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VACUUM TENACULUM

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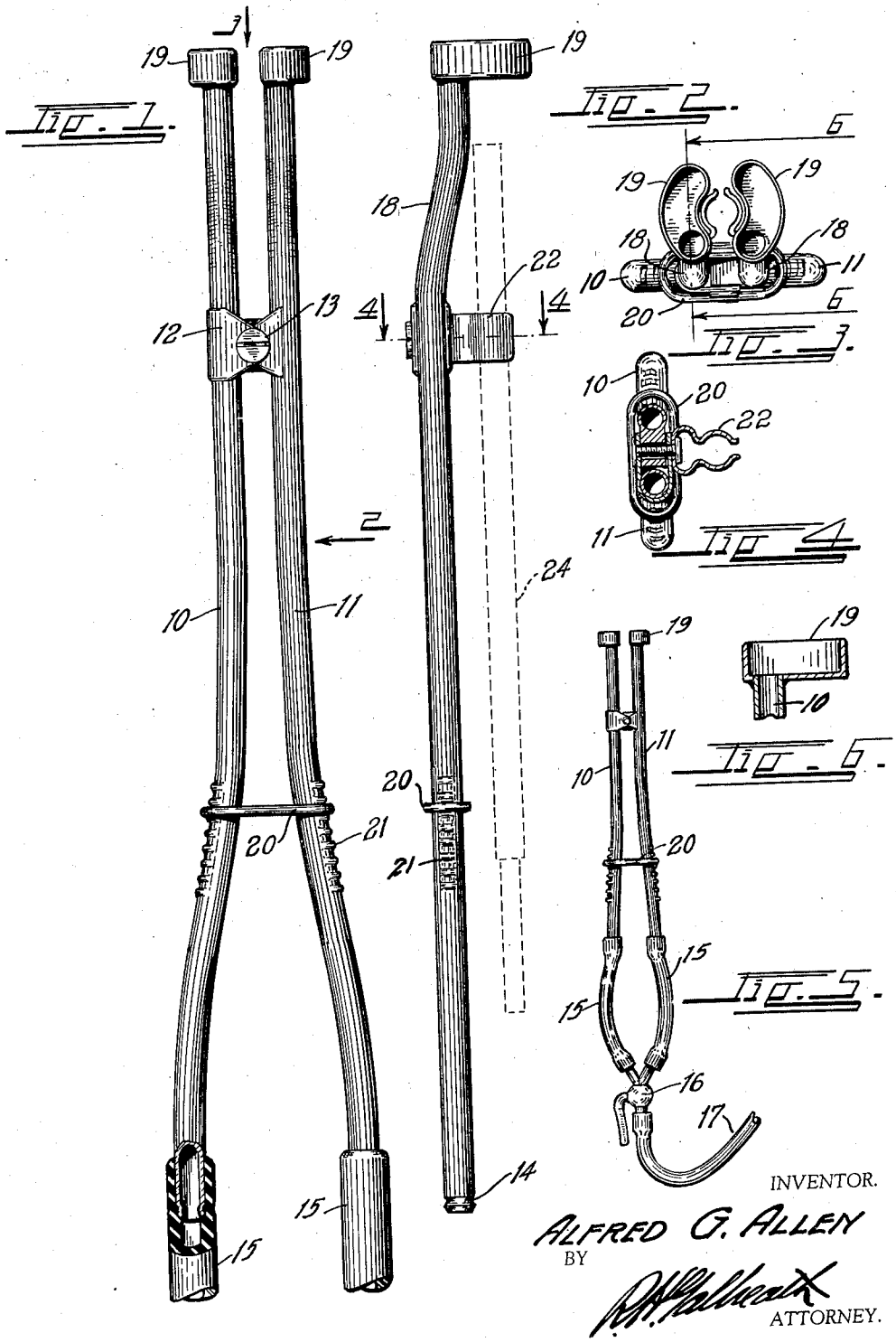

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VACUUM TENACULUM

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9 Claims. (Cl. 128—20)

This invention relates to a surgical instrument for seizing and holding parts and other operations where the usual tenaculum is employed. It is more particularly designed for uterine operations. The usual tenaculum employed for this purpose consists of a sharpened hook which is hooked into the flesh to give the desired traction upon the part being operated on. The hook will often tear through the part wounding the patient and interfering with the operation. Roughened surfaces have been employed on tenaculums of the forcep type to obviate the damage done by teeth. Such surfaces, however, do not give the desired traction unless exceedingly great pressure is exerted and the pressure may result in bruising or damaging the tissues.

The principal object of this invention is to provide a tenaculum which can be employed for both tractive and dilative purposes without injury to the tissues.

Another object of the invention is to provide means for causing the tenaculum to attach itself to the tissues with a tenacity sufficient to give an exceedingly strong traction without damage to the tissues and which will not injure the patient, should it be accidentally pulled from place.

A further object is to provide a construction which will enable a vacuum to be effectively employed for attaching operating instruments to the tissues. While the vacuum principle is exceedingly valuable in a tenaculum, it is not, of course limited to this particular use, but can be also employed on certain types of dilators, elevating forceps, retractors, etc.

A still further object is to provide means on a vacuum tenaculum for supporting and guiding operating instruments, illuminating lamp tubes, etc.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:—

Fig. 1 illustrates a side view of the improved vacuum tenaculum.

Fig. 2 is an edge view thereof.

Fig. 3 is an end view of the operating extremity, looking in the direction of the arrow "3", Fig. 1.

Fig. 4 is a cross section, taken on the line 4—4, Fig. 3.

Fig. 5 is a side view on a reduced scale, illustrating the asperating hose leading to the tenaculum.

Fig. 6 is a cross-section, taken on the line 6—6 of Figure 3.

Figs. 1, 2, 3, and 4 are enlarged views, the instrument itself may be built on any desired scale, depending upon the particular use for which it is intended. The vacuum attachment principle employed in this instrument would of course be valuable in any instrument where an attachment to the tissues was desired for tractive or dilative purposes. It will be described, however, as particularly applied to a tenaculum for use in holding, pulling, or dilating the os-uteri and cervical canal for the insertion of operating instruments, packers, applicators, suppositories, etc., and for inspection purposes.

The invention comprises two metallic tubes 10 and 11 hinged together by means of a hinge 12, and a hinge pin 13. The rearward extremities of the tubes 10 are curved outwardly to form handles for the instrument, and each terminate in a hose nipple extremity for receiving a branch hose 15. The hoses 15 can be joined by means of a T-fitting or a three way valve 16 to a single hose 17. The hose 17 may be connected to any suitable aspirator or other suction apparatus.

The forward extremities of the tubes 10 and 11 are offset sidewardly as shown at 18, so as to place these extremities in parallel relation in a plane to one side of the plane of the major portion of the tubes.

The forward extremities terminate in arcuate, vacuum cups 19 which are curvated about a common axis as shown in Fig. 3. The tubes 10 and 11 join the cups 19 at one extremity of the latter so that the cups project still further to the side of the offset 18.

Any suitable means may be provided for holding the forward extremities in the open or dilating position. Such a means is illustrated by an oval ring 20 which surrounds both tubes 10 and 11, and can be moved therealong behind suitable locking indentations 21 so as to hold the tenaculum in any desired open or dilating position.

The tenaculum as illustrated, is designed for use in placing traction on the os-uteri or cervical canal or for dilating the cervical canal for the insertion of medicated suppositories, operating instruments, etc. In use, the instrument is inserted in the vagina until the vacuum cups 19 surround and are pressed against the os-uteri or

mouth of the cervix. The aspirator is then placed in service or the valve **16** is opened, causing a vacuum in the cups which draws the tissues therein and securely attaches the tenaculum about the cervix. The handle portions of the tubes are then pressed together by the hand to dilate the cervix and the ring **20** is placed in the proper position to hold it in the desired dilated position.

The offset position of the cups with relation to the tubes provides a free passage for the insertion of the desired instruments. To facilitate the insertion of the latter, a guide clamp **22** is secured upon the offset side of the instrument. This clamp can be secured by means of the hinge screw **13** if desired. The clamp is bent to a circular outline, the axis of which aligns with the axis of curvature of the cups **19** so that an instrument inserted through the clamp will be accurately aligned, as indicated by the broken lines at **24** in Fig. 2, with the dilated cervix. The clamp **22** can also be used for holding an illuminating tube, terminating in a lamp and lens to illuminate the dilated surfaces, for inspection and operating purposes.

While the vacuum cups **19** are particularly designed simply for attachment purposes, they could also be used as aspirators for drawing off accumulating discharges.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

1. A tenaculum comprising: a pair of hollow tubes; means for hinging said tubes together; vacuum cup members secured on the forward extremities of said tubes and communicating with the interiors of the latter; and means for attaching a suction medium to the rearward extremities of said tubes, said cup members being curvated about a common axis.

2. A tenaculum comprising: a pair of hollow tubes; means for hinging said tubes together so that they will swing in the plane of their lengths; vacuum cup members secured on the forward extremities of said tubes and communicating with the interiors of the latter; and means for attaching a suction medium to the rearward extremities of said tubes, said cup members being offset from the plane of swing of said tubes so as to project to one side thereof.

3. A tenaculum comprising: a pair of metallic tubes; means for hinging said tubes together; vacuum cup members secured on the forward extremities of said tubes and communicating with the interiors of the latter; and means for attaching a suction medium to the rearward extremities of said tubes, said cup members being offset from the plane of said tubes so as to project to one side thereof, and being curved about a common axis.

4. A tenaculum comprising: a pair of metallic tubes; means for hinging said tubes together; vacuum cup members secured on the forward extremities of said tubes and communicating with the interiors of the latter; and means for attaching a suction medium to the rearward extremities of said tubes, said tubes being offset adjacent their forward extremities so as to place said cup members to one side thereof, said cup members being curved about a common axis.

5. A tenaculum comprising: a pair of metallic tubes; means for hinging said tubes together; vacuum cup members secured on the forward extremities of said tubes and communicating with the interiors of the latter; means for attaching a suction medium to the rearward extremities of said tubes; and a guide member projecting from said tubes for guiding an instrument into position between said cup members.

6. A vacuum tenaculum comprising: a pair of similarly formed, "right" and "left" metallic tubes; a hinge hingedly connecting said tubes, there being an offset formed in said tubes forwardly of said hinge so as to place the forward extremities of the tubes to one side of the plane of the remainder thereof; an arcuate, cup-like, suction member mounted on the forward extremity of each tube and communicating therewith.

7. A vacuum tenaculum comprising: a pair of similarly formed, "right" and "left" metallic tubes; a hinge hingedly connecting said tubes, there being an offset formed in said tubes forwardly of said hinge so as to place the forward extremities of the tubes to one side of the plane of the remainder thereof; an arcuate, cup-like, suction member mounted on the forward extremity of each tube and communicating therewith, said suction members lying in a plane at right angles to the plane of said tubes and being curved about a common axis.

8. A vacuum tenaculum comprising: a pair of similarly formed, "right" and "left" metallic tubes; a hinge hingedly connecting said tubes, there being an offset formed in said tubes forwardly of said hinge so as to place the forward extremities of the tubes to one side of the plane of the remainder thereof; an arcuate, cup-like suction member mounted on the forward extremity of each tube and communicating therewith; and a guide clip secured to said hinge and projecting from the offset side of said tenaculum, said guide clamp being in alignment with the axis of curvature of said cup members.

9. A tenaculum comprising: a relatively long hollow tube; a cup formed on one extremity of said tube, the open face of said cup lying in a plane at right angles to the axis of said tube; and means for connecting the other extremity of said tube to a suction hose, said cup being curvated and elongated so that its open face will present two relatively long parallel curved edges joined by relatively short curved ends.

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