July 20, 1943. B. ROBINSON 2,324,538

CONTRACTION BAND

Filed July 13, 1942

Fig. 1

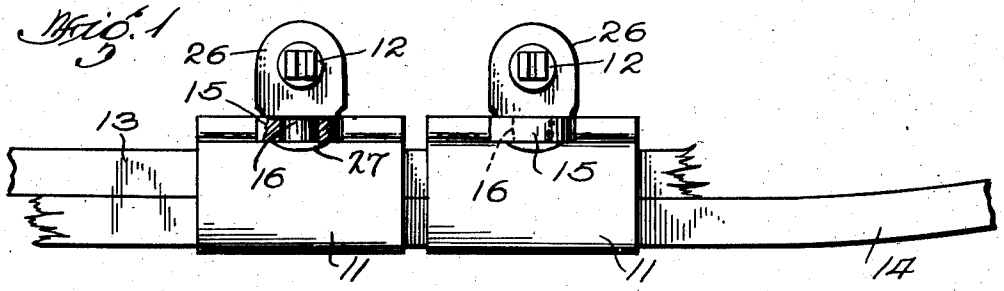


Fig. 2

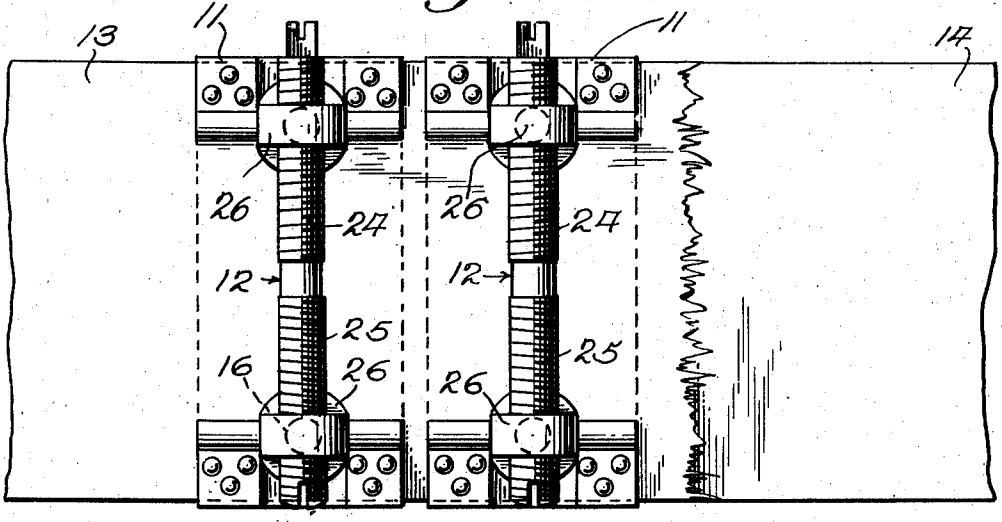
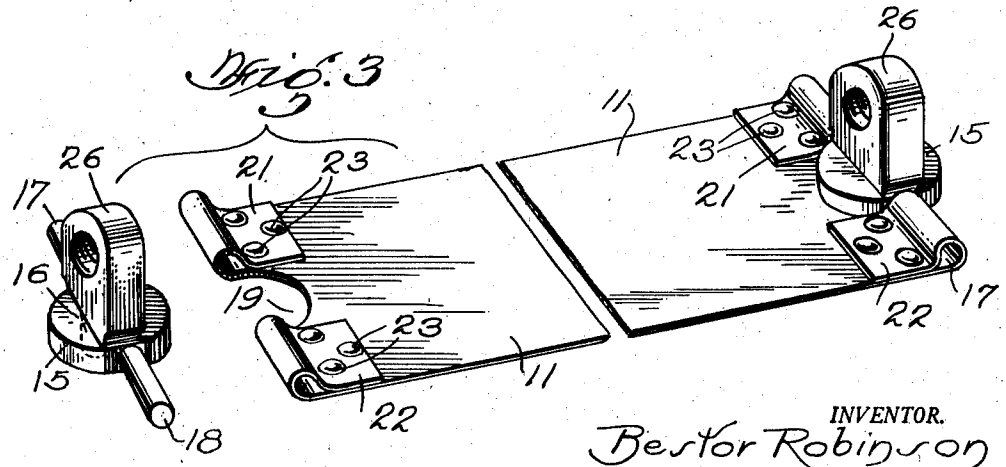


Fig. 3



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CONTRACTION BAND

Bestor Robinson, United States Army,
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Application July 13, 1942, Serial No. 450,782

1 Claim. (Cl. 24—19)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

The present invention relates to contraction bands, and more specifically to a novel and improved terminal fitting for the ends of a contraction band.

Before describing the novel details of the present invention, it may be pointed out that the general class of structures to which the present invention relates consists of a thin sheet metal contraction band provided with terminal fittings on each end, and a bolt or machine screw arranged to draw the opposite ends of the band toward each other so that emergency repairs may be made on broken skis by encircling the broken portions with the band and tightening the tension screw sufficiently to hold the parts in position, and to effect a temporary repair. Such devices are well known in the art, and are commonly used by ski troops to effect emergency repairs of broken skis; but it has been discovered that the types of devices heretofore used in the art have been faulty in that the connection between the thin sheet metal of the band and the terminal fittings for clamping screw has been unsatisfactory, with the result that the terminal fittings have often been torn completely apart from the thin sheet metal of the band itself, thus rendering the contraction band entirely useless.

It is, accordingly, the prime object of the present invention to provide a novel and improved contraction band including a terminal fitting of novel design and of greater strength than those heretofore known in the art.

A further object of the invention resides in the provision of a flat circular terminal body, including a pair of trunnions extending on each side, and a central opening at right angles to the axis of the trunnions, the terminal body being arranged to interconnect the threaded nut of the clamping screw with the thin metallic strip of the contraction band.

Referring now more particularly to the drawing attached to, and forming a part of the present specification:

Fig. 1 is a side elevational view of a pair of contraction bands in position on a broken ski.

Fig. 2 is a plan view thereof.

Fig. 3 is a perspective view of one of the contraction bands constructed in accordance with the teachings of disclosure, the several parts of the band being shown in disassembled positions.

As heretofore stated contraction bands of the general class to which the present invention relates, comprise a relatively long, narrow, and very thin metal band 11, provided with a tightening screw 12, so that the band may be tightly clamped around some object to be repaired, as, for example, around the two halves of a broken ski, the rearward half being indicated in the drawing by the numeral 13, and the forward half by the numeral 14.

It will be understood, of course, that in repair equipment of this type, the most satisfactory results can be obtained only through the use of a band of extremely thin metal so that the lower surface of the repaired ski will be substantially smooth. The thickness may vary somewhat, but it is customary to provide a band having a thickness of about .0125 of an inch; and when metal of this thickness is used, considerable difficulty has been encountered by virtue of the fact that types of terminal fittings known to the prior art have pulled loose when the screws 12 are tightened, or when the repaired ski is subjected to strains incident to its use.

The shortcomings of the prior art terminal fittings have been overcome by the provision of the novel and improved terminal forming the essence of the invention in the present application. This terminal consists of a main terminal fitting having a flat circular disk-shaped body 15 with a central drilled opening 16, and a pair of outwardly extending cylindrical trunnions 17 and 18 having their axis at right angles to the axis of the opening 16. The metal strip 11 of the contraction band has each end bifurcated to provide a central slot 19, and a pair of ears 21 and 22, spaced apart from each other a distance approximately equivalent to the diameter of the terminal body 15. These ears 21 and 22 are looped over the trunnions 17 and 18, respectively, and secured to the main body of the strip 11 by means of the rivets 23, or other suitable means, and it will be appreciated that this connection between the ends of the band 11 and the terminal fitting 15 is capable of withstanding relatively great strain, and will not be easily damaged by twisting or misalignment of the contraction band. The clamping screw 12 includes oppositely pitched screw-threaded portions 24 and 25, each threaded into one of the nuts 26, and the nuts 26 are in turn pivotally secured to the main terminal fittings 15 at each end of the band 11. To this end each of the nuts 26 is provided with a rivet 27 rotatably held in the central opening 16 of the terminal fitting 15.

From the foregoing it will be apparent that the

connection between the thin sheet metal of the band 11 and the terminal fitting is established by means of the two reverse looped ears 21 and 22 that serve to provide a transverse bearing for the trunnion members 17 and 18, and thus distribute the load or strain on the band 11 across its entire width. Further, the connection between the fitting 15 and the nut 26 is pivoted so that the strain is equalized on both sides of the band, with the result that the band can support its maximum load.

It may be noted in passing that the present structure has been devised to meet acute military needs, and has been adopted by the United States Army as the most satisfactory fitting of this nature available; but it is believed that its utility is not limited to military uses, but extends to commercial fields of endeavor as well; and it is, accordingly, requested that the scope of the invention be regarded as limited only by the terms of the appended claim.

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

In a contraction band in combination, a relatively long, narrow, and extremely thin flexible metal band having a pair of terminal fittings adapted to be drawn into engagement with each other by a clamping screw, the entire structure being characterized by the construction of the terminal fitting including a threaded nut adapted to receive the clamping screw, said nut including a pivot at a right angle to the axis of the clamping screw and normal to the plane of the flexible band; a main terminal fitting comprising an enlarged body portion mounted for pivotal movement on the pivot of the nut, and having a pair of cylindrical trunnions extending outwardly from the body at right angles to the axis of the pivot on the aforementioned nut; and a pair of ears on the thin metal band, said ears being spaced apart from each other a distance approximately equivalent to the diameter of the body of the terminal fitting, and said ears being each formed in a reverse loop around one of the trunnion members of the body, to provide long, slender trunnion bearings interconnecting the end of the flexible band with the main terminal fitting.

BESTOR ROBINSON.