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(54) Title: AUTOMATIC FEEDING DEVICE FOR PETS

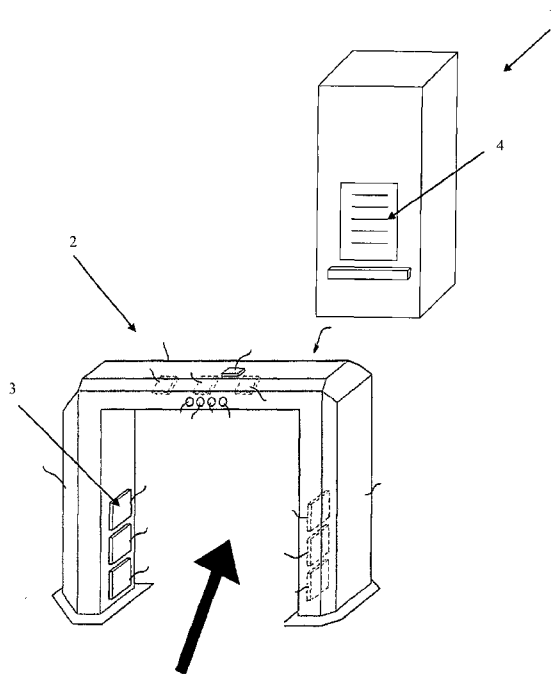


FIG. 1

(57) Abstract: Automatic feeding device (1) for pets associated to a RFID reader (3) for reading of one or more ID tags that are attached to one or more pets. The automatic feeding device (1) comprises one or more magazines (4) for portion packages (6) with food, and an automatic opening mechanism (7) for opening of the portion packages (6) and serving of the content.

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## Automatic feeding device for pets

### **Field of the invention**

5           The present invention concerns an automatic feeding device for pets which is associated with an RFID reader for reading of one or more ID tags that are attached on one or more pets, and a method for use of the automatic feeding device.

### **Background of the invention**

10           Pets like dogs and cats are today tagged with ID tags based on the ISO standard 11784/85, which is based on Radio Frequency Identification (RFID) technology. RFID tags are available in active and passive versions. Active tags have their own battery and may therefore include more storage capacity, more functionality as well as working over longer  
15           distances (more than 100 meters) than passive tags. Passive tags have no battery, but induce their own energy from radio signals from a RFID reader and respond by sending a small amount of data. Signals from such tags normally have a range up to 30 cm. These tags are inserted under the skin of the pets, and are so-called passive tags.

20           In GB 2199477 A an automatic feeding device for animals is described. The automatic feeding device comprises a box including two rotating discs with openings for food containers. The device also includes engines that drive the rotating discs. Various automatic feeding devices for animals in which a RFID reader is used for reading of one or more ID tags are known. Patent document US 6044795 A regards an automatic feeding system for pets. A tag is attached to the pet with information about feeding of the pet. The automatic feeding  
25           system includes a reading device that receives and reads the information. An automatic feeding system to control the food intake of different types of animals is also disclosed in US 7895973 B1. The system is based on gravity and is suitable for pelleted food. An RFID reader and ID tags on the animals are used. Publication US 2005/0284382 A1 regards automatic feeding devices associated with an RFID reader for reading one or more ID tags that are  
30           attached to the pet. Also the publications WO 2009/063415 A2 and WO 2005/092019 A2 regard automatic feeding devices associated with a RFID reader.

          The aforementioned automatic feeding devices are handling pelleted food and may cause some spillage during feeding. Pelleted food is also less appetizing to the pets than other

food, and because the automatic feeding devices are used when animals are alone, it is important that the food is appetizing as no one is present to make sure that your pets are eating regularly. The shelf life of pelleted cat food is also generally less than for hermetic food.

5           The purpose of the present invention is to provide a device and a method that addresses at least one of the above mentioned issues, and as far as possible uses the benefits of the prior art.

## 10   **Summary of the invention**

          This is achieved according to the invention with an automatic feeding device for pets associated with an RFID reader for reading of one or more ID tags that are attached to one or more pets which is distinguished in comprising one or more magazines for portion packages with food, and an automatic opening mechanism for opening of the portion packages and  
15   serving of the content, wherein the opening mechanism comprises a knife or a wire, and wherein the automatic feeding device further comprises a device for automatic compression of package.

          In another aspect, the present invention concerns a method for using the automatic feeding device comprising; reading one or more ID tags with an RFID reader when the pet or  
20   animal approaches the RFID reader (3) wherein the method is distinguished by comprising, opening a magazine (4) with a portion package (6) with food at a programmed time, and opening a portion package with food, with an automatic opening mechanism comprising a knife or a wire, and serving the content, and automatically compressing package after each portion package is emptied of food.

25           Further preferred embodiments of the invention are disclosed in the dependent claims.

## **Brief description of the drawings**

          The present invention is described in detail in the following, with reference to the  
30   appended drawings wherein;

          Figure 1 shows the automatic feeding device and a portal with RFID readers.

          Figure 2 shows a portion package with a knife as opening mechanism.

          Figure 3 shows a portion package with steel wire as opening mechanism.

### Detailed description of the invention

Figure 1 shows an automatic feeding device for pets associated with an RFID reader according to the invention, which is described in detail below.

The automatic feeding device 1 is associated to a RFID reader 3 for reading of one or more ID tags that are attached to one or more pets. The automatic feeding device includes one or more magazines 4 for portion packages 6 with food for the pet or pets. The portion packages are hermetically sealed and the content can thus be all the possible varieties of hermetic food for pets. The portion packages 6 are for example made of aluminum or aluminum alloys. In the preferred embodiment the portion packages 6 are made of aluminum or aluminum alloys, but all known suitable materials may be used. The automatic feeding device 1 comprises logic to distribute and/or vary the food over time. In this way the pets may have variable, healthy and tasty food, even if they are without supervision for a period of time. The device may for example, include a food program for 1 week. On basis of the owner's input, the food is dosed according to the predefined preferences. It will be possible to obtain a variety of diets and food programs. This may be weight loss, dental care, high-fiber etc. The device may also comprise a water bowl with possibility of refill.

The automatic feeding device 1 comprises a reader including antennas for reading ID tag (s). To ensure safe reading of the ID tag (s) the automatic feeding device should have a small portal integrated where the RFID-reader 3 is arranged. The portal may have antenna around its circumference, and is optionally provided with several antennas on the top and on the sides.

The automatic feeding device 1 comprises an automatic opening mechanism 7 for opening the portion packages with hermetic foods and a mechanism for automatically serving of the food. The opening mechanism 7 for opening the hermetic portion packages comprises, for example, a knife or a steel wire. When using steel wire, the steel wire is integrated around the cover. The device has a small hook for pulling of the steel wire and thereby opens the cover. Both the knife and steel wire will after a time lose their sharpness, and this is typically a part that needs to be replaced. In an embodiment a steel wire is used, but all known suitable opening mechanisms can be utilized and a thread of another suitable material may be used. The automatic feeding device comprises equipment for the purpose of reporting to a central register, of the number of times in use, and the user will be informed of maintenance requirement.

As the portion packages 6 are hermetic units, there will be some packaging, and the automatic feeding device therefore comprises equipment for automatic handling of packaging.

The portion packages are compressed and therefore occupies a small volume after use, and in the case they are made of aluminum, they are relatively easy to compress compared to e.g. plastic. Portion packages of thin metal is the most appropriate to not occupy a large volume. Alternatively, hermetic bags could be an appropriate alternative.

5           A method for using the automatic feeding device comprises reading the ID tag(s) with RFID reader 3 when the pet approaches the RFID reader 3. A magazine 4 with a portion package 6 with food will be opened at a programmed time and a portion package 6 with food then opens automatically, for example, with a knife. After a portion package is emptied, the packaging is compressed automatically.

10           In another embodiment of the automatic feeding device 1, it may comprise two magazines to provide food for two species of animals, such as dog and cat. If the portion packages have a common diameter even if the content is different, the same automatic feeding device can be used, for example, to feed a dog in one home and a cat in another.

15           The automatic feeding device may be provided with WiFi. The device might be able to monitor the food intake of the animal, and having warning capabilities linked to the internet/email and/or mobile phone. A food program could be provided for a cat, for example for one week, and if the cat does not eat or if the machine does not work, one might be warned by SMS or email. The WiFi link may be direct linked to central databases, and hence deduce the pets age and race. On the basis of this input, the system will be able to suggest  
20           suitable food programs for the animal.

          The embodiments shown in the drawings and disclosed in the specification are not limiting, but intended only as examples.

## Claims

1. Automatic feeding device (1) for pets associated to a RFID reader (3) for reading of one or more ID tags that are attached to one or more pets

5 **characterized in that** it comprises one or more magazines (4) for portion packages (6) with food, and an automatic opening mechanism (7) for opening of the portion packages (6) and serving of the content, and where the opening mechanism (7) comprises a knife or a wire, and where the automatic feeding device (1) further comprises a device for automatic compression of package.

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2. Automatic feeding device (1) for pets according to claim 1, wherein the portion packages (6) are hermetically sealed.

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3. Automatic feeding device (1) for pets according to any of the preceding claims, wherein the portion packages (6) are made of aluminum or aluminum alloy.

4. Automatic feeding device (1) for pets according to any of the preceding claims, comprising logic to distribute and/or vary the food over time.

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5. Automatic feeding device (1) for pets according to any of the preceding claims, comprising a reader including antennas for reading ID tag (s).

6. Method for using the automatic feeding device (1) according to claim 1, comprising

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reading one or more ID tags with a RFID reader (3) when the pet or animal approaches the RFID reader (3) where the method is **characterized in** comprising;

opening a magazine (4) with a portion package (6) with food at an programmed time,  
and

opening a portion package with food, with an automatic opening mechanism comprising a knife or a wire, and

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serving the content, and

automatically compressing package after each portion package is emptied of food.

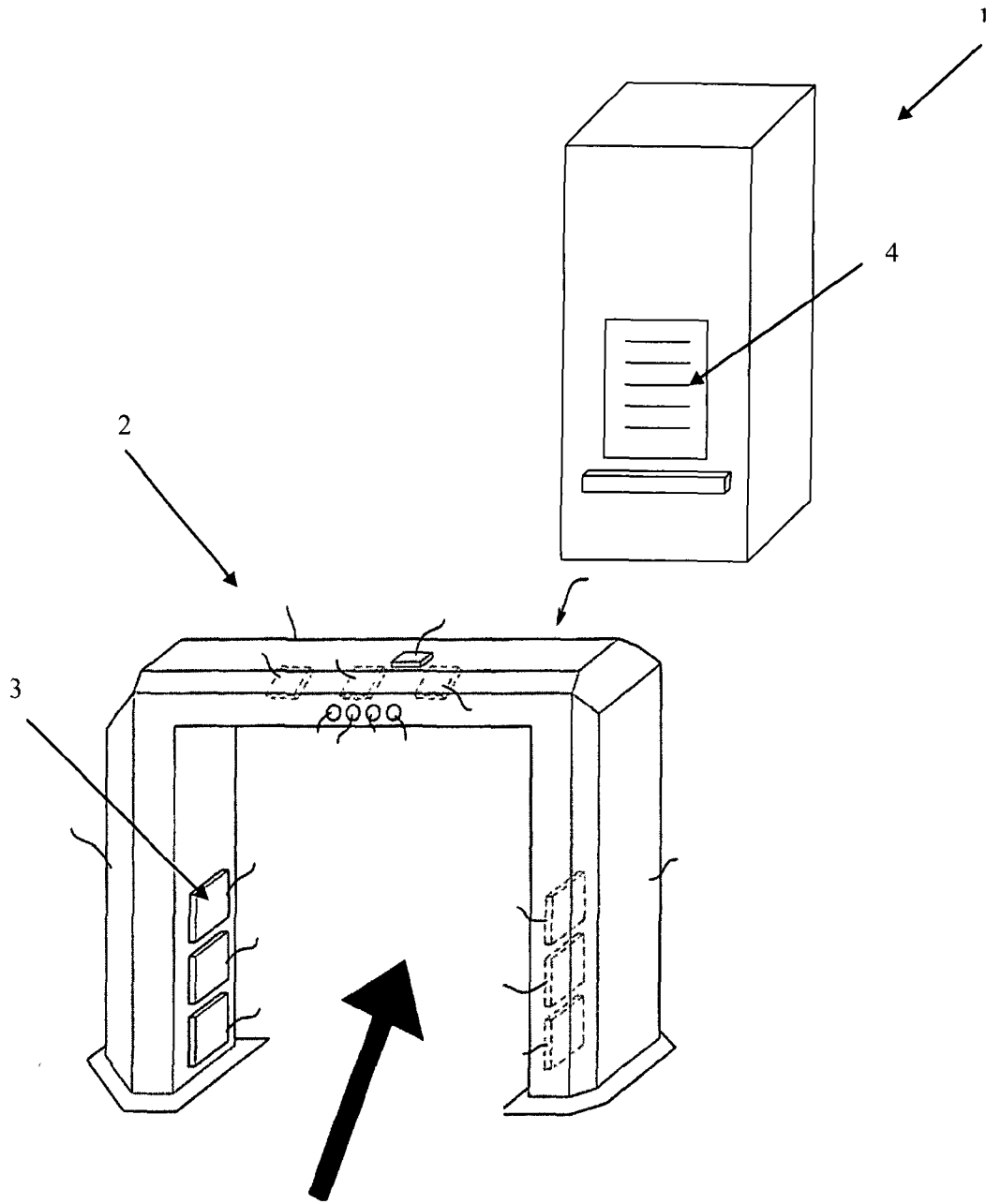


FIG. 1

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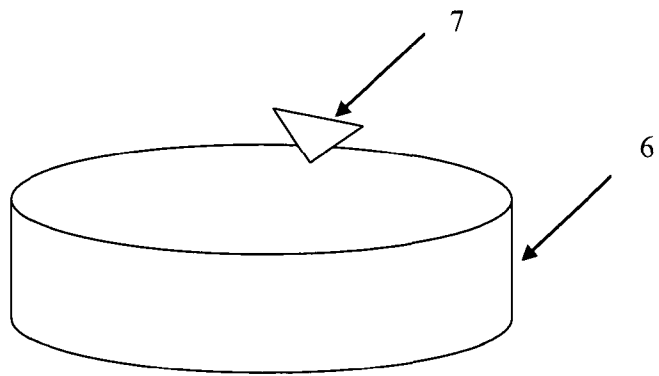


FIG. 2

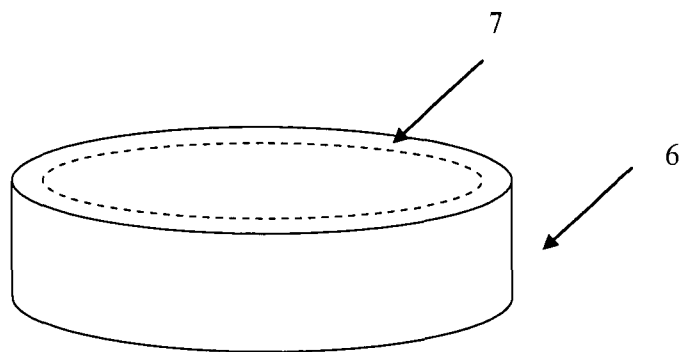


FIG. 3