

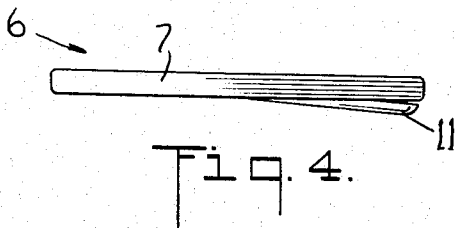
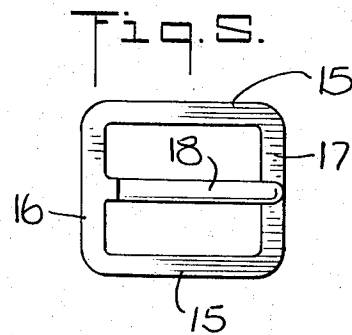
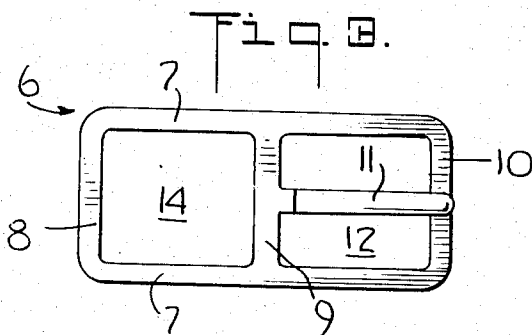
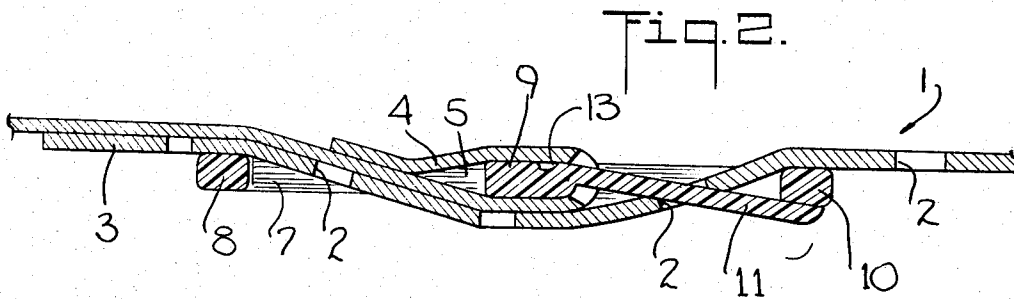
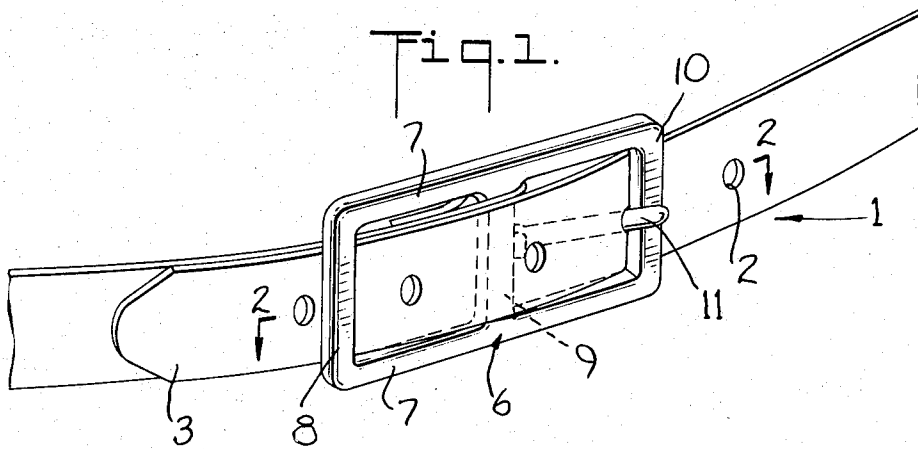
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BELT BUCKLE

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3,357,067

## BELT BUCKLE

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5 Claims. (Cl. 24—176)

This invention relates to a buckle for belts and the like. More particularly, this invention relates to a buckle for belts and the like which has an integral tongue. Still more particularly, this invention relates to a plastic buckle for belts and the like which has an integral movable tongue.

In the ordinary buckle for belts an elongated pivoted tongue is provided for engagement within holes in the fixed and free ends of the belt to be secured by the buckle. Such a movable tongue is likely to become out of order in use and often becomes loose accidentally, thereby loosening the belt. Also, constant contact of the pivoted tongue with the outer surface of the end bar of the frame tends to mar the appearance of such surface. Further, in most instances, these belt buckles have been made of metal and it has been necessary to coat them with suitable compounds in order to protect them against corrosion and to give them an attractive appearance. This coating step has materially increased the cost of these buckles. These disadvantages are but a few of the many disadvantages inherent in buckles with pivoted tongues.

Attempts have been made to avoid these disadvantages by providing cast metal buckles with an integral belt-engaging stud in place of the pivoted tongue. However, these studs were made either integrally of very thin sheet metal, of the order of ten thousandths of an inch, and consequently very weak, or separately of a heavy gauge metal and fixedly secured to a stationary part of a sheet metal buckle.

It is therefore an object of this invention to provide a plastic buckle with an integral elongated tongue.

It is another object of this invention to provide a plastic buckle with an integral elongated flexible tongue.

It is another object of this invention to provide a buckle with an integral tongue made of polypropylene.

Further objects and advantages of this invention will become apparent from the following detailed description and accompanying drawings in which:

FIG. 1 is a perspective view of a belt and buckle provided with an integral tongue according to this invention;

FIG. 2 is a cross-sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is a view of a buckle provided with an integral tongue;

FIG. 4 is a front edge view of the buckle of FIG. 3; and

FIG. 5 is a view of a modification of a buckle provided with an integral tongue according to this invention.

Referring to FIGS. 1 to 4, a belt 1 which is, by way of example, a lady's dress belt, is provided with a series of spaced holes 2 at its outer end portion 3. The other end portion 4 of the belt 1 is turned back on and secured to itself so as to form a loop 5. The buckle 6 which is of conventional form is made of a flexible plastic, and is constituted of a rectangular frame including a pair of side bars 7 which are interconnected by three spaced cross bars 8, 9 and 10. The tongue 11 is integrally formed on the middle cross bar 9 in a first plane parallel to the frame of the buckle 6, and extends across the space 12 between middle cross bar 9 and end cross bar 10 into contact with an outside surface of the end cross bar 10. As shown in FIG. 2, the tongue 11 is provided with a relief portion 13 near the point at which it joins with the middle cross bar 9 to insure a long flexing life for the tongue.

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The tongue 11 is made so that its initial position is on the underside of cross bar 10, that is, it is on the side of cross bar 10 opposite that shown in FIGURE 2. The tongue 11 because of its inherent flexibility is then passed through the space 12 so that it contacts the outside surface of cross bar 10 as shown in FIGURE 2 in a plane parallel to and spaced from the plane at which the tongue is integrally secured to cross bar 9. In this position, the tongue 11 is under a slight tension which maintains it in contact with cross bar 10. The tongue 11 is now in operating position and can be flexed very many times without failure.

The buckle 6 can be made of any flexible plastic which has good "hinging" properties, i.e., that it is capable of being flexed many times without being permanently distorted from its original shape. Buckles made of polypropylene have been found to be particularly satisfactory, but other plastics such as polyethylene and polyallomers such as propylene-ethylene polyallomers may also be used.

The buckle 6 can be made preferably by casting; however, machining and extruding are also suitable. Because of the material from which the buckle 6 is made, there is no problem of corrosion present. Hence, there is no requirement to coat the buckle by expensive methods. Further, the buckle 6 can be provided with various colors as desired to give an attractive appearance with the garment with which it is used. Hence, no additional covering is needed to blend the buckle in with the garment used.

The buckle 6 is secured to the belt 1 by positioning the cross bar 9 within the loop 5 by having the end portion 4 of the belt 1 pass through the spaces 14 and 12 between cross bars 8, 9 and 10 and thence turned back on itself and secured to the remainder of the belt 1 by any suitable means, for example, stitching.

In use, the belt 1 with buckle 6 secured thereto is wrapped around the wearer's waist and the outer end portion 3 is passed under end cross bar 10, through the space 12, over cross bars 9, through space 14 and under cross bar 8. In passing through the space 12, the end portion 3 of the belt 1 causes the tongue 11 to flex outwardly of the wearer until the desired position of the belt 1 is reached. The tongue 11 is then passed through the appropriate hole of the series of holes 2 and upon further insertion of the end portion 3 in the space 14, the tension force in the belt 1 returns the tongue 11 into contact with the cross bar 10.

Referring to FIG. 5, a modification of the buckle of this invention can be made of a rectangular frame which constitutes a pair of side bars 15 interconnected only by a pair of spaced cross bars 16 and 17. The tongue 18 is formed integrally as described above with the cross bar 16 and extends across the space 19 between the cross bars into contact with a surface of the cross bar 17. In this modification, the buckle is secured to a belt which is looped around the cross bar 16 and the tongue 18 passes through a slot in the belt. In use, the free end of the belt after being properly penetrated by the flexible tongue 18 is held in place against the remainder of the belt by a suitable loop formed on the belt as is well known in the art.

While preferred embodiments of this invention have been illustrated and described, the invention is not wished to be limited to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the following claims.

I claim:

1. A buckle for belts comprising a one piece frame, said frame being of a plastic material having an inherent flexibility to return to an original formed shape, said frame having a pair of side bars, a plurality of spaced cross

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bars interconnecting said side bars, and an integral elongated flexible tongue connected to an intermediate one of said cross bars within a first plane parallel to said frame, and extending into bearing contact within a second plane parallel to and spaced from said first plane under a tension force with another of said cross bars.

2. A buckle for belts as set forth in claim 1 wherein said plastic frame is made of polypropylene.

3. A buckle for belts as set forth in claim 1 wherein said plastic frame is made of polyethylene.

4. A buckle for belts as set forth in claim 1 wherein said plastic frame is made of propylene-ethylene-polyallomers.

5. A buckle for belts comprising a one piece frame, said frame being of a plastic material having an inherent flexibility to return to an original formed shape, said frame having a pair of side portions, a front portion and a rear portion defining an opening within said portions,

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and an integral elongated flexible tongue connected to said rear portion within a first plane parallel to said frame, and extending across the opening into bearing contact within a second plane parallel to and spaced from said first plane under a tension force with said front portion.

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