

Oct. 14, 1969

B. W. NIEBEL ET AL
PERFECT CIRCLE HEMORRHOIDAL EXCISOR, STAPLER
AND EXCISOR HEMOSTATIC DILATOR

3,472,231

Filed June 20, 1966

2 Sheets-Sheet 1

Fig. V

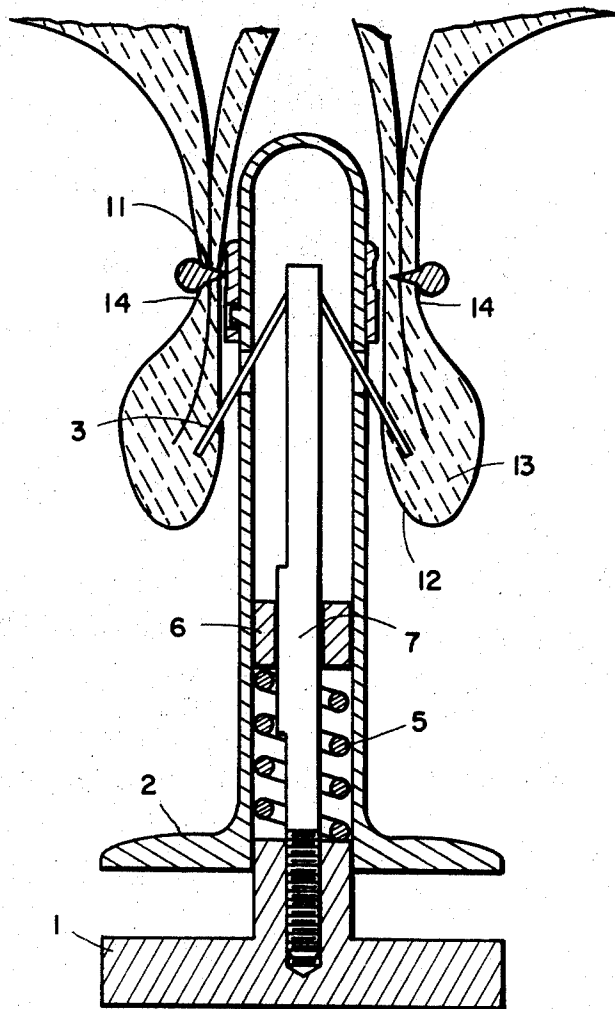
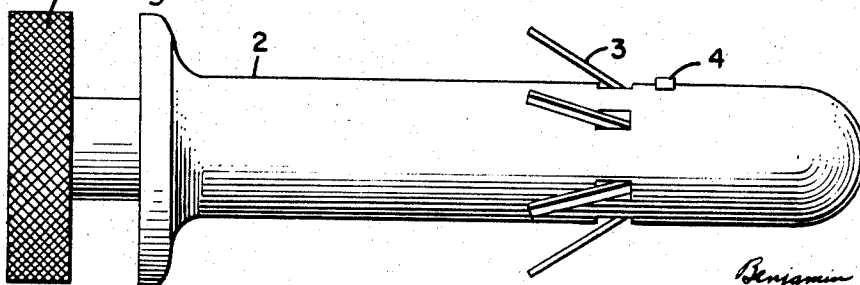


Fig. I



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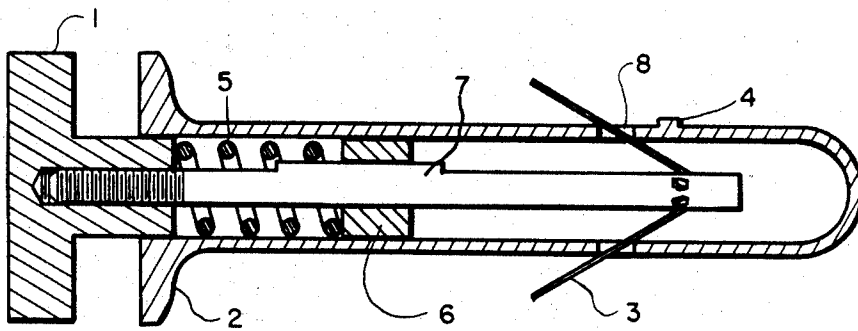


FIGURE II

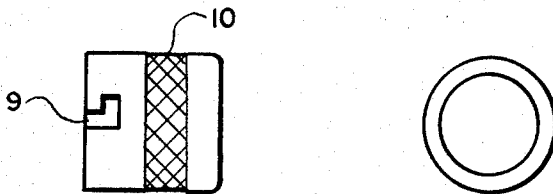


FIGURE III

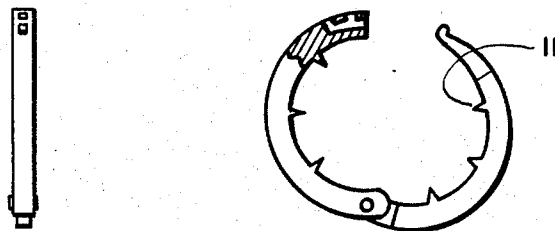


FIGURE IV

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PERFECT CIRCLE HEMORRHOIDAL EXCISOR, STAPLER AND EXCISOR HEMOSTATIC DILATOR

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10 Claims

ABSTRACT OF THE DISCLOSURE

This invention is a surgical device adapted for circular excision of hemorrhoids from the rectal area. The device consists of a hollow obturator having circumferential holes therethrough; a removable internal sleeve circumferentially mounted on the obturator near the holes, tenaculas within the obturator adapted to protrude therefrom through the holes, a piston attached to the tenaculas within the obturator adapted to extend or retract the tenaculas from the obturator, and a clamping band adapted to clamp rectal tissue against the internal sleeve. In use the obturator is inserted in the rectum, the tenaculas extended to engage rectal tissue and the device withdrawn to pull rectal tissue outside of the rectum. Hemorrhoids are then clamped between the internal sleeve and the clamping band and excised with a scalpel using the clamping band as a circular guide for the scalpel. A perfect circular incision is thus obtained.

Hemorrhoids are groups of pathological veins located in the anal area. They produce pain, discomfort and bleeding and are commonly removed by excision and suturing of the excised base or by clamping and cutting with thermal cautery.

A major technical problem is the operating of a circular area with linear instruments and fastenings. No hand tailored cutting is capable of restoring a perfectly circular function.

The present invention relates to a novel method for excising both internal and external hemorrhoids so that upon healing a restored circular function results. An additional novelty of the present invention is the elimination of suturing and the permission of the passage of flatus and excretion during the post-operative healing without painful dilatation.

The primary object of the perfect circle hemorrhoidal excisor, stapler, and excisor hemostatic dilator is to provide a means for the excision of internal and external hemorrhoids so that upon patient recovery a uniform circular cross section of the anal canal will prevail. A secondary objective of the invention is to provide a means for a more rapid, less painful post-operative recovery than typified by conventional excision and suturing. A third objective is the ability to perform the operation rapidly and bloodlessly.

The fundamental mechanism is an obturator to which a sleeve is attached and locked preparatory to insertion. The spring loaded handle of the obturator is depressed withdrawing the tenacula inside the obturator housing. The instrument is then inserted in the anal canal to an adequate depth so that the tenacula ports are above the base of the internal hemorrhoids. The spring loaded handle of the obturator is then released allowing the emergence of the spring tenacula into the base of the hemorrhoids. The entire instrument is then carefully withdrawn bringing with it the engaged internal hemorrhoids. When the sleeve containing the tenaculated hemorrhoids

approximates the base of the external hemorrhoids the clamping band is applied around the periphery of the sleeve, thus, holding securely the hemorrhoids to said sleeve.

The hemorrhoids are then excised with a scalpel cutting externally to the clamping band. The obturator handle is then depressed withdrawing the tenacula. The internal sleeve is then unlocked from the obturator and the obturator is removed, allowing the internal sleeve to remain at the anal canal.

The hemorrhoidectomy clamp consisting of a combination of the internal sleeve and the clamping band is allowed to remain attached until healing takes place.

FIGURE I gives a front view of the obturator without the internal sleeve attached.

FIGURE II illustrates a cross section view of the obturator without the internal sleeve attached.

FIGURE III illustrates a front and end view of the internal sleeve.

FIGURE IV illustrates a front and end view of the clamping band.

FIGURE V illustrates a section view of the instrument being utilized with the internal and external hemorrhoids in position for excising those portions to the outside of the clamping band.

Referring more particularly to the drawings, in FIGURE I and FIGURE II, 1 illustrates a spring loaded handle, to which is attached a plunger, 7, that is supported by a fixed bearing, 6, which is pressed in the obturator housing 2. The tenacula, 3, located around the periphery of said plunger, 7, will be withdrawn through ports, 8, upon depression of said spring loaded handle, 1. Upon release of said handle, 1, and attached plunger, 7, outward causing tenacula, 3, to emerge through ports, 8. A locking clasp, 4, is located on said obturator housing for the purpose of attaching the internal sleeve illustrated in FIGURE III.

FIGURE III illustrates an internal sleeve which is held in place on the housing obturator, 2, by aligning slot, 9, will clasp, 4, and then latching. In order to facilitate clamping of the hemorrhoids a portion of the exterior periphery of the internal sleeve is knurled, 10.

FIGURE IV illustrates the clamping band which contains teeth, 11, around its interior so as to hold firmly the hemorrhoidal bases to the internal sleeve. The clamping band is adjustable to allow for considerable variation in hemorrhoid size.

FIGURE V illustrates the perfect circle hemorrhoidal excisor, stapler and excisor hemostatic dilator introduced in the anal canal. In use, the obturator 2 having the internal sleeve 10 mounted thereon is inserted in the anal canal with the spring loaded handle 1 pressed forward to allow the tenacula 3 to be withdrawn within the obturator 2. When the obturator 2 has been properly positioned, the spring loaded handle 1 is released allowing the tenacula 3 to emerge through the ports 8 and engage the internal hemorrhoids 12. The entire instrument is then drawn from the anal canal bringing with it the engaged internal hemorrhoids 12 and the positioned external hemorrhoids 13. The desired location 14 for the section of hemorrhoids is then established and clamping band (not numbered) is placed over the external hemorrhoids 13 directly opposite the internal sleeve 10. The clamping band is then secured compressing both the external hemorrhoids 13 and the internal hemorrhoids 12 against the internal sleeve 10. The external hemorrhoids 13 and the internal hemorrhoids 12 are then excised by means of a scalpel (not shown), cutting externally to the clamping band so that the clamping band acts as a circular guide for the scalpel. The handle 1 of obturator 2 is then depressed withdrawing the tenacula 3 within the obturator

2's internal cavity. Locking clasp 4 is then disengaged from aligning slot 9 and the obturator 2 is withdrawn from the anal area leaving hemorrhoids 12 and 13 clamped between internal sleeve 10 and the clamping band. Internal sleeve 10 and the clamping band remain in the rectum until healing of the incision is complete.

What is claimed as new is as follows:

1. A hemorrhoidal excisor, comprising in combination:

an elongated cylindrical obturator member having a hollow bore therein, said obturator being provided with a plurality of openings radially spaced around the obturator adjacent one end thereof communicating with said bore;

a slidable piston extending within the bore;

a plurality of hemorrhoid engaging tenacula members radially spaced around said piston and pivotally attached thereto, said tenacula members extending out through said openings externally of said obturator;

spring means connected to said piston within said bore normally biasing said piston axially outward of said bore so that upon actuation of said piston, the tenacula members are alternatively withdrawn or extended through said openings;

said obturator further being provided with external locking means adjacent said holes and hemorrhoid support sleeve member removably mounted circumferentially on said obturator by said locking means; whereby upon excising of hemorrhoids having taken place, said obturator can be removed leaving the support sleeve member in place within the anal canal.

2. The combination as claimed in claim 1, having a locking lug means positioned upon said obturator and a slot within said internal sleeve adapted to removably engage said locking clasp means;

whereby said internal sleeve may be removably secured to said obturator.

3. The combination as claimed in claim 2, in which the outer surface of said internal sleeve is roughened, permitting frictional engagement with tissue resting upon said internal sleeve.

4. The combination as claimed in claim 3, in which said tenaculas at full extension are inclined at an acute angle to the longitudinal axis of said obturator.

5. The combination as claimed in claim 4, having a flange positioned on the end portion of said obturator, adapted to be grasped.

6. The combination as claimed in claim 5, having a handle attached to said piston and extending to without said obturator.

7. The combination as claimed in claim 6, in having

a bearing positioned within said hollow obturator between said piston and said obturator; whereby said piston is guided in and out of said obturator.

8. The combination as claimed in claim 7, having a clamping band positioned upon said internal sleeve adapted to secure tissue between said clamping band and said internal sleeve.

9. The combination as claimed in claim 8, in which said clamping band is circular.

10. The process of excising rectal tissue with a circular incision utilizing a hollow obturator having circumferential holes therethrough; a removable internal sleeve mounted circumferentially upon said obturator adjacent to said holes; a piston extending within the hollow portion of said obturator; extendable tenaculas pivotally attached to said piston and extending through said holes to without said obturator; and a clamping band adapted to be positioned about said internal sleeve to clamp rectal tissue between clamping band and said internal sleeve, comprising the steps of:

withdrawing said tenacula to within said obturator; inserting said obturator into the rectal canal; activating said piston to allow said tenacula to emerge through said holes and engage the tissue of said rectal canal;

withdrawing said obturator from said rectal canal; clamping rectal tissue between said internal sleeve and said clamping band;

excising rectal tissue adjacent to said clamping band with a cutting instrument using said clamping band as a circular guide;

withdrawing said tenaculas within said obturator and; removing said obturator from said rectal canal so as to leave said clamping band and said internal sleeve within the rectal canal clamping rectal tissue.

References Cited

UNITED STATES PATENTS

834,047	10/1906	Crumrine	128—303
1,063,750	6/1913	Townsend	128—353
1,344,227	6/1920	Hauman	128—334
1,918,890	7/1933	Bacon	128—346
2,108,206	2/1938	Meeker	128—353
2,434,030	1/1948	Yeomans	128—346
2,638,901	5/1953	Sugarbaker	128—334
2,881,762	4/1959	Lowrie	128—337
3,168,096	2/1965	Brummelkamp	128—337

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128—346, 341