

(No Model.)

A. T. SNELL.
SAFETY PIN.

No. 571,054.

Patented Nov. 10, 1896.

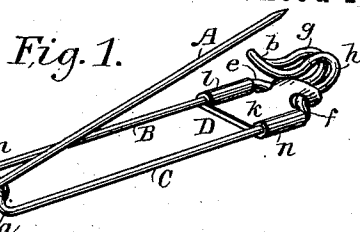


Fig. 2.

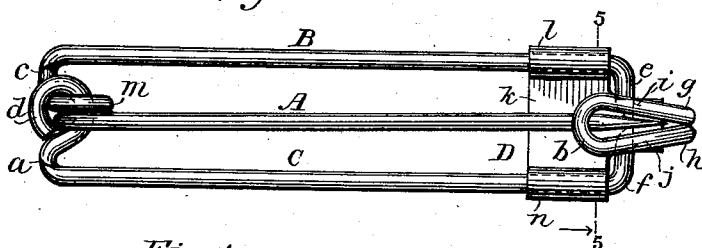


Fig. 3.

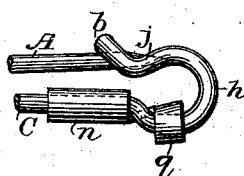


Fig. 4.

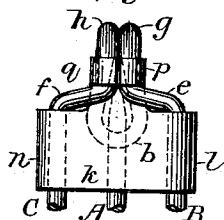


Fig. 5.

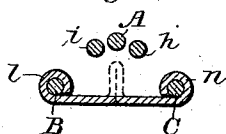


Fig. 6.

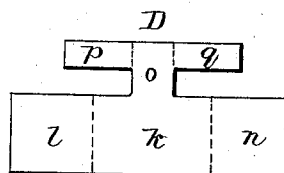


Fig. 7.

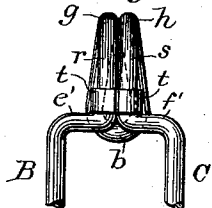


Fig. 8.

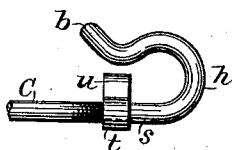


Fig. 9.

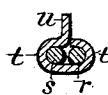


Fig. 11.

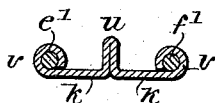


Fig. 12.

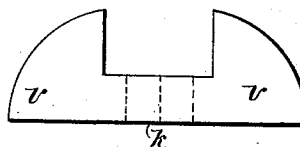


Fig. 10.

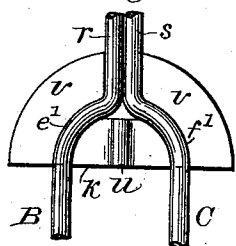


Fig.13.

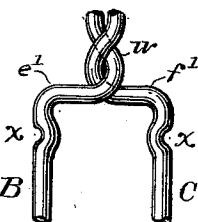
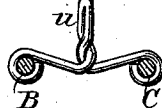


Fig. 14.



Witnesses:

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Inventor:

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by *Arthur S. Ground*
The Attorney.

UNITED STATES PATENT OFFICE.

ARTHUR T. SNELL, OF SANTA BARBARA, CALIFORNIA.

SAFETY-PIN.

SPECIFICATION forming part of Letters Patent No. 571,054, dated November 10, 1896.

Application filed August 25, 1893. Serial No. 484,054. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR T. SNELL, of Santa Barbara, in the county of Santa Barbara and State of California, have invented certain new and useful Improvements in Safety-Pins, of which the following is a specification.

The present invention consists in certain improvements upon the safety-pins set forth in Letters Patent of the United States No. 481,834, granted to my assignees August 30, 1892. The safety-pin set forth in said patent has an open frame and pin-shank composed of a single piece of wire bent to form a substantially rectangular open frame with parallel sides between which the pin-shank lies, the pin-shank being connected to the frame at one end by a spring-coil, and a sheet-metal guard or shield for the pin-point being secured to the opposite end of the frame. The object of said patented invention was to provide a safety-pin which could be fastened and unfastened by one hand unassisted by the other, being hence particularly useful to surgeons and nurses in applying bandages, especially to infants, where one hand is engaged in holding the infant. The present improvements are applied to safety-pins of this character and for the same purpose, the substantially rectangular two-sided wire pin open frame being retained and the pin-shank in one piece with the frame and connected therewith by a spring-coil being also retained.

The present improvements relate to the construction of the pin-point guard or shield end of the frame. Instead of a sheet-metal guard, shield, or pin-catch being employed the same is formed by properly bending the wire of which the pin-frame is composed, and in connection therewith and in order to secure rigidity for the guard end of the pin-frame and to prevent the frame being bent out of shape by use or accident a cross-brace and tie is provided between the sides of the frame below and in the vicinity of the pin catch or guard.

The present improvements are illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of the improved pin. Fig. 2 is a plan view. Fig. 3 is a side view. Fig. 4 is a bottom view. Fig. 5 is a cross-section. Fig. 6 is a plan view of the blank from which the strengthening cross-

brace and tie is made. Fig. 7 is a plan view, Fig. 8 a side view, and Fig. 9 a cross-section, of the guard end of a modification of the pin. Figs. 10 to 14 illustrate other modifications.

Referring first to the preferred construction shown in Figs. 1 to 6, A is the centrally-located pin-shank, B and C are the two sides of the substantially rectangular open pin-frame, *a* and *c* are the bends at the rear end of the pin-frame, *d* is a loop formed at one end of the wire of which the frame and pin-shank are composed, and *m* is the double spring-coil at the base of the pin-shank, which passes through the loop *d* and connects the pin-shank with the frame, all of which parts are substantially identical with the construction shown in said patent, and particularly with the construction shown in Figs. 9 and 10 of said patent.

At the front end of the pin-frame, where the wire passes from side B to side C, the wire does not form a simple bend as in said patent, but is shaped to provide the catch guard or shield for the pin-point. The forward ends of frame sides B C merge, respectively, into inwardly and downwardly extending curved sections *e f*, which approach either nearly or substantially to contact, and these sections merge, respectively, into upwardly-arching sections *g h*, which lie substantially parallel with each other in close proximity and extend through about half a circle. These sections *g h* then merge into downwardly, rearwardly, and outwardly extending branches *i j*, which spread apart from each other, and these two branches merge into a uniting-bend *b*, which extends upwardly and rearwardly from the branches *i j* through an arc of about half a circle. The bend *b* constitutes the pin-catch proper, while the bend *b*, together with the sections *e, f, g, h, i, and j*, constitutes what I term the "pin-guard" as a convenient designation. The center of the catch *b* is its highest and most rearwardly-located point, and from this point the catch slopes downwardly and forwardly. The pin-point, which is normally held elevated above the catch by the spring-coil *m*, is caught by simply pressing the same downwardly or directly toward the catch *b*, the sloping shape of which directs the pin-point to one side or the other until the pin-point passes below one

of the lowest parts of the catch *b*, that is, the point on either side where the catch merges into one of the side branches *i* or *j*. The double coil *m*, which tends always to keep the pin-shank in its central position, then throws the pin-point toward the center beneath the catch, and on relieving the pin-shank from pressure the pin-point is caught by the catch *b*. When thus located beneath the catch, the pin-point is held from accidental lateral displacement by the side branches *i* and *j*.

The pin-frame is rendered rigid at its base by the bends *a c*, the loop *d*, and the double spring-coil *m*, which prevent the frame at that point from collapsing or being spread apart.

In order to render rigid the front end of the frame to prevent it from collapsing, to maintain the parallelism of the sides *B C*, and to prevent the side bends of the pin-guard being pulled apart, a combined tie and cross-brace *D* is employed. This brace and tie, as shown in the blank illustrated in Fig. 6, comprises, in a single piece of stamped or otherwise cut-out sheet metal, a plate *k*, side flanges *l n*, and an end projection *o* with ears *p* and *q*. In applying the combined tie and brace *D* to the pin-frame it is placed beneath the sides *B C* and the flanges *l n* are turned up and over the sides *B C*, respectively. The projection *o* extends above the bends *e f*, and the ears *p q* are bent down and around the lowermost parts of the bends *g* and *h*, respectively, thus tying them together. The flanges *l n* prevent any lateral movement of the sides *B C*, and the ears *p q* prevent any spreading apart of the parts constituting the pin-guard. The ears *p q*, together with the frame-sections *e f*, also prevent any longitudinal sliding of the tie and brace *D* along the pin-frame. The plate *k* prevents the pin-shank being pressed below the sides *B C*.

In the modification shown in Figs. 7, 8, and 9 the abutting brace-sections *e' f'* replace the frame-sections *e f* of the preferred construction. They are located nearly below the catch *b* and extend directly in line with each other and at right angles to the sides *B C*. The inner ends of these brace-sections *e' f'* abut against each other, so that they prevent the frame from collapsing and thus fulfil the corresponding function of the brace *D* of the preferred construction. Straight parallel sections *r s* connect the abutting ends of the brace-sections with the upwardly-bending sections *g h*, respectively, and to prevent the spreading apart of the sections *r s* and of the sides of the catch *b* a separate tie *t* is bent around the sections *r s*. This tie *t* fulfils the tying function of the flanges *l n* and the ears *p q* of the preferred construction. This tie *t* is preferably formed with an upwardly and centrally projecting tongue *u*, which has the same object and effect as the tongue *g* in the aforesaid patent, No. 481,834.

In the modification shown in Figs. 10, 11, and 12 the frame is made substantially as in

the modification shown in Figs. 7, 8, and 9, the difference residing in the construction of the brace-tie and tongue. The brace-tie and tongue are formed out of the sheet-metal blank shown in Fig. 12, which has a base-plate *k* and curved end wings *v*. The base-plate *k* extends between the sides *B C* of the frame, its middle part is bent up to form the tongue *u*, as shown in Fig. 11, and its end wings *v* are bent around the brace-sections *e' f'*. The base-plate *k* serves also to brace the sides *B C*.

In the modification shown in Figs. 13 and 14 the portions of the wire which connect the brace-sections *e' f'* with the curved sections *g h* are twisted around each other, as shown at *w* in Fig. 13, so that the two sides *B* and *C* are thereby tied together. A tongue *u* and additional tie are formed in this modification by a wire bent to form the same, (see Fig. 14,) with its ends bent around bends *x x* in the sides *B* and *C*, which bends *x x* prevent the additional tie and tongue *u* from sliding longitudinally along the sides *B* and *C*.

A dividing-tongue *u* can be used in connection with the construction shown in Figs. 1 to 6, as indicated in dotted lines in Fig. 5, by bending up the middle part of the blank, as in the modification shown in Figs. 10 to 12.

I claim as my invention—

1. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch, composed of a single piece of wire, and having a tie at the guard end of the open frame which prevents the spreading apart of the sides of the open frame and of the guard, substantially as set forth.

2. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch composed of a single piece of wire, and having a brace between the two sides of the open frame at the guard end thereof to prevent the same from collapsing, and a tie at the guard end of the open frame to prevent the spreading apart of the sides of the open frame and of the guard, substantially as set forth.

3. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch, composed of a single piece of wire, and having a sheet-metal brace and tie extending between the sides of the open frame and bent around the same, substantially as set forth.

4. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch composed of a single piece of wire, said pin-guard having two sections or bends lying adjacent to each other, and said safety-pin having a sheet-metal brace and tie extending between the sides of the open frame, said brace and tie having flanges bent around the sides of the open frame and having ears bent around the adjacent sections of the pin-guard, substantially as set forth.

5. A safety-pin, having its two-sided frame *B, C*, central pin-shank *A*, and pin guard and catch composed of a single piece of wire, said

guard and catch being composed of converging sections *ef* which extend from the respective sides B, C, to and into contact with each other, two upwardly-arching and contiguous
5 parallel sections *g h* extending from said sections *ef* respectively, the downwardly-extending and diverging sections *ij* extending from said sections *g h* respectively, and the upwardly-arching crosswise-extending section
10 *b* uniting the said sections *ij*, substantially as set forth.

6. A safety-pin having its two-sided open frame, central pin-shank and pin guard and

catch composed of a single piece of wire, and having a combined tie and tongue at the
guard end of the open frame connecting the
two sides of the open frame and providing a
directing-tongue for the pin-point, substantially as set forth. 15

In witness whereof I have hereunto signed 20
my name in the presence of two subscribing witnesses.

ARTHUR T. SNELL.

Witnesses:

GEO. A. CULBERTSON,
R. D. SMITH.