

C. L. BERGENTHAL & L. KELLER.
PULLEY.

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986,961.

Patented Mar. 14, 1911.

Fig. 1.

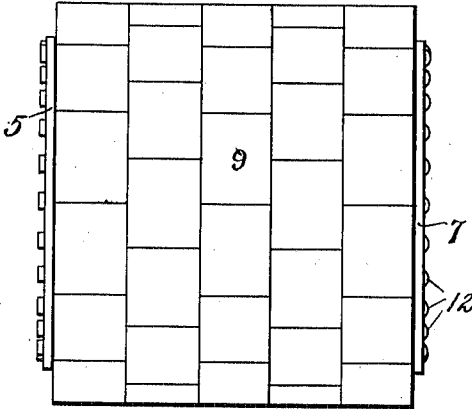


Fig. 2.

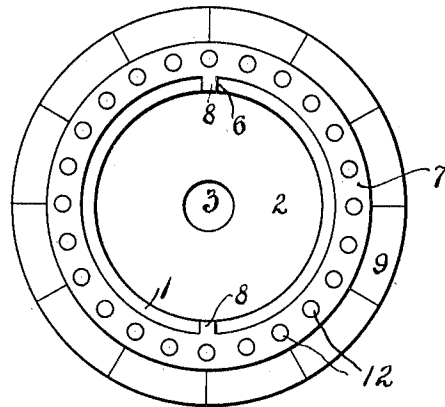


Fig. 4.

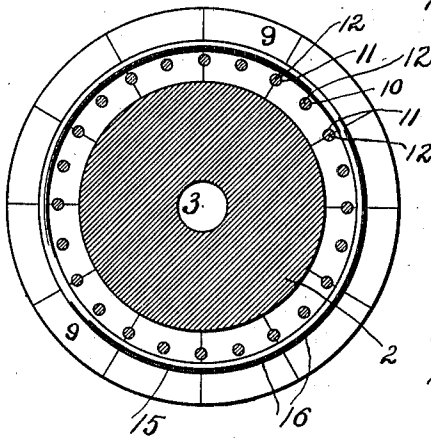
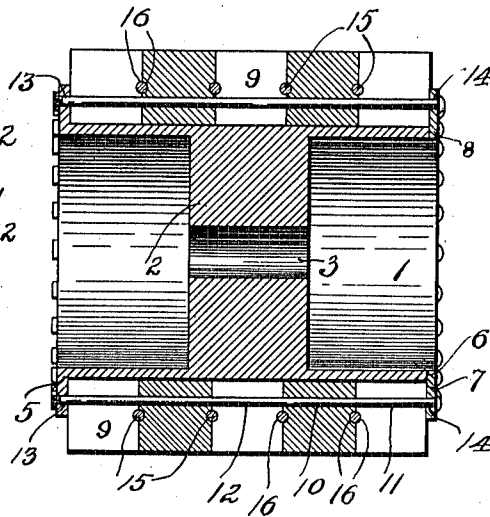


Fig. 3.



Witnesses

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PULLEY.

986,961.

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To all whom it may concern:

Be it known that we, CHARLES L. BERGENTHAL and LEROY KELLER, citizens of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Pulleys; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to pulleys.

In designing our pulley, special attention has been given to the requirements for high speed pulleys. The consideration of first importance in constructing a high speed pulley is to prevent the belt from slipping thereon. Other objects which we have had in constructing our pulley are to insure uniform wear all around the same, to provide for renewing the lagging without removing the pulley from its shaft, and to provide a pulley which is inexpensive to manufacture.

In order to prevent the belt from slipping, we employ for the lagging on our pulley wooden blocks set in place so that the grain of the wood, of which each block is made, extends radially of the pulley whereby the ends of the grain of the wood lagging are presented on the whole belt-engaging surface of the pulley. The ends of the grain of wood will not wear smooth, consequently the belt will not slip. The wooden blocks are removably retained upon the metal core or sleeve of the pulley by means of longitudinally extending tie rods and metal rings, the latter engaging angular grooves in the meeting faces of adjacent rows of said blocks.

The pulley as a whole is simple in construction and can be cheaply manufactured.

The invention also consists in the features of construction and combinations of parts hereinafter described, illustrated in the accompanying drawing, and specified in the appended claims.

Figure 1 is a side elevation of one of our complete pulleys. Fig. 2 is an end view thereof. Fig. 3 is a central longitudinal sectional view of the pulley, and Fig. 4 is a cross section.

Referring more particularly to the drawing, 1 designates the metal core or sleeve of the pulley which is preferably made in skeleton form with a central web 2 having a central longitudinal opening 3 therein to receive

a shaft. The outer surface of the core or sleeve is cylindrical. At one end thereof, an integral outwardly extending flange 5 is formed. The other end of the sleeve has its edge notched at 6 for the purpose of retaining a separable flange 7 against turning thereon, said flange 7 being provided with lugs 8 which engage the notches 6.

The lagging or jacket of the pulley consists of the plurality of rows of blocks 9 extending around the sleeve or core. All of the blocks are preferably of a uniform size and those in each row are preferably arranged to break joints with those in the rows at either side thereof. The meeting ends of the blocks in each alternate row are preferably arranged in line with one another longitudinally. Each block is provided with an opening or passage 10 through the center thereof and a groove 11, which in cross section is equal to one-half of the passage 10, in each of its ends. The blocks are retained upon the core or sleeve by longitudinal tie rods 12 which are passed through holes 13 and 14, formed respectively in the integral flange 5 and separable flange 7, and through the openings 10 and grooves 11 in the blocks.

By reason of the arrangement of the blocks in the several rows, as already described, it will be seen that each tie rod extends through central openings 10 in blocks of alternate rows and engages the grooves 11 in the meeting faces of blocks in the other rows, the two grooves 11 in adjacent blocks forming together a passage (similar to the passages 10 in the middle of the blocks. The tie rods not only retain the lagging blocks upon the core or sleeve of the pulley but also secure the separable flange 7 in place with its lugs 8 engaging the notches 6 in the sleeve whereby said flange is locked against turning on the sleeve. The lagging blocks are further retained upon the core of the pulley, and secured against centrifugal force which tends to throw them outwardly when the pulley is revolved rapidly, by means of metal rings 15 which are fitted in grooves 16 in the meeting lateral faces of the blocks in the several rows, as clearly illustrated in Figs. 3 and 4. Each block therefore has a section of the groove 16 formed in its lateral faces, except the blocks in the two end rows which, of course, only have this groove formed in their inner lateral faces. The rings 15 are made round in cross section which adds

greater strength to the pulley than flat bands, especially when the pulley is driven at a high speed.

From the foregoing description, it will be understood that the blocks constituting the lagging or jacket of the pulley may be readily removed for renewing, etc., by taking out the tie rods and removing the separable flange. It will also be understood that blocks of different sizes may be used on the same core thus varying the diameter of the pulley. Special attention is called to the fact that the periphery or belt engaging surface of the pulley will not wear smooth because the belt contacts with the ends of the grain of each wooden block. Furthermore, the resistance to wear is equal at every point on the periphery of the pulley, insuring even wear all around it.

We claim:

1. A pulley comprising a core or sleeve having an integral flange at one end and notches in its other end, of lagging on the surface of the sleeve, a separable flange having lugs engaging the notches in the sleeve, and tie rods passed through both flanges and the lagging.

2. A pulley comprising a core or sleeve, flanges at the ends of said sleeve, lagging mounted on the sleeve between said flanges, said lagging consisting of blocks arranged in rows and breaking joints, each block having a passage through the center thereof and grooves in its ends, and tie rods passed through the flanges and the passages and grooves in said blocks for the purpose specified.

3. A pulley comprising a core or sleeve, flanges at the ends of said sleeve, lagging mounted on the sleeve between said flanges, said lagging consisting of blocks arranged in rows and breaking joints, the grain of the wood in each block extending radially

of the pulley, each block having a passage through the center thereof and grooves in its ends, and tie rods passed through the flanges and the passages and grooves in said blocks for the purpose specified.

4. A pulley comprising a core or sleeve, flanges at the ends of said sleeve, lagging mounted on the surface of the sleeve between said flanges, said lagging consisting of blocks arranged in rows and breaking joints, each block having a central passage and grooves in its ends, the grooves in the meeting ends of the blocks in alternate rows being in longitudinal alinement with the central passages in the blocks in the other rows, and tie rods passed through the flanges and the passages and grooves in the blocks for the purpose specified.

5. A pulley comprising a core or sleeve, lagging mounted on said sleeve, said lagging consisting of blocks arranged in rows and having grooves in their lateral faces, means to retain said blocks against longitudinal movement, and rings engaging the grooves in the adjacent lateral faces of the rows of blocks for retaining the same against outward movement.

6. A pulley comprising a core or sleeve, lagging mounted on said sleeve, said lagging consisting of blocks arranged in rows and having grooves in their lateral faces, means to retain said blocks against longitudinal movement, and rings, round in cross section, engaging the grooves in the adjacent lateral faces of the rows of blocks for retaining the same against outward movement.

In testimony whereof, we affix our signatures, in presence of two witnesses.

CHAS. L. BERGENTHAL.
LEROY KELLER.

Witnesses:

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