

[54] **VACUUM CURETTAGE DEVICE**

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[58] Field of Search **128/276, 277, 278, 304**

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[57]

ABSTRACT

A vacuum curette including an integral reservoir supported from the outlet end of the curette. The reservoir itself is provided with a vacuum outlet to which the inlet end of a flexible vacuum hose may be connected and the interior of the reservoir includes a partition forming filter body through which the outlet end of the curette opening into the reservoir extends. Also, the base end of the curette from which the reservoir is removably supported includes a vacuum bleed or break opening between the vacuum outlet and the partition defining filter body.

9 Claims, 3 Drawing Figures

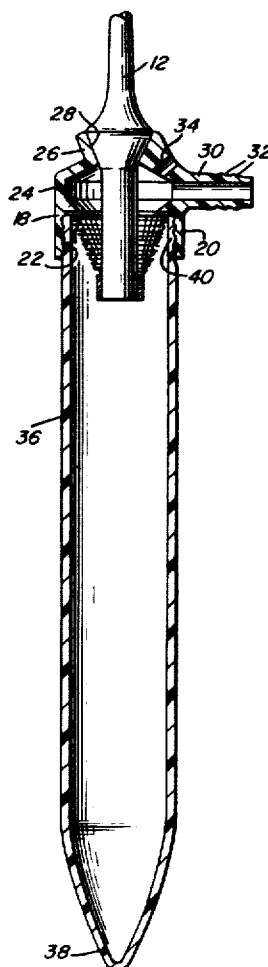


Fig. 1

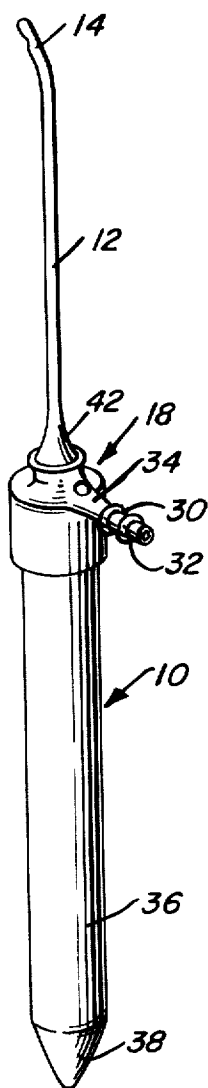


Fig. 2

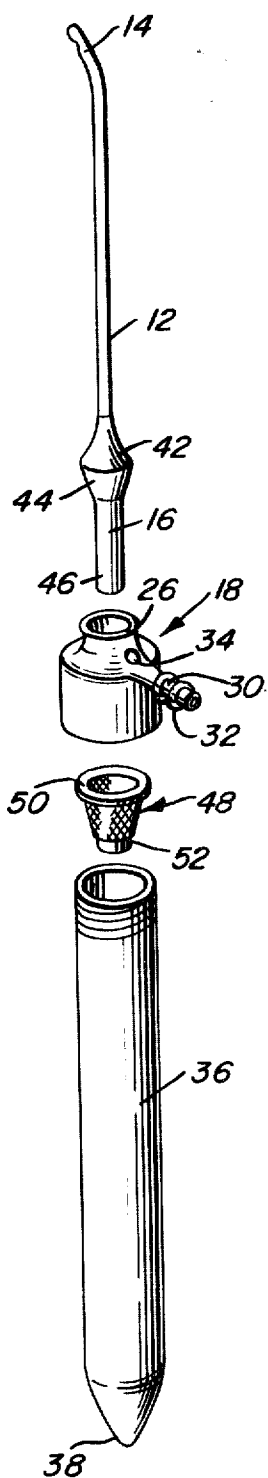
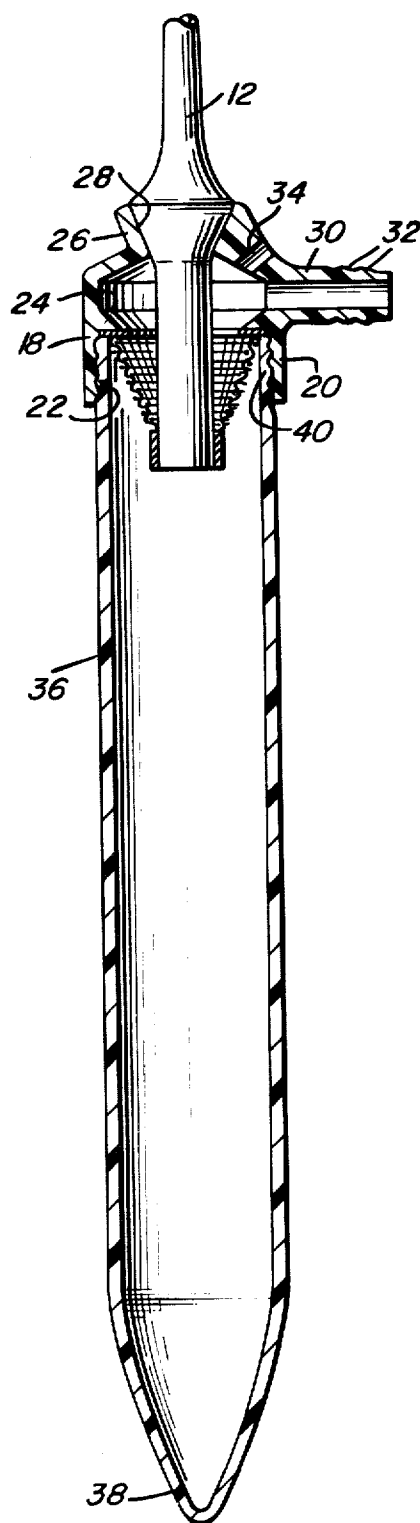


Fig. 3



VACUUM CURETTAGE DEVICE

The vacuum curettage device of the instant invention has been specifically designed for use in vacuum curettage of the uterus. It is to be used with constant suction applied from an outside vacuum source of at least 20 inches of mercury. The vacuum curettage device comprises a somewhat conventional vacuum curette having an inlet end of the usual configuration and an outlet end including a threaded coupling from which a mating threaded end of a reservoir is supported. The interior of the inlet end of the reservoir includes a centrally apertured partition defining filter through which the outlet end of the curette extends and the fitting itself includes a vacuum outlet nozzle and an air bleed passage opening to the exterior of the fitting downstream from the partition defining filter. With the outlet nozzle communicated with a source of vacuum air is drawn through the inlet end of the curette, out the outlet end thereof into the reservoir and through the outlet nozzle into the associated vacuum line, when the air bleed opening is covered by the user's finger. In this manner, material drawn through the curette into the reservoir is trapped therein and may not pass through the filter into the vacuum line associated with the outlet nozzle of the fitting of the curette. Also, when the user's finger is removed from the bleed opening, which bleed opening is closely adjacent the vacuum outlet nozzle of the fitting, the vacuum supplied to the inlet end of the curette is relieved and therefore the user of the vacuum curettage device may readily control the vacuum supplied to the tip of the curettage device. Also, the fitting carried by the outlet end of the curette may be formed either integrally with the outlet end of the curette or removably supported therefrom.

The main object of this invention is to provide a vacuum curettage device that may be readily selectively actuated by the user at will while the curettage device is continuously operatively associated with a suitable source of vacuum.

Another object of this invention is to provide a vacuum curettage device which will be capable of retaining all materials drawn thereinto for subsequent testing, if desired.

A final object of this invention is to provide a vacuum curettage device in accordance with the preceding objects and which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is a perspective view of the vacuum curettage device of the instant invention;

FIG. 2 is an exploded perspective view of the vacuum curettage device; and

FIG. 3 is an enlarged fragmentary longitudinal sectional view of the vacuum curettage device.

Referring now more specifically to the drawings, the numeral 10 generally designates the vacuum curettage device of the instant invention. The device 10 includes a more or less conventional vacuum curette 12 includ-

ing an inlet tip end portion 14 and a base discharge end portion 16. The device 10 further includes a fitting referred to in general by the reference numeral 18. The fitting 18 is generally cylindrical and includes a large diameter end portion 20 internally threaded as at 22 and provided with a circumferential shoulder 24 a spaced distance from the terminal end of the large diameter end portion 20. The end of the fitting 18 remote from the large diameter end portion 20 is diametrically reduced as at 26 and includes a flared axial opening 28. In addition, the fitting 18 includes a lateral outlet nozzle 30 provided with axially spaced circumferential ridges 32 over which the inlet end of a resilient and flexible vacuum line (not shown) may be frictionally secured. It is to be understood that such a vacuum line will have its outlet end communicated with a suitable source of vacuum (not shown). Finally, the fitting 18 includes an air bleed opening or vacuum spoiling opening 34 closely adjacent the inlet end of the discharge neck 30.

The device 10 further includes a tubular reservoir 36 closed at one end as at 38 and open at its other end. The open other end of the reservoir 36 is externally threaded as at 40 and removably threadably engaged in the internally threaded large diameter end portion 20 of the fitting 18.

The base or outlet end 16 of the curette 12 includes a diametrically enlarged portion 42 defining an outer conical seating surface 44 tapering toward the cylindrical terminal end 46 of the base or outlet end 16 of the curette 12. Also, the curette 10 includes a frusto-conical filter referred to in general by the reference numeral 48 and including an annular sealing washer 50 at its major diameter end portion and a cylindrical sealing sleeve 52 at its minor diameter end.

In operation, the filter 48 is placed within the open inlet end of the reservoir 36 in the manner illustrated in FIG. 3 of the drawings with the annular sealing washer 50 abutted against the outer end face of the open end of the reservoir 36. Then, the reservoir 36 is threaded into the large diameter end portion 20 of the fitting 18 until the sealing washer 50 is clamped between the end face of the reservoir 36 and the opposing surfaces of the shoulder 24. Then, the base or outlet end 16 of the curette 12 is inserted through the opening 28 until the cylindrical terminal end 46 is snugly received in the sealing sleeve 52 and the sealing surface 44 is seated in the flared opening 28. Thereafter, the inlet end of the vacuum line is removably secured over the outlet nozzle or discharge nozzle 30 and the curettage device 10 is ready to be used.

During insertion of the tip inlet end 14 of the curette 12 the air bleed opening 34 is left uncovered so as to prevent the vacuum supply communicated with the discharge nozzle 30 from being effective at the tip inlet end 14. Thereafter, after the curette has been inserted, the user, when vacuum is desired at the tip of the curette, closes the vacuum bleed opening or vacuum spoiler opening 34 with one finger, whereby the vacuum source communicated with the discharge nozzle 30 will be effective at the tip of the curette 12. Of course, when it is desired to relieve the vacuum at the tip of the curette 12, the user's finger may be removed from the bleed opening 34.

As material is drawn into the curette during use such material passes through the curette and directly into the reservoir 36. The air passing through the curette

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and into the reservoir 36 then passes through the filter 48, which filter may be of any suitable material, and then out through the nozzle 30. Of course, any material drawn into the reservoir 36 through the curette 12 is prevented from being discharged through the nozzle 30 by the filter 48.

The curette 12 and reservoir 36 may be constructed of any suitable material such as stainless steel (long lasting), plastic (disposable) or a combination thereof. Further, if it is desired, the curette 12 may be constructed as an integral portion of the fitting 18. The filter 48 may have its sealing washer and sleeve portions 50 and 52 constructed of any suitable substance such as a plastic with a low coefficient of friction and the filtering portion of the filter 48 may be constructed of nylon or other suitable material.

The reservoir, when manufactured in such a manner that its outer dimensions will fit the commonly available laboratory centrifuges, may be used, together with the filter assembly and an appropriate threaded stopper or top, for the transportation of the material obtained by the use of the complete vacuum-curette assembly, and for the direct processing of such materials by centrifugal separation of the contents, without any further manipulations, thus diminishing the loss of parts of the said materials, as well as decreasing the labor involved in such separation and preparation for diagnostic procedures.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A vacuum curettage device comprising a curette including an elongated tubular shank having an outer tip inlet at one end and a discharge end portion at its other end, a hollow fitting having first and second opposite sides, the discharge end portion of said shank being supported from and projecting through said first side of said fitting into the latter, said second side of said fitting having a combined inlet and outlet opening formed therein with which said discharge end portion is at least generally aligned, said fitting including a vacuum air flow outlet opening adapted to be communicated with a suitable source of vacuum, a reservoir re-

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movably supported from said fitting in communication with and closing said combined inlet and outlet opening, and a filter assembly including an outer periphery sealed relative to said combined inlet and outlet opening and a central opening formed therethrough with which said discharge end portion is registered and engaged in at least reasonably good sealed engagement therewith.

2. The combination of claim 1 wherein said fitting defines a third opening opposing the first mentioned opening and said discharge end portion of said shank extends through said third opening in at least reasonably good fluid tight sealed engagement with said fitting.

3. The combination of claim 2 wherein at least the outer portion of said third opening defines an outwardly flared seat, said discharge end portion of said shank including an enlargement tapering toward said other end of said shank and which is seatingly engaged in said seat.

4. The combination of claim 1 including a small diameter vacuum break opening formed in said fitting adjacent the inner end of said vacuum air flow outlet opening and adapted to have its outer end covered by a finger of a user of said device, whenever desired.

5. The combination of claim 4 wherein said fitting defines a third opening opposing the first mentioned opening and said discharge end portion of said shank extends through said third opening in at least reasonably good fluid tight sealed engagement with said fitting.

6. The combination of claim 5 wherein at least the outer portion of said third opening defines an outwardly flared seat, said discharge end portion of said shank including an enlargement tapering toward said other end of said shank and which is seatingly engaged in said seat.

7. The combination of claim 1 wherein said reservoir is threadedly engaged with the portions of said fitting disposed about said combined inlet and outlet opening.

8. The combination of claim 7 wherein the outer periphery of said filter assembly is clamped between said reservoir and portions of said fitting defining an inner portion of said combined inlet and outlet opening.

9. The combination of claim 8 wherein said filter assembly, between said outer periphery and said central opening, comprises a hollow frusto-conical foraminous filter body.

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