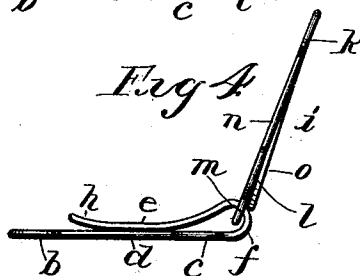
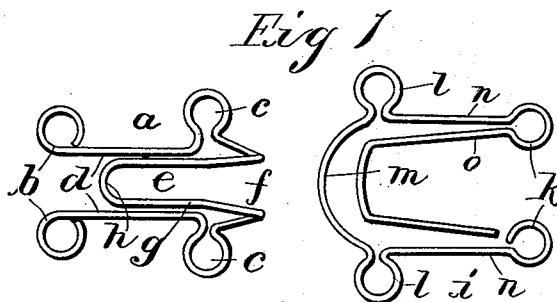


(No Model.)

Z. E. BATES & M. E. COLLINS.
HOOK AND EYE.

No. 509,347.

Patented Nov. 21, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ZERVAH E. BATES AND MARY E. COLLINS, OF GRAND RAPIDS, MICHIGAN.

HOOK AND EYE.

SPECIFICATION forming part of Letters Patent No. 509,347, dated November 21, 1893.

Application filed February 14, 1893. Serial No. 462,299. (No model.)

To all whom it may concern:

Be it known that we, ZERVAH E. BATES and MARY E. COLLINS, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Eye Members for Hooks and Eyes; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to that particular class of hooks and eyes used on ladies' garments; our object being to produce a device which will be less exposed to view when the edges of the garment are drawn apart, than those generally heretofore in use.

A further object of the invention is to produce a device wherein the hook is prevented from disengaging the eye, except when the user so desires.

To accomplish these different objects we construct our invention in the peculiar manner as will now be described.

In the accompanying drawings which illustrate our invention: Figure 1 represents an enlarged plan view of the hook and eye disengaged. Fig. 2 represents a side elevation of the same. Fig. 3 represents a similar view of the members forced together in the same plane. Fig. 4 represents the position of parts when the members are being disengaged.

In the drawings the reference letter *a* represents the hook member of our invention, preferably made of an integral spring piece of wire. This wire is so bent that its ends terminate in loops *b* at the rear of the hook. Loops *c* are formed at the forward end of the hook, all of said loops being in the same plane with the side wires *d*. A tongue *e* is formed from a continuation of the side wires *d*, being bent upward and backward after passing the loops *c*, thereby forming a shoulder *f*. After forming this shoulder, the tongue is bent downward at *g* and nearly intersects the plane of the side wires *d*. The extreme end *h* of the tongue is bent slightly upward to facilitate the reception of the eye. By means of the shoulder *f*, and peculiar formation of the tongue *e*, it will be seen that when the same engages the eye, the latter slips under the

shoulder and is prevented from slipping out 55 by the spring tendency of the tongue. The eye is thus practically locked in place and cannot become disengaged.

Any common form of hook can be used with our form of eye, the one shown and described 60 however being preferable, but we make no claim therefor.

The eye member is represented by the reference letter *i*, and like the hook member, it is made of an integral piece of spring wire, 65 and is also provided with loops *k* at its rear corners. Loops *l* are formed at its forward corner, and between these two latter loops the wire is bent in the form of an arc *m*, for the reception of the tongue *e* of the hook member *a*. 70

All of the loops lie in the plane of the side wires *n*, and extending forward from one of the loops *k* is a retaining arm *o*, bent in the shape of a **U**, its forward curve following the 75 general outline of the arc-shaped side *m*, but at such a distance therefrom as to allow the tongue *e*, to pass freely between. The forward end of this arm *o* is slightly out of the plane of the wires *n*, whereby, when the two 80 members are pushed together in the same plane, this retaining arm mounts and slides back of the shoulder *f*, thereby preventing the disengagement of the same from the hook member, as shown by Fig. 3. Thus it will be 85 seen that the hook member must be turned at an angle to the eye member, before the same can be disengaged therefrom, as shown in Fig. 4.

Having thus described our invention, what 90 we claim as new, and desire to secure by Letters Patent, is—

The herein-described eye member consisting of an integral piece of spring metal, loops formed at its corners and in the plane of the 95 eye-frame, the frame between the front loops being arc-shaped, and a **U**-shaped spring retaining-arm in the rear of the arc-shaped side, the normal position of which is below the plane of the eye-frame, substantially as described. 100

In testimony whereof we affix our signatures in presence of two witnesses.

ZERVAH E. BATES.
MARY E. COLLINS.

Witnesses:

L. B. RICE,
H. J. MAYNARD.