

(No Model.)

B. C. SMITH.  
TRACE BUCKLE.

No. 385,146.

Patented June 26, 1888.

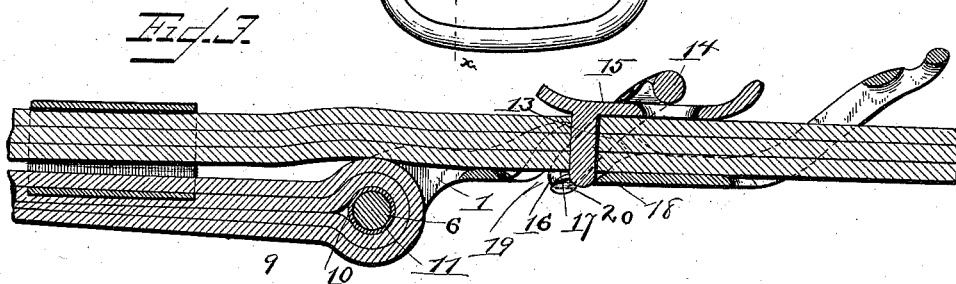
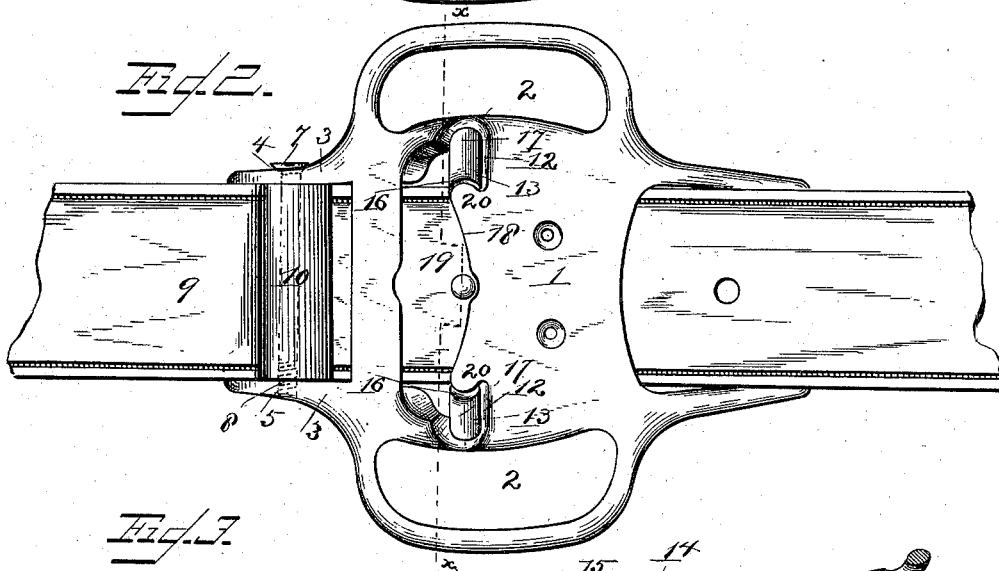
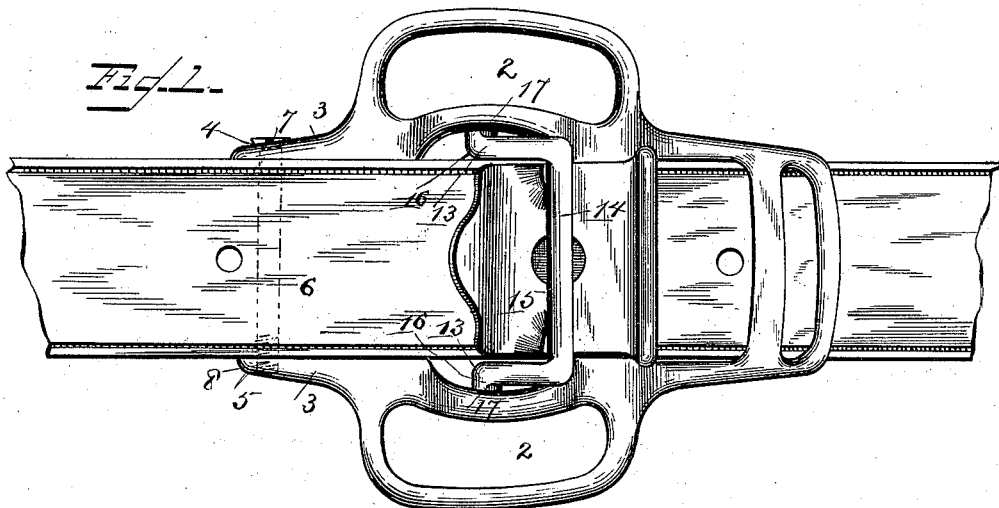


Fig. 4.

WITNESSES.  
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# UNITED STATES PATENT OFFICE.

BYRON C. SMITH, OF AUBURN, NEW YORK.

## TRACE-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 385,146, dated June 26, 1888.

Application filed April 4, 1888. Serial No. 269,583. (No model.)

*To all whom it may concern:*

Be it known that I, BYRON C. SMITH, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Trace-Buckles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to harness-buckles, and more especially to trace-buckles; and it consists in providing the trace-buckle for which Letters Patent No. 88,489 were granted to Erastus M. Kinne March 30, 1869, with projecting lips or tongues, wings, spurs, or horns upon the body of the buckle, which said lips or tongues are bent to project over the beveled or shouldered corners of the arms and trunnions of the bail which retains the tongue-plate in place; and it further consists in the improved construction and combination or arrangement of parts of the buckle, as will hereinafter be fully disclosed in the description, drawings, and claims.

The objects of my invention are to provide the body of the above-referred-to buckle with two lips or tongues, wings, spurs, or horns, which may be bent to project over the beveled or shouldered arms of the bail which retains the tongue-plate, which said lips or tongues will retain said bail in its bearings.

In the buckle as shown and described in the above-mentioned patent there has been the serious drawback that the crank-arms of the bail which retains the tongue-plate were liable to drop out of their bearings, especially when the harness was not in use, thereby causing a possible loss of the bail and of the tongue-plate, and this drawback I avoid, and guard against the said loss by confining the said crank-arms in their bearings by the said lips or tongues, which are bent over the beveled or shouldered portions of the crank-arms.

In the accompanying drawings, forming part of this specification, and in which the same reference-numerals indicate the same or corresponding parts, Figure 1 represents a view of the buckle, showing it applied to the hame-tug and trace; Fig. 2, a back or inside view of the buckle with the hame-tug and

trace in place; Fig. 3, a longitudinal section of the buckle and the hame-tug and trace; and Fig. 4, a transverse section of the buckle, looking toward the arms of the bail and their bearings, the section being taken on line *x x* of Fig. 2.

In the drawings the numeral 1 indicates the body or frame of the buckle, which may be provided with the side loops, 2; or the said loops may be dispensed with, and the forward end of this body or frame of the buckle may either be provided with a rigid and integral cross-bar, or, as shown in the drawings, the forward ends of the arms 3 of the buckle-frame are, preferably, respectively formed with a countersunk hole, 4, and a screw-threaded hole, 5, so that a bolt, 6, having a head, 7, and a screw-threaded end, 8, may be inserted with its head in the countersunk hole and with the screw-threaded end in the screw-threaded hole, and thus form a detachable or removable cross-bar.

The rear end of the hame-tug 9 is formed with a transverse eye, 10, and this said eye may fit upon a sleeve or roller, 11, which fits and revolves upon the screw-threaded bolt.

The bearings 12 in the sides of the main frame or body 1 of the buckle are similar to the bearings in the buckle described in the above-referred-to patent, and the crank-arms 13 of the bail 14, which retains the tongue-plate 15, are journaled in these bearings in the same manner as in the said patent; but the elbows or bends of the arms of this bail have their corners 16 beveled or shouldered, said beveled or shouldered elbows or corners being suitably rounded to correspond to the peripheries of the trunnions 17 of the crank-arms.

The rear edge, 18, of the transverse opening 19, through which the bail is inserted into its bearings, is formed at its corners with two forwardly and laterally projecting lips or tongues, wings, spurs, or horns, 20, cast integral with the frame of the buckle, and having sufficient flexibility to admit of their being bent back for the insertion of the bail in its bearings and again be bent over the arms of said bail, or so cast that the wings when pressed down to the arms of the bail will hold the bail in the journals referred to.

When the parts of the buckle are put to-

gether, the bail is inserted through the opening 19 in the buckle-frame, and its trunnions are placed in the bearings, the lips or tongues 20 having first been bent out of the way for the insertion of the bail-arms, and when the trunnions of the bail are in place in their bearings the lips or tongues are bent over the beveled or shouldered corners 16 of the arms, bearing against the latter and retaining the trunnions in place in the bearings. By having these lips or tongues securing the bail in place the said bail cannot be disengaged from the frame and lost, and the tongue-plate cannot be lost or disengaged without removing the trace-billet from the buckle.

Referring to the action by which the bail is confined to the buckle-frame, it will be seen that the arms 20 act in their capacity as abutments by bearing endwise against the bends or corners 16 of the bail-arms. For this purpose the relation of the abutting arms to the open or recess bearings 12 is peculiar—that is to say, the recess-bearings are formed in line with the front edge of the body-plate 1, but in a plane above the plate, so that the arms 20 project from the edge of the plate between the sides of the body and toward the recess-bearings therein, so as to stand against the bent ends of the bail-trunnions and form end bearings thereto in a manner to lessen or narrow the space of the opening 19 at these two points, and thereby confine the trunnions within the open bearings 12 without a clamping or binding action. In this function of the arms 20 they confine the trunnions within open spaces by forming abutments against the endwise movements of the trunnions and as inclined arms to prevent the trunnions from moving out of their bearings 12 into the body-opening 19. This construction permits the arms 20 to be cast in the same plane with the body-plate 1, which is important in giving a smooth casting.

Having thus fully described the construction and combination or arrangement of parts of my buckle and its advantages, what I claim as new is—

1. In a buckle, the combination, with the buckle frame or body formed with the transverse opening 19 and with the bearings 12, and provided with the lips or tongues 20, projecting forward and to the sides in the opening toward the inner ends of the bearings, of the bail having its trunnions rocking in the bearings and retained therein by the said lips, and the tongue-plate retained by the bail, substantially as described.

2. In a buckle, the combination, with the buckle frame or body formed with the transverse opening 19 and with the bearings 12 in its sides, and provided at the rear edge of the said opening with the lips or tongues 20, which project forward and to the sides of said opening toward the said bearings, of the bail having its trunnions rocking in the said bearings and formed with beveled or shouldered corners at the inner ends of the trunnions, and having the said lips or tongues bearing against the said beveled or shouldered corners and retaining the trunnions in their bearings, and the tongue-plate retained by said bail, substantially as described.

3. The buckle-frame having the open side bearings, 12 12, and the body-plate 1, formed with the arms 20 20 at the front corners of said body-plate opposite the said open bearings, in combination with the bail having its trunnions confined by said arms abutted against them, and a separate tongue-plate, 15, substantially as described, for the purpose specified.

4. The buckle-frame having the open side bearings, 12 12, and the arms 20 20, projecting from the front edge of the body-plate 1 in a direction toward said bearings and in a plane below the latter, in combination with a bail having trunnions confined within the said open bearings, in the manner stated and shown.

In testimony whereof I have affixed my signature in presence of two witnesses.

BYRON C. SMITH.

Witnesses:

HENRY T. KEELER,  
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