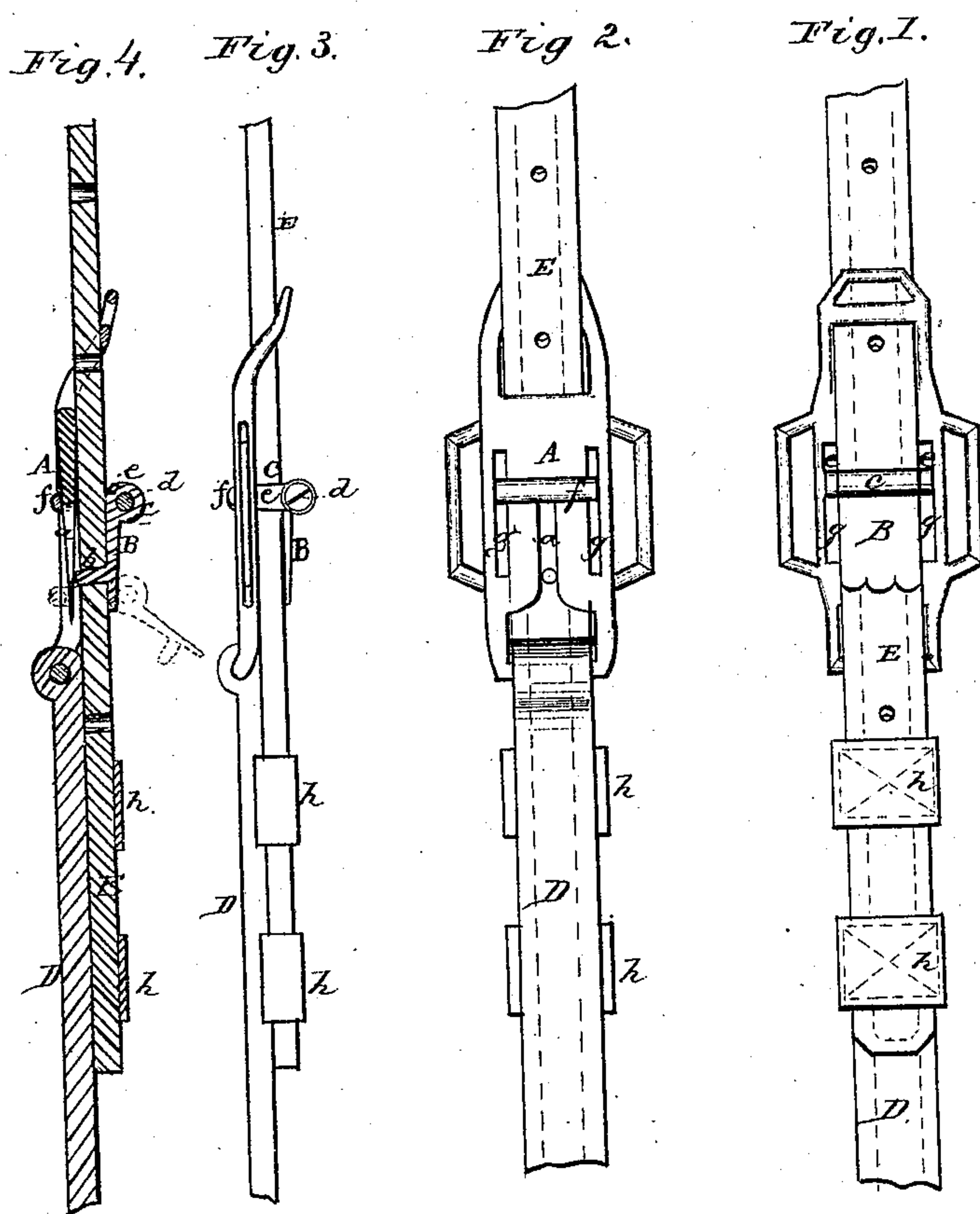


Thornton & Demmen,

Trace Buckle.

No. 102333.

Patented Apr. 26. 1870.



Witnesses:

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# United States Patent Office.

JAMES THORNTON AND CHARLES F. DEMMEN, OF WELLSVILLE, NEW YORK, SAID DEMMEN ASSIGNOR TO SAID THORNTON.

Letters Patent No. 102,333, dated April 26, 1870.

## IMPROVEMENT IN TRACE-BUCKLES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES THORNTON and CHARLES F. DEMMEN, both of Wellsville, in the county of Allegany and State of New York, have invented a new and useful Improvement in Trace-Buckles; and we do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which our invention appertains to fully understand and to make and use the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 is a top view of our buckle applied to a trace;

Figure 2, an inverted plan view;

Figure 3, a side view; and

Figure 4, a longitudinal central section of the buckle and trace.

This invention consists in providing the frame of the buckle with a stationary bottom, wedge-formed in its longitudinal section, over which the trace passes; and

Also, in the provision of an automatic sliding tongue frame, so constructed as to adapt itself to the thickness of the trace, and operating in connection with the bottom plate to hold and release the trace, as hereinafter more fully described.

The nature of the invention will be fully understood from the following detail description of the drawings, wherein similar letters of reference indicate like parts in the several figures.

A represents a plate forming the bottom of the buckle-frame and attached thereto.

This plate will generally be made tapering in thickness, as shown clearly in fig. 4, to form a wedge, for a purpose to be hereinafter described, and provided with an open slot, *a*, to receive the end of the tongue which projects on the under side, when the trace to which the buckle is applied is rather thin.

We do not limit ourselves to the wedge-form of the plate A, as a bottom of uniform thickness can be made to answer the purpose.

B is a plate carrying the tongue *b* and cast with a rounded tubular portion, *c*.

This plate is hinged in a frame, C, by a screw or rivet, *d*, passing through the tubular portion of the tongue-plate, and having its bearings in the arms *e e*, which, in connection with the cross-bar *f*, to which they are attached, form the frame C.

The arms *e e* pass through slots *g g* in the plate A of the buckle, thus allowing the tongue-plate and frame a sliding movement, for a purpose to be hereinafter mentioned.

The cross-bar *f*, which may be either round, flat, oval, or of any other suitable form in its cross-section,

is in contact with the under side of plate A, and moves back and forth thereon.

D represents the hame-tug, to which the buckle is attached; and

*h h* are loops with which the tug may be provided.

E is the trace.

In order to "take up" or shorten the trace, it is only necessary to push or draw it forward toward the hames, the sliding tongue-frame being carried with the trace until the arms *e e* strike the ends of the slots *g g*, when the hinged plate B is immediately thrown up, releasing the trace, which is then drawn forward until the hole into which the tongue is to enter is just in front of the latter, the tongue not entering the holes in the strap until the movement of the latter is reversed, when the plate B falls and the tongue enters the first hole, thus securing the trace.

The falling of the plate B and the catching of the tongue is caused by the friction of the strap or trace on the part *c* of the plate, which is, virtually, an eccentric; or, the falling of the plate may be sometimes caused by gravity; and, again, by the combined influences of gravity and friction.

The tongue frequently falls and engages the strap before the frame C, which is carried backward by the trace, comes in contact with the rear end of the slots *g*.

To let out or lengthen the trace the operation just described is reversed.

One of the principal advantages of our buckle consists in its perfect and automatic adaptation to various thicknesses of traces. This is the result of the peculiar construction and combination of the bottom plate, hinged tongue-plate, and sliding frame; the latter being capable of assuming such a position with relation to the bottom as to bring the plate B nearer to or further from the same, whereby the buckle is made to adapt itself perfectly to the trace, whether the same consists of a single thickness or a number of thicknesses of leather.

The advantage in making the bottom plate tapering in thickness is this:

When it is desired to adjust the length of the trace, the tongue-frame is moved from the thick to the thin portion of the wedge, which allows the easy movement of the trace back and forth, the arms *e e* being at right angles to the bottom plate. This result can, however, be accomplished with a plate of uniform thickness, the arms *e e* being made slightly longer in proportion than is here shown, so that, when said arms occupy a position at right angles to the plate A, there will be sufficient space for the trace to pass easily through the buckle.

The entire buckle will be generally made in three pieces, all cast; one, the frame, with the bottom plate;



another, the sliding frame; and third, the tongue and plate, exclusive of the screw or rivet, which connects the tongue-plate to the sliding frame.

The frame may be made with or without loops and of suitable form or size to adapt the buckle for single or double harness; and it can be ornamented, if desired.

The simplicity and durability of our buckle, combined with its feature of self-adjustment and the automatic operation of the tongue-plate, will especially recommend it as a valuable improvement.

We are aware that a buckle has been made with a stationary bottom, of which only the upper side is inclined. This construction we do not wish to claim, as it cannot produce the result desired, and which we obtain by making said plate wedge-shaped or with an inclined lower face.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. A plate, A, cast with the buckle-frame, when its under side is inclined, substantially as shown and described, for the purpose set forth.

2. The combination of the frame C, tongue-plate B, and screw or rivet *d*, all constructed and arranged to operate substantially as set forth.

3. The improved buckle herein described, consisting of a frame with bottom plate A and slots *g g* and the sliding frame C, hinged tongue-plate B, and screw or rivet, all constructed and arranged to operate substantially as specified.

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