

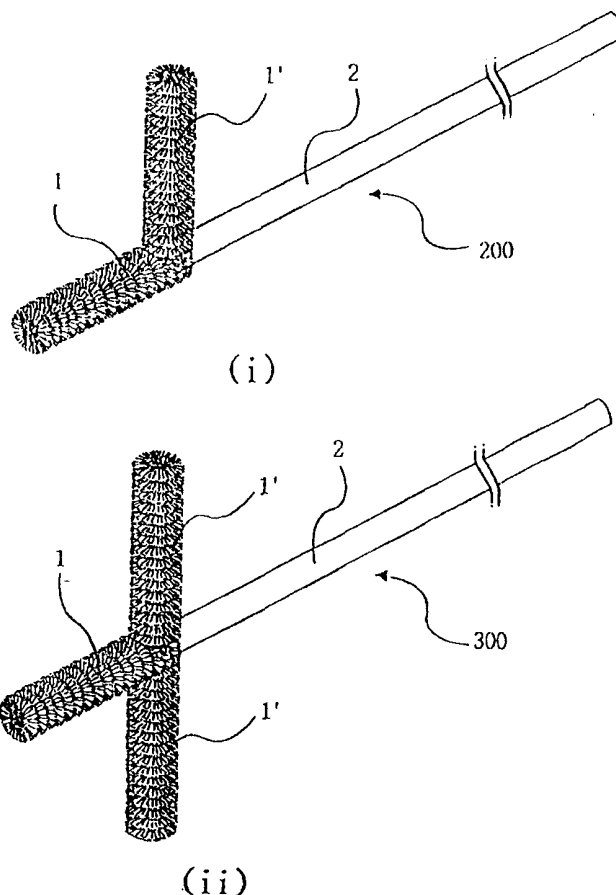


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(54) Title: STRUCTURE OF BRUSH FOR EXAMINING UTERINE CERVICAL CANCER**(57) Abstract**

Provided with a brush for use in an examination method of uterine cervical cancer which has a brush part formed on a 15 cm-length and 2.5 mm-diameter soft plastic grip, the brush including: a 1.2 cm-length screw wire being provided with the 5 mm-diameter brush part formed thereon, wherein the screw wire with the brush part is inserted lengthwise in the grip; and a 5 mm-diameter side brush part being formed integrally with the brush part on either side or both sides of the 2 cm-length screw wire.



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STRUCTURE OF BRUSH FOR EXAMINING UTERINE CERVICAL CANCER

BACKGROUND OF THE INVENTION

Field of the Invention

5 The present invention relates to a structure of an uterine cervical cancer examining brush.

Background of the Related Art

 Uterine cervical cancer is one of the most prevailing women's diseases that reflect underdevelopment of a nation and incur a serious loss to women in social and economical
10 aspects. An effective means for reducing uterine cervical cancer is a selective examination method. For several scores of years, the uterine cervical cell examination method has been considered as a most effective and economical selective examination method.

 The uterine cervical cell examination method, which is developed by Papanicolaou in 1928, has been employed as a mass examination method on a government scale in every
15 countries of North America and Europe. Due to the selective examination method performed for the past scores of years, the occurrence rate of uterine cervical cancer has been dramatically reduced as well as a decrease in the death rate caused by that disease (See., Kosa, 1989; Richart, 1959; Burns et al., 1969).

It is however is reported that approximately 6,000 women a year newly suffer from the uterine cervical cancer in Korea where the selective examination method has been performed for scores of years, which fact suggests that the selective examination method for the uterine cervical cancer leaves much to be improved (Ref. the Ministry of Health & society, 1993).

Particularly, it is also reported that women who suffer from the uterine cervical cancer are still found out even in the British Columbia of Canada where the mass examination method rate for the uterine cervical cancer reaches 100 percents. According to the report, it results from a high false-negative rate for the uterine cervical cancer in the uterine cervical cell examination method, which comes up to 6-55% (See. Soost et al., 1991; Sherman et al., 1994; Orr & Shingleton et al., 1995; Coppelson & Brown, 1974; Fetherson, 1983; and Maggi et al., 1989).

Such a high incorrect diagnosis rate of the selective examination method for the uterine cervical cancer is considered to be caused by a disadvantageous method of collecting a test sample from a cervix. So many models have been developed to overcome the above problem but there still exists no effective solution for the problem yet.

The uterine cervix is divided into two parts, endocervix and exocervix. Although the uterine cervical cancer primarily occurs at a joining region between the endocervix and the exocervix, the related art tools for an examination method of the uterine cervical cancer are designed to separately examine the endocervix and the exocervix. This troublesome processes

for examining the two parts of the cervix separately cause incorrect diagnoses.

There are several types of tools used to collect pathic cells from a cervix in the medical examination method of the uterine cervical cancer. But, the related art tools leave much to be desired to collect pathic cells from the entire part of the cervix. For example, an I-shaped brush patented by Medscan Co. in Sweden is widely used. As illustrated in FIGs. 1 to 4, an I-shaped brush 100 includes a 5mm-diameter brush part 1 formed around a 2cm-length screw wire 3 with a 15cm-length and 2.5mm-diameter soft plastic gripe 2. The I-shaped brush 100 is however designed to be used for endocervix 7 only and often fails to collect pathic cells of exocervix 6 where the uterine cervical cancer occurs most than other regions of the cervix. This causes a high incorrect diagnosis rate.

SUMMARY OF THE INVENTION

Accordingly, an object of the present invention is to provide a brush structure for use in the medical examination method for the uterine cervical cancer, designed to collect pathic cells from both endocervix and exocervix by a single operation, thereby making it possible to have an accurate acknowledge of the location of the cancer as well as improving incorrect diagnosis rate of the related art I-shaped brushes.

To achieve the above object of the present invention, there is provided a brush for use in an examination method of the uterine cervical cancer which includes a brush part 1 formed on a 15cm-length and 2.5mm-diameter soft plastic gripe 2. The brush further includes: a

1.2cm-length screw wire 3 being provided with the 5mm-diameter brush part 1 formed thereon, wherein the screw wire 3 with the brush part 1 is inserted lengthwise in the gripe 2; and a 5mm-diameter side brush part 1' being formed integrally with the brush part 1 on either side or both sides of the 2cm-length screw wire 2.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the drawings:

In the drawings:

FIG. 1 is a perspective view of a related art I-shaped brush;

FIG. 2 is a vertical sectional view of the related art I-shaped brush;

FIG. 3 shows a medical examination method for an endocervix with the related art I-shaped brush;

FIG. 4 shows a pathic cell collected with the related art I-shaped brush and transferred on a slide;

FIG. 5 is a perspective view of (i) an L-shaped brush and (ii) a T-shaped brush according to the present invention;

FIG. 6(i) shows a medical examination method for both an endocervix and an exocervix with the L-shaped brush shown in FIG. 5;

FIG. 6(ii) shows a medical examination method for both the endocervix and the exocervix with the T-shaped brush shown in FIG. 5; and

FIG. 7 shows pathic cells on a slide, extracted from the exocervix on the left side and from the endocervix on the right side, wherein (i) pathic cells are collected with the L-shaped
5 brush and (ii) pathic cells with the T-shaped brush.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Hereinafter, the present invention will be described in detail with reference to the accompanying drawings.

FIG. 5 is a perspective view of a brush for use in the medical examination method of
10 uterine cervical cancer, wherein the brush has a side brush part 1' formed on either side or both sides of the brush. FIG. 6(i) shows a medical examination method for both an endocervix and an exocervix with an L-shaped brush according to the present invention, and FIG. 6(ii) shows a medical examination method for both the endocervix and the exocervix with a T-shaped brush according to the present invention.

15 Referring to FIG. 6, the brush is taken to pathic cells at the endocervix 7 and the exocervix 6 that protrudes from the endocervix 7, with a gripe 2 being turned clockwise or counter clockwise.

Now, reference will be made to the effects of the present invention L-shaped or T-shaped brush that is useful to collect pathic cells from both the endocervix 7 and the
20 exocervix 6.

The pathic cells taken from the exocervix 6 are placed on the left side of a slide 400 with the pathic cells from the endocervix 7 being on the right side of the slide 400. This makes it possible to examine the pathic cells of the exocervix 6 separately from the pathic cells of the endocervix 7.

5 Compared with the related art I-shaped brush, the present invention L-shaped or T-shaped brush can be manufactured at a low cost into a simple structure that the 5mm-diameter side brush part 1' is formed integrally with the brush part 1 on either side or both sides of the 2cm-length screw wire 3, wherein the screw wire 3 with the brush parts 1 and 1' is inserted in the gripe 2. This brush structure is expected to be widely used in all parts of the world and
10 greatly contribute to a reduction of the uterine cervical cancer rate.

 It can be known from this inventor's experience with the novel brush at a university hospital that the present invention is very useful to exactly collect pathic cells from both the endocervix and the exocervix and improve high erroneous diagnosis rate with the related art brush.

15 It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A brush for use in an examination method of uterine cervical cancer which includes a brush part formed on a 15cm-length and 2.5mm-diameter soft plastic gripe, the brush comprising:

5 a 1.2cm-length screw wire being provided with the 5mm-diameter brush part formed thereon, wherein the screw wire with the brush part is inserted lengthwise in the gripe; and

a 5mm-diameter side brush part being formed integrally with the brush part on either side or both sides of the 2cm-length screw wire.

Fig. 1

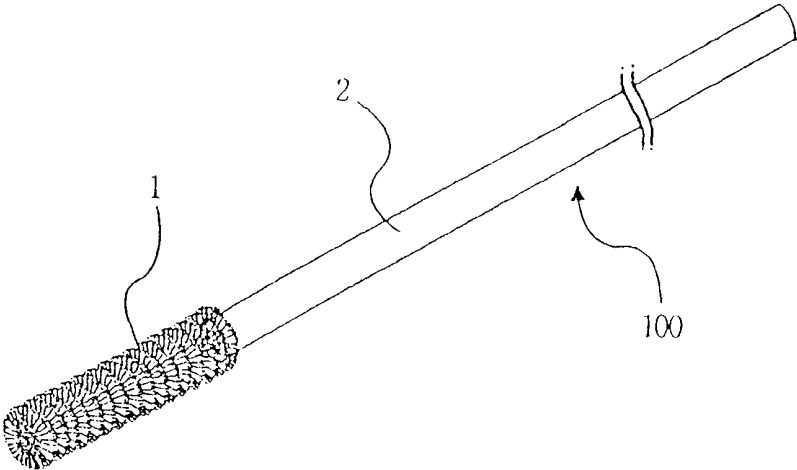


Fig. 2

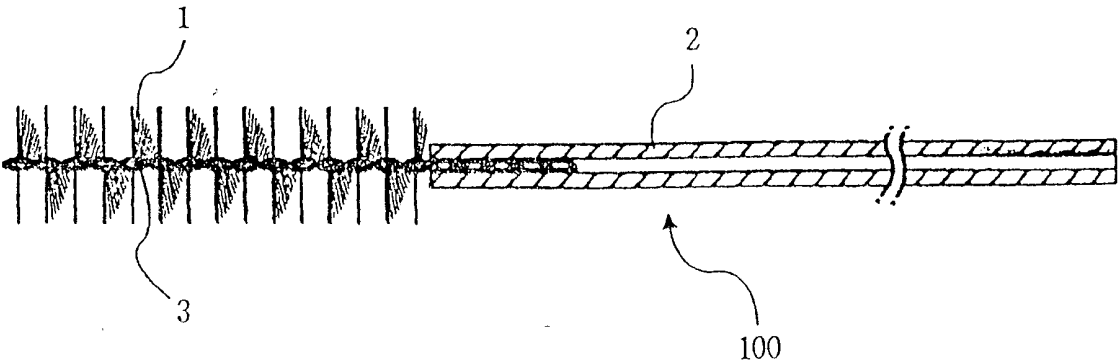


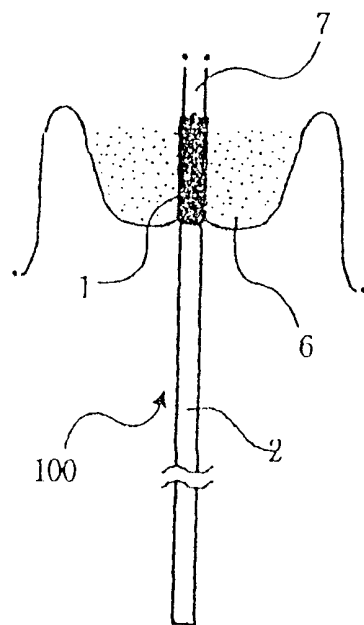
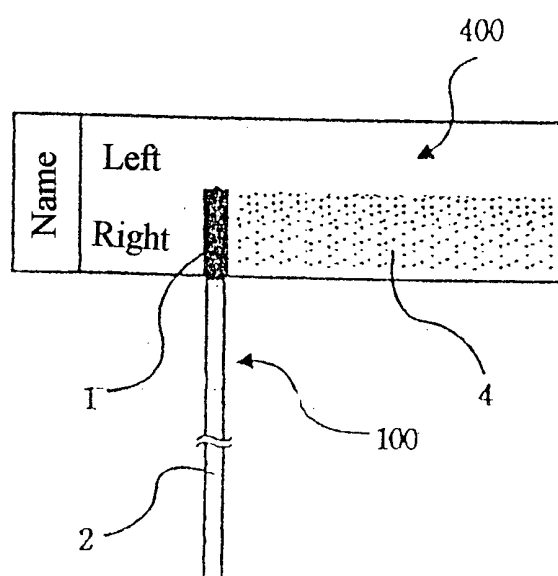
Fig. 3**Fig. 4**

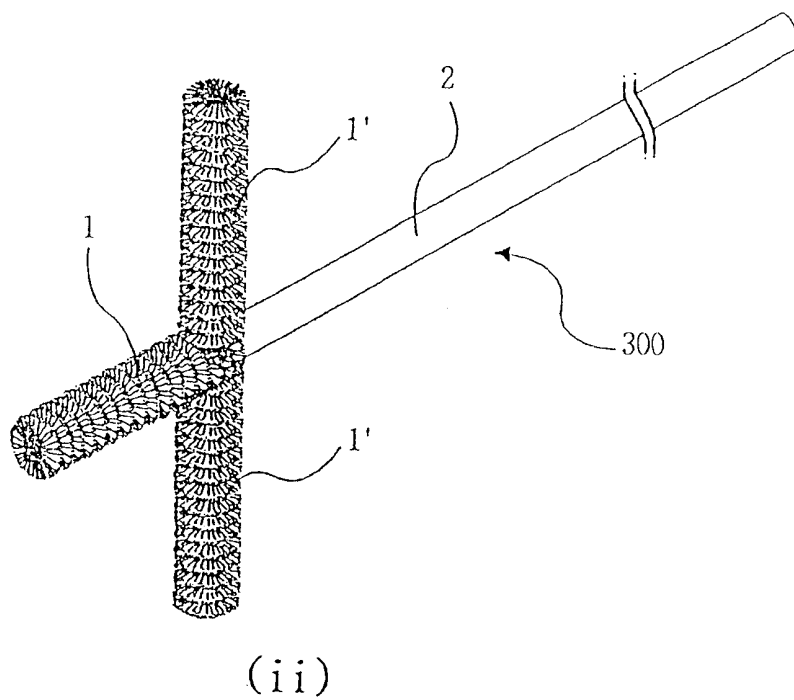
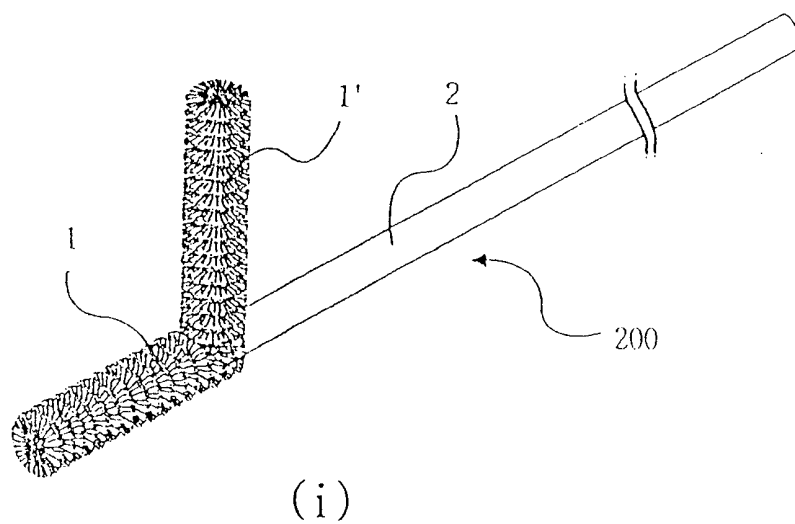
Fig. 5

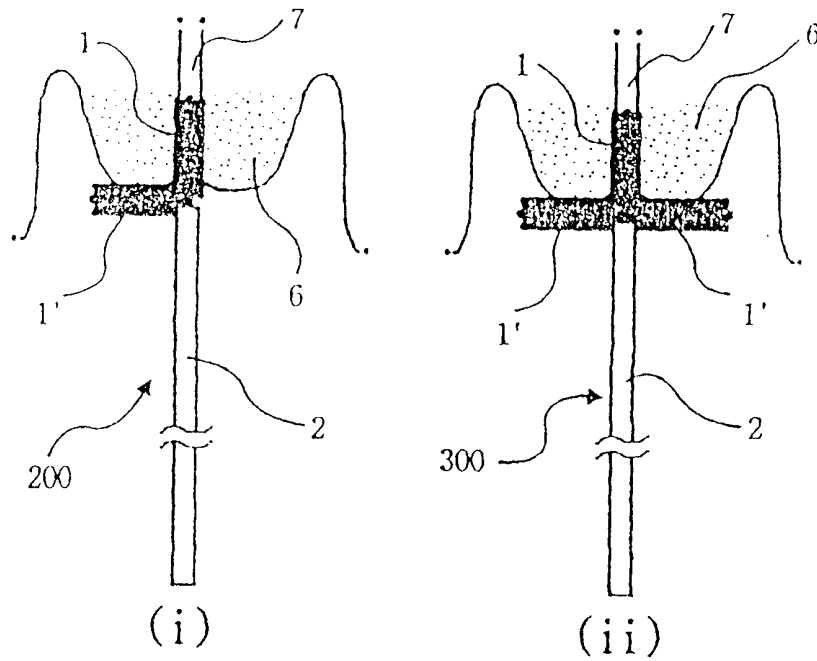
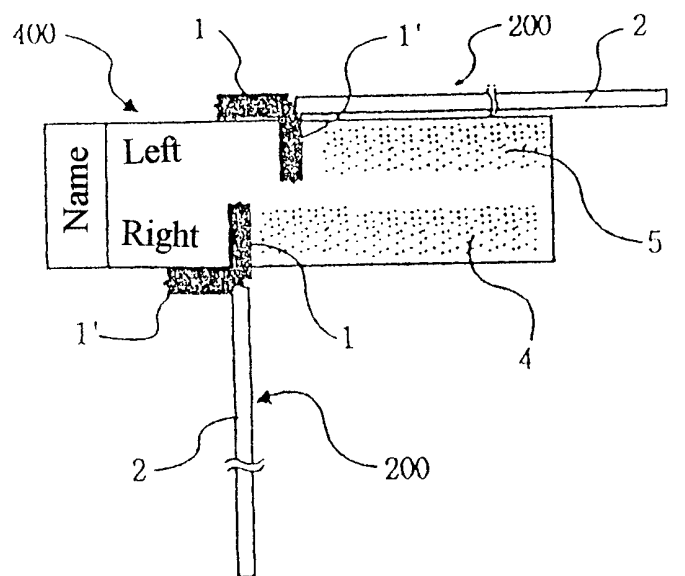
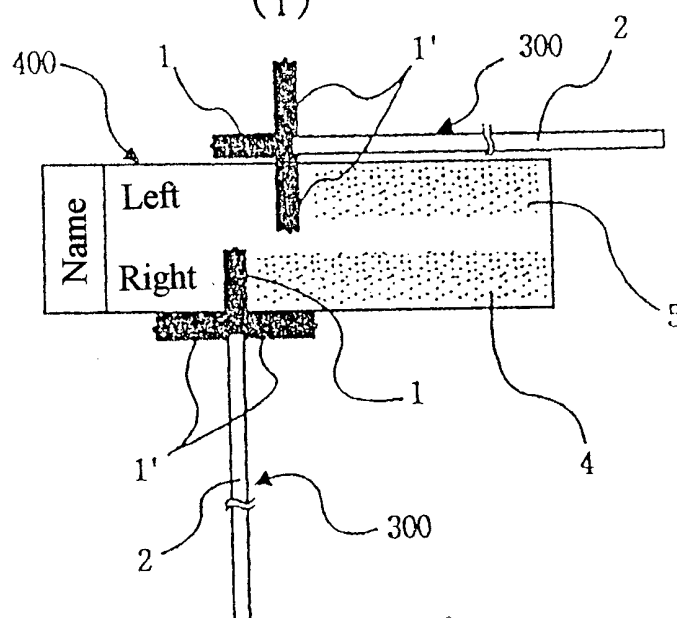
Fig. 6

Fig. 7

(i)



(ii)