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CLIP

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Fig. 1.

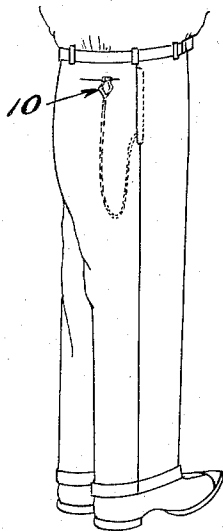


Fig. 2.

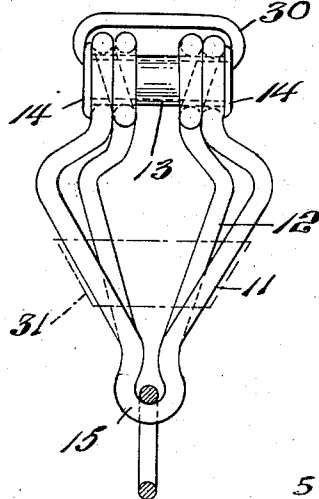


Fig. 3.

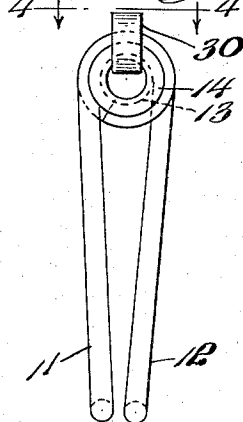


Fig. 6.

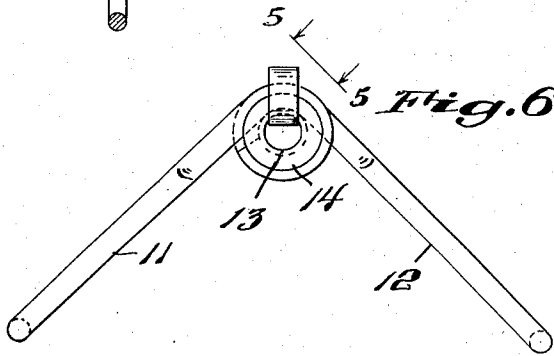


Fig. 4.

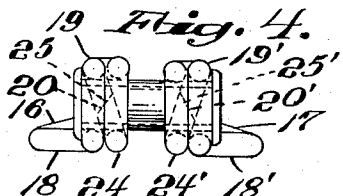


Fig. 7.

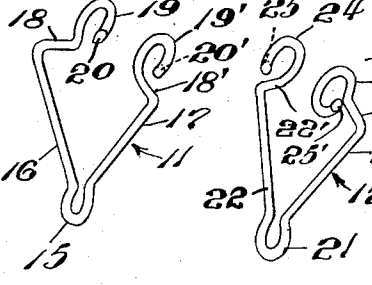


Fig. 8.

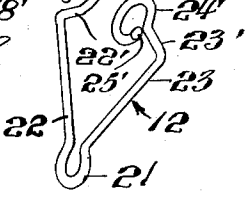
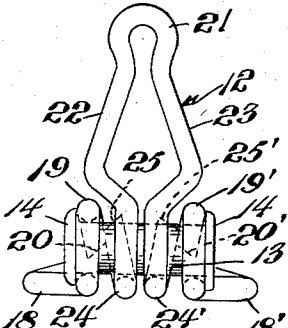


Fig. 5.



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6 Claims. (Cl. 24—3)

This invention relates to a spring clip.

An object of the invention is to provide a clip which will be adapted to be made from wire material.

Another object of the invention is to provide a clip which may be attached in any of various locations on a garment.

Another object of the invention is to provide a clip which will be easily attached and detached from a garment and which will not tear the garment upon an inadvertent pull on the clip.

Another object of the invention is to provide a clip having pivoted jaws in which a resilient force will be applied axially of the pivot of the jaws so as to hold the jaws in the closed and open relation.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a view illustrating the clip embodying the invention used as a key chain clip and shown attached to a garment;

Fig. 2 is an elevational view of the clip shown in Fig. 1 on an enlarged scale;

Fig. 3 is an edge view of the same;

Fig. 4 is a top plan view looking in the direction of the arrows on line 4—4 of Fig. 3 and with a part omitted so as to expose the clip structure beneath the said part;

Fig. 5 is a similar view but showing the clip jaws in the open relation as viewed in the direction of the arrows on line 5—5 of Fig. 6;

Fig. 6 is an edge view of the clip shown with the jaws in the open relation;

Fig. 7 is a perspective view of one of the jaws of the clip; and

Fig. 8 is a similar view of the other jaw of the clip.

Referring to the drawing for a more detailed description, 10 designates generally a spring clip having a pair of U-shaped jaws 11 and 12 which are substantially similar and are pivotally mounted on a pivot pin 13 which is shown as being tubular with the ends thereof upset as at 14 in rivet like fashion so as to provide oppositely disposed abutments or shoulders. The jaw 11 is made of a length of spring wire which is bent at the midpoint into an eye formation 15 and resilient arms 16 and 17. The arms diverge from each other for the greater portion of their length and then bend inwardly to converge toward each other as at 18 and 18'. These portions 18, 18' terminate into circular coil portions 19, 19' which extend about a common axis and are normally spaced from each other a distance greater than the spacing between said shoulders 14. The coils extend on a general helix with the end extremity cut on a slant providing camlike surfaces 20, 20' respectively.

The jaw 12 is likewise made of a length of spring wire which is bent at the mid portion into an eye 21 and arms 22, 23. The arms diverge for the greater length thereof and then bend inwardly as at 22' and 23' to converge to-

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ward each other. The portions 22', 23' also terminate in coil portions 24, 24' which extend about a common axis. These coils likewise extend on a general helix with the end extremity of each coil portion cut on a slant as at 25, 25' complementary to the surfaces 20, 20' to form cam like surfaces, the action of which will be presently described.

The coils 19, 19' as initially formed are spaced apart a distance greater than the distance between shoulders 14 by the arms 16, 17 and are compressed when mounted on the pivot 13 by shoulders 14 against which they frictionally engage. The coils 24, 24' are also mounted on the pivot 13 to lie between the coils 19, 19' and in their initially formed position are spaced apart a distance greater than the spacing between coils 19, 19'. The resulting arrangement is one, therefore, in which the coils 24, 24' are spring biased into engagement with coils 19, 19'.

Referring to Fig. 4, it will be seen that in the closed relation of the jaws, the helical portions of coils 19 and 24 extend in line with each other, that is, these two coil portions extend in continuation one with the other and the slanted or cam surfaces 20, 25 are in registry with each other. In a like manner, the coils 19', 24' extend in continuation one with the other and the cam surfaces 20' and 25' are in registry with each other.

It will be apparent that during the angular relative movement of the jaws 11, 12 from the closed relation as seen in Fig. 3, to the open relation as seen in Fig. 6, there will be a camming action between surfaces 20, 20' and 25, 25' which will apply a force on the arms 16, 17, 22 and 23 tending to maintain them in closed position. During this movement the coil portions 24, 24' are squeezed together since the coil portions 19, 19' abut against the shoulders 14. Thus the coils 24, 24' are moved axially toward each other against the resiliency of the arms 22, 23 thereof. Upon sufficient movement of the jaws in the same direction the cam surfaces will move past each other as seen in Fig. 5. Upon further movement in the same direction, the coil portion 24, 24' will be moved along the helical portions of coils 19, 19' and will be held thereagainst by the resiliency of the arms 22, 23. Thus, the jaws will be retained in open position over a wide range of angular openings between jaws.

Upon moving the jaws toward each other a sufficient distance to align the cam surfaces, the spring pressure of the arms 22, 23 acting against the surfaces will move the jaws to closed position. With the cam surfaces perfectly aligned, it will be seen that the jaws are held in the closed position by the resiliency of arms 22 and 23.

In some instances, it may be desirable to ornament the clip, such for example as by attaching a personal identification plate 30 to extend along the coils in spaced relation therewith. In other instances, the ornamentation may take the form of an emblem and/or the like which may be attached to jaw 11 as shown in broken lines 31 of Fig. 2.

From the above, it will be apparent I have disclosed a spring clip which may be adapted for use in connection with many different articles, but which is particularly adapted for use with a key chain which may be attached to either of the eyes 15, 21 in a known manner. The clip is attached to a garment, for example, a pocket by positioning the jaws to engage about the edge of the pocket as shown in Fig. 1 or the jaws may be attached to the waistband of the garment as well as to a belt. Further, it will be apparent that the clip lends itself to be made of wire of gold filled quality in that said wire has the required resiliency.

I claim:

1. A resilient clip comprising a pair of jaws, a pivot pin, each of said jaws being generally U-shaped and having spring arms terminating in a general helical coil about

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said pivot with the coils of one of the arms of one of said jaws being positioned on said pivot at a location thereon between the coils of the other jaw and being held thereagainst by spring pressure of said arms, the coils of adjacent arms extending in continuation one with the other when said jaws are in the closed relation and held engaged by the spring pressure of the arms, the abutting ends of said coils extending on a slant whereupon relative angular movement of said jaws toward open relation, said slant will be operable to compress the coils of the said one of said jaws toward each other for said slanted ends to pass each other.

2. A resilient clip comprising a first and second jaw, a pivot pin having oppositely disposed shoulders thereon, said first jaw having spring arms provided with end portions pivotally mounted on said pivot pin and extending into engagement with said shoulders, said second jaw having spring arms provided with end portions pivotally mounted on said pivot pin at a location thereon in the space between said end portions of the arms of the first jaw, each of said portions having a cam surface thereon with the cam surfaces of the arms of the first jaw being adapted to engage with the cam surfaces of the arms of the second jaw when said jaws are in a closed relation and held engaged by the spring pressure of said arms, said cam surfaces being operable upon relative movement between said jaws to open relation to compress the arms of the said second jaws and for said cam surfaces to pass each other.

3. A clip comprising a pair of spring wire jaws generally U-shaped, a pivot pin, the arms of each of said jaws having the end portions thereof pivotally mounted on said pivot pin for angular movement toward and from each other, the arms of one of said jaws being mounted on said pin in the space between the arms of the other

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jaw, each of said end portions having a cam surface thereon with the cam surfaces of adjacent portions inter-engaged with each other when said jaws are in the closed relation and operable upon relative angular movement of said jaws to open relation to compress the arms of the said one jaw toward each other and allow said cam surfaces to pass each other.

4. A resilient clip comprising a pair of jaws, a pivot, each of said jaws being generally U-shape and having spring arms terminating in a coil about said pivot with the coils of one of the arms of one of said jaws being positioned on said pivot at a location thereon between the coils of the other jaw and being held thereagainst by the spring pressure of said arms, each of said coils having a cam surface thereon with the cam surfaces of adjacent coils being adapted to engage against each other to move the coils of the said one of said jaws toward each other and allow the said cam surfaces to pass each other upon relative angular movement of said jaws.

5. A resilient clip as set forth in claim 4 wherein each of said jaws are made of a single length of spring wire.

6. A resilient clip as set forth in claim 4 wherein each of said jaws is provided with an eye at the mid point between the arms thereof.

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