No. 752,558. PATENTED FEB. 16, 1904.

M. HYNSON.

SUSPENDERS.

APPLICATION FILED JAN. 19, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

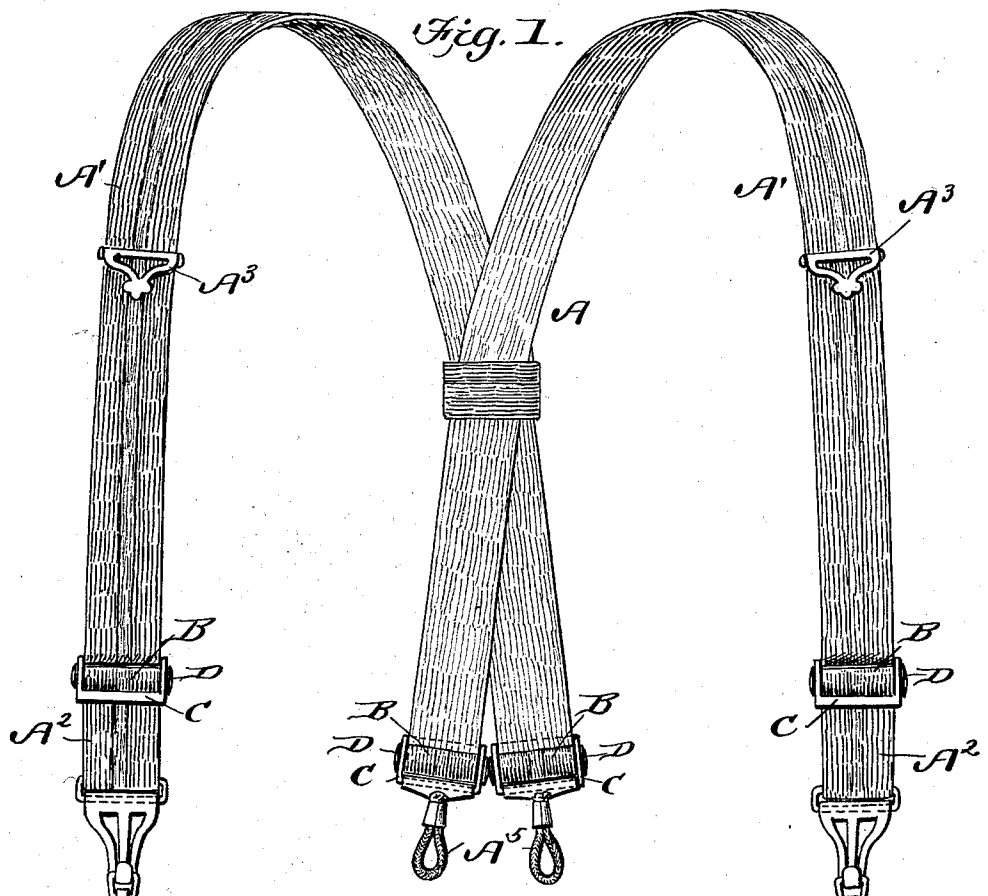


Fig. 2

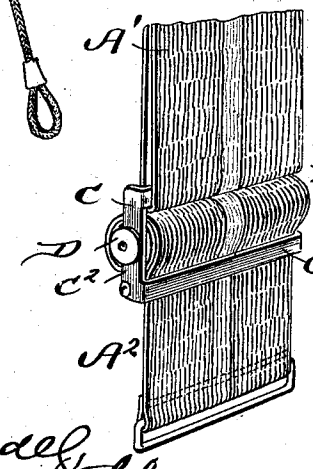
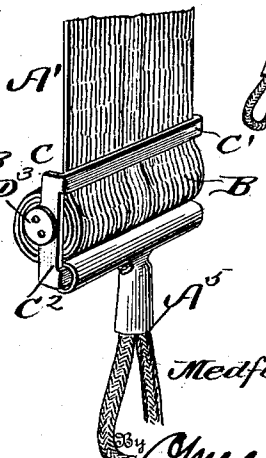


Fig. 3.



Witnesses

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

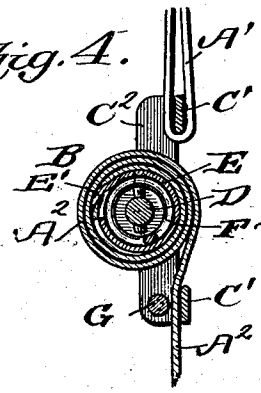


Fig. 5.

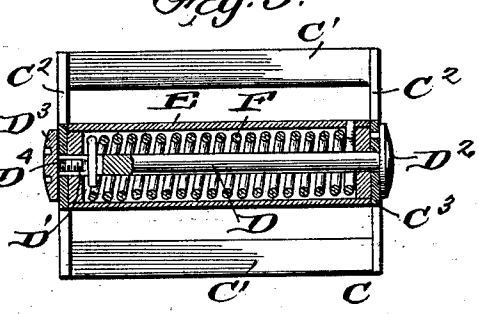


Fig. 6.

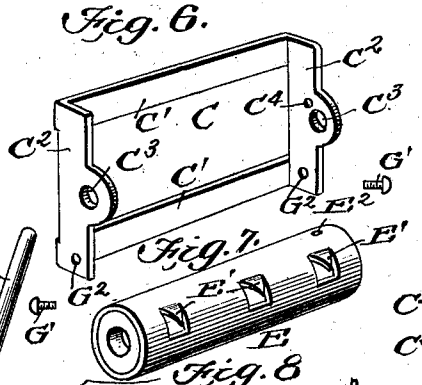


Fig. 7.

Fig. 8.



Fig. 12.

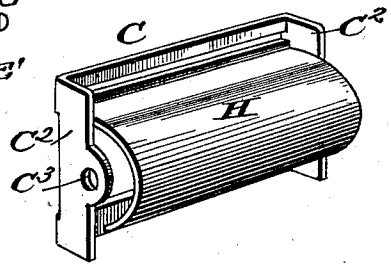


Fig. 13.

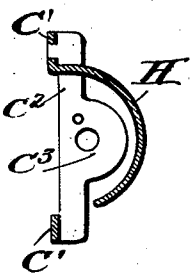


Fig. 9.



Fig. 14.

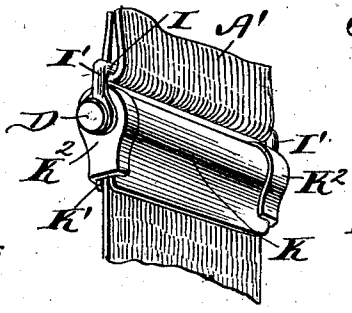


Fig. 16.

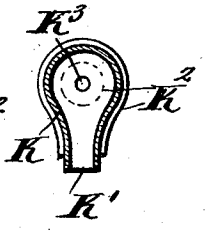


Fig. 10.

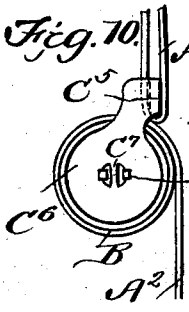


Fig. 11.

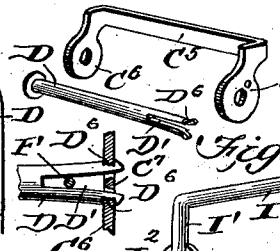
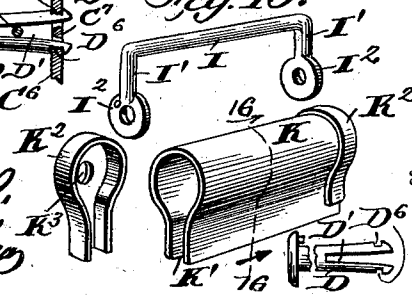


Fig. 15.



Witnesses

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No. 752,558. Patented February 16, 1904.

UNITED STATES PATENT OFFICE.

MEDFORD HYNSON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF ONE-HALF TO GEORGE F. NELSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

SUSPENDERS.

SPECIFICATION forming part of Letters Patent No. 752,558, dated February 16, 1904.

Application filed January 19, 1903. Serial No. 139,591. (No model.)

To all whom it may concern:

Be it known that I, MEDFORD HYNSON, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Improvement in Suspenders, of which the following is a specification.

This invention relates generally to suspenders, the object being to provide an attachment which can be applied to any construction of suspender and by means of which elastic webbing can be dispensed with, thereby providing an exceedingly easy suspender, which, owing to its durability or lasting qualities, will be cheaper than the ordinary construction of suspender employing the elastic webbing.

With these objects in view the invention consists, essentially, in the employment of spring-rollers and skeleton frames in which they are arranged, one portion of the suspender being connected to the spring-actuated roller and the other portion to the skeleton frame, the normal tendency of the spring-actuated roller being to keep the straps of the suspender taut, but at the same time said rollers will yield easily to any strain, thereby permitting the supporting-straps to be extended the required extent and automatically taking up the slack the moment the tension is relieved, thereby providing an exceedingly easy suspender, one which will cause little or no annoyance to the wearer, and one which will rest immovably upon the shoulders, inasmuch as all of the movements occur at the points where the two sections of the standard are connected to the spring-actuated rollers and their skeleton frames.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a view showing a pair of suspenders provided with my improvement. Fig. 2 is a detail perspective view showing the lower forward end of one of the straps. Fig. 3 is a detail perspective view showing the rear end of the strap. Fig. 4 is a transverse vertical section taken through the spring-actuated roller and skeleton frame and showing the sections of suspender-strap connected to said roller and frame. Fig. 5 is a longitudinal sectional view taken through the spring-actuated roller and frame. Fig. 6 is a detail perspective view of the skeleton frame, a roller and one of the means of securing it in position in the frame being shown at one side. Fig. 7 is a detail perspective view of the roller. Fig. 8 shows side and end views of the spring. Fig. 9 is a perspective view showing the pin upon which the spring turns and also the means for securing the pin in the frame. Fig. 10 is an end view of a slightly-modified form of construction. Fig. 11 is a detail perspective view of the skeleton frame employed in such construction. Fig. 12 is a detail perspective view of a skeleton frame provided with a guard or shield. Fig. 13 is a sectional view of said frame and guard. Fig. 14 is a detail perspective view showing another modification. Fig. 15 is a detail perspective view showing the various parts of said modified form detached. Fig. 16 is a section on the line 16 16 looking in the direction of the arrow.

In constructing a pair of suspenders in accordance with my invention I employ straps A, of inelastic webbing, there being two straps crossing in the rear, as usual, and in practice I prefer to make each strap in two sections A' and A^2, the section A' being provided with the usual or any approved construction of adjusting-buckle A^3, and the front buttonhole-straps A^4 are connected to the lower ends of the sections A^2 in any suitable manner. Between the sections A' and A^2 is arranged my improved attachment, comprising a spring-actuated roller B, to which the section A^2 is attached, and the skeleton frame C, carrying the said spring-actuated roller and to which the section A' is attached. At their rear ends the straps are connected to the rollers B, and the rear buttonhole straps or loops A^5 are connected to the frames C, thus reversing the order of things.

Various forms of constructions of spring-rollers and frames may be employed for carrying out my invention, and in the accom-

panying drawings I have shown various forms which I have found to be thoroughly practical and convenient; but it will of course be understood that other forms may be employed and that certain changes or modifications can be made to the various parts without departing from the broad principle of my invention, which involves the employment of a spring-actuated roller between the two sections of the suspender-straps.

The frame C is substantially rectangular and preferably constructed from a single piece of thin metal and comprises the horizontal bars or side pieces C′ and the vertical end bars or pieces C^2, which are formed with the apertured ears C^3, through which the pin D passes, said pin being employed as a journal for the tubular sleeve or roller E. The roller is preferably constructed of thin sheet metal and has the integral pointed barbs E′ punched therefrom for the purpose of engaging the webbing which is to be connected to the said rollers. A coil-spring F surrounds the pin D within the tubular sleeve or roller, one end of the spring engaging the perforation E^2 produced in the said sleeve or roller adjacent to one end, while the opposite end of the spring fits into the longitudinal slot D′ produced in the end of the pin D, and this pin is held against rotation by means of a short stud D^2, formed upon the head of the pin and which engages the perforation C^4, produced in one of the vertical end bars C^2 adjacent to the apertured ears C^3. By constructing the parts in this manner the spring is of small diameter and extends substantially from end to end of the roller, with its axis parallel with the side pieces of the frame and with the plane of the suspender-webbing. This permits of the ends of the webbing being connected directly with the frame and with the roller, respectively, without the intervention of cords or other accessories, whereby a straight and even pull or strain is secured in all positions.

A detachable cap D^3, having a threaded shank D^4, engages the slotted and threaded end D′ of the pin D, and thereby securely fastens the pin within the frame, and consequently the spring-roller. The section A′ of the suspender-strap is connected to one of the horizontal bars C′, and the section A^2 is connected to the spring-actuated roller through the medium of the pointed barbs, as before described, and whenever any strain is placed upon the suspender-strap as a whole the spring-roller will yield, permitting that portion of the section A^2 which is wound thereon to unwind, and as soon as strain is relieved the action of the spring will cause the slack to be taken up by rewinding the same upon the roller, and during such movements the section A^2 bears against the other horizontal bar C′, and, if desired, a guide-roller G, as shown in Figs. 4 and 6, may be arranged parallel to said bar C′ and adjacent thereto, said guide-roller being held between the vertical end bars by means of screws G′, which pass through suitable openings G^2 therein.

In Figs. 10 and 11 I have shown a modified form of skeleton frame, which comprises a single horizontal bar C^5 and the apertured ears C^6, arranged at right angles to the said bar.

In Fig. 12 I have shown the skeleton frame provided with a rearwardly-extending curved guard H, which prevents the roller with the strap wound thereon coming in contact with the wearer.

In Figs. 14, 15, and 16 I have illustrated a very compact construction which comprises the bail I, having depending ends I′, carrying the apertured ears I^2, and the spring-actuated roller is carried by this bail in exactly the same manner as before described, said roller being arranged in an essentially U-shaped guard K, which is open at the bottom, as shown at K′, and is closed at each end by the detachable cap-pieces K^2, which fit upon the guard and are held there by means of the apertured ears I^2 and the pin D, passing through the said cap-pieces, said cap-pieces being formed with apertures K^3, through which the pin passes.

It will thus be seen that I provide an exceedingly cheap and simple attachment which can be used in connection with any construction of suspender employing straps or webbing, and inasmuch as elastic webbing can be dispensed with the usefulness or the durability of a pair of suspenders is prolonged to an indefinite period, being dependent only upon the operativeness of the spring-roller.

In the construction shown in Figs. 10, 11, and 15 the pin is secured by springing the ends of the split portion apart and providing said ends with notches D^6, which are adapted to engage the apertures of the ears, and in Fig. 10 a cross-bar C^7 may extend across the aperture for the purpose of spreading the end of the pin. This construction provides a simple means for fastening the pin within the frame.

It will also be understood that my invention is adaptable to all kinds of garment-supporters or garters employing straps or bands, and, furthermore, the invention can be used in connection with harness or other devices wherein elastic straps or bands have heretofore been employed.

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

1. In a garment-supporter, a substantially rectangular frame comprising end and side pieces, and a roller journaled intermediate the side pieces thereof, and substantially parallel therewith, either of said side pieces forming a means of attachment for a suspender-section.

2. In a garment-supporter, a substantially rectangular frame comprising end and side pieces, and a roller journaled intermediate the

side pieces thereof, and substantially parallel therewith, either of said side pieces forming a means of attachment for a suspender-section, and the roller being provided with means for attaching another suspender-section.

3. In a garment-supporter, a substantially rectangular frame comprising end and side pieces, and a spring-actuated roller journaled intermediate the side pieces thereof, and substantially parallel therewith, the surface of said roller being provided with barbs for forming one means of attachment to a suspender-section, and either of said side pieces forming means for attaching another suspender-section.

4. In a garment-supporter, a substantially rectangular frame comprising end and side pieces, a pin through the end pieces intermediate the side pieces and substantially parallel therewith, a roller on the pin provided with means for attaching a suspender-section thereto, either of the side pieces of the frame forming a means of attachment for another suspender-section, and a spring between the pin and the roller and connected thereto, respectively.

5. In a garment-supporter, a substantially rectangular frame provided with perforated flat end pieces, a pin through said perforations, a roller mounted on the pin with its ends in engagement with said flat end pieces and its surface provided with means for attaching a suspender-section thereto, and a spring between the pin and the roller and having its ends secured thereto respectively, and either of the side pieces of the frame forming a means of attachment for another suspender-section.

6. In a garment-supporter, a substantially rectangular frame comprising end and side pieces, the side pieces of which frame are flat and lie substantially in the same plane and either one forms a means of attachment to a suspender-section, and a roller journaled intermediate said side pieces and substantially parallel therewith, the surface of the roller being provided with means for attaching it to another suspender-section.

7. In a garment-supporter, a frame and a spring-actuated roller arranged therein, one section of a suspender-band connected to said frame, the other section of the suspender-strap being connected to the spring-actuated roller and partially wound thereon, the axis of said roller being substantially parallel with the planes of said suspender-sections, as specified.

8. In a garment-supporter, a frame provided with side and end pieces, said side pieces lying substantially in the same plane, and a spring-actuated roller journaled in the end pieces with its axis substantially parallel with the side pieces and to one side of the plane thereof.

9. In a garment-supporter, a frame provided with side and end pieces, a spring-actuated roller journaled in the end pieces with its axis substantially parallel with the side pieces, and a guide below the roller and adjacent to the lower side piece.

10. In a garment-supporter, a frame provided with flat side and end pieces, the end pieces being perforated and standing at right angles to the side pieces, a pin through the perforations of the end pieces to the rear of and substantially parallel with the side pieces, and a spring-actuated roller mounted on the pin and provided with means for attaching a suspender portion thereto.

11. In a garment-supporter, a frame provided with perforated end pieces, a pin through said perforations, one end of which is provided with means for securing it in position and with means for securing a spring, a roller mounted on said pin and provided with means for attaching a suspender-section thereto, and a spring within the roller, one end of which is attached thereto and the other end is attached to said pin.

12. In a garment-supporter, a frame provided with perforated end pieces, a pin through said perforations, one end of which is slotted longitudinally and provided with means for securing it in position, a roller mounted on said pin and provided with means for attaching a suspender-section thereto, and a spring in the roller, one end of which is attached thereto, and the other end projects through said slot.

13. In a garment-supporter, a frame provided with perforated end pieces, a pin through said perforations, one end of which is slotted longitudinally and notched for engaging with said end pieces, a roller mounted on said pin and provided with means for attaching a suspender-section thereto, and a spring in the roller, one end of which is attached thereto and the other end projects through said slot.

14. In a garment-supporter, a frame provided with side pieces and rearwardly-projecting end pieces, a spring-actuated roller mounted between the end pieces and to the rear of the side pieces, and a curved guard extending from the upper side piece over and to the rear of said roller.

MEDFORD HYNSON.

Witnesses:
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LOLAH UNSWORTH.