Aug. 3, 1937. J. G. TOMPKINS 2,088,820

BUCKLE

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Fig. 1

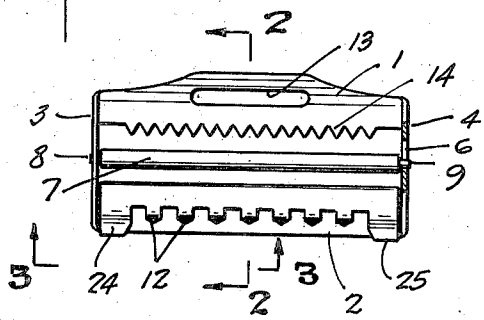


Fig. 2

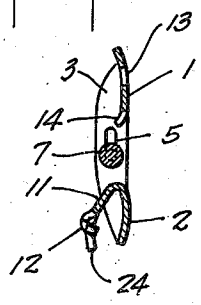


Fig. 5

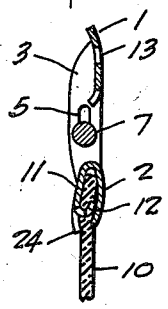


Fig. 3

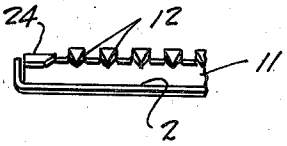


Fig. 4

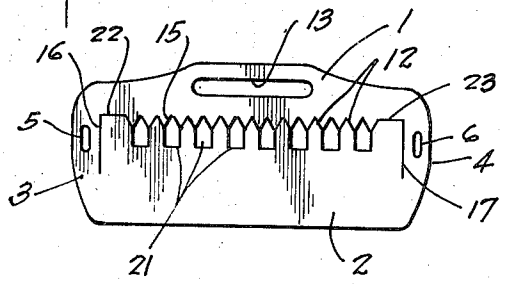


Fig. 8

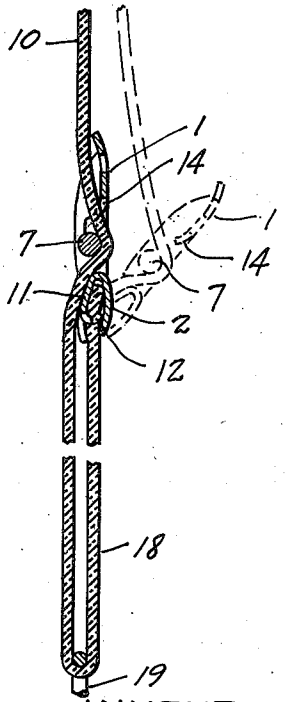


Fig. 6

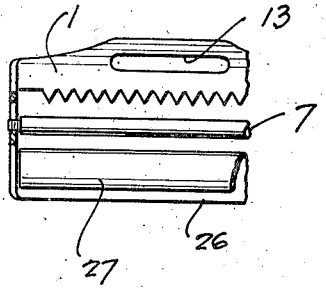
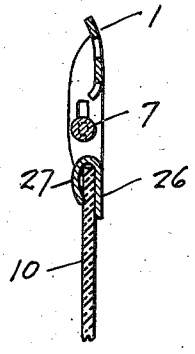


Fig. 7



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Fig. 9

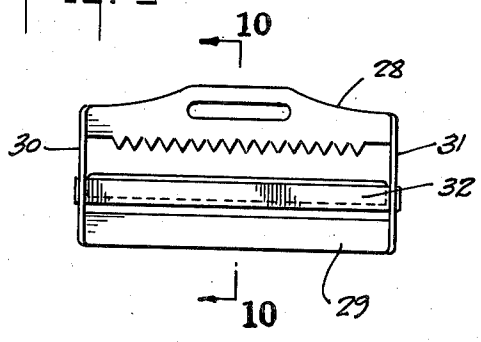


Fig. 10

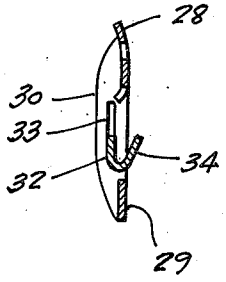


Fig. 11

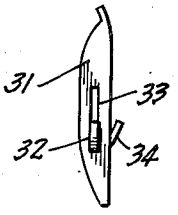


Fig. 12

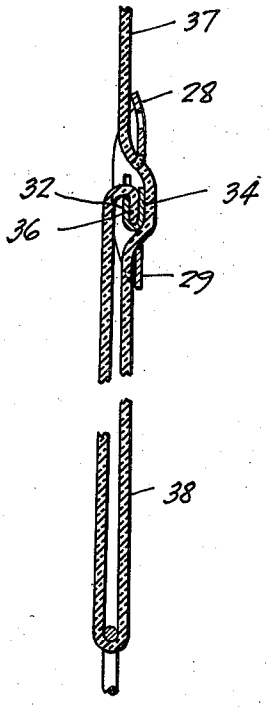
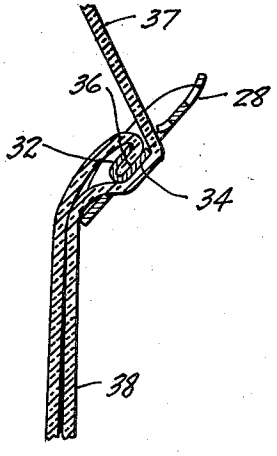


Fig. 13



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Patented Aug. 3, 1937

2,088,820

UNITED STATES PATENT OFFICE

2,088,820

BUCKLE

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Application October 14, 1933, Serial No. 693,604

4 Claims. (Cl. 24—194)

This invention relates to a buckle for adjusting the length of a flexible web, or of a belt. Such buckles are in common use in connection with articles of clothing, such as hose supporters, belts, and suspenders.

This application is an improvement of a prior application, Serial No. 652,165, filed in the name of James G. Tompkins, on January 17, 1933, now Patent No. 1,995,439, granted March 26, 1935 for a Buckle.

In said prior application there is described a buckle and a method of making it, in which there is a sliding bar intermediate the upper and lower bars. The web is attached at one end, to the lower bar; then it is formed into a loop and passed successively through the space between the lower and intermediate bars, and then through the space between the intermediate bar and the upper bar. The upper bar has serrations or teeth engaging the webbing, to hold the material at a definite loop length.

It is one of the objects of this invention to improve in general, the structure of the buckle.

It is another object of the invention to provide an improved mode of attaching the web to the lower bar.

It is still another object of the invention to provide an improved form of buckle in which the end of the web is attached to the intermediate bar.

This invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of several embodiments of the invention. For this purpose there are shown a few forms in the drawings accompanying and forming part of the present specification. These forms will now be described in detail, illustrating the general principles of the invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a front elevation of a buckle incorporating the invention;

Fig. 2 is a sectional view, taken along plane 2—2 of Fig. 1;

Fig. 3 is a fragmentary view, taken along plane 3—3 of Fig. 1;

Fig. 4 is a development of the buckle showing how it may be stamped from a piece of sheet metal;

Fig. 5 is a view similar to Fig. 2, but showing how the fabric of the web used in connection with the buckle can be attached permanently to the lower bar of the buckle;

Fig. 6 is a fragmentary view similar to Fig. 1, but of a modified form of the invention;

Fig. 7 is a sectional view of the form of the invention shown in Fig. 6;

Fig. 8 is a sectional view showing the buckle in use in connection with an elastic or flexible web;

Fig. 9 is a view similar to Fig. 1, but of still another modification of the invention;

Fig. 10 is a sectional view taken along plane 10—10 of Fig. 9;

Fig. 11 is a side elevation of the buckle shown in Fig. 9; and

Figs. 12 and 13 are sectional views showing how the buckle of Fig. 9 may be used.

In the form of the invention shown in Figs. 1 to 5, inclusive, the buckle comprises a rectangular frame having an upper cross bar 1 and a lower cross bar 2. These cross bars are joined integrally to the sides 3 and 4. The entire frame can be made from sheet metal in a manner to be hereinafter described. Furthermore, the sides 3 and 4 are slotted, the slots being indicated at 5 and 6. These slots 5 and 6 accommodate the reduced ends 8 and 9 of an intermediate sliding bar 7. The reduced ends 8 and 9 can either slide or roll in slots 5 and 6 but preferably these ends are rectangular in section, whereby sliding alone is permitted.

The flexible or elastic web 10 with which the buckle is used can be permanently attached at one end to the lower bar 2. For providing the fastening means, there is a doubled over portion 11 of the lower bar 2. This doubled over portion carries the sharply pointed projections 12. These projections are pointed toward the concave back surface of the bar 2. In Fig. 2 the buckle is shown prior to the joining of the web 10 to the bar 2. In Fig. 5 the web 10 is shown as clinched between the parts 2 and 11, the projections 12 having been turned inwardly by being pressed against the inner concave surface of bar 2. The fabric 10 is thus clinched underneath the sharp points of projections 12. These sharp points pass through the webbing.

In Fig. 4 there is illustrated the development of the buckle as it may be stamped from sheet metal. The sides 3 and 4 are here shown as in the same plane as bars 1 and 2 prior to any bending operation. Slots 5 and 6 as well as a slot 13 are punched in the sheet. The slot 13 is merely used for providing a loop adjacent the upper edge of bar 1.

The opening of the buckle frames between the

bars 1 and 2 is formed by severing the sheet of material adjacent its upper edge by a saw tooth cut 15, to form the serrations 14 at the bottom of the upper bar 1. Furthermore, the five sided apertures 21 are also stamped out to form the sharply pointed projections 12 of the bent over portion 11. These projections 12 are thus shown to be spaced apart by the width of one serration, each projection 12 having its point formed between alternate points of the serrations 14. The cut 15 is extended downwardly at each end as indicated at 16 and 17, so as to make it possible to form the fastener bar 11 by bending the severed portion defined by lines 16, 17 downwardly. This operation also forms a space between the bars 1 and 2. It is to be noted that the severing line 15 has straight end portions 22 and 23 of considerable width. These end portions form the side guards 24 and 25, at each end of the serrated clamping bar. They serve to cover the edges of the fabric 10 adjacent the side members 3 and 4.

The sides 3 and 4 are bent up at right angles to the stamping to form the complete frame. As shown most clearly in Fig. 2, bars 1 and 2 are bent slightly to make them convex toward the front and concave toward the back.

One manner in which the buckle may be used is illustrated in Fig. 8. One end of the elastic or flexible web 10 is fastened between the bars 2 and 11. A loop 18 is formed which can pass through a hose supporter 19 or the like. The upper end of the loop is passed around the intermediate bar 7 and thence underneath the serrated edge of bar 1, which bites into the web 10 and holds it firmly in adjustment. The upper end of web 10 can be fastened to any appropriate support, as for example a girdle or a corset, in case the web be used as a woman's support.

Since the intermediate bar 7 is free to move transversely of the frame, it adjusts itself to any thickness of the web 10. To adjust the length of loop 18, the upper bar 1 can be moved to the dot-and-dash position of Fig. 8, to tilt the entire buckle outwardly from the top portion of web 10. In this position the serrations 14 are freed from the web 10 and the web is free to slide either way on the intermediate bar 7. As soon as the desired adjustment is made, the bar 1 can be released and the serrations 14 then reengage the web 10.

In the modification shown in Figs. 6 and 7, the upper bar 1 is formed in a manner similar to the modification of Fig. 1. The lower bar 26, however, is shown in this instance as flat. The rear clamping bar 27 is curved inwardly and is not provided with projections, the continuous sharp edge of the clamping bar 27 serving to perform the clinching operation on the end of the fabric 10.

The buckle structure can be utilized in still other ways. For example, the end of the webbing 10 can be clamped to the intermediate sliding bar, rather than to the lower bar 2. Such a form is illustrated in Figs. 9 to 13. In this case the buckle has an upper bar 28 and a lower bar 29 integrally joining the sides 30 and 31. The intermediate bar 32 has ends projecting into slots 33 in the sides 30 and 31. Furthermore, it has an integrally joined clamping bar 34.

As shown most clearly in Figs. 12 and 13, the end 36 of a flexible webbing 37 can be fastened to the intermediate bar 32 by bending the clamping bar 34 securely over the end 36. A loop 38 can then be formed in the webbing 37, the end of the loop extending first through the space between the lower bar 29 and the intermediate bar 32; and then through the space between intermediate bar 32 and the upper bar 28. The serrations in the lower edge of the upper bar 28 while the buckle is in use engage the webbing 37. However, when the buckle frame is moved outwardly as indicated in Fig. 13, the serrations are disengaged, making it possible to adjust the length of the loop 38.

I claim:

1. In a buckle structure, an open frame having sides, a lower bar having a concave side, and a serrated clamping bar bent over the lower bar, the serrations being adapted to pass through the fabric of the element on which the buckle is to be used, and to engage the concave side of the bar for clinching the serrations over the fabric, the serrations being directed upwardly after clinching, whereby to support the pull of the fabric.

2. In a buckle structure, an open frame having sides, a pair of spaced bars connecting the sides, one of the bars having a concave side, an intermediate bar, and a serrated clamping bar bent over the concave side, the serrations being adapted to pass through the fabric of the element on which the buckle is to be used, and to engage the concave side of the bar for clinching the serrations over the fabric, the serrations being directed upwardly after clinching, whereby to support the pull of the fabric.

3. In a buckle structure, an open frame having sides, a pair of spaced bars integrally joined to the sides, and an intermediate bar, one of said spaced bars having serrations along one edge, and the other spaced bar having a clamping portion folded over the bar, said clamping portion having an edge with a series of pointed projections, and the ends of the edge being flat and extending beyond the folded over clamping portion, to serve as guards for the end corners of the fabric clamped to the said other spaced bar.

4. In a buckle structure, an open frame having sides, a lower U-shaped bar, one leg of the U having a concave side, and the other leg having serrations, the serrations being adapted to pass through the fabric of the element on which the buckle is to be used, and to engage said concave face for clinching the serrations over the fabric, the serrations being directed upwardly after clinching whereby to support the pull of the fabric.

JAMES G. TOMPKINS.