March 6, 1951 W. A. SMITH 2,544,619

BRACE END

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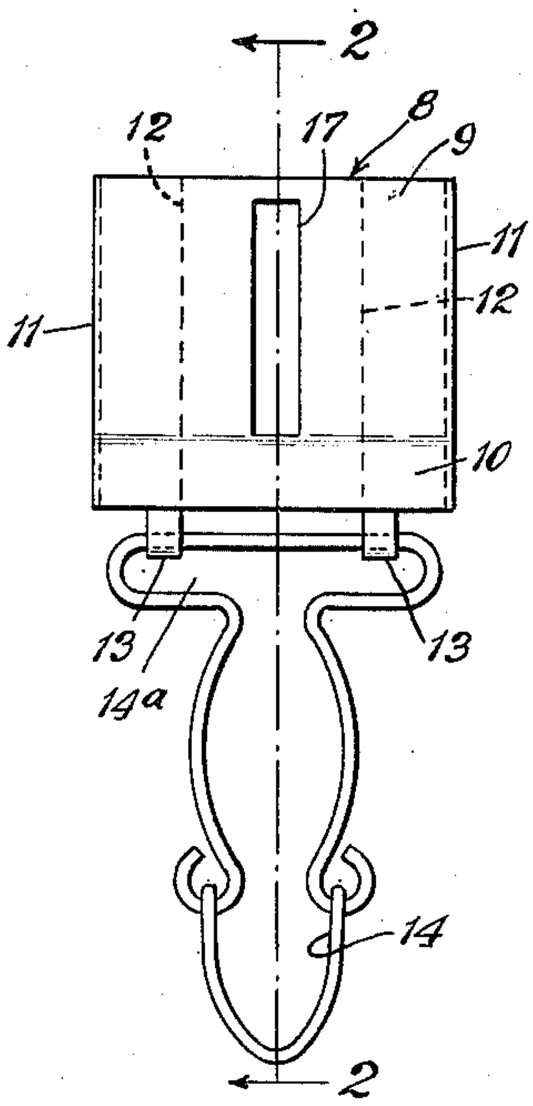

Fig. 1

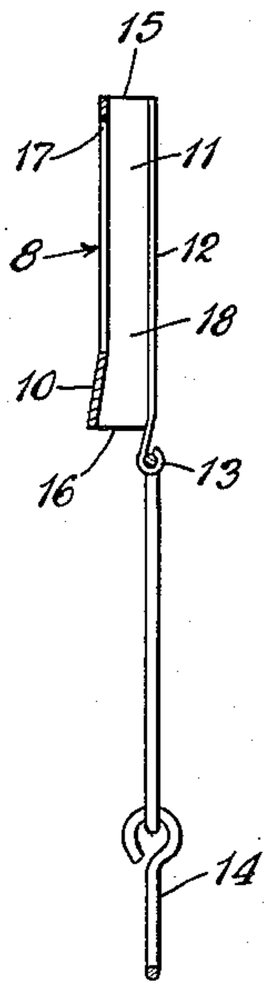

Fig. 2

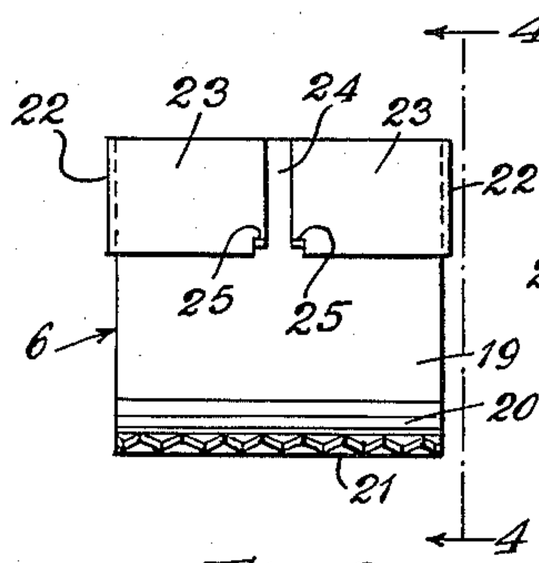

Fig. 3

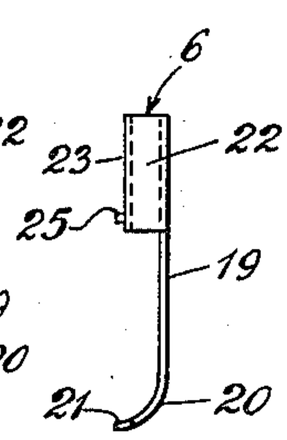

Fig. 4

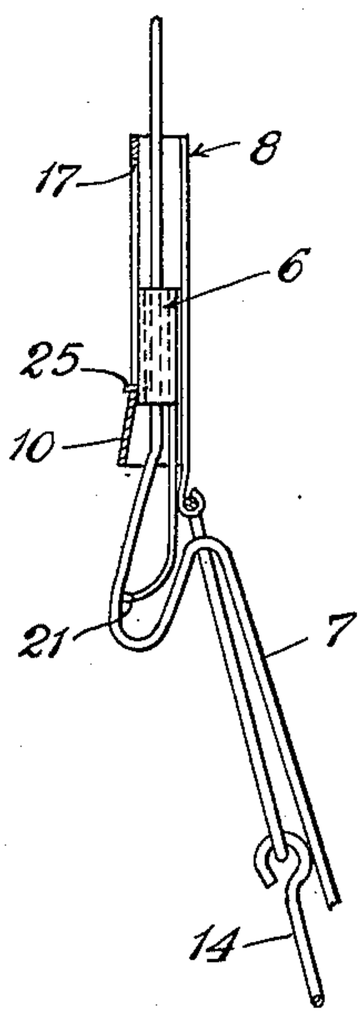

Fig. 5

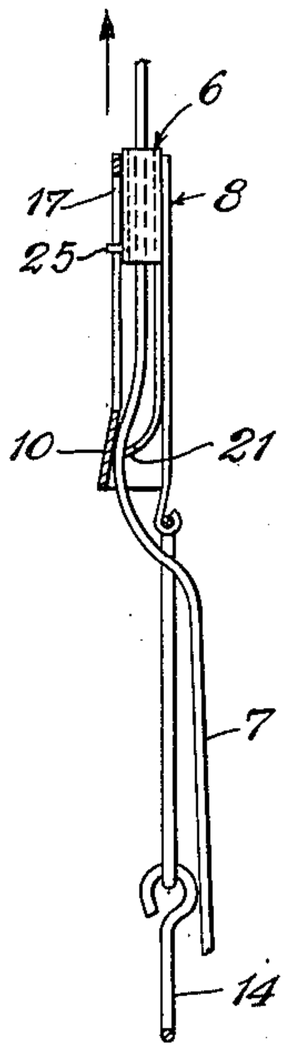

Fig. 6

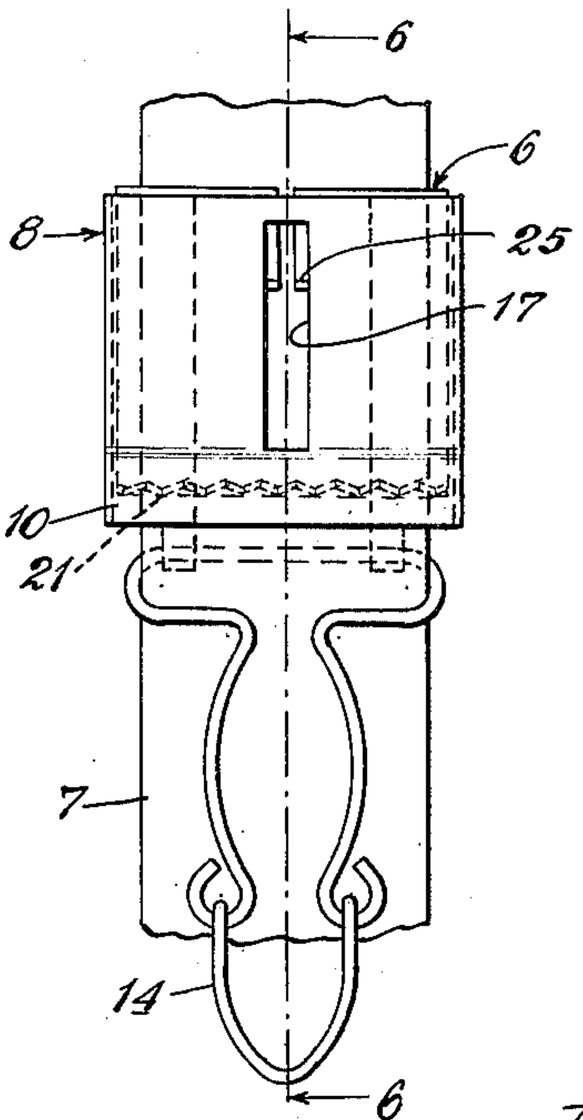

Fig. 7

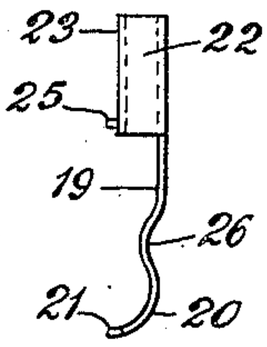

Fig. 8

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BRACE END

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1 Claim. (Cl. 24—73)

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This invention relates to brace ends and especially although not exclusively to such devices for use with the shoulder straps of workmen's and other overalls. According to the present invention the brace ends are constructed so that they can be readily detached from the garment when it is desired to clean the garment or for other purposes. The brace ends comprise two parts relatively slidable between certain limits, one of the parts being formed with a cam surface and the other part being formed to co-operate with the said cam surface and having teeth, serrations or the like for engaging the shoulder strap or otherwise when the parts are in a wedged relationship, the part having the cam surface also carrying a button-receiving loop or the like.

In general, in accordance with the present invention one of the relatively slidable parts is formed from a rectilinear casing open at two opposite ends and the cam surface is formed adjacent either of said open ends. The other part slides within the casing and one extremity thereof is formed with teeth, serrations or the like which in one extreme position leave the strap free to be passed between the two devices and in the other extreme position cause the teeth to co-operate with the cam surface to wedge the strap between the teeth and the cam surface.

Means are preferably provided whereby the strap is lightly gripped by the inner toothed part prior to being wedged in position, so that after a preliminary setting, pull on the strap will move this inner part to cause the teeth to co-operate with the cam surface and grip the brace end or the like between them.

In order that the invention may be better understood, it will now be described with reference to the accompanying drawings which are given by way of example only and in which:

Fig. 1 is a front elevation and Fig. 2 a central sectional elevation of one of the parts of a brace end according to the invention taken along line 2—2 of Fig. 1.

Fig. 3 is a front elevation, and Fig. 4 a side elevation, taken along line 4—4 of Fig. 3, of the other part of a brace end according to the invention.

Fig. 5 is a view similar to Figs. 2 and 4 but of the two parts assembled and with the inner part in the non-gripping extreme position.

Fig. 6 is a view, taken along line 6—6 of Fig. 7, and similar to Fig. 5 but with the inner part in the other extreme or gripping position.

Fig. 7 is a front elevation similar to Figs. 1 and 3 but of the parts associated together and with a brace strap, and taken from the left of Fig. 6.

Fig. 8 is a view similar to Fig. 4 but of a modified embodiment of the invention.

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As shown in Figs. 1 and 2, one of the parts comprises a rectilinear casing 8 of sheet metal having a front surface 9, the lower part 10 of which projects outwardly and downwardly to constitute a sloping cam, two narrow side portions 11 which taper outwardly towards their lower ends to match the part 10, and a back formed of two portions 12 with a gap therebetween. If desired, the back may be formed as a unitary surface. Each of the back portions 12 extends down into a coiled loop 13 to carry the button-holding loop 14 of known character. The upper and lower extremities 15 and 16 respectively of the casing 8 are open and the front of such casing has a vertical slot 17 extending from the narrow portion of the sloping part 10 towards the open top 15. It will be realised that the distance between the front 9 and the back portions 12 from the open top 15 down to the top of the sloping part, indicated by the reference numeral 18 in Fig. 2, is uniform and narrower than the distance from the front to the back at the lower open end 16.

As shown in Figs. 3 and 4, the other part comprises a rectilinear plate 19 the lower edge of which is bent into a curved formation 20 terminating in teeth 21. Adjacent its upper end the plate 19 has two side portions 22 projecting at right angles therefrom, and these are bent into portions 23 which parallel the plate 19 and are spaced a desired distance therefrom. This distance is slightly greater than the thickness of the brace end 7 or strap which is destined to pass therethrough. The ends of the portions 23 are spaced apart to leave a gap 24 therebetween and at the lower extremities of these ends small outwardly projecting lugs 25 are formed.

The disposition and size of said lugs 25 are such that the distance between their outer extremities is slightly less than the width of the slot 17 in the front of the other part 8 and the distance between the outer surfaces of the side portions 22 is slightly less than the internal distance between the sides 11, whilst the distance between the rear surface of the plate 19 and the front surfaces of the portions 23 is slightly less than the distance between the interior surfaces of the front 9 and the back portions 12. Moreover, the distance between the plane of the rear of the plate 19 and a parallel plane touching the front

of the teeth 21 is intermediate the width at 18 and the width at the open end 16.

As a result of the construction of the two parts, the part shown in Figs. 3 and 4 can be inserted within the part shown in Figs. 1 and 2 for sliding movement therein within limits defined by the lugs 25 acting in the slot 17. In operation, a shoulder strap, as shown in Fig. 5, is passed down through the open top 15 of the one part 8 and between the plate 19, the portions 22 and the portions 23 of the other part 6, and out through the lower open end 16 of the said one part 8 over the teeth 21. Also, if desired, it may be turned back and then down as shown through the widest portion 14*a* at the upper part of the button-holding loop structure 14.

Preferably, the relative dimensions and disposition of the parts are such that when the parts are positioned as shown in Fig. 5 they have a slight grip on the strap, not sufficient to prevent it being readily moved at will but being sufficient so that an upward pull on the strap end 7 pulls the plate 19 into the outer casing 8 to bring the parts into the position shown in Fig. 6 where the teeth 21 are in gripping relation with the strap 7 which is forced against the interior surface of the part 10. In some cases to increase the grip this interior surface may be serrated or otherwise roughened. To free the brace end it is simply necessary to press downwardly on the lugs 25, or to pull downwardly on said strap to return the parts 6 and 8 to the relative positions shown in Fig. 5.

To facilitate the threading of the strap 7 through the assembled device when the parts are in the position shown in Fig. 5 in some cases the plate 19 may have a rib or projection 26 (Fig. 8) which gives a lead to the actual extremity of the inserted strap to direct it over and clear of the teeth 21.

The invention is not limited to the precise forms or details of construction herein described, as these may be varied to suit particular requirements.

What I claim and desire to secure by Letters Patent of the United States of America is:

A brace end for a garment shoulder strap comprising, in combination, a rectilinear casing having a front wall and two open ends for the passage of the shoulder strap, the lower margin of the front wall sloping outwardly to form a wedge-shaped opening adjacent one end of said casing, a button receiving loop attached to the rear margin of said casing and adapted to receive the end of the shoulder strap, and a second rectilinear casing adapted to slidably fit into said first named casing and having a downwardly extending wall portion provided with teeth at its lower edge which in one extreme position leave the shoulder strap free to pass through the two telescoping casings while in another position said teeth cooperate with the inner sloping face of the lower margin of said front wall to hold the shoulder strap gripped between said teeth and said sloping face, the first named rectilinear casing being formed with an elongated vertical slot in said front wall, and the other casing being provided with stops adapted to cooperate with said slot, the arrangement being such that in the locking position the teeth of said wall portion of said other casing forces the shoulder strap against said sloping front wall portion in a position intermediate the ends of said sloping front wall portion.

WILLIAM ARTHUR SMITH.

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