

E. P. PALMER.

Axle-Box.

No. 50,948.

Patented Nov. 14. 1865.

Fig. 1.

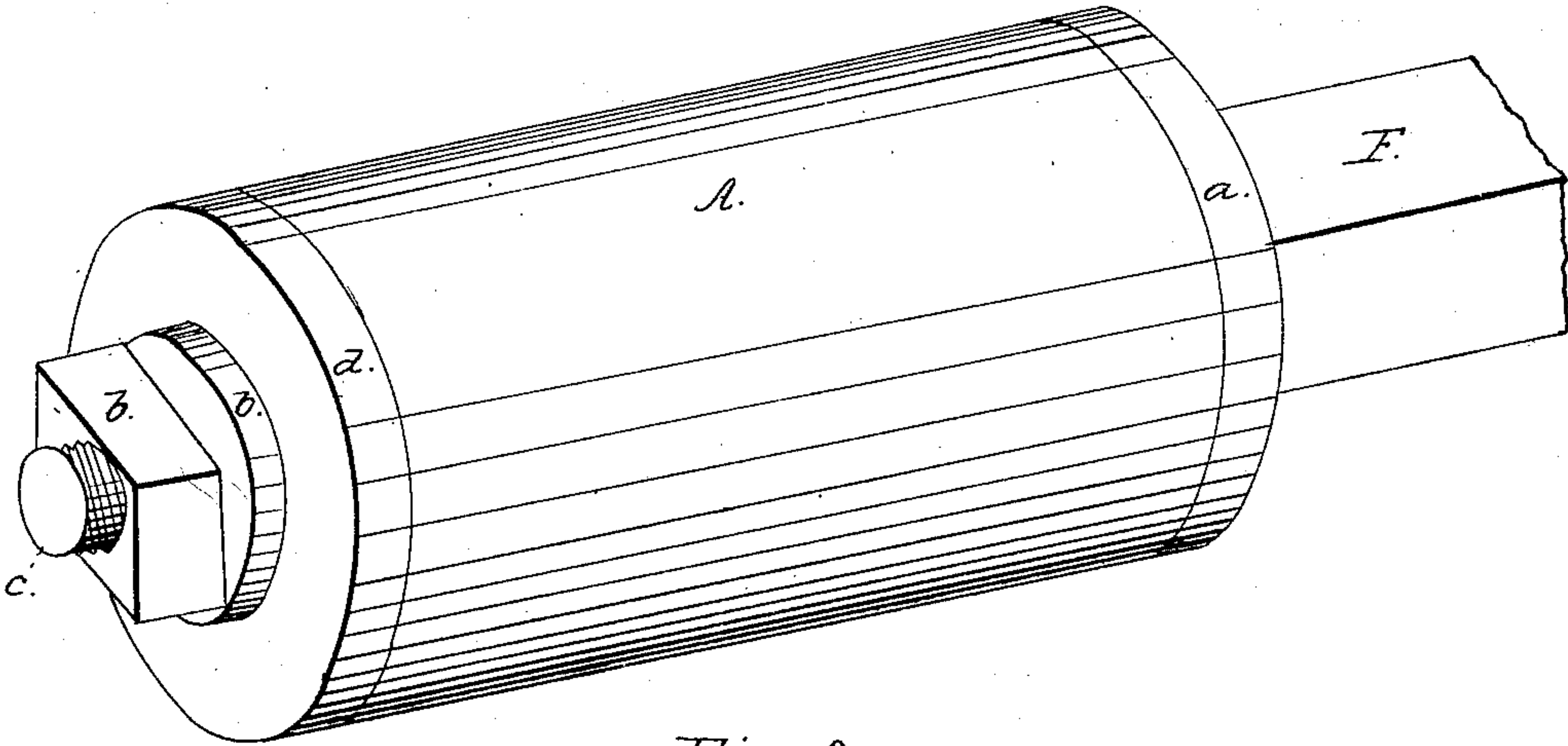


Fig. 2.

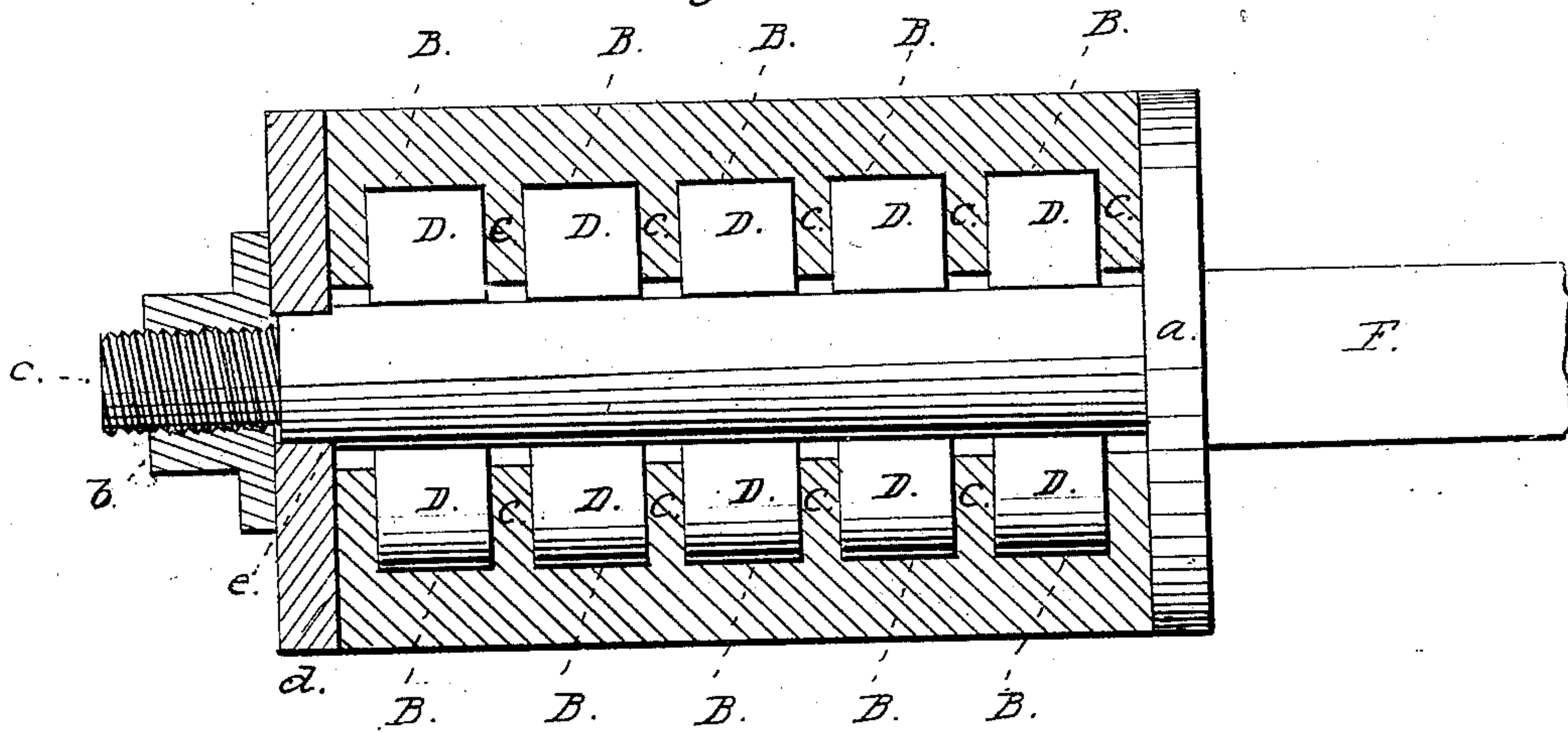
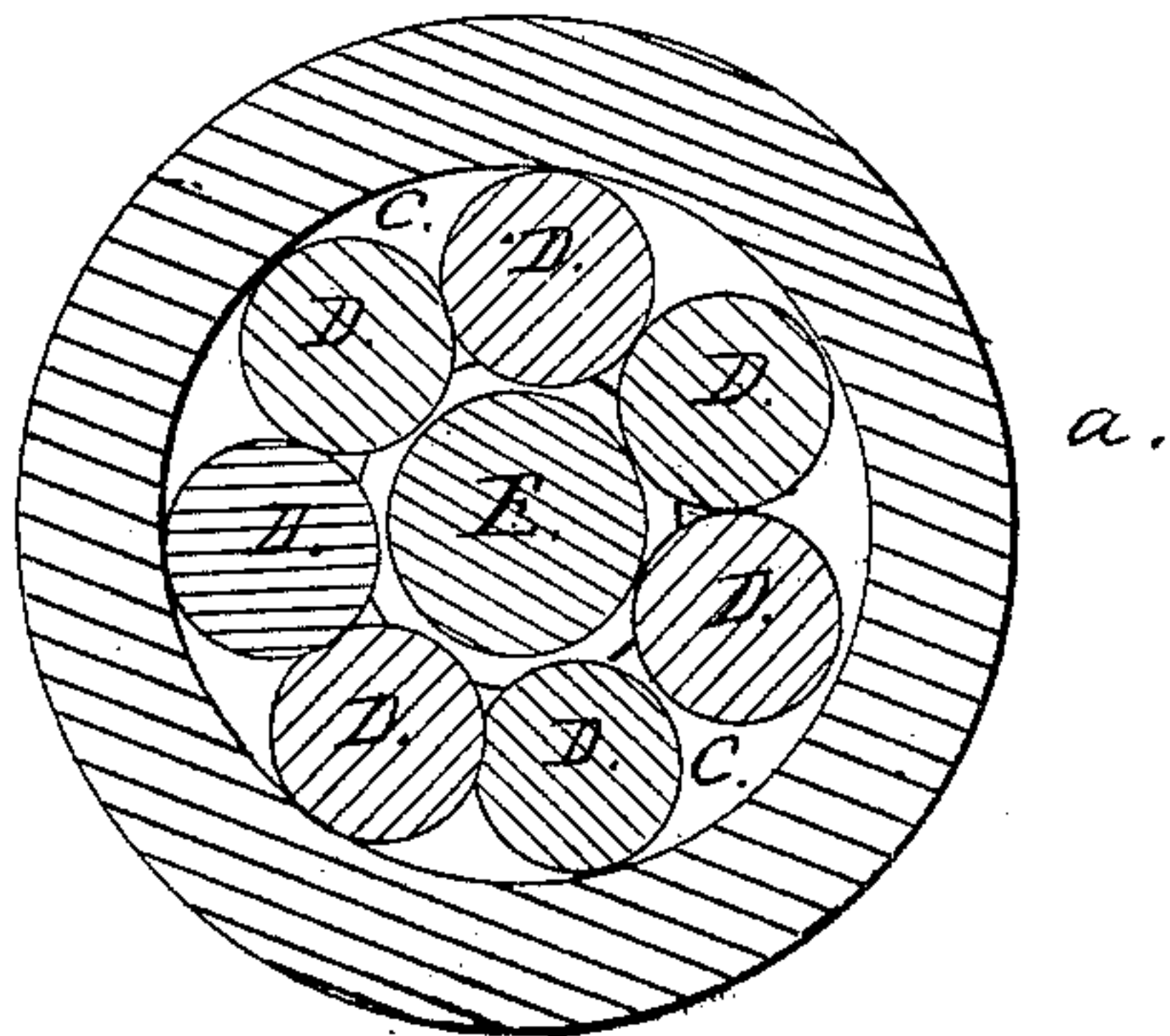


Fig. 3.



Witnesses:
Stephen W. Wick
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Inventor:
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UNITED STATES PATENT OFFICE.

EBENEZER P. PALMER, OF MILTON, DELAWARE.

IMPROVEMENT IN JOURNAL-BOXES FOR LAND-CARRIAGES.

Specification forming part of Letters Patent No. 50,948, dated November 14, 1865.

To all whom it may concern:

Be it known that I, EBENEZER P. PALMER, of Milton, in the county of Sussex and State of Delaware, have invented a new and useful Improvement in Journal-Boxes for Land-Carriages and other Journals; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a longitudinal section. Fig. 3 is a cross-section.

Like letters in all the figures represent the same parts.

The nature of my invention and improvement consists in constructing a box with a number of annular chambers, each of which is provided with a series of friction-rollers, which revolve on the periphery of the same, as they are turned by the pressure of the journal, which has a central arrangement in relation to them.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is a box, which is constructed of cast-iron or other suitable material. It is represented in the drawings of cylindrical form, and I usually make the boxes in this form when I insert them in the hubs of vehicles, but when I construct them for other purposes I substitute any other form which may be suitable for the purpose for which they are used.

B B B B B are annular chambers in the interior of the said box, which are separated from each other by the partitions C C C C. In each of these chambers there is a series of friction-rollers, D, which bear on the periphery of the chamber, as represented in Figs. 2 and 3.

E is the journal, which is kept in its central position by the rollers D, and which, in its revolutions, causes them to roll around it and against the peripheries of the chambers B.

F is a portion of the axle or shaft. It has a flange, *a*, which bears against the inner end of the box A, it being kept in position by means of the nut *b* on the screw-projection *c*,

on the outer end of the journal E, the said nut bearing the cap-plate *d* against the shoulder *e* of the journal, as represented in Fig. 2. When the cap-plate or flange *d* is thus secured the distance between it and the flange *a*, corresponds to the length of the box A in such a manner as to permit the said flanges in their revolutions with the journal E to move freely on the ends of the box A. Balls may be used in place of cylindrical rollers, if desired.

The operation is as follows: As the journal revolves it bears at its line or lines of pressure upon the peripheries of the rollers D, which causes them to revolve against the peripheries of the chambers B, each roller assuming a different position with the journal and taking the place of the other in its respective chamber in regular succession, and thereby equalizing the amount of wear to each roller. Having the box divided into a number of compartments, as represented, so as to shorten the length of the friction-rollers, the jamming the ends of the same against their supporting-surfaces is obviated, even in journals of great length.

I do not design the use of the above-described combination of friction-rollers with the box A merely with the journals of the axles or shafts of land-carriages, but contemplate adopting it in all kinds of machinery in which it can be readily used to advantage.

I do not claim, broadly, the combination of friction-rollers without journals with the journals of shafts, as that is not new; but

I claim—

Constructing the box A with a number of partitions, C, so as to shorten the rollers and prevent their jamming, when the said box is used in combination with the rollers D and journal E, substantially as described, and for the purposes set forth.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal, this 28th day of April, 1863.

EBENEZER P. PALMER. [L. S.]

Witnesses:

STEPHEN USTICK,
LOUIS T. MARTS.