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HOSE CLASP

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2 Claims. (Cl. 24—246)

1

This invention relates to improvements in hose clasps and similar devices and is a continuation of my copending application Serial No. 681,026 filed July 2, 1946, now abandoned.

An object of the invention is to provide an improved hose clasp consisting of a body member having a laterally disposed head adjacent one end thereof and which has swingably connected thereto a keeper or gripping member adapted to swing into closing engagement with the head and closed with a snap-over action. The improved construction is characterized by the fact that the head and sides of the keeper taper or converge upwardly toward the swingable connection between the parts and that the swingable connection permits of a small limited sliding movement of the keeper relatively to the body to permit of a wedging action to take place between the substantially rigid head and the keeper to grip hose or a similar fabric therebetween. It is also characterized by the fact that the keeper provides opposed slightly resilient arms engageable with the lower ends of the head with snap-over action in locking or unlocking the clasp.

The improved clasp is highly advantageous in that the body is formed of a substantially rigid material and the clasp is closed by merely inserting the body beneath the fabric and swinging the keeper into closing and gripping position by snapping it over the head. The design is such that when the material or fabric of the hose is subjected to extreme tensile stresses, the clasp will automatically open and release the material before the hose will be torn thereby.

Many users of clasps of this character have occasion to fold or double the hose at the location where it is engaged by the clasp. The improved clasp is so designed that it may effectively clasp the hose regardless of whether a single layer is positioned over the head of the body or the hose is double and positioned between the head and the keeper.

Another object of the invention is to provide a hose clasp which is so designed that it will effectively grip and retain against slipping hard or synthetic hose fabrics such as nylon or rayon. These fabrics frequently will slip or pull through a conventional type of hose clasp even though the clasp remains completely closed.

Still another object of the invention is to provide an improved hose clasp which is so designed that it will close with snap action without involving "slip back." In the conventional type of hose clasp inasmuch as the body or part that carries the head of the clasp is flexible the keeper

2

or loop is drawn downwardly over the head and then released upwardly with the result that the elastic or tape to which the clasp is fastened is frequently looser at the time that the clasp is closed than at the time when the keeper is being positioned over the head. This "slip back" may be entirely avoided in a clasp embodying the present invention.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a front view in elevation of the improved clasp illustrating it in applied position;

Fig. 2 is an edge view in elevation of the clasp;

Fig. 3 is a vertical section taken substantially upon the line 3—3 upon Fig. 1; and

Fig. 4 is a sectional view taken substantially upon the line 4—4 upon Fig. 1.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved clasp consists of an elongated body 10 preferably formed of a substantially rigid material such as for example a synthetic resin plastic which may be readily molded to the desired shape. This body presents a substantially flat rear or under-surface and on the forward side thereof adjacent its lower end there is a laterally or forwardly disposed head 11. The top of the body is substantially thickened as at 12 and has on its ends elongated recesses 13. Adjacent one or both of these recesses there are small communicating grooves 14. The head presents sides 15 and 16 which converge upwardly and which are recessed or grooved as indicated at 17. These grooves extend across the sides of the head at a slight angle to the length of the body being somewhat more forwardly disposed at the upper ends of the sides than at the lower ends of the sides.

The lower ends of these grooves merge smoothly with a rebated or undercut portion 18 at the bottom of the head so that the body of the head presents a rounded snap-over edge 19. A keeper is provided which is formed of sheet metal or similar material, this keeper consisting of two opposed sides 20 and 21 integrally connected by a bottom 22 that is disposed some distance below the bottom edge 19 of the head. The sides 20 and 21 are so shaped as to converge upwardly adjacent the upwardly converging sides 15 and 16 of the head. Above the bottom 22 the sides have integral therewith opposed arms 23 and 24.

3

These arms possess a slight degree of resiliency and are adapted to pass over the edge 19 with a snap-over action in engaging the keeper with the head. The upper ends of the arms 20 and 21 are provided with opposed pinions or trunnions 25 and 26 that enter the elongated recesses 13. These pinions may be inserted into the recesses by passing them through the connecting grooves 14. The upper ends of the sides 20 and 21 are preferably braced against spreading by means of an integral brace or case 27. The side 20 has integral therewith an arm 28 which extends across the top of the keeper and has its end slightly spaced from the upper end of the side 21 providing an entering throat 29 for a loop or elastic or tape indicated at 30. The underside of this arm preferably presents a convex edge 31 so that the loop of elastic or tape will tend to remain distributed across the bottom edge of the arm.

As will be observed from Fig. 2, the keeper is so shaped that it is bowed outwardly from its swingable connection provided by the pintles or trunnions 25 and 26 and then inclined downwardly and rearwardly adjacent the sides 15 and 16 of the head. Finally it is bent rearwardly to a point approximately flush with the flat rear or underside of the body so that the bottom 22 of the keeper up to the approximate location of the resilient arms 23 and 24 is disposed approximately in the plane of the underside of the body 10.

In use the body 10 is positioned beneath the hose H which may be either of single or double thickness and the keeper is swung downwardly and rearwardly causing the arms 23 and 24 to snap over the edge 19. During this snap-over action the pintles or trunnions 25 and 26 are crowded to the extreme upper ends of the elongated recesses 13. When the clasp is then released and tension is applied to the hose H the hose tends to be drawn downwardly against the upwardly convergent sides 15 and 16 and to draw the keeper downwardly with it so that its upwardly convergent sides will depress the fabric of the hose into the grooves 17 on the sides of the head. This serves to adequately fasten the hose to the clasp and retain it in fastened condition for all ordinary stresses. However, it will be found that a clasp constructed as above described will automatically open when the hose H is subjected to extreme tension to thus release the hose automatically prior to its tearing.

As the arms 23 and 24 are relatively short and stubby the resiliency of these arms is such that it will be retained for an indefinite period enabling the keeper to always properly snap over the edge 19 regardless of the extent to which the clasp is used. In this way continued use does not weaken the resiliency of the arms and allow the clasp to accidentally open. Upon opening the clasp it is merely necessary to depress the head through the opening that is bounded on three sides by the arms 23 and 24 and the sides 20 and 21.

It will be observed that when the hose H is drawn or pulled downwardly, it is effective to urge the body and the head in a rearward direction through the keeper. This causes the tops of the grooves 17 to press the fabric against the upwardly convergent sides. The folding of the fabric of the hose from the engagement between the tops of the grooves and the upwardly convergent sides of the keeper down across the forward face of the head and rearwardly above the

4

opposed arms will effectively lock even hard or synthetic fabrics such as nylon or rayon against slipping.

As the clasp will close with snap action without materially altering or changing the elevation of the body or of the keeper, "slip back" is effectively avoided.

It will be appreciated from the above-described construction that the parts of the clasp can be very easily engaged and disengaged and that they can be very easily and economically manufactured and assembled. In assembling the parts of the clasp it is merely necessary to pass the trunnions or pintles 25 and 26 through the grooves 14 or if only one groove is employed one pintle 26 may be positioned in its recess 13 and the other pintle passed through the groove into its recess. When the pintles have been positioned in their recesses the parts of the clasp will not ordinarily separate during usage.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A hose clasp comprising an elongated, substantially flat body, an irregular shaped head integral with the body and disposed on one end and face thereof, said head having grooves formed about a portion of the periphery thereof, an enlarged portion on the end of said body opposed to said head but integral with the same face and coextensive in width thereof, the enlarged portion and head lying in substantially the same plane, said enlarged portion having an elongated recess formed in each side thereof, said recess being parallel to said body, and an elongated, irregular shaped keeper, said keeper comprising a pair of opposed, arcuately bound, spaced apart sides, a portion of each side being received by a portion of the grooves in said head, each side having integral therewith a pintle adapted to be received in said recesses for pivoting and sliding movement of said keeper, a bottom on said keeper interconnecting said sides to prevent the spreading apart thereof, a resilient arm integral with each side and extending toward the opposed side, said arms being adapted to be received by a portion of the grooves about said head adjacent the free end of said body to hold the keeper in a clasping position, a third arm integral with but one side at the extreme end and in opposed relationship to said bottom, said third arm being substantially parallel to said enlarged portion but spaced therefrom and adapted to receive an elastic member passing about and between said third arm and the enlarged portion, and a member interconnecting the two sides disposed intermediate the ends and between the head and enlarged portion respectively.

2. A hose clasp comprising an elongated, substantially flat body, an arcuately shaped head disposed on and extending from one face of said body adjacent one end, said head having an arcuate groove formed therein that merges into a portion of said body, an elongated enlarged portion integral with said body and in opposed relationship to said head, said enlarged portion extending outwardly from and perpendicular to the axis of said body and being in substantially the same plane as said head, said enlarged portion having formed in each end thereof an elongated recess, said recess being parallel to said body, and an elongated irregularly shaped keeper, said keeper comprising a pair of opposed, arcuately bound,

10

spaced apart sides, said sides adapted to be received by a portion of said body merging grooves about said head, resilient arms integral with each side and extending toward the opposed side, said arms adapted to be received by a portion of the grooves about said head adjacent the free end of the body, a pintle integral with each side to be received by said elongated recesses in said enlarged portion for pivoting and sliding movement of said keeper, means interconnecting the sides to prevent the spreading apart thereof, and an element integral with one side for receiving an elastic material.

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15
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6

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