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G. PETERS

1,514,259

SURGICAL IMPLEMENT FOR APPLYING CLIPS TO WOUNDS

Filed Jan. 25, 1923

Fig. 1.

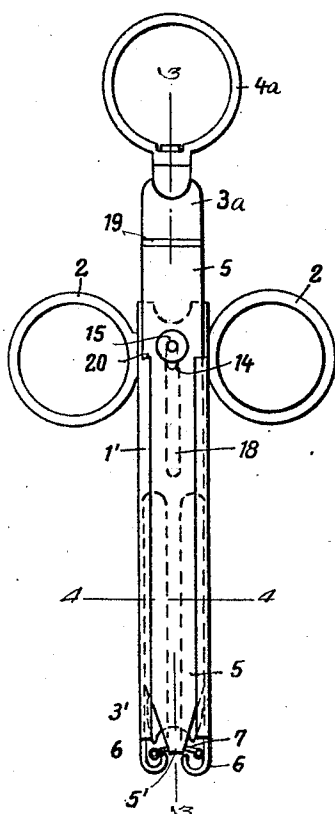


Fig. 2.

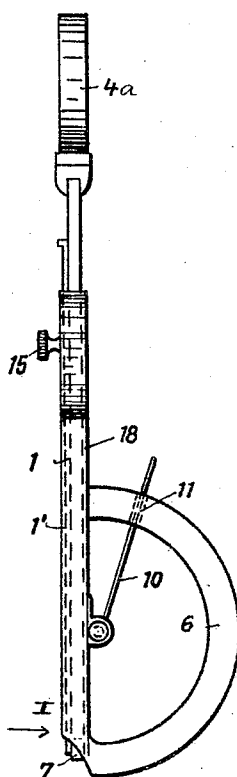


Fig. 3.

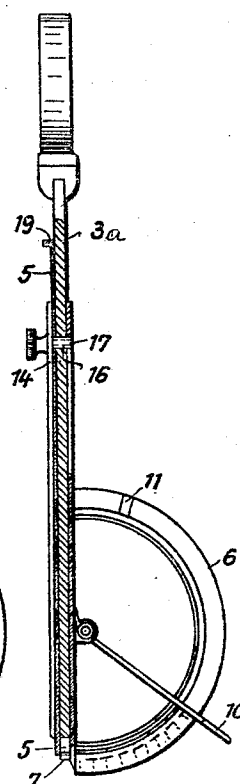


Fig. 4.

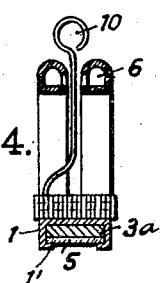


Fig. 5.



Fig. 6.

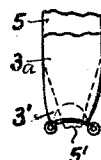


Fig. 7.



Fig. 8.

Witnesses:
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UNITED STATES PATENT OFFICE.

GUSTAV PETERS, OF DANZIG, FREE CITY OF DANZIG.

SURGICAL IMPLEMENT FOR APPLYING CLIPS TO WOUNDS.

Application filed January 25, 1923. Serial No. 614,817.

To all whom it may concern:

Be it known that I, GUSTAV PETERS, a citizen of Germany, and residing in the city of Danzig, in the Free City of Danzig, have invented certain new and useful Improvements in Surgical Implements for Applying Clips to Wounds, of which the following is a specification.

This invention relates to an improved surgical implement for applying clips to wounds, which essentially comprises two slides adapted to catch a clip escaping from a clip magazine, to advance the same, and to bend it together at the end of said advance, that is when applying it to the wound, the implement being held by means of two annular handles while a third annular handle serves to operate the same.

The accompanying drawing show the improved implement: Figs. 1 and 2 are respectively a front view and a side view of the same, Fig. 3 is a longitudinal section on the line 3—3 of Fig. 1, Fig. 4 is a cross-section on the line 4—4 of Fig. 1, Figs. 5 to 8 inclusive show details.

The improved implement comprises a framelike member 1 fitted with two annular handles 2 integral therewith and carrying a slide 3^a, which has an annular handle 4^a at its top end and which carries another slide 5. On the back side of said member 1 a magazine 6 for the clips to be applied is provided, the same consisting of two tubular members of semicircular shape. The clips 7 (Fig. 5) are put in series on a wire strap 8 (Fig. 6) and inserted together with the latter, with its free members 9 in front, in the two magazine members 6, the wire strap being then withdrawn. A spring arm 10 (Fig. 4), which passes through between the two magazine members, then acts on the clips in the magazine in such a way that the latter are continuously pressed toward the front opening of the magazine, said spring arm being adapted to be locked in a notch 11 in the upper part of the magazine 6 so as to facilitate the insertion of the clips in the latter.

Fig. 3 shows the two slides 3^a and 5 in their raised positions. The inner slide 3^a then assumes such a high position that it does not prevent the clips escaping from the magazine 6. The outer slide 5 then assumes such a height with its lower bent portion 5' that one clip escaping from the

magazine 6 is supported on said bent portion 5'.

To allow a proper co-action of the two slides 3^a and 5 by means of the handle 4^a only, the slide 5 has a limited movement only on the slide 3^a. The slide 5 has a longitudinal slot 14 through which passes a set-screw 15 which is screwed at 16 through the slide 3^a and which engages with its projecting end 17 in a longitudinal slot 18 in the frame-like member 1. The slide 5 is at its upper end fitted with an abutment 19 which at the lowermost positions of the slides (Fig. 8) strikes against the upper edges 20 of the guiding-ledges 1' of the frame-like member 1 and thus limits the downward movement of the slide 5.

If, in the position of the parts shown in Fig. 2, one clip 7 is supported on the bent portion 5' of the slide 5, the handle 4^a is depressed and the parts assume then successively the positions shown in Figs. 7 and 8, which show the same in the direction of arrow I, Fig. 2. Upon depression of slide 3^a, the same catches with its fingerlike ends 3' the clip 7 and presses the same against the bent portion 5' of the slide 5, so that it is firmly located between 3' and 5'. The two slides 3^a and 5, coupled by the clip 7, move then in common downwards until the slide 5, by its abutment 19 striking against the edges 20, is stopped from moving farther downwards, this position corresponding to the position of parts shown in Fig. 7. By a downward pressure on the handle 4^a, the slide 3^a moves alone downwards, its finger-like projections 3' bending then the clip 7 gradually together over the bent portion 5' of the slide 5 whereby the clip ends enter the edges of the wound, that is the clip is closed. The length of the slot 18 determines the maximum movement of the slide 3^a, and the length of the slot 14 that of the slide 5 with reference to the slide 3^a. Upon depression of the slide 3^a, the clip 7 causes the slide 5 to participate in its downward movement by coupling the two slides at 3' and 5'. Thereby, the clip to be applied is sufficient secured in position. For the manipulation of the implement, it is of great advantage that it need be approached to the wound with its narrow lower edge only and not with a larger surface. The manipulation itself is exceedingly simple by the insertion of one clip between the slides

3^a and 5 being effected automatically with the aid of the spring arm 10, as soon as the two slides are sufficiently retracted within their guide 1.

5 The separation of the implement from the clip applied to the wound takes place in an equally easy way by a slight upward movement of the slide 3^a. The outer slide 5 does not directly follow said upward
10 movement as it is retarded by its greater friction against the guiding ledges 1', it following the slide by aid of the set-screw 15 only when the latter has reached the upper end of slot 14.

15 What I claim, is:—

1. In a surgical implement for applying clips to wounds, the combination of a frame-like member, two annular handles integral with said member, an open-ended
20 clip magazine on said member, two slides arranged on said member, an annular handle adapted to move said slides, and means in connection with said slides to take

the clips, one by one, out of said magazine, to advance the same, and to bend it together, substantially as set forth. 25

2. In a surgical implement as specified in claim 1, means to limit the movement of one slide and to bend the ends of the clip together by the other further advancing slide, 30 substantially as set forth.

3. In a surgical implement as specified in claim 1, in which the clip magazine consists of two semicircularly shaped tubular members, a lockable spring arm guided between 35 the latter and adapted to continuously advance the clips in the magazine toward the opening of the latter, substantially as set forth.

In testimony whereof I have hereunto set 40 my hand in the presence of two subscribing witnesses.

GUSTAV PETERS.

Witnesses:

PAUL MILLER,

WILHELM SCHULZE.