S. E. BENTLEY.

SAFETY PIN.

APPLICATION FILED JULY 20, 1921.

1,420,952. Patented June 27, 1922.

Fig. 3.

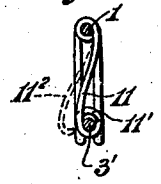


Fig. 1.

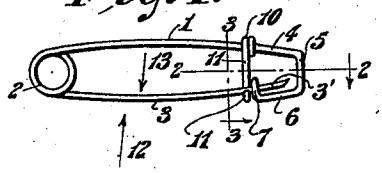


Fig. 2.

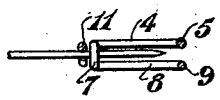


Fig. 4.

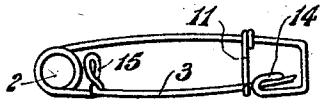


Fig. 5.

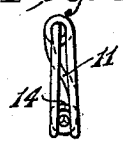


Fig. 6.



Fig. 9.

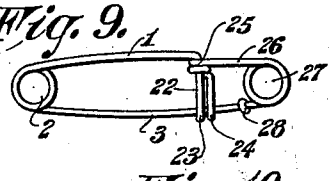


Fig. 7.

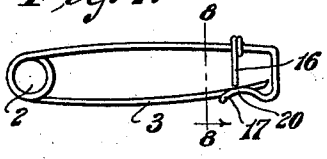


Fig. 8.

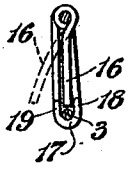


Fig. 10.

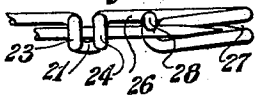


Fig. 11.

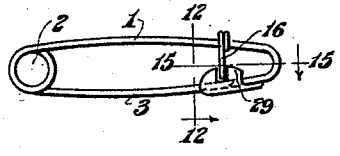


Fig. 12.

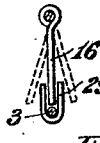


Fig. 13.

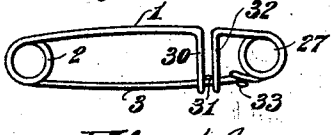


Fig. 15.



Fig. 16.

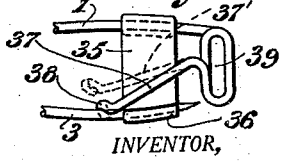
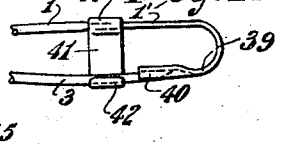


Fig. 14.



Fig. 17.



WITNESS:

Fig. 18.

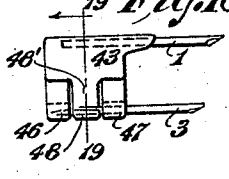
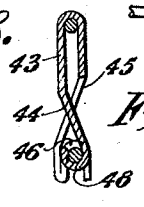


Fig. 19.



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SAFETY PIN.

1,420,952. Specification of Letters Patent. Patented June 27, 1922.

Application filed July 20, 1921. Serial No. 486,044.

To all whom it may concern:

Be it known that I, SAMUEL E. BENTLEY, a citizen of the United States of America, residing at Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Safety Pins, of which the following is a specification.

This invention relates to improvements in safety pins.

An object of the invention is to provide a pin that will not become unfastened or unlatched when excessive strain or tension is placed on the pin or bar portion proper.

A further object is to provide a pin in which the pointed end is effectually prevented from catching or tearing the clothing.

A further object is to provide a pin which cannot be readily unfastened by a child, thus preventing loss of the pin or possible injuries to the child.

Further objects and nature of the invention will appear in the body of the specification and will be particularly pointed out in the claims appended hereto.

Referring to the drawings:

Fig. 1 is a plan or side elevational view showing the pin closed.

Fig. 2 is a top plan view on the line 2—2 of Fig. 1, showing the bent wires for protecting the pointed end of the bar.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1 showing the position of the hook or latch in dotted lines.

Fig. 4 is a plan view of a modification in which a part of the wire is twisted to prevent the clothing from entering the spring or coiled part.

Figs. 5 and 6 are end and top views respectively of Fig. 4.

Fig. 7 is a further modification showing a post like member or part for supporting the bar when the same is pressed inward.

Fig. 8 is a sectional view on the line 8—8 of Fig. 7.

Fig. 9 is a further modification showing substantially two hook portions of the bar.

Fig. 10 is a plan view of Fig. 9.

Fig. 11 is a slight modification of the construction shown in Figs. 9 and 10.

Fig. 12 is a sectional view on the line 12—12 of Fig. 11.

Fig. 13 is a further modification of a hook and supporting structure for the bar.

Fig. 14 is a plan view of Fig. 13.

Fig. 15 is a sectional view on the line 15—15 of Fig. 11.

Fig. 16 is a further modification in which a plate is used to form a hook to receive the end of the sharpened bar and to act as a guide for the same.

Fig. 17 is a further modification in which the upper inner end of the wire is recessed to receive the sharpened end of the pin, and a connecting strip to prevent the outward movement of the pointed bar is provided.

Fig. 18 is a further modification in which the end of the bar is provided with a plate to form the hook and recess for the end of the pin.

Fig. 19 is a sectional view on the line 19—19 of Fig. 18.

Referring to the drawings in detail:

1 designates the main or body wire portion of the pin having the usual spring turn or coil 2 thereon, and the pointed bar portion 3 which enters the cloth. The part 1 is extended as indicated at 4 and is bent to form the part 5. From the part 5 leads the part 6 which is continued to form the hook or loop 7 which is integral with the portion 8 that is continued downward by the part 9 parallel with the part 5. Its lower end then continues parallel with the portion 4 where it is wound around this portion, as indicated at 10. It then passes upward or across the space between the parts 1 and 2 to form the hook 11 under which the pointed end 3′ of the bar portion passes, as shown, when the pin is in use. The lower or inner part 11′ of the hook 11 is substantially in line with the bend or loop 6 which forms the hook, whereby the pin is securely locked in place in both an upward and downward direction, as shown in Fig. 3. In order to disengage the bar 3 from the hook 11 it is bent or moved to one side as indicated by the dotted lines 11^2 in Fig. 3. This construction prevents the bar 3 from being unfastened by either an inward pressure thereon, indicated by the arrow 12, or an outward pull, indicated by the arrow 13.

The pointed end of the pin is also very carefully protected from catching in the clothing, as is clearly shown in Figs. 1, 2, and 3.

The construction shown in Figs. 4, 5, and 6 is substantially the same as that shown in Figs. 1, 2, and 3, with the exception that the loop 7 is elongated or flattened as indicated

at 14 to form a bearing for the pointed bar 3 which is slightly spaced from the hook 11. 15 indicates a loop located near the coil to prevent the clothing from entering or becoming caught in this coil.

Figs. 7 and 8 show the free end of the part which forms the hook 11 in Figs. 1 to 6, as terminating immediately below the pointed part of the bar 3, as indicated at 16, and the loop 17 formed by the parallel portions 18 and 19 extends slightly upward as indicated by the curve at 20, in order to provide a bearing part for the upper side of the bar 3 and to afford suitable space between this bearing and the upper end of the post like part 16 for receiving the bar 3 (see Fig. 8). In order to unfasten or unlatch the bar 3 the part 16 is moved to one side as shown in dotted lines in Fig. 8.

Figs. 9 and 10 indicate a further modification in which the hook part 21 is formed as a loop that is produced by carrying the part 1 upward as indicated at 22, then over at 23 along at 21 and back over at 24 of the bar 3, then downward at 23, then around the part 22 at 25. It then continues with the part 26 to form the coil 27 which terminates in the hook 28. The parts 21 and 28 thus form spaced hooks for the bar 3, one being above and the other below the bar, as shown, whereby this bar is securely held against removal, when either an upward or downward pressure is applied in the same manner as indicated by the arrows 12 and 13 in Fig. 1.

Figs. 11 and 12 show a further modification which is similar to the construction shown in Figs. 7 and 8, with the exception that a housing 29 is employed (see Fig. 12). The bar 3 is simply carried around below the edge of the housing when it is to be inserted therein. To unfasten this bar the post like member 16 is moved to one side as shown in dotted line.

Figs. 13, 14, and 15 show a modification which is similar to the construction shown in Figs. 9 and 10, with the exception that the coil 25 is omitted and the part 1 is carried up at 30 to form the hook 31, returns at 32, and then extends to the right to form the coil 27, which terminates in the hook 33, similar to the hook 28 in Fig. 10, for a bearing for the end of the bar 3.

Fig. 15 shows the openings 34 to permit the post-like member 16 to move laterally when the bar 3 is to be unlatched.

In Fig. 16, a plate 35 is secured to the wire 1 by crimping or otherwise; and it extends across to form a hook 36 in which the end of the bar 3 rests. 37 is a spring arm having a hook 38 at its inner end. This arm is a continuation of the coil 39 and slides on the plate 35 when the bar 3 is unlatched or latched, as indicated by the dotted lines 37'.

Fig. 17 is a further modification in which the inner bent end 39 of the wire 3 is formed with a cup shaped or concave recessed part 40 to receive the pointed end of the bar 3. 41 is a plate that is secured to the wire 1 in any suitable way, as by flattening this wire and bending the plate around the same as indicated by the dotted lines 41'. 42 is a hook at the other end of the plate 41 to receive the bar 3. The bar is latched by simply pressing the same inward. It is unlatched by pressing sidewise on the bar 3 to disengage the same from the recessed part 40.

Figs. 18 and 19 show a form in which the folded plate 43 is secured to the wire 1 by any suitable means. Its opposite sides 44 and 45 form respectively the recesses or cup shaped parts 46 and 47 and the bar receiving hook 48. This hook is simply a tongue indicated at 48' and is integral with the plate 43. The bar 3 is secured by pressing the same inward against the upper edge of the hook 48 when it will snap by and into the seats 46 and 47. The bar 3 is disengaged by pressing the tongue sidewise when it will fly out.

In all of the forms there is a general or uniform construction carried out, namely, that the bar 3 is locked both in its inward and outward direction, thereby securely retaining it in place.

What I claim is:

1. A safety pin construction comprising main and pin bar parts having a coiled spring connection, a plurality of hooks to receive and partially surrounding the bar and being so constructed and arranged to prevent either an inward or outward movement of the bar when engaged by the said hooks.

2. A safety pin construction comprising in combination, a main bar and a pin bar portion, a plurality of hook devices for retaining the latter in a locked position, said devices including longitudinally spaced supports for the same, one of the supports being so constructed and arranged to permit the same to be moved sidewise when the pin is inserted or removed.

3. A safety pin comprising main and pin bar parts, the main bar being bent to form a support for the sharpened end of the pin and to protect the same, and hook means connected to the main bar for engaging the opposite side of the pin, whereby the pin is locked in place and prevented from movement in both an inward and outward direction.

4. A safety pin construction comprising in combination, main and pin bar portions, connecting means for the same, a part on the main bar to receive the sharpened end of the pin, and a laterally movable hook shaped part to retain the pin in said first named part and to permit the pin to be released therefrom.

5. A safety pin having main and pin bar portions connected together, the main bar being extended to form spaced openings to receive the pin bar and a terminal hook-shaped part for supporting the underside of the pin, and said main bar also being bent to form a second hook that extends over the pin, whereby the pin is held against movement both in an inward and outward direction.

6. A safety pin having main and pin-bar portions, the main portion being bent to form a laterally spaced protecting opening for receiving the pin and for preventing an inward movement of the pin and also a post like hook part to prevent the pin from being moved outward, but permitting sidewise movement when the pin is to be released.

7. In a safety pin, the combination with main and pin bar portions, means for connecting the same together, a portion on the main bar being bent to receive the pin bar, and to prevent inward movement of the same, the main bar terminating in a spring hook to receive the opposite side of the pin bar, whereby the pin bar is locked in both its inward and outward direction, as described.

SAMUEL E. BENTLEY.