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(54) DEVICE FOR SUPPLYING PLASTIC CARDS AND DEVICE FOR HANDLING PLASTIC CARDS COMPRISING SUCH SUPPLYING DEVICE

(57) A device (10) is described, for supplying plastic cards for card handling devices comprising a first and a second compartment (1, 2) which contain a first and a second stack (31, 32) of cards; a first and a second mouth (21, 22) for exiting the cards; a supplying element (4) of the cards through the first or the second mouth (21,22); a selecting mechanism (3) to withdraw a card from the first stack (31) and supply it through the first mouth (21), or to withdraw a card from the second stack (32) and supply it through the second mouth (22); a device for handling plastic cards connectable to or comprising such supplying device is also described.

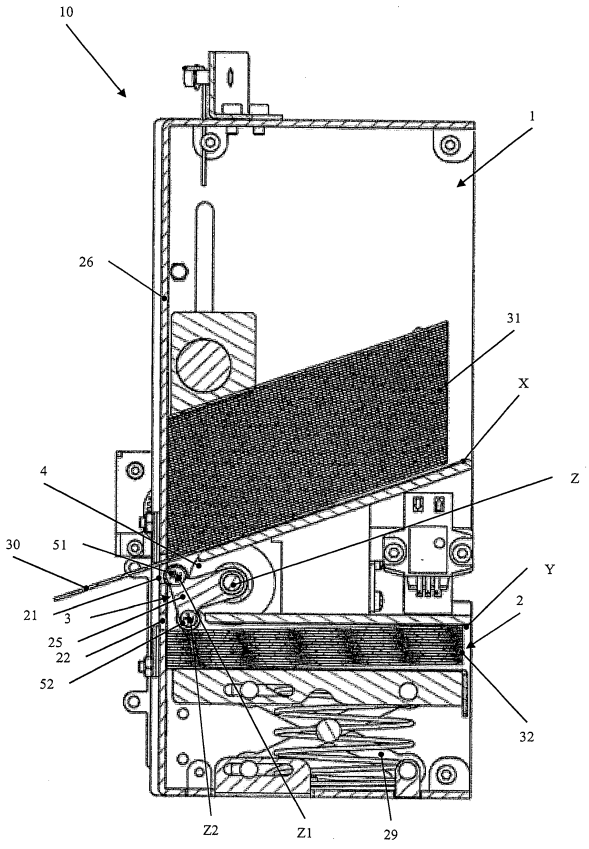

FIG. 1

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Description

[0001] The present invention refers, in general, to a device for supplying plastic cards for card handling devices.

[0002] In particular, the present invention refers to a device for supplying plastic cards adapted to supply the card by withdrawing it from at least two different stacks of cards; the invention further refers to a device for handling plastic cards comprising said supplying device.

[0003] Devices for supplying plastic cards are known in the art, for example cards of the CR 80 format or cards according to ISO 7810 standard, for a device for handling the cards such as a printer, for example a laser printer, or other types of devices, such as a device for magnetically writing or encoding a chip or a magnetic band of the card, which allow withdrawing a card from at least two different stacks of cards to supply it inside the handling device to perform a working of the card, for example a laser prionting or the magnetic writing of the chip or of the magnetic band of the card.

[0004] Such suppying dfevices can be used both inside the device for handling the cards or connected thereto, and outside it in a supply line upstream of the device, to withdraw the card from at least two different stacks of cards and supply the card inside the handling device.

[0005] The known devices for supplying plastic cards which allow supplying the card for a card handling device by withdrawing it from at least two different stacks of cards, every stack contained in a different container, provide that the card can be withdrawn from one of the two stacks of cards and is exited from two different mouths, one for every stack of cards, thereby allowing to perform the supply of the card, withdrawn from the desired stack of cards, inside the handling device.

[0006] These known devices for supplying plastic cards however are not satisfactory, and have the problem that, when it is necessary to end the withdrawal of the card from a stack and withdraw a card from the other stack, a card of the first stack can be dragged from the previously withdrawn card and remain blocked in the mouth, clogging it and blocking the operation of the device.

[0007] Object of the present invention is solving the above prior art problem, by providing a device for supplying plastic cards adapted to supply the card for a card handling device, through a first or a second mouth, withdrawing it from at least two different stacks of cards, and a device for handling plastic cards comprising said supplying device, avoiding that one of the two mouths can be clogged by a second card dragged therein, blocking the operation of the device when it is necessary to start withdrawing a card from the other stack.

[0008] The above and other objects and advantages of the invention, as willl appear from the following description, are obtained with a device for supplying plastic cards and a device for handling plastic cards comprising said supplying device, as claimed in the respective independent claims. Preferred embodiments and non-trivial variations of the present invention are the subject matter of the dependent claims.

[0009] It is intended that all enclosed claims are an integral part of the present description.

[0010] It will be immediately obvious that numerous variations and modifications (for example related to shape, sizes, arrangements and parts with equivalent functionality) can be made to what is described, without departing from the scope of the invention as appears from the enclosed claims.

[0011] The present invention will be better described by some preferred embodiments thereof, provided as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1 is a side sectional view of a device for supplying plastic cards for card handling devices according to the present invention, in a first configuration; and
- Figure 2 is a side sectional view of a device for supplying plastic cards for card handling devices according to the present invention, in a second configuration.

[0012] With reference to the Figures, a preferred embodiment of the device 10 for supplying plastic cards 30 for card handling devices and of the device for handling the cards comprising said supplying device 10 according to the present invention is shown and described.

[0013] In particular, a device 10 is described, for supplying plastic cards 30, for example cards of the CR 80 format or cards according to ISO 7810 standard, for card handling device according to the present invention, connected to a printer, for example a laser printer, or inserted therein to withdraw the card from at least two different stacks of cards and supply the printer by advancing therein the plastic cards to be treated.

[0014] Similarly, the device 10 for supplying plastic cards 30 for card handling devices according to the present invention can be connected or inserted inside devices for magnetically writing and/or encoding a chip of the plastic card.

[0015] A device for supplying plastic cards of the same type can further be used in a device for delivering plastic cards along different directions, for example used to withdraw from different stacks plastic cards to be treated and send them to different devices, such as printers, devices for magnetically writing and/or encoding the chip or the magnetic band of the plastic card, or to handle plastic cards coming from a second device for supplying plastic cards placed in a sequence to the device 10 for supplying plastic cards of the invention, for example coming from a second supplying device equal to the device 10 of the invention and associated therewith.

[0016] With reference to the Figures, the device 10 for supplying plastic cards for card handling devices of the invention comprises:

- a first compartment 1 configured to contain a first stack 31 of cards and a second compartment 2 configured to contain a second stack 32 of cards;
- a first mouth 21 for exiting the cards from the first compartment 1 and a second mouth 22 for exiting the cards from the second compartment 2;
- a supplying element 4 of the cards, configured to withdraw a card 30 from the first stack 31 or from the second stack 32 of cards and supply the card respectively through the first mouth 21, along a first supply direction X, or through the second mouth 22 along a second supply direction Y;
- a selecting mechanism 3 comprising first supplying means 51 and second supplying means 52 configured to operate in a first configuration wherein the first supplying means 51 cooperate with the supplying element 4 to withdraw a card 30 from the first stack 31 and supply the card 30 through the first mouth 21, and the second supplying means 52 prevent an exit of the cards of the second stack 32 from the second mouth 22, said first supplying means 51 and second supplying means 52 being further configured to operate in a second configuration wherein the first supplying means 51 prevent an exit of the cards of the first stack 31 from the first mouth 21, and the second supplying means 52 cooperate with the supplying element 4 to withdraw a card 30 from the second stack 32 and supply it through the second mouth 22; for example, the first supplying means 51 and the second supplying means 52 prevent an exit of the cards from the first 21 and from the second mouth 22 by closing the mouths 21, 22 and/or exerting a pressure on the stacks 31, 32 of cards to keep them far from the mouths 21, 22.

[0017] Preferably, the selecting mechanism 3 comprises a support 25 connected to the first supplying means 51 and to the second supplying means 52, said support 25 being configured to move between a first position, wherein the first supplying means 51 cooperate with the supplying element 4 to withdraw a card 30 from the first stack 31 and supply the card through the first mouth 21, while the second supplying means 52 prevent an exit of the cards of the second stack 32 from the second mouth 22, and a second position wherein the first supplying means 51 prevent an exit of the cards of the first stack 31 from the first supply mouth 21, and the second supplying means 52 cooperate with the supplying element 4 to withdraw a card 30 from the second stack 32 and supply it through the second mouth 22.

[0018] In a preferred way, the device 10 for supplying plastic cards for card handling devices of the invention comprises a bearing structure 26, to which said first and second compartments 1, 2 and said supplying element 4 are connected.

[0019] Preferably, the support 25 is connected to the bearing structure 26 rotatably around a transvere rotation axis Z, preferably perpendicular, to the card supplying directions X, Y.

[0020] In a preferred way, the selecting mechanism 3 comprises actuating means configured to move the support 25 in the first position or in the second position. Preferably, the support 25 is connected to the actuating means, for example composed of a spring and a magnet, configured to exert a force on the support 25 and take it in the first position, wherein the card is supplied through the first mouth 21 and the second supplying means 52 prevent an exit of the card 30 from the second mouth 22, or in the second position wherein the card is supplied through the second mouth 22 and the first supplying means 51 prevent an exit of the card 30 from the first mouth 21.

[0021] Preferably, the first and the second compartment 1, 2 are vertically overlapped, separated from the selecting mechanism 3.

[0022] In a preferred way, the second compartment 2 comprises a mechanism for lifting the cards 29, for example composed of two mutually hinged arms, pushed by a spring, having a first end sliding in a guide and the second hinged end, configured to lift the second stack of cards 32 in order to arrange the first card 30 to be withdrawn next to the supplying element 4.

[0023] Preferably, the first supplying means 51 and the second supplying means 52 are connected rotating to the support 25, and the supplying element 4 is connected rotating to the bearing structure 26; for example, the supplying element of the cards comprises a roller 4 connected to the bearing structure 26 rotatably around the same rotation axis Z of the support 25, and the supplying means 51, 52 each comprise at least one small roller 51, 52, connected to the support 25 and rotating around a respective axis Z1 Z2, said rotation axes Z, Z1 and Z2 being transverse, preferably perpendicular, to the card supplying directions X, Y.

[0024] In a preferred way, the small rollers 51, 52 are assembled in contact with the roller 4 and configured to drag the card 30 which must be withdrawn from the stacks 31, 32; the roller 4 is driven by known motor means, for example an electric motor connected to a shaft of the roller 4 through kinematisms or belts, and the small rollers 51, 52 are free and dragged in rotation by the roller 4.

[0025] Advantageously, the device 10 for supplying plastic cards for card handling devices of the invention allows supplying the card in a card handling device by withdrawing it from at least two different stacks of cards, providing a device for supplying plastic cards adapted to supply the card through a first or a second mouth, avoiding that one of the two mouths can be clogged by a second card dragged therein, blocking the operation of the device when it is necessary to start withdrawing a card from the other stack.

Claims

1. Device (10) for supplying plastic cards for card han-

dling devices comprising:

- a first compartment (1) configured to contain a first stack (31) of cards and a second compartment (2) configured to contain a second stack (32) of cards;
- a first mouth (21) for exiting the cards from the first compartment (1) and a second mouth (22) for exiting the cards from the second compartment (2) ;
- a supplying element (4) of the cards, configured to withdraw a card from the first stack (31) or from the second stack (32) of cards and supply the card respectively through the first mouth (21), along a first supply direction (X), or through the second mouth (22) along a second supply direction (Y);
- a selecting mechanism (3) comprising first supplying means (51) and second supplying means (52) configured to operate in a first configuration wherein the first supplying means (51) cooperate with the supplying element (4) to withdraw a card (30) from the first stack (31) and supply the card through the first mouth (21), and the second supplying means (52) prevent an exit of the cards (30) of the second stack (32) from the second mouth (22), said first supplying means (51) and second supplying means (52) being further configured to operate in a second configuration wherein the first supplying means (51) prevent an exit of the cards (30) of the first stack (31) from the first mouth (21), and the second supplying means (52) cooperate with the supplying element (4) to withdraw a card (30) from the second stack (32) and supply it through the second mouth (22);

wherein the selecting mechanism (3) comprises a support (25) connected to the first supplying means (51) and to the second supplying means (52), said support (25) being configured to move between a first position, wherein the first supplying means (51) cooperate with the supplying element (4) to withdraw a card from the first stack (31) and supply the card through the first mouth (21), while the second supplying means (52) prevent an exit of the cards (30) of the second stack (32) from the second mouth (22), and a second position wherein the first supplying means (51) prevent an exit of the cards (30) of the first stack (31) from the first mouth (21), and the second supplying means (52) cooperate with the supplying element (4) to withdraw a card (30) from the second stack (32) and supply it through the second mouth (22), the selecting mechanism (3) comprising actuating means configured to move the support (25) in the first position or in the second position,
characterized in that the support (25) is connected to the actuating means which are configured to exert a force on the support (25) and take it in the first position, wherein the card is supplied through the first mouth (21) and the second supplying means (52) close the second mouth (22), or in the second position wherein the card is supplied through the second mouth (22) and the first supplying means (51) close the first mouth (21).

2. Device (10) for supplying plastic cards for card handling devices according to claim 1, **characterized in that** it comprises a bearing structure (26), to which said first and second compartments (1, 2) and said supplying element (4) are connected, said support (25) being connected to the bearing structure (26) rotatably around a transverse rotation axis (Z), preferably perpendicular, to the card supplying directions (X, Y).

3. Device (10) for supplying plastic cards for card handling devices according to any one of the previous claims, **characterized in that** the first supplying means (51) and the second supplying means (52) are connected rotating to the support (25), and the supplying element (4) is connected rotating to the bearing structure (26).

4. Device (10) for supplying plastic cards for card handling devices according to claim 3, **characterized in that** the supplying element of the cards comprises a roller (4) connected to the bearing structure (26) rotatably around the same rotation axis (Z) of the support (25), and the supplying means (51, 52) each comprise at least one small roller (51, 52) connected to the support (25) and rotating around a respective axis (Z1, Z2), said rotation axes (Z, Z1, Z2) being transverse, preferably perpendicular, to the card supplying directions (X, Y).

5. Device (10) for supplying plastic cards for card handling devices according to any one of the previous claims, **characterized in that** the first and the second compartments (1, 2) are vertically overlapped, separated from the selecting mechanism (3).

6. Device (10) for supplying plastic cards for card handling devices according to any one of the previous claims, **characterized in that** the second compartment (2) comprises a mechanism for lifting the cards (29), configured to lift the second stack of cards (32) in order to arrange the first card to be withdrawn next to the supplying element (4).

7. Device for handling plastic cards **characterized in that** it is connectable to a device (10) for supplying plastic cards according to any one of the previous claims or comprises said device (10) for supplying plastic cards.

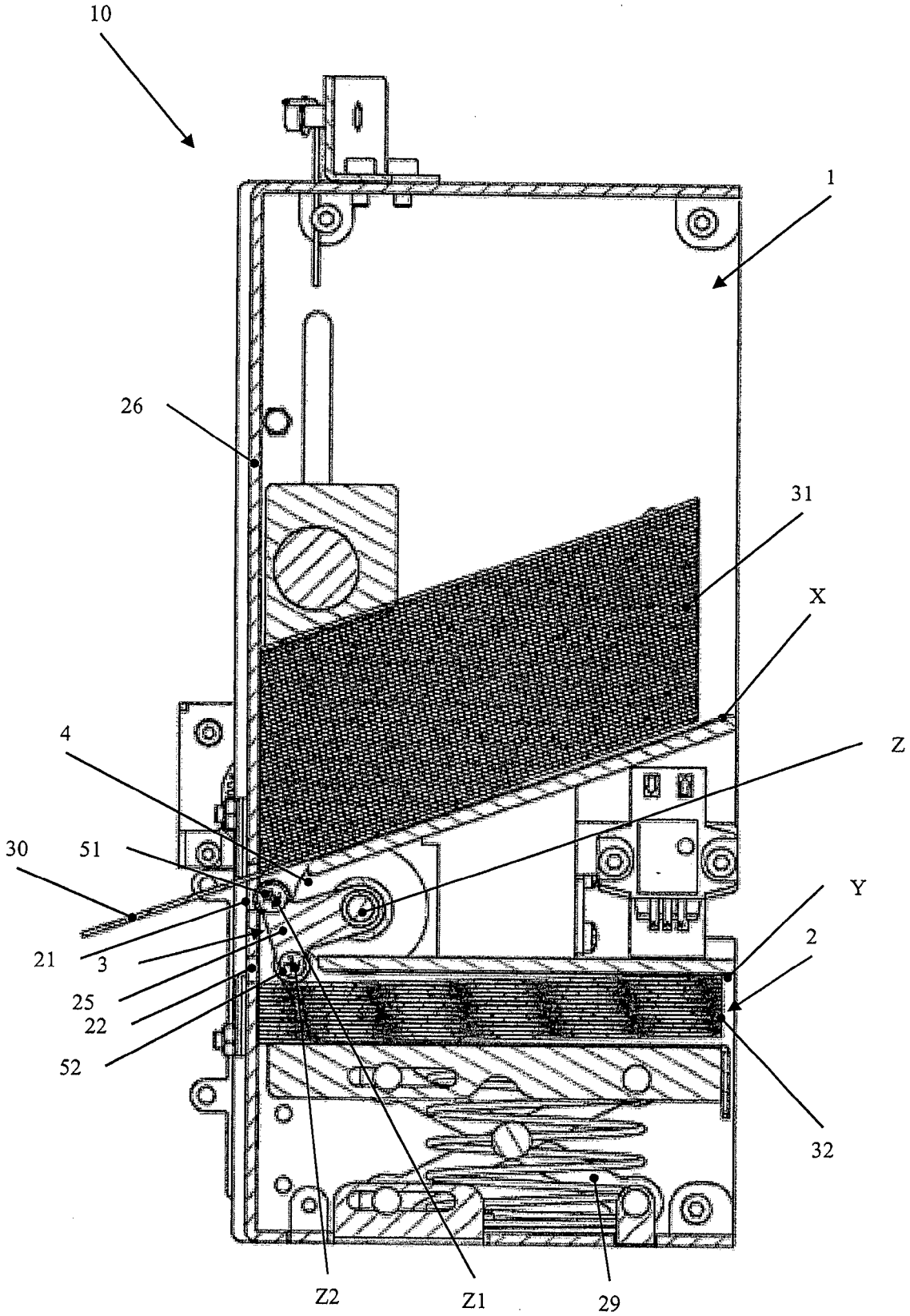

FIG. 1

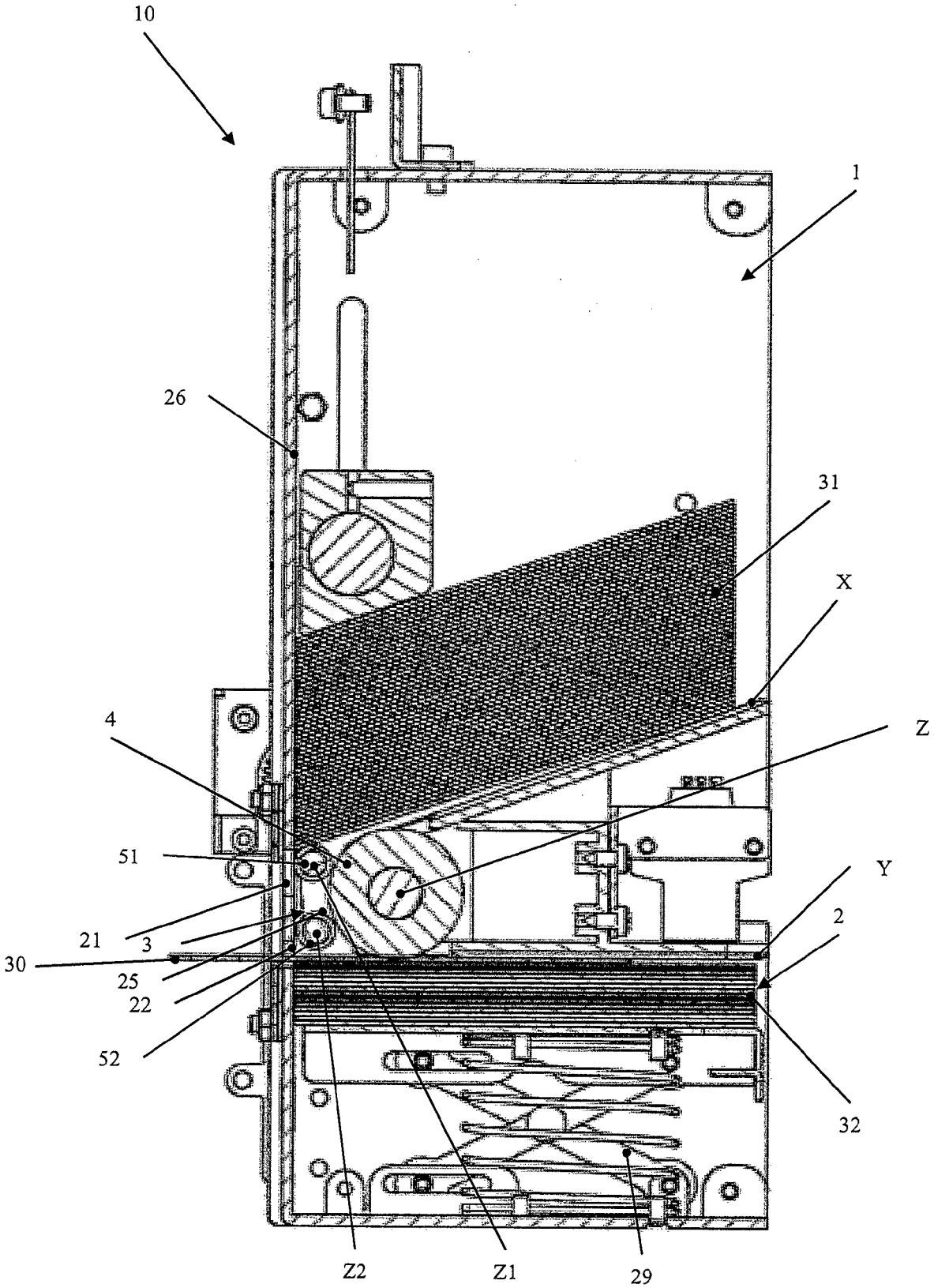

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 19 00 0514

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 March 2020	Athanasiadis, A

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