



(11) **EP 2 248 567 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
01.02.2012 Bulletin 2012/05

(51) Int Cl.:
A63H 23/10 (2006.01)

(21) Application number: **10156015.9**

(22) Date of filing: **16.05.2005**

(54) **Squirting toy**
Spritzspielzeug
Jouet à eau

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

(30) Priority: **16.09.2004 US 942326**

(43) Date of publication of application:
10.11.2010 Bulletin 2010/45

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
05750483.9 / 1 799 321

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Description

FIELD OF THE INVENTION

[0001] The present invention is a water squirting apparatus for use at play. More specifically, it is a soft floating tubular piston type squirt gun for use such as in a swimming pool or swimming area by participants in or adjacent to the water.

BACKGROUND AND OBJECTS OF THE INVENTION

[0002] Squirt guns are well known in many forms in the prior art. Numerous squirt guns and squirting toys are made and have been made over the years for use by persons while swimming in or standing adjacent to a swimming pool, which are adapted to quickly take in water from the swimming pool for squirting. One such toy is called Water Stix(TM) and is sold by Hearthsong Inc. This toy, representative of many such squirting toys, is basically comprised of a housing having a nozzle at its squirting end. A piston, which includes a graspable handle, is adapted to slide within the housing so that, when the nozzle end of the housing is submerged in the pool and the piston is pulled backwards, water is drawn into the housing through the nozzle. And when the piston is subsequently forced forwardly, that water is forced from the housing, through the nozzle, towards a target, in a powerful stream.

[0003] Additionally, many squirt guns of the prior art are constructed in a manner that entraps air and thereby inadvertently enables those guns to partially float in water. The degree of such buoyancy is relative to the amount of water that has been taken into the gun and the longevity of such buoyancy is relative to the amount of air leakage from the housing.

[0004] There are also floating toy "swimming noodles" in the prior art, which are made of resilient floating closed-cell polymer foam. These toys are used to provide buoyancy to the user while swimming. Because these toys are often left floating in the pool when not in use, their softness eliminates the safety threat that they would otherwise pose.

[0005] US 4,597,527 discloses a toy for receiving, storing, and squirting water and comprising a tubular housing defining a chamber for receiving and storing the water, said chamber comprising a cylinder and having a piston as means for expansion or contraction, wherein said piston sealingly engages said chamber's interiors cylindrical surface, said piston being adapted for longitudinal movement within and relative to said cylinder to alternately expand and contract the volume within the chamber. Said housing comprises a hole to allow communication between said chamber and the outside environment, whereby said toy is adapted to inhale the water through said hole while said hole is submerged during said expansion of said chamber, and said toy is adapted to exhale the water through said hole during said contraction

of said chamber. However, the squirting toy has the disadvantage that it does not float atop the surface of the water if it is filled with water.

[0006] It is therefore an object of the present invention to provide an improved squirting toy that floats fully atop the surface of the water, whether filled with or empty of water.

[0007] The object is solved by the toy with the features of claim 1.

[0008] Embodiments are defined in the dependent claims.

[0009] Advantages of the invention will be apparent upon a review of the following description and drawings of the invention, including the preferred embodiment thereof.

SUMMARY OF THE INVENTION

[0010] The present invention comprises a toy according to claim 1. A squirting toy is housed within a polyethylene (PE) closed cell foam shell. The closed cell shell is non-absorbing, so that the foam remains buoyant and keeps the gun afloat indefinitely. The foam is soft, so that the gun is not a safety hazard when left floating in a swimming pool. The squirting toy is comprised of a cylindrical housing and a piston that slides within to force water into or out of the housing via a hole therein. The foam shell of the preferred embodiment is similar in size and shape to a "swimming noodle", and is therefore more attractive to a child who is familiar with such.

[0011] A more complete understanding of the invention will be realized upon review of the following description and drawings of the preferred embodiment of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is an action view of a squirting toy according to the preferred embodiment of the invention showing water being expelled therefrom.

FIG. 2 is a cross-sectional view through the toy of **FIG. 1** in its retracted/empty state.

FIG. 3 is an enlarged partial section of the toy of **FIG. 1** floating in water,

FIG. 4 is an action cross-sectional view in showing the intake of water into the toy of **FIG. 1**, and

FIG. 5 is an action cross-sectional view in showing the expulsion of water from the toy of **FIG. 1**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] The Preferred embodiment of the invention is shown in FIGS. 1 through 5, where there is depicted a toy 100 for squirting a water stream 102, and which is adapted to float on the water surface 104.

[0014] The toy comprises a rigid tubular housing 106 that encloses a hollow cylindrical chamber 110. The forward end 112 of the tubular housing is closed except for a small hole 114. Piston 116 slides longitudinally within chamber 110 and is sealed against the cylindrical inner surface 120 of the chamber by o-ring 122, which is seated within groove 124 of the piston. The piston separates the chamber 110 into a forward portion 110A and a rear portion 110B. The piston 116 is rigidly connected to shaft 124 at the forward end 126 thereof. Slide bushing 128 supports shaft 124 at the rear end 130 of the tubular housing 106, while allowing longitudinal movement relative thereto. Handle portion 132 is rigidly connected to shaft 124 at the rearward end 134 thereof. Expansion of the handle portion 132 relative to the tubular housing 106, while hole 114 is below the water surface 104, as depicted in FIG. 4, causes water to be inhaled into the expanding forward chamber portion 110A, through hole 114. Subsequent retraction of the handle portion 132 relative to the tubular housing 106 causes that water to be exhaled through hole 114 in a powerful stream 102.

[0015] Tubular shell 138, preferably made of closed-cell polyethylene foam, surrounds tubular housing 106, to provide both a soft protective surface and buoyancy. Other materials may be substituted for polyethylene foam, such as ethylene vinyl acetate closed-cell foam.

[0016] Handle portion 132 also includes handle shell 140, which is preferable made of the same foam, and is rigidly connected shaft 124 by means of support bushings 144 and 146. Alternatively, other materials having sufficient buoyancy, softness, and water impermeability, such as polyurethane foam, may be used for both the tubular and handle shells. Or the shells could instead be replaced by blow molded or rotationally molded air-filled cylindrical bladders. When the handle portion is retracts as in FIG. 2, the shells create a similar appearance and feel to those of a common "swimming noodle".

[0017] It will be appreciated by those skilled in the applicable arts that the foregoing is merely one of many possible embodiments of the invention, and that the invention should therefore only be limited according to the following claims.

Claims

1. A toy for receiving, storing, and squirting water and comprising a tubular housing defining a chamber for receiving and storing the water, said chamber comprising a cylinder and having a piston as means for expansion or contraction, wherein said piston seal-

ingly engages said chamber's interior cylindrical surface, said piston being adapted for longitudinal movement within and relative to said cylinder to alternately expand and contract the volume within the chamber, said housing having a hole to allow communication between said chamber and the outside environment, whereby said toy is adapted to inhale the water through said hole while said hole is submerged during said expansion of said chamber, and said toy is adapted to exhale the water through said hole during said contraction of said chamber, **characterised in that** it further comprises an outer shell comprised of a soft material that has a buoyancy sufficient to keep the toy afloat in water when said expanded chamber is full of water, and wherein said shell substantially surrounds the tubular housing to provide both a soft protective surface and buoyancy.

2. The toy of claim 1 wherein said soft material is closed-cell polymer foam.
3. The toy of claim 1 wherein said material is closed-cell polyethylene foam.
4. The toy of claim 1 wherein said material is closed-cell ethylene vinyl acetate foam.
5. The toy of claim 1 wherein said outer shell is cylindrically shaped.
6. The toy of claim 5 wherein said soft material is closed-cell polymer foam.
7. The toy of claim 5 wherein said material is closed-cell polyethylene foam.
8. The toy of claim 5 wherein said material is closed-cell ethylene vinyl acetate foam.

Patentansprüche

1. Spielzeug zum Aufnehmen, Speichern und Verspritzen von Wasser, enthaltend ein röhrenförmiges Gehäuse, das eine Kammer zum Aufnehmen und Speichern des Wassers definiert, wobei die Kammer einen Zylinder aufweist und einen Kolben als Mittel zur Expansion oder Kontraktion hat, wobei der Kolben abdichtend an der zylindrischen Innenoberfläche der Kammer anliegt, wobei der Kolben für eine Längsbewegung im und relativ zum Zylinder eingerichtet ist, um das Volumen in der Kammer abwechselnd zu vergrößern und zu verkleinern, wobei das Gehäuse eine Öffnung aufweist, um die Verbindung zwischen der Kammer und der äußeren Umgebung zu ermöglichen, wobei das Spielzeug dafür eingerichtet ist, das Wasser durch die Öffnung einzusaugen, wobei die Öffnung während der Expansion der

Kammer untergetaucht ist, und das Spielzeug dafür eingerichtet ist, das Wasser während der Kontraktion der Kammer durch die Öffnung auszustoßen, **dadurch gekennzeichnet, dass** es ferner eine äußere Hülle enthält, die aus einem weichen Material besteht, das eine Auftriebskraft aufweist, die ausreichend ist, um das Spielzeug im Wasser schwimmend zu halten, wenn die vergrößerte Kammer voll Wasser ist, und wobei die Hülle das röhrenförmige Gehäuse im Wesentlichen umschließt, um sowohl eine weiche, schützende Oberfläche als auch Auftriebskraft bereitzustellen.

2. Spielzeug nach Anspruch 1, wobei das weiche Material geschlossenzelliger Polymerschaum ist.
3. Spielzeug nach Anspruch 1, wobei das Material geschlossenzelliger Polyethylenschaum ist.
4. Spielzeug nach Anspruch 1, wobei das Material geschlossenzelliger Ethylvinylacetatschaum ist.
5. Spielzeug nach Anspruch 1, wobei die äußere Hülle zylindrisch geformt ist.
6. Spielzeug nach Anspruch 5, wobei das weiche Material geschlossenzelliger Polymerschaum ist.
7. Spielzeug nach Anspruch 5, wobei das Material geschlossenzelliger Polyethylenschaum ist.
8. Spielzeug nach Anspruch 5, wobei das Material geschlossenzelliger Ethylvinylacetatschaum ist.

- 5 2. Jouet selon la revendication 1, dans lequel ledit matériau souple est une mousse de polymère à cellules fermées.
- 10 3. Jouet selon la revendication 1, dans lequel ledit matériau est une mousse de polyéthylène à cellules fermées.
4. Jouet selon la revendication 1, dans lequel ledit matériau est une mousse d'acétate de vinyle-éthylène à cellules fermées.
- 15 5. Jouet selon la revendication 1, dans lequel ladite enveloppe externe a une forme cylindrique.
- 20 6. Jouet selon la revendication 5, dans lequel ledit matériau souple est une mousse de polymère à cellules fermées.
- 25 7. Jouet selon la revendication 5, dans lequel ledit matériau est une mousse de polyéthylène à cellules fermées.
- 30 8. Jouet selon la revendication 5, dans lequel ledit matériau est une mousse d'acétate de vinyle-éthylène à cellules fermées.

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Revendications

1. Jouet pour recevoir, stoker et faire jaillir de l'eau et comprenant un boîtier tubulaire définissant une chambre pour recevoir et stoker l'eau, ladite chambre comprenant un cylindre et comprenant un piston comme moyen d'expansion ou de contraction, ledit piston s'engageant de manière étanche dans la surface cylindrique interne de ladite chambre, ledit piston étant conçu pour un mouvement longitudinal dans ledit et relatif au cylindre pour alternativement expandre et contracter le volume dans la chambre, ledit boîtier comprenant un orifice pour permettre une communication entre ladite chambre et l'environnement externe, ledit jouet étant conçu pour aspirer l'eau par ledit orifice lorsque ledit orifice est immergé pendant ladite expansion de ladite chambre, et ledit jouet étant conçu pour rejeter l'eau par ledit orifice pendant ladite contraction de ladite chambre, **caractérisé en ce qu'il** comprend en outre une enveloppe externe se composant d'un matériau souple qui possède une flottabilité suffisante pour faire flotter le jouet dans l'eau lorsque ladite chambre expan-

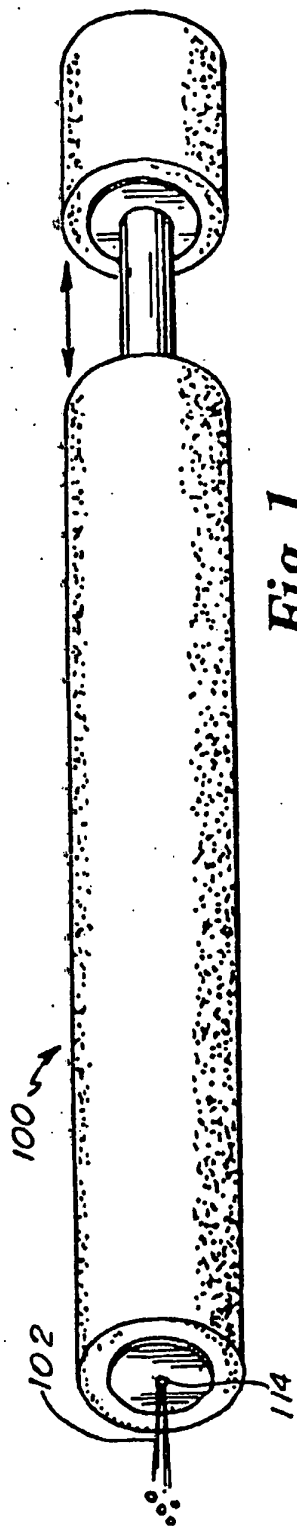


Fig. 1.

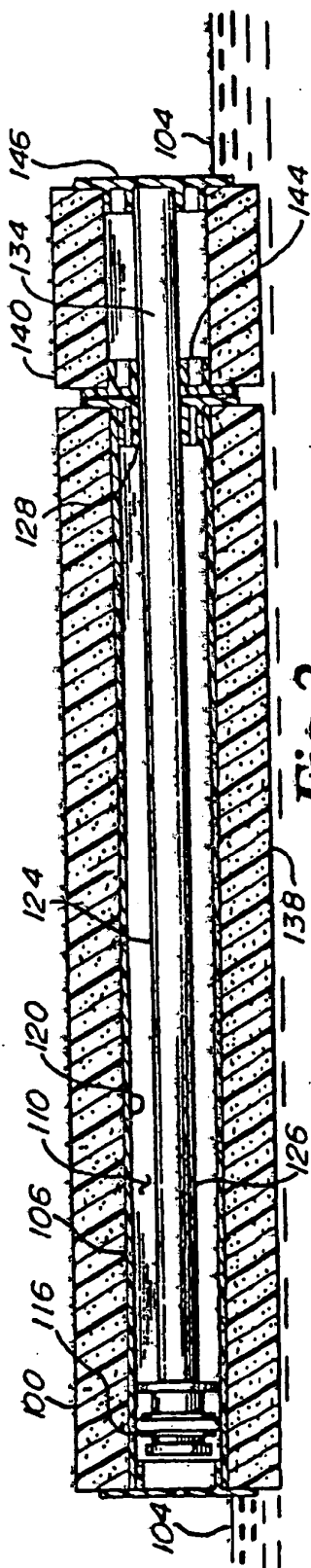


Fig. 2.

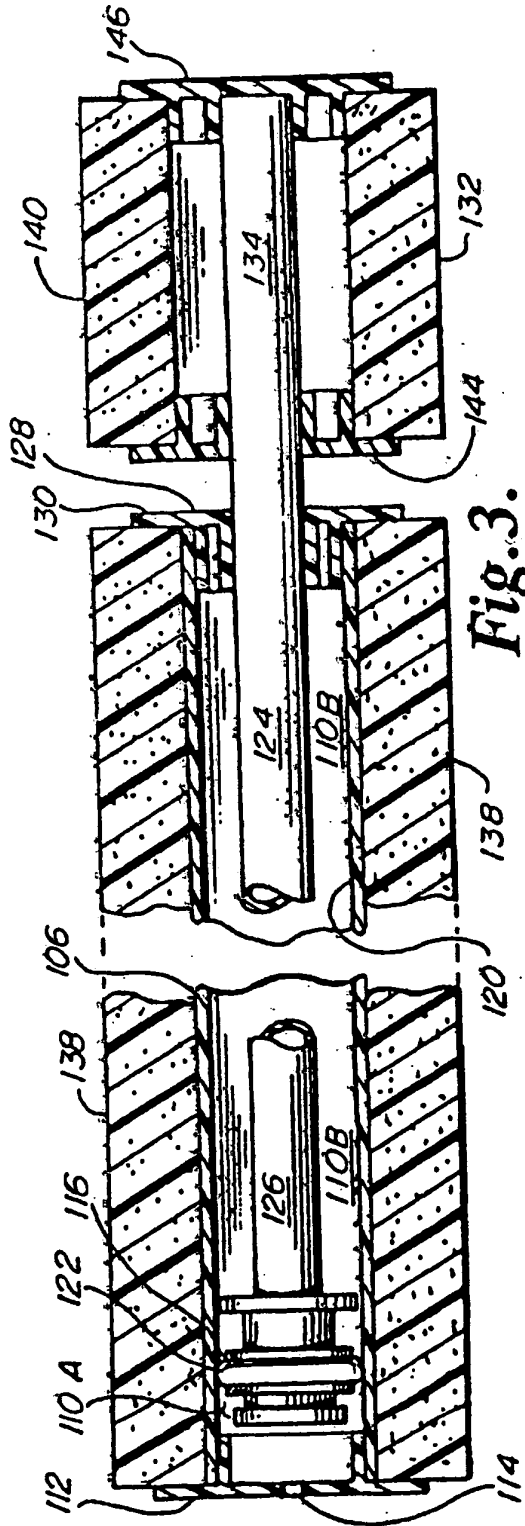


Fig. 3.

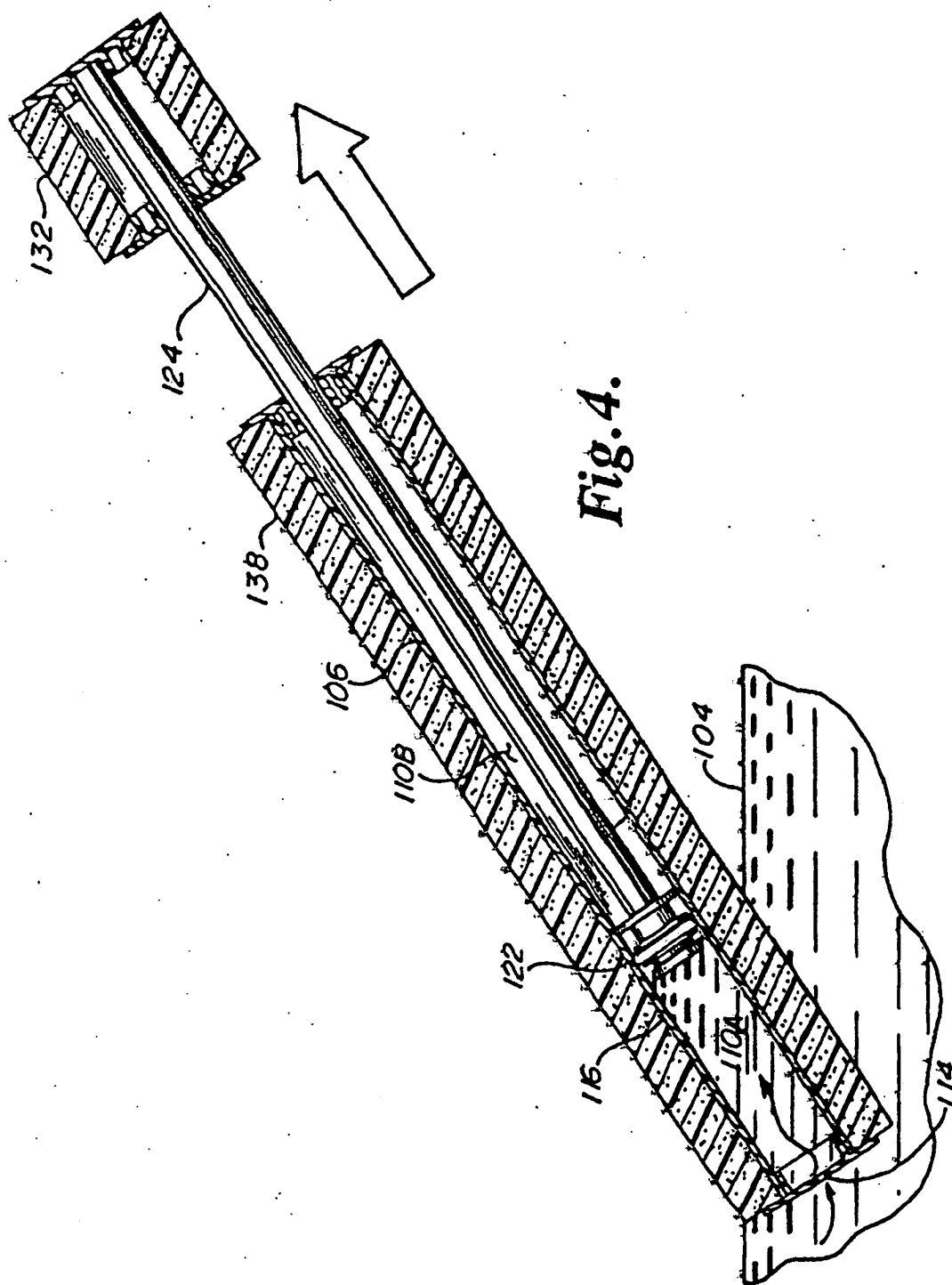


Fig. 4.

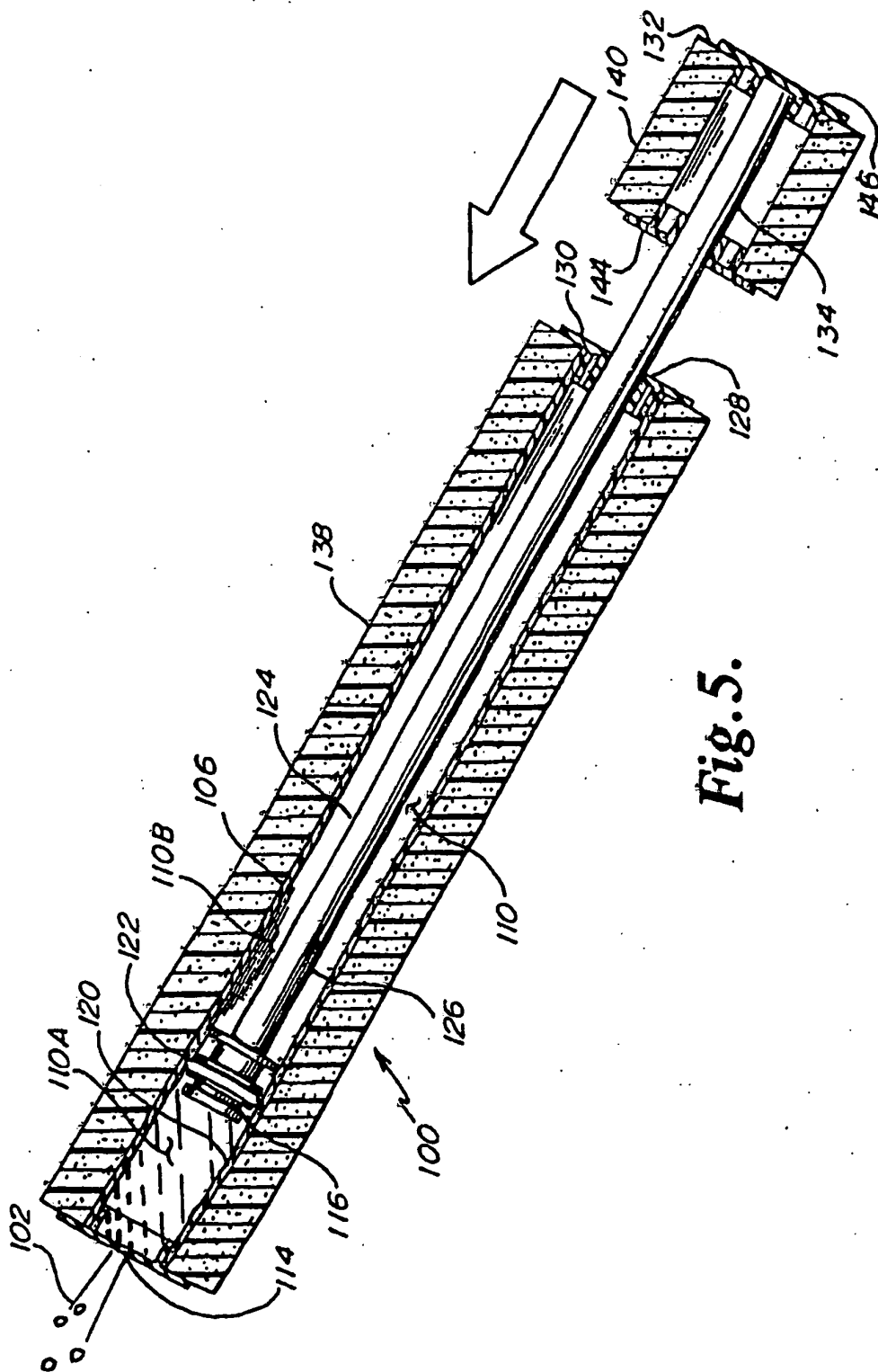


Fig. 5.

REFERENCES CITED IN THE DESCRIPTION

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