J. H. Gray,

Lubricating Band Pulleys,

No. 82,110, Patented Sept. 15, 1868.

Fig. 1.

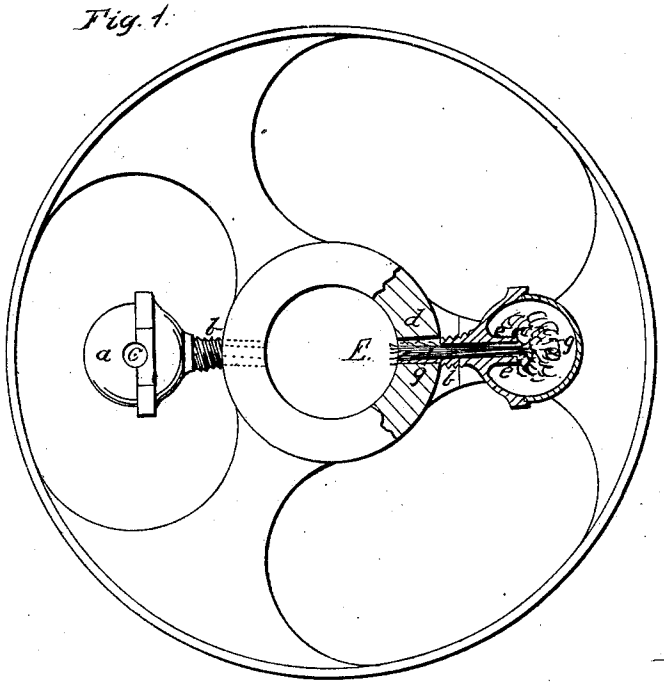


Fig. 3.

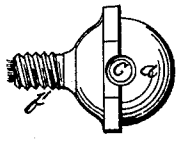
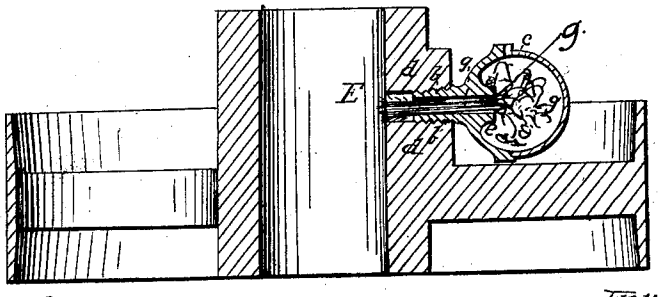


Fig. 2.



Attest:

Nathan Brown

John E Crane

Inventor:

James H Gray

United States Patent Office.

JAMES H. GRAY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 82,110, *dated September* 15, 1868; *antedated September* 8, 1868.

IMPROVEMENT IN LUBRICATING PULLEYS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES H. GRAY, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Oilers for Loose Pulleys, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents an end view of an ordinary pulley with my invention applied to two sides of the hub of such pulley. On one side the oiler and a portion of the hub are shown in section, and on the other side of said hub is shown a side elevation of the oiler.

Figure 2 represents a central section of a pulley with my improvements applied to the hub, at one side thereof.

Figure 3 represents a side elevation of a detached oiler.

The object of this invention is to provide a simple, cheap, and very efficient device for oiling loose pulleys, or pulleys which run loosely on rotatory shafts, and which pulleys cease at times to rotate while the shaft rotates within the pulley; to provide an oiling-device that will greatly economize in the use of oil or other lubricant, and prevent such oil being thrown by centrifugal force on to belts, bands, or other moving or stationary objects within the range of the loose pulley, or of dropping on to machinery, or goods or fabrics being made by machinery, or on persons in attendance.

And this invention consists of a hollow ball, *a*, having a perforated stem, *b*, which screws into a hole in the hub *d* of the pulley, said hollow ball being provided with a receiving-port, *c*, at that side which comes next to the end of the pulley, as clearly shown in fig. 1.

An ordinary wick, *g*, of some fibrous material, passes through the perforated stem *b*, from the shaft-hole E of the pulley to the cavity within the ball, which cavity contains considerable of a quantity of such wick for saturation, retention, and proper delivery of oil to the interior of the hub, and to the shaft running through it, the oil being conducted from the cavity in the ball to the shaft by the saturated wick, and through the perforated stem.

Within the cavity of the ball, and surrounding the perforation of the stem, is an annular hub, *e*, to prevent any surplus of oil, which might be in the cavity of the ball from running down the wick, if, by chance, the loose pulley should cease rotating with the oiler upward.

The receiving part *c* must be through the side of the shell, and the oiler applied, as shown in fig. 1, so that no oil can be discharged from the oiler by centrifugal force caused by the rotary motion of the pulley, as such centrifugal force will throw the surplus oil to the head or outer extremity of the cavity, where it will be taken up and conveyed to the shaft by the wick *g*.

This improved oiler may be applied to sliding-devices as well as to pulleys or other devices which have a rotary motion, and when applied to reciprocating-devices, the receiving-port *c* should be at a right angle with the line of motion of such reciprocating-device, so that oil may not be thrown out of the port when the direction of motion is changed.

Dust or dirt cannot enter this improved oiler, which is capable of receiving only what is properly injected or applied through the port *c*, and without the trouble and inconvenience of removing a cap or cover, so common in other devices used for oiling reciprocating movers.

This improved oiler, applied to the hub of a pulley not more than four or six inches in the length of its bearing on the shaft, and not revolving at a very high velocity, will keep the shaft and the pulley sufficiently lubricated; but if the length of the pulley-hub is more than six inches, or if said pulley rotates rapidly, then it may be desirable to apply more than one oiler, and at such suitable points or positions that the shaft may be well and properly lubricated.

Care should be taken that no leak or vent-holes occur through the shell of the cavity, except the port *c*, as

shown and described, so that no oil can be thrown out by the motion of the pulley, or leak out when the pulley is at rest.

This improved oiler may, after the wick is saturated, be filled with oil to near the lower side of the port *c*, and retain the whole of such oil against the action of the pulley revolving at any safe velocity, and until taken up by the wick and economically applied to the shaft or other device arranged to receive it.

What I claim as new, and desire to secure by Letters Patent, is—

An oiling-device for loose pulleys, when constructed, applied, and arranged to operate substantially as and for the purpose described.

JAMES H. GRAY.

Witnesses:

NATHAN BROWN,

JOHN E. CRANE.