(No Model.)

C. G. MATHEWS.

SUSPENDERS.

No. 564,829. Patented July 28, 1896.

Fig. 1,

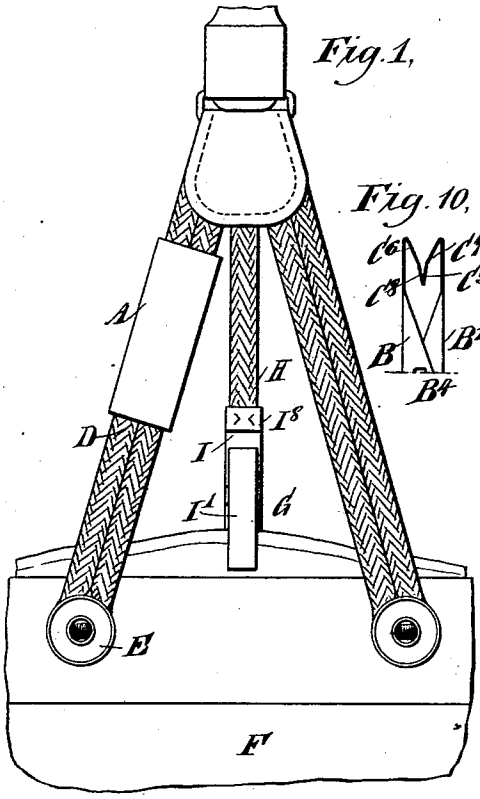


Fig. 10,

Fig. 2.

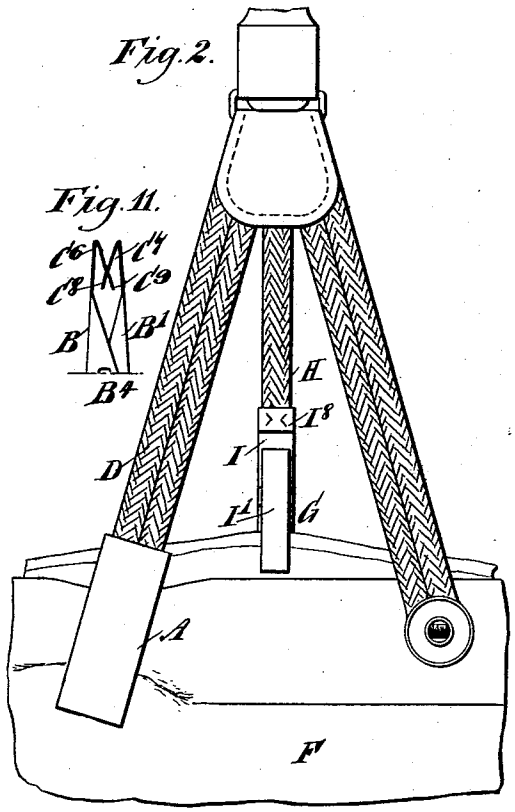


Fig. 11.

Fig. 3,

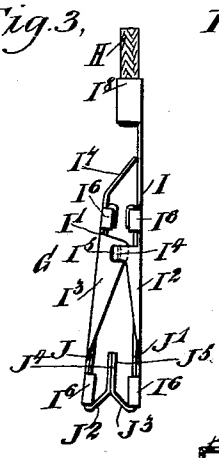


Fig. 4

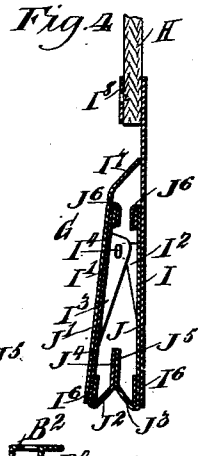


Fig. 5,

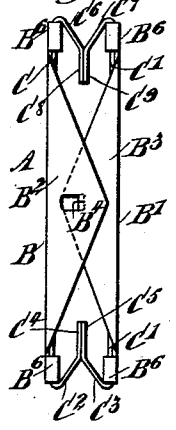


Fig. 6,

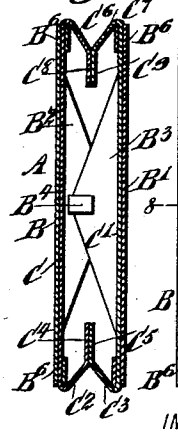


Fig. 7.

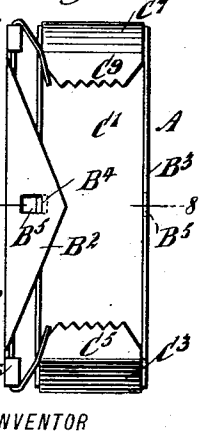


Fig. 8,

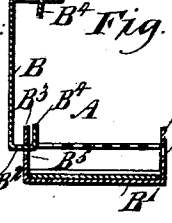
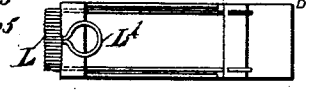


Fig. 9.



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CHARLES G. MATHEWS, OF ATHENS, OHIO.

SUSPENDERS.

SPECIFICATION forming part of Letters Patent No. 564,829, dated July 28, 1896.

Application filed December 23, 1895. Serial No. 573,007. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. MATHEWS, of Athens, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Suspenders, of which the following is a full, clear, and exact description.

The object of the invention is to provide certain new and useful improvements in suspenders arranged for conveniently engaging trousers and drawers to properly support the same and for attaching the suspender-ends to the trousers in case a button is torn off.

The invention consists principally of a clasp having two pivoted arms provided with spring-jaws on their inner faces, the jaws being adapted to firmly engage and press the material between the jaws.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied and with the clasp on the suspender-end in an inactive position. Fig. 2 is a like view of the same with the clasp engaging the trousers. Fig. 3 is an enlarged side elevation of the clasp for the drawers end. Fig. 4 is a sectional side elevation of the same. Fig. 5 is an enlarged side elevation of the clasp for the suspender-end. Fig. 6 is a sectional side elevation of the same. Fig. 7 is a front elevation of the same with one jaw-arm open. Fig. 8 is a sectional plan view of the same on the line 8 8 of Fig. 7. Fig. 9 is a front elevation of a jaw-arm of a modified form, and Figs. 10 and 11 are diagrammatic views of the improvement.

The clamp A (illustrated in Figs. 1, 2, 5, 6, 7, and 8) is provided with two arms B B′, made of brass or other non-elastic material and formed with sides B^2 B^3, of which the sides B^2 on the arm B are provided at or near their middle with inwardly-projecting lugs B^4, engaging corresponding recesses B^5 in the sides B^3 of the arm B′. By this arrangement a casing is formed and the arms are pivotally connected with each other at their sides, leaving a free passage inside of the casing for the suspender-end, as hereinafter more fully described.

On the inner faces of the arms B B′ are placed plates C C′, respectively, preferably made of spring metal and held in place on the said arms by loops B^6 on the upper and lower ends of the arms B B′. The lower ends of the spring-plates C C′ are formed with inwardly and upwardly extending arms C^2 C^3, terminating in the approximately parallel jaws C^4 C^5, normally contacting with each other, as is plainly indicated in Figs. 5 and 6. The upper ends of the spring-plates are likewise formed with arms C^6 C^7, respectively, extending inwardly and upwardly, to terminate in the approximately parallel jaws C^8 C^9, similar to the jaws C^4 C^5.

Instead of making the clasp with the side arms B B′ and the corresponding jaw-carrying plates C C′ in separate pieces, I may form each arm B or B′ and its jaw-plate C or C′ in one single piece. It is, however, understood that in either case oblique arms C^2 C^3 and C^6 C^7 form an obtuse angle with the corresponding jaws C^4 C^5 and C^8 C^9, respectively, so that the sharp or serrated ends of the jaws readily engage the material, and on pressing the outer ends of the jaw-plates C C′ the said jaws move outwardly with their serrated edges and out of contact with the material to permit of moving the clasp on the material either to a different position thereon or to entirely remove the clasp from the material.

It will be observed that by applying pressure at the end of the pivoted arms or at any point between their ends and pivotal point the ends may be forced toward each other, and this movement will cause a deflection of the engaging ends of the jaws to release them from the material, as indicated in Fig. 11, so that the clasp may be readily slid along the material.

It is understood that the jaws when pressed and in line contact with the material offer no appreciable resistance to moving the clasp on the fabric in the desired direction.

It is further understood that the spring-

power of the jaws has little to do with the holding power of the clasp, as the main feature of my invention is to get the ends of the jaws to hold the fabric until pressed outward out of engagement with the material, as above explained.

It is further understood that by the arrangement described two pairs of jaws are formed in the ends of the clasp-casing, a free space intervening the jaws, as plainly indicated in Fig. 6. The clasp A, constructed in the manner described, can be readily slipped upon a suspender-end D, so that the serrated ends of the jaws C^4 C^5 and C^8 C^9 engage opposite sides of the suspender-end D, whereby the clasp A is firmly held in an inactive position on the upper portion of the suspender-end D, as plainly indicated in Fig. 1.

Now, in case a button E on the trousers F, engaged by the suspender-end D, is torn off, then the operator slips the clasp A downward on the suspender-end D until the lower half of the clasp projects beyond the lower end of the suspender-end D and the upper pair of jaws C^8 C^9 still engage the suspender-end at its loop. In order to move the clasp on the suspender-end in a downward direction, it is necessary for the operator to press the upper ends of the side arms B B′ toward each other to cause the serrated or sharp edges of the jaws C^8 C^9 to disengage the material, as previously explained, and to permit the operator to push the clasp downward. The serrated edges of the lower jaws C^4 C^5 offer no resistance to this downward movement, as they move away from that part of the material which they had engaged. The lower jaws are then engaged with the trousers material to connect the trousers and suspender with each other. The downward pull of the trousers engages its material with the upwardly-extending sharp or serrated edges of the jaws C^4 C^5, so that a firm connection is made and the trousers are securely held in place by the suspender.

The clasp G (shown in Figs. 1, 2, 3, and 4) is attached to the drawers end H and is adapted to engage and support the drawers. Thus the clasp G is provided with arms I I′, having sides I^2 and I^3, respectively, of which the sides I^2 are formed with inwardly-projecting lugs or pivots I^4, engaging openings I^5 in the other side, I^3. On the inner faces of the arms I I′ are held the spring-plates J J′, respectively, secured in place by loops I^6 on the arms I I′.

The lower ends of the plates J J′ are formed with inwardly and upwardly extending arms J^2 J^3, terminating in the approximately parallel spring-jaws J^4 J^5, resting one upon the other in a normal position and adapted to engage the material of the drawers at opposite sides, as indicated in Figs. 1 and 2. The upper end of the arm I′ is formed with an inwardly-bent arm I^7, normally resting on the arm I, and the latter is provided at its extreme upper end with a loop I^8 for engaging the drawers end H to securely attach the clasp G to the said end. The upper ends of the spring-plates J J′ are simply bent over the upper loops I^6, as at J^6, to hold the said spring-plates in position on the arms. It will be seen that in this case the clasp G is made with only one pair of jaws adapted to engage the drawers, while the upper end of the arm I is permanently attached to the drawers end H.

As illustrated in Fig. 9, the clasp K is provided with spring-jaws L, made of coiled wire and terminating in a loop L′, forming the jaw proper, similar to the jaw C^4 or C^5.

If desired, the jaw-faces of the jaws J^4 J^5 C^4 C^5 may be made with teats or lugs projecting inwardly to insure the grasping of the fabric by the whole length and breadth of said jaw-faces.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A clasp comprising two connected plates movable toward and from each other, the said plates having coacting jaw portions at their free ends, each jaw consisting of a portion turned inward and then toward the connecting-point of the plates, substantially as shown and described.

2. A clasp, comprising plates adapted to be moved toward each other at their ends, and jaws at the ends of said plates consisting of portions turned at an angle inward and toward the connecting-point of the plates, and substantially parallel engaging portions extended from the angle portions toward the connecting-point of the plates, whereby the engaging ends of said substantially parallel portions may be deflected from each other upon moving the ends of the plates toward each other, substantially as shown and described.

3. A clasp, having two pivoted arms carrying a pair of jaws at each end, with a clear space between the arms from one pair of jaws to the other, substantially as shown and described.

4. The combination with a suspender-end, of a clasp fitted to slide on said end, and having two pairs of jaws engaging the suspender-end, substantially as shown and described.

5. A clasp, comprising two arms pivotally connected with each other at their sides to form a clasp-casing, and plates secured to said arms and formed into a pair of jaws between the said arms, substantially as shown and described.

6. A clasp, comprising two arms having sides pivotally connected with each other at or near their middle, plates held on the inner faces of said arms, and a pair of jaws formed

on the ends of said plates between the arms, substantially as shown and described.

7. A clasp comprising two arms having sides pivotally connected with each other at or near their middle, loops at the ends of the arms, plates secured in the said loops and each formed at each end with an oblique arm terminating in a jaw, to form a pair of jaws in each end of the clasp, substantially as shown and described.

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Witnesses:
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