(No Model.)

V. W. MASON.

FRICTION PULLEY.

No. 295,656. Patented Mar. 25, 1884.

Fig. 1

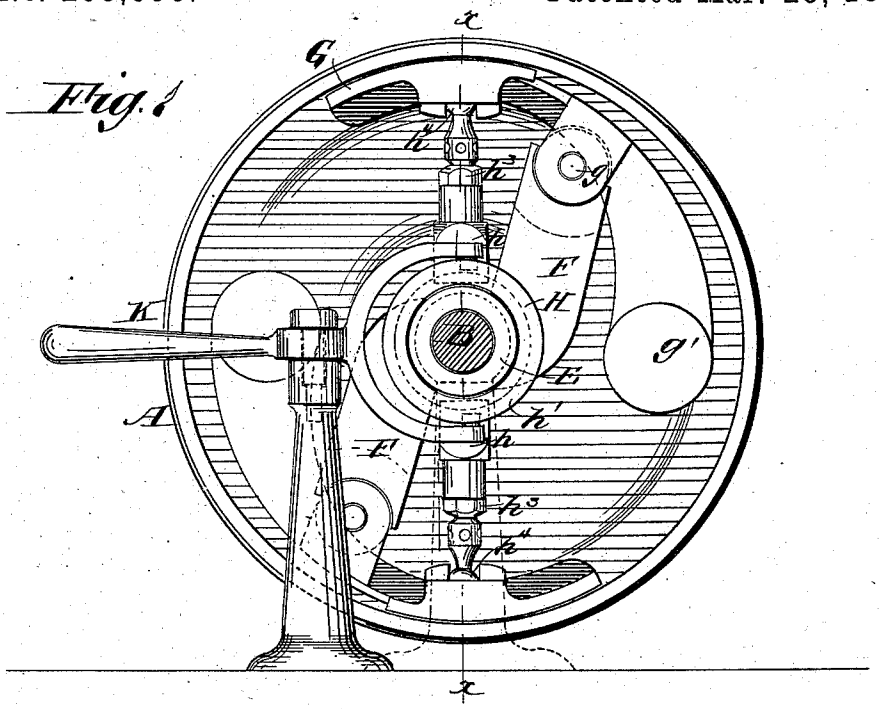
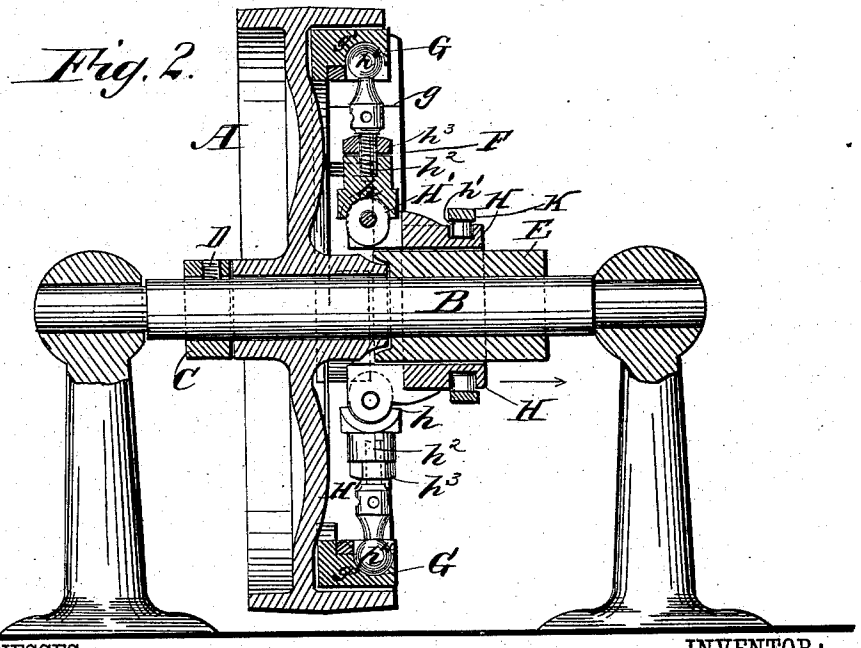


Fig. 2.



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FRICTION-PULLEY.

SPECIFICATION forming part of Letters Patent No. 295,656, dated March 25, 1884.

Application filed September 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, VOLNEY W. MASON, of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Friction-Pulley, of which the following is a full, clear, and exact description.

The object of my invention is to counteract the effect of centrifugal force in the working parts of friction-pulleys.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is an elevation of one side of the pulley. Fig. 2 is a sectional view of the pulley, taken upon the line *x x*, Fig. 1.

My invention relates to those pulleys which run loose upon their shafts, and are thrown into working connection with the same by means of shoes or friction-surfaces, which, being brought into contact at the will of the operator, cause the shaft and pulley to revolve as one during the time of such contact. In my invention a pulley, A, is fitted to run freely upon a shaft, B, and is retained in position by a collar, C, and set-screw D. A hub, E, having one or more arms, F, is secured upon the shaft B. A friction-shoe, G, is made of the proper form to fit the inner surface of the pulley A, and is suspended upon the arm F by a bolt or hinge-joint, *g*, in such a manner that the shoe G can be swung to and from the pulley. The shank or body of the shoe is extended beyond the point of suspension at *g*, and carries a weight or counter-balance, *g'*, which, when the pulley is in motion, by its centrifugal force tends to crowd the shoe from the surface of the pulley, thus counteracting the centrifugal force of the shoe itself, which would tend to throw the shoe out against the pulley. The shoe G is moved to and from the pulley by means of a sliding hub, H, and hinged connection H', actuated by a hand-lever, K, which engages a groove, *h'*, in the hub H. The hinged connection H' is made of two parts, *h* and h^2, which can be adjusted to the proper length by turning the screw h^2, and secured by a binding-nut, h^3. The connection H' has at its outer end a head or ball, h^4, which fits in a socket, *g'*, provided in the shoe G, in such a way that sliding the hub H to and fro by means of the hand-lever K will cause the connection H' to, by means of the ball h^4, press the shoe G out against the pulley or withdraw the same, as desired, while at the same time the form of the ball is such as to offer no obstruction to turning the screw h^2 when adjusting the connection to proper length, and also permits of the free movement of the shoe G in the plane of revolution of the pulley, although the connection H' moves in a plane at right angles thereto. The number of arms F and connections H' will be governed by the number of shoes G employed, all of the shoes being by means of their connecting mechanisms actuated simultaneously by the hand-lever K.

In the ordinary form of construction of friction-pulleys, the shoe G being made to slide radially and without counter-balance, the centrifugal force caused by the rotation of the pulley when running loose tends automatically to throw the shoe into contact with the pulley, and thus to establish the connection between pulley and shaft at improper times, with perhaps disastrous consequences; or, if the pulley and shoes are revolving, such centrifugal force makes it more difficult to break the contact of the shoes G and pulley A when it is desired to stop either. These difficulties are entirely obviated by the method described of counterbalancing the shoes G, since any tendency of shoe G to move by centrifugal pressure against the pulley is counteracted by my method herein described of opposing the tendency to such pressure by an equal centrifugal pressure brought to bear upon the shoe in the contrary direction by counterbalancing the shoe and suspending it upon an arm, as set forth.

In the use of my invention I prefer, in general, to arrange the shoe so as to operate against the inner surface of the pulley, as shown; but, if desired, the shoes may be arranged to operate upon the outer surface of the pulley.

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

1. A friction-pulley made, substantially as herein shown and described, with one or more counterbalanced shoes, as set forth.

2. In a friction-pulley, the combination, with the shoe, of a counter-balance, substantially as herein shown and described.

3. In a friction-pulley, the shoe constructed

with an attached counter-balance, and adapted to operate substantially as herein shown and described.

4. In a friction-pulley, the combination, with one or more counterbalanced shoes, of a mechanism for throwing said shoes in and out of contact with the pulley, substantially as shown and described.

5. In a friction-pulley, the arm F, attached at one end to the driving-shaft, and carrying at the other end a counterbalanced shoe, substantially as shown and described.

6. The method herein described of counteracting the centrifugal pressure of friction-pulley shoes against their pulleys, which consists in opposing the tendency to such pressure by an equal centrifugal pressure brought to bear upon the shoe in the contrary direction, substantially as set forth.

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Witnesses:
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