

No. 643,700.

Patented Feb. 20, 1900.

E. E. WARD.
HOOK AND EYE.

(Application filed Dec. 20, 1898.)

(No Model.)

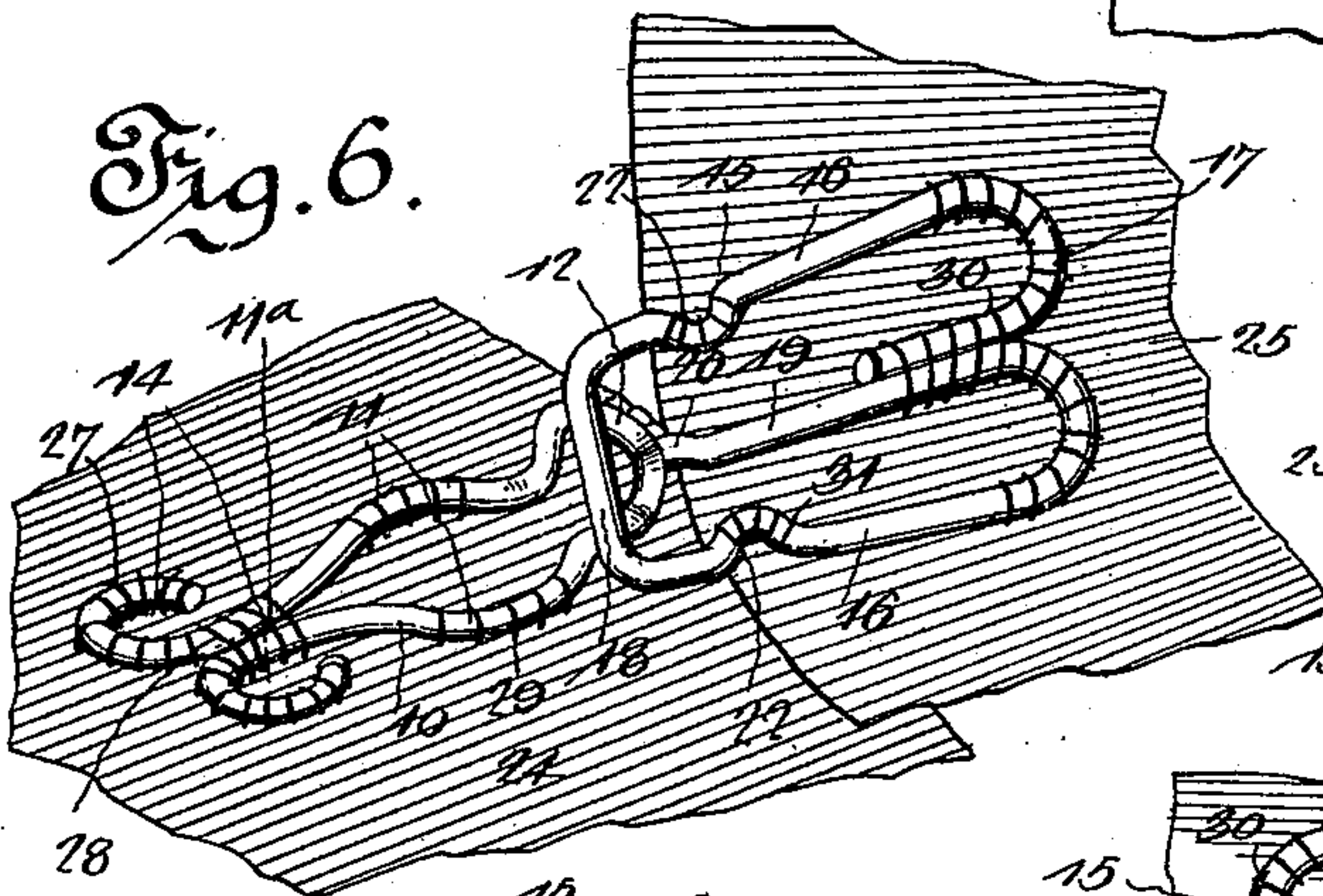
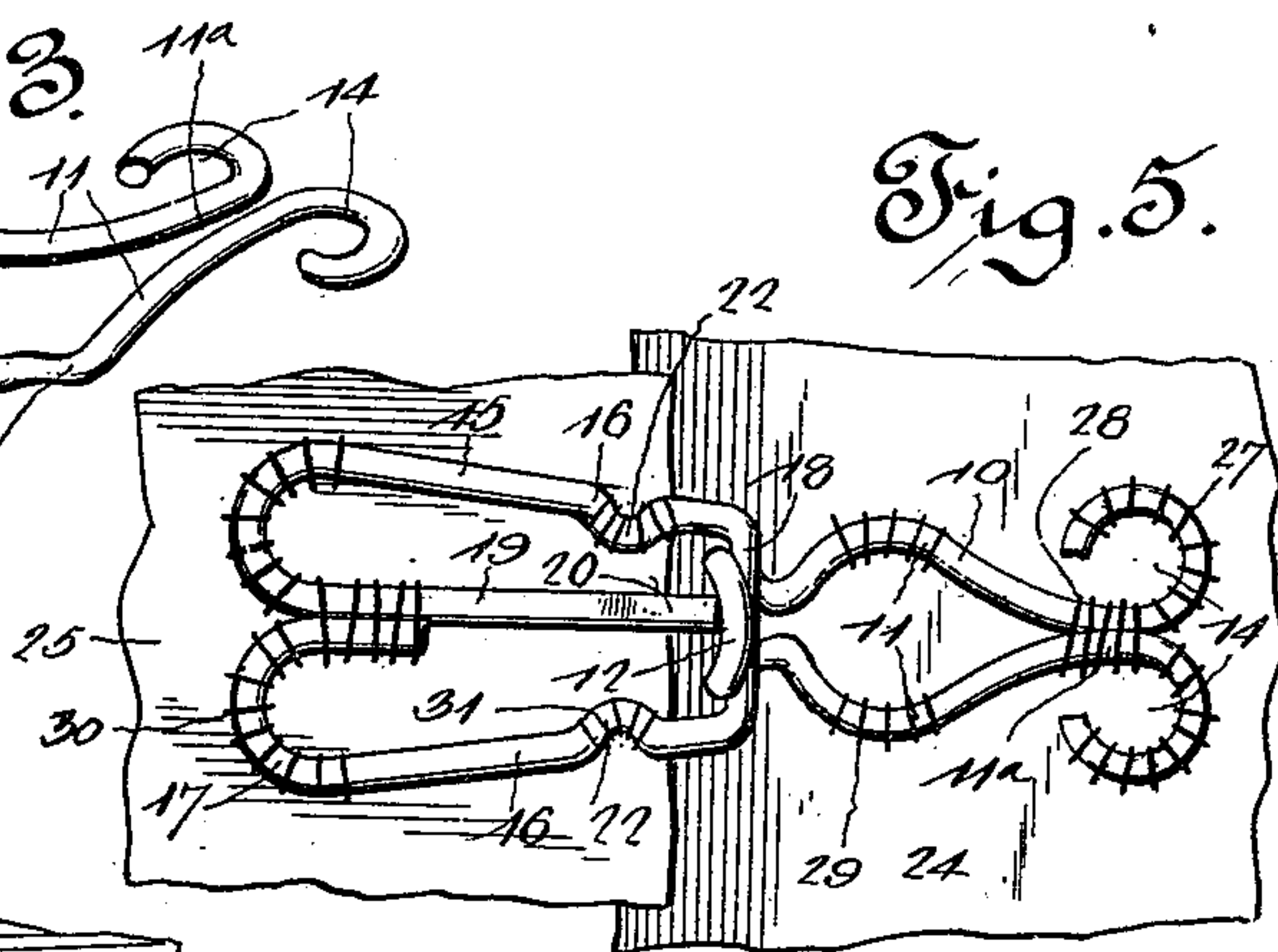
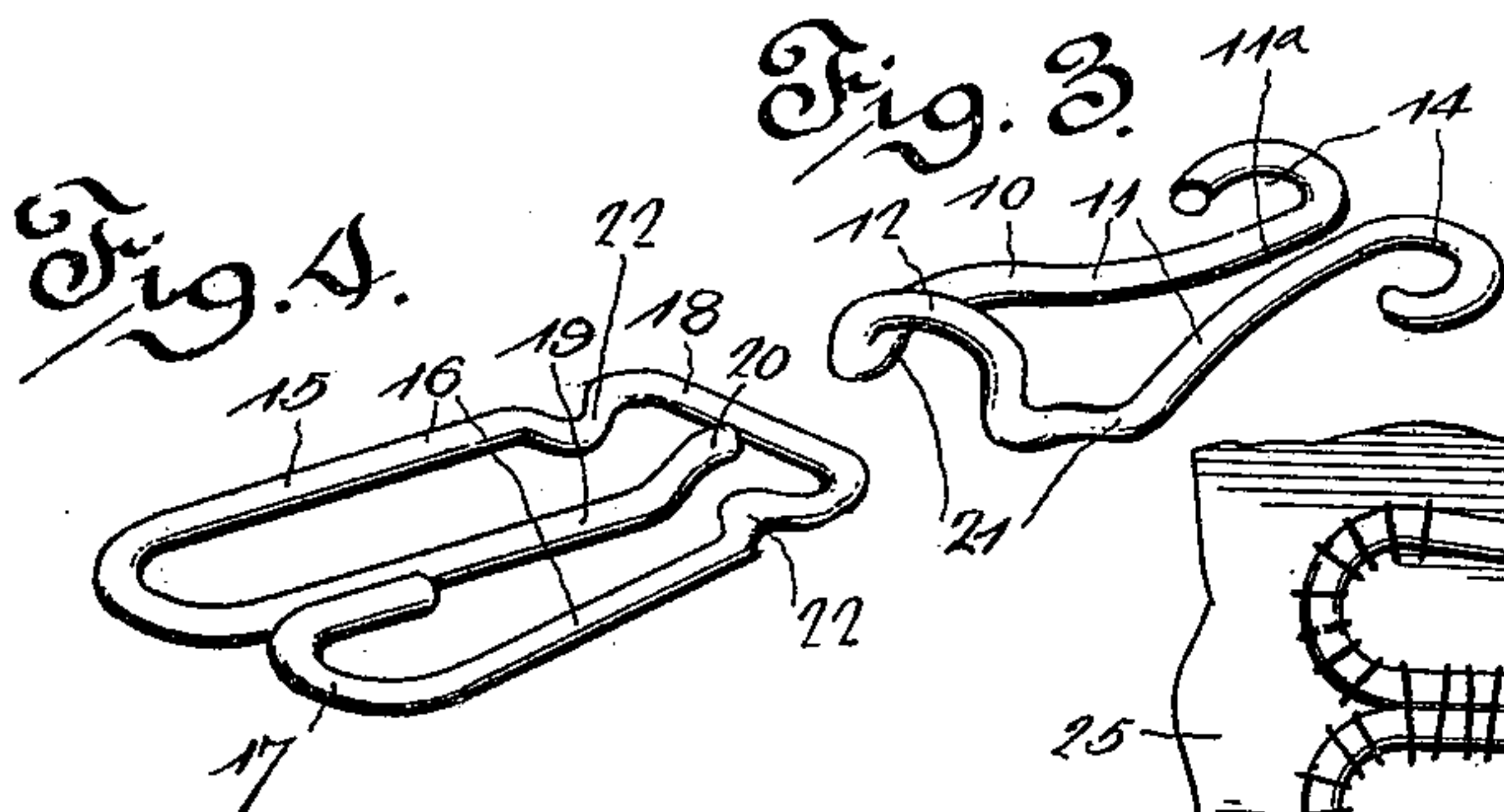
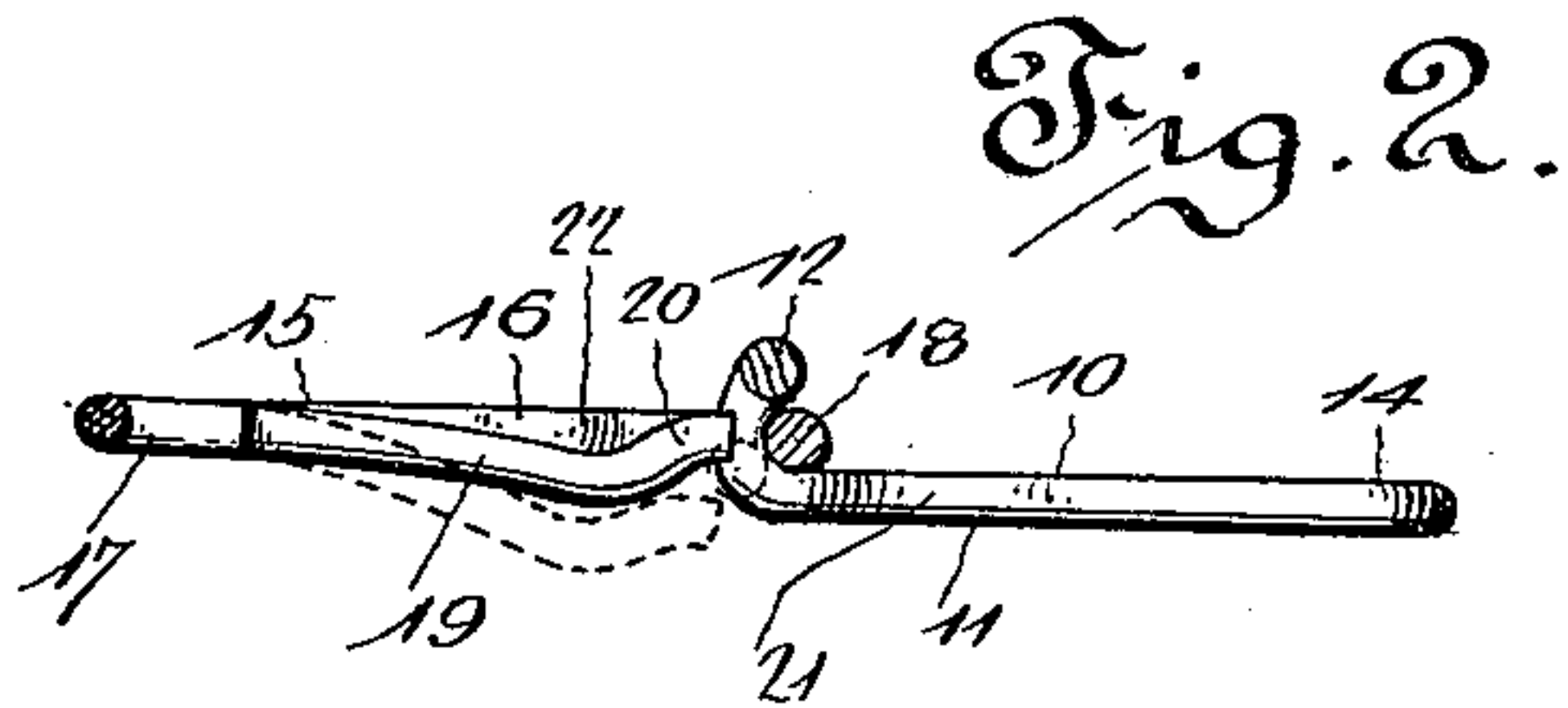
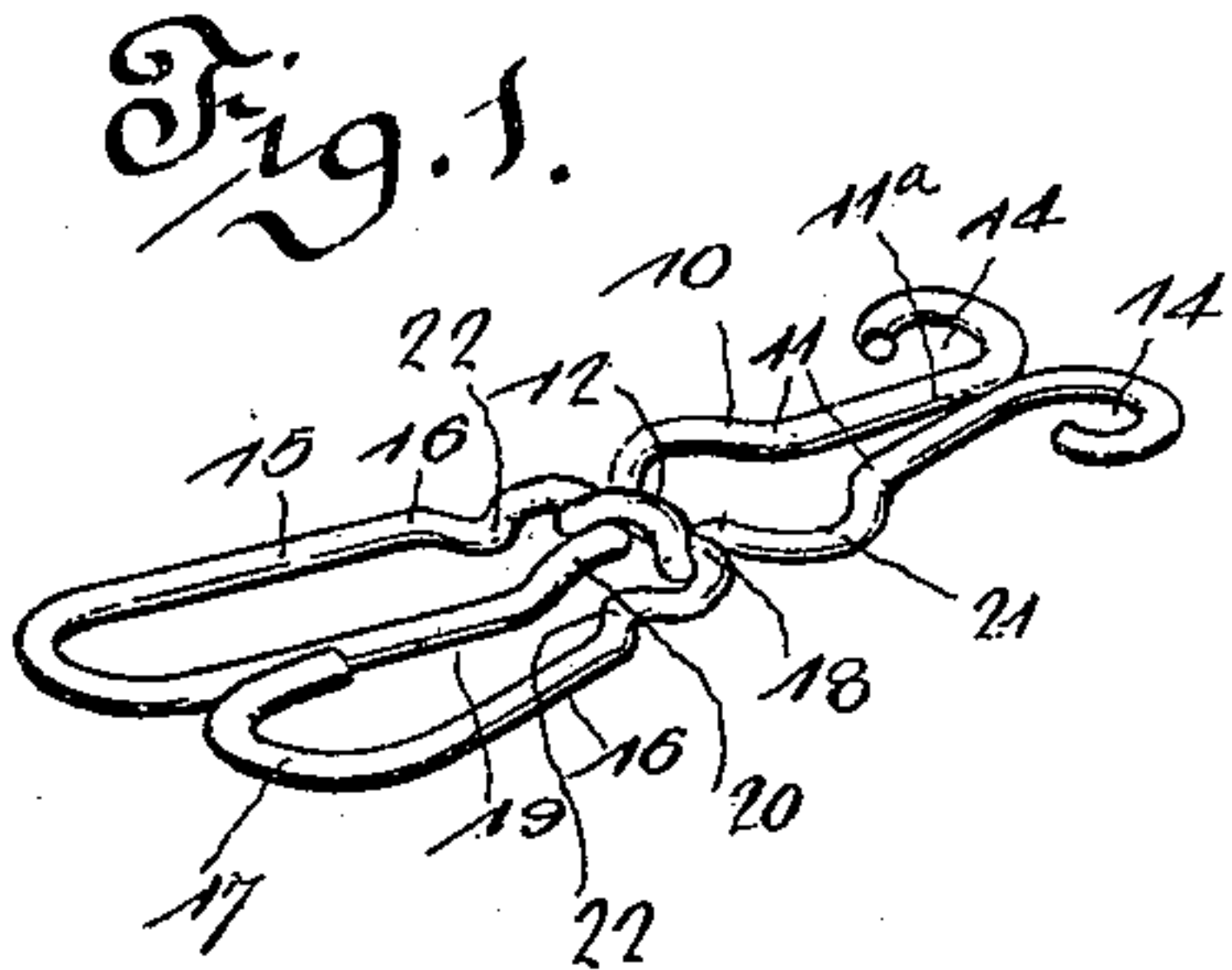


Fig. 6.

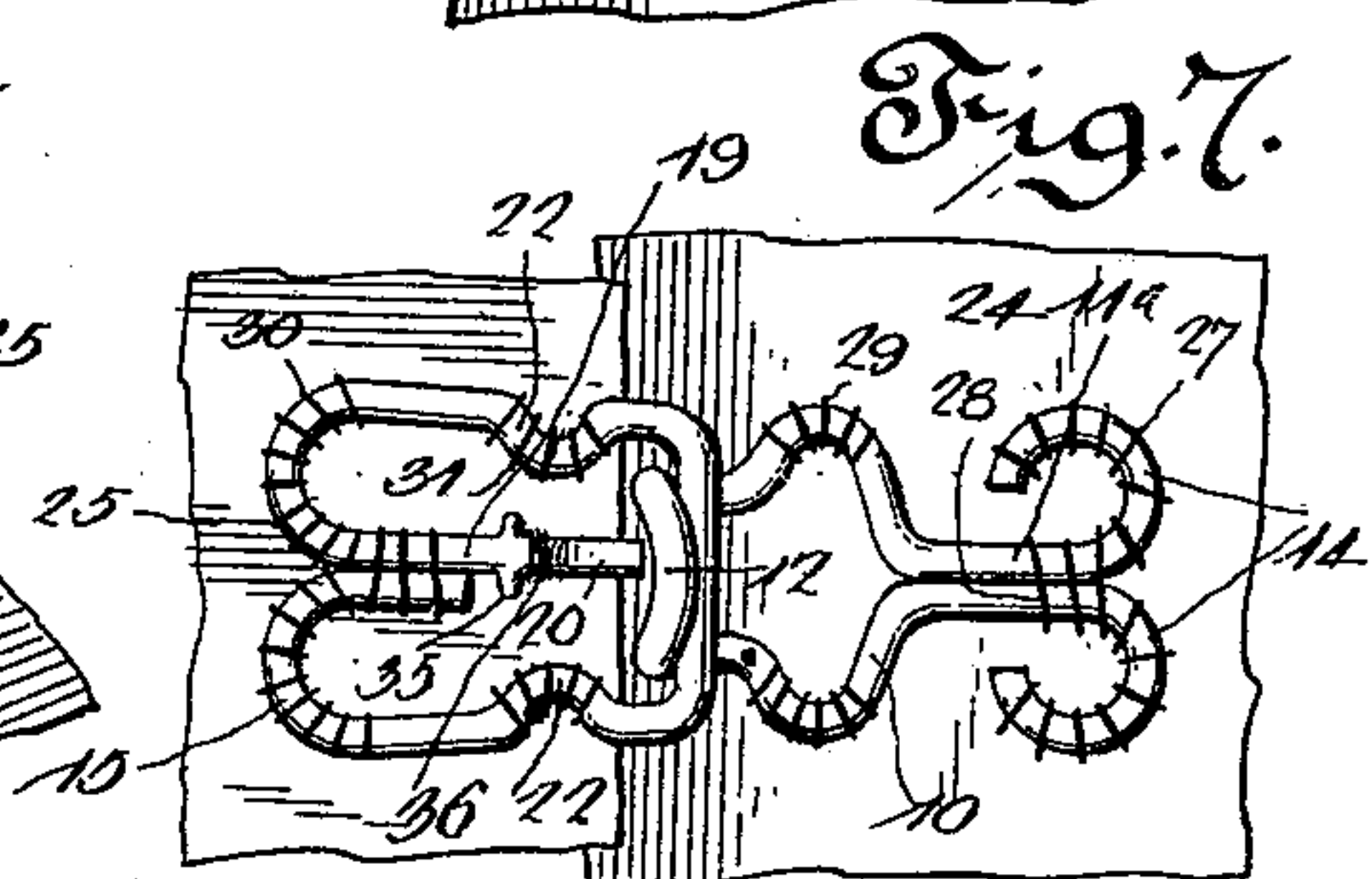
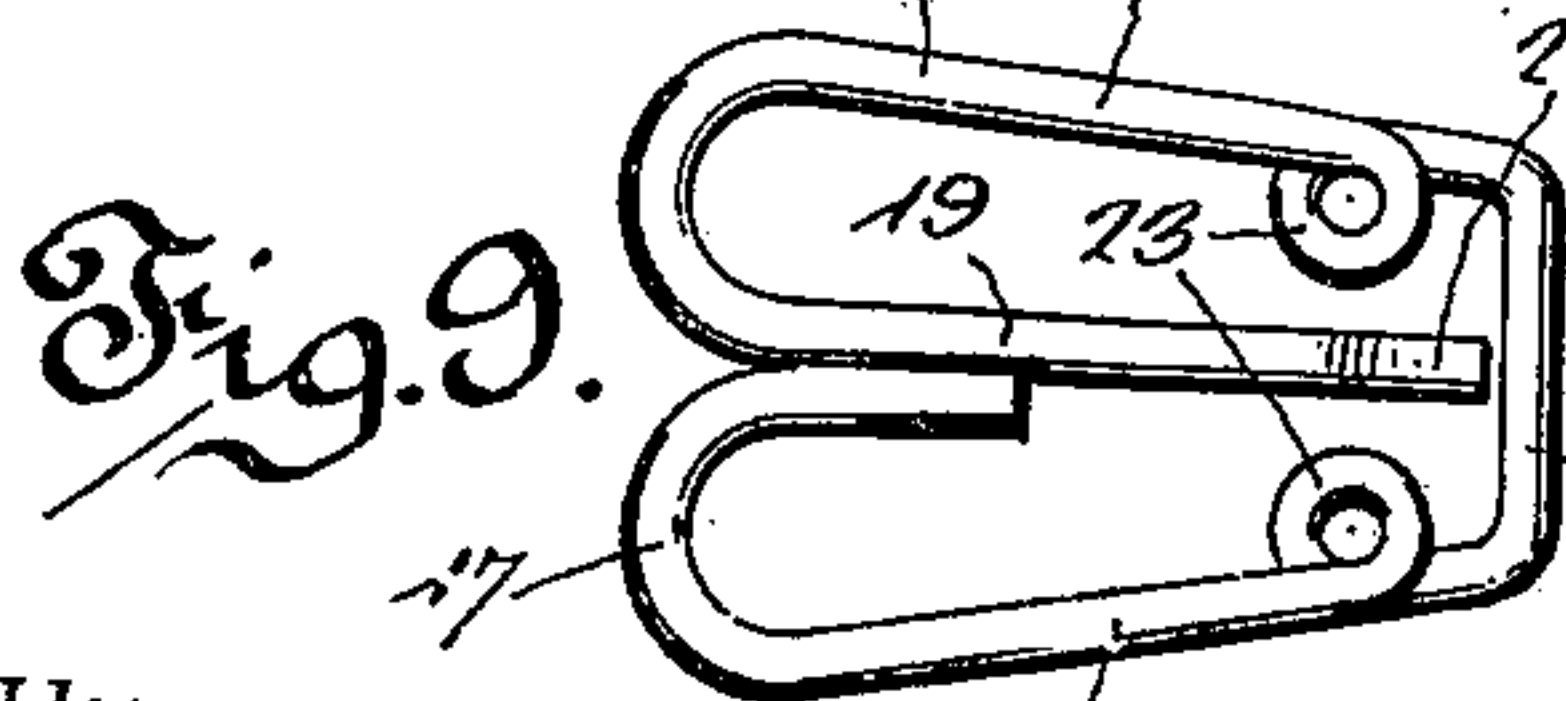
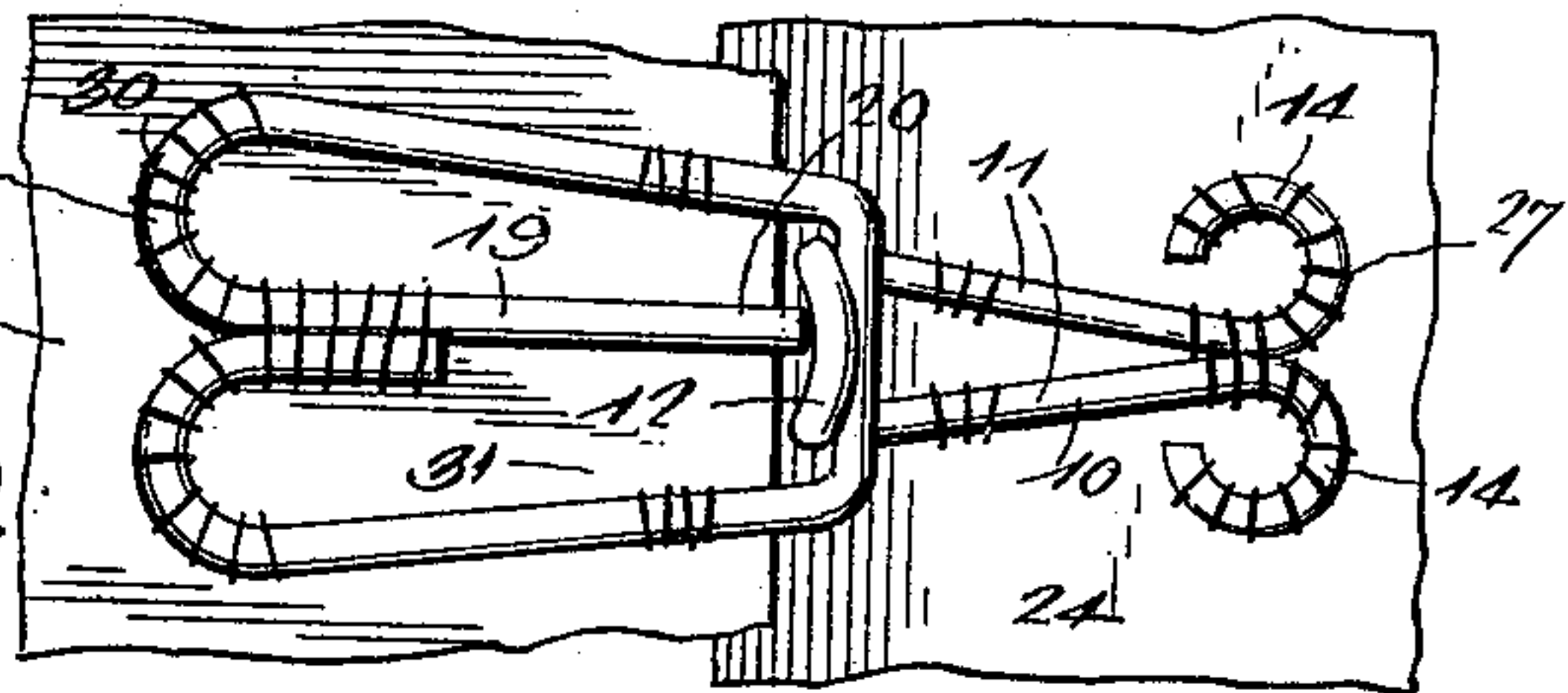


Fig. 8.

Fig. 9.



Witnesses
J. Frank Culverwell
H. J. Pemberton

Elmer E. Ward, Inventor.
By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ELMER E. WARD, OF COLORADO SPRINGS, COLORADO, ASSIGNOR OF ONE-HALF TO FREDERIC R. HASTINGS, OF SAME PLACE.

HOOK AND EYE.

SPECIFICATION forming part of Letters Patent No. 643,700, dated February 20, 1900.

Application filed December 20, 1898. Serial No. 699,856. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. WARD, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented a new and useful Hook and Eye, of which the following is a specification.

This invention relates to hooks and eyes; and the object is to provide an improved construction which obviates the necessity for unduly straining the garment in fastening or unfastening the same, especially with close-fitting garments; which will present a flat appearance, so as to lie compactly to the garment and be scarcely noticeable when placed between two pieces of dress fabric; which will not be damaged or injured in washing the fabric, and especially when passing the same through a clothes-wringer; which will be simple and easy of manipulation; which is not liable to become disengaged accidentally; which will not be caught in lace, trimmings, the fabric, or the hair in moving or donning the garment, and which will enable the members to be applied to dress fabrics close up to the edge thereof, so as to draw the edges together and insure overlapping thereof, thereby preventing the edge of the garment from spreading or gapping open.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of my improved hook-and-eye fastener. Fig. 2 is a longitudinal section thereof, the dotted lines representing the abnormal position of the spring-tongue. Figs. 3 and 4 are detail perspectives of the hook member and the eye member, respectively. Fig. 5 is a plan view of the fastener applied to two pieces of fabric. Fig. 6 is a perspective view showing the positions of the members in separating the same. Figs. 7 and 8 are plan views of modifications of the fastener; and Fig. 9 is a plan view of another embodiment, in which one or

both of the members are provided with loops adapted to be stitched to the fabric.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

The hook member 10 of my improved fastener consists of the side bars 11, the bill 12, and the eyes 14. The bill is in the form of a loop, and it is extended for a short distance at right angles to the plane of the side bars 11.

The eye member 15 of the fastener consists of the side bars 16, a cross-bar 18, and a spring-tongue 19. This tongue occupies a position about midway between the side bars. Its free end is inclined upwardly above the plane of the side bars, and it terminates contiguous to the cross-bar 18.

In the practical embodiment of my invention each member thereof is bent from a single piece or strand of wire, although I would have it understood that I do not strictly confine myself to this particular material in the manufacture of the hook and eye.

As shown by the drawings, the hook member 10 is bent at a point intermediate of its length to provide the looped bill 12, and then the side bars 11 are bent at right angles to the bill and are carried rearwardly therefrom, the terminals of the wire being bent in opposite directions to form the eyes or loops 14. In a similar manner the eye member 15 is bent from a single piece of wire to form the cross-bar 18, then bent substantially at right angles to provide the side bars, and one end of the wire is bent inwardly to form the loop 17, while the other end of the wire is bent inwardly alongside of the loop 17 and extended or carried forward to form the spring-tongue 19. This spring-tongue at its free end is bent or offset at 20, and said offset free end terminates contiguous to the cross-bar 18, so as to leave a space or interval between itself and the cross-bar, which is of a width less than the thickness of the wire from which the bill 12 of the hook-shaped member 10 is formed.

The hook member 10 has its loops or eyes 14 disposed in close relation to one another, and the side bars adjacent to the loops or eyes 14 are quite close to form a shank, as at 11^a. From this shank the side bars diverge laterally until they reach points beyond the

ends of the looped bill, and these bars are then curved or brought inwardly in an abrupt manner to produce the shoulders 21 between the said bars and the looped bill.

5 The side bars 16 of the eye member 15 may be substantially parallel, and between the cross-bar 18 and the inward bends at the heel of said eye member these side bars 16 may be and preferably are bent inwardly toward the
10 spring-tongue 19 to produce the shoulders 22.

In applying my fastener to a garment the hook member 10 is fitted against one piece of fabric, as 24, for the bill thereof to lie within the edge of the fabric, and this hook mem-
15 ber is fastened to the fabric by stitches 27, which embrace the loops 14, by the stitches 28, that engage with the shank 11^a, and the stitches 29, embracing the shouldered portions 21, as clearly shown by the drawings. The

20 eye member 15 is fitted against the other piece 25 of the fabric for its cross-bar 18 to extend beyond the edge of said fabric, and this eye member is fastened in place by stitches 30, which embrace the inwardly-bent portions 17,
25 and by stitches 31, that engage with the shoulders 22. It will thus be seen that each member of the fastener is fastened to the fabric at points adjacent to the edge thereof, and the edge portions of the fabric are prevented
30 from drawing away from each other when the members 10 15 are connected together, thus insuring overlapping of the fabric 24 25 one by the other and obviating spreading of the fabrics at the line where they should be joined
35 closely together. To connect the two members of the fastener it is necessary only to draw the edges of the fabric sufficiently together for the cross-bar 18 of the member 15 to take over the bill 12 of the member 10, and according to

40 my improvement it is not necessary to overlap the edges of the fabric to such an extent as to strain the garment, because the member 15 will readily slip over the bill 12, thus obviating injury to the garment and the seams thereof.

45 When the cross-bar 18 of the member 15 slips over the bill 12, the free offset end of the spring-tongue 19 bears against the looped end of the bill, and in pressing the cross-bar of the member 15 to its seat in the bill 12 the
50 spring-tongue yields or gives in an outward direction, thus enabling the two members of the fastener to be connected. Immediately after the eye member is properly connected to the bill of the hook member the spring-

55 tongue resumes its normal position and fits within the space of the loop-shaped bill, and this spring-tongue thus serves to confine the eye member in proper relation to the bill and prevents accidental separation of the two
60 members, because the spring-tongue normally occupies a position within the bill. In order to separate the members, it is necessary to twist or turn them for the member 15 to assume an inclined position relatively to the
65 plane of the member 10, and by pulling the members apart the spring-tongue impinges

against the bill 12 and assumes the deflected abnormal position indicated by dotted lines in Fig. 2.

The operation of unfastening the members 70 may be described graphically as follows, reference being had more particularly to Fig. 6: The hook member is grasped in the left hand and the eye member by the right hand. The pieces of fabric are moved in opposite direc- 75 tions to correspondingly adjust the members 10 15, and in the separation of the fabrics a spring-tongue presses against the bill to assume the inclined position until the member 10 is free from the member 15, and this oper- 80 ation may be easily and quickly effected without sliding the members lengthwise one of the other and straining the garment.

The spring-tongue of the member 15 lies in the plane of the side bars, or substantially so, 85 and the bill 12 of the member 10 extends only a short distance beyond the side bars of said member 10. This construction of the parts is advantageous, because they may lie com- 90 pactly to the fabrics, so as to be scarcely noticeable when interposed between two pieces of fabrics. The members are not liable to be caught in laces, trimmings, or the hair in donning or removing the garment, and said members will not be injured when washing 95 the fabric or passing the same through a wringer, thus rendering the improved fastener well adapted for use on wash fabrics.

The members of my fastener are extremely simple, and they can be manufactured very 100 cheaply.

The fastener can be lined over or faced up with respect to the fabric, so that only a frag- ment of either a hook or eye remains exposed; but at the same time the fabrics do not in- 105 terfere with the expeditious coupling or unhooking of the two members.

I attach special importance to the members provided with shoulders at points intermedi- 110 ate of their length for the reception of stitches by which the members may be attached near the free edges of the fabrics, and this construction renders the device especially serv- 115 iceable where neat, fine, and particular work is desired on garments, especially close or tight fitting articles, and more particularly on light fabrics to prevent the gapping of the goods.

In my improved garment-fastener the eye member is constructed with a spring-tongue 120 which lies nearly in the plane of the side bars of said member and has the bent portion near the free end of said spring-tongue, the extremity of said tongue being inclined to the longitudinal axis thereof and terminating 125 quite close to the front cross-bar of said eye member. The hook member of the fastener has the cross-bar of its bill arranged on a plane above the side bars of said hook mem- 130 ber, and the width of this bill is less than the width of the front end of the eye member, so that the eye member may be easily slipped

over the bill in coupling the two members. This construction and adaptation of the parts of said members is especially advantageous in separating them, because the two parts
 5 may be easily uncoupled by separating the fabrics in an inclined direction to make the eye member assume an inclined position to the plane of the hook member; but at the same time the parts are coupled against dis-
 10 engagement by a direct pull thereon, and the members are furthermore constructed to lie compactly and closely upon the garment.

In Figs. 5 and 6 of the drawings the hook member has its side bars spread or diverged
 15 beyond the limits of the looped bill; but this is not essential, because in Fig. 8 of the drawings the side bars 11 are represented as extending in straight lines from the loops 14 to the bill 12. In Fig. 9 of the drawings the
 20 eye member is provided with loops 23 at points between the cross-bar 18 and the inwardly-bent ends 17, and these loops 23 are adapted to receive the stitches by which the member 16 may be secured near its free end
 25 to the garment, the loops or eyes 23 serving the purposes of the shoulders 22 in the construction shown by Figs. 5 and 6.

In Figs. 5, 6, 8, and 9 the form or shape of the members, particularly the member 10, is
 30 changed somewhat, so as to dispense with the shoulders 21; but the gist of the invention is preserved.

In some cases I may flatten the tongue 20 at a point intermediate of its length, as shown
 35 at 35 in Fig. 7 of the drawings, in order to provide the projecting shoulders. This may be effected by compressing or pinching the tongue to expand it laterally, and the stitches 36 may be arranged across the tongue in rear
 40 of its offset free end and in advance of the shoulders in order to confine or limit the play of the tongue. The shoulders and offset end

of the tongue prevent displacement of the stitches.

Changes may be made in the form and pro- 45
 portion of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary 50
 therefrom.

What I claim is—

1. A garment-fastener consisting of the eye member comprising the side bars, the front cross-bar, and the spring-tongue disposed be- 55
 tween the side bars in nearly the same plane therewith and having an inclined free end terminating contiguous to the front cross-bar of said member, and the hook member pro-
 60 vided with a bill having its cross-bar in a plane above the side bars thereof, the width of the bill on said hook member being less than the width of the front end of the eye member.

2. A garment-fastener comprising a hook 65
 member, and an eye member, each having its side bars bent or deflected inwardly at points between the front and rear ends thereof, and forming abrupt surfaces for engagement by the fastening appliances, said hook member 70
 provided at its front end with an angular bill which spans the space between the side bars, and the eye member provided with the spring-tongue arranged between the side bars thereof
 75 and having its front end terminating close to the front bar of said member, for the purpose described, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ELMER E. WARD.

Witnesses:

OTIS REMICK,

ALBERT E. HASTINGS.