(No Model.)

J. G. KITCHELL.

SAFETY BUCKLE.

No. 384,984. Patented June 26, 1888.

Fig. 1.

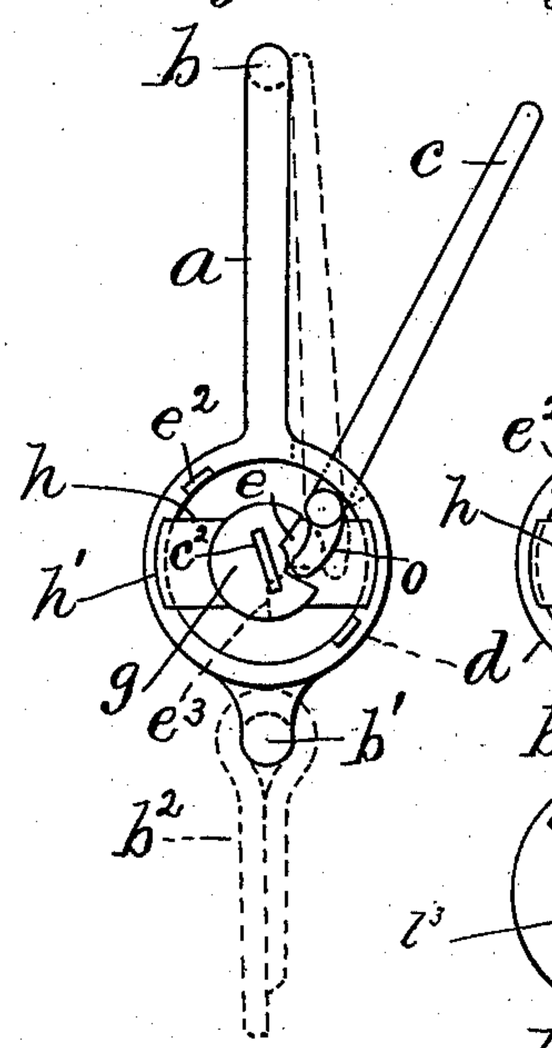


Fig. 2.

Fig. 3

Fig. 4.

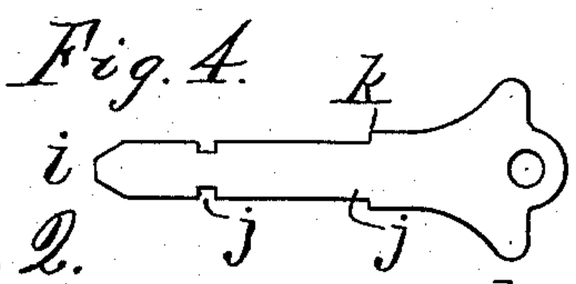


Fig. 5.

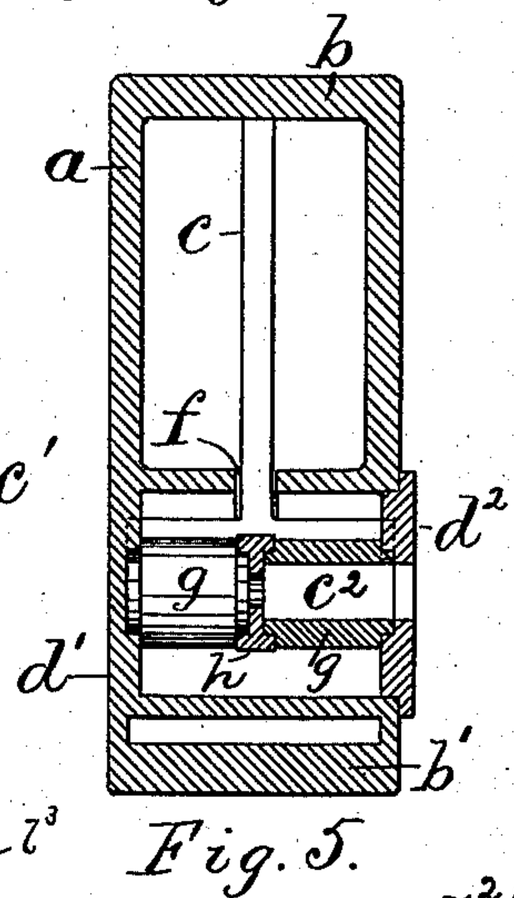


Fig. 6.

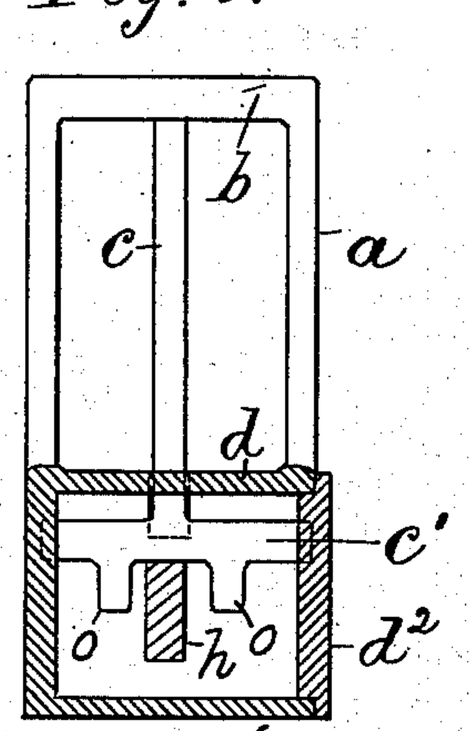


Fig. 10.

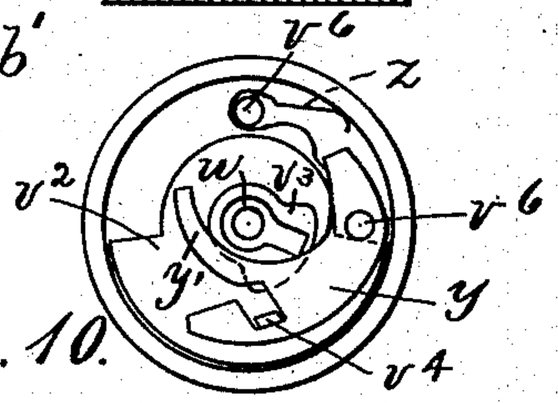


Fig. 8.

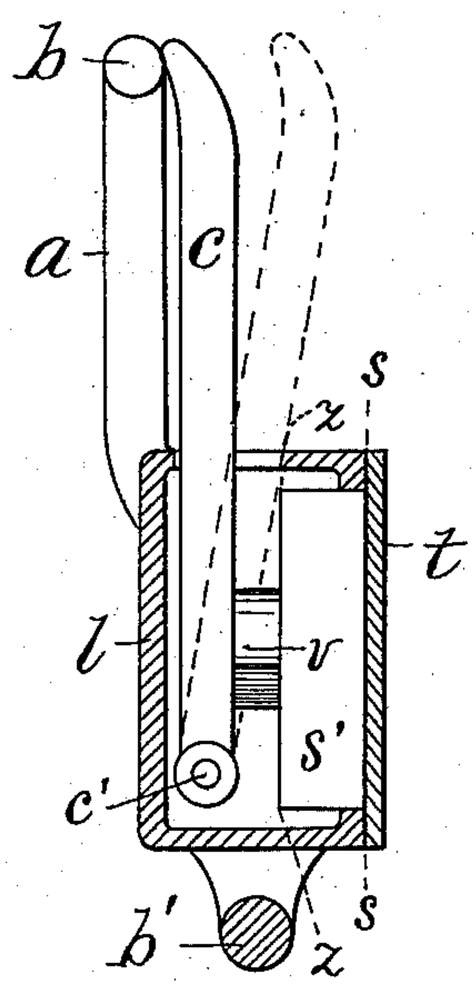


Fig. 9.

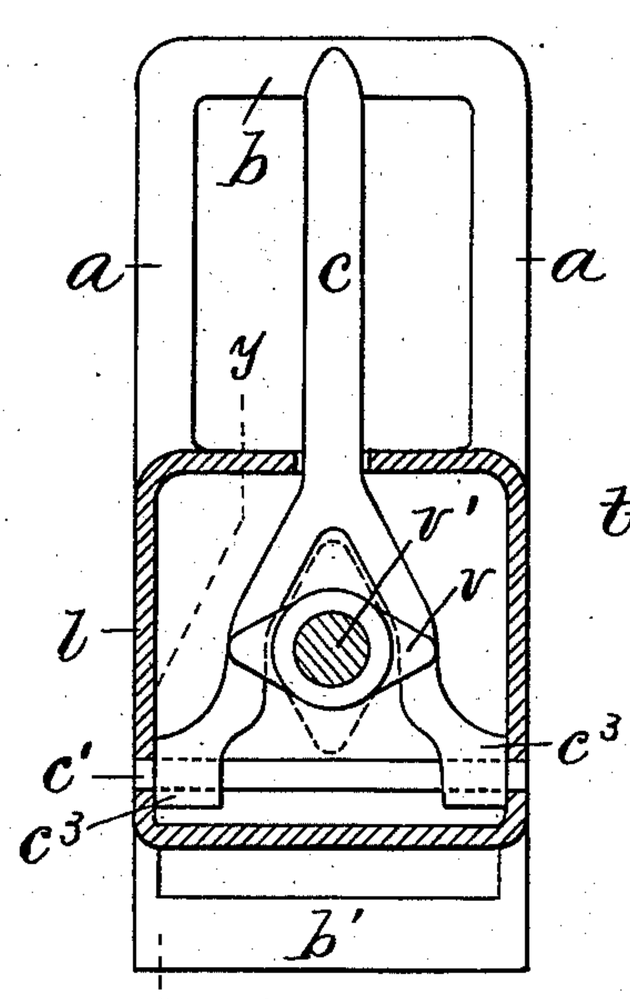
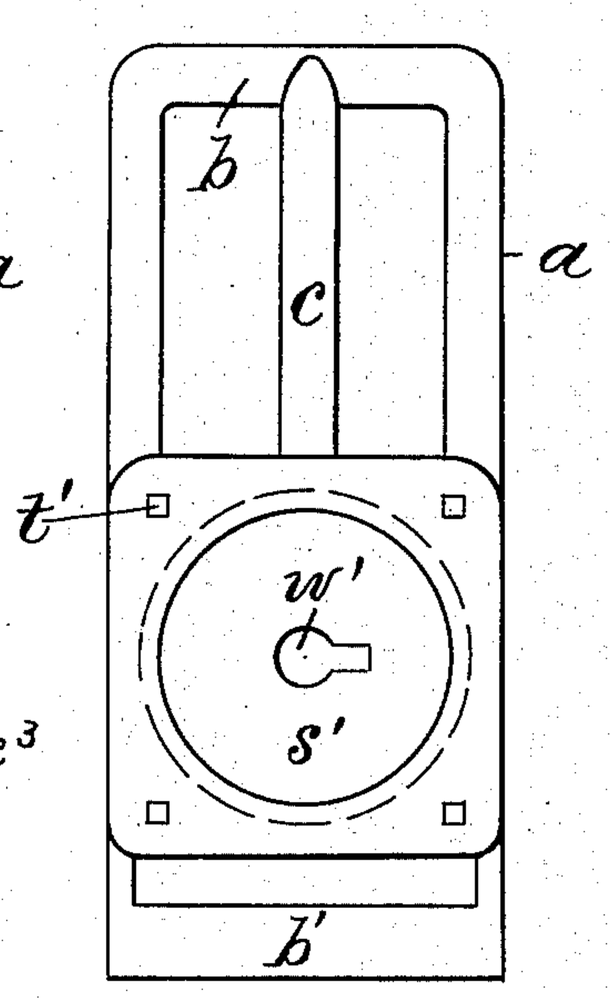


Fig. 7.



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Jos. G. Kitchell, per
Crane & Miller, Attys.

UNITED STATES PATENT OFFICE.

JOSEPH G. KITCHELL, OF NEW YORK, N. Y.

SAFETY-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 384,984, dated June 26, 1888.

Application filed January 16, 1888. Serial No. 260,853. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. KITCHELL, a citizen of the United States, residing at No. 25 West Twenty-third street, New York city, State of New York, have invented certain new and useful Improvements in Safety-Buckles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to provide a safety-buckle which may be applied to loose straps or to trunk, bag, or box fastenings, and which may operate to securely retain the strap upon the tongue of the buckle until a key is applied to release the tongue.

Locking devices have been heretofore applied to buckles, and I do not therefore claim, broadly, such a locking device; but my invention differs from those heretofore used in having the locking device applied to the butt of the tongue, so that the forward end of the buckle, to which the tip is applied, presents a lighter and neater appearance and the strap is more readily applied thereto than in previous constructions.

The invention consists in the combination, with a buckle-frame and its pivoted tongue, of a hollow casing at the base of the buckle, and a locking device inclosed within said casing and operating upon the tongue to hold the same against the cross-bar of the buckle, and the locking device is adapted to operate with a key, so that it cannot be opened without the use of the latter.

I have illustrated two different constructions in the drawings to show the general principle of the invention.

Figure 1 is an edge view of a buckle, with a cylindrical casing at the base of the frame and the cover to the casing removed, the tongue being shown in its operative position in dotted lines and in its open position in full lines. Fig. 2 is a similar view with one of the locking-cams removed. Fig. 3 is a plan of the casing-cap. Fig. 4 is a plan of the key to fit the lock in such casing. Fig. 5 is a longitudinal section through the center of the frame and casing in Fig. 1, with one of the locking-cams not in section. Fig. 6 is a section on line *x x* in Fig. 2. Figs. 7 to 10 represent a buckle-frame with a square casing at the bottom. Fig. 7 is a plan of the entire buckle. Fig. 8 is an edge view of the buckle with the casing in section on line *y y* in Fig. 9. Fig. 9 is a plan of the buckle in section on line *z z* in Fig. 8; and Fig. 10 is a plan of the locking mechanism, with the cover removed, in section on line *s s* in Fig. 8.

In Figs. 1 to 6, *a* is the buckle-frame; *b*, the cross-bar; *c*, the tongue; *c'*, its pivot; *d*, the casing formed at the base of the buckle integral with the sides of the frame *a*, and having a fixed head, *d'*, and a loose head, d^2, the latter being formed, as shown in Fig. 3, with slots *e'*, adapted to fit studs e^2, cast upon the casing to be riveted in the slots *e'* to secure the loose head thereto.

b' is a loop formed at the back of the casing to receive the butt of the strap, if one be used, as shown in the dotted lines b^2; or any other means may be employed to secure the base of the buckle where it is to be used, as it is not material to my invention how the buckle be attached.

The tongue *c* is formed with pivots *c'*, journaled in the heads of the casing, and the latter is formed with an aperture, *f*, through which the tongue projects to the cross-bar *b*.

The casing contains two rotary cams, *g*, journaled in the heads of the casing and in a bridge, *h*, fitted to longitudinal grooves *h'*, formed in opposite sides of the casing, in which the bridge may be introduced as far as the middle of the casing when the head d^2 is removed. The cams are provided each with an axial slot, c^2, (shown in Figs. 1 and 5,) and the center of the bridge and the head d^2 are provided with similar slots, l^3, to fit a key, *i*. (Shown in Fig. 4.) Each cam is formed with a notch, *e*, at one side adjacent to the pivots *c'*, and tail-pieces *o* are affixed to the tongue or its pivot to play in such notches when turned in the proper position, as shown in Fig. 1, thereby permitting the movement of the tongue to apply and adjust the strap. When the slots in the cams correspond with the slot in the head d^2, the notches *e* are turned away from the tail-pieces *o*, as shown by the dotted lines *e* e^3 in Fig. 1, and the cylindrical periphery of the cams then presses upon the tail-pieces and holds the tongue against the cross-bar *b*, as indicated by the tongue shown in

dotted lines in Fig. 1, to secure the strap in a locked position until the tongue is released. The slots l^3 in the bridge h and head d^2 are enlarged at the center, and the key is formed with notches j, to permit of its being turned in such enlargement when the shoulder k upon the key is in contact with the head d^2. It is obviously necessary that both the cams should be turned to the position shown in Fig. 1, to release the two tail-pieces o, to permit the unlocking of the buckle tongue, and the use of such cams with the intermediate bridge thus prevents the turning of both the cams by any other device than the proper key.

The construction shown is adapted for use on a much smaller scale than that shown in the drawings, where it is illustrated of considerable size to show the parts distinctly; but the construction shown in Figs. 7 to 10, inclusive, is illustrated with a still larger buckle, to which it would be particularly adapted. In the former construction the pivot of the tongue was between the point of the tongue and the locking device, and required tail-pieces, as o, for the locking device to operate upon; but in the other construction the locking device is applied to the tongue between the point and the pivot, and no tail-pieces are therefore required. The letters a, b, b', c, and c' refer in the latter figures to the same parts as in Fig. 1.

l is the casing, formed with square body parallel with the frame a, and having the top, instead of one end, removable, with a locking device, s', attached to the cover t. The cover is shown with holes t', to be riveted upon the casing l, as in the previous construction, and the locking-cam consists in a T-piece, v, fixed upon a rotary shank, v', which would be pivoted in the bottom of the lock s'.

The cross-bar and its pivot would be turned by means of a key, w, inserted through a keyhole, w', in the front of the lock and acting upon a segment, v^2, which would be attached to the pivot v'. The segment is shown in Fig. 10 provided with a recess, v^3, in which the key is first introduced, and the lock provided with a stud, v^4, to which a pivoted tumbler, y, is applied, to hold the segment from turning until shifted by the pressure of the key upon the tumbler-arm y'. A spring, z, holds the tumbler in its locked position.

The tongue c is forked at the base and provided with eyes c^3 to fit the pivot c', and the T-piece is pivoted in the center of the fork, so that when turned across the same it serves to hold the tongue securely against the cross-bar b, as shown in Figs. 8 and 9.

The movement of the segment v^2 is regulated by stop-pins v^6, which permit its turning just ninety degrees, and the cross-bar when thus turned, as shown in dotted lines in Fig. 9, clears the fork of the tongue c, and thus allows the movement of the same to free the strap, as shown in the dotted lines in Fig. 8.

The state of the art in such inventions is shown in United States Patents Nos. 247,507, 109,849, 292,372, and 97,909, and I hereby disclaim the said patents.

My invention differs from those heretofore used in having the casing formed integrally with the base of the buckle-frame, with a tongue hinged upon fixed pivots within the casing and movable around such pivots to and from the cross-bar of the frame when unlocked, and held against such cross-bar when locked by a cam within the casing, such cam being actuated by a detachable key, as in other locks. By my construction the method of operating the buckle-tongues is precisely the same as in ordinary buckles, and ample space is afforded between the casing and the cross-bar to introduce and manipulate the strap.

Having thus set forth my invention and disclaimed those which are analogous thereto, I claim my own construction, as follows:

1. The safety-buckle herein shown and described, consisting in the frame a, constructed integrally with the lock box or casing at its base and the cross-bar b at its farther end, the tongue c, hinged upon a fixed pivot within the casing and movable to and from the cross-bar b when unlocked, and the locking device operating within the casing to prevent the lateral movement of the tongue upon its pivot, substantially as herein set forth.

2. The safety-buckle herein shown and described, consisting in the frame a, constructed integrally with the lock box or casing at its base and the cross-bar b at its farther end, the tongue c, hinged upon a fixed pivot within the casing and movable to and from the cross-bar b when unlocked, and a locking device consisting in a rotary cam arranged within the casing and adapted when actuated by the key of said locking device to hold the tongue against the cross-bar b, substantially as herein set forth.

3. The safety-buckle herein shown and described, consisting in the frame a, constructed integrally with the lock box or casing at its base and the cross-bar b at its farther end, the tongue c, hinged upon a fixed pivot within the casing and movable to and from the cross-bar b when unlocked, the casing provided with the aperture f, to permit the movement of such tongue, and a rotary cam applied to the side of the tongue within the casing to hold the point of the tongue upon the cross-bar b, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOS. G. KITCHELL.

Witnesses:
A. E. CLAFLIN,
F. F. LOOMIS.