March 10, 1942. L. HOCHREINER 2,276,194

SELF-LOCKING SAFETYPIN

Filed March 24, 1941

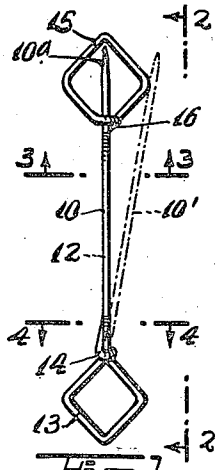


Fig. 1.

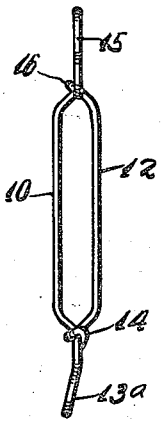


Fig. 2.

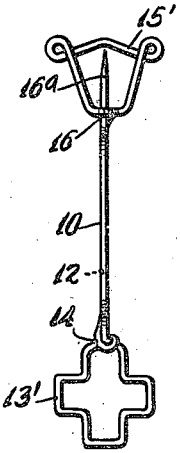


Fig. 6.

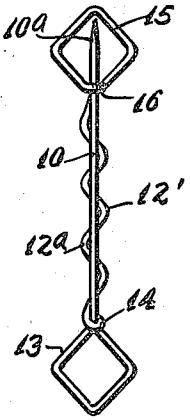


Fig. 7.

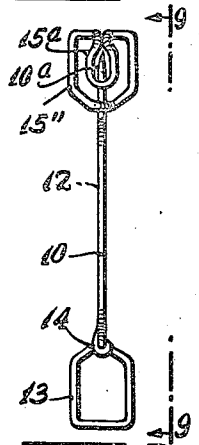


Fig. 8.

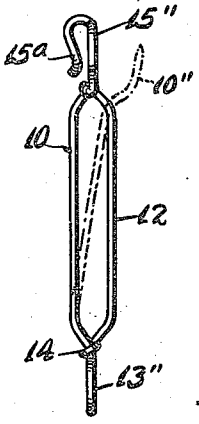


Fig. 9.

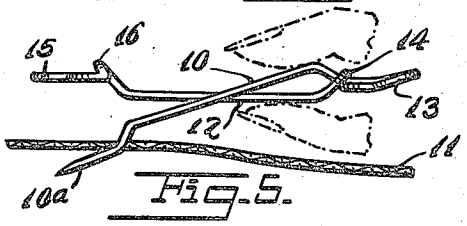


Fig. 5.

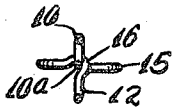


Fig. 3.

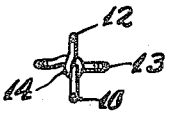


Fig. 4.

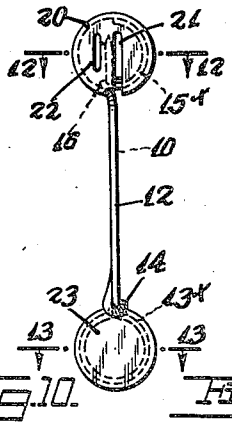


Fig. 10.

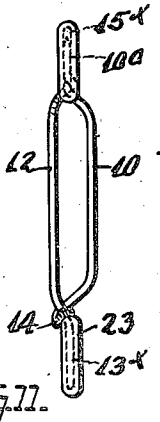


Fig. 11.

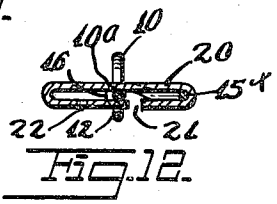


Fig. 12.



Fig. 13.

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UNITED STATES PATENT OFFICE

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SELF-LOCKING SAFETY PIN

Leopold Hochreiner, New York, N. Y.

Application March 24, 1941, Serial No. 384,846

11 Claims. (Cl. 24—161)

This invention relates to new and useful improvements in a safety pin.

More specifically, the invention proposes the construction of a self-locking safety pin constructed from a continuous piece of wire bent in a particular fashion, which permits the pin to be easily inserted into cloth or other material in a manner to automatically lock itself against accidental disengagement until it is desired to remove the same.

Still further it is proposed to characterize the pin by a piercing portion having an offset pointed end for facilitating the engagement of the piercing portion through the piece of material.

Still further it is proposed to arrange the body portion beneath said piercing portion and to provide one end of the body portion with a head portion arranged in a manner to cooperate with the pointed end of said piercing portion for preventing the same from engaging the flesh when in use.

Still further it is proposed to provide the other end of said body portion and the adjacent end of said piercing portion with a loop portion forming a handle for facilitating the engagement of the pin into the piece of material.

A further object of this invention proposes the construction of a hook on said head portion and the formation of an eye on said loop portion for permitting the hook of one pin to be engaged with the eye of an adjacent pin in a manner to permit several pins to be connected together in a continuous line.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a plan view of a safety pin constructed in accordance with this invention.

Fig. 2 is a view looking in the direction of the line 2—2 of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Fig. 5 is an elevational view of a pin in the process of being inserted in a piece of cloth or other material.

Fig. 6 is a view similar to Fig. 1 illustrating a modification of the invention.

Fig. 7 is still another view similar to Fig. 1 illustrating a further modification of the invention.

Fig. 8 is another view similar to Fig. 1 illustrating a further modification of the invention.

Fig. 9 is a view looking in the direction of the line 9—9 of Fig. 8.

Fig. 10 is a plan view of a safety pin constructed in accordance with another form of this invention.

Fig. 11 is a side elevational view of Fig. 10.

Fig. 12 is a vertical sectional view taken on the line 12—12 of Fig. 10.

Fig. 13 is a vertical sectional view taken on the line 13—13 of Fig. 10.

The safety pin, according to this invention, is preferably constructed from a continuous piece of relatively stiff wire and consists of a piercing portion 10 having its front end 10a offset and pointed to facilitate its engagement through a piece of cloth or other material 11. A body portion 12 is spaced from the piercing portion 10 and is arranged directly beneath the piercing portion.

A loop portion 13 continues from the rear ends of the body 12 and the piercing portion 10 and forms a handle which is in a plane substantially at right angles to the plane extending between the body portion 12 and the piercing portion 10. This loop portion 13 at the junction of the piercing portion 10 and the body portion 12 is formed to maintain its shape by twisting a portion of the body portion 12 around the adjacent area of the piercing portion 10. This twisted portion is designated at 14 and extends completely around the piercing portion 10, as shown in Fig. 4. The loop portion 13 is further arranged in a plane intermediate of the height of the plane extending between the piercing portion 10 and the body portion 12. This loop portion has its rear bent upwards as indicated at 13a, for facilitating the gripping thereof when the loop portion is used as a handle for causing the piercing portion to be engaged through the cloth or other material 11.

A head portion 15 continues from the front end of the body portion 12 and extends over the offset pointed end of the piercing portion 10 and is in a plane substantially identical with the plane of the loop portion 13 and has a top socket 16 for encasing and holding the pointed end of the piercing portion 10. This top socket 16 is directed at an inclination upwards and sidewards and normally the offset portion engages this socket portion in a manner to cause the pointed end of the piercing portion 10 to be in the common plane extending between the sides of the

head portion 15. Thus the head portion 15 encircles the pointed end of the piercing portion 10 for preventing the pointed end from engaging the flesh when the pin is used in articles of cloth.

When the offset portion is completely disengaged from its socket 16 and the pointed end is brought over the top of the head portion 15 it will assume the position illustrated by the dot and dash lines 10' in Fig. 1. From an inspection of this figure it will be noted that the piercing portion has assumed a position to the right of the top socket or adjacent the inner end thereof so that the normal resiliency of the piercing portion 10 will cause it to be engaged into the socket portion 16 at all times when no pressure is applied to cause the same to be disengaged.

The operation of this form of the invention is as follows:

The handle portion 13 is gripped with one's fingers with the piercing portion 10 disposed above the body portion 12. The head 15 is then rested against the material into which it is desired to engage the piercing portion 10. Pressure is then applied downwards and the pin is moved forwards to cause the piercing portion to be simultaneously disengaged from the top socket 16 and engaged into the cloth material 11. When the piercing portion is completely engaged through the cloth material pressure is released permitting the resiliency of the piercing portion to return the offset end 10^a to the top socket 16.

Due to the fact that the piercing portion 10 is disposed above the body portion 12 while being engaged through the cloth, the resiliency of the return action will cause the pin to be twisted substantially through 180° or into a position in which the body portion is disposed above the piercing portion 10 when the pin is in position with relation to the cloth material 11. This turning of the pin causes the piercing portion to be automatically locked in its closed position preventing an accidental disengagement of the pin from the material. This locking action is caused because the top socket 16 is also twisted through substantially 180° until it assumes a position in which it is directed downwards and sidewise so that when pressure is applied to the piercing portion to withdraw the pin the offset portion 10^a will be more tightly drawn into the socket 16 instead of disengaging therefrom.

For removing the pin from the cloth material it is merely necessary to twist the same to the right through substantially 180° or into a position in which the piercing portion 10 is again disposed above the body portion 12, whereupon it is possible to manually pull the pin backwards, causing the offset end 10^a of the piercing portion to be simultaneously disengaged from the top socket 16 and withdrawn from the cloth material 11.

According to the modification of the invention shown in Fig. 6 a differently shaped head portion 15' and loop portion 13' is formed upon the ends of the piercing portion 10 and body portion 12. In other respects this form of the invention is similar to the previous form and identical parts may be identified by corresponding reference numerals.

According to the modification of the invention shown in Fig. 7 the construction of the safety pin is similar to that previously described except that the portion 12' is formed with a plurality of offset bent portions 12^a for engaging against the surface of the cloth material 11 for preventing twisting of the pin and so limit it against accidentally turning through the required 180° unless manually turned as desired.

According to the modification of the invention shown in Figs. 8 and 9 the construction of the pin is similar to that previously described except that the head portion 15'' is formed to have a hook 15^a and the loop portion 13'' is formed in the shape of an eye in a manner so that the hook 15^a of one pin may be engaged with the eye of an adjacent pin to permit a plurality of pins to be connected together in a continuous line when desired. The dot and dash lines 10'' shown in Fig. 9 illustrate the position of the piercing portion when pressure is applied to the head 15'' to engage the pointed end of the piercing portion through the cloth or other material. In other respects this form of the invention is similar to the previous forms.

In the modified form of the invention illustrated in Figs. 10 to 13 inclusive, a safety pin has been disclosed which is constructed from a continuous piece of relatively stiff wire, and which includes a piercing portion 10 having its front end 10^a offset and pointed to facilitate its engagement through a piece of cloth or other material. A body portion 12 is spaced from the piercing portion 10 and is arranged directly beneath the piercing portion. A circular loop portion 13^x continues from the rear ends of the body 12 and the piercing portion 10 and forms the core of a handle which is in a plane substantially at right angles to the plane extending between the body portion 12 and the piercing portion 10.

The loop portion 13 is maintained in shape by the provision of a twisted section 14 at the junction of the piercing portion and the body portion. A core 15^x of a head portion continues from the front end of the body portion 12 and extends over the pointed end 10^a of the piercing portion, and is in a plane substantially identical to the plane of the loop portion 13^x. This head portion has a socket loop 16 for encasing and holding the pointed end 10^a of the piercing portion 10. The core 15^x of the head portion is of semi-circular shape.

A flat sheet metal shell body 20 is mounted over the core 15^x of the head portion. This shell 20 encases the top socket 16. The shell 20 is provided with a slot 21 in one wall thereof through which the pointed end 10^a of the piercing portion 10 may pass to engage and disengage the socket loop 16. The shell 20 is provided with an auxiliary slot 22 parallel to the slot 21 to facilitate gripping the shell 20 with one's finger nail for holding the same when desired. The loop portion 13^x is also provided with a flat shell body 23 mounted thereover and encasing the same. This shell 23 comprises the body of the handle of the safety pin.

In other respects this form of the invention is identical to the previous form and like parts are identified by like reference numerals.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a

piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion.

2. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing front end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said body portion having its rear end twisted about said piercing portion at the rear junction thereof for forming said loop portion.

3. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said loop portion having its rear bent upwards to facilitate the gripping thereof when the loop portion is used as a handle for engaging the piercing point through the cloth or other material.

4. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said loop portion being arranged in a plane intermediate of the height of the plane extending between said piercing portion and said body portion.

5. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said top socket being directed upwards and sidewise at an inclination for permitting said piercing portion and said body portion to be in a common plane when the offset end of said piercing portion engages said top socket.

6. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said loop portion and said head portion being of varying designs for adding to the decorative quality of said pin.

7. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending be-

tween said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said body portion being provided with a plurality of offset portions for engaging said cloth material when the pin is engaged therewith for preventing an accidental turning for removing said pin.

8. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, and a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, said loop portion being in the form of an eye, said head portion being formed with a hook engageable with the eye of an adjacent pin for permitting a plurality of pins to be connected together in a continuous line when desired.

9. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, and a flat shell mounted over said loop portion.

10. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, and a flat shell mounted over said head portion and encasing said top socket and having a slot in one wall thereof through which the point of said piercing portion may pass to engage and disengage said top socket.

11. A safety pin, comprising a piercing portion having its front end offset downwards and pointed to facilitate its engagement through a piece of material, a body portion directly beneath said piercing portion, a loop portion continuing from the rear ends of said body and piercing portions and forming a handle which is in a plane substantially at right angles to a plane extending between said body and piercing portions, a head portion continuing from the front end of said body portion and extending over said offset pointed end in a plane substantially identical with the plane of said handle and having a top socket for encasing and holding the top of said piercing point end, so that by grasping said handle and resting said head portion on said material and applying pressure downwards and moving said pin forwards one may force said piercing portion through said material and then may release all pressure to again permit said pointed end to reengage said socket portion, and a flat shell mounted over said head portion and encasing said top socket and having a slot in one wall thereof through which the point of said piercing portion may pass to engage and disengage said top socket, and a flat shell mounted over said loop portion.

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