

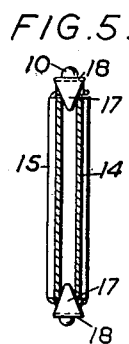
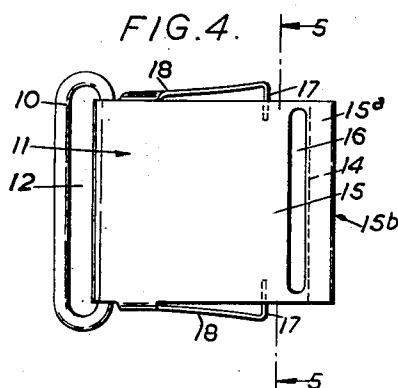
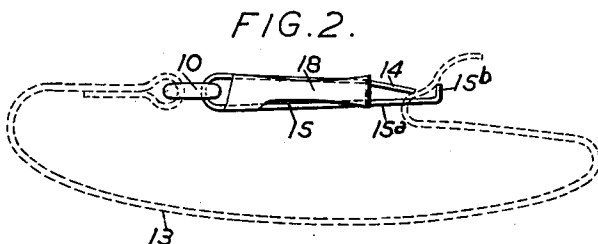
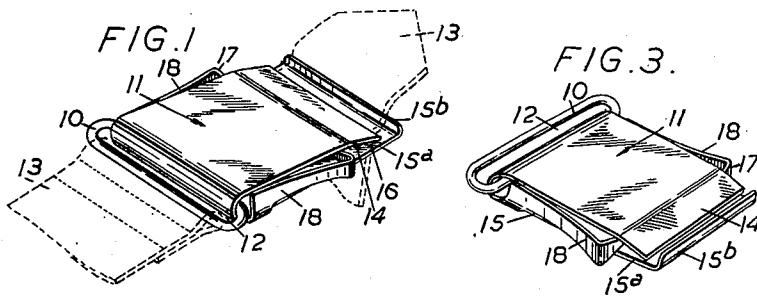
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BUCKLE OR STRAP FASTENING

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BUCKLE OR STRAP FASTENING

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7 Claims. (Cl. 24-168)

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This invention has reference to the construction of buckles for adjustably fastening straps and other pliable strip material by looping the strap over an end member of a buckle frame, the strap being secured without passing prongs, pins or like devices through the strap.

My invention is particularly applicable to buckles for adjustably connecting two strap ends together, one strap end being secured to the buckle by looping it over one end member of the buckle frame and permanently securing the loop by sewing, stitching, riveting or in other known manner, while the other strap end is adjustably fastened to the buckle as stated in the preceding paragraph.

According to my invention, the buckle comprises two links of flattened O or D shape hinged together, one strap end being adapted to be permanently secured to one link, and the other strap end being adjustably secured to the other link which is made in one piece including a pressure member constantly and resiliently urged towards the end member of the link over which the adjustable strap end is looped, and also including finger-operable means for releasing the pressure of said pressure member towards the adjacent end member, between which two members the adjustable strap is passed.

The arrangement is such that, while the adjustable strap can be drawn through the space between the pressure member and the adjacent end member of the buckle to tighten or shorten the strap connection, the pressure member holds the adjustable strap against slackening movement until the pressure on the pressure member on the adjustable strap is released by actuating the finger-operable means.

The invention will be more readily understood by reference to the accompanying explanatory drawings whereon:

Fig. 1 is a perspective view and Fig. 2 an edge view of one form of buckle according to the invention, the strap being shown in broken lines. Fig. 3 is a further perspective view and Fig. 4 an inverted plan view of the buckle shown in Figs. 1 and 2. Fig. 5 is a cross-sectional view on the line 5-5 of Fig. 4.

In one convenient manner of carrying out the invention, as illustrated in Figs. 1-5, the buckle comprises two links 10 and 11 of flattened O or D shape made from sheet metal or stout wire or rod. In the drawings, the link 10 is made of stout wire and the link 11 of sheet metal. The link 10 is shorter and has a narrow elongated slot 12 through which one end of a strap 13 is passed

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and permanently secured. The other or longer link 11 is made from a single blank passed through the slot 12 and then doubled upon itself, so that the two links become hingedly attached together. The doubling over of the metal of the link 11, which is made of suitably resilient metal or other resilient material, produces upper and lower jaws 14 and 15, of which the upper jaw 14 is made slightly shorter than the lower jaw 15 to act as the pressure member. The longer jaw 15 has a slot 16 therein (Fig. 4) for the passage therethrough of the adjustable strap 13 which passes under the outer edge of the shorter jaw 14, the strap being gripped between the ends of the two jaws. The gripping edge of the pressure jaw 14 may be smooth, roughened or serrated. The slot 16 forms the lower jaw 15 into a form of D-shaped link hinged at one end to the link 10 and provided at its other end with an end member 15a which is preferably bent up at right angles at its end at 15b to give a better grip on the strap 13 which is passed over the end member 15a. Resilient outwardly urged wedges 17, one extending from each side of the buckle, are arranged to be pressed under the side edges of the pressure jaw 14 by thumb and finger pressure, in order to raise the pressure jaw sufficiently to release the adjustable strap when it is desired to slacken the strap.

The resilient wedges 17 are struck out of the sheet metal blank of the link 11 before doubling over, so that the wedges 17 extend inwards from spring arms 18 attached at their other ends to the side edges of the jaw 15.

My invention is applicable to adjustable strap fastenings of all kinds, such as wrist straps, stocking suspenders, book straps and the like, and is particularly useful for fastening tourniquets and like surgical appliances, as the act of releasing the tourniquet can be effected gradually by side-ward finger pressure and may be arrested at any stage of its action.

The model illustrated is particularly suitable for medical tourniquets, as compression of the tourniquet can be graduated with great precision, so that the surgeon can accurately adjust the pressure of the tourniquet to the required blood circulation in the constricted limb.

It will be noted that in the example illustrated the gripping of the strap is effected by resilient means, by the elasticity of the spring jaws 14 and 15. The strap is firmly gripped at all times, regardless of whether the strap is drawn tightly around an article, or is in a slack condition. In contradistinction to the usual prongless buckles

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on the market, which depend on the strap being tightened before the buckle will hold the strap, and which require the strap to be drawn even tighter before the buckle can be caused to release the strap, my invention provides a buckle which always grips the strap and which can be released without having to tighten the strap.

I claim:

1. A prongless buckle or strap fastening comprising a link adapted to be secured to one end of the strap, a second link composed of a single blank looped through the first-mentioned link and folded to form a pair of resilient jaws one of which has a slot to provide a cross member at the other end of said jaw, the other end of the strap being adapted to be pressed through said slot and over said cross member, said jaws being constantly and resiliently urged towards each other, and finger-operable means bent out of said blank to engage between said jaws for releasing the pressure of said jaws towards each other.

2. A prongless buckle or strap fastening comprising a link having a slot therein providing an end member over which one end of the strap is adapted to be looped and secured, a resilient sheet metal blank looped through said link and doubled upon itself to form a pair of pressure jaws one of which has a slot therein providing an outer end member over which the other end of said strap is adapted to be passed after being passed through the slot in said jaw, the other of said jaws constituting a pressure member resiliently and constantly urged towards said slotted jaw and into contact with that portion of the strap which is positioned between the slot and outer end member of said slotted jaw, and finger-operable resilient means bent out of said blank and normally urged into an inoperative position and adapted under finger pressure to be forced between the said jaws to separate them against closing movement.

3. A prongless buckle or strap fastening comprising a flattened O-shaped link, a buckle member hinged to the O-shaped link, said member comprising upper and lower unitary jaws resiliently pressed together, the lower jaw extending beyond the upper jaw and having a slot therein in rear of the gripping edge of the upper jaw, the gripping edge of said upper jaws normally pressing against said lower jaw beyond said slot, wedge means engageable between said jaws, and resilient finger-operable members unitary with

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said jaws and normally retracting said wedge means from contact between said jaws, said finger-operable members being operable by finger pressure to press said wedge means inwards between said jaws to separate the gripping edge of the upper jaw from the lower jaw.

4. An article as specified in claim 3 wherein the upper and lower jaws are formed by doubling resilient sheet metal about one limb of the O-shaped link.

5. An article as specified in claim 3 in which the member is formed from a blank of resilient sheet metal doubled over one limb of the O-shaped link to form the upper and lower jaws, and said finger-operable members are integrally formed from the blank.

6. An article as specified in claim 3 in which the outer edge of the lower jaw is turned up beyond the gripping edge of the upper jaw.

7. A prongless buckle member made from a single sheet metal blank cut, shaped and bent upon itself to form a pair of pressure jaws, the upper jaw of which overlies and is shorter than the lower jaw, said jaws being resiliently pressed towards each other at their forward ends by the resilience of a bend uniting the rear ends of said jaws and said lower jaw having a slot and upturned lip at its forward end projecting beyond said upper jaw, and said blank having upturned side portions united at their rear ends to one of said jaws and free to spring outwards resiliently away from said jaws, the front ends of said side portions carrying intumed wedge-shaped projections adapted to be pressed between and to spread said jaws apart when said side portions are pressed towards each other against their inherent tendency to spring outwards.

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