

R. A. HAMMOND.
 FLAT ROPE OR BELT.
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966,830.

Patented Aug. 9, 1910.

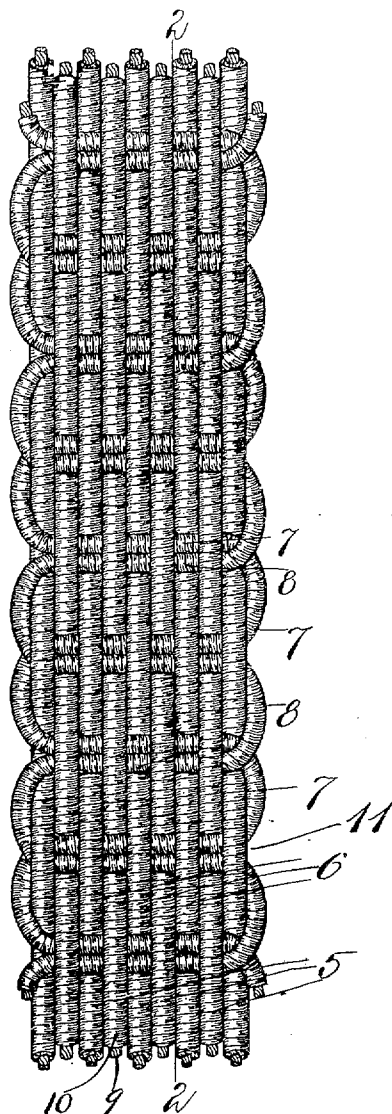


Fig. 1.

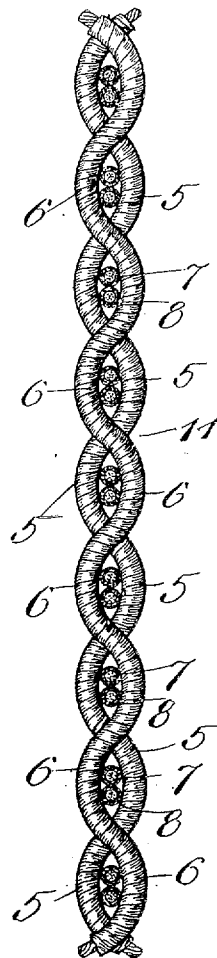


Fig. 2.

Witnesses:

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Inventor:

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 By his attorney, Charles S. Fording.

UNITED STATES PATENT OFFICE.

ROBERT A. HAMMOND, OF SANDWICH, MASSACHUSETTS.

FLAT ROPE OR BELT.

966,830.

Specification of Letters Patent.

Patented Aug. 9, 1910.

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To all whom it may concern:

Be it known that I, ROBERT A. HAMMOND, a citizen of the United States, residing at Sandwich, in the county of Barnstable and State of Massachusetts, have invented new and useful Improvements in Flat Ropes or Belts, of which the following is a specification.

This invention relates to an improved flat belt or rope, the object of the invention being to provide a belt which shall be very strong and possessed of great frictional capacity and which shall be capable of being used without injury or deterioration in wet places or under water, or when subjected to acid fumes or climatic changes, and which is also so constructed that in the manufacture of the same the belt will be flat and not inclined to warp or twist, as hereinafter described.

To this end the belt is preferably formed of two series of longitudinal strands interwoven with two cross strands, the cross strands extending entirely across the belt side by side and across each other alternately at opposite edges of the belt outside the longitudinal strands, so that while each pick contains two cross strands, these cross strands do not add to the thickness of the belt more than would a single cross strand, and moreover the belt itself, in its completed form, presents a flat surface, as a whole, to the periphery of the pulley or pulleys over which it runs. It will be evident that the thickness of the belt is reduced by the crossing of the strands at the edges thereof to the least possible dimensions consistent with the respective diameters of the longitudinal and cross strands.

The crossing of the cross strands at the edges of the belt, as distinguished from structures in which the cross strands cross each other midway between the edges of the belt, results not only in the production of a belt which can be made flat and comparatively thin, but also tends to very much prolong the life of the belt, for the reason that the cross strands do not rub and wear upon each other in the manner in which they do when crossing each other while passing through between the longitudinal strands of the belt.

Preferably the longitudinal and cross strands of my improved belt are made of strands composed of wire, each of the strands consisting of a series of wires twisted tightly together, these wires being then covered with

a twisted strand of prepared hemp or other fibrous material which is "served" around the same to form an outer elastic covering therefor.

In order to prevent the belt from becoming twisted or warped I prefer to form the strands by winding the covering of the wire cores upon said cores in the opposite direction to that in which the wires forming the cores are wound or laid.

The invention consists in a belt formed and constructed as hereinafter described and particularly as set forth in the appended claims.

Referring to the drawings: Figure 1 is a face view of my improved belt showing the same with two cross strands, said cross strands crossing each other at opposite edges of the belt alternately. Fig. 2 is a sectional elevation taken on line 2—2 of Fig. 1.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, Figs. 1 and 2, 5, 5, 5 are longitudinal strands forming one series and 6, 6, 6 are longitudinal strands forming another series of such strands.

7 and 8 are the cross strands. It will be seen that the cross strands 7 and 8 lie side by side and are interwoven with the longitudinal strands 5, 5 and 6, 6, said strands 7 and 8 crossing each other alternately at opposite edges of the belt, and between these edges it will be noted that the strands 7 and 8 lie side by side, so that the longitudinal strands are separated at most by the single thickness of one of the cross strands at any point in the width of the belt.

The longitudinal strands 5, 5, 5, it will be noted, extend across and outside the cross strands on one face of the belt and all of the longitudinal strands 6, 6, 6 extend across and outside the cross strands 7, 8 on the opposite face of the belt at each pick, said strands respectively crossing from one face to the other of said belt between each pick. Thus the cross strands are entirely protected from wear throughout the entire width of the belt by the longitudinal strands and there is no tendency for the cross strands to rub one upon the other at their crossing point.

The crossing of the cross strands at the edges of the belt also adds to the resiliency of the belt, so that the same can hug closely to the periphery of the pulley and such a construction adds greatly to the frictional capacity of said belt.

In Figs. 1 and 2, it will be noted that the longitudinal strands 5, 5 and 6, 6 each consist of a central core 9, the wires twisted or laid one upon the other, said wires being twisted in a left hand helical form and being covered with marline 10, twisted in a right hand helical form to cover the inner core of wires 9, this form of my invention, therefore, being composed of longitudinal strands in which the inner core of each strand is formed of wires laid around each other in one direction and a covering of marline laid around said wires in the opposite direction.

In addition to the advantages hereinbefore set forth derived from the construction of my improved flat belt, the construction of the same is such, as will be seen by reference particularly to Fig. 2, that there is no possibility of the friction upon the pulley becoming lessened by reason of air becoming confined between the under side of the belt and the face of the pulley, as is the case oftentimes in broad leather belts, but in my improved belt it will be seen that there are lateral spaces as at 11, 11 (Fig. 2) which extend laterally across the belt and, therefore, prevent any cushioning of air between the belt and the face of the pulley, thus greatly adding to the efficient frictional contact of the belt with the pulley.

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

1. A flat rope or belt consisting of two sets of longitudinal strands and two strands interwoven with said longitudinal strands and crossing said belt alternately in opposite directions and crossing each other at opposite edges of said belt alternately, all of the strands of one of said sets extending

across and outside said cross-strands on one face of said rope and all of the strands of the other of said sets extending across and outside said cross strands on the other face of said rope at each pick thereof.

2. A flat rope or belt consisting of two sets of longitudinal strands and two strands interwoven with said longitudinal strands and crossing said belt alternately in opposite directions and crossing each other at opposite edges of said belt alternately, all of the strands of one of said sets extending across and outside said cross strands on one face of said rope and all of the strands of the other of said sets extending across and outside said cross strands on the other face of said rope, all of the strands of each of said sets respectively crossing from one face to the other of said rope between each pick thereof.

3. A flat rope or belt consisting of two sets of longitudinal strands and two strands interwoven with said longitudinal strands and crossing said belt alternately in opposite directions, extending side by side entirely across said belt and crossing each other at opposite edges of said belt alternately, all of the strands of one of said sets extending across and outside said cross strands on one face of said rope and all of the strands of the other of said sets extending across and outside said cross strands on the other face of said rope at each pick thereof.

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

ROBERT A. HAMMOND.

Witnesses:

CHARLES S. GOODING,
FREDERICK E. WILLIAMS.