

HENRY SMITH.
Improvement in Pulley-Blocks.

No. 115,248.

Patented May 23, 1871.

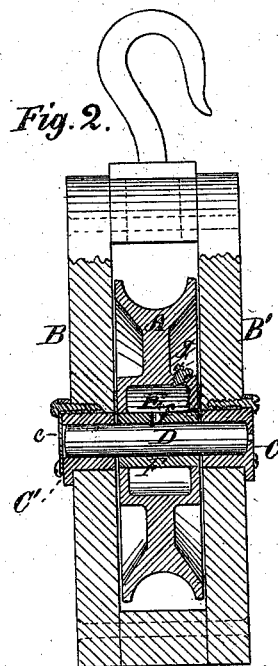
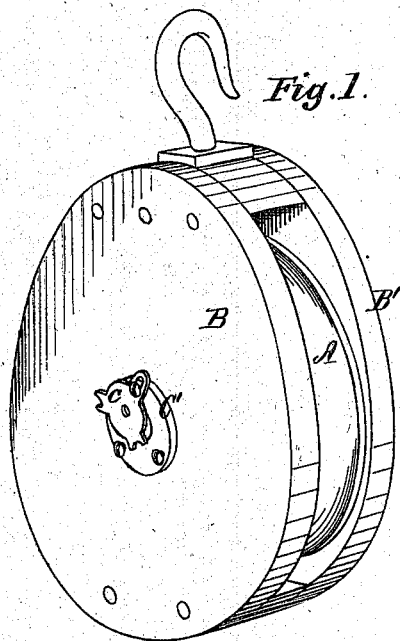
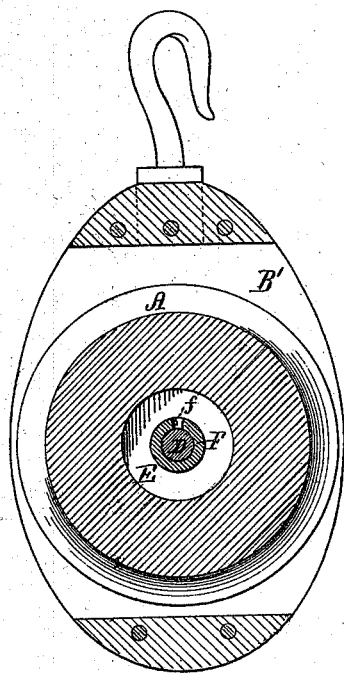


Fig. 3.



Witnesses.
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HENRY SMITH, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF
HIS RIGHT TO FRED. R. GIBBS, OF SAME PLACE.

Letters Patent No. 115,248, dated May 23, 1871.

IMPROVEMENT IN PULLEY-BLOCKS.

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, HENRY SMITH, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Pulley-Blocks.

My invention consists in a novel mode of mounting the sheave in the block, and in providing a peculiarly-constructed self-lubricating chamber; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a true, clear and exact description thereof.

Referring to the drawing—

Figure 1 represents one of my improved pulley-blocks in perspective.

Figure 2 represents the same in cross vertical section.

Figure 3, the same in longitudinal vertical section.

A is the sheave, and

B and B' are the sides of the block.

C and C' are the block-journals, located opposite each other in the sides of the block.

The former is constructed with a partially-closed outer end; the latter is open at both ends, but is provided with a removable face-plate, *c*, which serves as a cap for the outside, and closing it to correspond with the other journal.

D is an axle, of uniform diameter, fitted to the journals C and C', and of a length slightly less than the distance between the inside of the head of the journal C and the inner face of the face-plate *c*.

The sheave is cast with an interior cavity, E, and is provided with a steel bushing, F, which is rigidly attached to the sheave.

Before being inserted one or more ducts, *f*, are drilled midway between the ends of the chamber, which is then loosely filled with any suitable fibrous absorbent.

A duct, *g*, is drilled in the hub of the sheave, provided with a suitable screw-plug.

After supplying the chamber E with lubricating matter, by the way of the duct *g*, the sheave is placed between the walls of the block, the axle D having been previously removed.

The axle is then replaced, entering the bearing C', and passing through the bushing F, for which it is a bearing.

The end plate *c* is then secured in position by screws or otherwise.

The main object of the end plate is to secure the axle D in position, but it also serves to keep dust and dirt from entering upon the bearings.

It will be observed that the ducts *f* are located at a point midway between the interior ends of the chamber E, on the line of the axle. It is obvious, therefore, that if the chamber be properly charged, say to half its capacity, regardless of the position of the block, it is impossible for the oil to be discharged from the ducts except by attraction of the fibrous

absorbent, and then only while the block is in actual use.

It is this peculiarity of construction that gives my block great value.

It is well known that blocks of this character are liable to be operated while in any position, from flatwise to vertical, and that while not in use they are liable to be thrown down flatwise, there to remain until again required.

It will also be observed that the sheave is mounted on an axle, which in turn is mounted in the bearings C and C' in the walls of the block.

By this arrangement it is obvious that the axle will not only wear evenly and truly, but that the friction between the wheels and the block will be divided between the wheel bearing on the axle and the axle bearing in the journals C and C'.

The lubricating matter extends from the pulley bearing to the right and left, and keeps the journals C in proper working order.

I am aware that chambers have been constructed in pulleys and wheels of various kinds, and that fibrous absorbents have been largely employed therein in connection with lubricating matter. I know of none, however, which has been so constructed and arranged that, regardless of the position in which the wheel might be, the oil could not escape by way of the fibrous absorbent, and even then only while the wheel was in operation.

Having thus described my invention,

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

1. The lubricating-chamber E within the wheel, surrounding the sleeve, and provided with the supply-duct *g* and the discharge-duct *f*, the latter being so located with reference to the interior ends of the lubricating-chamber that oil can only be discharged by the attraction of the fibrous absorbent, substantially as shown and described.

2. The combination of the bearings C and C', the sheave, and the loose axle D, the whole being so arranged that the sheave is free to revolve on the axle and the axle free to turn in its bearings, substantially as shown and described.

3. The combination of the block with the bearings C and C', the sheave, the loose axle, and the removable end plate *c* so arranged that the axle and sheave may be freely removed from the block, substantially as described.

4. The improved pulley-block with its sheave, provided with a lubricating-chamber, and loosely mounted upon an axle or shaft, which in turn is free to revolve in bearings provided therefor in the walls of the block, all substantially as described.

HENRY SMITH.

Witnesses:

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