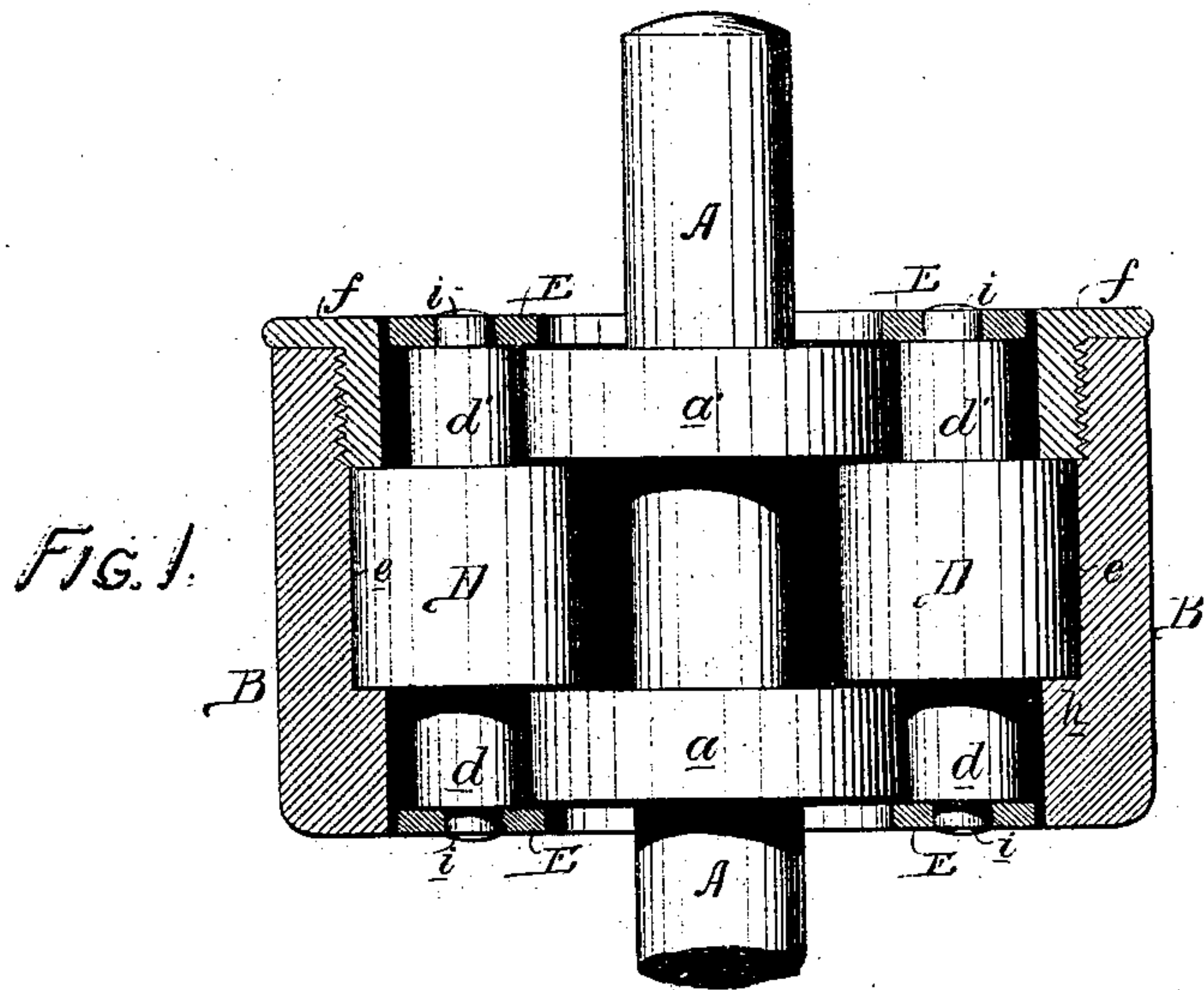


*J. I. Parry,*

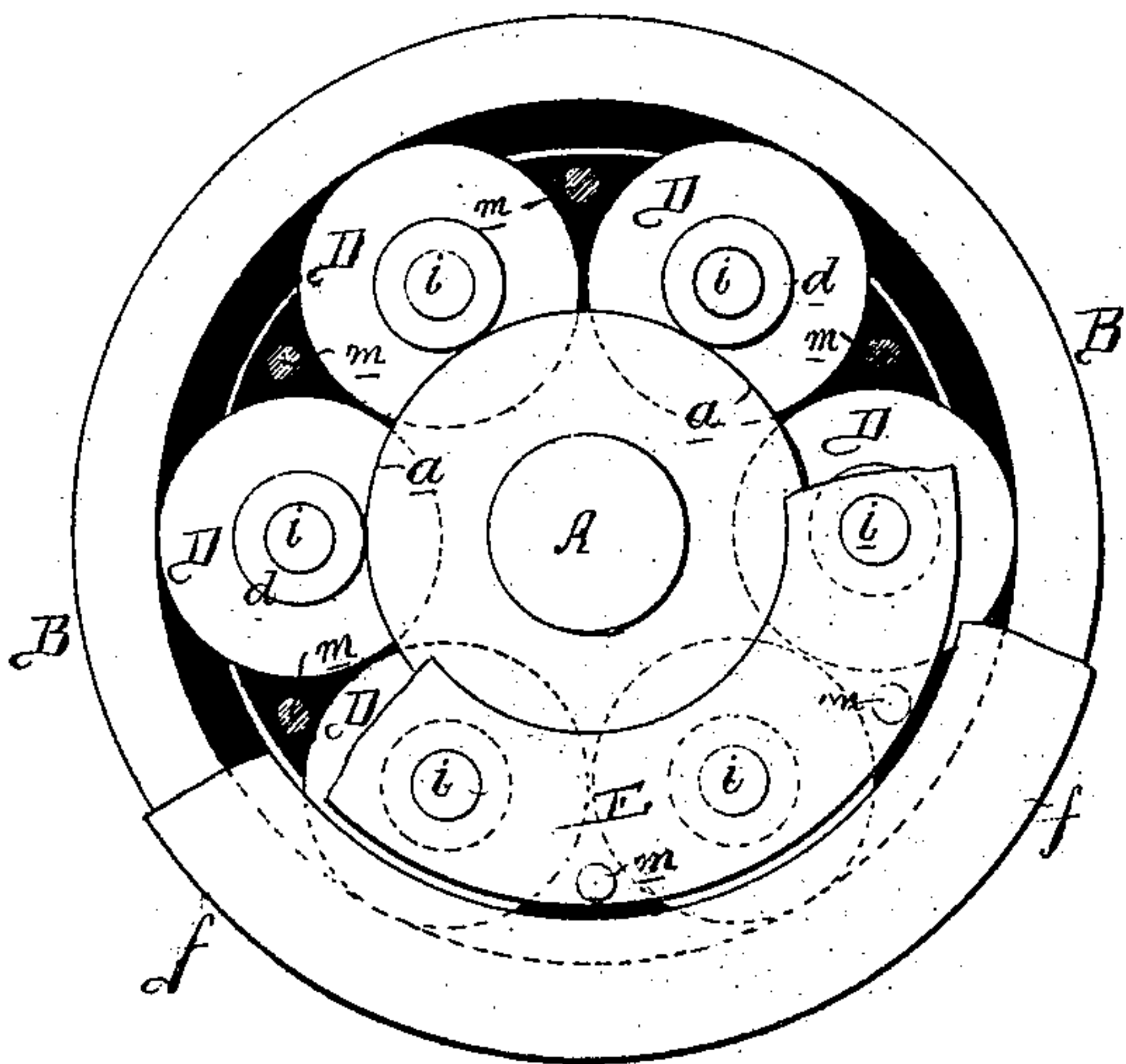
*Anti Friction Box.*

*No. 96,720.*

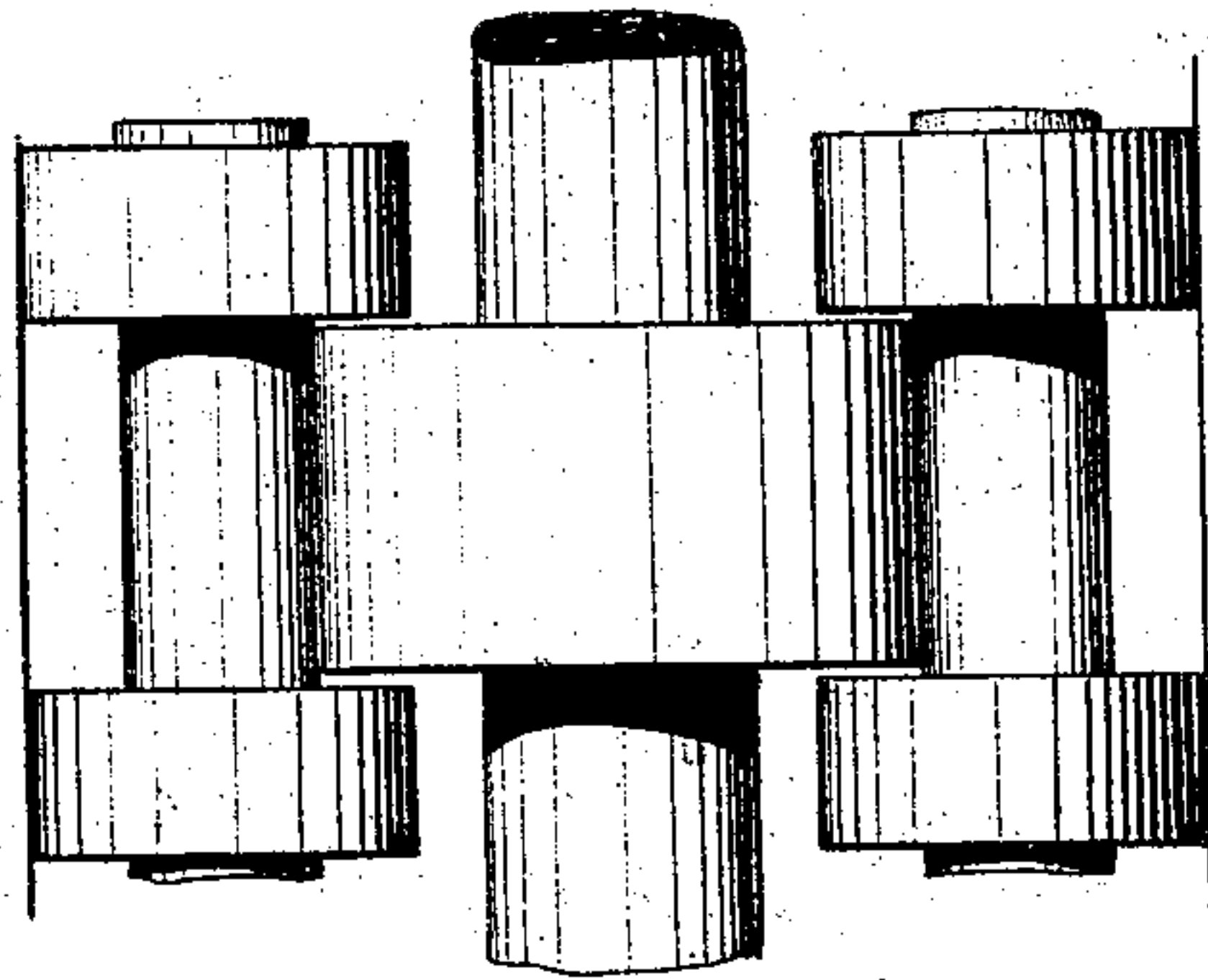
*Patented Nov. 9. 1869.*



*FIG. 2.*



*FIG. 3.*



WITNESSES

*Wm. A. Steel*

*John Parker*

*Joseph L. Parry*  
*by his Atty.*

*Stowson and Son*



# United States Patent Office.

JOSEPH L. PARRY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND SAMUEL ZANE; ASSIGNORS TO THEMSELVES AND EBENEZER H. BAILEY, OF SAME PLACE.

Letters Patent No. 96,720, dated November 9, 1869.

## IMPROVED ANTI-FRICTION BOX.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOSEPH L. PARRY, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Anti-Friction Box, of which the following is a specification.

### *Nature and Object of the Invention.*

My invention consists of an anti-friction box containing a series of rollers, constructed, adapted, and proportioned in respect to an axle or shaft, and to the interior of the box, as described hereafter, so that the moving of the rollers in contact with the axle or shaft shall be in unison with their movement in contact with the interior of the box, thereby preventing all disposition which the rollers otherwise would have, to produce friction, by dragging against either the box or axle.

### *Description of the Accompanying Drawing.*

Figure 1 is a sectional view of my improved anti-friction box;

Figure 2, a front view, with portions removed; and

Figure 3 illustrates a modification of my invention.

### *General Description.*

A represents part of the axle of a wagon, and B, part of the hub of a wheel, or A may be supposed to represent any revolving shaft, that of a propeller for instance; and B, part of a box or bearing.

In the following description of the invention, however, A will be referred to as representing part of an axle, and the hollow cylinder B as part of the hub of a wheel, revolving on the axle.

Two collars or disks, *a* and *a'*, are formed on the axle, and against the peripheries of these disks bear the portions *d* and *d'* of a series of rollers, D, six being shown in the present instance.

These rollers are arranged around the axle at equal distances apart from each other and from the centre of the axle, as shown in fig. 2, and the enlarged portions *e* of the rollers are arranged to bear against the inside of the hollow cylinder B, which is made in two parts, the cylinder proper and a follower, *f*, arranged for insertion into and withdrawal from the cylinder, in which is formed a shoulder, *h*, the enlarged portions of the rollers fitting freely between the said shoulder and the inner end of the follower, so that when the latter is in its place the whole of the rollers are maintained in their proper lateral position in the cylinder

or box, and the latter, with their rollers, are maintained in their proper position, laterally, on the axle, owing to the enlarged portions of the rollers fitting freely between the disks *a* and *a'*, on the said axle.

Small journals, *i i*, are formed on the opposite ends of the rollers, for turning freely in rings E and E', the two rings being connected together by rods *m m*.

It will be observed that no portion of the axle bears against the rollers, excepting the peripheries of the disks *a* and *a'*, and that no part of each roller bears against the cylinder, excepting the enlarged portion.

It is essential, in carrying out my invention, that the circumferences of the bearing-portion of the axle, rollers, and cylinder or box should be properly proportioned in relation to each other.

Thus, the circumference of the portions *d* and *d'* of each roller should bear, as near as possible, the same proportion in relation to the circumference of the disks of the axle, as the circumference of the enlarged portion *e* of each roller bears to the circumference of the interior of that portion of the cylinder against which the rollers bear, so that the movement of the portions *d* of the rollers over and in contact with the disks of the axle will be in unison with the movement of the enlarged portions of the rollers, over and in contact with the cylinder, or, in other words, so that there can be no frictional drag of the rollers either against the cylinder or axle.

In the modification illustrated in fig. 3, the axle has but one disk, fitting between two enlargements of the rollers, which bear against the interior of the cylinder or box.

This modification will be readily understood without explanation, as will also the proposed arrangement of the rollers, for a bearing for a revolving shaft.

### *Claim.*

An anti-friction box containing a series of rollers, constructed, adapted, and proportioned in respect to an axle or shaft, and cylinder or box, substantially as set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH L. PARRY.

Witnesses:

WM. A. STEEL,  
HARRY SMITH.