

(No Model.)

W. K. SPRINGER & A. KEESKA.
Sheave.

No. 240,474.

Patented April 19, 1881.

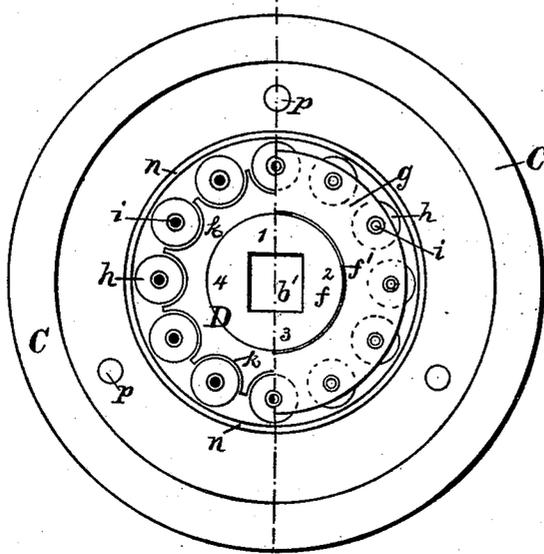


Fig. 1.

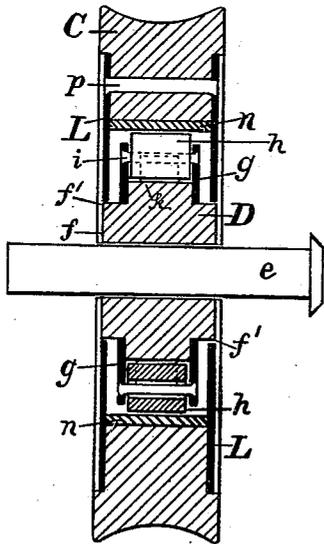


Fig. 2.

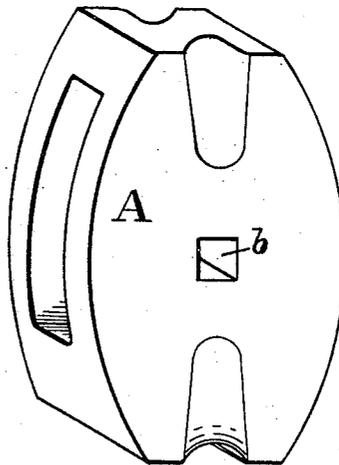


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM K. SPRINGER, OF LIVERPOOL, COUNTY OF LANCASTER, AND
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SHEAVE.

SPECIFICATION forming part of Letters Patent No. 240,474, dated April 19, 1881.

Application filed March 16, 1881. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM K. SPRINGER, residing at Liverpool, in the county of Lancaster, England, and AUKUST KEESKA, residing at Shields, in the county of Torm, England, both being citizens of Great Britain, have invented certain new and useful Improvements in Sheaves; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Our invention relates to an improvement in sheaves, and will first be described, and then designated in the claim.

Figure 1 is a vertical side view, partly in section, of a sheave embodying our improvements. Fig. 2 is a diametrical section of same. Fig. 3 is a perspective of the sheave-block.

The letter A designates the case or block, which is of any ordinary form or construction, except that the usual central hole, *b*, for the shaft of the grooved pulley-wheel is square instead of round.

The grooved pulley-wheel C consists of an annular rim rotating on friction-rollers, which are arranged within the center of the rim, and it is to this feature that our invention relates.

A hub, D, has a central hole, *b'*, which is square, and through which the pin *e* passes, and by which the hub is secured in a fixed position with respect to the block. The center of the hub in the present example has at each side a projecting face, *f*, around which is an annular shoulder, *f'*. Viewed in diametrical section, as seen in Fig. 2, the hub has on each side, extending radially from the annular shoulder, a flange, *g*. These serve as guides or bearings for the ends of the friction-rollers *h*. These rollers are placed circumferentially about the hub, and may have journals *i*, to turn in loose-fitting bearings in the side flanges, *g*, which contrivance serves merely to keep the rollers in position when the parts of the pulley-wheel are separated. We do not consider the journals, however, as essential, as the real working bearings for the rollers consist of a pecu-

liar seat, (denoted by the letter *k*), which is somewhat U-shaped or concaved to adapt it to receive the cylindrical form of the roller. The several seats or bearings for the rollers are in one integral piece of metal, as seen in Fig. 1.

The grooved pulley-rim may be made of the usual hard wood, or of metal; if of wood, a metal ring, *n*, should be provided as an inner annular face, to bear upon and rotate about the rollers.

When the sheave is suspended the pulley-rim will bear upon the uppermost rollers, and after these have withstood the wear occasioned by usage the pin *e* may be withdrawn from the block, the hub turned one-quarter around, to present on the uppermost side other rollers which have not been subjected to wear. When, after a time, these have become worn, the pin may again be withdrawn and the hub again turned one-quarter, as before. Thus those rollers adjoining the four sides of the square central hole, *b'*, are subjected to wear in succession.

As a mark to indicate the proper way to turn the hub, the numerals 1, 2, 3, and 4 are made on the face of the hub. To secure the hub and its rollers in the center of the pulley-wheel, a circular plate, L, having a central opening to allow the shoulder *f'* of the hub to project, is secured to the pulley-wheel by means of three pins or screws, *p*.

Having described our invention, we claim and desire to secure by Letters Patent of the United States—

The improvement in sheaves consisting of the combination of a hub adapted to be secured in a fixed position with respect to the case or block, rollers placed circumferentially about the hub, and a pulley-rim having an inner annular face to bear on and rotate about the rollers, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:

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