

No. 796,158.

PATENTED AUG. 1, 1905.

E. J. SMITH.  
HOOK AND EYE.  
APPLICATION FILED JAN. 27, 1905.

FIG. 1.

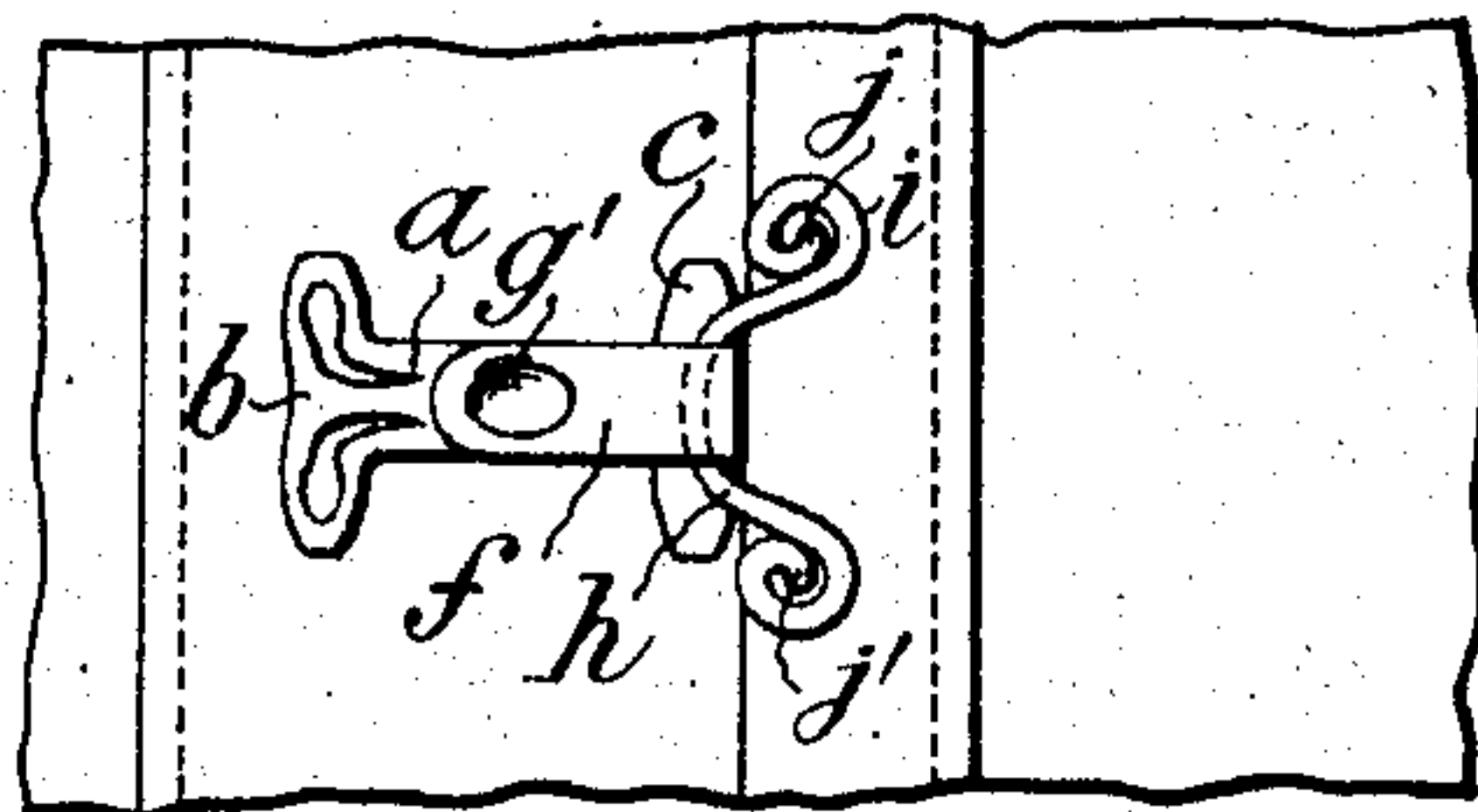


FIG. 2.

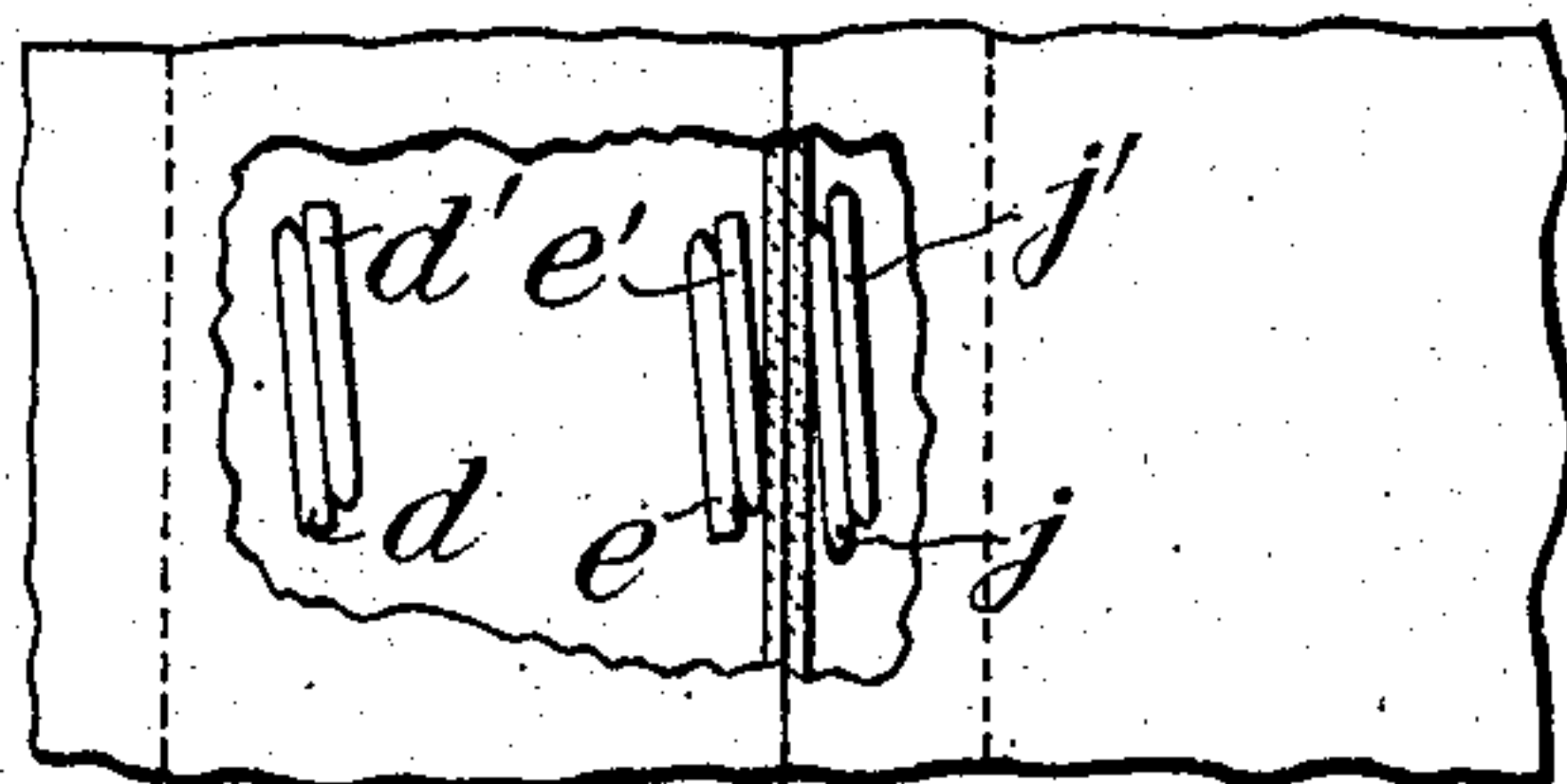


FIG. 3.

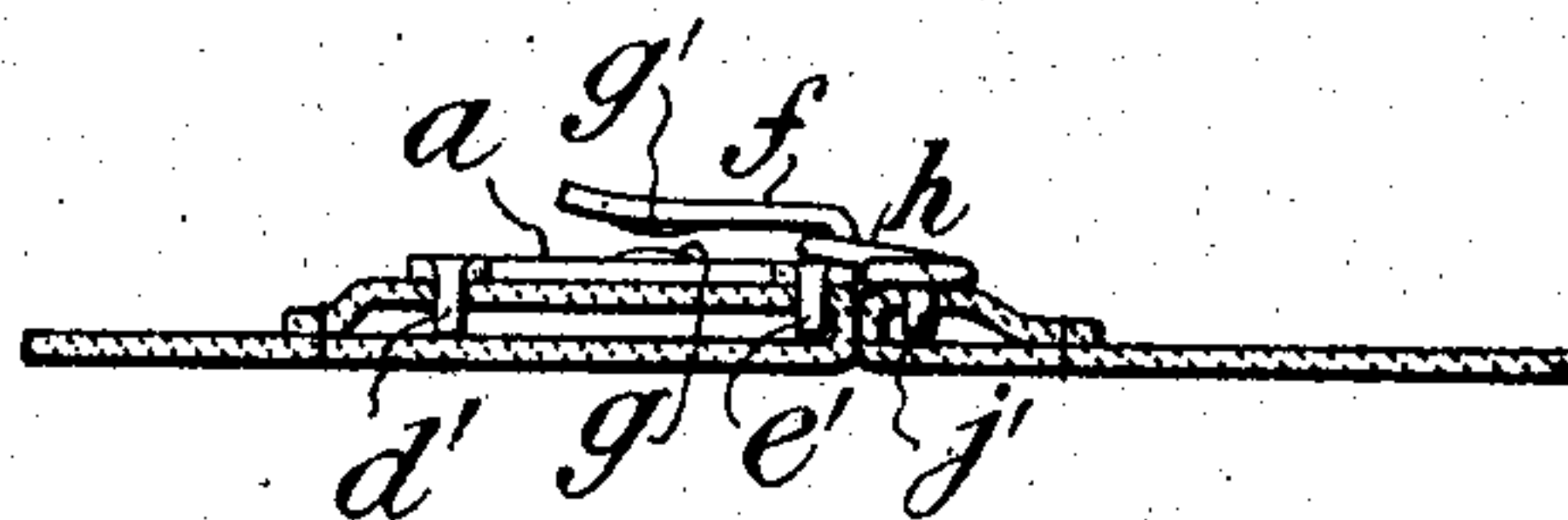


FIG. 4.

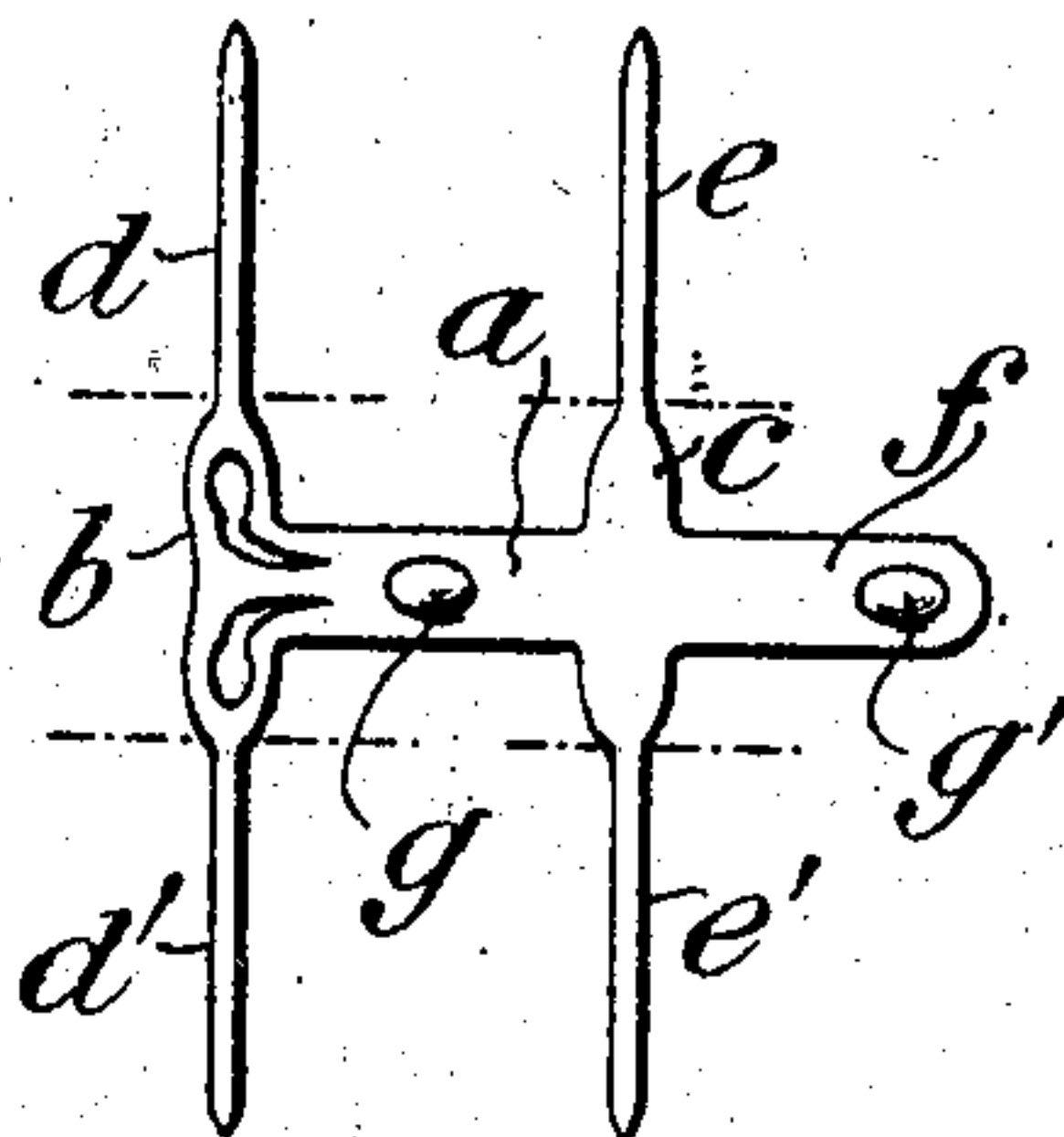


FIG. 5.

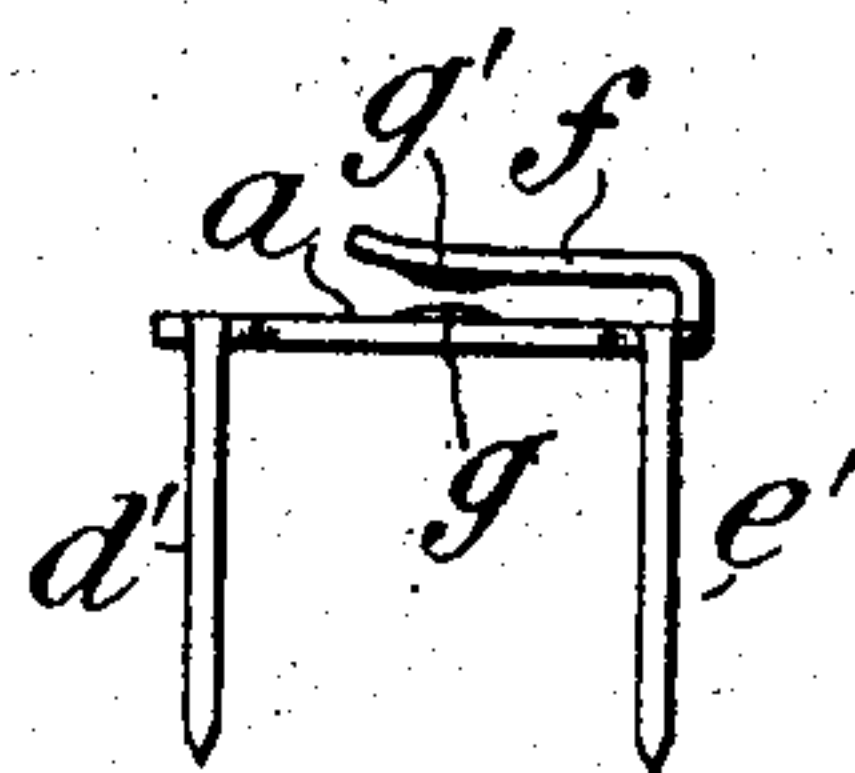


FIG. 6.



WITNESSES:

*Ired White*  
*Rene Muine*

INVENTOR:

*Elizabeth J. Smith,*

*By Attorneys,*  
*Arthur C. Tracer & Co.*



# UNITED STATES PATENT OFFICE.

ELIZABETH J. SMITH, OF NEW YORK, N. Y.

## HOOK AND EYE.

No. 796,158.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed January 27, 1905. Serial No. 242,863.

*To all whom it may concern:*

Be it known that I, ELIZABETH J. SMITH, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Hooks and Eyes, of which the following is a specification.

This invention relates to an improved hook and eye for use on articles of apparel.

My invention in its preferred form provides a hook and eye which can be easily attached to the garment without sewing, which will securely hold its place thereon, which may be quickly detached from the garment, if desired, and which will not injure the garment either during application or use.

My invention in its preferred form provides a hook constructed of sheet metal having a broad base or body portion having integral fastening prongs which are adapted to pass through the material and to be bent inwardly as closely as possible to the base portion. Such prongs are of small cross-section, so that they shall be capable of passing between the threads of the fabric without placing any undue strain upon the threads and are arranged, preferably, at right angles to the length of the hook, so as to clamp the fabric tightly against the base in a direction which is transverse to the line of pull of the hook. The end of the bill of the hook is arranged at a point which is close to the forward fastening-prongs, whereby the latter may engage the fabric close to its edge, thereby holding such edge close to the opposite edge of the garment and preventing separation of the two.

My invention also provides a novel construction of eye which in its preferred form is constructed of a single piece of wire having a loop forming the eye proper and on either side thereof being bent into two flat coils adapted to bear against the face of the fabric and thence downwardly into prongs which are adapted to pass through the fabric and to be bent to clamp the latter against the coils.

In the accompanying drawings, which illustrate the preferred form of my invention, Figure 1 is a plan showing the hook and eye attached to the opposite edges of a garment. Fig. 2 is a view of the reverse side, showing the attaching-prongs in place. Fig. 3 is a section of the fabric, showing the hook and eye in side elevation. Fig. 4 is a plan of the

hook before its prongs are bent at right angles to the body portion or base. Fig. 5 is a side elevation of the hook ready for insertion, and Fig. 6 is a similar view of the eye.

Referring to the drawings, let *a* indicate the base or body portion of the hook, which according to my invention is formed at its ends with lateral extensions *b* and *c*. At each end of the extensions is formed a prong, those of the extension *b* being lettered *d d'*, respectively, and those of the extension *c* being lettered *e e'*, respectively. Each of the prongs is formed integrally with its extension and is of small cross-section and practically uniform in width throughout its length, the ends thereof being tapered to a blunt point, as shown. It is practically essential for most purposes that the prongs be quite slender in order that when inserted in the fabric they will not break or strain the threads of the latter. Before the insertion of the prongs into the fabric they are bent downwardly along the dotted lines in Fig. 4 to positions at right angles to the extensions *b c*. Fig. 5 illustrates the hook after the prongs are so bent. After the prongs have been passed through the fabric they are bent transversely to the body portion as closely as possible to the latter, thus clamping the fabric tightly against the base along lines which are transverse to the line of pull of the latter. It will be observed that by this construction not only do the prongs engage the threads which extend transversely of the hook, but the longitudinal threads of a considerable breadth of cloth are firmly gripped by the hook, thus securely holding the latter without marring or otherwise injuring the fabric. The engagement of the device with the transverse threads alone would result in either pulling the latter outwardly or starting a tear. By providing two sets of prongs, arranged as shown, so that each prong exerts a clamping action directly against a rigid base portion, I obtain a secure engagement without damage to the fabric.

The bill *f* of the hook has its bight or engaging bend closely adjacent to the lateral extension *c* and in line with the prongs *e e'*. This construction enables me to place the hook with its bight close to the edge of the fabric, so that the latter is held by the successive hooks closely against the opposite edge of the garment to which the eyes are fastened. In unhooking the garment there is a lifting strain upon the bill of the hook



which tends to separate it from the fabric. By locating the prongs close to the end of the hook no leverage is exerted against the prongs in unhooking, so that the latter are relieved of a considerable portion of the strain to which they would otherwise be subjected. As a means for preventing accidental unhooking I provide the base or the bill of the hook (preferably both) with a "hump" or raised projection  $g$   $g'$  extending into the space between the bill and the base and constricting such space to less than the diameter of the eye. The spring of the bill, however, permits the eye to pass inwardly or outwardly through the constricted passage thus formed when properly directed for this purpose.

My invention provides a novel form of eye which in its preferred form is constructed of a single piece of wire bowed at its middle to form a loop portion or eye proper,  $h$ , and at each side thereof to form a flat coil  $i$ , the eye proper being bent upward from the plane of said coils. The two ends are then bent downwardly from the middle of the coil to form prongs  $j$  and  $j'$ . When the eye is applied to the fabric, the prongs are forced downwardly through the fabric and are bent toward each other until they lie side by side on the under face of the fabric. The flat coils of the eye provide a base or bearing portion for limiting the downward movement of the eye, and the prongs serve to pinch the fabric closely against such coils, the irregular surface of the latter aiding in the engagement. The loop portion  $h$  preferably extends only a short distance beyond the coils  $i$ , so that the prongs  $j$   $j'$  may be arranged close to the edge of the fabric when the loop is in proper position relatively thereto.

In the drawings I have shown the prongs of both the hook and the eye inclosed at the edge in a fold of the fabric to which they are attached. They may, however, be applied in any other suitable manner.

In both the hook and eye the broad surface of the base portions effectually prevents any danger of the prongs slipping out of line with the part of the device lying above them, so that the full clamping power of the opposed parts is always obtained. In each case the prongs are preferably made of such

length that they extend across the full width of the base portion, so as to secure to the greatest extent the transverse grip upon the fabric which is chiefly relied upon to securely hold the device without injury to the fabric.

While I have described in detail the preferred form of my device, it will be understood that I do not wish to be limited to the particular construction shown, as many changes may be made therein without departing from the invention.

I claim as my invention the following-defined novel features, substantially as hereinbefore specified, namely:

1. In a hook and eye, a hook formed of a single piece of sheet metal having a broad base  $a$ , formed with lateral extensions  $c$   $b$  at front and at rear respectively, a bill  $f$  formed with its bend close to said extension  $c$ , fastening-prongs  $e$   $e'$  formed at opposite ends of said extension  $c$ , and fastening-prongs  $d$   $d'$  formed at opposite ends of said extension  $b$ , each of said prongs being of substantially uniform and narrow width throughout its length and being adapted to pass through a fabric without injury thereto and to be bent to clamp the fabric closely against said base, and being of sufficient length to extend substantially across said base.

2. An eye formed of a single piece of wire, and having a coil on each side thereof, an elongated prong depending from each of said coils, and adapted to be bent to lie across said coil to clamp the fabric against the latter, and a loop connecting said coils forming the eye proper for engagement by a hook.

3. An eye formed of a single piece of wire having a coil on each side thereof, and an elongated prong depending from each of said coils adapted to be bent to lie across said coil to clamp the fabric against the latter, and a loop connecting said coils and bent up from the plane thereof and forming the eye proper for engagement by a hook.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ELIZABETH J. SMITH.

Witnesses:

MARY SCOTT,  
ELIZABETH SMITH.