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(54) **DISCHARGE DEVICE WITH INTERMEDIATE PIECE**

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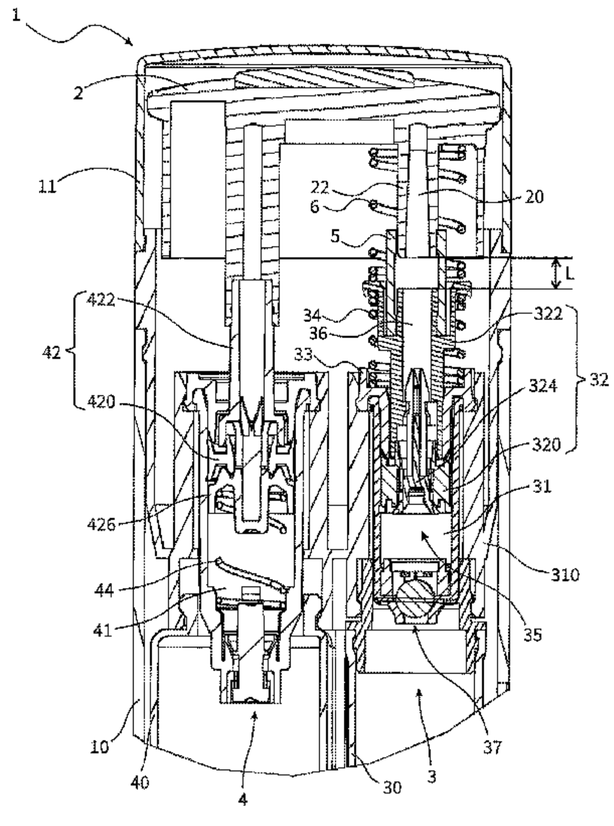
(57) **ABSTRACT**

A discharge device having an actuating handle, a first pump system for conveying a first medium and a second pump system for conveying a second medium. The actuating handle can be moved between an initial position and an end position. The first pump system includes a first pump chamber and a first piston arranged in a displaceable manner in the first pump chamber. The second pump system includes a second pump chamber and a second piston arranged in a displaceable manner in the second pump chamber. The first piston and the second piston can be displaced via the actuating handle in the direction of actuation, and the actuating handle and the first piston are coupled to each other such that the actuating handle and the first piston can be displaced relative to each other in a direction of actuation via a free travel.

20 Claims, 2 Drawing Sheets



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See application file for complete search history.

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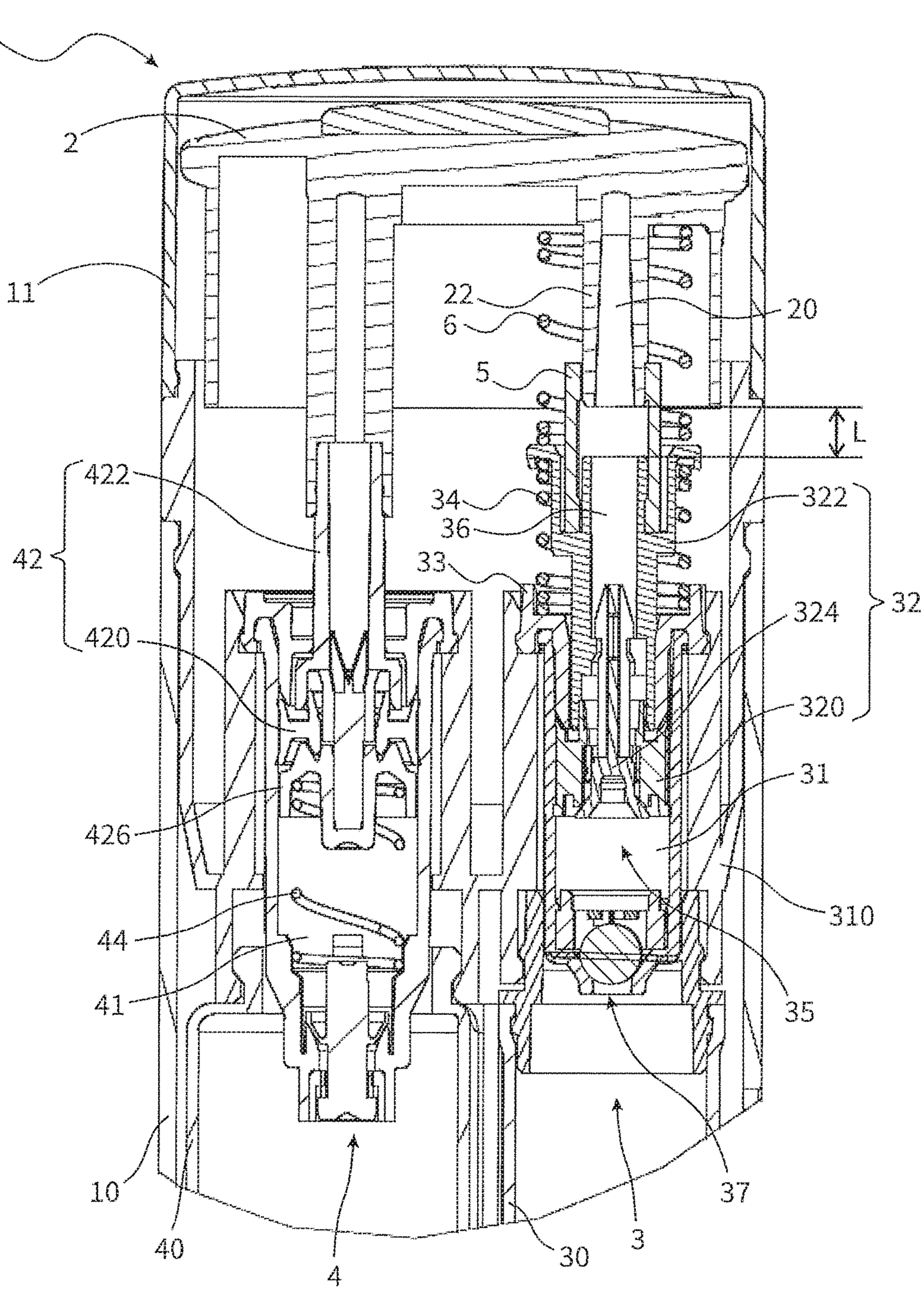

Fig. 1
(Amended)

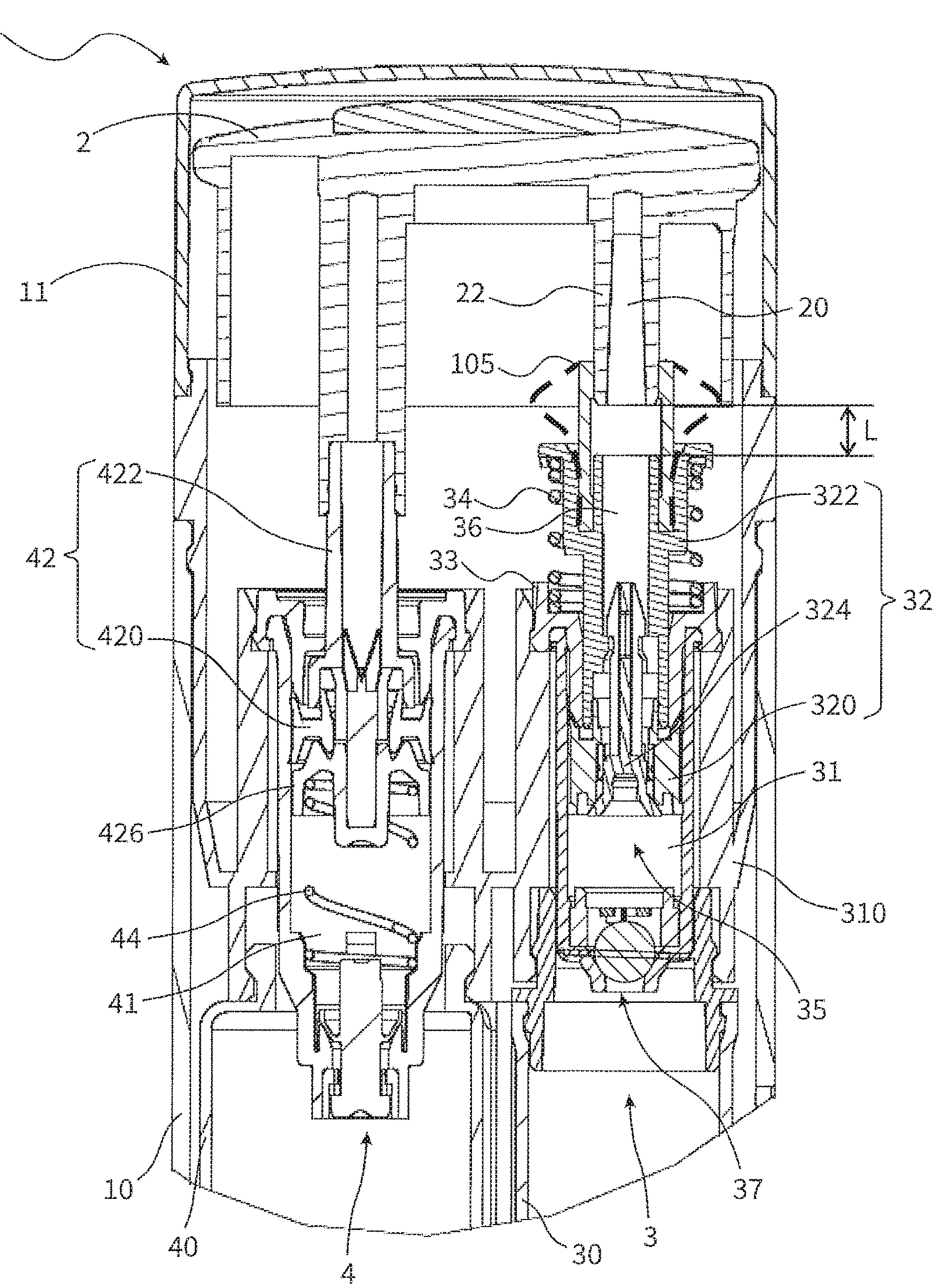

Fig. 2
(Amended)

DISCHARGE DEVICE WITH INTERMEDIATE PIECE

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue; a claim printed with strikethrough indicates that the claim was canceled, disclaimed, or held invalid by a prior post-patent action or proceeding.

SCOPE AND PRIOR ART

The invention relates to a discharge device having an actuating handle, a first pump system for conveying a first medium and a second pump system for conveying a second medium.

The first and/or second medium is, for example, a pasty medium such as viscous or cream-like liquids, suspensions and/or fluids, water-in-oil emulsions (W/O emulsions), oil-in-water emulsions (O/W emulsions), oleo gels, hydrogels or the like. In particular, in this case, these are cosmetic media such as skincare applications, lotions, hair gels, washing gels or the like.

DE 101 10 888 A1 discloses a discharge device for the simultaneous, metered discharge of liquid and/or pasty media from at least two storage units, which are arranged in a common housing and to which in each case separate pump systems are assigned. An actuating handle, which is designed as a lever, is mounted, in this case, in such a manner that it acts on a common actuating member in a center plane that is located between the pump systems such that both pump systems carry out same size metering strokes.

OBJECT AND ACHIEVEMENT

The object underlying the invention is to create an improved discharge device with two pump systems.

Pursuant to the invention a discharge device is provided having an actuating handle, a first pump system for conveying a first medium and a second pump system for conveying a second medium, wherein the actuating handle is movable between a starting position and an end position, the first pump system and the second pump system are actuatable together by means of the actuating handle, the first pump system includes a first pump chamber and a first piston which is arranged so as to be slidable in the first pump chamber, the first piston is displaceable in an actuating direction relative to the pump chamber by means of the actuating handle, the second pump system includes a second pump chamber and a second piston which is arranged so as to be slidable in the second pump chamber, the second piston is displaceable in the actuating direction relative to the second pump chamber by means of the actuating handle, the actuating handle is movable between a starting position and an end position, and the actuating handle and the first piston are coupled together in such a manner that the actuating handle and the first piston are displaceable relative to one another in the actuating direction over a first free travel, and wherein the distance between the starting position and the end position is greater than the first free travel.

In particular, in the case of cosmetic products, there is the need for these to be adapted individually to the requirements of the user, for example to certain hair or skin types. In order, nevertheless, to keep the number of products low, individualizing individual products by mixing constituent parts is desirable. In addition, mixing constituent parts immediately prior to use is advantageous in the case of constituent parts which place different demands on their storage and/or which react to one another when mixed.

A movement of the actuating handle for a discharge is effected manually and/or by means of motor-driven support.

On account of the free travel, there is no movement transmission to the piston at the start and/or end of a movement of the actuating handle between the starting position and the end position. When the actuating handle is reset in its starting position, by means of said relative movement an additional back suction effect can be achieved by means of which a volume of the remaining medium in the region of an outlet opening is minimized. As a result, the risk of the product drying and consequently of the region of the outlet opening becoming blocked is prevented or at least reduced.

In one development, it is provided that the actuating handle and the second piston are coupled together in such a manner that the actuating handle and the second piston are displaceable relative to one another in the actuating direction over a second free travel, wherein the distance between the starting position and the end position is greater than the second free travel. When the actuating handle is reset in its starting position, by means of a relative movement between the second piston and the actuating handle, an additional back suction effect can also be achieved by means of which a volume of the remaining medium in the region of an outlet opening is minimized.

In an advantageous development, the first free travel and the second free travel deviate from one another. As a result of the different free travels, it is possible, in this case, by means of one common actuating handle which is moved by an actuating stroke, to bring about different metering strokes for the pump systems and consequently to convey different metering quantities of the first and of the second medium by means of the associated pump systems. A metering stroke of the first pump system corresponds, in this case, to the actuating stroke minus the first free travel. A metering stroke of the second pump system corresponds to the actuating stroke minus the second free travel.

In a particularly preferred development, the second piston is operatively connected to the actuating handle in a play-free manner. This means that no free travel is provided between the second piston and the actuating handle. A metering stroke of the second pump system, in this case, corresponds to the actuating stroke. As a result, a medium is discharged immediately following a movement of the actuating handle. This can have an advantageous effect on the perception of the user as regards handling quality.

In an advantageous development, an intermediate piece is provided for a coupling between the first piston and the actuating handle, wherein the actuating handle and the first piston are coupled so as to be relatively movable over the first free travel by means of the intermediate piece. In one development, the intermediate piece, in this case, is produced integrally with the actuating handle or is connected to said actuating handle in an at least substantially rigid manner. In other developments, the intermediate piece is produced integrally with the piston. In advantageous developments, the intermediate piece is produced separately and is connected to the piston in an at least substantially rigid manner.

In an advantageous development, the intermediate piece is designed in a sleeve-shaped manner, wherein the actuating handle and/or the first piston is guided slidably into the intermediate piece. The component, in this case, is produced

from a material with sufficient rigidity, for example from polyamide or polypropylene or from metal.

In an alternative development, the intermediate piece is reversibly deformable, wherein the actuating handle or the first piston is produced integrally with the intermediate piece and/or is coupled with said intermediate piece in a substantially play-free manner. The intermediate piece is produced, for example, as bellows from a thermoplastic material and/or from an elastically deformable material. In one development, the reversibly deformable intermediate piece is produced integrally with the actuating handle or the first piston, for example as a two-component injection molding part. A connection to the respectively other part is effected, for example, in a materially bonding manner by means of welding or bonding or in a non-positive locking manner, elastic restoring forces of the intermediate piece being utilizable. As an alternative to this, the intermediate piece is produced as a separate part and is connectable to both parts in a non-positive and/or materially bonding manner. The reversibly deformable intermediate piece allows for a relative movement of the piston and of the actuating handle by the free travel.

In advantageous developments, a first force element is provided between the first piston and a housing of the pump chamber, wherein the first piston is displaceable against a restoring force of the first force element for reducing a volume of the pump chamber. In one development, the first force element is arranged in the pump chamber. In particular, in the case of viscous media, however, it is advantageous to arrange the force element outside the pump chamber. The first pump chamber is also designated as the piston returning element.

As an alternative to this or in addition to it, in advantageous developments a second force element, by means of which the first piston and the actuating handle are held at a distance, is provided between the first piston and the actuating handle. The second force element serves, among other things, for stabilizing the movement over the free travel. A displacement of the actuating handle relative to the piston is effected against the force of the second force element. With the intermediate piece designed as an elastic component, in one development the intermediate piece also functions as the second force element.

The first and/or the second force element is/are designed, in particular, as restoring springs. Insofar as both the first and the second force elements are present, it is possible, on account of choosing the restoring forces of the force elements, to determine whether a relative movement is effected at the start of a movement of the actuating handle or at the end of the movement. Insofar as a second force element with a high restoring force is used, when the actuating handle is moved both elements are first of all moved together until the first piston reaches an end position. When the first piston reaches the end position, a further movement of the actuating handle leads to a relative movement of the actuating handle relative to the first piston over the free travel. Insofar as a second force element with a low restoring force is used, when the actuating handle is moved the actuating handle is first of all moved over the free travel relative to the first piston. When the actuating handle is adjusted over a distance that exceeds the free travel, the actuating handle and the piston are moved together for a product discharge.

In one development, the actuating handle and the first piston are coupled together in the starting position for a movement transmission and, when an end position of the piston is achieved, are uncoupled for a relative movement over the free travel. In advantageous developments, the

actuating handle and the first piston are arranged spaced apart from one another in the starting position and, when the actuating handle is actuated for a discharge, move to a stop after the first free travel for a movement transmission.

BRIEF DESCRIPTION OF THE DRAWINGS

Further advantages of the invention proceed from the sub-claims and from the following description of exemplary embodiments of the invention which are shown schematically in the drawings. Uniform references are used for identical or similar components in the drawings. Features described or shown as part of one exemplary embodiment can also be used in another exemplary embodiment in order to obtain a further embodiment of the invention.

The drawings are as follows:

FIG. **1** shows part of a discharge device according to a first exemplary embodiment of the invention and

FIG. **2** shows part of a discharge device according to a second exemplary embodiment of the invention.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

FIGS. **1** and **2** show schematic representations in each case of an exemplary embodiment of a discharge device **1** having an actuating handle **2**, a first pump system **3** for conveying a first medium and a second pump system **4** for conveying a second medium. The media, in this case, are stored in a first container **30** and a second container **40**. The discharge devices **1** shown each include a housing **10** which is common to both pump systems **3**, **4** and a cover **11** which is common to both pump system **3**, **4**.

In one exemplary embodiment, the first container **30** comprises a drag piston. In one exemplary embodiment, the second container **40** communicates with the surrounding area for pressure equalization. Said development allows a delicate medium to be stored in the first container **30** without contact with the surrounding area, whereas a second medium is stored in the second container **40** without any specific protective measures. The volumes of the two containers **30**, **40** deviate from one another, a volume of the second container **30** being greater than that of the first container **40**. The described and/or shown development, however, is simply as an example and numerous modifications are conceivable.

The actuation of both pump systems **3**, **4** is effected by means of the common actuating handle **2**. One or two or more outlet openings (not shown) for the first and the second medium is or are provided on the actuating handle **2**.

The first medium is conveyed out of the container **30** to the outlet opening or openings (not shown) by means of the first pump system **3**. The pump system **3** shown includes a first pump chamber **31** and a first piston **32** which is arranged so as to be slidable in the first pump chamber **31**.

The first piston **32** is designed with multiple parts and includes a ring element **320** which is mounted in the first pump chamber **31**, an actuator **322** and a valve slide **324**. The valve slide **324** is coupled in a substantially play-free manner with the actuator **322** and by way of the actuator **322** is slidable by a valve stroke relative to the ring element **320** which functions as a valve seat. A thrust bearing **33** is non-movably mounted on a housing **310** of the pump chamber **31**. The thrust bearing **33** serves as a stop for the piston **32** in a shown top end position of the piston **32**. A force element **34**, which is designed as a restoring spring, is

provided between the piston **32**, more precisely between the actuator **322** of the piston **32**, and the thrust bearing **33**.

The piston **32** is displaceable in a known manner from the shown top end position against a restoring force of the force element **34** for a reduction in a volume of the pump chamber **31**. In this case, the actuator **322** is first of all displaced with the valve slide **324** relative to the ring element **320** such that an outlet valve **35**, which is formed by the valve slide **324** and the ring element, opens. When the actuator **322** is displaced over a distance that exceeds the valve stroke, the actuator **322** moves to the stop with the ring element **320** and the movement of the actuator is transmitted to the ring element **320**. As a result of displacing the piston **32**, a medium that is present in the pump chamber **31** is displaced such that the medium passes out of the pump chamber **31** by means of the outlet valve **35** into an outlet channel **36** provided in the piston **32**. The outlet channel **36** of the piston **32** communicates with a channel **20** in the actuating handle **2**, said channel **20** communicating with the outlet opening (not shown). When the piston **32** is moved back into the end position shown on account of the restoring forces of the force element **34**, the actuator **322** is first of all moved with the valve slide **324** relative to the ring element **320** such that the outlet valve **35** closes. On account of a negative pressure that is created in the pump chamber **31** during the return movement, the inlet valve **37**, which is designed as a ball valve, opens such that medium is conveyed out of the container **30** into the pump chamber **31** for pressure equalization.

The piston **32** is moved out of the top end position shown by means of the actuating handle **2**. In this case, the actuating handle **2** is coupled in such a manner with the first piston **32** that the actuating handle **2** is displaceable over a free travel L in the actuating direction relative to the piston **32**.

In the exemplary embodiment shown in FIG. **1**, a rigid intermediate piece **5** is provided for this purpose, the actuating handle **2** and the first piston **32** being coupled so as to be displaceable relative to one another over the free travel L in the actuating direction by means of the intermediate piece **5**.

The intermediate piece **5** shown is developed as a separate, sleeve-shaped component. A component of this type is producible in a cost-efficient manner. The intermediate piece **5** shown is coupled in an at least substantially play-free manner with the piston **32**, more precisely with actuator **322** of the piston **32**, by means of a latching connection. In other developments, the intermediate piece **5** is produced integrally with the first piston **32**, in particular with the actuator **322**. In yet another development, the intermediate piece **5** is produced integrally with the actuating handle **2** and is coupled with the piston **32** so as to be slidable by the free travel L relative to the piston **32**.

In the exemplary embodiment shown, a journal **22**, which comprises the channel **20** and is slidingly guided in the intermediate piece **5** which is designed as a sleeve, is provided on the actuating handle **2**. In the exemplary embodiment shown, the actuating handle **2** and the first piston **32**, with the actuating handle **2** in a shown starting position, are arranged spaced apart from one another. A second force element **6**, by means of which the first piston **32** and the actuating handle **2** are held at a distance, is provided between the first piston **32** and the actuating handle **2**. A maximum distance, in this case, is delimited by stops. The second force element **6**, in this case, also serves for stabilizing a relative movement such that jamming or the like is avoided.

The restoring forces of the first force element **34** and of the second force element **6** are chosen, for example, in such a manner that when the actuating handle **2** is actuated for a discharge, the actuating handle **2** is first of all moved relative to the piston **32** into its starting position without movement transmission to the piston **32**. The movement is effected against the restoring force of the second force element **6**. After a movement over a distance that corresponds to the free travel L, the actuating handle **2**, more precisely the journal **22**, moves to the stop with the piston **32** such that when the actuating handle **2** is moved further, a movement is transmitted onto the piston **32**.

Where an actuating force is omitted, the first force element **34** causes the piston **32** to move back into the shown end position of the piston **32**. In addition, the actuating handle **2** is moved relative to the piston **32** on account of the restoring forces of the second force element **6**. By means of said relative movement, an additional back suction effect is obtained, by means of which a medium that has remained at the outlet opening (not shown) is sucked into the channel **20** and/or the outlet channel **36**. As a result, the risk of a product drying and consequently of a blockage in the region of the outlet opening is prevented or at least reduced.

FIG. **2** shows an alternative development. In contrast to the development according to FIG. **1**, an at least partially reversibly deformable intermediate piece **105** is provided, in the case of said development too, the actuating handle **2** and the first piston **32** being coupled by means of the intermediate piece **105** so as to be displaceable relative to one another over the free travel L in the actuating direction. The reversibly deformable intermediate piece **105** is, for example, produced from an elastically deformable material and/or is designed as bellows.

The intermediate piece **105** shown in FIG. **2** is also designed as a separate component which is coupled with the piston **32**, more precisely with the actuator **322** of the piston **32**, and with the actuating handle, more precisely with the journal **22** of the actuating handle. A connection is effected in a non-positive or materially bonding manner. In other developments, the intermediate piece **105** is produced integrally, for example as a two-component injection molding part with the actuator **322** or the actuating handle **2**.

In the case of the embodiment shown in FIG. **2**, the elastically deformable intermediate piece **105** also assumes the function of the force element **6** according to FIG. **1**. In other developments an additional force element is provided.

As mentioned, a second pump system **4** is provided in both exemplary embodiments shown in FIGS. **1** and **2**. The second pump system **4** includes a second piston **42** which is guided in a second pump chamber **41**. The second piston **42** is also developed with multiple parts and includes a ring element **420** which is mounted in the second pump chamber **42** and an actuator **422**. The second piston **42** includes a thrust bearing **426** for a force element **44** which is arranged in the pump chamber **41**.

In the exemplary embodiment shown, the piston **42**, more precisely the actuator **422** of the piston **42**, is coupled in at least substantially play-free manner with the actuating handle **2** such that movement is transmitted immediately from the actuating handle **2** to the piston **42**.

The pump systems **3**, **4** are actuated together by means of the actuating handle for a discharge. In the exemplary embodiment shown, a metering volume of the second pump system **4**, however, is greater than that of the first pump system **3** such that a longer stroke is necessary for a complete discharge. In the exemplary embodiment shown, equalization is created by means of the distance between the

actuating handle **2** and the piston **32**, the stroke of the first piston **32** being shorter than that of the second piston **42** by a length which corresponds to the free travel L.

The invention claimed is:

1. A discharge device comprising:

an actuating handle movable a distance between a starting position and an end position, the distance between the starting position and the end position representing a total travel stroke of the actuating handle, the total travel stroke of the actuating handle having a first part and a second part which follows the first part;

a first pump system, actuable by the actuating handle, for conveying a first medium, the first pump system including a first pump chamber and a first piston slidably arranged in the first pump chamber, the first piston being displaceable relative to the first pump chamber in an actuating direction by the actuating handle, the actuating handle and the first piston being coupled together such that the actuating handle and the first piston are displaceable relative to one another in the actuating direction over a free travel distance corresponding to the first part of the total travel stroke, the total travel stroke of the actuating handle being greater than the free travel distance;

a first force element disposed between the first piston and a housing of the first pump chamber, the first piston being displaceable against a first restoring force of the first force element for reducing a volume of the pump chamber;

a second force element disposed between the first piston and the actuating handle and having a second restoring force which holds the first piston and the actuating handle at a distance from one another, the second restoring force being sufficient to permit displacement of the actuating handle and the first piston relative to one another over the free travel distance corresponding to the first part of the total travel stroke such that the first piston during the first part of the total travel stroke is not displaced relative to the first pump chamber and medium in the first pump chamber is not dispensed during the first part of the total travel stroke; and

a second pump system, actuable by the actuating handle, for conveying a second medium, the second pump system including a second pump chamber and a second piston slidably arranged in the second pump chamber, the second piston being displaceable relative to the second pump chamber in an actuating direction by the actuating handle, the actuating handle and the second piston being coupled together such that the second piston during the first and second parts of the total travel stroke is displaced relative to the second pump chamber and medium in the second pump chamber is dispensed during the first and second parts of the total travel stroke, the actuator handle displacing the first piston relative to the first pump chamber against the first restoring force of the first force element during the second part of the total travel stroke such that medium in the first pump chamber and medium in the second pump chamber are both dispensed during the second part of the total travel stroke.

2. The discharge device according to claim **1**, wherein the first restoring force of the first force element is greater than the second restoring force of the second force element.

3. The discharge device according to claim **2**, wherein the second piston is operatively connected to the actuating handle in a play-free manner such that the second piston moves together with the actuating handle over an entirety of the total travel stroke thereof.

4. The discharge device according to claim **3**, further including an intermediate component disposed between the first piston and the actuating handle, the intermediate component interconnecting the first piston and the actuating handle to permit relative movement therebetween during the first part of the total travel stroke of the actuating handle.

5. The discharge device according to claim **4**, wherein the intermediate component is sleeve-shaped and a portion of the actuating handle **[**or a portion of the first piston**]** is slidably disposed and guided within the intermediate component.

6. The discharge device according to claim **4**, wherein the intermediate component is reversibly-deformable**[**, and the actuating handle or the first piston is formed integrally with the intermediate component**]**.

[7. The discharge device according to claim **4**, wherein the intermediate component is reversibly-deformable, and the actuating handle or the first piston is coupled with the intermediate component in a substantially play-free manner.**]**

8. The discharge device according to claim **1**, wherein the actuating handle and the first piston are disposed in a spaced-apart manner relative to one another when the actuating handle is in the starting position, and when the actuating handle reaches an end of the first part of the total travel stroke and begins the second part of the total travel stroke, the actuating handle and the first piston move together to cause a displacement of the first piston relative to the first pump chamber such that medium in the first pump chamber is dispensed during the second part of the total travel stroke.

9. A discharge device comprising:

an actuating handle movable a distance between a starting position and an end position, the distance between the starting position and the end position representing a total discharge travel stroke of the actuating handle, the total discharge travel stroke of the actuating handle having a first part and a second part which follows the first part;

a first pump system for conveying a first medium, the first pump system including a first pump chamber and a first piston slidably disposed in the first pump chamber, the first piston being displaceable relative to the first pump chamber by the actuating handle, the actuating handle and the first piston being coupled together such that the actuating handle and the first piston are displaceable relative to one another over a free travel distance corresponding to the first part of the total discharge travel stroke, the total discharge travel stroke of the actuating handle being greater than the free travel distance;

a first force element disposed between the first piston and a housing of the first pump chamber, the first piston being displaceable against a first biasing force of the first force element for reducing a volume of the first pump chamber;

a second force element disposed between the first piston and the actuating handle and having a second biasing force which biases the first piston and the actuating handle away from one another such that the actuating handle and the first piston are spaced apart from one another when the actuating handle is in the starting position, the second biasing force permitting displacement of the actuating handle and the first piston relative

to one another over the free travel distance corresponding to the first part of the total discharge travel stroke; and

a second pump system for conveying a second medium, the second pump system including a second pump chamber and a second piston slidably disposed in the second pump chamber, the second piston being displaceable relative to the second pump chamber by the actuating handle, the actuating handle and the second piston being coupled together such that the second piston is displaced relative to the second pump chamber to dispense medium in the second pump chamber during an entirety of the total discharge travel stroke; and

the second biasing force of the second force element is less than the first biasing force of the first force element such that the first piston, during the first part of the total discharge travel stroke, is not displaced relative to the first pump chamber and medium in the first pump chamber is not dispensed and such that the first piston, during the second part of the total discharge travel stroke, is displaced relative to the first pump chamber and medium in the first pump chamber is dispensed only during the second part of the total discharge travel stroke.

10. The discharge device according to claim **9**, wherein the actuating handle and the first piston are displaced relative to one another in opposition to the second biasing force of the second force element when the actuating handle is initially actuated and moves from the starting position and through the first part of the total discharge travel stroke, and when the actuating handle reaches an end of the first part of the total discharge travel stroke and begins the second part thereof, the actuating handle and the first piston move together in opposition to the first biasing force of the first force element to cause a displacement of the first piston relative to the first pump chamber such that medium in the first pump chamber is dispensed during the second part of the total discharge travel stroke.

11. The discharge device according to claim **10**, wherein the actuating handle and the second piston are coupled to one another such that a metering stroke of the second pump system corresponds to the total discharge travel stroke of the actuating handle.

12. The discharge device according to claim **11**, wherein a metering stroke of the first pump system corresponds to the second part of the total discharge travel stroke.

13. The discharge device according to claim **12**, further including an intermediate component interconnecting the actuating handle and the first piston in a relatively movable manner to permit displacement of the actuating handle and the first piston relative to one another during the first part of the total discharge travel stroke, the actuating handle being disposed to displace the first piston during the second part of the total discharge travel stroke.

14. The discharge device according to claim **13**, wherein the intermediate component comprises a sleeve and **[**one of**]** the actuating handle **[**or the first piston**]** is slidably disposed in the sleeve.

15. A discharge device comprising:

an actuating handle, a first pump system for conveying a first medium and a second pump system for conveying a second medium, wherein the actuating handle is movable between a starting position and an end position, and wherein the first pump system and the second pump system are actuatable together by the actuating handle;

the first pump system includes a first pump chamber and a first piston which is slidably arranged in the first pump chamber, wherein the first piston is displaceable in an actuating direction by the actuating handle relative to the first pump chamber;

the second pump system includes a second pump chamber and a second piston which is slidably arranged in the second pump chamber, wherein the second piston is displaceable in an actuating direction by the actuating handle relative to the second pump chamber;

the actuating handle and the first piston are coupled together in such a manner that the actuating handle and the first piston are displaceable relative to one another in the actuating direction over a first free travel, wherein the distance between the starting position and the end position is greater than the first free travel, such that there is no movement transmission to the first piston at the start of a movement of the actuating handle between the starting position and the end position;

an intermediate piece between the first piston and the actuating handle, wherein the actuating handle and the first piston are coupled so as to be relatively movable over the first free travel by the intermediate piece; and

the intermediate piece comprises a sleeve, wherein at least a portion of the actuating handle is guided slidably in the intermediate piece;

a first piston force element, the first piston being displaceable against a first piston force of the first piston force element for reducing a volume of the pump chamber; and

a restoring force element having a restoring force, the restoring force being sufficient to permit displacement of the actuating handle and the first piston relative to one another over the free travel distance such that the first piston during a first part of the total travel stroke is not displaced relative to the first pump chamber and medium in the first pump chamber is not dispensed during the first part of the total travel stroke.

16. The discharge device according to claim 15, further including a force element disposed between the second piston and a housing of the second pump chamber, the second piston being displaceable against a restoring force of the force element for reducing a volume of the second pump chamber.

17. The discharge device according to claim 15, wherein:

the first piston force element is disposed between the first piston and a housing of the first pump chamber; and

the restoring force element is disposed between the first piston and the actuating handle and has the restoring force which holds the first piston and the actuating handle at a distance from one another, the free travel distance corresponding to the first part of the total travel stroke.

18. The discharge device according to claim 17, further including a third force element disposed between the second piston and a housing of the second pump chamber, the second piston being displaceable against a third restoring force of the third force element for reducing a volume of the second pump chamber.

19. The discharge device according to claim 15, wherein the second piston is operatively connected to the actuating handle in a play-free manner such that the second piston moves together with the actuating handle over an entirety of the total travel stroke thereof.

20. The discharge device according to claim 15, wherein the actuating handle and the first piston are disposed in a

spaced-apart manner relative to one another when the actuating handle is in the starting position, and when the actuating handle reaches an end of the first part of the total travel stroke and begins the second part of the total travel stroke, the actuating handle and the first piston move together to cause a displacement of the first piston relative to the first pump chamber such that medium in the first pump chamber is dispensed during the second part of the total travel stroke.

21. The discharge device according to claim 15, wherein the restoring force element is disposed between the first piston and the actuating handle.

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