No. 640,871. Patented Jan. 9, 1900.

J. BUNIMOWITSCH & A. & J. E. R. SCHADT.

DIVIDED LOOSE PULLEY FOR BELT DRIVING GEAR.

(No Model.) (Application filed Oct. 4, 1899.)

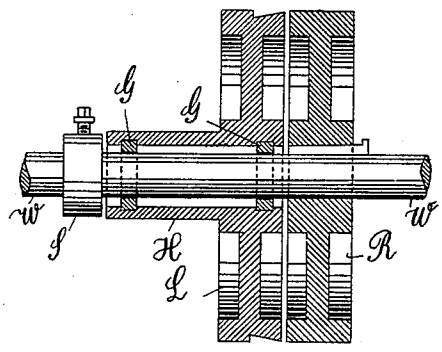


Fig. 1.

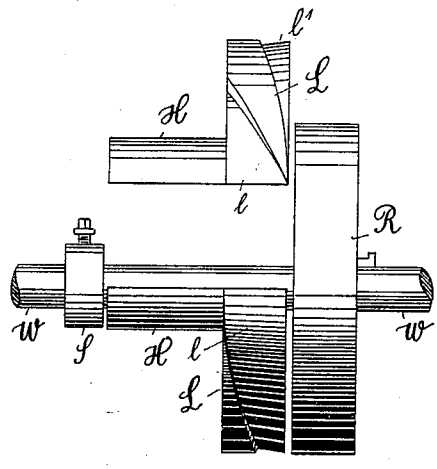


Fig. 2.

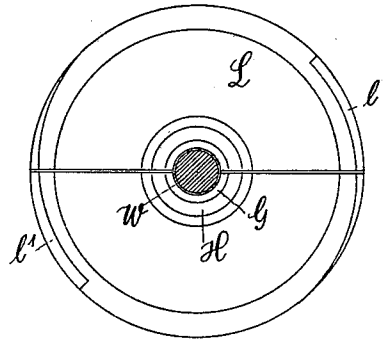


Fig. 3.

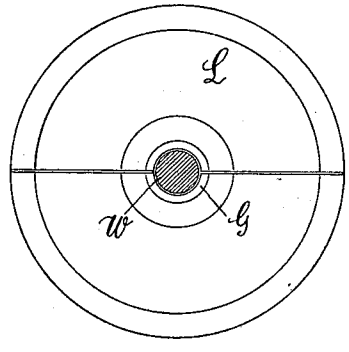


Fig. 4.

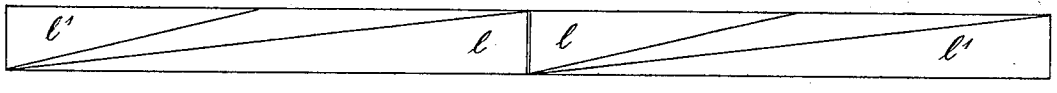


Fig. 5.

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UNITED STATES PATENT OFFICE.

JACQUES BUNIMOWITSCH, OF FRANKFORT-ON-THE-MAIN, AND ALBERT SCHADT AND JULIUS EDUARD RICHARD SCHADT, OF KREUZNACH, GERMANY.

DIVIDED LOOSE PULLEY FOR BELT-DRIVING GEAR.

SPECIFICATION forming part of Letters Patent No. 640,871, dated January 9, 1900.

Application filed October 4, 1899. Serial No. 732,526. (No model.)

To all whom it may concern:

Be it known that we, JACQUES BUNIMOWITSCH, residing at Frankfort-on-the-Main, and ALBERT SCHADT and JULIUS EDUARD RICHARD SCHADT, of Kreuznach, Germany, subjects of the Emperor of Germany, have invented certain new and useful Improvements in Divided Loose Pulleys for Driving-Belts, of which the following is a specification.

The subject of this invention is a divided loose pulley of peculiar form and arranged in such a manner that the driving-belt may be slipped off the same and passed over the driving-pulley in a much simpler way than as hitherto practiced. For this purpose the outer edge of the new or improved loose pulley has cut upon it in a suitable direction one or more wide helicoidal or other screw-thread or worm of peculiar shape, so that owing to this thread or worm the driving-belt may be guided off the loose and over the driving pulley by a mere sharp tug or pull on the belt in the direction of rotation of the latter pulley.

In the accompanying drawings, Figure 1 shows a loose pulley constructed according to this invention and placed by the side of an ordinary driving-pulley, both being in section. Fig. 2 is a side view of these two pulleys, the part or half of the loose pulley being raised in order to show the manner in which it is constructed. Fig. 3 is a front view of this new loose pulley, showing the side or face thereof which is farthest from the driving-pulley. Fig. 4 is a view of the face of the loose pulley which is turned toward the fast pulley, while Fig. 5 is a development of the outer periphery of the new or improved loose pulley, showing the screw-threads or worm formed or cut therein.

Upon the driving-shaft W, of any suitable construction, are mounted the fast driving-pulley R, as well as an adjustment-collar S. The driving-shaft W carries, moreover, between the fast pulley R and the adjustment-collar S a sleeve H of suitable length, which is free to turn on the said shaft by means of the inner bushes or steps G. Upon this sleeve H and on the left-hand side of the driving-pulley R is the loose pulley L. The sleeve H is divided longitudinally in the same manner as the loose pulley L, mounted thereon, in order that it may be mounted on the driving-shaft or removed therefrom whenever required even while the said shaft is in motion. The coupling of the two parts or halves can be effected in any suitable manner, either by screws, by hooks and eyes, or otherwise, and the edges of the parts to be thus coupled may be arranged to grip one over the other or to abut or to be dovetailed. The loose pulley L, which has the same size outwardly as the fast pulley R, by the side of which it is placed, is provided upon its periphery with two wide screw or worm threads *l l'*, extending slightly over half a circle. The ground surface of this worm is inclined in such a manner that the higher side of the same is turned toward the fast pulley R. Each one of the threads is accordingly deepest and at the same time narrowest on the side turned away from the driving-pulley R, while, on the contrary, the same thread is widest but less deep on the side turned toward the same pulley R, so that when looking on this side the edge of the pulley appears thoroughly round, its diameter being fully equal to that of the driving-pulley R. (See Figs. 3, 4, and 5.)

In order to bridge over projections formed on the driving-shaft—such as key ends, collars, couplings, &c.—and to render them thus not liable to injure the men to whom they used to be a constant source of danger, the sleeve H is accordingly prolonged and enlarged in such a manner that the said sleeve may in consequence of such prolongation and enlargement serve at the same time as a protective sheath for the shaft. Thus should the driving-belt spring off no danger would result from such an occurrence according to the present arrangement of parts, as in consequence of the belt falling upon the prolongation of the sleeve the latter, with its loose pulley, would be forthwith stopped, so that the belt could not become entangled.

In order to slip the driving-belt over the fast pulley for the purpose of driving some

machinery, all that is required after having momentarily stopped the loose pulley L is to put the belt in one of the screw-threads *l l'* of such pulley, an operation which is easily performed, owing to the diameter of the pulley being reduced at this insertion-point in consequence of the greater depth of the thread. After the loose pulley has been released the belt is drawn or pulled a short distance in the direction of motion. After the driving-gear has accomplished a quarter of a revolution the driving-belt passes from the screw-thread of the loose pulley L onto the driving-pulley R, whence the said belt can be brought back over the loose pulley by the usual disconnecting means whenever the machinery requires to be stopped. Whenever the belt is placed on the loose pulley L, it is always necessary in order to slip it over the driving-pulley R to give a short pull to the said belt in the direction of motion in the manner above stated.

The whole arrangement—that is to say, the loose pulley L, the sleeve H, as well as any prolongation or enlargement of the same—may be made of any suitable material—such as metal, wood, and the like—and it is obvious that instead of the bushes, brasses, or steps G roller or ball bearings may be likewise used and that according to the requirements of the case any other suitable arrangement of bearings may be also found to fulfil the purpose in view.

We claim—

A divided or split loose pulley for driving-shafts provided upon its periphery with a suitable number of wide screw-threads *l l'*, which are narrowest and deepest on the side turned away from the driving-pulley while they are on the contrary wider and less deep on the other side of the said loose pulley to such an extent as to run out into the edge of the latter; substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

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Witnesses:
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