April 7, 1925. 1,532,141

P. G. KENYON

BRAKE BAND

Filed May 10, 1924

FIG. 1.

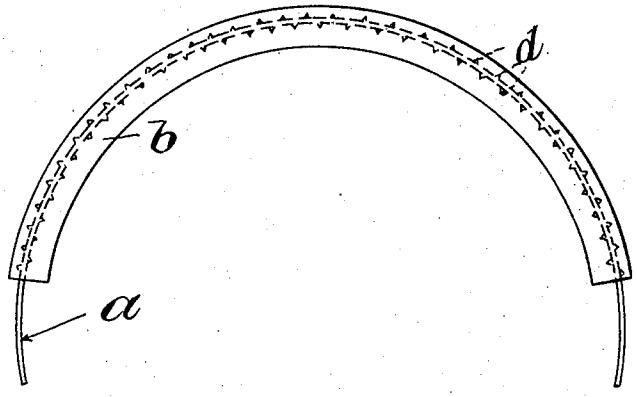


FIG. 2.

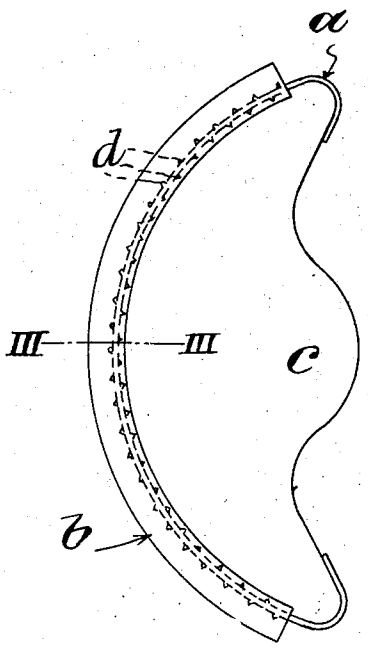
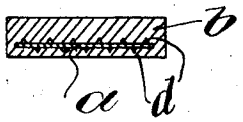


FIG. 3



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UNITED STATES PATENT OFFICE.

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BRAKE BAND.

Application filed May 10, 1924. Serial No. 712,202.

To all whom it may concern:

Be it known that I, PERCY GEORGE KENYON, a subject of the King of Great Britain and Ireland, residing at Sydways, Spotland, Rochdale, in the county of Lancaster, England, have invented new and useful Improvements in Brake Bands, of which the following is a specification.

The invention has reference to brake bands or linings of woven, folded, moulded, wrapped, wound or plaited material such as asbestos, cotton or other fibre, and used to contact with the brake drums of motor vehicles or the like, the object of the invention being to provide a device of this character whereby the use of rivets for attaching the braking surface to the brake band is made unnecessary, and the replacement of worn braking surfaces is rendered extremely easy.

With the foregoing and other objects in view, the invention consists in the novel features of construction and combination of parts which will be more fully described hereinafter and particularly pointed out in the claims.

In the drawings accompanying and forming part of this specification:

Fig. 1 is a side elevation of a brake band of the contracting type constructed in accordance with the present invention;

Fig. 2 is a side view of a brake band of the expanding type, showing the same attached to the usual metal holder; and

Fig. 3 is a transverse section taken on the line III—III of Fig. 2.

The same characters of reference designate the same parts in the different figures of the drawings.

Referring to the drawings, *a* designates a metal core, which is enclosed within an envelope *b*, of fibrous material, the ends of said core extending beyond the ends of the envelope, so that the core may be bent at its end in any suitable manner for attachment to the brake operating mechanism. The core *a* is provided along that portion of its length which is within the envelope, with a plurality of projections or spurs *d* extending from opposite surfaces thereof, whereby, after the core has been inserted in the envelope, the latter will be kept from "creeping" along the core. The spurs *d* may be punched up from the material of the core itself, or may be made separately and attached to said core. In Fig. 2 the core is shown secured to an expanding metal holder *c*, the protruding ends of the core being bent into the proper form so as to securely fasten it to said holder, the holder being of the usual type used in connection with expanding brakes.

In previous practice such brake bands have been employed to line metallic brake-shoes or other metal carriers and they are secured to such by means of rivets. This riveting process presents certain difficulties in execution, and, moreover, the space occupied by the rivet heads reduces the area of effective braking surface.

In this invention the brake band of fibrous material is combined with a core of metal, which may be either woven wire, preferably with barbs, or a strip of flat metal perforated or punched, and hereafter referred to as the metal core. Such barbs, perforations or punchings provide projections with sharp edges, arranged to occur alternately on each face of the metal, which provide clinching properties with the fibrous portion of the band on both sides of the metal core.

The combination of fibrous material and metal core is made in such a manner that with brakes of the contracting type the usual metal band to which the brake lining is riveted may be dispensed with and the necessity for riveting is obviated. In this case it is only necessary to connect the projecting ends of the metal core to the usual brake actuating mechanism, the metal core taking the place of the ordinary metal band.

In brakes of the expanding type it would suffice for the projecting ends of the metal core being secured to the ordinary metal holder by bending such projecting ends over the ends of the holder or securing them to such holder by any convenient means. In this case also the necessity for rivets through the brake lining is dispensed with. This not only simplifies the original installation of brake linings and their renewal but presents full area of brake surface to the brake drum.

There are various ways in which I carry this invention into effect. In the first, I weave the material for use as a brake band tubular in formation, but with a preponderance or increased thickness of material on the face which is to be used as the contact side of the bands. For instance, the

band is woven from asbestos, metal re-inforced asbestos, cotton or other fibrous material in a number of plies or cloths of the required width. Two or more of these plies or cloths are bound together during the process of weaving, one of the plies or cloths being fastened to the others at the selvedge, so as to form a flat tube having one part of its section thicker than the other part. For example, four cloths or plies may be woven, three of which are bound together all across their width, while the fourth or outer cloth is secured to the combined other cloths at the selvedge only. The number of plies or cloths may, however, be varied as desired. Woven in the manner described a sheath is formed into which I insert the metal core.

In a second method I use folded asbestos cloth, cotton cloth or other textile fabric to get the required thickness, and the metal core is inserted between two of the folds in such a manner that the same effect is obtained as in the case of the cloths which are plied in weaving. Or I may cover the metal core with a sliver, strip, yarn, or the like, of asbestos, cotton or other fibrous material by a process of wrapping, winding or plaiting.

It is not essential that the section of fibrous material providing the contacting surface should be made thicker than the other section, as the metal core may be placed centrally thus providing a lining which is reversible.

Having been formed by one of the above methods, the brake bands thus produced are subjected to any suitable or known finishing treatment to provide the requisite density and contact surface, and also to make a thoroughly inseparable combination between the fibrous material and the metal core.

The inseparable combination between the fibrous material and the metal core is brought about partly by the impregnant used in the finishing treatment and partly by the bending over or clenching of the projections in the metal core.

In the case of contracting brakes as stated above the combined and finished product can then be attached directly to the brake actuating mechanism without any necessity for employing the usual metal band.

Also for expanding brakes the metal core of the product may be fastened to the ordinary metal holder without the necessity for employing rivets through the actual braking surface.

I declare that what I claim is:—

1. A brake band, comprising an envelope of fibrous material, and a metallic operating core passing through said envelope, the ends of said core extending outside of the envelope for attachment to brake-actuating mechanism.

2. A brake band, comprising an envelope of fibrous material, and a metallic operating core passing through said envelope and provided with means within the envelope for gripping the same, the ends of said core extending outside of the envelope for attachment to brake-actuating mechanism.

3. A brake band, comprising an envelope of fibrous material, and a metallic operating core passing through said envelope, the portion of the core within the envelope being punched up to provide spurs extending from opposite surfaces thereof thereby to grip the envelope, the ends of the core extending outside of the envelope for attachment to brake-actuating mechanism.

In testimony whereof I have signed my name to this specification.

PERCY GEORGE KENYON.