

No. 702,953.

Patented June 24, 1902.

E. S. INGRAHAM.
SAFETY PIN.

(Application filed Dec. 21, 1900.)

(No Model.)

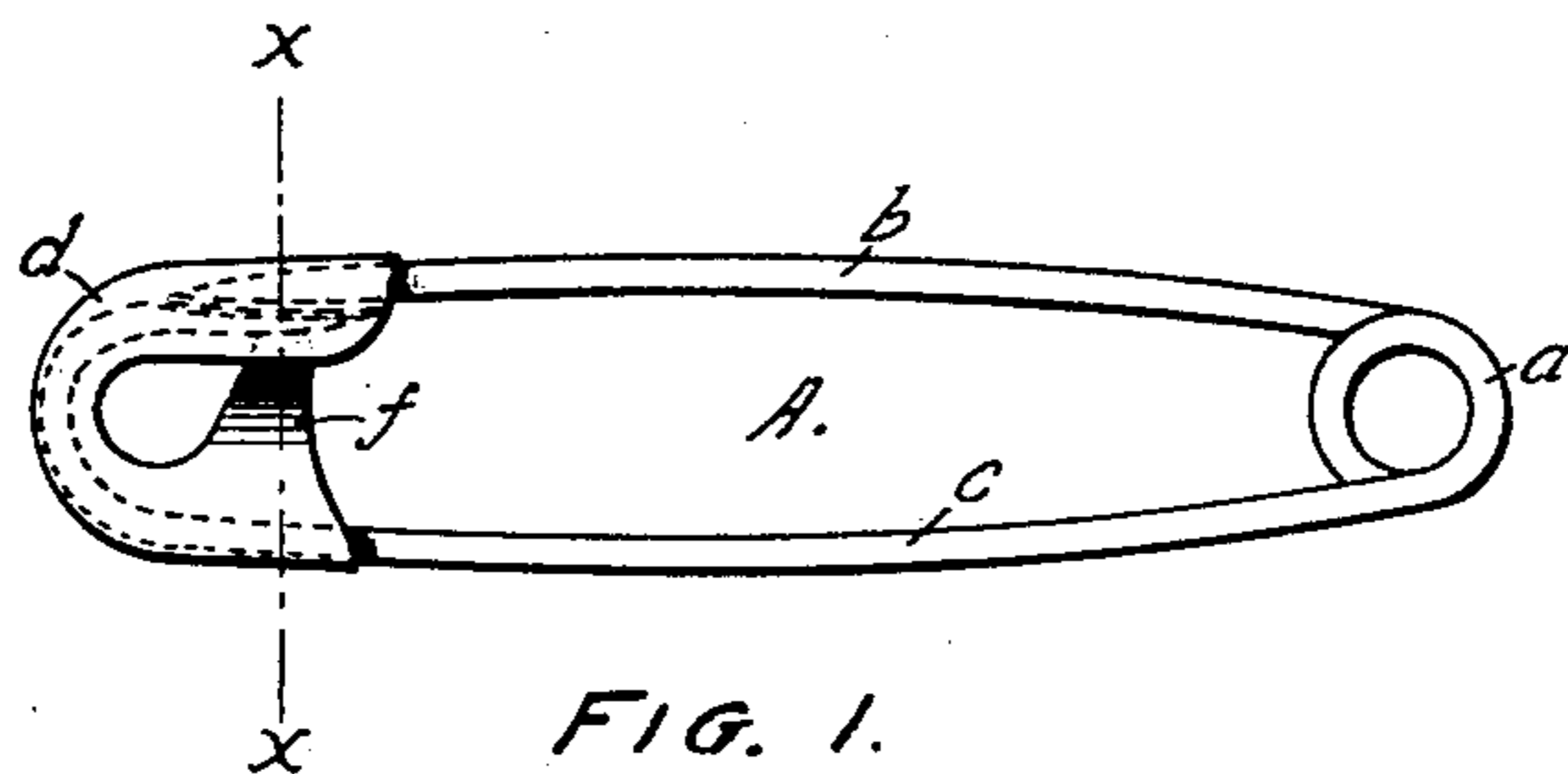


FIG. 1.

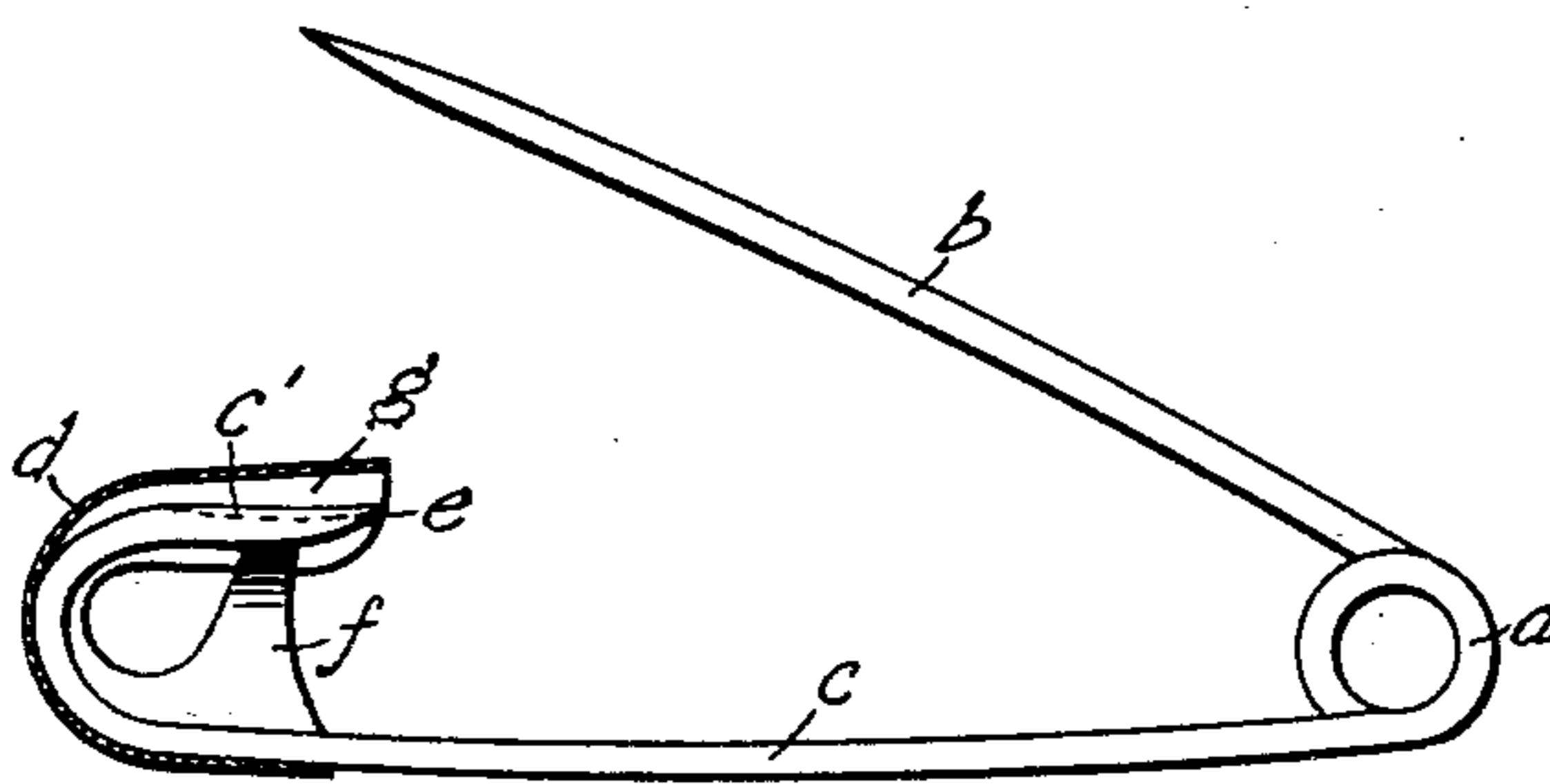


FIG. 2.

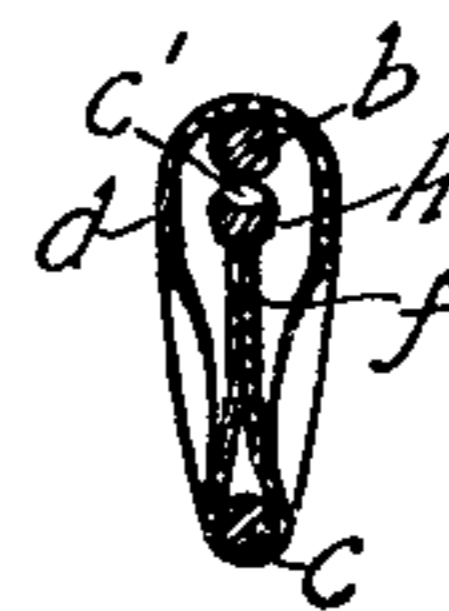


FIG. 3.

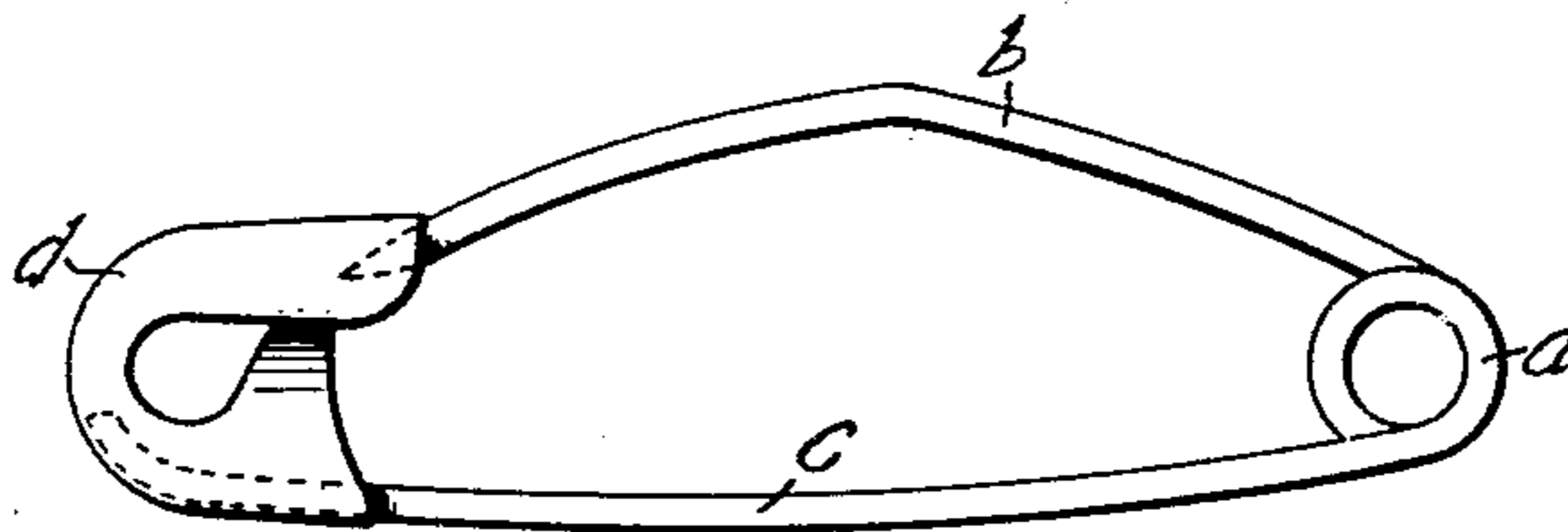


FIG. 4.

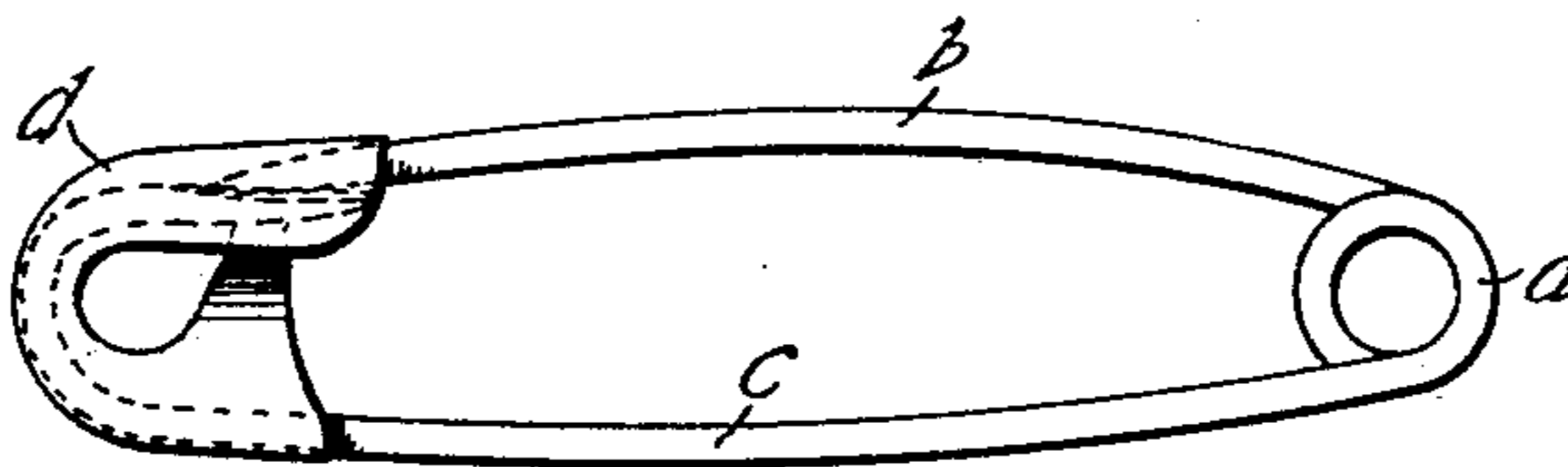


FIG. 5.

WITNESSES,

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UNITED STATES PATENT OFFICE.

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SAFETY-PIN.

SPECIFICATION forming part of Letters Patent No. 702,953, dated June 24, 1902.

Application filed December 21, 1900. Serial No. 40,608. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. INGRAHAM, of Watertown, county of Litchfield, and State of Connecticut, have invented certain new and useful Improvements in Safety-Pins; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

My invention relates to safety-pins, and has for its object to provide a pin which is so constructed as to prevent the bending of the pointed leg when subjected to any ordinary strains and the consequent pulling of the pin lengthwise out of the shield.

When a safety-pin is subjected to transverse strain, the pointed leg of the pin, if its end is unsupported against inward movement, is liable to be bent at or near the middle of its length, as shown in Figure 4 of the drawings, and if so bent the pointed end is liable to be drawn or pulled out lengthwise from the shield. An outward movement of the middle portion of the pointed leg will necessarily, by reason of the engagement of the leg with the edge of the shield, which acts as a fulcrum, be accompanied by an inward movement of the pointed end, and if there be nothing to prevent this inward movement of the pointed end there will be little resistance to the bending of the leg at or near its middle. If, however, the pointed end of the leg be firmly supported against inward movement, there will be a very great resistance to the bending of the leg and the consequent pulling of the pointed end lengthwise out of the shield, because if the pointed end cannot be moved inward there cannot be any material movement outward of the middle portion of the leg.

The present invention consists in providing a stop beneath the end of the pointed leg when engaged by the shield, whereby inward movement of the pointed end is prevented. By thus supporting the pointed end against inward movement the liability of the pointed leg to bend at or near its middle, and the con-

sequent pulling out of the leg lengthwise from the shield, is obviated and the pin thereby greatly strengthened and improved.

In describing the invention more in detail reference will be made to the accompanying drawings, in which—

Fig. 1 is a side view of a safety-pin embodying my invention. Fig. 2 is also a side view with the shield in section and the pointed leg disengaged from the shield. Fig. 3 is a section view on line *x x*, Fig. 1; and Figs. 4 and 5 are illustrative views showing the advantage obtained by my invention over the form of safety-pin now in use.

Referring to the drawings, A represents a safety-pin with the ordinary coiled-spring portion *a*, the sharpened or pointed leg *b*, the unsharpened leg *c*, and the shield *d*. The unsharpened leg *c* is bent upward and backward, so that its end *e* will underlie the pointed end of the pin when the latter is engaged with the shield, and thus form a stop to prevent the inward movement of said pointed end, as shown in Fig. 2. In order to enable the stop *e* to perform its function of resisting and preventing inward movement of the pointed end, it is important that said stop should be constructed so as to prevent the end of the sharpened leg from slipping laterally off of the stop when pressed inward against said stop. To secure this result, it is preferred to concave the upper side of the bent-back end *e*, as shown at *e'*, Fig. 3; but it will be understood that it may be made with a V-shaped depression or flat or in any other form that will prevent the pointed end from slipping laterally off of the stop when subjected to direct inward pressure.

When the invention is employed in a safety-pin with a guide or guard, as *f*, it is preferred to have the bent-back end *e* bear against the upper end of said guide-finger, thereby strengthening the support for the pointed end. The space *g*, Fig. 2, between the under surface of the trough-like side of the shield and the upper side of the bent-back portion of the unsharpened leg is preferably

of such a size as to just admit the pointed end freely. The sides of the trough-like fold of the shield extend down below the bent-back end of the unsharpened leg and are so constructed and arranged as to allow the pointed end to readily pass vertically through the space *h* between the side of the shield and the bent-back portion of the unsharpened leg into the bottom of the trough. Thus the bent-back end does not interfere with the unfastening of the pin, which is accomplished by pushing the point slightly sidewise as well as downward, which forces it through the space *h* and out of the shield on either side.

When a safety-pin constructed with my improvement is subjected to a transverse strain, any substantial outward movement of the middle portion of the sharpened leg is prevented, by reason of the fact that the stop *e* prevents the inward movement of the pointed end of the sharpened leg, as shown in Fig. 5. By thus preventing the outward movement of the middle portion of the sharpened leg the production of an initial bend at this point is avoided and the pointed end is prevented from pulling lengthwise out of the shield and the pin materially strengthened. The employment of the stop also prevents the unfastening of the pin from any accidental inward pressure upon the pointed end, as when subjected to such a pressure the pointed end

will bring up against the stop and be firmly held against further inward movement.

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

1. A safety-pin comprising a wire bent to form the legs of the pin, a shield, and a fixed stop constructed to prevent inward movement of the pointed end when pressed inward against said stop.

2. A safety-pin comprising a wire bent to form the legs of the pin, and a shield the unsharpened leg being folded back within the shield to form a stop to prevent inward movement of the pointed end when pressed inward against said stop.

3. A safety-pin comprising a wire bent to form the legs of the pin, and a shield, the unsharpened leg being folded back within the shield and concaved on the upper side of the folded-back portion.

4. A safety-pin comprising a wire bent to form the legs of the pin, a shield, and a guide, the unsharpened leg being folded back within the shield and concaved on the upper side of the folded-back portion and having the under side of said bent-back portion supported by the guide.

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Witnesses:

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