

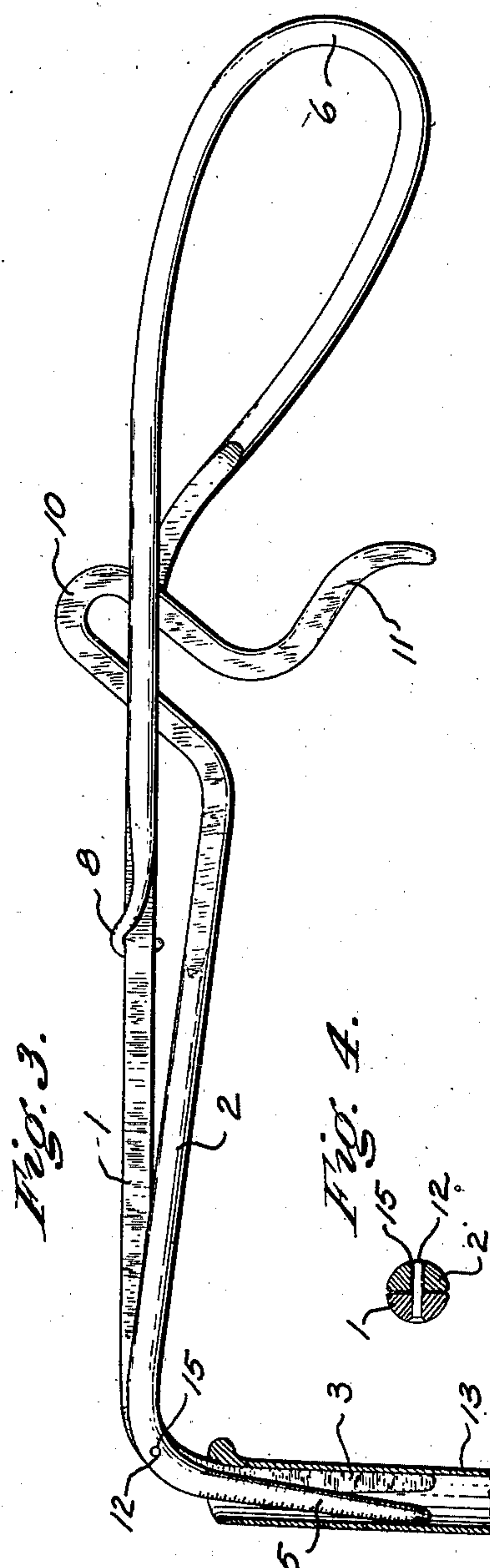
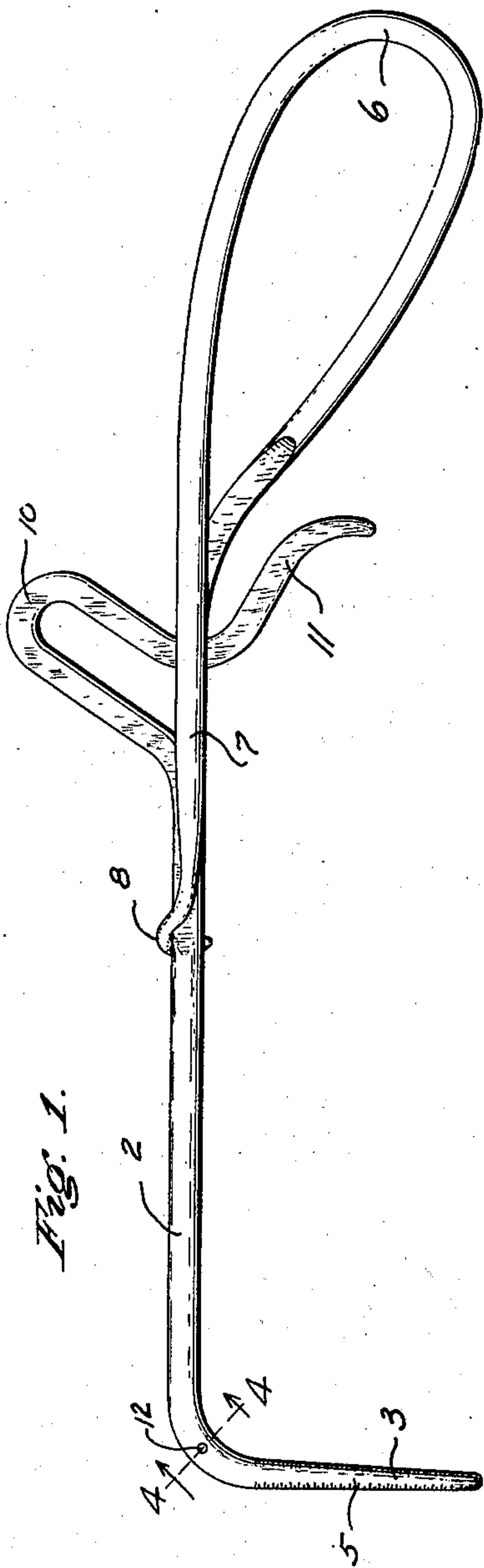
No. 702,443.

Patented June 17, 1902.

L. R. KRATZMUELLER.
SURGICAL INSTRUMENT.

(Application filed May 15, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS R. KRATZMUELLER, OF CHICAGO, ILLINOIS.

SURGICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 702,443, dated June 17, 1902.

Application filed May 15, 1901. Serial No. 60,346. (No model.)

To all whom it may concern:

Be it known that I, LOUIS R. KRATZMUELLER, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Surgical Instruments, of which the following is a specification.

My invention has been applied particularly to intubators and extubators or instruments for inserting tubes into the larynx and removing same therefrom; but the jaws may be modified in form, so as to be applied for other purposes, such as pincers, nippers, &c.

The main objects of my invention are to provide an improved instrument of this class combining simplicity and positive operation, having an improved frictional device for adjusting the jaws in different relative positions and improved connections for the jaws, permitting same to be readily separated for cleaning and to be readily antisepticized. I accomplish these objects by the construction shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a combined intubator and extubator constructed according to my invention, the parts being shown in their normal position, with the jaws closed. Fig. 2 is a top view of the same. Fig. 3 is a side elevation showing the jaws extending inside of a tube, which is shown in vertical section. Fig. 4 is a section on the line 4 4 of Fig. 1.

The device shown is made of two pieces of resilient wire. The shanks 1 and 2 are substantially straight and parallel for a considerable part of their length. At one end they are bent approximately at right angles to form the jaws 3 and 5. The jaws are slightly tapered toward the ends and are preferably made with a half-round section, so that when together, as shown in Fig. 1, they form a rounded instrument which can readily be inserted into the tube. The inner side of the shanks 1 and 2 are also flattened, except at the part forming the handle. The shank 1 is bent upon itself to form the loop or handle 6 and thence returning to form the member 7, substantially parallel to the member 14 of said shank 1, and at 8 being bent over and partly encircling the main part of said shank

1. The inner surface 9 of the member 7 is also flattened. The shank 2 is substantially parallel to the shank 1 to a point beyond the part 8, where it is bent to form a lateral extension or bight 10, projecting upwardly between the members 14 and 7 and continuing below to form the trigger 11. Both sides of the bight 10 and the trigger 11 are preferably flattened where they come in contact with the inner sides of the members 14 and 7. The pivot 12 is rigidly secured to the shank 1 at its union with its jaw 3. The shank 2 has a recess 15 for receiving the pivot 12 and is held in position by the pressure of the resilient members 14 and 7 against the bight 10. The handle 6 is made of such form that when grasped by the hand of the operator the bight 10 is in convenient position to be depressed by his thumb and the trigger 11 is convenient to his index-finger.

The operation of the device is as follows: The jaws 3 and 5 when in their closed position, as shown in Fig. 1, are inserted into the tube 13. The operator presses upon the bight 10 with his thumb, thus separating the jaws until they firmly grasp the tube. The tube may then be inserted into the larynx of the patient. The operator then pulls the trigger 11 backward with his forefinger until the shank 2 comes in contact with the part 8, indicating that the jaws are closed and that the instrument is free to be removed. For extracting the tube the operation is reversed. The members 7 and 14, bearing against the sides of the bight 10 through the friction of said parts, retain the jaws in the different relative positions to which same may be adjusted by the operator.

To remove the shank 2 and its jaw from connection with the shank 1 and its jaw, the operator will pull the trigger 11 downwardly until the jaw 10 is removed from between the members 7 and 14. The shank 2 and its jaw may then be readily removed from the pivot 12. Said pivot 12 and the recess 15 are not threaded, thus permitting the shanks to be readily separated for cleaning and antisepticizing.

It will be understood that various details of construction of the device shown may be altered without departing from the spirit of my invention. I therefore do not confine my-

self to such details except as hereinafter limited in the claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

5 1. A surgical instrument comprising a pair of jaws pivoted together and each having a shank, one of the shanks having a laterally-extending part lying in the plane of its pivotal movement with said shank, and the other
10 shank having a pair of members which have a resilient action toward each other and against opposite sides of said laterally-extending part, said members being adapted to control the relative pivotal position of said
15 jaws through frictional contact with the sides of said laterally-extending part.

2. A surgical instrument comprising a pair of jaws pivoted together and each having a shank, one of the shanks having a laterally-extending part lying in the plane of its pivotal movement with said shank, and having
20 a trigger extending oppositely to said laterally-extending part, and the other shank having a pair of members which have a resilient
25 action toward each other and against opposite sides of said laterally-extending part, said members being adapted to control the relative pivotal position of said jaws through frictional contact with the sides of said laterally-
30 extending part.

3. A surgical instrument comprising a pair of jaws pivoted together and each having a shank, one of the shanks having a laterally-extending part lying in the plane of the pivotal movement of such shank, and the other
35 shank being formed of resilient material bent upon itself and around said laterally-extending part in suitable manner to bear against each side of same and through frictional con-

tact with opposite sides of said laterally-extending part, to control the relative pivotal positions of said jaws. 40

4. A surgical instrument comprising a pair of jaws pivoted together and each having a shank, one of said shanks being bent upon
45 itself to form a laterally-extending bight and thence continuing to form a trigger extending opposite to said bight, and the second shank bearing against the side of and extending rearward of said bight, being thence bent
50 upon itself to form a handle, thence returning across and bearing against the opposite side of said bight and having its free end hooked over the opposite part of said second shank forward of said bight. 55

5. A surgical instrument comprising a pair of jaws pivoted together and each having a shank, one of the shanks having a laterally-extending part lying in the plane of the pivotal movement of such shank, and the other
60 shank having a member bearing against each side of said laterally-extending part and through frictional contact therewith controlling the relative pivotal positions of said jaws; the pivotal connection of the jaws consisting
65 of a pin rigid on one jaw and having an unthreaded end projecting loosely into a recess in the other jaw and adapted for freely disconnecting the jaws in the manner specified when said laterally-extending part is with-
70 drawn free from the members bearing against its sides.

Signed at Chicago this 11th day of May, 1901.

LOUIS R. KRATZMUELLER.

Witnesses:

WM. R. RUMMLER,

EUGENE A. RUMMLER.