

[54] CIRCUMCISION CLAMP  
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Related U.S. Application Data

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[58] Field of Search ..... 128/346

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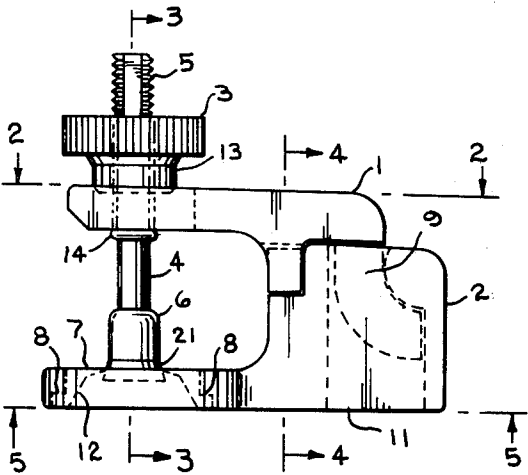
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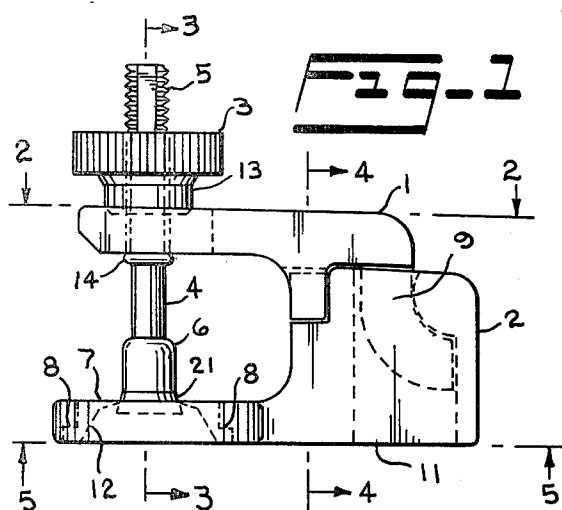
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ABSTRACT

A bloodless circumcision clamp having a C-shaped frame comprising two members that are rotatably engaged. A rod goes through a slot in the upper member and an opening in a clamping ring which is located in a lower member. A bell-shaped member on the rod is adapted to receive the glans of a penis and the fore-skin goes over the ball. When the clamping element is drawn upward, the bell-shaped member and the opening in the clamping ring are brought into cooperative arrangement, thereby constricting the blood vessels in the foreskin and allowing it to be cut away.

7 Claims, 6 Drawing Figures





# 1

## CIRCUMCISION CLAMP

This Application is a substitute for application Ser. No. 314,736, filed Dec. 13, 1972, now abandoned.

### BACKGROUND OF THE INVENTION

The present invention relates to an improved circumcision clamp. In my copending application Ser. No. 179,292 filed Sept. 10, 1971, a bloodless circumcision clamp was described having a C-shaped frame, a rod with a bell-shaped head, and a means to move the rod in order to bring the bell-shaped head into contact with a changeable clamping ring.

It has now been found that certain improvements in my prior circumcision clamp make it even more useful than before, while embodying the basic invention as previously described. Briefly, it has been found that it is desirable to have more space in which to manipulate the foreskin (prepuce) and the glans of the penis on the bell-shaped head and to have a better means for securing a hand grip on the clamp.

In my prior copending application Ser. No. 270,662 filed July 11, 1972, improved handleability of the circumcision clamp was achieved by slidably mounting an upper member on a lower member, so that the upper member could slide back along a guide on the lower member to a position out of the way from the area where the operator places the glans and prepuce of the penis on the bell-shaped member of the device.

Another means of obtaining sufficient space for the operator is shown in U.S. Pat. No. 3,050,065 which is representative of a class of circumcision clamps. Basically, in this type of device the upper portion of the clamp is removable from the base portion to allow manipulation of the bell-shaped member with the penis with the upper portion serving as a lever to actuate the clamping action of the device.

Other circumcision clamps do not provide a space or area for the operator to manipulate the glans and prepuce onto the bell-shaped member but attempt to provide a means for securing the prepuce to the bell, then to seat the bell into the clamp, such as U.S. Pat. Nos. 2,238,660 and 2,471,864 and 2,296,594. For example, the latter patent shows a clasping means which is supposed to hold the prepuce in place over the surface of the bell as the bell is brought into position in the frame portion of the clamp. A clamping ring is also carried into place as the bell is assembled to the frame and held in place by the force of the bell surface with the prepuce thereover pressing against it.

Thus, it is an advantage of this invention to provide a circumcision clamp of simple design. It is a further advantage of this invention to provide a circumcision clamp that can be maintained as a single unit, yet is adapted to allow clear access by the operator to the area where the glans and foreskin are fitted in the clamp, yet require less handling and manipulation than clamps of the prior art. It is yet a further advantage to provide a circumcision clamp which is readily hand-held during the fitting of glans and foreskin in the clamp and during the operation. It is further an advantage of this invention to provide a circumcision clamp which can be easily manipulated by one person. It is a particular feature of this invention to provide a circumcision clamp that can be easily cast or extruded in resins or polymeric materials. It is another feature of the present invention to provide a circumcision clamp that

can be distributed in a ready-to-use, sterilized, preassembled condition. It is a further feature of the present invention to provide a circumcision clamp that can be adapted for use with different size penes. These and other advantages and features of my invention will become apparent from the following discussion and the drawings.

### DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation of one embodiment.

FIG. 2 is a top view and partial cross section along 2—2 of FIG. 1.

FIG. 3 is a cross sectional elevation taken along 3—3 of FIG. 1.

FIG. 4 is a cross sectional elevation taken along 4—4 of FIG. 1.

FIG. 5 is a bottom view taken along 5—5 of FIG. 1.

FIG. 6 is a side elevation of an alternate embodiment.

### SUMMARY OF THE INVENTION

Briefly stated, the present invention is a bloodless circumcision clamp comprising a C-shaped frame which is comprised of an upper and lower member, with the upper member being rotationally mounted on the lower member. The upper member can be lifted up and away from the area where the operator places the glans and prepuce of the penis on a bell-shaped member located below a clamping ring in the lower member. This allows adequate room to manipulate this arrangement, yet keeps the clamp as a unitary device. When the penis is situated, the upper member is rotated back into place and a rod to which the bell-shaped member is attached is fitted into a slot on the upper member. A means is actuated to move the bell-shaped member which is anatomically designed. The rod is then drawn up. The foreskin is compressed by contact with the clamping ring, thereby constricting the blood vessels and achieving hemostasis. The desired amount of foreskin is cut away above the constriction. Usually the clamp is allowed to remain in position for five minutes or so prior to the removal of the foreskin. The present invention also describes a somewhat elongated bottom member which provides an adequate gripping area.

Different sizes of bell-shaped members can be used with the appropriate clamping ring to accommodate different size penes.

The clamping rings are of such a configuration so that the contact of the prepuce on the surface of the bell-shaped member will crush but not cut the foreskin.

The design of the present clamp also has a desirable feature in the configuration of the upper and lower members, in that these two members have somewhat extended portions wherein the clamping of the foreskin takes place. This feature provides a certain amount of resiliency which the operators employing the clamp have found necessary for proper functioning of the clamp. The effect of the resiliency is like a spring applying a uniform and constant pressure to the foreskin during the hemostasis period.

Although the upper and lower members of the frame portions are arranged to function as a unit, the two members need not be hinged together but may be comprised of elements of close tolerances so that friction will permit the upper member to be rotated about an axis, for example, an arcuate tongue on one member in a corresponding channel of the other which will allow the members to move relative to each other while

maintaining the unitary configuration of the circumcision clamp. This aspect of the present invention may be viewed as where the upper member is functionally associated with the lower member so that the upper member can be rotated about a point spaced away from the slot in the upper member.

The following description of the invention in regard to the drawings will aid in better understanding the invention. To the extent possible, the same or corresponding elements of the various figures have been given the same designation.

#### DESCRIPTION OF SPECIFIC EMBODIMENTS

A side elevation of a particular embodiment of the present invention is shown in FIG. 1. The upper member 1 and the lower member or base 2 are cooperatively engaged by tongue 9 engaged in channel 11. Tongue 9 has an arcuate shape which is held in the channel 11 by protrusion 10 which has a shape corresponding to the arc of the tongue 9. The tongue 9 is usually tightly fitted so that it is movable but positionable. For example, if the nut 3 were run up the threads 5 on rod 4 and removed, upper member 1 could be rotated upward, creating a larger or more open area in which the person using the circumcision clamp can operate. An open configuration may be seen by reference to FIG. 6 (phantom figure).

Referring again to FIG. 1, the tightly fitted tongue 9 is desirable since it will remain in a selected open position without further effort by the operator. In the closed position shown in FIG. 1, the upper and lower member combination form a C-shaped frame. Handling of the clamp is further facilitated by the slightly elongated rear portion of the lower member 2, which provides an adequate area for hand gripping but which is still compact in overall design.

With the nut 3 removed from rod 4, the rod can be removed downwardly through an aperture or opening 21 in clamping ring 7. In use, the glans of the penis is fitted into recess 20 of the bell-shaped member 6, while the prepuce or foreskin is pulled over the outer surface of the bell-shaped member 6. The rod 4 is then reinserted through opening 21. Usually, butterfly hemostats or the like are inserted through the opening 21 to hold the foreskin in place while the clamp is assembled back onto the configuration shown in FIG. 1.

The upper member 1 is returned to the position shown in FIG. 1, and the nut 3 reassembled on rod 4. As the rod 4 is drawn upward by the clockwise rotation of nut 3, the foreskin is crushed but not cut between the frusto-conical section 16 of bell-shaped member 6 and the annular rim 19 of clamping ring 7. The clamping ring 7 has an anatomically designed beveled recess 12 which, in conjunction with a particular bell-shaped head, is selected for a particular sized penis. The clamping ring 7 is removable, but it is firmly held in place against downward movement since it is frictionally seated in an opening in lower member 2. The clamping ring 7 is seated against annular flange 8 located in the opening of the lower member 2.

It can be appreciated that the clamp need not be completely disassembled as described above in order to employ the clamp for a circumcision. Some operators may merely drop the rod 4 down in order to place the glans and foreskin on the bell-shaped member 6. Located on rod 4 at the lower end of the threads 5 is a stop in the form of an annular lip 14. This lip serves two pur-

poses. First, the lip 14 prevents the nut 3 from coming off the threads and secondly, when the annular shoulder 13 is brought to rest against the lip 14, a predictable pressure is being applied at the crushing juncture between frusto-conical section 16 and annular rim 19. Preferably, this predictable pressure is between 27 and 35 pounds per square inch, which has been determined by the medical profession to be most suitable. The stop can be in the form of a bead, pin or other obstruction and can be fixed or adjustable along the threads 5 in order to obtain varying pressures.

The rod 4 passes through a slot 15, which is in cooperative alinement with the opening 21 in clamping ring 7 and in upper member 1, which serves to stabilize the rod and provide a surface against which the annular shoulder 13 of nut 3 operates to move the rod 4 and bell-shaped member 6. The annular shoulder 13 seats in recess 17 of upper member 1 when in use. The slot 15 is equipped with at least one and preferably two parallel flat surfaces which correspond to flat surfaces on the portion of the rod 4 passing through the slot 15 to prevent rotation of the rod 4 as the nut 3 is turned. Rotation of the bell-shaped member with the foreskin in contact with clamping ring 7 can result in breaking or cutting of the foreskin contrary to the concept of a bloodless, sutureless procedure described herein.

The configuration, shown more clearly in FIGS. 2 and 3, which prevents the rotation of rod 4 about its longitudinal axis when it is manipulated, achieves true rectilinear movement of the rod 4 and the bell-shaped member 6.

Another feature of the present invention is the alinement and support arrangement wherein there are a pair of legs 22 extending from upper member 1 and resting on lower member 2. Interposed between the legs is a support member 28 extending upward from lower member 2. This arrangement provides an added degree of lateral stability to the clamp in the closed, operating position. It is of course apparent that the alinement and support arrangement is not critical to the operation of the clamp.

Referring to FIG. 5, the assembled clamp is seen from the bottom, i.e., along 5-5 of FIG. 1. The bell-shaped member 6 is seen pulled up into contact with the annular rim 19 of the clamping ring 7. The tongue 9 can be seen through the channel 11. It should be noted that channel 11 need not open all of the way through lower member 2. An alternative arrangement would be a channel shaped to correspond to the arc of the tongue. The configuration of the channel 11 in the clamp shown in FIG. 1 is primarily a manufacturing convenience.

An alternate embodiment for the present clamp is shown in FIG. 6, which shows the upper member 1 being pivotally attached to the lower member 2 by pin 18. The two portions could be otherwise hinged together so that the two halves of the frame of the clamp are able to function as a single unit.

A further refinement of the present invention is a latch means to prevent the upper and lower members from being reopened after the two parts are seated together in the closed position shown in FIG. 1 and FIG. 6. One means of achieving this result is shown in FIG. 4. The latch members 24 are compressed as upper member 1 is brought down into the closed position, then spring back into notches 25 to prevent the separation of the upper and lower members. This feature pre-

vents the inadvertent separation of the halves of the clamp, for example while the nut 3 is being reassembled to the rod 4. The location of the latches and notches could, of course, be reversed or positioned differently to achieve the same result.

It is within the scope of this invention that various parts could be reversed, yet the invention as disclosed would be the same. For example, the tongue 9 could extend from the lower member into a channel in the upper member. Other modifications such as the application of conventional features are within the purview of the invention.

The circumcision clamp of this invention is of such simple design that it can be readily fabricated from a wide variety of materials, by such various methods as extrusion molding of thermoplastic and thermoset polymers such as nylon, nylon 66, polystyrene, acrylonitrile-butadiene-styrene, aldehyde resins, polyesters, polyethers, polyamides, polyamines and the like. Similarly the clamp can be made from metals such as stainless steel, aluminum, brass or the like, by forging, casting or stamping.

The invention claimed is:

1. A circumcision clamp having an expandable work area comprising,
  - a lower member having an opening forming a seat, an upper member rotationally mounted on the lower member by means of a tongue attached at one end of said upper member and movably seated in a channel in said lower member for rotating the upper member out of the work area while maintaining the upper member in functional relation with the lower member, said upper and lower members forming a generally C-shaped frame in a closed position and having a slightly elongated configuration for gripping by hand, said upper member having a slot on the opposite end from said tongue, a clamping ring removably and frictionally engaged in said seat in said opening, said clamping ring having an aperture and recess therein in substantial

alignment with said slot, said recess facing away from said upper member.

a rod movably positioned through said slot and said aperture,

- 5 a bell-shaped member on one end of said rod, said bell-shaped member having a recess therein adapted to receive the glans of a penis and an outer surface having a diameter greater than the diameter of the opening in said clamping ring, and adapted to receive the prepuce thereover, said bell-shaped member being movable toward and from said recess and aperture in the clamping ring and interfitting with said clamping ring, and,
- 10 a nut threaded onto the end of said rod opposite said bell-shaped member for actuating said rod in substantially rectilinear movement.

2. The circumcision clamp according to claim 1 wherein the slotted end of the upper member rotates away from said lower member.

3. The circumcision clamp according to claim 2 wherein said tongue has an arcuate shape.

4. The circumcision clamp according to claim 3 wherein said tongue is frictionally engaged with a portion of said channel.

- 5 5. The circumcision clamp according to claim 4 wherein said slot has at least one flat surface therein and a corresponding and cooperating flat surface on said rod for preventing rotation of the rod about its longitudinal axis.

6. The circumcision clamp according to claim 5 wherein a projection on said rod to stop said nut is provided to preselect the pressure applied at the surface of the bell-shaped member cooperating with said clamping ring.

7. The circumcision clamp according to claim 1 wherein a means is provided for permanently latching said upper member and said lower member in said C-shape.

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