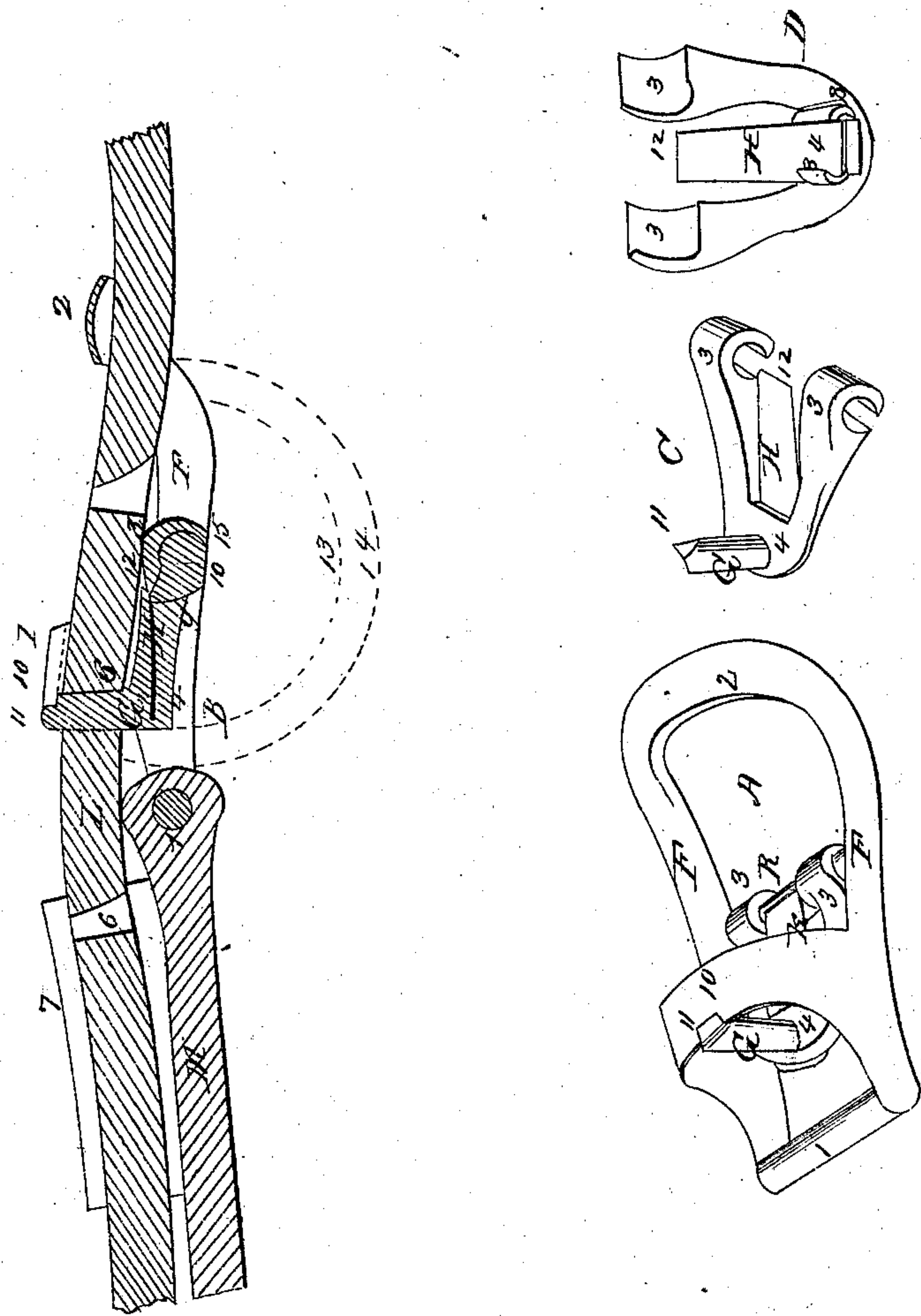


K. Frazer,
Buckle,
N^o 3,970. Patented Mar. 26, 1845.



UNITED STATES PATENT OFFICE.

KASSON FRAZER, OF MANLIUS, NEW YORK.

HARNESS-BUCKLE.

Specification of Letters Patent No. 3,970, dated March 26, 1845.

To all whom it may concern:

Be it known that I, KASSON FRAZER, of the village of Fayetteville, town of Manlius, in the county of Onondaga and State of New York, have invented a new and useful Spring and Rectangular Tongue-Buckle; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure A is a perspective view of said buckle; Fig. B, a vertical half section of the same, and of the straps; Fig. C, a front view of the spring, and the rectangular tongue; Fig. D, the back section of the same; Fig. E, the cross-bar to which said tongue is attached, and the end of the spring that thereon rests.

In the construction of said buckle I use iron, zinc, brass, copper, or any other suitable metallic substance, and cast the same in two separate pieces, or distinct parts; the one of which consists of said rectangular tongue as seen in sectional drawing, Fig. C, excluding the spring H, made of steel and afterward attached; and the other consists of all the other parts of said buckle as seen in perspective view Fig. A, to wit, the side pieces marked F, which are similar to those of the common buckle; an end cross-bar marked 1, to which the motive, power, or permanent strap is securely attached; the bridge or front section I, cast ovaling, or flat according as the movable, or draft strap is swelled or otherwise; the back section 2 similar to that of the common buckle; and the back cross-bar K, whose use is hereinafter described. Said rectangular tongue, Fig. C, consists of the back section 3, 4, 3, somewhat resembling a common clevis, or an ox-bow, the extremities of the arms of which marked 3, are cast with a hook or claw; and of a perpendicular erection G, from their center, or point of union 4, forming the part of the tongue which is to pass through the strap. In casting said tongue a small space resembling the common dove-tail mortise is left open on the back section Fig. D, having a small elevation marked 8 on each side, into which open space or mortise, the end 4 of the spring H is afterward inserted as a tenon, after the manner of being dove-tailed; after which the small projections 8 on each side are

clenched down upon said back end 4, of said spring, with a small hammer, so as to secure it from all liability to slide back, or work out. The arms of said back section 3, 4, 3, Figs. C and D, are attached to the cross-bar 5, K, 5, Fig. E, by means of their extremities 3, being hooked on said cross-bar, as at figure 5, and clenched or bent, more closely around it with a small hammer, their union being seen at figure 3, perspective view A. Said cross-bar 5, K, 5, Fig. E, is cast with a small cylindric portion 5, about one third its length at each end, with somewhat of a semi-cylindric portion of a much greater diameter lying between forming a swell or projection K, on the side of said cross-bar corresponding with the back section of the buckle, yet passing around some five or ten degrees, on that side of the cross-bar K, toward the cross-bar 1, perspective Fig. A. The object of said swell or projection is that it may act as a sort of fulcrum, or power upon the end 12, of said spring H, (see Figs. A, B, and E,) resting thereon, which in turn, being as aforesaid attached to its back section acts upon said rectangular tongue, forcing the point 11, of its front section G, through the holes of the movable or draft strap, and afterward retains the same securely there; said point 11 being pressed against and resting upon the point 10 on the side of the bridge I, Figs. A, and B, which action upon said spring is produced in this wise. As the back section 3, 4, 3, Figs. C and D, of said rectangular tongue moves around the small cylindric portions 5, of said cross-bar 5, K, 5, Fig. E (see combination in perspective view Fig. A,) as a common axis the knee 4, and point 4, where said spring is inserted and made fast, Figs. C, and D, are always at equal respective distances, from a straight line passing through the center of said cross-bar, and the two points of motion 5 Fig. E, which straight line; and the knee 4, of said tongue determine a movable revolving plane, in which said spring H at all times would lie inactive; but the moment the end 12, of said spring is raised above the level of the revolving plane thus determined, that moment by its own elastic force, it acts to bring the other end 4, up to the same level, and thereby throws up, or forward, the rectangular tongue to the back section of which its said end 4, is attached. The edge I Figs. B, and E, of said semi-cylindric portion K of said

cross-bar 5, K, 5, being in proportion to the length of its diameter out from the aforesaid straight line passing through 5, 5, the points of motion, acts upon the end 12, of said spring H, as the same becomes elevated above the aforesaid revolving plane, and should be so cast, on said cross-bar, as to be thus elevated some 5 or 10 degrees after the tongue has been brought to pass through the holes of the strap, and its point 11, to rest upon the edge 10 of the bridge I, Figs. A, and B, as aforesaid described; then as said tongue is thrown back in the direction 13 and 14 Fig. B, said fulcrum, or point of power 9, rises in said revolving plane, and acts with greater force upon the end 12 of said spring, while the elastic force of the latter becomes gradually diminished it being somewhat lengthened out, as the distance between the revolving point 4, and said fulcrum, or extreme, point of power 9, is thus increased; and after said tongue is drawn back in the aforesaid direction 13 and 14 Fig. B till the end 12 of said spring passes the aforesaid extreme point of power 9, the end of the spring passes around on the semi-cylindric surface 15 of said swell or projection and is acted uniformly upon by it, which action in the one direction being about equal to the power of friction in the other, causes said tongue to lie at rest when it is thus thrown sufficiently far back.

The object of the bridge I, Fig. A is that the end of the tongue 11, after passing through the strap may rest thereon as seen at 10, Figs. A, and B, so as not to be bent back or broken by the action of the movable or draft strap; and also to hold down said strap so that it can in no case by its action upon the weight or draft slip off, over the end of said tongue.

Figure B, represents a central vertical section of said buckle, and the straps, or the parts of each that would be visible were said buckle and straps divided into two equal corresponding sections, and one of them viewed on the side of intersection, in which I, F², represent the visible parts of the main section of the buckle; G³, the half section of the rectangular tongue; H, the edge of the half section of the spring, K, the end of the half section of the cross-bar to which said tongue is as aforesaid attached, and that part of said cross-bar on which the end 12, of the aforesaid spring rests, I being the fulcrum or extreme point of power acting upon said spring; M, the half section of the motive or power strap, which passes around and is permanently secured to the front cross-bar 1; L the half section of the movable or draft strap and Fig. 6, three several holes through which the section G, of said rectangular tongue may pass; and 7, the loop attached to the permanent strap M, and under which the end

of the movable or draft strap L, may be made to pass.

The various parts of my buckle being thus constructed, and combined as represented in perspective views Fig. A, and vertical and central sectional view B, I pass the movable or draft strap L, under the back section 2, Figs. A, and B, thence over the cross-bar K, the spring H, and arms of said rectangular tongue 3, thence under the bridge or front section I, till the end reaches the vertical section G, of said rectangular tongue, and presses the same back and downward in the direction 13, Fig. B so that said strap may pass along in the direction of the loop 7, Fig. B, till one of the holes 6 comes in contact with the end 11, of said tongue, which will immediately enter being forced in by the aforesaid power, acting upon the said spring. Thus said strap is held securely or may in like manner be passed along to the next or any subsequent hole. In case said movable strap is required to be drawn back or lengthened out, it should first be pushed forward till the tongue is forced back and out of the hole when placing the thumb upon the knee 4, or angle of said tongue, on the back section of the buckle, it may easily be thrown back in the direction 14 so that the action of said power on said spring will be overcome by reason of the friction that will be produced by said cylindric surface of the aforesaid swell or projection of said cross-bar, acting upon the end of said spring when said tongue will retain any fixed position and permit said strap to be moved and adjusted at pleasure, and may then be brought forward so that said spring will again act, by a contrary movement of the thumb or fingers.

Whenever it becomes necessary, (as for instance in a tug buckle) I cast in addition to the parts above described a small loop on each side F, perspective view A, one to receive the back, and the other the girth and thill straps; which loops are similar to those of the common tongue tug buckle, and form no part of my invention.

The great improvement claimed for the spring and rectangular tongue buckle is that the section of the rectangular tongue which passes through the strap, does the same at right angles, wearing on the center and each side of the strap alike, and far less than does the common tongue which passes through the same at acute angles both cramps and often badly tears and otherwise injures the strap by a sort of lever action created on each side and especially the under side of the strap; and that with the spring and rectangular tongue, the strap may be moved and adjusted with the greatest ease—a thing often extremely difficult with the common tongue, while for safety and cheapness of manufacture the spring

and rectangular tongue buckle far surpasses the lever and roller buckles.

What I claim as my invention and desire to secure by Letters Patent is—

5 The manner in which I construct the tongue of my buckle substantially as herein described, the tongue being combined with a spring and so operated on by the same

that it enters the holes in the straps in the direction and manner substantially as set forth.

KASSON FRAZER.

Witnesses:

NATHAN R. CHAPMAN,
SAML. D. LUCE.