

No. 648,356.

Patented Apr. 24, 1900.

A. D. FIELD.

BUCKLE.

(Application filed Jan. 14, 1898.)

(No Model.)

Fig. 1.

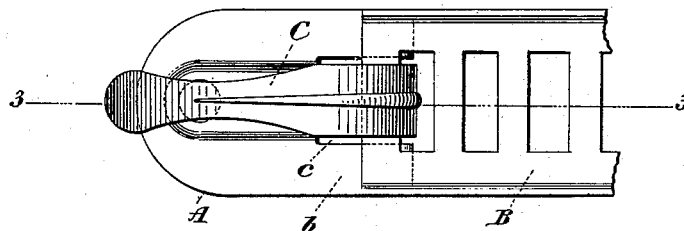


Fig. 2.

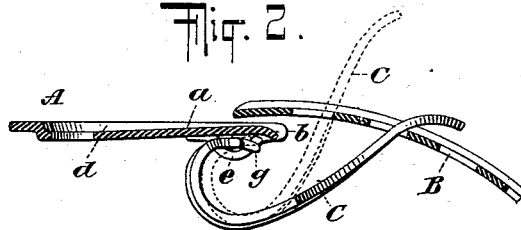


Fig. 3.

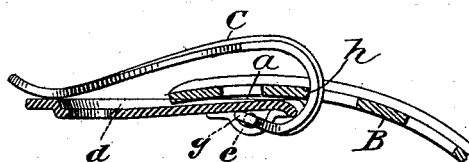
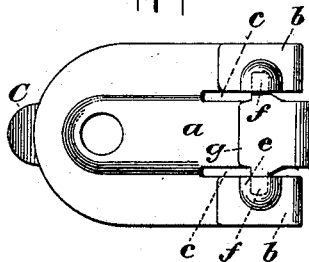


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT D. FIELD, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
SHOE HARDWARE COMPANY, OF SAME PLACE.

BUCKLE.

SPECIFICATION forming part of Letters Patent No. 648,356, dated April 24, 1900.

Application filed January 14, 1898. Serial No. 666,618. (No model.)

To all whom it may concern:

Be it known that I, ALBERT D. FIELD, a resident of Waterbury, New Haven county, State of Connecticut, have invented certain
5 new and useful Improvements in Buckles, of which the following is a specification.

My invention relates to buckles, and more particularly to that class known as "shoe-buckles."

10 Heretofore in the manufacture of buckles of the character to which my invention relates it was necessary because of the construction of the buckles to submit them to several operations in assembling the parts or
15 in uniting the tongues to the body-plates.

The object of my invention is to overcome the disadvantages heretofore found and to provide a simple and efficient buckle which can be manufactured at small cost and where-
20 in the parts can be assembled at one operation.

To this end my invention consists in a buckle constructed in the manner hereinafter described and claimed.

25 In the accompanying drawings, wherein like characters represent corresponding parts in the various views, Figure 1 is a plan view of a buckle, with its cooperating fastening-loop, embodying my invention. Fig. 2 is a
30 longitudinal section of the same, showing the tongue in the unlocked position. Fig. 3 is a longitudinal section on the line 3 3 of Fig. 1, showing the parts in the locked position. Fig. 4 is a lower face view of the buckle with
35 the fastening-loop removed.

The body-plate A of my improved buckle is preferably, though not necessarily, made of a single piece and is struck up or formed with a central spring a, separated from the
40 side arms b by slits c. The entire central spring a is preferably depressed below the upper surface of the body-plate, as indicated at d, so as to throw the spring below the upper
45 surface of the buckle and not to present any abutment or contact edge which will extend into the path of the fastening-loop B when the latter is moved in the act of locking and unlocking the buckle. The side arms
50 b afford bearings for the pivots of the vibrating tongue C. These bearings are preferably

formed by striking up a pocket or recess e in each of the arms b and turning the free ends of the arms back against themselves, thus forming pockets which are adapted to surround the pivots f of the hook-like take-up
55 tongue C and prevent the tongue from being disconnected from the body-plate. It will be observed that by forming the bearings or the pivots of the take-up tongue in the manner described the pockets e are extended below the
60 lower surface of the body-plate and below the lower face of the central spring a, so that the axis of the pivots of the tongue is below the central spring a, notwithstanding said spring is depressed below the upper surface of the
65 body-plate. The tongue C is provided with a finger g, eccentric to the axis of the pivots f. This finger extends toward the inner portion or loop of the tongue in such a manner that the said finger will be out of contact with
70 and relieved from all strain of the spring a when the tongue is in the releasing position. (Represented in Fig. 2.) In this figure it will be observed that the tongue is entirely free
75 to vibrate from the full-line position to the dotted-line position before any tension is exerted by the central spring a. This enables the wearer of the buckle to readily place the fastening-loop over the end of the tongue and
80 to move the tongue to the position represented in Fig. 3, to tighten the parts, and to lock the buckle by exerting but little pressure, while the tongue C is entirely free from strain of the central spring a when the tongue
85 is in the open position. It will be observed that the opposite is true when the tongue is in the locked position. (Represented in Fig. 3.) In this position the central spring exerts its greatest force to maintain the tongue against
90 movement, and no movement of the tongue can take place in this position without overcoming the tension of the spring.

The supporting portion h of the take-up tongue C extends forward of the pivots thereof when the tongue is closed, so that when
95 strain is exerted thereon by the fastening-loop it will be a drawing strain in almost direct line with the pivots of the tongue.

In addition to the above structural advantages of a buckle made in accordance with

my invention there are advantages in manufacture by which I am enabled to produce a better buckle at considerably less cost than heretofore. In shoe-buckles heretofore made
 5 it has been found necessary to submit the buckles to some four or five operations in order to complete them. Thus it was necessary, among other things, to assemble the parts while the tongue was under pressure of the
 10 spring after the hardening or tempering of the spring. It will be readily understood that the tempering of the spring in a position when it exerts pressure would result in the loss of the pressure thus exerted when the metal is
 15 heated sufficiently hot to bend, so that an insufficient amount of pressure is afterward obtained when the buckle is in use, and the tongue, therefore, could not be held secure against movement in the locked position.
 20 Such buckles would therefore be unreliable and inefficient.

In accordance with my invention I am enabled to assemble the parts with the tongue in the position shown in Fig. 2, wherein there
 25 is no tension whatever exerted by the as yet untempered spring *a*. The ends of the arms *b* are turned so that the pockets *c* will inclose the pivots *f* of the tongue. I now temper the body part of the buckle and its spring. Thus
 30 it requires but one operation to assemble the parts and another to produce the finished buckle by tempering. It will therefore be seen that by my invention I am enabled to produce a better buckle than heretofore at
 35 less expense. I wish to state that after the parts are assembled as in Fig. 2 and while the spring is free from strain I temper those parts which I wish to harden. I make, by preference, the body-plate *A* and its spring *a*
 40 of tempering metal. The tongue *C*, I prefer to make of non-tempering metal; but it could also be made of tempering metal. The fact that by this construction I am enabled to temper the unstrained spring of the buckle
 45 after the parts are assembled is of the utmost importance. It will be clear that by assembling the parts before tempering I am fully able to bend the plate *A* into pockets, which I could not properly do after spring-temper-
 50 ing. By tempering after assembling the parts I am able to have the spring *a* of one piece with the body-plate.

Having described my invention, what I claim, and desire to secure by Letters Patent,
 55 is—

1. A shoe-buckle comprising a body-plate, a spring formed integral therewith, a hook-like take-up tongue pivoted to said body-plate and having the supporting portion of
 60 said take-up tongue extended forward of the pivots thereof when the tongue is closed, the said spring resting upon a portion of the tongue above the pivots thereof and coöperating with the tongue to exert a downward
 65 pressure thereon when the tongue is closed and to entirely relieve said tongue from pressure when the tongue is open and a fastening-

loop adapted to pass over said take-up tongue and to coöperate with it to secure the parts in the locked position. 70

2. A shoe-buckle comprising a body-plate, a spring therefor, a hook-like take-up tongue pivoted to said body-plate and having the supporting portion of said take-up tongue
 75 extended forward of the pivots thereof when the tongue is closed, the axis of the pivots of said tongue being below said spring, a finger on said tongue which projects upwardly and at an angle to the plane of the body-plate
 80 when the tongue is closed, the said spring coöperating with the finger to exert a downward pressure thereon when the tongue is closed and to be entirely out of contact with said finger when the tongue is open and a
 85 fastening-loop adapted to pass over said tongue and to coöperate with it to secure the parts in the locked position.

3. A shoe-buckle comprising a body-plate having an integral central spring-tongue, side arms provided with depressed pockets, the
 90 pocket-containing portions of said arms being turned back on the arms to provide bearings entirely below the lower face of the body-plate, a vibrating hook-like take-up tongue whose pivots are contained within said bear-
 95 ings below the spring-tongue, the supporting portion of said take-up tongue being extended forward of the pivots thereof when the tongue is closed, and a fastening-loop adapted to pass over said take-up tongue and to coöperate
 100 with it to secure the parts in the locked position.

4. A shoe-buckle comprising a body-plate having an integral central spring-tongue, side arms provided with depressed pockets, the
 105 pocket-containing portions of said arms being turned back on the arms to provide pivot-bearings below the lower face of the spring-tongue, a vibrating hook-like take-up tongue whose pivots are contained within and surrounded
 110 by said bearings, the supporting portion of said take-up tongue being extended forward of the pivots thereof when the tongue is closed, a finger carried by said take-up tongue and adapted to coöperate with the spring to exert
 115 a pressure upon the finger when the tongue is closed and to relieve the finger from pressure when the tongue is open and a fastening-loop adapted to pass over the take-up tongue and to coöperate with it to secure the parts
 120 in the locked position.

5. A shoe-buckle comprising a body-plate struck up from a single piece, said body-plate having a central spring formed integral there-
 125 with and downwardly depressed throughout the entire extent thereof, side arms provided with depressed pockets, the pocket-containing portions of said side arms being turned back on the arms to provide pivot-bearings entirely below the lower face of the spring
 130 and below the lower face of the buckle, a vibrating hook-like take-up tongue whose pivots are contained within said bearings and below the spring and the supporting portion

of which tongue is forward of the pivots there-
of when the tongue is closed, a finger carried
by the tongue to one side of the axis of the
pivots thereof, said finger projecting up-
5 wardly toward the spring and at an angle to
the body-plate when the tongue is closed and
being adapted to cooperate with the spring to
exert a pressure on the finger when the tongue
is closed and to relieve the finger from pres-

sure when the tongue is open and a fastening- 10
loop adapted to pass over the take-up tongue
and to cooperate with it to secure the parts
in the locked position.

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Witnesses:

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