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(71) Applicant: **Gunnebo Cash Automation AB**
40227 Göteborg (SE)

(72) Inventors:
- **Hansson, Lars-Åke**
  640 31 Mellösa (SE)
- **Gyllstål, Lars Göran**
  641 96 Kartineholm (SE)
- **Stenberg, Tor**
  421 57 Västra Frölunda (SE)
- **Konkell, Gunnar**
  430 90 Öckerö (SE)

(74) Representative: **Bergentall, Annika Maria et al**
Cegumark AB,
P.O. Box 53047
400 14 Göteborg (SE)

Remarks:
A request for re-establishment of rights in respect of the twelve-month period from the date of filing of the first application has been granted (Art.87(1) and Art. 122 EPC).

(54) **Arrangement and system for handling documents of value**

(57) The invention relates to a device (1) for handling valuable documents during transportation of valuable documents between supplier (2) and receiver (3) of valuable documents by means of vehicle for transportation of valuable documents (5) and security transportation container (6) from securable receiver box for valuable documents (7-7^n) arranged at the supplier (2).

According to the invention, a docking station (8) is arranged at the supplier (2) for secure automatic closed transfer of valuable documents (4) to a said security transportation container (6).

The invention also relates to a system for banknote handling.

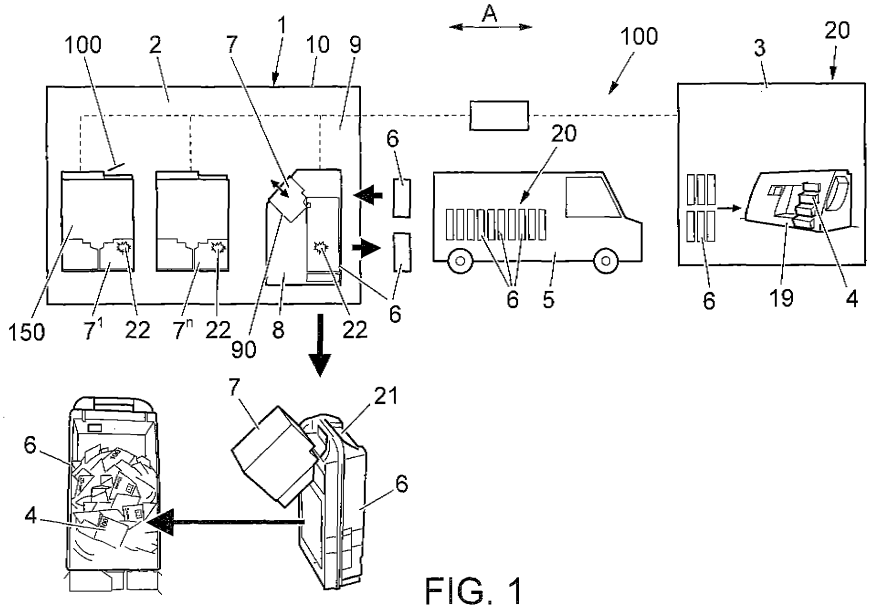


FIG. 1

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Description

[0001] The present invention relates to a device for handling valuable documents during transportation of valuable documents between supplier and receiver of valuable documents by means of vehicle for transportation of valuable documents and security transportation container, from securable receiver box for valuable documents arranged at the supplier.

[0002] Secure handling of banknotes and other valuable documents such as, e.g., cheques, is something that is tried to aim at achieving to 100 %. However, it has not yet been managed to solve this, if one looks at all attempts to, and also successful, robberies that have been made. There is always an opportunity that suits those dishonest to try to unlawfully take banknotes when such are handled by staff. Even if attempts to solve the problem partly have decreased the chances for robbers, there is always time for attempts to unallowed access of money.

[0003] In that connection, there is risk that staff is damaged in addition to the fact that great material values may disappear and/or be destroyed.

[0004] By, for instance, WO 2006/041357 A1, WO 2006/041358 A1, EP 0 692 599 A1 and EP 1 069 540 A2, systems and devices are previously known to secure the handling of banknotes etc., for the continued transportation thereof. However, nothing is shown that increases the security in connection with letting transfer banknotes from a receiver box for valuable documents used in, e.g., the retail trade to a security transportation container, so-called security bags, used in connection with handling of transportation of valuable documents. There is always an instant where the money is accessible from outside so that it without permission can be unlawfully taken by dishonest persons.

[0005] Therefore, the main object of the present invention is primarily to by simple means solve, among other things, said problems reliably and efficiently.

[0006] Said object is attained by means of a device and a system, respectively, according to the present invention, which in all essentials is characterized in that a docking station is arranged at the supplier for secure automatic closed transfer of valuable documents to a said security transportation container, and that the docking station arranged at the supplier is arranged to enable secure automatic closed transfer of banknotes from a receiver box for valuable documents detachable from the place of payment, respectively, after connection of said receiver box for valuable documents to said docking station, to a security transportation container receivable in the docking station.

[0007] The invention is described below in the form of a preferred embodiment example, reference being made to the accompanying drawings in which,

Fig. 1 shows the device and the system, respectively, schematically,

Fig. 2 shows a driving portion of a docking station according to the invention as well as a container for the transportation of valuable documents,

Fig. 3 shows the feeding compartment of a container,

Fig. 4 a container obliquely from the front,

Fig. 5 shows the interior of a car for transportation of valuable documents,

Fig. 6 shows the docking station obliquely from the front,

Fig. 7 shows the docking station in cross-section, and

Fig. 8. shows the docking station in perspective having a connected receiver box for valuable documents.

[0008] A device 1 intended for handling valuable documents during transportation of valuable documents between supplier 2 and receiver 3 of banknotes 4 and other valuable documents by means of vehicle for transportation of valuable documents 5 and security transportation container 6 from a receiver box for valuable documents 7-7^n, which is securable at the supplier 2, comprises a docking station 8. According to the invention, a said docking station 8 is contained in a separated space 9 in a building 10. Such a docking station 8 is arranged to enable secure automatic closed transfer of valuable documents 4 from a receiver box for valuable documents 7-7^n to a said security transportation container 6 connectable in the docking station 8.

[0009] The device 1 is suitable to be applied in a banknote handling system 100 for the retail trade and comprises a banknote reception unit 150 having appurtenant receiver boxes for valuable documents 7-7^n for the receipt of banknotes 4 in. The receiver boxes for valuable documents 7-7^n are arranged receivable and lockably interconnectable preferably to more than one place of receipt in e.g., a respective counter 150 and which enable alternate exchange of the receiver boxes for valuable documents 7-7^n, which comprise a rotatably driven storage drum for banknotes 4, contained in a surrounding cover. The driving source for driving said rotatable banknote storage drum is arranged in said receiver boxes for valuable documents 7-7^n and banknotes 4 are arranged to be received rolled on said drum and pressed in place by assembly lines at mutual distance from each other as seen in the direction of rotation for the drum. The receiver boxes for valuable documents 7-7^n are arranged lockably interconnectable with said banknote reception unit 150, and are lockably interconnectable with said docking station 8 for banknotes 4, respectively, which are received wound on a said storage drum. The receiver boxes for valuable documents 7-7^n comprise a timer for activation of marking and/or destruction by e.g., dyeing of the contents upon e.g., attack and theft of a receiver box for valuable documents 7-7^n.

[0010] Security transportation containers 6 for emptied banknotes 4 are included in the system 100 for transfer of banknotes 4 between e.g., a shop 2 and vehicle for

transportation of valuable documents 5 and said security transportation container 6 also contains means for marking and/or destruction of the contents, by e.g., dyeing the banknotes and activation upon e.g., attack and theft of said security transportation container 6.

[0011] The receiver boxes for valuable documents 7-7^n in question are receivable in an up-filling space 90 in said docking station 8.

[0012] The docking station 8 is provided with a keyset 200 or the like for decoding upon coupling, and uncoupling, respectively, of receiver boxes for valuable documents 7-7^n to the docking station 8. Said security transportation containers 6 have a preferably slot-shaped reception opening 11 adapted to entirely closed feeding of valuable documents 4 from a receiver box for valuable documents 7-7^n connectable and receivable in said docking station 8.

[0013] A feeding mechanism 12 to provide secure transfer of valuable documents, such as banknotes 4 from a said receiver box for valuable documents 7-7^n, which normally is received lockable in a shop 2 or another similar point of payment, to a security transportation container 6 receivable in said docking station 8, is formed of pair-wise drive rollers 13, 14. Said drive rollers are driven by an electric motor 15, which is connected into said docking station and which is connectable to suitable electric driving source by means of cables 16. A said feeding mechanism 12 is in the shown examples arranged in the security transportation containers 6 but may also be arranged in the docking station 8 or in the receiver boxes for valuable documents 7-7^n.

[0014] A docking station 8 has a height of approx. 1-1,5 m and is reliably anchored to the building 10 so that it is not easy to bring with and move for thieves.

[0015] An additional feature thereby is that the drive rollers 13, 14 are locked to be possible to be brought in opposite intended driving direction 17, 18. The main object thereof is that the banknotes 4 are driven by the rollers 13, 14 from a receiver box for valuable documents 7-7^n connected in the docking station 8 into a security transportation container 6 connected to the docking station 8. Thus, it should not be possible to from the outside pull out the banknotes from the interior of said security transportation container 6. Furthermore, the receiver box for valuable documents 7-7^n comprises a rotatably driven roller device according to the above-mentioned for storage of valuable documents 4 line-wise on a formed rotatable roller.

[0016] At receivers 3 of filled security transportation containers 6 with money therein, at a distance L from said supplier 2 in which the receiver boxes for valuable documents 7-7^n are filled with obtained banknotes 4 being surplus and not needing to be used as change, i.e., foremost big banknotes, a sorter 19 is suitably arranged. A said sorter 19 is arranged to quickly sort those banknotes 4 that in security, in e.g., a cash depot 20, are emptied from the respective security transportation container 6 to be counted and bundled.

[0017] The bag-shaped security transportation containers 6, or containers arranged with another suitable shape, which are arranged movable between the docking station 8 and vehicle for transportation of valuable documents 5 and between said vehicle 5 and receiver 3, respectively, are arranged to be possible to be secured by means of suitable lock members in a holder 20 internally situated and protected in said vehicle 5.

[0018] The security transportation containers 6 that are included in the device 1 as well as the receiver boxes for valuable documents 7-7^n, contain content destroyer 22 of suitable type, such as, for instance, ink cartridges arranged to be activated by, e.g., explosive or by another suitable release mechanism, e.g., carbonic acid cartridges etc. The material of said security transportation container 6 consists of metal, pressed board and/or plastic, suitably reinforced e.g., using a surrounding cover, which makes that the contents of a said security transportation container 6 are destroyed if someone begins to break into a security transportation container 6 through the material of the same as well as through the opening 11 for feeding banknotes 4 therein. They are furthermore provided with carrying handles 21, which enables manual carrying of the same. A device 1 according to the invention is extremely suitable to be applied in a system 100 for transfer of banknotes 4 from a supplier 2 in the form of, e.g., a point of payment 150 in a shop and the like to enable secure transportation of the banknotes 4 to receiver 3 by means of secure guard-provided vehicles for transportation of valuable documents 5 having the banknotes safely received in security transportation containers 6, by means of a number of reliably securable receiver boxes for valuable documents 7-7^n arranged at the supplier 2.

[0019] Such a system 100 comprises a steady and anchored docking station 8, which is situated at the supplier 2, preferably in the office of the shop. The said docking station 8 is arranged to enable secure automatic closed transfer of banknotes 4 from a said receiver box for valuable documents 7-7^n detachable from the place of payment in the counter 150, Said secure transfer of banknotes 4 is arranged to be possible to take place after connection of said receiver box for valuable documents 7-7^n having been effected to the space 90 in said docking station 8 to a security transportation container 6, which before then safely has been received in said docking station 8 in close connection to a said receiver box for valuable documents 7-7^n. In that connection, the banknote feeder 12 of the docking station 8 is arranged in close connection to a slit-shaped opening 11 of the security transportation container 6. The rollers 13, 14 are arranged so that the banknotes 4 are pulled out from a said receiver box for valuable documents 7-7^n into the security transportation container 6.

[0020] For instance, approx. 2-3000 banknotes 4 can be received in a said security transportation container 6 and if then the banknotes are of great denominations, this becomes a considerable amount of money that safely

can be transported from the supplier 2 and his/her shop 10 to a safer location 3, 20.

[0021] The banknotes 4 are fed out automatically from the receiver box for valuable documents 7-7^n, by means of the mechanism 13-16, which prevents access from outside to a connected security transportation container 6, in the docking station 8, thanks to the locking on the drive rollers 13, 14 and which prevents that the same rollers are driven in the opposite direction to the feeding-out direction 17, 18.

[0022] A device 1 and a system 100, respectively, according to what has been described above is/are not limited to the above-mentioned but should be possible to be varied within the scope of the claims without deviating from the general idea of the invention.

Claims

1. A device (1) for handling valuable documents during transportation of valuable documents between supplier (2) and receiver (3) of valuable documents by means of vehicle for transportation of valuable documents (5) and security transportation container (6), from securable receiver box for valuable documents (7-7^n) arranged at the supplier (2), **characterized in that** a docking station is arranged (8) at the suppier (2) for secure automatic closed transfer of valuable documents (4) to a said security transportation container (6).

2. A device according to claim 1, **characterized in that** said security transportation container (6) comprises a slot-shaped reception opening (11) for completely closed feed in of valuable documents from a receiver box for valuable documents (7-7^n) receivable in said docking station (8).

3. Device according to claim 1, **characterized in that** a feeding mechanism (12) for transfer of valuable documents from a said receiver box for valuable documents (7-7^n) in the counter of a shop (2) or a similar point of payment to a security transportation container (6) is formed by pair-wise drive rollers (13, 14).

4. Device according to claim 3, **characterized in that** the drive rollers (13, 14) are locked to be prevented from being driven opposite the intended driving direction (17, 18).

5. Device according to any one of the above claims, **characterized in that** the receiver box for valuable documents (7-7^n) comprises a rotatably driven roller belt device for storage of valuable documents (4) line-wise on a formed rotatable roller.

6. Device according to any one of the above claims, **characterized in that** at receiver (3), a sorter (19), preferably a banknote sorter, is arranged for sorting valuable documents (4) taken out from the security transportation container (6).

7. Device according to any one of the above claims, **characterized in that** security transportation containers (6) movable between the docking station (8) and vehicle for transportation of valuable documents (5) are arranged to be received in holders (20) internally protected in said vehicle (5), preferably securable.

8. Device according to any one of the above claims, **characterized in that** in security transportation container (6) and receiver box for valuable documents (7-7^n) included in the device (1), a content destroyer (22) is arranged, such as for instance ink cartridges arranged to be activated by a release mechanism.

9. Device according to any one of the above claims, **characterized in that** the docking station (8) is fixedly anchored in a building (10).

10. Device according to any one of the above claims, **characterized in that** the security transportation containers (6), which have handles (21) for manual carrying, consist of e.g., metal, board and/or of plastic material as well as surrounding cover.

11. A system (100) for transfer of banknotes (4) from point of payment (150) in a shop and the like for transportation of the banknotes (4) to receiver (3) by vehicle for transportation of valuable documents (5) in security transportation container (6), by means of securable receiver box for valuable documents (7-7^n) arranged at the supplier, **characterized in that** docking station (8) arranged at the supplier (2) is arranged to enable secure automatic closed transfer of banknotes (4) from a receiver box for valuable documents (7-7^n) detachable from the place of payment (150), after connection of said receiver box for valuable documents to said docking station (8), to a security transportation container (6) receivable in the docking station (8).

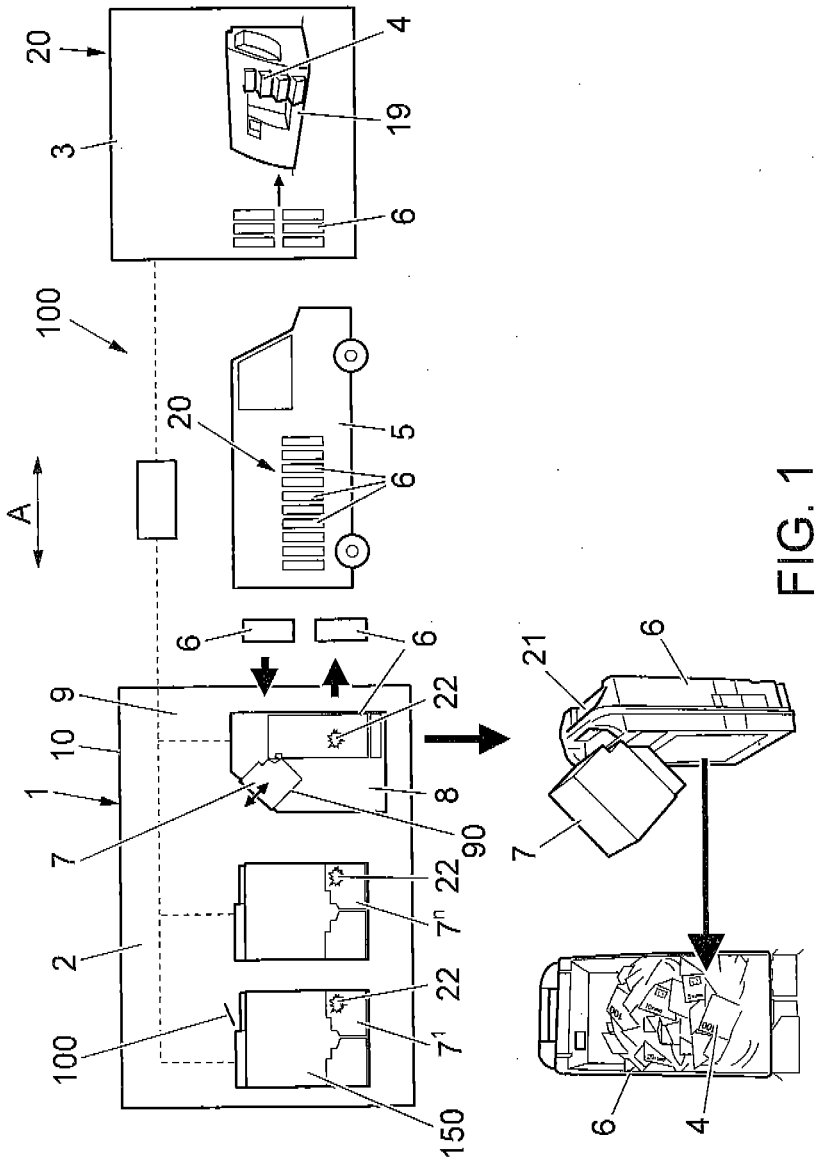


FIG. 1

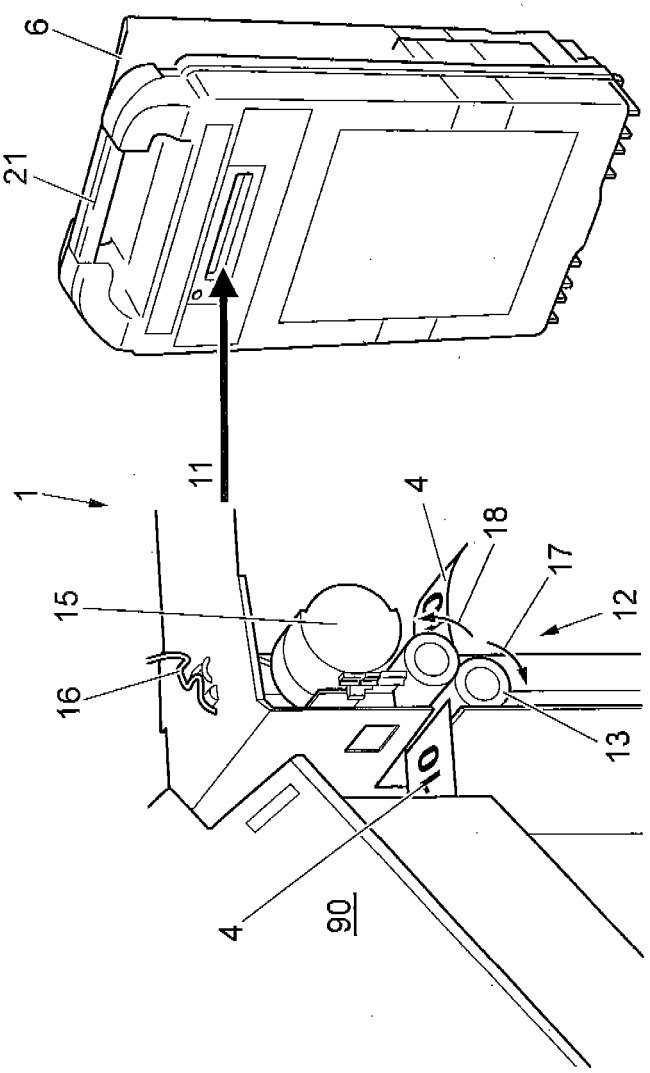


FIG. 2

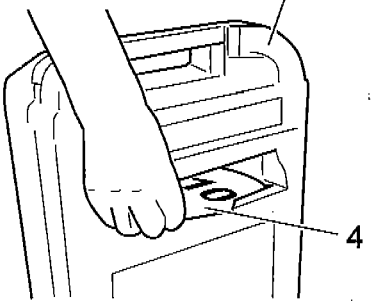


FIG. 3

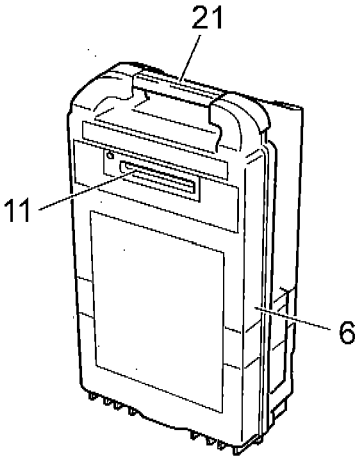


FIG. 4

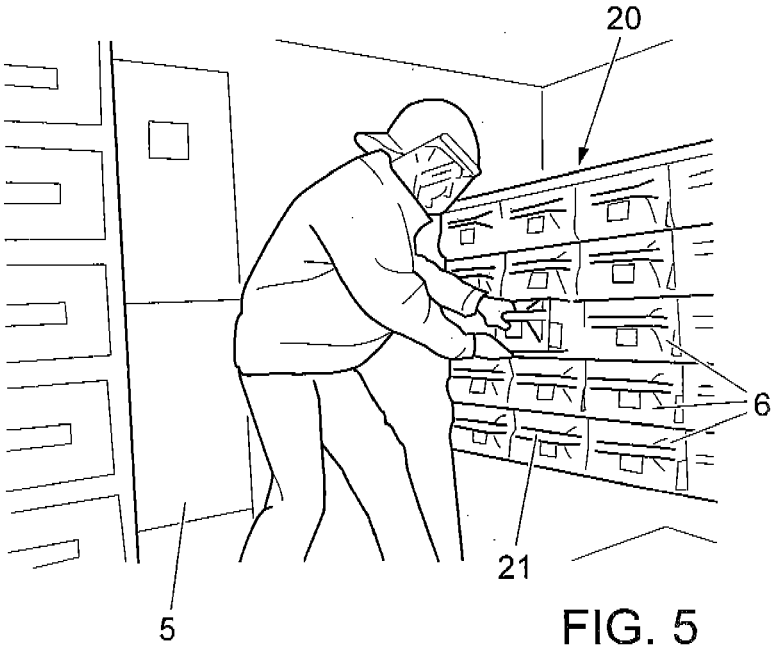


FIG. 5

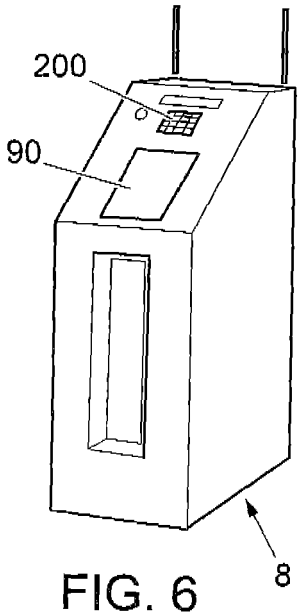


FIG. 6

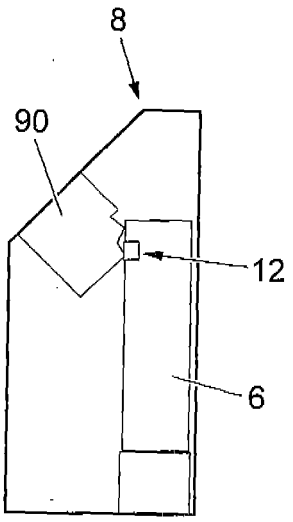


FIG. 7

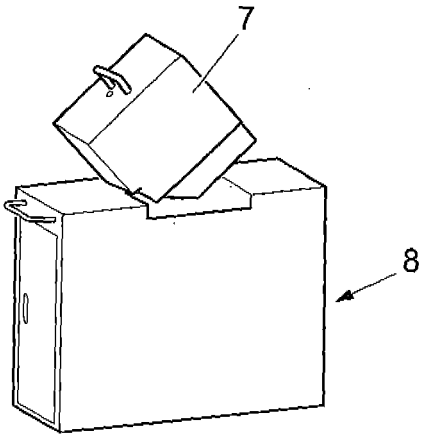


FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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