No. 692,595. Patented Feb. 4, 1902.

B. J. BALLIETT.

SUSPENDER LINK.

(Application filed Nov. 26, 1900.)

(No Model.)

Fig. 1.

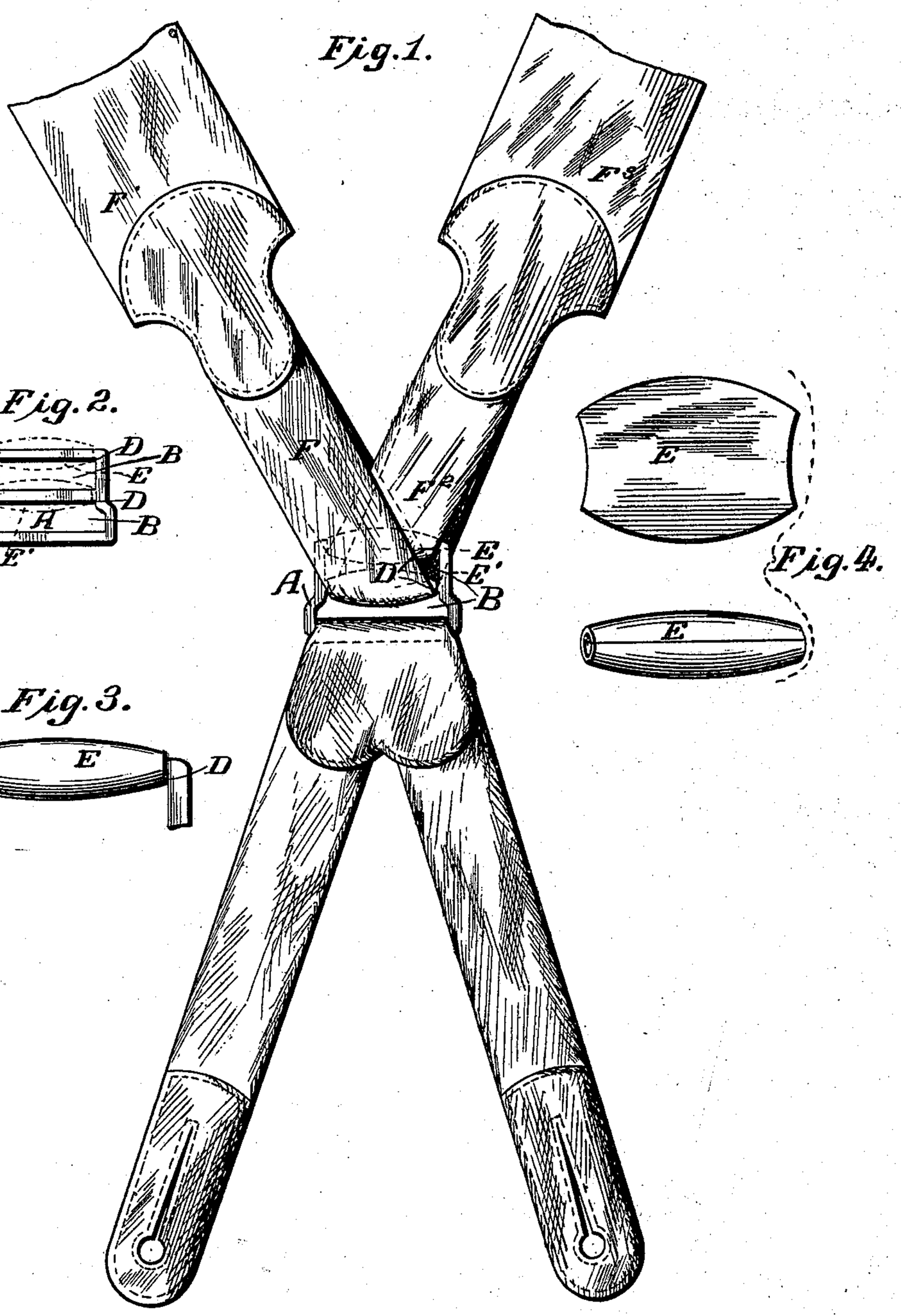

Fig. 2.

Fig. 3.

Fig. 4.

Inventor

Byron J. Balliett.

Witnesses

L. E. Handy.

Vernon E. Hardy

By John H. Cook Sig Attorney

UNITED STATES PATENT OFFICE.

BYRON J. BALLIETT, OF MANSFIELD, OHIO.

SUSPENDER-LINK.

SPECIFICATION forming part of Letters Patent No. 692,595, dated February 4, 1902.

Application filed November 26, 1900. Serial No. 37,851. (No model.)

To all whom it may concern:

Be it known that I, BYRON J. BALLIETT, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, (whose post-office address is Mansfield, Ohio,) have invented a new and useful Improvement in Suspender-Links, of which the following is a specification.

My invention relates to an improvement in suspenders, and more particularly to a device pertaining to that class of suspenders which bear on rollers or pulleys; and it consists of a link connecting the front and back straps of the suspenders, on the cross-bars of which link are journaled rollers of such shape that the suspender-straps are kept and retained in a central position thereon.

The objects attained by my invention are a reduction in the friction caused by the movement of the straps back and forth with the movements of the body and an equalization of the strain brought to bear on the straps irrespective of the movements or position of the body of the person wearing suspenders provided with my improvement and also to provide a means by which the straps are kept centered on the rollers of the link, permitting the straps to slide freely over the crown-rollers without coming in contact with the link, thus avoiding undue friction and wear of the suspenders.

It is well known by those skilled in the art of manufacturing suspenders that the link connections heretofore have been defective in these particulars, for when the position of the body is changed the straps have a tendency to slide in opposite directions, the effect of which is to bring the edges of the straps in contact with the links, causing the straps to bend and wedge, retarding their free movement and causing them to wear prematurely. Having in view these defects in the construction of the ordinary link connections, I have devised an improvement which prevents the above defects and provides a novel, inexpensive, and practical device.

In the accompanying drawings, Figure 1 is a plan view of a pair of suspenders provided with my improved link connection. Fig. 2 is a plan view of the link, the crown-rollers being shown in dotted lines. Fig. 3 is a detail view of one of the rollers applied to the link, and Fig. 4 is a detail showing the shape of the blank from which the crown-roller is rolled and the finished article.

The link A is pressed out of wire or sheet metal of any suitable gage, forming the loops B B and provided with cross-bars C C′ C^2, connected at their ends by the end bars D D. The edges of the cross-bars may be left square or pressed round, as desired. Upon these cross-bars C C′ C^2 are journaled crown-rollers E E′, which revolve thereon as the suspender-straps, which bear upon the rollers, move to conform to the movements of the body, and the crown-rollers revolve freely on the cross-bars and between the end bars D D of the link. These crown-rollers are rolled from elliptical blanks of metal, the ends of which are cut inwardly. The rollers if straightened out would present the appearance of a flattened blank, as shown in the upper view of Fig. 4. These blanks so shaped are rolled into rollers by any suitable means, and the finished article resembles the lower view of Fig. 4. The rollers are hollow and bear upon the cross-bars, upon which they are journaled only at their ends, whereby a great deal of friction between the rollers and the cross-bars is obviated. These rollers are separate from this link, being formed of an independent piece of metal, and may be removed therefrom by forcing apart the meeting edges. These rollers act as automatic centering anti-friction devices for the straps of the suspenders.

The back strap of the suspender is attached to cross-bar C^2 by looping the strap to form an eyelet.

The link-strap F is attached at its upper ends to the right and left shoulder-straps F^3 and F′, forming a straight loop passing under roller E′. The other link-strap F^2 is attached to the under side of shoulder-strap F′ at one end and passing under roller E is secured to the upper side of shoulder-strap F^3.

When motion is transmitted to either link-strap by movements of the body, the straps run on the center of the rollers, owing to their peculiar confirmation, and are thereby prevented from engaging with the sides of the link itself, which would not only retard its movements, but quickly wear it out.

My improvement may be applied to the

front straps of a suspender without deviating from the principle involved, and many other slight changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. A suspender provided with a link, crown-rollers journaled on the link and straps passing over the crown-rollers whereby the straps are kept constantly centered during their movements and prevented from contact with the sides of the link.

2. A suspender provided with a link, crown-rollers formed from elliptically-shaped blanks of sheet metal journaled on the link, and suspender-straps passing over the rollers and constantly retained in a central position thereby which permits a freely-sliding movement of the straps to accommodate the movements of the wearer at the same time preventing the straps from contact with the link.

3. A suspending device provided with a link composed of a plurality of cross-bars, and end bars connecting the cross-bars, hollow crown-rollers journaled on the cross-bars, the rollers bearing on the cross-bars only at their extreme ends, and straps passing under the rollers which straps are centered by the crown-rollers, the latter reducing the amount of friction and wear on the straps by preventing their contact with the link proper.

4. The combination with a frame comprising a plurality of cross-bars, and end bars connecting them, of hollow crown-rollers mounted on one or more of said cross-bars, said crown-rollers formed each of a blank of sheet metal, the side edges of which are approximately elliptical in form and the opposite ends incurved, the roller so formed that the elliptical side edges lie against each other in a straight line whereby the body of the roller is given a suitable convexity and the ends only of the rollers bear upon the bars on which the rollers are mounted to turn, the convex surface of the roller having the effect of throwing the objects drawn over them toward the center.

Signed by me at Mansfield, Ohio, this 15th day of November, 1900.

BYRON J. BALLIETT.

Witnesses:
ALLIE AUNGST,
H. WALTER MATEER.