(No Model.)

J. L. THOMSON & J. J. UNBEHEND.

SPRING CLASP.

No. 368,433. Patented Aug. 16, 1887.

Fig. 1.

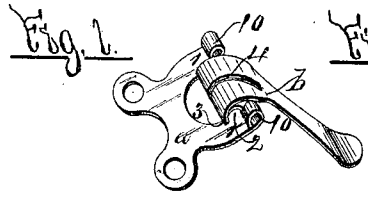


Fig. 2.

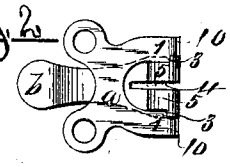


Fig. 4.

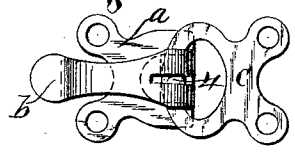


Fig. 3.

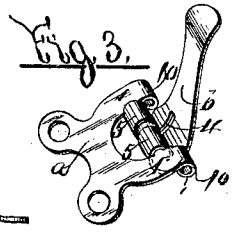


Fig. 5.

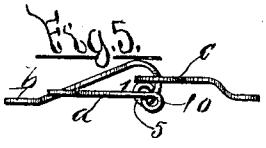


Fig. 6.

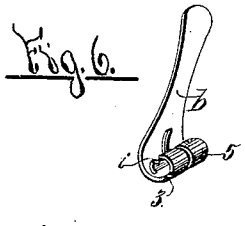


Fig. 9.

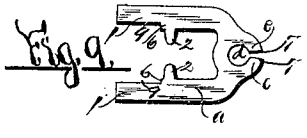


Fig. 7.

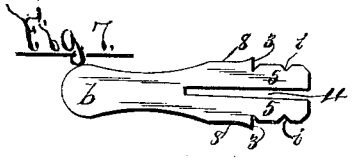
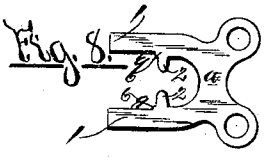


Fig. 8.



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UNITED STATES PATENT OFFICE.

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SPRING-CLASP.

SPECIFICATION forming part of Letters Patent No. 368,433, dated August 16, 1887.

Application filed February 17, 1887. Serial No. 227,906. (No model.)

To all whom it may concern:

Be it known that we, JUDSON L. THOMSON and JACOB J. UNBEHEND, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Spring-Clasps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to the class of shoe-clasps described in the application of Jacob J. Unbehend, filed January 27, 1887, Serial No. 225,620, and has for its object the production of a clasp in which the parts are so constructed as to give an exceptionally easy movement of the tongue on the clasp-plate, and to limit the opening of the tongue to the best position for the convenient engagement of the usual slotted plate therewith when the clasp and plate are attached to an Arctic or other article; and to this end our invention consists in spring-clasps wherein the tongue-plate is provided with tapered pintles, preferably made integral therewith, and in providing the tongue with stops to limit the movement in opening the tongue, and in providing the tongue with two integral springs operating laterally to hold the tongue in its open and closed position in connection with notches in the outer edges of the tongue, and offsets on the inner edges of the forward extensions of the tongue-plate adjacent to the pintles, and also in the detail, construction, and arrangement of the parts, all as more particularly described, and pointed out in the claims.

In specifying our invention reference is had to the accompanying drawings, in which, like letters indicating corresponding parts in all the figures—

Figure 1 is an isometric view of our improved spring-clasp, showing the tongue opened and the stops on the tongue taking against the forward extensions of the tongue-plate. Fig. 2 is an inverted plan view showing the construction of the plate, the tongue being closed. Fig. 3 is an isometric view of the spring-clasp, showing the tongue open and in the reverse position from that shown in Fig. 1. Fig. 4 is a top plan view of our improved spring-clasp, showing the attaching-plate secured to the clasp. Fig. 5 is a longitudinal edge view showing the attaching-plate interlocked with the spring-clasp. Fig. 6 is a detached isometric view of the tongue, illustrating more clearly the stops and the integral spring-sleeves which embrace the tapered pintles of the clasp-plate. Fig. 7 shows a detached view of the tongue-blank before the same is bent up, as shown in Fig. 6, illustrating the construction thereof. Fig. 8 is a detached view of the spring tongue-plate, illustrating the detail construction thereof; and Fig. 9 is a like view illustrating a modification in the construction of the plate to provide for the passage of the fastening-rivet.

a represents our improved spring-plate, preferably made of a single thickness of spring metal, having the forwardly-extending arms 1 1 and the tapered laterally-projecting pintles 2 2, as best shown in Figs. 8 and 9, made integral with the plate, the ends of the extensions 1 1 terminating in the curved loop-shaped ends 10 10, as best shown in Figs. 1, 3, and 5, to prevent the usual slotted plate from being drawn underneath the clasp-plate *a*, and to afford an easy bearing on the foot of the wearer when attached to an Arctic or overshoe, it being found that clasp-plates having sharp or abrupt edges hurt the feet of the wearer, and this difficulty is overcome by providing the curved loop-shaped ends 10 10 for the described purposes.

b is the tongue-plate, preferably struck up from a spring-metal blank, as shown in Fig. 7, the tongue *b* being provided with the central longitudinal slot, 4, and provided on its outer edges with the shoulders or offsets 3 3 and the notches *i i*, and the straight portions 5 5 between the shoulders 3 3 and notches *i i*. The portions 5 5, when bent up, as illustrated in Fig. 6, form sleeves or integral spring-sleeves, which, when the tongue is connected to the clasp-plate *a*, embrace the tapered pintles 2 2 of the clasp-plate *a* and serve to connect the tongue to the clasp-plate.

The object of tapering the pintles 2 2 is to secure a free movement of the spring-sleeves 5 5 on the pintles in the opening and closing of the tongue.

It will be observed that the spring-sleeves 5 5 of the tongue *b* are contracted in the operation of opening and closing the tongue, and the

contraction thereof is caused by shaping the outer edges of the tongue *b* at 8 8, as shown in Fig. 7. Such inclination of the edges 8 8 forms cams of the character described and illustrated in the above-mentioned application of Jacob J. Unbehend, filed January 27, 1887, Serial No. 225,620, and experience shows that where the pintles are tapered the action of the tongue with its integral spring-sleeves 5 5 is made much more free, and at the same time the durability of the device is greatly increased.

The shoulders 3 3 on the tongue *b* serve as stops to limit the extent to which the tongue *b* can be opened, and this desirable result is accomplished by the engagement of the shoulders or stops 3 3 with the inner edges of the forwardly-extending arms 1 1 on the clasp-plate *a*, as best shown at Figs. 1 and 3 of the drawings.

The stops 3 3 are formed at the proper point on the tongue *b* to stop the tongue in its opening movement at the most convenient point to allow of its engagement with the usual slotted plate, *c*.

In order to lock the tongue in its open or closed position, we provide notches *i i* in the sleeves 5 5 of the tongue, and the said notches operate in precisely the same manner as in the spring-clasp described in the application of Jacob J. Unbehend above referred to, with the exception that we provide on the inner edge of the extending arms 1 1 of the clasp-plate *a* offsets or shoulders 6 6, Figs. 8 and 9, adjacent to the enlarged part of the tapered pintles 2 2, and the notches *i i* engage said shoulders or offsets 6 6 and serve more effectually to lock the tongue in its open or closed position than where the engagement of the notches is with the inner edges of the extensions 1 1, as in the above-mentioned application of Jacob J. Unbehend. Furthermore, the cut-out in the extending arms 1 1, above the shoulders or offsets 6 6, permits the quick expansion of the spring-sleeves 5 5, formed on the tongue *b*, and thus relieves the friction incident to the expansion and impingement of the outer edges of the spring-sleeves with the inner edges of the extensions 1 1 of the clasp-plate.

The clasp-plate *a* is provided with apertures or openings for the passage of the fastening devices to secure the plate to the article upon which the device is to be applied, and in order to utilize the fastening device for applying a tension on the clasp-plate and spring-sleeves of the tongue we preferably employ the aperture *d*, Fig. 9, provided with curved arms *e e*, having inclined ends 7 7, pointing outward, as shown in the figure, and an opening between them extending into the aperture *d*.

When the fastening-rivet is headed down, the curved arms *e e* are forced outwardly, spreading the ends 7 7, which causes the forwardly-extending arms 1 1 of the plate *a* to approach each other, thus clamping the arms laterally against the spring-sleeves of the tongue, increasing the tension of the springs, and at the same time stiffening the arms 1 1 and bracing them against the lateral pressure caused by the tongue in opening and closing it and overcoming any tendency of the tongue to twist off the tapered pintles.

The operation of our improved spring-clasp will be readily understood from the foregoing description and upon reference to the drawings.

It will be observed that the tongue *b* when opened, by reason of the stops thereon, is held securely against the plate *a* in convenient position to catch the slot in the attaching-plate *c*, and that when the tongue *b* is closed the notches *i i* interlock with the shoulders or offsets 6 6 on the inner edges of the extending arms 1 1 of the plate *a*, adjacent to the tapered pintles 2 2, and that the tapered pintles 2 2 and spring-sleeves 5 5 of the tongue *b* permit a free movement of the tongue, rendering the operation of opening and closing the clasp easy to accomplish, while the device is very durable, as undue friction is dispensed with. It will also be observed that the desired elasticity of the spring-sleeves 5 5 on the tongue *b* is secured by regulating the length of the elongated slot 4.

It is obvious that the tongue of our clasp-plate, provided with the stops 3 3, may be used in connection with clasp-plates provided with re-enforced pintles, or pintles of any desirable form, and that a solid tongue without the slot 4, provided with the stop 3, may be used instead of the slotted tongue *b*, it being simply necessary to so construct the clasp-plate *a* as to secure the necessary spring-tension to operate the tongue; hence we do not restrict ourselves to the exact construction specified in respect to clasp-plates of a single thickness of metal provided with tapered integral pintles, nor to tongues composed of spring metal provided with the elongated slot 4.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a spring-clasp, the plate *a*, provided with tapered pintles 2, made integral therewith, substantially as and for the purpose set forth.

2. The combination of the plate *a*, having tapered pintles 2, with a tongue, *b*, having stops 3, substantially as and for the purpose set forth.

3. The combination of the plate *a*, having forwardly-extending arms 1 1, tapered pintles 2 2, with a tongue, *b*, having stops 3, engaging the inner edges of the extensions 1 1 as the tongue is opened, and limiting the extent to which it can be opened, and the integral springs 5 5 on the tongue *b*, substantially as and for the purpose set forth.

4. The tongue *b*, made with the stops 3 3, slot 4, notches *i i*, and portions 5 5 between the stops and notches, substantially as and for the purpose set forth.

5. The plate *a*, made with the extensions 1 1, tapered pintles 2 2, and offsets 6 6 on the inner edges of the extensions 1 1 adjacent to the

pintles 2 2, substantially as and for the purpose set forth.

6. The combination of the plate *a*, having integral tapered pintles 2 2, forwardly-projecting extensions 1 1, having on their inner edges offsets 6 6 adjacent to the pintles 2 2, with the tongue *b*, having integral spring-sleeves 5 5, provided with notches *i i*, substantially as and for the purpose set forth.

7. The plate *a*, having the aperture *d* for the passage of the fastening-rivets, terminating in the inclined arms 7 7, in combination with the forwardly-projecting arms 1 1, having pintles 2 2, and the spring-sleeves 5 of the tongue *b*, substantially as and for the purpose set forth.

8. The clasp-plate *a*, provided with forwardly-entending arms 1 1, offsets 6 6, formed of the pintles 2, and the cut-outs 9 9, substantially as and for the purpose set forth.

9. The clasp-plate *a*, provided with forwardly-extending arms 1 1, terminating in the curved loop-shaped ends 10 10, substantially as and for the purpose set forth.

In testimony whereof we have hereunto signed our names, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 15th day of February, 1887.

JUDSON L. THOMSON.
JACOB J. UNBEHEND.

Witnesses:
FREDERICK H. GIBBS,
E. C. CANNON.