

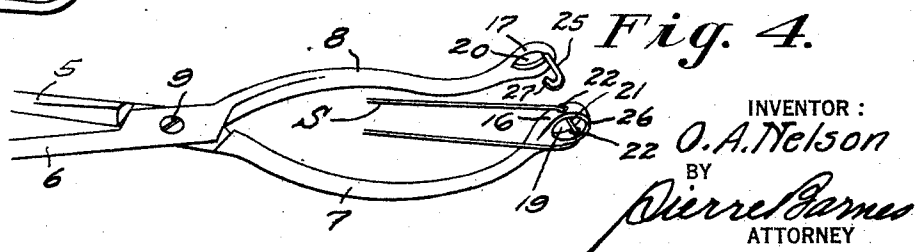
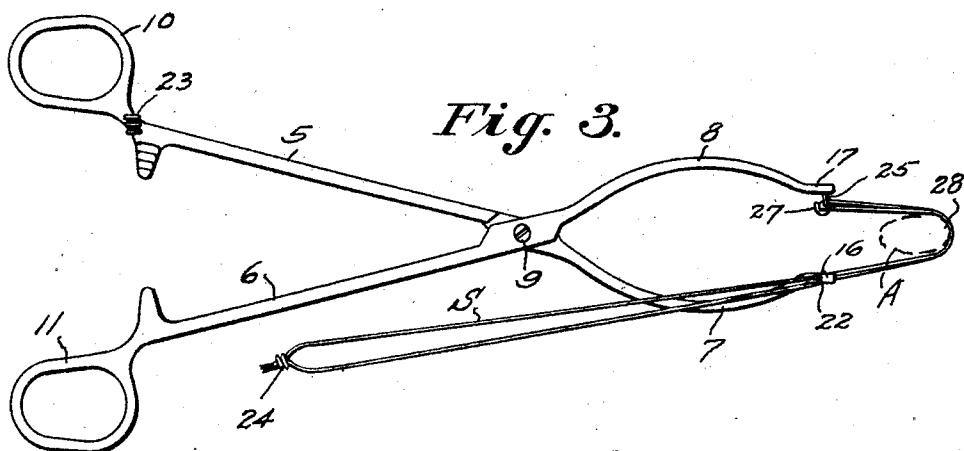
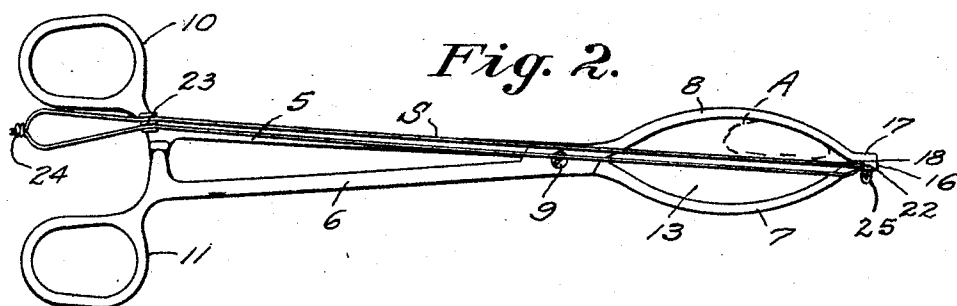
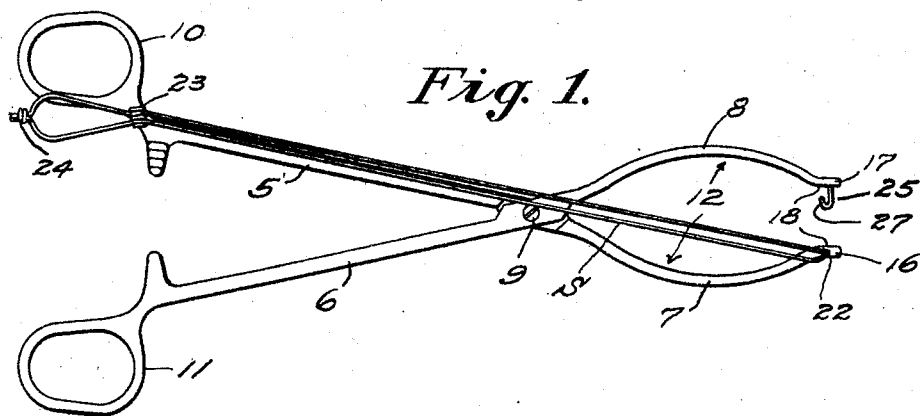
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O. A. NELSON

SURGEON'S FORCEPS

Filed March 17, 1924



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OLE A. NELSON, OF SEATTLE, WASHINGTON.

SURGEON'S FORCEPS.

Application filed March 17, 1924. Serial No. 699,789.

To all whom it may concern:

Be it known that I, OLE A. NELSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Surgeons' Forceps, of which the following is a specification.

This invention relates to surgical forceps for assisting the surgeons in securing ligatures about ducts or vessels in inaccessible places.

The object of the invention is to provide a new and efficient instrument of the type above mentioned.

A practical embodiment of the invention is shown in the accompanying drawing forming a part of this specification.

In said drawing,—

Figures 1, 2 and 3 are plan views of the forceps in which the forceps members are illustrated in different operative relations; and Fig. 4 is a perspective view of the jaw end of the instrument, the forceps members and the string occupying the relative positions in which they are shown in Fig. 1.

The reference numerals 5 and 6 designate the handle elements and 7 and 8 the complementary jaw elements of a pair of forceps members which are connected by a pivot pin 9.

As shown, said handle elements are desirably provided with finger rings 10 and 11. The jaw elements 7 and 8 are preferably bowed as at 12 (Fig. 1) in opposite directions to afford a cavity 13 between the jaws when the latter are in their relatively closed positions as represented in Fig. 2.

The outer terminals 16 and 17 of the respective jaws are flattened and arranged to enable the opposing surfaces 18 thereof to seat against each other when the forceps jaw elements are in their closed positions, see Fig. 2. The jaw terminals 16 and 17 are of substantially annular shapes (Fig. 4) to provide eyes 19 and 20 therein, that of the terminals 17 being thus formed to secure greater lightness.

The eye of the other terminal 16 is bridged by a portion 21 of a ligature or string S which is threaded through perforations 22 in the terminal at diametrically opposite sides of its eye 19.

The string S is of length sufficient to extend from its connection with the jaw terminal 16 to beyond a clip or catch 23 which is provided on one of the handle elements to

retain the string under tension sufficient to ensure the string bridge-portion 21 being taut. In practice, the string is desirably made endless by tying the ends thereof together as at 24.

Rigid with and extending from the jaw terminal 17 toward the companion jaw terminal 16 is a hook 25 adapted to enter the eye 19, but of greater width than the distance between the string bridge therein and the outer periphery as at 26 (Fig. 4) of the eye. The hook, moreover, is arranged to have its bill 27 disposed as shown in order that in the forceps jaw closing movement, that is to say—from its Fig. 1 into Fig. 2 relations—the hook will cause the string bridge to be flexed or sprung to permit the passing of the hook bill by the string and ensure the string being engaged in the hook when the forceps are subsequently opened. When the string is thus engaged in the hook, the withdrawal of the latter from the jaw eye 19 carries the string S therewith to span the gap between the jaw terminals 16 and 17.

In a surgical operation, the string S is applied to the forceps as represented in Figs. 1 and 4 and the jaws introduced into an incision made in the patient so that the jaws will be at opposite sides of the organ or part which is to be bound by the string. When the forceps have been inserted in the incision sufficiently far to receive the part above referred to, denoted by A, between the bowed portions 12 of the jaws, the operator closes the forceps, as in Fig. 2, bringing together the jaw terminals 16 and 17 with the part A within the cavity 13.

In thus bringing the jaw terminals together, the hook 25 is caused to pass through the eye 19 (Fig. 4) of the jaw terminal 16 extending beyond the string bridge 21 (Fig. 4) and protrude outside of the jaw terminal 16 as shown in Fig. 2.

The operator thereupon opens the forceps, causing the hook 25 to be retracted from the jaw terminal 16 and in so doing the hook seizes and draws therewith the string from the eye in a manner to span the gap between the jaw terminals.

The operator then withdraws the forceps from the incision which causes the string to become looped, as at 28, Fig. 3, about the part A. After the forceps have been sufficiently withdrawn, the string is disconnected from both jaws and the forceps dis-

pensed with. The operator manipulates the string to bind the part to any desired tightness, and finally ties the free portions of the string to secure the same.

5 While I have illustrated and described the embodiment of the invention now preferred by me, I do not wish to be understood as confining myself specifically thereto as changes may be made within the scope
10 of the following claims.

What I claim, is,—

1. A surgeon's forceps comprising pivotally connected members, each having a handle and a jaw element, one of said jaw elements having an annular shaped terminal provided with perforations at diametrically opposite sides of the eye thereof, and a hook provided on the other of said jaw elements and adapted to extend through said eye when the jaws are in closed relation with each other.

2. A surgeon's forceps comprising associated members having finger rings at one end and jaws at the other, one of said jaws having an eye and provided at opposite sides of the latter with string supporting means, the other jaw being provided with a hook adapted to extend through said eye into engageable relation with the string when the jaws are brought together.

3. A surgeon's forceps carrying a hook which extends laterally from the terminal of one of its jaws, its other jaw being provided with means to support a string and retain the same thereon in position to be engaged by said hook during an opening movement of the forceps.

4. A surgeon's forceps comprising pivotally connected members, each having a handle and a jaw element, a hook extending laterally from the terminal of one of the jaw elements, means provided on the terminal of the other jaw element for holding

a string in position to be engaged by said hook, said means also serving to guide the string when the latter is drawn therefrom by the hook during the opening movement of the forceps, and string holding means provided upon the handle element of one of said members.

5. A surgeon's forceps comprising a pair of members pivoted to one another, the jaw element of one of said members being provided with a recess and the other with a string engaging means adapted to enter said recess during the closing movement of the forceps, and means provided on the recessed jaw element for retaining a string in position to be engaged by the first named means during the opening movement of the forceps.

6. A surgeon's forceps comprising two members pivoted to one another, means for connecting a string to the jaw element of one of said members, and a hook carried by the jaw element of the other member, said hook being arranged to be projected beyond said means into engageable relation with the string during the closing movement of the forceps and into engaged relation with the string during the opening movement of the forceps.

7. In a surgeon's forceps, comprising two jaws, means provided upon one of the jaws for attaching a string thereto, and a hook extending from the other jaw and arranged to be moved therewith during the successive closing and opening movements of the forceps into engageable and engaged relations respectively with a string which is held by said means.

Signed at Seattle, Washington, this 7th day of March, 1924.

OLE A. NELSON.

Witness:

PIERRE BARNES.