W. R. MORSE.

BUCKLE.

APPLICATION FILED FEB. 11, 1918.

1,316,632. Patented Sept. 23, 1919.

Fig. 1.

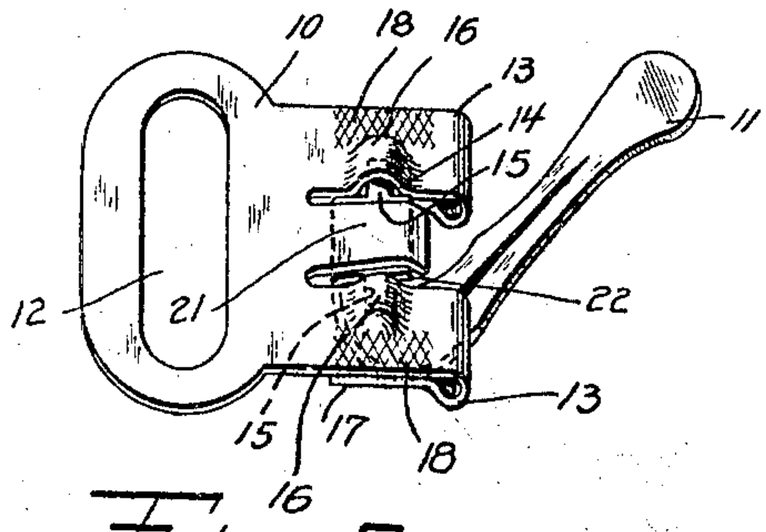


Fig. 2.

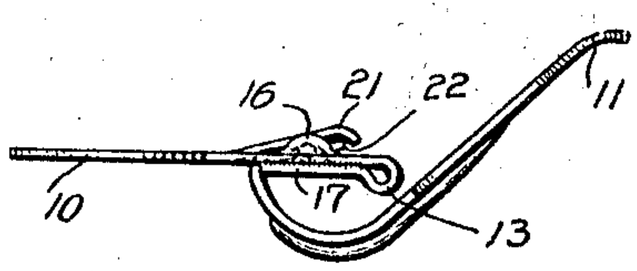


Fig. 3.



Fig. 4.

Inventor.
Walter R. Morse,

By his Attorney

Ernest Hopkinson.

UNITED STATES PATENT OFFICE.

WALTER R. MORSE, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SHOE HARDWARE COMPANY, A CORPORATION OF CONNECTICUT.

BUCKLE.

1,316,632. Specification of Letters Patent. Patented Sept. 23, 1919.

Application filed February 11, 1918. Serial No. 216,458.

To all whom it may concern:

Be it known that I, WALTER R. MORSE, a citizen of the United States, residing at Waterbury, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Buckles, of which the following is a full, clear, and exact description.

This invention relates to buckles, and more particularly to a novel method of forming and securing together the component parts of a buckle, and also to the buckle manufactured in accordance with such method.

There have heretofore been used upon boots, shoes, arctics, and various other articles, buckles formed of two stampings of sheet metal, and comprising a socketed plate-member to which is hingedly secured a hook-shaped locking tongue. The plate-member of such buckles is customarily formed at one end with three extensions or fingers suitably spaced apart, the outer two fingers being provided with alined sockets which receive the pintles of the locking tongue. The intermediately disposed finger acts as a spring and coöperates with a cam surface on the locking tongue to hold the tongue in opened and closed positions. The sockets in the two outer fingers are formed by striking up a portion of the metal intermediate the length of the fingers and bending back the ends of the fingers to overlie the recesses so formed. No provision has heretofore been made for securing the bent back ends to the portions of the fingers lying therebeneath, the retention of the ends in place being solely dependent upon the strength of the metal at the point of bend. This feature is objectionable for in turning back the ends a sharp bend is made placing the particles of metal at the point of bend under very great strain, which is frequently so severe that the metal splits or cracks with the result that when the ends are subjected to the additional strains caused by opening and closing the locking tongue, they often break off permitting the pintles of the tongue to fall out of the sockets, thus destroying the usefulness of the buckle. In order to guard against this disadvantage high grades of steel have been used, but the difficulty has never been entirely overcome. It has consequently been the practice to test each buckle by snapping the locking tongue to closed and opened positions, which additional precaution however, has not resulted in the complete elimination of defective buckles, as frequently the fracture at the point of bend does not manifest itself until after the buckle has been in use for a long period of time. The use of high grade steel and the cost of labor required to perform the snapping operations add greatly to the final cost of the buckle without entirely overcoming the liability of the buckle to break in service.

An object of the present invention, accordingly, is to provide an improved method whereby buckles free from the various disadvantages hereinbefore noted may be rapidly and economically manufactured.

A further object of the present invention is to provide a buckle of great durability, simple construction, and inexpensive manufacture which will withstand without breakage the strains encountered in service.

Other objects of the invention will hereinafter appear.

In the accompanying drawings wherein some of the various possible embodiments of the invention are shown:

Figure 1 is a perspective view of a buckle constructed in accordance with my invention, the locking tongue being shown in opened position.

Fig. 2 is a side view of the buckle illustrated in Fig. 1.

Figs. 3 and 4 are fragmentary views illustrating modified forms of construction.

The buckle illustrated in the drawings comprises a plate-member 10 to which is hingedly secured a hook-shaped locking tongue 11. The plate-member and locking tongue are preferably made of sheet steel, although it is to be understood that any suitable kind or grade of sheet metal may be used for the purpose. One end of the plate-member is formed with an elongated eye 12 to provide a convenient means for attaching the buckle to any suitable article, while the other end is provided with three spaced fingers the outer two of which, 13, are formed with sockets 14 which receive the pintles 15 of the locking tongue. The sockets 14 are formed by striking up the portion of metal 16 intermediate the length of the fingers 13 and bending back the ends 17 of the fingers so as to overlie the recesses so formed. After the ends have been bent back

as set forth they are integrally united to a portion of the metal lying therebeneath by brazing, soldering, welding, or other suitable means. Any desired method of welding may be used preferably, however, the "electric welding method" is employed by which term I mean the well-known method in which the work is brought to the welding temperature by the internal heat generated by the resistance of the work to the passage of electric current at the place of contact between the parts to be joined by the welding pressure.

In Fig. 1 of the drawings the ends of the fingers are shown united to portions of the metal lying therebeneath by a line weld 18 extending longitudinally of the fingers and along the outer margins thereof. In Fig. 3 the weld 19 is shown extending transversely across the finger and longitudinally along the outer margin thereof. In Fig. 4 the weld 20 extends transversely across the finger. Although I have illustrated some of the various forms of welds which may be used, it is to be understood that the form and position of the weld may be greatly varied within the scope of the invention.

It is also to be understood that the sockets may be formed in various other ways than that set forth, for example, the fingers may be made with laterally extending portions adapted to be bent over to cover the recesses, or separate pieces of metal may be placed over the recesses and held in place by welding. In certain types of construction the recesses may be formed in the bent over portions of metal or both the bent over portions of metal and the portions lying therebeneath may be provided with registering recesses. In the embodiment of the invention illustrated in the drawing the recesses are shown disposed inwardly from the point of bend, which construction renders the strength of the sockets totally independent of the strength of the metal at the point of bend. If desired, however, the sockets may be formed at the point of bend in the usual and well-known manner.

The locking tongue 11 of the buckle consists of a hook-shaped stamping of metal and is provided with integrally formed ears or pintle pins 15 which fit into the sockets 14 of the plate-member 10 providing a hinge connection between the parts. The pintles are arranged inwardly from the bill of the hook and the portion of metal 21 lying therebeyond serves as a cam which coöperates with the resilient finger 22 formed on the plate-member intermediate the two socketed fingers 13 to hold the tongue in opened and closed position.

By my invention I am enabled to produce a more durable and satisfactory buckle than has heretofore been known. I am also enabled to produce such buckles at a lower cost than that of the previously known buckles by reason of the fact that less expensive grades of metal may be used, and the costly snapping operations are entirely dispensed with.

While I have described some of the preferred embodiments of my invention, it is to be understood that various modifications in form, material and arrangement may be made without departing from the spirit and scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

A buckle comprising a tongue portion having pintles and a cam plate, and a metal body portion formed of a single sheet and bifurcated ends formed of double sheets having portions spaced to form sockets for the retention of said pintles the upper sheets of said ends being integral with the body portion and the lower sheets forming bearing surfaces for said pintles, and a spring plate above said cam and integral with the body portion adapted for spring pressed engagement with said cam, the said lower sheets being firmly united with the upper sheets throughout a portion of their surfaces to the rear of the free ends of said upper sheets for preventing separation of the sheets and for transmitting the pressure from the spring to said upper sheets when the tongue functions.

Signed at Waterbury, Connecticut, this thirty-first day of January, 1918.

WALTER R. MORSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."