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CURETTE DEVICE

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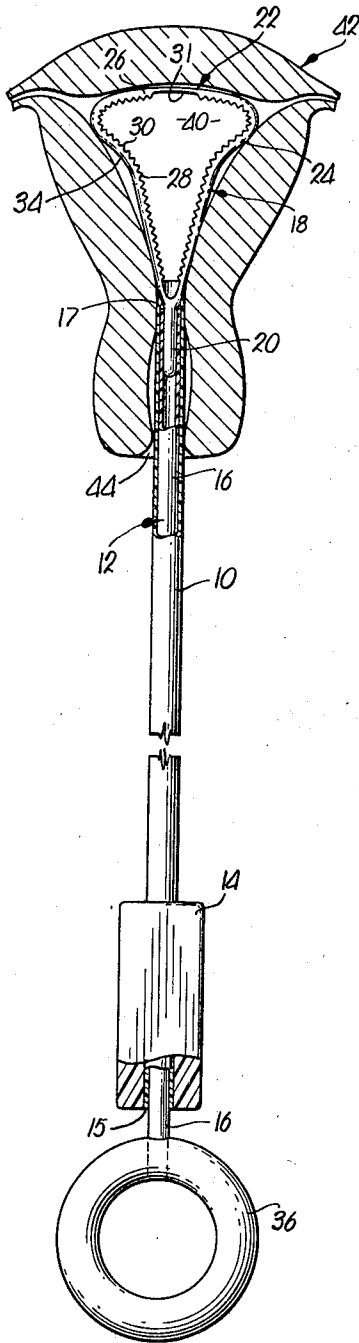


Fig. 1.

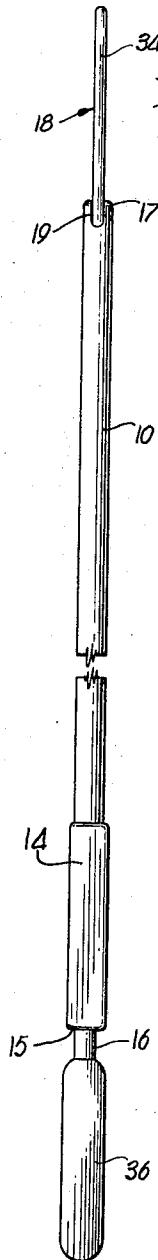


Fig. 2.

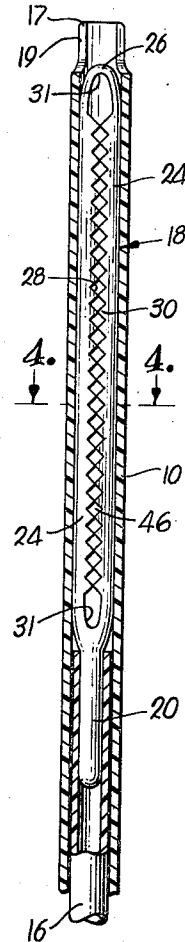


Fig. 3.

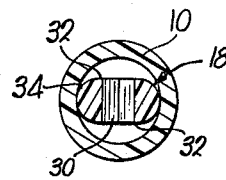


Fig. 4.

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CURETTE DEVICE

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2 Claims

ABSTRACT OF THE DISCLOSURE

A medical instrument for use in biopsy in the form of a curette for obtaining tissue samples from the inner uterine walls having an elongated injection tube which reciprocally receives therein a device presenting an elongated stem with a pair of tissue-gripping fingers on one end normally housed in the tube at one end of the latter. The fingers are interconnected at their ends remote from the stem and lie in side-by-side relationship when housed within the tube, but when expelled therefrom while within the uterus present a loop with each finger having a pair of opposed edges for engagement with the wall and an innermost, irregular tissue-gripping surface. Tissue is progressively gripped and removed from the uterine wall as the fingers are brought together and rehoused within the tube in side-by-side relationship by withdrawing the stem from the opposite end of the tube.

This invention relates to a medical instrument in the form of a curette and, more particularly, to a curette for removing tissue from the uterus for diagnostic purposes.

It is the primary object of my invention to provide a curette adapted to remove a relatively large portion of tissue from the walls of the uterus, the curette being collapsible to facilitate entry and removal thereof through the cervix opening of the uterus whereby painful dilation of the latter is obviated, to the end that anesthetic is not required.

Another object of the instant invention is to provide a curette having novel tissue-engaging structure for efficiently scraping the tissue and gathering the same into a retained mass for removal from the uterus.

In the drawing:

FIGURE 1 is a fragmentary, front elevational view of a curette made pursuant to the teachings of my invention, showing the same in operation, parts being broken away and in section for clarity;

FIG. 2 is a fragmentary, side elevational view of the curette;

FIG. 3 is a fragmentary, enlarged, substantially central, vertical, cross-sectional view thereof; and

FIG. 4 is an enlarged, cross-sectional view taken along line 4—4 of FIG. 3.

The curette of the present invention broadly comprises an injector tube 10 which telescopically receives a device 12 for relative reciprocation therebetween. A substantially flat finger piece 14 is rigidly secured to tube 10 adjacent end 15 of the latter, the other end 17 being rounded and having a pair of opposed slots 19 therein.

Device 12 includes a tubular stem 16 joined at one end to a pair of elongated fingers 18 which merge into a shank 20 secured within stem 16. Fingers 18 are formed of flexible, self-sustaining material such as polyethylene, whereby a substantially triangular, open loop 22 is presented when fingers 18 are disposed outwardly of tube 10. Fingers 18 thereby present a pair of stretches 24 converging toward stem 16 and a bight 26 remote from the stem and spanning the distance between stretches 24 in interconnecting relationship thereto.

The proximal innermost surfaces 28 of fingers 18 are serrated to present a plurality of transversely extending

teeth 30, there being nonserrated portions 31 of surface 28 adjacent stem 16 and at the transversely central area of bight 26. Each innermost surface 28 terminates in opposed, parallel, longitudinal edges 32 which merge with corresponding arcuate outer surfaces 34 of fingers 18. The proximal edges 32 of respective surfaces 28 lie in a common plane extending tangentially of loop 22 and normally of teeth 30. A grasping ring 36 is secured to stem 16 remote from loop 22 and is disposed exteriorly of finger piece 14.

The present invention is adapted for insertion into a body cavity for removal of tissue therefrom for diagnostic purposes. The present curette is especially suitable for removing tissue from a wall 40 of the uterus 42, the latter having a restricted cervix opening 44. Wall 40 represents the rear wall of uterus 42, it being appreciated that a front wall (not shown) normally engages wall 40 in face-to-face relationship.

To prepare the curette for insertion into uterus 42, ring 36 is shifted to draw fingers 18 into side-by-side relationship within tube 10 as shown in FIG. 3. The nonserrated portions 31 of surfaces 28 prevent binding of the collapsed fingers and thus facilitate flexing of the same into the housed position.

Rounded end 17 is inserted through cervix opening 44 into a position adjacent wall 40. Ring 36 is then shifted toward end 17 to expel fingers 18 from tube 10 and slidably shift the same through slots 19. Stretches 24 flex outwardly along the walls of the uterus to reform loop 22 which is positioned in parallel relationship to the walls. Loop 22 is moved into tight engagement with one of the walls, such as wall 40, with proximal edges 32 initially engaging the wall. Tube 10 is manipulated to scrape edges 32 along wall 40 to loosen tissue therefrom, it being recognized that tube 10 and loop 22 are maintained in interlocked relationship at slots 19 so that scraping may be effectively accomplished.

Ring 36 is then shifted away from end 17 to progressively draw fingers 18 into tube 10, with teeth 30 gripping tissue therebetween as fingers 18 are brought into side-by-side engagement. Teeth 30 effectively scrape tissue from the wall since edges 32 efficiently gather the tissue into a retained mass between fingers 18. Teeth 30 are preferably aligned for opposed apex-to-apex engagement when the fingers are drawn into side-by-side relationship whereby a plurality of spaces 46 are presented to receive the tissue scraped from the wall of the uterus. The curette is then easily withdrawn through cervix opening 44 and the tissue removed from fingers 18 for analysis.

The collapsing feature of the above described curette provides the combined advantages of facilitating entry and withdrawal of the curette through the restricted cervix opening, while additionally providing tissue gripping action for effectively scraping and retaining tissue. The expansion of loop 22 within the uterus provides structure for removing a relatively large amount of tissue in a single sequence of operation, while not requiring dilation of the uterus which is very painful and normally requires an anesthetic. The curette could, of course, be adapted for use in other body cavities as needed.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A medical instrument for intrauterine biopsy comprising:

- an injection tube; and
- a device reciprocable within the tube and including a stem having a pair of elongated fingers on one end thereof normally housed in the tube at one end of the latter with said fingers in side-by-side relationship, said fingers each having a pair of opposed edges and an innermost, irregular tissue-gripping surface,

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said innermost surfaces comprising transverse serrations spanning the distance between said edges, the ends of the fingers proximal to the stem being joined to the latter,
 the ends of the fingers remote from the stem being interconnected,
 the fingers being of flexible, self-sustaining material forming an open loop when the stem is shifted in the tube toward one end of the latter expelling the fingers outwardly of said end of the tube,
 said fingers presenting in the open loop a pair of stretches converging toward the stem and a bight remote from the stem and spanning the distance between the stretches in interconnecting relationship thereto,
 whereby the fingers are progressively brought together into side-by-side relationship with tissue gripped between said surfaces when the curette is placed in use by shifting the stem away from said end of the tube to close the loop as the fingers are rehousing within the tube, said serrations being transversely triangular, presenting elongated apexes between said edges, said serrations of the corresponding fingers being aligned for opposed apex to apex engagement when said fingers are housed in the tube,
 said device extending at its opposite end outwardly beyond the opposite end of the tube.

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2. The invention of claim 1, said tube having opposed slots at one end thereof for slidably receiving corresponding stretches when the fingers are expelled.

References Cited

UNITED STATES PATENTS

3,404,677	10/1968	Springer	128—2
618,521	1/1899	Palmer	128—304
651,395	6/1900	Stapp	128—304
654,763	7/1900	Russell	128—304
687,112	11/1901	Bowker	128—304
752,356	2/1904	Pilling	128—304
1,092,914	4/1914	Jones	128—304
2,397,823	4/1946	Walter	128—321
2,994,321	8/1961	Tischler	128—2
3,088,454	5/1963	Shute	128—2
3,342,175	9/1967	Bulloch	128—2

OTHER REFERENCES

Surgical Instruments, 20th ed., Kny-Sheerer Co., Catalogue, 1915, pp. 5083—5085 relied on.

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