

(No Model.)

T. R. FERRALL.

ANTI FRICTION BEARING FOR PULLEY BLOCKS.

No. 358,028.

Patented Feb. 22, 1887.

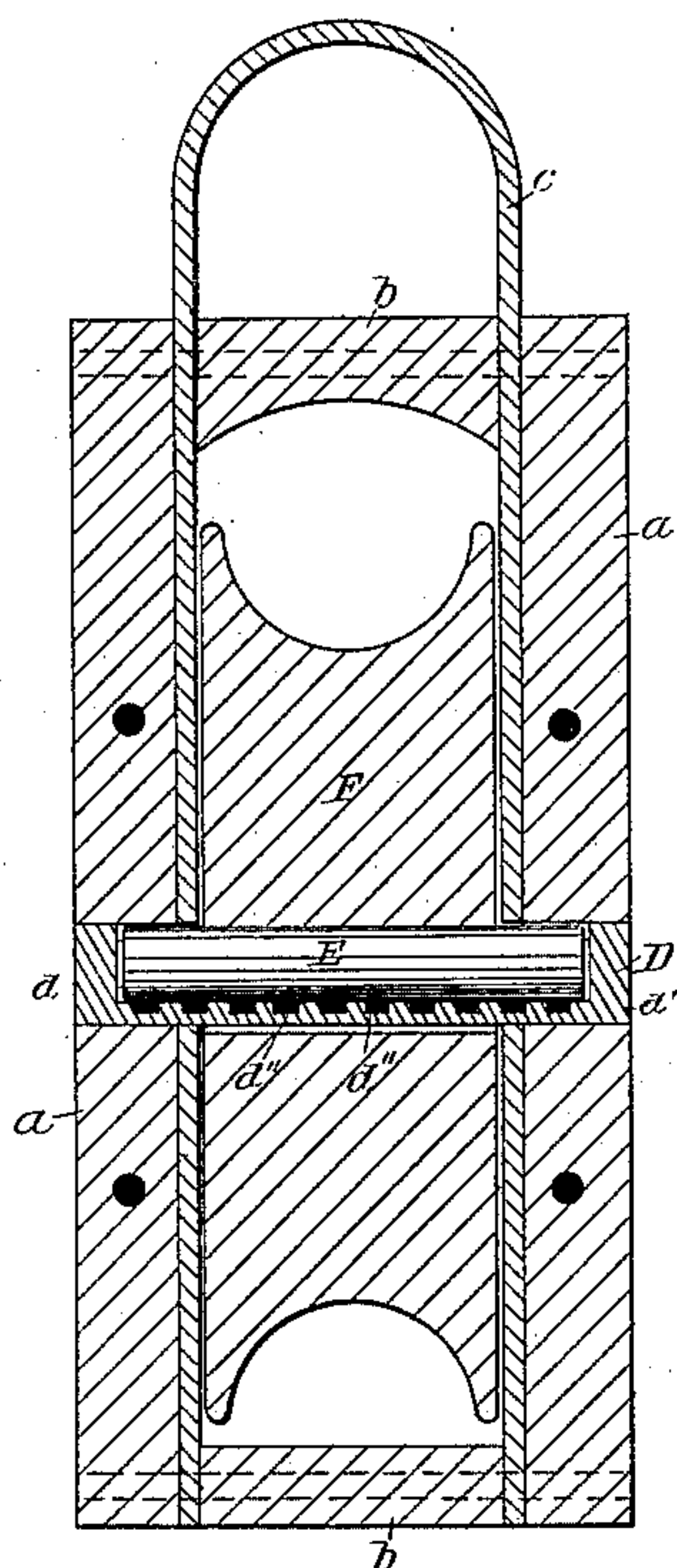


Fig. 1.

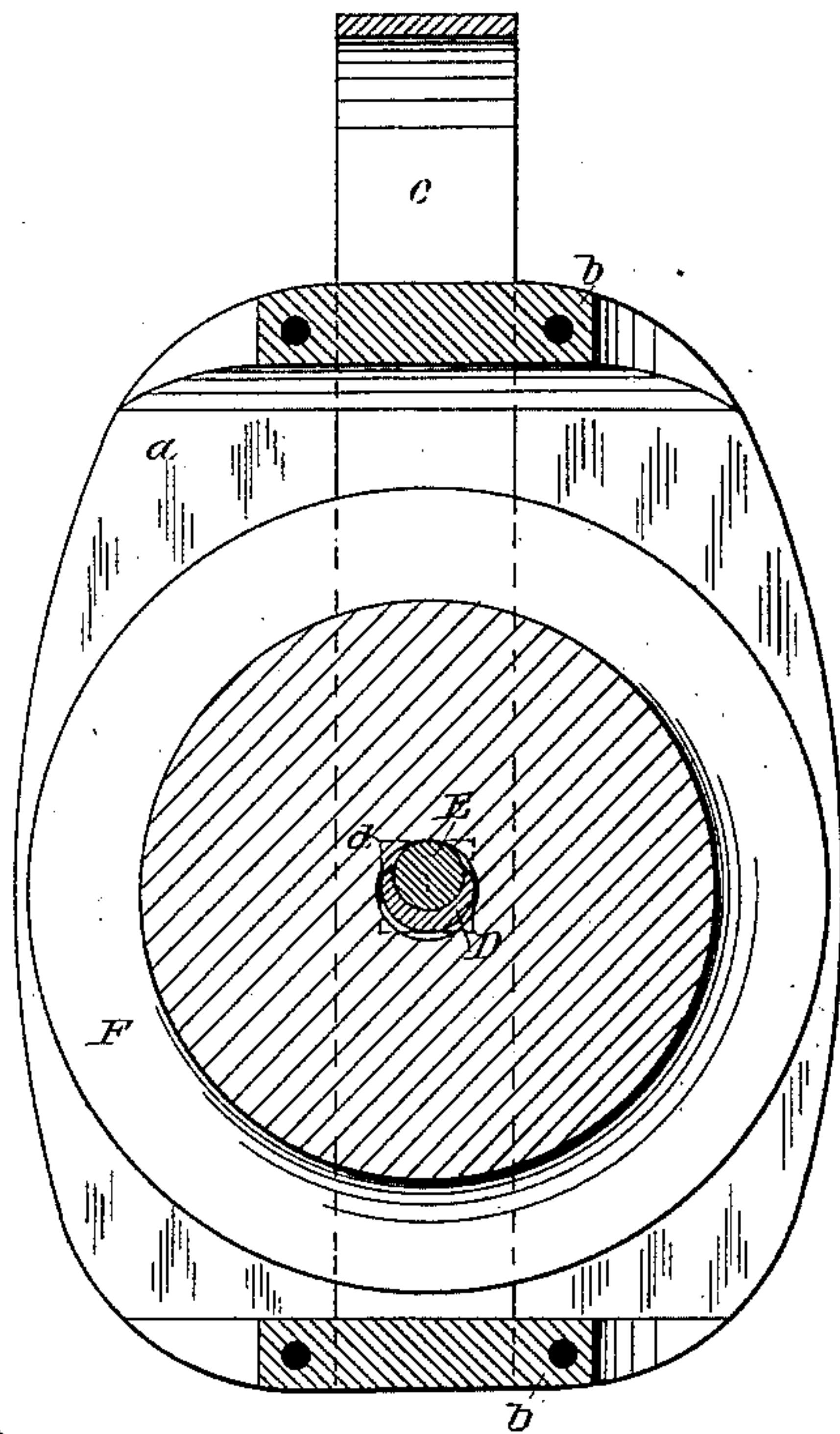


Fig. 2.

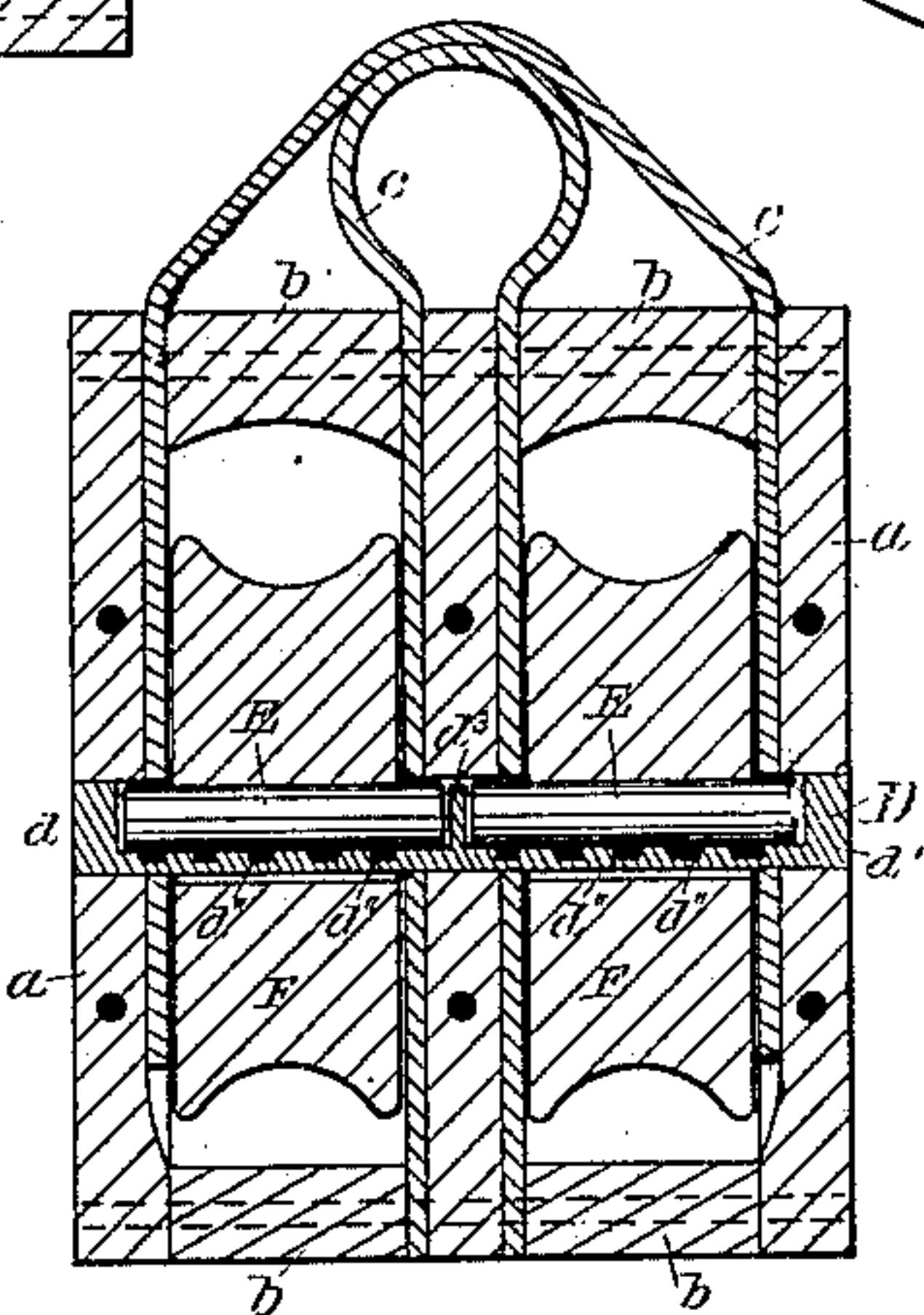


Fig. 3.

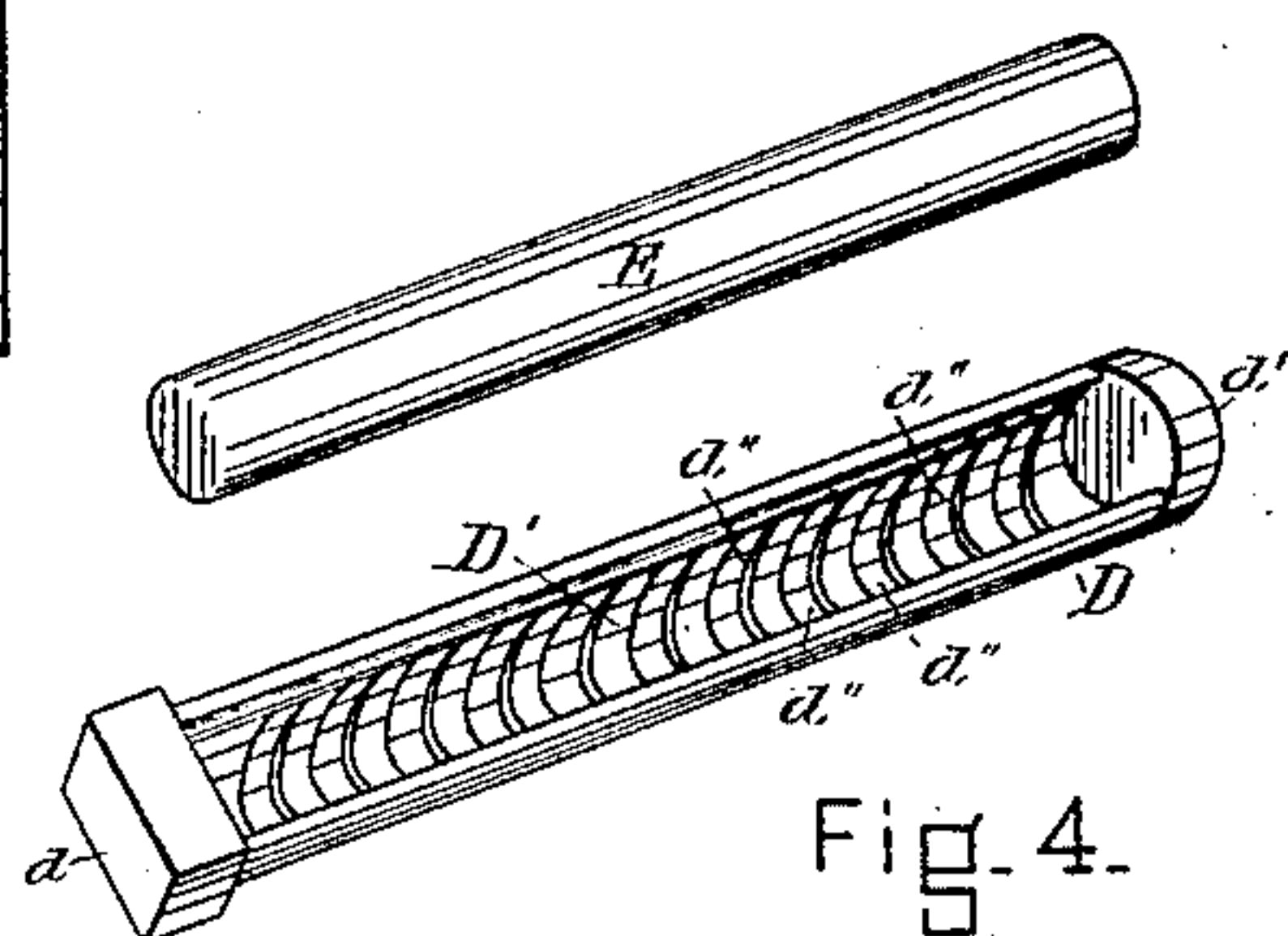


Fig. 4.

WITNESSES.

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ANTI-FRICTION BEARING FOR PULLEY-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 358,028, dated February 22, 1887.

Application filed April 16, 1886. Serial No. 199,058. (No model.)

To all whom it may concern:

Be it known that I, THOMAS R. FERRALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Anti-Friction Bearings; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

10 This invention relates to improvements in anti-friction bearings, and it is particularly well adapted for pulley-blocks, although it is equally useful for other purposes where an anti-friction device is needed.

15 The invention is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a longitudinal section, and Fig. 2 represents a cross-section, of a single-sheave pulley-block provided with my improved anti-friction bearing. Fig. 3 represents a longitudinal section of the same as applied to a double or multiple block. Fig. 4 represents a perspective detail view of the box and its anti-friction cylinder.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

30 In Figs. 1 and 2 is represented a single-sheave pulley-block, in which *a a* are the sides, and *b b* the end pieces, as usual.

c is the metal bow-strap, secured to the sides *a a* by means of the box *D*, passing through perforations in said sides and metal bow-strap *c*.

35 The box *D* is made of metal, with a semicircular, or nearly so, recess, *D'*, extending nearly throughout its whole length, and having solid ends *d* and *d'*, as shown in the drawings, one of which may be made square or polygonal, or of suitable shape, to fit a corresponding recess in one of the sides *a*, so as to prevent the box from turning around when put in place with its recess *D'* uppermost, as shown.

45 Within the recess *D'* in box *D* is laid loosely the solid cylinder *E*, which is made of uniform size and shape throughout its length, so as to bear and lie on the entire recess *D'* from one end to the other, said recess being therefore made of a uniform size and shape throughout its entire length, as shown.

F is the sheave, having a central perfora-

tion, through which is loosely inserted the box *D* and its cylinder *E*, as shown in Figs. 1 and 2.

By making the cylinder *E* of uniform size and shape throughout its length without any reduced ends or journals, and sufficiently long to extend beyond the metal strap *c* and interior walls of the side pieces, *a a*, it will be seen that the downward strain on the sheave *F* is conveyed, through the medium of the uniform cylinder *E*, to the metal strap *c* and side pieces, *a a*, and thus relieving all breaking strain from the box *D*, which latter may therefore be made very light, and preferably of gun-metal or suitable material. The upper portion of the central perforation in sheave *F* is made to rest on the upper surface of the cylinder *E*, and as the sheave is rotated it will roll on the cylinder *E*, that will be caused to revolve easily in the recess *D'*. I prefer to provide the recess *D'* with a number of grooves or notches or channels, *d'' d'' d''*, into which a suitable lubricant, paste, or liquid is placed, so as to keep the cylinder *E* and recess *D'* properly lubricated, by which arrangement a large amount of lubricating material can be placed in such grooves, &c., to keep the recess *D'* and its cylinder *E* properly lubricated for a great length of time. When the lubricant is consumed, the box *D* and cylinder *E* can easily be removed from the block and a fresh supply placed in said grooves *d'' d''*.

When the device is to be used in double or multiple block, as shown in Fig. 3, I make a separate cylinder for each sheave on account of the variation in speed of the sheaves when the block is used, and I make a division-wall, *d³*, in the box *D*, so as to separate one cylinder from the other, as shown in Fig. 3.

This my device is very strong and durable, and is applicable as an anti-friction bearing for a variety of purposes besides sheaves and pulley-blocks.

What I wish to secure by Letters Patent, and claim, is—

1. In an anti-friction bearing, the sides or supports *a a*, the stationary box *D*, having a recess, *D'*, of continuous size, and end walls, *d d'*, the roller *E*, of continuous size throughout its length, adapted to rotate in said recess, and the pulley *F*, having central perforation, in which the box *D* and roller *E* are introduced,

to permit the pulley to rotate on and around the roller E, combined as and for the purpose set forth.

5 2. The cylinder E, of uniform size throughout its length, in combination with the box D, having recess D', of uniform size, for receiving the cylinder E, the end walls, d d' , and channels or grooves or notches d'' d'' , for holding the lubricant, as herein set forth and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

THOMAS R. FERRALL.

Witnesses:

ALBAN ANDRÉN,
HENRY CHADBOURN.