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(54) **System for handling documents of value**

System für das Handhaben von Wertdokumenten

Système pour manipuler des documents de valeur

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Description

[0001] The present invention relates to a system 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 banknote 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 system according to claim 1.

[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 system, 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.

[0009] 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.

[0010] The device 1 is suitable to be applied in a banknote handling system 100 according the invention 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.

[0011] 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.

[0012] The receiver boxes for valuable documents 7-7^n in question are receivable in an up-filling space 90 in said docking station 8.

[0013] 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 trans-

portation containers 6 have a 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.

[0014] 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 arranged in the security transportation containers 6.

[0015] 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.

[0016] 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

[0017] 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.

[0018] The bag-shaped security transportation containers 6, or containers arranged with another suitable shape, which are arranged movable between the docking station B 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.

[0019] The security transportation containers 6 that are included in the system 100 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 trough 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 is extremely suitable to be applied in a system 100 according to the invention 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.

[0020] 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.

[0021] 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.

[0022] 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.

[0023] A system 100 according to what has been described above is 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 in-

vention.

Claims

1. A system (100) for handling banknotes (4) during transportation of banknotes (4) between supplier (2) and receiver (3) of banknotes (4) by means of vehicle (5) for transportation of banknotes (4) and security transportation container (6), from securable receiver box (7-7^n) for banknotes (4) arranged at the supplier (2), namely 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), wherein a docking station (8) of the system (100) is arranged at the supplier (2) for secure automatic closed transfer of banknotes (4) to a said security transportation container (6) of the system (100), said docking station (8) arranged at the supplier (2) is arranged to enable secure automatic closed transfer of banknotes (4) from said receiver box (7-7^n) of the system (100) detachable from the place of payment (150), after connection of said receiver box for banknotes (4) to said docking station (8), to said security transportation container (6) receivable in the docking station (8), wherein said security transportation container (6) comprises a slot-shaped reception opening (11) for completely closed feed in of banknotes (4) from the receiver box (7-7^n) for banknotes (4) receivable in said docking station (8), said security transportation container (6), which has a handle (21) for manual carrying, consists of e.g., metal, board and/or of plastic material as well as surrounding cover,**characterized in that** a feeding mechanism (12) for transfer of banknotes (4) from a said receiver box for (7-7^n) for banknotes (4) 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) and is arranged in said security transportation container (6), that the receiver box for banknotes (4) comprises a rotatably driven roller belt device for storage of banknotes (4) line-wise on a formed rotatable roller, that the drive rollers (13, 14) are locked to be prevented from being driven opposite the intended driving direction (17, 18), that in security transportation container (6) and receiver box (7-7^n) for banknotes (4) included in the system (100) a content destroyer (22) is arranged, such as for instance ink cartridges arranged to be activated by a release mechanism.

2. System (100) according to claim 1, **characterized in that** the security transportation container (6) movable between the docking station (8) and vehicle (5) for transportation of banknotes (4) is arranged to be received in holders (20) internally protected in said vehicle (5), preferably securable.

3. System (100) according to any one of the above claims, **characterized in that** the docking station (8) is fixedly anchorable in a building (10).

4. System (100) 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 banknotes (4) taken out from the security transportation container (6).

Patentansprüche

1. System (100) zum Handhaben von Banknoten (4) während des Transports von Banknoten (4) zwischen einem Lieferanten (2) und einem Empfänger (3) von Banknoten (4) mittels Fahrzeug (5) zum Transport von Banknoten (4) und Sicherheitstransportbehälter (6) aus einer sicherbaren Empfängerbox (7-7^n) für Banknoten (4), die bei dem Lieferanten (2) angeordnet ist, insbesondere zur Überführung von Banknoten (4) von einem Zahlungspunkt (150) in einem Laden und dergleichen zum Transport der Banknoten (4) zum Empfänger (3), wobei eine Andockstation (8) des Systems (100) bei dem Lieferanten zur sicheren automatischen verschlossenen Überführung von Banknoten (4) zur dem Sicherheitstransportbehälter (6) des Systems (100) angeordnet ist, wobei die Andockstation (8), die bei dem Lieferanten (2) angeordnet ist, eingerichtet ist, um eine sichere automatische verschlossene Überführung von Banknoten (4) von der Empfängerbox (7-7^n) des Systems (100), die von dem Zahlungsort (150) abnehmbar ist, nach einer Verbindung der Empfängerbox für Banknoten (4) mit der Andockstation (8) zu dem Sicherheitstransportbehälter (6), der in der Andockstation (8) aufnehmbar ist, zu ermöglichen, wobei der Sicherheitstransportbehälter (6) eine schlitzförmige Aufnahmeöffnung (11) für ein vollständig verschlossenes Einspeisen von Banknoten (4) aus der Empfängerbox (7-7^n) für Banknoten (4), die in der Andockstation (8) aufnehmbar ist, umfasst, wobei der Sicherheitstransportbehälter (6), der einen Griff (21) zum Tragen von Hand aufweist, z.B. aus Metall-, Holz- und/oder aus Kunststoffmaterial sowie einer umgebenden Abdeckung besteht, **dadurch gekennzeichnet, dass** ein Einspeisemechanismus (12) zur Überführung von Banknoten (4) von einer Empfängerbox (7-7^n) für Banknoten (4) in dem Schalter eines Ladens (2) oder eines ähnlichen Zahlungspunktes zu einem Sicherheitstransportbehälters (6) durch paarweise Antriebswalzen (13, 14) gebildet und in dem Sicherheitstransportbehälter (6) angeordnet ist, dass die Empfängerbox für Banknoten (4) eine drehbar angetriebene Walzenriemeneinrichtung zur Speicherung von Banknoten (4) der Reihe nach auf einer gebildeten drehbaren Walze umfasst, dass die Antriebswalzen (13, 14) verriegelt

sind, um zu verhindern, dass sie entgegengesetzt zu der beabsichtigten Antriebsrichtung (17, 18) angetrieben werden, dass in dem Sicherheitstransportbehälter (6) und der Empfängerbox (7-7^n) für Banknoten (4), die in dem System (100) enthalten sind, eine Inhaltszerstörungseinrichtung (22), wie etwa zum Beispiel Tinkenkartuschen, angeordnet ist, die durch einen Freigabemechanismus zu aktivieren ist.

2. System (100) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Sicherheitstransportbehälter (6), der zwischen der Andockstation (8) und dem Fahrzeug (5) zum Transport von Banknoten (4) beweglich ist, derart eingerichtet ist, dass er in Haltern (20) aufgenommen sein kann, die in dem Fahrzeug (5) intern geschützt, bevorzugt sicherbar sind.

3. System (100) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Andockstation (8) fest in einem Gebäude (10) verankerbar ist.

4. System (100) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** bei Empfänger (3) ein Sortierer (19), vorzugsweise ein Banknotensortierer, zum Sortieren von Banknoten (4), die aus dem Sicherheitstransportbehälter (6) entnommen werden, angeordnet ist.

Revendications

1. Système (100) pour manipuler des billets de banque (4) durant un transport de billets de banque (4) entre un fournisseur (2) et un destinataire (3) de billets de banque (4) au moyen d'un véhicule (5) destiné à un transport de billets de banque (4) et d'un contenant de transport sécurisé (6), à partir d'une boîte réceptrice pouvant être sécurisée (7-7^n) destinée à des billets de banque (4) agencée chez le fournisseur (2), à savoir pour un transfert de billets de banque (4) depuis un point de paiement (150) dans un magasin et autres en vue d'un transport des billets de banque (4) jusqu'au destinataire (3), où une station d'arrimage (8) du système (100) est agencée chez le fournisseur (2) pour sécuriser un transfert fermé automatique de billets de banque (4) jusqu'audit contenant de transport sécurisé (6) du système (100), ladite station d'arrimage (8) agencée chez le fournisseur (2) est agencée pour permettre un transfert fermé automatique sécurisé de billets de banque (4) depuis ladite boîte réceptrice (7-7^n) du système (100) pouvant être détachée du point de paiement (150), après fixation de ladite boîte réceptrice destinée à des billets de banque (4) sur ladite station d'arrimage (8), sur ledit contenant de transport sécurisé (6) pouvant être reçu dans la station d'arrimage (8), où ledit contenant de transport sécurisé (6) comprend une ouverture de réception en forme de fente (11) pour une introduction complètement fermée de billets de banque (4) depuis la boîte réceptrice (7-7^n) destinée à des billets de banque (4) pouvant être reçue dans ladite station d'arrimage (8), ledit contenant de transport sécurisé (6), lequel dispose d'une poignée (21) pour un transport à la main, est constitué par exemple de métal, de carton et/ou d'une matière plastique ainsi que d'une enveloppe protectrice, **caractérisé en ce qu'**un mécanisme d'introduction (12) destiné à un transfert de billets de banque (4) depuis ladite boîte réceptrice (7-7^n) destinée à des billets de banque (4) au niveau du comptoir d'un magasin (2) ou d'un point de paiement similaire jusqu'à un contenant de transport sécurisé (6) est formé par des rouleaux d'entraînement appariés (13, 14) et est agencé dans ledit contenant de transport sécurisé (6), **en ce que** la boîte réceptrice destinée à des billets de banque (4) comprend un dispositif de courroie à rouleaux pouvant être entraîné en rotation pour un stockage de billets de banque (4) en ligne sur un rouleau pouvant être entraîné en rotation formé, **en ce que** les rouleaux d'entraînement (13, 14) sont verrouillés de manière à empêcher qu'ils ne soient entraînés dans le sens opposé au sens d'entraînement prévu (17, 18), **en ce que** dans un contenant de transport sécurisé (6) et une boîte réceptrice (7-7^n) destinés à des billets de banque (4) inclus dans le système (100), un destructeur de contenu (22) est agencé, comme par exemple des cartouches d'encre agencées de manière à être activées par un mécanisme de libération.

2. Système (100) selon la revendication 1, **caractérisé en ce que** le contenant de transport sécurisé (6) pouvant être déplacé entre la station d'arrimage (8) et un véhicule (5) destiné à un transport de billets de banque (4) est agencé de manière être reçu dans des supports (20) protégés à l'intérieur dudit véhicule (5), de préférence pouvant être sécurisés.

3. Système (100) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la station d'arrimage (8) peut être ancrée de manière fixe dans un bâtiment (10).

4. Système (100) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** chez le destinataire (3), un dispositif de tri (19), de préférence un dispositif de tri de billets de banque, est agencé afin de trier des billets de banque (4) extraits du contenant de transport sécurisé (6).

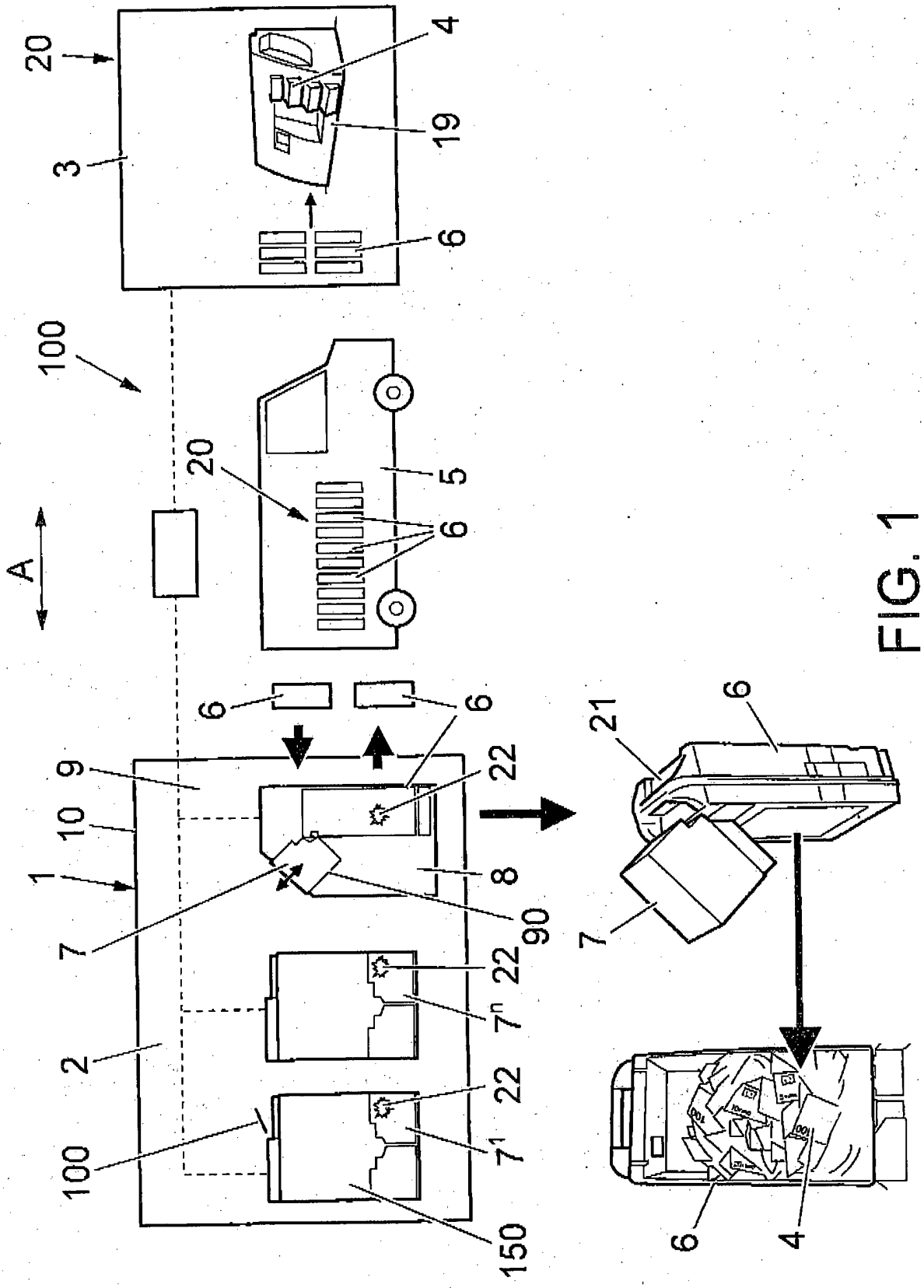

FIG. 1

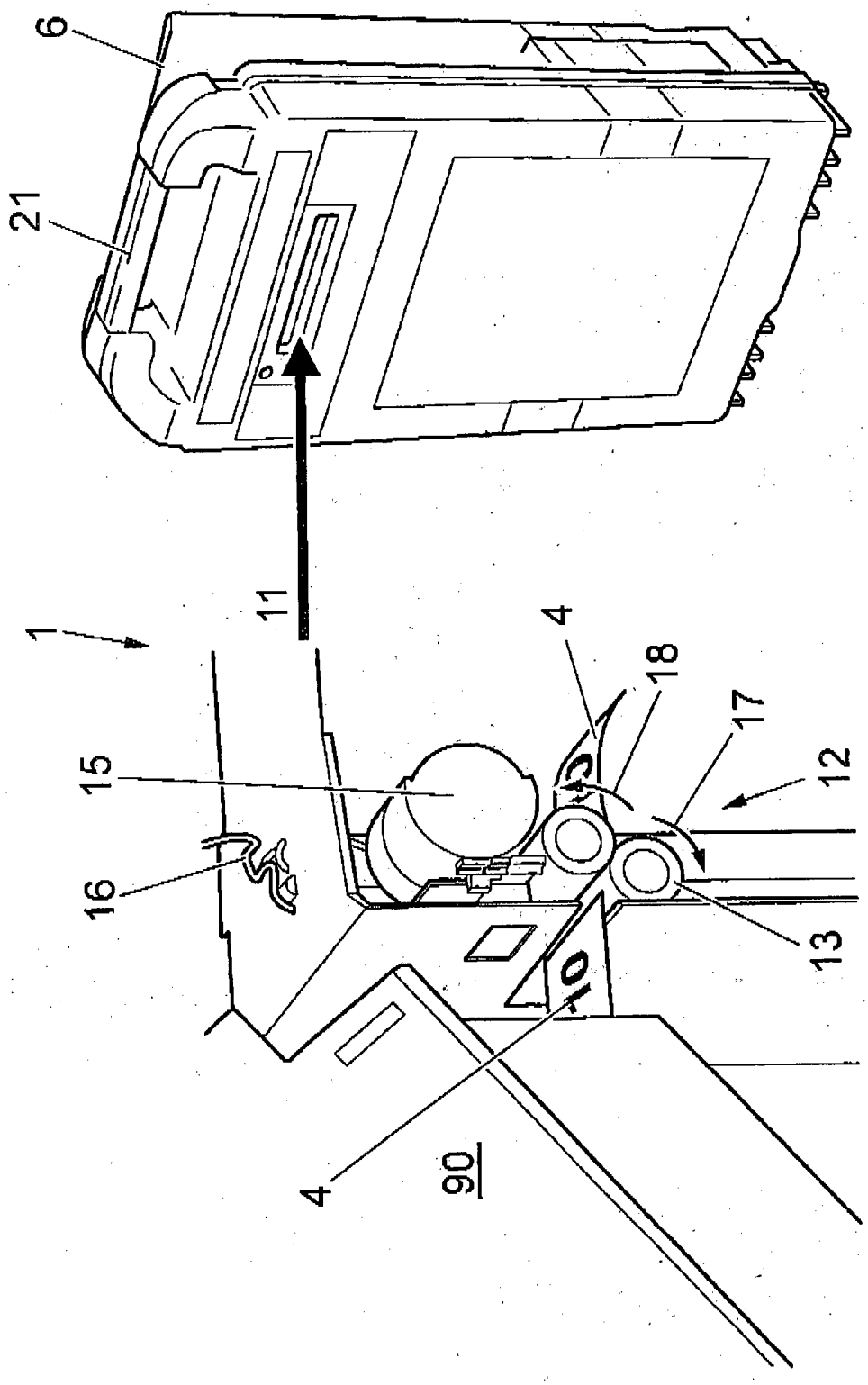

FIG. 2

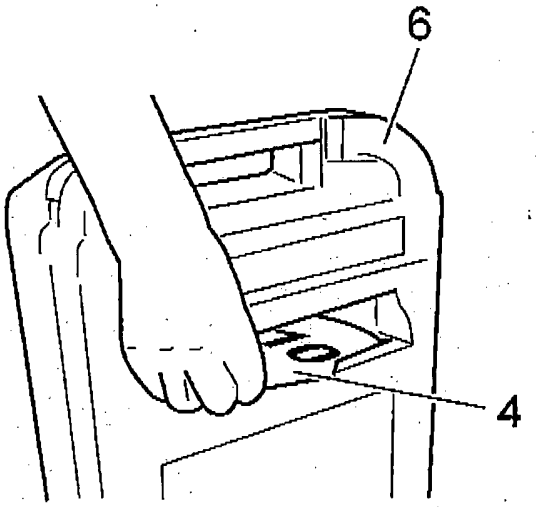

FIG. 3

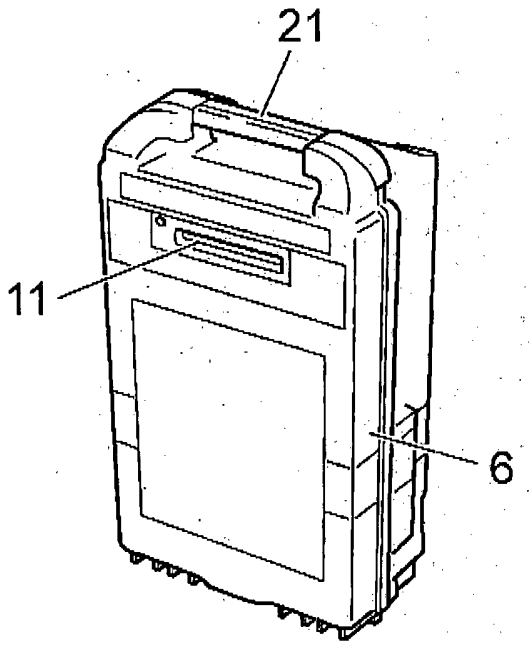

FIG. 4

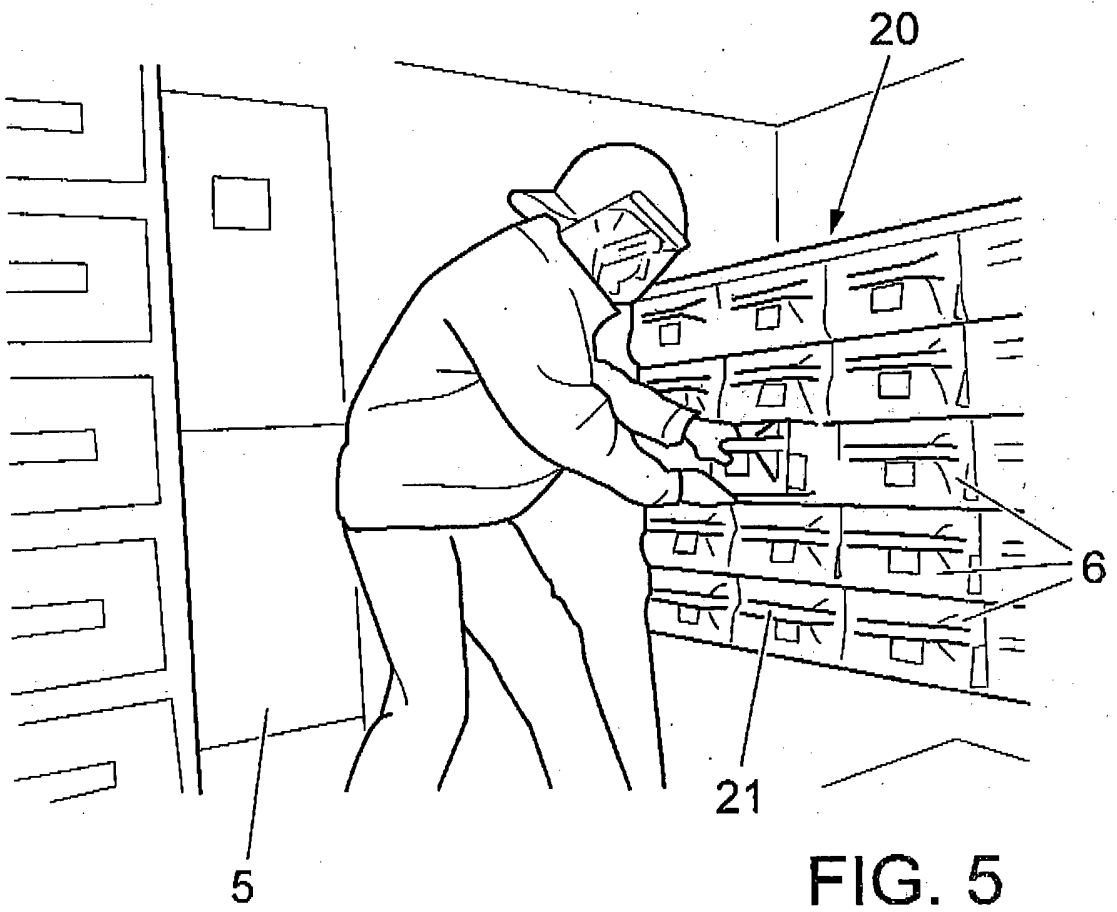

FIG. 5

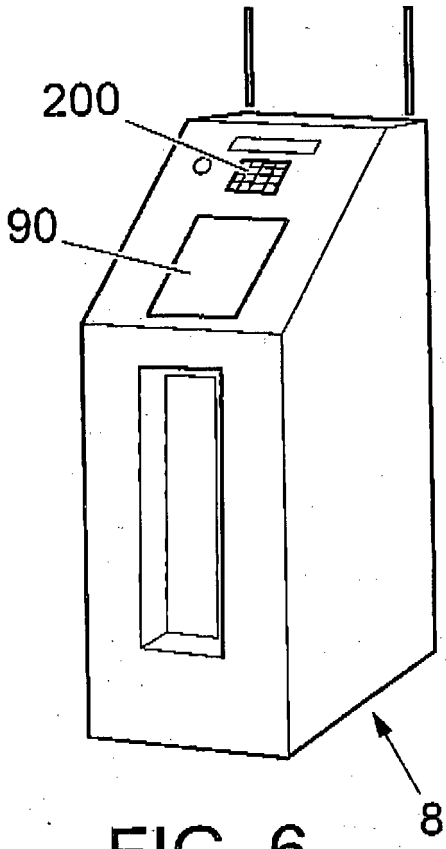

FIG. 6

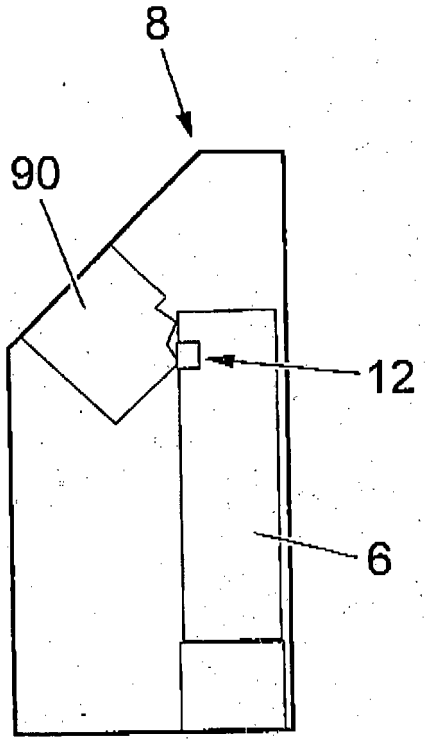

FIG. 7

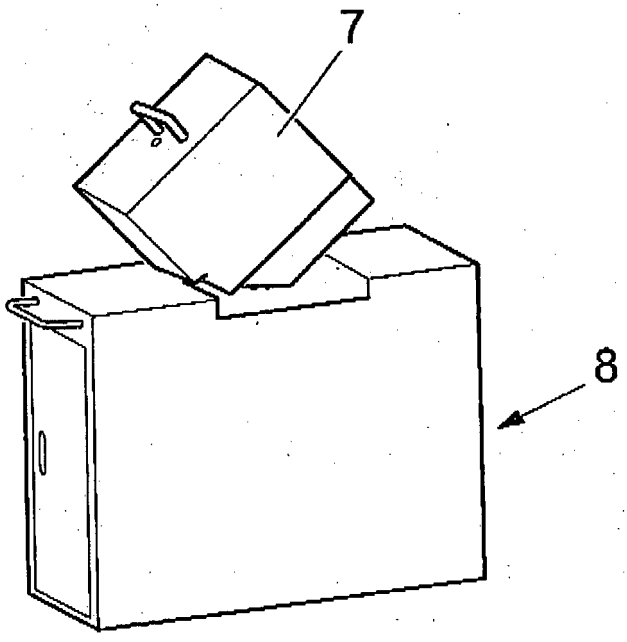

FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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