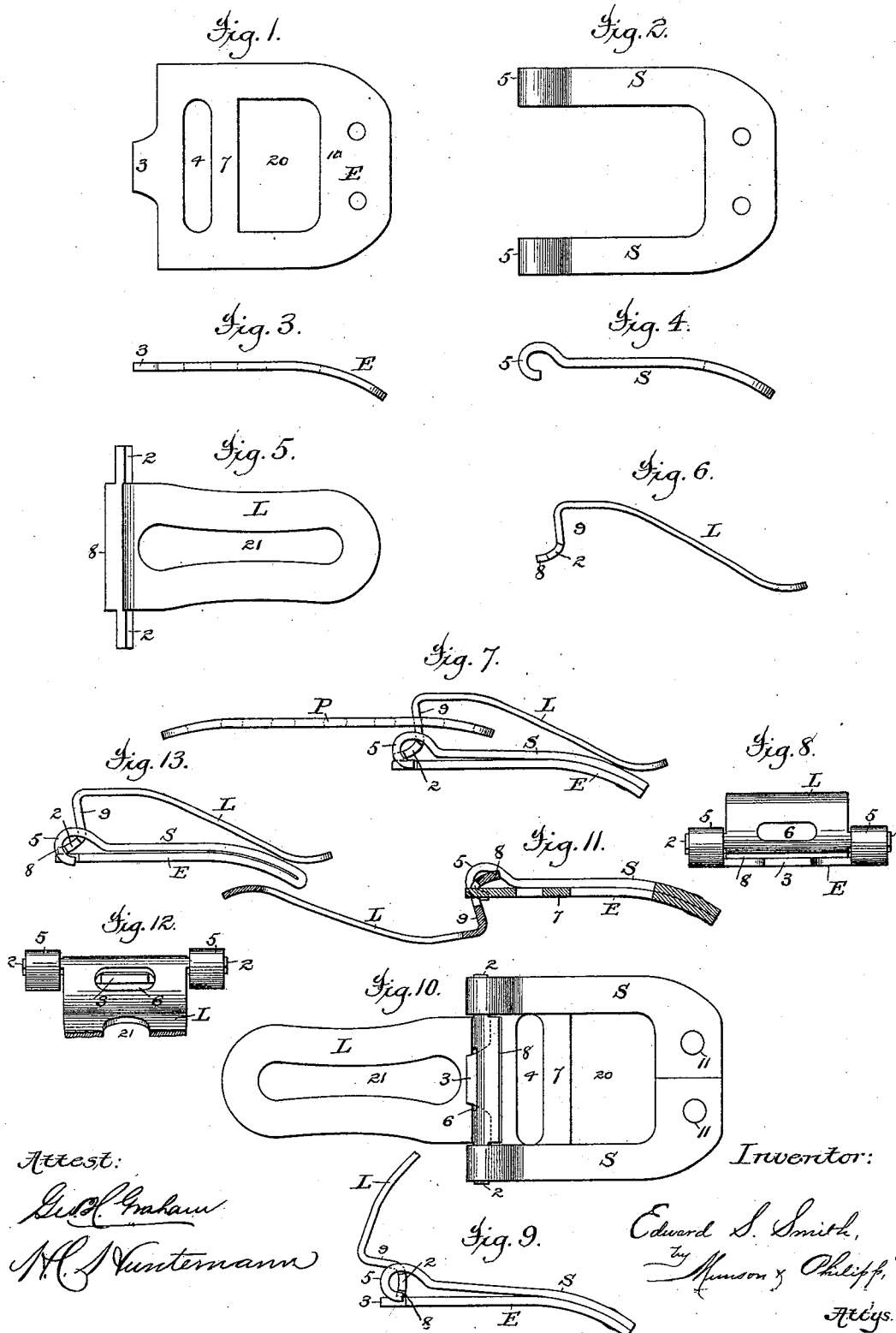


(No Model.)

E. S. SMITH.  
SPRING CLASP.

No. 303,547.

Patented Aug. 12, 1884.



# UNITED STATES PATENT OFFICE.

EDWARD S. SMITH, OF WATERBURY, CONNECTICUT.

## SPRING-CLASP.

SPECIFICATION forming part of Letters Patent No. 303,547, dated August 12, 1884.

Application filed April 25, 1884. (No model.)

### *To all whom it may concern:*

Be it known that I, EDWARD S. SMITH, a citizen of the United States, residing in the city of Waterbury, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Spring-Clasps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to that class of spring-clasps which are provided with a spring-seated swinging holding-lever constructed so as to engage with a holding-loop or slotted attaching-plate and secure or release the same as said lever is closed or opened. In this class of clasps, owing to the low price at which they must be produced and sold, parts few in number and simple in construction are among the essentials. In consequence of their use in  
20 fastening together parts of articles that are subjected to great strains, it is requisite that the holding-lever shall be retained in its closed position by a spring of considerable strength and power, so that it will neither be liable to breakage or to be readily overcome. By reason of the necessity of drawing the parts of the article to be fastened quite closely together in order to accomplish a snug fastening, it is of great importance that the holding-lever may  
30 open quite widely, so as to admit its engagement with the proper loop of the fastening-plate. These desirable qualities are all embraced in the clasp embodying the present invention, which consists in improved structure of the parts and their combination, as will fully appear from the particular description of the construction and operation now to be given in connection with the accompanying drawings, in which—

40 Figures 1 and 2 are plan views, and Figs. 3 and 4 side elevations, representing, respectively, the base-plate and spring-arms. Figs. 5 and 6 are respectively plan and side elevations of the holding-lever. Fig. 7 is a side elevation of the clasp when closed and holding an attaching-plate. Fig. 8 is an end elevation of the closed clasp. Fig. 9 is a side elevation of the clasp partially opened. Figs. 10, 11, and 12 are respectively a plan view,  
50 a central sectional elevation, and an end ele-

vation, partly in section, of the clasp when opened. Fig. 13 is a side elevation of a modification of the clasp.

The clasp consists of three elements—a base-plate, E, spring-arms S S, and a swinging holding-lever, L.

The base-plate E is blanked out of metal in the shape shown in Fig. 1, whereby it is given a body, 10, an extended tongue, 3, and a slot, 4; and it may, if desired, have the portion 20 removed either to reduce the weight of the plate or to produce the bar 7. It is preferably curved at its rear end, as shown in Fig. 3, but to suit some uses may be flat.

The spring-arms S, of which there are two, 65 are formed from spring metal, and are preferably made in a single piece, as shown in Fig. 2, so that they will conform to the shape of the base-plate. These arms have their forward ends curved to form pivot-sockets 55, as is shown in Fig. 4, the same being shaped so that the free end of their curved portion will nearly abut against the forward edge of the base-plate E, as is well shown in Fig. 7. This abutting, however, though desirable, is not  
75 essential.

The holding-lever L is also blanked out of sheet metal, and so bent as to form a body or long arm whose forward portion is bent at about a right angle to form a shank, 9, against which the loop of a buckle or bar of an attaching-plate, as P, Fig. 7, may rest and be held. This forward portion is further bent at an obtuse angle to form the projecting bearer 8. The forward end of this holding-lever is also provided with a slot, 6, (see Fig. 8,) to admit the passage of the tongue 3, and it is provided at opposite sides with pivots 2 2, that project laterally from the bearer 8. The body of the lever is or may be cut away, 90 as at 21, to provide lightness and impart an ornamental effect. The forward end of the base-plate E is cut back at each side of the tongue 3, so as to provide spaces or room for the protrusion rearward of the lower members of the sockets 5 of the spring-arms S, so that said lower members of the sockets may be aligned with the base-plate when the clasp is closed, and thus bring the parts into a narrow compass, whereby the article to which 100

the clasp is attached may not be unduly increased in thickness by the presence of the clasp.

The parts are readily assembled by first placing the pivots 2 2 of the lever L in the sockets 5 5 of the arms S S, (where it will rest loosely when extended forward, as will further appear,) then laying said arms evenly on the plate E and securing the arms to the plate E by means of rivets 2 2, entered through their rear ends and the plate, as in Fig. 10. Thus secured, it will be found that the tongue 3, in consequence of its extending through the slot 6 in the holding-lever L, (see Fig. 2,) does not impinge upon any portion of said lever, and hence that the lever is free to swing on its pivots 2 2 in the sockets to an extent limited only by the abutment of the face of its front member against the front edge of the base-plate E at points between the tongue 3 and the sockets 5 5, where the base-plate is cut back to form spaces at the side and rearward of the tongue 3. This capacity or range of forward movement enables the holding-lever to be extended, so as to approximately lie in a plane parallel with the base-plate of the clasp, as in Fig. 2, and hence it is projected nearly, if not quite, parallel with that portion of the article carrying the loop or attaching-plate, and brought into a position to readily enter the loop or the slot of the attaching-plate that is nearest the end of said lever. Thus the lever L may so engage with the attaching-plate P as to draw one portion of the article to be fastened toward the other portion thereof, to which the plate E is attached, and thus obtain a close or snug securing of the parts. When the holding-lever L is moved rearwardly, its bearer 8 will come into contact with the tongue 3, and as said bearer slides over said tongue the latter will press the pivots 2 2 upward in the sockets 5 5 of the spring-arms S S, thus raising the latter away from the plate E and tongue 3 far enough to permit the bearer 8 to pass from the position shown in Fig. 2 to that shown in Fig. 7, in which latter the clasp is shown as closed. When the point of the greatest distention of these spring-arms S S has been passed, their resilient capacity will cause them to move toward the base-plate E, so that when the lever L is closed said spring-arms will press upon the pivots 2 2 and hold the bearer 8 in snug contact with the tongue 3, whereby such a leverage will be exerted as will tend to hold the rear end of the holding-lever L upon the rear ends of the spring-arms and resist any forward draft exerted upon the shank 9 of said lever. In this rearward movement of the holding-lever the attaching-plate P is drawn toward the base-plate E, and follows down on the body of the lever L as the latter approaches its closed position, and finally rests upon the sockets 5 5 and is seated against the shank 9. To release the fastening, the rear end of the holding-lever L is raised by power sufficient to overcome the

pressure of the spring-arms, and is pushed forward until it is in the position shown in Fig. 2, whereupon the loop or attaching-plate is free to become detached, which will be accomplished without the aid of hand manipulation by reason of the extreme extended position this lever L may assume, and because of its free or loose condition when so extended. This latter effect is of great advantage, as it not only lessens the difficulty of unfastening the clasp, but avoids any necessity of distorting one part of the article supplied with the clasp by raising it away from the other—an operation often resulting, especially in gum shoes, in serious injury thereto.

The slot 4 in the base-plate is provided for the passage of an attaching-strap for securing the clasp to the article to which it is to be applied, in which case the strap might simply pass through said slot. If, however, the plate is removed, as at 20, it provides a bar, 7, around which such strap may pass, and the structure is such as to enable this slot 4 or bar 7 to be formed at a point so near the pivotal point of the lever L as to secure a strong hold and close lap of the parts of the article fastened by it.

It is practicable to construct the holding-lever L without the slot 6; but in this case the said lever will be limited in its forward movement.

This base-plate may obviously be made of common material, as soft iron, and when so made it may readily be supplied with fastening-legs punched out of its body, which legs will then be composed of material best suited to be bent for that purpose.

It is not essential that the arms S S shall be a single piece, as in Fig. 2. They may be separate parts and form rights and lefts, united to the base-plate E, as in Fig. 10; but the construction is an economical and practical one where the two are formed in one piece and attached to the plate E. They might also be combined in one piece with the base-plate E, and this is shown in Fig. 13. In such a case, or in that shown in the other figures, both the arms S S and the plate E may be made of spring metal, and thus mutually act as springs, controlling the holding-lever L, and when made of separate pieces the arms may have one temper and the plate another. The arms S S may have the pivots projecting inwardly therefrom and the holding-lever L be provided with the sockets. These latter structures are therefore to be considered as within the invention and as embraced in the following statement of what I claim:

1. A spring-clasp consisting of a base-plate having a tongue, as 3, spring-arms secured to said plate, and a holding-lever pivoted in sockets of said arms, and provided with a bearer, as 8, co-operating with said tongue, said lever being also provided with a slot, as 6, for the reception of the tongue 3, and said base-plate being cut away at each side of its for-

ward end to provide a space for receiving the shank of said lever, substantially as described.

2. A spring-clasp consisting of a base-plate, spring-arms, and a pivoted lever, said base-plate being cut away at each side of its forward end to provide spaces rearward of a central tongue, as 3, and said spring-arms being attached to said plate, and having the under portion of their sockets turned rearward into said spaces of and in alignment with said base-plate, by which construction the parts are brought within a narrow compass when said holding-lever is closed, substantially as described.

3. A spring clasp consisting of a base-plate having a tongue, as 3, spring-arms secured to said plate, and a holding-lever pivoted in sockets of said arms, said lever being also

provided with a slot, as 6, for the reception of the tongue 3 when the lever is opened or distended, substantially as described.

4. A spring-clasp consisting of a base-plate having a tongue, as 3, and slot 4, spring-arms SS, and a pivoted holding-lever having a bearer, 8, substantially as described.

5. In a spring-clasp, the combination, with the base-plate, of spring-arms SS, formed and attached separately to said plate, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD S. SMITH.

Witnesses:

T. H. PALMER,  
H. T. MUNSON.