

E. B. SMITH.
 Roller-Sheaves for Pulley-Blocks.

No. 154,095.

Patented Aug. 11, 1874.

Fig. 1.

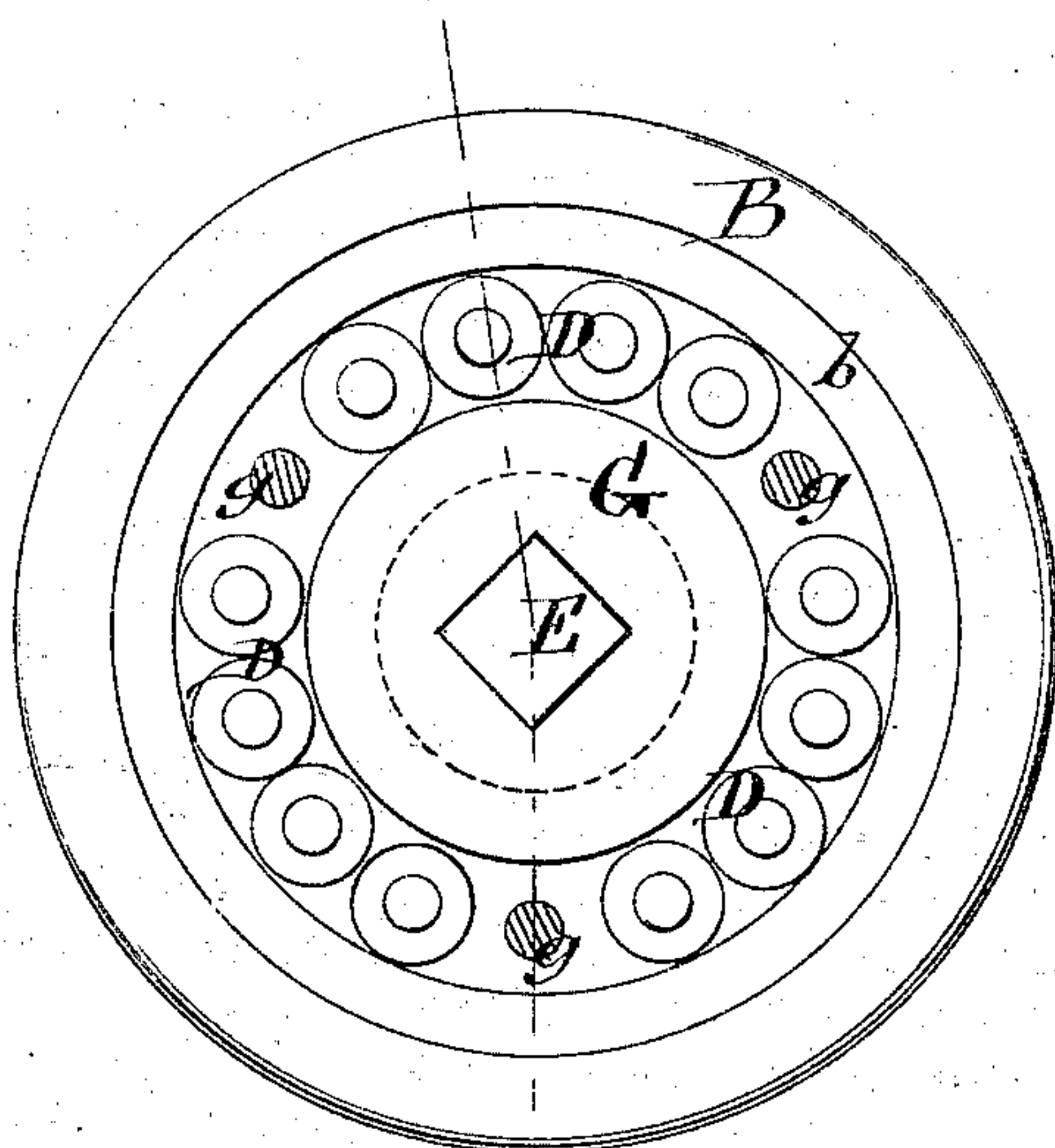
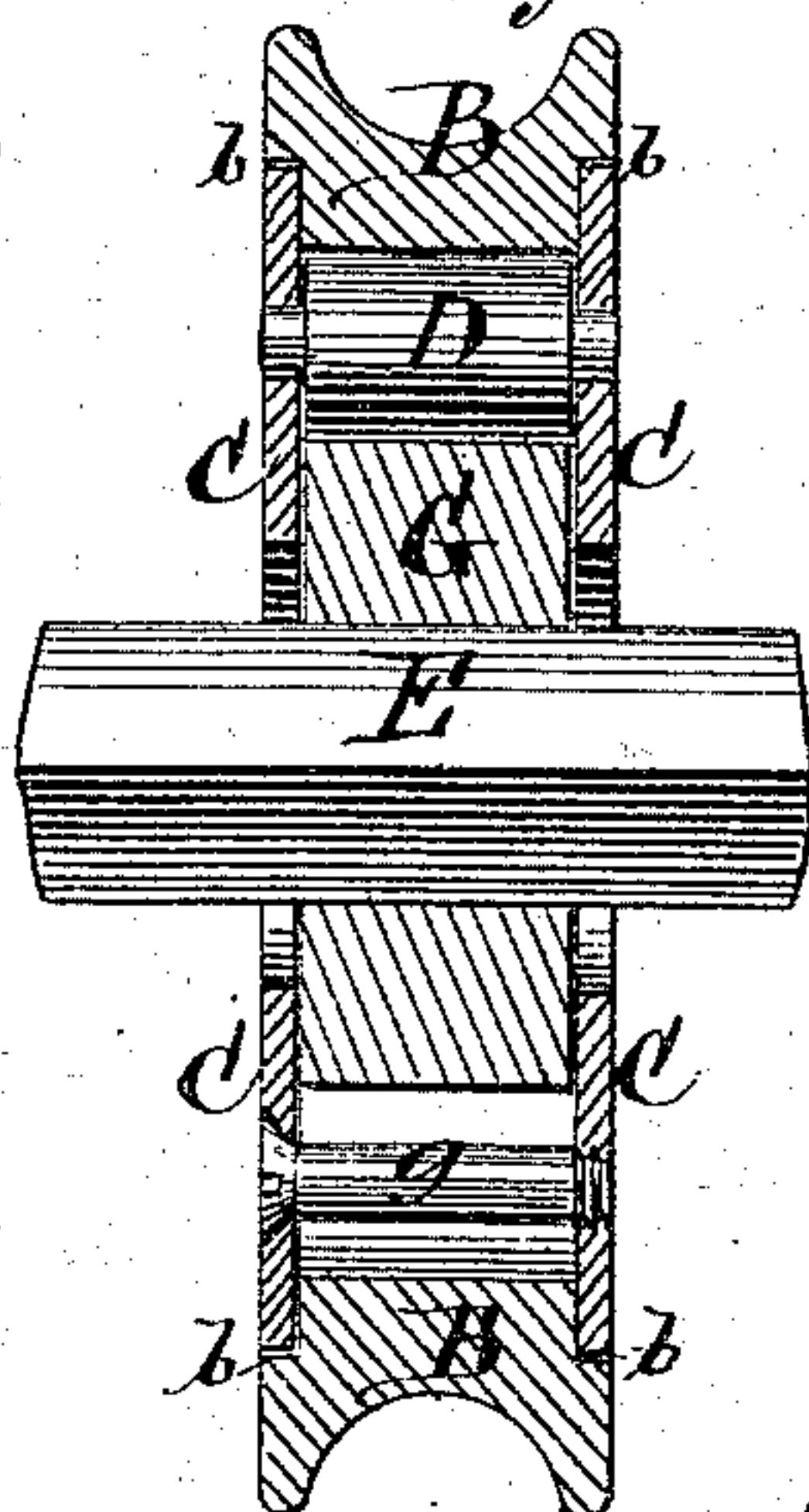


Fig. 2.



Witnesses.

John Becker
Frederic Haynes

Inventor

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By his Attorneys
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UNITED STATES PATENT OFFICE.

ELIJAH B. SMITH, OF BROOKHAVEN, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE F. CARMAN AND ALFRED C. MOTT, OF SAME PLACE.

IMPROVEMENT IN ROLLER-SHEAVES FOR PULLEY-BLOCKS.

Specification forming part of Letters Patent No. **154,095**, dated August 11, 1874; application filed April 20, 1874.

To all whom it may concern:

Be it known that I, ELIJAH B. SMITH, of Brookhaven, in the county of Suffolk and State of New York, have invented certain Improvements in Roller-Sheaves for Pulley-Blocks, of which the following is a specification:

My invention relates to certain improvements in roller-bearings for pulley-blocks, whereby the bearing is distributed over a larger space than usual in blocks of this description.

The invention consists in an annular sheave, with its inner surface bearing on friction-rollers arranged in sets and journaled in circular plates on either side of the sheave, the shaft being of angular or equivalent form, so as to prevent it from turning in the block, and surrounded by a cylindrical core or collar, the periphery of which forms a bearing-surface for the rollers.

In the accompanying drawing, Figure 1 is a side view of the invention, with one of the side plates removed. Fig. 2 is a transverse section of the same.

The sheave B is of annular form, its face being grooved as usual, and its inner surface being cylindrical, and bearing on friction-rollers D, journaled in circular plates C, arranged one on each side of the sheave, and having their peripheries fitting in shoulders *b* therein. The rollers may, if desired, be arranged in sets, as shown in Fig. 1, in which they are represented in three sets of four rollers each. The plates C are secured together by bolts, rivets, or screws *g g*. Instead of the rollers being arranged in sets, as shown in Fig. 1, they may all be arranged as near as practicable together, and the screws *g g* will in such case be arranged in the angular spaces between the rollers. The shaft E is of angular or equivalent form, so as to prevent it from turning in the block, and is secured in the strap of the block in such manner as to confine it endwise, and it has firmly secured to it a cylindrical core or collar, G, the periphery

of which forms a bearing-surface for the rollers D.

Instead of revolving upon a fixed axis, or upon a series of stationary rollers, the sheave bears upon the rollers, which in turn bear upon the collar G, revolving upon their own axes, and also revolving about a common center. By this arrangement the bearing is brought upon several rollers at once, and is distributed over a larger surface, instead of being upon a small shaft and upon one or two rollers, as in blocks provided with rollers in the usual way, and thus the operation is easier, and the parts are subjected to less wear.

Another advantage of this collar G is, that it keeps the sheave from the cheeks of the block, as the inner edges of the annular plates C, lapping over the outer edges of the said collar, while the collar is fast on the shaft E, and the latter fast in the strap of the block, prevent any movement of the same in the direction of its axis.

I do not claim a series of friction-rollers journaled in annular plates between the sheave and a shaft, for such of itself is not new, being old and well known. The special feature of my invention, as hereinbefore stated, consists in arranging the annular plates so that they not only form bearings for the rollers, but at the same time are of such a size and construction that they overlap the sides of the sheave and the core or collar, the important results of which have hereinbefore been pointed out.

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

The combination, in a sheave for pulley-blocks, of the annular plates C C for guiding the rollers D, and overlapping the sides of the sheave B and fixed core G, substantially as herein shown and described.

ELIJAH B. SMITH.

Witnesses:

HENRY T. BROWN,
MICHAEL RYAN.