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(54) **AEROSOL CAN NOZZLE EXTENSION**

(57) An aerosol can (1) nozzle extension, intended to be coupled to the can (1), wherein the can (1) houses an aerosol liquid and has a body (2) and a cap (3) provided with a dispensing nozzle (4), wherein the extension is characterised in that it comprises: a semi-flexible wire (5) intended to surround the body (2) of the can (1); a longitudinal plate (6) comprising a first end (7) joined to the wire (5) and which is provided with a first retention

element (8), and a second end (9) opposite the first end (7) and which is provided with a second retention element (10); an outer tube (11) that is retained by the retention elements (8,10); an inner tube (12) that is housed in the outer tube (11) and wherein one of the ends of the inner tube (12) is intended to be connected to the nozzle (4) and the other end is intended to expel the aerosol liquid.

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Description

Object of the invention

[0001] The present invention relates an aerosol can nozzle extension, especially intended for marking animals, wherein the nozzle extension has a support wherein a tube connected to the nozzle is retained, through which the aerosol liquid contained in the aerosol can is dispensed.

[0002] Specifically, the nozzle extension makes it possible to mark the animal at a certain distance, preventing the operator from being closely exposed to the particles released during the application of the aerosol liquid.

Background of the invention

[0003] In the livestock sector, there is a need to mark animals to identify, for example, which animals should be vaccinated or which ones should go to the abattoir. Aerosols or spray paints are currently used for these tasks and an operator applies the paint directly on the animal.

[0004] However, to carry out this task, the operator has to get very close to the animal, which causes high stress for the animal, as well as directly exposes the operator to harmful products that are released from the aerosol.

Description of the invention

[0005] The present invention relates to an aerosol can nozzle extension, intended to be coupled to the can, wherein the can houses an aerosol liquid and has a body and a cap provided with a dispensing nozzle. The extension comprises a semi-flexible wire intended to surround the body of the aerosol, a longitudinal plate comprising a first end joined to the wire and provided with a first retention element, and a second end opposite the first end and provided with a second retention element. The extension also comprises an outer tube that is retained by the retention elements and an inner tube that is housed in the outer tube and wherein one of the ends of the inner tube is intended to be connected to the nozzle and the other end is intended to expel the aerosol liquid.

[0006] In this way, when the user presses the cap, the aerosol liquid passes through the inner tube and is expelled at the end thereof and the animal can be marked from a great distance. This reduces stress for the animal, since the operator does not have to get as close to it and it prevents the operator from breathing harmful substances released by the aerosol liquid.

[0007] In addition, the extension can be easily coupled to the can thanks to the semi-flexible wire thereof, such that, for example, when the can is used up or the colour is to be changed, the type of can is changed quickly without having to change the extension. If the can has a cover, said cover can be coupled to the extension by making a small slot to allow at least the inner tube to pass through.

The invention is focused on, but not limited to, being used to mark pigs.

[0008] Thus, the main advantage of this invention is the comfort and ease of being able to work at a certain distance from the animal, it being possible, for example, to mark the pigs that will go to the abattoir or be injected with medication, without entering the pen and without putting stress on the animal and avoiding the excessive inhalation of the aerosol liquid. Another advantage is that when marking the animals for vaccination, as is done in the case of pigs, the operator does not have to bend his or her back as much or run after the animals.

[0009] The first retention element may comprise a first plate section extending from the first end of the longitudinal plate and is provided with a first hole, and the second retention element may comprise a second plate section extending from the second end of the longitudinal plate and is provided with a second hole, wherein the outer tube is housed in both holes. In this way, the outer tube, and therefore the inner tube, remain secured to the longitudinal plate, preventing them from moving transversely to the longitudinal plate and achieving optimum stability for marking the animals.

[0010] The outer tube may comprise a threaded surface extending from the end thereof close to the first hole and the extension comprises at least two nuts that surround the threaded surface on both sides of the first plate section, hindering the longitudinal movement of the outer tube with respect to the longitudinal plate and improving the stability thereof.

[0011] The wire can partially outline a circumference in a way that is better adapted to the can, since said cans are usually cylindrical. Since the wire has a certain flexibility, it can be adapted to cans of different dimensions. For example, it is possible to use a spring of suitable dimensions that is coupled to the can.

[0012] The outer tube is preferably metallic and the inner tube made of flexible nylon, to better adapt to the nozzle of the cap. The end of the inner tube is intended to join the nozzle, preferably surrounding the nozzle and remaining outside of it.

[0013] Both tubes protrude from the second end, such that the tubes are longer than the longitudinal plate. Thus, the tubes can be sized as needed, keeping the longitudinal plate the same size.

Description of the drawings

[0014] As a complement to the description provided herein, and for the purpose of helping to make the features of the invention more readily understandable, in accordance with a preferred practical exemplary embodiment thereof, said description is accompanied by a set of drawings constituting an integral part of the same, which by way of illustration and not limitation, represent the following:

Figure 1 shows a perspective view of a nozzle ex-

tension connected to an aerosol can.

Figure 2 shows a perspective view of the nozzle extension in a disassembled situation.

Figure 3 shows a detailed view of the nozzle extension connected to an aerosol can.

Preferred embodiment of the invention

[0015] Figure 1 shows a perspective view of a nozzle extension connected to an aerosol can (1), according to the present invention. The can (1) houses an aerosol liquid and has a body (2) and a cap (3) joined to the body (2) provided with a dispensing nozzle (4). The extension has a semi-flexible wire (5) that surrounds the body (2) of the can (1), wherein this wire (5) has a semi-circular shape. The extension comprises a longitudinal plate (6) comprising a first end (7) joined to the wire (5) and which is provided with a first retention element (8), and a second end (9) opposite the first end (7) and which is provided with a second retention element (10).

[0016] The extension in turn has an outer tube (11) that is retained by the retention elements (8,10) and an inner tube (12) that is housed in the outer tube (11) and is intended to house the aerosol liquid for subsequent expulsion thereof. Specifically, the inner tube (12) is connected to the nozzle (4) at one end and the other end thereof is where it expels the aerosol liquid. The tubes (11,12) protrude from the second end (9) of the longitudinal plate (6) and can measure approximately 1 m.

[0017] Figure 2 shows a perspective view of the nozzle extension in a disassembled situation, according to the present invention. The first retention element (8) comprises a first plate section (15) extending from the first end (7) of the longitudinal plate (6) and is provided with a first hole (16), and the second retention element (10) comprises a second plate section (17) extending from the second end (9) of the longitudinal plate (6) and is provided with a second hole (18), wherein the outer tube (11) is configured to be housed in both holes (16,18) so that it is retained.

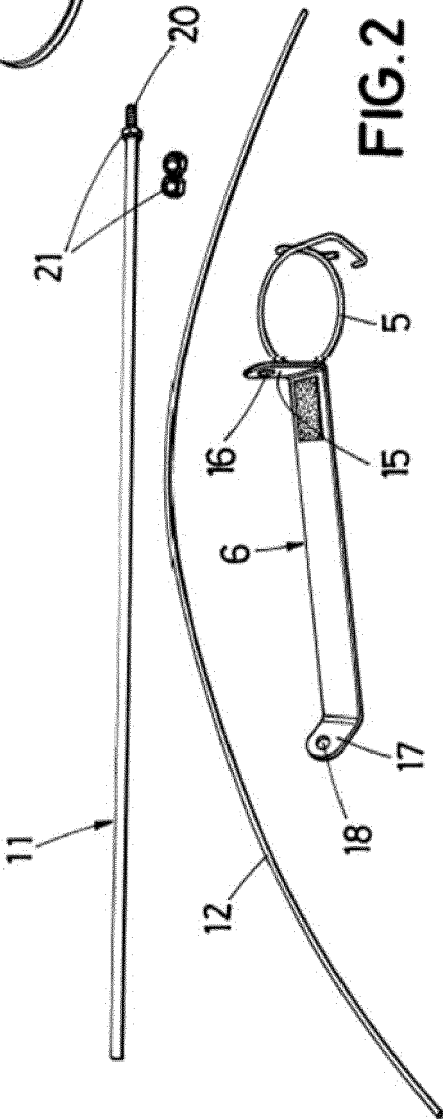
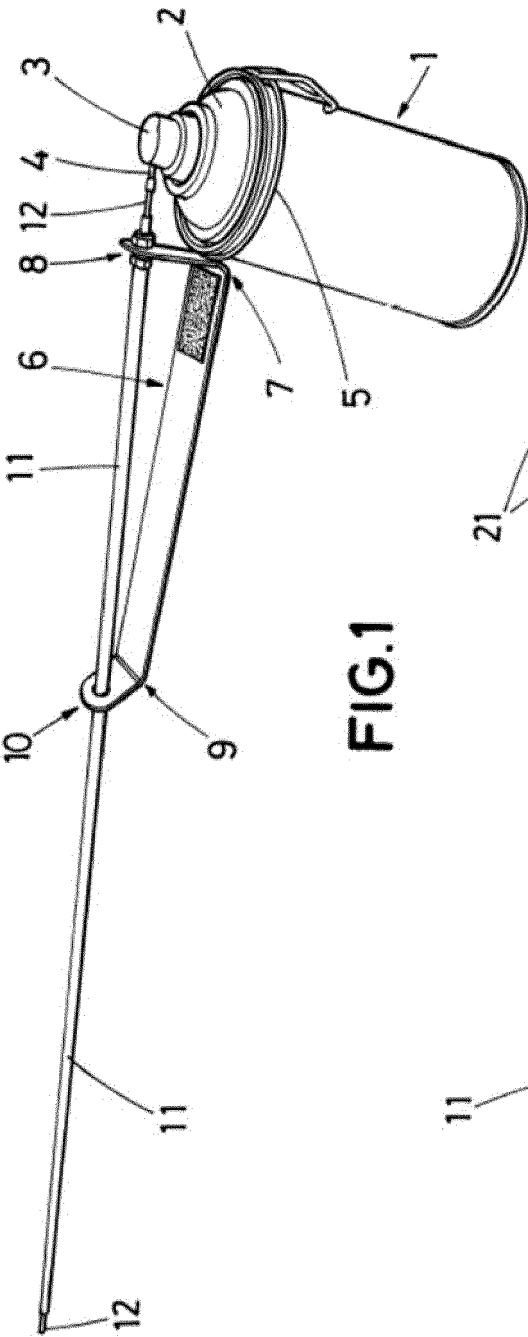
[0018] Figure 3 shows a detailed view of the nozzle extension connected to an aerosol can, according to the present invention. The outer tube (11) has a threaded surface (20) extending from one of the two ends of the outer tube (11), specifically the one that is close to the first hole (16) and the extension comprises at least two nuts (21) that surround the threaded surface (20) on both sides of the first plate section (15).

- a semi-flexible wire (5) intended to surround the body (2) of the can (1);
- a longitudinal plate (6) comprising a first end (7) joined to the wire (5) and which is provided with a first retention element (8), and a second end (9) opposite the first end (7) and which is provided with a second retention element (10);
- an outer tube (11) that is retained by the retention elements (8,10);
- an inner tube (12) that is housed in the outer tube (11) and wherein one of the ends of the inner tube (12) is intended to be connected to the nozzle (4) and the other end is intended to expel the aerosol liquid.

2. The extension of claim 1, wherein the first retention element (8) comprises a first plate section (15) extending from the first end (7) of the longitudinal plate (6) and is provided with a first hole (16), and the second retention element (10) comprises a second plate section (17) extending from the second end (9) of the longitudinal plate (6) and is provided with a second hole (18), wherein the outer tube (11) is housed in both holes (16,18).
3. The extension of claim 2, wherein the outer tube (11) comprises a threaded surface (20) extending from the end thereof close to the first hole (16) and the extension comprises at least two nuts (21) that surround the threaded surface (20) on both sides of the first plate section (15).
4. The extension of claim 1, wherein the wire (5) partially outlines a circumference.
5. The extension of claim 1, wherein the outer tube (11) is metallic and the inner tube (12) is made of flexible nylon.
6. The extension of claim 1, wherein the tubes (11,12) protrude from the second end (9).

Claims

1. An aerosol can (1) nozzle extension, intended to be coupled to the can (1), wherein the can (1) houses an aerosol liquid and has a body (2) and a cap (3) provided with a dispensing nozzle (4), wherein the extension is **characterised in that** it comprises:



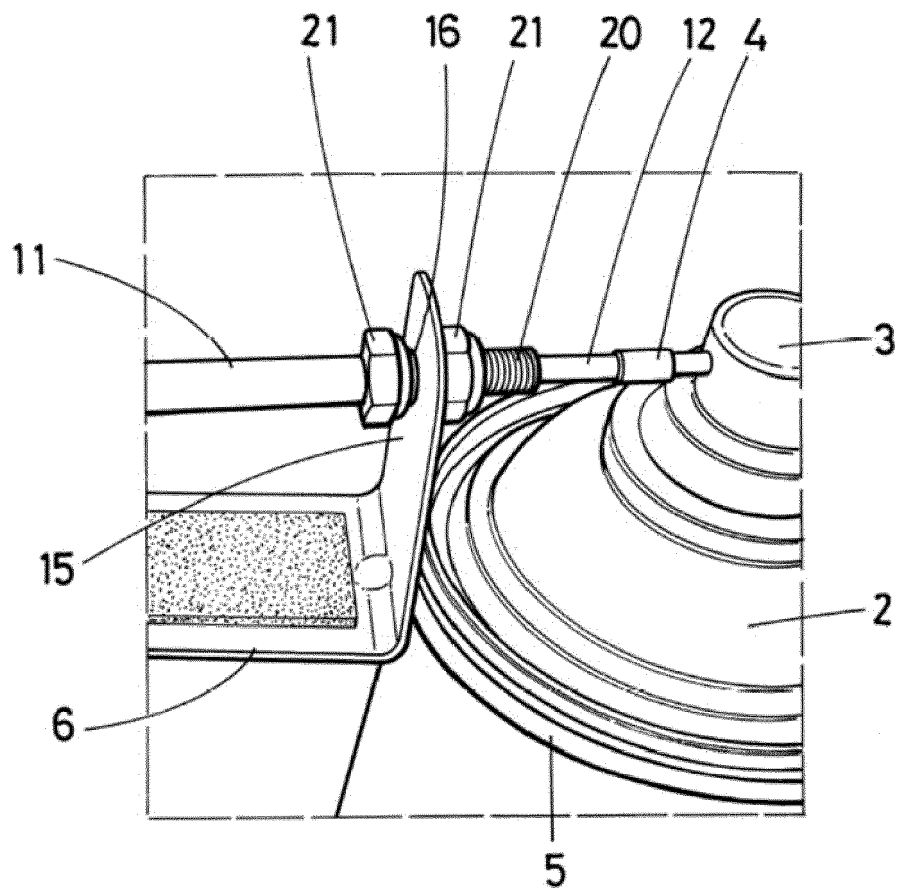


FIG.3



EUROPEAN SEARCH REPORT

Application Number

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 July 2022	Examiner Kun, Karla
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	

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