

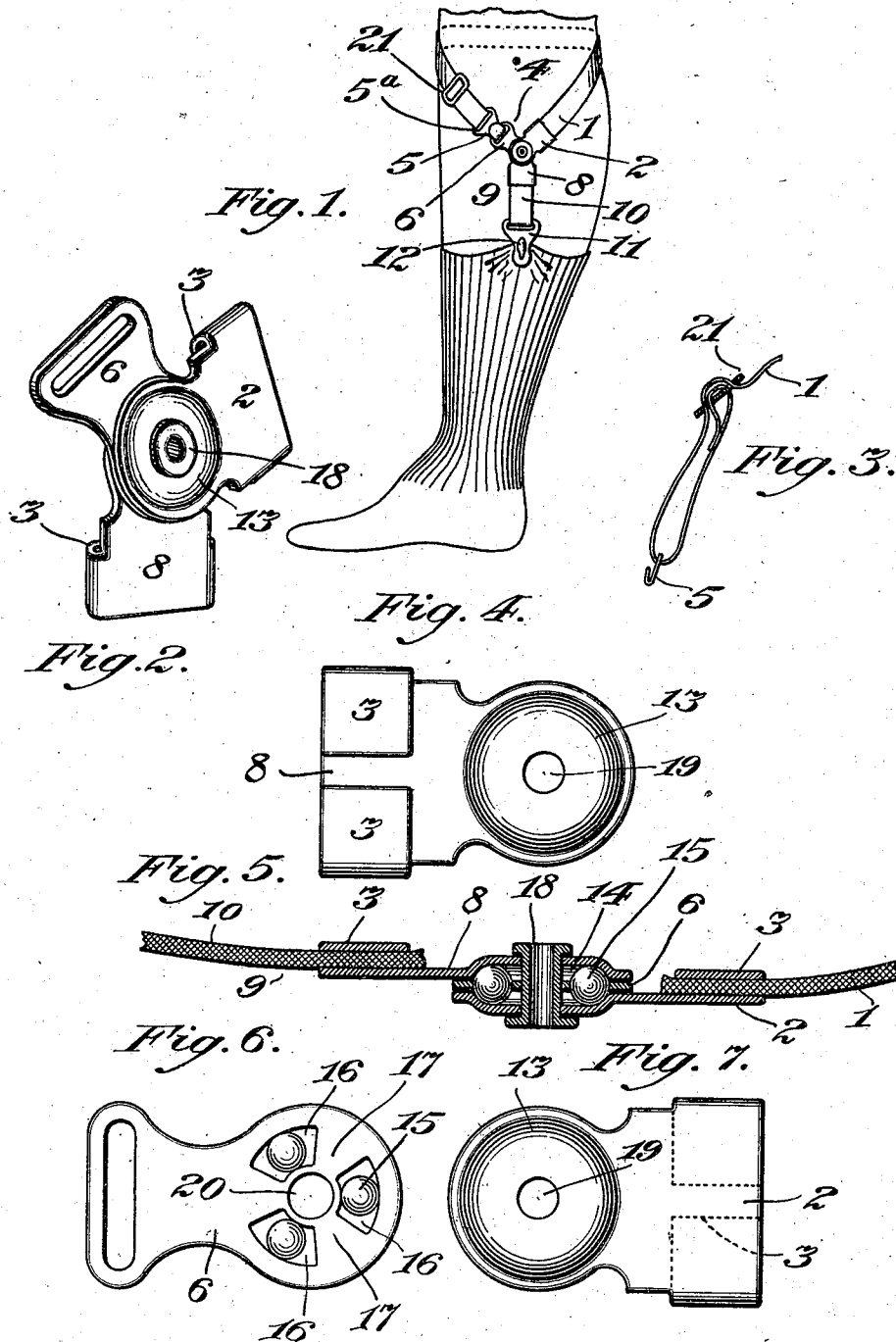
No. 725,563.

PATENTED APR. 14, 1903.

H. C. HINE.
HOSE SUPPORTER.

APPLICATION FILED JAN. 23, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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HOSE-SUPPORTER.

SPECIFICATION forming part of Letters Patent No. 725,563, dated April 14, 1903.

Application filed January 23, 1903. Serial No. 140,231. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HINE, a citizen of the United States, residing in New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Hose-Supporters, of which the following is a specification.

This invention relates to hose-supporters of the class wherein a band encircles the calf of the wearer and sustains a hose-gripper; and its object is to improve the construction of the hose-supporter, particularly with a view to increasing the ease of action and durability thereof.

In the drawings forming part of this specification, Figure 1 is a view showing my improved hose-supporter in use. Fig. 2 is an enlarged perspective of the link portion of the trimmings. Fig. 3 illustrates the band take-up. Fig. 4 shows one of the band end pieces. Fig. 5 is a section illustrating the sheet-metal parts employed at the junction of the band with the hose-gripper. Fig. 6 is a separate view of a sheet-metal piece used upon one end of the band. Fig. 7 is an obverse view of the Fig. 4 device.

An elastic band 1 is secured to a thin sheet-metal end piece 2, which may be provided with folds, flaps, or chape portions 3 for clasp-
ing the end of the band, although other suitable connecting means may be employed. The other end of the band is provided with an end piece 4, which is preferably made in two sheet-metal parts, whereof one part, 5, is attached by a chape portion 5^a to the band and is in the form of a hook, and the other part, 6, is in the form of an eyepiece engaged by said hook, said hook and eyepiece taken together forming a cast-off. The end piece 2 is pivotally connected to the eyepiece 6, and connected to said pieces 2 and 6 is a third end piece 8, similar to the end piece 2 and comprising part of a hose-gripper, which is designated in a general way as 9. In this instance the hose-gripper comprises a short elastic strap 10, connected at its upper end to the end piece 8 and at its lower end to a seizing device 11, which may be of any desired type and is illustrated in this instance

as consisting of a V-shaped seizer of a well-known type, which pinches the hose, as illustrated at 12.

The three end pieces or links 2, 4, and 8 are pivotally connected by a ball-bearing joint. The end pieces 2 and 8, which are similar, have each a struck-up annular groove, channel, or depression 13, and these depressions together form a race 14, in which is inserted a set of bearing-balls 15. The eye member 6 of the end piece 4 is inserted between the plates 2 and 8 and by means of an annular series of curved slots 16 also engages the balls 15. Thus both freedom of action and immunity from destructive wear at the joint are secured. The slots 16 taken together may be viewed as a single complete circular opening, having a series of ball-separators 17, by the use of which a few balls are enabled to do the duty of many. The separators 17 are integral with the plate 6.

The groove-plates and the inserted plate forming the three parts of the joint are held in coöperative relation to one another and to the balls by means of a double-headed transverse fastener 18, preferably tubular, passing through central holes 19 and 20 in the plates.

The eyepiece 6 is inserted between the end pieces 2 and 8, so that when the hook 5 is inserted in said eyepiece it may lie flat or even with the end pieces 2 and 8, so as to avoid undue projection of this part of the trimming and permit the same to lie flat against the limb of the wearer. The end piece 8, forming part of the hose-gripper, is placed beneath the pieces 2 and 6, so that it may lie contiguous to the limb, leaving the end pieces 2 and 6 slightly separated from the limb, thereby conducting to freedom of pivotal action of these parts. By connecting the ends of the band to the hose-gripper by the means illustrated chafing of the band edges upon the metal parts is obviated, and thus by means of an inexpensive construction the ease of action and the life of the hose-supporter are greatly increased.

The end of the band having the cast-off may be provided with a take-up 21.

It will be seen that the metallic end pieces

2 and 6, together with the metallic end piece 8 of the hose-gripper, turn upon a single set of bearing-balls, means 18 being provided for holding said metallic members and said balls in coöperative relation. It will be understood that the flexible parts, as straps 1 and 10, taken together form a harness, which is provided with means, as 11, for attachment to a garment, and it will be perceived that other kinds of straps or cords forming other kinds of harness and having other means for attaching to a garment-supporter may be used within the scope of my invention.

Variations may be resorted to within the scope of my improvements.

Having thus described my invention, I claim—

1. A hose-supporter comprising a band, sheet-metal end pieces attached to said band and connected together by a ball-bearing joint, and a hose-gripper carried by said end pieces.

2. A hose-supporter comprising a band, sheet-metal end pieces attached to said band, said end pieces including a cast-off, and a hose-gripper connected by a ball-bearing joint to one of said end pieces.

3. A hose-supporter comprising a band, end pieces attached to said band, one of said end pieces being formed in two parts one of which may be cast off from the other, and a hose-gripper connected to said end pieces by a ball-bearing joint.

4. A hose-supporter comprising a band, end pieces attached to said band, and a hose-gripper; said end pieces and hose-gripper inclosing a set of balls and being connected by a fastener, and including means for enabling one end of the band to be cast off.

5. A hose-supporter comprising a band, end pieces attached to said band, a hose-gripper, a single set of bearing-balls whereon all of said members may turn, and means for holding said members and said balls in coöperative relation.

6. A hose-supporter comprising a band, metallic end pieces attached to said band, and a hose-gripper having a metallic part which is connected to said end pieces, a single set of bearing-balls being interposed between said end pieces and said metallic part of said hose-gripper, whereon all of said metallic members may turn; one of said end pieces comprising a hook and an eye, and said hook being attached to the band.

7. A hose-supporter comprising a band, end pieces therefor, and a hose-gripper, said end pieces and gripper being connected, and a set of bearing-balls being interposed between said end pieces and said gripper, whereon all of said connected members may turn, and one of said end pieces consisting of a hook and eye, whereof the hook is attached to the band and the eye is inserted between the other end piece and the hose-gripper and engages the balls.

8. A hose-supporter comprising a band, end

pieces attached to said band and fastened together, a hose-gripper, the latter comprising a device for seizing the hose and a part connecting said seizing device to said end pieces, and a set of bearing-balls inserted within said end pieces and said connecting part.

9. A hose-supporter comprising a band, end pieces attached to said band and loosely connected, said end pieces including a cast-off, and a hose-gripper; the latter including a member pivotally connected to said end pieces, a hose-seizer, and an intervening strap; and a set of bearing-balls being provided at the connection of said hose-gripper to said end pieces, whereon said hose-gripper may turn.

10. A hose-supporter comprising a band, end pieces therefor and a hose-gripper; the latter including a strap having at one end a hose-seizing device and at the other end an end piece; all of said end pieces being connected, a set of bearing-balls being provided at such connection, and one of the end pieces for the band consisting of a hook and eye, whereof the hook is attached at the band and the eye is inserted, together with said balls, between the other band end piece and the end piece of the hose-gripper.

11. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members, a set of bearing-balls confined by said members, means for connecting said members so that they may turn freely with relation to each other, and a third member inserted between said two members and working independently upon said balls, in combination with harness connected to said sheet-metal members and to said inserted member, said harness having means for attachment to a garment.

12. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members each provided with a struck-up ball-groove, a set of bearing-balls working in the grooves, a third sheet-metal member inserted between said two members and working independently upon said balls, and means for holding said three sheet-metal members in coöperative relation so that either may turn independently of the others, in combination with harness connected to said sheet-metal members and to said inserted member, said harness having means for attachment to a garment.

13. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members each provided with a struck-up ball-groove, a set of bearing-balls working in said grooves, a third sheet-metal member inserted between said two members and working independently upon said balls, and means for holding said three sheet-metal members in coöperative relation so that either may turn independently of the others; each of said three sheet-metal members being formed with a chape portion, and straps secured to said chape portions and forming a harness, said

harness having means for attachment to a garment.

14. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members each provided with a struck-up ball-groove, a set of bearing-balls working in the grooves, a third sheet-metal member inserted between said two members and working independently upon said balls, and means for holding said three sheet-metal members in co-operative relation so that either may turn independently of the others; each of said three sheet-metal members being formed with a chape portion, and one of said members being in the form of a hook and eye; and straps secured to said chape portions and forming a harness, said harness having means for attachment to a garment.

15. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members, a set of bearing-balls confined by said members, means for connecting said members so that they may turn freely with relation to each other, and a third member inserted between said two members and working independently upon said balls; said inserted member being formed with ball-separators; in combination with harness connected to said sheet-metal members and to said inserted member, said harness having means for attachment to a garment.

16. In a garment-supporter, three sheet-metal end pieces fastened together and independently rotatable upon a single set of bearing-balls which are confined by the end pieces, in combination with straps to which said end

pieces are attached, said straps forming a harness, and said harness having means for attachment to a garment.

17. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members, a set of bearing-balls confined by said members, means for connecting said members so that they may turn freely with relation to each other, and a third member inserted between said two members and working independently upon said balls, and formed with ball-separators, in combination with harness connected to said sheet-metal members and to said inserted member, said harness having means for attachment to a garment.

18. In a garment-supporter, a ball-bearing three-part joint comprising two sheet-metal members each provided with a struck-up ball-groove, a third sheet-metal member inserted between said two members and formed with curved slots, balls within said slots and grooves, and means for holding said three sheet-metal members in co-operative relation so that either may turn upon the balls independently of the others, in combination with harness connected to said sheet-metal members and to said inserted member, said harness having means for attachment to a garment.

Signed at Nos. 9 to 15 Murray street, New York, N. Y., this 19th day of January, 1903.

HENRY C. HINE.

Witnesses:

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JOHN O. SEIFERT.