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(72) Inventor: **Boldetti, Massimiliano**
21020 Buguggiate (IT)

(74) Representative: **Lloyd, Robin et al**
Kilburn & Strode LLP
Lacon London
84 Theobalds Road
London WC1X 8NL (GB)

(71) Applicant: **Samsonite IP Holdings S.À.R.L.**
1931 Luxembourg (LU)

(54) **DEVICES FOR STORING ONE OR MORE CARDS**

(57) A device 1 for storing one or more cards 4 comprises a housing 2 including an opening 3 for receiving one or more cards 4; an ejector mechanism 10 movable relative to the housing 2 to space the one or more cards 4 relative to one another; an actuator 13 configured to actuate the ejector mechanism 10; and one or more gripping elements 14 configured to hold the one or more cards 4 within the housing 2, the one or more gripping elements 14 being configured to be moved relative to the housing 2 by movement of the ejector mechanism 10 and/or the actuator 13.

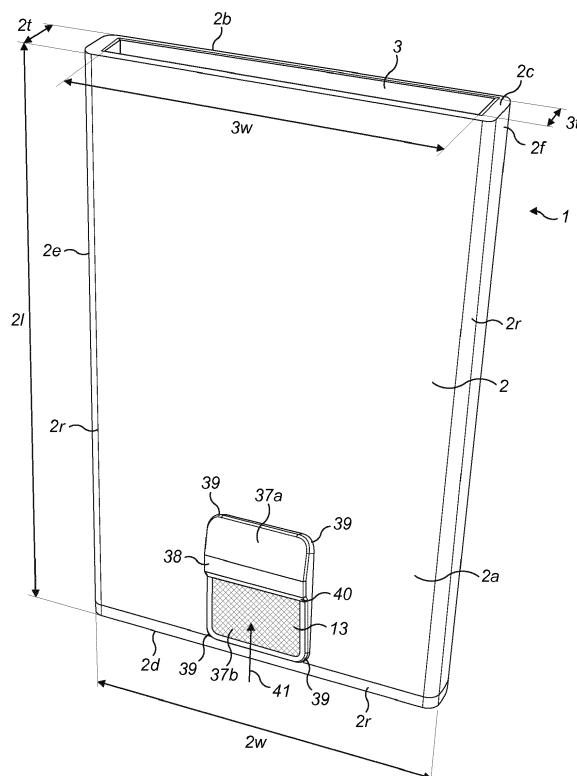


FIG. 1A

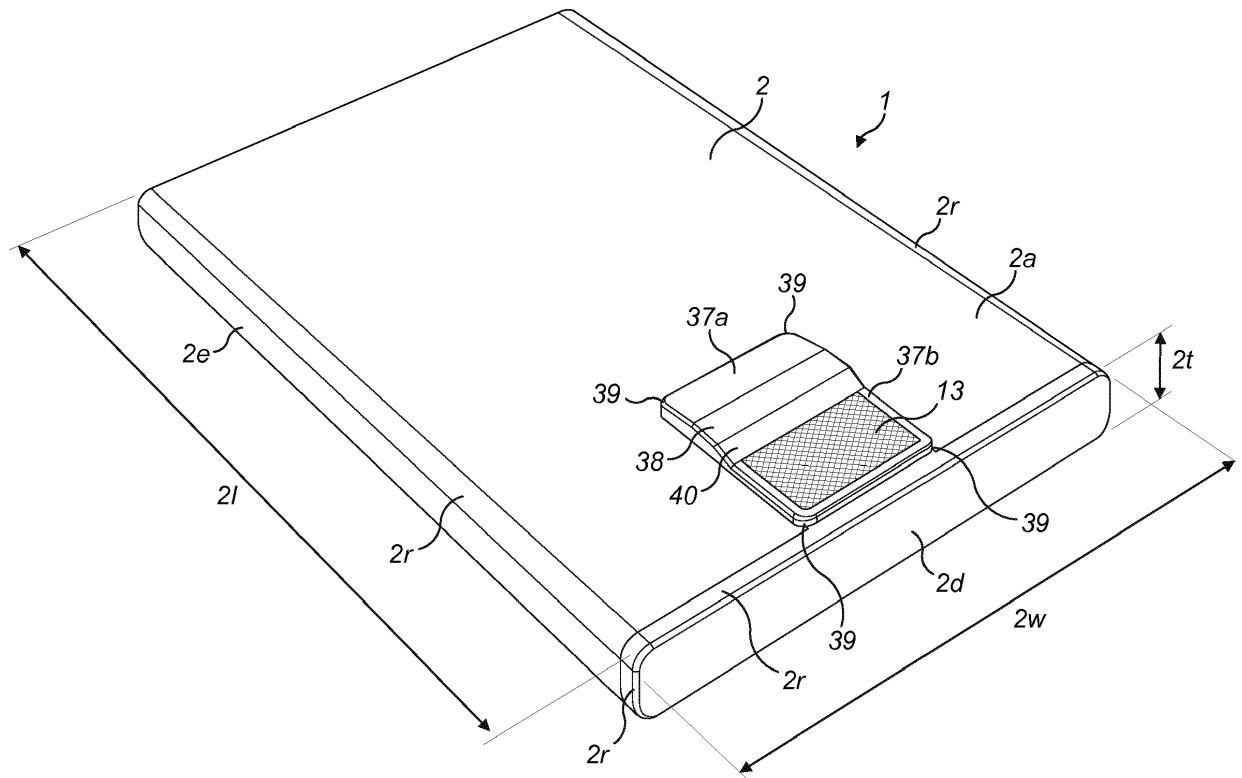


FIG. 1B

Description

FIELD

[0001] The present disclosure relates to devices for storing one or more cards, such as credit cards, identification cards, business cards, and the like. In particular, the present disclosure relates to a device for storing one or more cards having an ejector mechanism movable to space the one or more cards relative to one another.

BACKGROUND

[0002] Devices such as wallets and purses can be used to store cards such as credit cards, identification cards, business cards, and the like. Such devices typically include a plurality of pockets each for holding one card. It can be time consuming for a user of such a device to insert a plurality of cards into such pockets. Furthermore, it can be fiddly and time consuming for a user to find a particular card that they need to use immediately (for example, a credit card, to make a payment with), and to remove said card from the device. Additionally, there is a risk of one or more cards falling out of such a device. It is also desirable to store cards in a compact arrangement.

[0003] EP0287532A2, US5718329A, US2005/224149A1, EP2434922, EP3167744, EP3165122, EP2931078, WO2015009156, EP0844835, WO2017/204644 and WO2017/204645 describe known devices for storing cards.

[0004] The present disclosure seeks to alleviate, at least to a certain degree, the problems and/or address at least to a certain extent, the difficulties associated with the prior art. In particular, the present disclosure seeks to provide a device for storing one or more cards that is comfortable, intuitive and easy to use; can provide easy access to one or more cards; and stores the one or more cards stably and safely.

SUMMARY

[0005] According to an aspect of the disclosure, there is provided a device for storing one or more cards as described in any or all of the accompanying claims or a combination thereof.

[0006] According to an aspect of the disclosure, there is provided a device for storing one or more cards, comprising:

- a housing including an opening for receiving one or more cards;
- an ejector mechanism movable relative to the housing to space the one or more cards relative to one another;
- an actuator configured to actuate the ejector mechanism; and

one or more gripping elements configured to hold the one or more cards within the housing, the one or more gripping elements being configured to be moved relative to the housing by movement of the ejector mechanism and/or the actuator.

[0007] Advantageously, such a device may be comfortable, intuitive and easy to use. In particular, the one or more gripping elements may provide that the effort required by a user of the device to operate the actuator is reduced, thus making the device easier and more comfortable to operate. This is because the gripping elements are arranged to move with movement of the ejector mechanism and/or the actuator, i.e. to move with one or more cards being spaced/indexed by the ejector mechanism, which can encourage cards held by the gripping elements to be urged towards the opening in the housing. In addition, the one or more gripping elements may serve to assist the movement of the ejector mechanism.

[0008] In addition, the device may advantageously provide easy access to one or more cards. In particular, the ejector mechanism may provide that one or more cards can be spaced relative to one another to each protrude from the opening of the housing by a different respective amount so as to provide a user with easy access to the one or more cards in order to remove a particular card from the device.

[0009] Furthermore, the device may advantageously provide for the stable and safe storage of one or more cards. In particular, the one or more gripping elements may provide that the one or more cards are gripped and/or engaged so that they are held within the housing during movement of the ejector mechanism relative to the housing. Advantageously, this may prevent the one or more cards from inadvertently falling out of the housing during movement of the ejector mechanism relative to the housing, and when the one or more cards are spaced relative to one another by the ejector mechanism. The spacing of the cards relative to one another may result in the cards being longitudinally offset from one another and may result in an equal spacing between adjacent cards.

[0010] Optionally, the housing is made from a material that is electromagnetically and/or electrostatically insulating and/or shielding, for example, aluminium.

[0011] Advantageously, such a housing may reduce the likelihood of or prevent so-called electronic pickpocketing, by insulating one or more cards stored inside the housing of the device from electromagnetic and/or electrostatic signals such as RFID (radio frequency identification) signals.

[0012] Optionally, the housing may comprise a generally cuboidal shape.

[0013] Optionally, the housing may comprise a first major face and a second major face, wherein the second major face is arranged parallel to and opposite to the first major face. The housing may further comprise a first minor face and a second minor face, wherein the second minor face is arranged parallel to and opposite to the first

minor face, and wherein the first minor face and the second minor face are arranged adjacent to and perpendicular to the first major face and the second major face of the housing. The housing may further comprise a third minor face and a fourth minor face, wherein the fourth minor face is arranged parallel to and opposite to the third minor face, and wherein the third minor face and the fourth minor face are arranged adjacent to and perpendicular to the first major face, the second major face, the first minor face and the second minor face of the housing.

[0014] Optionally, the first major face and the second major face of the housing each has a larger surface area than each of the first minor face, the second minor face, the third minor face and the fourth minor face of the housing.

[0015] Optionally, the opening of the housing is positioned on one of the first minor face, the second minor face, the third minor face or the fourth minor face of the housing.

[0016] Optionally, the housing may comprise a top face and a bottom face, wherein the bottom face is arranged parallel to and opposite to the top face. The housing may further comprise a left side face and a right side face, wherein the right side face is arranged parallel to and opposite to the left side face, and wherein the left side face and the right side face are arranged adjacent to and perpendicular to the top face and the bottom face. The housing may further comprise a front face and a rear face, wherein the rear face is arranged parallel to and opposite to the front face, and wherein the front face and the rear face are arranged adjacent to and perpendicular to the top face, the bottom face, the left side face and the right side face.

[0017] Optionally, the opening is positioned on one of the left side face, the right side face, the top face and the bottom face of the housing.

[0018] Optionally, the opening is positioned on the top face of the housing.

[0019] Optionally, the housing comprises one or more radiused or bevelled edges.

[0020] Optionally, the opening is substantially rectangular.

[0021] Optionally, the housing is sized so as to receive one or more cards according to ISO/IEC 7810 ID-1.

[0022] Optionally, each of the one or more cards may comprise a first major face and a second major face, wherein the second major face is arranged parallel to and opposite to the first major face. Each of the one or more cards may further comprise a first side and a second side, wherein the second side is arranged parallel to and opposite to the first side, and wherein the first side and the second side are arranged adjacent to and perpendicular to the first major face and the second major face of said card. Each of the one or more cards may further comprise a third side and a fourth side, wherein the fourth side is arranged parallel to and opposite to the third side, and wherein the third side and the fourth side are ar-

ranged adjacent to and perpendicular to the first major face, the second major face, the first side and the second side of said card.

[0023] Optionally, the first major face and the second major face of each of the one or more cards may be substantially rectangular.

[0024] Optionally, the first major face and the second major face of each of the one or more cards may have rounded corners.

[0025] Optionally, each of the first major face and the second major face of each of the one or more cards has a larger surface area than each of the first, second, third and fourth sides of each of the one or more cards.

[0026] Optionally, the opening of the housing is sized to correspond to one of the first, second third or fourth sides of the one or more cards.

[0027] Optionally, the housing and the opening of the housing are sized such that in use, one or more cards can be inserted into the opening of the housing such that the first major face and the second major face of each of the one or more cards lies substantially parallel to the first major face and the second major face of the housing. When more than one card is inserted into the housing, the cards may be stacked atop one another.

[0028] Optionally, the housing and the opening of the housing are sized such that in use, one or more cards can be inserted into the opening of the housing such that the first major face and the second major face of each of the one or more cards lies substantially parallel to the front face and the rear face of the housing.

[0029] Optionally, the first side and the second side of each of the one or more cards are longer than the third side and the fourth side of each of the one or more cards, or the first side and the second side of each of the one or more cards are shorter than the third side and the fourth side of each of the one or more cards. Optionally, the housing and the opening of the housing are sized such that in use, one or more cards can be inserted into the opening of the housing such that either the first side and the second side or the third side and the fourth side of each of the one or more cards lies substantially parallel to the face of the housing that the opening is positioned on.

[0030] Optionally, the ejector mechanism comprises a lever comprising one or more engagement surfaces arranged spaced apart from one another and each for engagement of one of the one or more cards.

[0031] Advantageously, such a lever may provide that the one or more cards can be spaced relative to one another to each protrude from the opening of the housing by a different respective amount so as to provide a user with easy access to the one or more cards in order to remove a particular card from the device. Furthermore, such a lever may advantageously provide that the ejector mechanism is easy to actuate.

[0032] Optionally, the lever has a longitudinal direction that extends along the length of the lever.

[0033] Optionally, at least a portion of each of the one

or more engagement surfaces is arranged or extends perpendicular to the longitudinal direction of the lever.

[0034] Optionally, the one or more engagement surfaces comprise one or more steps.

[0035] Optionally, the one or more steps are spaced apart from one another along the longitudinal direction of the lever.

[0036] Optionally, the one or more steps are equally spaced from one another along the longitudinal direction of the lever.

[0037] Optionally, the lever has a depth that extends perpendicular to the longitudinal direction of the lever.

[0038] Optionally, the one or more steps are equally spaced from one another along the depth of the lever.

[0039] Optionally, the lever has a width that extends perpendicular to the longitudinal direction of the lever and the depth of the lever.

[0040] Optionally, the one or more steps extend at least partially across the width of the lever.

[0041] Optionally, each of the one or more steps comprises a straight portion and a curved portion.

[0042] Optionally, the straight portion of each of the one or more steps is arranged perpendicular to the longitudinal direction of the lever and extends in the direction of the width of the lever.

[0043] Optionally, the curved portion of each of the one or more steps extends from the straight portion at one end thereof and curves towards the longitudinal direction of the lever. When the ejector mechanism is moved, the lower edge of a card in said housing may move by initially following the curved portion.

[0044] Optionally, the lever is configured to pivot relative to the opening of the housing.

[0045] Advantageously, such a lever may provide that the ejector mechanism may be configured to translate and/or push the each of the one or more cards at least partially out of the opening of the housing.

[0046] Optionally, the curved portion of each of the one or more steps is configured to engage and/or contact one of the one or more cards when the lever is pivoted relative to the opening of the housing.

[0047] Optionally, the lever is pivotally coupled to the housing.

[0048] Optionally, the lever has a first end and a second end.

[0049] Optionally, the lever is pivotally coupled to the housing at a point on the lever proximate to the first end of the lever.

[0050] Optionally, the second end of the lever is a free end of the lever.

[0051] Optionally, the lever is pivotally coupled to the housing, at a point on the lever proximate to the first end of the lever, at an end of the housing that is opposite to an end of the housing that the opening is positioned on.

[0052] Optionally, the lever is pivotally coupled to the housing at a first point on the lever.

[0053] Optionally, the lever is configured to be angularly displaced relative to the opening of the housing.

[0054] Optionally, the lever comprises a slot and the lever is pivotally and slidably coupled to the actuator at the slot.

[0055] Advantageously, such a lever may be easy to operate and be movable smoothly, i.e. it may be configured to smoothly pivot and slide relative to the actuator.

[0056] Optionally, the slot may be positioned between the first end of the lever and the second end of the lever.

[0057] Optionally, the slot may be positioned approximately halfway between the first end of the lever and the second end of the lever.

[0058] Optionally, the slot may be positioned closer to the first end of the lever than to the second end of the lever.

[0059] Optionally, the slot may be arranged parallel to the longitudinal direction of the lever.

[0060] Optionally, the slot may have a length that is arranged parallel to the longitudinal direction of the lever, the length of the slot being between approximately one tenth to one third of the length of the lever. Optionally, the length of the slot is between approximately one seventh to one quarter of the length of the lever.

[0061] Optionally, the slot may have rounded corners.

[0062] Optionally, the actuator may comprise a pin, and the slot of the lever may be configured to slidably receive the pin of the actuator.

[0063] Optionally, the housing may comprise a support.

[0064] Optionally, the support of the housing may be arranged opposite to the opening of the housing.

[0065] Optionally, the support of the housing may comprise a recess configured to receive the first end of the lever.

[0066] Optionally, the recess in the support of the housing may be sized and/or shaped so as to allow the first end of the lever to pivot relative to the support of the housing.

[0067] Optionally, the second end of the lever may be curved.

[0068] Optionally, the lever is rigid.

[0069] Advantageously, such a lever may not inadvertently deflect towards or away from either of the side faces or major faces of the housing. This may prevent jamming.

[0070] Optionally, the device further comprises a biasing means configured to bias the lever away from the opening of said housing.

[0071] Optionally, the device further comprises a biasing element configured to bias the lever away from the opening of said housing. When the lever is fully biased away from the opening, the lever may be in a position to allow cards to be fully stored within the housing.

[0072] Advantageously, such a device may be comfortable, intuitive and easy to use. In particular, the effort required by a user to operate the device may be reduced because the user will not have to perform any specific action to move the lever away from the opening of the housing.

[0073] Optionally, the biasing element or the biasing

means may comprise a spring, such as a helical spring.

[0074] Optionally, the spring may be attached at a first end thereof to the housing and at a second end thereof to the lever.

[0075] Optionally, the first end of the spring may be attached to an end or face of the housing that is opposite to the opening of the housing.

[0076] Optionally, the housing may comprise a pin or hook for receiving the first end of the spring.

[0077] Optionally, the second end of the spring may be attached to the lever at a point that is between the first end of the lever and the second end of the lever.

[0078] Optionally, relative to the longitudinal direction of the lever, the second end of the spring may be attached to the lever in the region of (i.e. proximate to) the slot.

[0079] Optionally, the lever may comprise a pin or hook or aperture for receiving the second end of the spring.

[0080] Optionally, the stiffness of the spring may be chosen to optimise the amount of biasing of the lever away from the opening of the housing.

[0081] Optionally, the ejector mechanism comprises a frame and the one or more gripping elements may be arranged on said frame. The gripping elements may be arranged opposite one another to engage a card inserted into the housing.

[0082] Advantageously, such a device provides that the one or more gripping elements are configured to move relative to the housing. Advantageously, one or more the gripping elements may thus serve to assist the movement of the ejector mechanism. In particular, the frame and the one or more gripping elements may provide that the effort required by a user of the device to operate the actuator to actuate the ejector mechanism is reduced. Furthermore, the frame and the one or more gripping elements may provide that the one or more cards are gripped and/or engaged so that they are held within the housing during movement of the ejector mechanism relative to the housing. Advantageously, this may prevent the one or more cards from inadvertently falling out of the housing during movement of the ejector mechanism relative to the housing, and when the one or more cards are spaced relative to one another by the ejector mechanism.

[0083] Optionally, the frame is configured to receive at least a portion of the one or more cards.

[0084] Optionally, the frame is arranged within the housing and is configured to move relative to the housing.

[0085] Optionally, the one or more gripping elements are supported on two substantially parallel opposing arms of said frame.

[0086] Advantageously, such a frame may engage opposing minor faces or sides of the one or more cards.

[0087] Optionally, the frame comprises two substantially parallel opposing arms.

[0088] Optionally, the frame further comprises a base connecting and extending between the two substantially parallel opposing arms of the frame.

[0089] Optionally, the base of the frame is perpendicular

to the two substantially parallel opposing arms of the frame.

[0090] Optionally, the base of the frame and the two substantially parallel opposing arms of the frame each has a generally cuboidal shape.

[0091] Optionally, the frame comprises two substantially opposing arms arranged along minor side faces of the housing; and a base connecting and extending between the two substantially parallel opposing arms of the frame, the base of the frame being arranged opposite to the opening of the housing.

[0092] Optionally, the housing comprises one or more slots configured to receive at least a portion of the frame such that the frame can slide within and relative to the housing.

[0093] Optionally, each of the two substantially parallel opposing arms of the frame comprises a pin configured to be received by slots on opposing faces of the housing.

[0094] Optionally, the two substantially parallel opposing arms of the frame each has a length that is approximately half of the length of the housing.

[0095] Optionally, the housing comprises first and second opposing major faces, and the actuator is arranged on one of said major faces of the housing.

[0096] Advantageously, such a device may be comfortable, intuitive and easy to use. In particular, the actuator being arranged on one of the major faces of the housing may provide that a user may operate the device using only one hand. Specifically, the actuator being arranged on one of the major faces of the housing may provide that a user may be able to operate the actuator and hold and/or support the housing using the same hand. Furthermore, the actuator being arranged on one of the major faces of the housing may provide that a user may operate the actuator using one of their thumbs, and that the actuator is quick and easy to find simply by a user feeling around the device. In other words, a user may be able to quickly and easily find and operate the actuator upon picking the device up or pulling it out of a bag or pocket, for example.

[0097] Optionally, the actuator is arranged on the front face or the back face of the housing.

[0098] Optionally, the actuator comprises a sliding element configured to slide relative to the housing.

[0099] Advantageously, such an actuator may be comfortable, intuitive and easy to operate. In particular, such an actuator may be suitable for a user to control the actuator using a single digit, for example using one finger or one thumb. Furthermore, such an actuator may provide that upon using the device for the first time, a user may be readily able to ascertain how to use the device, in particular, how to operate the actuator.

[0100] Optionally, the sliding element is configured to slide relative to the housing in a longitudinal direction of the housing that runs between the bottom face and the top face of the housing.

[0101] Optionally, the frame is configured to slide relative to the housing and the sliding element is configured

to slide relative to the housing with the frame.

[0102] Optionally, the sliding element is directly connected to the frame.

[0103] Optionally, the sliding element is sized to be substantially flush with one of the major faces of the housing, for example a front face of the housing, such that the device can fit in a user's pocket.

[0104] Optionally, the sliding element is sized and/or shaped to be operated by a user's thumb.

[0105] Optionally, the sliding element comprises a rough or textured portion configured to frictionally engage a user's finger or thumb.

[0106] Advantageously, such a sliding element may be easy to grip and easy to find.

[0107] Optionally, the sliding element is a sliding button.

[0108] Optionally, the frame is configured to move with the actuator, and movement of the frame and/or movement of the actuator causes the lever to pivot relative to the opening of the housing.

[0109] Advantageously, such a device may be comfortable, intuitive and easy to use. For example, such a device may allow the sliding element to be arranged on one of the major faces of the housing, which may provide that a user may operate the device easily and intuitively and using only one hand.

[0110] Optionally, the frame and the sliding element are configured to slide or translate relative to the housing and sliding of the frame and the sliding element causes the lever to pivot relative to the opening of the housing.

[0111] Optionally, the one or more gripping elements are arranged to engage, in use, each of the one or more cards at a lower end thereof that is further from the opening of the housing than an opposing upper end of the one or more cards.

[0112] Optionally, the one or more gripping elements are arranged to engage, in use, each of the one or more cards in a lower portion thereof, for example the lowermost 50% or lowermost 30% or lowermost 25% thereof.

[0113] Advantageously, such one or more gripping elements may provide that the one or more cards are gripped and/or engaged so that they are held within the housing during movement of the ejector mechanism relative to the housing. In particular, such one or more gripping elements may provide that the one or more cards are more stable and safe during movement of the ejector mechanism relative to the housing. This is advantageous because the one or more cards may then be stable and safe within the housing when they are fully or partially stored within the housing.

[0114] Optionally, each of the one or more gripping elements is configured to engage at least a portion of the one or more cards when said one or more cards are inserted into the housing.

[0115] Advantageously, such one or more gripping elements may provide for a large contact area between the one or more gripping elements and the one or more cards. This is particularly advantageous because firstly,

this may provide that the one or more gripping elements better grip and/or engage the one or more cards to hold the one or more cards within the housing more securely. This may prevent the one or more cards from inadvertently falling out of the housing during movement of the ejector mechanism relative to the housing, and when the one or more cards are spaced relative to one another by the ejector mechanism. Secondly, this is advantageous because this may provide that the one or more gripping elements may serve to assist the movement of the ejector mechanism. In other words, such gripping elements may provide that the effort required by a user of the device to operate the actuator to actuate the ejector mechanism is reduced, thus making the device easier and more comfortable to operate.

[0116] Optionally, the opening is for receiving one or more cards according to ISO/IEC 7810 ID-1, each of the one or more cards having a first major face and an opposing second major face; and each of the one or more gripping elements is for engaging at least a portion of one of the major faces of each of the one or more cards.

[0117] Optionally, each of the one or more gripping elements comprises a plurality of holding members each arranged to extend, in use, between the one or more cards.

[0118] Optionally, the holding members may comprise hooks, bristles and/or filaments.

[0119] Optionally, each of the one or more gripping elements comprises a plurality of hooks, bristles and/or filaments. The gripping elements may extend in a transverse direction of the housing, e.g. perpendicular to the side of the frame.

[0120] Advantageously, such one or more gripping elements may provide for improved gripping and/or engagement of the one or more cards, with a large contact area between the one or more gripping elements and the one or more cards. Furthermore, such one or more gripping elements may be adaptable and conformable to a particular set or stack of one or more cards to protrude and/or extend between the one or more cards to better grip and/or engage the one or more cards.

[0121] Optionally, each of the one or more gripping elements comprises a hook side element of a hook and loop fastener, such as a hook side element (e.g. a portion comprising a plurality of hooks or the like) of VELCRO®. This is particularly advantageous over known devices which use other materials such as felt and/or metal fibres, for example, to grip one or more cards within a device, because the hooks may provide engagement with the major faces of the one or more cards. In particular, the hooks may provide a mechanical engagement, for example, a frictional engagement, with the major faces of the one or more cards. Other materials, such as partially resilient and/or deformable materials, including woven fabrics, rubbers, plastics and metals or the like may though still be used as gripping elements with advantageous effect in place of the hook like materials or the like.

[0122] Optionally, one or more of the gripping elements

each further comprises a biasing element, such as a metal spring. The spring may be a plate like spring which engages against the side of a card inserted into the device. An upper gripping element may be provided over said biasing element comprising of hook-like elements, bristles or filaments or the like which engage with a major surface of one or more cards inserted into the device. Additionally, the gripping elements may comprise just the spring without, for example, a hook, bristle or filament like portion.

[0123] Optionally, the respective biasing element of each of the one or more gripping elements is configured to bias said respective gripping element away from the respective arm of the frame that said gripping element is supported on, when a force is applied on said biasing element, such as when one or more cards are inserted into the device.

[0124] Advantageously, such one or more gripping elements may provide for improved gripping and/or engagement of the one or more cards, with a large contact area between the one or more gripping elements and the one or more cards. Furthermore, such one or more gripping elements may be adaptable and conformable to a particular set or stack of one or more cards to protrude and/or extend between the one or more cards to better grip and/or engage the one or more cards. In addition, such one or more gripping elements may provide for a reduced manufacturing complexity and a reduced manufacturing cost of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0125] The present disclosure may be carried out in various ways and examples will now be described with reference to the accompanying drawings, in which:

Figure 1A shows a perspective view of a device for storing one or more cards;

Figure 1B shows an alternative perspective view of the device of Figure 1A;

Figure 2 shows a side view of the device of Figure 1A;

Figure 3 shows a perspective view of the device of Figure 1A with a plurality of cards inserted in the device;

Figure 4 shows a rear view of the inside of the device of Figure 1A with an ejector mechanism of the device in a retracted position;

Figure 5A shows a front view of the inside of the device of Figure 1A with the ejector mechanism in a retracted position;

Figure 5B shows a front view of the inside of the device of Figure 1A with the ejector mechanism in an intermediate position;

Figure 5C shows a front view of the inside of the device of Figure 1A with the ejector mechanism in an extended position;

Figure 6A shows a rear perspective view of the inside of the device of Figure 1A with the ejector mechanism

in an extended position;

Figure 6B shows a rear perspective view of the inside of the device of Figure 1A with the ejector mechanism in an intermediate position;

Figure 6C shows a rear perspective view of the inside of the device of Figure 1A with the ejector mechanism in a retracted position;

Figure 7 shows a rear view of part of the inside of the device of Figure 1A, with a plurality of cards inserted in the device, with the ejector mechanism in a retracted position;

Figure 8 shows a front view of part of the inside of the device of Figure 1A, with the ejector mechanism in a retracted position;

Figure 9 shows a lever;

Figure 10 shows a side view of a portion of a frame and a gripping element;

Figure 11 shows a perspective view of part of the inside of a device; and

Figure 12 shows a front view of part of the inside of a device.

DETAILED DESCRIPTION

[0126] Figure 1A shows a front perspective view of a device 1 for storing one or more cards. Figure 1B shows a top perspective view of the device 1. Figure 2 shows a side view of the device 1. Each of the elements of the device 1 shall firstly be introduced and described. Their connection with and relative to one another will then be discussed. The operation and advantages of the device 1 will be described later in this application.

[0127] The device 1 comprises a housing 2, which includes an opening 3 for receiving one or more cards 4 (shown in Figure 3). The housing 2 has a generally cuboidal shape and comprises a front face 2a, a rear face 2b, a top face 2c, a bottom face 2d, a left side face 2e, and a right side face 2f. The names of the faces 2a-f are intended purely to illustrate the relative orientation of the faces 2a-f relative to one another, and should not be considered to be limiting in terms of their spatial orientation or otherwise. For example, the face 2b is opposite to the face 2a. The faces 2a and 2b may also be collectively referred to herein as "major faces" of the housing 2, and the faces 2c, 2d, 2e and 2f may be collectively referred to herein as "minor faces" of the housing 2. This is because the faces 2a and 2b have a larger surface area than the faces 2c, 2d, 2e and 2f.

[0128] The faces 2a and 2b are arranged parallel to and opposite to one another. The faces 2c and 2d are arranged parallel to and opposite to one another, and are perpendicular to the faces 2a and 2b. The faces 2e and 2f are arranged parallel to and opposite to one another, and are perpendicular to the faces 2a, 2b, 2c and 2d. The housing 2 comprises radiused/curved edges 2r between adjacent faces, for example faces 2a and 2f, 2f and 2b, 2b and 2e, 2e and 2a, 2d and 2a, 2d and 2f, 2d and 2b and 2d and 2e.

[0129] In the example, the housing 2 is made from aluminium. Advantageously, this prevents so-called electronic pickpocketing, by insulating one or more cards 4 stored inside the housing 2 of the device 1 from electromagnetic and/or electrostatic signals such as RFID (radio frequency identification) signals. Though, it is also envisaged that the housing may be made from any other suitable material to provide structural integrity and/or electromagnetic insulation.

[0130] The opening 3 is generally rectangular in shape and is sized to receive a plurality of cards, such as those according to ISO/IEC 7810 ID-1. Though, it is also envisaged that the opening 3 may be sized to receive a plurality of any other cards, for example cards of the credit card type, identity card type, business card type, or wallet type. In the exemplary arrangement shown in Figures 1A, 1B and 2, the side faces 2e and 2f have a larger surface area than the top face 2c and the bottom face 2d, and the opening 3 is positioned on the top face 2c of the housing 2, such that the housing 2 has a "portrait" orientation. Though, it is also envisaged that the opening 3 may alternatively be positioned on one of the side faces 2e and 2f of the housing 2, to allow cards to be received from a different side.

[0131] Figure 3 shows the device 1 with a plurality of cards 4 each partially inserted into the opening 3 of the housing 2. The plurality of cards 4 are substantially identical in geometry, for example each sized according to ISO/IEC 7810 ID-1. Though, it is also envisaged that the cards 4 may be any cards of the credit card type, identity card type, business card type, or wallet type. The respective faces of each of the plurality of cards 4 shall now be described with reference to one of the plurality of cards 4, card 4f.

[0132] Only a portion of the card 4f is shown in Figure 3, as the card 4f is partially inserted into the opening 3 of the housing 2. The card 4f is generally rectangular in shape, with rounded corners 5, and has a first major face 6 and a second major face 7 (shown in Figure 7), wherein the second major face 7 is arranged parallel to and opposite the first major face 6. The card 4f also has a first side 8 and a second side (not shown), wherein the second side is arranged parallel to and opposite to the first side 8, and wherein the first side 8 and the second side are arranged adjacent to and perpendicular to the first major face 6 and the second major face 7 of the card 4f. The card 4f also has a third side 9 and a fourth side (not shown), wherein the fourth side is arranged parallel to and opposite to the third side 9, and wherein the third side 9 and the fourth side are arranged adjacent to and perpendicular to the first major face 6, the second major face 7, the first side 8 and the second side of said card 4f. The faces 6 and 7 of the card 4f are referred to collectively herein as "major faces" of the card 4f because they have a larger surface area than the first side 8, the second side, the third side 9 and the fourth side of the card 4f.

[0133] As shown in Figure 3, the housing 2 and the

opening 3 are sized to receive and store the plurality of cards 4 such that each of the cards 4 has its respective first major face 6 and second major face 7 orientated parallel to the front face 2a and the rear face 2b of the housing. In other words, each of the cards 4 has a length 4l, a width 4w and a thickness 4t. The housing 2 also has a length 2l, a width 2w and a thickness 2t. The opening 3 has a width 3w and a depth 3t (shown in Figure 1A). The length 2l of the housing 2 is greater than the length 4l of each of the cards 4. The width 2w of the housing 2 is greater than the width 4w of each of the cards 4. The thickness 2t of the housing 2 is greater than the combined total thickness of a desired number of cards 4, which in the example shown in Figure 3 is at least 6 cards. Similarly, the width 3w of the opening 3 is greater than the width 4w of each of the cards and the depth 3t of the opening 3 is sized to receive a desired number of cards 4, based on their combined total thickness, wherein in the example shown in Figure 3 there are 6 cards.

[0134] The terms "length", "width" and "depth" as used in relation to the directions 2l, 2w, 2t, 3w, 3t, 4l, 4w, and 4t are intended purely to illustrate the relative orientation of the directions 2l, 2w, 2t, 3w, 3t, 4l, 4w and 4t relative to one another, and should not be considered to be limiting in terms of their spatial orientation or otherwise. For example, when the device 1 is orientated such that the opening 3 is on the "top" of the device 1, Figure 3 shows that the opening 3 is sized to receive the first side 8 of each of the cards 4, which is illustrated in Figure 3 as being the "short" side of each of the cards 4, such that each of the cards 4 is inserted into the opening 3 in a "portrait" orientation. Though, it is also envisaged that the opening 3 may be sized to receive the third side 9 or the fourth side of each of the cards 4, which may be a "long" side of each of the cards, such that when the device 1 is orientated such that the opening 3 is on the "top" of the device 1, each of the cards 4 is inserted into the opening 3 in a "landscape" orientation.

[0135] The inside of the device 1 shall now be described. Figure 6A shows a rear perspective view of the inside of the device 1, with the housing 2 shown partially cutaway, to clearly show the inside of the device 1. The housing 2 is also shown partially cutaway in Figures 4, 5A, 5B, 5C, 6B, 6C, 7 and 8, for the sake of clarity. The device 1 further comprises an ejector mechanism 10. The ejector mechanism 10 comprises a lever 11 and a frame 12.

[0136] The ejector mechanism 10 is movable relative to the housing 2 to space the plurality of cards 4 relative to one another, as shown in Figure 7. The ejector mechanism 10 is shown in Figure 6A as being in an extended position. Figure 6B shows the ejector mechanism 10 in an intermediate position. Figure 6C shows the ejector mechanism in a retracted position. Figure 4 shows a rear view of the ejector mechanism in a retracted position. Figures 5A, 5B and 5C show a front view of the ejector mechanism in a retracted position, an intermediate position, and an extended position respectively.

[0137] The device further comprises a sliding button 13, which is configured to actuate the ejector mechanism 10.

[0138] The lever 11 of the ejector mechanism 10 shall now be described. The lever 11 has a first end 15a and a second end 15b, and a longitudinal direction 16 that extends along the length of the lever 11. The housing 2 comprises a support 17, which is arranged adjacent the bottom face 2d of the housing. In the example shown in Figure 6A, the bottom face 2d of the housing is integrally formed with the support 17. Though, it is also envisaged that the bottom face 2d of the housing may be attached to the support 17.

[0139] A point 18 on the lever 11 proximate the first end 15a of the lever 11 is pivotally coupled to the support 17 of the housing 2 at a point on the support 17 that is approximately one third of the way along the length of the support 17. Though, it is also envisaged that the lever 11 may be pivotally coupled to the support 17 at any other point along the length of the support 17, such as approximately halfway along the length of the support 17. In the example shown in Figure 6A, the point 18 comprises a through hole of the lever 11, and the support 17 comprises a pin 19 that is configured to be received by the point 18 of the lever 11. Though, it is envisaged that any other suitable mechanical connection or coupling may be used to pivotally couple the first end 15a of the lever 11 to the support 17. For example, instead of the lever 11 comprising a through hole at the point 18 that receives a pin 19 of the support 17, the support 17 may comprise a through hole (not shown) that receives a pin (not shown) at the point 18 on the lever 11.

[0140] In the example shown in Figure 6A, the first end 15a of the lever 11 is curved and the support 17 comprises a curved recess 17a sized to receive the curved first end 15a of the lever 11 and to allow space for the first end 15a of the lever 11 to be angularly displaced within the recess 17a as the lever 11 pivots about the point 18. The second end 15b of the lever 11 is also curved.

[0141] The second end 15b of the lever 11 is a free end of the lever 11. In other words, the second end 15b of the lever 11 may move relative to the housing. Accordingly, the lever 11 is configured to be angularly displaced relative to the support 17. In other words, in the extended position of the ejector mechanism 10 shown in Figure 6A, the lever 11 is pivoted about pin 19 such the second end 15b of the lever 11 moves away from the support 17 and towards the opening 3 of the housing 2, such that the angular displacement of the lever 11 is at a maximum relative to the support 17. In the retracted position of the ejector mechanism 10 shown in Figure 6C, the lever 11 is pivoted towards the support 17 and away from the opening 3 of the housing 2, such that the angular displacement of the lever 11 is at a minimum relative to the support 17. Figure 6B shows an intermediate position of the ejector mechanism 10 which is between the positions shown in Figures 6A and 6C, wherein the lever 11 is at

an intermediate value of angular displacement relative to the support 17.

[0142] The lever 11 comprises a slot 20, which is shown in further detail in Figures 7, 8 and 9. The slot 20 is positioned between the first end 15a and the second end 15b of the lever 11 and has a length 21. The slot 20 is orientated to be parallel to the longitudinal direction 16 of the lever along the length 21 of the slot 20. In the example shown in Figure 9, the slot 20 is positioned closer to the first end 15a of the lever 11 than the second end 15b of the lever. Though, it is also envisaged that the slot 20 may be positioned at any other location between the first end 15a and the second 15b along the lever 11. The longitudinal position of the slot 20 along the lever 11 may be chosen depending on the desired motion and/or geometry of the ejector mechanism 10.

[0143] In the example shown in Figure 9, the length 21 of the slot 20 is between approximately one sixth to one fifth of the total length (measured along the longitudinal direction 16 of the lever 11) of the lever 11. The slot 20 is generally rectangular in shape and has radiused/curved ends 22 in the example shown in Figure 9. Though, it is envisaged that the slot 20 may be any other suitable shape, for example an arc-shaped slot or a rectangular slot with non-radiused ends.

[0144] The sliding button 13 comprises a pin 13a on a rear side thereof. The slot 20 of the lever 11 is configured to slidably receive the pin 13a of the sliding button 13. In the example shown in Figures 6A, the pin 13a is generally cylindrical in shape. Though, it is also envisaged that the pin 13a may be any other suitable shape, for example any prism. As shown sequentially in Figures 6A, 6B and 6C, where the ejector mechanism 10 is shown progressively moving from the extended position through to the retracted position, and as also shown sequentially in Figures 5A, 5B and 5C, where the ejector mechanism 10 is shown progressively moving from the retracted position through to the extended position, the pin 13a is configured to slide within/along the slot 20 as the ejector mechanism 10 moves, in particular, as the lever 11 pivots relative to the support 17. In the example shown in Figure 6A, the generally cylindrical pin 13a has a diameter that corresponds generally with a width 20w of the slot 20 and with the radiused/curved ends 22 of the slot 20.

[0145] Although the example shown in Figure 6A shows that the lever 11 is pivotally and slidably coupled to the sliding button 13 by the slot 20 and the pin 13a, it is also envisaged that any other suitable mechanical connection may be used to pivotally and slidably couple the lever 11 to the sliding button 13. For example, instead of the lever 11 having a slot 20 and the sliding button 13 having a pin 13a that is received by the slot 20 of the lever, the lever 11 could have a pin (not shown) that is received by a slot (not shown) on the sliding button 13. Advantageously, the lever 11 is able to smoothly pivot and slide relative to the sliding button 13.

[0146] Turning now to Figure 9, which shows an enlarged view of the lever 11, the lever 11 comprises a

plurality of steps 23. The steps 23 are arranged on a portion of the lever 11 that is proximate to the second end 15b of the lever and distal from the first end 15a of the lever. The steps 23 are configured to engage the plurality of cards 4. In the example shown in Figure 9, each one of the steps 23 is configured to engage one of the cards 4. Though, it is also envisaged that the steps 23 may be configured to each engage more than one of the cards 4. The dimensions of the steps 23 relative to the cards 4 may be chosen to achieve this.

[0147] The steps 23 are equally spaced apart from one another along the longitudinal direction 16 of the lever 11 in the example shown in Figure 9. Though, it is also envisaged that the steps 23 may be spaced apart from one another along the longitudinal direction 16 of the lever 11 by different respective amounts. For example, the respective spacings of the steps 23 along the longitudinal direction 16 of the lever 11 may be chosen depending on the desired spacing/indexing amount of the cards 4 which is to be caused by movement of the ejector mechanism 10, which shall be discussed in more detail below. In other words, if it is desired to space apart some of the cards 4 more than others, then the steps 23 may be positioned to be unequally spaced along the longitudinal direction 16 of the lever 11.

[0148] The lever 11 has a depth that extends perpendicular to the longitudinal direction 16 of the lever 11. In the example shown in Figure 9, the depth of the lever 11 extends in a direction that is perpendicular to the page. The steps 23 are equally spaced from one another along the depth of the lever 11. This is shown in the example of Figure 6A. Though, it is also envisaged that the steps 23 may be spaced apart from one another along the depth of the lever 11 by different respective amounts. For example, the respective spacings of the steps 23 along the depth of the lever 11 may be chosen depending on how many cards 4 it is desired for each of the steps 4 to engage. For example, the spacings of the steps 23 along the length of the lever 11 may be increased if it is desired for some or all of the steps 23 to each engage more than one card 4.

[0149] The lever 11 has a width 24 that extends perpendicular to the longitudinal direction 16 and the depth of the lever 11. Each of the steps 23 has a straight portion 23a and a curved portion 23b. The straight portion 23a of each of the steps 23 extends in the direction of the width 24 of the lever 11 and is substantially perpendicular to the longitudinal direction 16 of the lever 11. The curved portion 23b of each of the steps 23 extends from the straight portion 23a and curves through 90 degrees towards the longitudinal direction 16 of the lever 11. This is shown in the example of Figure 9. It is also envisaged that each of the steps 23 may have any other suitable shape. The shape of the steps 23 may be chosen depending on the desired engagement path of the steps 23 and the cards 4. For example, each of the steps 23 may be entirely straight or may be entirely curved, for example they may have a semicircle shape.

[0150] The lever 11 is substantially rigid, such that during use of the device 1, in particular, during movement of the ejector mechanism 10, the lever 11 will not inadvertently deflect towards or away from the major faces 2a, 2b (i.e. the front face 2a and the rear face 2b) of the housing 2. The material and/or geometry of the lever 11 may be chosen to optimise the rigidity of the lever 11.

[0151] The frame 12 of the ejector mechanism 10 shall now be described. As shown in Figure 6A, the frame 12 comprises two substantially parallel opposing arms 32a and 32b. The frame 12 further comprises a base 33 that connects and extends between the arms 32a and 23b. The base 33 of the frame is perpendicular to the arms 32a and 32b. The base 33 and the arms 32a and 32b each has a generally cuboidal shape. Though, it is envisaged that the base 33 and the arms 32a and 32b may comprise any other suitable shape.

[0152] The frame 12 is arranged inside the housing 2 and is sized accordingly, to fit inside the housing 2 and to receive a portion of the cards 4. In particular, the base 33 of the frame 12 is orientated to be parallel with the opening 3, the top face 2c and the bottom face 2d of the housing 2. The base 33 of the frame 12 is arranged to be proximate to the bottom face 2d of the housing 2 when the ejector mechanism 10 is in the retracted position, as shown in Figure 6C. The arm 32a of the frame 12 is orientated to be parallel with the side faces 2e and 2f of the housing 2. The arm 32a of the frame 12 is arranged to be proximate to the side face 2f of the housing 2. Similarly, the arm 32b of the frame 12 is also orientated to be parallel with the side faces 2e and 2f of the housing 2. The arm 32b of the frame 12 is arranged to be proximate to the side face 2e of the housing 2.

[0153] The frame 12 is configured to move relative to the housing 2. In particular, the frame 12 is configured to slide inside the housing 2, relative to the housing 2. This is shown sequentially in Figures 6A, 6B and 6C. In Figure 6A, the ejector mechanism 10 is in an extended position and the frame 12 is at a position of maximum height relative to the support 17 of the housing 2, with respect to the length 2l of the housing. In other words, in the extended position of the ejector mechanism 10, the frame 12 is at a maximum translational displacement from the support 17 of the housing 2. In Figure 6C, the ejector mechanism 10 is in a retracted position and the frame 12 is at a position of minimum height relative to the support 17 of the housing 2. In other words, in the retracted position of the ejector mechanism 10, the frame is at a minimum translational displacement from the support 17 of the housing 2, with respect to the length 2l of the housing.

[0154] In order to guide the frame 12 as it slides inside the housing 2, in the examples shown, the side walls 2e and 2f of the housing 2 comprise slots 34e and 34f respectively, as shown in Figure 6B. The slots 34e and 34f are substantially rectangular in shape and have radiused/rounded corners. The slots 34e and 34f are orientated along the length 2l of the housing 2. In other words,

the slots 34e and 34f are orientated to be parallel to the direction 35 along which the frame 12 is configured to slide relative to the housing 2. The arm 32a of the frame 12 comprises a pin 36a. The pin 36a is configured to be received by the slot 34f and to slide within, i.e. along the length of, the slot 34f. The pin 36a is substantially cuboidal in shape and is sized according to the width of the slot 34f. Though, it is envisaged that the pin 36a may be any other suitable shape, such as a cylinder. The arm 32b of the frame also comprises a pin (not shown), that is substantially identical to the pin 36a. The pin of the arm 32b is configured to be received by the slot 34e and to slide within, i.e. along the length of, the slot 34e. In this manner, the frame 12 is able to slide inside and relative to the housing 2. Though, it is envisaged that the frame 12 may be configured to slide inside and relative to the housing 2 using any other suitable mechanical connection or mechanism between the frame 12 and the housing 2.

[0155] The frame 12 is connected to and may be formed integrally with the sliding button 13. The frame 12 and the sliding button 13 are configured to move relative to the housing 2 together. In this manner, since the lever 11 is pivotally and slidably coupled to the sliding button 13, the lever 11 is hence also indirectly pivotally and slidably coupled to the frame 12. This can be understood by referring to Figures 5A, 5B and 5C, or alternatively Figures 6A, 6B and 6C. In Figure 6A, the ejector mechanism 10 is in the extended position, wherein the lever 11 is at a maximum angular displacement relative to the support 17 of the housing, and the frame 12 is at a position of maximum translational displacement from the support 17 of the housing 2. This is provided by the above described mechanical connections between the lever 11, the frame 12, the sliding button 13 and the housing 2. Correspondingly, in Figure 6C, the ejector mechanism 10 is in the retracted position, wherein the lever 11 is at a minimum angular displacement relative to the support 17 of the housing 2, and the frame 12 is at a position of minimum translational displacement relative to the support 17 of the housing 2. Figure 6B shows the intermediate positions of the lever 11 and the frame 12, when the ejector mechanism 10 is in an intermediate position that is between the extended and retracted positions.

[0156] As described above, in the examples shown, the lever 11 is slidably and pivotally coupled to the sliding button 13, and the frame 12 is connected to the sliding button 13, such that pivotal movement of the lever 11 results in translational movement of the frame 12, and such that translational movement of the frame 12 results in pivotal movement of the lever 11. Though, it is also envisaged that the lever 11 may alternatively be slidably and pivotally coupled to the frame 12, rather than to the sliding button 13, with the frame 12 still being connected to the sliding button 13. In this case, pivotal movement of the lever 11 would also result in translational movement of the frame 12, and translational movement of the

frame 12 would also result in pivotal movement of the lever 11.

[0157] The form and function of the sliding button 13 shall now be described in more detail. As shown in Figure 1A, the sliding button 13 is arranged on the front face 2a of the housing 2. Though, it is also envisaged that the sliding button may be arranged on any one of the faces 2a, 2b, 2d, 2e or 2f of the housing 2. However, arranging the sliding button on one of the major faces of the housing 2 (i.e. either the front face 2a or the rear face 2b) rather than one of the minor faces of the housing 2 is particularly advantageous and may provide that the device 1 is comfortable, intuitive and easy to use. In particular, the sliding button 13 being arranged on one of the major faces 2a, 2b of the housing 2 provides that a user can more easily operate the device 1 using only one hand. Specifically, a user may be able to operate the sliding button 13 and hold and/or support the housing 2 using the same hand. Furthermore, a user may be able to operate the sliding button 13 using one of their thumbs, and the sliding button 13 is quick and easy to find simply by a user feeling around the device 1. In other words, a user may be able to quickly and easily find and operate the sliding button 13 upon picking the device 1 up or pulling it out of a bag or pocket, for example.

[0158] The sliding button 13 is configured to slide relative to the housing 2. In particular, the sliding button 13 is configured to slide relative to the housing 2 along the length 2l of the housing. In other words, the sliding button 13 is configured to slide relative to the housing 2 along the same direction that the frame 12 is configured to slide relative to the housing 2. Advantageously, the sliding button 13 may be thus intuitive to operate. This is because the sliding button 13 may provide that upon using the device 1 for the first time, a user may be readily able to ascertain how to use the device 1, in particular, how to operate the sliding button 13, because it is intuitive that the sliding button 13 is arranged to slide in the same direction as the direction in which the cards 4 are configured to be extended out of the opening 3 of the housing 2 (referring to Figure 3).

[0159] The sliding button 13 is configured such that in order for a user to actuate the ejector mechanism 10 to move it from the retracted position (as shown in Figures 5A and 6C) to the extended position (as shown in Figures 5C and 6A), the sliding button 13 should be slid upwards away from the support 17 of the housing 2 towards the top face 2c and opening 3 of the housing 2. Specifically, since the sliding button 13 is operatively connected to the frame 12, when the ejector mechanism 10 is in an extended position and the frame 12 is at a maximum translational displacement from the support 17 of the housing 2, the sliding button 13 is also at a maximum translational displacement from the support 17 of the housing 2. This is shown in Figures 6A and 5C. Conversely, when the ejector mechanism 10 is in a retracted position and the frame is at a minimum translational displacement from the support 17 of the housing 2, the slid-

ing button 13 is also at a minimum translational displacement from the support 17 of the housing 2. This is shown in Figures 6C and 5A.

[0160] In the examples shown, the sliding button 13 is directly connected to the frame 12, for example using a direct mechanical connection such as a screw. Though, it is also envisaged that the sliding button 13 may also be indirectly connected to the frame 12, depending on the desired geometry and motion of the ejector mechanism 10.

[0161] As shown in Figures 1A, 1B and 2, the sliding button 13 is sized to be substantially flush with the front face 2a of the housing 2. In other words, the sliding button 13 has a maximum thickness 13t that is relatively small compared with the thickness 2t of the housing 2. In the example shown in Figure 2, the thickness 13t of the sliding button 13 is approximately one fifth of the thickness 2t of the housing 2. Advantageously, this provides the overall device 1 with a slim profile, enabling a user to fit the device 1 in a pocket of their clothes, for example. Though, it is also envisaged that the value of the thickness 13t of the sliding button 13 may have any other value relative to the thickness 2t of the housing 2.

[0162] The sliding button 13 has a first portion 37a that has a greater thickness (relative to the direction of the thickness 2t of the housing 2) than a second portion 27b of the sliding button 13. In other words, the sliding button 13 has a first portion 37a that protrudes from the front face 2a of the housing 2 by a greater amount than a second portion 37b of the sliding button 13. An intermediate portion 38 connects the first portion 37a to the second portion 37b. In the examples shown, the intermediate portion 38 curves between the first portion 37a and the second portion 37b. Though, it is also envisaged that the intermediate portion 38 may have any other suitable shape, for example, the intermediate portion 38 may be curved, radiused, bevelled and/or chamfered.

[0163] The second portion 37b of the sliding button 13 may have a textured surface that enables the second portion 37b of the sliding button 13 to frictionally engage a user's thumb or finger to make the device 1 easier to operate. Advantageously, a textured surface on the second portion 37b of the sliding button 13 may provide that the sliding button 13 is quick and easy to find simply by a user feeling around the device 1. In other words, a user may be able to quickly and easily find and operate the sliding button 13 upon picking the device 1 up or pulling it out of a bag or pocket, for example.

[0164] As shown in Figure 1A, the sliding button 13 is generally rectangular in shape, and has rounded corners 39. Though, it is envisaged that the sliding button 13 may be any other suitable shape, for example, a square, a circle, an oval, a triangle, a parallelogram or a rhombus. The sliding button 13 is shaped and sized to be easily and comfortably operated by a user's thumb. In particular, the sliding button 13 comprises an engagement surface 40 which is angled relative to the second portion 27b of the sliding button 13 and is configured to oppose

and engage a user's thumb to allow a user's thumb to easily and comfortably push the sliding button 13 up towards the opening 3 of the housing (towards the position shown in Figures 5C and 6A) to actuate the ejector mechanism 10.

[0165] As discussed above, in the examples shown, the ejector mechanism 10 is actuated by a sliding button 13. However, it is also envisaged that the ejector mechanism 10 may alternatively be actuated by any other suitable actuating element, for example, a lever or a button.

[0166] With reference to Figures 6A, 6B and 6C, two opposing gripping elements 14 are attached to the frame 12. The gripping elements 14 are configured to hold the cards 4 within the housing 2, and are configured to be moved relative to the housing 2 by movement of the ejector mechanism 10, since they are attached to the frame 12, which is itself part of the ejector mechanism 10 and is configured to slide inside the housing 2.

[0167] In the examples shown, one gripping element 14 is arranged on the arm 32a of the frame 12 and another gripping element 14 is arranged on the arm 32b of the frame. Though, it is also envisaged that any number of one or more gripping elements 14 may be attached to and/or integrally formed with the frame 12. For example, only one gripping element 14 may be arranged on the frame 12, on one of the arms 32a or 32b, or more than one gripping element 14 may be arranged on each of the arms 32a and 32b.

[0168] The gripping elements 14 are arranged on inwardly facing portions of the arms 32a and 32b of the frame 12 such that they face inwards towards an inner hollow cavity (provided by the opening 3) of the housing 2.

[0169] The gripping elements 14 are not shown in Figures 4, 5A, 5B and 5C. Figure 10 shows an enlarged side view of a portion of one of the arms 32a or 32b of the frame 12 and one of the gripping elements 14. In the example shown in Figure 10, the gripping elements 14 each comprise a plurality of hook-like elements 15 protruding away from respective arm 32a, 32b of the frame 12 and towards the other opposing arm 32a, 32b of the frame, i.e. towards/into the inner hollow cavity of the housing 2. The hook-like elements 15 are not shown in Figure 6A, 6B and 6C. For example, the gripping elements 14 may be made from a hook side element of a hook and loop fastener, such as a hook side element of VELCRO®. This is particularly advantageous over known devices which use other materials such as felt and/or metal fibres, for example, to grip one or more cards within a device, because the hook-like elements 15 provide engagement with the major faces 6, 7 of the one or more cards 4. In particular, the hook-like elements 15 may provide a mechanical engagement, for example, a frictional engagement, with the major faces of the one or more cards. Though, it is also envisaged that the gripping elements 14 may be made from any other suitable material and/or may comprise a plurality of hooks, bristles and/or filaments for example.

[0170] The hook-like elements 15 are arranged to pro-

trude or extend away from the arms 32a, 23b of the frame 12 and towards/into the inner hollow cavity of the housing 2 such that they are arranged to be substantially parallel to the front face 2a and the rear face 2b (i.e. the major faces) of the housing 2. Accordingly, when one or more cards 4 are inserted into the housing 2 via the opening 3, for example as shown in Figure 3, the hook-like elements 15 will engage at least a portion of one or more of the major faces 6, 7 of each of the cards 4. In other words, the hook-like elements 15 will protrude between the cards 4. One or more of the hook-like elements 15 may deflect when the cards 4 are inserted into the housing 2 based on the thickness 4t of each of the cards 4 relative to the spacing/positioning of the hook-like elements 15 relative to one another on the gripping elements 14. The relative spacing/positioning of the hook-like elements 15 relative to one another on each of the gripping elements 14 and/or the number of hook-like elements 15 on each of the gripping elements 14 may be chosen to account for the thickness of the cards 4 and to account for how strongly/how much it is desired for the gripping elements 14 to engage the cards 4. For example, increasing the number of hook-like elements 15 on each of the gripping elements 14 may increase the contact area between the gripping elements and the cards 4 to more strongly engage the cards 4.

[0171] In this manner, the gripping elements 14 hold the cards 4 within the housing 2 by engaging/contacting the major faces 6, 7 of each of the cards 4. This prevents the cards 4 from inadvertently falling out of the housing 2 via the opening 3. Referring to Figure 6C, the gripping elements 14 are positioned on the arms 32a and 32b of the frame and the arms 32a and 32b of the frame 12 are sized in length relative to the sides 2e and 2f of the housing 2 such that the gripping elements 14 are arranged to engage the cards 4 towards an end of the cards 4 that is distal relative to the opening 3 of the housing 2, when the cards 4 are inserted in the housing 2. In other words, the gripping elements 14 are configured to engage the cards 4 at a lower end of the cards 4 that is closer to the support 17 of the housing 2 than to the opening 3 of the housing, compared with an opposing upper end of the cards 4. In the examples shown, the arms 32a and 32b of the frame 12 are approximately half the length of the corresponding sides 2e and 2f of the housing. This helps ensure that the gripping elements 14 are arranged to engage the cards 4 towards an end of the cards 4 that is distal relative to the opening 3 of the housing 2, when the cards 4 are inserted in the housing 2. Advantageously, this helps ensure that the cards 4 are stable and safe in the housing 2 during movement of the ejector mechanism 10.

[0172] In the examples shown, the gripping elements 14 are positioned closer to the pins 36a on the arms 32a and 32b of the frame 12 than to the base 33 of the frame 12. Though, it is also envisaged that the gripping elements 14 may be positioned at any other position along the arms 32a and 32b, for example, adjacent the base 33.

[0173] Referring back to Figure 6A, a spring 27 is arranged to bias the lever 11 towards the support 17 of the housing 2, i.e. to bias the lever 11 towards a position where it is at a minimum angular displacement relative to the support 17 of the housing 2. In other words, the spring 27 is arranged to bias the lever 11, and hence the ejector mechanism 10, towards the retracted position of the ejector mechanism, which is the position shown in Figures 4, 5A and 6C, to resist movement/pivoting of the lever 1 away from the support 17 of the housing 2.

[0174] In this manner, after the sliding button 13 is actuated to move the ejector mechanism 10 to the extended position (shown in Figures 6A and 5C), when the sliding button 13 is no longer actuated (i.e. when a user is no longer providing an input to the sliding button 13), then the lever 11 will have a natural tendency to pivot back towards the support 17 of the housing 2 such that the ejector mechanism 10 naturally moves back towards the retracted position (shown in Figures 6C and 5A). Advantageously, the effort required by a user to operate the device 1 will thus be reduced, because the user will not have to input any effort/perform any specific action to move the ejector mechanism 10 back to the retracted position.

[0175] In the examples shown, the spring 27 is a helical spring. Though, it is envisaged that the spring 27 may also be any other type of suitable spring. It is also envisaged that the spring 27 may be replaced by any other suitable biasing element, for example, an elastic element capable of storing strain energy.

[0176] The spring 27 has a first end 27a and a second end 27b. The spring 27 has a first straight portion 28a which is positioned proximate the first end 27a of the spring 27, and a second straight portion 28b which is positioned proximate the second end 27b of the spring 27. This is shown in Figure 6A. The spring 27 has a coiled portion 29 which is positioned between the first end 27a and the second end 27b of the spring 27. The stiffness of the coiled portion 29 of the spring 27 (i.e. its spring constant) may be chosen to optimise the amount of biasing (i.e. the biasing force/resistance to movement) of the lever 11 relative to the support 17 of the housing 2.

[0177] As best understood by referring to Figure 6C, the length of the second straight portion 28b of the spring 27 is chosen to avoid obstructing the lever 11 when it moves between the retracted and extended positions, i.e. when it pivots relative to the support 17 of the housing 2. The lever 11 also contains a recessed portion 30 (shown in Figure 6C) to further avoid any obstruction by the second straight portion 28b of the spring 27 to the pivoting of the lever 11. Similarly, the length of the first straight portion 28a of the spring 27 is also chosen to avoid obstructing the lever 11 when it moves between the retracted and extended positions, i.e. when it pivots relative to the support 17 of the housing 2. Furthermore, the length of the coiled portion 29 of the spring 27 and the position along the length of the spring 27 relative to the first and second ends 27a, 27b of the spring 27 is

also chosen to avoid obstructing the lever 11 when it moves between the retracted and extended positions, i. e. when it pivots relative to the support 17 of the housing 2. This can be understood by referring to Figures 6A, 6B and 6C sequentially. As best shown in Figure 6C, the lever 11 also contains a recessed portion 31 to further avoid any obstruction by the coiled portion 29 of the spring 27 to the pivoting of the lever 11. In this manner, the spring 27 and the lever 11 are spatially, positionally and geometrically configured to not unwantedly obstruct one another during movement of the ejector mechanism 10.

[0178] The first end 27a of the spring 27 is connected to the support 17 of the housing 2, in the example shown in Figure 6A. Though, it is also envisaged that the first end 27a of the spring 27 may be connected to any other location on the housing 2, for example, to a bottom end of one of the side faces 2e or 2f of the housing. In the example shown in Figure 6A, the support 17 comprises a hook 30a that is configured to receive the first end 27a of the spring 27. The first end 27a of the spring comprises a hooked or looped end (not shown) that can be hooked onto the hook 30a. Though, it is envisaged that the first end 27a of the spring 27 can be connected to the support 17 of the housing 2 by using any other suitable mechanical connection, such as a pin or hook arrangement.

[0179] The second end 27b of the spring 27 is connected to the lever 11. In the examples shown, the second end 27b of the spring 27 is connected to the lever 11 at a point on the lever 11 that is between the first end 15a and the second end 15b of the lever. In particular, in the examples shown, relative to the longitudinal direction 16 of the lever 11, the second end 27b of the spring 27 is connected to the lever in the region of (i.e. proximate to) the slot 20. Though, it is also envisaged that the second end 27b of the spring 27 can be connected to the lever 11 at any other location on the lever 11. The location at which the second end 27b of the spring 27 is connected to the lever 11 may be chosen depending on the desired biasing of the lever 11 and the desired motion and geometry of the ejector mechanism 10. The second end 27b of the spring 27 can be connected to the lever 11 by using any suitable mechanical connection, such as a pin, hook or aperture on the lever for receiving the second end 27b of the spring 27.

[0180] The interaction of the one or more cards 4 with the device 1, i.e. the operation of the device 1, shall now be described in more detail, with reference to Figures 5A, 5B, 5C and 7. When the ejector mechanism 10 is in the retracted position, wherein the lever 11 is at a minimum angular displacement relative to the support 17 of the housing 2, as shown in Figure 5A, the second side (i.e. the bottom edge, not shown) of each of the cards 4 is engaged by the straight leading edge 24 (shown in Figure 9) of the lever 11. In this position of the ejector mechanism 10, the second sides of each of the cards 4 are aligned with one another such that the cards 4 are arranged in a "neat" stack, wherein each of the cards 4

completely overlaps with all of the other cards 4. In this position, all of the cards 4 are completely contained within the housing 2 and none of the cards 4 protrudes from the opening 3 of the housing 2.

[0181] When the ejector mechanism 10 is moved to the extended position, as shown sequentially in Figure 5B and then Figure 5C, the angular displacement of the lever 11 relative to the support 17 of the housing 2 is gradually increased. In this manner, the second side (not shown) of each of the cards 4 is progressively engaged by the curved portion 23b of the respective step 23 that is engaging said card. As the lever 11 is angularly displaced relative to the support 17 of the housing 2, the point at which the curved portion 23b engages its respective card 4 progressively moves along the curved portion 23b towards the straight portion 23a. For example, as illustrated in Figure 9, when the ejector mechanism 10 is at an intermediate position wherein the lever 11 is angularly displaced from the support 17 of the housing 2 by a small angle, the point 25 on the curved portion 23b of the step 23 engages one of the cards 4. When the ejector mechanism 10 is progressively moved towards the retracted position wherein the lever 11 is angularly displaced from the support 17 of the housing 2 by a larger angle, the point 26 on the curved portion 23b of the step 23 engages one of the cards 4. In this manner, the shape of the step 23, in particular the curved portion 23b, provides that each of the steps 23 causes one or more of the cards 4 to smoothly and gradually be pushed up away from the support 17 of the housing 2 when the lever 11 pivots from the retracted position towards the extended position.

[0182] Because the steps 23 are spaced apart from one another along or across the depth of the lever 11 (as shown in Figure 6A, for example), each of the steps 23 is configured to engage one of the cards 4. Though, it is also envisaged that the respective spacings of the steps 23 along the depth of the lever 11 may be increased if it is desired for some or all of the steps 23 to each engage more than one card 4. Because the steps 23 are equally spaced apart from another along the longitudinal direction 16 of the lever 11, each of the steps 23 is configured to push a respective one of the cards 4 that it engages upwards by a different amount. In other words, each of the steps 23 is configured to push one of the cards 4 partially out of the opening 3 of the housing 2 by a different amount to how much the other cards 4 are pushed out of the opening 3 of the housing 2. This is best understood by referring to Figures 3 and 7, which show that when the steps 23 of the lever 11 each engages a different one of the cards 4, each of the cards 4 is caused to protrude from the opening 3 of the housing 2 (see Figure 3) by a different respective amount. This may be referred to as "indexing" or "staggering" the cards. In particular, in the example shown in Figure 3, the card 4f which is arranged closer to the front face 2a of the housing 2 than the rear face 2b of the housing 2 is caused to protrude from the opening 3 of the housing 2 by a smaller amount than the

card 4a which is arranged closer to the rear face 2b of the housing than the front face 2a of the housing 2. The card 4e is caused to protrude from the opening 3 of the housing 2 by a larger amount than the card 4f. The card 4d is caused to protrude from the opening 3 of the housing 2 by a larger amount than the card 4e. The card 4c is caused to protrude from the opening 3 of the housing 2 by a larger amount than the card 4d. The card 4b is caused to protrude from the opening 3 of the housing 2 by a larger amount than the card 4c. The card 4a is caused to protrude from the opening 3 of the housing 2 by a larger amount than the card 4b.

[0183] Due to the spring 27, when no force is applied to the sliding button 13 by a user, the ejector mechanism 10 is naturally/inherently in the retracted position. The user may then insert a stack/pile (i.e. a plurality) of cards 4 into the housing 2 via the opening 3, such that each of the cards 4 is fully contained within the opening. At this stage, the ejector mechanism 10 is still in the retracted position, which is shown in Figures 5A and 6C, for example. The hook-like elements 15 of the gripping elements 14 engage the major faces 6, 7 of the cards 4 such that the gripping elements 14 hold the cards 4 within the housing 2. This prevents the cards 4 from inadvertently falling out of the housing 2 via the opening 3, for example if the device 1 were to be turned upside down (a 180 degree rotation relative to the position of the device 1 shown in Figure 1A) when the cards 4 are in the retracted position.

[0184] In order to eject the cards 4 from the device 1, the user may then use a thumb or finger to apply an upwards force 41 (shown in Figures 1A and 3) on the sliding button 13. This causes the sliding button 13 to slide upwards away from the support 17 of the housing 2 towards the opening 3 of the housing 2. Due to the mechanical connection of the sliding button 13, the lever 11 and the frame 12, this causes the ejector mechanism 10 to move towards the extended position, which is shown in Figures 5C and 6A, for example. The movement of the ejector mechanism 10 into this position is described above. This causes the cards 4 to be "indexed" or "staggered", such that each of the cards 4 protrudes from the opening 3 of the housing 2 by a different amount, as shown in Figure 3 and as described above.

[0185] During the movement of the ejector mechanism 10 from the retracted position (shown in Figures 5A and 6C) to the extended position (shown in Figures 5C and 6A), the gripping elements 14 still hold the cards 4 within the housing 2. This prevents the cards 4 from inadvertently falling out of the housing 2 via the opening 3 while the cards 4 are being indexed/retracted, and when they are indexed/extended (i.e. both during and after movement of the ejector mechanism 10 from the retracted position to the extended position).

[0186] Because the lever 11 causes the cards 4 to be indexed, such that each of the cards 4 is pushed upwards out of the opening 3 by a different amount 2 (shown in Figure 3), each of the cards 4 moves by a different re-

spective amount relative to the gripping elements 14. However, because the gripping elements 14 are arranged on the sliding frame 12, which slides upwards with the cards 4 relative to the housing 2, the distance that each of the cards 4 has to move relative to the gripping elements 14 is advantageously minimised. This minimises the resistance caused by the gripping elements 14 of the cards 4 to moving up to the indexed/extended position.

[0187] Advantageously, this means that the force required by a user to operate the sliding button 13 to actuate the ejector mechanism 10 to move it from the retracted position to the extended position is reduced. In other words, less effort is required by the user to operate the sliding button 13. In particular, the engagement of the cards 4 by the gripping elements 14 serves to assist the ejector mechanism 10 in upwardly pushing/translating the cards 4 towards the opening 3, such that the force required to slide the sliding button 13 upwards to index the cards is reduced. This is because the gripping elements 14 provide a gripping/engaging force on the cards 4 so that the cards 4 move upwards with the frame 12 when the frame 12 is slid upwards towards the opening 3 of the housing 2.

[0188] Once the cards 4 have been indexed/extended out from the opening 3 of the housing 2 into the position shown in Figure 3, the user may then pull one or more of the cards 4 out from the device 1. The user may then return said one or more of the cards 4 to the device 1 simply by inserting said one or more of the cards 4 back into the opening 3 of the housing 2.

[0189] After the user has pushed the sliding button 13 upwards to index/extend the cards 4, the user may let go of or release, i.e. remove the input force 41 from, the sliding button 13. Due to the spring 27, the sliding button 13 will then naturally move back downwards and the ejector mechanism 10 will thus naturally return to the retracted position.

[0190] In this manner, the user may use the device 1 to repeatedly insert/store and eject/index/extend the cards 4.

[0191] The advantageous effects of the device 1 and its operation shall now be discussed in more detail. The gripping elements 14 prevent the cards 4 from inadvertently falling out of the housing 2 when the ejector mechanism 10 is in both the retracted and extended positions. In order to provide this effect, it is desirable to maximise the holding force that the gripping elements 14 provide on the cards 4.

[0192] As discussed above, due to the indexing/staggering of the cards 4 that is provided by the steps 23 on the lever 11, each of the cards 4 has to move upwards relative to the gripping elements 14. In order to facilitate this, it is desirable to reduce the holding force that the gripping elements 14 provide on the cards 4.

[0193] Accordingly, it is desirable to optimise the holding force that the gripping elements 14 provide on the cards 4, to balance the aforementioned effects so that

the device 1 is able to securely and stably hold/retain the cards 4 inside the housing 2, whilst also allowing the cards 4 to slide/move relative to the housing 2 so that they can be indexed/staggered/extended out of the opening 3 of the housing 2. Arranging the gripping elements 14 on the frame 12 is thus particularly advantageous, since because the frame 12 is configured to slide upwards relative to the housing 2 with the cards 4, the distance that each of the cards 4 has to move relative to the gripping elements 14 is minimised. This means that the gripping elements 14 can be chosen to have a strong holding force, so that the gripping elements 14 can securely and stably hold/retain the cards 4 inside the housing 2, without compromising the ease with which the cards 4 can be indexed/staggered/extended/ejected out of the opening 3 of the housing 2. Furthermore, this is particularly advantageous because the gripping elements 14 engage/grip the cards 4 whilst the cards 4 are being indexed/staggered/extended/ejected by movement of the ejector mechanism 10, which means that the gripping elements 14 assist the ejector mechanism 10. This reduces the amount of force/effort that is required by the user to actuate the ejector mechanism 10, thus providing a device 1 that is much easier and more comfortable to use, and can much more easily be operated using only one hand as opposed to two hands. The hook-like elements 15 of the gripping elements 14 further contribute to this advantage. The gripping elements 14 are configured to engage the major faces 6, 7 of the cards 4, which provides a large contact area for the gripping elements 14 to engage/grip the cards, thus further increasing the holding force that the gripping elements 14 provide on the cards 4.

[0194] As such, the device 1 may be comfortable, intuitive and easy to use. The device 1 can advantageously provide easy access to the cards 4. In particular, the ejector mechanism 10 provides that one or more cards 4 can be spaced relative to one another to each protrude from the opening 3 of the housing 2 by a different respective amount so as to provide a user with easy access to the cards 4 in order to remove a particular card 4 from the device 1. Furthermore, the device 1 advantageously provides for the stable and safe storage of the cards 4.

[0195] Alternative devices shall now be described, with reference to Figures 11 and 12. Figures 11 and 12 show part of the inside of another example alternative device. The alternative device shown in Figures 11 and 12 is substantially identical to the device 1 as described above, except in the arrangement and form of the gripping elements 114a and 114b instead of gripping elements 14. Similar elements to those as described above in relation to the device 1 have been labelled using like reference numerals: for example, the lever 11, the frame 12, and the support 17 are all shown in Figures 11 and 12.

[0196] In the example of Figures 11 and 12, the gripping elements 114a and 114b are arranged on and coupled to the arms 32a and 32b of the frame 12 respectively and each of the gripping elements 114a and 114b has a

respective first end 42 and a respective second end 43. The respective first ends 42 may also be referred to as "coupled ends" herein. The gripping elements 114a and 114b each comprise a through hole 45 that is proximate to the first end 42 of each of the gripping elements 114a and 114b. In the examples shown in Figures 11 and 12, the through hole 45 is arranged approximately one sixth of the way along the length of each of the gripping elements 114a and 114b between the respective first end 42 and second end 43. Though, it is also envisaged that the through hole 45 may be arranged at any other location on the gripping elements 114a and 114b, for example approximately halfway between the first end 42 and the second end 43. The through hole 45 of each of the gripping elements 114a and 114b receives a pin 46 of each of the respective arms 32a and 32b of the frame 12, as shown in Figure 11. In the example shown in Figure 11, the pins 46 are cylindrical. Though, it is also envisaged that the pins 46 may be any other suitable shape. In the examples shown in Figures 11 and 12, the gripping elements 114a and 114b are substantially rectangular. Though it is also envisaged that the gripping elements 114a and 114b may be any other shape, for example square or elliptical.

[0197] In a resting position, which is shown in the examples of Figures 11 and 12, the second ends 43 of the gripping elements 114a and 114b, distal from their coupled ends 42, are unbiased and bent with a curved profile and spaced from the arms 32a and 32b respectively. When a force is applied on the ends 43 of each of the gripping elements 114a and 114b to push each of the ends 43 of the gripping elements 114a and 114b towards the arms 32a and 32b respectively, for example when one or more cards 4 are inserted into the device, the second ends 43 of the gripping elements 114a and 114b are biased away from the arms 32a and 32b respectively. When said force is removed, the ends 43 of the gripping elements 114a and 114b will naturally deflect back away from the arms 32a and 32b respectively, back into the resting position shown in Figures 11 and 12. In the examples shown in Figures 11 and 12, the gripping elements 114a and 114b comprise metal, plate-like springs 47a and 47b respectively to provide said biasing. Though, it is also envisaged that the gripping elements 114a and 114b may comprise any other element suitable for storing elastic energy, such as a helical spring or a leaf spring of any suitable material. Advantageously, by storing elastic energy, the gripping elements 114a and 114b may provide for improved engagement of one or more cards 4 held in the device and may serve to further assist the movement of the ejector mechanism 10.

[0198] In the example shown in Figures 11 and 12, gripping element 114a further comprises an upper gripping element 48a that is attached to the metal spring 47a. The upper gripping element 48a comprises a plurality of hook-like elements (not shown) that may be identical to the hook-like elements 15 of the gripping elements 14 described above. As with the example of the device 1 of

Figure 1A, the gripping elements 114a and/or 114b may alternatively or additionally comprise filaments or bristles or any other engaging element which may interact with the major faces of one of more cards 4 inserted into the device. As such, the upper gripping element 48a is configured to engage/contact the major faces 6, 7 of each of one or more cards 4 inserted into the device.

[0199] In another example, it is envisaged that the gripping element 114a may comprise only a metal spring 47a, without an upper gripping element 48a, such that the gripping element 114a is substantially identical to the uncovered gripping element 114b shown in Figure 11, which is shown with no upper gripping element. In other words, in an alternative device, the gripping elements 114a and 114b each comprise a metal, plate-like spring 47a and 47b respectively, and it is envisaged that either neither, one, or both of the gripping elements 114a and 114b may further comprise an upper gripping element 48a, 48b with hooks, bristles, filaments and/or the like.

[0200] Another alternative device shall now be described. As described above, the gripping elements 14 of the device 1 are particularly advantageous in that they are able to engage and grip the major faces 6, 7 of the cards 4, to prevent the cards 4 from inadvertently falling out of the opening 3 of the housing 2. Accordingly, it is also envisaged that another exemplary device (not shown) may comprise a housing including an opening for receiving one or more cards, the one or more cards being substantially identical to the cards 4. One or more gripping elements (not shown), which are substantially identical to the gripping elements 14, are arranged inside the housing. The gripping elements are configured to engage at least a portion of the major faces 6, 7 of each of the one or more cards 4. The device may or may not comprise an ejector mechanism and/or a sliding button as described above in relation to the device 1. For example, the device may comprise an ejector mechanism that is different to the ejector mechanism 10 as described above in relation to the device 1. As another example, the device may not comprise any ejector mechanism or any sliding button at all. In such a case, the device may be a simple wallet or a pocket or compartment of a wallet, bag or luggage item that is advantageously able to hold the cards in place to stop them inadvertently falling out of the device.

[0201] Various modifications may be made to the described embodiments(s) without departing from the scope of the invention as defined by the accompanying claims.

Claims

1. A device for storing one or more cards, comprising:
 - a housing including an opening for receiving one or more cards;
 - an ejector mechanism movable relative to the

housing to space the one or more cards relative to one another;

an actuator configured to actuate the ejector mechanism; and

one or more gripping elements configured to hold the one or more cards within the housing, the one or more gripping elements being configured to be moved relative to the housing by movement of the ejector mechanism and/or the actuator.

2. A device as claimed in claim 1, wherein the ejector mechanism comprises a lever comprising one or more engagement surfaces arranged spaced apart from one another and each for engagement of one of the one or more cards.

3. A device as claimed in claim 2, wherein the lever is configured to pivot relative to the opening of the housing.

4. A device as claimed in claim 2 or claim 3, wherein the lever comprises a slot and the lever is pivotally and slidably coupled to the actuator at the slot.

5. A device as claimed in any one of claims 2 to 4, wherein the lever is rigid.

6. A device as claimed in any one of claims 2 to 5, wherein the device further comprises a biasing means configured to bias the lever away from the opening of said housing.

7. A device as claimed in any one of the preceding claims, wherein the ejector mechanism comprises a frame and the one or more gripping elements are arranged on said frame.

8. A device as claimed in claim 7, wherein the frame comprises:
 - two substantially parallel opposing arms arranged along minor side faces of the housing; and
 - a base connecting and extending between the two substantially parallel opposing arms of the frame, the base of the frame being arranged opposite to the opening of the housing.

9. A device as claimed in claim 7, wherein the one or more gripping elements are supported on two substantially parallel opposing arms of said frame.

10. A device as claimed in any one of the preceding claims, wherein the housing comprises first and second opposing major faces, and the actuator is arranged on one of said major faces of the housing.

11. A device as claimed in any one of the preceding claims, wherein the actuator comprises a sliding element configured to slide relative to the housing.
12. A device as claimed in claim 7 when dependent on claim 3, wherein the frame is configured to move with the actuator, and wherein movement of the frame and/or movement of the actuator causes the lever to pivot relative to the opening of the housing.
13. A device as claimed in any one of the preceding claims, wherein the one or more gripping elements are arranged to engage, in use, each of the one or more cards at a lower end thereof that is further from the opening of the housing than an opposing upper end of the one or more cards.
14. A device as claimed in any one of the preceding claims, wherein each of the one or more gripping elements is configured to engage at least a portion of the one or more cards when said one or more cards are inserted into the housing.
15. A device as claimed in any one of the preceding claims, wherein:
the opening is for receiving one or more cards according to ISO/IEC 7810 ID-1, each of the one or more cards having a first major face and an opposing second major face; and
each of the one or more gripping elements is for engaging at least a portion of one of the major faces of each of the one or more cards.
16. A device as claimed in any one of the preceding claims, wherein each of the one or more gripping elements comprises a plurality of hooks and/or bristles and/or filaments.
17. A device as claimed in any one of the preceding claims, wherein each of the one or more gripping elements comprises a hook side element of a hook and loop fastener.

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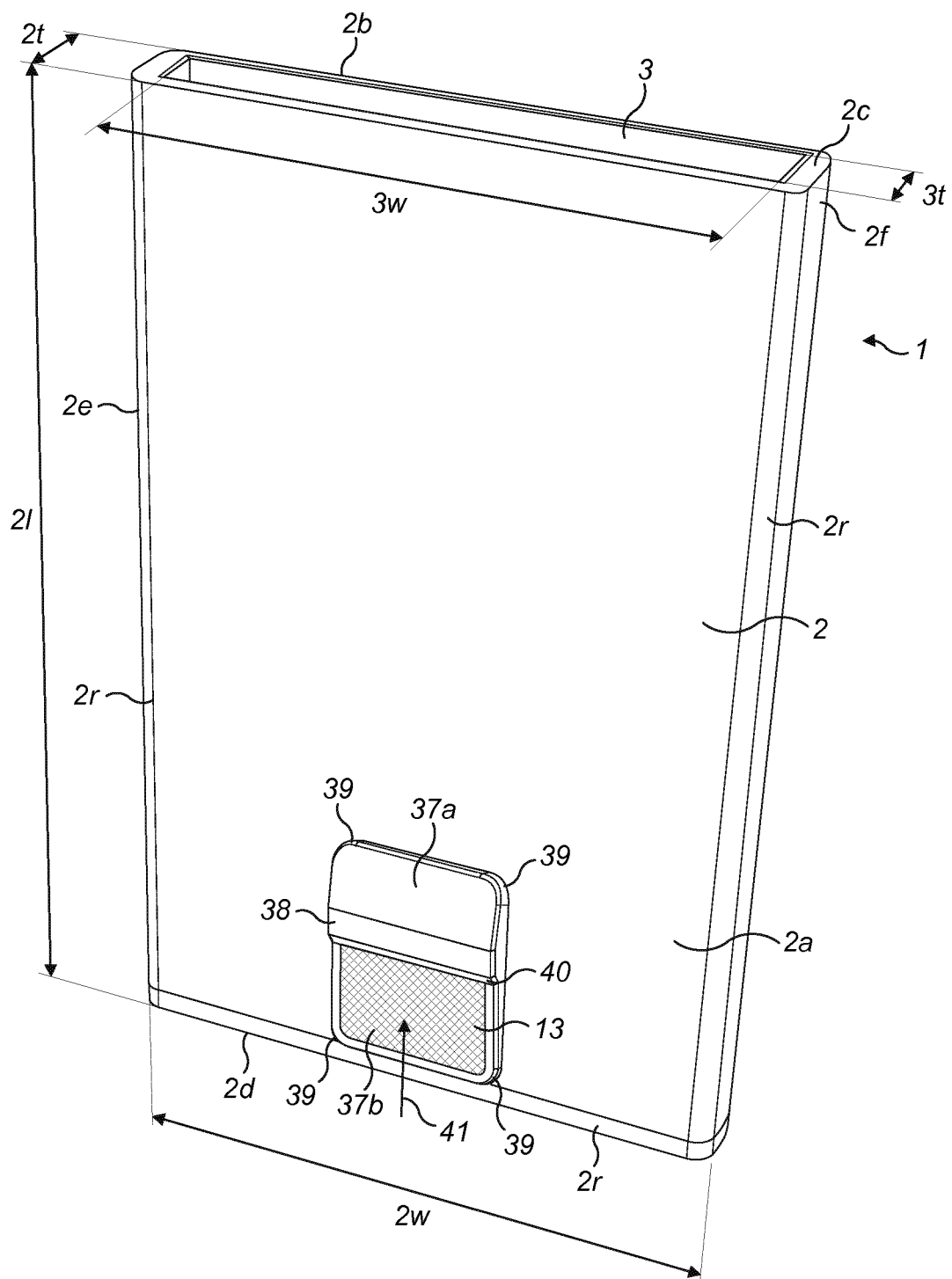


FIG. 1A

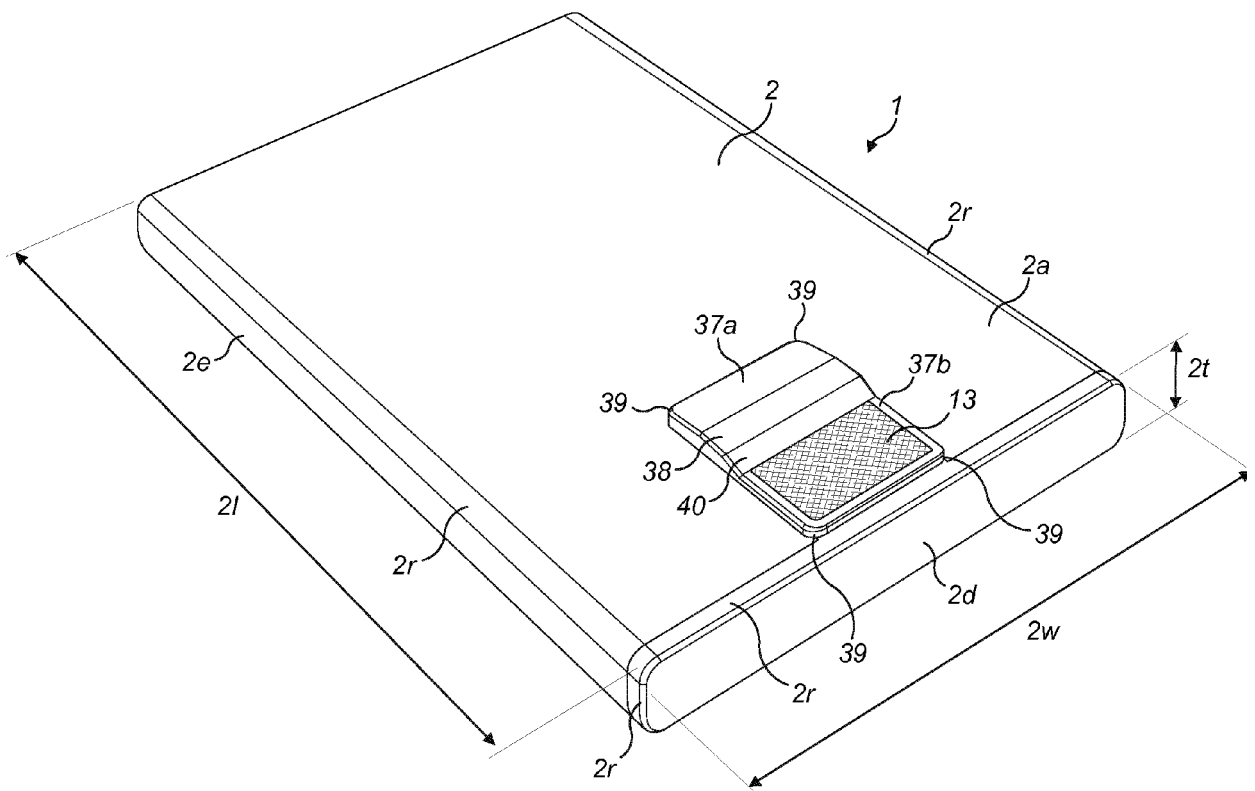


FIG. 1B

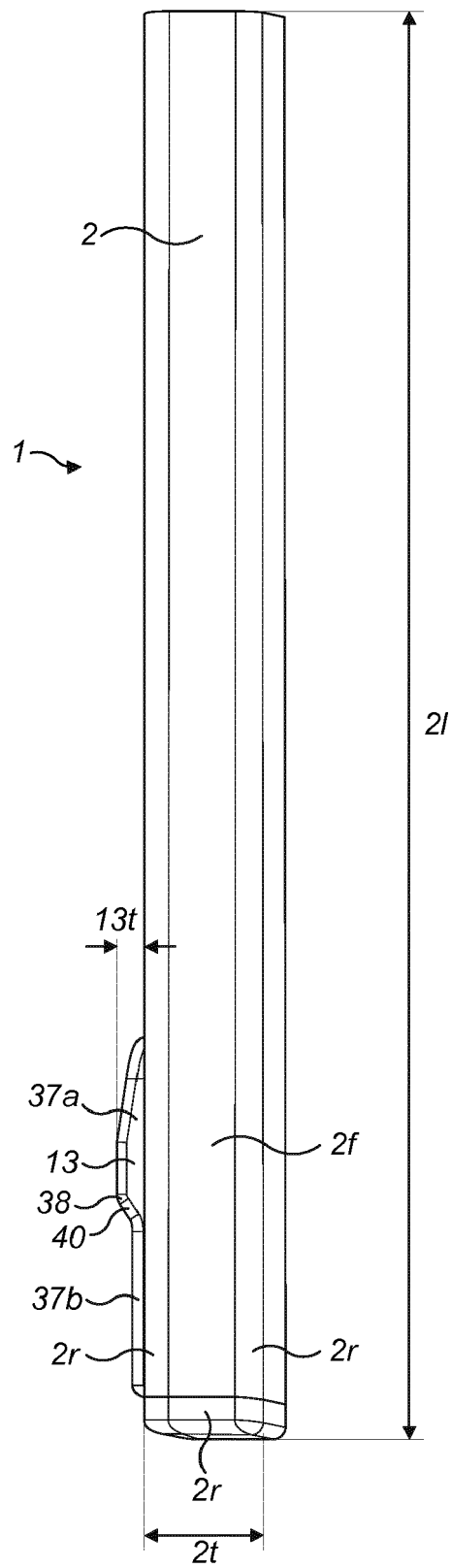
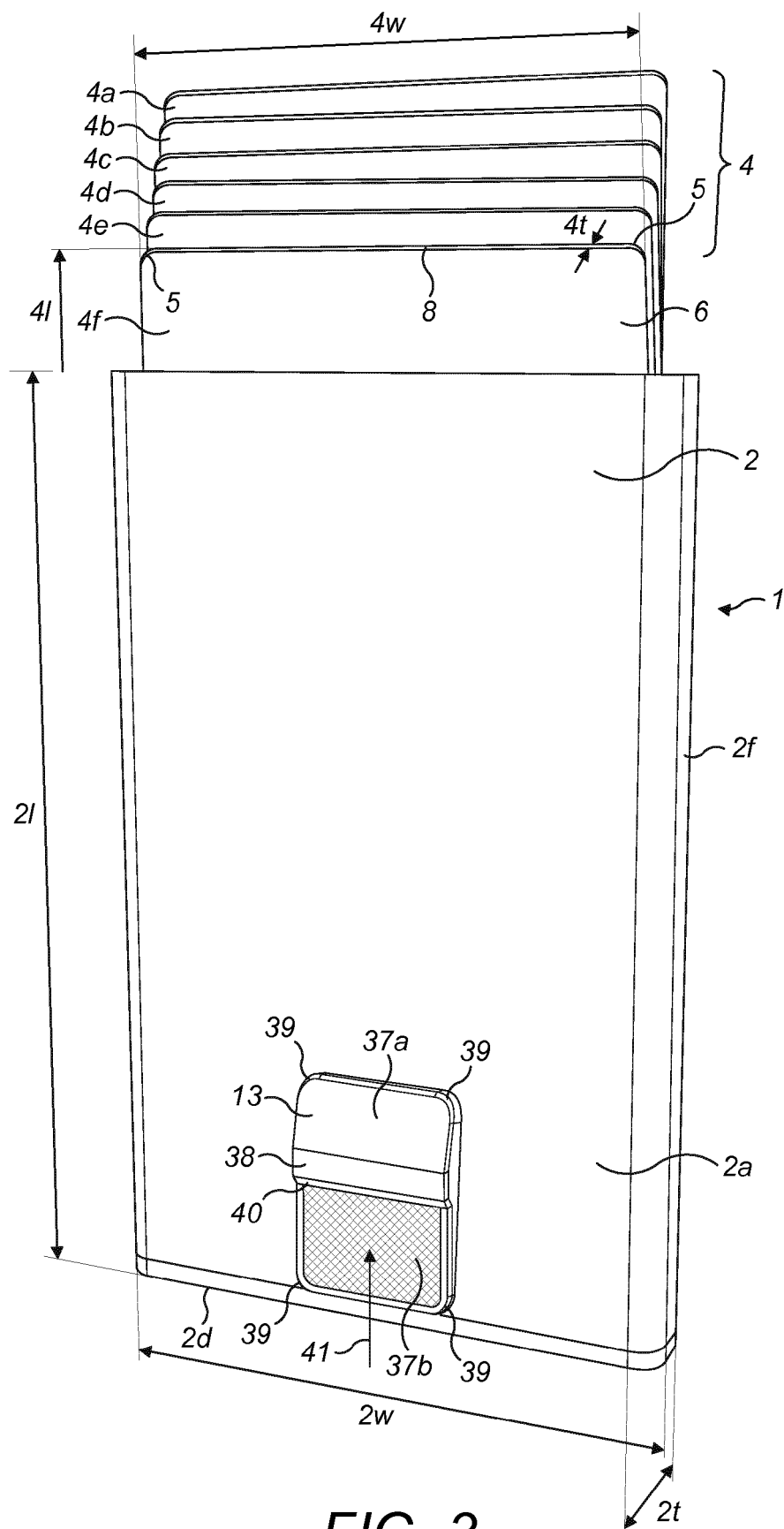


FIG. 2



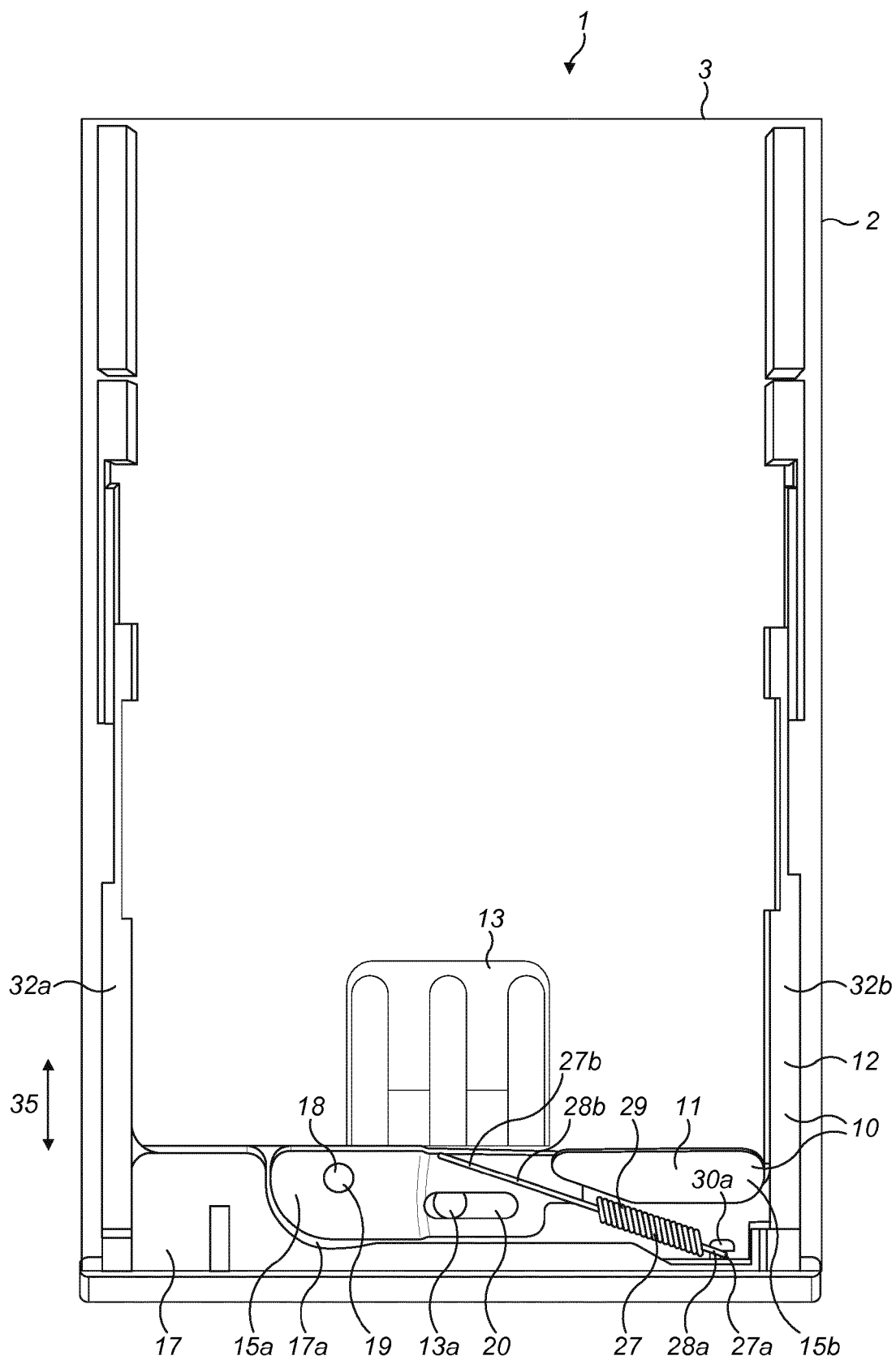


FIG. 4

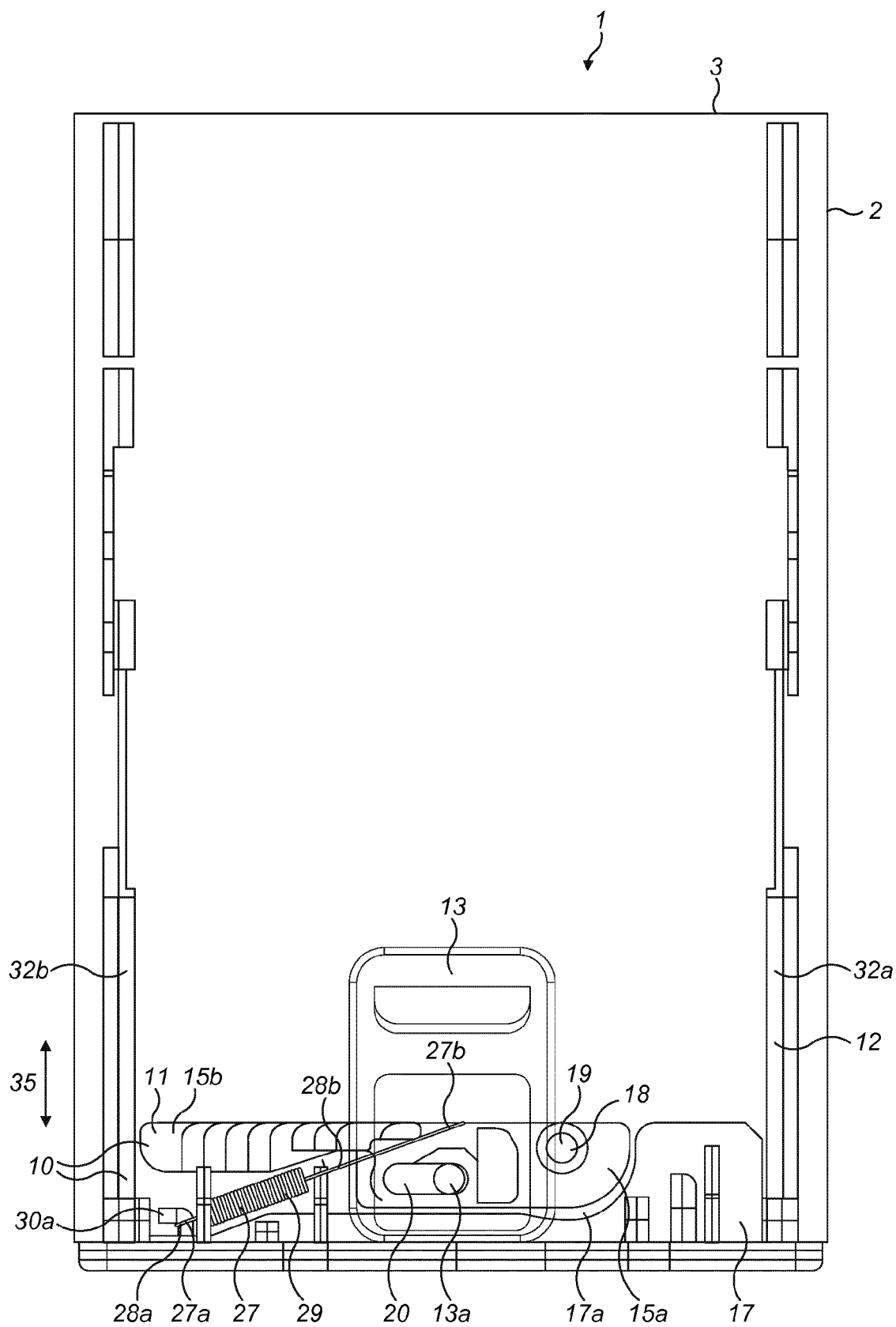


FIG. 5A

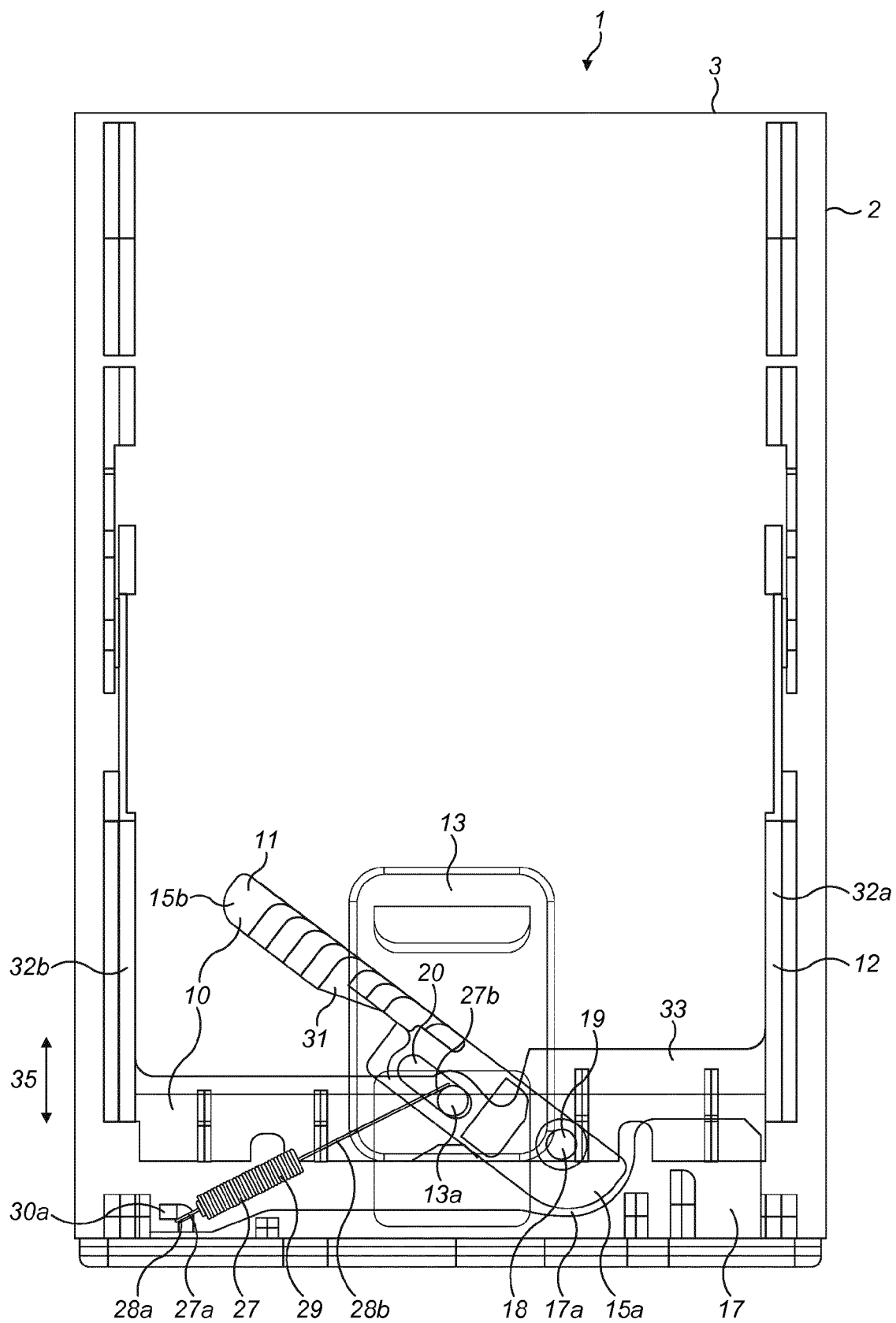


FIG. 5B

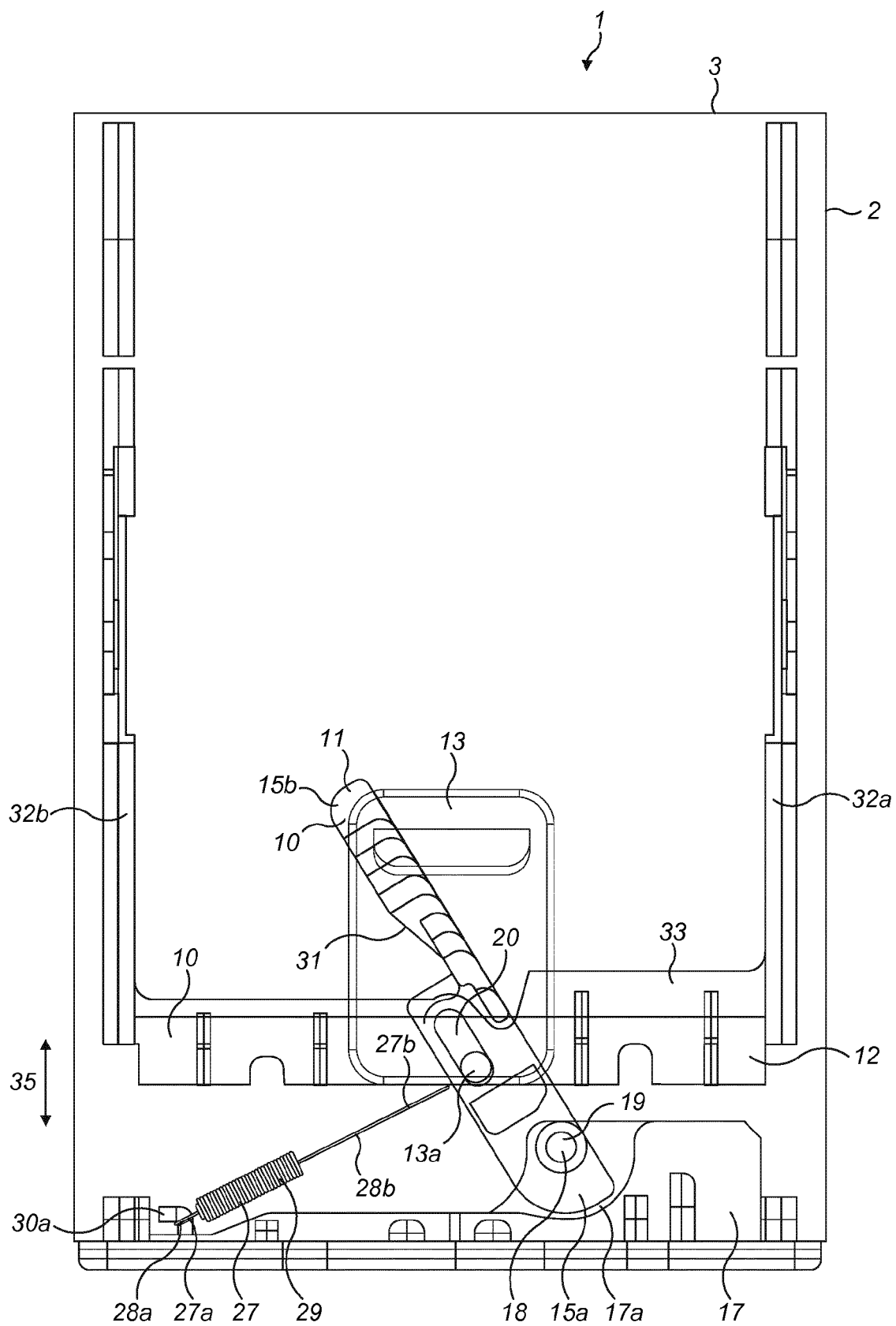


FIG. 5C

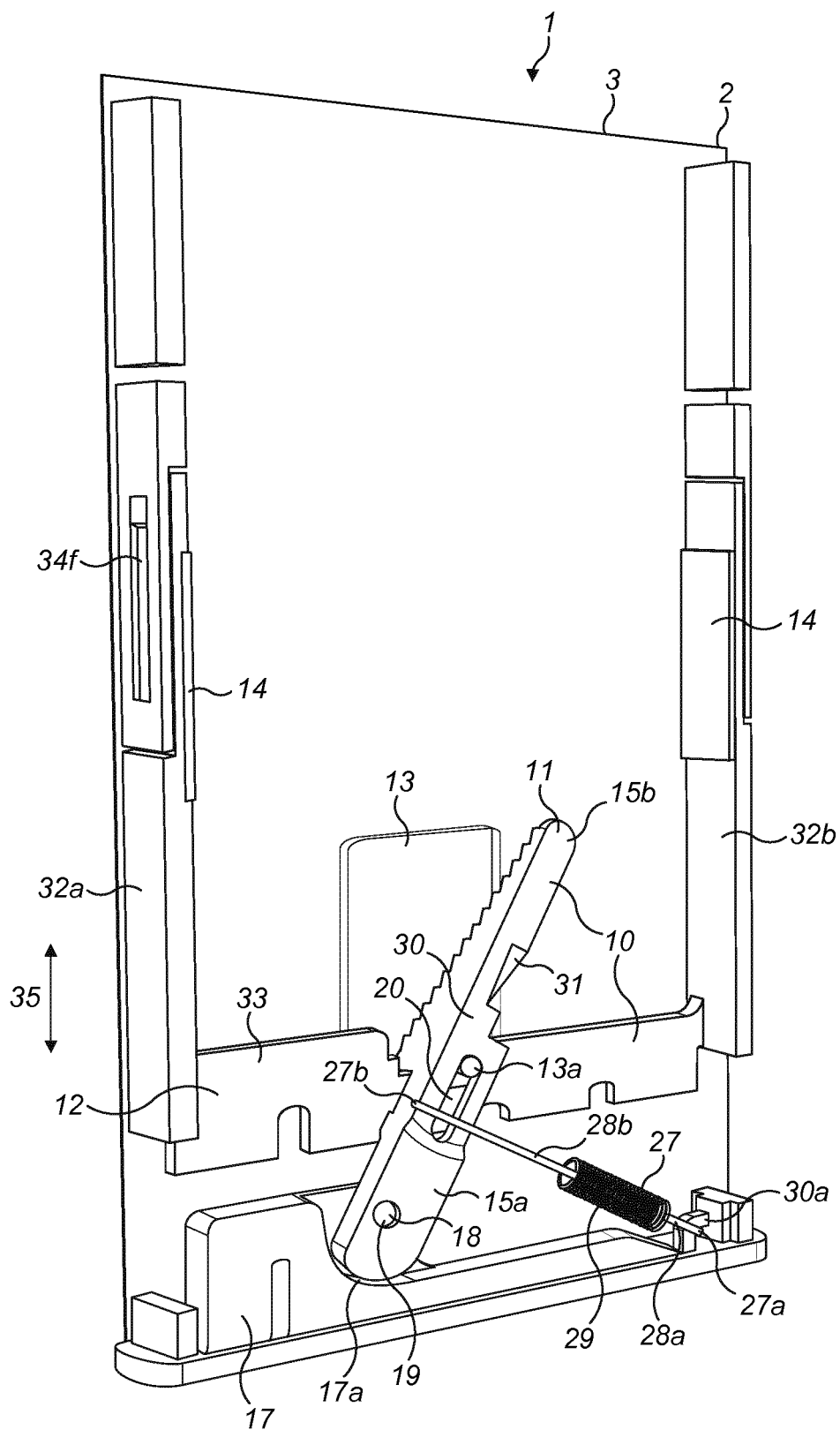


FIG. 6A

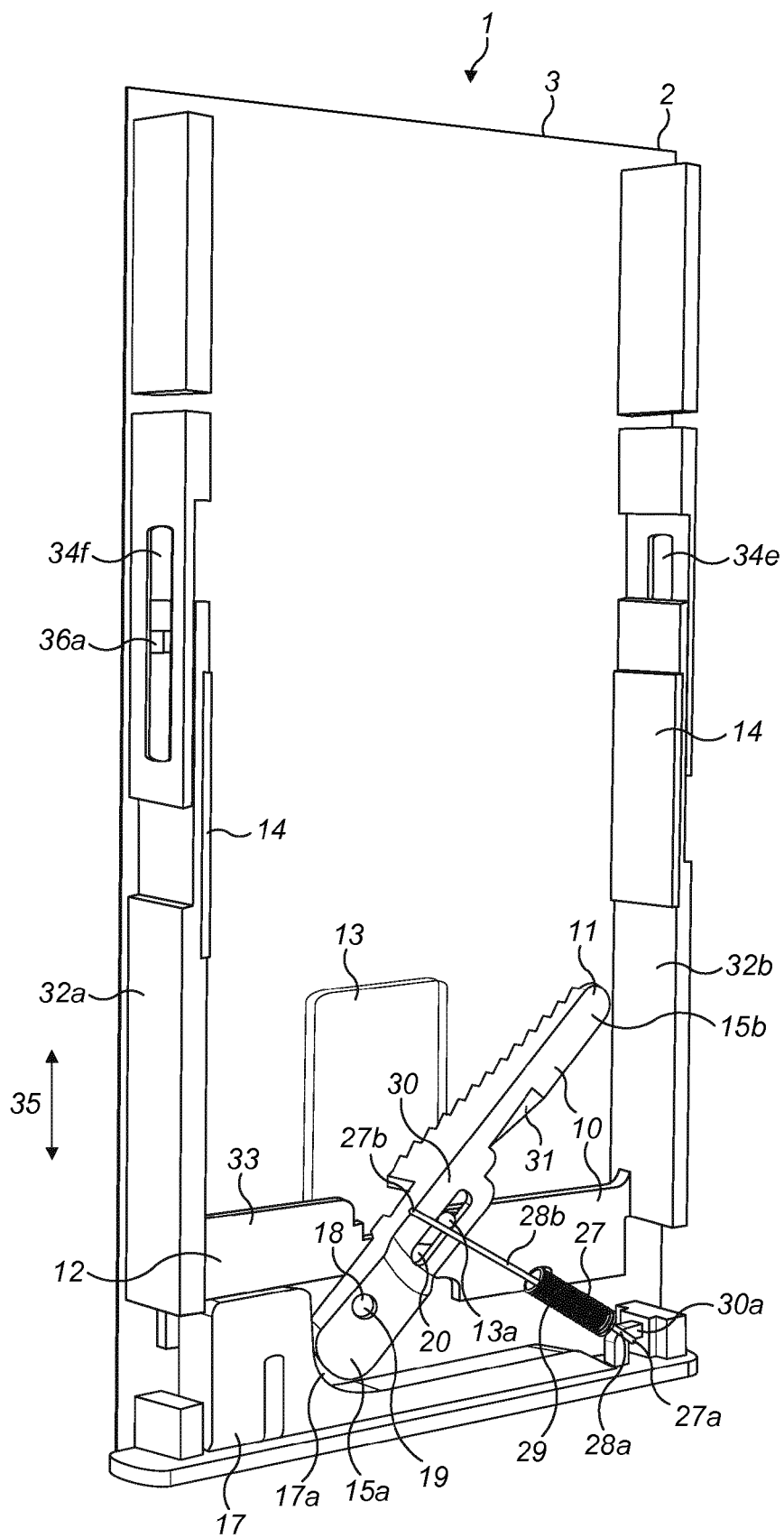


FIG. 6B

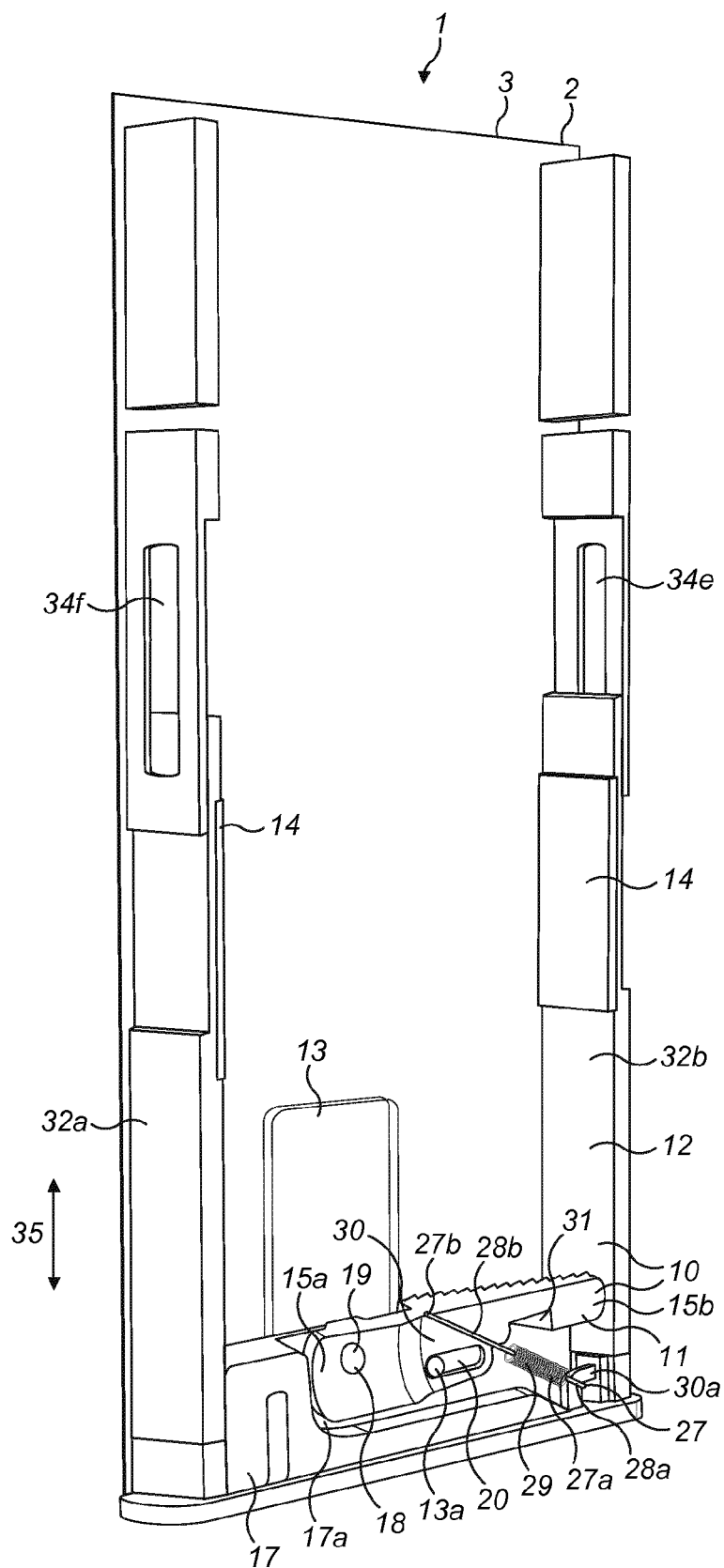


FIG. 6C

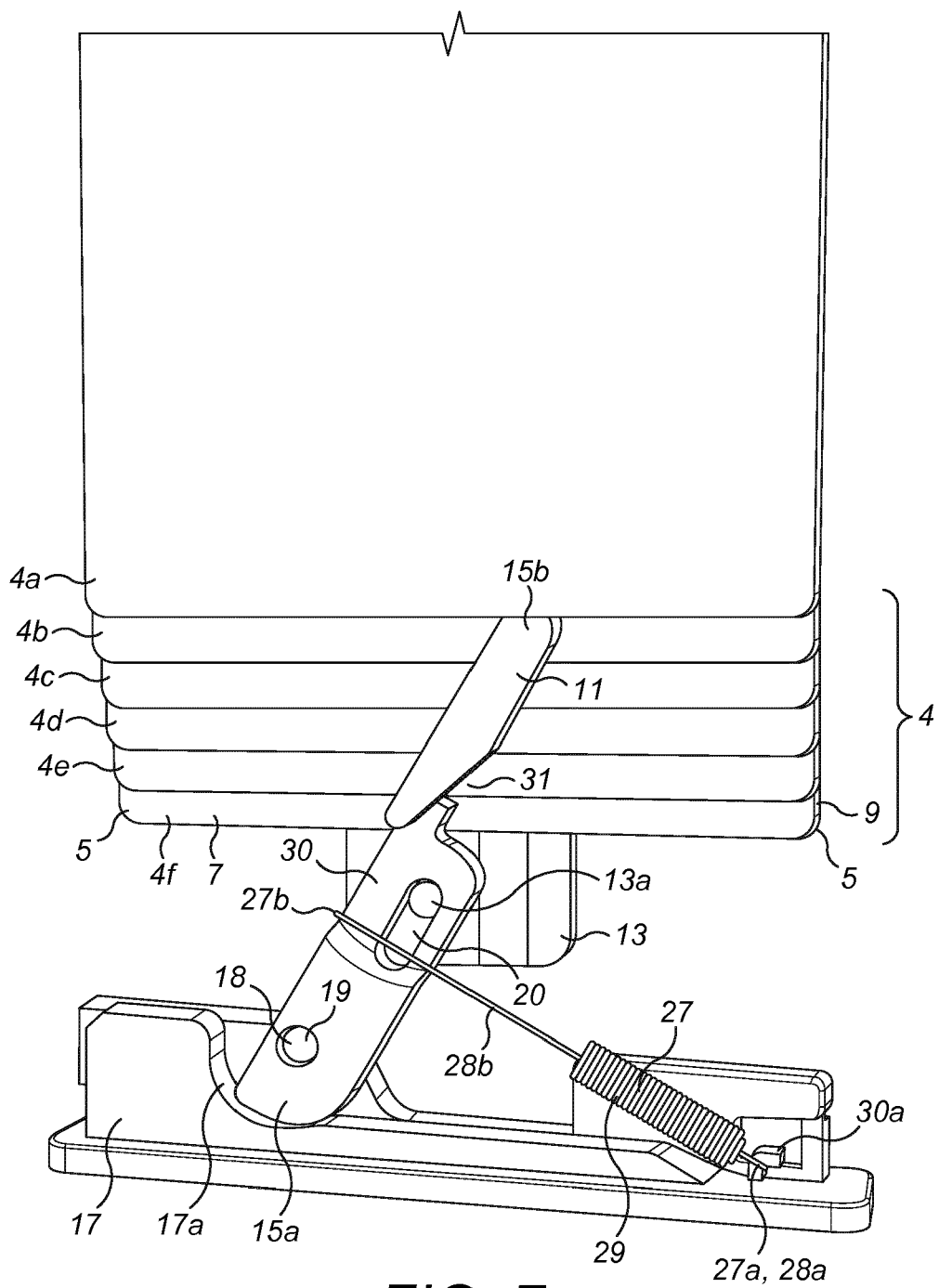


FIG. 7

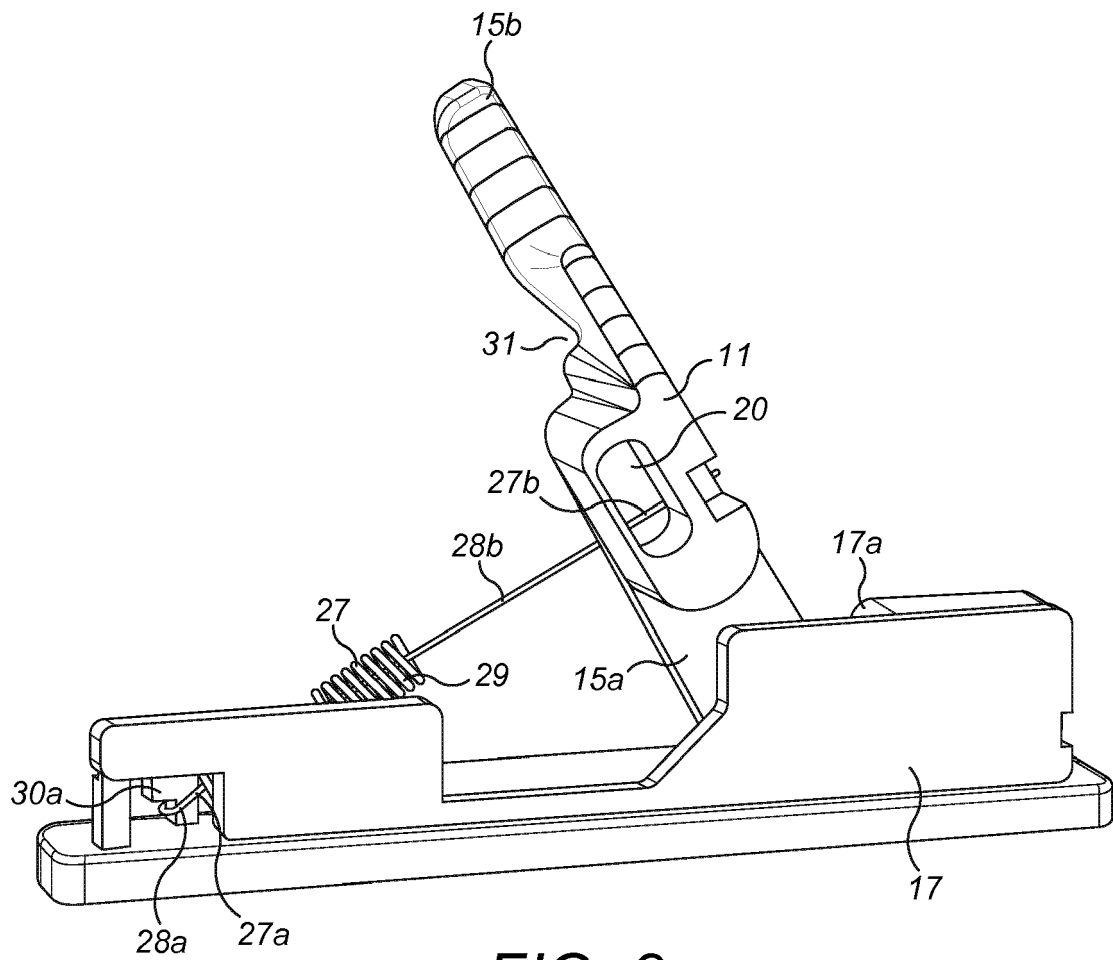


FIG. 8

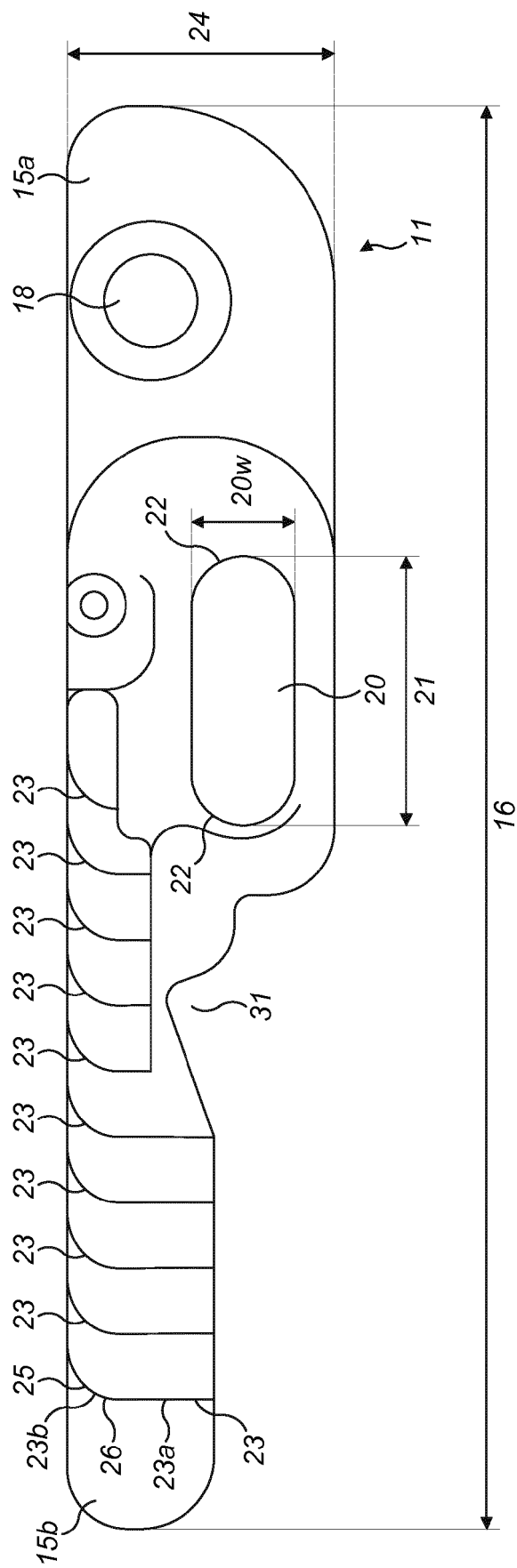


FIG. 9

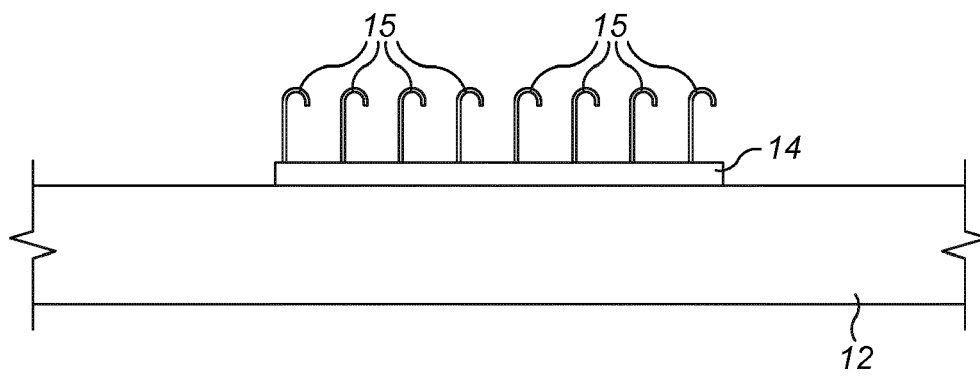


FIG. 10

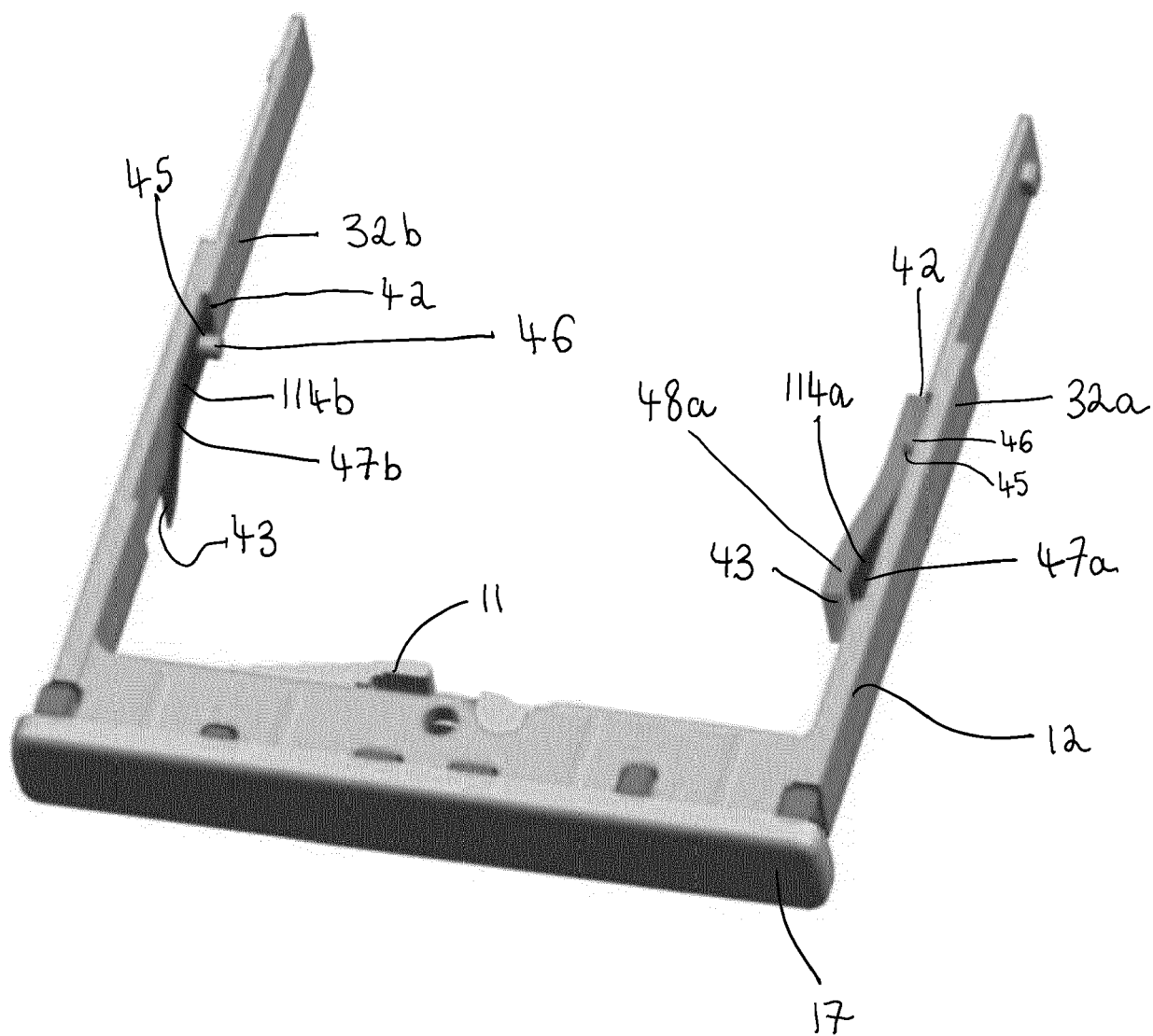


FIG. 11

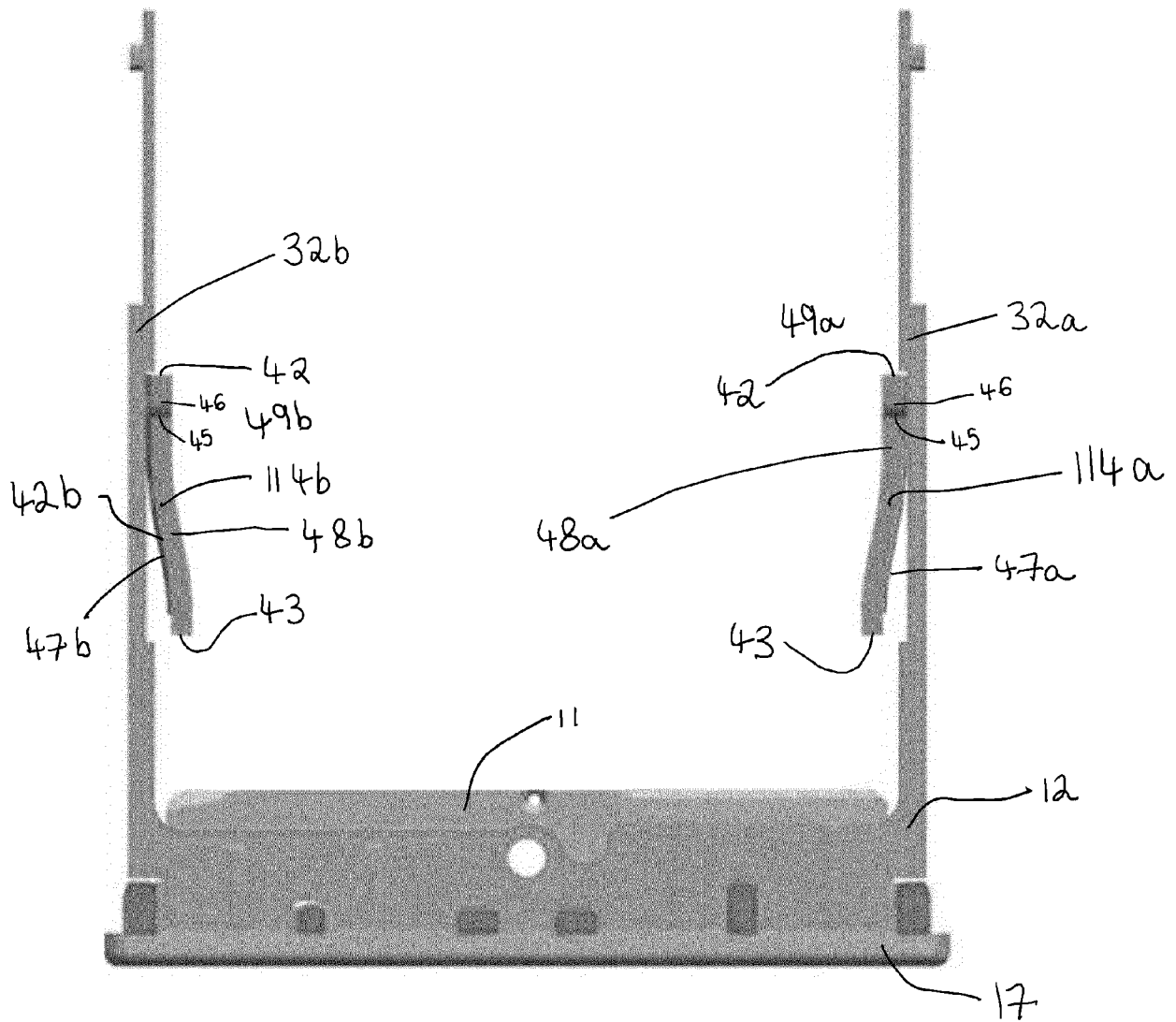


FIG. 12



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			A45C A45F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 September 2019	Examiner Lehe, Jörn
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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