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H. W. LAKIN

2,169,259

GARTER

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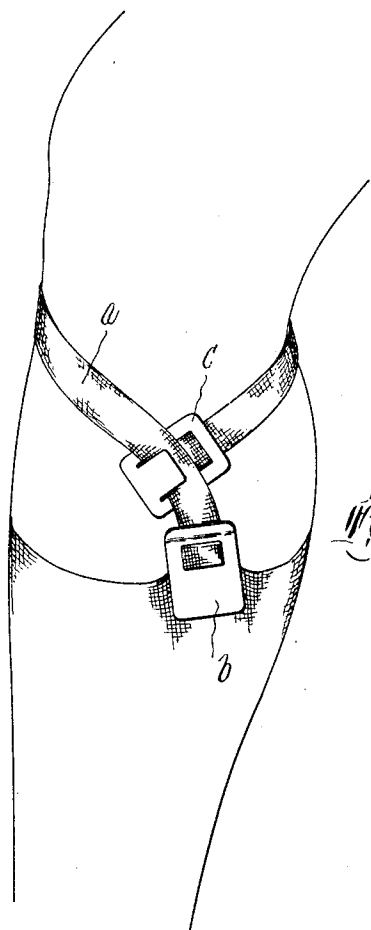


Fig. 1.

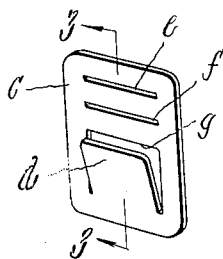


Fig. 2.

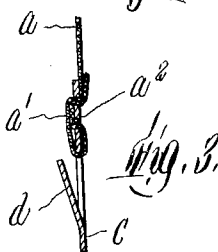


Fig. 3.

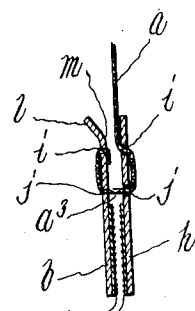


Fig. 5.

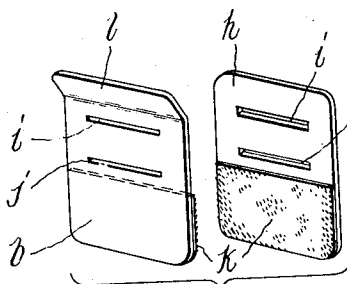


Fig. 4.

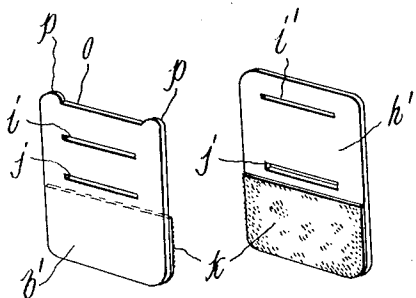


Fig. 6.

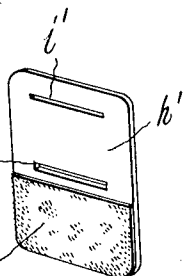


Fig. 7.

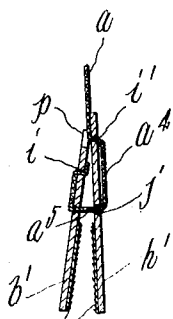


Fig. 8.

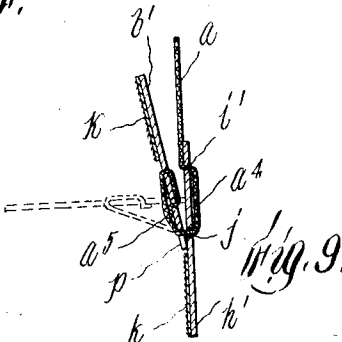


Fig. 9.

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UNITED STATES PATENT OFFICE

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GARTER

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Application November 13, 1937, Serial No. 174,390

6 Claims. (Cl. 24—243)

The object of the present invention is to provide a garter which can be easily and quickly applied securely to the border of a stocking and will grasp the same firmly but in a way which involves minimum risk of tearing the stocking or breaking a thread; and to provide also clasp-
5 ing means by which the part of the garter which passes around the leg of the wearer may be easily adjusted and made fast, with security
10 against slipping, to the part which leads to the stocking clasp. The combined features of the invention above referred to are useful and available in garters which are worn so as to embrace
15 the wearer's leg below the knee and above the calf, but those features which reside in the stocking clasp are available also for use in garters of the suspender type. Such clasp and its equivalents are equally useful for other suspenders for
20 supporting other articles of clothing as well as stockings. Indeed the part of a garter which supports a stocking is in effect a suspender, whether the other part of the garter is passed
25 and connected around the wearer's leg or is hung from a girdle or from the shoulders, or otherwise. Hence the protection which I claim for the invention embraces all novel features thereof, singly and in combination with other features.

The embodiment illustrated in the drawing furnished herewith is of a garter designed to pass
30 around the leg of the wearer and to support a short stocking or sock. In the drawing—

Fig. 1 is a perspective view showing a garter applied for use;

Fig. 2 is a perspective view on a larger scale of
35 the clasp by which the part of the garter which passes around the leg is made fast to the part which extends to the stocking;

Fig. 3 is a sectional view of such connector
40 clasp, showing also the adjacent part of the garter strap in connection with it;

Fig. 4 is a perspective exploded view of one
form of stocking clasp which forms a part of my garter;

Fig. 5 is a sectional view of such clasp connected
45 with the strap of the garter, and represented with the parts of the clasp separated from one another for clearness of illustration;

Figs. 6 and 7 are perspective views of, respectively, the two parts of another form of stocking
50 clasp embodying the invention;

Fig. 8 is a sectional view of this second form
of clasp assembled with the garter strap and with their respective gripping portions somewhat
separated for clearness of illustration;

55 Fig. 9 is a sectional view of the same stocking

clasp showing the parts thereof in approximately their open position of equilibrium, and showing in dotted lines one of the parts in an intermediate position.

Like reference characters designate the same
5 parts wherever they occur in all the figures.

The garter in the form adapted for use surrounding the leg of the wearer comprises a strap
a, a stocking clasp b, and a connector clasp c. These clasps are secured to the strap at or adjacent
10 to opposite ends thereof, and preferably by means which permits adjustment of the distance between them, i. e., of the intervening length of strap, in accommodating accordance
15 with the circumference of the leg and the height on the leg of the stocking top.

The connector clasp c is made of a flat plate of suitably stiff and rigid material. It may be of
sheet metal having sufficient thickness to provide the required stiffness, or it may be of non-
20 metallic material such as Celluloid, hard rubber, any of the synthetic resins which have strength, toughness and elastic rigidity, or any other like
or suitable material; it being understood that whatever the material used, the thickness of the
25 piece from which the clasp is made is such as will provide stiffness of the order indicated in the following description. Without intending to indicate any specific limitation as to thickness, I
30 may say that I have found a thickness in the order of $\frac{1}{16}$ " to be adequate for clasps made of Celluloid, thermoplastic synthetic resins, etc. Considerable variations from this example may
35 be used within the scope of the invention, provided that where the clasp is of metal, it should not be so thin, or have such sharp edges, as to risk cutting the strap.

A tongue d of substantially rectangular outline is severed on three sides from the body of the
clasp and bent outward, on its integral line of
40 junction with the clasp body, to an extent such that its free end is well forward of such body. The tongue is given a permanent set in this position. Its dimensions, and the degree or angle of
its offsetting are such that ample space is provided
45 for insertion of the strap between its free edge and the body of the clasp, while its lateral rear edges cross the face of the body at an acute
angle sharp enough to cause the strap to be
50 pinched and secured against slipping when forced toward the apex of the angle. There are also formed in the clasp, between the opening left by the offset tongue and the end of the clasp, two
slots e and f, parallel to the edge g of such
opening. These slots and the substance of the

clasp between them and the edge *g* provide means for adjustably connecting the strap to the clasp. The connection is made by passing the strap through slot *e* from rear to front, then downward around the edge *g*, then upward and forward through the slot *f*, and then further upward and back through the slot *e*. The part *a'* of the strap which extends from slot *e* to edge *g* overlies the part *a²* passing between the slots *f* and *e*, on the face of the clasp. Hence when tensile stress is applied to the strap, the overlying part *a'* binds the underlying part *a²* and prevents slippage. The security of slippage is augmented by the sharp bends of the strap around the edges of the slots, and may be further augmented by using elastic webbing as the material for the strap and making the slots so narrow that the webbing must be compressed in thickness to pass through them. It is perfectly feasible to proportion the slots so that the strongest tension to which the strap is ever exposed in use will not cause any slippage with respect to the clasp, and I have successfully done so.

The stocking clasp shown in Figs. 1, 4 and 5 is made of two parts or members, i. e., a forward member to which the reference letter *b* is applied, and a rear member *h*. These members may be made of any of the materials hereinbefore indicated as being suitable for the connector clasp, but may have less thickness and stiffness if desired, since they are subjected only to tensile stress in use. They are not subjected to bending stress, as is the tongue *d*. The stiffness necessary to prevent deflection of tongue *d* so far as to release the engaged garter strap is the practical measure of stiffness required for the material of the connector clasp. The parts of the stocking clasp must be stiff enough to act in the manner hereinafter described.

Each member of the connector clasp has parallel slots *i* and *j*, of which the slots *j* of the two members register with one another, while the slots *i* may register, although it is immaterial whether they do or not. Those parts of the clasp members between the slot *j* and the lower edge constitute jaws adapted to grip the stocking edge between them.

Such jaws, or at least the one designated *h*, which in use is placed between the wearer's leg and the stocking, but preferably both, are armed with means in the nature of barbs or hooks adapted to engage the stocking top, or the threads of which the stocking is made, in a manner such as to strongly resist slippage from between the jaws. Such barbs or hooks are most conveniently made by providing the jaws with facings *k* of shark skin, or the skins of other fishes of the shark family, rays, etc. The skin of these fishes has minute scales terminating in points fine enough to enter the meshes between the threads of the stocking. When such skins are cured, the scales remain in firm attachment and are hard and sharp, providing an excellent means for this purpose. Skins of these fishes are known to commerce under the name of shagreen, and I include within that name and its definition, for the purposes of this invention, any skins having scales or spines capable of operating in this manner. However, the jaws may be otherwise faced or constructed in such a way as to modify the normally smooth surface of the plate or sheet material so as to resist slippage, either by frictional resistance or by interlocking engagement with the stocking material or its constituent strands.

In the form of clasp now being described, the strap is passed through the slot *i* of the rear member *h*, from front to rear, then forward through the slots *j* of both members, then across the front face of the member *b* and back through the slot *i* thereof. The slots in the rear member are preferably made of such width that the strap may slide freely through them, while the slots of the forward member are made narrow enough to grip the strap tightly. This strap gripping effect is best obtained when the strap is made of elastic webbing. However, the invention is not limited as to the manner and means in which the strap and clasp member *b* are adjustably connected, and any means for connecting them in a non-slip manner, whether adjustable or not, is within the scope of the invention. Indeed it is not essential that both clasps be adjustable on the strap, and all requirements for adjustability may be satisfied by making the connector clasp *c* alone adjustable. It is essential, however, to connect the stocking clasp member *b* in non-slip connection with the strap, and essential that the rear member *h* of this clasp have a sliding engagement with the strap. Such sliding engagement causes tension on the strap to pull the members of the clasp closely together into tight gripping engagement with the interposed stocking material. One of the members may have an inclined lip or tab, as *l*, at its upper edge which, being pressed upon toward the rear, causes the jaw part of this member to be withdrawn from the other jaw for convenient insertion and removal of the stocking. The angle *m* between the tab and body of the clasp member acts as the fulcrum, bearing on the other clasp member or the interposed strap. When the clasp is applied to a garment in the way of use, the distance from the angle *m* to the slot *i* is the power arm of a lever through which the pull of the strap causes the jaw portion of the member *b* to be forced toward the other jaw element. In connecting a clasp of this character to a stocking, the members are first separated and the member *h* is passed between the wearer's leg and the upper end of the stocking. Then by an upward pull on the strap, the outer member *b* is caused to bear on the outside of the stocking and to cooperate with the inner member in grasping it. When the stocking top fits with reasonable closeness around the leg, no other force than that applied by the tension of the stocking is needed to hold the clasp member *h* in place while the slack of the strap is taken up in bringing the other member into gripping position. When the members have been thus engaged, further pull on the strap causes them to grip the stocking ever more firmly. A similar effect in the gripping of the garment by the clasp is obtained when the same or an equivalent clasp is applied to hold any other garment.

The form of stocking clasp shown in Figs. 6, 7, 8 and 9 is like the one previously described in being made of two members, here designated as *b'* and *h'*, having jaw portions faced with frictional or barbed material *k*, or otherwise suitably formed to resist slippage. It differs in having means by which the jaws may be maintained in an open position of equilibrium. The jaw member *b'* has slots *i* and *j*, through which the webbing is passed and secured, as described with respect to the clasp member *b*. The member *h'* likewise has a slot *j* beside and in register with the slot *j* of member *b'*. Its second slot, *i'*, is preferably spaced farther from slot *j* than in the first described form, and is made of a narrow

width such that it grips the strap, while the slot *j* is wide enough to permit the strap to slip freely through it. The upper edge *o* of member *b'* is recessed between its ends, leaving shoulders *p* for fulcrum engagement with the clasp member *h'*. The strap *a*, which in this instance must be of elastically extensible material, such as the familiar elastic webbing, is connected with the clasp members so that its portions *a⁴* and *a⁵*, between the slot *j* of member *b'* and slot *i'* of member *h'* are under tension when the jaws are closed. The shoulders *p* then have fulcrum bearing on the clasp member *h'* near the upper end of the latter. The clasp member *b'* may be put also in another position of equilibrium, approximately as shown in Fig. 9, where its jaw is widely separated from the jaw of member *h'*. The fulcrum shoulders *p* then bear on the mid length portion of member *h'*, and the elastic strap passes over the edge *o* of member *b'* at a distance from the extremities of the fulcrum shoulders such that a short lever arm is created on which the tension of the strap exerts a pull sufficient to hold the jaw *b'* in the open position. With the jaws in this position, the clasp can be easily engaged with the stocking, by first passing the member *h'* in back of the stocking top, and then moving the raised jaw member *b'* forward. After it has passed the position indicated by dotted lines in Fig. 9, this jaw member is closed on the outside of the stocking top by the elastic stress of the strap portions *a⁴* and *a⁵*.

A garter equipped with either form of stocking clasp here described is readily applied to a stocking. Having been connected to the stocking as described, its end to which the connector clasp *c* is attached is passed around the wearer's leg beneath the knee and the clasp *c* is hooked to the intermediate part of the strap at a point which causes it to embrace the leg closely enough to prevent slipping down. By adjustment of the strap with either clasp, or both clasps, the effective length of the strap may be made just great enough to embrace the leg closely so that it will not slip down and also to hold up the stocking smoothly and without too great tension. Once the strap has been placed in the angle between the tongue *d* and body of the clasp, the tension exerted on it by its manner of use causes its lower edge to be forced and wedged into the acute angle between the side edges of the tongue and the adjacent sides of the opening from which the tongue protrudes on an upward inclination. This angle is sufficiently sharp to cause gripping of the strap so that it cannot slip, either under its initial tension, or under the pull exerted by the stocking, or changes in tension and shocks occasioned by the movements of the wearer's leg in walking and his foot in striking the ground. This clasp is engageable with the strap equally well, and in exactly the same manner whether the strap is passed around the front of the leg from left to right, as indicated in Fig. 1, or in the opposite direction, and on either leg. It is not necessary to make any selection or discrimination between the members of a pair of garters before putting them on.

What I claim and desire to secure by Letters Patent is:

1. A suspender comprising a strap, a clasp comprising two substantially stiff members, one of which has an opening through which the strap passes with freedom for movement therethrough,

and the other of which is made fast to the strap, said members being otherwise disconnected and separable, and having fulcrum engagement with one another adjacent to one end, and portions thereof adjacent to their other end forming cooperative clasping means, the portion of the strap which passes from one member to the other being located between the point of fulcrum engagement and said clasping means.

2. In a suspender, a strap, a clasp comprising two stiff separable members having cooperating jaws faced with shagreen, the strap extending with freedom for sliding movement through one of said members into non-sliding connection with the other member at points intermediate the jaws and the relatively opposite ends of the respective members and being so disposed that tensile stress in the strap causes the jaws to be drawn toward one another.

3. In a suspender, a strap, a clasp comprising two stiff separable members having cooperating jaws, the strap extending through one of said members in freely sliding engagement therewith and having a non-sliding connection with the other member, at points between the jaws and the relatively opposite ends of the respective members.

4. In a suspender, a strap, a clasp comprising two stiff members having cooperating jaws, the strap being of elastic extensible material and being secured non-slidably to each, with a portion extending from one member to the other at a point between the jaw portions and the relatively opposite ends of both members, one of the members having separated fulcrum shoulders at the end opposite to its jaw portion adapted to bear on the adjacent face of the other member, and having a recessed edge between said shoulders adapted to admit the connecting portion of the strap when the jaw portion of said member is swung about the fulcrum engagement through an angle of more than 90° away from the jaw portion of the other member.

5. In a suspender, a strap and a clasp consisting of two substantially stiff flat members having cooperating jaw portions adjacent to one end, such jaw portions having means on their contiguous faces adapted to prevent slipping of a garment from between them when in close contact with such garment, one of said members having two slots of greater width than the thickness of the strap spaced apart from one another between the jaw end and the opposite end, the strap extending through the slot more remote from the jaw end from the inner face of said member, thence along the outer face of the same member and through the slot nearer to the jaw end, across to the other member and being secured to the latter with a non-slipping engagement; the clasp member last referred to being thereby separable bodily from the previously specified member, and being returnable into gripping relationship with said member by a pull on the strap.

6. In a suspender, a clasp having the construction and characteristics substantially as set forth in claim 5 and in which one of the members has a salient fulcrum projecting toward the other member at a location between the point at which the strap crosses from one member to the other and the end of the clasp away from the jaw portions.

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