March 8, 1966 W. G. DORSEY ETAL 3,238,784

HOODED SEEDING AND SAMPLING NEEDLE

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Fig. 1.

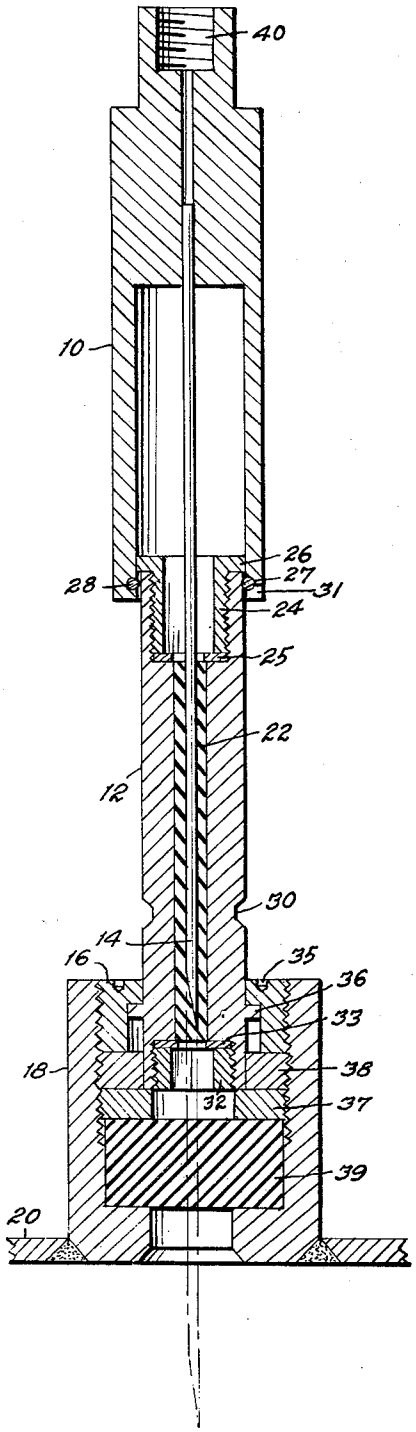



Fig. 2.

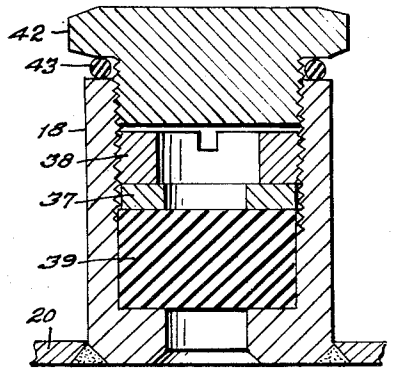
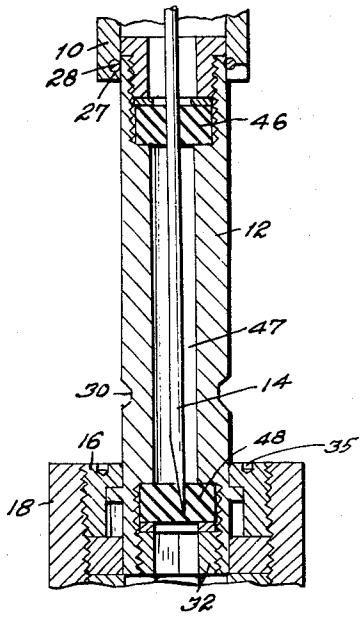



Fig. 3.




Inventors,
Warren G. Dorsey
Robert L. Willard
Lord D. Nickens
BY: Harry M. Saragovitz,
Edward J. Kelly &
Herbert Berl

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# HOODED SEEDING AND SAMPLING NEEDLE

Warren G. Dorsey, Robert L. Willard, and Lord D. Nickens, Frederick County, Md., assignors to the United States of America as represented by the Secretary of the Army

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2 Claims. (Cl. 73—425)
(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to us of any royalty thereon.

The present invention relates to needle-type apparatus for removably connecting one fluid container to another, or for connecting a tube to a container, or for similar applications. Such apparatus should be kept clean and germ-free, the needle should be protected when not in use, and germs or bacteria being transferred by the apparatus should not be permitted to escape or become contaminated by other germs or bacteria. The present invention is intended to improve such apparatus.

In the drawing:

FIG. 1 is a cross-section of the apparatus;

FIG. 2 is a cross-section of a cooperating connecting device;

FIG. 3 is a modification of the apparatus of FIG. 1.

In FIG. 1 an outer housing member **10** is telescopically associated with inner housing member **12** and has a hollow needle **14** rigidly connected thereto.

Inner housing **12** is detachably connected to the wall of a tank **20**, or such, by use of bushing **16** threadedly engaging upstanding collar **18**.

Resilient sealing member **22** is secured against movement at its upper end by plug **24** and washer **25**. Plug **24** has a flange **26** which acts as a stop for split ring **28**. Ring **28** is carried in a cooperating recess **27** in outer housing **10**. Ring **28** normally slides up and down on housing member **12** as the parts are telescoped, but flange-stop **26** prevents separation of housings **10, 12**. Outer housing member **10** may be telescoped downwardly to where ring **28** is just opposite annular recess **30** in inner housing **12**. This permits split ring **28** to be pressed inwardly by inserting a tool into slot (or slots) **31**. When ring **28** is pressed inwardly into recess **30**, it disengages recess **27** in housing **10** and thereby permits housing **10** to be removed from housing **12**.

Sealing member **22** is held in place at its lower end by plug **32** and washer **33**. Recesses **35** receive a tool to screw bushing **16** tightly against flange **36**. Thus the lower end of housing **12** can be clamped against sealing gasket **37**. Gasket **37** is held in place by nut **38** and **37**, **38** hold diaphragm **39** seated in collar **18**.

A conduit, preferably a flexible tube, may be connected

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to the top end of housing **10** at **40** for transfer of fluid to, or from, a remote location.

In use, fluid may be transferred thru the assembly and hollow needle **14** from **40** to tank **20**, or reversely, by pressing housing member **10** downwardly to carry needle **14** thru diaphragm **39** as illustrated in broken lines. When the transfer operation is completed, housing **10** is raised to thereby withdraw needle **14**. Diaphragm **39**, of soft material, flows together to plug and seal the hole formerly occupied by the needle. With needle **14** withdrawn, bushing **16** is removed from collar **18** and thus housings **10, 12** may be removed. Noting FIG. 2, a plug **42** and O-ring gasket **43** may be used to close collar **18** against entry of foreign material.

It will be noted that needle **14**, when withdrawn, is sealingly protected by resilient member **22**. Thus, foreign matter cannot contaminate the needle, or contaminants on the needle may not contaminate surrounding objects or injure personnel.

FIG. 3 is similar to FIG. 1 except that two gasket seals **46, 48** replace seal **22** of FIG. 1. This leaves an open but sealed space **47** into which hollow needle **14** may retract as member **10** is telescoped upwardly.

We claim:

**1.** A needle assembly comprising; a first housing member, a second housing member telescopically connected to said first hosuing member, a needle fixedly secured to the first housing member, sealing means in sealing relationship with said second housing member and in sliding sealing contact about said needle, and means for detachably connecting said second housing member to an internally threaded collar comprising a sealing diaphragm substantially in axial alignment with said needle, a gasket engaging said diaphragm, an externally threaded nut engaging said gasket and adapted to screw into the internally threaded collar, a flange on said second housing member, and an externally threaded bushing engaging said flange and adapted to screw into the internally threaded collar for sealingly securing the parts together.

**2.** Apparatus as set forth in claim **1** and a plug and washer secured in said second housing member securing said sealing means in said second housing member.

**References Cited by the Examiner**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,627,857 | 2/1953 | Marcelli | 141—130 X |
| 2,839,152 | 6/1958 | Tracht. | |
| 3,094,155 | 6/1963 | Tarmasso | 141—329 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 906,711 | 5/1945 | France. |

LOUIS R. PRINCE, *Primary Examiner.*

S. C. SWISHER, *Assistant Examiner.*