

(19)



(11)

EP 3 001 390 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
30.03.2016 Bulletin 2016/13

(51) Int Cl.:
G07F 19/00 ^(2006.01)
E05G 1/00 ^(2006.01)
G07F 9/06 ^(2006.01)

(21) Application number: **15187310.6**

(22) Date of filing: **29.09.2015**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
MA

(71) Applicant: **Hartmann Tresore Italia S.r.l.**
20149 Milano (IT)

(72) Inventor: **HONEGGER, Claudio Venturino**
20149 MILANO (IT)

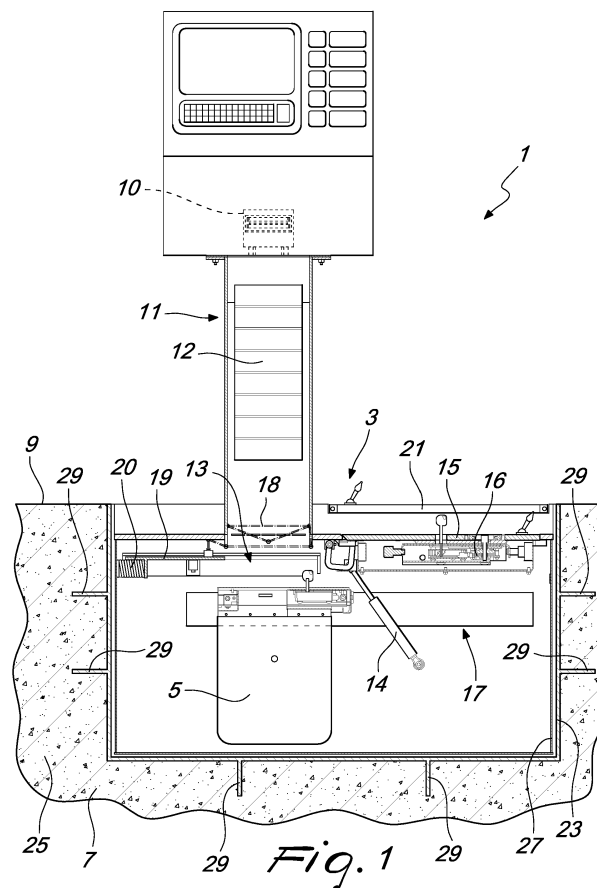
(74) Representative: **Modiano, Micaela Nadia et al**
Modiano & Partners (IT)
Via Meravigli, 16
20123 Milano (IT)

(30) Priority: **29.09.2014 IT MI20141693**

(54) SECURITY SYSTEM FOR PAYMENT POSTS, PARTICULARLY FOR SERVICE STATIONS

(57) A security system (1) for payment posts, particularly for service stations comprising a base structure (3) which accommodates a bank note container (5) which is adapted to receive the bank notes that arrive from a pay-

ment post (11) through an opening (13), the base structure (3) being adapted to be anchored to the ground (7) below the walking surface (9).



Description

[0001] The present invention relates to a security system for payment posts, particularly for service stations.

[0002] Currently the vast majority of service stations are provided with self-service fuel pumps which are accessible 24 hours a day, 7 days a week, and which are provided with payment posts which allow the user to make the payment for the fuel using bank notes or credit cards.

[0003] One of the main drawbacks of such self-service fuel pumps, and in particular of payment posts, consists in that the latter are easily amenable to forcing by criminals who want to steal the bank notes contained therein.

[0004] In particular, the method which is used to steal the cash present in a payment post consists of knocking down the post with a car, and taking it away in its entirety, so as to be able to extract the bank notes contained therein at another time, quietly. In fact, such operation of knocking down and removing the payment post requires just a few seconds.

[0005] Conventional payment posts, in fact, comprise a safe located in the body of said post, which is usually just below the device for accepting bank notes, known as the "head". In this manner the safe is stolen by simply taking away the whole payment post.

[0006] The aim of the present invention is to overcome the limitations of the known art described above, by devising a security system in order to prevent the forcing of a payment post of a service station and the theft, by criminals, of the bank notes contained therein, i.e. of the money in cash form.

[0007] Within this aim, an object of the present invention is to devise a security system for payment posts, particularly for service stations, which prevents the theft, by criminals, of the safe containing the bank notes, i.e. the money in cash form.

[0008] Another object of the present invention is to devise a security system for payment posts, particularly for service stations, which allows a secure and rapid retrieval of the bank notes, i.e. of the money in cash form, by an authorized operator.

[0009] Another object of the present invention is to devise a security system for payment posts, particularly for service stations, which is easy to install, even within pre-existing payment posts.

[0010] Another object of the present invention is to provide a security system for payment posts, particularly for service stations, which is highly reliable, easily and practically implemented, and low cost.

[0011] This aim and these and other objects which will become better apparent hereinafter are achieved by a security system for payment posts, particularly for service stations, characterized in that it comprises a base structure which accommodates a bank note container which is adapted to receive the bank notes that arrive from a payment post through an opening, said base structure being adapted to be anchored to the ground below the

walking surface.

[0012] Further characteristics and advantages of the invention will become better apparent from the description of a preferred, but not exclusive, embodiment of the security system for payment posts, particularly for service stations, according to the present invention, which is illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a cross-sectional front elevation view of an embodiment of a security system for payment posts, according to the present invention, in the configuration with the doors closed;

Figure 2 is a cross-sectional front elevation view of the embodiment shown in Figure 1 of the security system for payment posts, according to the present invention, in the configuration with the doors open, during the retrieval of the bank note container;

Figure 3 is a cross-sectional side view of the embodiment shown in Figure 1 of the security system for payment posts, according to the present invention; Figure 4 is a cross-sectional front elevation view of the embodiment shown in Figure 1 of the security system for payment posts, according to the present invention, in the event of attempt at forcing.

[0013] With reference to the figures, the security system for payment posts, particularly for service stations, according to the invention, generally designated by the reference numeral 1, comprises a base structure 3 which is anchored to the ground 7 and installed, entirely or partially, below the walking surface 9, inside which is accommodated a container 5 of bank notes the function of which is to receive, by way of an adapted opening 13, the bank notes that arrive from a payment post 11.

[0014] The payment post 11 associated with the security system 1 can comprise a device for accepting bank notes 10, substantially conventional, into which the bank notes are introduced, such device for accepting bank notes 10 being connected to the bank note container 5 by way of a system of conveyor belts 12, by way of the opening 13. Such system of conveyor belts 12 is configured to move the bank notes introduced into the device for accepting bank notes 10 to the bank note container 5. Advantageously such system of conveyor belts 12 comprises a pair of belts which are adjustable for distance.

[0015] The security system 1 for payment posts is advantageously provided with means for detecting the forcing 18 of the payment post 11, such forcing detection means 18 having the twofold function of detecting an impact imparted to the payment post 11, for example by an automobile 100 driven by criminals, and of triggering, as a consequence of the detection of such impact, the closing of the opening 13 of the bank note container 5, in order to prevent criminals from being able to access the bank note container 5.

[0016] In a preferred embodiment, the security system

1 for payment posts can comprise a self-sealing door 19 for the closure of the opening 13 of the bank note container 5, such self-sealing door 19 being actuated by way of a spring-loaded mechanism 20 which is controlled by the forcing detection means 18, which comprise for example a system of cables.

[0017] The base structure 3 has a first door 15 which allows the retrieval, by an operator, of the bank note container 5; advantageously, the bank note container 5 is sealed automatically upon opening such first door 15.

[0018] The first door 15 is preferably of the armored type, in particular comprising a lock 16 which has to withstand attempts at forcing. Since, in general, an armored door has a considerable weight with respect to a door of normal type, a shock absorber 14 is associated at the base of the first door 15 and is adapted to dampen the opening movement and, in particular, the closing movement of the first door 15.

[0019] In order to allow the retrieval of the bank note container 5, the security system 1 for payment posts can comprise means of translation 17 of the bank note container 5, such means of translation 17 being configured to move the container 5 from a first position, in which it is arranged at the payment post 11, to a second position, in which it is arranged at the first door 15.

[0020] The means of translation 17 are further configured to perform the return movement, in the opposite direction to the one described above, i.e. to move the container 5 from the second position, in which it is arranged at the first door 15, to the first position, in which it is arranged at the payment post 11.

[0021] The bank note container 5 can therefore be retrieved by an operator only when it is arranged in the second position, obviously after having been sealed.

[0022] In an embodiment of the security system 1 for payment posts, the bank note container 5 is constituted by a self-sealing bag which is advantageously configured to seal itself when it is arranged in the second position, i.e. at the first door 15.

[0023] The security system 1 for payment posts also comprises a second door 21 which is adapted to protect said security system 1 from any external agents, which for example can be atmospheric agents, such as rain or snow, or foreign objects present in the surrounding environment, such as sand or dust. The second door 21 is arranged preferably at the first door 15.

[0024] In an embodiment of the security system 1 for payment posts, the base structure 3 comprises a pair of box-like structures: an external box-like structure 23, which can be embedded, during the installation of the security system 1, in a sufficient quantity of concrete 25; and an internal box-like structure 27, which can be fixed rigidly to the external box-like structure 23 mentioned previously and contains at least the bank note container 5.

[0025] The base structure 3 advantageously comprises a plurality of wall anchors 29 which protrude from the outer surface and are embedded in the concrete 25. Such wall anchors 29 are adapted to strengthen the anchoring

of the base structure 3 to the ground 7.

[0026] Operation of the preferred embodiment described above of the security system for payment posts, particularly for service stations, according to the present invention, is the following.

[0027] During an attempt at forcing the payment post 11, the criminals use an automobile 100 to violently collide with the payment post 11, which tilts following such impact.

[0028] The tilt deriving from the impact is immediately detected by the forcing detection means 18, which actuate the closure of the opening 13 to the bank note container 5, in order to prevent the forcing of the post, i.e. access to the container 5, with the consequent theft, by criminals, of the bank notes contained therein.

[0029] In particular, the system of cables 18, following the impact of the payment post 11 with the automobile 100, releases the spring-loaded mechanism 20 which rapidly pushes the self-sealing door 19 into the closed position, hermetically closing the opening 13 of the bank note container 5.

[0030] In alternative embodiments of the security system 1, not shown, the forcing detection means 18 comprise different devices which are adapted to release the spring-loaded mechanism 20 that closes the self-sealing door 19. Such alternative forcing detection means 18 can for example comprise lever means, or sensor means adapted to trigger the release of the spring-loaded mechanism 20.

[0031] Retrieval of the bank note container 5 by an authorized operator is described below.

[0032] The operator opens the second door 21, to gain access to the lock 16 of the first door 15. Opening the first door 15 actuates the means of translation 17 which move the bank note container 5 from the first position, underneath the payment post 11, to the second position, i.e. at such first door 15.

[0033] In the step of translating from the first to the second position, the container 5 is automatically sealed, so as to prevent the fall or the removal of the bank notes.

[0034] After having been sealed and after having arrived at the second position, the container 5 can be easily removed and replaced with an empty container by the authorized operator.

[0035] In practice it has been found that the invention fully achieves the set aim and objects. In particular, it has been seen that the security system for payment posts, particularly for service stations, thus conceived makes it possible to overcome the qualitative limitations of the known art, in that it makes it possible to prevent the forcing of a payment post of a service station and the theft, by criminals, of the bank notes contained therein.

[0036] Another advantage of the security system for payment posts, particularly for service stations, consists in that it prevents the theft, by criminals, of the safe containing the bank notes, i.e. the money in cash form.

[0037] Another advantage of the security system for payment posts, particularly for service stations, consists

in that it allows a secure and rapid retrieval of the bank notes, i.e. of the money in cash form, by an authorized operator.

[0038] Another advantage of the security system consists in that the installation and the substitution of said security system are very rapid and simple, thanks to the arrangement of the external box-like body anchored in the ground, which makes it possible to insert and subsequently remove the internal box-like body containing the various components of the security system.

[0039] Furthermore, the security system, according to the invention, can be installed without resorting to welding operations, which are prohibited near fuel pumps, or which in any case require special procedures which increase the installation times and costs.

[0040] The invention, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0041] In practice the materials employed, and the contingent dimensions and shapes, may be any according to requirements and to the state of the art.

[0042] In conclusion, the scope of protection of the claims shall not be limited by the explanations or by the preferred embodiments illustrated in the description by way of examples, but rather the claims shall comprise all the patentable characteristics of novelty that reside in the present invention, including all the characteristics that would be considered as equivalent by the person skilled in the art.

[0043] The disclosures in Italian Patent Application No. MI2014A001693 from which this application claims priority are incorporated herein by reference.

[0044] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A security system (1) for payment posts, particularly for service stations, **characterized in that** it comprises a base structure (3) which accommodates a bank note container (5) which is adapted to receive the bank notes that arrive from a payment post (11) through an opening (13), said base structure (3) being adapted to be anchored to the ground (7) below the walking surface (9).
2. The security system (1) for payment posts according to claim 1, **characterized in that** it comprises means (18) for detecting the forcing of said payment post (11), said forcing detection means (18) being adapted

ed to detect an impact imparted to said payment post (11) and to start the closure of said opening (13) in order to prevent access to said container (5).

3. The security system (1) for payment posts according to claims 1 or 2, **characterized in that** it comprises a self-sealing door (19) for closing said opening (13) and a spring-loaded mechanism (20), adapted to perform said closure, said spring-loaded mechanism (20) being controlled by said forcing detection means (18).
4. The security system (1) for payment posts according to claims 1, 2 or 3, **characterized in that** said base structure (3) comprises a first door (15) which is adapted to make it possible to pick up said container (5), the opening of said first door (15) sealing said container (5).
5. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** it comprises means (17) for the translation of said container (5), which are configured to move said container (5) from a first position, in which it is arranged at said payment post (11), to a second position, in which it is arranged at said first door (15), and vice versa.
6. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** said container (5) can be picked up by an operator, when it is placed in said second position, after it has been sealed.
7. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** said container (5) is a self-sealing bag configured to seal itself when it is arranged in said second position.
8. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** it comprises a second door (21) which is adapted to protect said security system (1) from external agents.
9. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** said base structure (3) comprises an external box-like structure (23), which can be embedded in concrete (25), and an internal box-like structure (27), which contains at least said container (5) and can be fixed rigidly to said external box-like structure (23).
10. The security system (1) for payment posts according to one or more of the preceding claims, **characterized in that** said base structure (3) comprises a plu-

ality of wall anchors (29) embedded in said concrete (25).

5

10

15

20

25

30

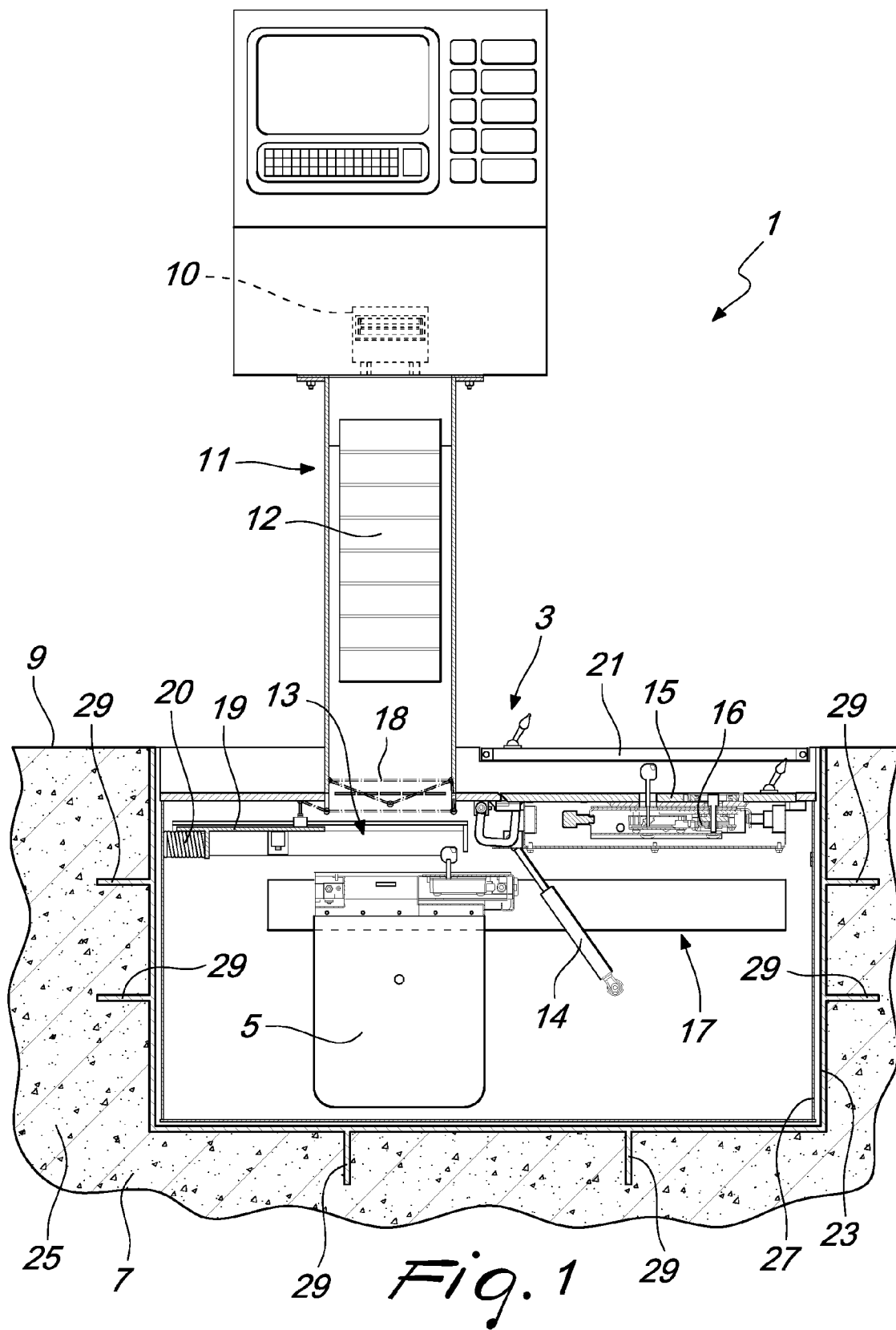
35

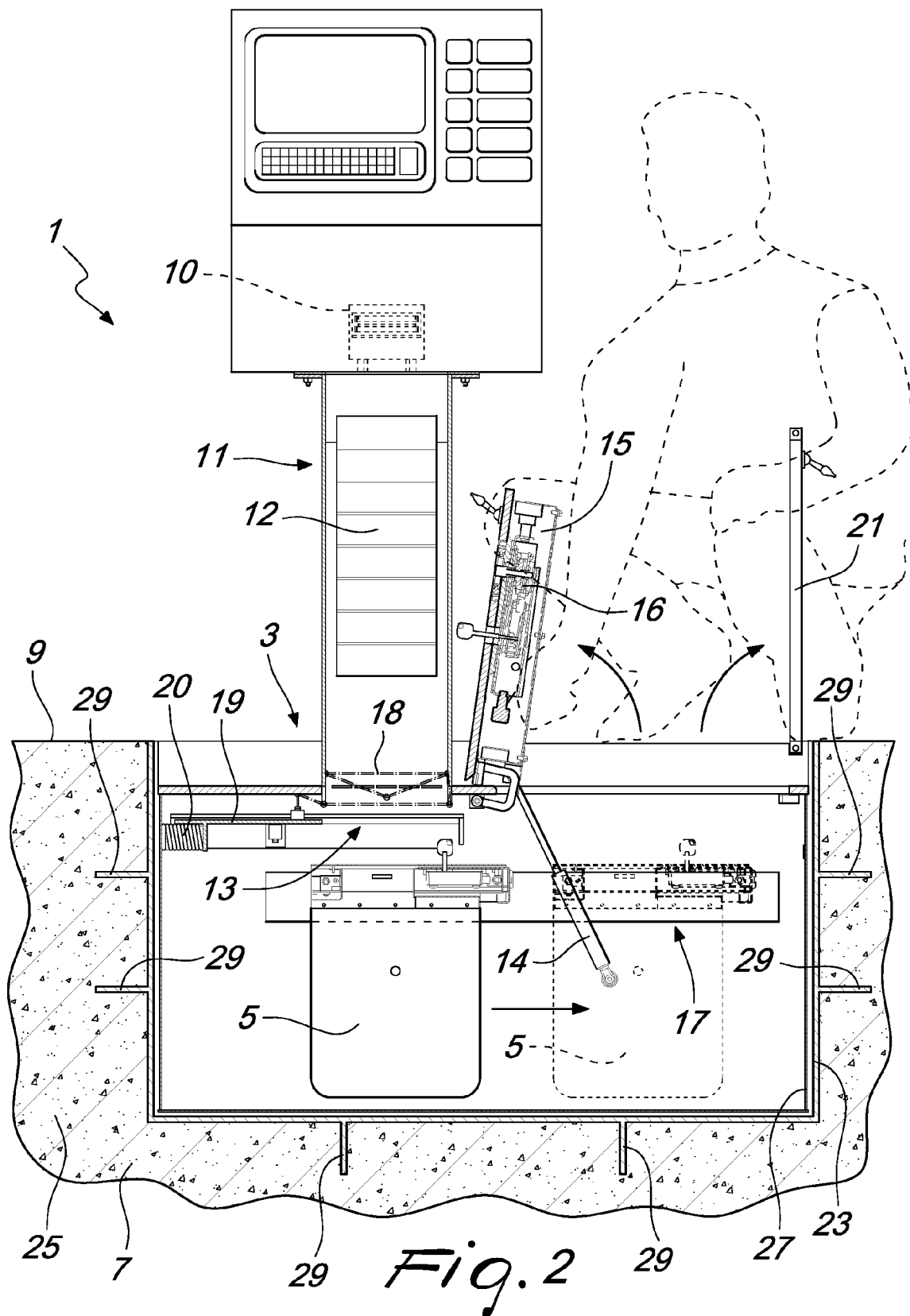
40

45

50

55





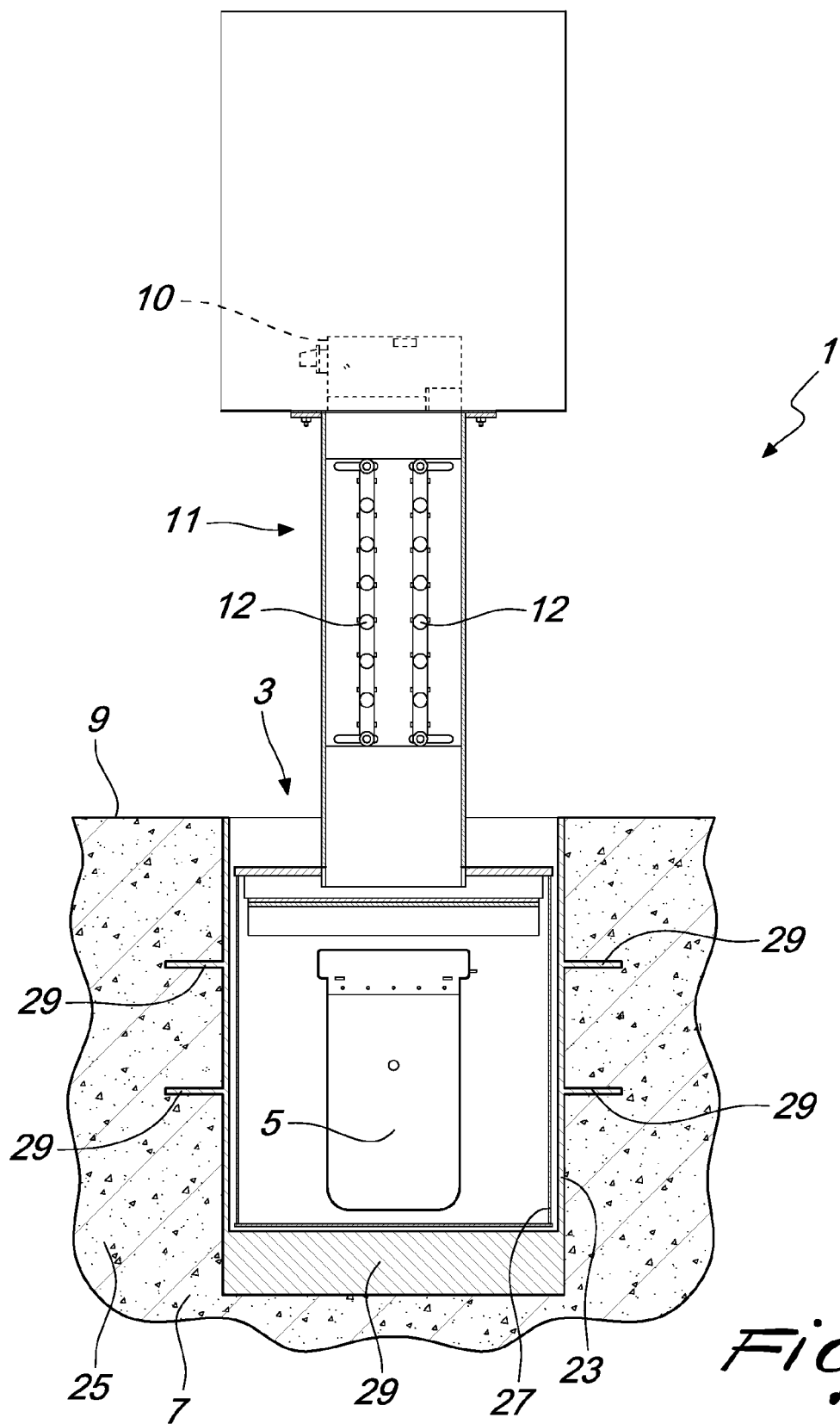
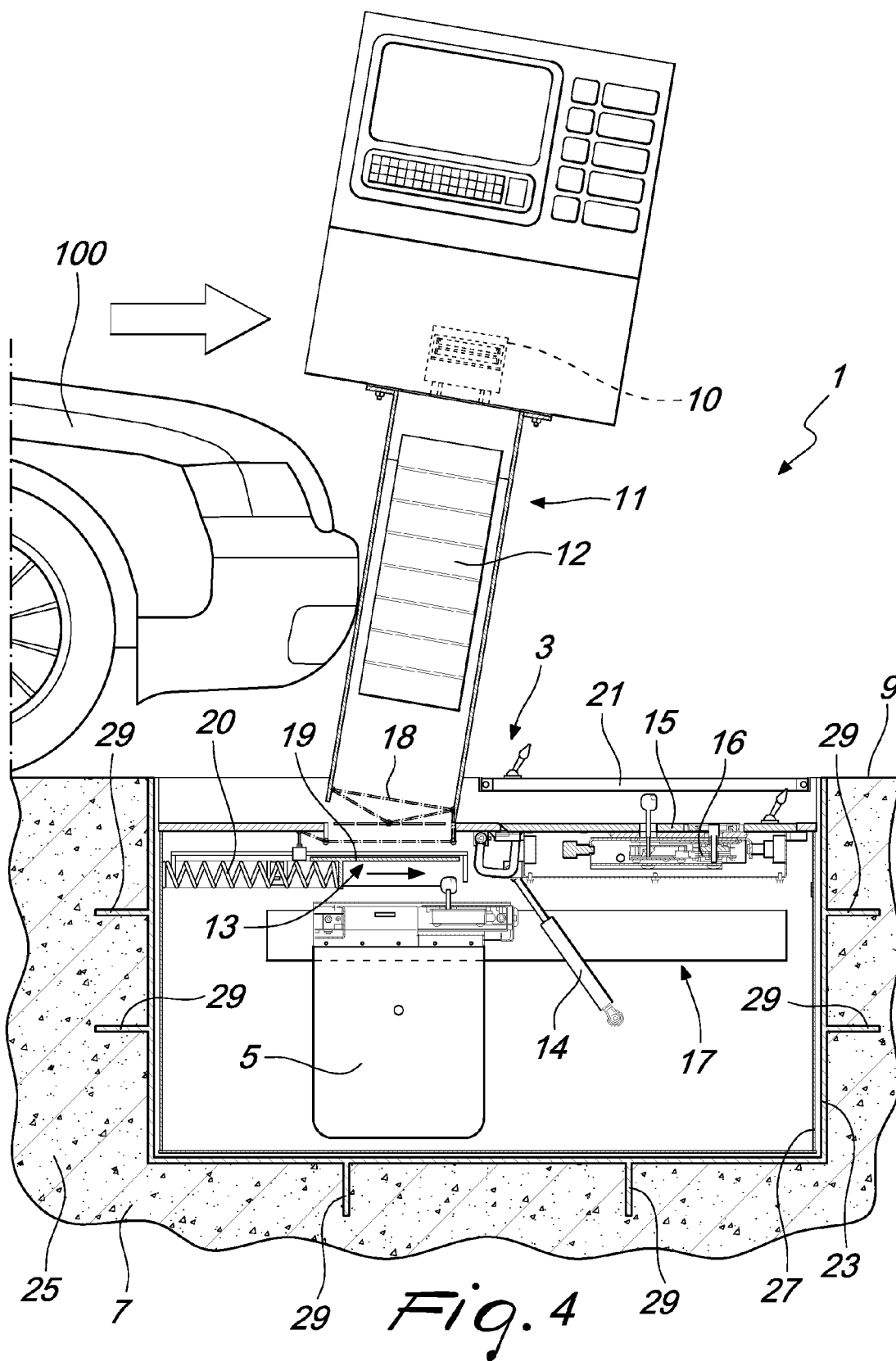


Fig. 3





EUROPEAN SEARCH REPORT

 Application Number
 EP 15 18 7310

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 95/18429 A1 (INFORM VERTRIEBSGESELLSCHAFT F [DE]; STEWING VERTRIEBS GMBH & CO KG [D]) 6 July 1995 (1995-07-06) * page 1, line 24 - page 3, line 25; figure 2 * * page 5, line 9 - page 39 * * page 10, line 2 - page 29; claim 5 *	1-10	INV. G07F19/00 G07F9/06 E05G1/00
X	GB 1 274 413 A (JOHNSTON BROTHERS ENG; ARTHUR BERNARD BONE) 17 May 1972 (1972-05-17) * the whole document *	1,3-10	
X	US 2 964 237 A (ENDERSON WILLIAM H) 13 December 1960 (1960-12-13) * the whole document *	1,3-10	
X	US 1 632 536 A (BREEN GEORGE T) 14 June 1927 (1927-06-14) * page 1, line 1 - line 58; figures 1-, 2, 4-7 * * page 1, line 90 - page 2, line 13 * * page 2, line 59 - page 3, line 25 *	1-10	TECHNICAL FIELDS SEARCHED (IPC) G07F G07D A47G E05G
A	FR 2 887 668 A1 (PARKEON [FR]) 29 December 2006 (2006-12-29) * page 1, line 8 - page 2, line 10 * * page 3, line 11 - page 4, line 7 * * page 5, line 1 - page 9, line 12; claims 1-9; figures 1,2 *	1-10	
A	US 3 881 573 A (COTTER JOHN L ET AL) 6 May 1975 (1975-05-06) * column 4, line 6 - column 5, line 15 * * column 6, line 8 - line 37; claim 1; figures 1, 2, 10 *	1-10	
		-/--	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 January 2016	Examiner Guivol, Ouri
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	

EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 15 18 7310

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	GB 2 273 528 A (KITCHIN ENG LTD [GB]) 22 June 1994 (1994-06-22) * the whole document * -----	1,2	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 January 2016	Examiner Guivol, Ouri
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			

 1
EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 18 7310

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-01-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9518429 A1	06-07-1995	AU 1385395 A EP 0737346 A1 WO 9518429 A1	17-07-1995 16-10-1996 06-07-1995
GB 1274413 A	17-05-1972	NONE	
US 2964237 A	13-12-1960	NONE	
US 1632536 A	14-06-1927	NONE	
FR 2887668 A1	29-12-2006	AU 2006263787 A1 BR PI0613384 A2 CA 2611553 A1 EP 1902428 A1 FR 2887668 A1 US 2009127064 A1 WO 2007000511 A1	04-01-2007 11-01-2011 04-01-2007 26-03-2008 29-12-2006 21-05-2009 04-01-2007
US 3881573 A	06-05-1975	NONE	
GB 2273528 A	22-06-1994	AU 5656394 A EP 0674742 A1 GB 2273528 A WO 9413918 A1	04-07-1994 04-10-1995 22-06-1994 23-06-1994

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- IT MI20141693 A [0043]