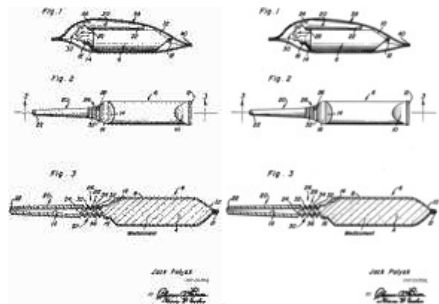
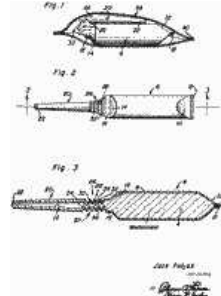


#	 Title	Publication number	1st App. date	Applicant/Assignee	1st Publ. date	Publ. date
1.	Disposable squeeze tube with foldable nozzle	US3570662	1969-02-07	POLYAK JACK	1971-03-16	1971-03-16

A dispenser and complemental applicator comprising a disposable squeezable tube providing a container for a medicament. The applicator comprises a suitably rigid nozzle whose rearward intake end is communicatively joined to the medicament ejecting neck of the container by bendably flexible connecting means. This connecting means is also resilient and foldable and permits the nozzle to be positioned alongside one lengthwise side surface of the container whereby the side-by-side container and nozzle can be compactly and conveniently stored in a sterile marginally openable plastic envelope.



2.	Squeeze-bottle dosing device for medicaments - with transparent measuring tube for pasty substances	FR2290918	1974-11-15	CARDON JEAN*	1976-06-11	1976-06-11
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Squeeze-bottle dosing device, for therapeutic uses, is intended for the introduction of precise doses of medicament of pasty consistency into the body cavities of human beings and animals. It comprises a plastic or rubber recipient, shaped to fit the hand of the user, a neck, fitted with a male thread to receive the nozzle with an orifice and a transparent, graduated measuring tube, open at one end; the other end is fixed in the base which has a tube opening into the recipient via the pliable tube. The tube is screwed into the base and the latter mounted in the neck so that the base is partly engaged. A tube containing the ointment is placed against the measuring tube. The ointment is **squeezed** into this tube until the latter is filled to the required graduation. The base of the nozzle is then screwed on the neck of the recipient. For introduction into a body cavity, such as the auditory canal, the end of the nozzles is placed in the ear and the elastic walls of the recipient pressed until air is heard to escape; this indicates that the whole of the measured dose has been introduced. Whereas a syringe can only deal with liqs., the new device can handle gels, creams, ointments and salves in measured doses. There is no risk of administering an insufficient or an excess dose which might be harmful.

3.	Apparatus and method for natural cure of middle ear infections without antibiotics	US2014288532	2013-03-25	SINGHAL TARA CHAND	2014-09-25	2014-09-25
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An apparatus for natural cure for middle ear infection has a single use sachet. The sachet has a pocket that holds a limited quantity of mustard essential oil. The sachet has a neck and a dropper and sachet can be **squeezed** to flow drops for pouring into an ear canal. The sachet is put in a microwave oven just before use for only substantially 30 seconds to heat the oil and up to five drops of heated oil is **squeezed** into an ear canal of a person with severe ear itching indicative of a middle ear infection.

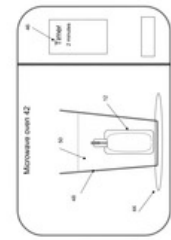
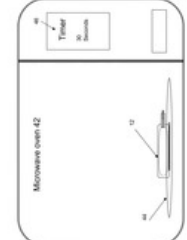
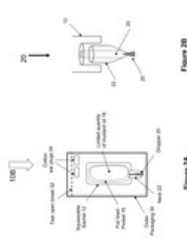
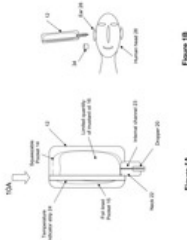
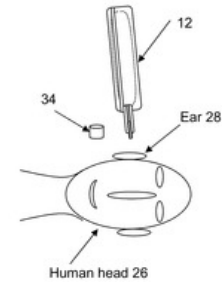
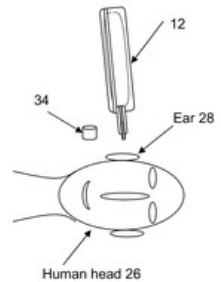


Figure 5

1. A method for treating a middle ear infection with a patient, the method comprising: providing a sachet containing a limited quantity of mustard essential oil; heating the sachet in a microwave oven for a predetermined time; and squeezing the sachet to dispense drops of the heated mustard essential oil into the ear canal of the patient.

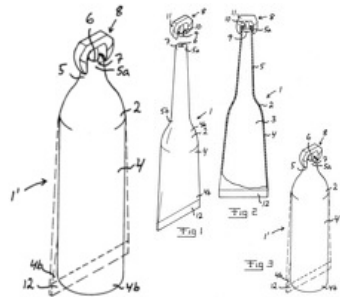
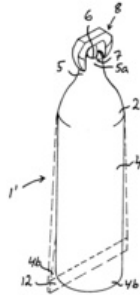
2. The method of claim 1, wherein the sachet is heated in a microwave oven for a time of from 30 seconds to 1 minute.

3. The method of claim 1, wherein the sachet is heated in a microwave oven for a time of from 30 seconds to 1 minute, and the sachet is squeezed to dispense drops of the heated mustard essential oil into the ear canal of the patient.

4. The method of claim 1, wherein the sachet is heated in a microwave oven for a time of from 30 seconds to 1 minute, and the sachet is squeezed to dispense drops of the heated mustard essential oil into the ear canal of the patient, and the drops are allowed to flow into the ear canal of the patient.

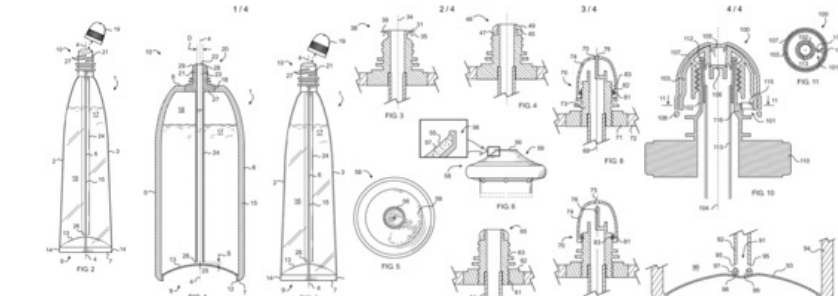
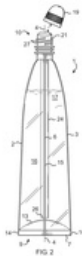
5. The method of claim 1, wherein the sachet is heated in a microwave oven for a time of from 30 seconds to 1 minute, and the sachet is squeezed to dispense drops of the heated mustard essential oil into the ear canal of the patient, and the drops are allowed to flow into the ear canal of the patient, and the drops are allowed to flow into the ear canal of the patient.

The invention relates to a device for application of lubricant in an urethra so as to thereby facilitate the insertion of a medical instrument into the urethra. The device (1) comprises a receptacle (2) having a lubricant-containing space (3), which receptacle is provided with a gripping part (4) and a sprout (5) connected to the gripping part. The outer end (5a) of the sprout is dimensioned so as to be insertable into the urethra of a patient through the urethra orifice and is provided with an outlet opening (6) that is connected to the lubricant-containing space (3) in the receptacle. The receptacle is designed to be grippable and manipulatable by a user by gripping with the fingers about the gripping part (4) of the receptacle, the gripping part (4) being deformable so that lubricant from the lubricant-containing space (3) can be **squeezed** out through the outlet opening (6) of the sprout by compression of the gripping part (4) with the fingers.



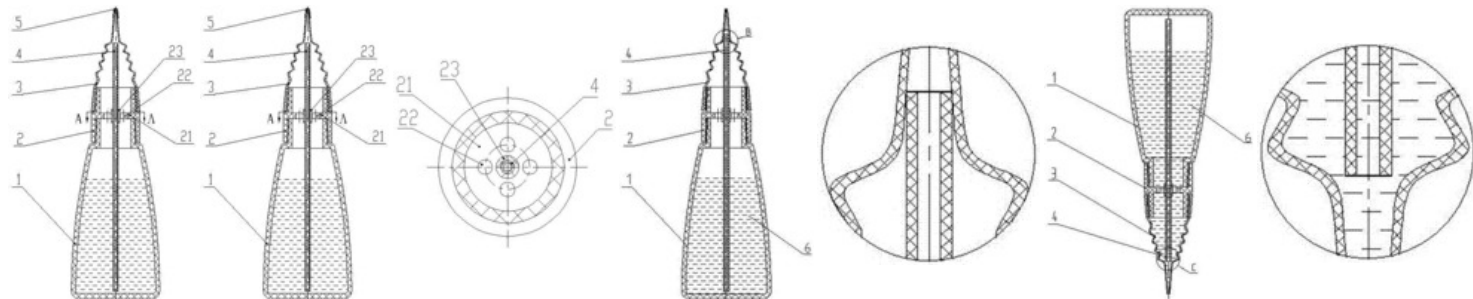
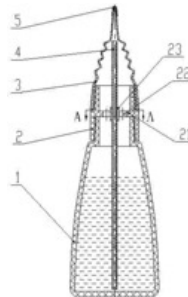
5. Collapsible liquid irrigation containerWO20170113612016-07-09MILLER BRIAN M2017-01-192017-01-19

A disposable, collapsible, **squeeze-dispensing** container (1) carrying a preloaded amount of a nasal irrigation solution (17) and having a bottom-supplied feed tube (24) connected to a spout (10) adapted to form a seal against a user's nostril and inject solution through the spout while the container is being **squeezed** in a substantially upright orientation. The spout can be shaped and fitted with a resiliently compressible material band to comfortably seal against the tissues surrounding a user's nostril. A locking mechanism can prevent resealing an opened container.

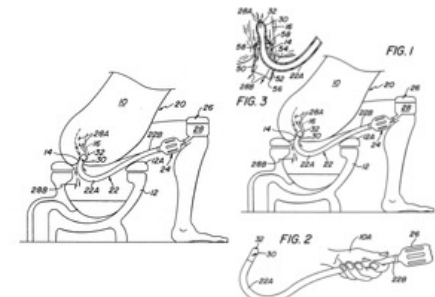
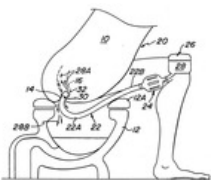


6. Buccal drug delivery bottleCN1066191102017-03-02WANG CHENGYU2017-05-102017-05-10

The invention discloses a buccal drug delivery bottle. The bottle comprises a bottle body, a connecting casing, a drug delivery nozzle and a guide tube. The upper end of the connecting casing is connected with the drug delivery nozzle, and the lower end of the connecting casing is connected with the bottle body; a partition plate is arranged between the upper end and the lower end of the connecting casing, the guide tube penetrates through the partition plate, the lower end of the guide tube stretches into the bottle body and the upper end of the guide tube stretches into the drug delivery nozzle; through holes are formed in the partition plate, and a cavity of the bottle body is communicated with the interior of the drug delivery nozzle through the through holes; the inner diameter of a section, close to a free end, of the drug delivery nozzle is smaller than the external diameter of the upper end of the guide tube, and the drug delivery nozzle is of a telescopic structure. By means of the buccal drug delivery bottle, a drug can be conveniently and efficiently applied on the affected part on the upper portion or the lower portion of the mouth cavity, the drug delivery dosage is easy to control and not affected by the amount of a drug liquid in the bottle, and the problem that when the drug is applied on the palate or the upper lip of the mouth cavity by means of an existing drug delivery bottle, too much drug liquid is **squeezed** out due to too much pressure, or the drug liquid is not easy to **squeeze** out due to a small amount of drug liquid is solved.

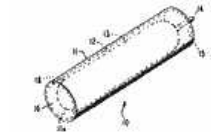
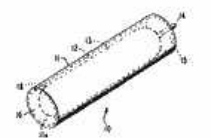


A device for administering a liquid into the bowel of a person. The device comprises a rigid conduit, a manually actuatable pump, and a reservoir holding the liquid. The conduit is of a general J-shape having an elongated straight proximal section and a curved distal section terminating in a tip having an aperture therein. The elongated proximal section is sufficiently long that when the person is seated on a toilet with the proximal section located between the person's legs the tip is located at the person's anus, so that he/she can readily insert the tip into the anus by manually manipulating the proximal section of the conduit. The pump is coupled to the proximal section of the conduit and is arranged to be **squeezed** by the person to pump the liquid from the reservoir through the conduit and out the aperture into the person's bowel.



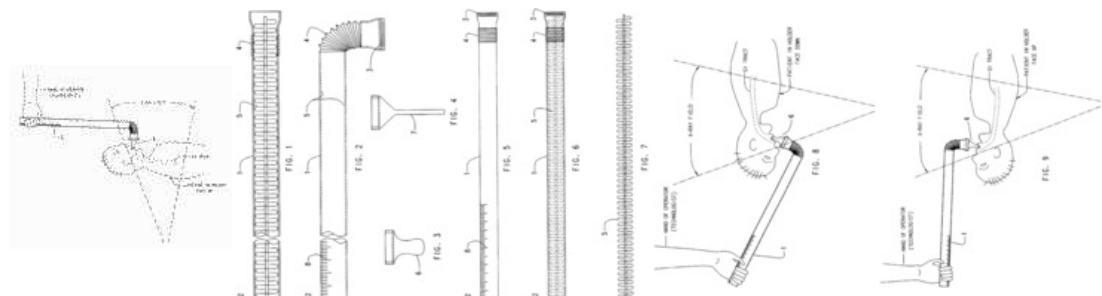
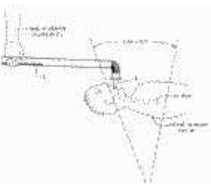
8. Liq. dispensing device - contains hydrophilic, water-insol. water-swellaable polymer layer between compressible container and rigid casingFR24529181979-04-02ALZA*1980-10-311980-10-31

Liq. dispensing device comprises a rigid outer casing allowing the passage of water, a compressible container impermeable to the liq. to be dispensed with water and provided with an outlet for discharging liq. and, between casing and container, a layer allowing water to be drawn into the device, to exert a pressure on the compressible container. Novelty consists in using a layer contg. a hydrophilic, water-insoluble polymer, capable of swelling in water. The layer can be a 2-layer laminate contg. one layer of water-insoluble polymer and another layer of water-absorbing non-swellaable material. The device is used for discharging a therapeutic fluid into a human or animal body, e.g. by implanting in a body cavity. Water penetrates into the rigid outer casing and is absorbed by a layer, causes swelling of the layer and presses against the container whereby medicinal liq. is **squeezed** out.



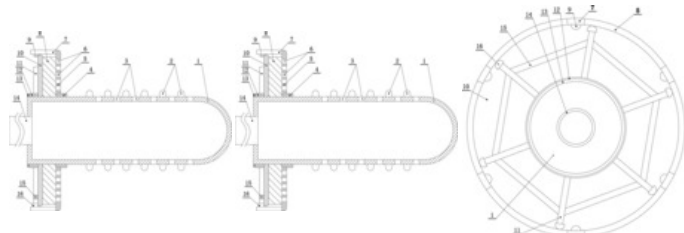
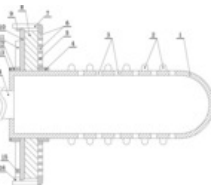
9. Barium feeding device for x ray gi studiesUS56930331996-03-07NITA; OCTAVIAN1997-12-021997-12-02

A thin, long tube (1) made of transparent semi-rigid plastic having a closed end (2) and an open, enlarged and threaded end (3) for feeding attachments: baby nipple (6) or feeding straw (7). Semi-rigid plastic signify that the tube can be **squeezed** (compressed) between the fingers of the operator in order to force the liquid of the tube. The tube has volume measuring marks (8) starting at the closed end and a self locking accordion-like portion (4) close to the open end. The tube contains a wave breaking insert (5) made of coiled (helical) or brush-like plastic.

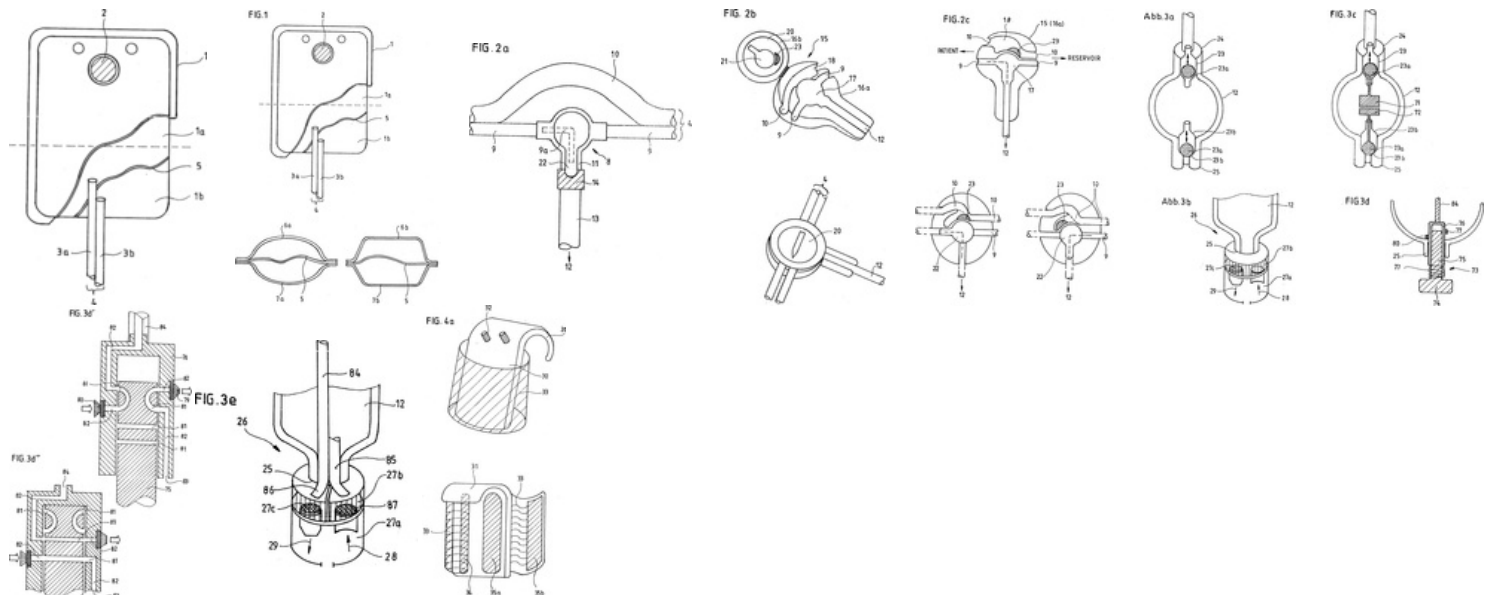


10. Gynecological anti-inflammatory medicine injectorCN1067302892017-01-07FU QING2017-05-312017-05-31

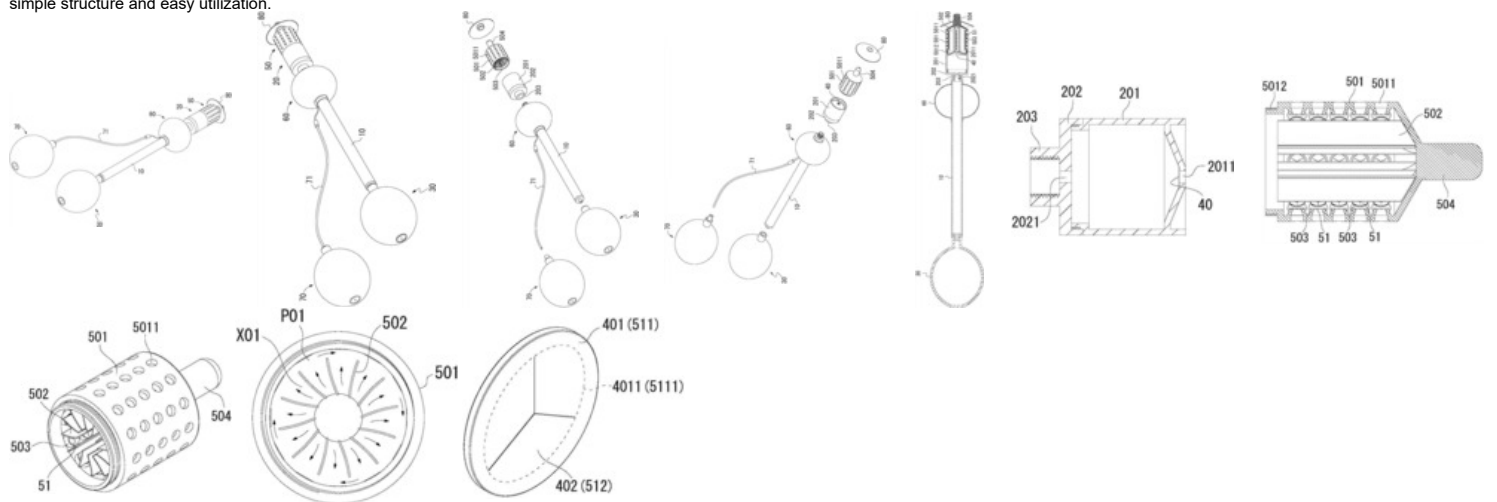
A gynecological anti-inflammatory medicine injector comprises a hollow cylindrical shell, the front end of the shell bulges forwards to form a semi-sphere, a medicine injecting tube for being connected with a hose is fixedly hermetically connected to the rear end of the shell, the sidewall of the shell is provided with a plurality of medicine outlets, a sliding sleeve movably sleeves the rear sidewall of the shell in a front-rear direction, an inner stop board is fixedly connected outside the sliding sleeve and is provided with a plurality of dense medicine sucking through holes, a sponge ring sleeves the sidewall of the shell on the rear side of the inner stop board, an outer stop board is in threaded connection with the outer sidewall of the shell on the rear side of the sponge ring, the sponge ring is compressed between the inner stop board and the outer stop board, a plurality of elastic connecting rods with free ends extending backwards are fixedly connected to the edge of the inner stop board, lock fastener protrusions are fixedly connected to the free ends of the elastic connecting rods, are positioned on the inner sides of the elastic connecting rods and fasten the rear face of the outer stop board when the sponge ring is **squeezed**, and a rotating ring rotatably movably sleeves the sidewall of the shell on the rear side of the outer stop board.



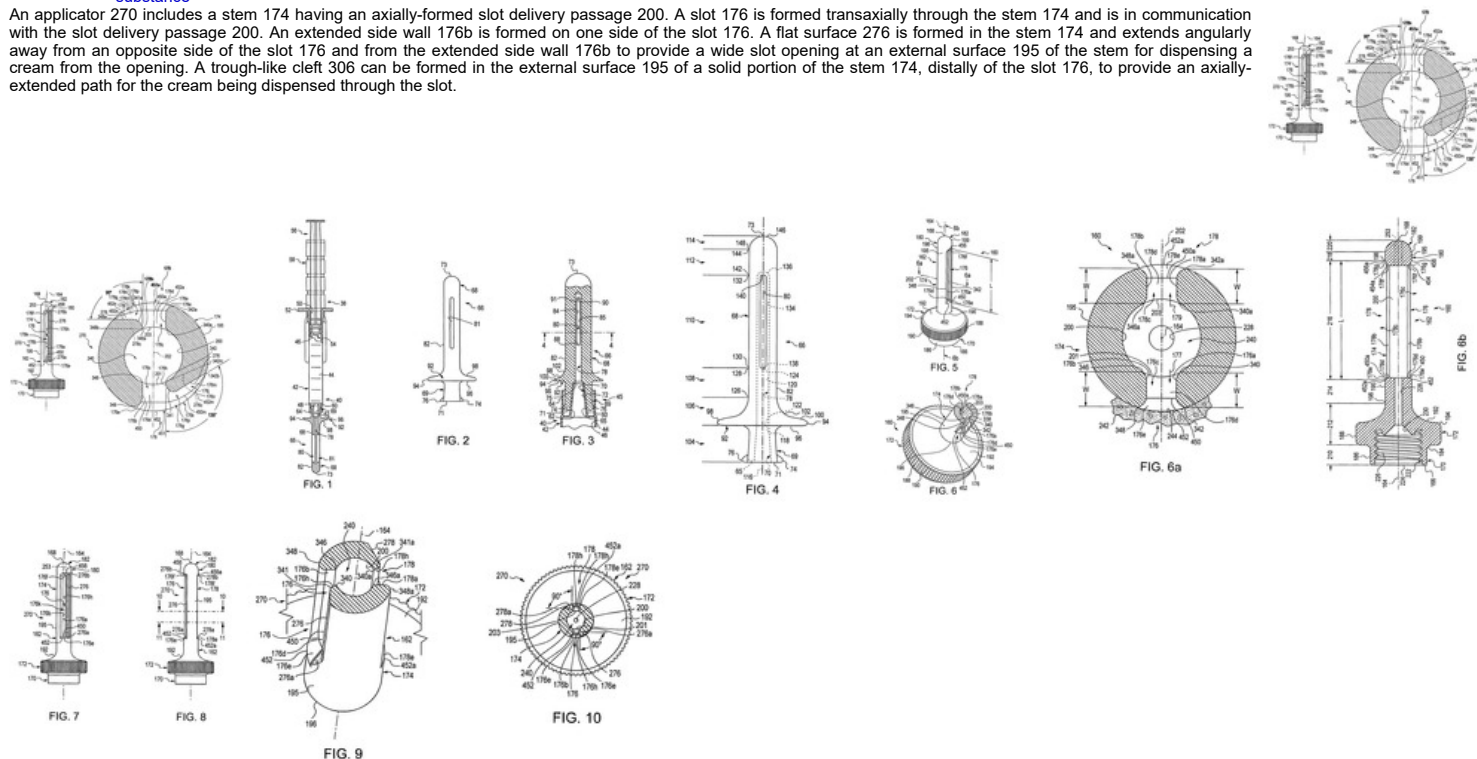
The device has a fluid reservoir with a flexible surface area. The flexible surface area stays in surface contact with an air reservoir that is subjected with air or other medium, such that the fluid reservoir is compressed by filling the air reservoir, so as to **squeeze** the fluid into a patient's body. The liquid reservoir and the air reservoir are integrated with each other to a common bag (1), which comprises multiple compartments (1a, 1b) that are separated from one another. Hoses (3a, 3b) are attached to the fluid and air reservoirs, where the hoses are components of a dual-lumen hose (4).



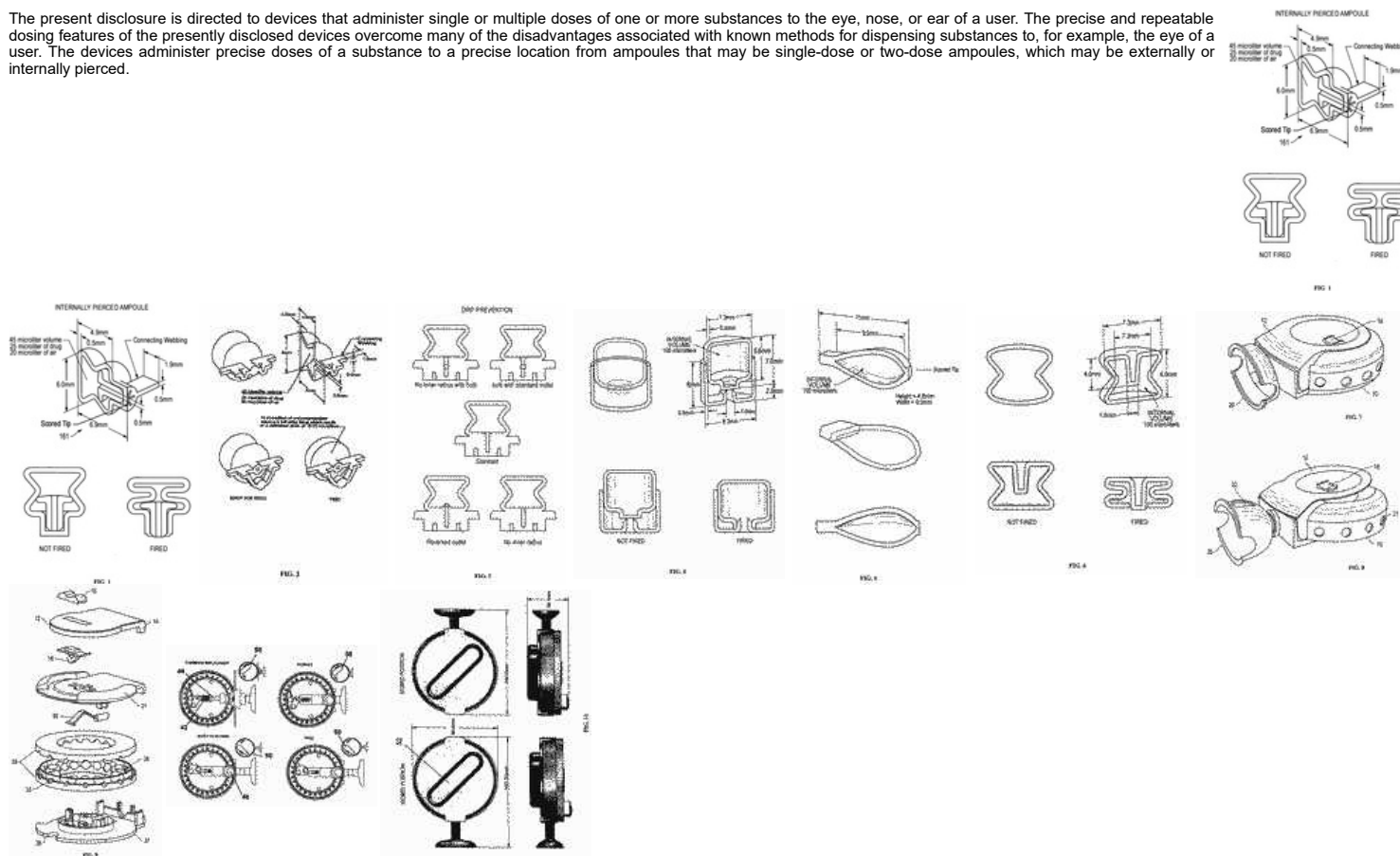
The invention discloses a vaginal Lactobacillus planter. The planter comprises a hard tube, a drug storage device, a first elastic squeezing ball and a diffuser, wherein the hard tube is provided with a first end and a second end; a drug storage cavity, an air inlet communicated with the drug storage cavity and a drug outlet communicated with the drug storage cavity are formed in the drug storage device; the drug storage device is connected with the second end of the hard tube in a detachable mode, and the air inlet is communicated with the second end of the hard tube; the first elastic squeezing ball is connected with the first end of the hard tube in order to inflate the drug storage device through the hard tube; a first elastic open-and-close component is arranged at the drug outlet, which is constructed to start when the gas pressure in the drug storage device is larger than a first default value; the diffuser comprises a first container which is provided with an open end and a close end, the open end is connected with the drug storage device in a detachable mode and communicated with the drug outlet, and a plurality of drug diffusion holes are formed in the wall of the first container. According to the vaginal Lactobacillus planter, uniform planting of powdered vaginal Lactobacillus preparations can be achieved, and the planter has the advantages of simple structure and easy utilization.



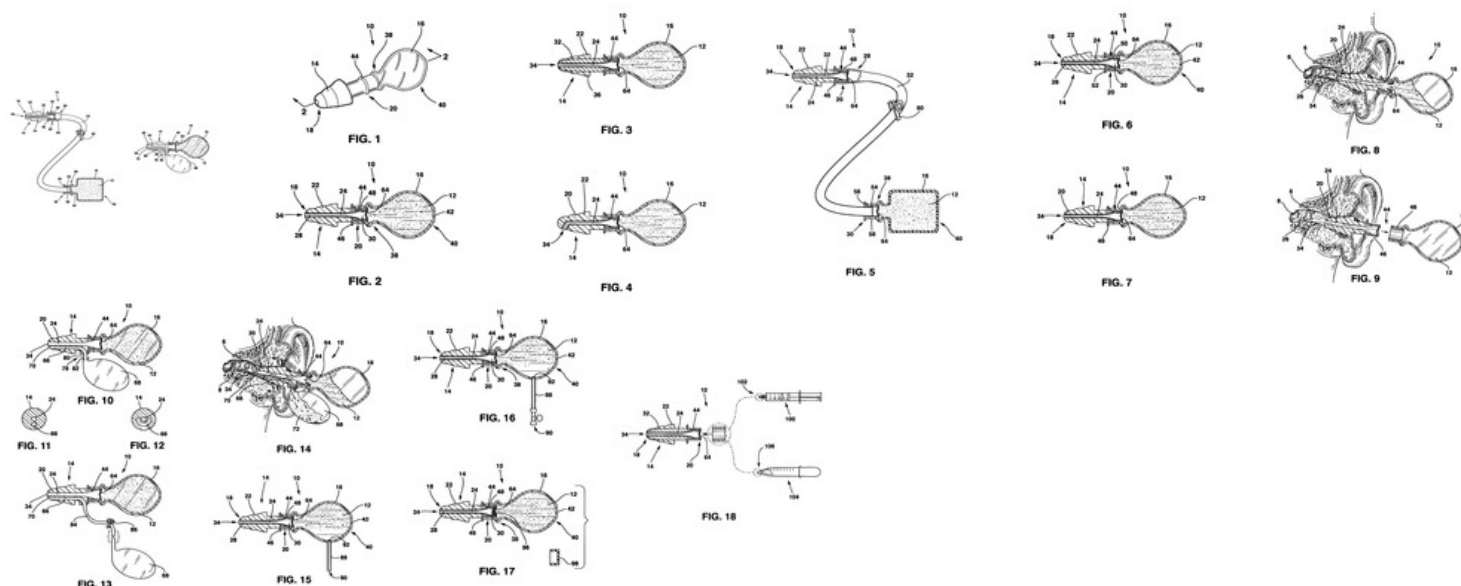
An applicator 270 includes a stem 174 having an axially-formed slot delivery passage 200. A slot 176 is formed transaxially through the stem 174 and is in communication with the slot delivery passage 200. An extended side wall 176b is formed on one side of the slot 176. A flat surface 276 is formed in the stem 174 and extends angularly away from an opposite side of the slot 176 and from the extended side wall 176b to provide a wide slot opening at an external surface 195 of the stem for dispensing a cream from the opening. A trough-like cleft 306 can be formed in the external surface 195 of a solid portion of the stem 174, distally of the slot 176, to provide an axially-extended path for the cream being dispensed through the slot.



The present disclosure is directed to devices that administer single or multiple doses of one or more substances to the eye, nose, or ear of a user. The precise and repeatable dosing features of the presently disclosed devices overcome many of the disadvantages associated with known methods for dispensing substances to, for example, the eye of a user. The devices administer precise doses of a substance to a precise location from ampoules that may be single-dose or two-dose ampoules, which may be externally or internally pierced.



An ear medication delivery device for delivering a treatment liquid and retaining the treatment liquid within an ear canal of a patient including a unitary, one piece earplug formed of a soft resilient material including an ear canal engaging portion and an external portion and defining a single internal passage therethrough. The external portion includes a major disk and an annular medication applicator receiving portion in fluid communication with the internal passage. The ear canal engaging portion includes at least two minor disks of progressively different size extending outwardly in a generally radial direction. The ear canal engaging portion defines a molded resilient valve unitary with the earplug that is shiftable from a closed position to an open position in either direction under a preselected fluid pressure and that resiliently returns to the closed position below the preselected fluid pressure.



16. Device and method for inserting lubricating capsule

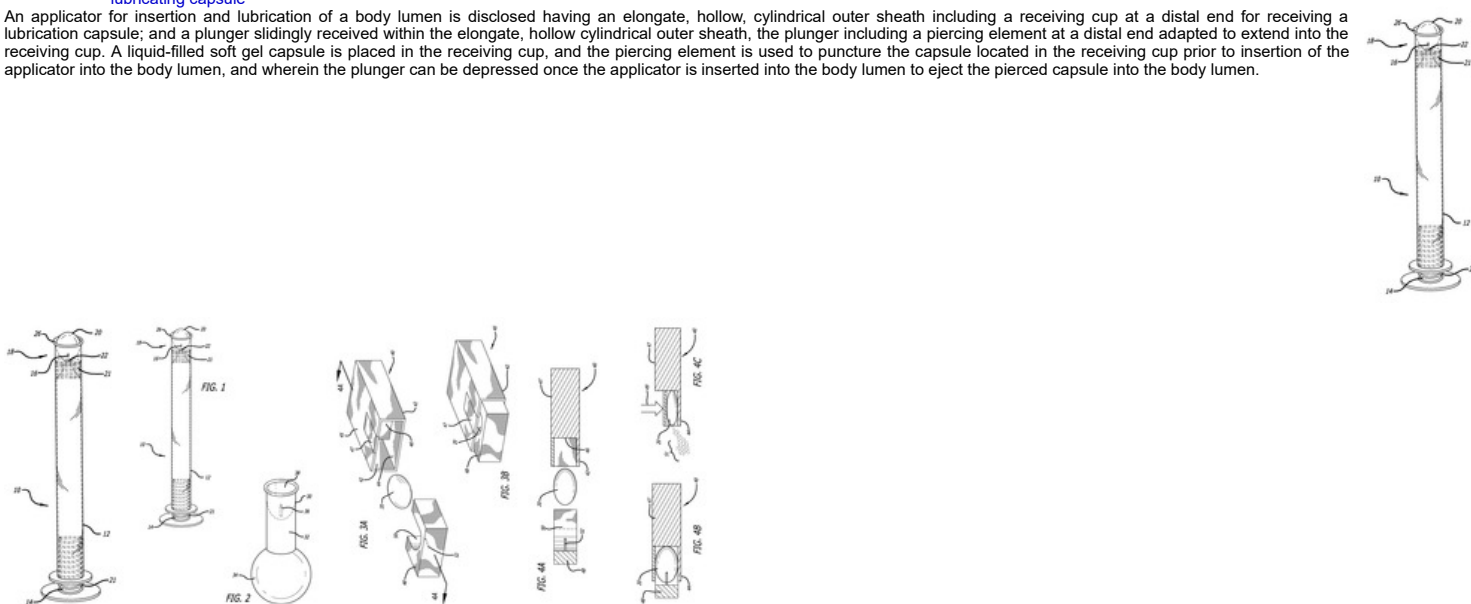
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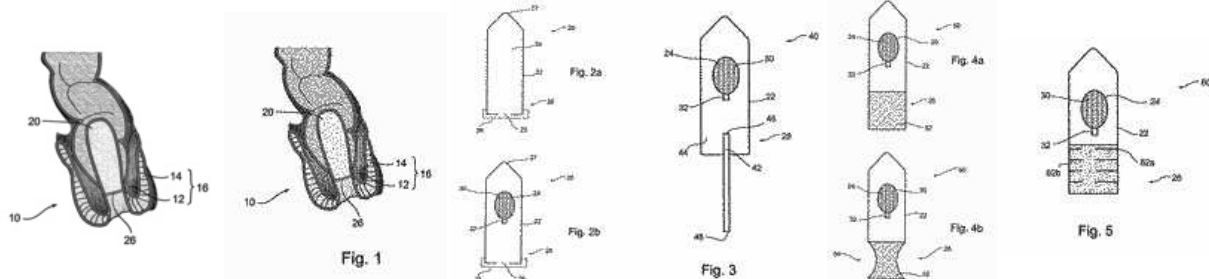
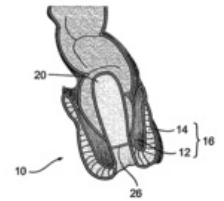
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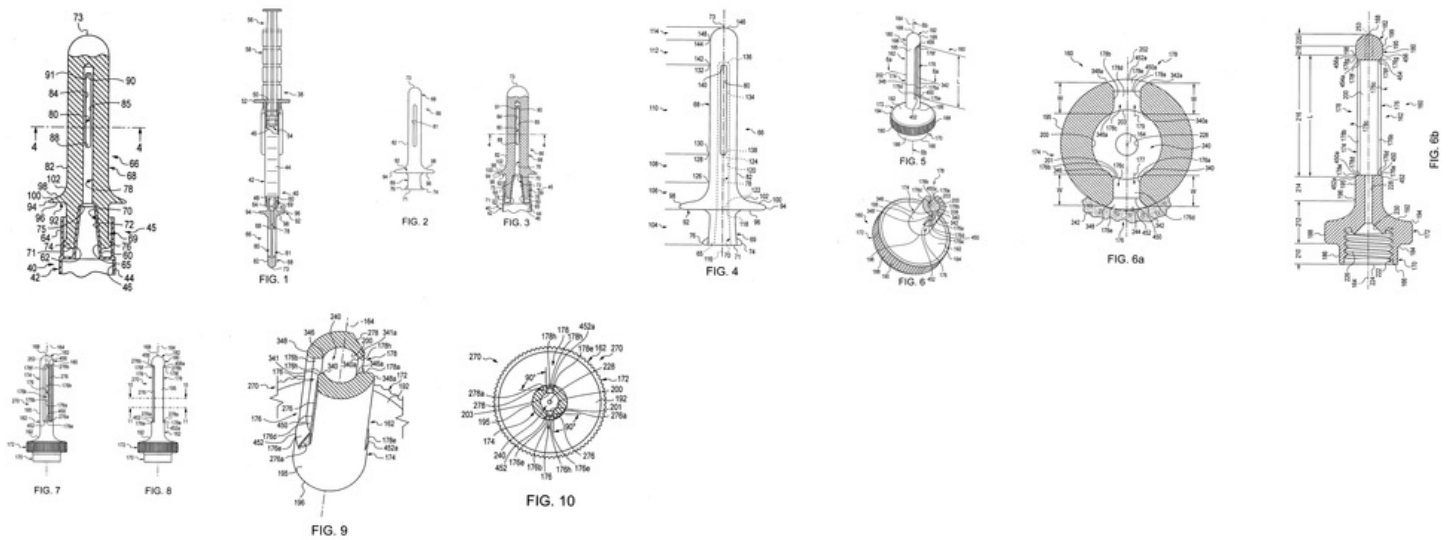
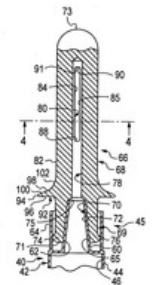
An applicator for insertion and lubrication of a body lumen is disclosed having an elongate, hollow, cylindrical outer sheath including a receiving cup at a distal end for receiving a lubrication capsule; and a plunger slidingly received within the elongate, hollow cylindrical outer sheath, the plunger including a piercing element at a distal end adapted to extend into the receiving cup. A liquid-filled soft gel capsule is placed in the receiving cup, and the piercing element is used to puncture the capsule located in the receiving cup prior to insertion of the applicator into the body lumen, and wherein the plunger can be depressed once the applicator is inserted into the body lumen to eject the pierced capsule into the body lumen.



A rectally insertable device for localized drug delivery to the anal sphincter of a subject, a method of using the device and the use of the device is disclosed. The device comprises a shell for containing an active pharmaceutical ingredient, the shell being substantially impermeable to the active pharmaceutical ingredient wherein a lower portion of the shell is configured to release the active pharmaceutical ingredient from the shell and wherein when the device is inserted into the rectum of the subject, the lower portion of the shell is proximal to the anal sphincter, such that the active pharmaceutical ingredient is released proximal to the anal sphincter.



An applicator 270 includes a stem 174 having an axially-formed slot delivery passage 200. A slot 350 is formed transaxially through the stem 174 and is in communication with the slot delivery passage 200. An extended side wall 350b is formed on one side of the slot 350. A flat surface 354, which is formed in the stem 174, is spaced and extends angularly away from an opposite side of the slot 176 and from the extended side wall 350b to provide for direct and lateral dispensing of a cream 280 onto a tissue 242 of a patient.

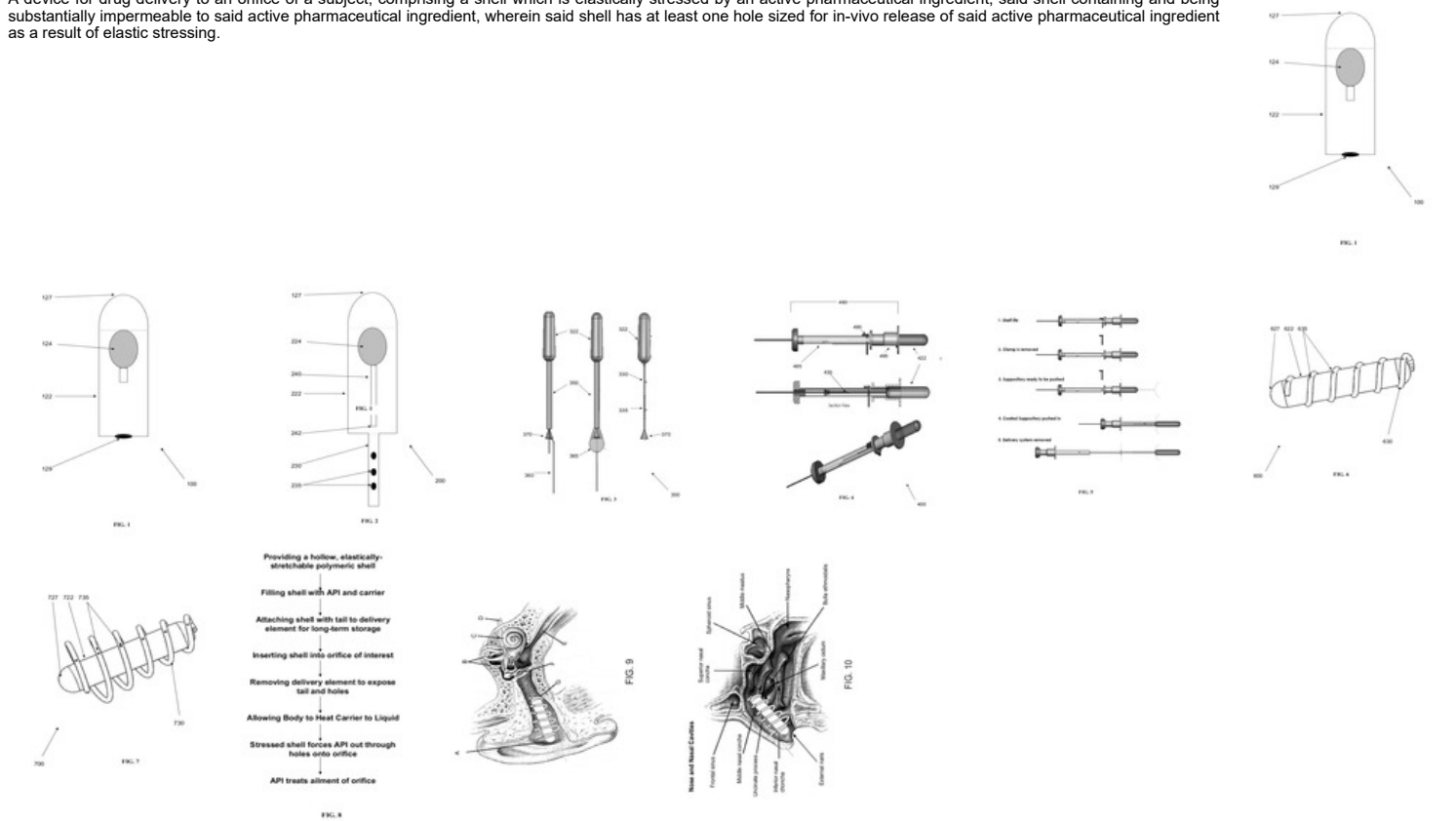


A rectally insertable device for localized drug delivery to the anal sphincter of a subject, a method of using the device and the use of the device is disclosed. The device comprises a shell for containing an active pharmaceutical ingredient, the shell being substantially impermeable to the active pharmaceutical ingredient wherein a lower portion of the shell is configured to release the active pharmaceutical ingredient from the shell and wherein when the device is inserted into the rectum of the subject, the lower portion of the shell is proximal to the anal sphincter, such that the active pharmaceutical ingredient is released proximal to the anal sphincter.

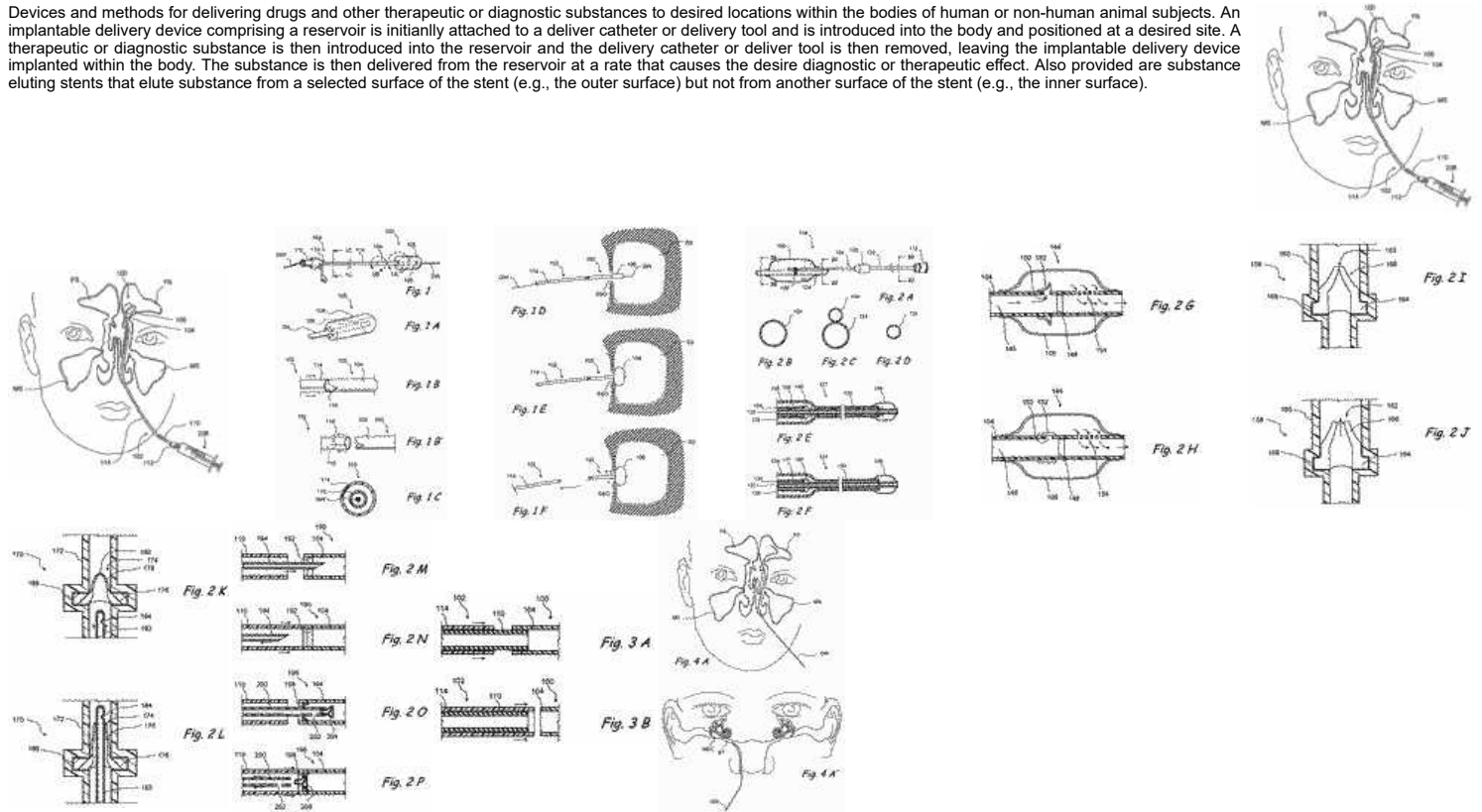


20. Methods and devices for delivery of pharmaceutical agents within orifices of the bodyWO20101465912010-06-17RDD PHARMA*2010-12-232010-12-23

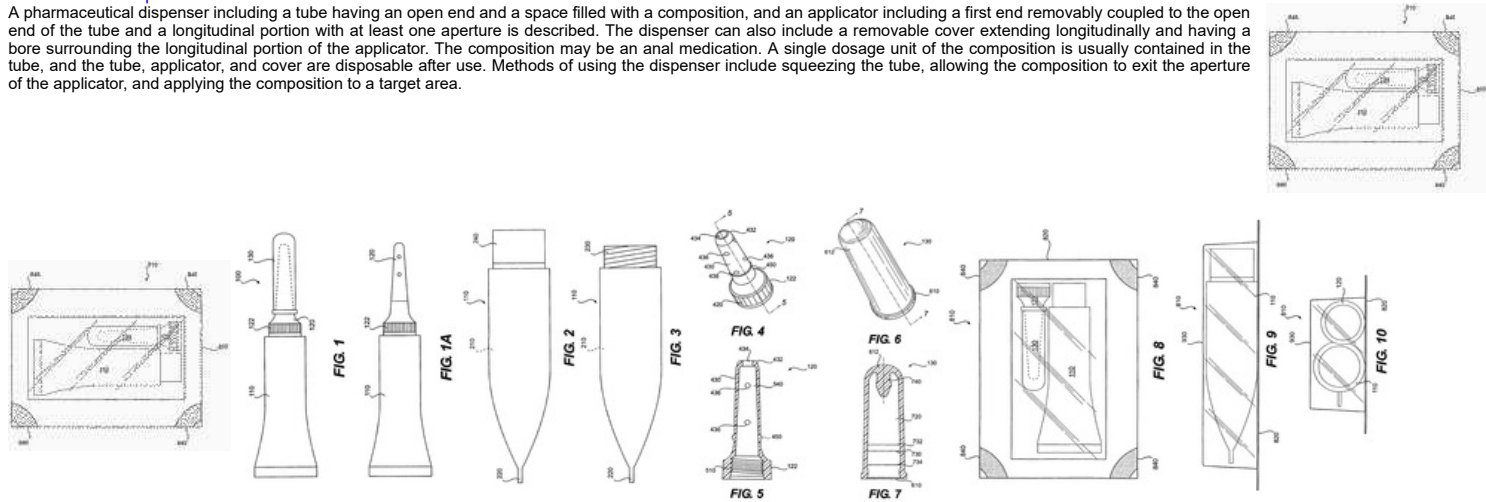
A device for drug delivery to an orifice of a subject, comprising a shell which is elastically stressed by an active pharmaceutical ingredient, said shell containing and being substantially impermeable to said active pharmaceutical ingredient, wherein said shell has at least one hole sized for in-vivo release of said active pharmaceutical ingredient as a result of elastic stressing.



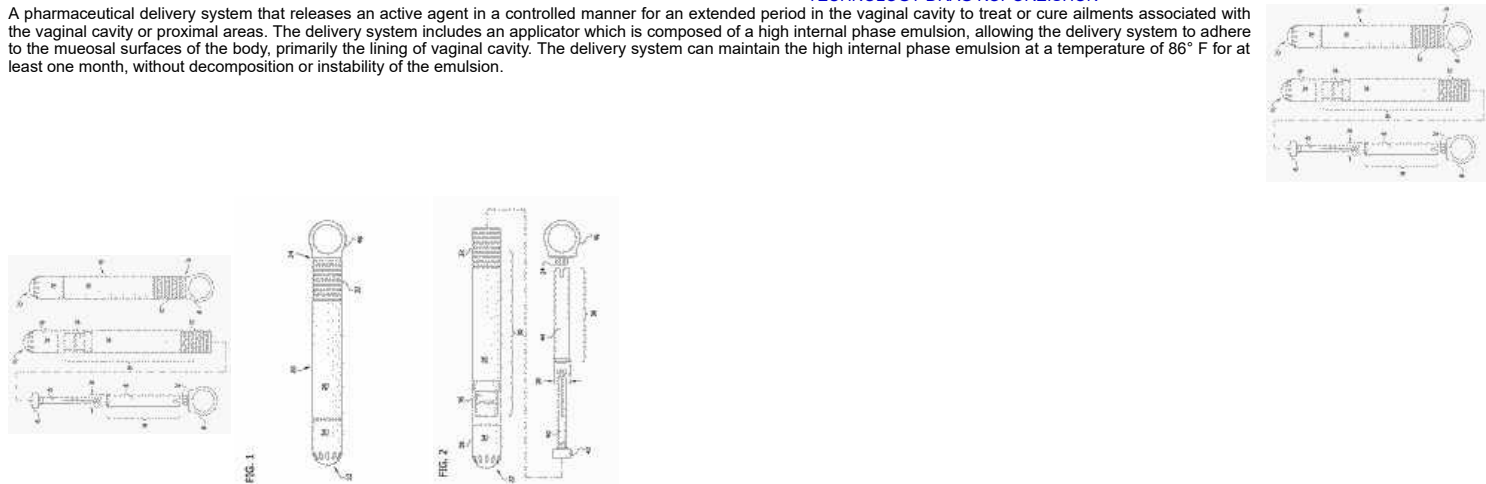
Devices and methods for delivering drugs and other therapeutic or diagnostic substances to desired locations within the bodies of human or non-human animal subjects. An implantable delivery device comprising a reservoir is initially attached to a deliver catheter or delivery tool and is introduced into the body and positioned at a desired site. A therapeutic or diagnostic substance is then introduced into the reservoir and the delivery catheter or deliver tool is then removed, leaving the implantable delivery device implanted within the body. The substance is then delivered from the reservoir at a rate that causes the desire diagnostic or therapeutic effect. Also provided are substance eluting stents that elute substance from a selected surface of the stent (e.g., the outer surface) but not from another surface of the stent (e.g., the inner surface).



A pharmaceutical dispenser including a tube having an open end and a space filled with a composition, and an applicator including a first end removably coupled to the open end of the tube and a longitudinal portion with at least one aperture is described. The dispenser can also include a removable cover extending longitudinally and having a bore surrounding the longitudinal portion of the applicator. The composition may be an anal medication. A single dosage unit of the composition is usually contained in the tube, and the tube, applicator, and cover are disposable after use. Methods of using the dispenser include squeezing the tube, allowing the composition to exit the aperture of the applicator, and applying the composition to a target area.



A pharmaceutical delivery system that releases an active agent in a controlled manner for an extended period in the vaginal cavity to treat or cure ailments associated with the vaginal cavity or proximal areas. The delivery system includes an applicator which is composed of a high internal phase emulsion, allowing the delivery system to adhere to the mucosal surfaces of the body, primarily the lining of vaginal cavity. The delivery system can maintain the high internal phase emulsion at a temperature of 86° F for at least one month, without decomposition or instability of the emulsion.



A nasal applicator tip for introducing a viscous medicament along internal nasal walls is provided. The nasal applicator tip may include an elongated tube extending from a base end to a socket end, wherein the socket end forms an enclosure having an opening, and wherein the base end is adapted to removably and fluidly connect to a source of viscous material. An applicator ball may be rotatably housed in the enclosure so as to protrude from the opening and allow viscous medicament to flow between its circumference and the enclosure. A user of the nasal applicator tip may removably attach it to a desired source of viscous material so that the user may selectively engage the protruding portion of the applicator ball and a predetermined portion of the nasal wall for medicating and/or moistening purposes.

