(No Model.)

E. S. SMITH.

BUCKLE OR CLASP.

No. 337,708. Patented Mar. 9, 1886.

Fig. 1.

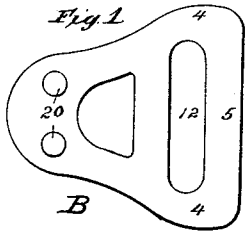


Fig. 2.

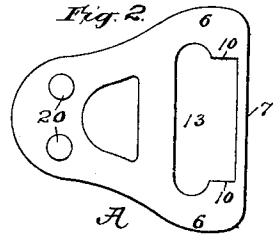


Fig. 5.

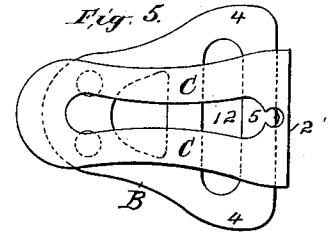


Fig. 3.

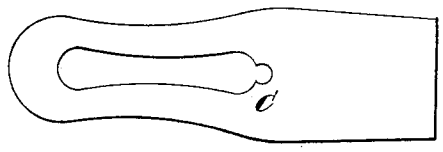


Fig. 4.

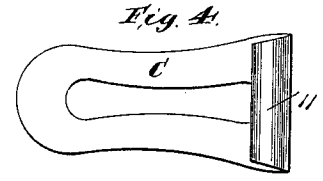


Fig. 6.

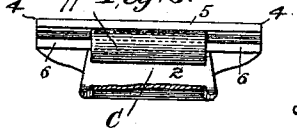


Fig. 7.

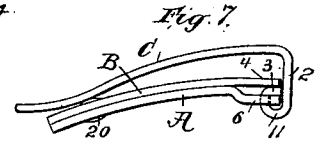


Fig. 8.

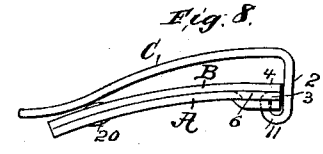


Fig. 9.

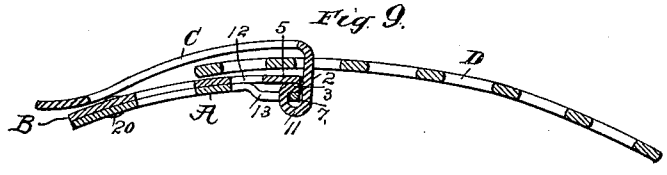


Fig. 10.

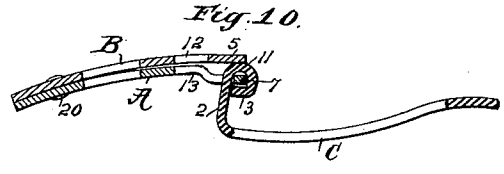


Fig. 11.

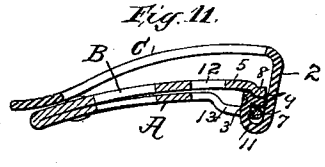
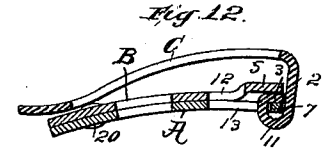


Fig. 12.



Attest:
Geo. H. Botts.
Geo. H. Graham

Inventor:
Edward S. Smith
By Munn & Philipp
his attorneys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWARD S. SMITH, OF WATERBURY, CONNECTICUT.

BUCKLE OR CLASP.

SPECIFICATION forming part of Letters Patent No. 337,708, dated March 9, 1886.

Application filed January 17, 1885. Serial No. 153,184. (No model.)

To all whom it may concern:

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

These improvements relate to that class of spring-clasps or lever-buckles which comprise in their structure a body adapted to be attached to one part of an article, and provided with a spring-seated holding-lever adapted to engage and interlock with an attaching or looped plate secured to another part of an article, and thus form an adjustable fastening especially well adapted to secure the separable parts of a glove, shoe, carriage-curtain and the like.

The present invention consists in the peculiar construction and combination of parts, particularly hereinafter described and claimed, whereby with simplicity of structure and ease of manipulation is combined an effective and strong holding capacity.

In the drawings, Figures 1, 2, and 3 are plan views of the blanks from which the top and bottom plates constituting the body and the holding-lever are formed. Fig. 4 is a plan view of the under side of the completed holding-lever. Fig. 5 is a plan view of the buckle closed. Fig. 6 is an end elevation of the buckle with the holding-lever broken away. Fig. 7 is a side elevation of the buckle or clasp with its parts swaged into shape and attached together. Fig. 8 is a similar view with the bottom plate modified. Figs. 9 and 10 are sectional elevations of the buckle or clasp as seen when closed and open, the former also exhibiting an attaching-plate as engaged by the holding-lever. Figs. 11 and 12 are sectional elevations illustrating modifications.

The buckle or clasp consists of a body or base composed of two plates, A B, one or both of which may be made of spring metal, the two being connected together at the rear end by uniting-rivets, 20, or by making the two from a single piece, folded as in Fig. 11. The upper plate, B, shaped from a blank substantially of the form shown in Fig. 1, provides by means of the slot 12 side arms, 4 4, that are connected at the front of the plate by a flat bar, 5, which performs the function of a bearer for the holding-lever, as will presently appear. The lower plate, A, is shaped from a blank substantially of the form shown in Fig. 2, and by means of a slot, 13, cut not only to coincide with the slot 12 in the plate B, but extended to a greater extent forward, so as to provide the side arms, 6 6, with bearing-shoulders, 10 10, which side arms are connected together by a bar, 7, that forms the pintle upon which the holding-lever swings, as will be explained. These plates are curved more or less to suit the contour of the object to which the buckle or clasp is to be applied, and the forward portion of one of the plates (it may be the central portion, or extend the entire width of the plate) is swaged or bent out of the plane which its general body has, in order to provide a space between the forward ends of the two plates for the accommodation of the knuckle of the holding-lever. Thus in Figs. 7 to 11 the plate A is so constructed, while in Fig. 12 the upper plate, B, has this shape. The provision of this space might also be accomplished by bending both plates slightly in opposite directions.

The holding-lever C is composed of a blank substantially of the form shown in Fig. 3, that portion of it or the lever portion which is to overlie the body of the clasp being fancifully shaped and slotted for ornament as may be desired. Its forward portion is bent at about right angles to the main body to form the holdback 2, upon which the attaching-plate, as D, is to bear, (see Fig. 9,) and its end portion is folded or doubled to form the knuckle 11, the inner portion of which forms a flat seat, 3, to fit the like flat under surface of the bar or bearer 5. The knuckle 11 of this holding-lever C is of a width about equal to the length of the slot 13, between the shoulders 10 10 of the plate B, (see Fig. 6,) and said knuckle is bent around the bar 7, so as to envelop it, which bar thus constitutes the pintle upon which said lever turns, the shoulders 10 10 confining the lever against undue lateral movement, thus guiding it in proper working relation to the bearer 5. The upper plate, B, is secured to the plate A, which has the holding-lever C hinged upon its bar or pintle 7, and the two are fastened together by the rivets 20, (or the fold, as in Fig. 11,) so that the knuckle 11 of the holding-lever will be embraced between the central portion of the bar or bearer 5 of the plate B, and a like portion

of the bar or pintle 7 of the plate A, the resilient power of one or both of the plates A B causing said knuckle to be clamped and held. Thus when the lever is closed, as in Figs. 7, 8, 9, and 12, the pintle 7 will be pressed upward by the plate A, and the bearer 5 will be pressed downward by the plate B, and, as the bearer 5 and seat 3 have coinciding flat surfaces, it follows that said lever will be held closed and require considerable pressure to displace it. When it is to be opened, however, sufficient force exerted upon its long arm will cause its knuckle to pry the plates A B apart, and while the lever may be swung forward, as in Fig. 10, its knuckle will continue to be embraced between the pintle 7 and bearer 5, and be held more or less firmly according to the exterior surface formation of said pintle. If it is curved in all parts except the seat 3, the frictional resistance opposed to its movement by the spring will be small, and this may be advantageous, as it is the closed position which should be most strongly maintained, while the major part of its opening and closing should be easily made. It is desirable, however, that when opened, as in Fig. 10, that position should be firmly maintained, and hence it may be stated that a portion of the knuckle about opposite to the seat 3 may have a corresponding seat suited to the shape of the under side of the bearer 5. In fact, the pintle may be polygonal, and thus be adapted to be strongly held in many positions without departing from this feature of the improvements.

It will be observed (see Figs. 2, 4, and 6) that the pintle 7 and bearer 5 are the only portions of the plates A B that clamp upon the knuckle, and hence it will be apparent that such portions of the plate A or B as are outside of said knuckle need not be bent downward—that is, as this bending of the plate is only required to a widthwise extent equal to that of the length of the knuckle of the lever, since there are no parts of the knuckle projecting between the arms 4 4 and 6 6, it is practically necessary to bend only so much of the plate as will separate the bearer from the pintle far enough to receive the knuckle. Thus when the forward end of the plate A is bent to provide for the play of the knuckle, its arms 6 6 might be parallel with the arms 5 5 of the plate B, as in Fig. 8, and said arms 5 5 might likewise be parallel with the arms 6 6 of the plate A when the plate B is bent, as in Fig. 11.

The pintle 7 may be square, as shown, or it may be rounded, or have one flat side corresponding with the flat seat 3. Said pintle may be continuous, as shown, or it might have its central portion cut away, and this is true of the knuckle 11, whether the pintle is divided, cut away, or made continuous, since it is not essential that the clamping action shall be applied continuously throughout the knuckle.

That the closed position of the holding-lever may be more firmly secured than can be accomplished by the spring-pressure of two plane surfaces, as the straight bearer 5 and seat 3, the former is provided with a projection, 8, and the latter with a depression, 9, (see Fig. 11,) one engaging in the other, and thus forming a lock tending to hold the lever closed and requiring considerable force to be exerted in the operation of moving the lever to open the buckle.

A clasp or buckle of the construction herein set forth is composed of but three principal parts, all of which are most simple in structure and capable of formation by common cutting and swaging operations.

The parts subjected to strain are all strong, and the relation of the bearings that receive the strains in use is such that a maximum of strength is attained with a minimum of metal, thus enabling an effective article to be cheaply made.

It is not essential that the slots 12 should be provided as shown, for the reason that the forward end of the upper plate would provide the bearer 5 if that plate were unbroken, but these slots 12 13 are convenient means for receiving the strap by which the buckle is attached to the article that is to carry it, and while the slot 12 may be used the bar 5 may have its central portion removed so long as it is extended enough at each end to project beyond the shoulders 10 10, as a bearer for the knuckle of the lever.

What is claimed is—

1. A clasp or buckle consisting of body-plates and a swinging holding-lever, one of said plates being provided with a pintle upon which the lever is hinged, and the other of said plates with a bearer that presses upon the knuckle of the lever, substantially as described.

2. The combination, with a clasp or buckle consisting of body-plates, one of which provides a pintle, 7, upon which the swinging holding-lever C is hinged, and the other a bearer, 5, that presses upon the knuckle of said lever, of a looped or slotted attaching-plate, D, substantially as described.

3. In a spring-clasp, the combination, with two spring-plates, one provided with arms 4 4 and a bearer, 5, and the other with arms 6 6, and the pintle 7, of a holding-lever hinged upon said pintle, and having its knuckle arranged to be engaged and pressed upon by said bearer, substantially as described.

4. In a spring-clasp, the combination, with the holding-lever hinged upon the pintle carried by one plate and provided with a depression, 9, of a bearer, 5, carried by the other plate, and provided with a projection, 8, substantially as described.

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

EDWARD S. SMITH.

Witnesses:
H. T. MUNSON,
GEO. H. GRAHAM.