W. R. GOUDIE & H. L. MYERS.

LAMINATED BELT FOR TRANSMITTING POWER.

APPLICATION FILED APR. 1, 1908.

936,532. Patented Oct. 12, 1909.

Fig. 1

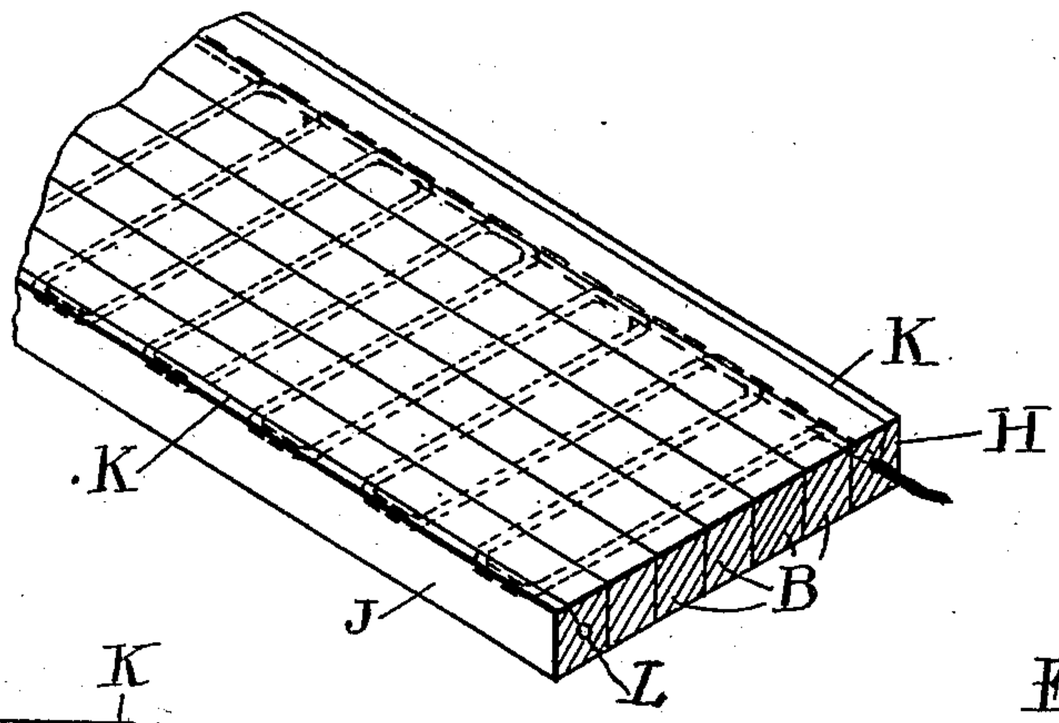
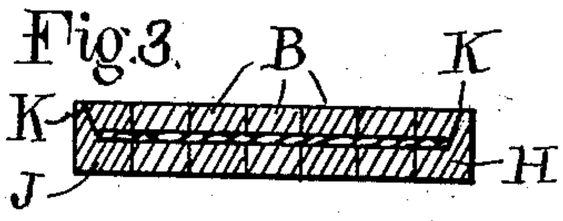


Fig. 3.



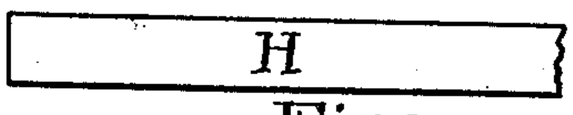


Fig. 2.

Fig. 16.

Fig. 4.

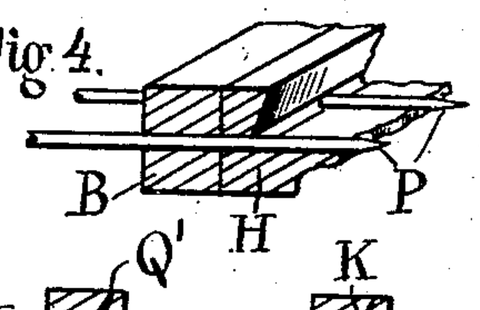


Fig. 5.

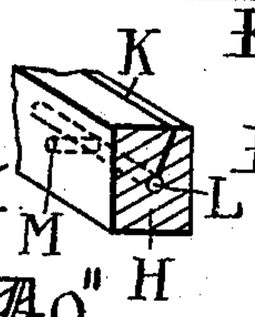


Fig. 6.

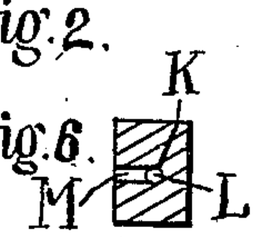
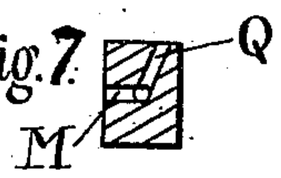


Fig. 7.



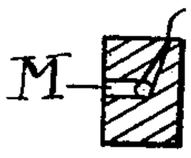


Fig. 8.

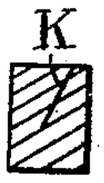


Fig. 9.

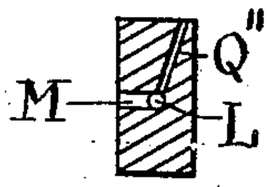


Fig. 15.

Fig. 10.

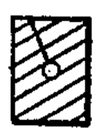


Fig. 11.

Fig. 12.

Fig. 13.

Fig. 14.

Witnesses
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Herman Morris

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Harry Lawrence Myers,
By his Attorneys
Binney and Ogden

UNITED STATES PATENT OFFICE.

WILLIAM ROBERT GOUDIE AND HARRY LAWRENCE MYERS, OF PASSAIC, NEW JERSEY.

LAMINATED BELT FOR TRANSMITTING POWER.

936,532. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed April 1, 1908. Serial No. 424,620.

To all whom it may concern:

Be it known that we, WILLIAM ROBERT GOUDIE, a subject of the King of Great Britain, and HARRY LAWRENCE MYERS, a citizen of the United States, both residing at Passaic, New Jersey, United States of America, have invented certain new and useful Improvements in Laminated Belts for Transmitting Power and other Uses, of which the following is a specification accompanied by drawings.

The invention relates particularly to belts made up of laminæ of leather set edgewise to the wearing face of the belt and sewn together transversely from side to side of the belt, though its application is not limited to these precise details.

Heretofore the most approved form of stitching has been accomplished by means of grooves in the edges or side faces of the belt in which exposed portions of the stitching were counter-sunk so as to avoid abrasion from the shifters or other bodies coming in contact with the edges of the belt. This practice, however, leaves the stitches only partially protected and as the edge of the belt wears the stitches usually fail in the first instance at these grooves. Moreover, the stitching is directly exposed to water, acid, steam, dirt, and other injurious action to a much greater extent than the portions of the thread or stitching lying in the central portions of the belt and substantially embedded in the leather.

The object of the present invention is to do away with these defects and provide a strongly sewn belt in which the stitching is substantially embedded in the leather at all parts and in which the side laminæ or strands of the belt are as durable both in themselves and in the way they are stitched, as any other portions of the belt.

In the drawings: Figures 1 and 2 are perspective and side views respectively of a belt embodying the improvement. Fig. 3 is a cross-sectional view of the same in the plane of one of the transverse threads. Fig. 4 is a detail view to illustrate one of the steps of putting the belt together. Fig. 5 is a perspective view of the edge lamina or strand having the same form of cut as in Figs. 1, 2, 3 and 4. Fig. 6 is a cross section of Fig. 5 at the plane of the transverse thread. Figs. 7, 8, 9, 10, 11, 12, 13, and 14, are cross sections of an edge lamina showing various positions of cut. Fig. 15 is a similar view showing a form for an extra thick belt. Fig. 16 shows five different outlines of the cuts.

In all the figures the lower face of the belt is assumed to be the wearing face that comes in contact with the pulley.

Under the present improvement no exposing of the thread occurs.

In Figs. 1 to 6 inclusive the side laminæ H, J are cut longitudinally and diagonally from the upper face near its outer edge to the center of the section and at the center of the section a small longitudinal channel for the thread is cut by removal of a minute cylinder of the leather. The transverse holes are punched through all the laminæ or strands separately at equi-distant intervals of about twenty-two to the foot, but the side strands H and J instead of being punched all the way through from side to side, are only punched from the inner face of the strand to the central thread channel. The exposed line of the cut is indicated by K in the figures, the thread channel by L, and the punch holes by M.

In Fig. 4 the way in which the leather is bent to open it and allow the laminæ to be set up side by side on a series of cross pins P of fine steel preparatory to sewing them, is illustrated. As each cross stitch is sewn the pin P is drawn out in advance of the needle that carries the thread, and after the belt is stitched, as indicated in Fig. 1, the leather is pressed back into position to entirely close the cut and inclose the lengthwise portions of the stitching within the interior of the channel L in the middle of the leather. It is sometimes preferable, though not necessary, to cement the cut together so as to prevent any tendency of the cut to open up in use. It will, however, be seen that when the cut is in the position shown in these figures, 1 to 6 inclusive, the cut is subjected to forces tending to close it, because in running over the faces of the pulleys a belt is subjected to tension in the direction of its length and to compression radially of the pulley. The side faces of the belt, as seen in Fig. 2, are perfectly smooth and do not show any indication that the belt has been sewn.

Where very thick thread is used, it is sometimes preferable to remove some of the leather throughout the depth of the cut, or, in other words, to make a channel, as in Fig. 7 at Q. Instead of making this channel with

parallel sides it may be made with converging sides, as shown in Fig. 8, Q′. This saves some of the leather but, as will be understood, the form shown in Fig. 7 tends to close up so that the channel will become of the same shape as that shown in Fig. 8. Where, on the other hand, the leather is very soft and spongy, no channel need be made for the thread as it will embed itself by the strain. In such instance a simple cut as at K in Fig. 9 may be used. For very thick belts of stiff heavy leather the form shown in Fig. 15 may be used in which the cut is a narrow channel Q″ terminating interiorly in a larger cylindrical hole L for the heavy thread or twine to be used.

Fig. 16 shows five forms of cuts which may advantageously be employed in different instances, as already explained.

Figs. 10 to 14 show various positions at which the cuts or channels may be made, it being understood that the position already described is regarded by us as best because it gives an uncut edge or side face to the belt and at the same time does not require an excessive bending of the leather to open the cut for the insertion of the setting up pins P and the needles carrying the thread.

By "sewn" we wish to include as substitutes the use of wires or other fastenings when covered by the flap of leather formed by cuts as explained.

We claim and desire to secure by Letters Patent, the following:

1. The improved edge or side lamina or strand for a laminated sewn belt having a cut extending inward from one of the faces of the lamina and thread holes extending from a face of the lamina to the said cut at intervals, the plane of the said cut being oblique to the faces of the lamina and the thread holes being made through one of the faces of the lamina adjacent to that in which the cut extends.

2. A laminated and transversely sewn belt comprising a plurality of laminæ, one or more of the outer laminæ of which has a longitudinal and substantially central channel within it, thread holes extending therefrom toward the center of the belt, and a longitudinal cut extending from the said channel to one of the faces of the lamina other than the edge face of the belt.

3. The improved lamina or strand for a laminated sewn belt of approximately rectangular cross section, having a continuous longitudinal thread hole, transverse thread holes extending therefrom to one of the faces of the lamina and a cut extending from the said longitudinal thread hole to one of the faces of the lamina adjacent to that having the transverse thread holes.

In witness whereof we have signed this specification in the presence of two subscribing witnesses, March 30th 1908.

WILLIAM ROBERT GOUDIE.
HARRY LAWRENCE MYERS.

Witnesses:
E. Van Zandt,
Herman Morris.