extend upwardly from a floor **654** of the clamping feature **650**. The distance between inner surfaces of the side walls **652** is selected so as to provide a frictional fit between a side wall of the nozzle subunit structure **610** so as to secure the structure **610** to the base **600** while at the same time permitting the structure **610** to be disengaged and easily removed from the base **600**. Accordingly, the distance between the inner surfaces of the side walls **652** is equal to or slightly greater than a width of the side wall of the structure **610** that is received within the retaining slot **660** between the side walls **652**.

[**0102**] Alternatively, the entire length of the rail **620** can have a "U-shaped" cross-section with a retaining slot **660** being formed between two side walls **652** that are spaced apart from one another. In this embodiment, the entire rail **620** serves as locking member instead of discrete clamping features **650** that are spaced along its length.

[**0103**] In the illustrated embodiment, each nozzle subunit structure **610** includes four nozzles **612** and four reservoirs (not shown) on the opposite side of the structure **610**. For purpose of illustration only, the nozzles **612** are illustrated as facing away from the clamping features **650** (such that the nozzles **612** are in a plane above the clamping features **650**); however, the structure **610** can be releasably interlocked with the base **600** such that the nozzles **612** face in the opposite direction. In other words, the reservoirs at the opposite end of the microfluidic channel face away from the clamping features **650** and are located in a plane above the clamping features **650**.

[**0104**] The nozzle subunit structures **610** are releasably interlocked with the base **600** by inserting the two opposing side walls **611** of one nozzle subunit structure **610** into retaining slots **660** of two adjacent rails **620** that face another with an open slot **640** therebetween. One side wall **611** can be inserted first and then the other side wall **611** can be inserted into the other retaining slot **660** or both side walls **611** can be aligned with the slots **660** and then the nozzle subunit structure can be pressed downward to effectively dispose the side walls **611** within the retaining slots **660**. Because both the nozzle subunit structure **610** and the base **600** are preferably formed of plastic materials and the dimensions of the structures are carefully selected, a frictional fit results when the side walls **611** are received within the retaining slots **660**. When the side walls **611** are received within the retaining slots **660**, the nozzles **612** and the reservoirs are received within the open slot **640** such that these elements are not obstructed by the base **600**. In other words, the reservoir openings are clear so that samples can be injected or otherwise disposed within the reservoirs and also the nozzle openings are clear so that the sample can be discharged.

[**0105**] In one embodiment, the base **600** is formed of a polymeric material and is manufactured using an injection molding process such that the base **600** is formed as a unitary structure. While a frictional fit is one manner of releasably interlocking the nozzle subunit structures **610** to the base **600**, a small amount of adhesive may be used at the interface between the side walls **611** and the clamping features **650** to ensure that the nozzle subunit structures **610** remain in place during various applications (when the base **600** may need to be turned upside down, etc.). Further, some applications require that a force be applied to the backside of the nozzle subunit structure **610** (e.g., due to actuation of a plunger in the reservoir, etc.) and therefore it is desirable for the nozzle subunit structures **610** to remain in place and not become dislodged from the base **600** when this force is applied. Any number of suitable adhesives can be used and it will be appreciated that one type of adhesive is a releasable adhesive that permits the nozzle subunit structure **610** to be removed from the base **600**.

[**0106**] **FIG. 19** illustrates another embodiment of base **600** that is very similar to the configuration illustrates in FIGS. **17-18**. In this embodiment, the clamping features **650** are configured to receive two side walls **611** of adjacent nozzle subunit structures **610**. Thus, the distance between the inner surfaces of the side walls **652** is selected so that the width of two side walls **611** placed in intimate adjacent contact with one another is about equal to or slightly less than the distance between the inner surfaces of the side walls **652**. In other words, the slot **660** is configured to receive and retain two side walls **611** of adjacent nozzle subunit structures **610**. To removeably couple the nozzle subunit structures **610** to the base **600** according to this embodiment, one side wall **611** is disposed within the slot **660** and then another side wall **611** of an adjacent nozzle subunit structure **610** is disposed in the slot **660** next to the other side wall **611**, thereby providing a frictional fit that results in both adjacent nozzle subunit structures **610** being held securely in place. Unlike the embodiment of FIGS. **17-18**, this embodiment requires that the two side walls **611** be disposed within one slot **660** to effectively couple each nozzle subunit structure to the base **600**.

[**0107**] It will be appreciated that other clamping members can be used besides the above described ones. For example, each clamping member can consist of a spring biased clip that receives side wall **611** in a frictional manner so as to retain and hold the side wall **611** in a releasable manner. The clip can consist of two opposing plates that are hingedly connected at one end so as to bias the plates toward one another. The side wall **611** is received at the opposite ends of the plates inserting the side wall **611** between the plates and then directing the side wall **611** between the plates toward the hinged end. The biasing action between the plates ensures that the side wall **611** is securely gripped between the plates, while at the same time can be removed by simply overcoming the biasing force and lifting the side wall **611** upward until it is free of the plates.

[**0108**] While the invention has been particularly shown and described shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

**1**. A microfluidic device comprising:

a body having a first surface and an opposing second surface, the body having at least one channel formed therein and extending through the body from the first surface to the second surface, wherein the channel has a reservoir section that is open at the first surface; and

at least one nozzle disposed along the second surface, the nozzle being in fluid communication with the channel