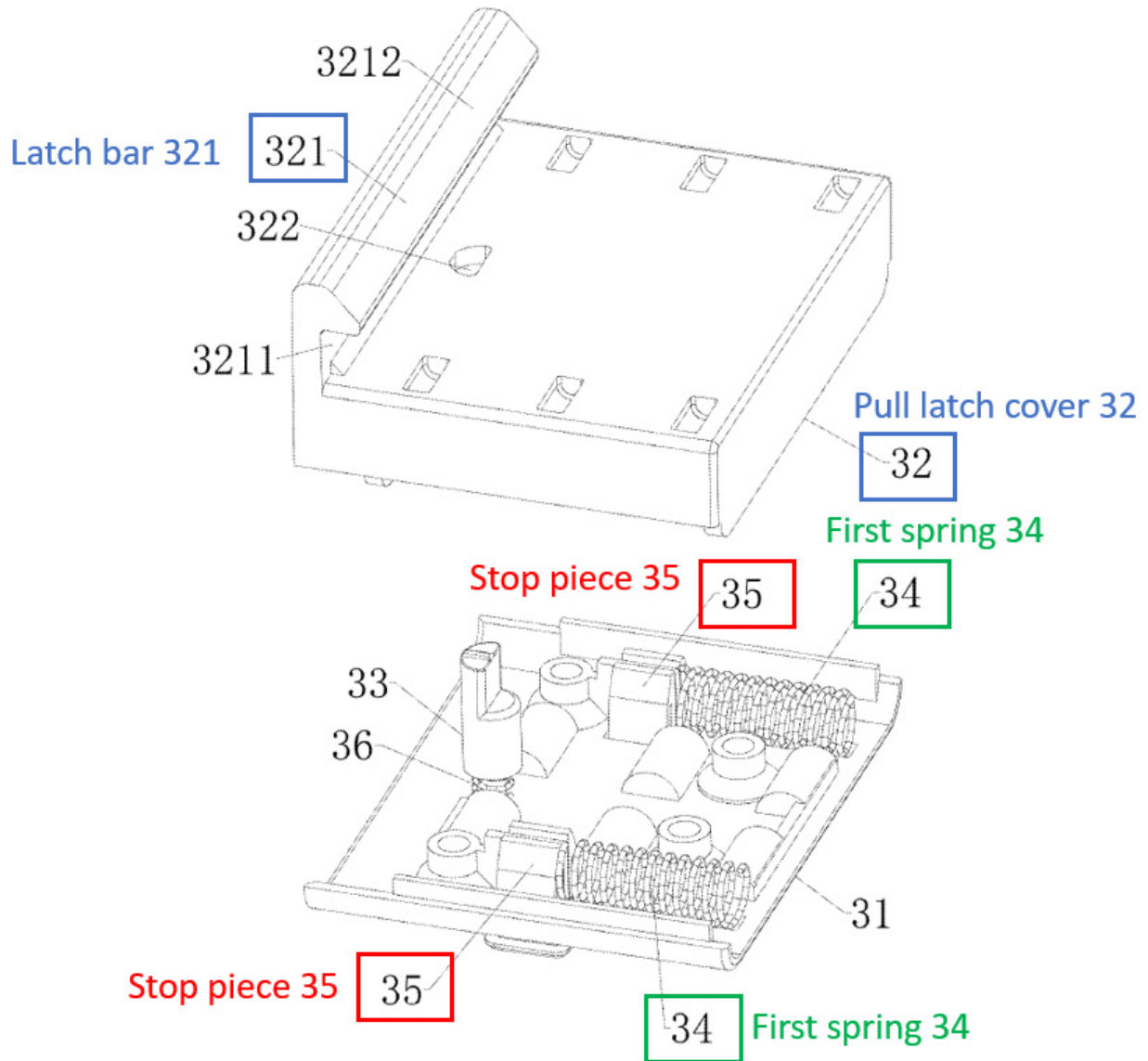


FIG. 4

EX1007, FIG. 4 (annotated).

161. In this manner, because first spring 34 is positioned between a fixed stop piece 35 that is mounted into chute 21 and pull latch cover 32, Li's first spring 34 teaches the claimed "*first resilient member located between said mounting body and said locking buckle.*"

162. Li's first spring 34 also keeps the "*locking buckle automatically in a*

locked state” as recited in [1.B] as well. As depicted in Figures 3 and 4, when first spring 34 is extended (i.e., is not compressed), pull latch cover 32 and latch bar 321 are in a locked state where latch bar 321 is locked into catch 12. EX1007, ¶¶34, 38, FIGs. 3-4. Figure 7 depicts this locked state. EX1007, ¶¶36-38. In contrast, when elastic pull latch 3 is pulled outward, stop piece 35 remains fixed, but pull latch cover 32 pulls into first spring 34, and “first spring 34 becomes compressed.” EX1007, ¶¶34, 38, FIGs. 3-4. When released, “elastic pull latch 3 of the lower box is automatically reset by the compressed first springs 34” and the locking state is re-engaged, meaning that the extension or elongation of first spring 34 automatically holds Li’s pull latch cover 32 in a locked state. EX1007, ¶38. Thus, Li also teaches “*wherein said first resilient member keeping said locking buckle automatically in a locked state*” as recited in [1.B].

4. [1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,

163. Li discloses [1.C]. As I discussed with reference to [1.A], Li’s catch 12 and catch groove 11 of an upper box collectively teach the claimed “*second connection part of another storage box*.” EX1007, ¶¶29-31, 33, 36, 38; Section XII.A.2. Li’s catch 12 teaches the claimed “*mating part interlockable with the locking buckle*.” EX1007, ¶¶29, 33, 38. Figures 1-2 and 7 depict catch 12.

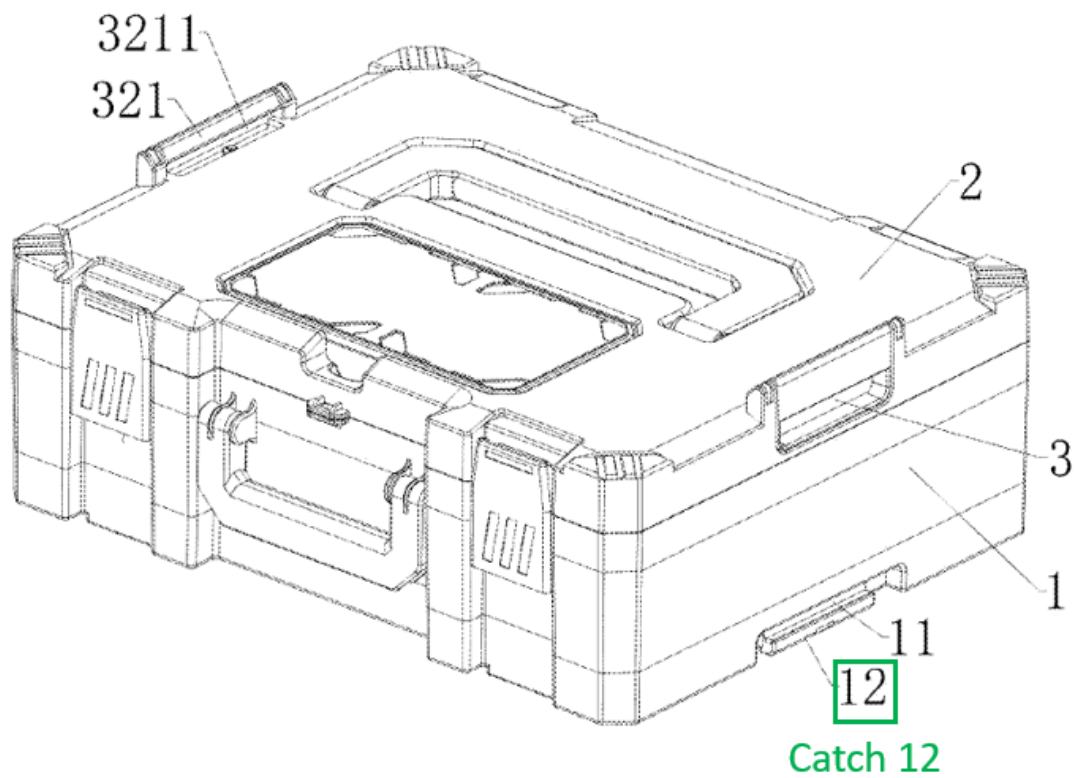


FIG. 1

EX1007, FIG. 1 (annotated).

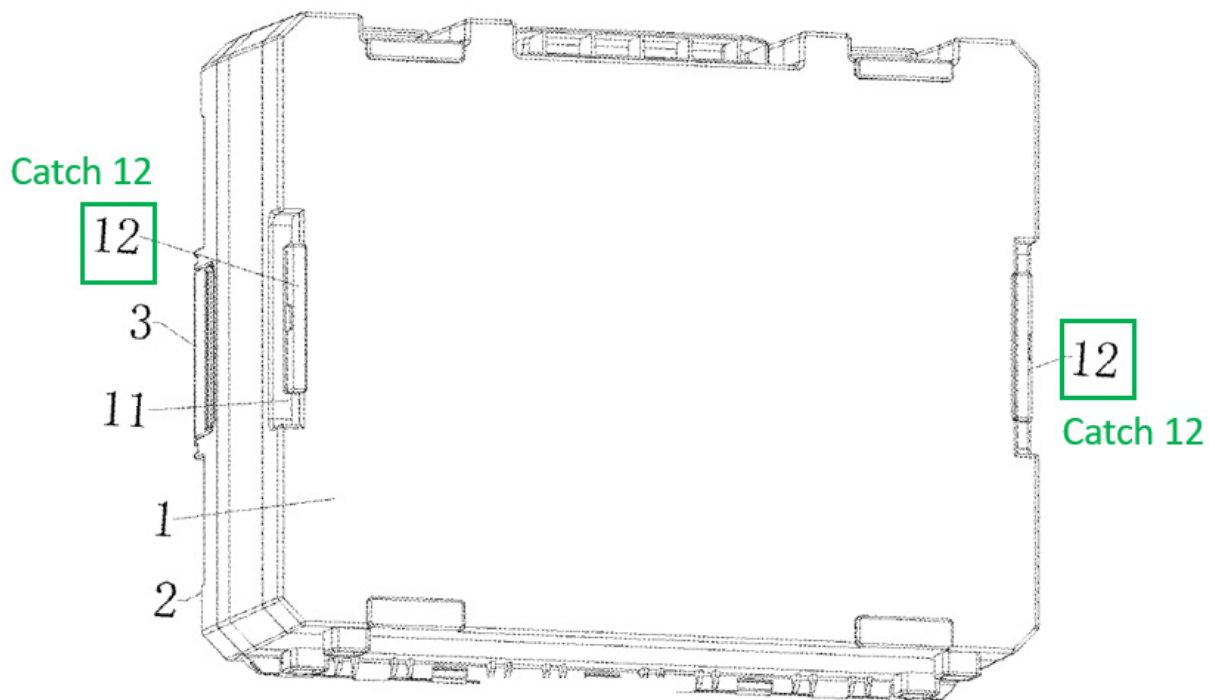


FIG. 2

EX1007, FIG. 2 (annotated).

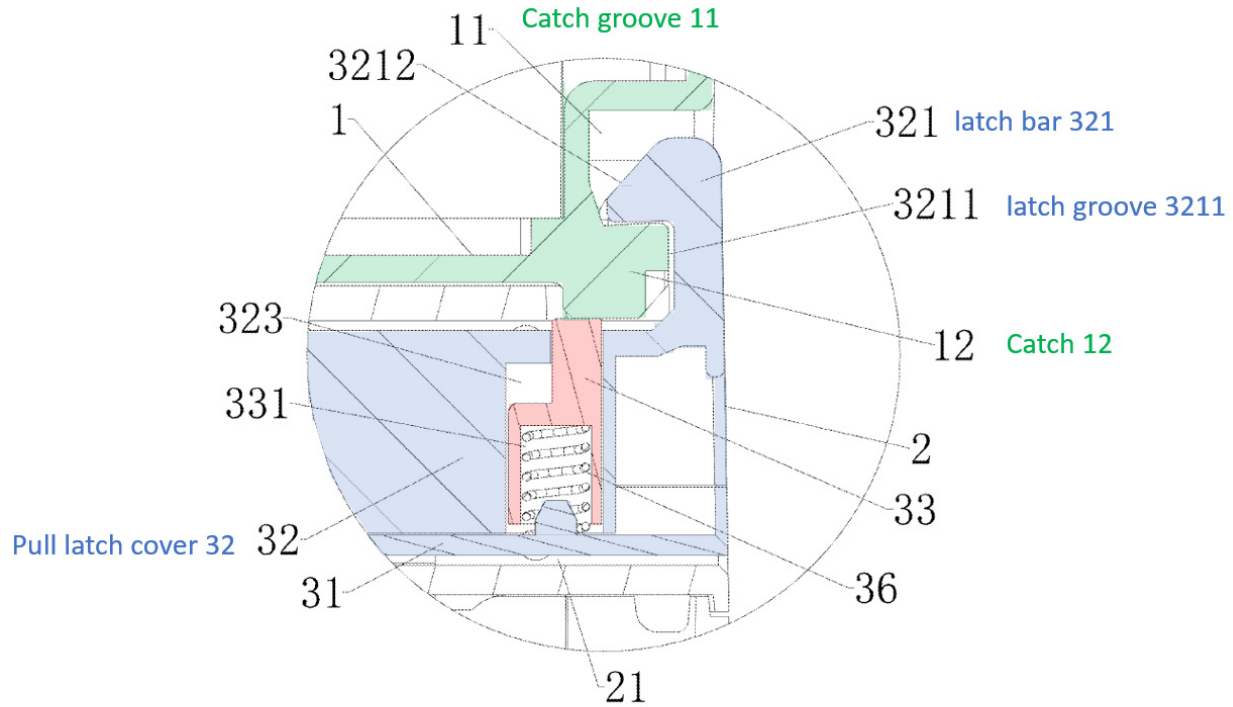


FIG. 7

EX1007, FIG. 7 (annotated).

164. As Figure 7 depicts, Li's catch 12 teaches the claimed "*mating part interlockable with the locking buckle.*" Li explains that a "catch 12 resembling a rectangular block or a ridge is provided on the lower edge of the catch groove 11." EX1007, ¶29. "When one box is stacked above another box, the latch bar 321 of the lower box is snapped into the catch groove 11 of the upper box." EX1007, ¶33. When latch bar 321 is snapped into catch groove 11, "catch 12 of an upper box can directly snap into the latch groove 3211 of a lower box." EX1007, ¶¶38. In this manner, Li's catch 12 teaches the claimed "*mating part*" which is interlockable with pull latch cover 32 via latch bar 321. EX1007, ¶¶30-31.

5. [1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;

165. Li discloses [1.D]. As I previously explained with reference to [1.B], Li describes a “first spring 34” (i.e., claimed “*first resilient member*”) that pushes or slides pull latch cover 32 and latch bar 321 (i.e., the claimed “*locking buckle*”) inward toward the center of cover 2. EX1007, ¶¶34, 38, FIGs. 3-4; Section XII.A.3. With this understanding and based on the configuration depicted in Figures 3 and 4 of Li, Li teaches a locking buckle that is configured to slide inward with respect to a mounting part when first spring 34 is in the non-compressed or elongated state. Specifically, “elastic pull latch 3 of the lower box is automatically reset by the compressed first springs 34,” which pushes latch cover 32 inward toward the center of cover 2 relative to the fixed position of stop piece 35. EX1007, ¶38. Li therefore teaches “*wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member*” as recited in [1.D].²

² If the claimed “*slide inward with respect to the mounting part*” is interpreted to refer to the movement of a “*locking buckle*” away from the center of a storage box

during the attachment of an upper storage box to the lower storage box, Li teaches this as well. Namely, as an upper stackable box is initially pressed downward, catch 12 presses onto the sloped portion of latch bar 321 and causes latch bar 321 and pull latch cover 32 to slide away from the center of the lower storage box. EX1007, ¶¶33-34, 38. Subsequently, first spring 34 releases its potential energy to extend and push pull latch cover 32 and latch bar 321 toward the center of cover 2 into the locked position. EX1007, ¶¶33-34, 38. This is the same functionality as the '946 patent. EX1001, 8:19-34. Li therefore discloses [1.D] under this claim interpretation as well.

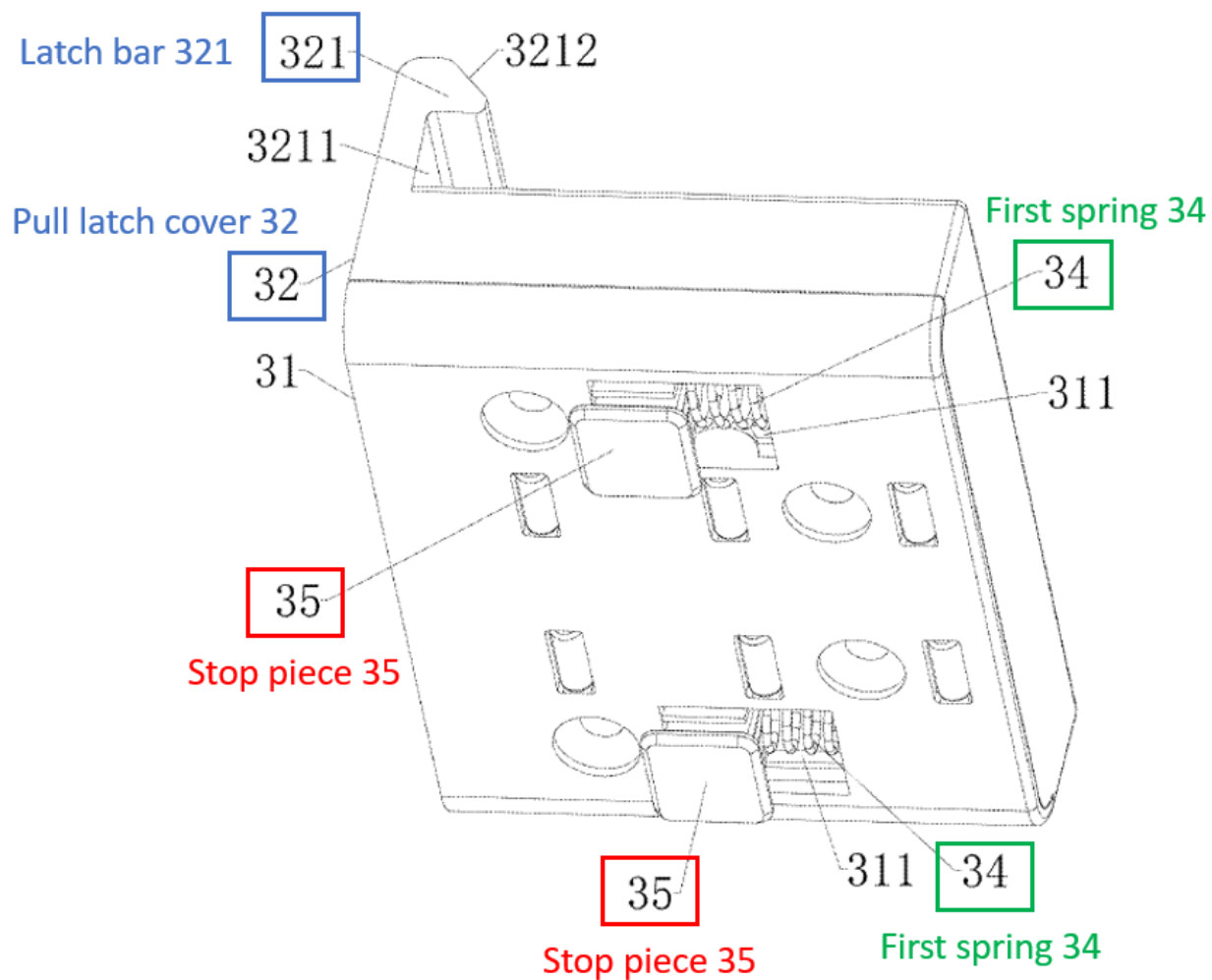


FIG. 3

EX1007, FIG. 3 (annotated).

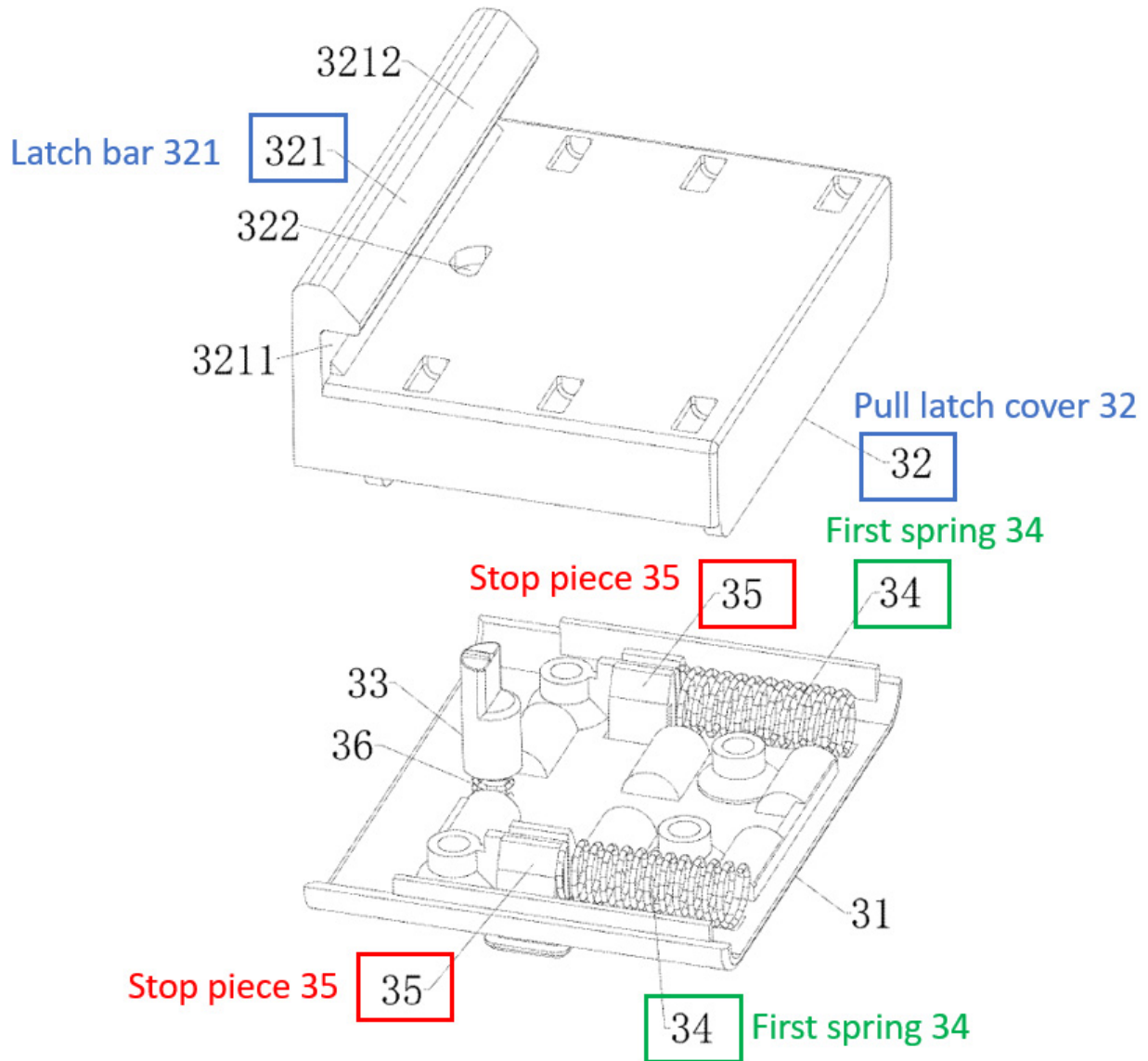
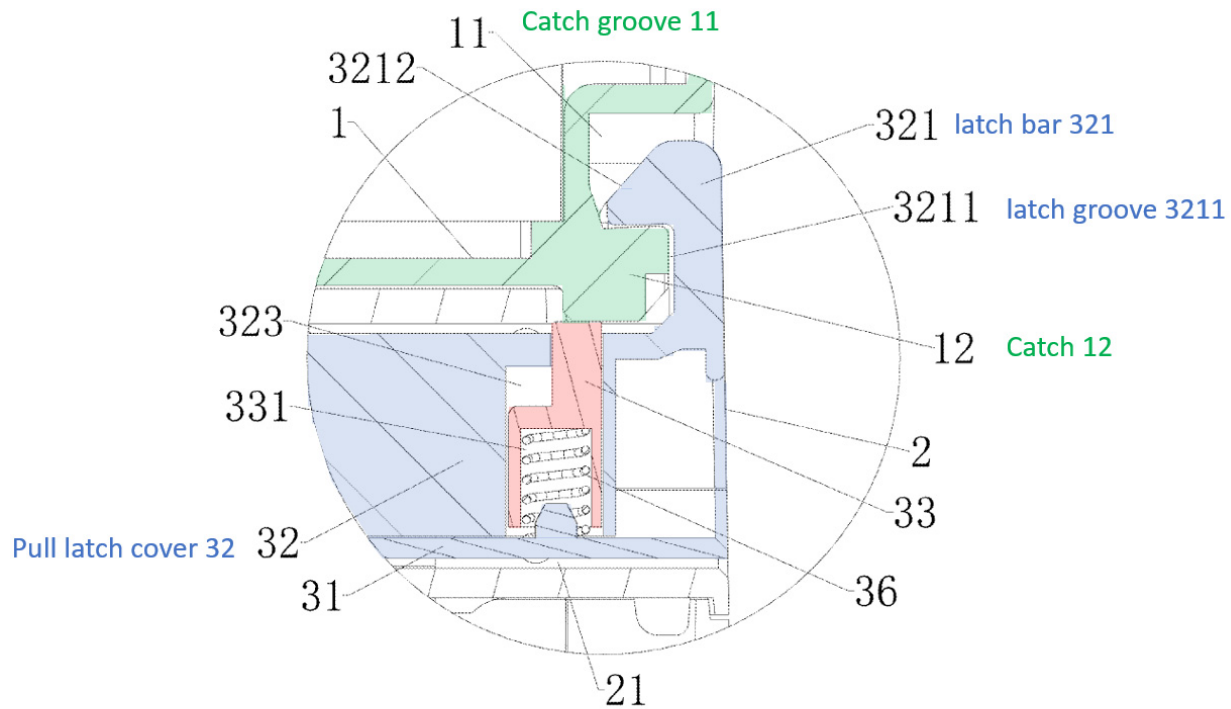


FIG. 4

EX1007, FIG. 4 (annotated).

166. As I explained with reference to [1.C], Li also explains that when first spring 34 is in an extended or non-compressed state, Li's pull latch cover 32 and latch bar 321 is automatically lockable with catch 12. Section XII.A.4. Specifically, when first spring 34 is extended and latch bar 321 is aligned with catch groove 11 and catch 12, latch bar 321 is pushed into a locked position with catch 12 (i.e., the

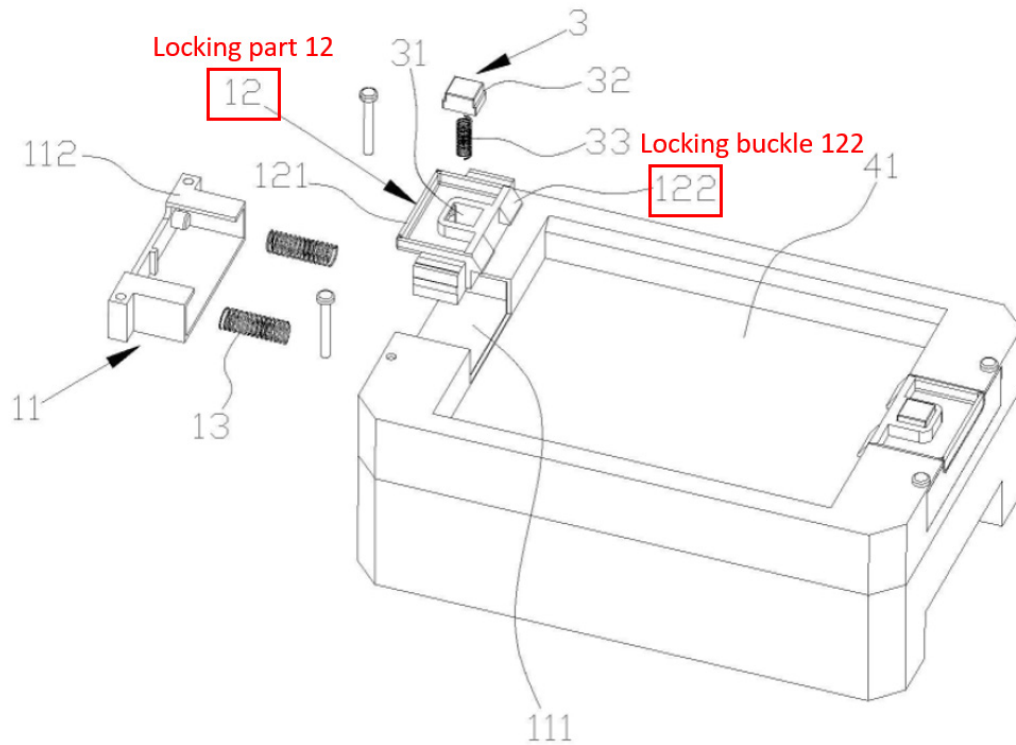
claimed “*mating part of the other storage box*”). EX1007, ¶¶29-31, 33, 38. For example, Figure 7 depicts the automatic locking caused by the extension of first spring 34 and latch cover 32 being slid inward.



EX1007, FIG. 7 (annotated).

6. [1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and

167. Li discloses [1.E]. At the outset, I note that the '946 patent depicts “locking buckle 122” as a part of “locking part 12” as seen from Figure 7. EX1001, 7:3-7.



EX1001, FIG. 7 (annotated).

168. As seen from Figure 7, the claimed “locking buckle” is an element of or portion of the claimed “locking part.” EX1001, 7:3-7 (“The locking part 12 *includes* ... a locking buckle 122 located on the side of the locking body 121 near the center of the storage box.” (emphasis added)). The ’946 patent further explains that to unlock two boxes, a user is instructed to “pull the locking part 12 of the lower storage box outward so that it moves toward the unlocking direction.” EX1001, 8:37-44. Li teaches this same structure and operation.

169. Li's "elastic pull latch 3 [which] includes a base 31 and a pull latch cover 32 on top of the base 31" teaches the claimed "*locking part*." EX1007, ¶37. Like the '946 patent, Li's elastic pull latch 3 includes pull latch cover 32 (i.e., the

claimed “*locking buckle*”) as a component as well, which demonstrates that Li’s elastic pull latch 3 teaches the claimed “*locking part*” in the same way contemplated in the specification of the ’946 patent. EX1001, 7:3-7. Again, Figures 3 and 4 depict pull latch cover 32 and latch bar 321 being an element or component of elastic pull latch 3. EX1007, FIGs. 3-4, ¶¶20-21.

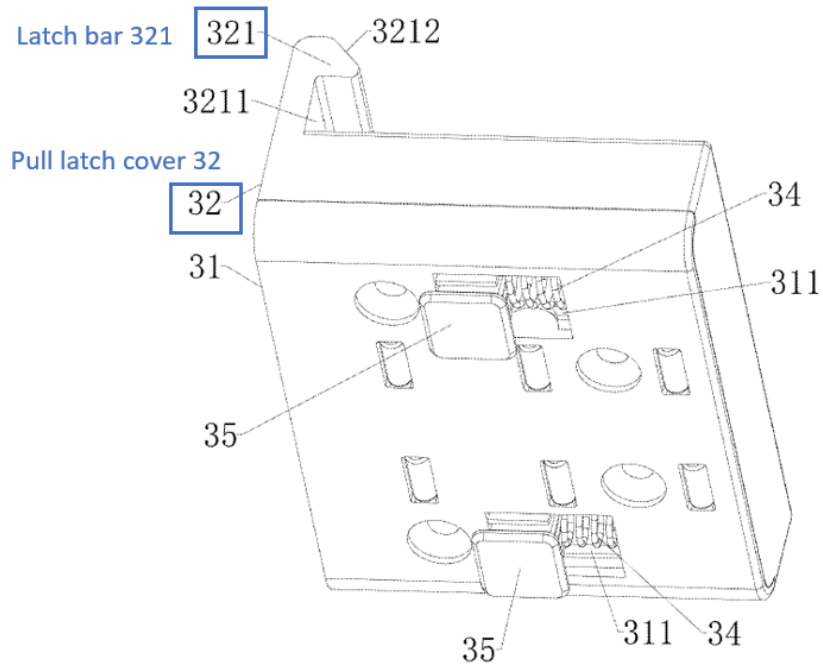


FIG. 3

EX1007, FIG. 3 (annotated).

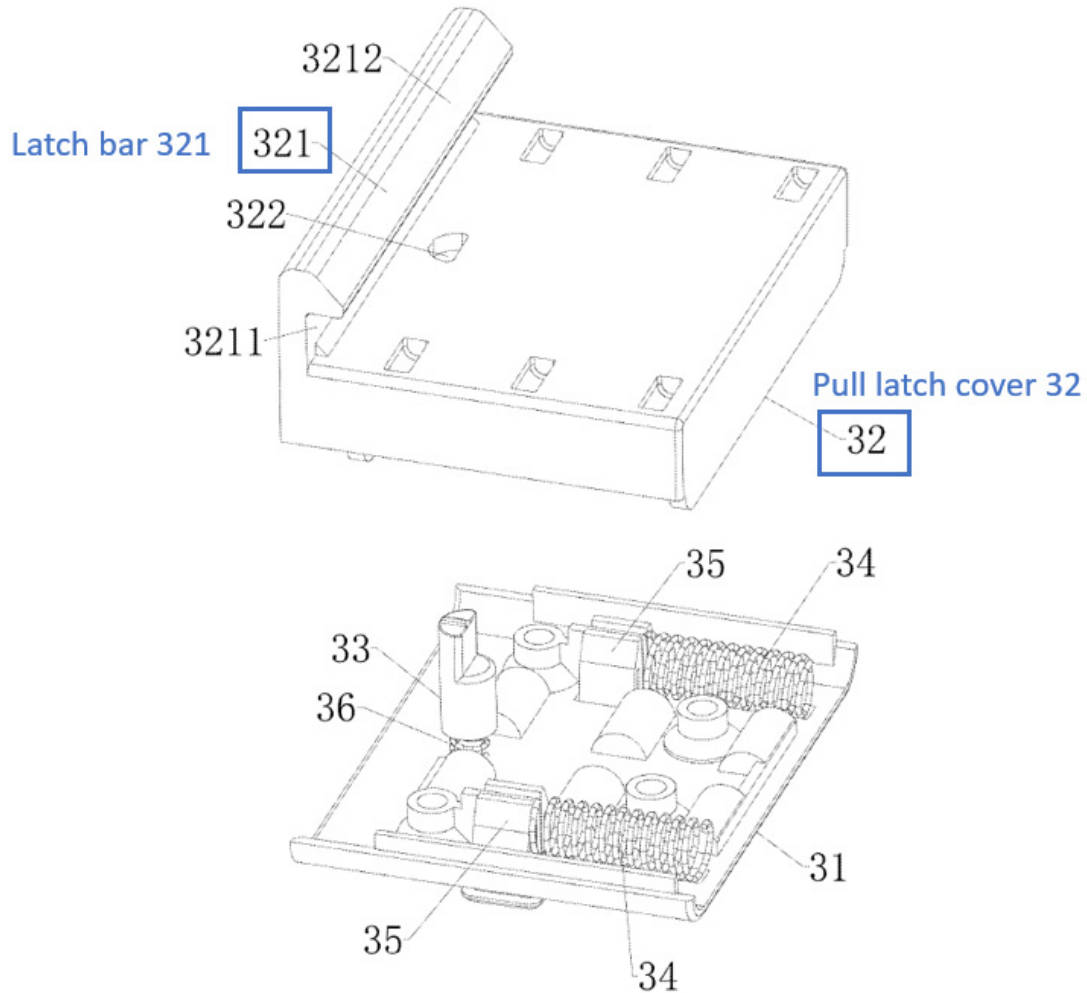


FIG. 4

EX1007, FIG. 4 (annotated).

170. In addition to teaching the structure recited in [1.E], Li also describes the claimed functionality where “*manual movement of the locking part causes the locking buckle to move to an unlocked state.*” As seen from Li’s Figure 1, Li’s “elastic pull latch 3” also includes a portion for a user to manually pull out to unlock elastic pull latch 3 from catch 12. EX1007, ¶¶5, 16, 32.

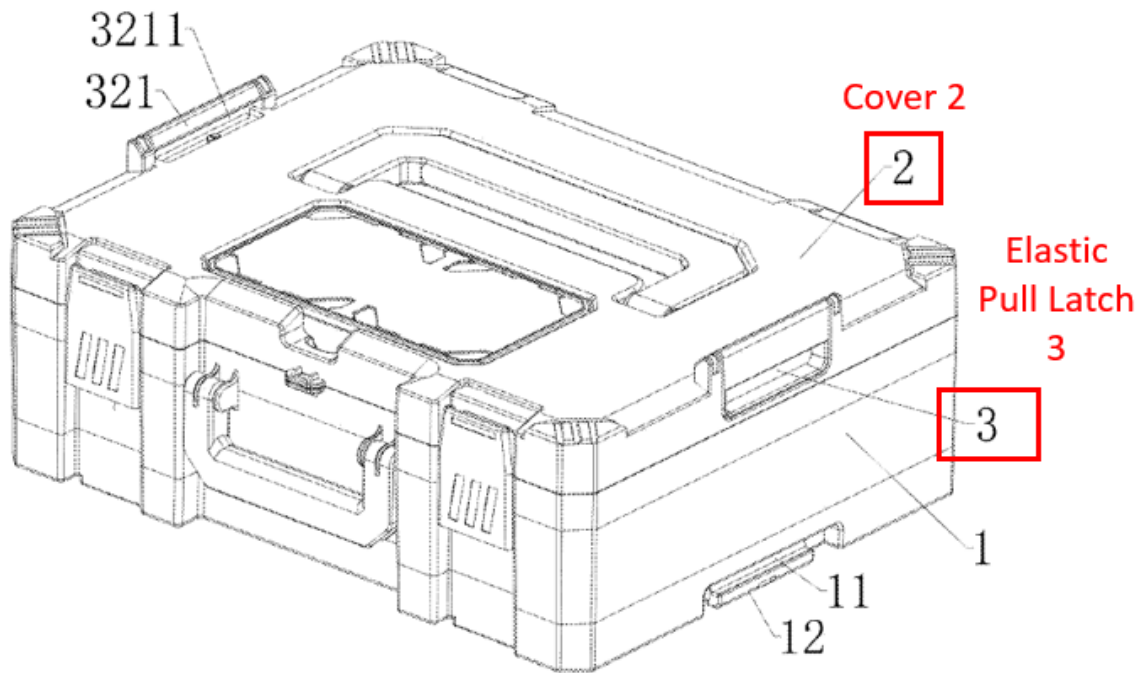


FIG. 1

EX1007, FIG. 1 (annotated).

171. Chute 21 as depicted in Figure 5 provides the “outward opening” depicted in Figure 1 that allows a user to pull out elastic pull latch 3. EX1007, ¶32.

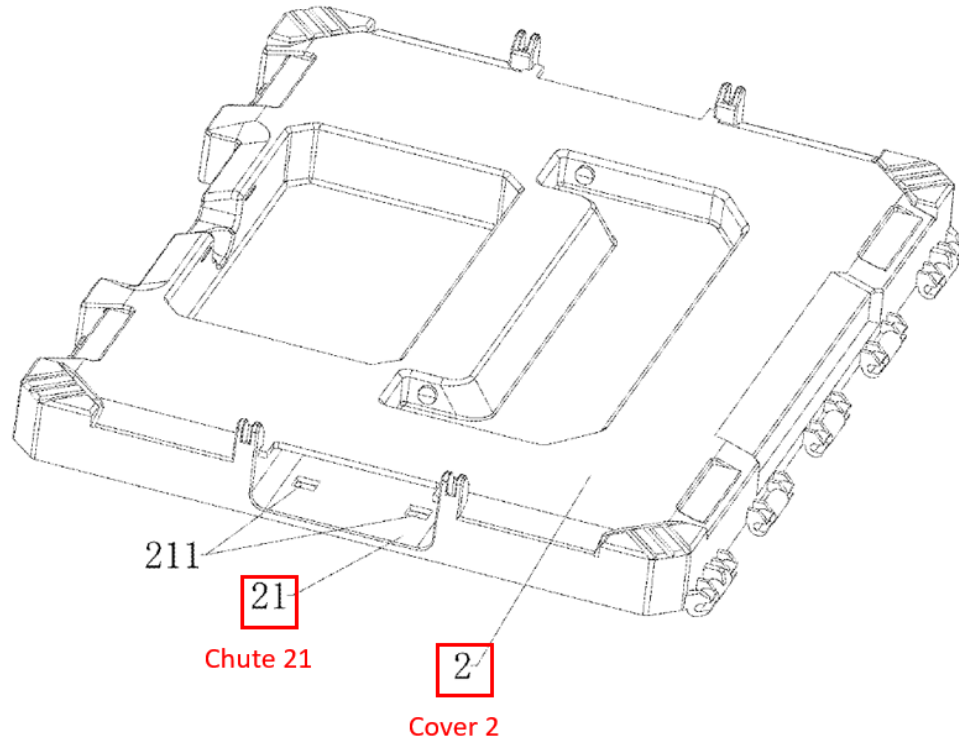


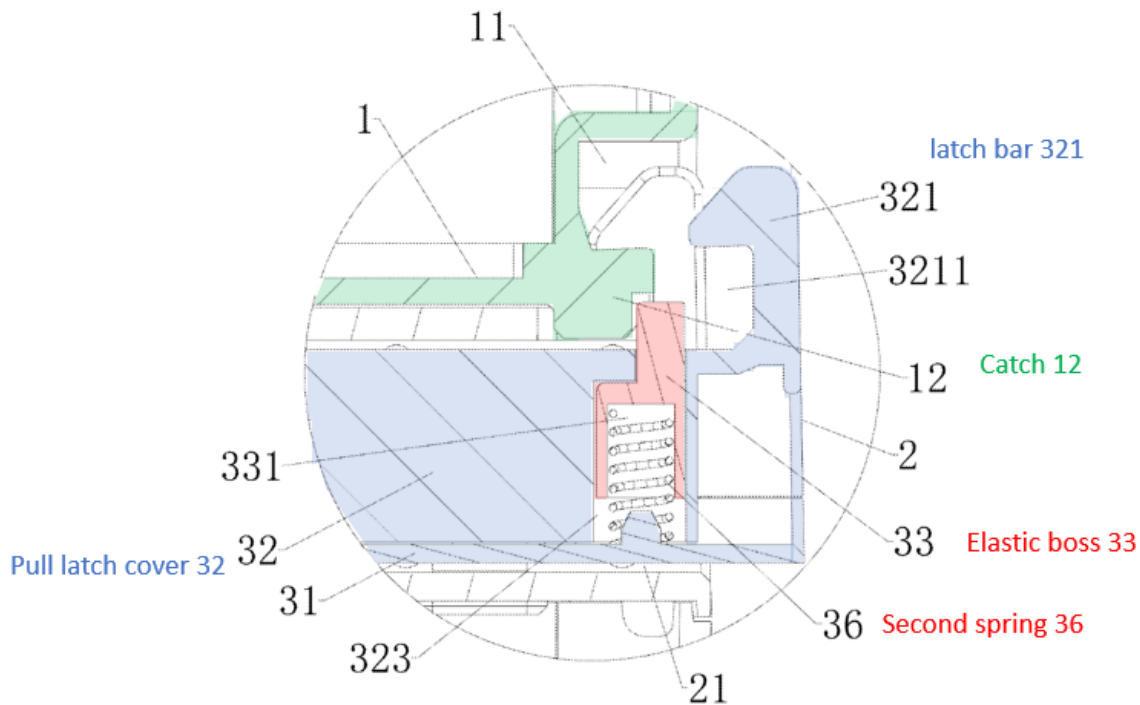
FIG. 5

EX1007, FIG. 5 (annotated).

172. Specifically, Li explains that the “left and right sides of the cover of the carrier are each provided with an elastic pull latch that can be pulled out.” EX1007, ¶5. Li further explains that “when stacked carriers need to be separated, *each elastic pull latch can be pulled out using one hand* and will remain in a pulled-out state without retracting.” EX1007, ¶16 (emphasis added). “In this way, stacked up carriers can be released and *unlatched ‘single-handedly,’* literally speaking, making the latch more convenient to use.” EX1007, ¶16 (emphasis added). In view of this description, Li described the claimed “*manual movement of the locking part [causing] the locking buckle to move to an unlocked state.*”

7. [1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part,

173. Li discloses [1.F.1]. Li's "elastic boss 33" teaches the claimed "*stop part*." EX1007, Abstract, ¶¶5-6, 12-14, 29-31, 35-36. Figure 9 shows the extension of the elastic boss 33 projecting in the outward direction to hold elastic pull latch 3 in an unlocked state. EX1007, ¶¶29-30, 36.



EX1007, FIG. 9 (annotated).

174. In particular, Li explains that the elastic boss 33 is "capable of moving vertically" and the "the upper end of the elastic boss extends out of the upper

surface of the latch.” EX1007, ¶¶5, 12, 29. “After the elastic pull latch of the lower carrier is pulled out, the elastic boss rises above and extends out of the upper surface of the latch so it becomes blocked by the catch.” EX1007, ¶¶6, 30. “As shown in FIG. 4, a second spring 36 extending vertically is mounted in the elastic pull latch 3 and the elastic boss 33 is situated on the second spring 36. The upper surface of the elastic pull latch 3 has an opening 322, allowing the top of the elastic boss 33 to pass through.” EX1007, ¶35.

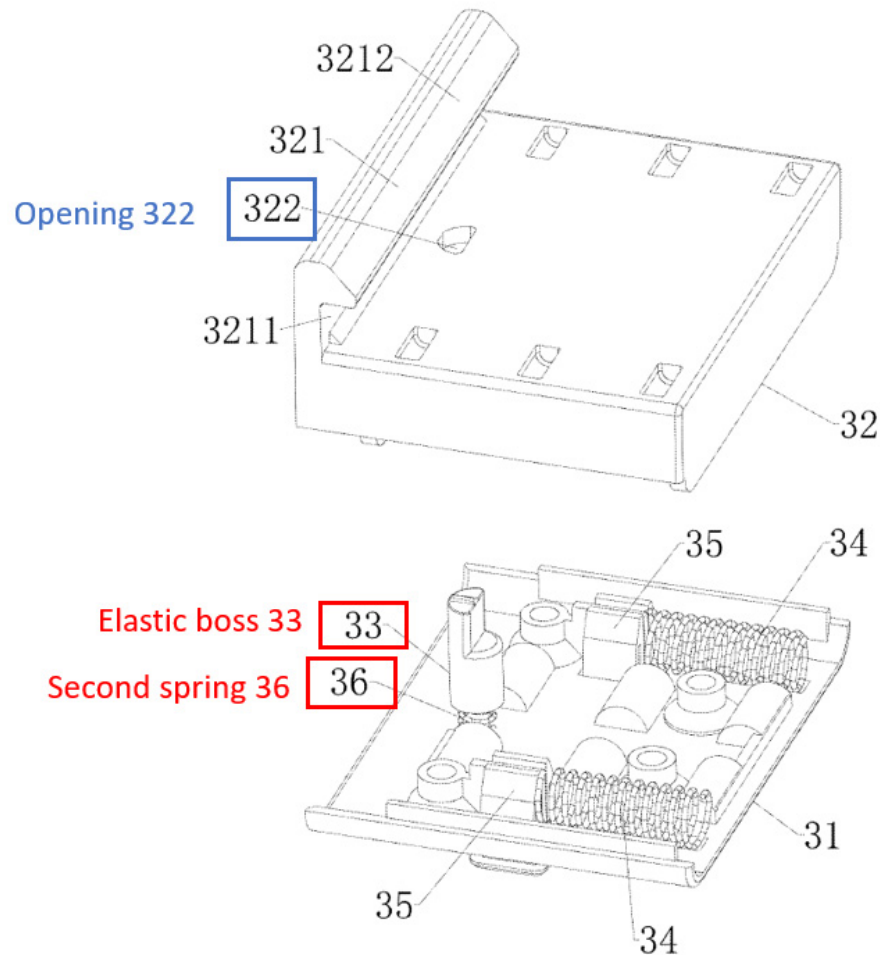


FIG. 4

EX1007, FIG. 4 (annotated).

175. In view of Figures 4 and 9 and Li's corresponding description, when a user pulls the elastic pull latch 3 outward in the horizontal direction, elastic boss 33 projects upward in the vertical direction via second spring 36. EX1007, ¶¶5-6, 12, 29-30, 35. This operation teaches the claimed "*stop part [that] projects outward with respect to a locking path of the locking part.*"³

176. Li also teaches that when the stop part is projected outward, the "*locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part*" as claimed. When elastic pull latch 3 is pulled outwards and the elastic boss 33 moves upward through opening 322, "the elastic boss 33 is held on the outer side of the catch 12 and the elastic pull latch 3 remains in a pulled-out state." EX1007, ¶36. Namely, after elastic boss 33 is extended, "pull latch 3 is being prevented from retracting inwards and is held on the outer side of the catch 12." EX1007, ¶¶30-31. This state of remaining unlocked is depicted in Figure 9 as annotated above. Li teaches that one advantage of this configuration is that "when stacked carriers need to be

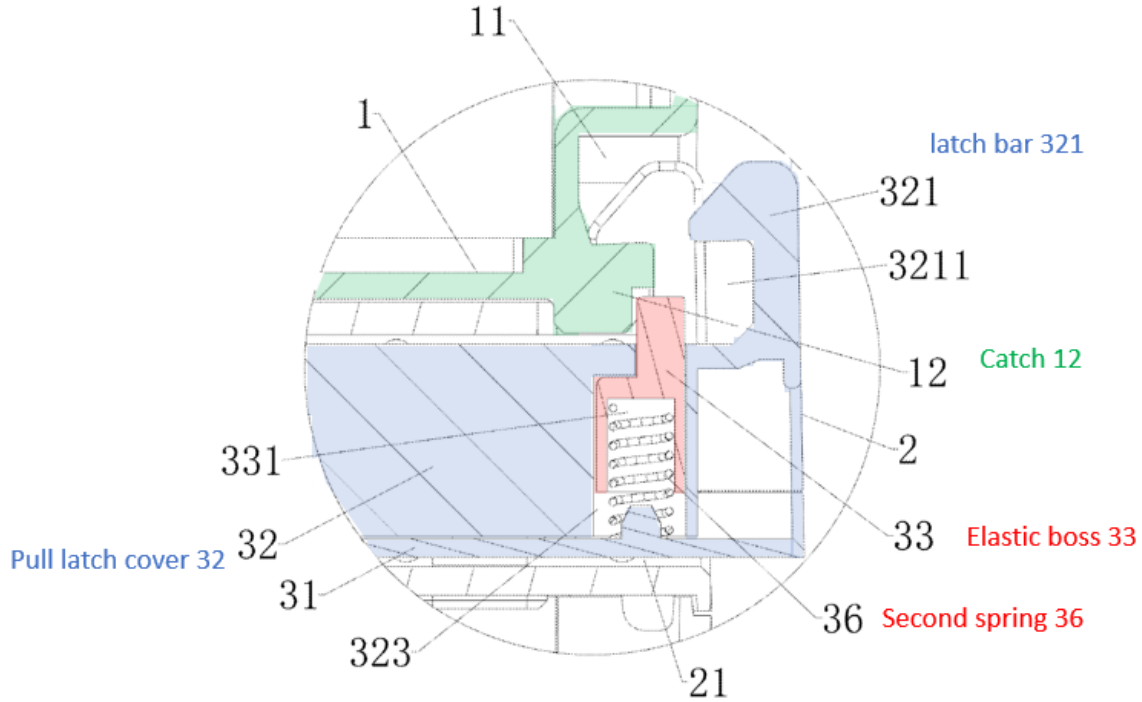
³ If "*stop part*" is construed to include both a blocking part and a resilient member, Li's elastic boss 33 and second spring 36 collectively disclose the claimed "*stop part*" under this construction as well for the same reasons that I presented in this section.

separated, each elastic pull latch can be pulled out using one hand and will remain in a pulled-out state without retracting so that other elastic pull latches can be released one by one.” EX1007, ¶¶16, 38.

177. In this manner, Li’s elastic boss 33 projecting outward through opening 322 prevents elastic pull latch 3 from automatically locking and therefore teaches the claimed “*stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part.*”

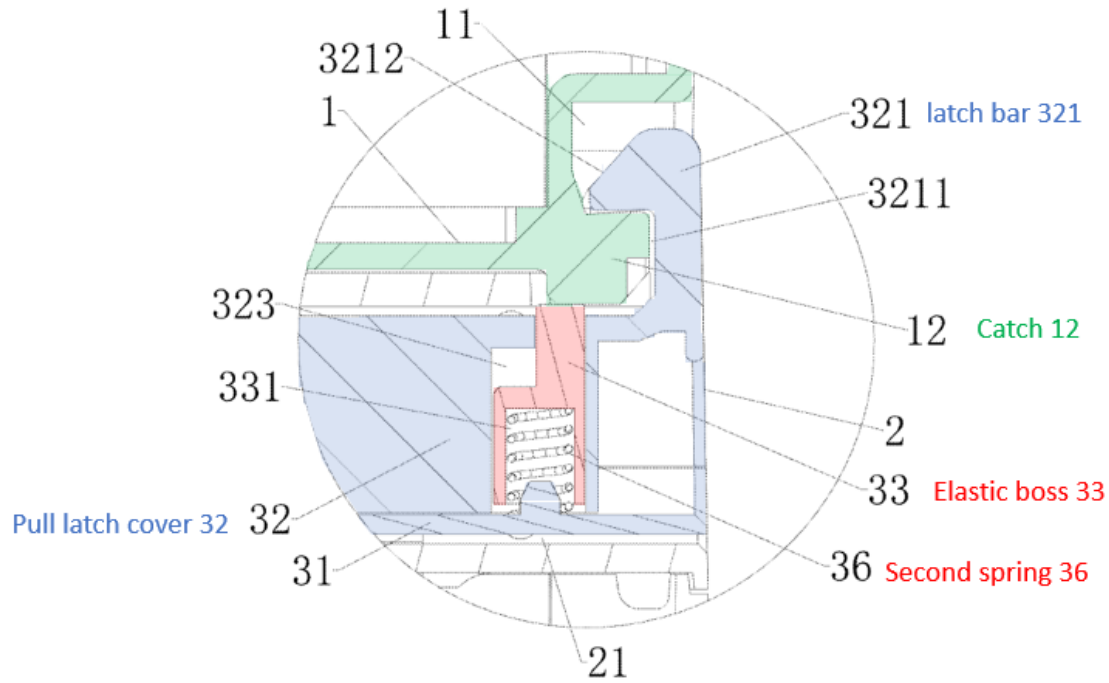
8. **[1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.**

178. Li discloses [1.F.2]. As I explained with reference to claim element [1.F.1], Li’s elastic boss 33 teaches the claimed “*stop part.*” Section XII.A.7. The operation of Li’s elastic boss 33 is also “*extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box*” as I described with reference to element [1.F.1]. Section XII.A.7. Figure 9 depicts elastic boss 33 in an extended state and holding elastic pull latch 3 in an unlocked state. EX1007, ¶¶16, 30-31, 36, 38.



EX1007, FIG. 9 (annotated).

179. Li's elastic boss 33 is also "*retractable*" and is "*compressed when said first connection part is in a locked state with said second connection part*" as claimed. In contrast to Figure 9, Li's Figure 7 depicts elastic boss 33 being retracted or shortened via the compression of second spring 36 when pull latch cover 32 and catch 12 are in a locked state. EX1007, ¶¶30-31, 36.



EX1007, FIG. 7 (annotated).

180. Li explains that when two boxes are “in a locked position, the bottom of the catch 12 of the upper box is in contact with the top of the elastic boss 33 of the lower box, and the second spring 36 underneath the elastic boss 33 is compressed.” EX1007, ¶36. The “bottom surface of the catch 12 on the upper carrier touches and depresses the elastic boss 33 of the pull latch 3 on the lower carrier.” EX1007, ¶¶30-31. In this manner, elastic boss 33 is retractable and is compressed when pull latch cover 32 from a lower box is in a locked state with catch 12 of an upper box.

181. Thus, Li teaches “*wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with*

said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part” as claimed.

B. Independent Claim 11

182. Li discloses Claim 11. The majority of claim elements from claim 11 are the same as claim 1 as shown in the table below. Li therefore discloses these claim elements for the same reasons that I presented with reference to claim 1.

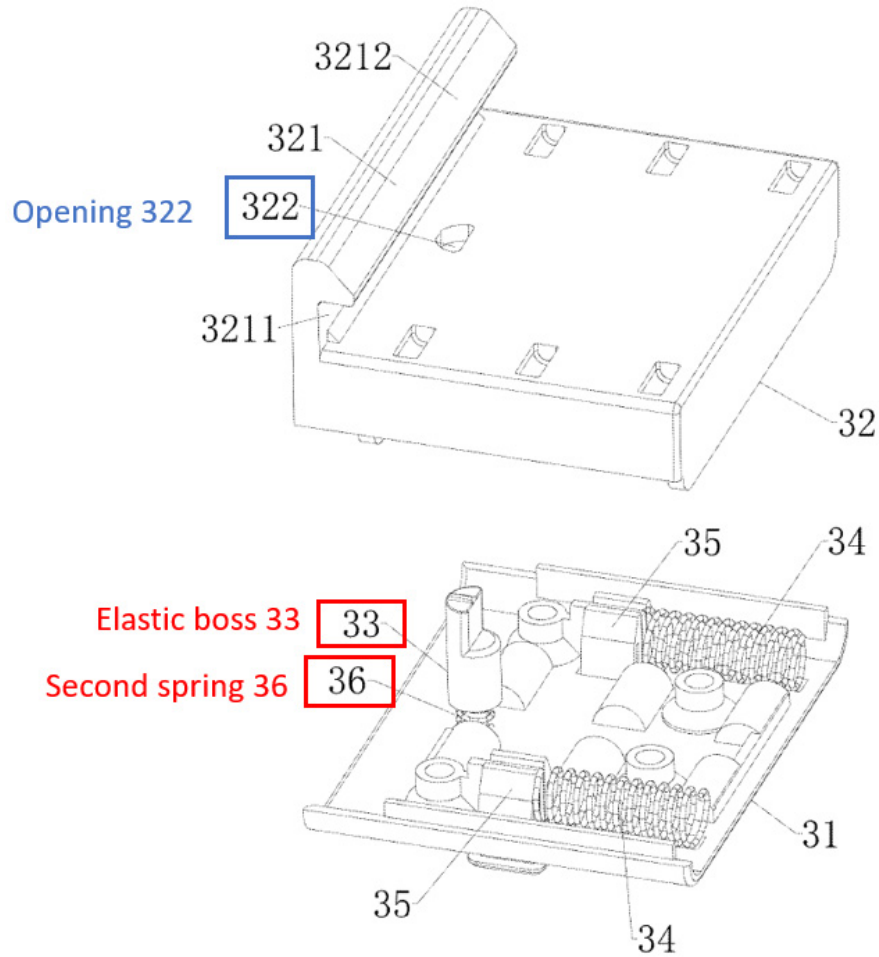
Independent Claim 11	Independent Claim 1
[11.P] A storage box comprising:	[1.P] A storage box comprising:
[11.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;	[1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;
[11.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;	[1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;

[11.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,	[1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,
[11.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;	[1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;
[11.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and	[1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and
[11.F] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part;	[1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part,

[11.G] <i>a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the second resilient member, wherein the stop part moves perpendicular with respect to a sliding path of the locking part.</i>	[1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.
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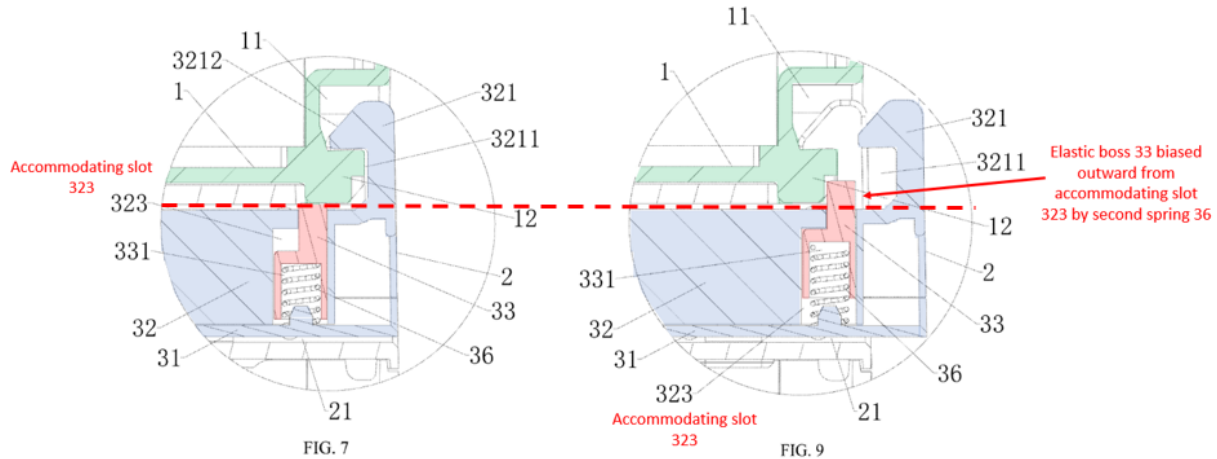
183. Claim element [11.G] additionally recites (1) a “*second resilient member*”; (2) “*the locking part comprises of a slot*”; (3) “*the stop part is biased outward from the slot by the second resilient member*”; and (4) “*the stop part moves perpendicular with respect to a sliding path of the locking part.*” Li discloses each of these additional elements for the reasons I presented with reference to [1.F.1] and [1.F.2]. Sections XII.A.7-8.

184. In particular, Li’s “second spring 36” teaches the claimed “*second resilient member.*” Li states: “As shown in FIG. 4, a second spring 36 extending vertically is mounted in the elastic pull latch 3 and the elastic boss 33 is situated on the second spring 36.” EX1007, ¶35.



EX1007, FIG. 4 (annotated).

185. Further, Li’s “accommodating slot 323” with “opening 322” teaches the claimed “*locking part comprises of a slot.*” EX1007, ¶¶13, 27, 35, 37. Li explains that elastic boss 33 is “arranged in the accommodating slot 323” and can be pushed through opening 322. EX1007, ¶¶35, 37. This can be seen as elastic pull latch 3 transitions from a locked to unlocked state and from Figure 7 to Figure 9. EX1007, ¶36.



EX1007, FIGs. 7, 9 (annotated).

186. When elastic pull latch 3 is pulled outward, “the upper end of the elastic boss extends out of the upper surface of the latch” based on “second spring 36 extending vertically.” EX1007, ¶¶5-6, 12, 29-30, 35. Li therefore teaches “*the stop part is biased outward from the slot by the second resilient member.*”

187. Li also teaches “*the stop part [moving] perpendicular with respect to a sliding path of the locking part*” for the reasons provided for [1.F.1]. Section XII.A.7. In view of Figures 4, 7, and 9 and Li’s corresponding description, when a user pulls the elastic pull latch 3 outward in the horizontal direction, elastic boss 33 projects upward in the vertical direction via second spring 36. EX1007, ¶¶5-6, 12, 29-30, 35. In this manner, when elastic pull latch 3—which includes base 31 and pull latch cover 32—is slid outward, elastic boss 33 moves perpendicular to the sliding direction of elastic pull latch 3 as seen from the transition from Figure 7 to Figure 9.

188. Thus, Li discloses each aspect of [11.G] and therefore also discloses claim 11.

C. Independent Claim 15

189. Li discloses claim 15 for the same reasons I presented for claims 1 and 11. The majority of claim elements from claim 15 are the same as those recited in claim 1 and 11 but have slight rearrangements and variations as shown in the table below. Li therefore discloses these claim elements for the same reasons that I presented with reference to claims 1 and 11 and as further explained below.

Independent Claim 15	Independent Claim 1
[15.P] A storage box comprising:	[1.P] A storage box comprising:
[15.A.1] a first connection part disposed on one area of said storage box,	[1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;
[15.A.2] wherein the first connection part comprises a mounting body, a locking buckle movable with respect to the mounting body, and a first resilient member located between the mounting body and the locking buckle <i>to bias the locking buckle automatically outward in a locked state;</i>	[1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said <i>first resilient member keeping said locking buckle automatically in a locked state;</i>

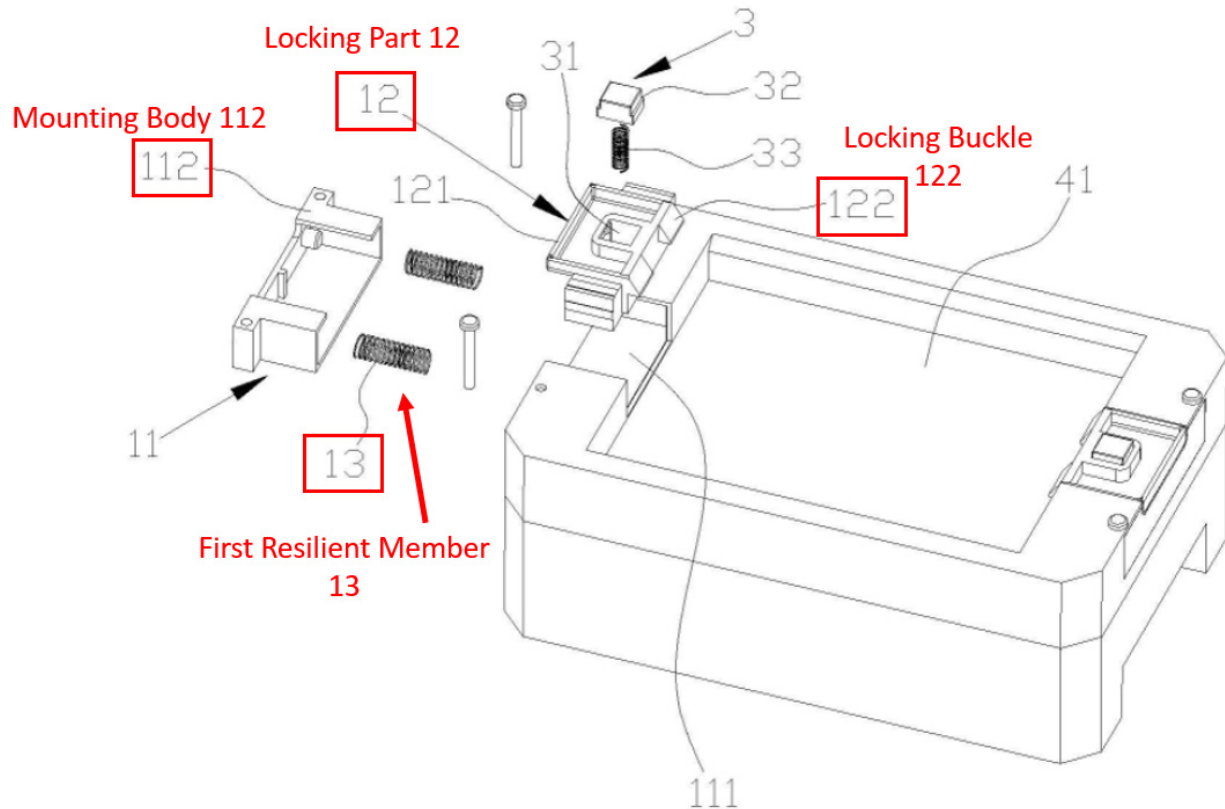
	[1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;
[15.B] a locking part configured to <i>move along a horizontal locking path</i> and to cooperate with the locking buckle, wherein manual movement of the locking part <i>along the horizontal locking path</i> causes the locking buckle to move between an unlocked state <i>retracted with respect to the mounting body and a locked state extended with respect to the mounting body</i>;	[1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and
[15.C] a stop part combined to the locking part comprising an unlocked state corresponding to the unlocked state of the locking buckle with the stop part extended from the locking part and the locking buckle held	[1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part

retracted with respect to the mounting body, and a locked state corresponding to the locked state of the locking buckle with the stop part retracted with respect to the locking part and the locking buckle held extended with respect to the mounting body; and	is in a state of remaining unlocked from said second connection part, [1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.
[15.D.1] a second connection part <i>disposed on another area of said storage box</i> , wherein the second connection part comprises a mating part that corresponds to the locking buckle,	[1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,
[15.D.2] wherein said locking part further comprises a holding slot opened on the locking part, and further comprising a second resilient member combined between the holding slot and the stop part, wherein the stop part is extended from the slot in the locking part when the stop part is in the unlocked state, and wherein the stop	[11.G] a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the second resilient member, wherein the stop part moves perpendicular with respect to a sliding path of the locking part.

part is retracted in the slot in the locking part when the stop part is in the locked state.	<i>See also</i> [1.F.1]-[1.F.2].
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190. **Li discloses [15.P] and [15.A.1]** for the reasons that I presented for [1.P] and [1.A] respectively. Sections XII.A.1-2.

191. **Li discloses [15.A.2]** for the reasons that I presented for [1.B] and [1.D]. Sections XII.A.3, XII.A.5. Additionally, Li’s “first spring 34” also operates “*to bias the locking buckle automatically outward in a locked state*” as recited in [15.A.2]. As I previously explained, the ’946 patent describes the first resilient member as operating to push locking buckle 122 toward the center of positioning slot 41: “locking buckle 122 extends into the positioning slot 41” to lock two boxes together; “locking buckle 122 is driven by the first resilient member 13 [and] automatically stuck into the slot 211.” EX1001, 7:3-11, 8:19-36. This can be understood based on the depiction of components from Figure 7.

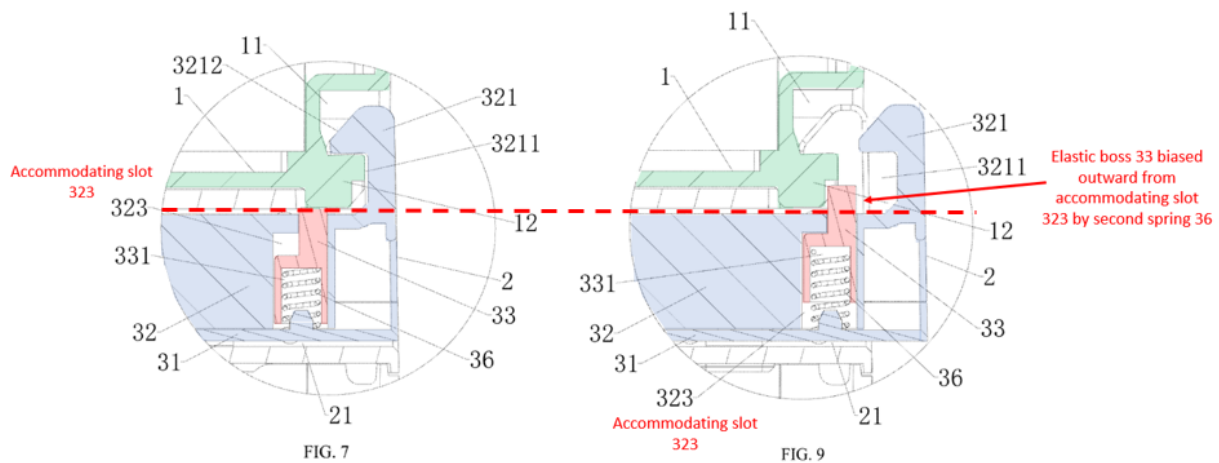


EX1001, FIG. 7 (annotated)

192. Li discloses this same operation for the reasons that I presented with reference to [1.B] and [1.D]. Section XII.A.3, XII.A.5. As depicted in Figures 4 and 7, “elastic pull latch 3 of the lower box is automatically reset by the compressed first springs 34” and the locking state is automatically engaged, meaning that the elongation of first spring 34 automatically biases Li’s pull latch cover 32 into a locked state. EX1007, ¶38. Thus, Li discloses [15.A.2].

193. **Li discloses [15.B]** for the reasons I presented for [1.D] and [1.E]. Sections XII.A.5-6. In particular, Li’s elastic pull latch 3 teaches the claimed “locking part” as previously explained. Sections XII.A.5-6; EX1007, ¶37.

Additionally, when positioned in chute 21, Li's elastic pull latch 3 moves "*along a horizontal locking path*" as recited in [15.B]. As seen from Figures 1 and 5, a user manually pulls elastic pull latch 3 outward from chute 21, which teaches the claimed "*horizontal locking path.*" EX1007, ¶¶5, 16, 32. This horizontal movement can also be seen as elastic pull latch 3 moves between the locked and unlocked positions depicted in Figures 7 and 9 respectively. EX1007, ¶36.



EX1007, FIGs. 7, 9 (annotated).

194. This movement also teaches the claimed "*locking buckle*" moving "*between an unlocked state retracted with respect to the mounting body and a locked state extended with respect to the mounting body.*" At the outset, the '946 patent refers to the extension of the locking buckle as being toward the center of a box to be in the locked position: "the locking buckle 122 **extends out** of the mounting portion 11 (i.e., the locking buckle 122 **extends** into the positioning slot 41)." EX1001, 7:7-9 (emphasis added). For retraction or the unlocked position, the

'946 patent states that “the locking buckle 122 **does not extend out** of the mounting portion 11 (i.e., the locking buckle 122 **does not extend** into the positioning slot 41).” EX1001, 7:14-17 (emphasis added).

195. With this understanding, Li's pull latch cover 32 (which includes “latch bar 321”)—i.e., the claimed “*locking buckle*”—operates in the same manner. Namely, when in the locked position, pull latch cover 32 (including latch bar 321) is pushed toward the center of cover 2 as I described with reference to [1.D]. Section XII.A.5; EX1007, ¶¶34, 38, FIGs. 3-4. Specifically, Li's first spring 34 extends and pushes the front face of pull latch cover 32 away from stop piece 35 in a locked state. EX1007, ¶¶29-31, 33, 38. This teaches the same extension of the locking buckle relative to the mounting body in a locked state described in the '946 patent. In the locked position, first spring 34 remains extended, and the front face of pull latch cover 32 is also extended away from stop pieces 35 as mounted into chute 21. EX1007, ¶¶34, 38, FIGs. 3-4.

196. Additionally, when in the unlocked position, pull latch cover 32 is pulled away from the center of cover 2 as I described with reference to [1.E]. Section XII.A.6; EX1007, ¶¶5, 16, 32. For example, first spring 34 is compressed as the front face of pull latch cover 32 is pulled toward stop piece 35 in an unlocked state. EX1007, ¶¶34, 38. This teaches the same retraction relative to the mounting body in an unlocked state described in the '946 patent. In the unlocked

position, first spring 34 is compressed or retracted, and the front face of pull latch cover 32 is also retracted toward stop pieces 35 as mounted into chute 21. EX1007, ¶¶34, 38, FIGs. 3-4.

197. In this manner, Li teaches [15.B] for the reasons I presented with reference to [1.D] and [1.E]. Sections XII.A.5-6.

198. **Li discloses [15.C]** for the reasons I presented for [1.F.1] and [1.F.2] and additionally as explained for [15.B]. Sections XII.A.7-8. At the outset, Li's elastic boss 33—e.g., “*stop part*”—is combined with or part of elastic pull latch 3, which teaches the claimed “*locking part*.” Section XII.A.6 (Claim Element [1.E]). When elastic pull latch 3 is in an unlocked state, elastic boss 33 is extended upward from opening 322 and holds elastic pull latch 3 in an unlocked position. Sections XII.A.7-8 (Claim Elements [1.F.1]-[1.F.2]); EX1007, ¶¶5-6, 12-14, 29-31, 35-36, FIG. 9. Li's unlocked position includes retracting or pulling pull latch cover 32 and latch bar 321 away from the center of cover 2 as I explained with reference to [15.B].

199. When elastic pull latch 3 is in a locked state, elastic boss 33 is retracted or compressed into accommodating slot 323 as I explained with reference to [1.F.2] and [11.G]. Sections XII.A.8, XII.B; EX1007, ¶¶30-31, 35-37, FIG. 7. Li's locked position also includes extending pull latch cover 32 and latch bar 321 toward the center of cover 2 as I explained with reference to [15.B]. Thus, Li

teaches [15.C].

200. **Li discloses [15.D.1]** for the reasons I presented for [1.A] and [1.C]. Sections XII.A.2, XII.A.4. Li's catch 12 and catch groove 11 also collectively teach the claimed "*second connection part disposed on another area of said storage box.*" EX1007, ¶¶29-31, 33, 36, 38. For example, as seen from Figures 1, 2, and 6, each of Li's boxes include elastic pull latch 3 on the cover for attaching to an upper box but also include catch 12 and catch groove 11 on a bottom portion for attaching to a lower box. Thus, Li discloses [15.D.1].

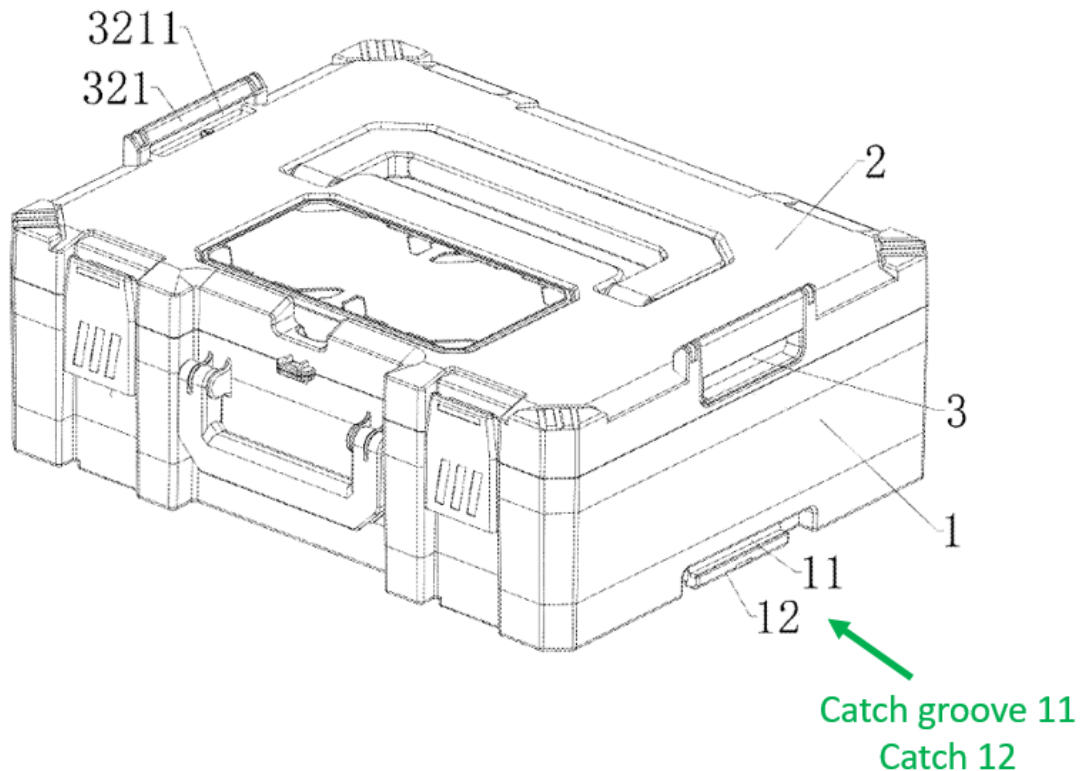


FIG. 1

EX1007, FIG. 1 (annotated).

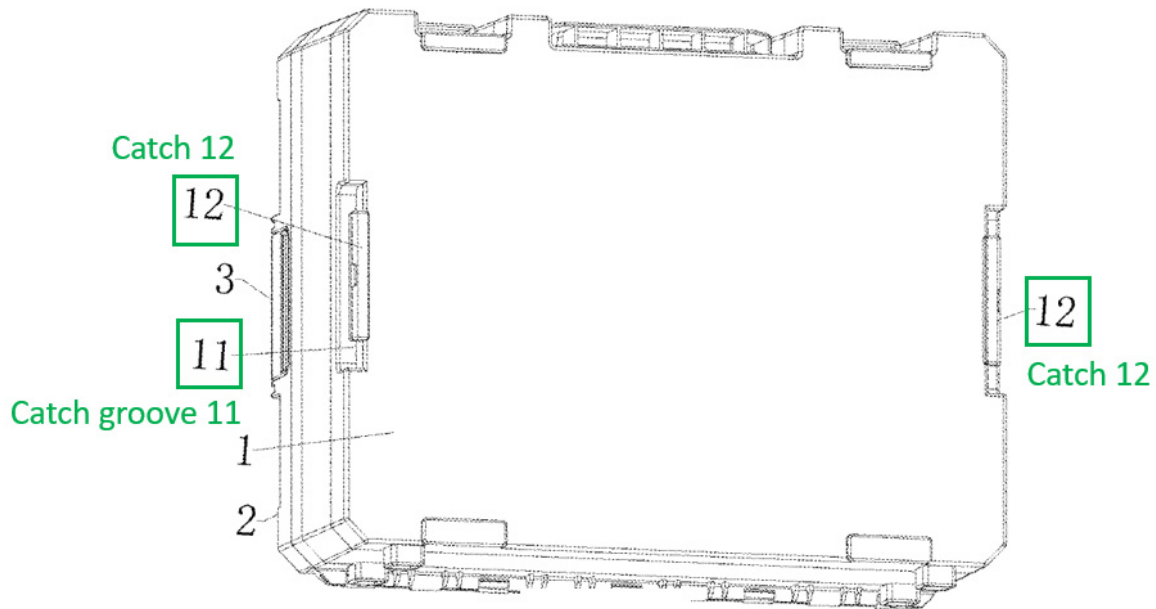


FIG. 2

EX1007, FIG. 2 (annotated).

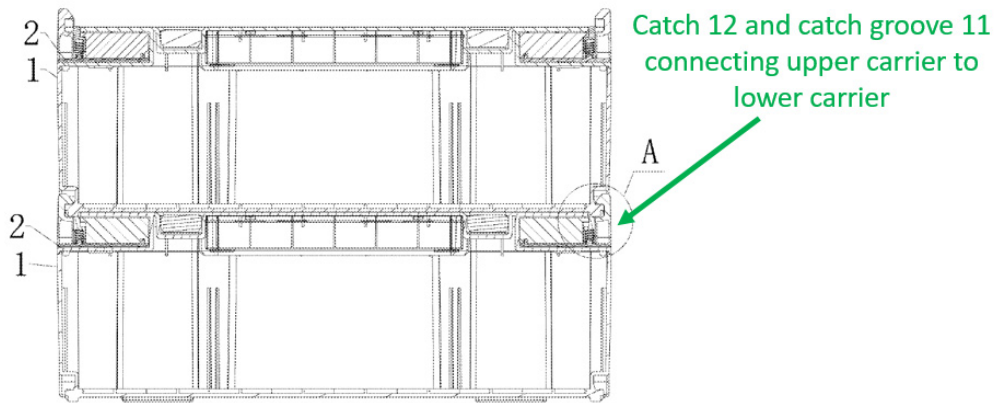
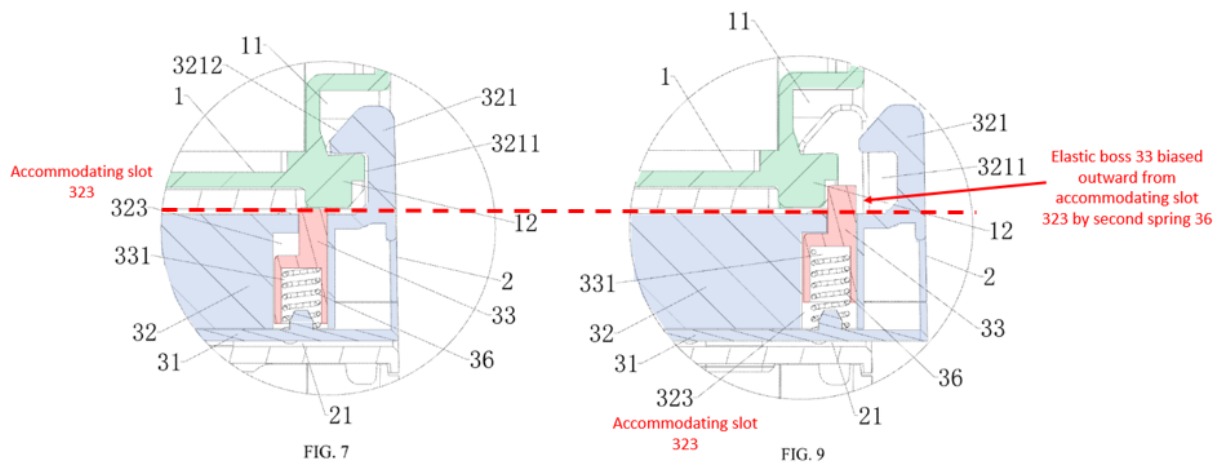


FIG. 6

EX1007, FIG. 6 (annotated).

201. **Li discloses [15.D.2]** for the reasons I presented for [1.F.1]-[1.F.2] and [11.G]. Sections XII.A.7-8, XII.B. As I explained with reference to [11.G], Li's "accommodating slot 323" with "opening 322" teaches the claimed "*holding*

slot opened on the locking part.” EX1007, ¶¶35-37; Section XII.B. Additionally, Li’s second spring 36 teaches the claimed “*second resilient member*.” EX1007, ¶¶35-36. Because second spring 36 is positioned between elastic boss 33 and the bottom portion of accommodating slot 323, Li also discloses the claimed “*second resilient member combined between the holding slot and the stop part*.” This positioning can be seen in Figures 7 and 9.



EX1007, FIGs. 7, 9 (annotated).

202. Additionally, as seen from these figures and as I explained with reference to [1.F.1], [1.F.2], [11.G], and [15.C], Li teaches “*wherein the stop part is extended from the slot in the locking part when the stop part is in the unlocked state, and wherein the stop part is retracted in the slot in the locking part when the stop part is in the locked state*” as recited in [15.D.2]. Sections XII.A.7-8, XII.B. When elastic pull latch 3 is unlocked, elastic boss 33 is extended outward from accommodating slot 323 through opening 322. EX1007, ¶¶5-6, 12, 29-31, 35.

When elastic pull latch 3 is “in a locked position, the bottom of the catch 12 of the upper box is in contact with the top of the elastic boss 33 of the lower box, and the second spring 36 underneath the elastic boss 33 is compressed.” EX1007, ¶36. In this manner, elastic boss 33 is retracted into accommodating slot 323 when in a locked state. Section XII.A.8 (Claim Element [1.F.2]). Thus, Li teaches [15.D.2].

D. Claim 2

203. Claim 2 recites “*The storage box of claim 1, wherein said stop part is provided on said locking part and is movable with said locking part along the locking path of the locking part.*”

204. Li discloses claim 2. As I explained with reference to [1.F.1], Li’s “elastic boss 33” teaches the claimed “*stop part.*” Section XII.A.7; EX1007, Abstract, ¶¶5-6, 12-14, 29-31, 35-36. As I explained with reference to [1.E], Li’s “elastic pull latch 3 [which] includes a base 31 and a pull latch cover 32 on top of the base 31” teaches the claimed “*locking part.*” Section XII.A.6; EX1007, ¶37. As seen from Figure 4, elastic boss 33 and second spring 36 are positioned within elastic pull latch 3 and on base 31. EX1007, ¶35, FIG. 4. Because Li’s elastic boss 33 is part of elastic pull latch 3, Li teaches “*wherein said stop part is provided on said locking part*” as claimed.

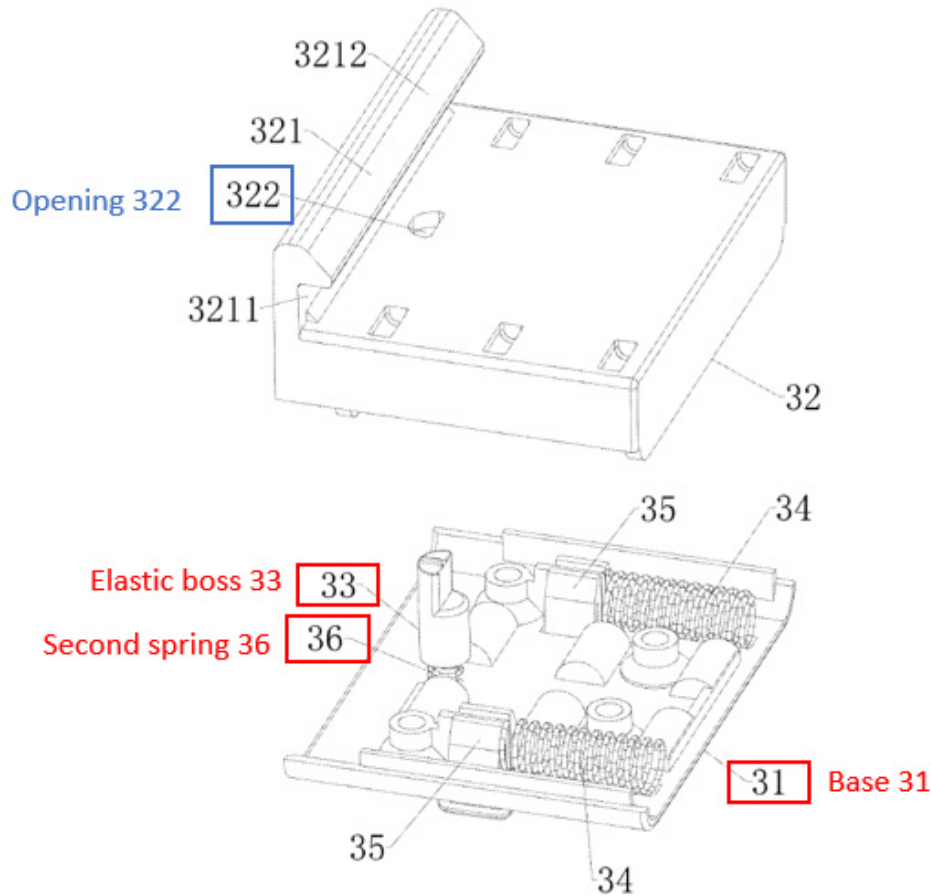


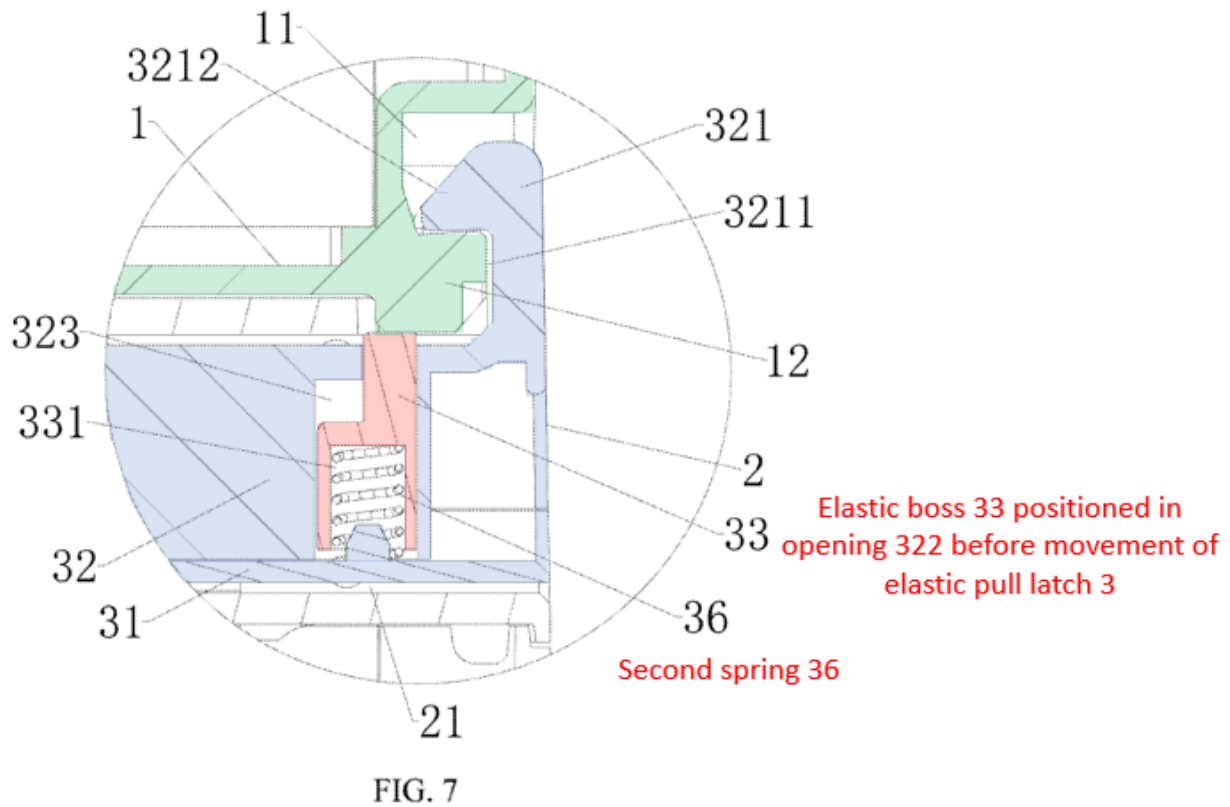
FIG. 4

EX1007, FIG. 4 (annotated).

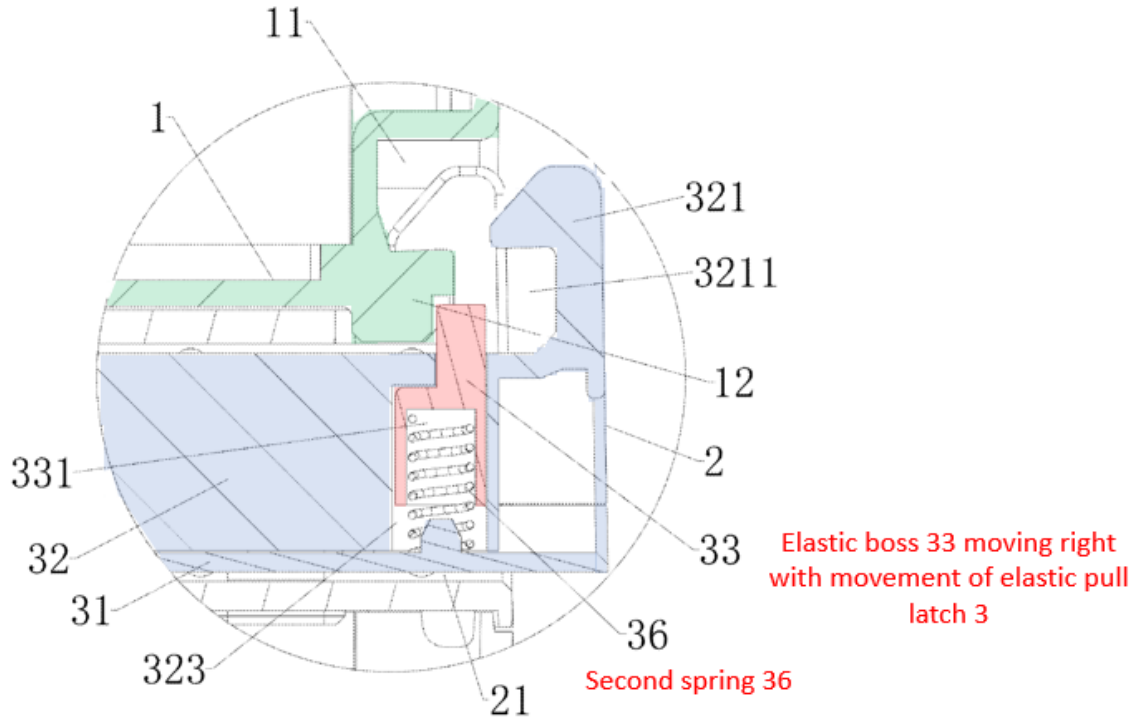
205. Li also teaches that elastic boss 33 is “*movable with said locking part along the locking path of the locking part*” as claimed. Li explains that elastic pull latch 3 (which includes base 31 and elastic boss 33), can be manually moved or pulled out by a user when unlocking two boxes. EX1007, ¶¶5, 16, 32. Similarly, elastic pull latch 3 moves inward toward catch 12 when moving to a locked position. EX1007, ¶¶33, 36. Because elastic pull latch 3 is movable, and base 31 and elastic boss 33 move along with elastic pull latch 3 when moving, elastic boss 33 is also “*movable with said locking part along the locking path of the locking*

part” as claimed.

206. This can further be seen from Figure 7, which depicts elastic boss 33 already positioned in the opening 322 in the locked state. EX1007, ¶¶35, 37. When a user pulls out elastic pull latch 3 in the rightward direction of Figure 7, elastic boss 33 similarly moves rightward and extends outward from the same opening 322 as depicted in Figure 9. EX1007, ¶¶35-36.



EX1007, FIG. 7 (annotated).



EX1007, FIG. 9 (annotated).

207. Thus, Li discloses claim 2.

E. Claim 3

208. Claim 3 recites “*The storage box of claim 2, wherein said locking part comprises a holding slot opened on the locking part, and further comprising a second resilient member combined between the holding slot and the stop part to extend the stop part outward in an extended state and said stop part is accommodated in said holding slot in a compressed state.*”

209. Li discloses claim 3 for the reasons I presented for [1.F.1], [1.F.2], [11.G], and [15.D.2]. Sections XII.A.7-8, XII.B, XII.C. Li’s “accommodating slot

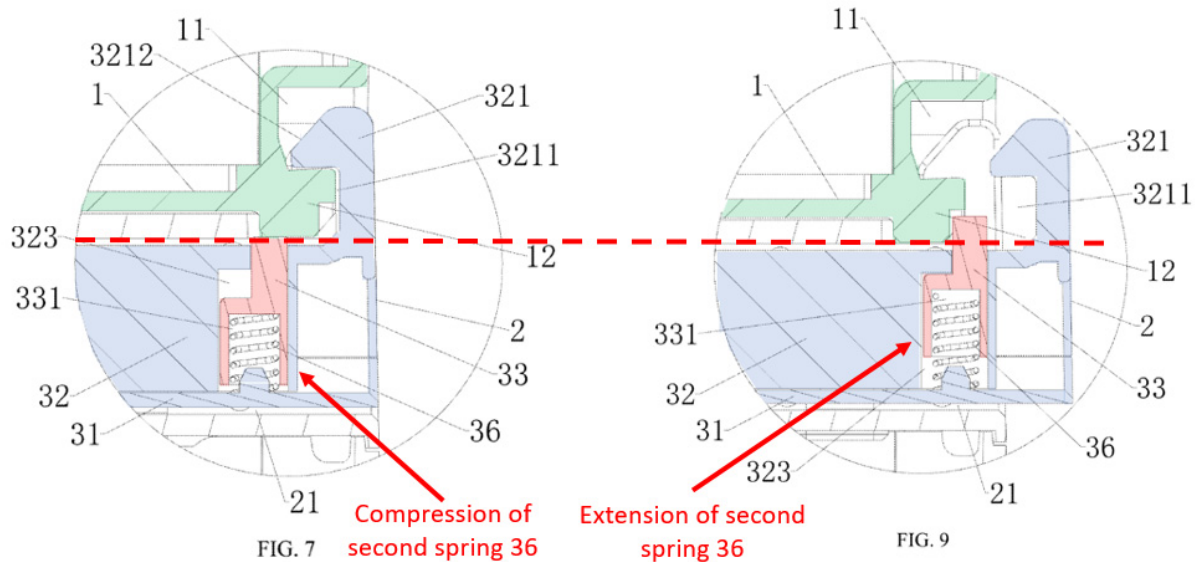
323” with “opening 322” teaches the claimed “*locking part comprises a holding slot opened on the locking part*” while Li’s “second spring 36” teaches the claimed “*second resilient member.*” EX1007, ¶¶13, 27, 35, 37. Because second spring 36 is positioned between elastic boss 33 and the bottom portion of accommodating slot 323, Li also discloses the claimed “*second resilient member combined between the holding slot and the stop part.*” EX1007, ¶¶35-36. As I explained with reference to [1.F.1], [1.F.2], [11.G], and [15.D.2], second spring 36 also causes elastic boss 33 to extend from or retract into accommodating slot 323 via opening 322 and therefore teaches “*extend the stop part outward in an extended state and said stop part is accommodated in said holding slot in a compressed state.*” Sections XII.A.7-8, XII.B, XII.C. Thus, Li teaches claim 3.

F. Claim 4

210. Claim 4 recites “*The storage box of claim 3, wherein when the stop part is retractably provided in said holding slot, said second resilient member is compressed; when said stop part is biased outward and held against a mating portion, said locking buckle is not automatically lockable to the mating part of the other storage box.*”

211. Li discloses claim 4 for the reasons I presented for [1.F.1], [1.F.2], [11.G], [15.D.2], and claim 3. Sections XII.A.7-8, XII.B, XII.C, XII.E. For example, Figure 7 depicts second spring 36 as compressed when elastic boss 33 is

retracted into accommodating slot 323. EX1007, ¶¶13, 27, 35, 37.



EX1007, FIG. 7, FIG. 9 (annotated).

212. Additionally, as I explained with reference to [1.F.1], when elastic boss 33 is extended or biased outward and held against catch 12 as depicted in Figure 9, latch cover 32 and latch bar 321 are “*not automatically lockable*” as claimed.⁴ See Section XII.A.7. Specifically, when elastic pull latch 3 is pulled

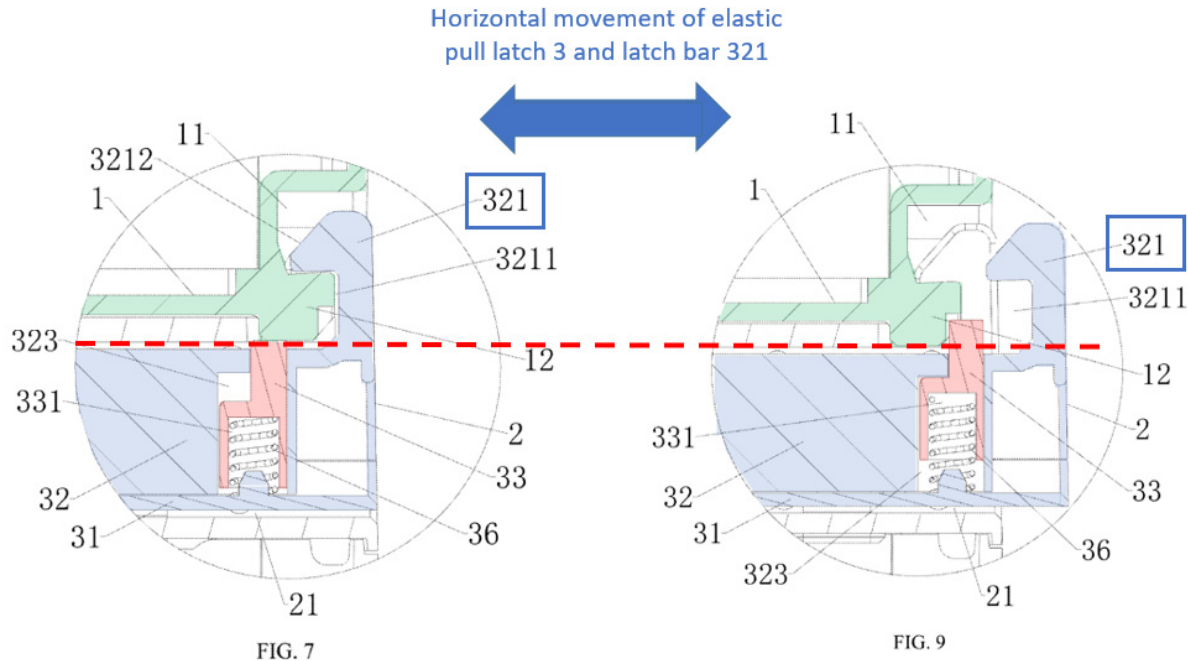
⁴ I note that claim 4 uses the term “*mating portion*” but the ’946 patent does not appear to define this term or identify this term with any specific reference number. Rather, the ’946 patent appears to use the term as equivalent to and interchangeably with “*mating part*.” EX1001, 3:56-63. Regardless, Li still describes the equivalent functionality when elastic boss 33 is biased outward and held against catch 12 and therefore still discloses all of the elements of claim 4.

outwards and the elastic boss 33 moves upward through opening 322, “the elastic boss 33 is held on the outer side of the catch 12 and the elastic pull latch 3 remains in a pulled-out state.” EX1007, ¶36. “The pull latch 3 is being prevented from retracting inwards and is held on the outer side of the catch 12.” EX1007, ¶¶30-31. Thus, Li discloses claim 4.

G. Claim 7

213. Claim 7 recites “*The storage box of claim 1, wherein said locking part is a sliding latch for horizontal movement.*”

214. Li discloses claim 7 for the reasons provided for [1.B], [1.D], and [1.E]. Section XII.A.3, XII.A.5-6. Li’s “elastic pull latch 3 [which] includes a base 31 and a pull latch cover 32 on top of the base 31” teaches the claimed “*locking part.*” EX1007, ¶37. Elastic pull latch 3 includes latch bar 321 and is a “*sliding latch for horizontal movement.*” EX1007, Abstract, ¶¶27, 29, 36. As seen from Figures 7 and 9, elastic pull latch 3 slides horizontally when pull out to an unlocked state or pushed in to a locked state. EX1007, ¶¶30-31, 34, 36-38. Li therefore discloses claim 7.



EX1007, FIG. 7, FIG. 9 (annotated).

H. Claim 8

215. Claim 8 recites “*The storage box of claim 1, wherein said first connection part is provided on a lid of said storage box.*”

216. Li discloses claim 8. As I explained with reference to [1.A], Li's "elastic pull latch 3" as installed in "chute 21" on "cover 2" teaches the claimed "*first connection part*." Section XII.A.2; EX1007, FIGs. 1, 5. Cover 2 is a "(carrier) cover" and is a lid of a storage box. EX1007, ¶¶27, 29-32. Thus, Li teaches a "*first connection part [that] is provided on a lid of said storage box*."

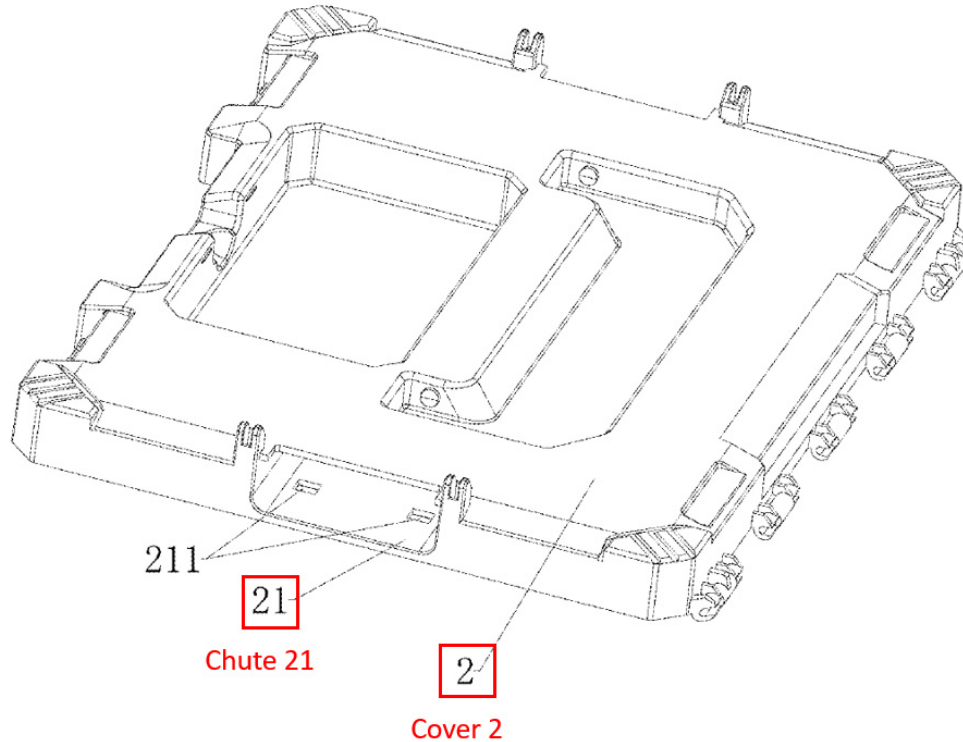


FIG. 5

EX1007, FIG. 5 (annotated).

I. Claim 9

217. Claim 9 recites “*The storage box of claim 1, wherein two adjacent storage boxes are interlockable with each other by means of the first connection part and the second connection part of the other storage box.*”

218. Li discloses claim 9 for the reasons that I provided for [1.A]. Section XII.A.2. For example, as depicted in Figures 6 and 7, Li teaches two adjacent storage boxes that are interlockable via elastic pull latch 3 of a lower box locking with catch 12 of an upper box. EX1007, ¶¶29-31, 33.

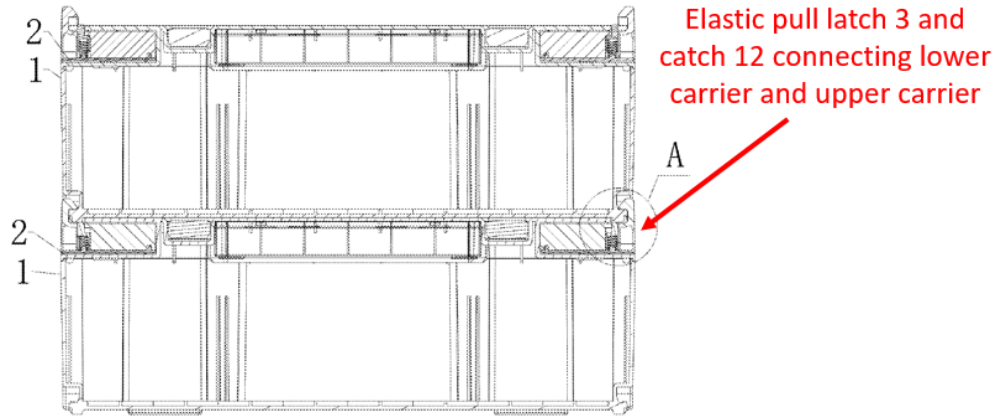


FIG. 6

EX1007, FIG. 6 (annotated).

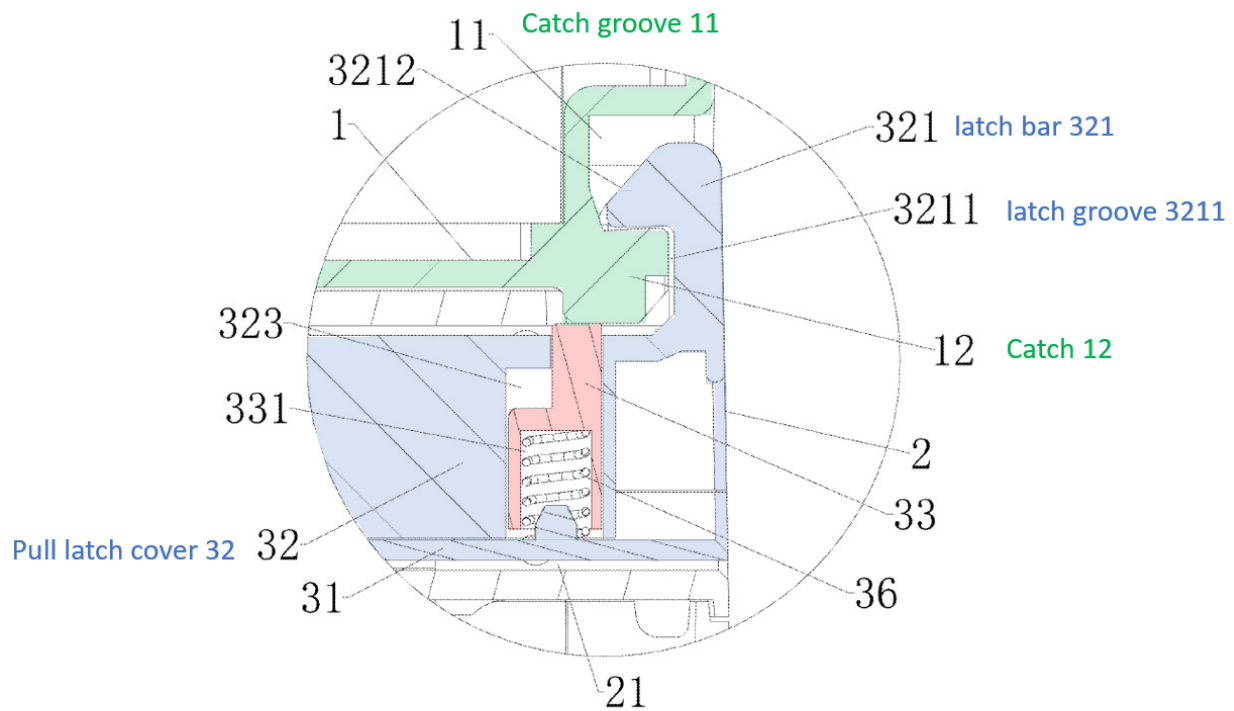


FIG. 7

EX1007, FIG. 7 (annotated).

219. Li further explains that when two carriers are “stacked one above another, the catch 12 at the bottom of an upper carrier is snapped into the latch

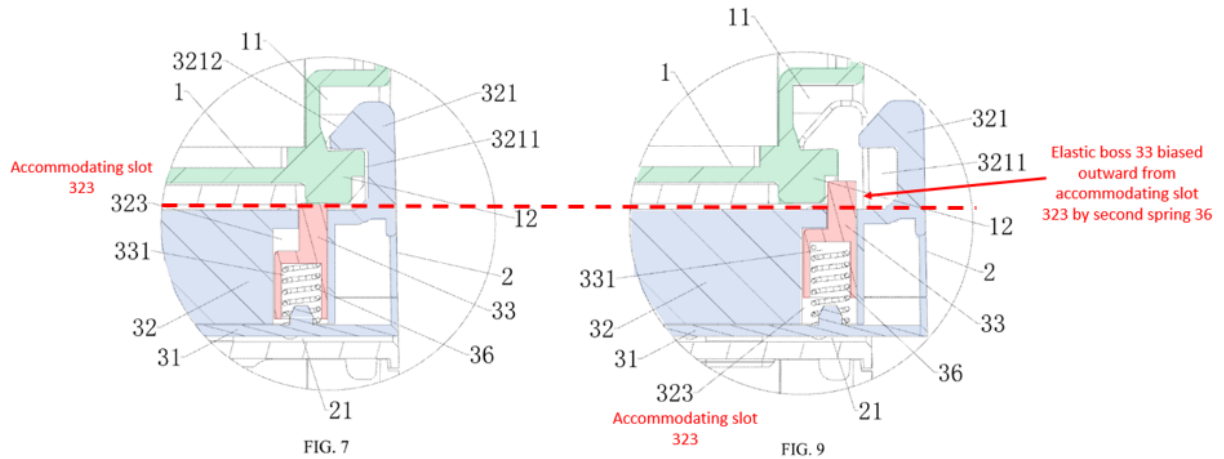
groove 3211 of the elastic pull latch 3 on the upper cover 2 of the lower carrier.”

EX1007, ¶¶30-31. Figure 7 shows this connection and “latch bar 321” attaching to “catch 12” to connect or interlock the two carriers. EX1007, ¶33. Thus, Li discloses claim 9.

J. Claim 10

220. Claim 10 recites “*The storage box of claim 1, and further comprising a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the second resilient member.*”

221. Li discloses claim 10 for the reasons provided for [11.G]. Section XII.B. Li’s “second spring 36” teaches the claimed “*second resilient member,*” and Li’s “accommodating slot 323” with “opening 322” teaches the claimed “*slot.*” EX1007, ¶¶13, 27, 35, 37. When elastic pull latch 3 is pulled outward, “the upper end of the elastic boss extends out of the upper surface of the latch” based on “second spring 36 extending vertically.” EX1007, ¶¶5-6, 12, 29-30, 35. Li therefore teaches “*the stop part is biased outward from the slot by the second resilient member*” as seen from Figures 7 and 9.



EX1007, FIGs. 7, 9 (annotated).

K. Claim 12

222. Claim 12 recites “*The storage box of claim 11, wherein the stop part moves outward relative to the locking part.*”

223. Li discloses claim 12 for the reasons provided for [1.F.1] and [11.G]. Sections XII.A.7, XII.B. As seen from Figure 9, Li’s elastic boss 33 (i.e., the claimed “*stop part*”) moves outward relative to elastic pull latch 3 as well as base 31 and pull latch cover 32 to hold elastic pull latch 3 in an unlocked state. EX1007, ¶¶29-30, 36.

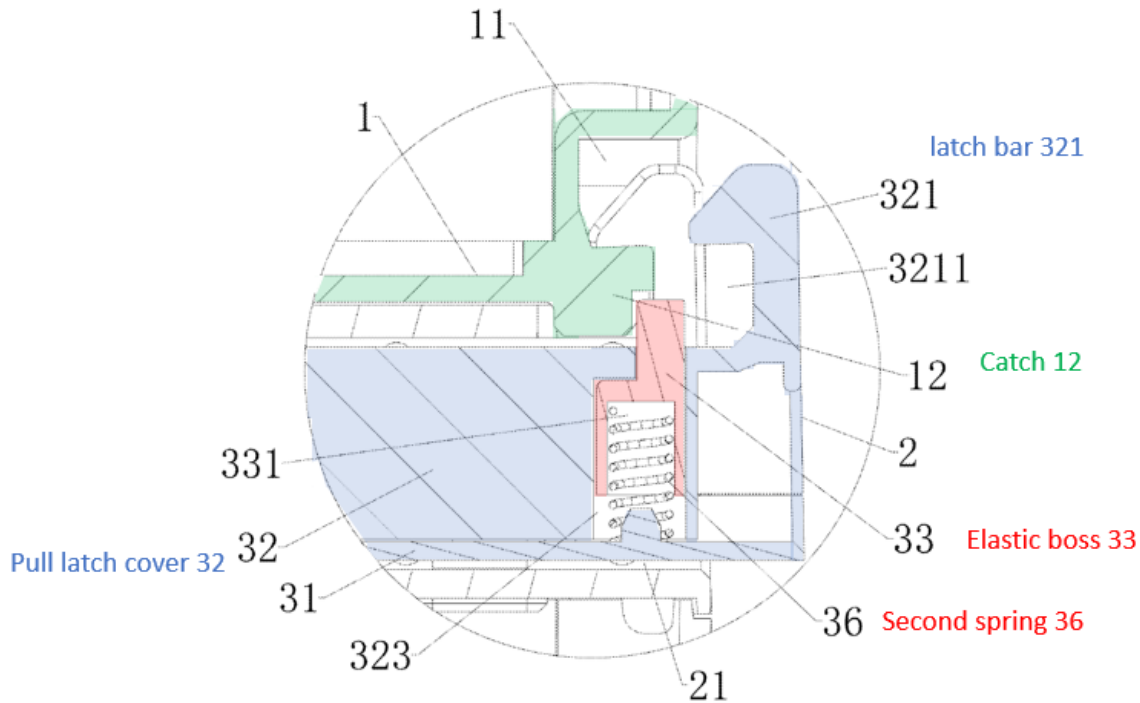


FIG. 9

EX1007, FIG. 9 (annotated).

224. Elastic boss 33 is “capable of moving vertically” and the “the upper end of the elastic boss extends out of the upper surface of the latch.” EX1007, ¶¶5, 12, 29. “[T]he elastic boss rises above and extends out of the upper surface of the latch so it becomes blocked by the catch.” EX1007, ¶¶6, 30, 35. In this manner, Li teaches a “*stop part [that] moves outward relative to the locking part*” and therefore discloses claim 12.

XIII. GROUND 1B: LI RENDERS OBVIOUS CLAIMS 1-4, 7-12, AND 15.

225. Claims 1-4, 7-12, and 15 would have also been obvious in view of Li.

226. As I explained with reference to Ground 1A, Li discloses and teaches

each aspect of the claims. Section XII. I have been informed that a disclosure that anticipates a claim also renders such a claim obvious because anticipation is the epitome of obviousness. With this understanding, Li both anticipates and renders obvious claims 1-4, 7-12, and 15 for the reasons that I previous with reference to Ground 1A. Section XII. To the extent that Patent Owner argues that Li does not disclose any particular claim element, a POSA would have still found such a claim element obvious.

227. For example, as I explained with reference to claim elements regarding [1.B], [11.B], and [15.A.2], Li's "stop piece 35" as attached to "chute 21" via "snap-in hole 211" discloses the claimed "*mounting body*." EX1007, ¶34; Section XII.A.3, XII.B, XII.C. If Patent Owner argues that this does not disclose the claimed "*mounting body*," a POSA would have still recognized Li's disclosure as rendering the claimed "*mounting body*" obvious. Li's configuration viewed as chute 21 combined with stop pieces 35 extending from snap-in holes 211 provides the same functionality as recited in the '946 patent. EX1007, ¶¶34, 36; EX1001, 6:61-7:17. Specifically, Li still describes elastic pull latch 3 moving horizontally relative to chute 21 and stop pieces 35. EX1007, ¶¶34, 36. This is the same configuration and function described in the '946 patent with reference to the claimed "*mounting body*" and a "*locking buckle movable with respect to said mounting body*":

Further, as shown in FIG. 7, in this embodiment, the locking part 12 may be housed within the mounting body 112, which may be movable relative to the mounting body 112. The locking part 12 is a sliding latch that moves horizontally relative to the mounting portion 11, thereby allowing the locking part 12 to move horizontally within the mounting slot 111.

EX1001, 6:61-67.

228. As seen from this description, the '946 patent describes a locking part 12 (which includes a locking buckle 122) being housed within the mounting body 112 and moving within and relative to the mounting body 112. EX1001, 6:61-67, 7:3-7; Section XII.A.3, XII.A.6 (Claim Elements [1.B], [1.E]).

229. As I explained in Ground 1A, Li teaches this same configuration and functionality when elastic pull latch 3 moves horizontally relative to chute 21 and stop pieces 35. EX1007, ¶¶33-34, 36; Sections XII.A.3, XII.A.6 (Claim Elements [1.B], [1.E]). Because Li describes the same configuration and functionality, a POSA would have additionally found the claimed “*mounting body*” and “*locking buckle movable with respect to said mounting body*” obvious in view of Li’s teachings. As I explained in Ground 1A, Li’s prior art teachings demonstrate that the claims of the '946 patent recite a predictable use of well-known prior art elements that operate according to their well-known and expected functions (e.g., a latch mechanism positioned in and moving relative to a receptacle in a lid).

EX1001, 6:53-67. Therefore, a POSA would have found claims 1-4, 7-12, and 15 obvious in view of Li.

XIV. GROUND 1C: THE COMBINATION OF LI, BURCHIA, AND HAMMOND RENDERS OBVIOUS CLAIMS 5-6 AND 13.

230. The combination of Li, Burchia, and Hammond renders obvious claims 5-6 and 13. As I previously explained with reference to Grounds 1A and 1B, Li anticipates and renders obvious independent claims 1 and 11, from which claims 5-6 and 13 depend. Claims 5-6 and 13 recite using a “torsion spring” as the second resilient member and causing the stop part to rotate around a shaft. As I explained with reference to [11.G], Li’s “second spring 36” teaches the claimed “*second resilient member*.” Section XII.B. Additionally, Burchia teaches that implementing a torsion spring as second spring 36 would have been a simple substitution and would have been implemented for locking mechanisms for stackable boxes. EX1008, ¶14. While Burchia does not explicitly provide implementation details for implementing a torsion spring, Hammond provides such a teaching and explains that a torsion spring would have been implemented on a shaft to rotate a stopping part for a latch mechanism. EX1009, ¶¶50, 54, 57, 61. Thus, the combination of Li, Burchia, and Hammond renders obvious claim 5-6 and 13

A. Motivation to combine Li, Burchia, and Hammond

231. A POSA would have been motivated to implement a torsion spring as

described in Burchia and Hammond in Li and would have found implementing a torsion spring to amount to merely combining known elements or a simple substitution of known elements to yield predictable results. As I explained in Ground 1A, Li already describes a “second spring 36” that extends and retracts elastic boss 33. Section XII.B. While Li describes the compression and expansion of second spring 36, Li does not provide explicit details on the type of spring to use or implementation details specific to implementing the spring.

232. To implement Li, a POSA would have been motivated to identify references describing types of springs used in locking mechanisms and how to implement those springs. This would have led to Burchia and Hammond.

233. Burchia explains that many types of springs are available for locking mechanisms used in stackable boxes. Section XI.C. Burchia explains that several types of springs are interchangeable for providing vertical displacement:

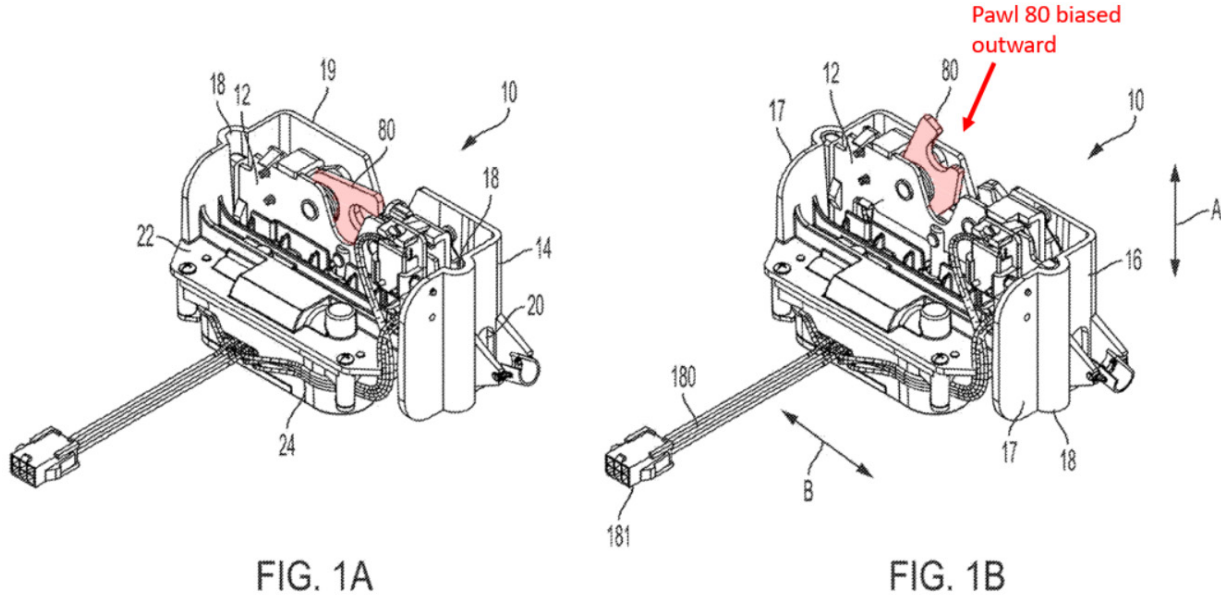
In order to be able to displace the locking element under spring stress, a spring element, for example, or another force storage unit is provided. *A pressure spring can be used.* Also, elastomer springs, leaf springs, helical springs or springs of a general nature can be used. *Likewise, torsion springs or plate springs can be used.*

EX1008, ¶14 (emphasis added).

234. In view of this teaching, a POSA would have recognized that selecting any one of these spring options to use in Li would have been a simple design

choice. Specifically, Burchia's permissive description that any one of these spring choices would have been usable for implementation in stackable box latching mechanisms would have suggested to a POSA that any of these springs would have usable as Li's second spring 36. In this manner, the selection of a "torsion spring" from Burchia's list would have been a simple design choice for implementing the same extension and retraction functions described in both Burchia and Li. EX1007, ¶¶16, 30-31, 36, 38; EX1008, ¶¶11-14, 75-78, 82, 86-87, Cl. 6.

235. To implement the torsion spring from Burchia's list, a POSA would have looked to references such as Hammond, which describe the use of a torsion spring to bias or project a latching component outward. EX1009, Abstract, ¶¶4, 54, 78, FIG.s 1A-1B, 3C. For example, as seen in Figures 1A and 1B, exposing or pushing pawl 80 outward in Hammond mirrors the same functionality in Li, which describes pushing elastic boss 33 upward as well. EX1007, ¶¶5-6, 12, 29-30, 35. In this manner, both Li and Hammond describe a spring that biases a portion of a locking mechanism upward and outward.



EX1009, FIGs. 1A-1B (annotated).

236. With this understanding and in view of Burchia's teachings, a POSA would have been motivated to combine Hammond with Li to utilize Hammond's explicit implementation details explaining how to implement a torsion spring to expose or bias a component in the upward direction. A POSA would have implemented Hammond's torsion spring teachings when implementing Li's second spring 36 to achieve Li's functionality.⁵ In this manner, implementing Hammond would have amounted to merely combining known elements from the prior art or a

⁵ Notably, bodily incorporation is not required for the combination. A POSA would have understood how to implement Burchia's and Hammond's teachings with Li based on their common functionality.

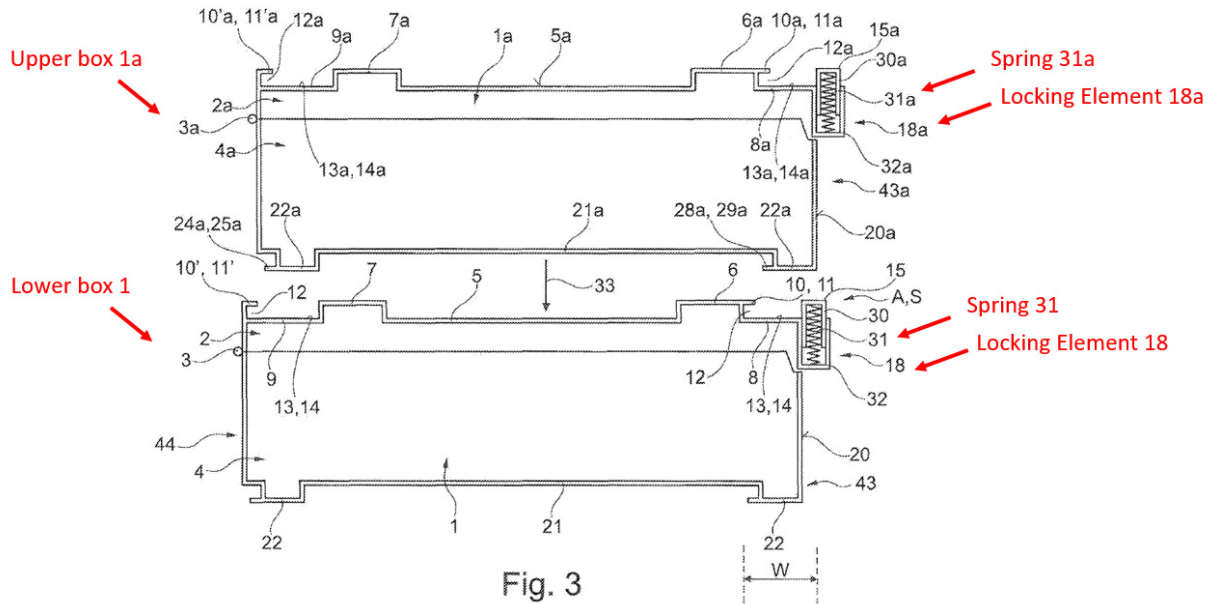
simple substitution of known elements from the prior art to yield predictable results and would have resulted in the same functionality described in Li. In view of Burchia's teachings, which explicitly describes implementing a torsion spring, a POSA would have also had a reasonable expectation of success in implementing Hammond's teachings in Li.

B. Claim 5

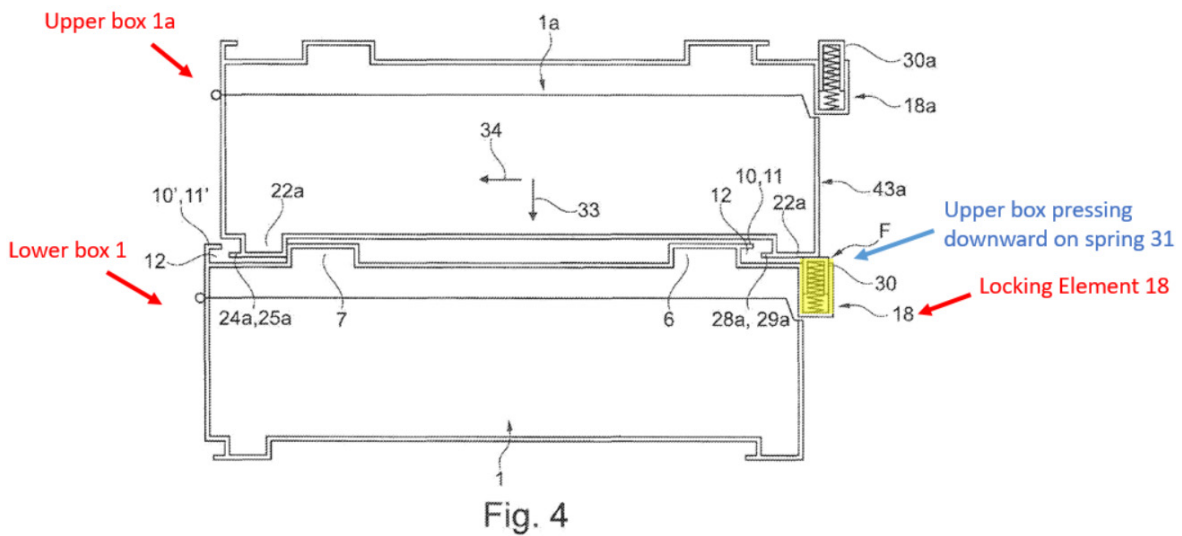
237. Claim 5 recites "*The storage box of claim 4, wherein said second resilient member is a torsion spring with one end against said stop part and the other end against a bottom of said holding slot; when said torsion spring is extended, said stop part extends out of said holding slot and when said torsion spring is compressed, said stop part is retracted into said holding slot.*"

238. The combination of Li, Burchia, and Hammond renders claim 5 obvious. As I explained with reference to [11.G], Li's second spring 36 teaches the claimed "*second resilient member.*" Section XII.B. Li in view of Burchia and Hammond teaches the use of a "torsion spring" as Li's second spring 36 to provide the same functionality for "elastic boss 33." Sections XII.A.7-8 ([1.F.1]-[1.F.2]), XII.B, XIV.A. Namely, Burchia teaches that "torsion springs" can be used in locking mechanisms for stackable boxes and to "displace [a] locking element under spring stress." EX1008, ¶14; Section XI.C. For example, as seen from Figures 3 and 4 and from Burchia teaching that a torsion spring can be used as spring 31,

Burchia teaches that a torsion spring can extend and retract similar to Li's second spring 36. EX1008, ¶¶11-14, 75-78, 82, 86-87, Cl. 6.



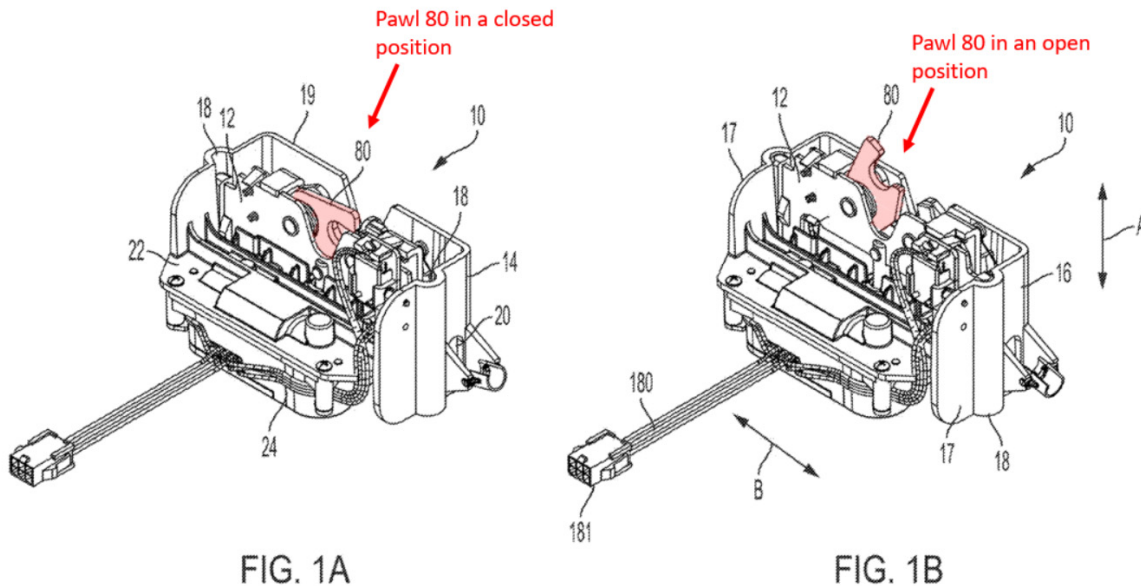
EX1008, FIG. 3 (annotated).



EX1008, FIG. 4 (annotated).

239. Further, Hammond provides implementation details for using a

“torsion spring” to extend and retract a component of a locking mechanism and to bias the component into an extended position. EX1009, FIGs. 1A-1B, 3C, ¶¶8-9, 52, 54-55, 78; Section XI.D.

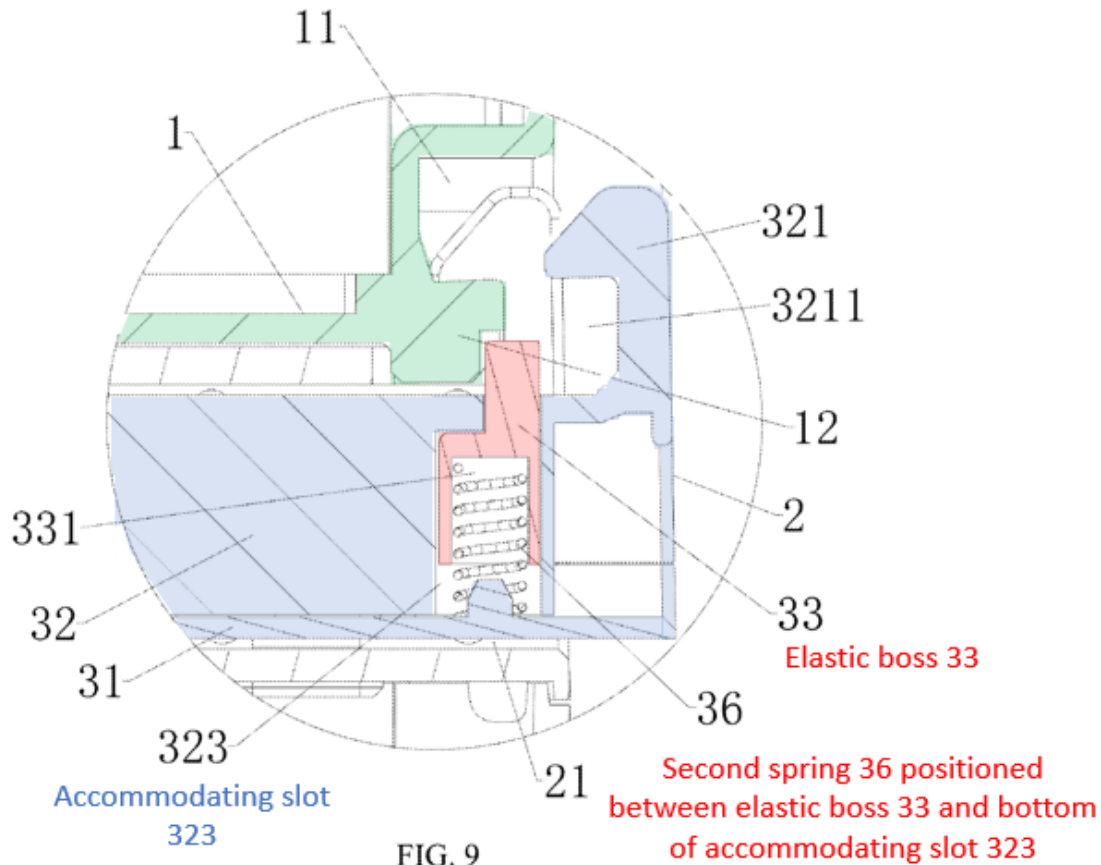


EX1009, FIGs. 1A-1B (annotated).

240. In view of these teachings, implementing a torsion spring as Li's second spring 36 would have amounted to merely combining known elements or a simple substitution of known elements to yield predictable results for the reasons previously explained. Section XIV.A.

241. When implementing a torsion spring as Li's second spring 36, a POSA would have recognized that one end would have been positioned against elastic boss 33 (i.e., the claimed "*stop part*") and the other end would have been positioned against the bottom of accommodating slot 323 (i.e., the claimed

“*holding slot*”). Section XII.B ([11.G]). As seen from Figures 4, 7, and 9 from Li, Li already teaches positioning second spring 36 with one end against elastic boss 33 and the other end against the bottom of accommodating slot 323. EX1007, ¶35, FIGs. 4, 7, 9.



EX1007, FIG. 9 (annotated).

242. Burchia also teaches this same position as seen from Figures 3 and 4 where spring 31—which again can be a torsion spring—is positioned between a “sliding part 30” and the bottom of a “holding part 32.” EX1008, FIGs. 3-4, ¶¶11, 13-14, 76-78, 82, 84. Thus, a POSA would have found it obvious in view of Li and

Burchia to position a torsion spring “*with one end against said stop part and the other end against a bottom of said holding slot*” as claimed.

243. The combination of Li, Burchia, and Hammond also renders obvious “*when said torsion spring is extended, said stop part extends out of said holding slot and when said torsion spring is compressed, said stop part is retracted into said holding slot*” as claimed.

244. Li already describes the extension and retraction of elastic boss 33 via the extension and compression of second spring 36 respectively. Sections XII.A.7-8 ([1.F.1]-[1.F.2]), XII.B ([11.G]), XII.F (claim 4). In this manner, when implementing a torsion spring with Li, the combination still teaches the same functionality of extending or retracting elastic boss 33 out of or into accommodating slot 323 via opening 322. Sections XII.A.7-8 ([1.F.1]-[1.F.2]), XII.B ([11.G]), XII.F (claim 4).

245. Burchia further confirms this understanding and, in Figures 3 and 4, depicts the same extension and retraction of a spring that can explicitly be a torsion spring. EX1008, FIGs. 3-4, ¶¶11, 13-14, 76-78, 82, 84. Spring 31—which again can be a torsion spring—moves a “sliding part 30” upward or down within a “holding part 32.” *Id.* In this manner, Burchia also teaches that when a torsion spring is extended or compressed, a component such as sliding part 30 or Li’s elastic boss 33 extends outward or retracts into a slot respectively. Hammond also

shows the extension or retraction of a locking component (pawl 80) using a torsion spring 48b for the reasons that I previously explained. Section XI.D, XIV.A.

246. Thus, the combination of Li, Burchia, and Hammond teaches “*wherein said second resilient member is a torsion spring with one end against said stop part and the other end against a bottom of said holding slot*” and “*when said torsion spring is extended, said stop part extends out of said holding slot and when said torsion spring is compressed, said stop part is retracted into said holding slot*” as recited in claim 5.

C. Claim 6

247. Claim 6 recites “*The storage box of claim 5, and further comprising a shaft connected to said locking part about which said stop part rotates, said shaft being fixed to said locking part; wherein the torsion spring being positioned on said shaft.*”

248. The combination of Li, Burchia, and Hammond renders claim 6 obvious. As I explained with reference to claim 5, a POSA would have found the use of a torsion spring to implement Li’s second spring 36 to be obvious in view of Burchia’s teachings. Section XIV.B. Hammond provides additional details for implementing such a torsion spring and therefore discloses the elements of claim 6 when implemented with Li.

249. In particular, Hammond teaches that for a torsion spring to operate,

the torsion spring is positioned on a shaft (e.g., torsion spring 48b positioned on pin 36b). EX1009, ¶¶50, 54, 57, 61. A POSA would have recognized that implementing a torsion spring using a shaft was ubiquitous and well-known in the art. For example, as reiterated in the “Standard Handbook of Machine Design” by Shigley, “Torsion springs are almost always mounted on a shaft or arbor with one end fixed.” EX1013, 24.35.

Torsion springs are used in spring-loaded hinges, oven doors, clothespins, window shades, ratchets, counterbalances, cameras, door locks, door checks, and many other applications. Torsion springs are almost always mounted on a shaft or arbor with one end fixed. They can be wound either right or left hand.

In most cases the springs are not stress-relieved and are loaded in the direction that winds them up or causes a decrease in body diameter. The residual forming stresses which remain are favorable in that direction. Although it is possible to load a torsion spring in the direction to unwind and enlarge the body coils, ordinarily it is not good design practice and should be avoided. Residual stresses in the unwind direction are unfavorable. Torsion springs which are plated or painted and subsequently baked or are stress-relieved will have essentially no residual stresses and can be loaded in either direction, but at lower stress levels than springs which are not heat-treated.

Correlation of test results between manufacturer and user may be difficult because there are few, if any, standardized torsion-spring testing machines. The springs will have varying degrees of intercoil friction and friction between the mounting arbor and the body coils. Often duplicate test fixtures must be made and test methods coordinated.

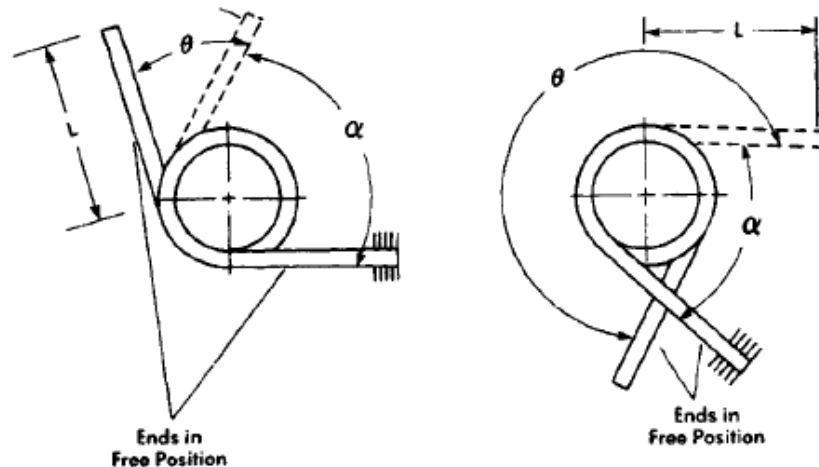


FIGURE 24.23 Specifying load and deflection requirements for torsion spring: α = angle between ends; P = load on ends at α ; L = moment arm; θ = angular deflection from free position. (Associated Spring, Barnes Group Inc.)

EX1013, 24.35 (annotated).

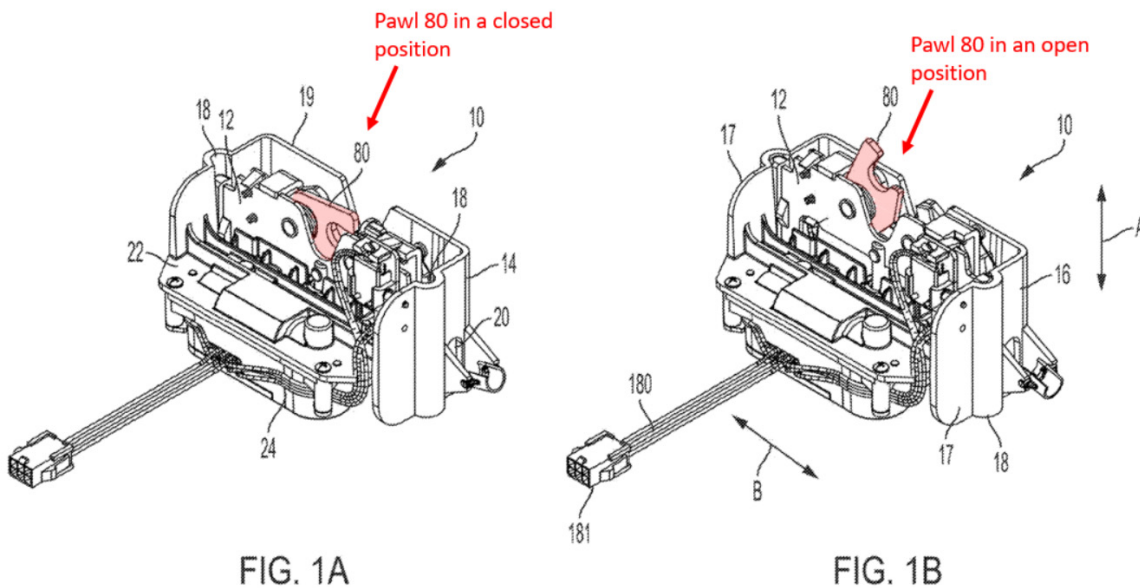
250. A POSA would have therefore recognized that Hammond's torsion spring 48b positioned on pin 36b teaches the same positioning of a torsion spring on a shaft. Hammond depicts this configuration in an exploded view in Figure 3C.

to the open position shown in FIG. 1B.” EX1009, ¶54. In view of this description, Hammond teaches positioning a torsion spring on a shaft as recited in claim 6.

252. When combined with Li, a POSA would have recognized that the combination teaches a shaft being “*connected to*” or “*fixed to*” a locking part as claimed. Specifically, Hammond teaches that pin 36b is a “*stationary*” component and that torsion spring 48b is positioned in a manner that is “capable of pivoting or rotation with *respect to the stationary component*[].” EX1009, ¶61 (emphasis added). In this manner, Hammond’s pin 36b description teaches a shaft that is fixed because such shaft configurations were common as I previously explained. EX1013, 24.35. In the combination with Li, a POSA would have implemented pin 36b in Li’s elastic pull latch 3 (i.e., the claimed “*locking part*”) in the same fixed or “stationary” manner described in Hammond to implement a similar torsion spring. Section XII.A.6 ([1.E]). For example, a POSA would have implemented pin 36b with a torsion spring to provide the functionality described with reference to Li’s second spring 36, which is a component of and fixed to elastic pull latch 3. Section XII.B ([11.G]). Thus, the combination teaches a shaft “*connected to*” or “*fixed to*” a locking part as claimed.

253. The combination also renders obvious a stop part that rotates about a shaft as claimed. For example, Hammond teaches that when implementing a torsion spring to bias a locking component into an extended or retracted position,

the locking component may be designed to pivot or rotate around a shaft. EX1009, Abstract, ¶¶61, 78, 80. For example, Hammond's torsion spring 48b biases pawl 80 to "auto-rotate to the open position" relative to pin 36b, which is fixed or stationary. EX1009, Abstract, ¶¶61, 78, 80. Figures 1A and 1B show the rotation of pawl 80 while Figure 3C depicts this rotation occurring relative to pin 36b. EX1009, ¶¶8-9, 14.



EX1009, FIGs. 1A-1B (annotated).

from Hammond's teaching of an extended and retracted position for pawl 80, a POSA would have recognized that implementing a rotatable stop part using a torsion spring and pin would have provided the same functionality recited in Li for elastic boss 33 and second spring 36—i.e., biasing elastic boss 33 upward or outward via a spring action. EX1009, FIGs. 1A-1B. I additionally note that Li does not restrict or limit the movement elastic boss 33 and simply describes its functionality as extending outward in an unlocked state. EX1007, ¶¶5-6, 12, 29-31, 35-36. In this manner, because both Hammond and Li provide the same functionality of biasing a component upward or outward, a POSA would have recognized that using a rotatable stop part would have been a simple design choice, which results from combining known elements or implementing a simple substitution of known elements that would yield predictable results. Sections XI.A, XI.D.

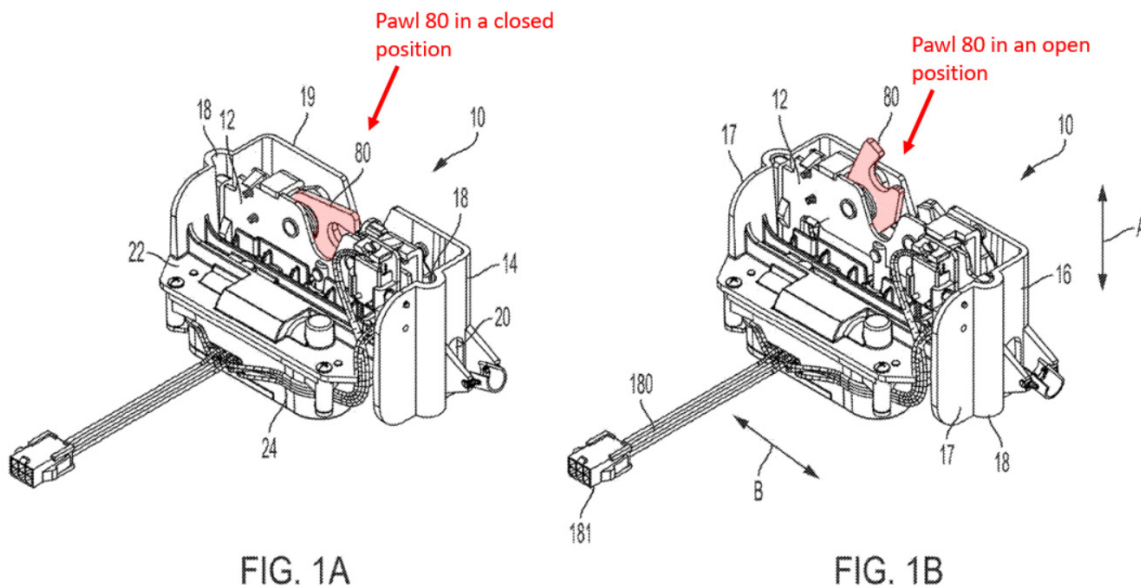
256. Thus, the Li-Burchia-Hammond combination renders claim 6 obvious.

D. Claim 13

257. Claim 13 recites “*The storage box of claim 11, wherein the second resilient member is a torsion spring and the stop part rotates relative to the locking part.*”

258. The combination of Li, Burchia, and Hammond renders claim 13 obvious for the reasons I presented for claims 5 and 6. Claim 13 additionally

recites the “*stop part rotates relative to the locking part.*” EX1001, Cl. 13. When implementing Hammond with Li, a POSA would have recognized that such a rotation would have been obvious based on the rotation of pawl 80 described in Hammond. EX1009, Abstract, ¶¶54-57, 61, 78, 80. For example, Figures 1A-1B in Hammond show the rotation of pawl 80 relative to the overall latch assembly. EX1009, Abstract, ¶¶8-9, 41.



EX1009, FIGs. 1A-1B (annotated).

259. When implementing a torsion spring with Li’s elastic pull latch 3, a POSA would have also found it obvious to implement a rotatable stop part to operate with the torsion spring similar to Hammond’s pawl 80. When operating to provide the functionality of elastic boss 33 and second spring 36, such a rotatable stop part would rotate relative to Li’s elastic pull latch 3 (i.e., the claimed “*locking*”

part”) for the reasons I provided for claim 6. Section XIV.C.

260. Thus, for the reasons provided for claims 5 and 6, the Li-Burchia-Hammond combination renders claim 13 obvious.

**XV. GROUND 1D: THE COMBINATION OF LI AND DAVIDIAN
RENDERS OBVIOUS CLAIMS 14 AND 16.**

261. As I previously explained with reference to Grounds 1A and 1B, Li anticipates and renders obvious independent claims 1 and 15, from which claims 14 and 16 depend. Claims 14 and 16 recite the following additional features:

- A “projection” on the bottom of an upper box that slots into a “positioning slot” on a hinged lid of a lower box; and
- “Four projections” on the lid of the lower box that slot into “four positioning recesses” located on the bottom of the upper box.

EX1001, Cl. 14, 16. The combination of Li and Davidian renders these claim features obvious for the reasons provided below.

A. Motivation to Combine Li and Davidian

262. A POSA would have been motivated to modify Li to include Davidian’s projections and recesses to provide additional stability when stacking multiple boxes. At the outset, Li’s Figure 1 already depicts and suggests using projections on a lid via the depiction of raised corners. EX1007, FIG. 1.

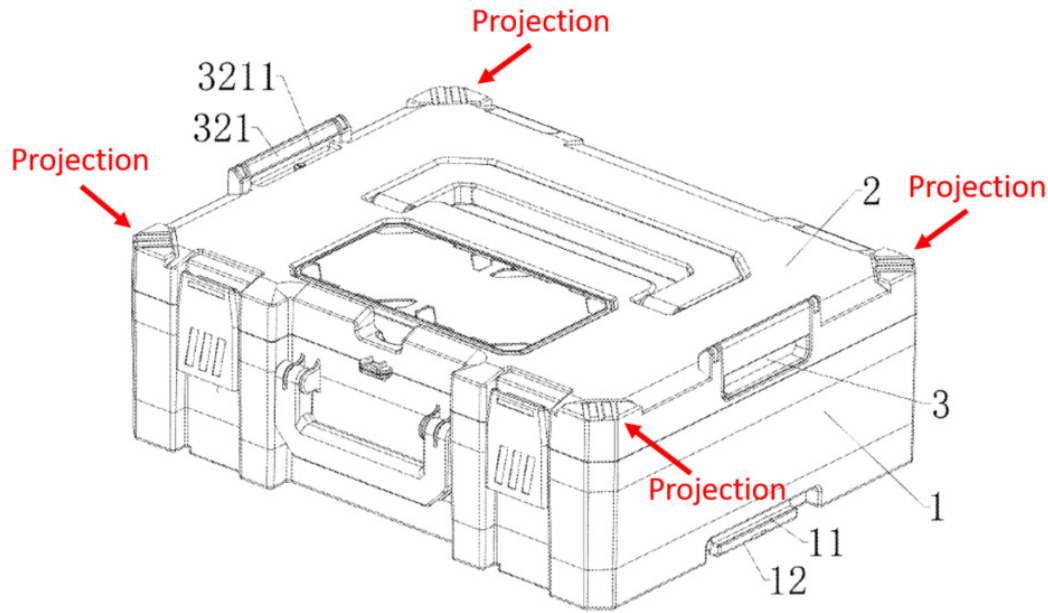


FIG. 1

EX1007, FIG. 1 (annotated).

263. In view of this suggestion, a POSA would have identified and/or recognized that projections could have been implemented on stackable boxes. To further identify possible projection configurations, a POSA would have identified references such as Davidian, which explicitly teaches the use of multiple projection configurations on both the top lid of a storage box and from the bottom of a storage box. Section XI.E; EX1011, ¶¶65-67, FIGs. 8A-8B.

264. A POSA would have been motivated to implement Davidian's projections and recesses to provide greater stability and reduce movement between the stackable boxes in Li. EX1011, ¶¶51, 53, 65, 72. As Davidian explains, the

“complementary surfaces” depicted on Davidian’s “lid 26 and [] base 22 also limit the lid 26 and base 22 from shifting relative to one another ... while stacked. In this way, the containers 14 are more stable when stacked and are less likely to become unstacked during use and/or transportation.” EX1011, ¶53. The projections and recesses also “limit sliding and/or rotation between toolboxes [] when stacked.” EX1011, ¶83. Accordingly, to take advantage of such benefits, a POSA would have been motivated to modify the stackable boxes described in Li to include the projections and recesses described in Davidian.

265. Additionally, a POSA would have had a reasonable expectation of success in modifying Li with Davidian because such a modification simply combines prior art elements (projections and recesses on the tops and bottoms of stackable boxes) according to known methods to achieve the predictable result of reducing movement between two stackable boxes. Davidian provides this explanation as I previously explained. EX1011, ¶¶53, 83. Further, combining Davidian with Li applies a known technique (the formation of projections and recesses on a box) to improve a similar stackable box in the same way described in Davidian.

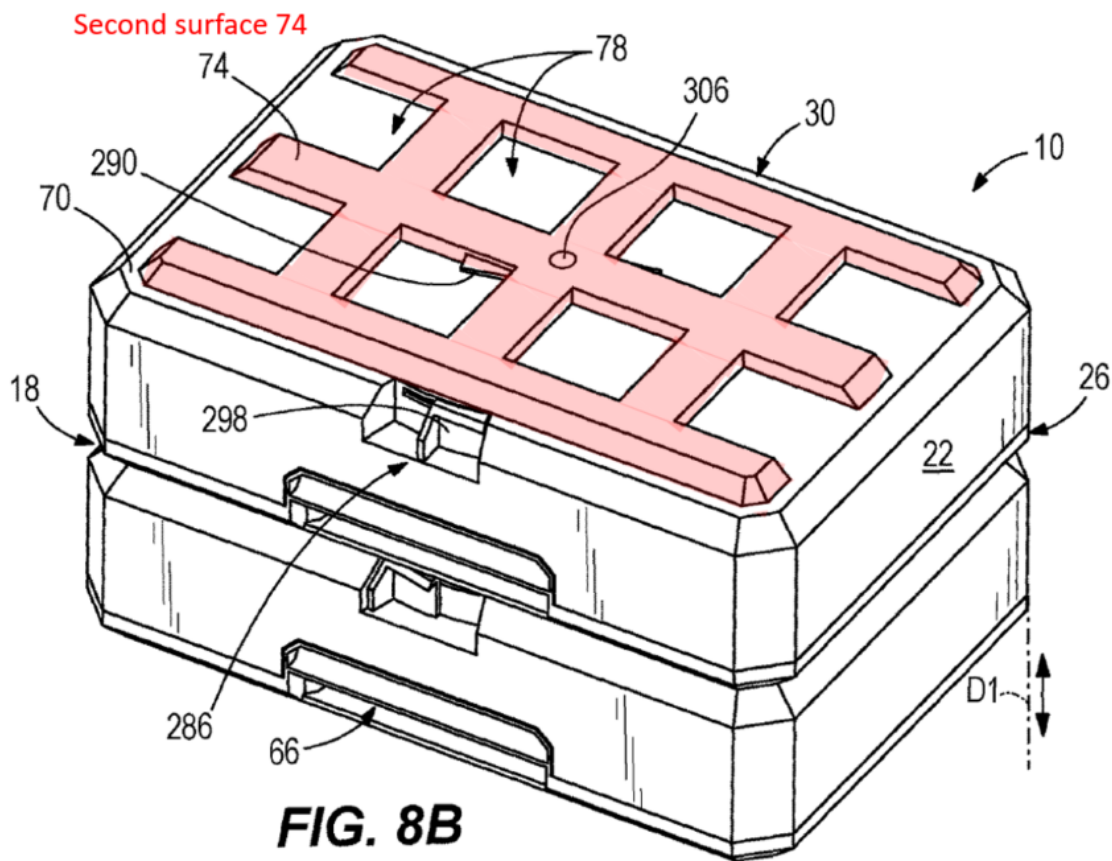
B. Claim Elements [14.A], [16.A]

266. Claim elements [14.A] and [16.A] recite the storage box of claim 1 or 15 further comprising “a *bottom comprising a projection, four sidewalls projecting*

from the bottom, a hinged lid to access an interior, and a positioning slot on the hinged lid, wherein two adjacent said storage boxes are located with respect to each other by the projection of the bottom and the positioning slot on the lid.”

267. The combination of Li and Davidian teaches [14.A] and [16.A]. In particular, Figure 8B from Davidian depicts a bottom surface of a stackable box that includes a “second surface 74,” which teaches the claimed “projection.”

EX1011, ¶67.



EX1011, FIG. 8B (annotated).

268. As seen from Figure 8B, second surface 74 is projected outward from

the bottom of a stackable box. Specifically, “the base 22 may include a first surface 70 complementary to the outer lip 38 of the lid 26, *a second surface 74 offset from the first surface 70*, and at least one depression or cavity 78.” EX1011, ¶67 (emphasis added). This offsetting teaches the claimed “*projection*.”

269. Li and Davidian also teach “*four sidewalls projecting from the bottom*” as claimed. The ’946 patent suggests the claimed “*four sidewalls*” project upward from the bottom of the storage container and form the conventional walls of the container: “Storage box 50 can be any type known to those skilled in the art, which comprises of a four sidewalls protecting from a bottom with a hinged lid 52 for access to an interior thereof.” EX1001, 6:14-17. With this understanding, both Li and Davidian teach such a container with four sidewalls. EX1007, FIGs. 1-2; EX1011, FIG. 8A. Indeed, stackable storage containers having four sidewalls were well-known as I demonstrated with various examples in Section VI.A.

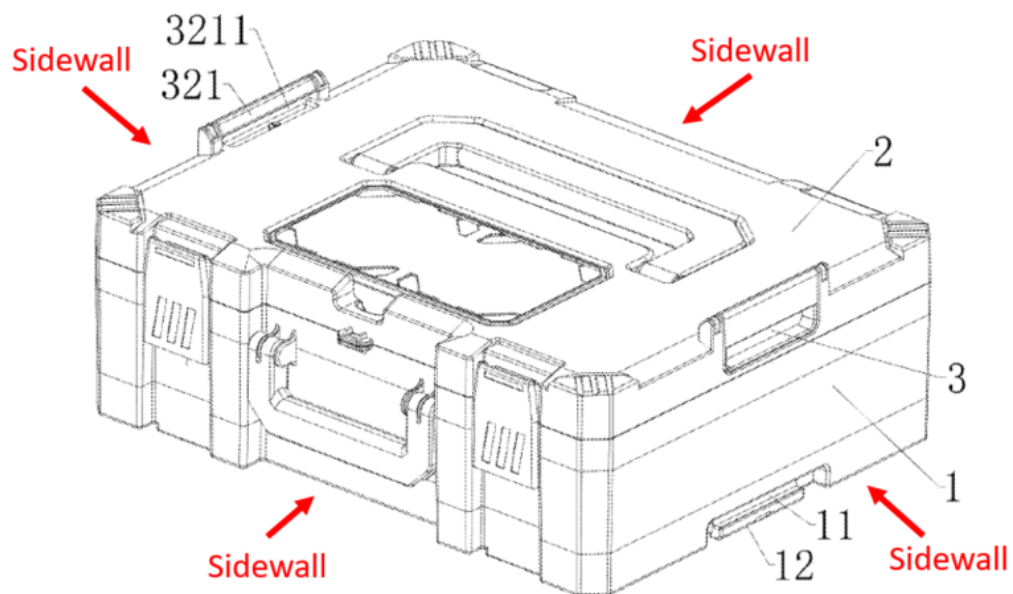


FIG. 1

EX1007, FIG. 1 (annotated).

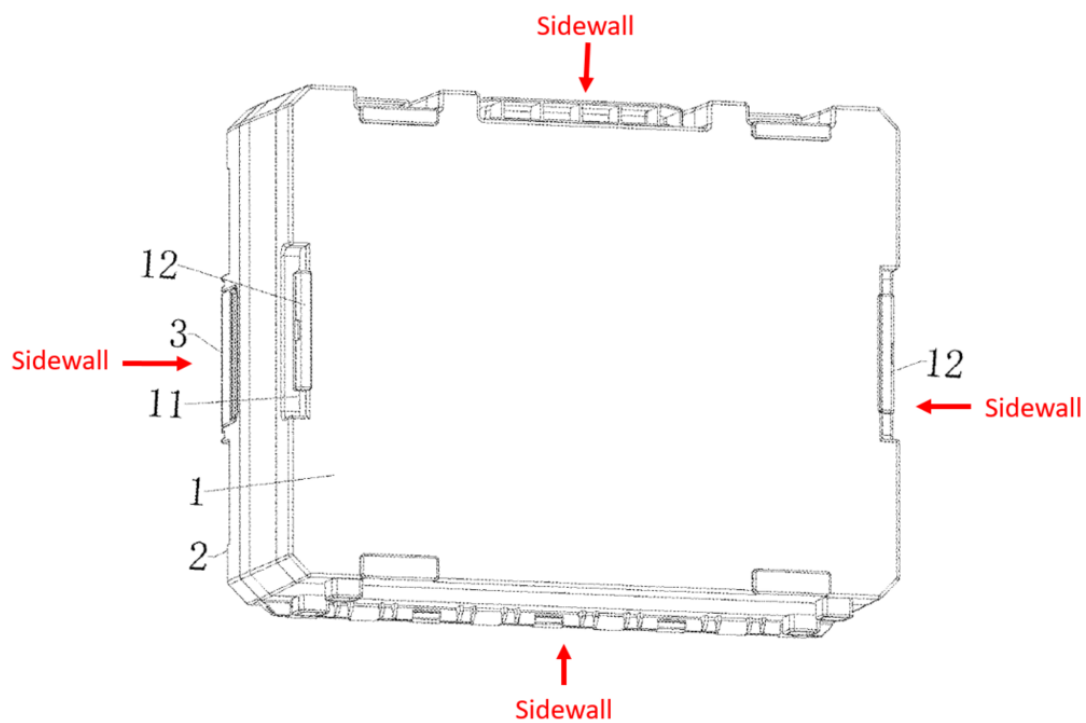
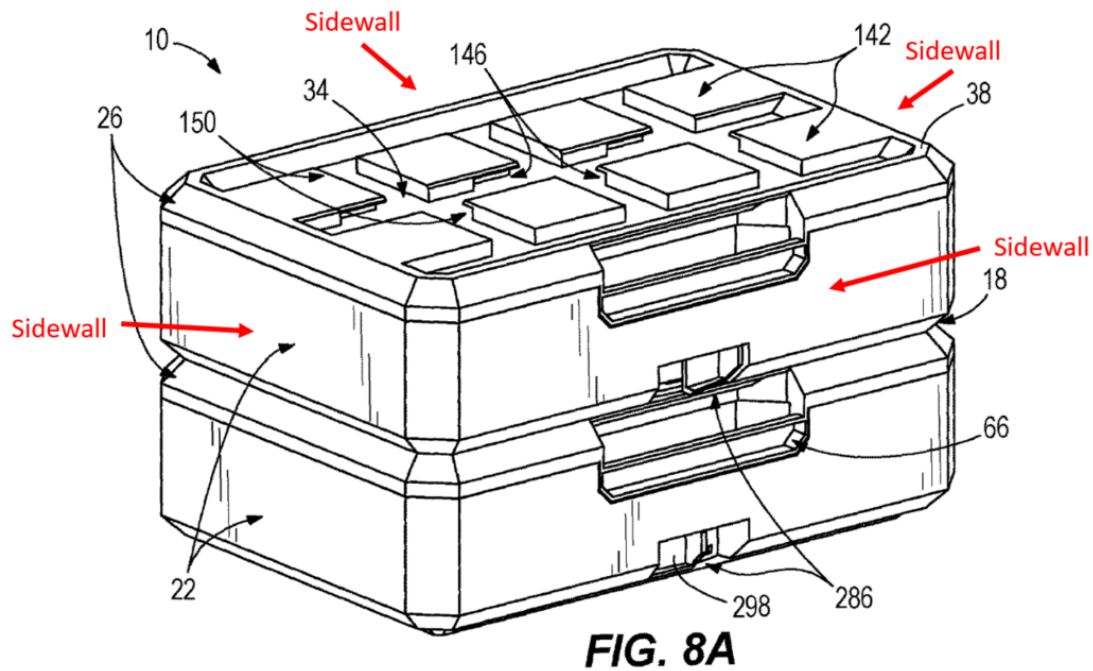


FIG. 2

EX1007, FIG. 2 (annotated).

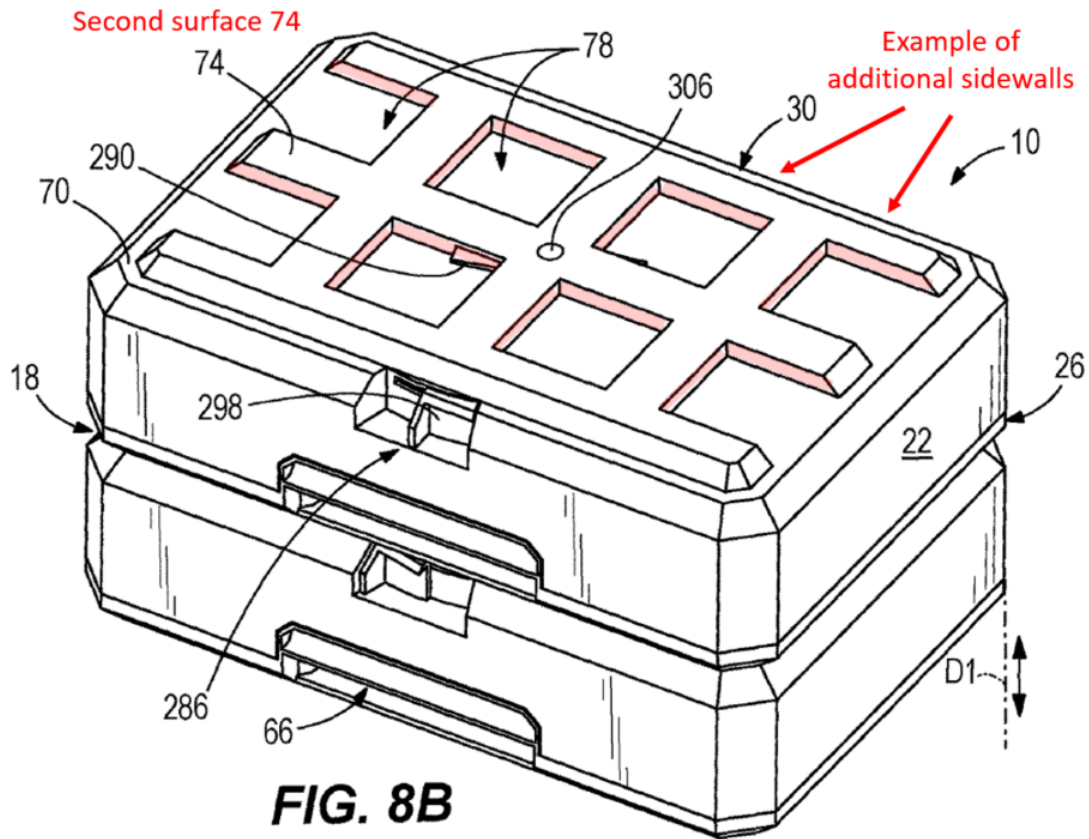


EX1011, FIG. 8A (annotated).

270. To extent that the claimed “*four sidewalls*” are interpreted to refer to projections downward from the bottom of the box, Davidian teaches this as well. Again, as seen from Figure 8B, the projection of second surface 74 creates multiple walls that project from the bottom of a stackable box. EX1011, ¶67, FIG. 8B. The claimed “*sidewalls*” are taught by both the multiple walls formed based on the flat walls created by second surface 74 as well as any four vertical walls created by second surface 74. I understand that because claims 14 and 16 recite “*comprising*,” Davidian’s teachings of additional walls or more than four sidewalls still teaches [14.A] and [16.A].



EX1011, FIG. 8B (annotated).



EX1011, FIG. 8B (annotated).

271. Moving to the top or lid of a storage box, Li and Davidian teach boxes with a “hinged lid to access an interior” as claimed. EX1007, FIG. 5; EX1011, ¶¶6, 49. For example, Figure 5 from Li depicts a “cover of a carrier” with hinges. EX1007, FIG. 5, ¶¶5-7.

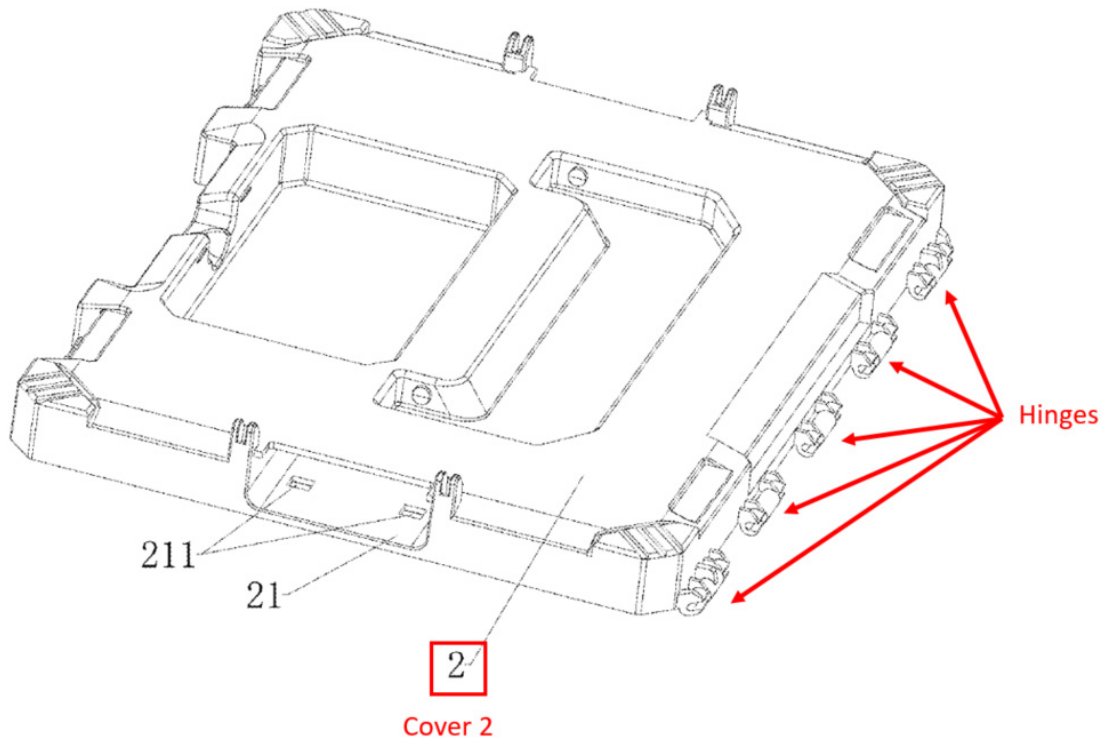
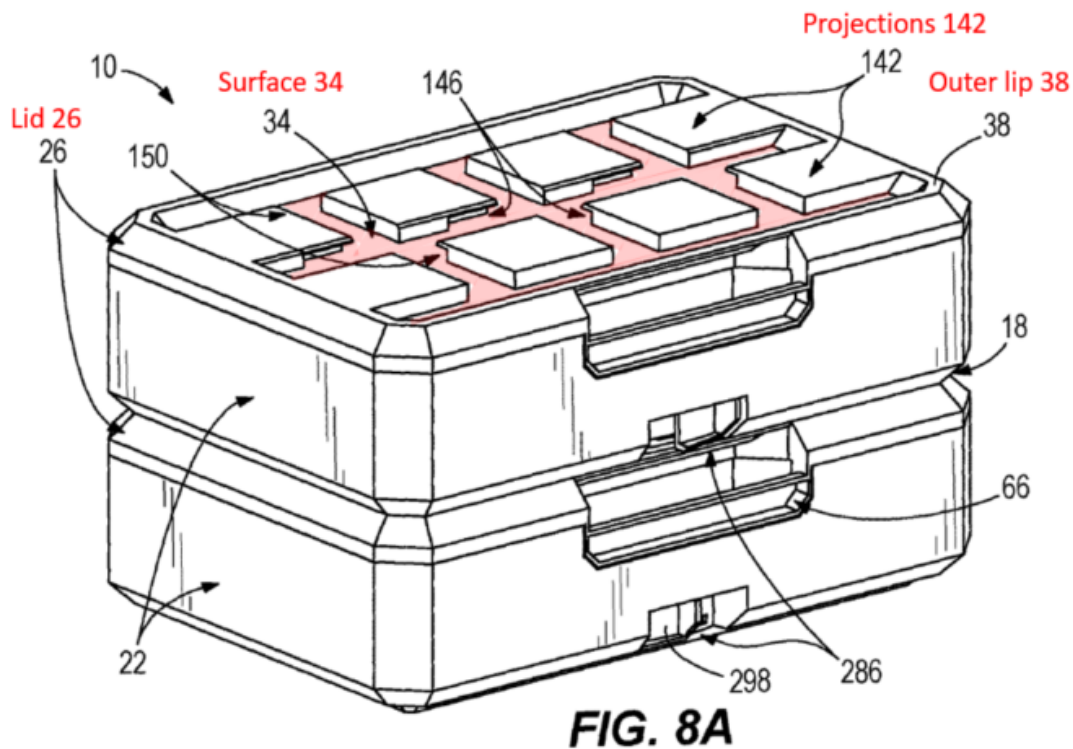


FIG. 5

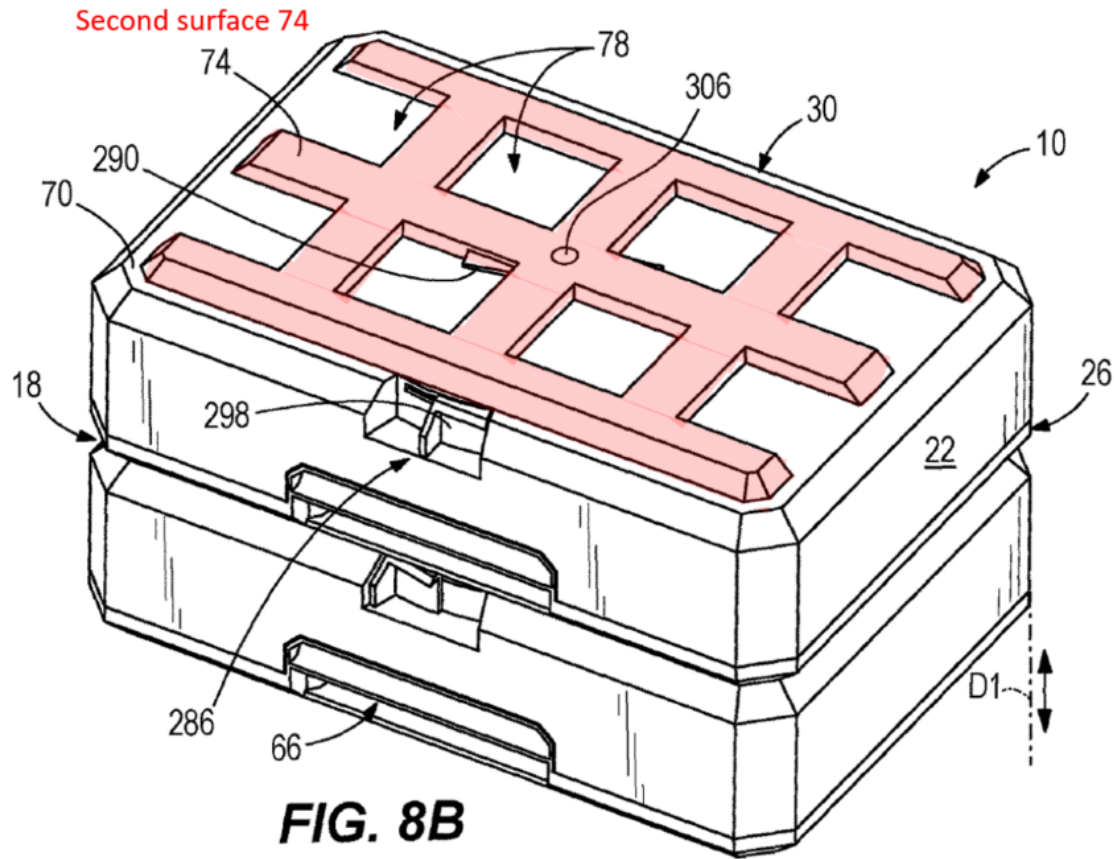
EX1007, FIG. 5 (annotated).

272. While Li does not explicitly label these hinges, a POSA would have recognized them as hinges based on their depiction. Davidian confirms this understanding and also explicitly teaches a hinged lid that allows access to the interior of a box: “Each storage container 14 may include a base 22 and a ***lid 26 rotatably coupled to the base 22 by a hinge 30.***” EX1011, ¶¶6, 49 (emphasis added). In view of this description, lid 26 provides access to the interior of the storage boxes described in Davidian. Because Davidian’s lid 26 rotates relative to base 22, Li in view of Davidian renders obvious a “*hinged lid to access an interior*” as claimed. EX1011, ¶¶6, 49.

273. The combination of Li and Davidian also renders obvious “a positioning slot on the hinged lid, wherein two adjacent said storage boxes are located with respect to each other by the projection of the bottom and the positioning slot on the lid.” Turning to Figure 8A of Davidian, lid 26 includes a recess formed by outer lip 38 and surface 34 that can receive a projected second surface 74. EX1011, ¶¶65, 67.



EX1011, FIG. 8A (annotated).



EX1011, FIG. 8B (annotated).

274. The recess formed by outer lip 38 and surface 34 on lid 26 teaches the claimed “*positioning slot on the hinged lid.*” The second surface 74 projecting from the bottom of a box can slot into this recess and contact surface 34. EX1011, ¶¶65-67. The connection of base 22 to lid 26 in this manner further teaches the claimed “*wherein two adjacent said storage boxes are located with respect to each other by the projection of the bottom and the positioning slot on the lid.*” As seen from Figures 8A and 8B, two storage boxes are arranged adjacent to each other so that a base 22 can slot into lid 26. EX1011, ¶¶65-67 (also explaining that “the base

22 may include a first surface 70 complementary to the outer lip 38 of the lid 26”).

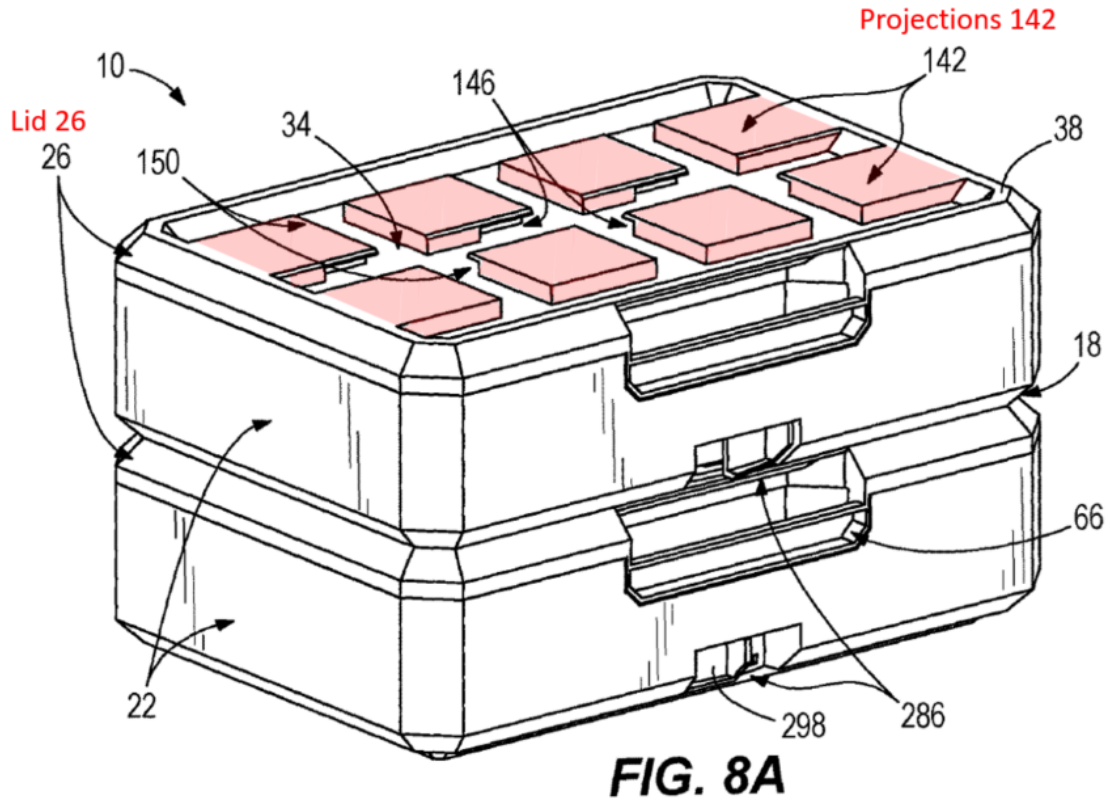
275. Thus, the combination of Li and Davidian teaches [14.A] and [16.A]. A POSA would have been motivated to implement Davidian’s projection and recess features with Li to provide greater stability when stacking multiple boxes as I previously explained. Section XV.A.

C. Claim Elements [14.B], [16.B]

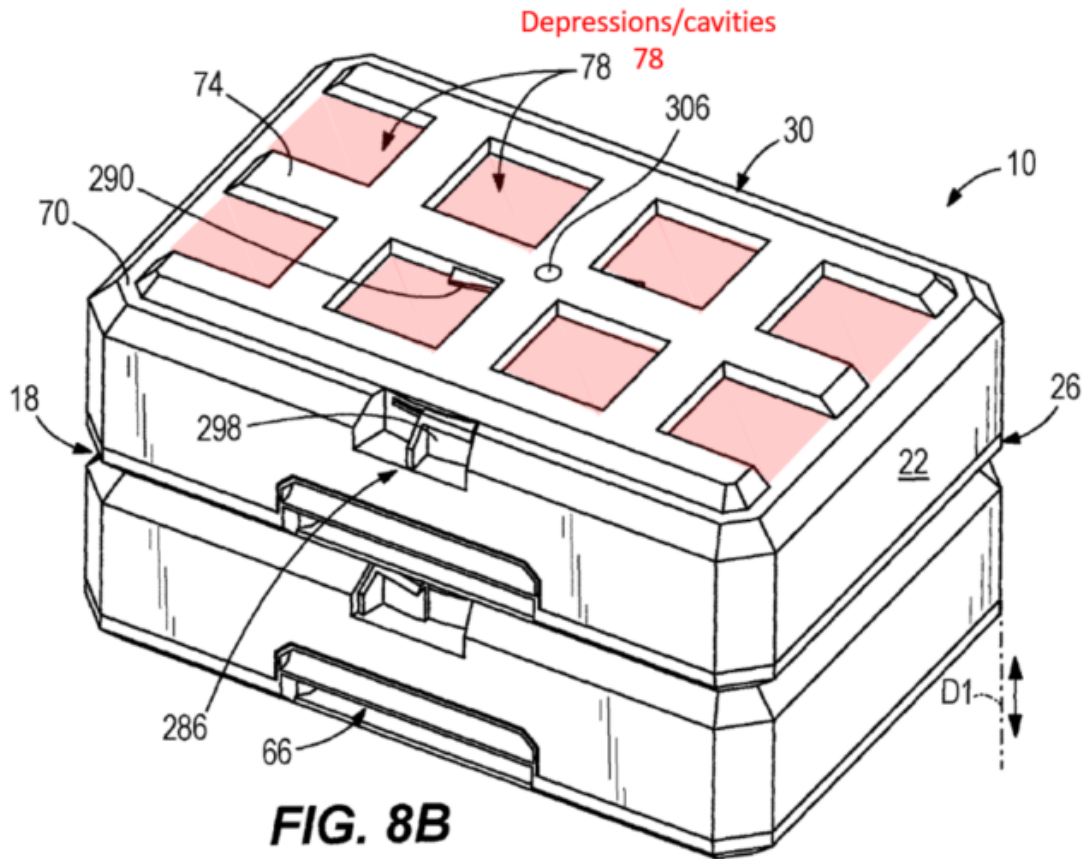
276. Claim elements [14.B] and [16.B] recite “*wherein the lid comprises four projections and the bottom comprises four positioning recesses, wherein two adjacent said storage boxes are located with respect to each other by the projection and the four positioning recesses on the bottom and the positioning slot and the four projections on the lid; wherein the four projections on the lid project upward from a top face of the lid, and the four positioning recesses of the bottom are located in a bottom face.*”

277. The combination of Li and Davidian teaches [14.B] and [16.B]. In particular, Figure 8A from Davidian depicts lid 26 with at least four projections 142 (e.g., the four projections in the center of lid 26) while Figure 8B depicts the bottom of base 22 with at least four corresponding depressions or cavities 78 (e.g., the four recesses in the center). EX1011, ¶¶65-67 (“projections 142 may be arranged in fewer or more rows, and/or each of the rows 150 may include fewer or more projections”); *see also* EX1011, ¶51 (explaining that “any number of

projections” may be used). These respective features teach “*wherein the lid comprises four projections and the bottom comprises four positioning recesses.*”



EX1011, FIG. 8A (annotated).



EX1011, FIG. 8B (annotated).

278. In this configuration and as explained for [14.A] and [16.A], Davidian teaches “wherein two adjacent said storage boxes are located with respect to each other by the projection and the four positioning recesses on the bottom and the positioning slot and the four projections on the lid.” Section XV.A. Namely, second surface 74 and depressions/cavities 78 on the bottom of base 22 respectively connect to the recess formed by outer lip 38 and surface 34 and projections 142 on the top of lid 26. EX1011, ¶¶65-67.

279. Additionally, this configuration teaches “wherein the four projections

on the lid project upward from a top face of the lid, and the four positioning recesses of the bottom are located in a bottom face” as seen from Figures 8A and 8B. EX1011, ¶¶65-67. For example, the four projections 142 in the center of lid 26 project upward from surface 34 and slot into the four depressions/cavities 78 in the center of the bottom face of base 22. EX1011, ¶¶65-67.

280. Thus, the combination of Li and Davidian teaches [14.B] and [16.B]. A POSA would have been motivated to implement Davidian’s projection and recess features with Li to provide greater stability when stacking multiple boxes. Section XV.A.

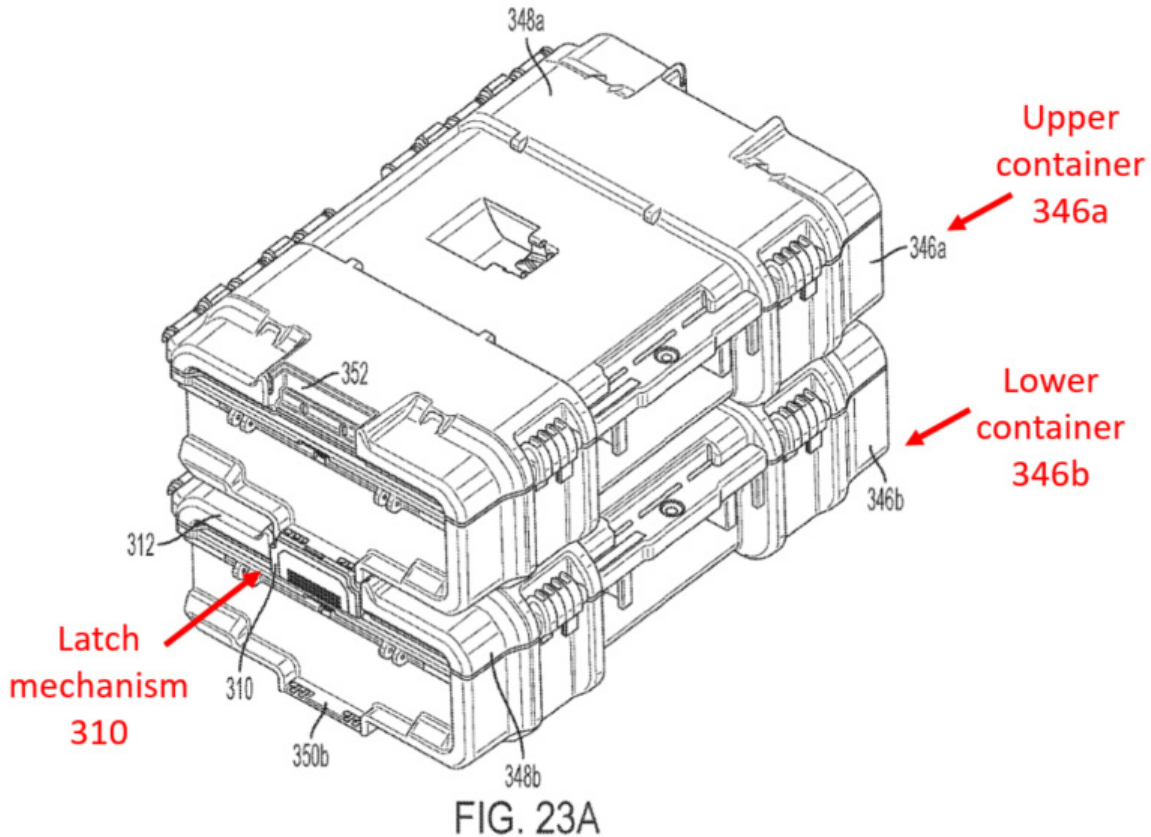
XVI. GROUND 2A: BARUCH ANTICIPATES CLAIMS 1-4, 7-12, AND 15.

281. Baruch anticipates claims 1-4, 7-12, and 15. As I explain below, Baruch teaches each aspect of the claims. In particular, Baruch also teaches the claimed “*stop part*” and the same stop part functionality described in the ’946 patent.

A. Independent Claim 1

1. [1.P] A storage box comprising:

282. Baruch discloses [1.P]. Baruch describes a “latch mechanism ... to secure two containers together.” EX1012, Abstract. For example, Figure 23A is a “perspective view of two containers being held together by a latch mechanism” and depicts an “upper container 346a” and a “lower container 346b.” EX1012, ¶¶33, 62.



EX1012, FIG. 23A (annotated).

283. As I further explain below, Baruch describes latch mechanism 310 that “positively couples stackable containers together.” EX1012, ¶¶49, 62-63. “Upper container 346a is thus secured to the lid 348b of the lower container 346b.” EX1012, ¶62.

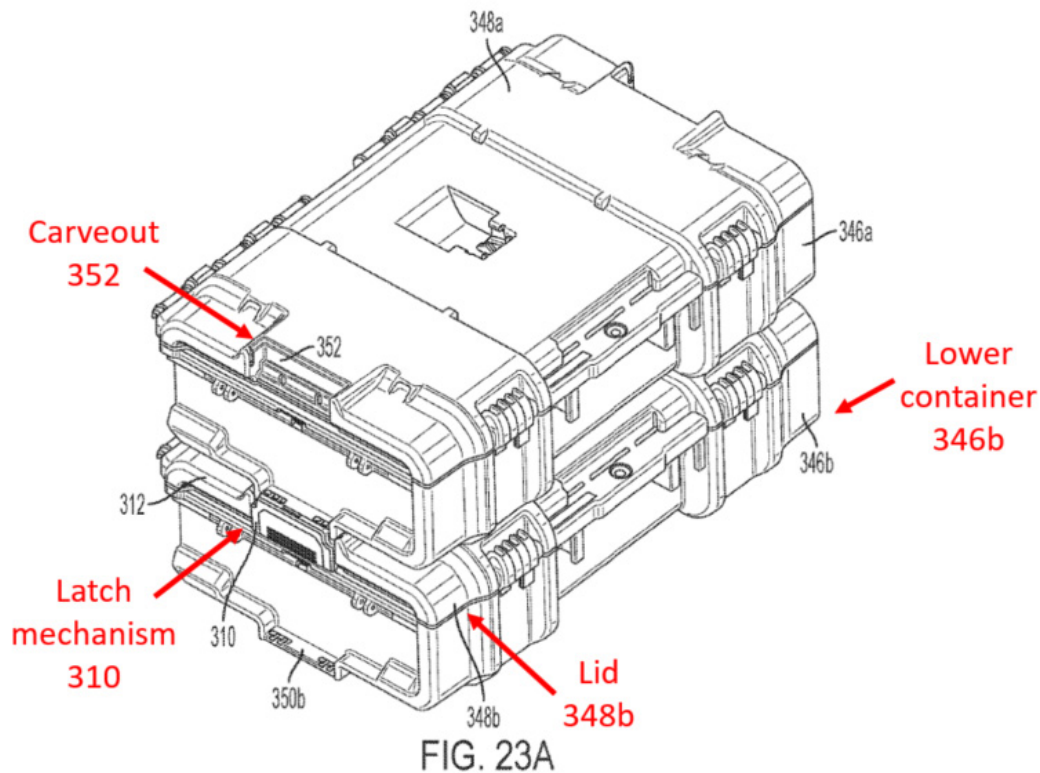
284. In this manner, any of Baruch’s containers—such as Baruch’s lower container 346b—teaches the claimed “*storage box*.”

2. [1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;

285. Baruch discloses [1.A]. Baruch’s “latch mechanism 310” as installed

in “carveout 352” of a “lid 348” corresponding to a lower container teaches the claimed “*first connection part disposed on one area of said storage box connectable to a second connection part of another storage box.*” EX1012, ¶¶55, 62-63, FIG. 23B.

286. For example, as seen from Figure 23A, each container includes a lid 348, and each lid 348 includes a carveout 352. EX1012, ¶¶55, 62-63. “[L]atch mechanism 310 can also be disposed in a carveout 352.” ¶55.



EX1012, FIG. 23A (annotated).

287. Baruch's "latch mechanism 310" as installed in "carveout 352"

teaches the claimed "*first connection part*." This area of Baruch's container is also

“connectable to a second connection part of another storage box” as depicted in Figure 23A. EX1012, ¶62 (latch mechanism 310 “positively couples stackable containers together”; “Upper container 346a is thus secured to the lid 348b of the lower container 346b”).

288. Specifically, latch mechanism 310 of a lower container connects to “step 350” of an upper container. EX1012, ¶¶62-63. For example, as seen in Figures 24A-24C and 25A-25D, latch mechanism 310—which includes latch 314—is disposed on lid 348b of a lower container and connects to step 350a of an upper container 346a. EX1012, ¶¶62-63. The portion of upper container 346a that includes step 350a teaches the claimed *“second connection part of another storage box.”* Thus, Baruch teaches [1.A].

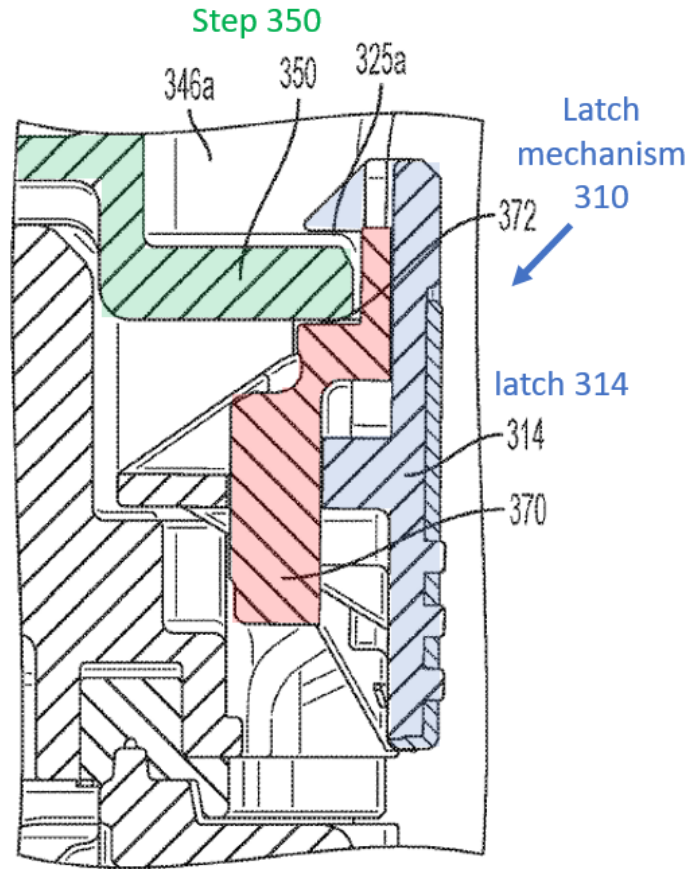


FIG. 24C

EX1012, FIG. 24C (annotated).

3. [1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;

289. Baruch discloses [1.B]. As I explained with reference to [1.A], Baruch's "latch mechanism 310" as installed in "carveout 352" teaches the claimed "*first connection part*." Section XVI.A.2. Latch mechanism 310 as depicted in

Figures 20-22, teaches various components that also teach the claimed “*mounting body,*” *locking buckle,*” and “*first resilient member.*”

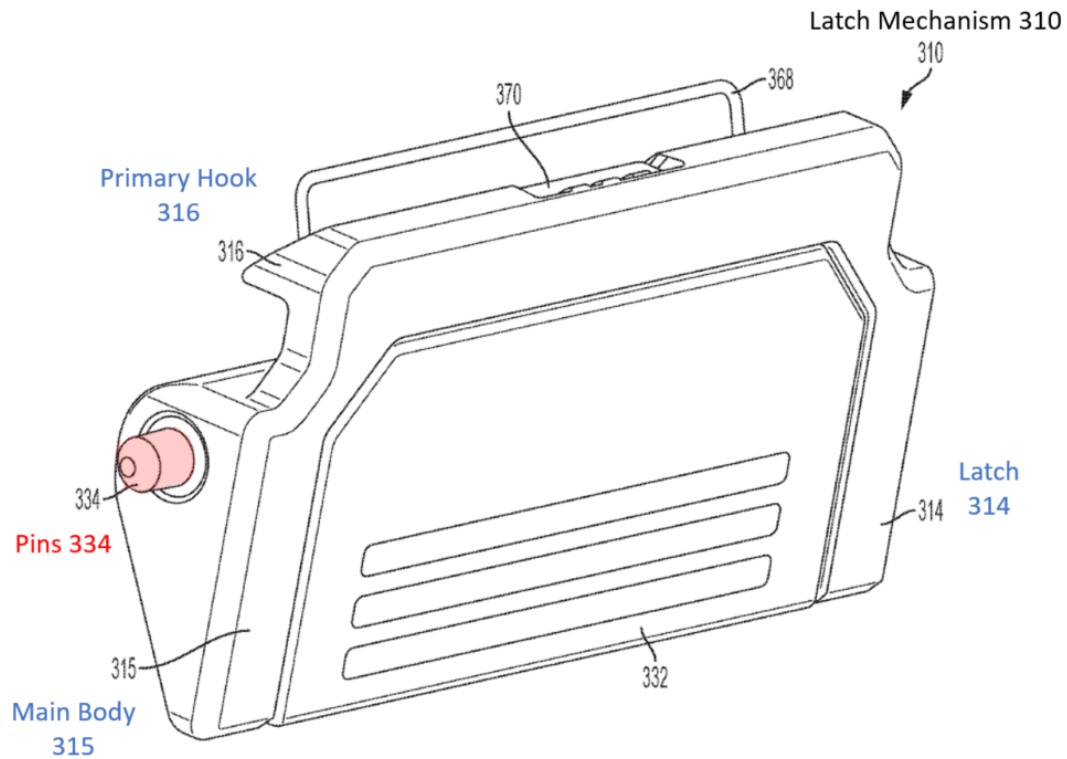


FIG. 20

EX1012, FIG. 20 (annotated).

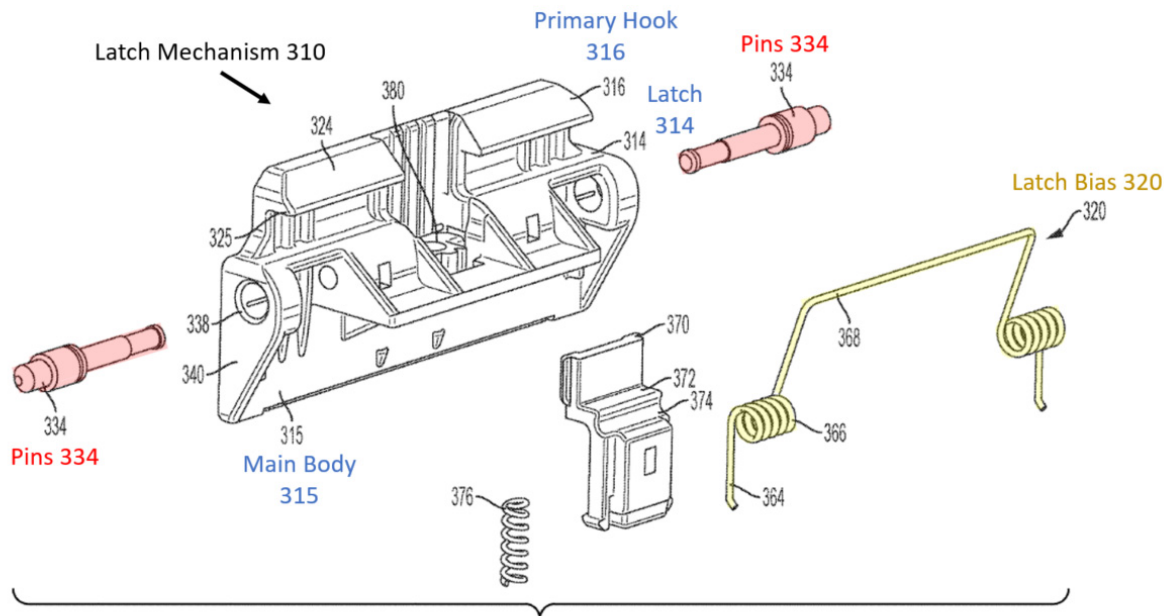


FIG. 22

EX1012, FIG. 22 (annotated).

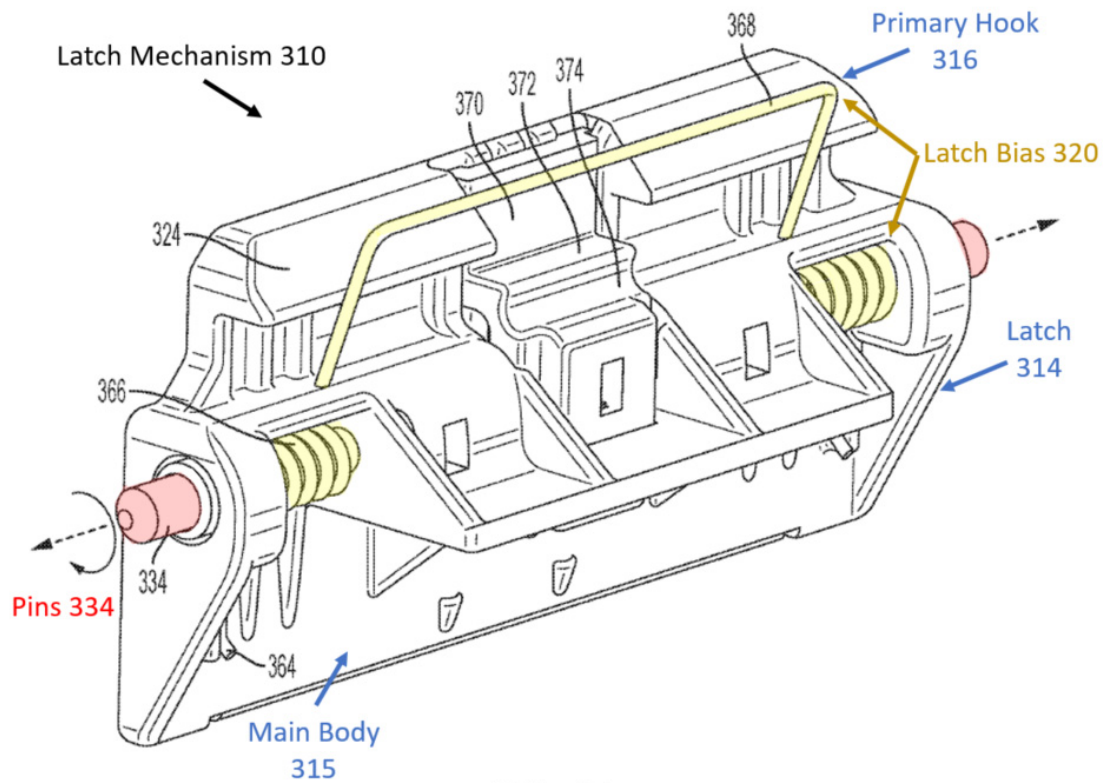
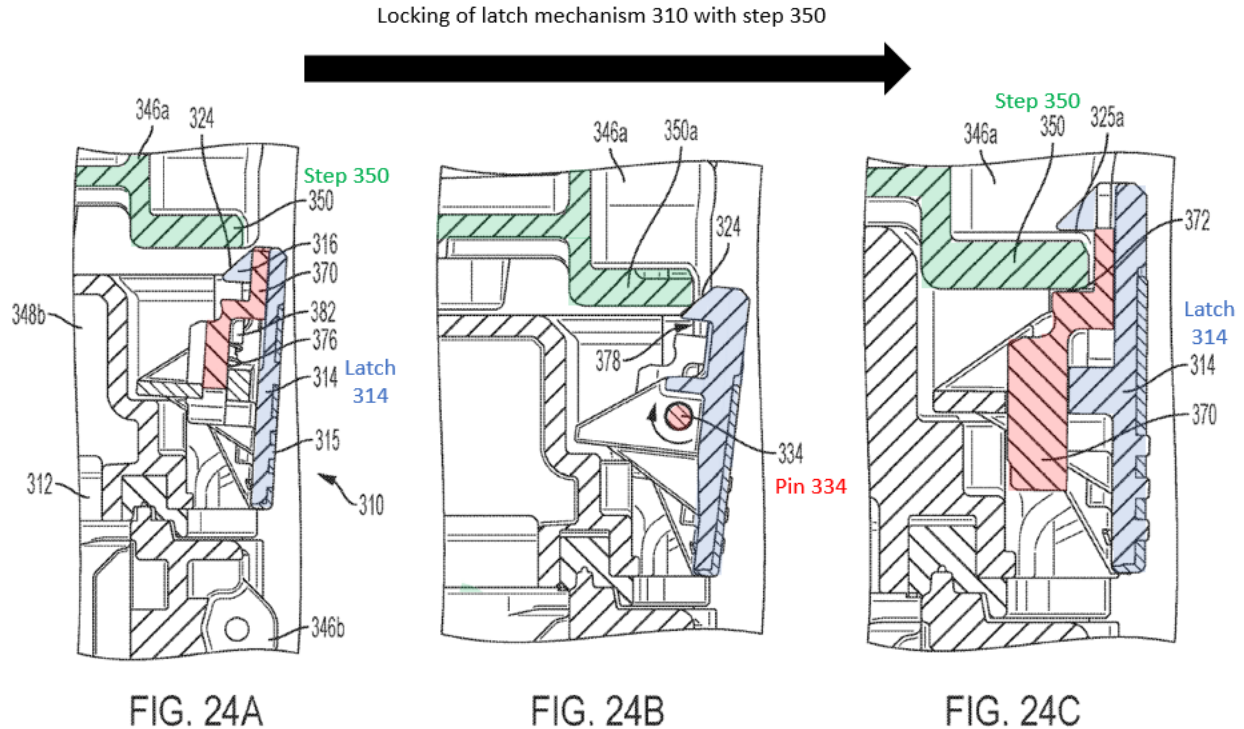


FIG. 21

EX1012, FIG. 21 (annotated).

290. As seen from Figures 20-22, Baruch's pins 334 as positioned in carveout 352 via holes 356 teach the claimed "*mounting body*." EX1012, ¶¶54-55. Pins 334 attach or mount latch mechanism 310 to carveout 352 on a lid of a carrier. EX1012, ¶55. "Latch mechanism 310 is slid downwardly within carveout 352 with the laterally outward extending ends of pins 334 sliding in slots 54 until they reach holes 56." EX1012, ¶55. "When pins 334 are disposed within holes 56, the latch mechanism 310 is secured within carveout [352]." EX1012, ¶55. Once mounted, pins 334 facilitate the "rotational movement of the latch." EX1012, ¶54. Thus, Baruch's pins 334 as positioned in carveout 352 via holes 356 teach the claimed "*mounting body*."

291. Baruch's "latch 314 [which] includes a main body 315 and a primary hook 316" teaches the claimed "*locking buckle movable with respect to said mounting body*." EX1012, ¶49. Latch 314 connects a lower container to an upper container via a step 350 on the upper container and therefore teaches the claimed "*locking buckle*." Section XI.B. For example, the progression from Figure 24A to Figure 24B to Figure 24C shows latch 314 moving/rotating relative to pin 334 to locking two containers together. EX1012, ¶¶36, 62.



EX1012, FIGs. 24A-24C (annotated).

292. In Figure 24A, an upper container is “pressed downward” so that step 350 displaces latch 314. EX1012, ¶62. As seen in Figure 24B, latch 314 rotates relative to pin 334 as the upper container continues to move downward. EX1012, ¶¶54-55, 62. Then, in Figure 24C, “latch 314 is displaced such that step 350a can move beneath the primary hook 316.” EX1012, ¶62. Latch bias 320 as seen in Figures 21-22 then causes latch 314 to rotate back toward the “locked position” depicted in Figure 24C. EX1012, ¶¶51, 54, 62. With this understanding, Baruch teaches that latch 314 is movable relative to the pins 334, which remain fixed in holes 356 while latch body 315 and hook 316 move during the locking process. EX1012, ¶¶51, 54-55, 62, FIGs. 21-22, 23B, 24A-24C. Thus, Baruch teaches the

claimed “*locking buckle movable with respect to said mounting body.*”

293. Baruch’s latch bias 320 teaches the claimed “*first resilient member.*” EX1012, ¶¶51, 54, 62-63. Similar to the ’946 patent, which describes the first resilient member as a spring, “latch bias 320 may be a torsion spring including two tines 364, two coils 366, and a torsion loop 368.” EX1012, ¶51; EX1001, 7:29-32. As seen from Figure 21, latch bias 320 is also positioned between pins 334 and main body 315 of latch 314. EX1012, ¶54 (“Rotational movement of the latch is facilitated by pins 334 and the latch bias 320 ... the energy in the latch bias 320 applies force against the main body 315.”) Baruch therefore teaches the claimed “*first resilient member located between said mounting body and said locking buckle.*”

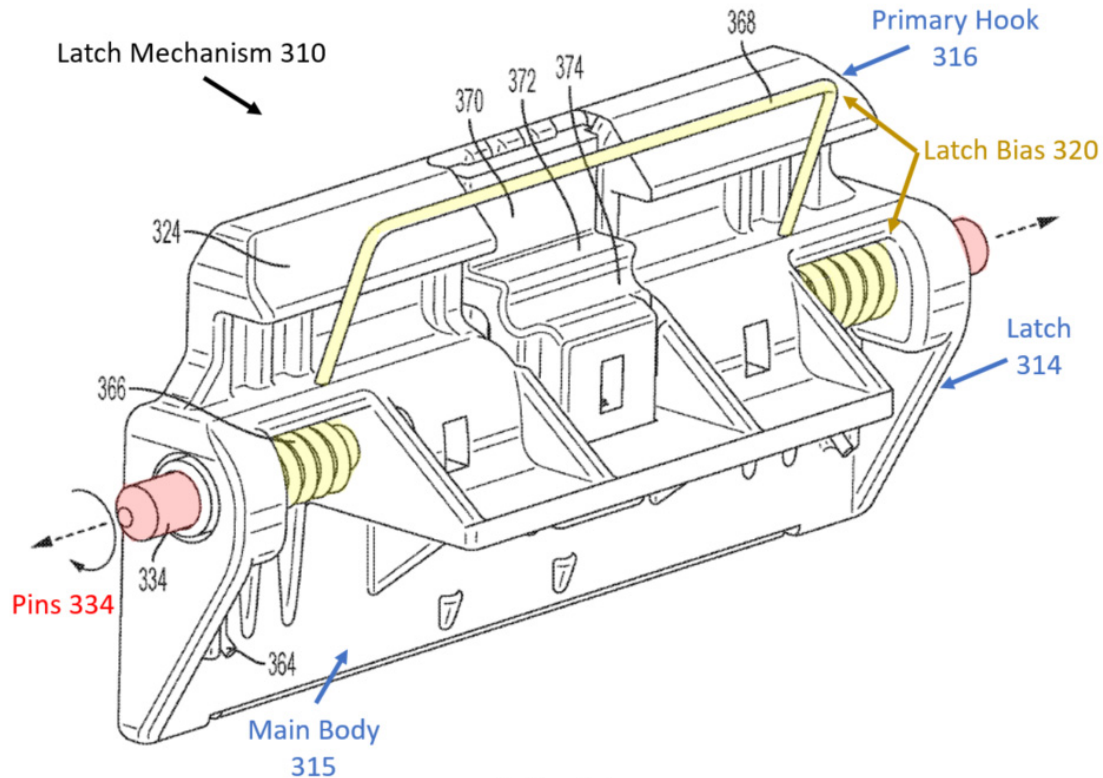


FIG. 21

EX1012, FIG. 21 (annotated).

294. Baruch's latch bias 320 functionality also teaches "*keeping said locking buckle automatically in a locked state.*" For example, latch bias 320 causes latch 314 to automatically rotate toward a "locked position" (also referred to as Baurch's "first position"). EX1012, ¶62. "Latch bias 320 is configured to bias the latch 314 toward its first position." EX1012, ¶51. "The energy in the latch bias 320 applies force against the main body 315. ... This force causes the latch to rotate around the pins 334 and axis X toward the latch's first position." EX1012, ¶54. Figures 24C and 25A also depict latch 314 being biased into the locked state. EX1012, ¶¶62-63. Thus, Baruch's latch bias 320 functionality also teaches

“keeping said locking buckle automatically in a locked state.”

4. **[1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,**

295. Baruch discloses [1.C]. As I discussed with reference to [1.A], the portion of an upper container containing Baruch’s step 350 teaches the claimed *“second connection part of another storage box.”* Section XVI.A.2. Step 350 teaches the claimed *“mating part interlockable with the locking buckle.”* EX1012, ¶¶62-63.

296. Specifically, latch mechanism 310 of a lower container connects to “step 350” of an upper container. EX1012, ¶¶62-63. For example, as seen in Figures 24A-24C and 25A-25D, step 350a of an upper container 346a is interlockable with primary hook 316 and latch 314 of the lower container 346b. EX1012, ¶¶62-63. In the locked position, “latch 314 is displaced such that step 350a can move beneath the primary hook 316.” EX1012, ¶62. “As step 350a moves into the negative space 378, bias 320 causes the latch 314 to rotate back toward its first position.” EX1012, ¶62. Thus, step 350 is a *“mating part interlockable with the locking buckle.”*

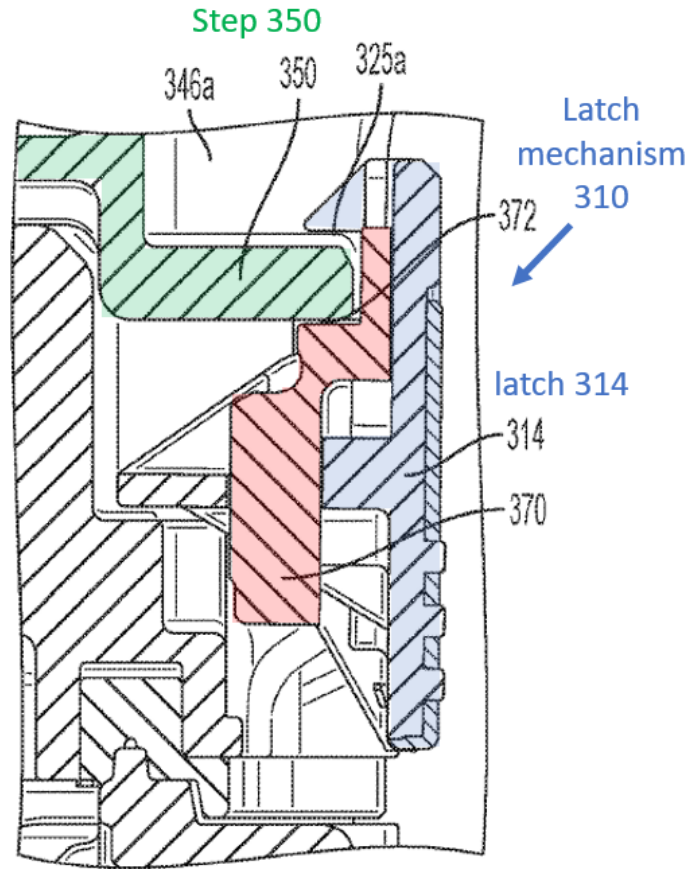


FIG. 24C

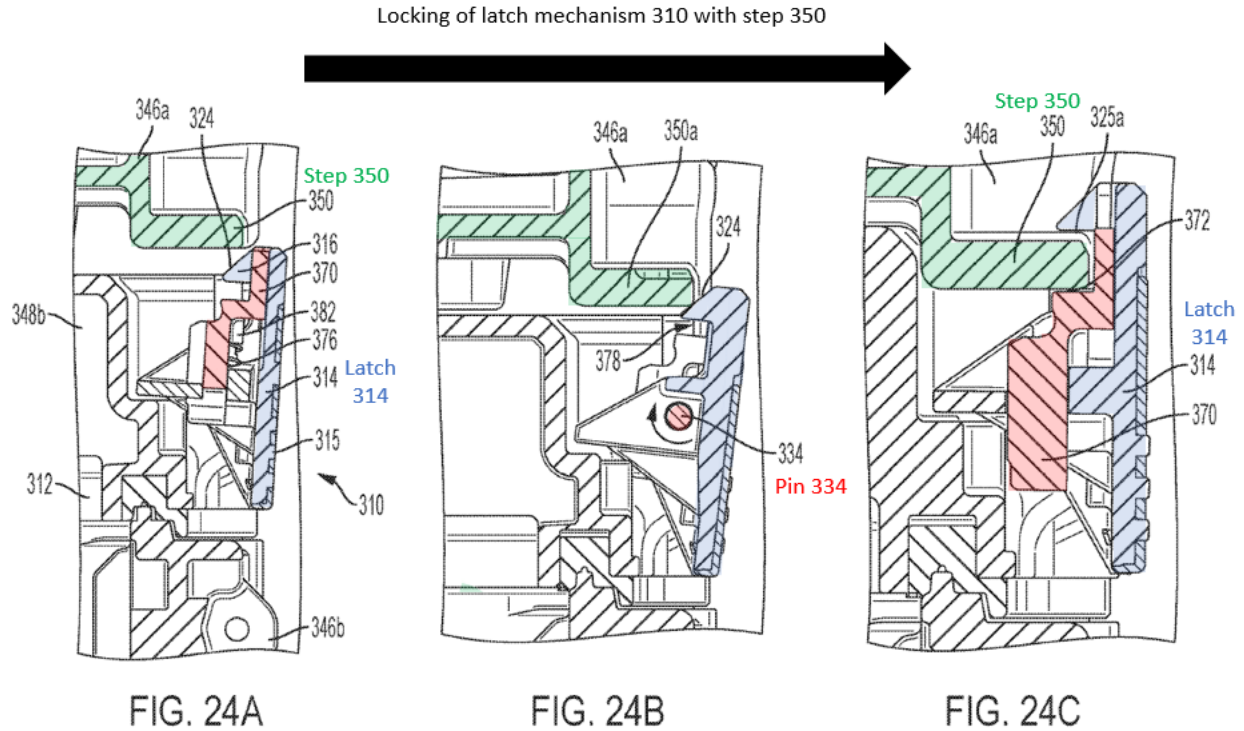
EX1012, FIG. 24C (annotated).

5. [1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;

297. Baruch discloses [1.D]. As I explained with reference to [1.B], Baruch describes a “latch bias 320” (i.e., claimed “*first resilient member*”) that pushes latch 314 and primary hook 316 (i.e., “*locking buckle*”) inward around pin 334 to a

locked position. Section XVI.A.3. With this understanding, when latch 314 and primary hook 316 slide inward, these components are automatically lockable with step 350 of an upper container. EX1012, ¶62.⁶ This automatic locking performed by latch bias 320 can be seen from Figures 24A-24C. EX1012, ¶¶51, 54, 62.

⁶ If the claimed “*slide inward with respect to the mounting part*” is interpreted to refer to the movement of a “*locking buckle*” away from the center of a storage box during the attachment of an upper storage box to the lower storage box, Baruch teaches this as well for the reasons that I present in this section. Namely, as seen from Baruch’s Figures 24A-24B, as an upper container is initially pressed downward, step 350 presses onto primary hook 316 and causes latch 314 and primary hook 316 to slide away from the center of the lower container around pin 334. EX1012, ¶¶54-55, 62, FIGs. 24A-24B. Subsequently, latch 314 and primary hook 316 are pressed toward the center into the locked position. *Id.* This is the same functionality as the ’946 patent. EX1001, 8:19-34. Baruch therefore discloses [1.D] under this claim interpretation as well.

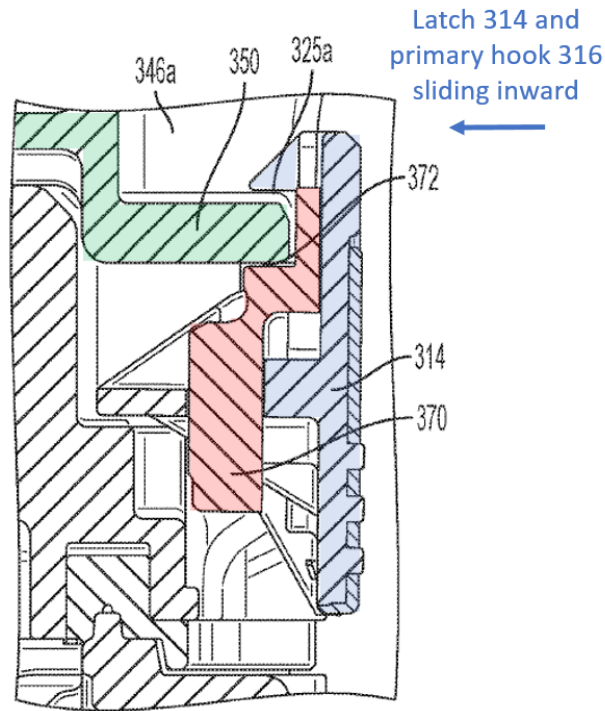


EX1012, FIGs. 24A-24C (annotated).

298. In Figure 24A, an upper container is “pressed downward” so that step 350 displaces latch 314. EX1012, ¶62. As seen in Figure 24B, latch 314 rotates outward relative to pin 334 as the upper container continues to move downward. EX1012, ¶¶54-55, 62. Then, in Figure 24C, “latch 314 is displaced such that step 350a can move beneath the primary hook 316.” EX1012, ¶62. Latch bias 320 as seen in Figures 21-22 rotates latch 314 and primary hook 316 inward toward the “locked position” depicted in Figure 24C. EX1012, ¶¶51, 54, 62. Specifically, as “step 350a moves into the negative space 378, bias 320 causes the latch 314 to rotate back toward its [locked] position.” EX1012, ¶62. This teaches that when latch 314 and primary hook 316 are aligned with step 350, latch 314 and primary

hook 316 rotate inward relative to pin 334 and slide inward into a locked position.

EX1012, ¶62, FIGs. 24B-24C. This can be seen as the latch 314 configuration depicted in Figure 24B transitions to Figure 24C.



EX1012, FIG. 24C (annotated).

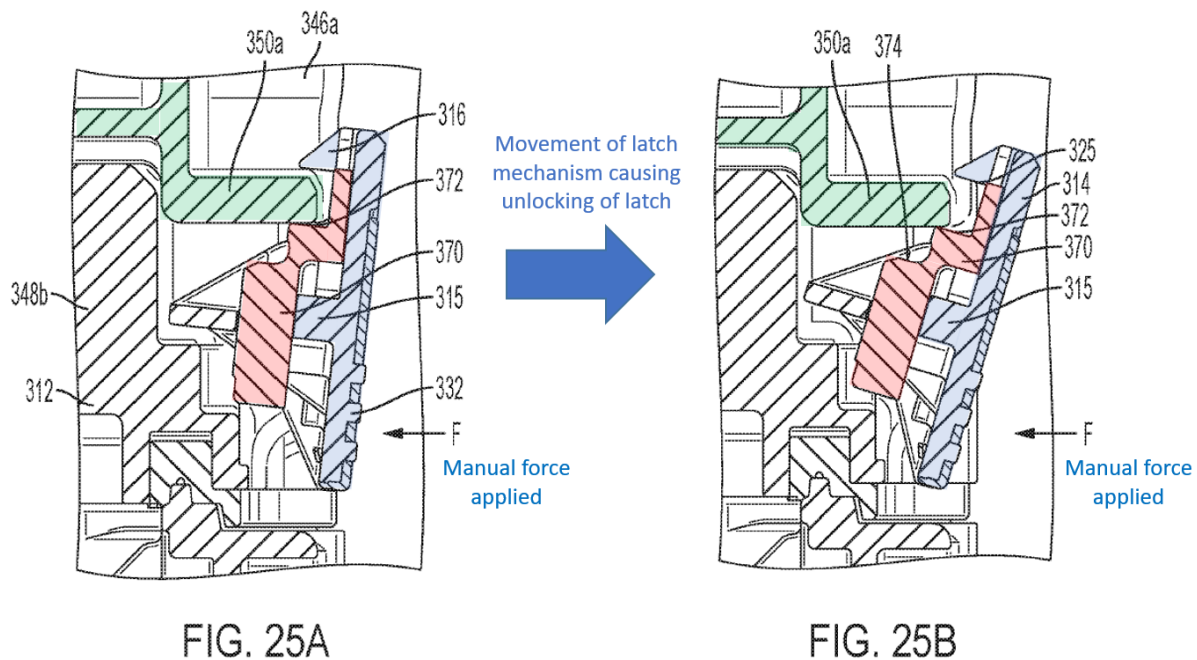
299. Thus, Baruch teaches [1.D].

6. [1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and

300. Baruch discloses [1.E]. As I previously explained, the '946 patent describes a “locking buckle” as part of a “locking part.” Section XII.A.6 (Ground 1A - [1.E]); EX1001, 7:3-7. With this understanding, Baruch’s “latch mechanism

310,” which includes latch 314, teaches the claimed “*locking part.*” EX1012, ¶¶49, 51-52, 55-56, 62-63. Baruch’s “latch mechanism [310] includes a latch 314 that includes a main body 315 and a primary hook 316” and therefore teaches the claimed “*locking part.*” EX1012, ¶49.

301. Baruch also teaches that “*manual movement of the locking part causes the locking buckle to move to an unlocked state.*” Baruch refers to an unlocked state as the “second position” and describes unlocking with reference to Figures 25A-25D. EX1012, ¶¶37, 42, 49-50, 63. For example, Figures 25A and 25B depict the initialization of moving latch 314 from a locked state to an unlocked state. EX1012, ¶63.



EX1012, FIGs. 25A-25B (annotated).

302. Baruch further explains:

“When an operator desires to remove the upper container, she follows the steps shown in FIGS. 25A-D. The first step is to apply force to the operator surface 332. Applying force here causes the latch 314 to rotate away from its first position toward its second position as shown in FIG. 25A.”

EX1012, ¶63.

303. As an operator continues to apply manual force to latching mechanism 310, latch 314 continues to move from Figure 25B to Figure 25C, which is an unlocked state or “second position.” EX1012, ¶63. As further explained below, stopper 370 holds latch 314 in this unlocked position. EX1012, ¶63. From this position, the “operator may lift the upper container 346a and fully disengage it from the lid 348b of the lower container.” EX1012, ¶63. Thus, Baruch teaches [1.E].

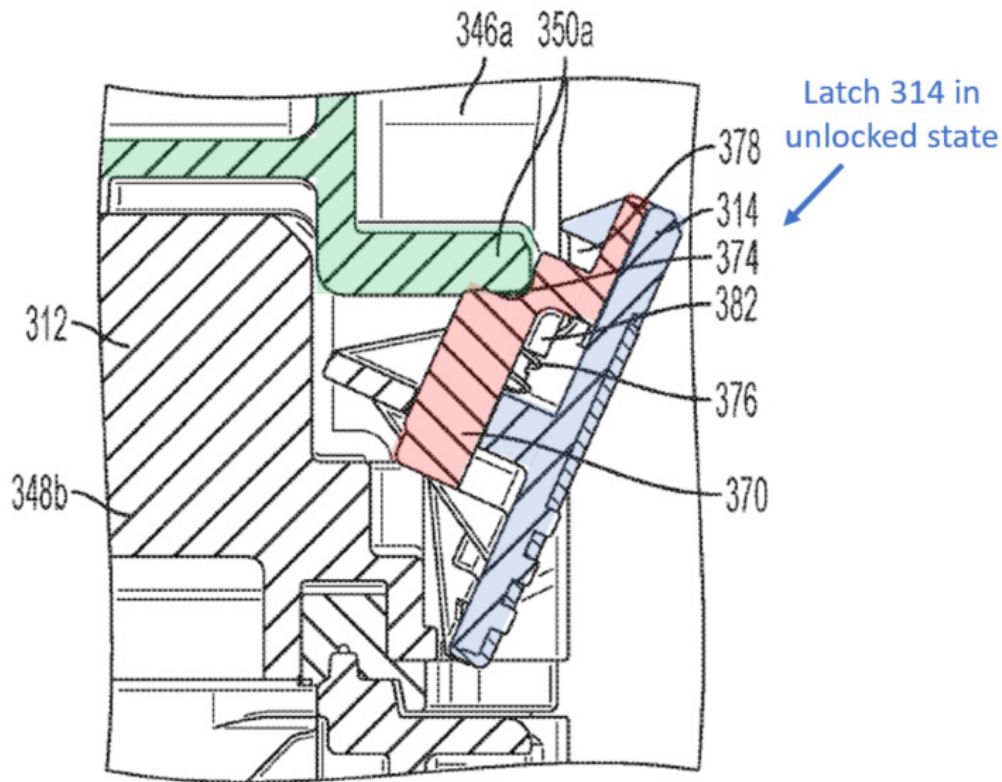


FIG. 25C

EX1012, FIG. 25C (annotated).

7. [1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part,

304. Baruch discloses [1.F.1]. Baruch's stopper/holder 370 teaches the claimed "*stop part*." EX1012, ¶¶52, 56, 62-63. Baruch explains that "[l]atch mechanism 310 also includes a stopper 370 that is slidably engaged to the latch 314 and includes a locking surface 372 and a holding surface 374." EX1012, ¶52.

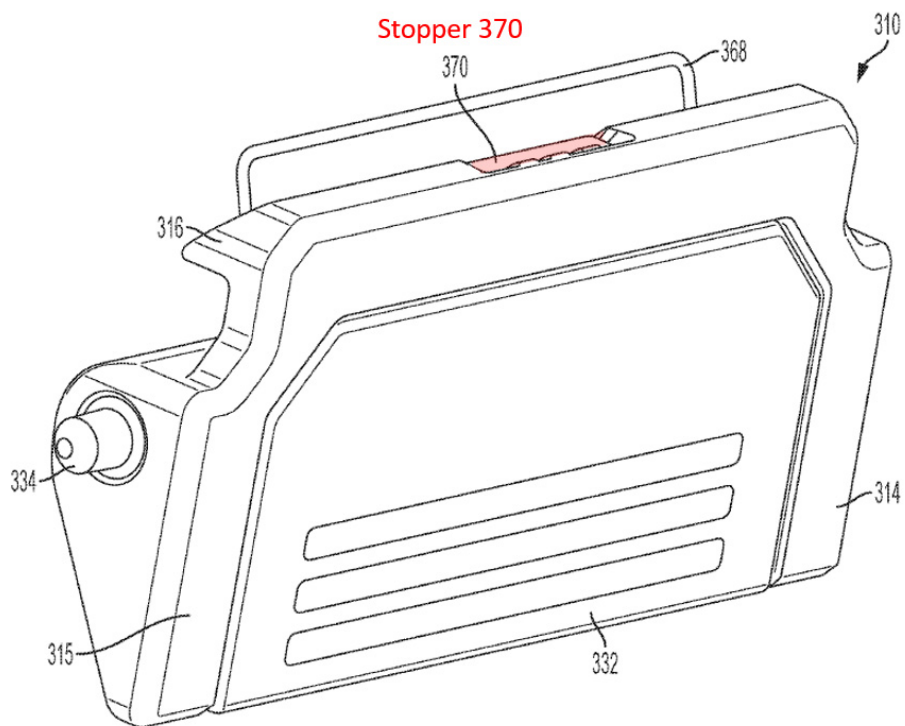


FIG. 20

EX1012, FIG. 20 (annotated).

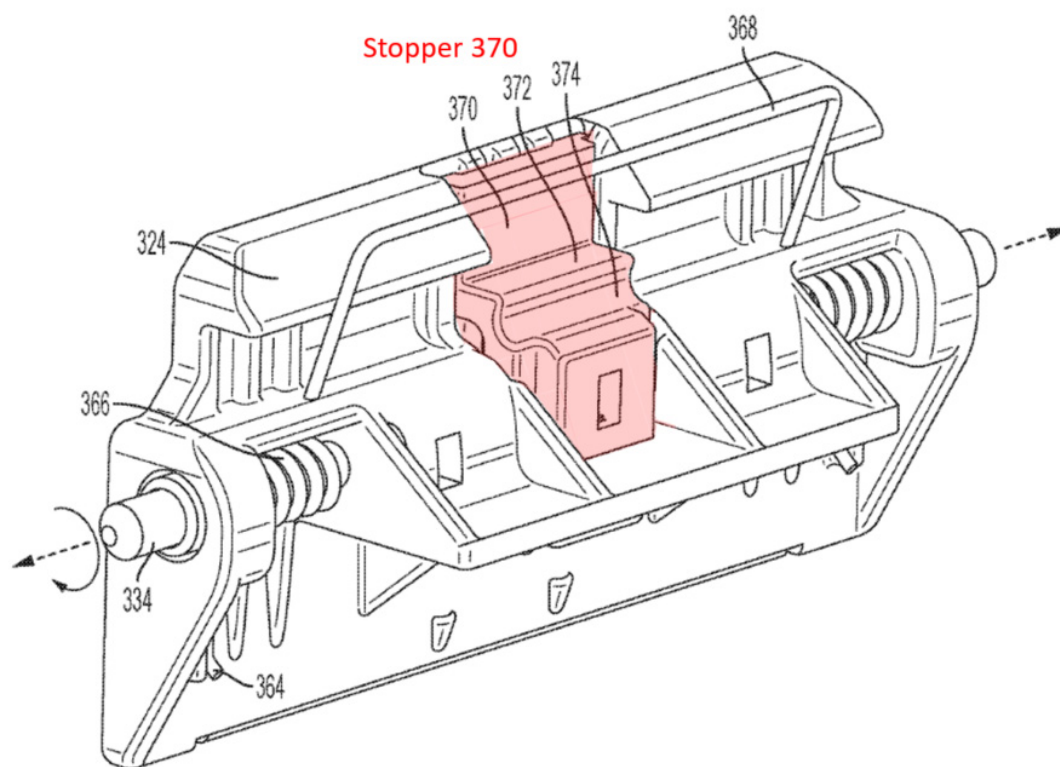
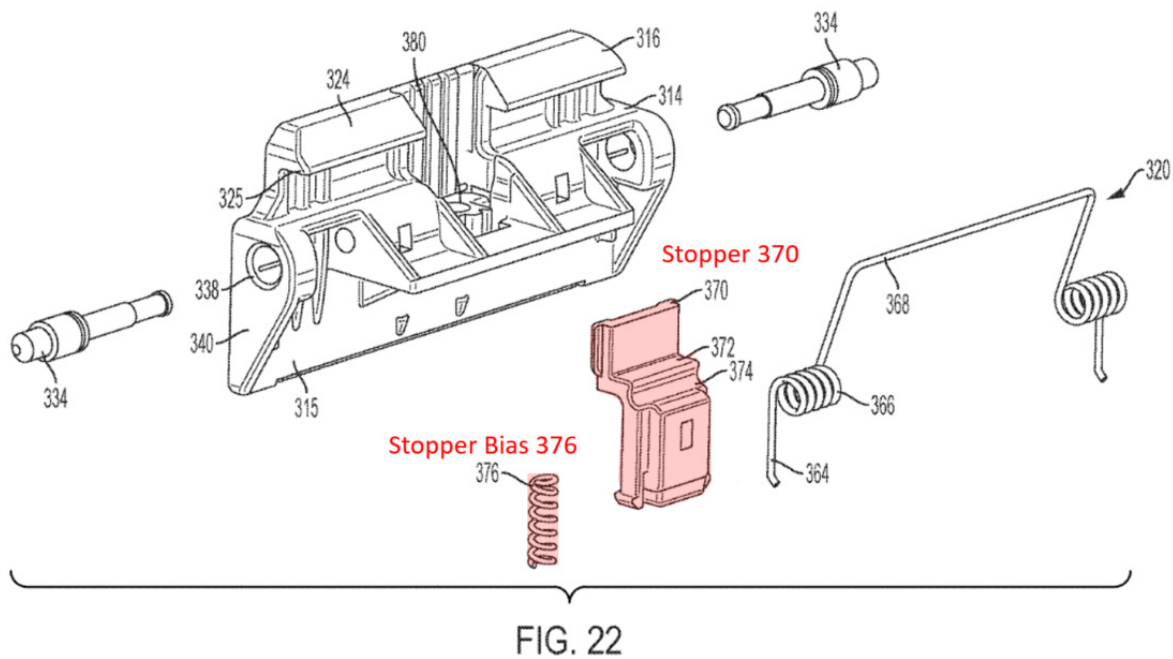


FIG. 21

EX1012, FIG. 21 (annotated).

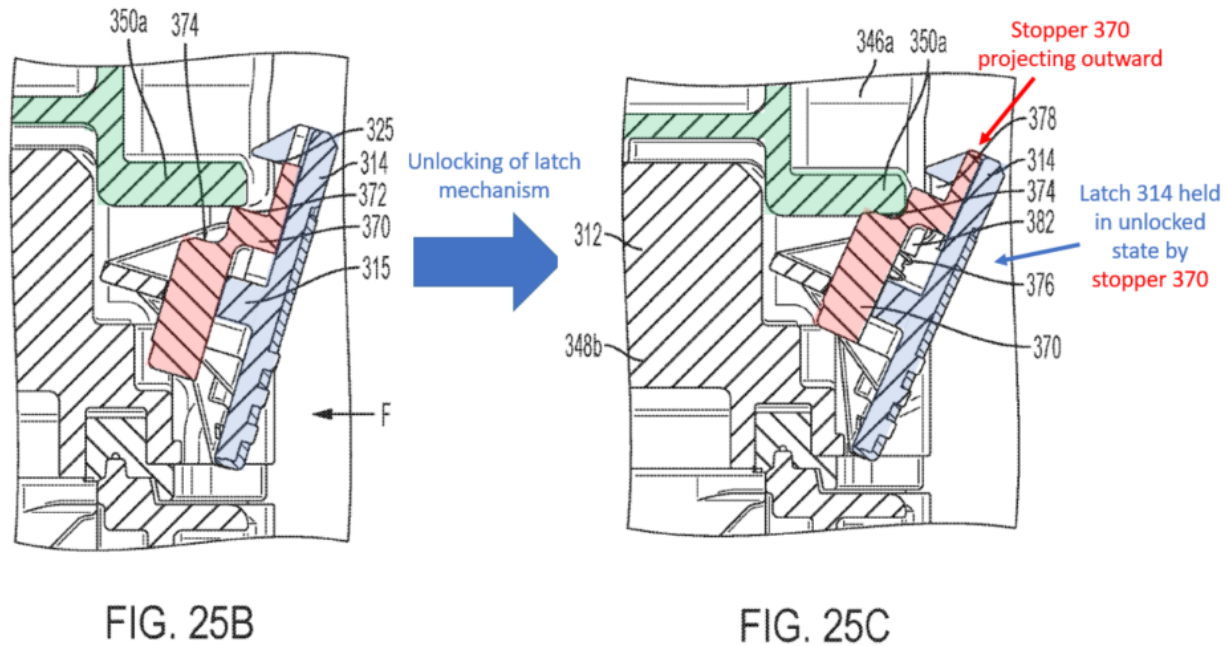


EX1012, FIG. 22 (annotated).

305. Baruch explains that “stopper 370 is movable between an upper and a lower position” via a “stopper bias 376.” EX1012, ¶52. As seen from Figure 22, stopper bias 376 may be a spring that is “positioned in a spring opening 380 defined by latch 314.” EX1012, ¶52. “Stopper bias 376 biases the stopper 370 toward its upper position.” EX1012, ¶52. In this manner, Baruch’s stopper bias 376 projects stopper 370 outward.⁷

⁷ If “*stop part*” is construed to include both a blocking part and a resilient member, Baruch’s stopper 370 and stopper bias 376 collectively disclose the claimed “*stop part*” under this construction as well for the same reasons that I presented in

306. As seen from Figures 25A-25C, when an operator is unlocking latch mechanism 310, stopper 370 projects outward with respect to the locking path of latch mechanism 310 to prevent the latch mechanism 310 from automatically re-locking. EX1012, ¶63.



EX1012, FIGs. 25B-25C (annotated).

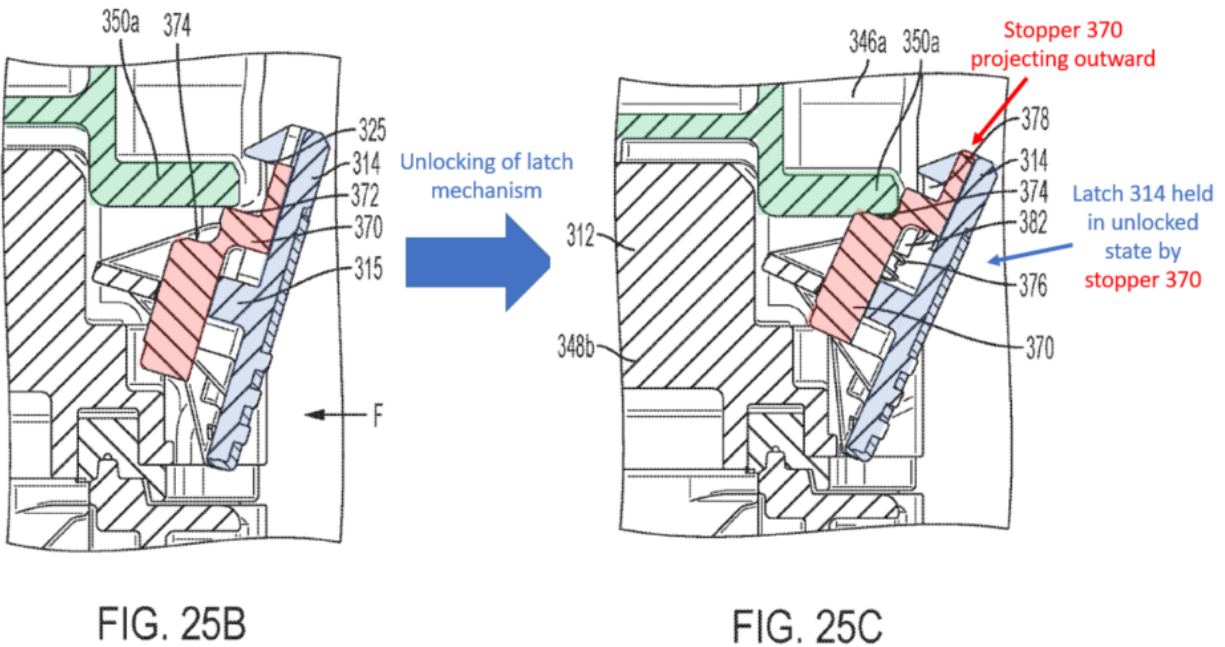
307. Baruch explains that continued rotation of latch 314 into the unlocked or “second position” causes stopper bias 376 to push stopper/holder 370 “back toward its upper position.” EX1012, ¶63. As seen in Figure 25C, “the stopper holds the latch 314 in its second position” (i.e., unlocked). EX1012, ¶63. “In this second position, the primary hook 316 is distal from the housing 312 (or lid 348b) and

this section.

unable to secure step 350a of the upper container 346a.” EX1012, ¶63. Because the locking mechanism 310 is held in a state of remaining unlocked from step 350a of the upper container 346a, “an operator may lift the upper container 346a and fully disengage it from the lid 348b of the lower container.” EX1012, ¶63. Thus, Baruch teaches [1.F.1].

8. **[1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.**

308. Baruch discloses [1.F.2]. As I explained with reference to claim element [1.F.1], Baruch’s stopper 370 teaches the claimed “*stop part*.” Section XVI.A.7. The operation of Baruch’s stopper 370 is also “*extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box*” as I described with reference to element [1.F.1]. Section XVI.A.7. Figure 25C depicts stopper 370 in an extended state and holding latch 314 in an unlocked state. EX1012, ¶63.



EX1012, FIGs. 25B-25C (annotated).

309. Baruch's stopper 370 is also "*retractable*" and is "*compressed when said first connection part is in a locked state with said second connection part*" as claimed. Specifically, Baruch explains that "stopper 370 is movable between an upper and a lower position" based on the action of a "stopper bias 376." EX1012, ¶52. This lower position teaches stopper 370 being "*retractable*." Figure 24C depicts stopper 370 being retracted via the compression of stopper bias 376 when latch 314 of the lower container is in the locked state with step 350 of the upper container. EX1012, ¶¶52, 62. Specifically, step 350 presses downward and compresses stopper 370 and stopper bias 376. EX1012, ¶¶52, 62.

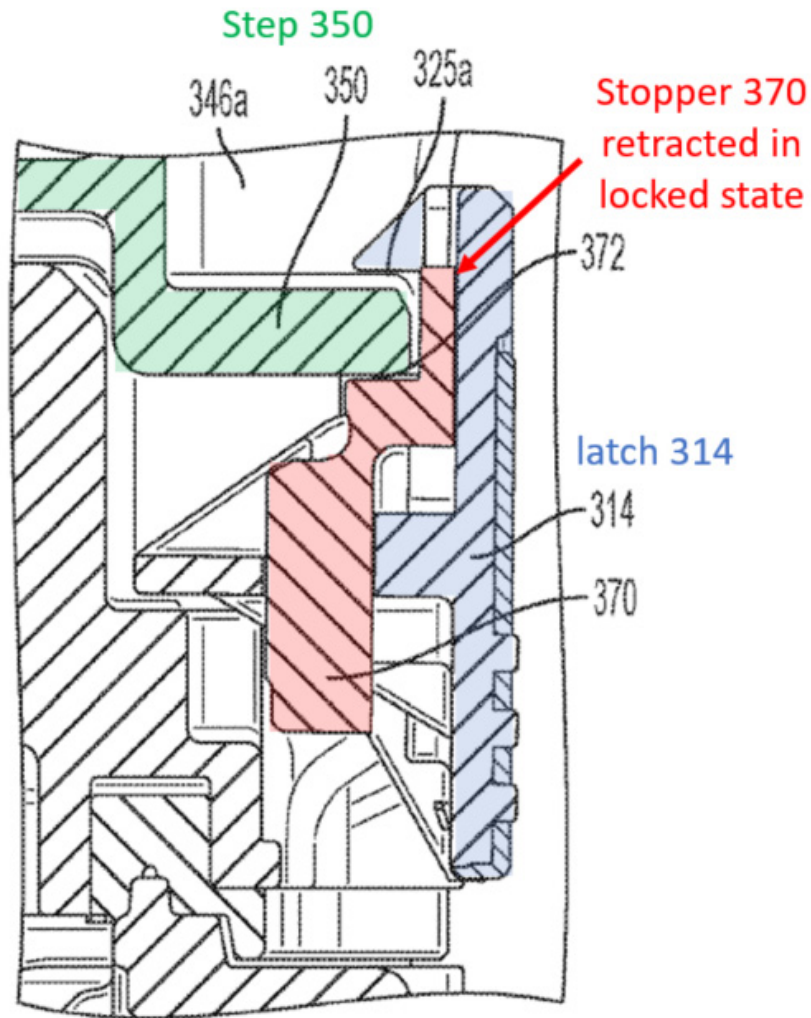


FIG. 24C

EX1012, FIGs. 24C (annotated).

310. Thus, Baruch teaches “*wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part*” as claimed.

B. Independent Claim 11

311. Baruch discloses Claim 11. The majority of claim elements from claim 11 are the same as claim 1 as shown in the table below. Baruch therefore discloses these claim elements for the same reasons that I presented with reference to claim 1.

Independent Claim 11	Independent Claim 1
[11.P] A storage box comprising:	[1.P] A storage box comprising:
[11.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;	[1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;
[11.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;	[1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said first resilient member keeping said locking buckle automatically in a locked state;
[11.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,	[1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,

[11.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;	[1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member when the locking buckle is aligned with the mating part of the other storage box;
[11.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and	[1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and
[11.F] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part;	[1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part,
[11.G] <i>a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the</i>	[1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with

<i>second resilient member, wherein the stop part moves perpendicular with respect to a sliding path of the locking part.</i>	said second connection part of the other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.
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312. Claim element [11.G] additionally recites (1) a “second resilient member”; (2) “the locking part comprises of a slot”; (3) “the stop part is biased outward from the slot by the second resilient member”; and (4) “the stop part moves perpendicular with respect to a sliding path of the locking part.” Baruch discloses each of these additional elements for the reasons that I presented with reference to [1.F.1] and [1.F.2]. Sections XVI.A.7-8.

313. In particular, Baruch’s “stopper bias 376” teaches the claimed “*second resilient member*” as seen in Figure 22. EX1012, ¶52.

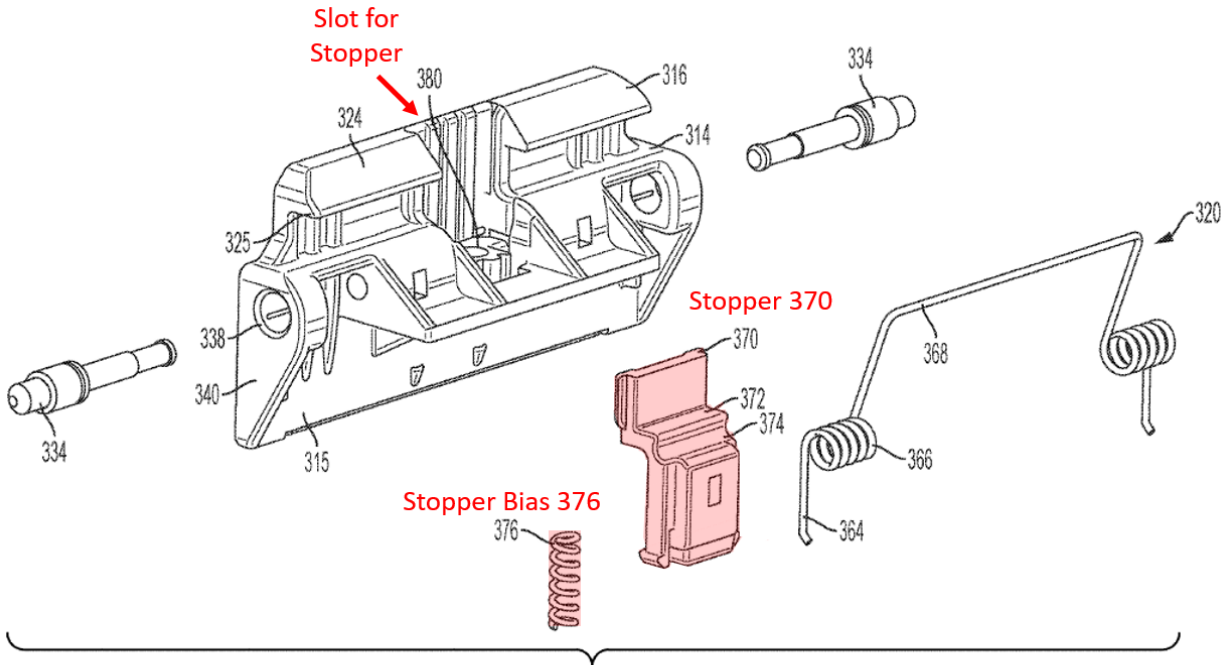


FIG. 22

EX1012, FIG. 22 (annotated).

314. Additionally, Baruch explains that stopper bias 376 is “positioned between the latch 314 and the stopper 370” and specifically “positioned in a spring opening 380 defined by latch 314.” EX1012, ¶52. This positions stopper 370 and stopper bias 376 in a slot defined by latch 314 as depicted in Figures 21 and 22. EX1012, FIGs. 21-22. Baruch therefore teaches the claimed “*locking part comprises of a slot.*”

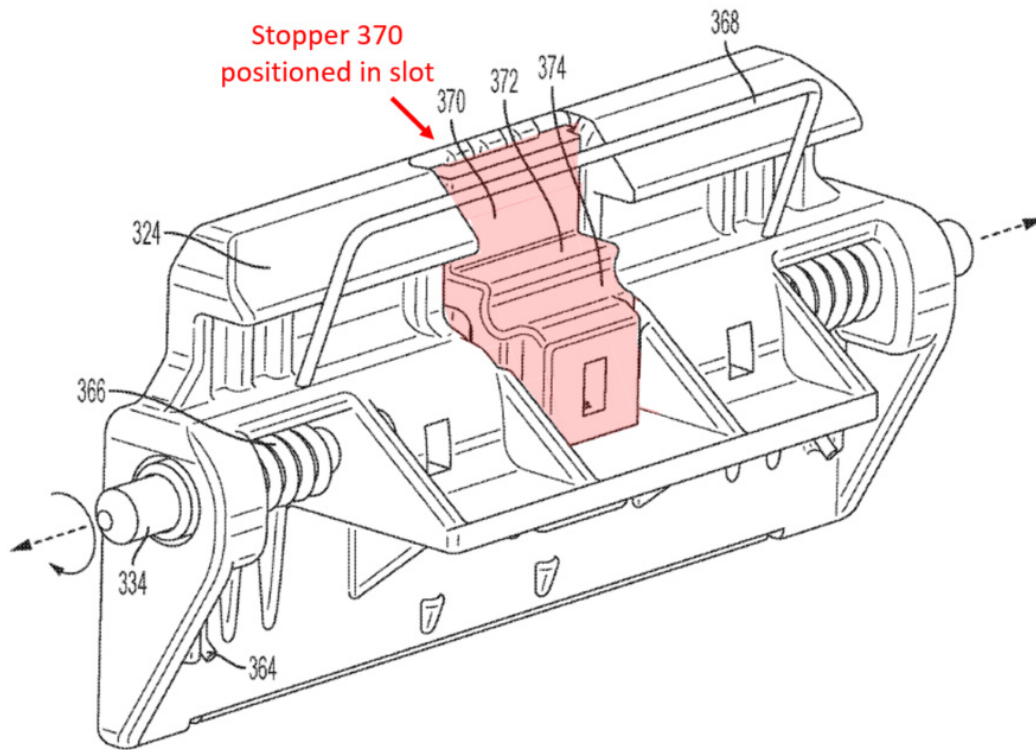


FIG. 21

EX1012, FIG. 21 (annotated).

315. Baruch also explains that “[s]topper bias 376 biases the stopper 370 toward its upper position.” EX1012, ¶52. Additionally, as seen in Figure 25C, this biasing of stopper 370 outward also exposes “holding surface 374 to come into contact with the step 350a,” which also moves the holding surface 374 outward from the slot. EX1012, ¶¶52, 63. Baruch therefore teaches that “*the stop part is biased outward from the slot by the second resilient member.*” Sections XVI.A.7-8 ([1.F.1] and [1.F.2]).

316. Baruch also teaches “*wherein the stop part moves perpendicular with respect to a sliding path of the locking part.*” As I explained with reference to

[1.F.1] and [1.F.2], Baruch's stopper 370 extends or compresses with respect to a locking path of latch 314. EX1012, ¶¶62-63; Sections XVI.A.7-8. This movement is also perpendicular relative to the sliding path of the latching mechanism as seen from the locking and unlocking depicted in Figures 24A-24C and 25A-25C.

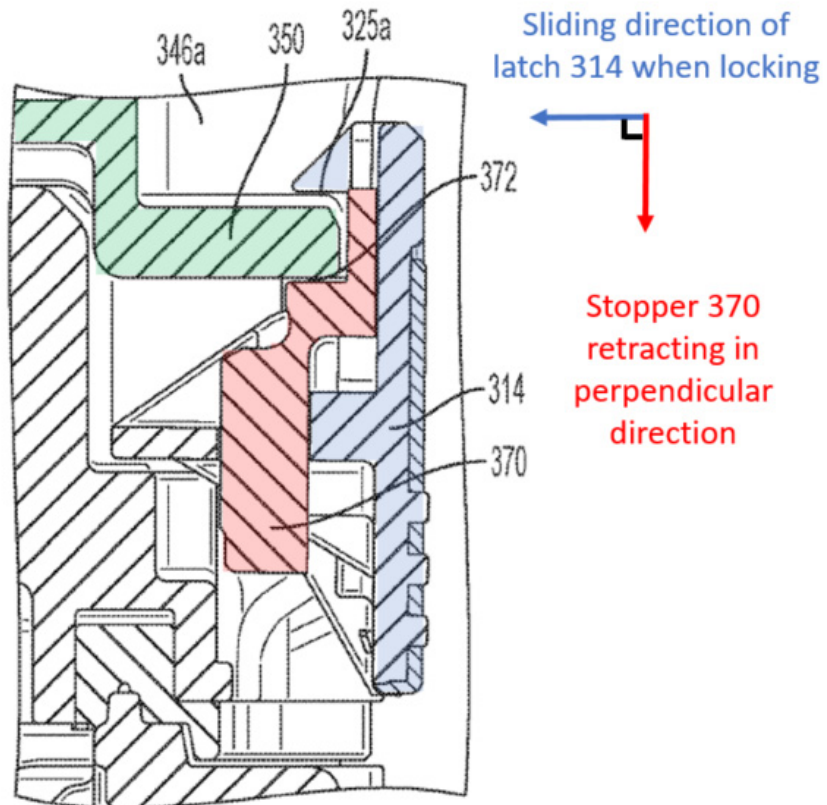


FIG. 24C

EX1012, FIG. 24C (annotated).

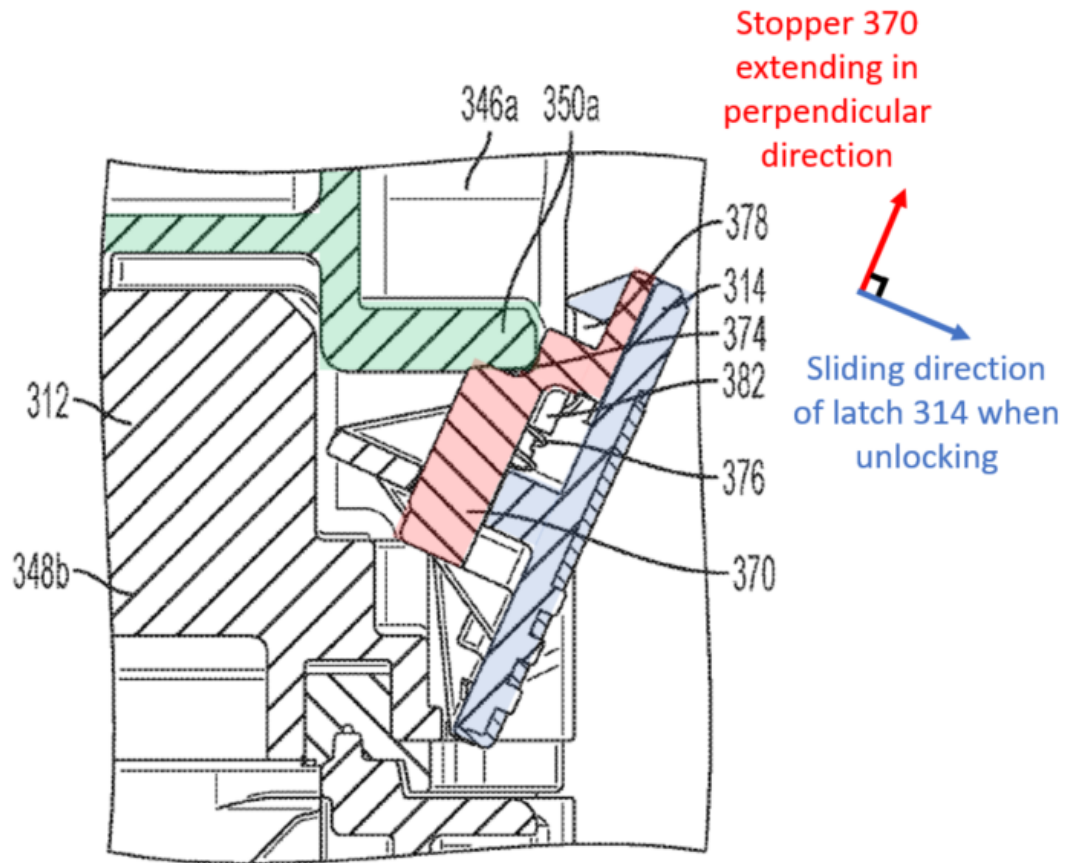


FIG. 25C

EX1012, FIG. 25C (annotated).

317. Thus, Baruch discloses each aspect of [11.G] and therefore also discloses claim 11.

C. Independent Claim 15

318. Baruch discloses claim 15 for the same reasons I presented for claims 1 and 11. The majority of claim elements from claim 15 are the same as those recited in claim 1 and 11 but have slight rearrangements and variations as shown in

the table below. Baruch therefore discloses these claim elements for the same reasons that I presented with reference to claims 1 and 11 and as further explained below.

Independent Claim 15	Independent Claim 1
[15.P] A storage box comprising:	[1.P] A storage box comprising:
[15.A.1] a first connection part disposed on one area of said storage box,	[1.A] a first connection part disposed on one area of said storage box connectable to a second connection part of another storage box;
[15.A.2] wherein the first connection part comprises a mounting body, a locking buckle movable with respect to the mounting body, and a first resilient member located between the mounting body and the locking buckle <i>to bias the locking buckle automatically outward in a locked state;</i>	[1.B] wherein, said first connection part comprises a mounting body, a locking buckle movable with respect to said mounting body, and a first resilient member located between said mounting body and said locking buckle, wherein said <i>first resilient member keeping said locking buckle automatically in a locked state;</i> [1.D] wherein the locking buckle is configured to slide inward with respect to the mounting part so that the locking buckle is automatically lockable with the mating part of the other storage box by action of said first resilient member

	when the locking buckle is aligned with the mating part of the other storage box;
[15.B] a locking part configured to <i>move along a horizontal locking path</i> and to cooperate with the locking buckle, wherein manual movement of the locking part <i>along the horizontal locking path</i> causes the locking buckle to move between an unlocked state <i>retracted with respect to the mounting body and a locked state extended with respect to the mounting body</i> ;	[1.E] a locking part cooperating with the locking buckle, wherein manual movement of the locking part causes the locking buckle to move to an unlocked state; and
[15.C] a stop part combined to the locking part comprising an unlocked state corresponding to the unlocked state of the locking buckle with the stop part extended from the locking part and the locking buckle held retracted with respect to the mounting body, and a locked state corresponding to the locked state of the locking buckle with the stop part retracted with respect to the locking part and the	[1.F.1] a stop part, wherein when the stop part projects outward with respect to a locking path of the locking part, said locking part is not automatically lockable and said first connection part is in a state of remaining unlocked from said second connection part, [1.F.2] wherein the stop part is retractable, said stop part being extended when said first connection part is in a holding unlocked state with said second connection part of the

locking buckle held extended with respect to the mounting body; and	other storage box, and said stop part being compressed when said first connection part is in a locked state with said second connection part.
[15.D.1] a second connection part <i>disposed on another area of said storage box</i> , wherein the second connection part comprises a mating part that corresponds to the locking buckle,	[1.C] wherein, said second connection part of the other storage box comprises a mating part interlockable with the locking buckle,
[15.D.2] wherein said locking part further comprises a holding slot opened on the locking part, and further comprising a second resilient member combined between the holding slot and the stop part, wherein the stop part is extended from the slot in the locking part when the stop part is in the unlocked state, and wherein the stop part is retracted in the slot in the locking part when the stop part is in the locked state.	[11.G] a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the second resilient member, wherein the stop part moves perpendicular with respect to a sliding path of the locking part. <i>See also [1.F.1]-[1.F.2].</i>

(emphasis added)

319. **Baruch discloses [15.P] and [15.A.1]** for the reasons I presented for [1.P] and [1.A] respectively. Sections XVI.A.1-2.

320. **Baruch discloses [15.A.2]** for the reasons that I presented for [1.B] and [1.D]. Sections XVI.A.3. Additionally, Baruch’s “latch bias 320” also operates *“to bias the locking buckle automatically outward in a locked state”* as recited in [15.A.2]. As I previously explained, the ’946 patent describes the first resilient member as operating to push locking buckle 122 toward the center of a box. EX1001, 7:3-11, 8:19-36; Section XII.C (Ground 1 – Claim 15). The ’946 patent further explains that the first resilient member extends and pushes locking buckle 122 by “accumulat[ing] force” or energy: “the first resilient member 13 compresses and accumulates force.” EX1001, 8:19-26. Then, when locking buckle 122 aligns with slot 211 in an upper box, “locking buckle 122 is driven by the first resilient member 13 [and] automatically stuck into the slot 211, so that the first connection part 1 and the second connection part 2 are in a locked state, that is, to achieve the automatic locking function of the upper and lower locker.” EX1001, 8:26-36.

321. Baruch discloses this same operation as I explained with reference to [1.B] and [1.D]. Section XVI.A.3, XVI.A.5. Additionally, Baruch also describes the accumulation of force and energy in latch bias 320 and the applying this force and energy to bias primary hook 316 toward the locked or first position and toward the center of the box:

In order to achieve the rotational bias, torsion loop 368 is rotated away from the latch 314 and positioned against the housing 312. When the torsion loop is positioned in this manner, energy is stored in the latch bias 320. ***The energy in the latch bias 320 applies force against the main body 315.*** More specifically, the tines 364 apply force is applied to the side of the main body 315 opposite the operator surface 332. ***This force causes the latch to rotate around the pins 334 and axis X toward the latch's first position.***

EX1012, ¶54 (emphasis added); *see also* EX1012, ¶63.

322. Additionally, as depicted in Figures 24C and 25D, latch bias 320 causes latch 314 and primary hook 316 to automatically move toward a “locked position” (also referred to as Baurch’s “first position”). EX1012, ¶¶62-63.

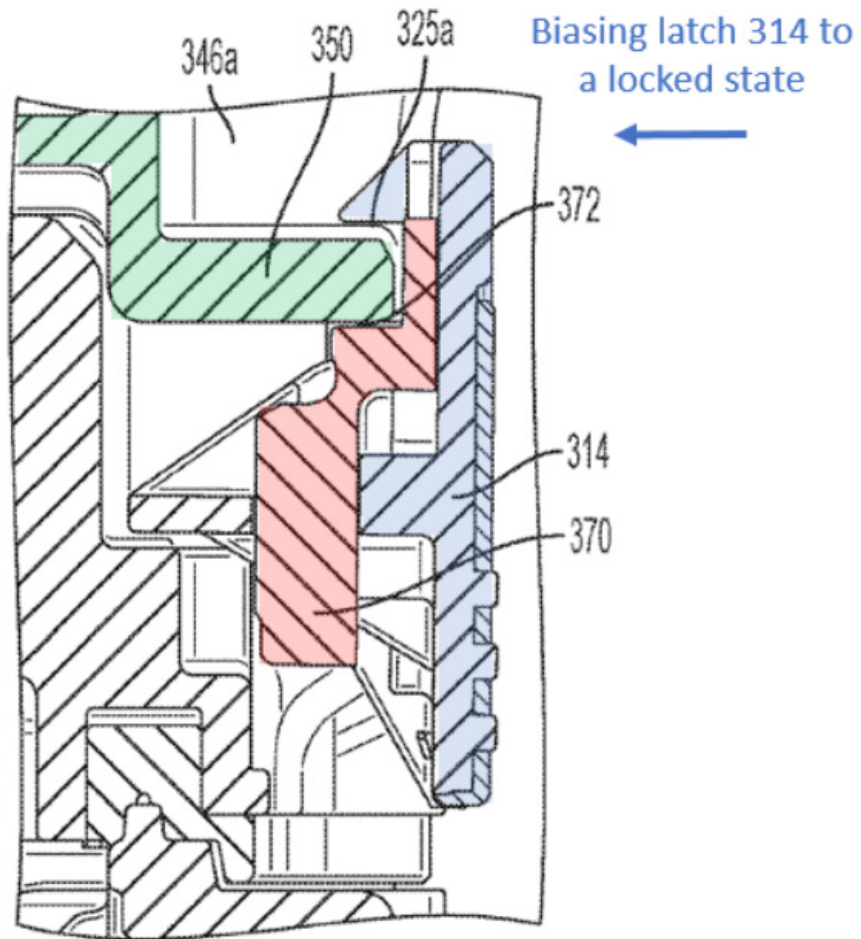


FIG. 24C

EX1012, FIG. 24C (annotated).

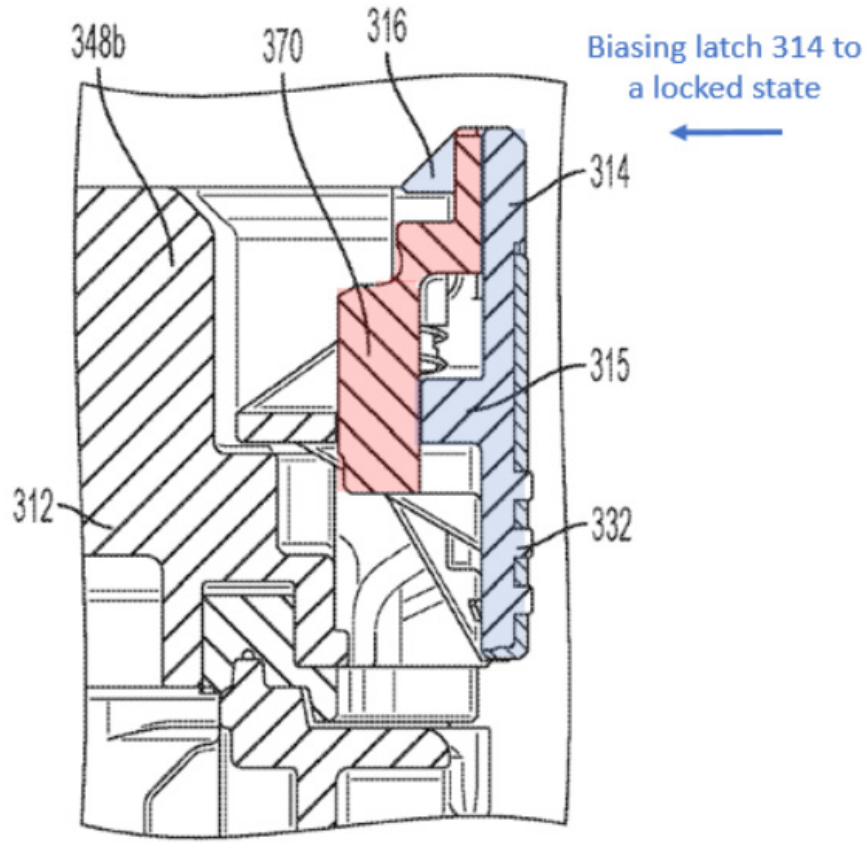


FIG. 25D

EX1012, FIG. 25D (annotated).

323. Specifically, “[l]atch bias 320 is configured to bias the latch 314 toward its first position.” EX1012, ¶51. “The energy in the latch bias 320 applies force against the main body 315. ... This force causes the latch to rotate around the pins 334 and axis X toward the latch’s first position.” EX1012, ¶54. In this manner, when locking into an upper container as shown in Figure 24C, “step 350a moves into the negative space 378, [and] bias 320 causes the latch 314 to rotate back toward its first position.” EX1012, ¶62. Similarly, when an upper container is

removed, “the latch bias 320 causes the entire latch 314 to rotate back to its first position, wherein the primary hook 316 is adjacent the housing 312 (or lid 348b) as shown in FIG. 25D.” EX1012, ¶63. This teaches the same biasing and locking functionality described in the ’946 patent and recited in [15.A.2]. EX1001, 7:3-11, 8:19-36.

324. I also note that as part of Baruch’s biasing of latch 314 by latch bias 320, latch bias 320 biases the lower portion of latch 314 away from the center of the box. EX1012, FIGs. 24C, 25D, ¶¶51, 54, 62-63. This can also be understood from the rotation that occurs moving from the position in Figure 24B to the position in Figure 24C as well as moving from the position in Figure 25C to Figure 25D. EX1012, FIGs. 24C, 25D, ¶¶51, 54, 62-63. I have annotated this biasing and movement below:

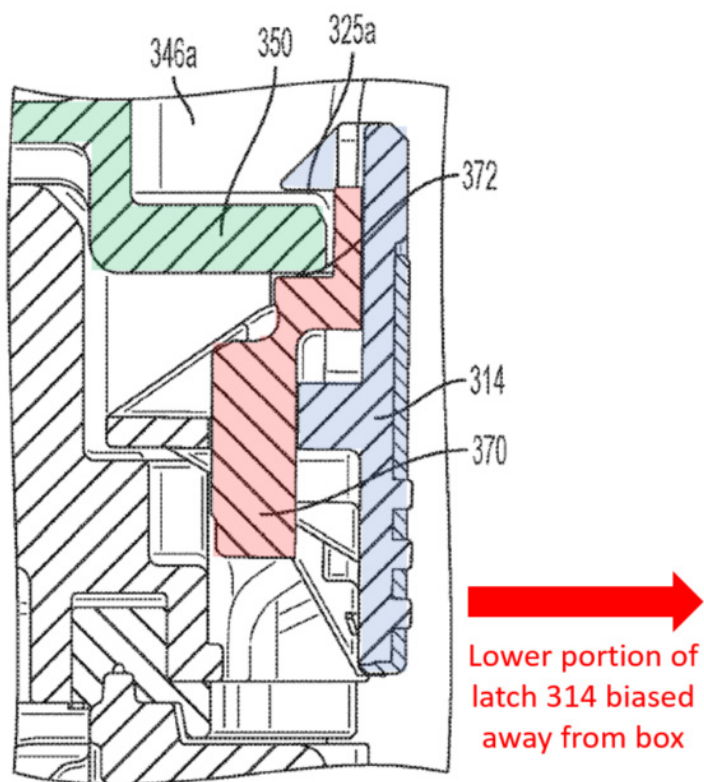


FIG. 24C

EX1012, FIG. 24C (annotated).

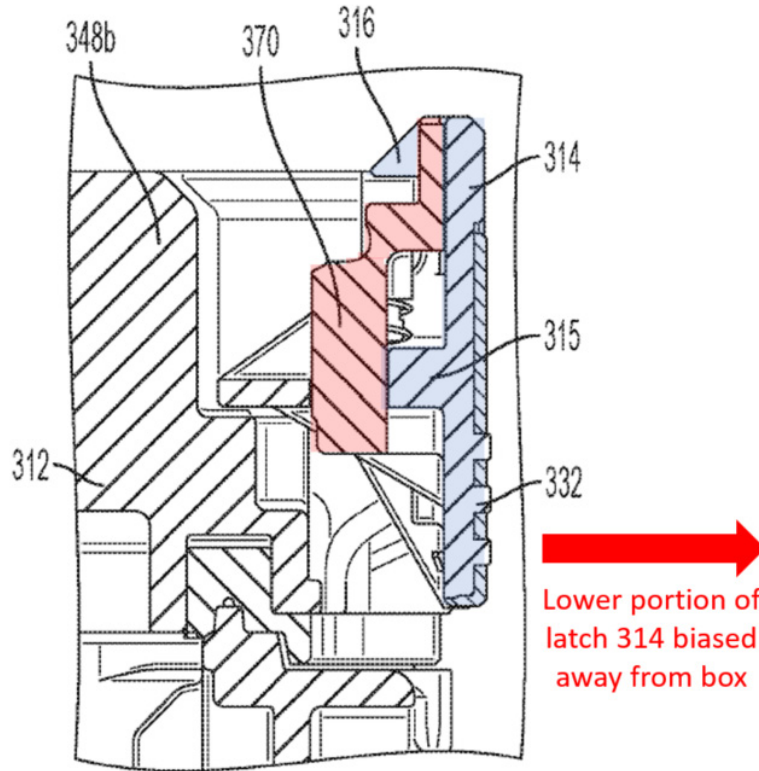


FIG. 25D

EX1012, FIG. 25D (annotated).

325. Thus, Baruch discloses [15.A.2].

326. **Baruch discloses [15.B]** for the reasons I presented for [1.D] and [1.E]. Sections XVI.A.5-6. In particular, Baruch’s “latch mechanism 310,” which includes latch 314, teaches the claimed “*locking part*” as previously explained. Sections XVI.A.6. Additionally, the horizontal component of the rotation of latch mechanism 310 and latch 314 teaches movement “*along a horizontal locking path*” as recited in [15.B]. For example, the transition from Figure 25A to Figure 25C shows the horizontal displacement of primary hook 316 relative to step 350a

(horizontal movement relative to dashed red line). EX1012, ¶63.

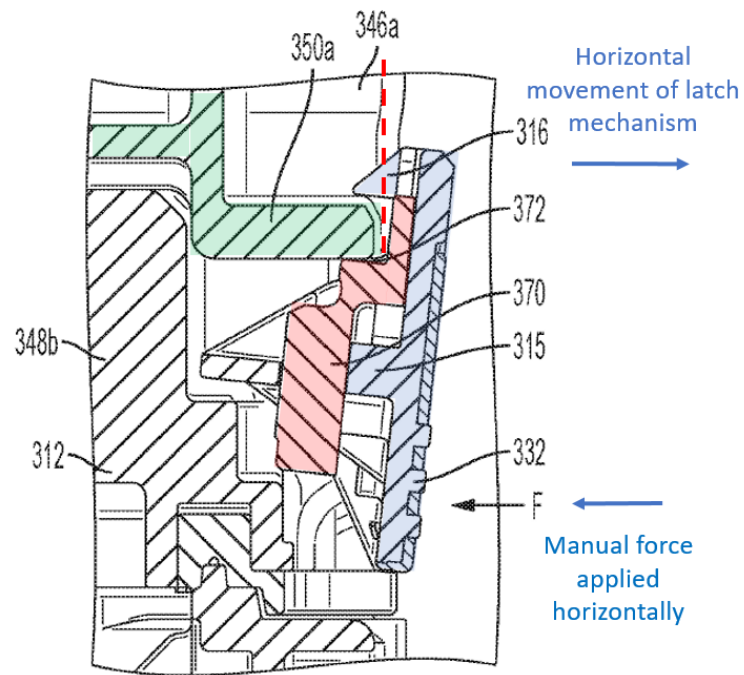


FIG. 25A

EX1012, FIG. 25A (annotated).

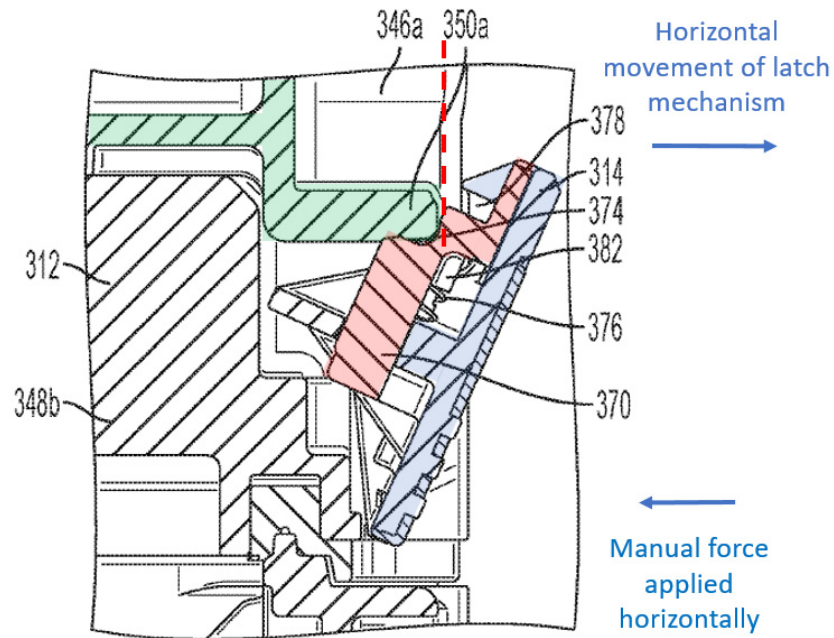


FIG. 25C

EX1012, FIG. 25C (annotated).

327. This movement also teaches the claimed “locking buckle” moving “between an unlocked state retracted with respect to the mounting body and a locked state extended with respect to the mounting body.” As previously explained, the ’946 patent refers to extension as extending into the center of a lid or container. EX1001, 7:7-17; Section XII.C (Ground 1 – Claim 15).

328. With this understanding, Baruch’s latch 314 (which includes “primary hook 316”)—i.e., the claimed “locking buckle”—operates in the same manner. Namely, when in the unlocked or “second position,” latch 314 (including primary hook 316) is pushed away from the center of lid 348b of the lower container 346b

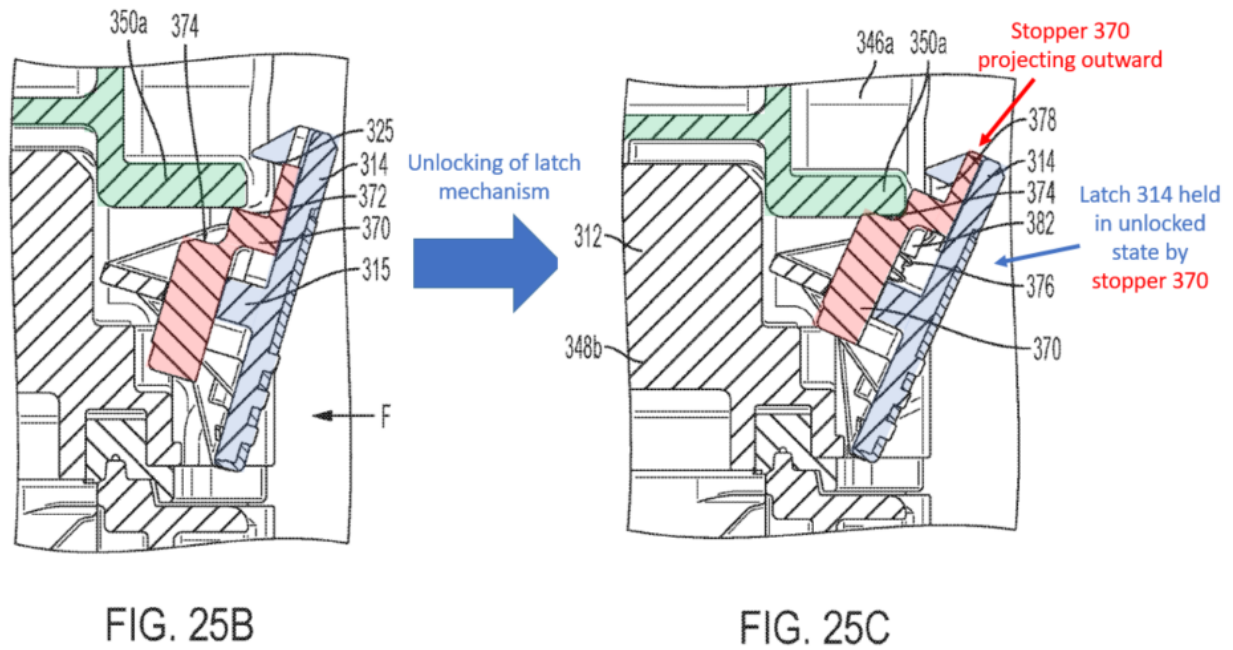
as I described with reference to [1.E]. Section XVI.A.6; EX1012, ¶¶37, 42, 49-50, 63, FIGs. 25A-25D. This teaches the same retraction relative to the mounting body in an unlocked state described in the '946 patent. EX1001, 7:7-17.

329. Additionally, when in the locked or “first position,” latch 314 (including primary hook 316) is pushed toward the center of lid 348b of the lower container 346b as I described with reference to [1.D]. Section XVI.A.5; EX1012, ¶¶51, 54, 62, FIGs. 24A-24C. This teaches the same extension of the locking buckle relative to the mounting body in a locked state described in the '946 patent. EX1001, 7:7-17.

330. In this manner, Baruch teaches [15.B] for the reasons I presented with reference to [1.D] and [1.E].

331. **Baruch discloses [15.C]** for the reasons I presented for [1.F.1] and [1.F.2] and additionally as explained for [15.B]. Sections XVI.A.7-8. At the outset, Baruch's stopper/holder 370—i.e., the claimed “*stop part*”—is a part of, combined with, and “*combined to*” latch mechanism 310, which teaches the claimed “*locking part*.” Section XVI.A.6 (Claim Element [1.E]). When latch mechanism 310 is in an unlocked state (i.e., second position), stopper 370 is extended upward from an opening and holds latch 314 in an unlocked position. Sections XVI.A.7-8 (Claim Elements [1.F.1]-[1.F.2]); EX1012, ¶¶63, FIG. 25C. Baruch's unlocked position includes retracting or pulling primary hook 316 and latch 314 away from the center

of lid 348b of the lower container 346b as I explained with reference to [15.B].



EX1012, FIGs. 25B-25C (annotated).

332. When latch mechanism 310 is in a locked state with step 350a, stopper 370 is retracted or compressed as I explained with reference to [1.F.2] and [11.G] and seen from Figure 24C. Sections XVI.A.8, XVI.B; EX1012, ¶¶52, 62, FIG. 24C.

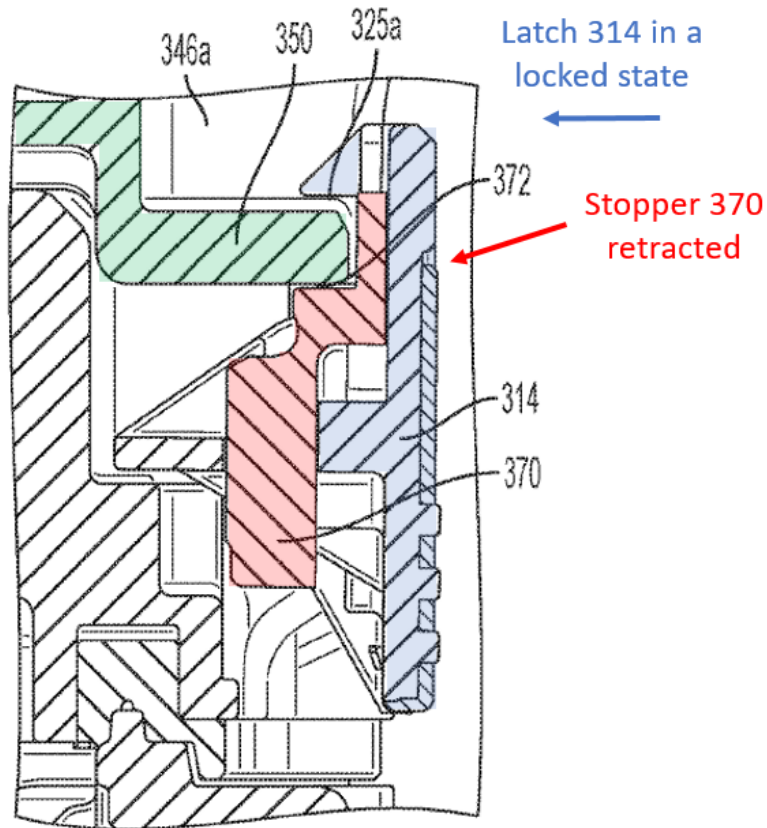


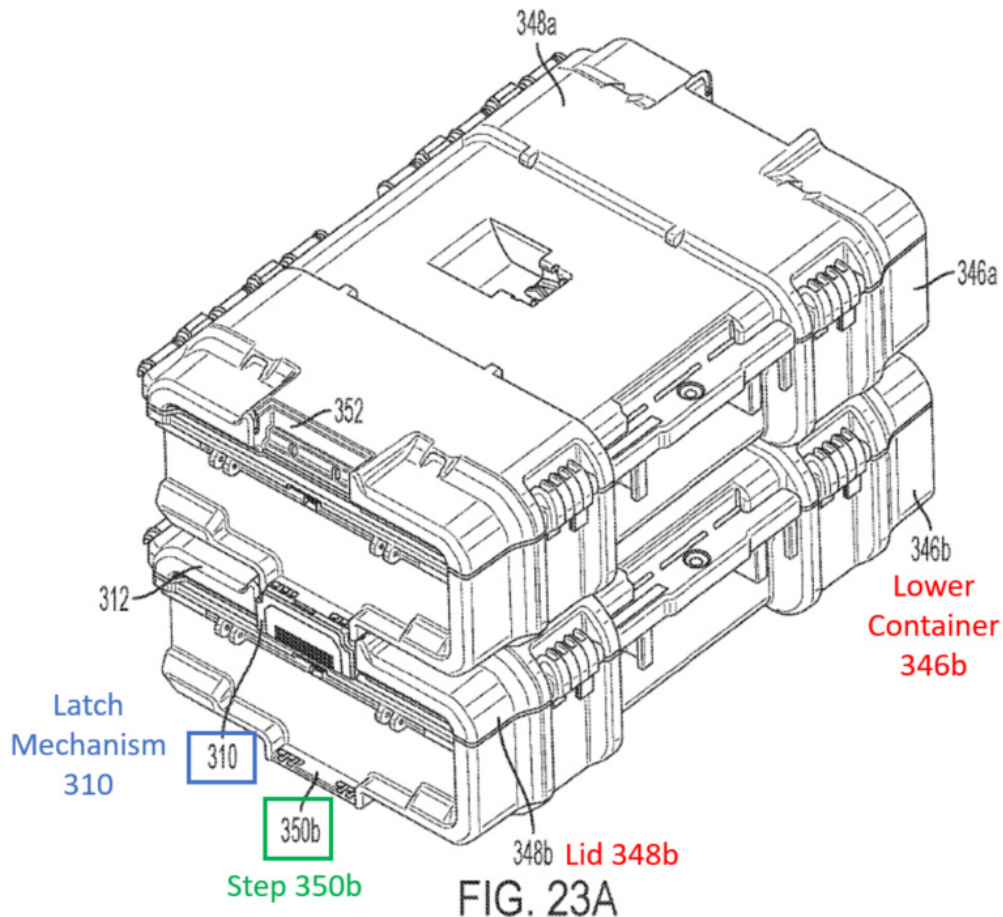
FIG. 24C

EX1012, FIG. 24C (annotated).

333. Baruch's locked position also includes extending latch 314 and primary hook 316 toward the center of lid 348b of the lower container 346b as I explained with reference to [15.B]. Thus, Baruch teaches [15.C].

334. **Baruch discloses [15.D.1]** for the reasons I presented for [1.A] and [1.C]. Sections XVI.A.2, XVI.A.4. The portion of a container containing Baruch's step 350 teaches the claimed "*second connection part disposed on another area of said storage box.*" EX1012, ¶¶62-63. For example, as seen from Figure 23A,

Baruch's lower container includes latch mechanism 310 on lid 348b for attaching to an upper container but also includes step 350b on a bottom portion (i.e., the claimed "*mating part*") for attaching to another lower container. Thus, Baruch discloses [15.D.1].



EX1012, FIG. 23A (annotated).

335. **Baruch discloses [15.D.2]** for the reasons I presented for [1.F.1]-[1.F.2] and [11.G]. Sections XVI.A.7-8, XVI.B. As I explained with reference to [11.G] and seen from Figures 21-22, Baruch's latch 314 defines a slot that holds stopper 370 and stopper bias 376 and therefore teaches the claimed "*holding slot*"

opened on the locking part.” EX1012, ¶52; Sections XVI.B.

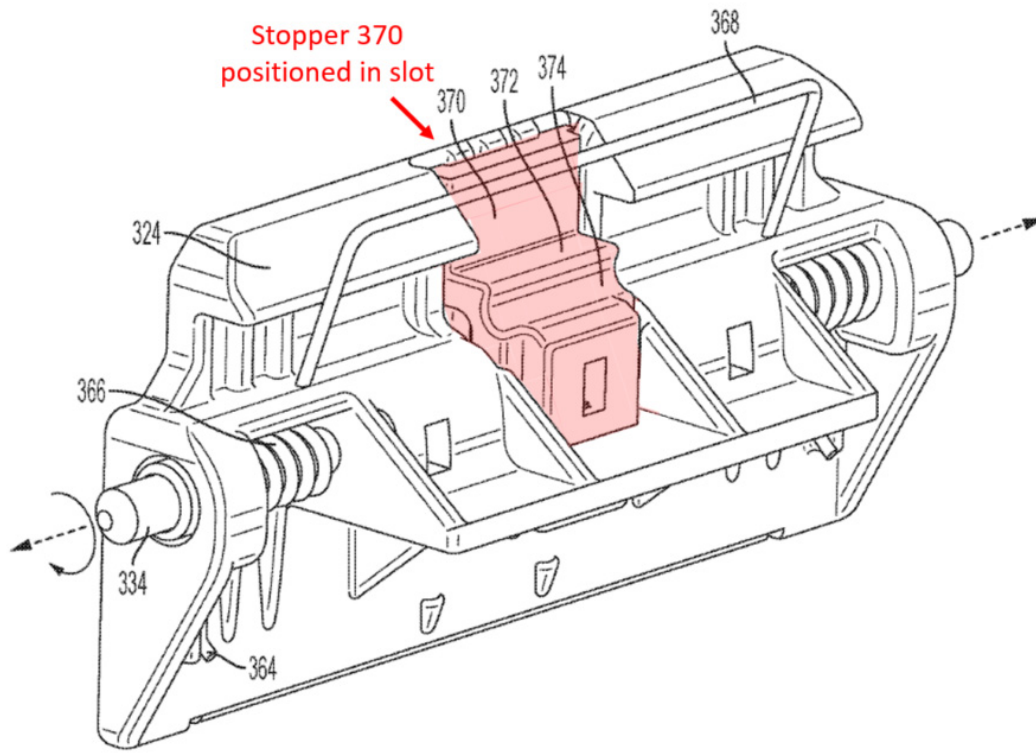


FIG. 21

EX1012, FIG. 21 (annotated).

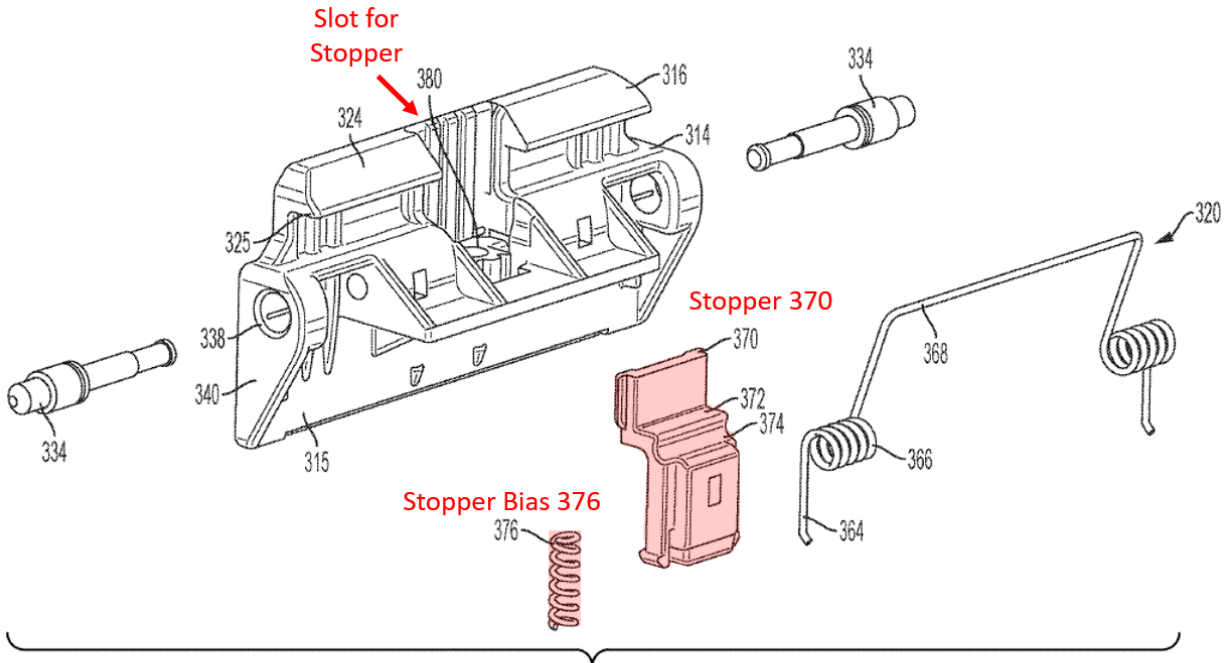


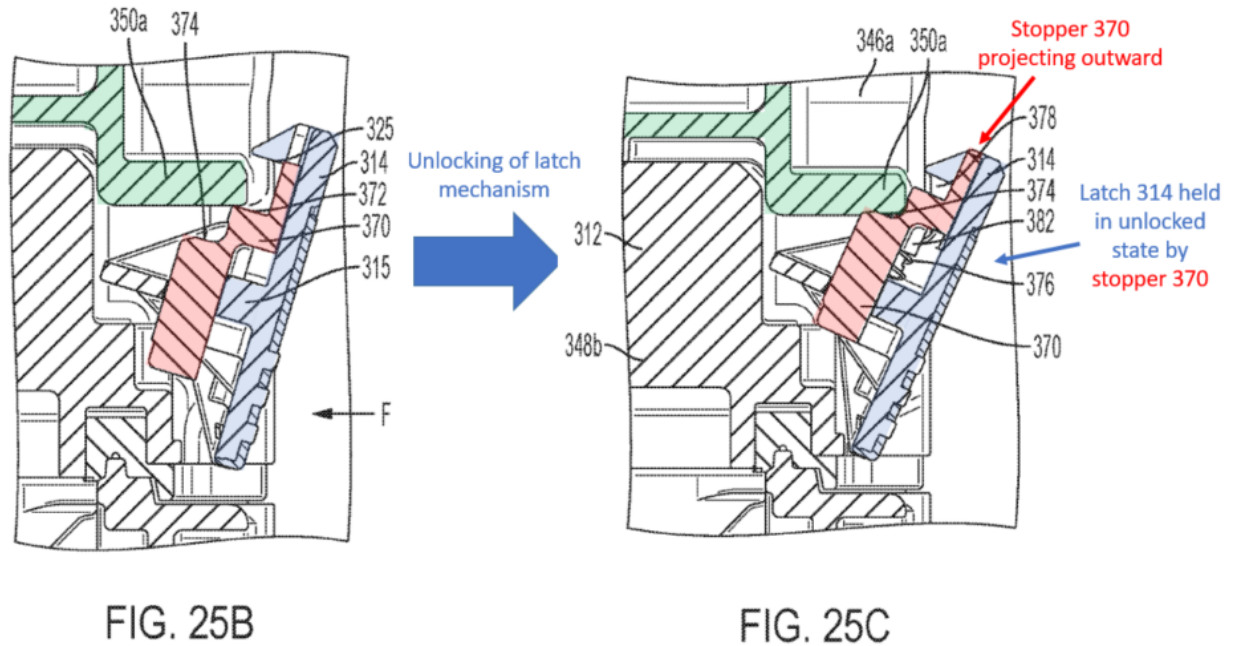
FIG. 22

EX1012, FIG. 22 (annotated).

336. Specifically, this slot includes “a spring opening 380 defined by latch 314.” EX1012, ¶52. Baruch’s stopper bias 376 teaches the claimed “*second resilient member*” and is positioned between spring opening 380 at the bottom of the slot and stopper 370. EX1012, ¶52. Baruch therefore also discloses the claimed “*second resilient member combined between the holding slot and the stop part.*”

337. Additionally, as seen from these figures and as I explained with reference to [1.F.1], [1.F.2], [11.G], and [15.C], Baruch teaches “*wherein the stop part is extended from the slot in the locking part when the stop part is in the unlocked state, and wherein the stop part is retracted in the slot in the locking part when the stop part is in the locked state*” as recited in [15.D.2]. Sections XVI.A.7-

8, XVI.B. When latch 314 is unlocked, stopper 370 is extended outward from the slot. EX1012, ¶63.



EX1012, FIGs. 25B-25C (annotated).

338. When stopper 370 is in the locked state, stopper 370 is retracted via the compression of stopper bias 376. EX1012, ¶¶52, 62. As seen from Figure 24C, step 350 of an upper container presses downward and compresses stopper 370 and stopper bias 376 causing retraction into the slot. EX1012, ¶¶52, 62.

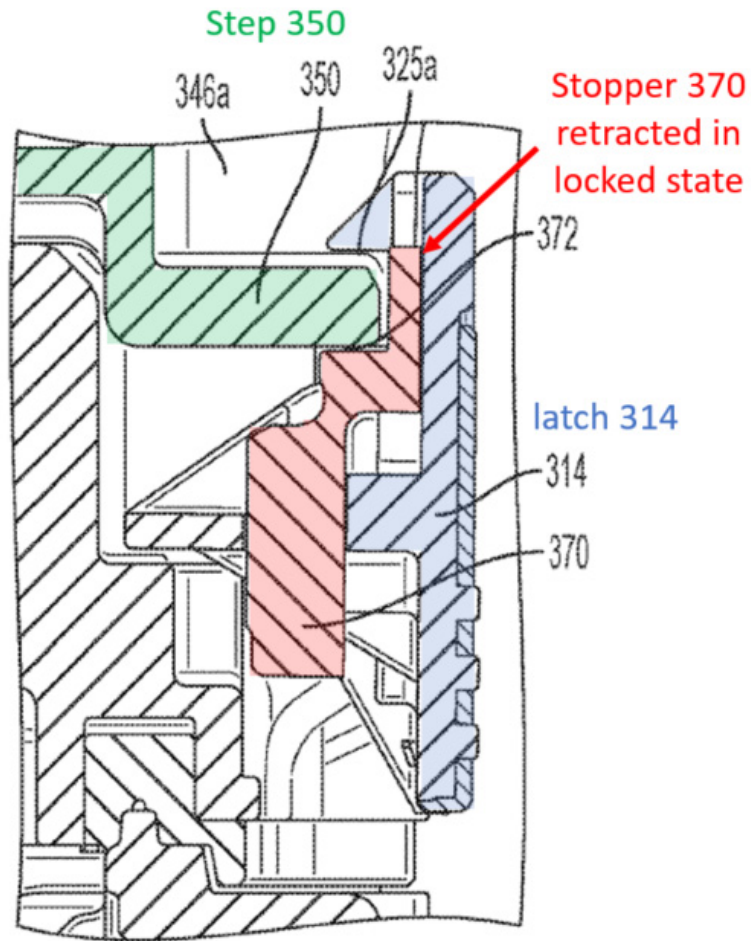


FIG. 24C

EX1012, FIGs. 24C (annotated).

339. In this manner, stopper 270 is retracted into the slot defined by latch 314 when in a locked state. Section XVI.A.8 (Claim Element [1.F.2]). Thus, Baruch teaches [15.D.2].

D. Claim 2

340. Claim 2 recites “*The storage box of claim 1, wherein said stop part is provided on said locking part and is movable with said locking part along the*

locking path of the locking part.”

341. Baruch discloses claim 2. As I explained with reference to [1.F.1], Baruch’s stopper 370 teaches the claimed “*stop part.*” Section XVI.A.7; EX1012, ¶¶52, 56, 62-63. As I explained with reference to [1.E], Baruch’s “latch mechanism 310,” which includes latch 314, teaches the claimed “*locking part.*” Section XVI.A.6; EX1012, ¶¶49, 51-52, 55-56, 62-63. Because stopper 370 is positioned in a slot formed by latch 314 and moves with latch 314, Baruch teaches “*wherein said stop part is provided on said locking part*” as claimed. Section XVI.B ([11.G]).

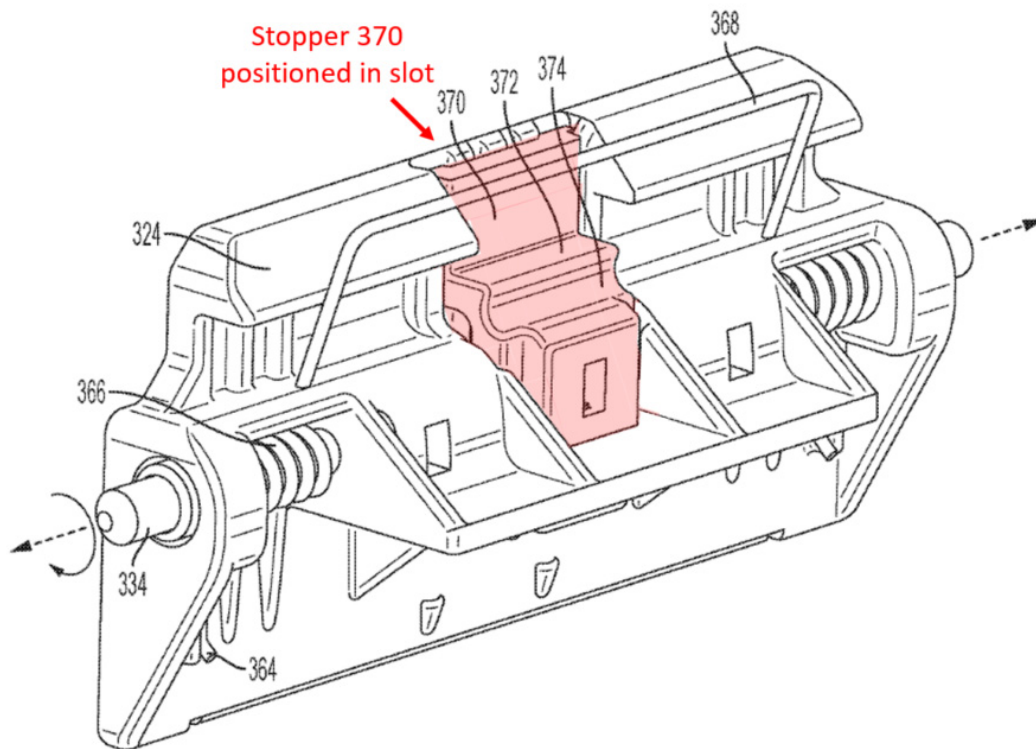


FIG. 21

EX1012, FIG. 21 (annotated).

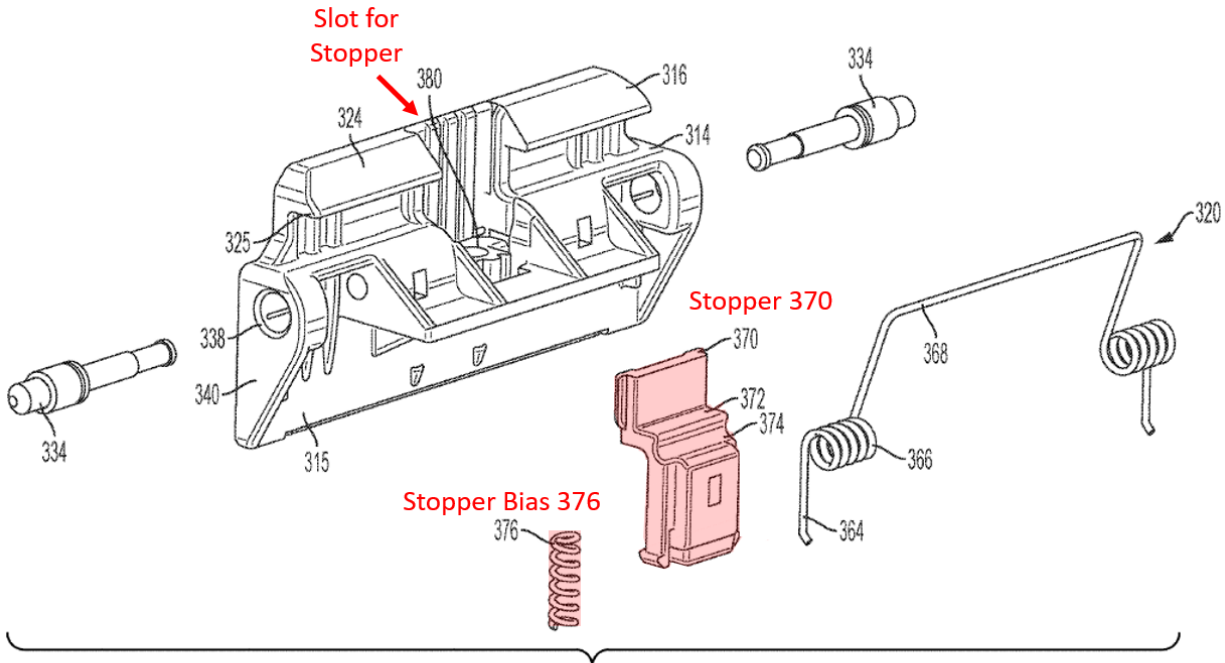


FIG. 22

EX1012, FIG. 22 (annotated).

342. Baruch also teaches that stopper 370 is “*movable with said locking part along the locking path of the locking part*” as claimed. Because stopper 370 is positioned in a slot defined by latch 314, stopper 370 moves in the same manner that latch mechanism 310 moves as well. EX1012, ¶52. For example, when moving into the locked or unlocked position as depicted in Figures 24A-24C and 25A-25C respectively, stopper 370 moves along the same path as latch 314. EX1012, ¶¶52, 55, 62-63. Thus, Baruch discloses claim 2.

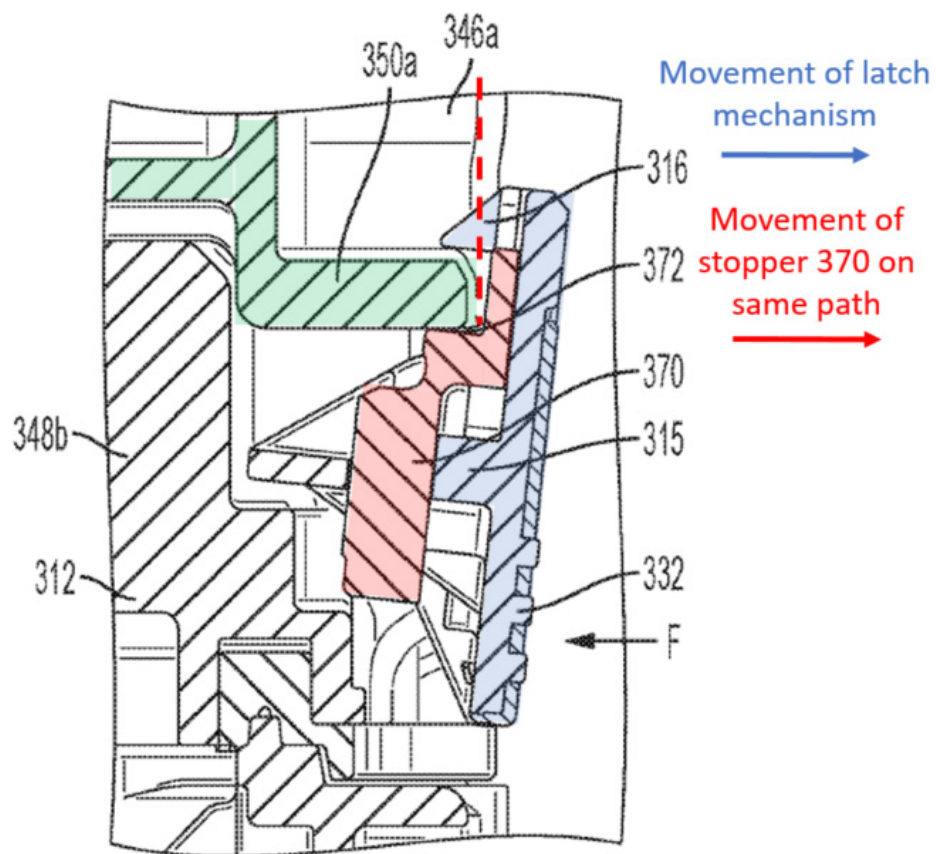


FIG. 25A

EX1012, FIG. 25A (annotated).

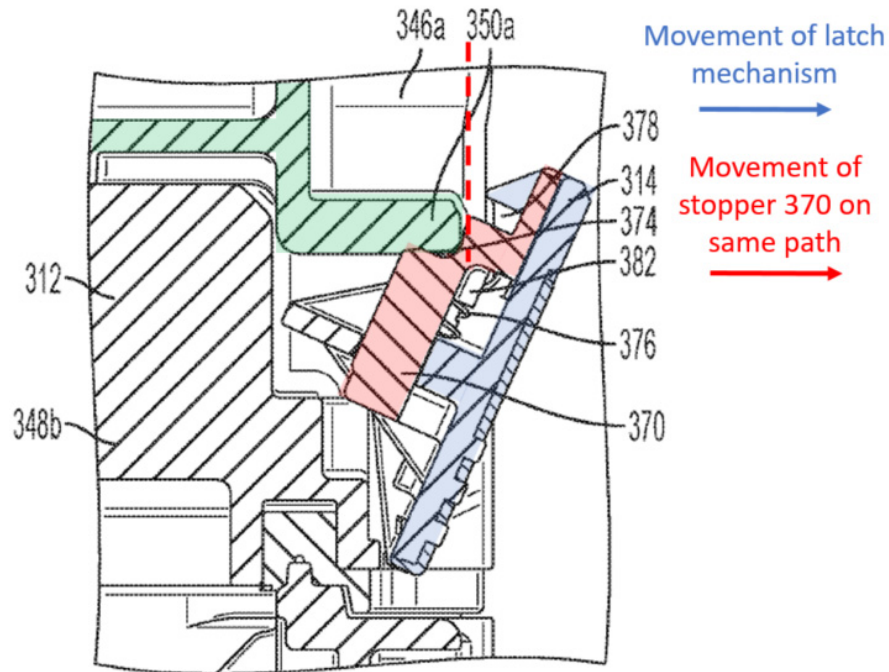


FIG. 25C

EX1012, FIG. 25C (annotated).

E. Claim 3

343. Claim 3 recites “*The storage box of claim 2, wherein said locking part comprises a holding slot opened on the locking part, and further comprising a second resilient member combined between the holding slot and the stop part to extend the stop part outward in an extended state and said stop part is accommodated in said holding slot in a compressed state.*”

344. Baruch discloses claim 3 for the reasons I presented for [1.F.1], [1.F.2], [11.G], and [15.D.2]. Sections XVI.A.7-8, XVI.B, XVI.C. For example, as seen from Figures 21-22, Baruch explains that latch 314 defines a slot that holds

stopper bias 376 (i.e., the claimed “*second resilient member*”) and stopper 370.

EX1012, FIGs. 21-22, ¶52.

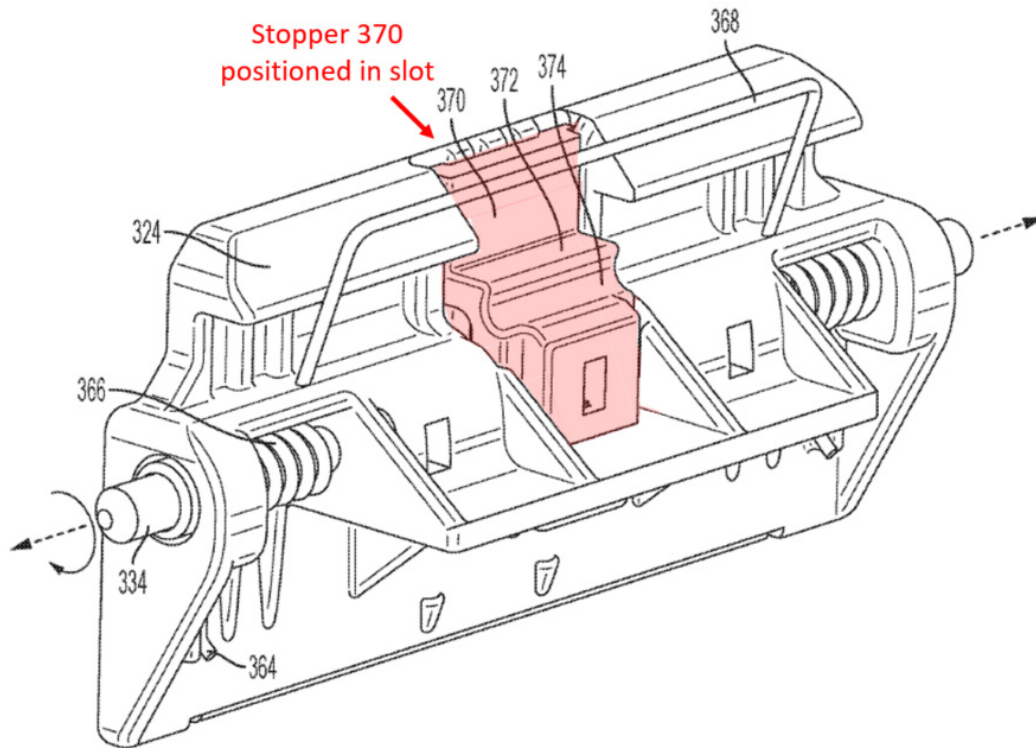


FIG. 21

EX1012, FIG. 21 (annotated).

F. Claim 4

346. Claim 4 recites “*The storage box of claim 3, wherein when the stop part is retractably provided in said holding slot, said second resilient member is compressed; when said stop part is biased outward and held against a mating portion, said locking buckle is not automatically lockable to the mating part of the other storage box.*”

347. Baruch discloses claim 4 for the reasons I presented for [1.F.1], [1.F.2], [11.G], [15.D.2], and claim 3. Sections XVI.A.7-8, XVI.B, XVI.C, XVI.E. For example, when stopper 370 is compressed or retracted into latch 314 by a downward force of a step 350, stopper bias 376 is also compressed. EX1012, ¶¶52, 62, FIG. 24C.

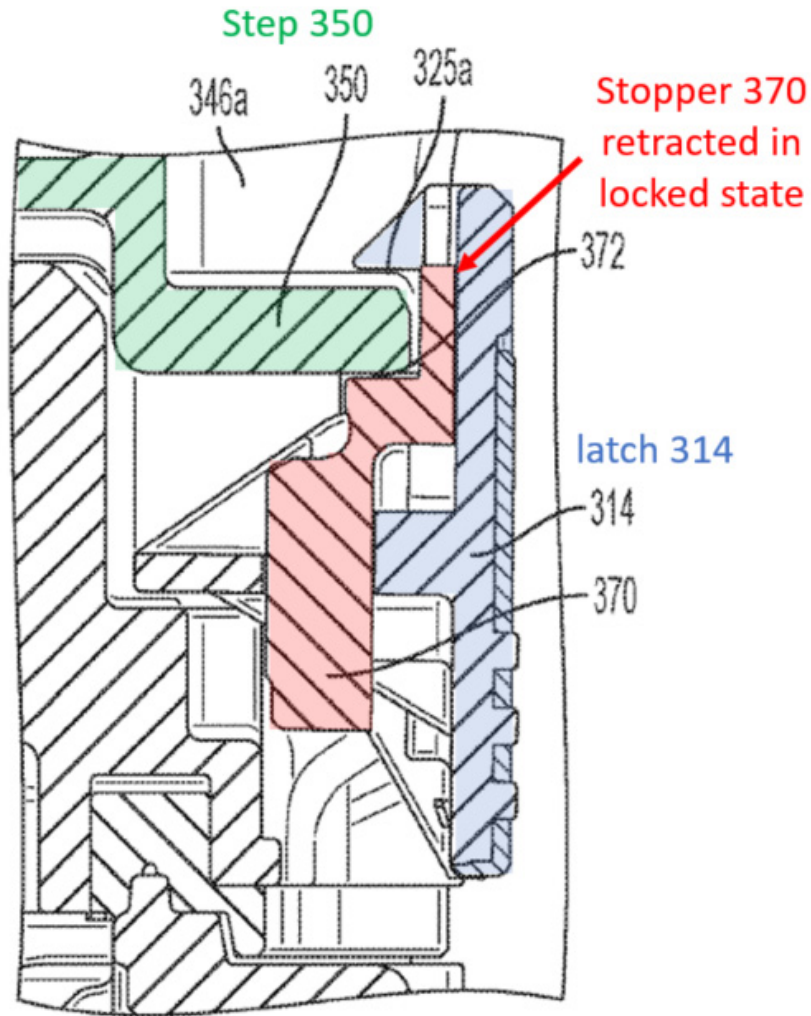
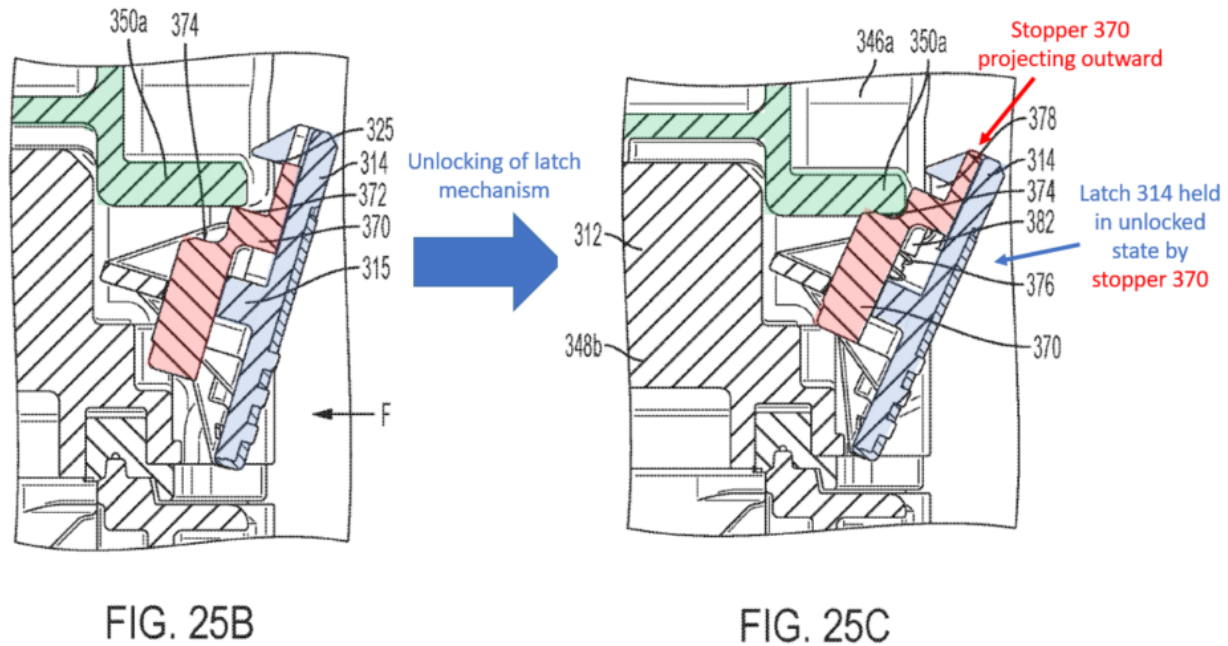


FIG. 24C

EX1012, FIGs. 24C (annotated).

348. Additionally, as I explained with reference to [1.F.1], when stopper 370 is extended or biased outward by stopper bias 376, latch 314 and primary hook 316 are “*not automatically lockable*” with a step 350 as claimed. Section XVI.A.7. As seen in Figure 25C, “the stopper holds the latch 314 in its second position” (i.e., unlocked). EX1012, ¶63. In particular, stopper 370 is held against step 350a to

hold this position as seen in Figure 25C. EX1012, ¶63. “In this second position, the primary hook 316 is distal from the housing 312 (or lid 348b) and unable to secure step 350a of the upper container 346a.” EX1012, ¶63. Thus, Baruch discloses claim 4.



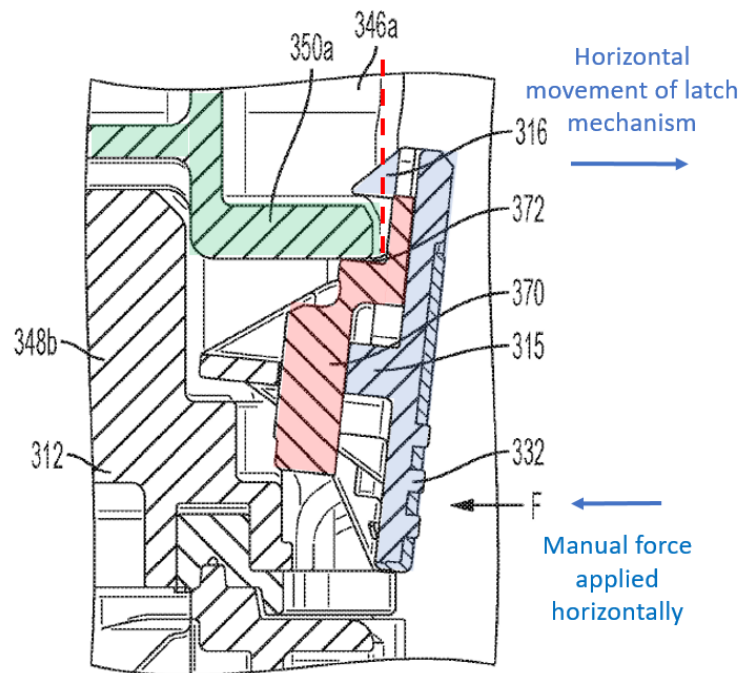
EX1012, FIGs. 25B-25C (annotated).

349. I note that claim 4 uses the term “mating portion” but the ’946 patent does not appear to define this term or identify this term with any specific reference number. Rather, the ’946 patent appears to use the term as equivalent to and interchangeably with “mating part.” EX1001, 3:56-63. Regardless, Baruch still describes the equivalent functionality when stopper 370 is biased outward and held against step 350 and therefore still discloses all of the elements of claim 4.

G. Claim 7

350. Claim 7 recites “*The storage box of claim 1, wherein said locking part is a sliding latch for horizontal movement.*”

351. Baruch discloses claim 7 for the reasons provided for [15.B]. Section XVI.C. In particular, Baruch’s “latch mechanism 310,” which includes latch 314, teaches the claimed “*locking part.*” Sections XVI.A.6, XVI.C. Latch 314 and primary hook 316 can slide horizontally relative to step 350 during the locking and unlocking process. EX1012, ¶63. For example, the transition from Figures 25A to Figure 25C depicts this movement. EX1012, ¶63.



EX1012, FIG. 25A (annotated).

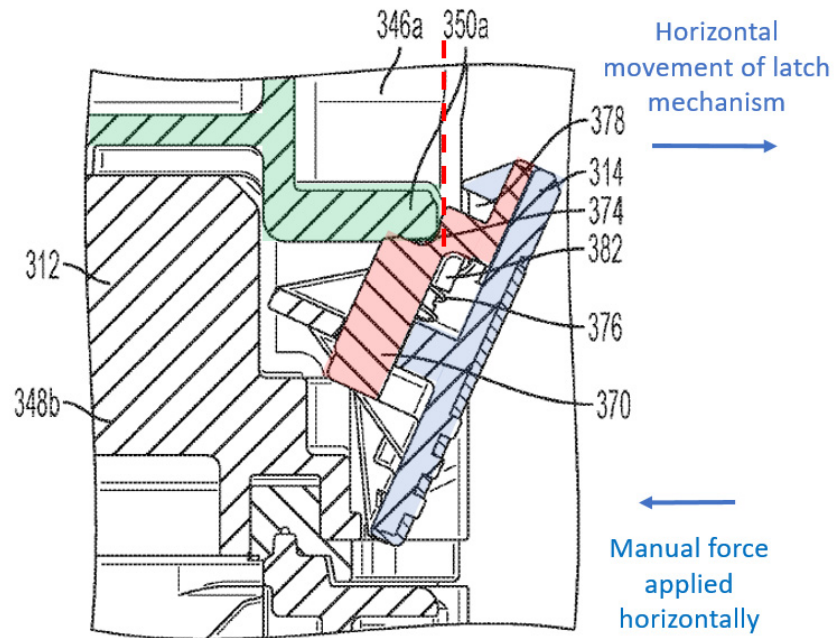


FIG. 25C

EX1012, FIG. 25C (annotated).

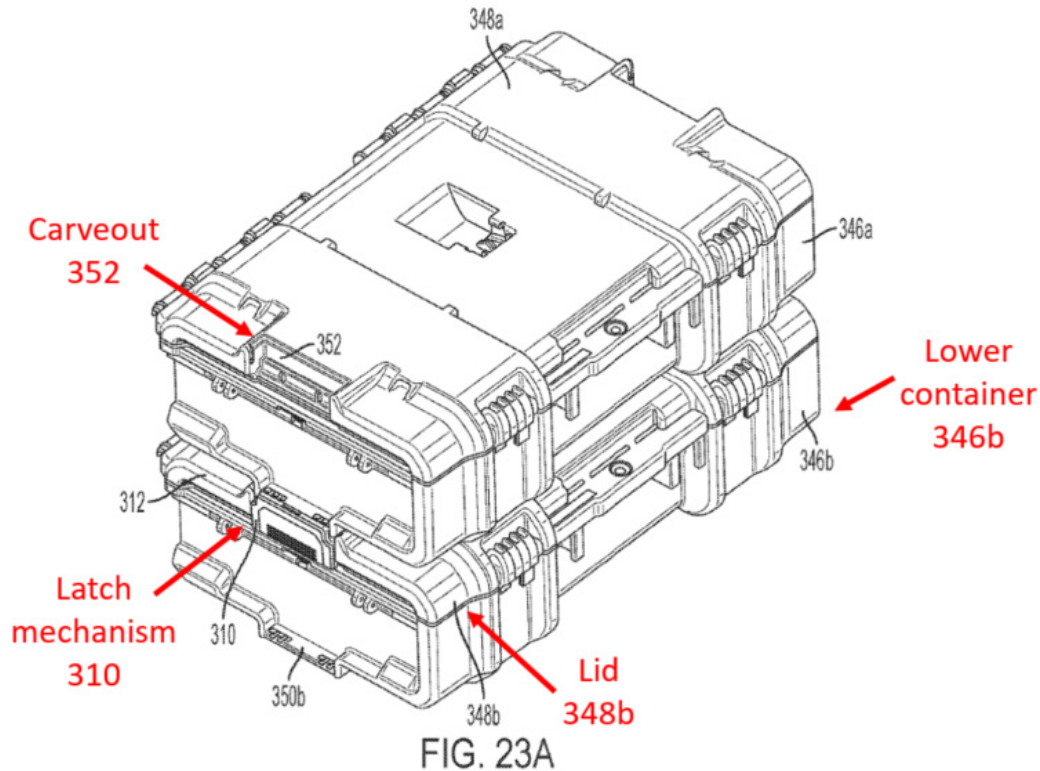
352. Additionally, the horizontal component of the rotation of latch mechanism 310 and latch 314 teaches claimed “*horizontal movement.*” A POSA would have recognized that rotational movement, such as the one described in Baruch, includes both a horizontal and vertical component (or x and y components). EX1014, 57-58. Specifically, any vector in a plane (such as a movement vector) can be “described by a pair of its vector coordinates,” such as an “x-component” and a “y-component.” EX1014, 57. “In the Cartesian system, the x and y vector components of a vector are the orthogonal projections of this vector onto the x- and y-axes, respectively.” EX1014, 57. In this manner, the movement

of Baruch's latch 314 and primary hook 316 also includes a horizontal component. For example, the transition from Baruch's Figure 25A to Figure 25C shows the horizontal displacement of primary hook 316 relative to step 350a. EX1012, ¶63. This can be seen from the horizontal movement relative to dashed red line that I have provided in the annotations to Figure 25A and Figure 25C above. Based on this horizontal movement, Baruch therefore discloses claim 7.

H. Claim 8

353. Claim 8 recites "*The storage box of claim 1, wherein said first connection part is provided on a lid of said storage box.*"

354. Baruch discloses claim 8. As I explained with reference to [1.A], "latch mechanism 310" as installed in "carveout 352" of a "lid 348" teaches the claimed "*first connection part.*" EX1012, ¶¶55, 62-63, FIGs. 23A-23B; Section XVI.A.2.



EX1012, FIG. 23A (annotated).

355. For example, as seen from Figure 23A, each container includes a lid 348, and each lid 348 includes a carveout 352. EX1012, ¶¶55, 62-63. “[L]atch mechanism 310 can also be disposed in a carveout 352.” EX1012, ¶55. “Upper container 346a is thus secured to the lid 348b of the lower container 346b.” EX1012, ¶62. Thus, Baruch teaches a “*first connection part [that] is provided on a lid of said storage box.*”

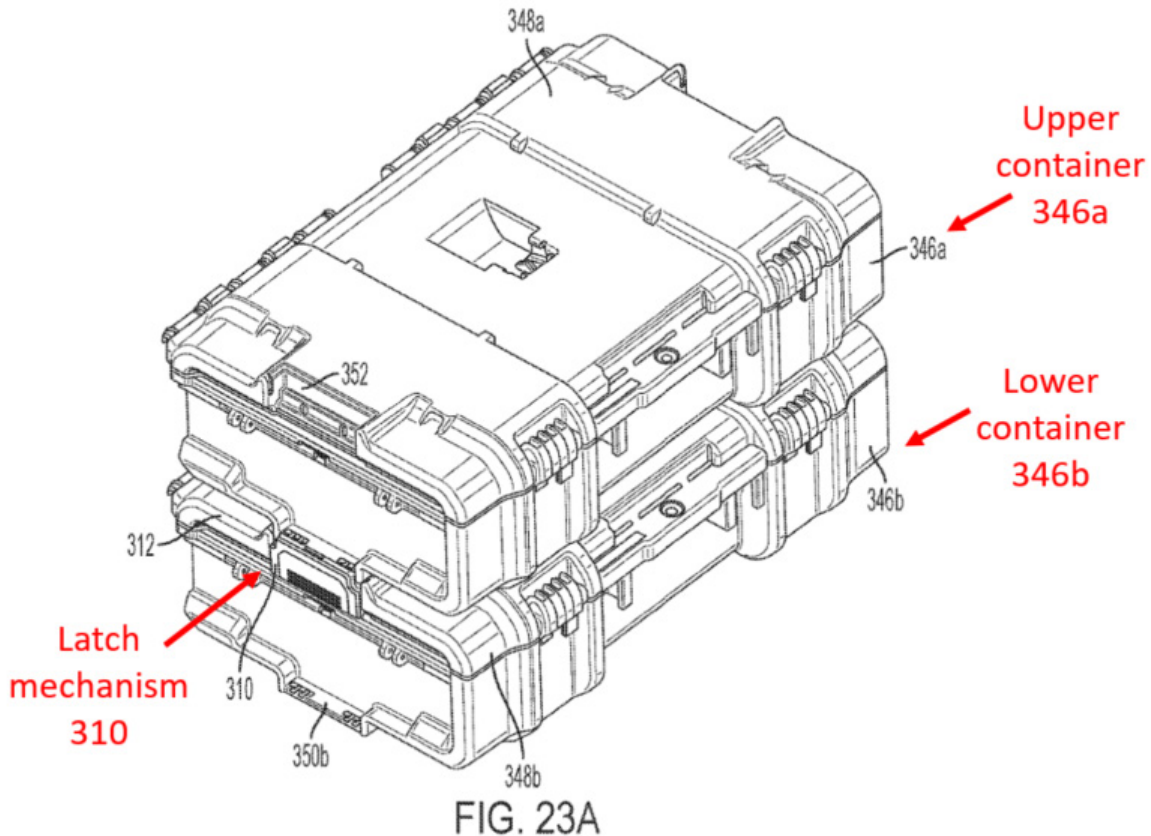
I. Claim 9

356. Claim 9 recites “*The storage box of claim 1, wherein two adjacent storage boxes are interlockable with each other by means of the first connection*

part and the second connection part of the other storage box.”

357. Baruch discloses claim 9 for the reasons provided for [1.P]-[1.A].

Section XVI.A.1-2. Latch mechanism 310 “positively couples stackable containers together.” EX1012, ¶62.



EX1012, FIG. 23A (annotated).

358. For example, as depicted in Figure 23A, Baruch teaches two adjacent storage boxes that are interlockable via latch mechanism 310 of a lower container 346b locking with step 350 of an upper container 346a. EX1012, ¶¶33, 49, 62-63. Thus, Baruch teaches claim 9.

J. Claim 10

359. Claim 10 recites “*The storage box of claim 1, and further comprising a second resilient member, and wherein the locking part comprises of a slot, and wherein the stop part is biased outward from the slot by the second resilient member.*”

360. Baruch discloses claim 10 for the reasons provided for [1.F.1] and [11.G]. Section XVI.A.7, XVI.B. Baruch’s “stopper bias 376” teaches the claimed “*second resilient member,*” and latch 314 defines a slot for holding stopper 370 and stopper bias 376. EX1012, FIGs. 21-22, ¶¶52. “Stopper bias 376 biases the stopper 370 toward its upper position” and therefore biases stopper 370 outward as I explained with reference to [1.F.1]. EX1012, ¶¶52, 63. Baruch therefore teaches claim 10.

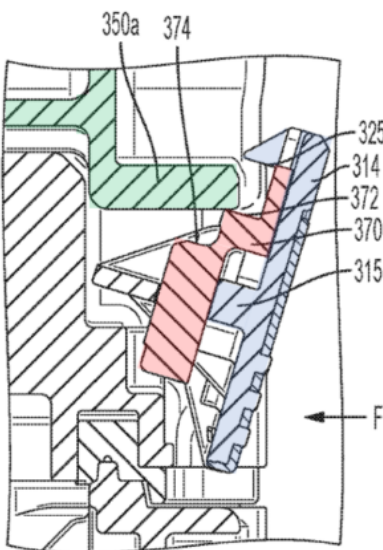


FIG. 25B

Unlocking of latch
mechanism

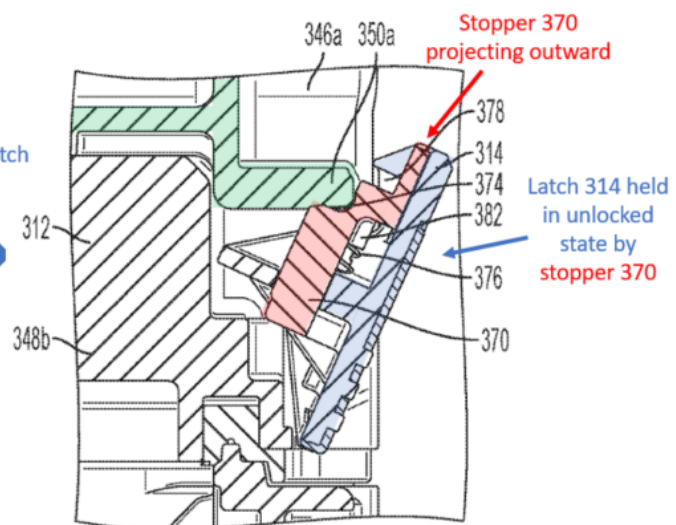


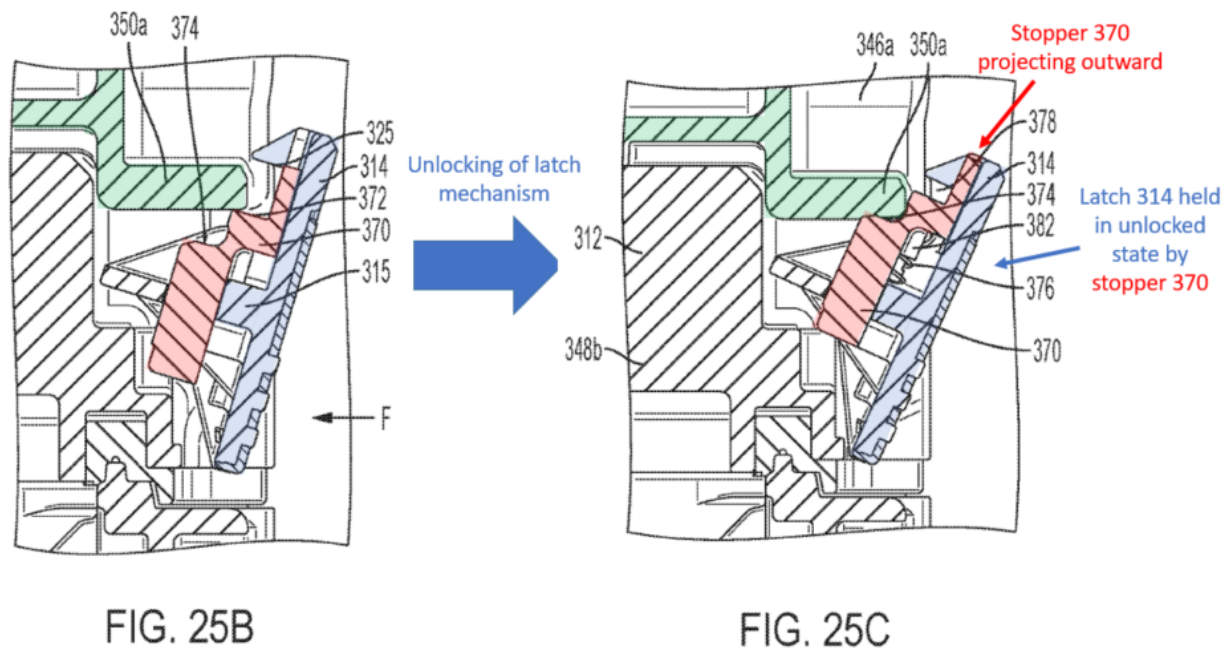
FIG. 25C

EX1012, FIGs. 25B-25C (annotated).

K. Claim 12

361. Claim 12 recites “*The storage box of claim 11, wherein the stop part moves outward relative to the locking part.*”

362. Baruch discloses claim 12 for the reasons provided for [1.F.1] and [11.G]. Sections XVI.A.7, XVI.B. As seen from Figure 25C, Baruch’s stopper 370 (i.e., the claimed “*stop part*”) moves outward relative to latch 314 and latch mechanism 310 to hold latch 314 in an unlocked state. EX1012, ¶¶52, 63. In this manner, Baurch discloses claim 12.



EX1012, FIGs. 25B-25C (annotated).

XVII.GROUND 2B: BARUCH RENDERS OBVIOUS CLAIMS 1-4, 7-12, AND 15.

363. Claims 1-4, 7-12, and 15 would have also been obvious in view of

Baruch.

364. As I explained with reference to Ground 2A, Baruch discloses and teaches each aspect of the claims. Section XVI. I have been informed that a disclosure that anticipates a claim also renders such a claim obvious because anticipation is the epitome of obviousness. With this understanding, Baruch both anticipates and renders obvious claims 1-4, 7-12, and 15 for the reasons that I previous with reference to Ground 2A. Section XVI. To the extent that Patent Owner argues that Baruch does not disclose any particular claim element, a POSA would have still found such a claim element obvious.

365. For example, as I explained with reference to claim elements regarding [1.B], [11.B], and [15.A.2], Baruch's "pins 334" as mounted in "carveout 352" via "holes 356" discloses the claimed "*mounting body*." EX1012, ¶¶54-55; Section XVI.A.3, XVI.B, XVI.C. If Patent Owner argues that this does not disclose the claimed "*mounting body*," a POSA would have still recognized Baruch's disclosure as rendering the claimed "*mounting body*" obvious. Baruch's configuration viewed as carveout 352 as combined with pins 334 extending from holes 356 after attachment provides the same functionality as recited in the '946 patent. EX1012, ¶¶54-55. Specifically, Baruch still describes latch 314, main body 315, and primary hook 315 rotating relative to carveout 352 and pins 334. EX1012, ¶¶54-55. This is the same configuration and function described in the '946 patent,

which describes a locking part 12 (which includes a locking buckle 122) being housed within the mounting body 112 and moving within and relative to the mounting body 112. EX1001, 6:61-67, EX1001, 7:3-7; Section XVI.A.6 ([1.E]).

366. As I explained in Ground 2A, Baruch teaches this same configuration and functionality when latch mechanism 310 and latch 314 move within and relative to carveout 352 and pins 334 EX1012, ¶¶54-55; Sections XVI.A.3, XVI.A.6 ([1.B], [1.E]). Because Baruch describes the same configuration and functionality, a POSA would have additionally found the claimed “*mounting body*” and “*locking buckle movable with respect to said mounting body*” obvious in view of Baruch’s teachings. As I explained in Ground 2A, Baruch’s prior art teachings demonstrate that the claims of the ’946 patent recite a predictable use of well-known prior art elements that operate according to their well-known and expected functions (e.g., a latch mechanism positioned in and moving relative to a lid carveout). EX1001, 6:53-67. Therefore, a POSA would have found claims 1-4, 7-12, and 15 obvious in view of Baruch.

XVIII. GROUND 2C: THE COMBINATION OF BARUCH, BURCHIA, AND HAMMOND RENDERS OBVIOUS CLAIMS 5-6 AND 13.

367. The combination of Baruch, Burchia, and Hammond renders obvious claims 5-6 and 13 for reasons similar to those presented for Ground 1C. Section XIV. As I previously explained with reference to Grounds 2A and 2B, Baruch anticipates and renders obvious independent claims 1 and 11, from which claims 5-

6 and 13 depend. Sections XVI-XVII. As I explained with reference to [11.G], Baruch's "stopper bias 376" teaches the claimed "*second resilient member*." Section XVI.B. Additionally, Burchia teaches that implementing a torsion spring as stopper bias 376 would have been a simple substitution and would have been implemented for locking mechanisms for stackable boxes. EX1008, ¶14. While Burchia does not explicitly provide implementation details for implementing a torsion spring, Hammond provides such a teaching and explains that a torsion spring would have been implemented on a shaft to rotate a stopping part for a latch mechanism. EX1009, ¶¶50, 54, 57, 61. Thus, the combination of Baruch, Burchia, and Hammond renders obvious claim 5-6 and 13.

A. Motivation to combine Baruch, Burchia, and Hammond

368. A POSA would have been motivated to implement a torsion spring as described in Burchia and Hammond in Baruch and would have found implementing a torsion spring to amount to merely combining known elements or a simple substitution of known elements to yield predictable results. As explained in Ground 2A, Baruch already describes a stopper bias 376 that extends and retracts stopper 370. Section XVI.A.7-8, XVI.B. While Baruch describes the compression and expansion of stopper bias 376 and depicts the bias as a spring, Baruch does not provide explicit details on the type of spring to use or implementation details for implementing a spring.

369. While Baruch suggests the use of a “torsion spring” based on ones used as latch bias 320, to implement Baruch’s stopper bias 376, a POSA would have been motivated to identify references describing types of springs used in vertical locking mechanisms and how to implement those springs. EX1012, ¶¶51, 54. This would have led a POSA to identify Burchia and Hammond.

370. As I previously discussed, Burchia explains that many types of springs are available for locking mechanisms used in stackable boxes. *See* Sections XI.C, XIV.A. For example, to displace a locking element under spring stress, “torsion springs” can be used. EX1008, ¶14. Indeed, Baruch already describes the use of a torsion spring in latch mechanism 310. EX1012, ¶¶51, 54. In further view of Burchia’s list of permissible spring choices, a POSA would have recognized that implementing a torsion spring as stopper bias 376 would have been a simple design choice as previously explained. Section XIV.A (Ground 1C).

371. To implement the torsion spring, a POSA would have looked to references such as Hammond, which describe the use of a torsion spring to bias or project a latching component outward. Section XIV.A (Ground 1C); EX1009, Abstract, ¶¶4, 54, 78, FIG.s 1A-1B, 3C. For example, Hammond’s biasing of pawl 80 outward mirrors the same functionality in Baruch, which describes pushing stopper 370 outward as well. EX1012, ¶52. In this manner, both Baruch and Hammond both describe biasing a component of a locking mechanism upward and

outward.

372. With this understanding and in view of Burchia's teachings, a POSA would have been motivated to combine Hammond with Baruch to utilize Hammond's explicit implementation details explaining how to implement a torsion spring to expose or bias a component in the upward direction. A POSA would have implemented Hammond's torsion spring teachings when implementing Baruch's stopper bias 376 to achieve Baruch's functionality.⁸ In this manner, implementing Hammond would have amounted to merely combining known elements or a simple substitution of known elements to yield predictable results and would have resulted in the same functionality described in Baruch. In view of Burchia's teachings, a POSA would have also had a reasonable expectation of success in implementing Hammond's teachings in Baruch.

B. Claim 5

373. Claim 5 recites "*The storage box of claim 4, wherein said second resilient member is a torsion spring with one end against said stop part and the other end against a bottom of said holding slot; when said torsion spring is*

⁸ Notably, bodily incorporation is not required for the combination. A POSA would have understood how to implement Burchia's and Hammond's teachings with Baruch based on their common functionality.

extended, said stop part extends out of said holding slot and when said torsion spring is compressed, said stop part is retracted into said holding slot.”

374. The combination of Baruch, Burchia, and Hammond renders claim 5 obvious. As I explained with reference to [11.G], Baruch’s stopper bias 376 teaches the claimed “*second resilient member.*” Section XVI.B. Baruch in view of Burchia and Hammond teaches the use of a “torsion spring” as stopper bias 376 to provide the same functionality for stopper 370. Sections XVI.A.7-8, XVI.B, XVIII.A. Namely, Burchia teaches that “torsion springs” can be used to “displace [a] locking element under spring stress” and extend and retract similar to Baruch’s stopper bias 376. EX1008, ¶¶11-14, 75-78, 82, 86-87, Cl. 6; Sections XI.C, XIV.A-B. Further, Hammond provides implementation details for using a “torsion spring” to extend and retract a component of a locking mechanism and to bias the component into an extended position. EX1009, FIGs. 1A-1B, 3C, ¶¶8-9, 52, 54-55, 78; Section XI.D, XIV.A-B.

375. In view of these teachings, implementing a torsion spring as Baruch’s stopper bias 376 would have amounted to merely combining known elements or a simple substitution of known elements to yield predictable results for the reasons previously explained. Section XVIII.A.

376. When implementing a torsion spring, a POSA would have recognized that one end would have been positioned against stopper 370 (i.e., the claimed

“stop part”) and the other end would have been positioned against “spring opening 380” or the bottom of slot defined by latch 314 (i.e., the claimed “holding slot”).

Section XVI.B ([11.G]). As seen from Figure 22 from Baruch, Baruch already teaches positioning stopper bias 376 with one end against stopper 370 and the other end against the bottom of the slot defined by latch 314. EX1012, ¶52, FIG. 22.

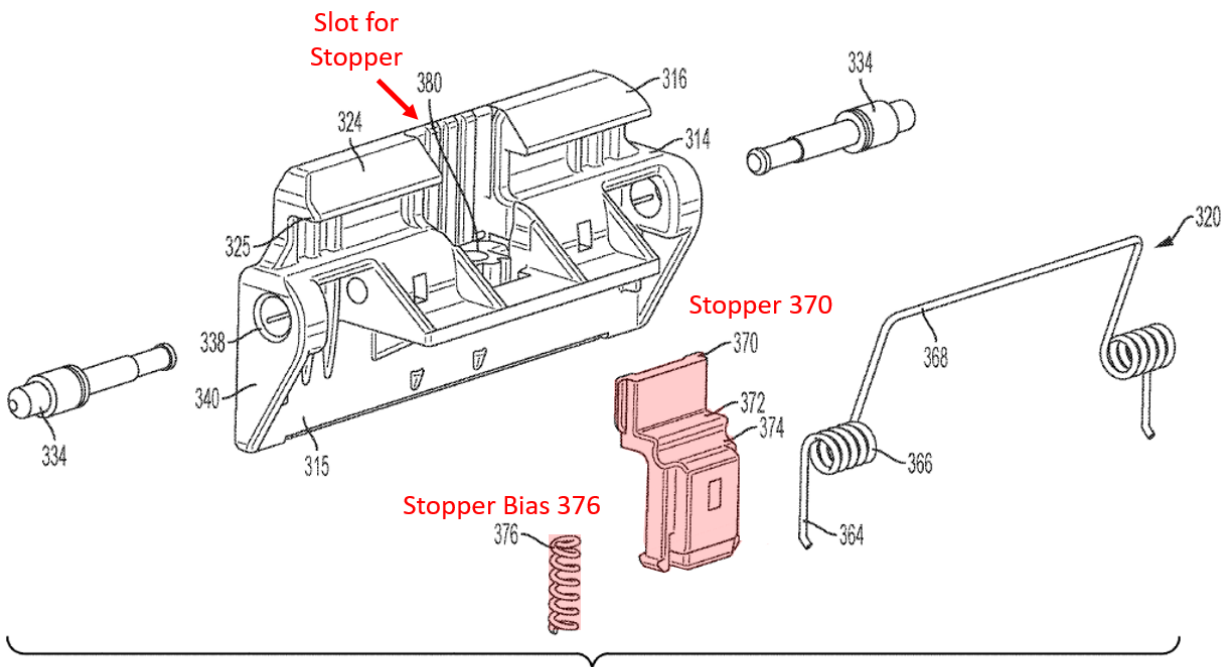


FIG. 22

EX1012, FIG. 22 (annotated).

377. Burchia also teaches this same position as seen from Figures 3 and 4 where spring 31—which again can be a torsion spring—is positioned between a “sliding part 30” and the bottom of a “holding part 32.” EX1008, FIGs. 3-4, ¶¶11, 13-14, 76-78, 82, 84. Thus, a POSA would have found it obvious in view of Baruch and Burchia to position a torsion spring “with one end against said stop

part and the other end against a bottom of said holding slot” as claimed.

378. The combination of Li, Burchia, and Hammond also renders obvious *“when said torsion spring is extended, said stop part extends out of said holding slot and when said torsion spring is compressed, said stop part is retracted into said holding slot” as claimed.*

379. Baruch already describes the extension and retraction of stopper 370 via the extension and compression of stopper bias 376 respectively. Sections XVI.A.7-8, XVI.B, XVI.F. In this manner, when implementing a torsion spring as stopper bias 376, the combination still teaches the same functionality of extending or retracting stopper 370 out of or into the slot defined by latch 314. Sections XVI.A.7-8, XVI.B, XVI.F. Burchia and Hammond further describe this functionality and confirm this understanding as I previously explained. Section XIV.B (Ground 1C).

380. Thus, the combination of Baruch, Burchia, and Hammond renders claim 5 obvious.

C. Claim 6

381. Claim 6 recites *“The storage box of claim 5, and further comprising a shaft connected to said locking part about which said stop part rotates, said shaft being fixed to said locking part; wherein the torsion spring being positioned on said shaft.”*

382. The combination of Baruch, Burchia, and Hammond renders claim 6 obvious. As I explained with reference to claim 5, a POSA would have found the use of a torsion spring to implement Baruch's stopper bias 376 to be obvious in view of Burchia's teachings. Section XVIII.B. As previously explained, Hammond provides additional details for implementing such a torsion spring and therefore discloses the elements of claim 6 when implemented with Baruch. Section XIV (Ground 1C).

383. When combined with Baruch, a POSA would have recognized that the combination teaches biasing a pawl 80 upward via a shaft being "*connected to*" or "*fixed to*" a locking part as claimed. Specifically, Hammond teaches that pin 36b is a "*stationary*" component and that torsion spring 48b is positioned in a manner that is "capable of pivoting or rotation with *respect to the stationary component*["]."
EX1009, ¶61 (emphasis added). In the combination with Baruch, a POSA would have implemented pin 36b in Baruch's latch mechanism 310 (i.e., the claimed "*locking part*") in the same fixed or "stationary" manner described in Hammond to implement a similar torsion spring. Section XVI.A.6. For example, a POSA would have implemented pin 36b with a torsion spring to provide the functionality described with reference to Baruch's stopper bias 376, which is a component of latch 314 and also fixed to latch 314. Section XVI.B ([11.G]).

384. For reasons similar to those that I presented with reference to Ground

1C, the combination of Baruch, Burchia, and Hammond also renders obvious a stop part that rotates about a shaft in view of Hammond's teaching of torsion spring 48b biasing pawl 80 to "auto-rotate to the open position" relative to pin 36b. Section XIV.C (Ground 1C); EX1009, Abstract, ¶¶61, 78, 80.

385. In the combination of Baruch, Burchia, and Hammond, a POSA would have found it obvious to implement a similar stopper 370 that rotates around a shaft. Sections XIV.C (Ground 1C), XVIII.A. For example, when using a torsion spring with Baruch's latching mechanism 310, a POSA would have also implemented a stop part capable of rotating around a shaft similar to pawl 80, torsion spring 48b, and pin 36b. Namely, as seen from Hammond's teaching of an extended and retracted position for pawl 80, a POSA would have recognized that implementing a rotatable stop part using a torsion spring and pin would have provided the same functionality recited in Baruch for stopper 370 and stopper bias 376—i.e., biasing stopper 370 upward or outward via a spring action. EX1009, FIGs. 1A-1B. In this manner, because both Hammond and Baruch provide the same functionality, a POSA would have recognized that using a rotatable stop part would have been a simple design choice, which results from combining known elements or implementing a simple substitution of known elements to yield predictable results. Section XVIII.A.

386. Thus, the combination of Baruch, Burchia, and Hammond renders

claim 6 obvious.

D. Claim 13

387. Claim 13 recites “*The storage box of claim 11, wherein the second resilient member is a torsion spring and the stop part rotates relative to the locking part.*”

388. The combination of Baruch, Burchia, and Hammond renders claim 13 obvious for the reasons I presented for claims 5 and 6. Claim 13 additionally recites the “*stop part rotates relative to the locking part.*” EX1001, Cl. 13. When implementing Hammond with Baruch, a POSA would have recognized that such a rotation would have been obvious based on the rotation of pawl 80 described in Hammond. Section XIV.D (Ground 1C). A POSA would have also found it obvious to implement a rotatable stop part to operate with the torsion spring similar to Hammond’s pawl 80. When operating to provide the functionality of stopper 370 and stopper bias 376, such a rotatable stop part would rotate relative to Baruch’s latch mechanism 310 (i.e., the claimed “*locking part*”) for the reasons I provided for claim 6. Section XVIII.C.

389. Thus, for the reasons provided for claims 5 and 6, the Baruch-Burchia-Hammond combination renders claim 13 obvious.

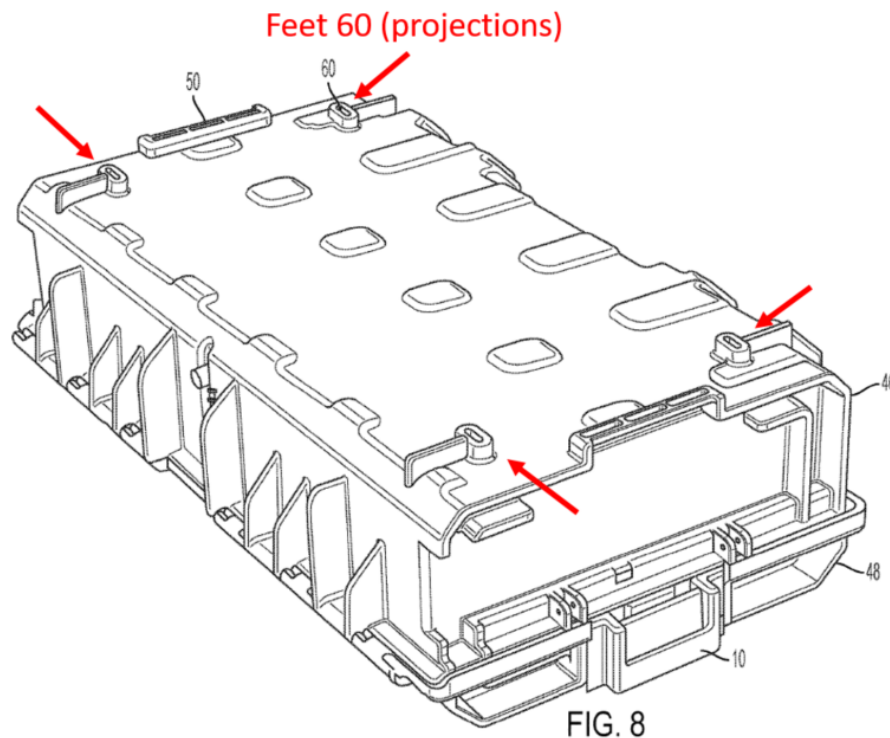
XIX. GROUND 2D: THE COMBINATION OF BARUCH AND DAVIDIAN RENDERS OBVIOUS CLAIMS 14 AND 16.

390. As I previously explained with reference to Grounds 2A and 2B,

Baruch anticipates and renders obvious independent claims 1 and 15, from which claims 14 and 16 depend. The combination of Baruch and Davidian renders claims 14 and 16 obvious. Section XI.E.

A. Motivation to combine Baruch and Davidian

391. A POSA would have been motivated to modify Baruch to include Davidian's projections and recesses to provide additional stability when stacking multiple boxes. At the outset, Baruch already depicts and suggests using projections (feet 60) on the bottom of a container with corresponding depressions on a lid. EX1012, FIGs. 8-9, 12, ¶59.



EX1012, FIG. 8 (annotated).

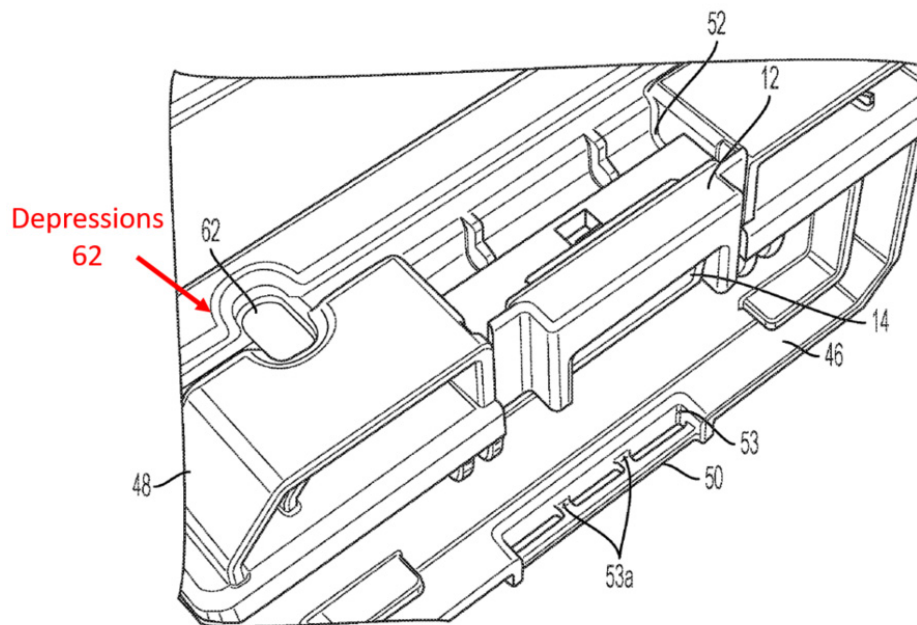


FIG. 9

EX1012, FIG. 9 (annotated).

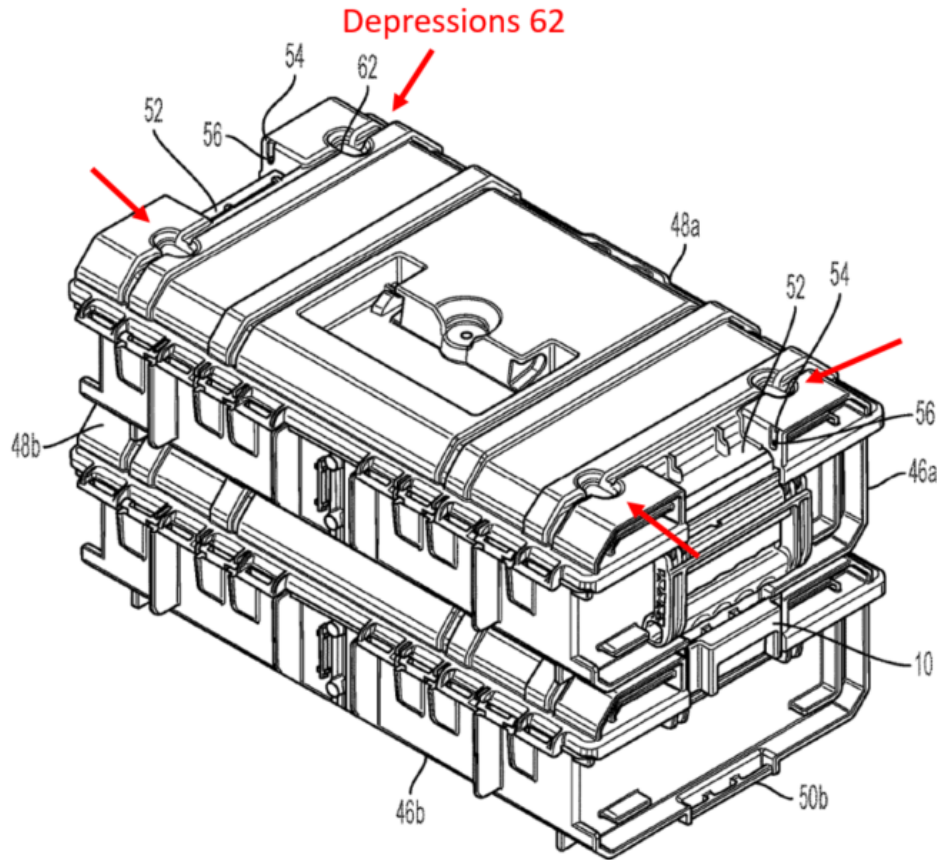


FIG. 12

EX1012, FIG. 12 (annotated).

392. In view of this suggestion, a POSA would have identified and/or recognized that projections could have been implemented on stackable boxes. To further identify possible projection configurations, a POSA would have identified references such as Davidian, which explicitly teaches the use of multiple projection configurations on both the top lid of a storage box and from the bottom of a storage box. Section XI.E; EX1011, ¶¶65-67, FIGs. 8A-8B.

393. A POSA would have been motivated to implement Davidian's

projections and recesses to provide greater stability and reduce movement between the stackable containers in Baruch. EX1011, ¶¶51, 53, 65, 72. As Davidian explains, the “complementary surfaces” depicted on Davidian’s “lid 26 and [] base 22 also limit the lid 26 and base 22 from shifting relative to one another ... while stacked. In this way, the containers 14 are more stable when stacked and are less likely to become unstacked during use and/or transportation.” EX1011, ¶53. The projections and recesses also “limit sliding and/or rotation between toolboxes [] when stacked.” EX1011, ¶83. Accordingly, to take advantage of such benefits, a POSA would have been motivated to modify the stackable containers described in Baruch to include the projections and recesses described in Davidian.

394. Additionally, a POSA would have had a reasonable expectation of success in making this modification because it simply combines well-known prior art elements (projections and recesses on the tops and bottoms of stackable boxes) according to known methods to achieve the predictable result of reducing movement between two stackable boxes. As I previously explained, Davidian provides this explanation and rationale. EX1011, ¶¶53, 83. Further, modifying Baruch to implement Davidian’s teachings amounts to applying a known technique (formation of projections and recesses on a box) to improve a similar stackable container in the same way described in Davidian.

B. Claim Elements [14.A], [16.A]

395. Claim elements [14.A] and [16.A] recite the storage box of claim 1 or 15 further comprising “*a bottom comprising a projection, four sidewalls projecting from the bottom, a hinged lid to access an interior, and a positioning slot on the hinged lid, wherein two adjacent said storage boxes are located with respect to each other by the projection of the bottom and the positioning slot on the lid.*”

396. The combination of Baruch and Davidian teaches [14.A] and [16.A]. Davidian teaches the claimed “*projection*” and “*positioning slot*” as I described with reference to Ground 1D. Section XV.B. Additionally, Baruch and Davidian teach the claimed “*four sidewalls*” as seen from Figure 23A of Baruch and as I previously explained with reference to Ground 1D for Davidian. EX1012, FIG. 23A; Section XV.B (citing EX1011, FIGs. 8A-8B, ¶67).

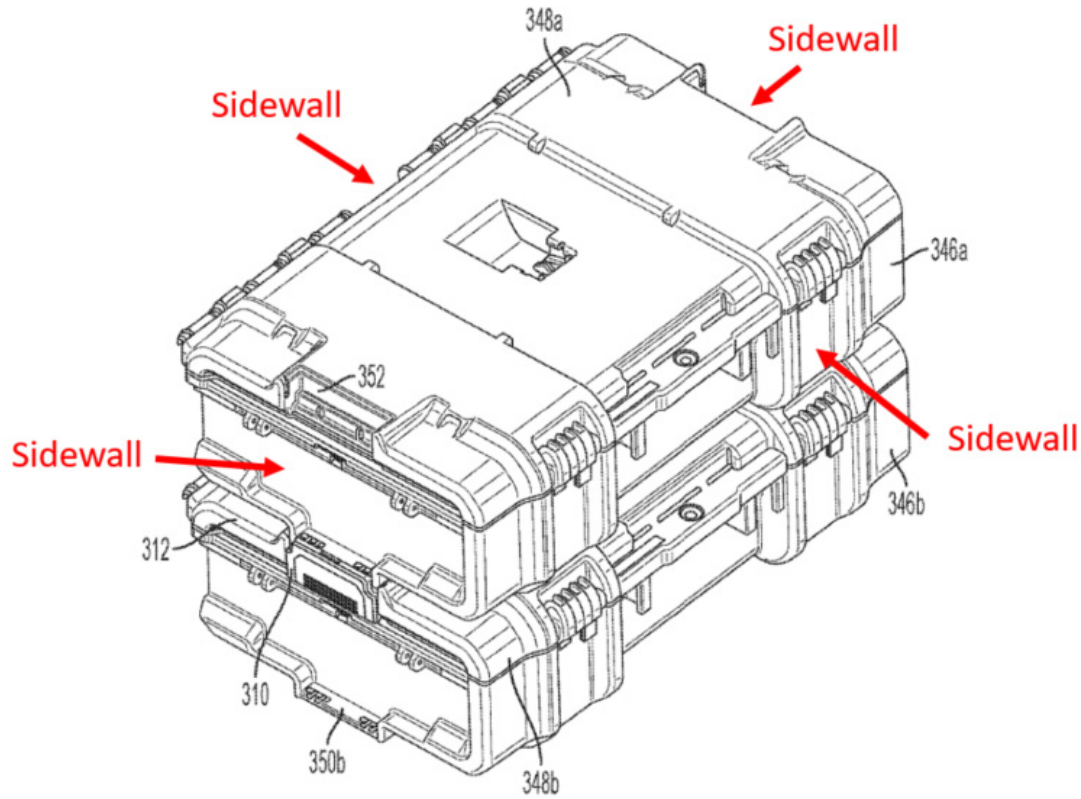
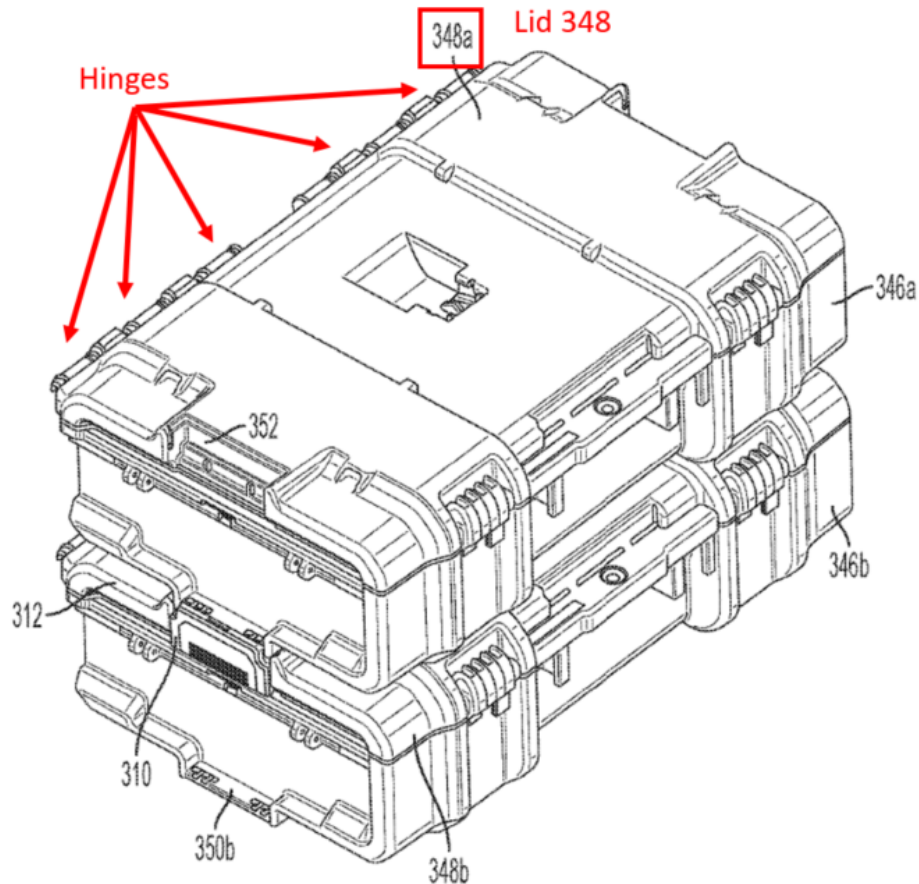


FIG. 23A

EX1012, FIG. 23A (annotated).

397. Baruch and Davidian also teach a “*hinged lid to access an interior*” as claimed. For example, Figure 23A from Baruch depicts a lid 348 with hinges while Davidian explicitly describes such a hinged lid. EX1012, FIG. 23A; EX1011, ¶¶6, 49 (“lid 26 rotatably coupled to the base 22 by a hinge 30”).



EX1012, FIG. 23A (annotated).

398. The combination of Baruch and Davidian also renders obvious “a positioning slot on the hinged lid, wherein two adjacent said storage boxes are located with respect to each other by the projection of the bottom and the positioning slot on the lid.” A POSA would have implemented Davidian’s projection, positioning slot, and recess features (Sections XI.E, XV.B) with Baruch to provide greater stability when stacking multiple storage containers for the reasons previously explained. Sections XV.A, XIX.A. Thus, the combination of

Baruch and Davidian renders obvious [14.A] and [16.A].

C. Claim Elements [14.B], [16.B]

399. Claim elements [14.B] and [16.B] recite “*wherein the lid comprises four projections and the bottom comprises four positioning recesses, wherein two adjacent said storage boxes are located with respect to each other by the projection and the four positioning recesses on the bottom and the positioning slot and the four projections on the lid; wherein the four projections on the lid project upward from a top face of the lid, and the four positioning recesses of the bottom are located in a bottom face.*”

400. The combination of Baruch and Davidian teaches [14.B] and [16.B]. Davidian teaches the claimed projections and positioning recesses for the reasons that I presented in Ground 1D. Section XV.C. Thus, the combination of Baruch and Davidian teaches [14.B] and [16.B]. A POSA would have been motivated to implement Davidian’s projection and recess features with Baruch to provide greater stability when stacking multiple containers. Section XIX.A.

XX. CONCLUSION

401. In signing this declaration, I recognize that the declaration will be filed as evidence in an *inter partes* review before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required, I will appear for cross-examination within the United States during the time allotted.

402. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on this 28th day of August 2025, in Irvine, California.


J. Michael McCarthy, Ph.D.