No. 630,972. Patented Aug. 15, 1899.

G. J. CAPEWELL, JR.

STICK PIN RETAINER.

(Application filed June 11, 1898.)

(No Model.)

Fig. 1

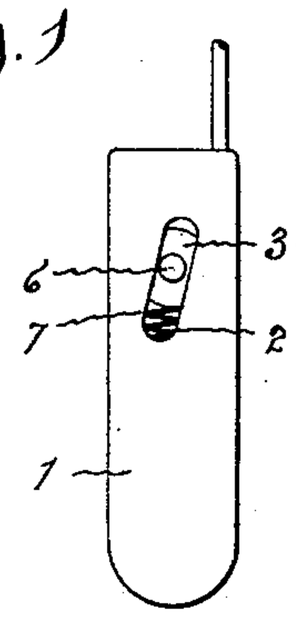


Fig. 2

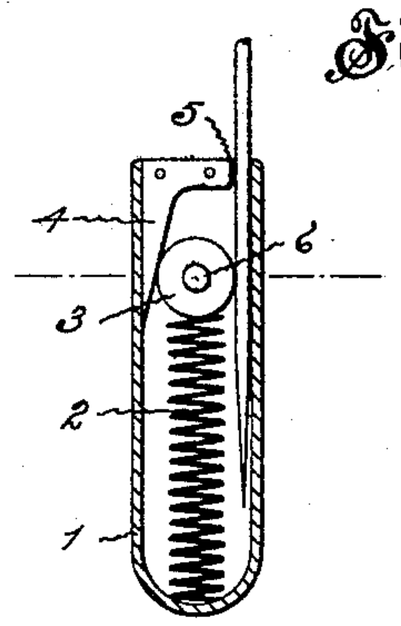


Fig. 3

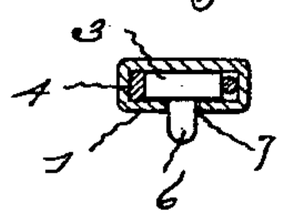


Fig. 4

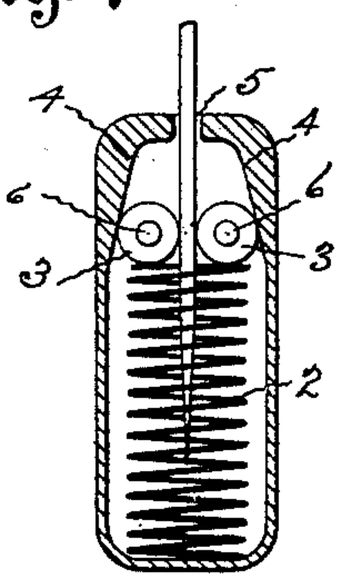


Fig. 5

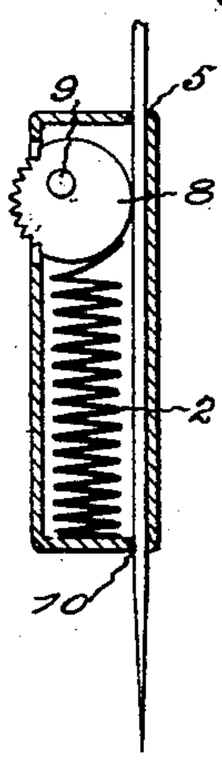
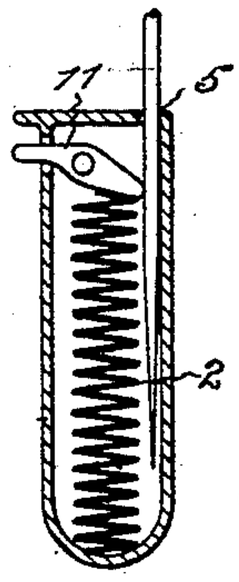


Fig. 6



Witnesses:
E. W. Fothergill.
E. J. Hyde.

Inventor:
George J. Capewell Jr.
by
Harry P. Williams
atty.

UNITED STATES PATENT OFFICE.

GEORGE J. CAPEWELL, JR., OF HARTFORD, CONNECTICUT.

STICK-PIN RETAINER.

SPECIFICATION forming part of Letters Patent No. 630,972, dated August 15, 1899.

Application filed June 11, 1898. Serial No. 683,162. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CAPEWELL, Jr., a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Stick-Pin Retainers, of which the following is a specification.

This invention relates to an article which is designed to be thrust upon or over the point end of a scarf, hat, or other ornamental stick-pin that has been placed in position for decoration or utility, to prevent accidental or malicious removal of the pin.

The object of the invention is to provide a very light, small, and inexpensive article that when simply thrust upon the point end of a pin of any size will, without marring the pin, automatically grip in such manner that the harder the attempt to pull out the pin without manipulating the gripping part the harder the retainer will hold.

This invention resides in an article having a shell with a spring-pressed rotary gripper so arranged that it will move freely and permit the insertion of the point end of a pin of any ordinary size into the shell without any manipulation whatever, but that will tend to move and bind and clamp the pin against any attempt at removal unless manipulated so as to prevent this binding, as more particularly hereinafter described, and pointed out in the claim.

Of the accompanying drawings, Figure 1 shows an enlarged side view of a retainer which embodies the invention. Fig. 2 is a view of the same with one side removed. Fig. 3 is a transverse section of this retainer. Fig. 4 is a view, with one side removed, of another form of retainer that embodies the invention. Fig. 5 is a similar view of another form, and Fig. 6 is a view of still another form.

The shell 1 of this retainer may be formed to any desirable shape, but it is preferably a narrow case but slightly thicker than the diameter of the largest pin with which it may be used. This shell may be stamped, drawn, or otherwise formed to shape of thin light precious metal, as gold or silver, or it may be formed of a base metal, as brass or copper, and plated, oxidized, or treated in any suitable way.

In the first form illustrated, a spring 2 is placed in the lower end of the shell, and above this spring and normally pushed outwardly by it is a roll 3. One of the edge walls of the shell is shaped or otherwise provided with a piece 4, so that the opening in the shell tapers inwardly toward the outer end. The outer end is closed, except on one side, which has an opening 5 left to permit the insertion of the point end of a pin. The spring pushes the roll outwardly, and as one wall of the shell is inclined the farther out the roll is pushed or drawn the more it will be carried toward the straight edge of the shell beneath the pin-opening. The roll is provided on one side with a stud 6, and in the side wall of the shell is a slot 7, through which the stud extends, so that it may be reached and the roll moved against the push of the spring from the exterior. If desired, instead of having one of the edge walls of the shell tapered or inclined the slots 7 may be arranged obliquely and utilized to guide the roll in its movement. When the point of a pin is thrust into the shell through the opening 5, the friction of the inwardly-passing pin against the roll causes the latter to rotate and move inwardly against the spring until it reaches a location so wide that the friction of the pin will not be sufficient to overcome the pressure of the spring. When a pin is thrust into the shell of this form, the spring pushes the roll outwardly until the friction of the latter upon the pin and against the inclined edge wall of the shell or of the studs against the edges of the oblique slots through the side walls of the shell is greater than the force of the spring. With the parts in these positions any attempt to draw the pin out tends to cause the roll to rotate along the inclined edge wall or the studs to roll along the edges of the oblique slots in such manner that the periphery of the roll bites the pin and clamps it against the straight edge wall of the shell. In practice, with the inclination of the edge wall or slots rightly proportioned this bite is sufficient to so securely clamp the pin that the latter will be fractured before it can be drawn

out. When it is desired to remove this retainer from the point end of the pin, the stud is first slightly moved downwardly and held by the thumb or finger, so that the roll cannot be moved, and then the pin can be freely withdrawn without being damaged or marred.

In the form illustrated in Fig. 4 the gripper is formed of two rolls instead of one, and in this case both edges of the shell may be made to taper or incline inwardly toward the outer end. This permits the formation of a retainer with the pin-opening 5 in the center of the shell—a more symmetrical form.

In Fig. 5 the disk 8 is held by an arbor or outwardly-projecting studs 9, arranged eccentrically, so that the roll will move freely to permit the insertion of a pin, but will tend to bind and clamp the pin against the edge wall when an attempt is made to draw it outwardly. One edge of this cam-disk 8 may be extended through one of the edge walls of the shell and may be provided with serrations in order that the disk may be moved and held from binding when it is desired to remove the pin. In this form an opening 10 is made through the inner end of the shell opposite the opening through the outer end of the shell. When the shell is formed in this manner, the retainer may be thrust upon a pin and located at any position along its length.

Fig. 6 illustrates a form in which the binding-cam is arranged on the end of a lever 11, that has one end projecting through the edge wall of the shell. This lever oscillates freely to permit the insertion of a pin, but will prevent the removal of the pin unless its outer end is moved and held so that its inner end will not bind.

In place of the roll shown in the first form illustrated and described a sliding block may be used; but such is not as desirable in action as the rolling block shown on account of the additional amount of friction against the edge wall of the shell. The binding edges of the gripping parts are preferably smooth, so that they will not damage or mar the pin; but of course they could be roughened, if desired.

These retainers may be made with a shell as plain or as ornamental as desired, and they can be quickly thrust upon the end of a scarf or hat pin without any manipulation whatever, so as to prevent the removal of such a pin either accidentally or maliciously. The retainer can be either permanently or temporarily concealed within a scarf or hat, and it can be readily manipulated to allow the free removal of the pin when necessary. It can be thrust upon the point of a pin, so as to afford protection against damage or injury, or it may be slipped along the shank of the pin to any desired position. These retainers can be made light in weight and small in size, so that they may be produced very cheaply and can be employed without annoyance or discomfort to guard against the loss of a valuable pin.

I claim as my invention—

A pin-retainer consisting of a shell with an opening for the passage of a pin, a rotary binder in the shell obstructing the opening and supporting means for said binder whereby the peripheral binding-surface is automatically rotated and the size of the opening increased by an inwardly-thrust pin, thereby affording free entrance to the pin, and whereby the peripheral binding-surface is automatically rotated and the size of the opening decreased by an outwardly-pulled pin, thereby clamping and preventing the withdrawal of the pin, and a spring for pressing the binder into the path of the pin and causing an initial clamping when the pin is thrust into the opening in the shell, substantially as specified.

GEORGE J. CAPEWELL, JR.

Witnesses:
HARRY R. WILLIAMS,
E. W. FOTHERGILL.