(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 295 757**
A1

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **88201268.5**

(51) Int. Cl.[4]: **A24F 15/10**

(22) Date of filing: **17.06.88**

(30) Priority: **17.06.87 NL 8701414**

(43) Date of publication of application:
21.12.88 Bulletin 88/51

(84) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

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(54) Device for dispensing a burning cigarette, cigar or similar smokable article.

(57) A device for dispensing a burning cigarette, cigar or similar smokable article comprises a frame (1) which includes, inter alia: a transport member (2) which is capable of stepwise movement and has at least one resting place (3) for a smokable article, a storage magazine (4) for the smokable articles from which a smokable article can be transferred to the resting place (3), a glowing element (14) for lighting one end of a smokable article in the resting place (3), a draw chamber (15) on the other side of the transport member for interaction with the other end of a smokable article in the resting place (3) and a dispensing tray (13) for a lit smokable article.

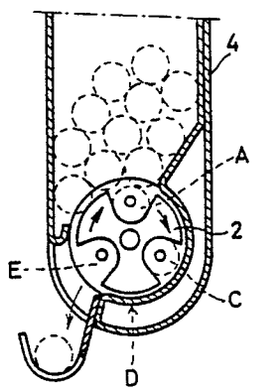

Fig: 4.

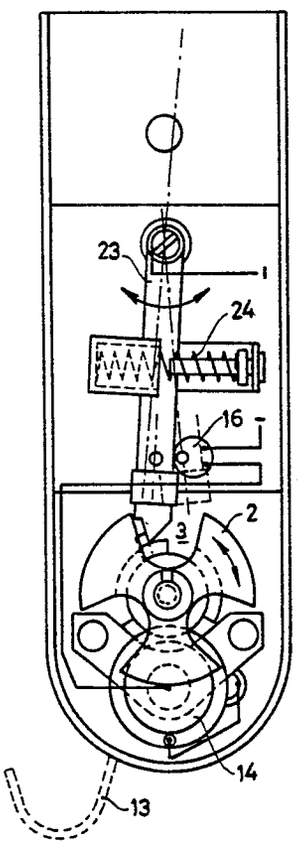

Fig: 3.

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Device for dispensing a burning cigarette, cigar or similar smokable article

In the smokable articles business it is usual for the consumer to buy a packet of cigarettes, a box of cigarillos or a box of cigars, and then to smoke the contents of this pack one by one. Only by exception is it now and then possible to purchase a single smokable article, for example, in a restaurant in which a special box is kept containing a selection of all sorts of cigars from which the customer can choose and select a single cigar. The chosen smokable article is lit in a separate operation and smoking can begin.

Many types of cigar or cigarette lighters, with which it is possible to light a smokable article that has been put into the mouth, are known. However, there are two requirements in practice which have so far not yet, or very unsatisfactorily, been met. The first requirement is to be able to grasp or take a single smokable article, a cigarette or the like, without being forced to purchase a packet or a box containing a number of such smokable articles. A second requirement is the possibility of obtaining the chosen smokable article already lit, since a lighter or match is not always available in the vicinity. The invention aims at fulfilling these two requirements by providing a device for dispensing a burning cigarette, cigar or similar smokable article.

The device according to the invention is characterized by a frame which comprises:

- at least one transport member capable of stepwise movement and which is provided with at least one resting place for the smokable article;
- a storage magazine for the smokable articles, the magazine being provided with a discharge opening which butts up to the associated moveable transport member in a manner such that, when a resting place in this member passes by this opening, a smokable article is transferred from the magazine to the resting place via the opening;
- a glowing element close to one side of the transport member for lighting one end of a smokable article present in a resting place;
- a draw chamber close to the side of the transport member opposite the glowing element for interaction with the other end - intended to be the tip - of a smokable article present in the resting place;
- a current switch for activating both the glowing element and the draw chamber;
- spring means for pressing both the glowing element and the draw chamber simultaneously against the relevant ends of a smokable article present in the resting place;
- a dispensing tray for a lit smokable article, this tray being butted up to the associated moveable transport member in a manner such that a smokable article present in the resting place falls into this tray when this resting place passes by;
- means for the stepwise movement of the transport member through at least three positions, each resting place of this transport member being located in succession at the receiving position at the discharge opening of a storage magazine, subsequently at at least one transport position and finally at the delivery position at the dispensing tray, an intermediate lighting position, in which the resting position in question is between the glowing element and the draw chamber, being passed beyond the last transport position and before the delivery position while the said spring means are activated.

In short, the device according to the invention consists of a storage magazine, a stepwise transport device and a transiently active lighting mechanism consisting of a glowing element and a draw chamber with which, so to speak, the first draw on the selected cigar or cigarette is taken. In principle, a device of this type may be embodied as a manually operated table-top model or as an embodiment which is driven by a motor and can be fixed to a wall. A very suitable application is a model mounted on, or fitted flush to, a car dashboard. The car driver can then take a lit cigarette from the dispensing tray and put it into his mouth without his attention being distracted from the road.

An embodiment of the device described above is characterized in that the glowing element is arranged so as to be axially moveable and, on the one hand, is under pressure from a spring and, on the other hand, can be pushed back by a cam, the current switch also being operated in a manner such that, during the stepwise movement of the transport member from the last transport position to the lighting position, the cam initially releases the glowing element, so that the spring pushes the glowing element against the smokable article, the smokable article is pushed against the draw chamber and the current switch closes, as a result of which the smokable article is lit, while on further movement of the transport member the cam pushes the glowing element back, the current switch opens and finally the delivery position is reached, the burning smokable article falling into the dispensing tray.

The stepwise movement always comprises two half steps, lighting of the smokable article present at that position taking place in the short interval between these two successive half steps. The user can then wait a few seconds, after which the second half step is carried out and the lit smokable

article comes within reach in the dispensing tray.

The stepwise movement of the transport member can be implemented as a translation, i.e. linear movement, or as a rotation, i.e. a rotating movement. Each of these possibilities has specific advantages as will be evident in the description, which follows, of two embodiments.

Fig. 1 is a front view of the device.

Fig. 2 is a side view from the left-hand side along the arrow II in Fig. 1.

Fig. 3 is a view of the interior of the device on a somewhat enlarged scale from a cross-section along the line III-III in Fig. 1.

Fig. 4 is a cross-section along the arrows IV-IV in Fig. 1.

Fig. 5 is a detail of the interior of the device.

Fig. 6 is a side view on a somewhat enlarged scale of the interior of the device corresponding to the view according to Fig. 1 but with the cover removed.

Fig. 7 is a view along the arrows VII-VII of a detail of Fig. 6.

Fig. 8 is a completely different embodiment of the device according to the invention.

As can be seen best in Figures 1 and 2, the device consists of a frame 1 (in this case embodied as a base) in which the following elements are accommodated. A transport member 2 which comprises a cylindrical roll in the embodiment according to Figures 1-7. The transport member 2 is provided with a number of resting places 3 for a smokable article which will be referred to as a cigarette in the text which follows. Figures 3 and 4 show that the transport member 2 embodimed as a cylindrical roll is provided with three resting places located at an arc distance of 120° relative to each other.

The device consists further of a storage magazine 4 for the cigarettes, the magazine being provided with a lid 5 on the top and a discharge opening 6 (see Fig. 4) at the bottom. This discharge opening butts up to the transport member 2 in a manner such that, when a resting place 3 in this member passes by this opening 6, a cigarette from the magazine is transferred via the opening to this resting place.

The transport member 2, i.e. the cylindrical roll, is fixed on a shaft 7 which is rotatably mounted in the end walls 8 of the magazine 4, see Figures 1 and 6. A handle 9 is fixed so as to be freely rotatable at one end of this shaft 7. This handle is internally provided with a ratchet drive 10 the ratchet of which is firmly fixed on the shaft 7. The underside of the handle 9 is provided with a projection 11 which can move between two stops 12. In this way, the handle 9 can make a backwards and forwards stroke through rather more than 60°. The ratchet drive 10 is provided with six teeth which are also at a mutual angular distance of 60° and with which the shaft 7 can be rotated stepwise in one direction always through the same angle of 60° (see Fig. 5).

Elements 9-12 form the means for the stepwise movement of the transport member 2, fixed on the shaft 7, between three positions A, C and E as can be seen in Figures 3 and 4. Position A is the so-called receiving position at the discharge opening 6 of the storage magazine 4. Position C is a so-called transport position which precedes position D, still to be described in detail, in which the cigarette is lit before this burning cigarette arrives at the delivery position E. Diagonally below this delivery position E there is a dispensing tray 13 for the lit cigarette, which in this position E rolls from the resting place 3 into the tray 13 under the force of gravity.

As can be seen best in Fig. 6, but also partially in Figs. 1, 3 and 7, a glowing element 14 is installed close to one side of the transport member 2 for lighting one end of a cigarette present in a resting place 3. A draw chamber 15 for interaction with the other end - intended to be the tip - of the cigarette present in the resting place 3 is located at the other side of the transport member 2 opposite the glowing element 14. There is also a current switch 16 present for activating both the glowing element 14 and the draw chamber 15, as will be described in further detail below.

Figures 6 and 7 show furthermore that the glowing element 14 is arranged so as to be axially moveable and, on the one hand, is under pressure from a spring 17 and, on the other hand, can be pushed back by a cam 18. The draw chamber is connected to an electrically driven vacuum pump 19 which is included in the circuit of the current switch 16. The pump 19 is fixed to the magazine 4. The glowing element 14 and the draw chamber 15 are non-rotatably accommodated in the frame 1 and the transport member 2 (the cylindrical roll) is fixed on the shaft 7 which is rotatable stepwise. Three cams 18 at a mutual distance of 120° are firmly connected to the shaft 7 via a common support 20. The shaft 7 moreover carries a disc 21 provided with three cams 22 spaced at 120° relative to each other (see Figure 3) for closing the current switch 16. For this purpose, these cams 22 interact with a pendulum arm 23 which is subjected to the action of a spring 24.

In respect of the functioning of the device described above it must be borne in mind that two steps are always necessary for rotating a resting place 3 from the receiving position A to an intermediate transport position C and from there to the delivery position E. When a number of cigarettes have been put into the magazine 4 and the resting places 3 have also been filled in the receiving position A and in the transport position C, the

following operations have to be carried out for delivery of a burning cigarette. The handle 9 is rotated once to the left through 60° from the position shown in Fig. 2, the shaft 7 also being rotated through 60° via the ratchet drive 10. The resting place 3 from the transport position C has then moved to the lighting position D located directly below the shaft 7. When this position is reached, the cam 18 has just released the glowing element 14 so that the latter is shifted to the right (Fig. 6) under the action of the spring 17 and through this movement comes into contact with the cigarette present in the resting place 3 of the transport member 2. As a result this cigarette is also shifted such that the other end is pushed in the direction of the stationary draw chamber 15. With that, the cigarette tip comes into contact with a plate 25 which is firmly fixed on the shaft 7 and which is provided with a connecting duct 26 at three places offset at 120°. The draw chamber 15 has a single opening 27 which comes into line with the connecting duct 26 in the lighting position D just reached. The cigarette is now restrained between the glowing element 14 at one end and the draw chamber 15 at the other end.

At this instant, the current switch 16 is operated by the pendulum arm 23 which (in Fig. 3) is pushed to the right by the cam 22. Current is supplied in this manner to, on the one hand, the glowing element 14 and, on the other hand, the vacuum pump 19. As a result, air is sucked through in the longitudinal direction of the cigarette and this cigarette is lit in a natural way by the heat of the glowing element 14.

As soon as smoke develops the handle 9 is again rotated to the left through 60° from the position shown in Fig. 2, the shaft 7 and the transport member 2 undergoing the same rotation. As a result the lit cigarette moves from the lighting position D into the delivery position E and slides into the dispensing tray 13. At the same time, the pendulum arm 23 has become separated from the cam 22 and the spring 24 has swung this arm back into the position shown in Fig. 3a. With that, the switch 16 is open and the glowing element 14 is no longer actuated, while the vacuum pump 19 has also stopped. Already at the start of the last-mentioned operation of the handle 9, the cam 18 has come into operation and has pushed the glowing element 14 back against the pressure of the spring 17 into the position shown in continuous lines in Fig. 6. In this way, there is no resistance to the movement of the lit cigarette from position D to position E.

For the sake of completeness, reference can also be made, with regard to Fig. 2, to the electrical connection 28 which can be coupled to the available elctrical mains or to a battery. The vacuum pump 19 is connected with the draw chamber 15 via a tube 29. Instead of the handle 9, the shaft 7 may also be rotated by means of a stepping motor not shown in Figures 1-7.

The embodiment according to Fig. 8 contains a transport member 2 which in this case consists, however, of an extended run G of an endless belt provided with a large number of gutter-shaped resting places 30. In this embodiment there is not a single storage magazine but four exchangeable magazines 4', which can interact at the bottom with a transverse transporter 31 for guiding a cigarette from the chosen magazine 4' into a resting place 30. This embodiment is suitable for mechanization for which purpose there is a stepping motor 32 which guides the chosen cigarette to a zone 33 between the diagrammatically shown glowing element 34 and the draw chamber 35. A dispensing tray, not shown in Fig. 8, from which the consumer can take the lit cigar or cigarette is located under zone 33.

It is noted that the device according to the invention can be embodied in many models. In the first place, a series of models is conceivable which are each provided with a storage magazine. The device may be embodied as a hand-held model intended for use in a car, while a mechanically driven model is also conceivable for this purpose. The device may also be embodied as a table-top model on a stand 36 as shown in Fig. 2. A mounting plate 37 is fixed on the stand or base 36 with rails 38 onto which the magazine 4 can be slid. By this means, the entire device can easily be removed and mounted in a different place. The glowing element 14 and 34, respectively, cannot only be heated electrically but also heated by a gas flame. The cigarette may also be lit directly by the gas flame. The device is also suitable for cigarettes provided with a filter.

The embodiment with various magazines are particularly suitable for use in places visited by the public, such as theatres, restaurants or canteens. In such cases, the magazines may be larger and contain, for example, 500-1,000 cigarettes or such-like smokable articles. The device may also be embodied with a coin-box so that the user can obtain a burning cigarette or cigar at a fairly small cost. An application of this type is particularly favourable for a railway station and at all places in which other vending machines for soft drinks, coffee and simple foodstuffs are already present.

Instead of using a stepping motor for driving the endless transporter G, a normal motor drive may also be used, provided that in that case the magazines 4' can move along with the transporter for a short time for transferring the cigarette from the magazine to the resting place 30. The same applies to the glowing element 34 and the draw

chamber 35 which then also have to be able to move along with the continuously moving resting places 30 for a few seconds.

Claims

1. Device for dispensing a burning cigarette, cigar or similar smokable article, characterized by a frame (1) which comprises:

- at least one transport member (2) which is capable of stepwise movement and which is provided with at least one resting place (3) for the smokable article;
- a storage magazine (4) for the smokable articles, the magazine being provided with a discharge opening (6) which butts up to the associated moveable transport member in a manner such that, when a resting place in this member passes by this opening, a smokable article is transferred from the magazine to the resting place via the opening;
- a glowing element (14) close to one side of the transport member for lighting one end of a smokable article present in a resting place;
- a draw chamber (15) close to the side of the transport member opposite the glowing element for interaction with the other end - intended to be the tip - of a smokable article present in the resting place;
- a current switch (16) for activating both the glowing element and the draw chamber;
- spring means (17) for pressing both the glowing element (14) and the draw chamber (15) simultaneously against the relevant ends of a smokable article present in a resting place;
- a dispensing tray (13) for a lit smokable article, this tray being connected to the associated moveable member in a manner such that a smokable article present in the resting place (3) falls into this tray when this resting place passes by;
- means (9-12) for the stepwise movement of the transport member (2) through at least three positions (A, C and E), each resting place (3) of this transport member being located in succession: at the receiving position (A) at the discharge opening (6) of a storage magazine (4), subsequently at at least one transport position (C) and finally at the delivery position (E) at the dispensing tray (13), an intermediate lighting position (D), in which the resting place in question is between the glowing element (14) and the draw chamber (15), being passed beyond the last transport position and before the delivery position, while the said spring means (17) are activated.

2. Device according to Claim 1, charazterized in that the glowing element (14) is arranged so as to be axially moveable and, on the one hand, is under pressure from a spring (17), and, on the other hand, can be pushed back by a cam (18), the current switch (16) also being operated in a manner such that, during the stepwise movement of the transport member (2) from the last transport position (C) to the lighting position (D), the cam initially releases the glowing element, so that the spring pushes the glowing element against the smokable article, the smokable article is puished against the draw chamber and the current switch closes, as a result of which the smokable article is lit, while on furhter movement of the transport member the cam pushes the glowing element back, the current switch opens and finally the delivery position (E) is reached, the burning smokable aticle falling into the dispensing tray (13).

3. Device according to Claim 1 or 2, characterized in that the transport member (2) is embodied as an essentially cylindrical roll provided with three resting places (3) located at an arc distance of 120° relative to each other, and that the drive means are embodied as a ratchet drive (10) with teeth located at 60° relative to each other.

4. Device according to one of Claims 1-3, characterized in that the draw chamber (15) is connected to an electrically driven vacuum pump (19) which is included in the circuit of the current switch (16).

5. Device according to one of Claims 2-4, characterized in that the glowing element (14) and the draw chamber (15) are non-rotatably accommodated in the system (1) and that the transport member (2) is fixed on a shaft (7) which is rotatable stepwise and on which the cam (18) for the glowing element and a second cam (22) for operating the current switch (16) are also fixed.

6. Device according to one of the preceding claims, characterized in that the means for the movement of the transport member (2) consist of a stepping motor (32) which is included in the electric circuit of a coin-box.

7. Device according to Claim 6, characterized in that more than one storage magazine is present, each magazine being capable of being brought into an active position for interaction with the transport member (2).

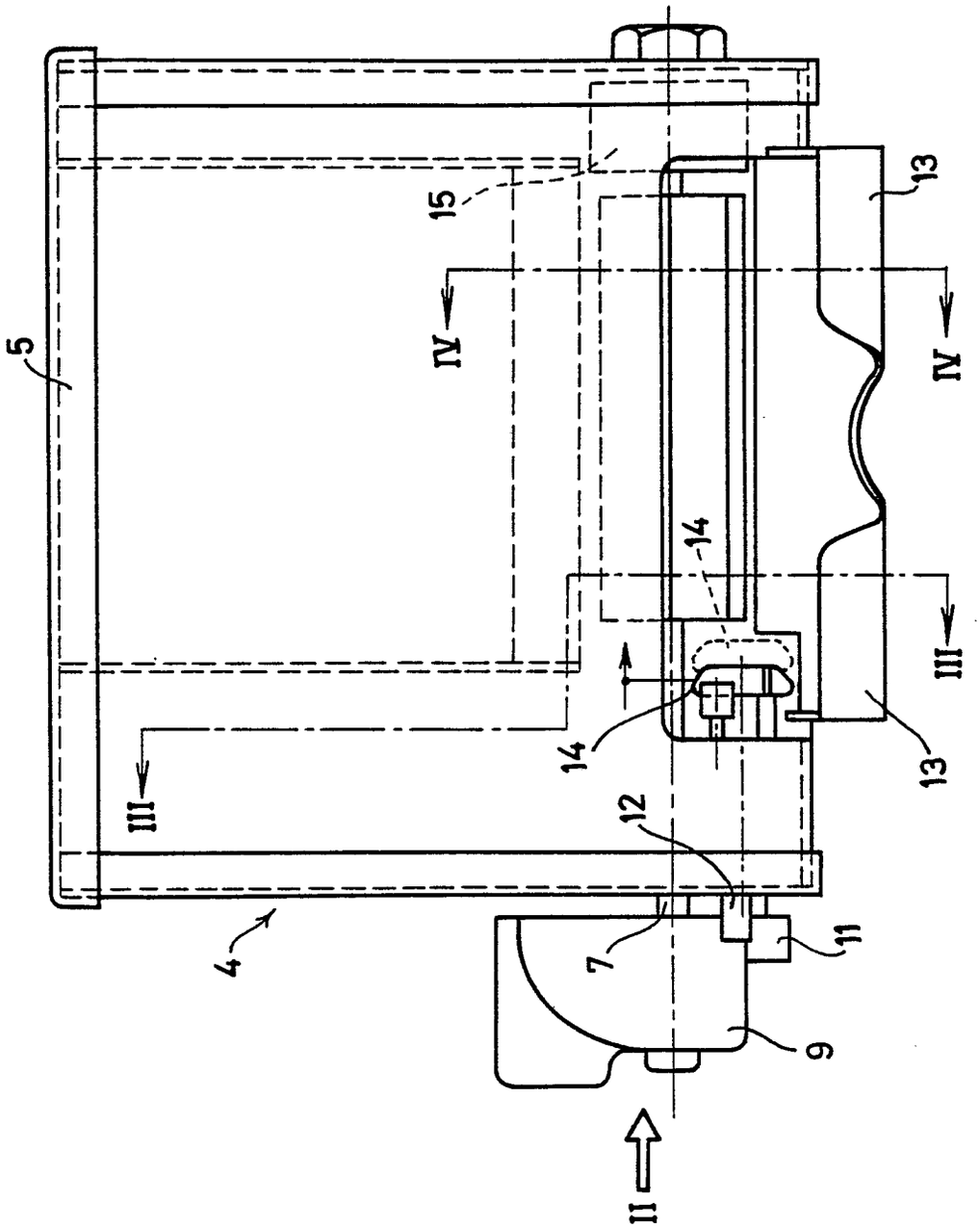

FIG. 2

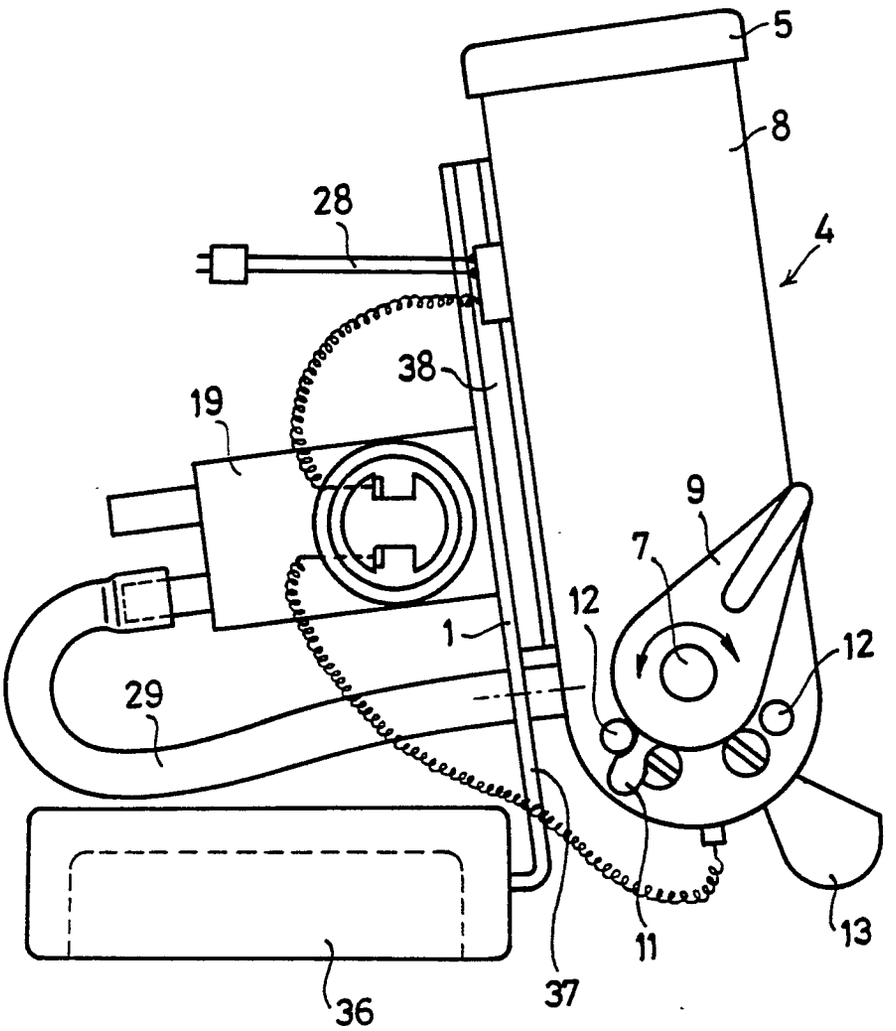

Fig. 2.

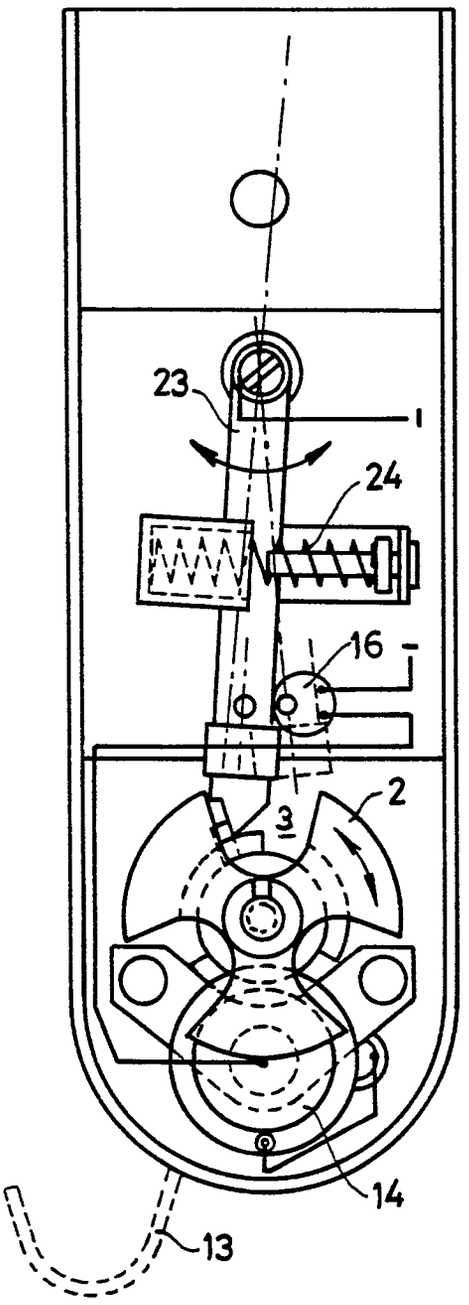

Fig: 3.

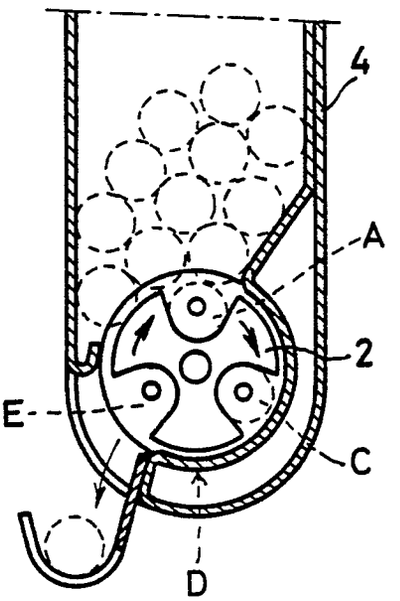

Fig: 4.

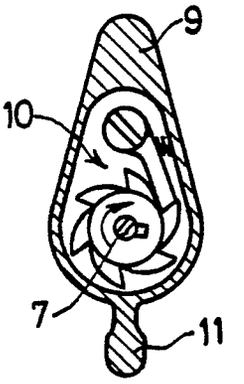

Fig: 5.

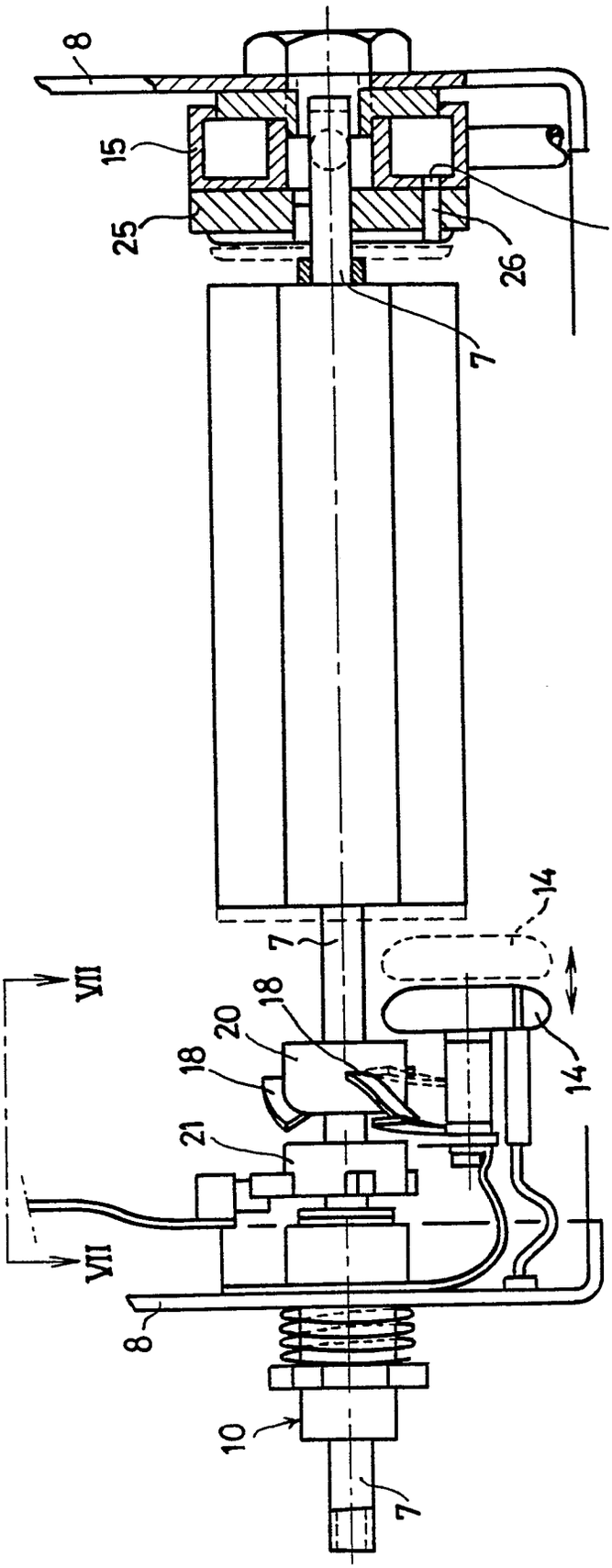

Fig. 5.

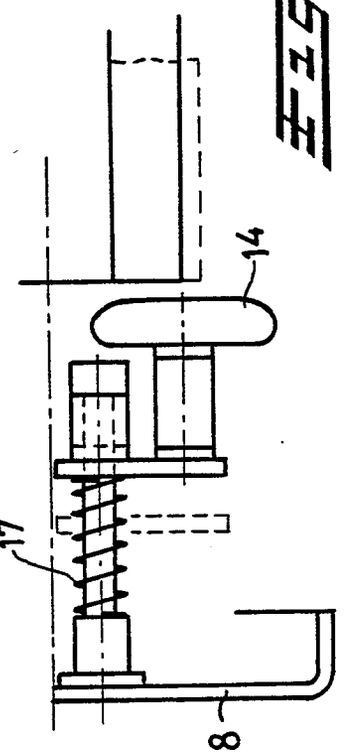

Fig. 7.

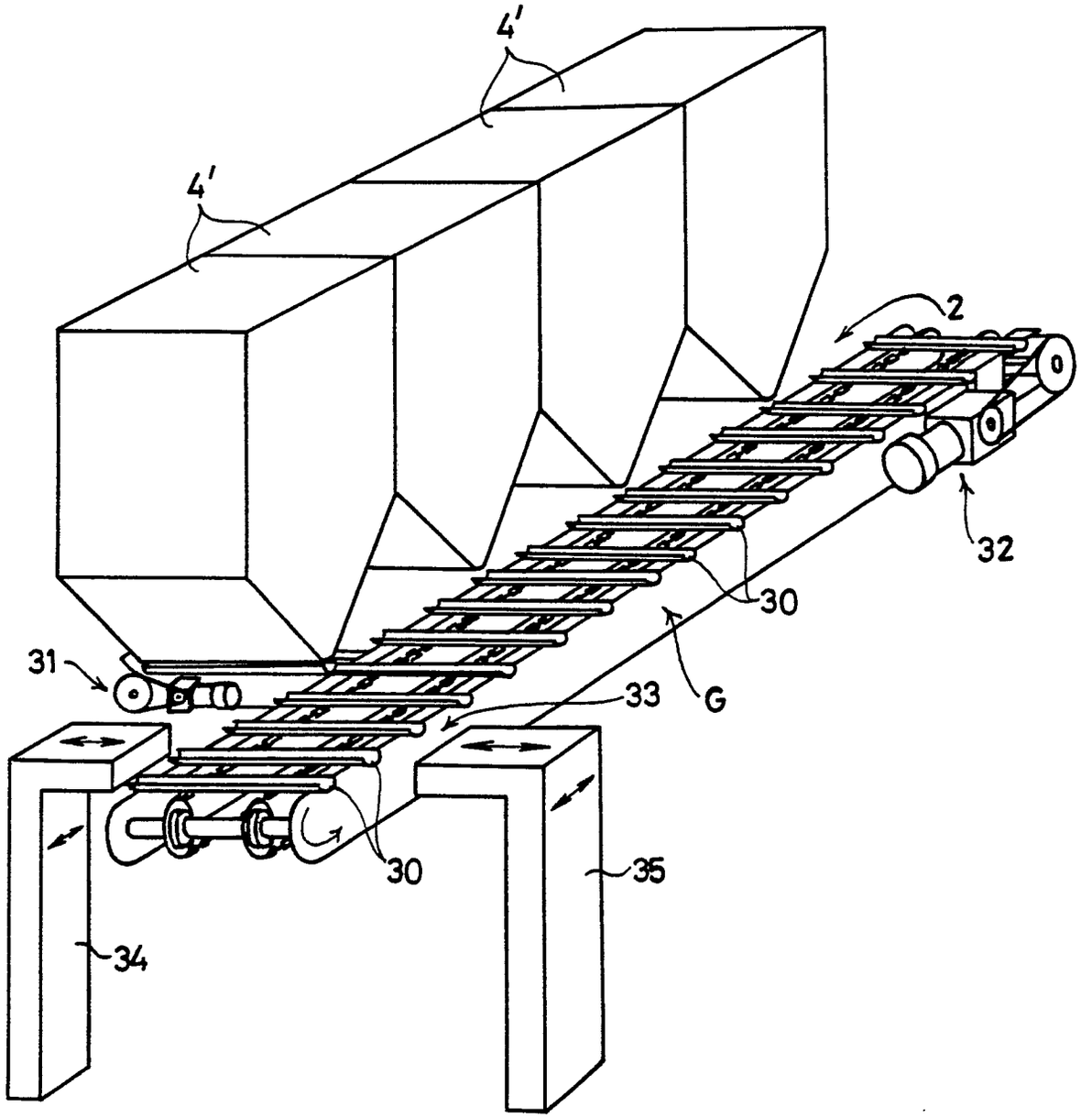

Fig: 8.

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EUROPEAN SEARCH REPORT

Application Number

EP 88 20 1268

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	FR-A-1 143 652 (SELLS) * Page 2, left-hand column, line 47 - right-hand column, line 42; figures 1-3 *	1,3	A 24 F 15/10
A	FR-A- 984 055 (LAROCHE) * Whole document *	1-2,5	
A	FR-A-1 251 587 (SPERNAU) * Whole document *	1,4,6	
A	FR-A-2 563 029 (ALLEON) * Page 3, lines 4-20; claim 1; figure 1 *	1,7	
A	FR-A-2 553 177 (ROUSSEAU) * Whole document *	1	
A	US-A-3 294 285 (KOVACEVIC) * Whole document *	1,6	
A	CH-A- 285 240 (STEINHAUER)		TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	DE-C- 866 000 (MULLER)		A 24 F
A	US-A-1 914 064 (BARNARD)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21-09-1988	RIEGEL R.E.

CATEGORY OF CITED DOCUMENTS

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