

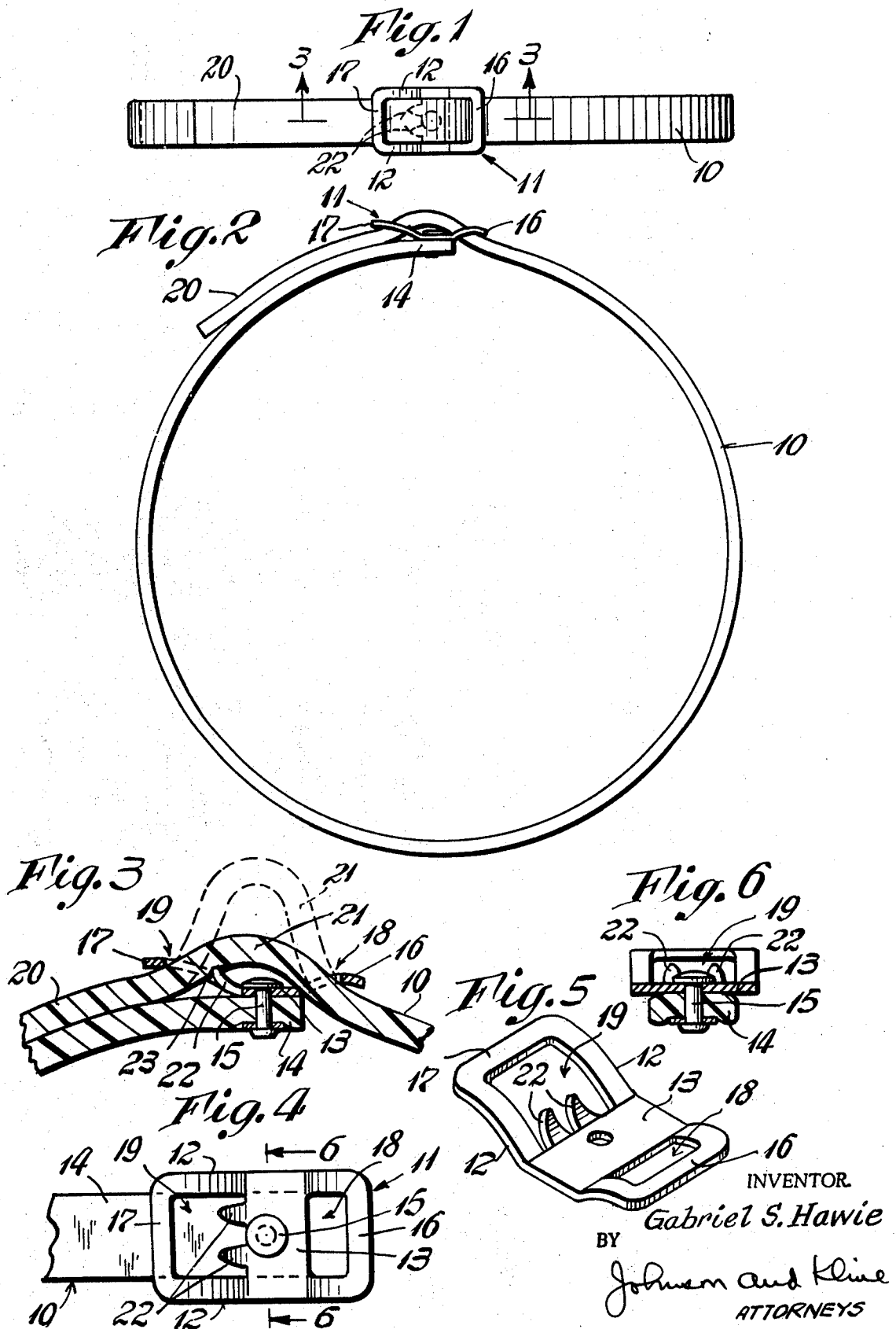
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BUCKLES

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BUCKLES

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1 Claim

ABSTRACT OF THE DISCLOSURE

There is disclosed an insecticide collar particularly for small animals comprising an imperforate strap of impregnated flexible plastic material, and a buckle attached to one end of the strap and having one or more fixed tongues adapted to indent the strap wherever it happens to engage the surface thereof and prevent inadvertent or unintentional withdrawal of the free end of the strap from the buckle.

The present invention relates to improvements in buckles such as are used on the straps of animal collars. Heretofore, such buckles comprised a frame having a central bar to which one end of the strap was secured, and end bars forming between them and the sides of the frame entrance and exit passages respectively for the free end portion of the strap. The central bar was provided with a hinged or pivoted tongue to be inserted into any one of a series of longitudinally spaced holes in the strap to prevent withdrawal of the free end portion of the strap through the passages in the frame.

In applying such a collar to the neck of an animal, after the strap was placed around the neck the free end of the strap was passed through the entrance passage of the frame, then over the central bar and tongue thereon, and then through the exit passage of the frame. When the free end of the strap was drawn through the frame sufficiently to obtain approximately the desired fit, the tongue was guided by the fingers of the person applying the collar into the closest hole in the strap, and the free end of the strap was then pulled to cause it to lie substantially flat on the frame.

This operation of inserting the pivoted tongue into a hole in the strap is usually rather tedious, especially when, as in the case of a plastic insecticide-treated strap, the strap is quite thick (in the order of an eighth of an inch) and quite stiff. Frequently, the operation must be performed while the animal is pulling or tugging to resist the application of the collar.

These difficulties and problems have been obviated by the present invention by avoiding the necessity of providing the buckle with a pivoted tongue, and also the necessity of having the strap provided with a series of tongue-engaging holes, and employing instead an imperforate strap and rigid tongue means on the buckle which does not penetrate through the plastic strap but merely indents the underside of the strap which it engages.

Accordingly, the buckle of the present invention comprises a frame having a central cross bar and end cross bars forming entrance and exit passages for the strap, the central cross bar being provided with fixed tongue means which may engage and indent any portion of an imperforate plastic strap (or a perforated plastic strap in case the perforations are provided for some other purpose) which it happens to engage to prevent retrograde movement of the strap through the frame of the buckle.

When the buckle of the present invention, after the strap has been placed around the neck of the animal, the free end of the strap is passed through the entrance forming a loop over the central bar, and then through the exit slot in a direction generally perpendicular to the frame. When this is being done, the tongue means does

not interfere with the movement of the strap because there is clearance between the surface of the adjacent end bar and the ends of the tongue means.

When the strap is fitted about the neck of the animal, the free end of the strap is pulled through the exit slot to bring the loop portion between the entrance slot and the exit slot against the tongue means so that the tapered ends thereof will indent the surface of the plastic material of the strap.

Pulling force on the portion of the strap around the neck of the animal will cause the tongue to further indent the strap and prevent withdrawal movement thereof.

With the strap and buckle of the present invention, there is no need for the person applying the collar to finger through the fur of the animal to find the tongue and place it in a hole in the strap, because the fixed tongue means of the present invention will automatically engage whatever place on the strap is opposite it when the loop of the strap over the buckle is taken up.

In temporarily removing the collar from the animal for subsequent replacement, it is merely necessary to push the free end of the strap back through the exit slot in the frame, and then when the free end passes through the exit slot slide the buckle off of the free end of the strap.

Other features and advantages will hereinafter appear.

In the accompanying drawings:

FIG. 1 is an elevation of the collar of the present invention consisting of the imperforate strap and buckle having fixed tongue means.

FIG. 2 is an edge view of the collar.

FIG. 3 is a longitudinal section of the strap and buckle showing the strap as being indented by the fixed tongue means, and showing in dotted lines the position of the strap just before the slack in the loop is taken up.

FIG. 4 is a plan view of the buckle with the anchored end secured to the central cross bar.

FIG. 5 is a perspective view of the buckle.

FIG. 6 is a transverse sectional view, taken on the line 6—6 of FIG. 4.

In the form of the invention shown in the accompanying drawings as exemplary thereof, the animal collar comprises a strap 10 of flexible plastic material of suitable length, width and thickness, and when used as an insecticide generator the strap is impregnated with certain insecticide ingredients. Usually, the strap is quite thick—say about 1/8 of an inch—and while it is flexible it is somewhat stiff.

The buckle comprises a generally rectangular frame 11 having sides 12 and a central cross bar 13 to which the anchored end 14 of the strap is secured by suitable means 15, such as an eyelet or rivet. The frame has end cross bars 16 and 17 forming with the central cross bar 13 an entrance passage 18 and an exit passage 19 respectively for the free end of the strap.

In applying the collar to the neck of an animal, the free end 20 of the strap is pushed upwardly through the entrance passage 18 and downwardly through the exit passage 19 leaving a loop portion 21 of the strap between the entrance and exit passages. This may be done before or after the collar is placed on the neck of the animal, depending on the size of the head or the length of the strap. In any case, when the collar is being fitted to the neck of the animal, the loop portion 21 of the strap may then be pulled up through the entrance passage 18 until the strap closes on the neck of the animal to the desired degree. Then the free end 20 of the strap is pulled down through the exit passage 19 to take up the loop portion 21 and cause the strap to be brought into firm contact with the tooth-like portions 22 on the central cross bar 13 which project into the exit passage 19 and thus cause the underside 23 of any portion of the strap that happens to be in position to be engaged by the projecting portions 22 to be

indented thereby. If thereafter any pulling force is applied to the strap which would tend to withdraw it from the buckle, the projections would cause substantial indentations of the strap and would thus prevent its withdrawal movement.

The central portion of the frame is depressed slightly so that the head of the rivet 15 is below the plane of the end cross bars 16 and 17, and the projections 22 are bent up and away from the central cross bar so as to extend slightly beyond the same. Thus, when the strap follows its tortuous path through the buckle, the projections 22 will be in position to indent the strap. The cross bar 17 is so spaced from the projections 22 that the latter will not interfere with the passing of the strap through the exit passage 19 when the free end of the strap is pushed through the buckle in a direction substantially perpendicular to the buckle.

It should be noted that while the buckle shown is provided with two projections 22, a single projection will suffice for the purpose of preventing withdrawal of the strap from the buckle.

When the collar is removed from the neck of the animal, the strap 10 may be cut; but if the collar is to be removed for subsequent replacement, the free end 20 of the strap will be pushed through the exit passage in a direction substantially perpendicular to and away from the plane of the buckle frame, and thus will be clear of the projections. When this is done, the free end of the strap will freely pass through the exit opening 19 and entrance opening 18.

Variations and modifications may be made within the scope of the claim and portions of the improvements may be used without others.

I claim:

1. In combination, an imperforate strap of flexible material capable of being indented and of determinate width and thickness and a buckle comprising a rigid frame having a central cross bar to a downwardly facing surface of which one end portion of the strap is fastened, a first cross bar defining with the central cross bar and sides of the frame an entrance slot having a dimension along the longitudinal axis of said buckle slightly greater than the

thickness of said strap for receiving the free end of the strap, a second cross bar defining with the central cross bar and sides of the frame an exit slot for receiving the free end of the strap, the sides of the frame defining the entrance slot and the exit slot being inclined upwardly away from the central cross bar whereby the axes of the slots lie in convergent planes so that the portion of the strap lying between the entrance and exit slots forms a substantial flat arc over the central cross bar, the central cross bar having tongue means integral therewith projecting into said exit slot only and of such length relative to the thickness of the strap as to allow free passage of the strap entering the exit slot from a direction approximately perpendicular to the plane of said frame, said tongue means being blunt and long enough to engage and indent without piercing the undersurface of the strap when the latter forms said substantially flat arc on the frame to resist inadvertent retrograde movement of the strap through the slots of the frame when force is applied to the strap tending to pull the latter back through the frame, the edges of the end cross bars being devoid of tongue means to allow free passage of the strap over said edges when applying and removing the strap from the buckle.

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