S. E. ATCHINSON.

HOOK AND EYE.

APPLICATION FILED OCT. 5, 1912.

1,067,234. Patented July 15, 1913.

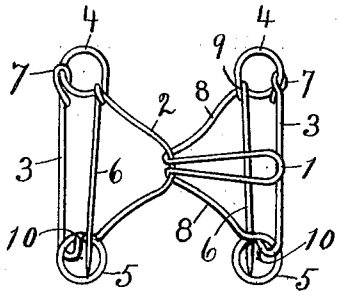


FIG. 1.

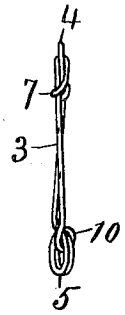


FIG. 2.

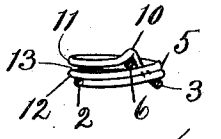


FIG. 4.

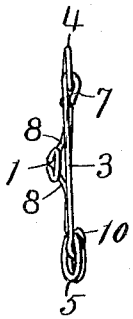


FIG. 3.

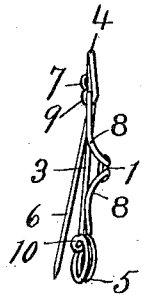


FIG. 5.

WITNESSES:
A. C. Fairbanks
A. G. Cutter.

INVENTOR.
Sophia E. Atchinson,
BY
Webster & Co.,
ATTORNEYS.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SOPHIA E. ATCHINSON, OF SPRINGFIELD, MASSACHUSETTS.

HOOK AND EYE.

1,067,234. Specification of Letters Patent. Patented July 15, 1913.

Application filed October 5, 1912. Serial No. 724,106.

To all whom it may concern:

Be it known that I, SOPHIA E. ATCHINSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Hook and Eye, of which the following is a specification.

My invention relates to garment fasteners of the hook and eye type, and consists of a hook and eye each formed of a single wire bent in a certain peculiar manner to produce the hook or the eye member and to provide such member with a shield-pin or safety-pin element wherewith to attach the member to the garment without the use of thread, all as hereinafter set forth.

One object of my invention is to produce hooks and eyes which can be easily and quickly attached to garments without sewing the former to the latter, and which can be as readily detached, if desired, such hooks and eyes being simple and comparatively inexpensive in construction, yet strong and durable.

A further object is to provide hooks and eyes that can, after being pinned in place, be sewed to the garment for further security. Ordinarily it is simply necessary to secure them by means of their pins, but when additional security is required provision is made for obtaining the same. The advantages of the safety-pin feature in facilitating the initial placing of the hooks and eyes which are to be sewed on and in holding them while being sewed on are clearly apparent.

Devices of this kind are usually small and necessarily made of comparatively fine wire, hence they need to be stayed at what may be termed their outer ends, and this has been done in the present construction. Without the stays, which constitute essential features of my invention, the hooks and eyes would be very liable to bend while being pinned to a garment and so have their efficiency impaired if not their usefulness altogether destroyed.

Other objects and advantages will appear in the course of the following description.

I attain the objects and secure the advantages of my invention by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top plan of a hook and eye which embody a practical form of my invention, the two being in engagement with each other and their pins being out of the keepers provided for the free ends or terminals of such pins; Fig. 2, an outer end elevation of the aforesaid eye, the pin of such eye being engaged with the keeper therefor; Fig. 3, an outer end elevation of the aforesaid hook with its pin in engagement with the keeper therefor; Fig. 4, a greatly enlarged cross-section through the eye, showing the keeper for the pin of said eye in elevation and said pin in engagement therewith and in section, and, Fig. 5, an inner end elevation of said hook, with the pin unfastened.

Similar figures designate similar parts throughout the several views.

Except for the presence of the male element of one and the female element of the other, that is, the bill and the eye proper, the two members each considered as a whole and including their keepers are alike.

In the drawings a bill or hook proper is represented at 1 and an eye or eye loop at 2 to receive such hook. The bill 1 is formed at the inner end of the hook element or member, and the eye loop 2 is formed at the inner end of the eye element or member, in the manner described below. At the outer end of each of the aforesaid elements is a brace or stay 3, while at one side of each element is a loop 4, and at the opposite side a coil which forms a pair of loops that separate or open on the inside, as best shown in Fig. 4, and constitute a keeper 5 for the free terminal of a pin 6. The pin 6 in each case extends from one of the loops 4 over to the vicinity of the associated keeper 5, such pin being situated between the stay 3 and either the bill 1 or the eye loop 2, accordingly as it is the pin for the hook or the pin for the eye.

As previously stated, the hook as a whole is made out of a single wire bent to form the several hook members, and the eye as a whole is constructed in a similar manner.

Giving attention first to the eye, it will be observed that the wire, out of which it is constructed, starts at 7, where one end of the stay 3 is connected with the loop 4, and ends with the point of the pin 6, this end of said wire being sharpened to produce such point. From the loop or knot 7 the wire extends straight away from the loop 4 to form the stay 3, and then said wire is coiled to form the keeper 5. The wire is next carried inwardly and then outwardly

to form the eye loop 2. Finally the wire is formed into the loop 4, coiled or wrapped about itself at 9, and extended to form the pin 6. The wrapping 9 not only lends strength and rigidity to the construction, but prevents the goods in which the pin is inserted from working out under the bent wire and getting caught.

The wire for the hook is knotted, extended, looped, wrapped, bent, and otherwise formed up in precisely the same manner as is the wire for the hook, except that the parts which correspond to the diagonal eye-loop members are formed into the bill 1, such parts constituting bill supports 8—8. The supports 8, instead of being united to form the eye loop 2, are bent to the right or outwardly to produce the bill 1.

The eye pin extends above its keeper or enters such keeper from above, while the hook pin extends under its keeper or enters the same from below. The pins when unfastened spring away from their keepers, as shown in Fig. 5, so that it is necessary to press the pointed terminal of each not only inwardly, but either up or down accordingly as it is the hook pin or the eye pin, in order to position such terminal so that it will snap into its keeper or can be forced into engagement therein. And for the purpose of rendering the keepers more secure, I prefer to bend the inner portion of the eye keeper upwardly, as clearly shown in Fig. 4, and the corresponding portion of the hook keeper downwardly. By thus bending the keepers, accidental disengagement of the pins, after they have been sprung into place in said keepers, is avoided. The bend or offset just referred to and which appears at 10 forms a recess for the reception of the pin, from which recess there is no danger of accidental escape on the part of said pin.

The following will render clear the construction in detail of the keepers 5: The wire, out of which the eye is made, after forming the stay 3 is carried upwardly and then downwardly to form the offset 10 before being coiled to form the double loop of the eye keeper. After being formed into said double loop the wire extends diagonally inward to enter into the formation of the eye loop 2. The bends and turns are so made that the aforesaid double-loop members are arranged one above the other and both cross that part of the wire that is between the offset 10 and the adjacent end of the stay 3. The same is true in every particular of the hook keeper, except that the wire is in this case bent downwardly and then upwardly after forming the stay 3. The keeper loops are forced wider apart by the pins in entering, and then close on such pins when they arrive in the offsets 10, thus holding them very securely.

In Fig. 4 the keeper loops are indicated at 11 and 12, and the entrance to the keeper which they form is indicated at 13. The offset 10 is in the loop 11.

In practice the hook and eye are attached to the goods by means of the pins 6, the latter being first thrust through the goods at the proper places and then engaged with their keepers 5. The eye pin locates the eye under the cloth and the hook pin locates the hook above the cloth, when the hook and eye are constructed as herein shown and described and applied as positioned in Fig. 1. The eye can be located outside of the cloth as well as the hook, by turning over said eye before applying it. If further security be desired the same may be obtained by sewing the loops 4 and the outer portions of the keepers 5 to the cloth.

I am aware that combination hooks and safety-pins have been produced before, and do not therefore claim broadly such a device; I am not aware, however, of any device that resembles the hook and eye herein set forth and claimed; and I seek to cover by my claims any and all modifications to which I may justly be entitled, especially modifications in shape, size, and minor points of construction.

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

1. A hook and eye fastener, each part having a portion to engage the other part, and being provided with a pin and with a keeper therefor, and having a stay at the outer end outside of said pin.

2. A hook and eye fastener, each part consisting of a single wire having a portion to engage the other part, an outer end stay, loops between said engaging portion and said stay at opposite ends of and securely connected by the latter, one of the loop elements being double and constituting a keeper, and a pin extending between said loops and adapted to be engaged with and disengaged from said keeper, said pin being located between said engaging portion and said end stay.

3. A hook and eye fastener, each part consisting of a single wire having a portion to engage the other part, an outer end stay, loops between said engaging portion and said stay at opposite ends of the latter, one of the loop elements being double and constituting a keeper, and a pin extending between said loops and adapted to be engaged with and disengaged from said keeper, said pin being located between said engaging portion and said end stay, and also being at one terminal wrapped around the loop from which said pin springs.

4. A hook and eye fastener, each part consisting of a portion at one end to engage the other part, a stay at the other end, loops at the sides, the ends of said stay being securely connected with said loops, whereby

the part is rendered stable at its outer ends, and an intermediately situated pin extending from one of such loops to the other, the second of such loop elements being double and constituting a keeper for such pin.

5. A hook and eye fastener, each part consisting of a wire having a portion to engage the other part, an outer end stay, single and double loops between said engaging portion and said stay at opposite ends of the latter, said double loop being coiled to provide an opening at one side and provided with a pin-receiving offset to form a keeper, such offset affording a recess in itself which opens into the space between the double-loop elements, and a pin extending from said single loop to said double loop and adapted to be engaged with and disengaged from said keeper, said pin being located between said engaging portion and said end stay.

6. A hook and eye fastener, each part consisting of a single wire forming a stay at one end of the device, continuing to form a coil constituting a keeper and extending thence to form engaging means for the other part of the fastener, thence to form a loop at the other end of the stay, and thence to form a pin which lies between said stay and said engaging means.

SOPHIA E. ATCHINSON.

Witnesses:
A. C. FAIRBANKS,
H. G. CUTTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."