

J. F. KITCHEN.
GARMENT STAY.
APPLICATION FILED SEPT. 9, 1910.

1,063,454.

Patented June 3, 1913.

FIG. 1

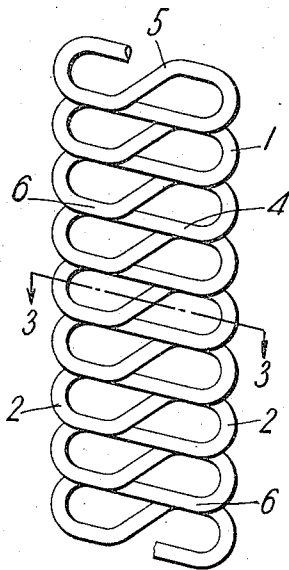


FIG. 2

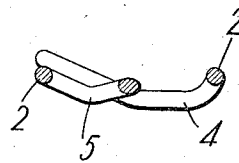
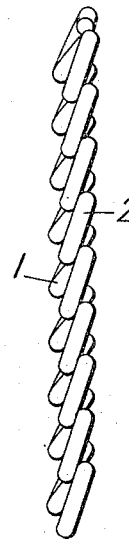


FIG. 3

WITNESSES

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GARMENT-STAY.

1,063,454.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed September 9, 1910. Serial No. 581,169.

To all whom it may concern:

Be it known that I, JOHN F. KITCHEN, a resident of Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Garment-Stays, of which the following is a specification.

This invention relates to garment stays and more particularly to wire stays for corsets and the like.

The invention relates to that form of stay formed from wire into a series of overlapping loops or convolutions which overlap one another in order to secure a mutual reinforcement and bracing when the stay is flexed flatwise in order to prevent short bending which would result in crystallization and breaking.

The object of the invention is to provide a stay of this character in which the electroplating or other rust-protecting coating will not be worn off at the points where the loops or convolutions contact due to the sliding or frictional action when the stay is flexed.

All wire garment stays are, or should be, provided with some protecting coating to prevent the wire from rusting. The usual practice is to either form the stay from a wire which is galvanized, electro-plated, tinned or nickel plated, or to coat the stay after it is formed with a suitable protecting material, such as electro-plating the same. The constant bending of the stay causes the wires at the contacting points to rub against each other and this frequently results in wearing off the protecting coating, permitting the wire stay to rust at such exposed points.

The present invention aims to overcome this difficulty by so forming the stay that the wires of the loops or convolutions where they are in contact have a large bearing surface which gives a correspondingly small unit of pressure on the plating when the loops or convolutions are forced or rubbed together, thereby reducing the liability of the protecting coating to wear off.

The invention comprises a stay constructed as hereinafter described, one form thereof being illustrated in the accompanying drawing, in which—

Figure 1 is an enlarged face view of a stay embodying the invention; Fig. 2 is an

edge view thereof; and Fig. 3 is a cross section on the line 3—3, Fig. 1.

The particular stay illustrated is formed from a single wire 1, which is bent back and forth to form a series of oppositely disposed eyes or loops 2, whose closed ends are rounded and form the edges of the stay. The eyes or loops 2 on opposite edges of the stay are progressively arranged longitudinally thereof; that is to say, each eye or loop along the line of the stay, is to a certain extent progressively in advance of the next preceding eye or loop on the other edge thereof. The transverse portions or crossings are shown as alternately substantially straight and bent, the straight crossings being indicated by the numeral 4 and the bent crossings by the numeral 5. The loops or eyes are so arranged that each side of each loop or eye overlaps the adjacent side of the neighboring loop or eye, at the point 6. As a consequence, the stay in edge view has a shingled appearance. This overlapping not only gives the various loops or eyes a support one upon another when the stay is flexed flatwise and thereby prevents short bending, but also permits the loops or eyes to slide or move past each other when the stay is flexed and particularly when flexed edgewise, thereby giving a flexible stay against edgewise bending stresses, and preventing the stay from twisting or buckling when bent edgewise, as is the case with an ordinary flat corset spring. The loops or eyes are so formed that at the overlapping portions 6 the two overlapping wires lie parallel, or substantially so, for a short distance, as shown. As a consequence, this gives a large bearing surface of one wire against the other, and a correspondingly small unit pressure on the plating when the loops are forced together. The loops may either be in direct pressure contact, or merely in close juxtaposition, so that they will contact when the stay is flexed flatwise.

While the invention has been illustrated in connection with a stay formed from a single wire which is bent alternately back and forth, it is perfectly obvious that the principle applies to a wire stay structure of any kind, irrespective of the number of wires, or the particular manner in which the wire is bent or coiled, so long as the same is

provided with a series of eyes, loops or convolutions which overlap each other, and in which the overlapping or crossing portions are in contact or liable to come into contact when the stay is flexed.

5 The stay body is galvanized, electroplated, tinned, or provided with any other suitable coating or covering which will protect the wire from rusting, and it is not material whether this be applied to the wire
10 before the latter is formed to shape, or after the wire is so formed.

In order to give greater stiffness to the stay than is afforded by the wire itself and the mutual reinforcing and bracing effect
15 secured by the overlapping of the loops or convolutions, the stay is also given a concavo-convex form in cross section, such as by deflecting the crossings 4 and 5 sidewise out of the plane of the stay, as shown in
20 Fig. 3. This not only renders the stay stiffer generally, but makes it stiffer against forces tending to bend the same toward the convex side than against forces tending to
25 bend it in the opposite direction. Inasmuch as the bending forces on corset and other garment stays is practically entirely outwardly, it is only necessary to place the stay with its concave side inwardly in order
30 to secure a maximum stiffness against the normal forces to which it is subjected in use.

What I claim is:

1. A garment stay comprising wire bent
35 back and forth to form a series of oppositely disposed progressively arranged loops or eyes and connecting crossings, the loops or eyes having straight sides extending substantially transverse to the length of the stay, and the straight sides of adjacent loops

or eyes overlapping each other and lying in
40 substantial parallelism, thereby distributing frictional wear between said loops or eyes over the length of said parallel portions.

2. A garment stay comprising wire bent
45 back and forth to form oppositely disposed loops or eyes and alternate straight and bent crossings, the bent crossings having straight end portions at opposite edges of the stay, said straight end portions and said straight
50 crossings forming the transverse sides of the loops or eyes and overlapping each other and lying in substantial parallelism and inclined to a line transversely of the stay, thereby distributing frictional wear between
55 adjacent overlapping loops or eyes over the length of said parallel portions.

3. A garment stay comprising wire bent
back and forth to form a series of oppositely disposed loops or eyes lying along the
60 side edges of the stay and connected by alternate straight and bent crossings, each bent crossing having a straight portion at one end overlapping the adjacent straight crossing of the next loop or eye on one edge
65 of the stay and a straight portion at its other end overlapping the straight crossing of the next loop or eye on the other edge of the stay, said straight portions and straight
70 crossings lying in substantial parallelism whereby, upon flexure of the stay, wear between successive overlapping portions is distributed over a considerable length of wire.

In testimony whereof, I have hereunto set my hand.

JOHN F. KITCHEN.

Witnesses:

M. M. BEEMAN,
J. H. PARDEE.