

(No Model.)

T. C. DENNISON.
DRIVING BAND.

No. 556,663.

Patented Mar. 17, 1896.

FIG. I

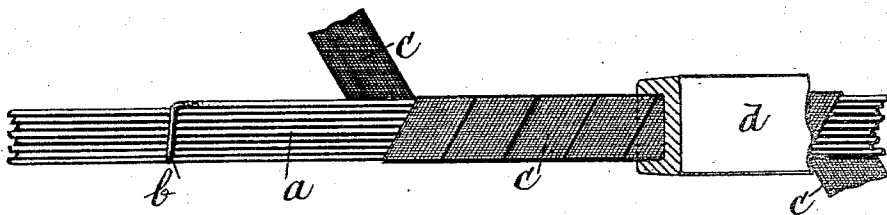


FIG. III

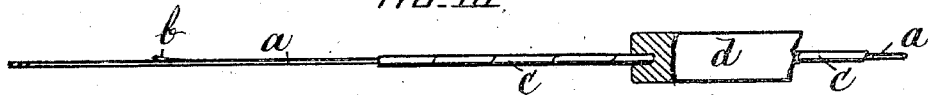


FIG. II

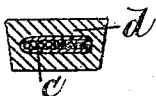


FIG. IV

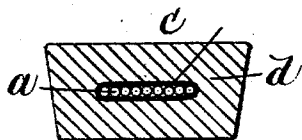
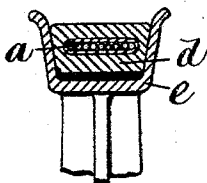


FIG. V

Witnesses:

John C. Wilson.
J. Stephen Gusta.

Inventor:

Thomas C. Dennison
by
Whitman & Wilkinson
Attys.

UNITED STATES PATENT OFFICE.

THOMAS CRAWFORD DENNISON, OF OAMARU, NEW ZEALAND.

DRIVING-BAND.

SPECIFICATION forming part of Letters Patent No. 556,663, dated March 17, 1896.

Application filed December 13, 1895. Serial No. 572,041. (No model.) Patented in England October 23, 1895, No. 19,971.

To all whom it may concern:

Be it known that I, THOMAS CRAWFORD DENNISON, a subject of the Queen of Great Britain, residing at Oamaru, New Zealand, have invented a new and useful Improvement in Driving-Bands, (for which I have obtained Letters Patent in Great Britain, No. 19,971, bearing date of October 23, 1895,) of which the following is a specification.

My invention relates to an improvement in belts or bands used for driving machinery, and more especially to bands used as substitutes for the "pitch-chains" now ordinarily used, in combination with suitable corresponding chain-wheels, for driving bicycles and other velocipedes; and the objects of my invention are to make such driving belts or bands so that they are very light, strong, flexible and durable, while they cannot stretch and are not liable to slip, and are cleaner than chains, no lubricating-oil being required. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 represents part of a driving-band, showing the method of its construction. Fig. 2 is a transverse section, and Fig. 3 an edge view. Fig. 4 is a section showing the band passing round a pulley, and Fig. 5 a transverse section on a larger scale.

Similar letters refer to similar parts in the different figures.

I take a sufficient length of fine, strong, metallic wire, preferably steel, such as is well known as "piano" wire, and I wind this wire in parallel and adjoining coils round a drum or wheel of the proper diameter, so that the coils form a flat endless ribbon *a* of the required width and length, and I attach the two ends of the wire to the coil by soldering or other equivalent means, as illustrated in Fig. 1, where *b* represents one end of the coil bent across and soldered to the rest of the band *a*.

The parallel coils of the wire band *a* are kept in their proper position by means of a suitable solder of sufficient flexibility applied to their whole surface or at intervals.

The flexible metallic band, made as described, after having been removed from the drum or wheel round which it has been wound, is wound round with a strip or strips

of hard canvas *c* and is finally coated with plain or vulcanized india-rubber, as shown at *d* in the figures, of suitable thickness and section.

Where vulcanized instead of plain india-rubber is used for the exterior coating, I first coat the wire coil with a thin coating of aluminum, so that the wire coil may not be injuriously affected by any sulphur or other injurious ingredients present in the india-rubber, or the solder used may be of aluminum or a compound of aluminum, or instead of aluminum other substances unaffected by sulphur may be used.

The india-rubber *d* is made of such shape in cross-section as to fit in corresponding grooves round the peripheries of the pulleys, round which the endless band passes, as shown in section at *e*, Fig. 4, and such an arrangement forms an excellent substitute for the ordinary chain wheels and pitch-chains used in cycles, and for other purposes of the like kind.

In order to increase the grip, the sides of the grooves may be made waved or undulating.

Bands made according to my invention are extremely light and flexible and at the same time of great strength and incapable of stretching in the direction of their length, and their durability is very great. They may be of any desired section and applied to all purposes for which flexible belts or bands are ordinarily used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An endless driving-band for bicycles and the like, composed of a central core formed of a continuous small tempered-steel wire wound in a plurality of coils adjacent to each other, and the ends of said wire bent transversely across the said coils and soldered thereto; a suitable solder interposed between said coils and binding the same together; a continuous strip of canvas wound spirally upon said central core; and a thick coating of india-rubber inclosing the whole, substantially as described.

2. An endless driving-band for bicycles and the like, composed of a central core formed of a continuous small tempered-steel wire wound in a plurality of coils adjacent to each other, and the ends of said wire bent trans-

versely across the said coils and soldered
thereto; a suitable solder interposed between
said coils and binding the same together; a
continuous strip of canvas wound spirally
5 upon said central core; and a thick coating
of india-rubber inclosing the whole; the said
band being of greater cross-section upon its
outer circumference, to fit in a correspondingly-
10 grooved wheel and thus insure the greatest

friction against the sides of said groove as
well as against the bottom thereof, substan-
tially as described.

In testimony whereof I have hereunto set
my hand in the presence of two witnesses.

THOMAS CRAWFORD DENNISON.

Witnesses:

ARTHUR E. EDWARDS,
W. E. SYKES.