

(No Model.)

I. P. DOOLITTLE.
HOOK AND EYE.

No. 587,189.

Patented July 27, 1897.

Fig. 1.

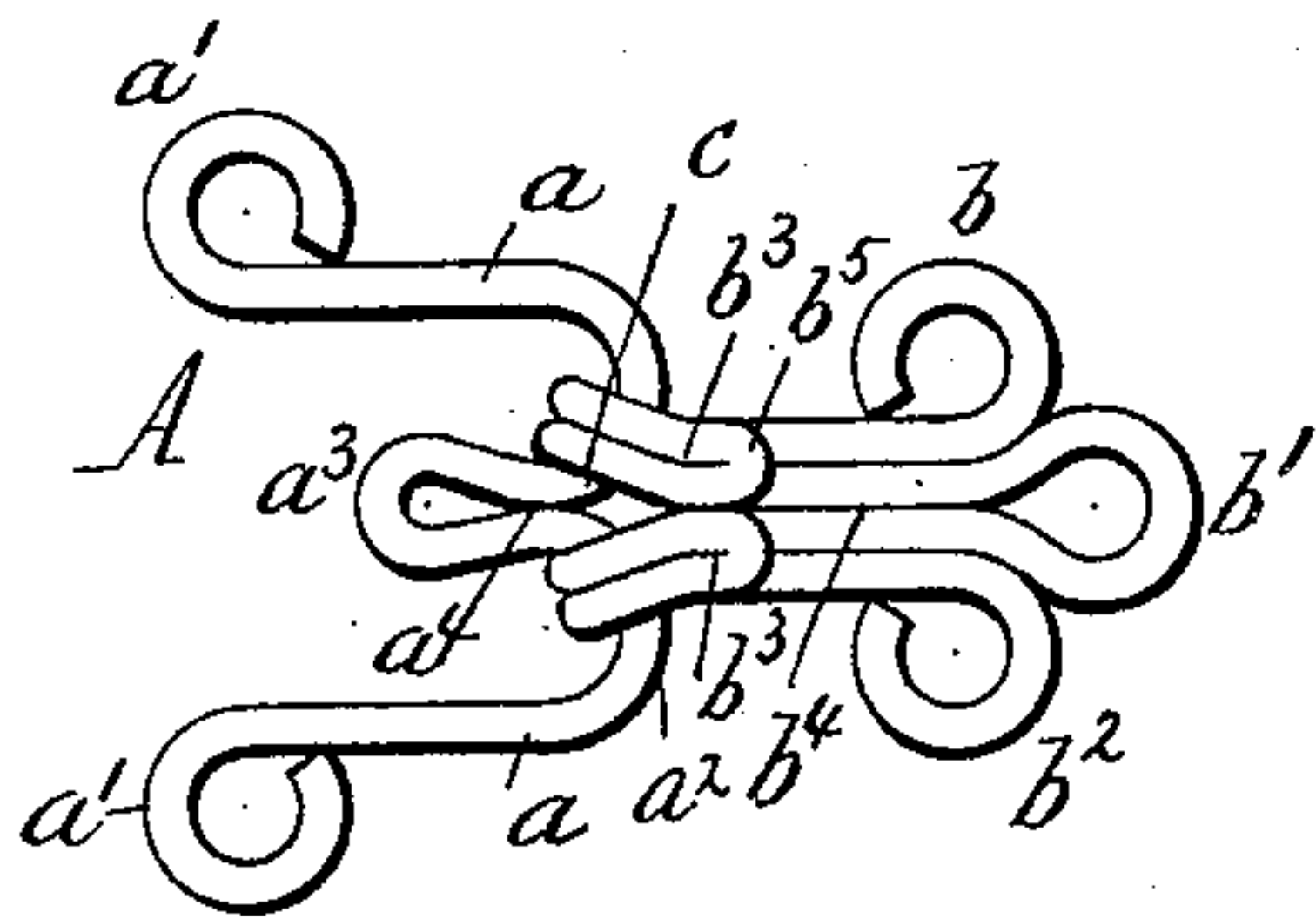


Fig. 2.

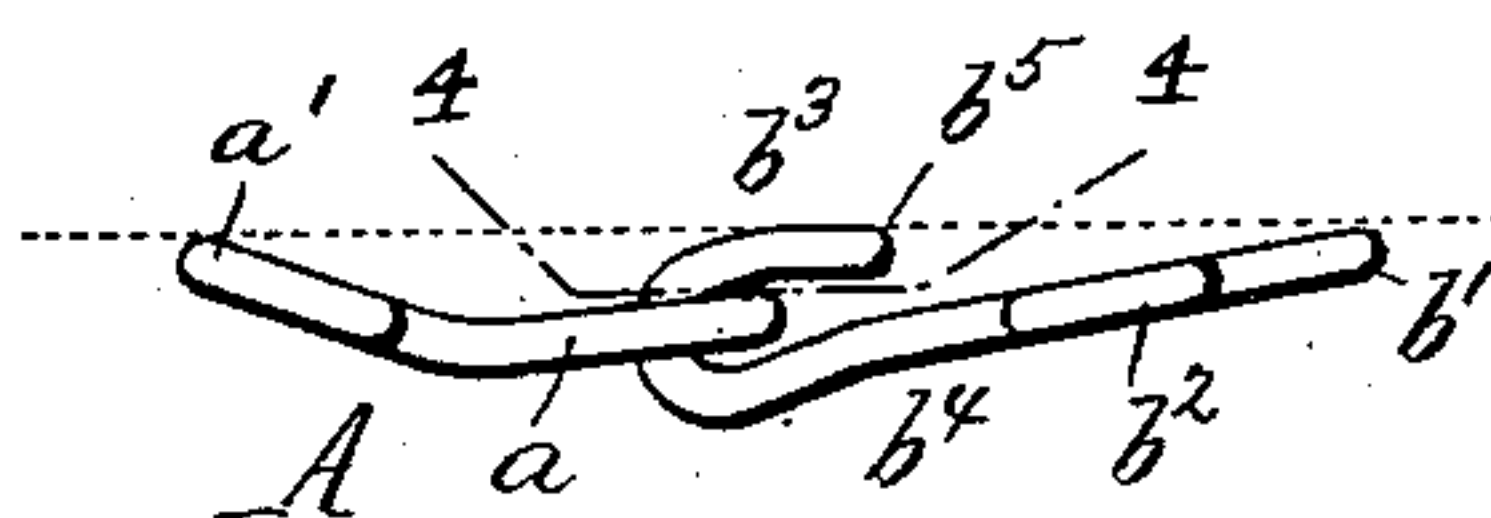


Fig. 4.

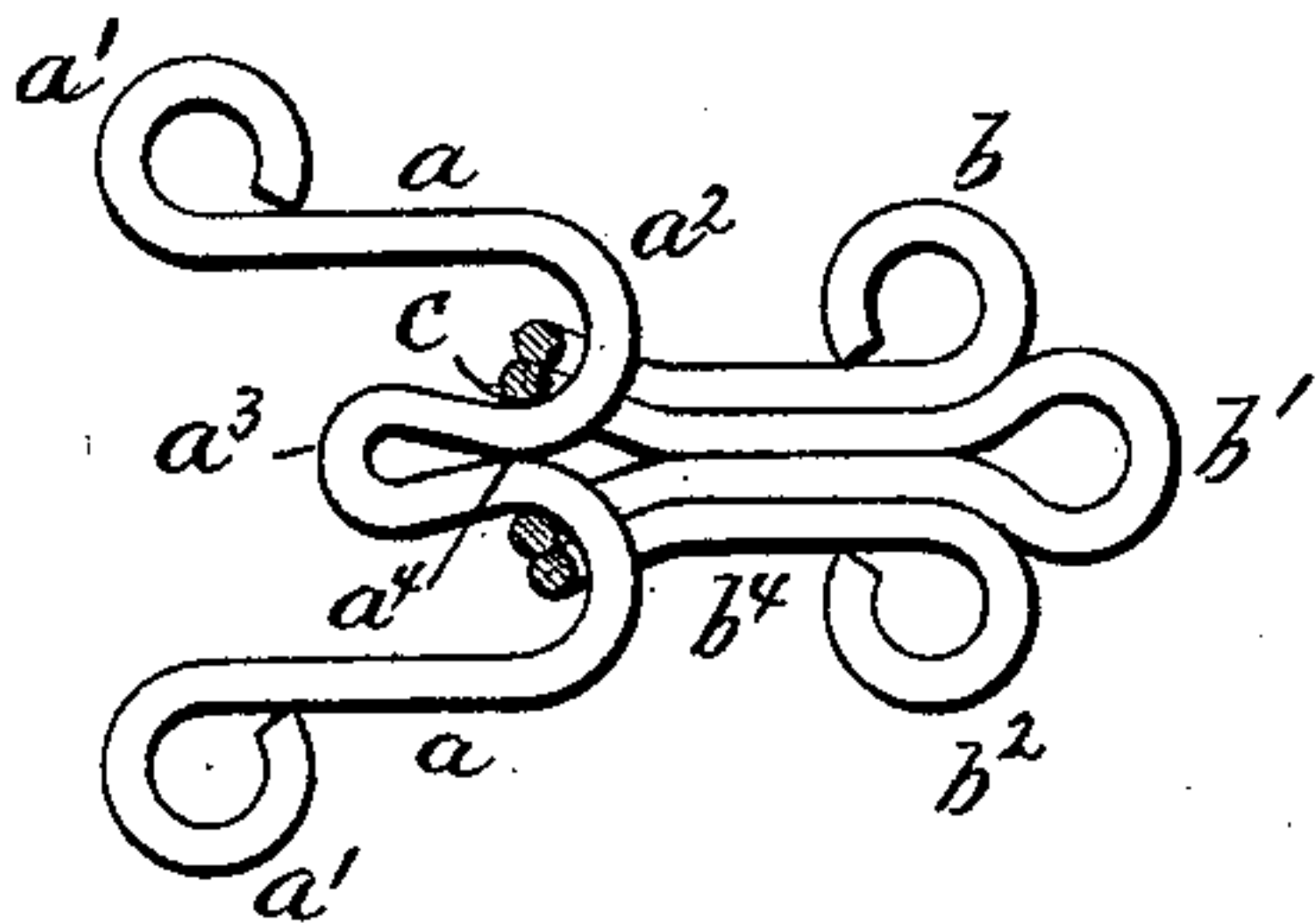
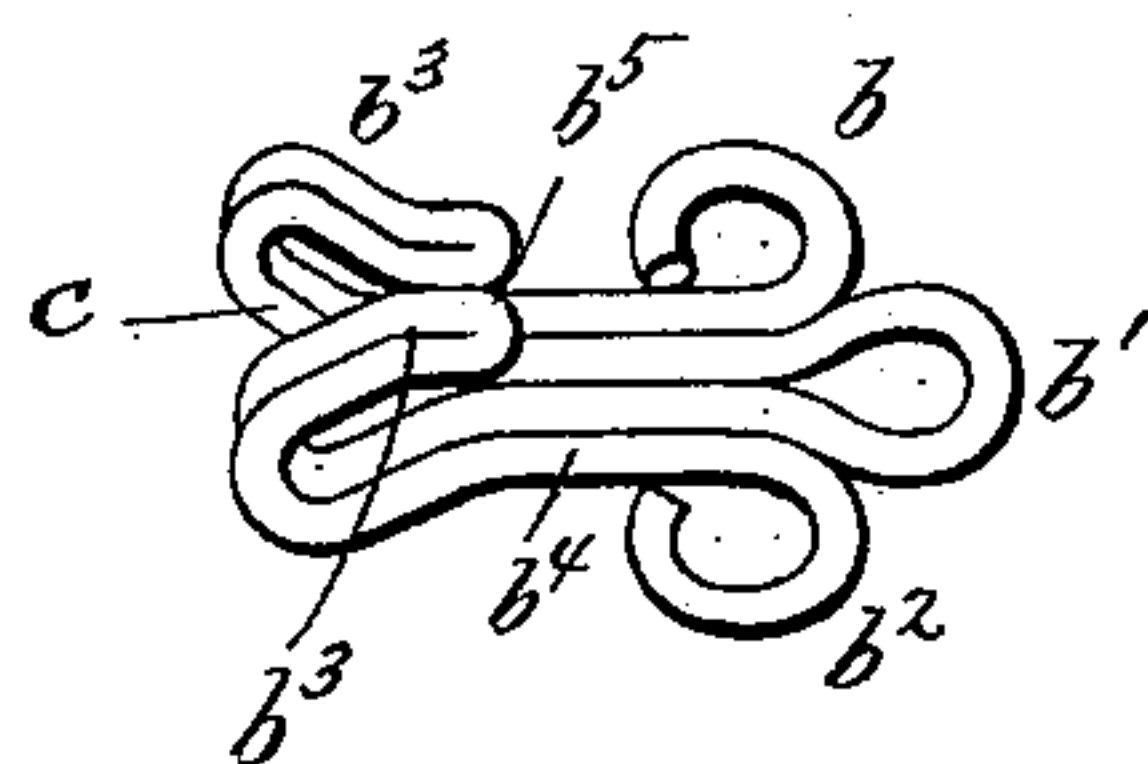


Fig. 3.



Irvin Parker Doolittle

WITNESSES:

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UNITED STATES PATENT OFFICE.

IRVIN PARKER DOOLITTLE, OF REDLANDS, CALIFORNIA.

HOOK AND EYE.

SPECIFICATION forming part of Letters Patent No. 587,189, dated July 27, 1897.

Application filed May 23, 1896. Serial No. 592,697. (No model.)

To all whom it may concern:

Be it known that I, IRVIN PARKER DOOLITTLE, a citizen of the United States, residing at Redlands, in the county of San Bernardino, in the State of California, have invented new and useful Improvements in Hooks and Eyes, of which the following is a specification.

This invention relates to the garment-fastenings known as "hooks and eyes."

10 The object of my invention is the production of a hook and eye in which the parts when engaged are reliably locked against accidental detachment and which can at the same time be easily disengaged.

15 In the accompanying drawings, Figure 1 is an inner or rear view of my improved hook and eye engaged with each other. Fig. 2 is an edge view thereof. Fig. 3 is a detached perspective view of the hook. Fig. 4 is a horizontal section in line 4 4, Fig. 2.

Like letters of reference refer to like parts in the several figures.

25 A represents the eye, which is preferably bent from a single piece of wire and provided at the rear ends of its side members a with the usual eyelets a' for sewing or otherwise attaching it to the garment. The bow or front portion a^2 of the eye is provided midway between the side members a with an inwardly-extending loop a^3 , which is enlarged rearwardly, so as to form a locking head or enlargement which is connected with the bow of the eye by a neck or contracted portion a^4 .

30 The hook forming the other part of the fastening is preferably constructed of a single length of wire and is provided with attaching eyelets or loops b b' b^2 . The hook is double or composed of two separated hook members b^3 b^3 , arranged side by side and adapted to engage with the bow of the eye A on opposite sides of the neck a^4 when the parts are interlocked, as shown in Fig. 1. In the construction shown in the drawings each hook member b^3 is double or composed of two 45 thicknesses of wire, and the bodies or shanks b^4 thereof are connected at their outer or rear ends by the central loop or eye b' , which latter forms a spring, whereby the two hook members are rendered elastic and permitted to yield laterally or away from each other. 50 The shanks of the hook members and their noses or ends b^5 are parallel and are held

against each other by the spring b' , while the hooks of the two members are permanently spread apart or bent outwardly, as shown in 55 Figs. 1 and 3, so as to leave between the same a space or aperture c , which receives the locking-head a^3 of the eye A. In the normal position of the hooks the aperture c is narrower than the locking-head of the eye, so that the 60 hooks must spring farther apart in order to allow the locking-head to pass through the aperture.

In interlocking the parts the hook is simply engaged with the eye by a lengthwise move- 65 ment of the parts on each other in the manner of engaging an ordinary hook and eye. In drawing the hook into the eye the locking-head a^3 of the latter enters the aperture c between the elastic hook member b^3 and forces 70 the latter farther apart until the head passes through the aperture, when the hook members again contract and bear against opposite sides of the neck a^4 of the eye, thereby locking the double hook in the bight of the 75 eye with sufficient security to prevent its accidental disengagement therefrom.

In order to disconnect the parts, the same are simply turned at an angle to each other and the hook is forced outward in the eye or, 80 in other words, pushed away from the person of the wearer, whereby the noses of the two hooks are forced apart and the neck a^4 of the eye is permitted to pass between the same. This method of disengaging the hook and eye 85 is advantageous when the parts are attached to a tight-fitting garment which permits the meeting edges of the garment to be drawn together only to a small extent; but when the fastening is applied to a loose-fitting garment 90 the parts may be disengaged by simply moving the same lengthwise on each other sufficiently to spring the hooks over the head a^3 of the eye.

When the hook is formed from a single 95 length of wire, as shown in the drawings, a piece of wire of suitable length is first doubled at its middle to form the combined attaching eyelet and spring b' , and its ends are then bent to form the side eyelets b b^2 . Next the 100 branches of the doubled wire are doubled outwardly upon themselves midway between their ends and the first-described bend to form the straight blanks of the hook members.

These straight doubled branches are then bent to form the hooks, and finally the hooks are spread apart to form the aperture *c*, the noses or ends *b*⁵ of the hooks being held against each other during this spreading operation.

The inner wires of the two hook members preferably extend outward slightly beyond their outer wires, as shown in Figs. 1 and 4. By this construction the bights or inner surfaces of the hook members converge toward the aperture *c* and form a flaring guide which facilitates the entrance of the locking-head *a*³ into said aperture, as shown in Fig. 4.

To facilitate the engagement of the hook with the locking-head *a*³ of the eye, the body or main portion of the eye on which said head is formed is raised above or extended outward beyond the plane of the attaching-eyelets *a'*, as shown in Fig. 2. By this construction the locking-head is located at a distance from the fabric to which it is attached, thus permitting the hook to be conveniently passed through the eye and interlocked with said locking-head.

I claim as my invention—

1. The combination with an eye member having its bow provided with a locking head or enlargement which is connected with the bow by a contracted neck, of a hook member composed of a pair of laterally-yielding shanks arranged side by side and provided at their front ends with hooks adapted to engage with the bow of the eye member on opposite sides of said contracted neck and separated at their bends by an aperture adapted to admit said locking head or enlargement, said hooks having plain or unenlarged ends, whereby the same can be withdrawn through the spaces between said contracted neck and

the opposing sides of the eye member by turning the two members at an angle to each other, substantially as set forth.

2. The combination with an eye member having its bow provided with a locking head or enlargement which is connected with the eye by a contracted neck, of a hook member formed of a single length of wire and comprising two parallel shanks connected at their rear ends by a spring-loop and each provided at its front end with a plain-ended hook, the branches which form said shanks being doubled backward upon themselves to form double shanks and the doubled branches being bent to form the plain-ended hooks of the shanks, the ends of said branches terminating in attaching-eyelets arranged on opposite sides of the shanks, substantially as set forth.

3. The combination with an eye provided in its bight or bow with a locking head or enlargement connected with the eye by a contracted neck, of a hook formed of a single length of wire and comprising two hook members, each containing two thicknesses of wire, the hooks of said members being bent outward to form an aperture between the same and the inner wires of said hooks extending outward beyond their outer wires, whereby the bights of the hooks converge toward said aperture, a spring connecting the shanks of said hook members, and attaching-eyelets formed on opposite sides of said shanks, substantially as set forth.

Witness my hand this 20th day of May, 1896.

IRVIN PARKER DOOLITTLE.

Witnesses:

JNO. J. BONNER,
WM. W. PIERCE.