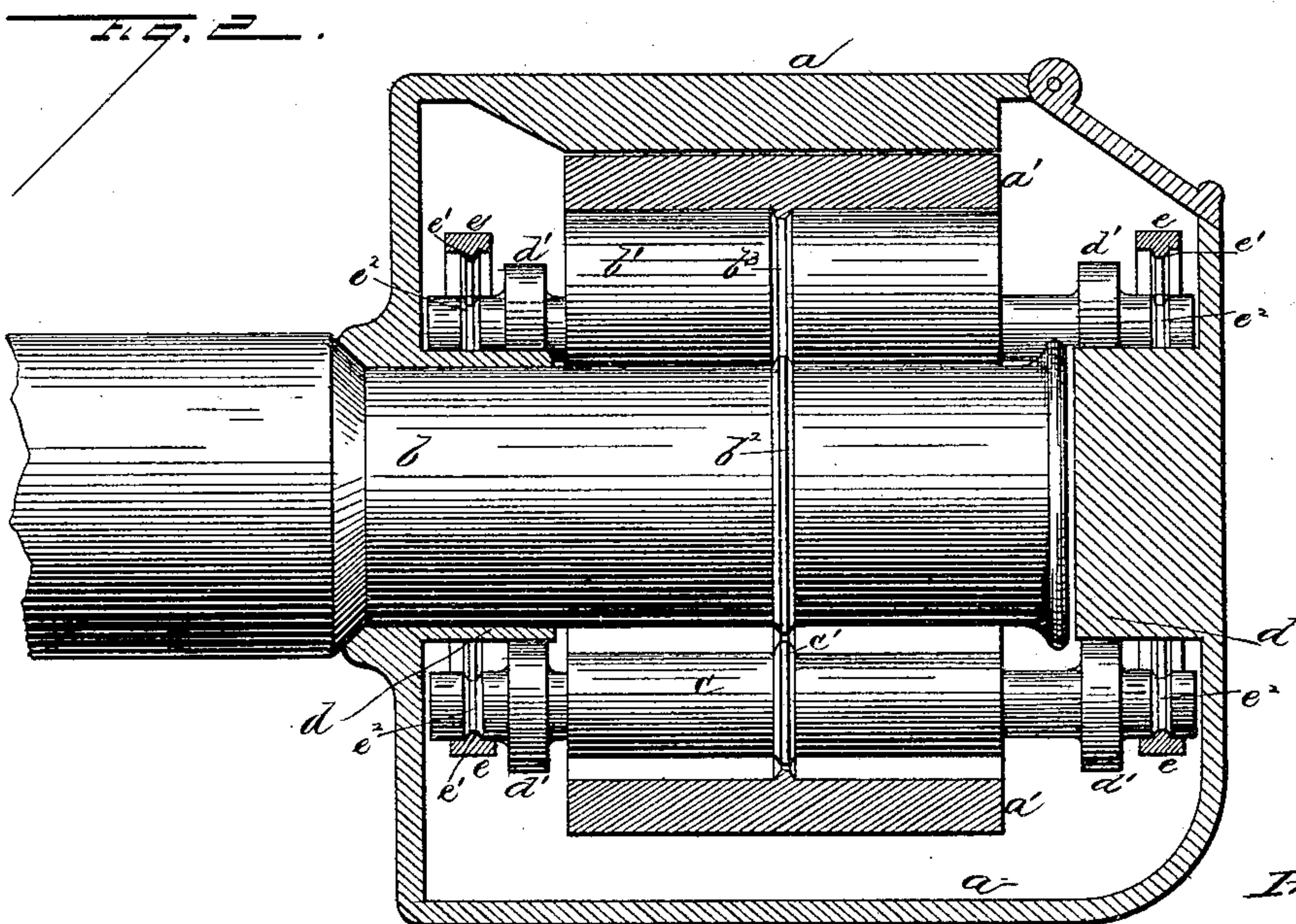
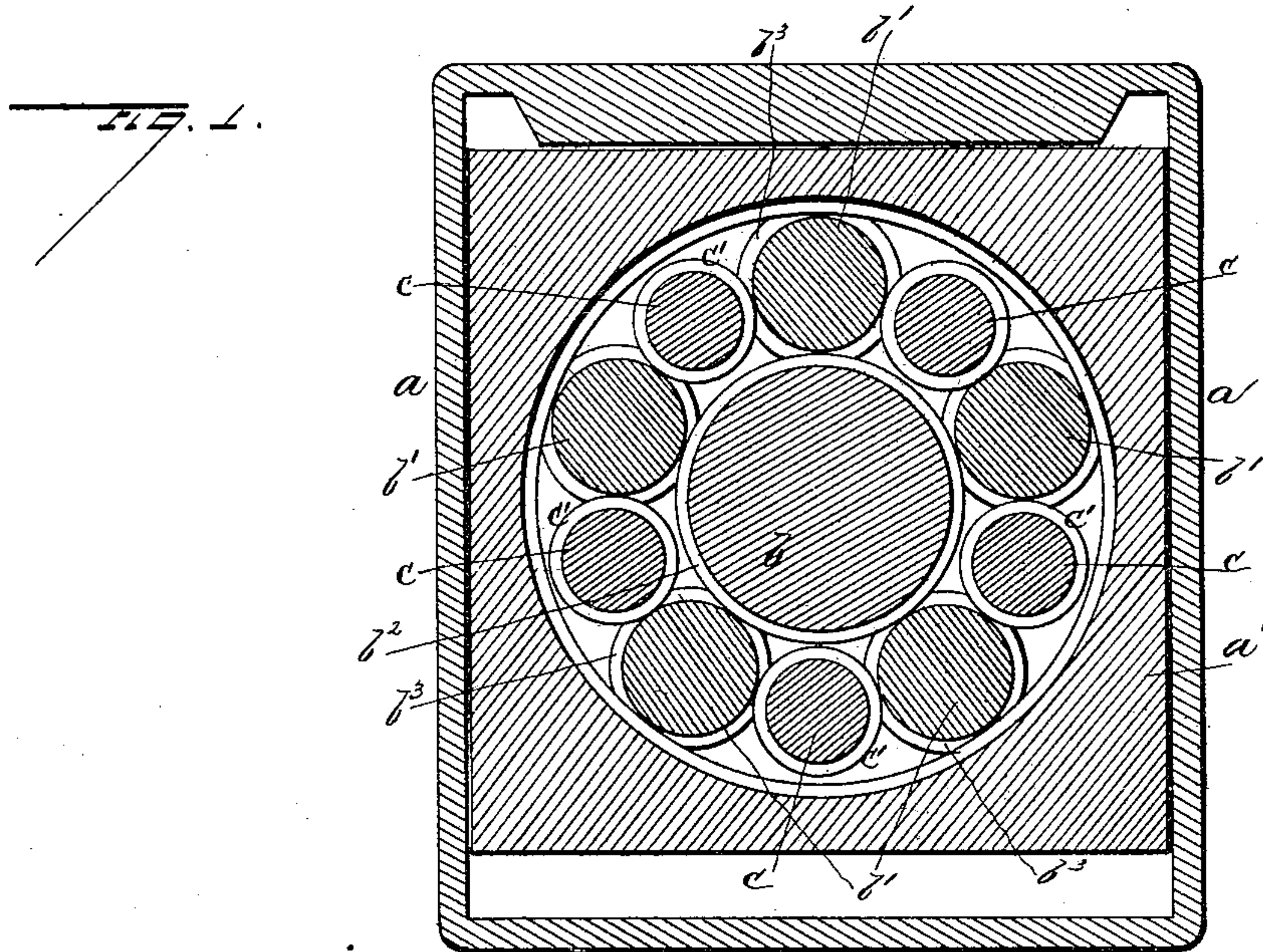


(No Model.)

D. ALLEN.
CAR AXLE BOX.

No. 388,238.

Patented Aug. 21, 1888.



Witnesses:
A. C. McArthur.
W. S. McArthur.

Inventor.
Delos Allen.

Per
H. Harrison.
Attorney.

UNITED STATES PATENT OFFICE.

DELOS ALLEN, OF CHICAGO, ILLINOIS.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 388,238, dated August 21, 1888.

Application filed September 23, 1887. Serial No. 250,519. (No model.)

To all whom it may concern:

Be it known that I, DELOS ALLEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Anti-Friction Journal-Boxes, of which the following is a specification, to wit:

This invention relates to an improvement in anti-friction journal-boxes; and it consists
10 in certain peculiarities of the construction and arrangement of the same, substantially as will be hereinafter more fully described and claimed.

In order to enable others skilled in the art
15 to which my invention pertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a cross-sectional view of my in-
20 vention; and Fig. 2 is a central section of the same, with parts shown in elevation.

a represents the inclosing-frame of the jour-
nal-box, which is of any of the usual or de-
sirable constructions, and in which is placed
25 a boxing, *a'*, having a large circular opening through it, as shown. The axle *b* is passed through the inner side of the outer casing and through the center of the opening in the box-
ing. Around this shaft, within the boxing *a'*,
30 are placed a series of rollers, *b'*, which occupy the space between the shaft and boxing and roll in contact with both. These rollers vary in number, as found desirable, and are kept from contact with each other by a series of
35 smaller rollers, *c c*, placed between the larger ones, and preferably with their centers at the same radial distance from the center of the shaft. In order to prevent any end motion of the rollers individually, I form the shaft *b*
40 with a peripheral flange, *b²*, and the rollers *b'* with a circumferential groove, *b³*, of size and form corresponding to the flange on the shaft, and the shaft and rollers are thus interlocked, so that there can be no endwise play of one
45 without the other. The separating-rollers *c c* are also formed with circumferential flanges *c'*, to engage the grooved rollers *b'*, as shown, and the whole is thus secured together.

Upon each end of the outer box or casing,
50 *a*, I form a circular disk, *d*, concentric with

the center of the shaft, and the smaller rollers, *c c*, are extended and have their ends formed or provided with disks or wheels *d'*, which run upon these disks *d*, the relative sizes being so gaged as to enable the smaller rollers, *c*,
55 to move around the whole circle at the same speed as the larger ones in the boxing. A ring, *e*, is slipped over the ends of these small rollers to hold them all in proper place, and this ring is also formed with an inner flange, *e'*,
60 running in grooves *e²* in the rollers, so that the rings may have no tendency to slip up against the outer casing and cause friction there.

It will be seen at once that as the shaft re-
65 volves it imparts motion to the larger rollers, which in turn transmit it to the smaller ones, and the whole moves around slowly, but without any friction and with no necessity for any lubrication of any kind. The device is herein
70 shown in connection with a railway journal-box, and is of the usual form of such devices; but it will be at once evident that it is readily applicable to any journal, and the only changes
75 needed would be such changes in the form of outer casing as found necessary or desirable to adapt it mechanically to the particular po-
sition it would occupy.

Having thus fully described my invention, what I claim as new, and desire to secure by
80 Letters Patent, is—

1. In an anti-friction journal-box, the combination, with the outer frame and the boxing formed with a circular opening, and the shaft passed through the center of this open-
85 ing, of a series of rollers placed around the shaft within the boxing and rolling in contact with both, a series of separating-rollers placed between the others and having their ends extended beyond the same, and a pair
90 of disks formed at the ends of the journal-box, upon which these separating-rolls travel, substantially as and for the purpose set forth.

2. In an anti-friction journal-box, the combination, with the shaft, of a series of rollers
95 placed around it, a circular boxing in which they run, a series of smaller separating-rollers placed between the others, and a pair of disks upon which the ends of these latter roll-
100 ers are carried, and confining-rings placed

around them, substantially as shown and described.

3. The combination, with the casing *a*,
formed or provided with the disks *d*, the cir-
5 cular boxing *a'*, and shaft *b*, of the rollers *b'*,
the separating-rollers *c c*, having their ends
extended and provided with the enlargements
b', and the confining-rings *e*, formed with
flanges *e'*, to fit the grooves *e²* in the separating-

rollers, substantially as and for the purpose so
set forth.

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

DELOS ALLEN.

Witnesses:

W. C. MCARTHUR,
W. S. MCARTHUR.