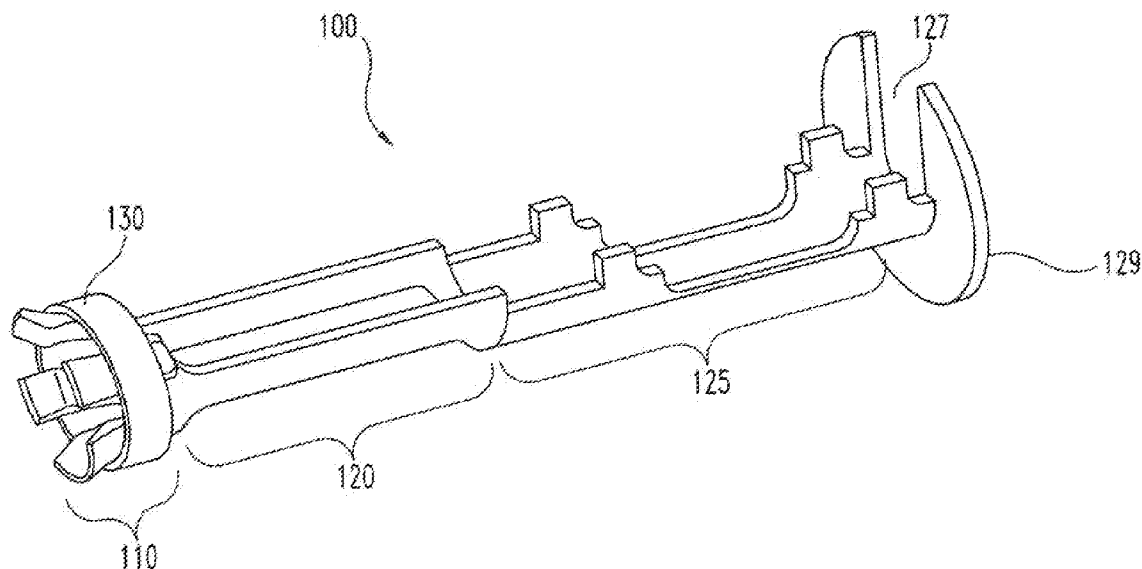


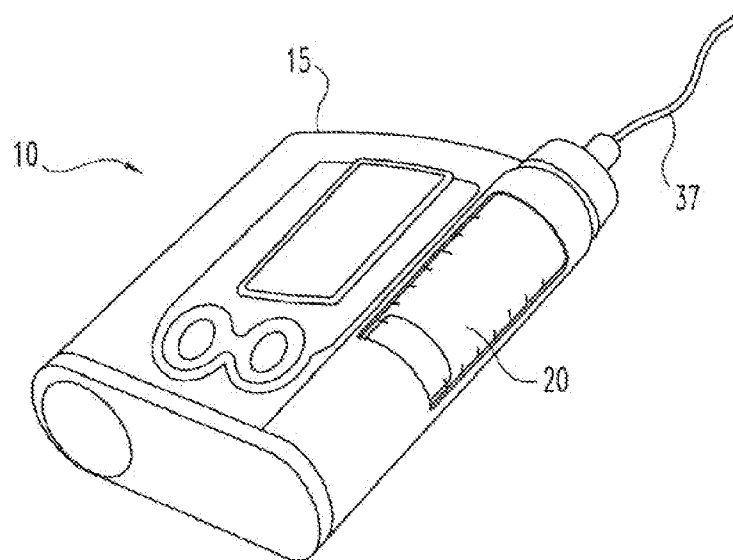
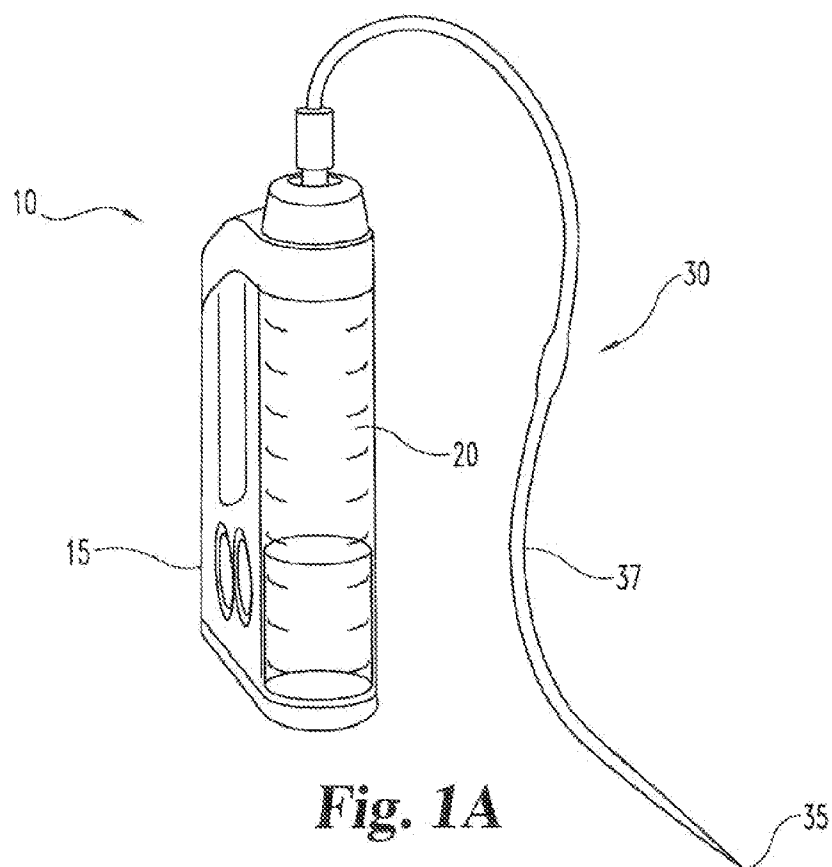


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(19) **United States**(12) **Patent Application Publication**
Wiegel(10) **Pub. No.: US 2012/0000569 A1**(43) **Pub. Date: Jan. 5, 2012**(54) **RESERVOIR FILLING AID FOR A MEDICAL PUMP**(76) Inventor: **Christopher D. Wiegel**, Sunnyvale, CA (US)(21) Appl. No.: **12/828,758**(22) Filed: **Jul. 1, 2010****Publication Classification**(51) **Int. Cl.**
B65B 3/04 (2006.01)(52) **U.S. Cl.** **141/2; 141/18**(57) **ABSTRACT**

A reservoir filling aid for a reservoir of a medical infusion pump is disclosed. The reservoir filling aid comprises a main body for supporting the reservoir during the filling of the reservoir with a medical serum and a supply vial adapter end positioned at a first end of the main body. The supply vial adapter end comprises a plurality of flexible tabs extending from the supply vial adapter end for interfacing with a supply vial containing the medical serum and a shaped ring for housing the plurality of flexible tabs and the supply vial while in a closed configuration to establish a fluid connection between the supply vial and the reservoir. The interior of the supply vial adapter end may also have a spiral track for additional security. A removable adapter may be fitted on the top of small supply vials.





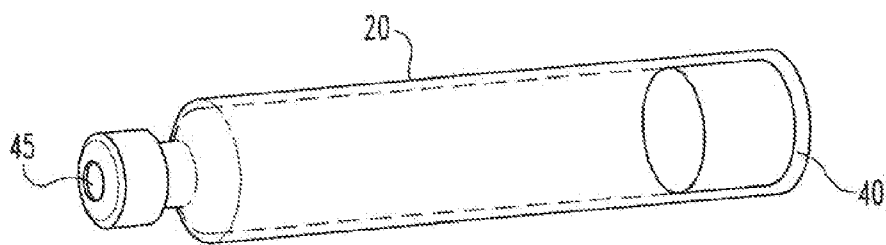


Fig. 2A

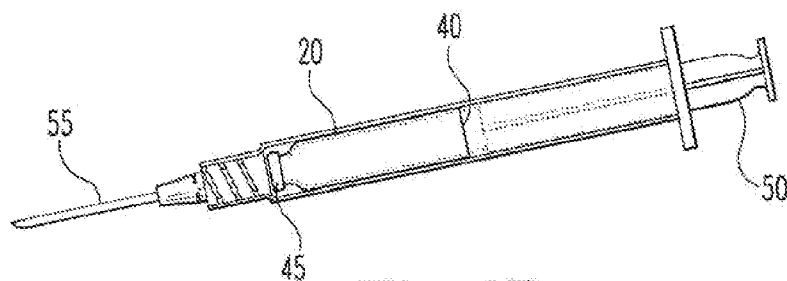


Fig. 2B

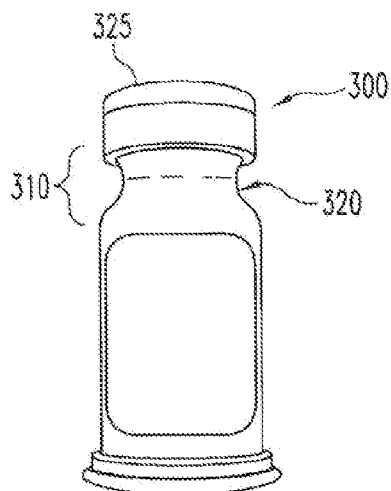
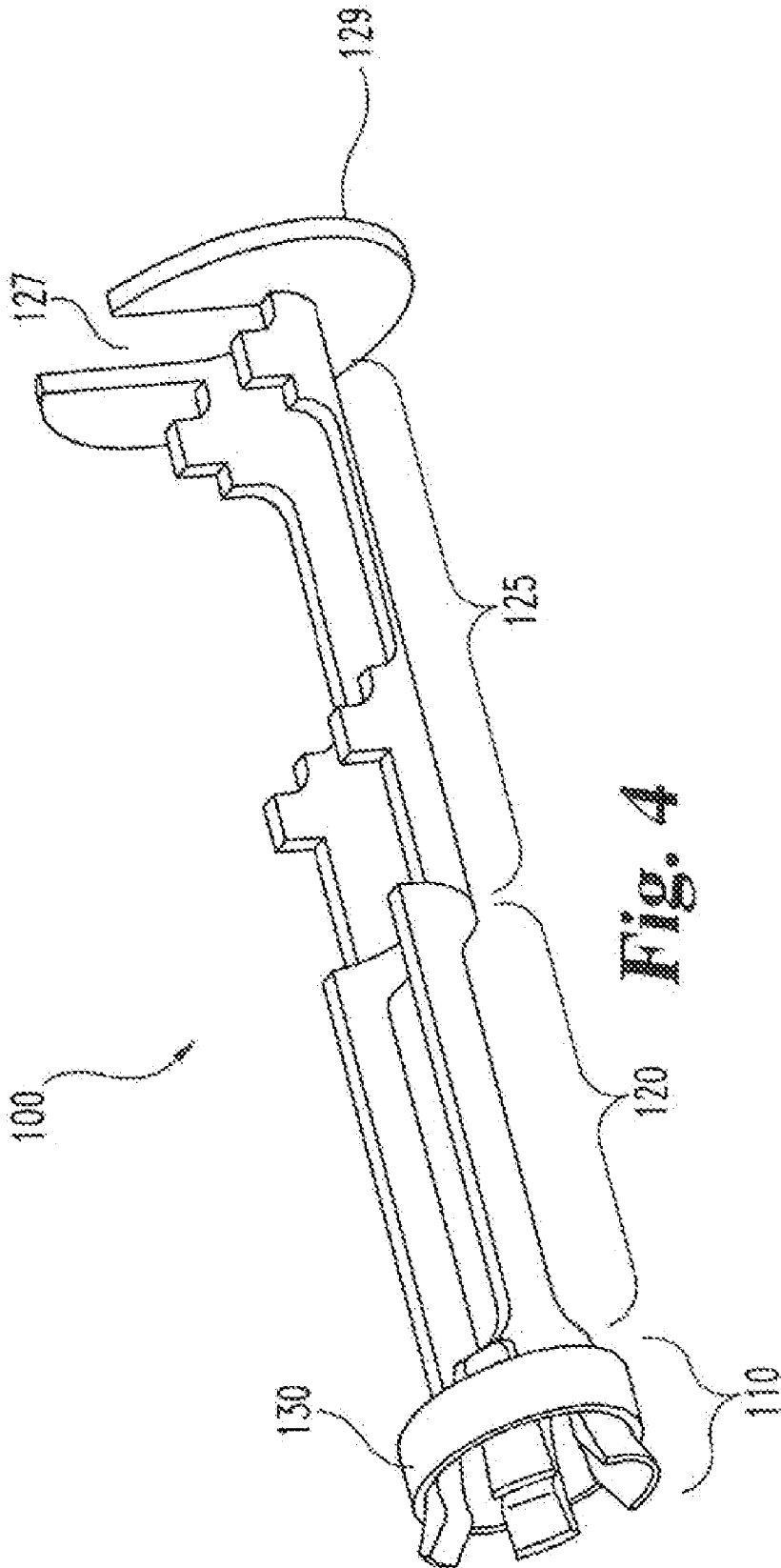


Fig. 3



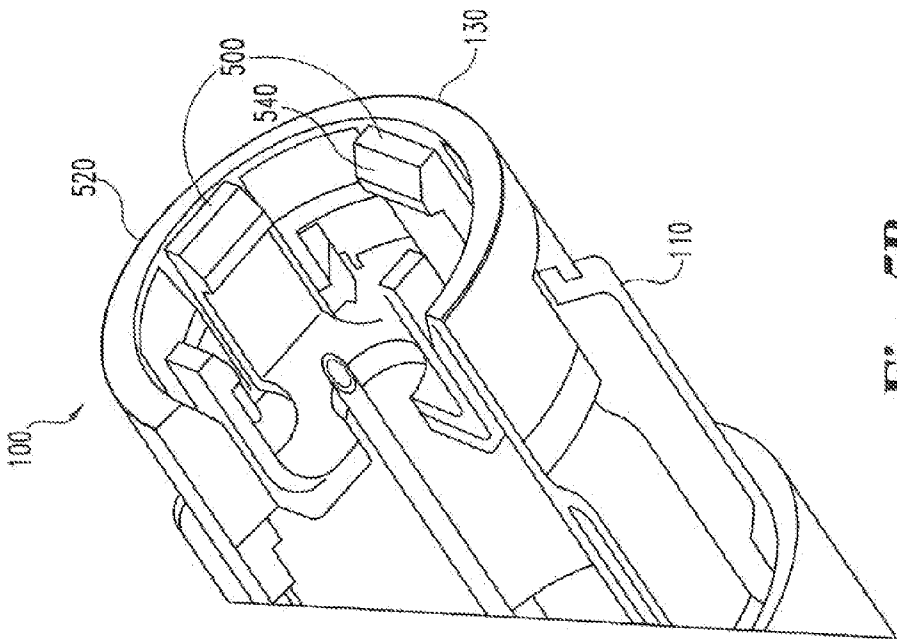


Fig. 5B

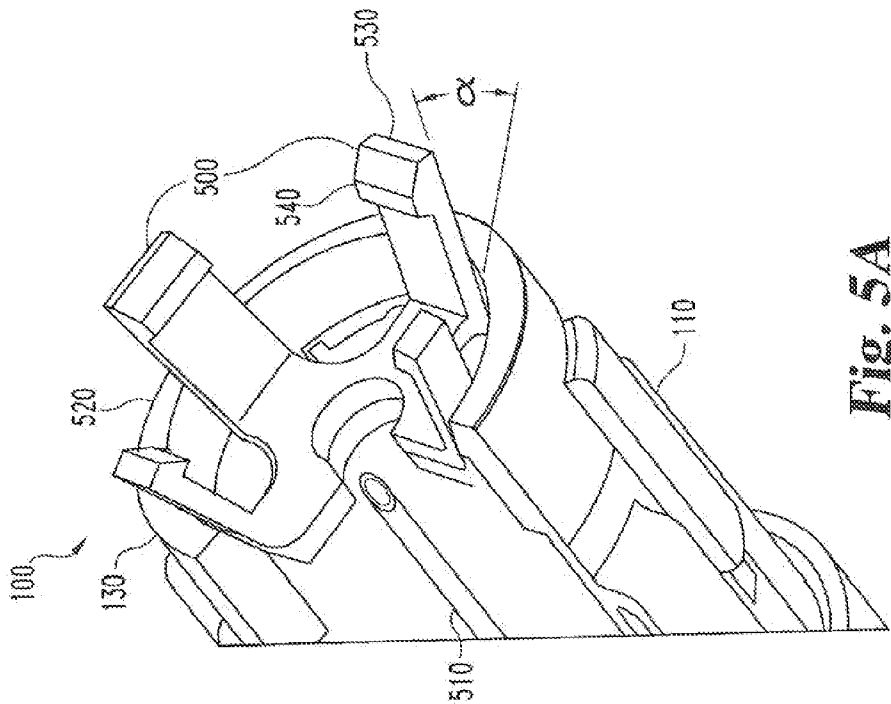


Fig. 5A

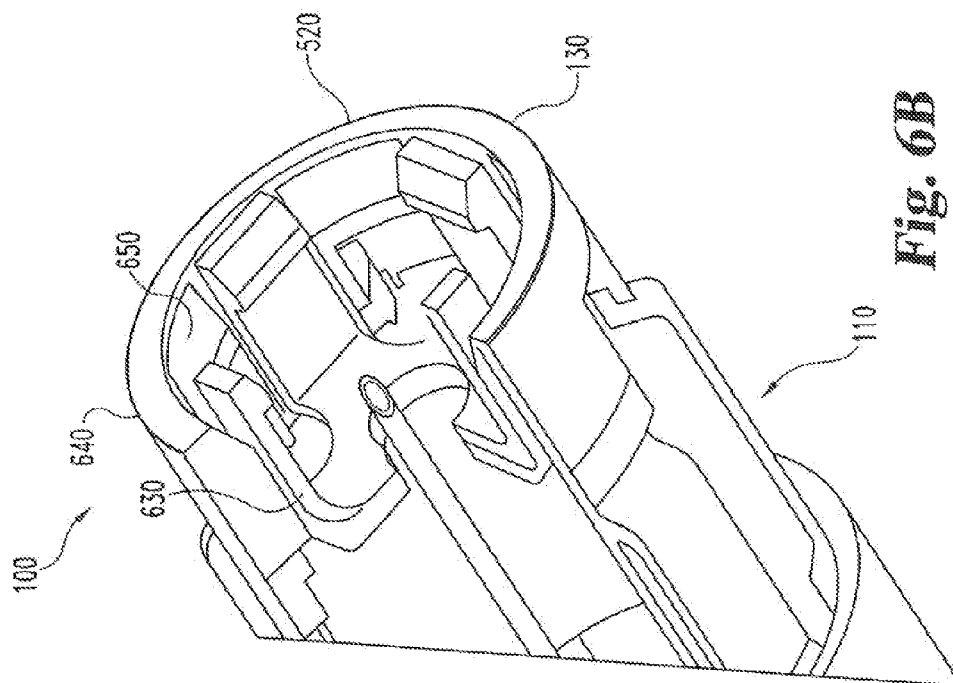


Fig. 6B

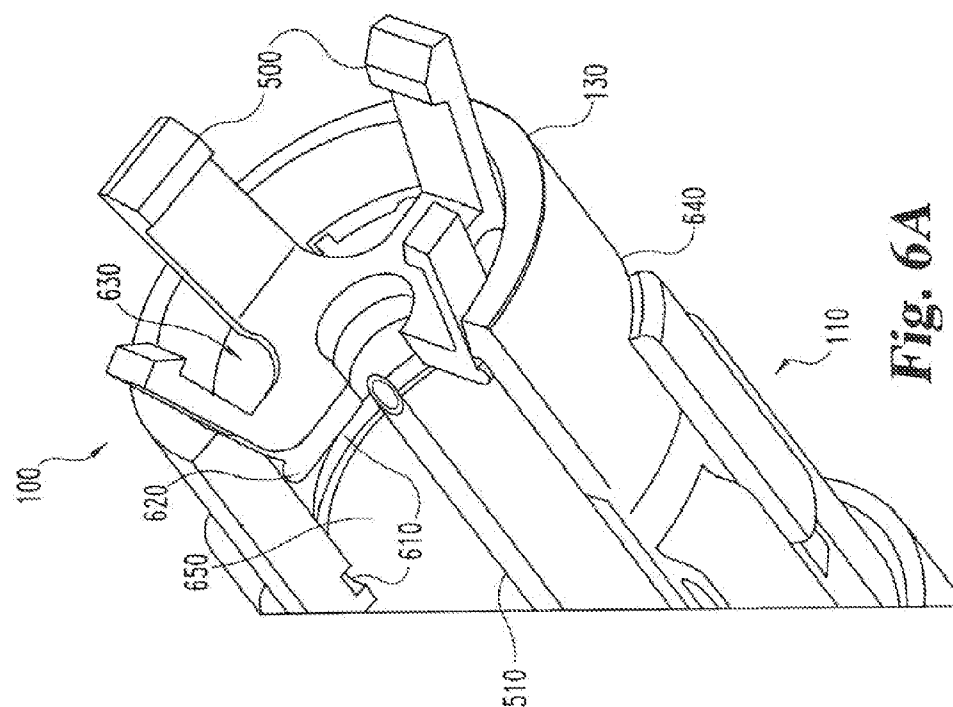


Fig. 6A

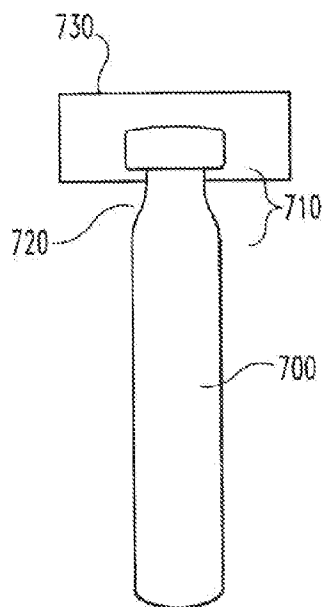


Fig. 7A

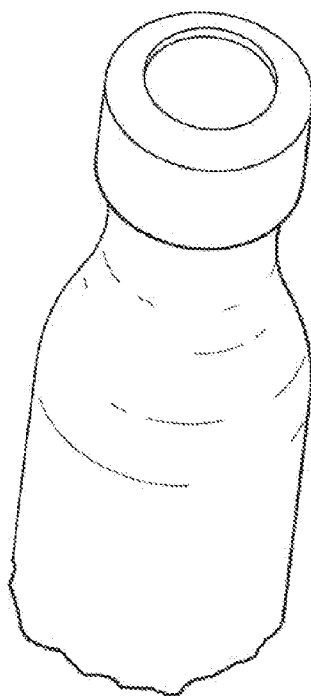
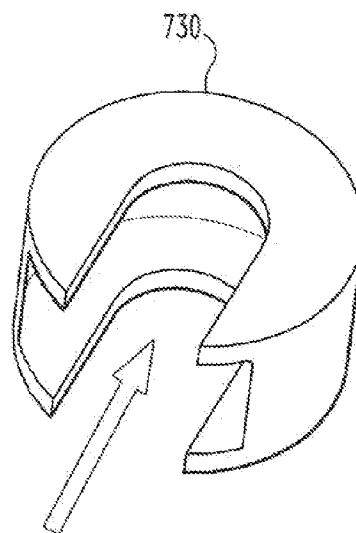


Fig. 7B

RESERVOIR FILLING AID FOR A MEDICAL PUMP

BACKGROUND

[0001] The present disclosure generally relates to a reservoir filling aid for a medical pump reservoir and, in particular, relates to a needle-safe transfer reservoir filling aid for a medical pump reservoir with a supply vial adapter.

[0002] In general, a medical pump can be a component of a medical device that is typically used for the administration of a medical serum, such as, for example, chemotherapy drugs in the treatment of cancers or insulin in the treatment of diabetes mellitus. The use of an insulin medical pump is also known as continuous subcutaneous insulin infusion therapy.

[0003] In the case of diabetes mellitus treatment, an insulin delivery medical pump can be an attractive alternative to multiple daily injections of insulin by insulin syringe or an insulin pen that typically associated with a more traditionally diabetes regimen. The insulin delivery medical pump can result in an intensive insulin therapy when it is used in conjunction with the more traditional blood glucose monitoring and carbohydrate counting.

[0004] Typically, to use a medical pump, a reservoir is used to store a medical serum, such as, for example, insulin, chemotherapy drugs, or any other suitable medical serum. It is typically recommended that a reservoir of the medical pump first be filled with the medical serum. Some medical pumps can use reservoirs that are prefilled with the medical serum. In these medical pumps, the reservoir can be taken out of the medical pump and replaced with a new prefilled reservoir when empty. However, it more common for medical pumps to have reservoirs that are manually filled by the user with the medical serum prescribed to the user.

[0005] However, being able to hold both the reservoir and the medical serum vial at the same time in order to fill the reservoir can be a serious problem for the very young, the very old, as well as for persons who may be blind or who may have limited dexterity. All of which can be common ailments of diabetics and others who may require a medical infusion pump device.

[0006] Therefore, there is a need for an inexpensive, easy-to-use reservoir filling aid for a medical infusion pump device that can facilitate the loading of medical infusion pump reservoirs with medical serum.

SUMMARY

[0007] According to the present disclosure, a reservoir filling aid for a reservoir of a medical infusion pump is disclosed. The reservoir filling aid can comprise a main body for supporting the reservoir of the medical infusion pump during the filling of the reservoir. A supply vial adapter end can be positioned at a first end of the main body. The supply vial adapter end can comprise a plurality of flexible tabs for interfacing and engaging a supply vial containing a medical serum and a shaped ring for securely housing the plurality of flexible tabs and the supply vial while the supply vial adapter end is in the closed configuration. While in the closed configuration, the reservoir filling aid can secure the supply vial and reservoir onto a needle to facilitate the filling of the reservoir of the medical serum.

[0008] In accordance with one embodiment of the present disclosure, the reservoir filling aid further comprises a

plunger body adjacent the main body for supporting and controlling a plunger during the filling of the reservoir.

[0009] In accordance with another embodiment of the present disclosure, the supply vial adapter end and the main body of the reservoir filling aid can be threaded to further secure the supply vial to the reservoir.

[0010] In accordance with yet another embodiment of the present disclosure, an additional adapter can be used with the reservoir filling aid in order to facilitate the use of different volume supply vials in filling the reservoir.

[0011] Accordingly, it is a feature of the embodiments of the present disclosure to provide an inexpensive, easy-to-use reservoir filling aid to facilitate the filling of a reservoir of a medical infusion pump with medical serum. Other features of the embodiments of the present disclosure will be apparent in light of the description of the disclosure embodied herein.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0012] The following detailed description of specific embodiments of the present disclosure can be best understood when read in conjunction with the following drawings, where like structure is indicated with like reference numerals and in which:

[0013] FIGS. 1A-B illustrate two views of a typical medical infusion pump according to an embodiment of the present disclosure.

[0014] FIG. 2A illustrates a typical reservoir according to an embodiment of the present disclosure.

[0015] FIG. 2B illustrates a typical reservoir with a plunger attached according to an embodiment of the present disclosure.

[0016] FIG. 3 illustrates a typical 10 ml supply vial according to an embodiment of the present disclosure.

[0017] FIG. 4 illustrates a typical reservoir filling aid for a medical infusion pump according to an embodiment of the present disclosure.

[0018] FIGS. 5 A-B illustrate an isometric view of a supply vial adapter end of a reservoir filling aid for a medical infusion pump showing a plurality of flexible tabs according to an embodiment of the present disclosure.

[0019] FIGS. 6 A-B illustrate an isometric view of a threaded supply vial adapter end of a reservoir filling aid for a medical infusion pump according to another embodiment of the present disclosure.

[0020] FIGS. 7A-B illustrate adapters that fits onto a supply vial to adapt the supply vial for use with the reservoir filling aid for a medical infusion pump according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

[0021] In the following detailed description of the embodiments, reference is made to the accompanying drawings that form a part hereof, and in which are shown by way of illustration, and not by way of limitation, specific embodiments in which the disclosure may be practiced. It is to be understood that other embodiments may be utilized and that logical, mechanical and electrical changes may be made without departing from the spirit and scope of the present disclosure.

[0022] Referring initially to FIG. 1, a typical medical infusion pump 10 for the administration of a medical serum, such as, for example, insulin or chemotherapy drugs is illustrated. The medical serum can be administered by the medical infu-

sion pump **10** subcutaneously, intravenously, or by any other suitable method known in the art. In one exemplary embodiment, the housing **15** of the medical infusion pump **10** can include the mechanical pump **15** itself as well as pump controls, a processing module, batteries, and a reservoir **20** for storing the medical serum. The reservoir **20** can reside within the medical infusion pump **10**. A disposable infusion set **30** can connect to the medical infusion pump housing **15**. The disposable infusion set **30** can include a cannula **35** for subcutaneous insertion (i.e., under the skin) into the user and a tubing system **37** to interface the medical serum reservoir **20** to the cannula **35**. The medical infusion pump **10** can pump the medical serum from the reservoir **20** through the tubing system **37** into the user via the cannula **35**.

[0023] In general, the medical infusion pump **10** can typically be prepared for use by a user by opening a new and sterile empty medical infusion pump reservoir **20** such as the exemplary reservoir **20** illustrated in FIG. 2A. A plunger **50** can be attached to a first end **40** of the reservoir **20** as illustrated in FIG. 2B and as is known in the art. The plunger **50** can be withdrawn, i.e., pulled away from the first end **40** of the reservoir **20**. A needle **55** can be attached to a second end **45** of the reservoir **20**, opposite the first end **40**, as is known in the art. The needle **55** can then be inserted into the top of a typical supply vial **300** (see FIG. 3) of medical serum. Air can be injected from the reservoir **20** into the supply vial **300** via the needle **55** by pushing forward on the plunger **50**, towards the first end **40** of the reservoir **20** and the supply vial **300**, in order to prevent a vacuum from forming in the supply vial **300** as the medical serum is withdrawn from the supply vial **300**. The medical serum can then be drawn into the reservoir **20** by pulling back on the plunger **50**, away from the first end **40** of the reservoir **20** and the supply vial **300**. After the reservoir **20** is filled, the needle **55** can then be removed from both the second end **45** of the reservoir **20** and the supply vial **300**. Any air bubbles can be removed from the reservoir **20** by slowing pushing the plunger **55** towards the first end **40** of the reservoir **20**. The plunger **55** can then be removed from the reservoir **20**.

[0024] In one exemplary embodiment, the reservoir **20** can then be attached to the infusion set tubing **37** of the medical infusion pump **10**. This assembly of the reservoir **20** and infusing set tubing **37** can then be installed into the medical infusion pump **10**. In another exemplary embodiment, the reservoir **20** can first be installed into the medical infusion pump **10** and then the infusion set tubing can be attached to reservoir **20**. The tubing **37** can then be primed (i.e., medical serum and any air bubbles are pushed through the tubing **37**) by the medical infusion pump **10**. This procedure is typically performed with the medical infusion pump **10** disconnected from the body of the user to prevent accidental medical serum delivery. In one exemplary embodiment, the medical infusion pump **10** and infusion set tubing **37** can then be attached to the body of the user and the cannula **35** can be inserted into the subcutaneous tissue of the user. Finally, the cannula **35** can be primed as if a new medical infusion pump **10** infusion set had been inserted.

[0025] FIG. 4 illustrates a reservoir filling aid **100** that can assist the user in the filling of the reservoir **20** according to an exemplary embodiment. The reservoir filling aid **100** can comprise a main body portion **120** and a plunger body portion **125**. The reservoir filling aid **100** can have a supply vial adapter end **110** at a first end **130** of the main body **120**. The supply vial adapter end **110** can securely engage a supply vial

300 of medical serum, such as the supply vial **300** illustrated in FIG. 3. In one exemplary embodiment, the supply vial **300** can be a 10 ml bottle such as the supply vial **300** illustrated in FIG. 3.

[0026] However, any suitable volume supply vial **300** known in the art can be used. In one exemplary embodiment, the supply vial **300** may contain, for example, insulin, chemotherapy drugs, or any other suitable medical serum that can be used in a medical infusion pump system. Typically, the neck **310** of the supply vial **300** has a indentation **320** around the circumference of the supply vial **300** as illustrated in FIG. 3.

[0027] Turning to FIGS. 5A-B, in one exemplary embodiment, the supply vial **300** can interface with the reservoir filling aid **100** by a needle **510** housed within the supply vial adapter end **110**. This interface can establish a fluid connection between the supply vial **300** and the reservoir **20** in order to transfer the medical serum from the supply vial **300** into the reservoir **20**. However, any other suitable method of interface known in the art may be used. Turning back to FIG. 4, in one exemplary embodiment, the reservoir **20** can be placed horizontally in the main body **120** of reservoir filling aid **100** with the second, or needle, end **45** of the reservoir **20** adjacent to and interfacing with the supply vial adapter end **110** of the reservoir filling aid **100**. In one exemplary embodiment, the needle end **45** of the reservoir **20** can interface with the reservoir filling aid **100** by the needle **510** (see FIGS. 5A-B) housed within the supply vial adapter end **110**. However, any suitable method of interface known in the art can be used. In a further exemplary embodiment, the supply vial adapter end **110** can have a plurality of flexible tabs **500** to assist in the secure engagement of the supply vial **300** to the reservoir filling aid **100** as illustrated in FIGS. 5A-B which will be discussed more fully below.

[0028] While the reservoir **20** is placed in the reservoir filling aid **100**, a plunger **55**, or pull rod, can be attached to the first end **40** of reservoir **20** as is known in the art. In one exemplary embodiment, as the plunger **55** is pulled away from the first end **40** of the reservoir **20**, the medical serum in the supply vial **300** can be pulled from the supply vial **300** into the reservoir **20** via the needle **510**, thereby, filling the reservoir **20** with the medical serum. The plunger **55** of the reservoir **20** can reside along the plunger body **125** of the reservoir filling aid **100**. Having the plunger **55** supported by the plunger body **125** can provide extra control over the movement of the plunger **55** during the filling process. In one exemplary embodiment, the distal end of the plunger **55** can fit into a slot **127** at plunger body end **129** of the reservoir filling aid **100** for additional control of the filling process. Thus, in one exemplary embodiment, a user can be able to fill the reservoir **20** using one hand. In addition, by guiding the plunger **55** of the reservoir **20** along the plunger body **125**, the reservoir filling aid **100** can also assist in refilling the reservoir **20** by helping to prevent overfilling and spilling of the medical serum by the additional control of the plunger. Further, the reservoir filling aid **100**, by providing the guidance of the plunger **55** along the length of the plunger body **125**, can help remove air bubbles in the reservoir **20**. Therefore, the reservoir filling aid **100** can provide much needed assistance to those users who have limited dexterity.

[0029] Turning to FIG. 5A, an isometric view of the supply vial adapter end **110** of the reservoir filling aid **100** is illustrated. From this view, the plurality of flexible tabs **500** extending from the supply vial adapter end **110** can be seen.

The plurality of flexible tabs **500** can be comprised of plastic, rubber, or any other suitable flexible material known in the art. In one embodiment, the plurality of flexible tabs **500** can be positioned equidistance along the circumference of supply vial adapter end **110**. In another embodiment, the plurality of flexible tabs **500** can be irregularly positioned around the circumference of the supply vial adapter end **110**. The plurality of flexible tabs **500** can comprise any number of flexible tabs **500**. In one exemplary embodiment, the plurality can comprise three flexible tabs **500** positioned equidistance apart from each other along the circumference of the supply vial adapter end **110**. However, the plurality of flexible tabs **500** may comprise more or less flexible tabs **500** as needed. In one exemplary embodiment, each of the individual flexible tab **500** of the plurality of flexible tabs **500** can have a flange **540** protruding from the distal end **530** of each of the flexible tabs **500** towards the center of the reservoir filling aid **100**. In one embodiment, the flange **540** may be rounded. However, any other suitably shaped flange **540** is possible.

[0030] In one exemplary embodiment, the plurality of flexible tabs **500** can initially be positioned to be in a receiving configuration as illustrated in FIG. 5A. In this configuration, the plurality of flexible tabs **500** can extend from the supply vial adapter end **110** at an angle α . In one exemplary embodiment, the angle α can be from approximately 10° to approximately 30° . However, other angles α can be envisioned without deviating from the spirit of the present disclosure. In an exemplary embodiment, when in the receiving configuration, the circumference of the distal ends **530** of the plurality of flexible tabs **500** of the supply vial adapter end **110** can be greater than the circumference of the top **325** of the supply vial **300**. Thereby, in the receiving configuration, the reservoir filling aid **100** can be incapable of securing a supply vial **300** (see FIG. 3) onto the needle **510** housed with the supply vial adapter end **110** of the reservoir filling aid **100**. In addition, having the plurality of flexible tabs **500** in the receiving configuration can provide additional protection to the user from the needle **510** housed with the supply vial adapter end **110**, thereby, helping to prevent accidental sticks of the needle **510**.

[0031] Alternatively, in the closed configuration, the typical supply vial **300** can be forced into the supply vial adapter end **110** by sliding together the typical supply vial **300** and the plurality of flexible tabs **500** into a shaped ring **520** at the end of the supply vial adapter end **110**. In one exemplary embodiment, the sliding motion can force the rounded flanges **540** of the plurality of the flexible tabs **500** to close around the indentation **320** of the neck **310** of the typical supply vial **300** in order to secure the supply vial **300** to the reservoir filling aid **100**. In addition, in one embodiment, the sliding motion can force the supply vial **300** onto the needle **510** housed within the reservoir filling aid **100** to establish a fluid connection between the supply vial **300** and the reservoir **20**. The plurality of the flexible tabs **500** in the closed configuration is illustrated in FIG. 5B. The indentation **320** of the supply vial **300** can support the flexible tabs **500** in this closed configuration in order to support and retain the supply vial **300**. In other words, the supply vial adapter end **110** of the reservoir filling aid **100** can use a sliding motion to close the plurality of flexible tabs **500** around the indentation **320** of the neck **310** of a supply vial **300** and into the shaped ring **520** of the reservoir filling aid **100**. The sliding motion can then securely force the supply vial **300** onto the needle **510** of the reservoir filling aid **100** establishing a fluid connection between the

supply vial **300** and the reservoir **20**, thereby the reservoir filling aid **100** can secure and support a needle connection between supply vial **300**, the reservoir filling aid **100** and the reservoir **20** itself.

[0032] Once the reservoir **20** is filled with the desired amount of medical serum, the supply vial **300** can be slid out of the supply vial adapter end **110** of the reservoir filling aid **100** by simply pulling on the supply vial **300**. As the supply vial **300** is slid out, the plurality of flexible tabs **500** can move from the closed position to the receiving position and, thereby, the plurality of flexible tabs **500** can lose contact with the neck **310** of the supply vial **300** and can release the supply vial **300**. Once the plurality of flexible tabs **500** are in the receiving position, the user can then simply remove the supply vial **300** from the needle **510** of the reservoir filling aid **100** breaking the fluid connection between the supply vial **300** and the reservoir **20**.

[0033] In another exemplary embodiment illustrated in FIGS. 6A-B, the supply vial adapter end **110** of the reservoir filling aid **100** can have an interior **650** and exterior **640**. The interior **650** of the supply vial adapter end **110** can have a track **610** that follows a spiral path down the interior **650** of the supply vial adapter end **110**. In one exemplary embodiment, the track **610** can be a recessed groove. The plurality of flexible tabs **500** can be connected together by a bottom ring **620**. The bottom ring **620** can have a track interface **620** protruding away from the bottom ring **630** towards the interior **650** of the supply vial adapter end **110**. In this exemplary embodiment, the track interface **620** can be interact with, or be threaded into, the track **610** when the flexible tabs **500** are in the receiving position. As the supply vial **300** is slid towards the shaped ring **520**, the supply vial **300** can also rotate the track interface **620** downwards along the path of the track **610**. The rotation downwards of the supply vial **300** can flex the plurality of flexible tabs **500** inward towards and onto the neck **310** of the supply vial **300** locking the supply vial **300** into place on the needle **510** and establishing a fluid connection between the supply vial **300** and the reservoir **20**. The track **610** and track interface **620**, thereby, provide additional support and security for the connection between the supply vial **300**, reservoir **20** and the reservoir filling aid **100**.

[0034] Once the reservoir **20** is filled with the desired amount of medical serum, the supply vial **300** can be rotated out of the supply vial adapter end **110** of the reservoir filling aid **100**. As the supply vial **300** is being rotated out of the supply vial adapter end **110**, the track interface **620** connected to the plurality of flexible tabs **500** travels up the interior **650** of the supply vial adapter end **110** along the path of track **620**. As the supply vial **300** is rotated out, the plurality of flexible tabs **500** can move from the closed position to the receiving position and, thereby, the plurality of flexible tabs **500** can lose contact with the neck **310** of the supply vial **300** and can release the supply vial **300**. Once the plurality of flexible tabs **500** are in the receiving position, the user can then simply remove the supply vial **300** from the needle **510** of the reservoir filling aid **100** breaking the fluid connection between the supply vial **300** and the reservoir **20**.

[0035] In yet another exemplary embodiment, a removable adapter **730** for fitting onto the supply vial adapter end **110** of the reservoir filling aid **100** is illustrated in FIGS. 7A-B. This removable adapter **730** can be fitted securely onto a small supply vial **700** having a smaller circumference than a typical 10 ml supply vial **300** in order to increase the overall circumference of the small supply vial **700** to that of a 10 ml supply

vial 300. In one exemplary embodiment, the small supply vial 700 can be a typical 3 ml supply vial. However, any other small supply vial 700 can be used with the removable adapter 730 without departing from the spirit of the present disclosure. In one exemplary embodiment illustrated in FIG. 7A, the removable adapter 730 can securely snap into the indentations 720 of the neck 710 of the small supply vial 700. In another embodiment illustrated in FIG. 7B, the removable adapter 730 can be slid onto the neck 710 of the small supply vial 700. However, any other suitable methods of attachment known in the art are possible. The removable adapter 730 and the neck 710 of the small supply vial 700 can then securely engage with the plurality of flexible tabs 500 of the supply vial adapter end 110 of the reservoir filling aid 100 as discussed above. Thus, the removable adapter 700 can allow the filling of the reservoir 20 by a small supply vial 700 of medical serum. In this embodiment, the plurality of flexible tabs 500 would secure against the body of the small supply vial 700 and the removable adapter 730. The removable adapter 730 can be comprised of a flexible material such as, for example, rubber, plastic or any suitable material known in the art.

[0036] After the reservoir 20 is filled, the small supply vial 700 can disengage from the reservoir filling aid 100 as described above and the removable adapter 730 can be removed from the small supply vial 700 by, for example, simply unsnapping the removable adapter 730 from the small supply vial 700, or simply sliding the removable adapter 730 from the small supply vial 700 or by any other suitable method.

[0037] It is noted that terms like “preferably,” “commonly,” and “typically” are not utilized herein to limit the scope of the claimed embodiments or to imply that certain features are critical, essential, or even important to the structure or function of the claimed embodiments. Rather, these terms are merely intended to highlight alternative or additional features that may or may not be utilized in a particular embodiment of the present disclosure.

[0038] For the purposes of describing and defining the present disclosure, it is noted that the term “substantially” is utilized herein to represent the inherent degree of uncertainty that may be attributed to any quantitative comparison, value, measurement, or other representation. The term “substantially” is also utilized herein to represent the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue.

[0039] Having described the present disclosure in detail and by reference to specific embodiments thereof, it will be apparent that modifications and variations are possible without departing from the scope of the disclosure defined in the appended claims. More specifically, although some aspects of the present disclosure are identified herein as preferred or particularly advantageous, it is contemplated that the present disclosure is not necessarily limited to these preferred aspects of the disclosure.

I claim:

1. A reservoir filling aid for a reservoir of a medical infusion pump, the reservoir filling aid comprising:
a main body for supporting the reservoir during the filling of the reservoir with a medical serum; and
a supply vial adapter end positioned at a first end of the main body having an interior and exterior, the supply vial adapter end comprising,

a plurality of flexible tabs extending from the supply vial adapter end for interfacing with a supply vial containing the medical serum, and

a shaped ring for housing the plurality of flexible tabs and the supply vial while in a closed configuration, wherein when in the closed configuration a fluid connection is established between the supply vial and the reservoir.

2. The reservoir filling aid of claim 1, further comprising a plunger body adjacent the main body for supporting a plunger attached to the reservoir during filling.

3. The reservoir filling aid of claim 1, wherein the supply vial adapter end further comprises

a needle for piercing both the supply vial and the reservoir, wherein the needle passes the medical serum contained within the supply vial into the reservoir to establish the fluid connection.

4. The reservoir filling aid of claim 3, wherein the needle is inaccessible when the supply vial adapter end is in a receiving configuration.

5. The reservoir filling aid of claim 1, wherein each of the plurality of flexible tabs have a flange at its distal end.

6. The reservoir filling aid of claim 5, wherein the flange at its distal end protrudes towards the center of the reservoir filling aid.

7. The reservoir filling aid of claim 5, wherein the flanges of each of the plurality of flexible tabs interface with a neck indentation of the supply vial.

8. The reservoir filling aid of claim 1, wherein the plurality of flexible tabs is comprised of rubber, plastic, or combination thereof.

9. The reservoir filling aid of claim 1, wherein the plurality of flexible tabs are positioned equidistant from each other.

10. The reservoir filling aid of claim 1, wherein the plurality of flexible tabs extend from the supply vial adapter end at angle.

11. The reservoir filling aid of claim 1, wherein the plurality of flexible tabs is comprised of three flexible tabs.

12. The reservoir filling aid of claim 1, wherein the plurality of flexible tabs has a circumference greater than the circumference of the supply vial adapter end while in a receiving configuration.

13. The reservoir filling aid of claim 1, wherein the medical serum is insulin.

14. The reservoir filling aid of claim 1, further comprising an adapter that fits on top of small supply vial, wherein the adapter fits within the plurality of flexible tabs of the supply vial adapter end of the reservoir filling aid.

15. The reservoir filling aid of claim 1, further comprising, a track that spirals down the interior of the supply vial adapter end; and

a bottom ring connecting the plurality of flexible tabs, wherein the bottom ring comprises a track interface that interacts with and travels along the spiral track.

16. A reservoir filling aid for a reservoir of a medical infusion pump, the reservoir filling aid comprising:

a main body for supporting the reservoir during the filling of the reservoir with a medical serum; and

a supply vial adapter end positioned at a first end of the main body and having an interior and an exterior, the supply vial adapter end comprising,

a track that spirals down the interior of the supply vial adapter end,

a plurality of flexible tabs extending from the supply vial adapter end for interfacing with a supply vial containing the medical serum, wherein the plurality of flexible tabs are connected together by a bottom ring, the bottom ring having a track interface that interacts with and travels along the track, and

a shaped ring for housing the plurality of flexible tabs and the supply vial while in a closed configuration to establish a fluid connection between the supply vial and the reservoir.

17. A method for filling a reservoir of a medical infusion pump using a reservoir filling aid, the method comprising:

positioning a reservoir of a medical pump in a main body of the reservoir filling aid;

engaging a supply vial containing a medical serum with an supply vial adapter end of the reservoir filling aid, wherein the supply vial is engaged with the supply vial

adapter end by a plurality of flexible tabs extending from the supply vial adapter end that connect with a neck indentation of the supply vial; and
sliding the engaged supply vial into a shaped ring of the supply vial adapter end.

18. The method of claim 17, further comprising, guiding a plunger attached to the reservoir along a plunger body of the reservoir filling aid.

19. The method of claim 17, further comprising, traveling a track interface affixed to the plurality of flexible tabs along a spiral track located within the supply vial adapter end.

20. The method of claim 17, wherein sliding the supply vial into shaped ring pierces the supply vial with a needle housed within the supply vial adapter end to establish fluid connection between the supply vial and the reservoir.

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