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(54) **DEVICE FOR SHOOTING CONFETTI, STREAMERS AND THE LIKE**

(57) A device (1) for shooting confetti, streamers and the like, comprising at least one tank (3) for containing a pressurized gas, having an inlet (4) for introducing the gas, is described. The tank comprises at least two outlets (6), for connecting at least two shooting tubes (7), and connecting means (13) adapted to establish, when open, an independent fluid connection between the tank and each of said shooting tubes, so that to cause a shot from each of said at least two shooting tubes both at different times and simultaneously.

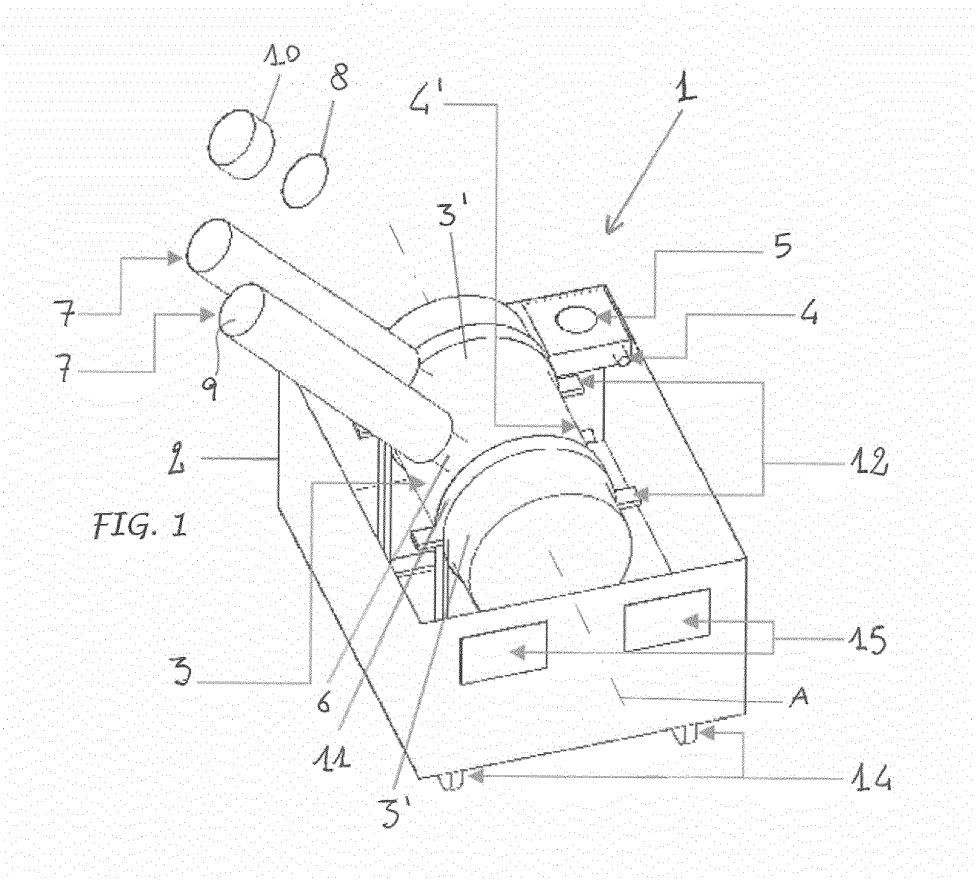

FIG. 1

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Description

Field of the Invention

[0001] The present invention concerns the entertainment sector and especially concerns a professional device for special effects and, specifically, for shooting confetti, streamers or other materials.

State of the art

[0002] Professional devices to create special effects at events such as concerts, parties, shows, events, etc., both outdoors and in theaters, locations, arenas or the like, are widely used in the entertainment sector.

[0003] In particular, the so-named shooting machines, or confetti shooting canons, that allow to shoot confetti, streamers, or other items made of fabric or anyhow of light material to create spectacular and unique effects, are known.

[0004] These machines use compressed air to shoot confetti and the like towards the desired direction at high height, so that to cover a wide area. The machine can continuously shoot a flow of material for a time determined by the time necessary for emptying the air from the tank.

[0005] The machines according to the known art essentially consist of shooting tube, to be filled with materials to be shot which can be in the form of confetti and the like, combined with a valve and preset to be able to be connected to an outer cannister containing a pressurized gas, such as CO^2, so that, when the valve is open, the gas can flow in the tube, thus causing the shot. However, this configuration allows to carry out a single shot.

[0006] In particular, at big events, such as for example concerts in stadiums or evens in large environments or outdoors, a multiplicity of such machines, which must be prearranged before the event itself, often also on scaffolds or in places that are difficult to access once the event has started, are used. The machines are then controlled remotely to make the shot.

[0007] Whenever the possibility to make more than one shot of confetti or the like is required, also at different times, the presence of a lot of personnel is necessary for refilling the various shooting tubes; in addition, despite this, it is not always then possible to refill the machines that cannot be reached during the event.

[0008] The European patent application EP 1 604 166 A1 concerns a device for projecting light materials, such as confetti or the like and/or emulsions such as foam, snow or the like. The device comprising a container containing the materials to be projected is connected by means of a vacuum device, such as an air amplification transducer, for example supplied with compressed air from compressed air cylinders, equipped with a safety valve. The containers containing the light materials are connected at the rear end of the transducer, to which a negative pressure is applied, while a positive pressure is applied at the opposite front end of said transducer to which a tubular element for ejecting outwardly is connected. Thus, the device comprises a portion for distributing the compressed air, comprising at least one inlet connected to the outlet of the safety valve and at least two outlets, a first outlet being connected to the compressed air inlet of the air amplification transducer and a second so-named automatic sealing outlet, i.e. an outlet that is sealed when no connecting means is connected to said outlet and that is open when a connecting means is connected thereto, adapted to be connected to the inlet of a distributing element of a second device for projecting light material. Thus, such a device requires means for sucking the material contained in an appropriate container and means to cause the ejection through the distributing element.

[0009] Object of the document WO 2015/034380 is a system for ejecting confetti and/or streamers, intended for the multiple ejection of streamers and confetti with the use of pressurized air, having a single shooting tube combined with a cartridge belt. Thus, such a device is not adapted to carry out several shots simultaneously and is very complex and costly since it must comprise means for bringing a cartridge at the shooting tube from time to time.

[0010] Both of the devices of the known art are particularly complex and bulky to be installed, thus being inappropriate for installations of the type described above, as well as costly to make.

Summary of the Invention

[0011] An object of the present invention is to provide a device for shooting confetti, streamers, or other similar items that overcomes the drawbacks of the known art.

[0012] Another object of the present invention is to provide a solution that allows to reduce the number of devices needed at an event and the amount of personnel needed to manage them.

[0013] A further object is to provide a device that allows to easily make more than one shot, whether simultaneously, at different times, and also at times close to each other.

[0014] Another object is to provide a device of contained bulkiness, which can also be installed on pylons and scaffolds.

[0015] Still a further object is to suggest a device that is simple to make and that requires a limited amount of components, with reduced costs with respect to the devices of the known art.

[0016] These and further objects are achieved by a device for shooting confetti, streamers and the like according to claim 1, comprising a tank to be filled with a pressurized gas through a specific inlet and means to establish an independent fluid connection between the tank and each of the at least two shooting tubes containing confetti, streamers or other similar items, said means for establishing a fluid connection being combined with

the tank. The wording shooting tubes refers to tubular elements prearranged to be filled with the material to be shot.

[0017] The presence of a tank provided with connecting means to be combined with at least two distinct shooting tubes, each combined with the tank so that to be able to receive a flow of compressed gas independently of the other, allows to make at least two shots of confetti at different times, without having to refill the shooting tubes. In fact, it is sufficient to prearrange and combine the at least two shooting tubes, appropriately filled with the desired material, with the tank to be able to make two shots simultaneously, or in sequence, or at different times during the same event. The shooting tubes are thus connected with the tank in parallel to one another so that to be completely independent one of the other. For this reason, the present invention does not provide any serial connection of the shooting tubes connected to a same tank.

[0018] Advantageously, each shooting tube is combined to the tank by means of a respective outlet; in other words, the tank is provided with as many outlets as the shooting tubes that can be combined with the device. The number of shooting tubes establishes the maximum number of shots that can be made without having to make any refill.

[0019] Preferably, the compressed gas present inside the tank is channeled in each of said tubes through valves.

[0020] Such valves can be individually combined with each shooting tube and channel the air therein by means of a respective outlet.

[0021] Preferably, the valves can be electrovalves, or pneumatic control valves.

[0022] Advantageously, the device is provided with means for controlling it remotely so that to be able to cause the shots remotely. The shots can be caused manually, by sending a relative activation signal to each specific shooting tube, for example by means of an electronic device such as a remote control. In alternative on in addition, the sequence and the times of the shots can be set before the event, by acting on the timing means combined with the single valves, or preferably with the device itself.

[0023] Thus, in a preferred solution, the device comprises a programmable control unit to manage the opening of the valves and consequently the shots.

[0024] Advantageously, in order to reduce the bulkiness of the device when unused and to facilitate the refilling of the shooting tubes, each shooting tube is removably combined with the device, preferably by screwing and with the aid of a quick coupling. A safe and stable connection is thus formed, but it is also at the same time possible to quickly unlock and lock each shooting tube from/to the tank.

[0025] Preferably, it is possible to vary the shooting angle, i.e. the angle that the shooting tube forms with the horizontal plane, by simply rotating the tank with respect to a containment body to which it is fastened. In order to allow this operation, the device comprises at least two brackets to fasten the tank to the containment body and locking elements to hold the tank in the desired position. This way, it is possible to vary the range, the inclination and the maximum height of the shot according to necessity.

[0026] In a particularly preferred solution, the tank comprises as many tank portions as the outlets combined with each other so that to be rotatable one with respect to the other in order to allow to direct the shots in different ways. From the moment that the tank contains a compressed gas, such tank portions are combined with each other fluid-tightly.

[0027] Advantageously, the tank is kept at a pressure of at least 4 bars, preferably of at least 8 bars, so that to ensure the pressure needed to make the shots.

[0028] Advantageously, so that not to have to increase the size of the tank and thus of the device, means for refilling the compressed gas, comprising a tube for connecting to a compressed air source or at least one device for containing a compressed gas such as a CO_2 cannister, provided with a pressure reducer to deliver the gas in the tank, can be combined with the gas supply inlet, once the tank is filled with compressed gas, so that to refill the tank once the gas present therein has run out.

[0029] In alternative or in addition, a single tank of greater capacity internally subdivided so that to provide the amount of compressed gas needed at the pressure necessary to make the shot to each shooting tube, or more tanks each combined with a relative shooting tube, can be prearranged.

[0030] Advantageously, whenever the device is prearranged to make two shots simultaneously, a single tank of a capacity sufficient for making both shots can be prearranged, preferably a single tank of a capacity of 40 liters of compressed gas at a pressure of 8 bars.

Description of the drawings

[0031] Further characteristics and advantages of the invention will be better highlighted by the review of the following detailed description of a preferred, but not exclusive, embodiment illustrated by way of example and without limitations, with the aid of the accompanying drawings, in which:

figure 1 shows a perspective view of an embodiment of a device for shooting confetti, streamers and the like according to the present invention;
figure 2 shows a side view of part of the device;
figure 3 shows a view from above of the device of figure 1, before its assembly; and
figure 4 shows the device of figure 1 in an unused condition.

Detailed description of the invention

[0032] With reference to the figures, the device 1 for shooting confetti, streamers and the like according to the present invention is depicted. For brevity, the following description will refer only to the confetti, but this does not exclude the fact that the device is also appropriate for shooting streamers or other items made of fabric, paper or anyhow of materials of different shapes and sizes.

[0033] Specifically, the device comprises a containment body 2 with which a tank 3 for a compressed gas is combined, having an inlet 4 for connecting to an outer apparatus for its filling. Usually, the tank is filled with compressed air by means of a compressor. In alternative, the device can be filled with CO_2 by means of cannisters with pressure reducer, which can be housed inside the containment body to easily make the refills and without requiring a connection to an electric power supply.

[0034] The tank is at a pressure of at least 4 bars, preferably of at least 8 bars. The air pressure value is very important since it determines the shooting range of confetti. A pressure gage 5 is thus combined with the tank to monitor the pressure therein. A relief valve 4' can also be combined with the tank to cause an outflow of pressurized gas whenever the pressure value detected by the pressure gage is greater than a maximum predefined value.

[0035] The tank comprises at least two outlets 6 independent of each other, each for connecting to a respective shooting tube 7 for ejecting the confetti previously inserted therein. Advantageously, each shooting tube is removably combined with the respective outlet through hooking means 6', preferably by screwing, by quick coupling.

[0036] A raising core 8 arranged in the tube so that to block up each tube in proximity of the outlet, must be inserted inside each shooting tube so that to improve the operations of the device. Once filled with the material, the free end 9 of the tube can be closed with a pressure cap 10, both to properly maintain the material inside the tube and to pressurize the tube during the shot, for a greater shooting effect.

[0037] Preferably, the tank is combined with the containment body so that to be able to be rotated on its longitudinal axis A. This rotation allows to change the angle of each shooting tube with respect to the horizontal direction, so that to be able to vary the shooting trajectory and thus the direction and height of the jet of confetti according to need. The tank can thus be combined with the containment body by means of two or more brackets 11 each provided with at least one locking element 12.

[0038] Preferably, the at least two outlets are arranged aligned with each other so that the respective shooting tubes are parallel to each other. In alternative, the outlets can be staggered, so that to shoot the confetti with different trajectories.

[0039] In an alternative solution, the tank consists of a number of tank portions 3' equal to the number of outlets. The portions are rotatably and sealingly constrained to each other, so that to be able to vary the direction of each shooting tube independently of the others.

[0040] The rotation of the tank, or of each of the tank portions, can be carried out manually or in a motorized way.

[0041] In alternative or in addition, each tube can be combined with the respective outlet by means of a foldable connection - not shown - that allows to direct it and to tilt it at will, in order to achieve the desired effect.

[0042] The at least two shooting tubes are prearranged to be able to shoot the material contained therein simultaneously, but preferably at different times.

[0043] To this end, each of the outlets of the tank are combined with connecting means 13 controlled to define a fluid connection between the tank and each of the at least two shooting tubes so that to channel the compressed gas therein to cause the shot of confetti. The connecting means 13 comprise at least two valves, each combined with a respective shooting tube.

[0044] Preferably, each shooting tube is individually combined with a respective outlet and the connecting means are arranged inside the tank.

[0045] The presence of at least two shooting tubes allows to make at least two shots with a same device, without requiring any refilling, both to be able to shoot different materials and to be able to shoot at different times during an event. In fact, thanks to the connecting means as described above, the gas can be supplied to each shooting tube independently of the others, thus also allowing to activate them at different times according to need.

[0046] Preferably, the valves having control means 13' of the electropneumatic type are used. Each valve can be provided with means for being controlled remotely so that to cause the shots at the desired time. Advantageously, each valve is connected to a control unit 14 to drive its opening.

[0047] In alternative or in addition, the control unit can be programmable for setting the timing of the shots, or each valve can be provided with a respective timer to control the opening at a preset instant.

[0048] The presence of at least two shooting tubes connected to the tank independently, allows to improve the scenic effect obtainable with such device since more shots can be made in close sequences, also of different materials, or at least two shots at different times during the event. Moreover, such solution allows to decrease the number of devices to be installed while obtaining the same effect.

[0049] In order to allow to make as many shots as the number of shooting tubes combined with the device, if concomitant, the tank must be sized so as to contain a quantity of compressed gas sufficient for each shot.

[0050] In alternative or in addition, the device can comprise more than one tank or a tank internally subdivided into separate sections, so that the compressed gas present inside each tank or in each section is sufficient to cause a respective shot from the shooting tube com-

bined therewith.

[0051] In alternative or in addition, the tank of the device can be combined with means for connecting to a compressed gas source, in particular compressed air, or can be initially filled with a quantity of compressed gas needed for a first shot and then connected to one or more CO_2 cannisters provided with a pressure reducer and/or delivering means that can be activated remotely in order to refill the tank once the gas therein has run out.

[0052] Wheels 14 for facilitating the movement can be combined with the main body 2. The wheels are provided with locking means 14' to stabilize the device on the ground, thus avoiding undesired displacements of the device due to the recoil of the shot.

[0053] In order to facilitate the movement of the device, movement handles 15, obtained at the level of the body, can be provided to allow to firmly hold the main body.

[0054] Finally, the main body is sized and structured to be able to put away the shooting tubes and other components therein, when the device is not in a using step, as shown in figure 3. To this end, a lid 16 can be fastened to the main body for its closing - as shown in figure 4 - when the device is unused and/or is in a transporting step.

Claims

1. A device (1) for shooting confetti, streamers and the like, comprising at least one containment tank (3) containing a pressurized gas, having an inlet (4) for introducing the gas into the tank itself, wherein said tank comprises at least two outlets (6), each for connecting to a respective shooting tube (7) containing an amount of material to shoot, selected from confetti, streamers and the like, and connecting means (13) adapted to establish, when open, an independent fluid connection between the tank itself and each of said shooting tubes, so that to cause a shot from each of said at least two shooting tubes at different times or simultaneously.

2. Device (1) according to claim 1, wherein said connecting means (13) comprise at least two valves, each of which is combined with one of said at least two outlets for defining a fluid connection between the tank and the respective outlet (6) so that to channel a flow of compressed gas towards said respective outlet.

3. Device (1) according to one of claims 1 or 2, wherein the connecting means (13) are of the electric, electromagnetic or pneumatic control type.

4. Device (1) according to one of claims 1-3, wherein the connecting means (13) are provided with remote controls, preferably of the wireless type, for causing their opening and closing and/or wherein the connecting means (13) are connected to a control unit (14) for causing their opening and closing, said control unit being able to be provided with remote control means, preferably of the wireless type.

5. Device (1) according to one of claims 1-4, wherein each of the connecting means (13) is provided with a timer for causing its opening and consequently the shot at a preset time and/or the control unit can be programmed for setting the sequence and timing of the shots of each of said at least two shooting tubes.

6. Device (1) according to one of claims 1-5, wherein each shooting tube (7) is removably combined with the respective outlet (6) by hooking means (6'), said hooking means being able to be of the screwable type with quick coupling.

7. Device (1) according to one of claims 1-6, wherein the tank (3) is rotatably combined with the containment body (2) on its longitudinal axis (A), so that to be able to vary the shooting angle of each shooting tube and wherein the tank can be combined with the containment body by means of at least one couple of brackets (11) each provided with at least one locking element (12).

8. Device (1) according to one of claims 1-7, wherein the tank comprises a number of tank portions (3') equal to the number of the outlets, said tank portions being sealingly and rotatably constrained to one another so that to be able to vary the shooting angles of each shooting tube independently from one another.

9. Device (1) according to one of claims 1-8, wherein, at the inlet (4) of the tank, connecting means can be combined with a compressed air source of with at least one containment device containing a compressed gas, such as CO_2 cannister provided with a pressure reducer and/or with the interposition of supply means which can be activated remotely for causing the supply of compressed gas in the tank to refill it once the gas therein has run out.

10. Device (1) according to one of claims 1-8, comprising a single tank internally subdivided into a number of portions equal to the number of shooting tubes combinable with the device, or a number of tanks equal to the number of shooting tubes, wherein each tank portion or each tank is adapted for containing a sufficient quantity of compressed gas for making a respective shot.

11. Device (1) according to one of claims 1-8, wherein, whenever the device is adapted to simultaneously make two shots, a single tank of sufficient capacity for making both shots is provided, preferably a single tank of a capacity of at least 30 liters, preferably at

least 40 liters of compressed gas at a pressure of at least 4 bars, preferably at least 8 bars.

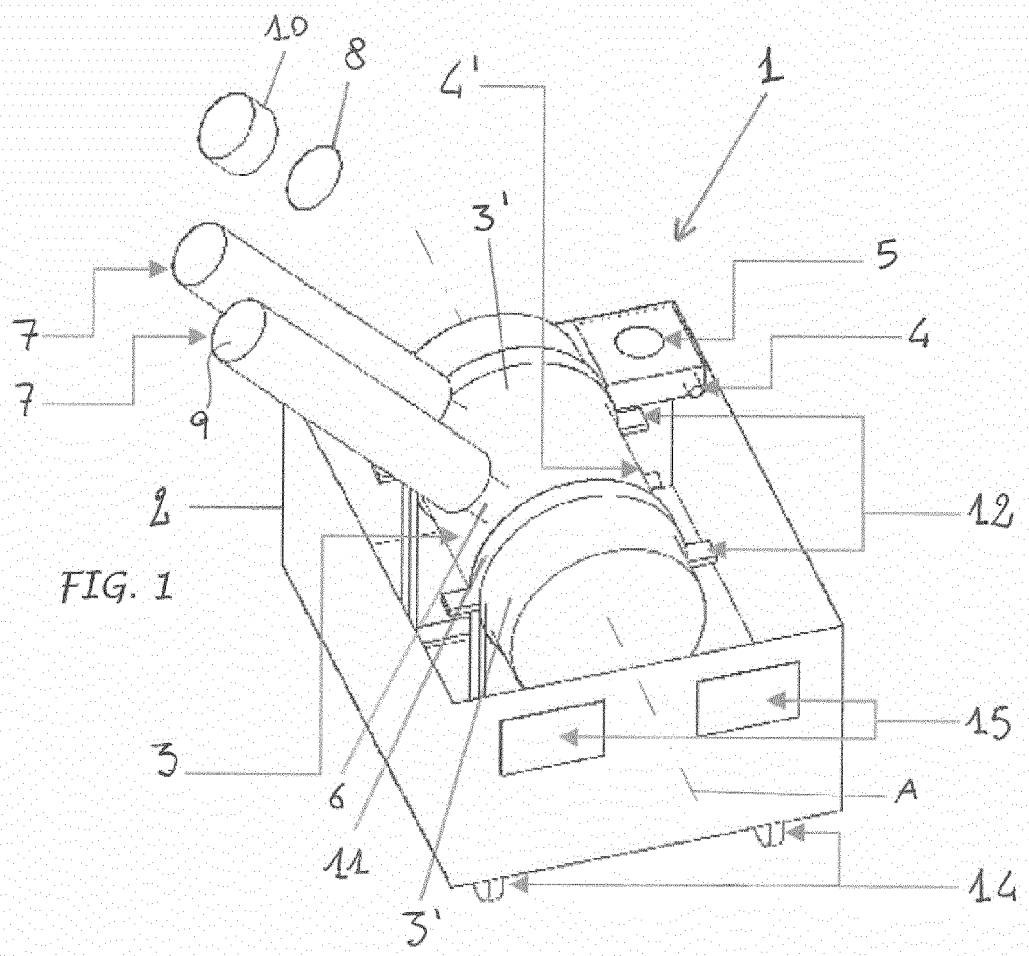

FIG. 1

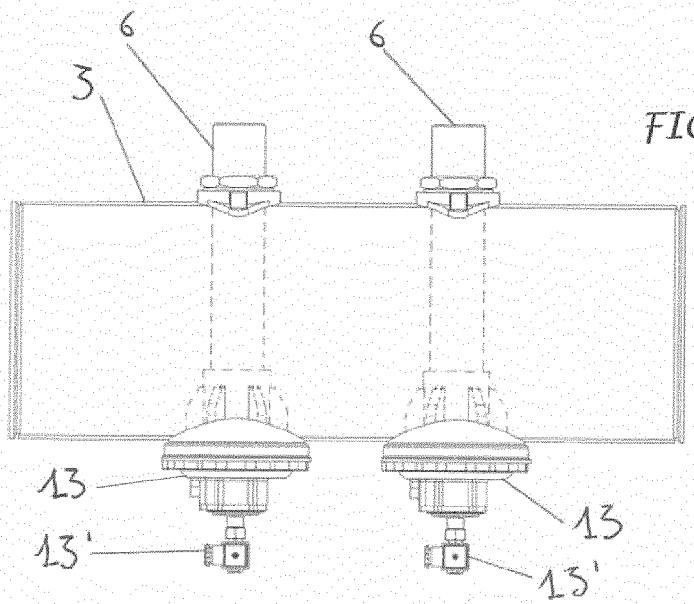

FIG. 2

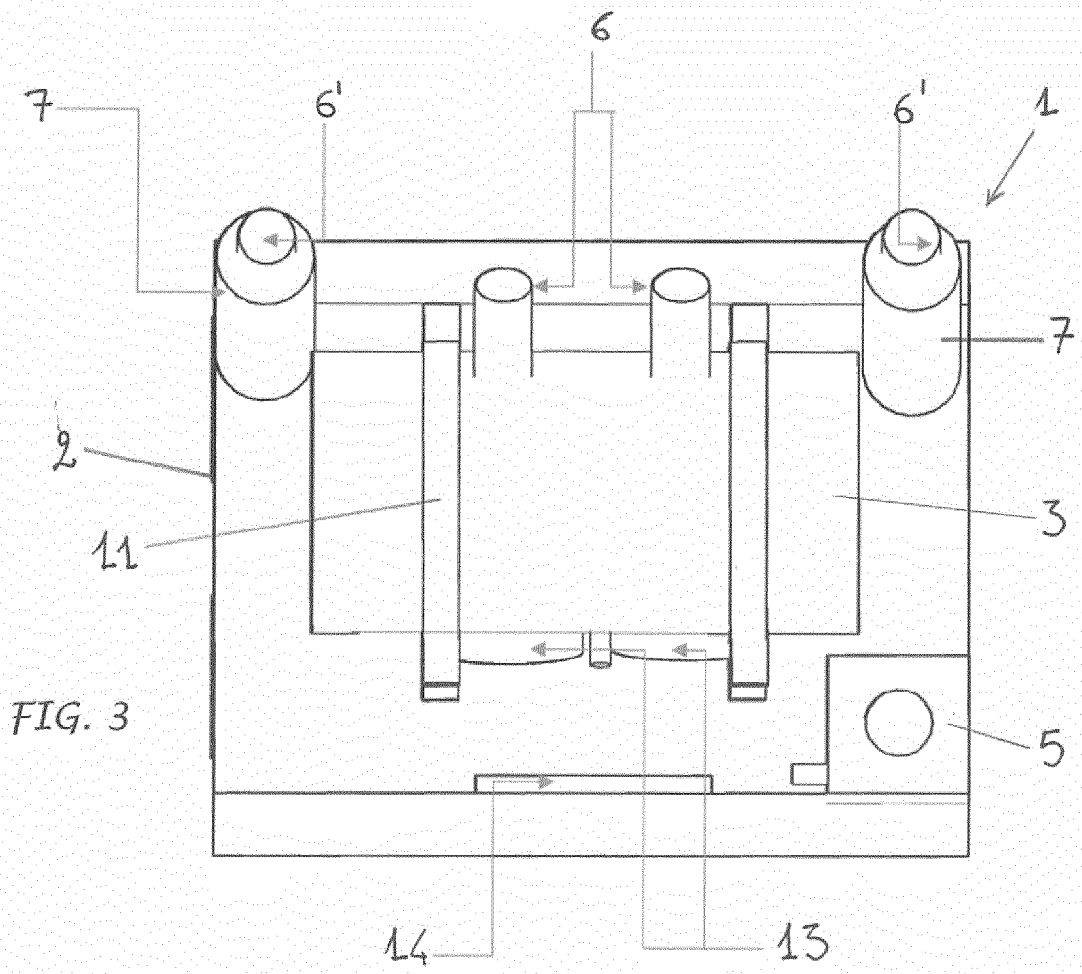

FIG. 3

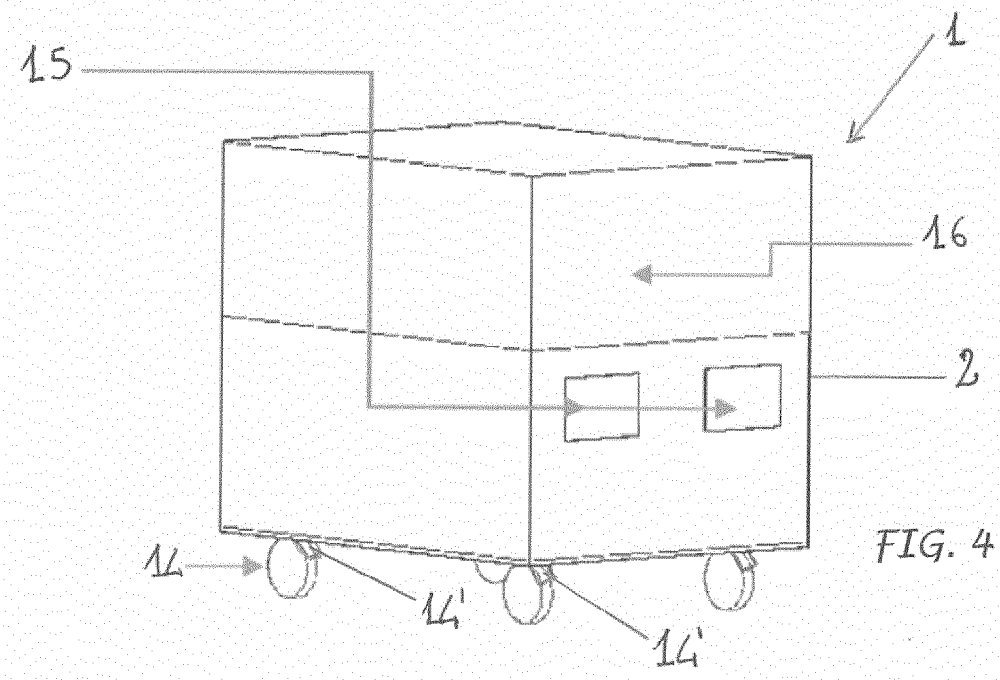

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 19 20 1355

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	EP 1 604 166 A1 (UNIVERSAL EFFECTS [FR]) 14 December 2005 (2005-12-14) * claims 1-9; figures 1-6 * -----	1-11	INV. A63H37/00
A	WO 2015/034380 A1 (EVERMERRY Z&A GARBINSCY SPÓLKA JAWNA [PL]) 12 March 2015 (2015-03-12) * page 3, paragraph 3 - page 4, paragraph 2; claim 1; figures 1-7 * -----	1-11	
A	WO 2016/116691 A1 (TOKE [FR]) 28 July 2016 (2016-07-28) * claims 1-10; figures 1-3 * -----	1-11	
A	WO 2014/037293 A1 (NESTEC SA [CH]) 13 March 2014 (2014-03-13) * page 7, line 21 - page 8, line 5; figures 1,5,6 * -----	1-11	
			TECHNICAL FIELDS SEARCHED (IPC) A63H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	17 December 2019	Brumme, Ion

CATEGORY OF CITED DOCUMENTS

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17-12-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1604166 A1	14-12-2005	AT 338933 T	15-09-2006
		DE 602004002286 T2	05-04-2007
		EP 1604166 A1	14-12-2005
		FR 2851996 A1	10-09-2004
		WO 2004081484 A1	23-09-2004
WO 2015034380 A1	12-03-2015	PL 225933 B1	30-06-2017
		WO 2015034380 A1	12-03-2015
WO 2016116691 A1	28-07-2016	FR 3031681 A1	22-07-2016
		WO 2016116691 A1	28-07-2016
WO 2014037293 A1	13-03-2014	AR 092484 A1	22-04-2015
		WO 2014037293 A1	13-03-2014

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Patent documents cited in the description

- EP 1604166 A1 **[0008]**
- WO 2015034380 A **[0009]**