To all whom it may concern:

Be it known that I, ARTHUR E. CLARK, a citizen of the United States, residing at Villard, in the county of Pope and State of Minnesota, have invented certain new and useful Improvements in Trace-Buckles for Harness; 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 has for its object to provide an improved trace buckle for harnesses, and to such ends, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is in the nature of an improvement on the trace buckle disclosed and claimed in my prior Patent 1,055,796, of date, February 3rd, 1914.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a side elevation showing the improved buckle and portions of the tug, the back pad, and belly band attached thereto; Fig. 2 is a perspective view showing the buckle opened up and with only the hame tug attached thereto; Figs. 3 and 4 are views in side elevation with some parts indicated by dotted lines, showing the buckle and tug.

The numeral 1 indicates the body portion of the buckle, and which, as shown, is of the general channel shape construction, and is preferably stamped from a single piece of sheet metal, being formed with upwardly pressed hinge lugs 2, tug loops 3, lock lugs 4, and back pad and belly band loops 5 and 6, respectively.

The said member 1 is also formed with longitudinally spaced and aligned perforations 7 for a purpose which will presently appear.

A tug bolt 8 is passed through the hinge lugs 2 and serves two purposes, to wit, it serves to attach a hame tug 9 to the said body member and affords a pivotal connection between the said body member and a channel-shaped tongue carrying plate 10.

This tongue carrying plate 10 is formed with laterally spaced arms or extended lugs having slots 12 through which the tug bolt 8 is passed, so that the said tongue carrying plate 10 is connected to the body member 1 for both pivotal and sliding movements. On its back, the said plate 10 is provided with longitudinally spaced depending tongues 13, and its flanged sides are provided with outwardly extended lock lugs 14, and at their ends with projecting lock lugs 15. One of the side flanges of the arms 10 is provided with a notch or lock detent 16 that is adapted to be engaged by the end of a plate lock, which, as shown, is in the form of a spring member 17 having one end securely clamped between the head of the bolt 8 and the adjacent hinge lugs 2.

The free end of the said lock spring 17 is turned inward and forward and works under a retaining shoulder 18 formed on the adjacent hinge lug 2. A main lug 19 is provided with longitudinally spaced pairs of perforations or tongue seats 20. The members of the pairs of perforations 20 must be spaced exactly to correspond to the spacing of the tongues 13, but the spacing between any two pairs of perforations may be varied as desired.

The numeral 21 indicates the back pad which is attached to the loop 5, and the numeral 22 indicates the belly band which is attached to the loop 6.

The operation or use of the improved buckle is substantially as follows: The main strap 19 is inserted between the tug 3 and the back of the body member 1 and is passed between the lock lugs 4, under the tongue plate 10, and is passed through the loops 9 of the hame tug 9. The tongue plate 10 is turned downward and its tongues 13 are passed through a pair of perforations 10 of the said main tug. Then the main tug is drawn backward so as to carry the lock lugs 14 under the hook-like ends of the lock lugs 4 and the projecting end lugs 15 under the sides of the tug 3. This securely locks the plate 10 against pivotal movement and holds it in an operative locking position as long as there is a rearward strain on the rear tug. To prevent accidental opening of the tongue plate when the tug is released from strain, the so-called plate lock 17 is employed, and this is one of the radical improvements involved in the present device and not found in the device disclosed in my prior patent. When the tongue plate 10 is drawn rearward, as just above stated, and interlocked to the body members, the free end of the lock spring 17 engages in the notch 16 of the tongue plate and securely holds the same against accidental forward or sliding movements, in respect
to the body member. This, as is evident, affords ample security against accidental opening of the buckle. When it is desired to open the tongue plate, the free end of the lock spring 17 is pressed downward, in respect to Fig. 2, or inward toward the horse, in practice, so as to carry the end of the said lock spring out of the lock notch 16. This will release the tongue plate so that it can be first slid forward and then moved pivotally outward into an inoperative position, and thereby release the main tug.

This tug buckle, in practice, has been found highly efficient for the purposes had in view. All of the parts thereof may be cheaply stamped from sheet metal, but, of course, they may be cast when desired. The tongues 18, located one ahead of the other, are important because they distribute the breaking strain on the tug between two different points, and correspondingly, reduce the liability of the tug being broken at the point of perforation.

What I claim is:

1. In a tug buckle, the combination with a body member having laterally spaced hinge lugs at one end, a tug holding loop at its other end and laterally spaced intermediate lock lugs of a tongue plate equipped with a tug engaging tongue and provided with side and end lock lugs and with laterally spaced slotted arms, a bolt applied to the hinge lugs of said body member and passed through the slotted arms of said tongue plate, the intermediate lock lugs of said body member, and the end lock lugs of said tongue plate being engageable with the loop of said body member, by sliding movements of said tongue plate.

2. In a tug buckle, the combination with a body member having laterally spaced hinge lugs at one end, a tug holding loop at its other end and laterally spaced intermediate lock lugs, of a tongue plate having a detent equipped with a tug engaging tongue and provided with side and end lock lugs and with laterally spaced slotted arms, a bolt applied to the hinge lugs of said body member and passed through the slotted arms of said tongue plate, the intermediate lock lugs of said body member, and the end lock lugs of said tongue plate being engageable with the loop of said body member, by sliding movements of said tongue plate, and a spring lock applied to said body member and engageable with a lock detent on said tongue plate, to lock the latter against sliding movements in respect to said body member, and with the said tongue plate and body member interlocked.

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

ARTHUR E. CLARK.

Witnesses:

Eva E. König,
Harry D. Kilgore.

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