

(No Model.)

G. A. WELD.
SHOE FASTENING.

No. 505,865.

Patented Oct. 3, 1893.

Fig. 1.

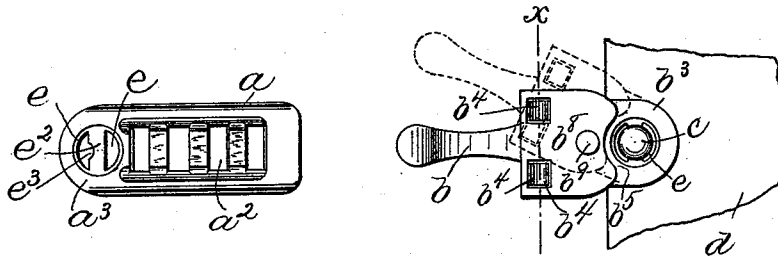


Fig. 2.

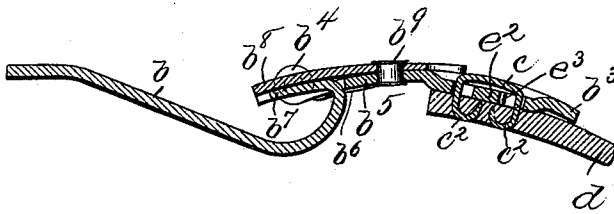


Fig. 3.

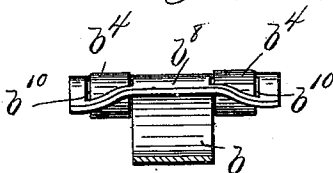


Fig. 4.

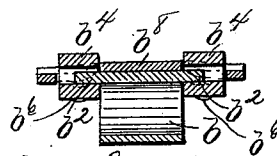


Fig. 5.

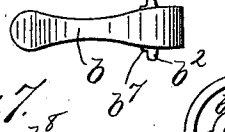
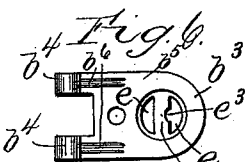
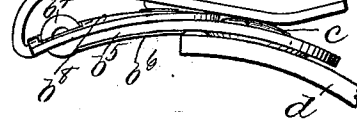


Fig. 6.



Witnesses.
Jas. J. Maloney.
H. C. E. Lee.

Fig. 9.



Fig. 10.



Inventor.
George A. Weld.
by J. P. Linnane
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE A. WELD, OF WINCHESTER, MASSACHUSETTS.

SHOE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 505,865, dated October 3, 1893.

Application filed September 5, 1892. Serial No. 445,120. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. WELD, of Winchester, county of Middlesex, State of Massachusetts, have invented an Improvement in Fastenings for Shoes and other Objects, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a fastening device or buckle such as used to fasten together the corners of the quarter of a shoe over the instep, or for other analogous purposes.

The invention is shown embodied in a buckle of that class which is composed of two members, one permanently secured to each of the parts to be fastened together, one of which members may be for convenience called the tongue member, and the other the take up plate. The tongue member has a tongue or lever pivotally connected with a frame piece or tongue plate, and the take up plate has a series of openings through which the tongue of the tongue member may be passed and then folded down so as to engage the two members and prevent them from pulling apart under a strain applied to the parts that are fastened together by said members.

The present invention consists partly in the construction of the shank or part by which the buckle members are permanently secured to the leather or other material of the article to be fastened by them. Such fastening members have been secured to the material by rivets of ordinary construction, but such rivets are objectionable as they are apt to pull through or break away from the leather or material to which the fastening member is attached, and in some cases two-pronged rivets or staples have been used, the prongs passing through separate openings in the shank of the fastening member, but such device as heretofore constructed, is objectionable as it produces too great rigidity in the connection between the buckle member and the leather, preventing free swiveling movement of the former on the latter and thus producing torsional strain on the leather and attaching device by which they are liable to be soon pulled apart or broken away.

In the present invention a two pronged staple-like attaching device is used, and the

shank or attaching portion of the buckle member is provided with two curved openings of considerable extent separated by an intervening bridge or cross bar, the said curved openings being of considerably greater circumferential length than the width of the staple prongs which are passed through them and clinched in the leather. The intervening bridge is thus securely held between the head of the staple and the leather, but owing to the great length of the curved openings relative to the width of the staple prongs the buckle is free to swivel laterally through a considerable angle, sufficient to accommodate all movement necessary in the use of the article without producing any twisting strain on the staple fastening or material in which it is inserted.

The invention further consists in details of construction which will be hereinafter pointed out.

Figure 1 is a plan view of the two members of the buckle or fastening, the tongue member being shown as secured to the leather or material to be fastened, while the other member is shown detached to illustrate the construction of the part with which the attaching staple engages. Fig. 2 is a longitudinal section of the tongue plate member and material to which it is fastened, on an enlarged scale; Fig. 3 an end view of the base plate of the tongue member; Fig. 4 a sectional detail thereof, on line *x*, Fig. 1; Fig. 5 a plan view of the tongue detached; Fig. 6 a plan view of the base plate of the tongue member detached; Fig. 7 a plan view of the spring plate of the tongue member detached; Fig. 8 a side view of the tongue member in closed position enlarged, and Figs. 9 and 10 side views of one of the pronged attaching devices.

The take up plate *a* may be of usual construction except the shank, or portion by which it is connected with the leather or material of the article to be fastened, the said take up plate being an elongated plate usually curved from end to end to correspond to the curvature of the instep of the foot and being provided with a series of openings *a*² to receive the tongue *b* of the tongue plate member of the fastening device.

The shank portion *a*³ or end of the take up

plate by which it is permanently attached to the material is of the same construction as the shank portion b^3 of the tongue plate, so that one description will answer for both.

5 The shank portion of the buckle members is constructed to be attached by a two-pronged or staple-like fastening c such as shown in Figs. 9 and 10, such fastening affording a greater hold on the leather or material d see
10 Figs. 1 and 2, than the solid or split shank rivets commonly used.

In order to provide for the secure engagement of the button member by the rivet and at the same time to permit the buckle member to have a swiveling movement sufficient to accommodate it to the various positions required in use without bringing torsional strain on the attaching parts, the said shank portions a^3 and b^3 , of the buckle members are provided with openings e of the form best shown on the shank portion a^3 Fig. 1, and b^3 Fig. 6, the said openings e being curved on their outer edges and separated by an intervening bridge or cross bar e^2 the curvature
15 of the outer edges of the two openings being portions of the same circle and constituting substantially a circular opening of a diameter equal to or slightly greater than the diameter of the head of the attaching
20 staple c , spanned by a diametric cross bar or bridge. The circumferential length of the openings e is considerably greater than the width of the staple legs c^2 see Fig. 2, which pass through the said openings, as
25 shown at the right hand in Fig. 1, and in Fig. 2, one at each side of the bridge e^2 thus securely attaching the shank of the fastening member to the leather or material d while permitting a free swiveling movement of
30 the former on the latter through a considerable angle as indicated by the full and dotted lines at the right hand in Fig. 1, which show one half of the range of the swiveling movement of the tongue member of the fastening,
35 it being capable of moving an equal distance to the other side of the central or normal position. Such swiveling movement accommodates all the changes of position that are required in the use of the buckle owing
40 to slight variations in the line of pull from one member to the other without bringing torsional strain either upon the attaching device or upon the portion of the fabric engaged by its prongs, and thus affords a durable attachment for the buckle members.

The attaching portion of the shank of each of the buckle members is depressed below the general level of the shank as best shown in Fig. 2, thus affording a guide for the nose
45 of the instrument by which the staples are driven, and also slightly sinking the head of the staple with relation to the general level of the upper surface of the buckle plate, which improves its appearance and is an advantage
50 in the use of the buckle.

The side of the bridge piece e^2 nearest the end of the buckle member is provided with

a central notch or recess e^3 which is to accommodate the wire upon which the buckle members are strung for the purpose of japaning in the process of manufacture the said depression affording ample space for the wire upon which the pieces are strung preparatory to dipping in japan and supporting them while the japan is being baked or hardened.
75

The attaching device c has its prongs c^2 passed through the material, and then clinched, or curled inward toward one another as shown in Fig. 2, passing back through the material d , and bringing up finally on the cross piece e^2 unless the material d is so thick that the prongs are fully clinched before reaching the said bridge piece. A two pronged fastening of this kind takes a very secure hold upon the material d and the construction of the shank portion of the buckle member co-operating therewith as described overcomes the objections that have been heretofore found in the attempts to use a two pronged attaching device of this kind.
80 85 90

The tongue b of the fastening device is provided with lateral ears or projections b^2 constituting the pintle or pivotal bearing on which the tongue turns in the operation of the fastening device, the said pintles having their bearings in loops b^4 and formed at the forward end of the base plate b^5 of the tongue member. The sides of the base plate are provided with longitudinal corrugations as shown as b^6 which strengthen and stiffen it; and said base plate is made of untempered material, as it does not have to have any spring action, and is therefore very strong.
95 100

In order to improve the operation of the tongue b or to hold it in the extreme position to which it is turned in co-operating with the take up plate a , the said tongue is provided with a cam extension b^7 beyond its pivotal axis which is acted upon by a spring plate b^8 fastening to the base plate b^5 by a rivet b^9 or other suitable fastening. The said spring plate is somewhat wider than the base plate and is provided with openings b^{10} , through which the pivot loops b^4 pass so as to project above the spring plate and afford the bearing for the take up plate a . The sides of the spring plate are depressed with relation to the middle portion so that the side portions of the spring plate lie close to the base plate b^5 while the middle portion of said spring plate is raised with relation to said side portions, as best shown in Figs. 3 and 4, to co-operate with the cam portion b^7 of the tongue. By this construction the spring plate has no sharp corners or projections to catch on anything, which is a great advantage, and at the same time the base plate and tongue form an operative fastening member even without the spring plate so that if the latter, which is of comparatively thin spring-tempered metal, should be broken or if it should become detached from the base plate, there would still be an operative fastening left, the said tongue and base plate being themselves substantially un-
105 110 115 120 125 130

breakable and practically certain to outlast any article with which they may be used as a fastening device. The spring plate, being however, continuous along its front edge across the middle of the fastening is furthermore itself much more durable and less likely to be broken than when bifurcated or divided by a central slot or opening into two branches one at each side of the base plate and tongue.

10 I claim—

1. A fastening device for shoes and the like, consisting essentially of a tongue member and a cooperating member provided with an opening to receive the tongue of the tongue member, said fastening member having at 15 one end an attaching portion or shank provided with curved openings e , e , and a cross bar e^2 to receive the prongs of an attaching device of considerably less width than the 20 length of the openings so as to enable the said fastening member to receive swiveling movement on its said attaching device, the tongue member being provided with a tongue hinged thereto near the end remote from the attaching device and adapted to be engaged with 25 and disengaged from the cooperating member by the hinging movement of said tongue, substantially as described.

2. In a fastening device for shoes and the like, a base plate having bearing loops b^4 , a 30 tongue having pintles engaged with said loops and also having a cam-projection b^7 , and a spring plate b^8 secured to said plate, of greater width than the latter, continuous across its front edge and provided with re- 35 cesses to receive the said bearing loops, substantially as described.

3. A fastening device for shoes and the like, consisting essentially of a base plate and a take-up plate, each having curved openings 40 e , e , and a cross-bar e^2 at one end to receive fastening devices of considerably less size than the length of the openings so as to enable the said plates to receive swiveling movement on such fastenings, a tongue hinged 45 to the base plate in bearings therein, and a spring applied to such base plate and engaging the tongue, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 50 two subscribing witnesses.

GEORGE A. WEID.

Witnesses:

JOS. P. LIVERMORE,
M. E. HILL.