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ANGULATED HEMORRHOID LIGATOR

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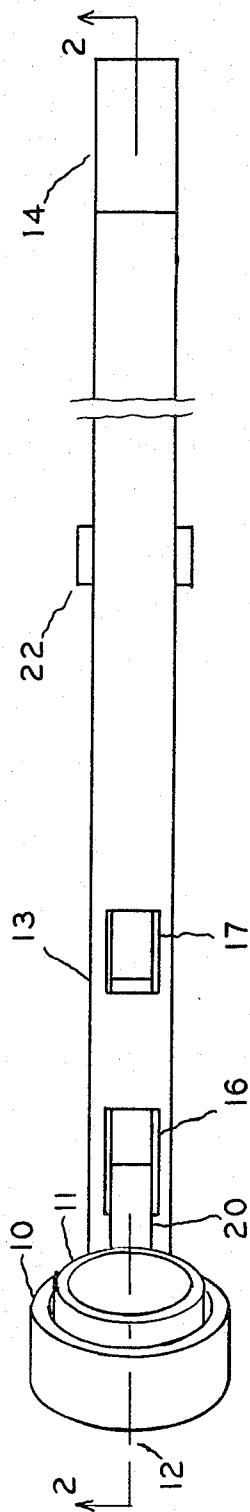


FIG. 1

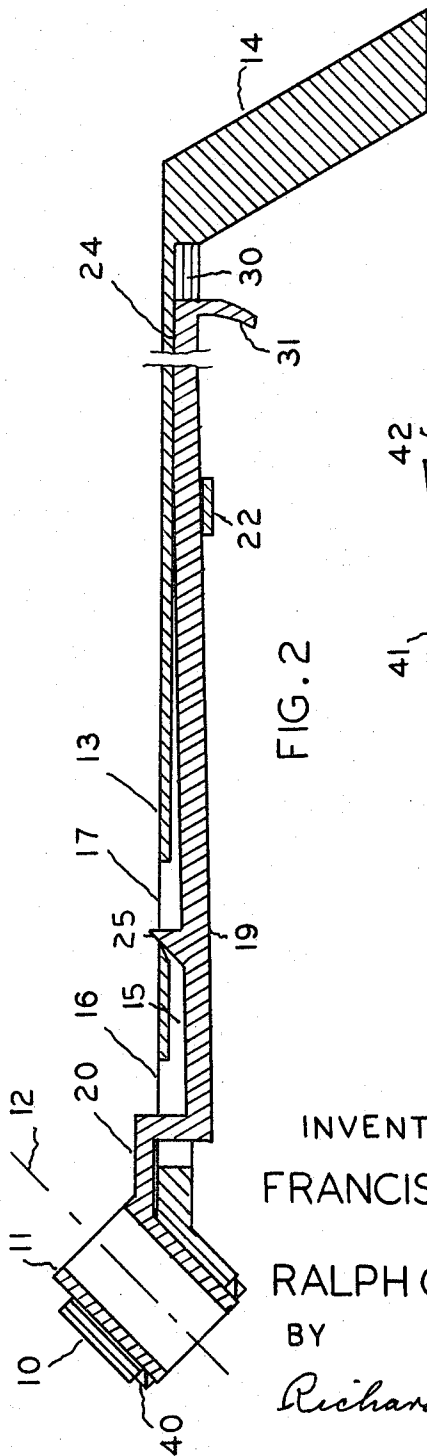


FIG. 2

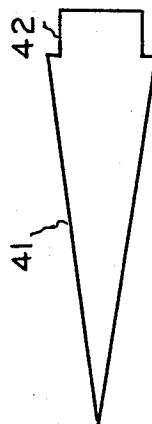


FIG. 3

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ANGULATED HEMORRHOID LIGATOR

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6 Claims. (Cl. 128—326)

ABSTRACT OF THE DISCLOSURE

This invention relates to an improved surgical instrument having a pair of coaligned cylindrical members mounted at an angle to its support member actuatable for depositing elastic members about human tissue such as hemorrhoids.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

This invention relates to an improved surgical instrument and more specifically to a device for treating hemorrhoids.

A hemorrhoid is a livid and painful swelling formed by a dilation of a vein at the anus. Such dilations are extremely painful often times causing debilitating conditions with a resultant loss of time by people so affected.

There have been treatments for this condition for many centuries and many different approaches have been used. Surgery is one which takes considerable time for the healing process and may remove a man from his occupation for a period of time.

Therefore, it is an object of this invention to provide a new and improved instrument useful in the treatment of hemorrhoids.

It is a further object of this invention to provide a medical instrument usable by a physician in his office for the treatment of hemorrhoids without resorting to surgical operating room.

It is yet a further object of this invention to provide an improved medical instrument whereby extremely small rubber bands may be properly placed about the lower portion of a hemorrhoid to cause it to in effect die, to scar over and thus cure the condition.

It is yet a further object of this invention to provide an improved medical instrument for placing a rubber band about a hemorrhoid comprising a first cylindrical member having a longitudinal axis; a second cylindrical member movably positioned with the first cylindrical member to move from a first to a second position in the first position, the second member having a lip portion extending beyond the first cylindrical member, and in the second position the lip portion is within the first member; a support member affixed to the first cylindrical member; an actuator arm affixed to the second cylindrical member; a bearing surface in the support member; a guide member on the actuator arm; and a means, including a trigger for biasing the actuator arm and the guide member against the support member and the bearing surface and for moving the second cylindrical member along the axis to remove a rubber band on the lip.

Other objects, advantages and novel features of the invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein:

FIGURE 1 is a top view of one embodiment of the invention;

FIGURE 2 is a sectional view along lines 2—2 in FIGURE 1; and

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FIGURE 3 is a view of loading mandrel usable within this embodiment of the invention.

The device has first and second coaligned coaxial cylindrical members 10 and 11 about a longitudinal axis 12. A body or support member 13 having a handle portion 14 is rigidly affixed to said cylindrical member 10. Member 13 has a grooved portion 15 therein and has a pair of slots or apertures 16, 17 extending all the way through said member 13. An actuator arm member 19 of spring steel is affixed to said second cylindrical member 11 by a neck portion 20 extending through a slot 16. A U-shaped clamp 22 biases the spring actuator arm 19 against the housing 13 within slot 15 at a point designated as 24 and against a bearing surface portion 25 of arm 19. A spring 30 in compression between handle 14 and actuator arm 19 tends to urge the arm member to the left as shown, and a trigger member 31 is provided for moving the arm portion 19 towards the handle when it is desired to release a rubber band 40 placed on the lip portion of inner cylinder 11.

In operation, a mandrel 41, shown in FIGURE 3, is inserted in cylinder 11 and has a step portion 42 designed to fit into an inner cylindrical member 11. A rubber band is urged up the mandrel onto the inner cylinder 11. In this first position the inner cylinder 11 coaligned with cylinder 10 has a lip portion extending beyond cylinder 10. When it is desired to release the rubber band 40, trigger 31 is pulled to the right against the urging of spring 30. The bearing surface or sloping portion 25 allows the arm to move in an upward direction, thus, causing cylinder 11 to move coaxially with regards to cylinder 10. Thus, there is provided a device for producing a motion which is along a given angle with respect to the main body 13. The slope of portion 25 is determined by the angle of the axis 12 with respect to the longitudinal axis of body 13.

With the construction as shown it is possible for the operating surgeon to take a pair of forceps and after the improved medical instrument has been placed about a hemorrhoid to reach through the hollow inner cylinder 11 and to grasp the hemorrhoid and pull it through the cylinder. At the time it is withdrawn sufficiently the surgeon merely pulls the trigger 31 and the rubber band 40 is placed about the hemorrhoid. It is then left there and since the blood supply has been cut off from the hemorrhoid it will die of its own lack of oxygen and food and will drop off. The area is closed over by scar tissue and the result is that the patient has a minimum of inconvenience and has a minimum of recovery time from this procedure.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

We claim:

1. An improved medical instrument for placing a rubber band about a hemorrhoid, comprising:
 - (a) a first cylindrical member having a longitudinal axis;
 - (b) a second cylindrical member movably positioned within said first cylindrical member to move from a first to a second position, in said first position, said second member having a lip portion extending beyond said first cylindrical member, and in said second position said lip portion is within said first member;
 - (c) a support member affixed at one end thereof to said first cylindrical member, said support member having first and second slots therein, and having a first planar bearing surface;

- (d) a flexible actuator arm having first and second ends, affixed to said second cylindrical member at said first end, said arm shaped so that a portion of it passes through said first slot;
- (e) a trigger member at said second end of said actuator arm;
- (f) a guide member attached to said actuator member engaging an edge of said second slot;
- (g) a second planar bearing surface on said actuator member engaging said first planar bearing surface; and
- (h) means, including a biasing member, for maintaining said actuator member in a flexed condition against said support member so that motion of said trigger member away from said first cylindrical member causes said second cylindrical member to move coaxially within said first cylindrical member from said first position to said second position.
2. The instrument of claim 1 wherein said support member has a handle affixed thereto.
3. The instrument of claim 2 wherein a spring is main-

tained under tension between said trigger end of said actuator arm and said handle.

4. The instrument of claim 2 wherein there is provided a guide way in said support member for confining said actuator arm for longitudinal motion, said biasing member maintaining said actuator arm in said guideway.

5. The instrument of claim 4 wherein said longitudinal axis of said first cylindrical member is at a predetermined angle with respect to the axis of said support member other than zero degrees.

6. The device of claim 1, wherein said guide member has a third planar bearing surface in contact with said second slot, said third planar bearing having an angle of slope which is substantially equal to the angle between said longitudinal axis and said support member.

References Cited

UNITED STATES PATENTS

1,863,234	6/1932	Bacon	-----	128—303
2,942,604	6/1960	Gravlee	-----	128—303

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