(No Model.)

J. L. REED.

PULLEY BLOCK.

No. 448,729. Patented Mar. 24, 1891.

Fig. 1.

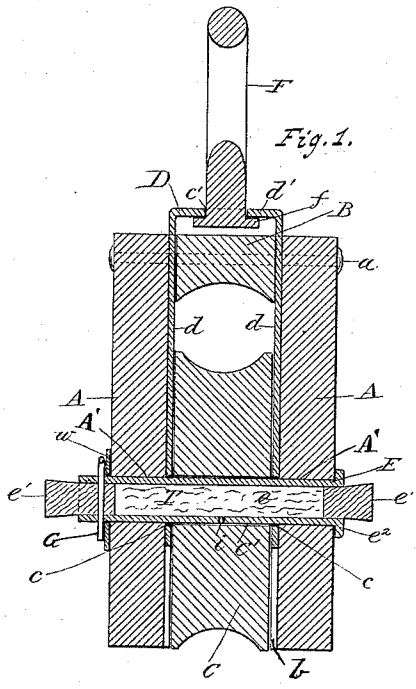


Fig. 2.

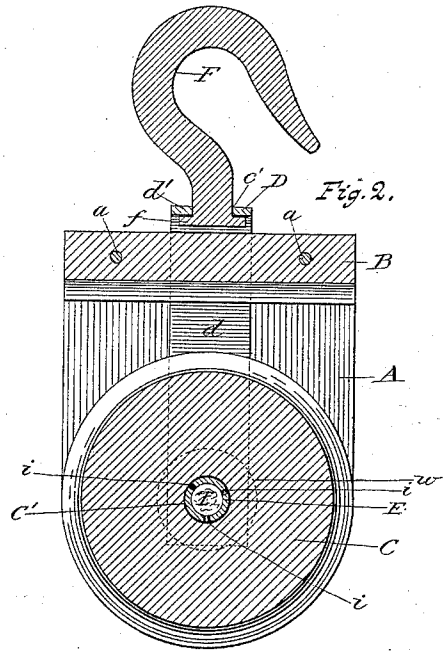


Fig. 3.

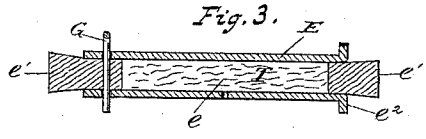


Fig. 4.

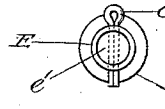
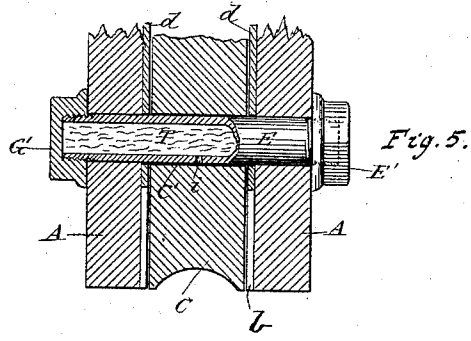


Fig. 5.



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PULLEY-BLOCK.

SPECIFICATION forming part of Letters Patent No. 448,729, dated March 24, 1891.

Application filed January 12, 1888. Serial No. 260,520. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. REED, a citizen of the United States, residing at Canajoharie, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Pulley-Blocks, of which the following is a specification.

This invention relates to improvements on my self-lubricating pulley-block for which Letters Patent No. 220,548 were granted to me October 14, 1879; and it consists of the devices and elements and the combinations of devices and elements hereinafter described, and specifically set forth in the claim.

The objects of my invention are, first, to combine with the cheeks and sheave of the block a hollow axle which will hold tallow and which is provided with one or more perforations through the shell opposite the bore of the sheave for the passage of the tallow when warmed, and has one end open for admission of the tallow, and is provided at one end with an annular flange or device for operating as a head to the axle and at the opposite end a detachable piece which can at will be operated to secure or permit a removal of the said axle, and, second, to combine with the cheeks, sheave, and a hollow axle a stop which will hold the latter at points in the length of the same corresponding with line of separation of the cheeks with the sides of the sheave, so that the shell or walls of the hollow axle can be made thinner and be strong, and be thereby adapted to become warmed through to the tallow by the heat arising from the friction in less time than will walls of greater thickness, and, further, to provide specific constructions of parts whereby my invention can be put into practice. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical sectional view of a pulley-block containing the improvements in this invention. Fig. 2 is a sectional view taken at right angles to that in Fig. 1. Fig. 3 is a sectional view of the hollow axle and adjuncts which may be used with the same for closing the ends of its chamber and holding it in place in the pulley-block. Fig. 4 is a view of an end of said axle, the view being taken from its entering or tail end; and Fig. 5 is a view, part in section, of the hollow axle with adjunts for closing its chamber and retaining it in place in the pulley-block modified.

The same letters of reference refer to like parts throughout the several views.

In the drawings, A A are the cheeks or side pieces of the pulley-block, which cheeks are provided with perforations A′ A′ for receiving the axle or spindle of the sheave. B is the tie-piece by which the said cheeks are secured together by means of the rivets *a a* or their well-known equivalents.

C is the sheave of the block, and has in it the central perforation C′ for receiving the axle or spindle on which it is revolved.

The inner sides of the cheeks A A have made in them grooves or recesses *b b* of width and depth corresponding with the width and thickness of the members *d d* of the strap D, so that the inner sides of the said members *d d* next to the sheave C will be about on a plane with the surface of the inner sides of said cheeks in which said grooves *b* are made.

The strap D is made of any suitable metal and has its head member *d′* continuous with the members *d d*, and is provided with perfotion *c′*, receiving the head end portion of the swiveling hook F, having the flange-head *f*. These members *d d* of the strap D are set apart to a distance about equal to the thickness of the sheave C, although they can be secured to the cheeks A A in any suitable manner by any suitable known means, yet I prefer to extend the said members downwardly from the head-member portion *d′* past the perforations A′ A′ in the cheeks A A and provide in their lower ends perforations *c* for receiving the axle of the sheave.

E is the axle or spindle on which the sheave C revolves. This axle can be made of any suitable metal, as may be preferred, and is cylindrical in form and contains the chamber *e*, extending from one end thereof to the other, with one of its ends at least open to the outside for convenience in charging the said chamber with tallow or other solid lubricating substance of a greasy nature and which will melt and flow when heated or warmed. The drawings show both ends of this chamber *e* open to the outside, and in Figs. 1 and

3 these open ends are shown to be closed by plugs e' e', which are removable at will. In Fig. 5 the said openings are shown to be closed by the cap-formed nuts E′ and G′, which nuts are also removable at will. One end of this cylindrical axle is provided with suitable means for preventing it from passing wholly through the cheek A first receiving this axle. In Figs. 1 and 3 this axle is shown to have with one of its ends a lateral projection e^2, which can be made in the form of a flange, so as to have bearing against the outside surface of cheek A, through which the axle is first passed.

In Fig. 5 the cap-formed nut E′ operates to hold by its screw-thread with one end of the axle E, and serves as a suitable means for preventing said axle from passing wholly through the cheek A first receiving it, the same as will the lateral projection e^2. This chambered or hollow axle E is provided with means for retaining it in place in the perforations A′ A′ of the cheeks A and perforations C′ of the sheave C until removed at will. In Figs. 1, 3, and 4 the means illustrated for thus retaining the said axle in place is the removable key G, contained in the perforation made through the metal of the axle near its plain end and opposite the end having the projection or flange e^2. A washer w is interposed between said key G and the cheek A last receiving the said axle. In Fig. 5 the cap-formed nut G′, closing an open end of the said axle, is shown to be the means for preventing the axle from moving out of place in this pulley-block, the same as does key G. This hollow axle is pierced in one or more places at about the middle of its length with holes i about one-sixteenth of an inch in diameter. These holes i, which serve as ports, are made through the wall of this axle and communicate from the chamber e to the bore C′ of the sheave C.

By the above-described construction and arrangement of parts the chamber of the hollow axle is unobstructed and is unoccupied by any substance or material other than the tallow T, so that I am enabled to use a hollow shaft of smaller diameter than in my older pulley-block, before referred to, and yet be able to give to the axle as large a charge of the tallow as in my older invention.

By constructing and arranging the strap D as above described, so that its limbs d d will be set apart to a distance about equal to the thickness of the sheave and have a bearing for the same at points close to the sides of the same, enables me to use wrought-iron hollow axles if thin walls, or cast-metal hollow axles having their walls but little thicker.

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

A pulley-block consisting of the cheeks A A, provided with perforations A′ A′, and sheave C, having a corresponding perforation C′, the removable axle E, corresponding with said perforations A′ and C′ and provided with the central longitudinal chamber e, and with ports i, communicating from said chamber to the perforation C′ in sheave C, and having end openings communicating from the same chamber to the outside, the holding devices above described applied to the outer ends of said axle and bearing against the said cheeks, and stoppers removable at will and closing the open ends of the said chamber e, substantially as and for the purposes set forth.

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