

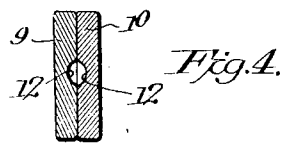
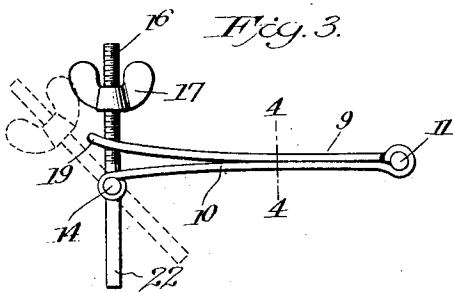
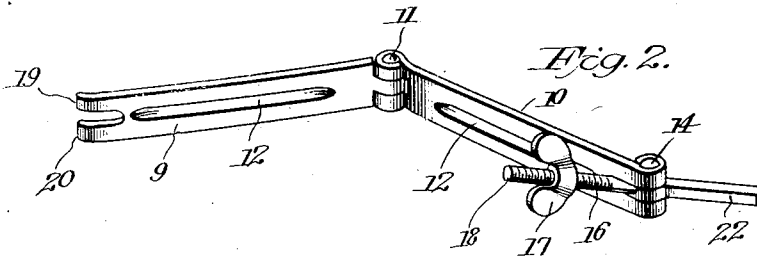
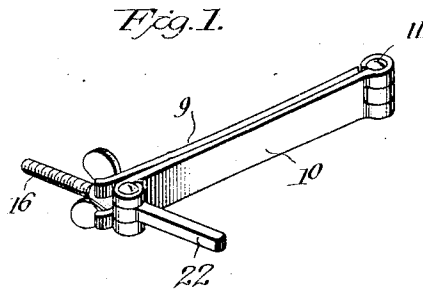
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SURGICAL CLAMP

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UNITED STATES PATENT OFFICE.

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SURGICAL CLAMP.

Application filed January 10, 1927. Serial No. 160,275.

The present invention relates to surgical instruments, and more particularly to an umbilical cord clamp for use on such cord at the time of birth of an infant.

5 Objects of the invention are to provide a clamp for this purpose which is so constructed that it effects perfect hæmastasis; which is readily susceptible to perfect sterilization; which is so constructed that the parts
10 thereof cannot become separated; which is provided with means for effecting resilient clamping pressure, thereby causing perfect dehydration of the cord; which cannot slip when it is once fastened in position; which
15 is so constructed that it cannot cut or lacerate the cord; which is so constructed that it is self-stabilizing; and which is symmetrically constructed so that it is equally effective and fully efficient regardless of which side is
20 uppermost.

Other objects are to eliminate the uncertainties and possibilities of infection attendant upon tying the cord without the use of a clamp; and to overcome the difficulties
25 heretofore experienced with clamps for this purpose.

Further objects and advantages of the invention will appear from the following description taken in connection with the accompanying drawings, which illustrate, by way of example, a preferred embodiment of the invention, but which are not to be taken
30 as a definition of the limits thereof, reference being had to the appended claims for that purpose.

35 In the drawings:

Fig. 1 is a perspective view of a clamp embodying the present invention, showing the device in its closed or clamping position;

40 Fig. 2 is a perspective view showing the clamp in open position;

Fig. 3 is a top plan view showing the clamping members in partly closed position just prior to being clamped together under
45 pressure;

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3.

The invention includes means for effecting the necessary clamping action on the umbilical cord of an infant by a cord clamp
50 that cannot slip and will not lacerate the cord.

In the preferred form of the invention herein shown, one or both of the clamping
55 members 9 and 10 are made of resilient material, such as high-grade spring steel, the

parts being heavily nickel-plated to aid in cleaning and to facilitate sterilization.

In order to exert positive but yielding clamping pressure on the cord and to insure
60 that the clamping faces will lie substantially flat against each other in clamping position, the hinged clamping members 9 and 10 are preferably convexly curved on their clamping
65 faces, so that under clamping pressure their faces will have flat surface contact. The clamping members are preferably movably secured together by some suitable means such as the hinge pin 11, to which
70 the adjacent ends of the clamping members are rotatably secured.

The opposed clamping faces are devoid of any projections which might cut or lacerate the cord and are preferably perfectly flat and smooth except for the grooves herein-
75 after referred to.

In order to insure perfect hæmastasis, each opposed clamping face of the members 9 and 10 is provided with a groove 12, the
80 grooves being arranged directly opposite each other so that when the clamp is closed the grooves 12 are complementary and form a closed channel, at which point the cord is compressed less, so that it is impossible for
85 the cord to slip.

The invention also provides non-detachable means for exerting clamping pressure upon the clamping members 9 and 10, together with means for stabilizing the clamp
90 as a whole to insure that it will remain, as long as desired, in the position in which it is placed during use.

In the form of the invention herein shown, the clamping means includes a pressure exerting member preferably hinged at
95 14, or otherwise non-removably secured, to one of the clamping members 10. The pressure exerting member, in the preferred form of the invention herein illustrated, includes the pressure exerting portion 16, which is
100 preferably screw-threaded to cooperate with a clamping wing nut 17 adapted, in the closed position of the clamp, to abut against the outer face of the clamping member 9 and press it into engagement with its co-
105 operating clamping member 10. At the extreme outer end 18 of the threaded portion 16, the threads are pinched or the end is enlarged to prevent the wing nut from coming off the threads. In the closed position
110 of the clamp, the threaded portion 16 is received between the outwardly curved

forked ends 19 and 20 of the clamping member 9, and the hinge pin 14, by which the pressure exerting member is pivotally mounted, permits this member to be moved free and clear of the clamping member 9 until it is brought to the full line position of Fig. 3, after which, when the wing nut 17 is rotated, the clamping members 9 and 10 are forced into flat face-to-face contact. The considerable curvature of the forked ends 19 and 20 positively prevents the clamp from being loosened until the wing nut 17 is rotated.

In the present preferred form of the invention, the stabilizing means is formed on or as a part of the pressure exerting member and is herein shown as being in the form of a smooth flat-sided projection 22 extending from the pivot 14 in a direction opposite to that of the threaded portion 16.

This construction, the whole of which is preferably nickel-plated, forms a non-separable unit, easily cleaned, readily sterilized, the parts of which cannot become lost or separated.

The flat clamping faces effectively prevent any cutting of the umbilical cord; the stabilizing portion 22 insures that the clamp will remain in upright position; the grooves 12 insure that the clamp cannot slip; the resilience of the clamping members and their curvature insure adequate clamping pressure to effect perfect hæmastasis.

It will be seen that the invention is extremely simple to apply and that it is impossible to apply it upside down, owing to its symmetrical construction. The clamp cannot pull or make traction on the cord, and the pressure exerted absolutely prevents it from slipping. Though the parts are movable, there is substantially no wear on the surfaces, so that the clamp has long life though in constant use.

In using the clamp of the present invention, it is unnecessary to wait for the cord to slough off, but the clamp, in most cases, may safely be removed after eight hours.

Various minor changes may be made in

the construction without departing from the invention as defined by the appended claims and without sacrificing its advantages.

What is claimed is:

1. An umbilical cord clamp including a pair of movably connected members, and means connected to one of said members for clamping said members together under pressure, said means having a stabilizing projection extending on both sides from its connection.

2. An umbilical cord clamp including a pair of hinged member having opposed smooth clamping surfaces, each of said surfaces having a groove, and means for clamping said surfaces together under pressure, said grooves, when said surfaces are clamped, forming opposite sides of a channel.

3. An umbilical cord clamp including a pair of clamping members, and means for clamping said members together including a member having a threaded portion extending in one direction and a smooth unthreaded stabilizing portion extending in the opposite direction.

4. An umbilical cord clamp including a pair of clamping members, at least one of said members being resilient and having a curved smooth clamping surface, and means for clamping said members together under pressure including a hinged member having a clamping portion and a substantially oppositely extending stabilizing portion.

5. An umbilical cord clamp including a pair of resilient hinged members, each having a convex smooth clamping surface provided with a groove, and means for clamping said members together under pressure including a hinged member having a clamping portion and a substantially oppositely extending stabilizing portion, said grooves, when said members are clamped together, forming complementary portions of a closed channel.

In testimony whereof I affix my signature.

WILLIAM M. SPRIGG.