

(No Model.)

D. L. ALTMAN.
SELF OILING JOURNAL BEARING.

No. 570,782.

Patented Nov. 3, 1896.

Fig. 1.

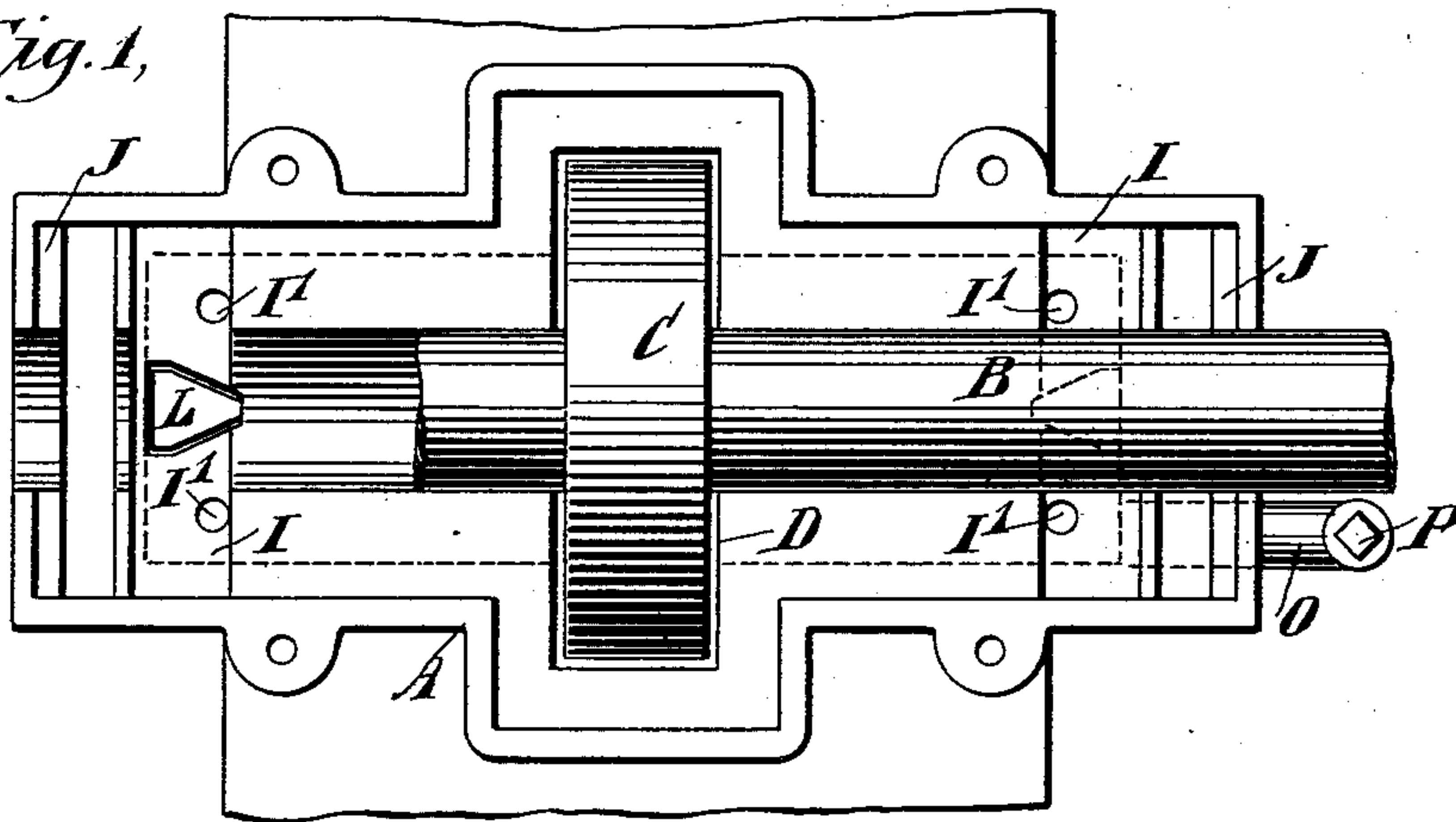


Fig. 2.

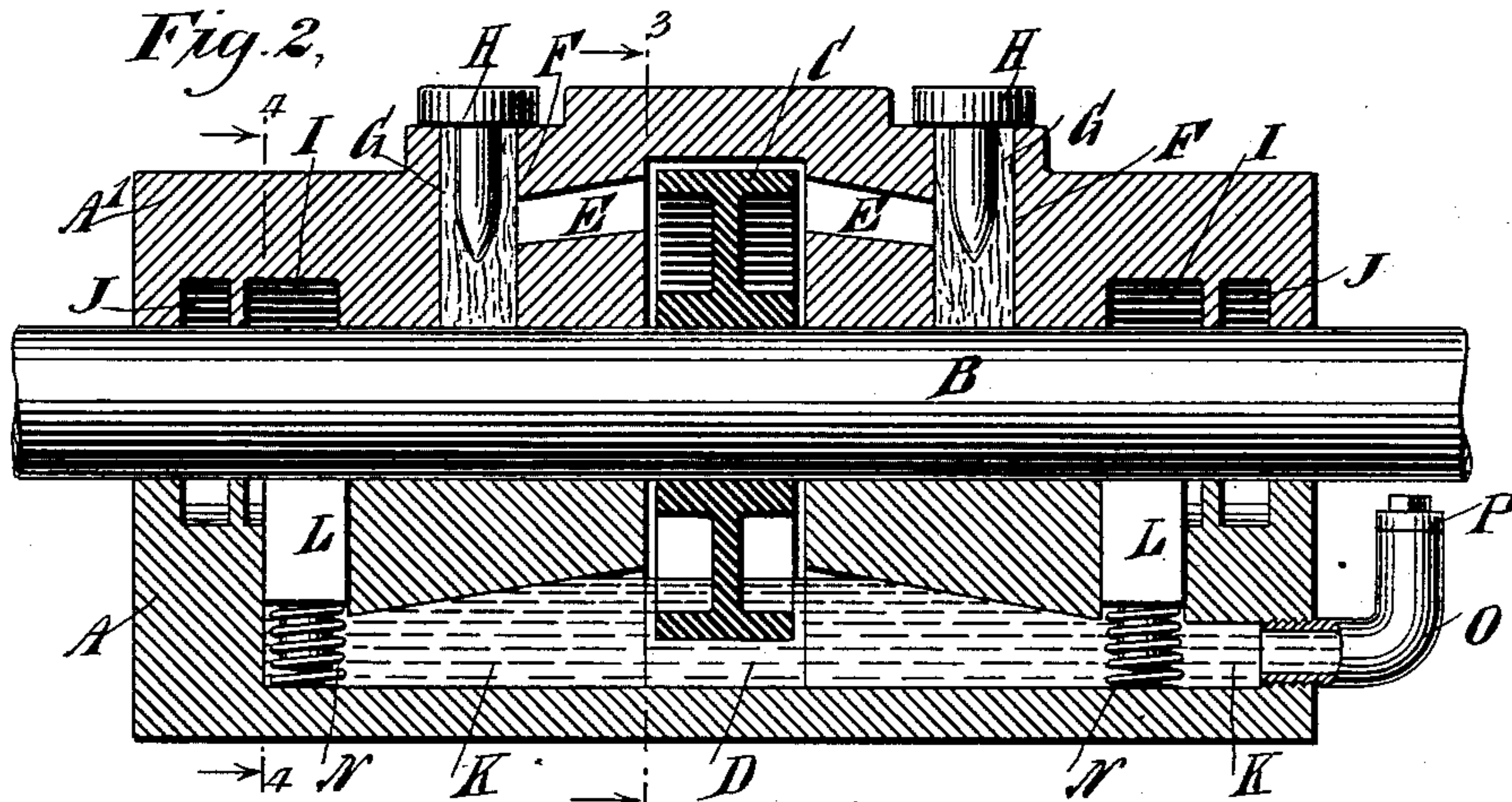
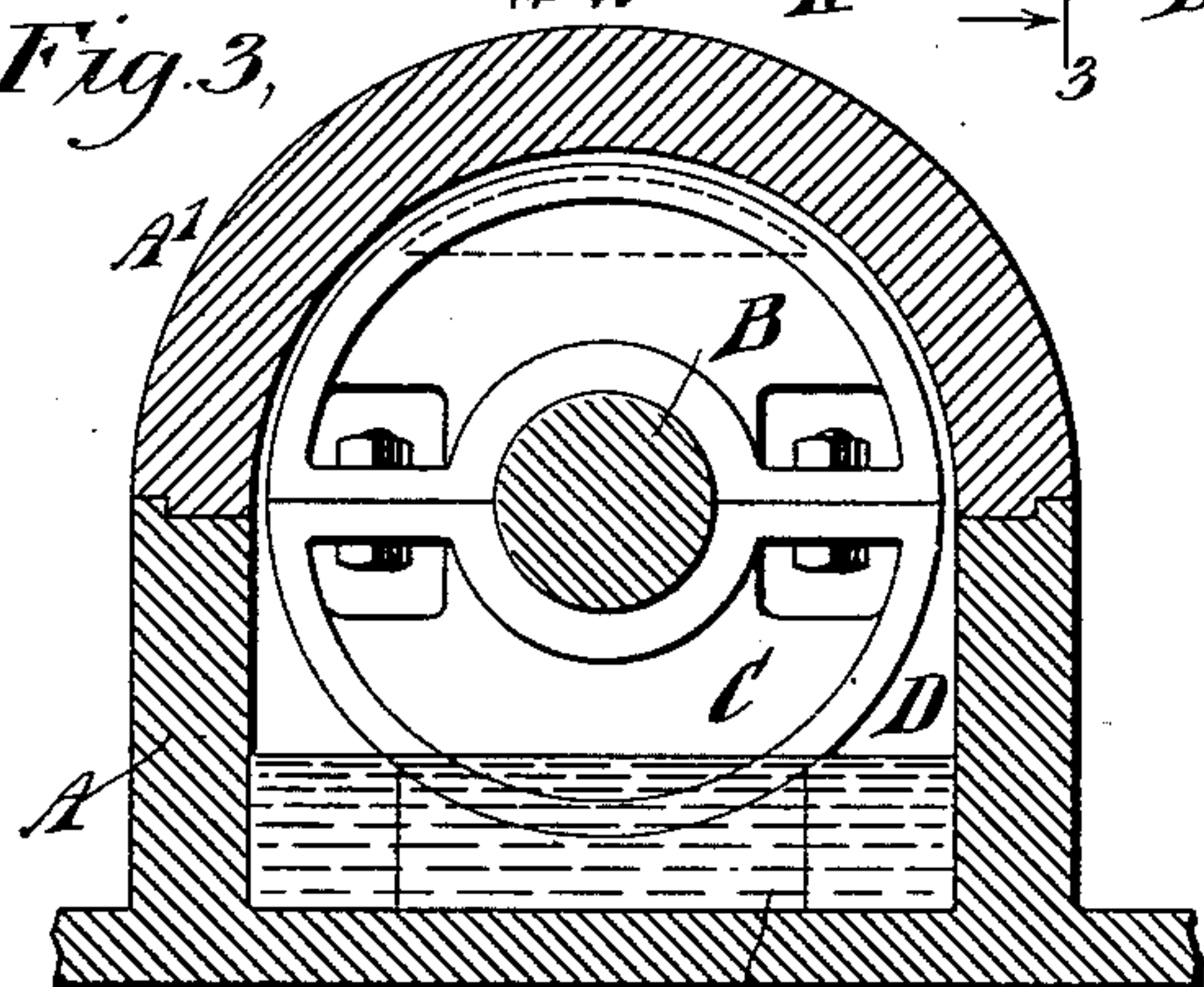


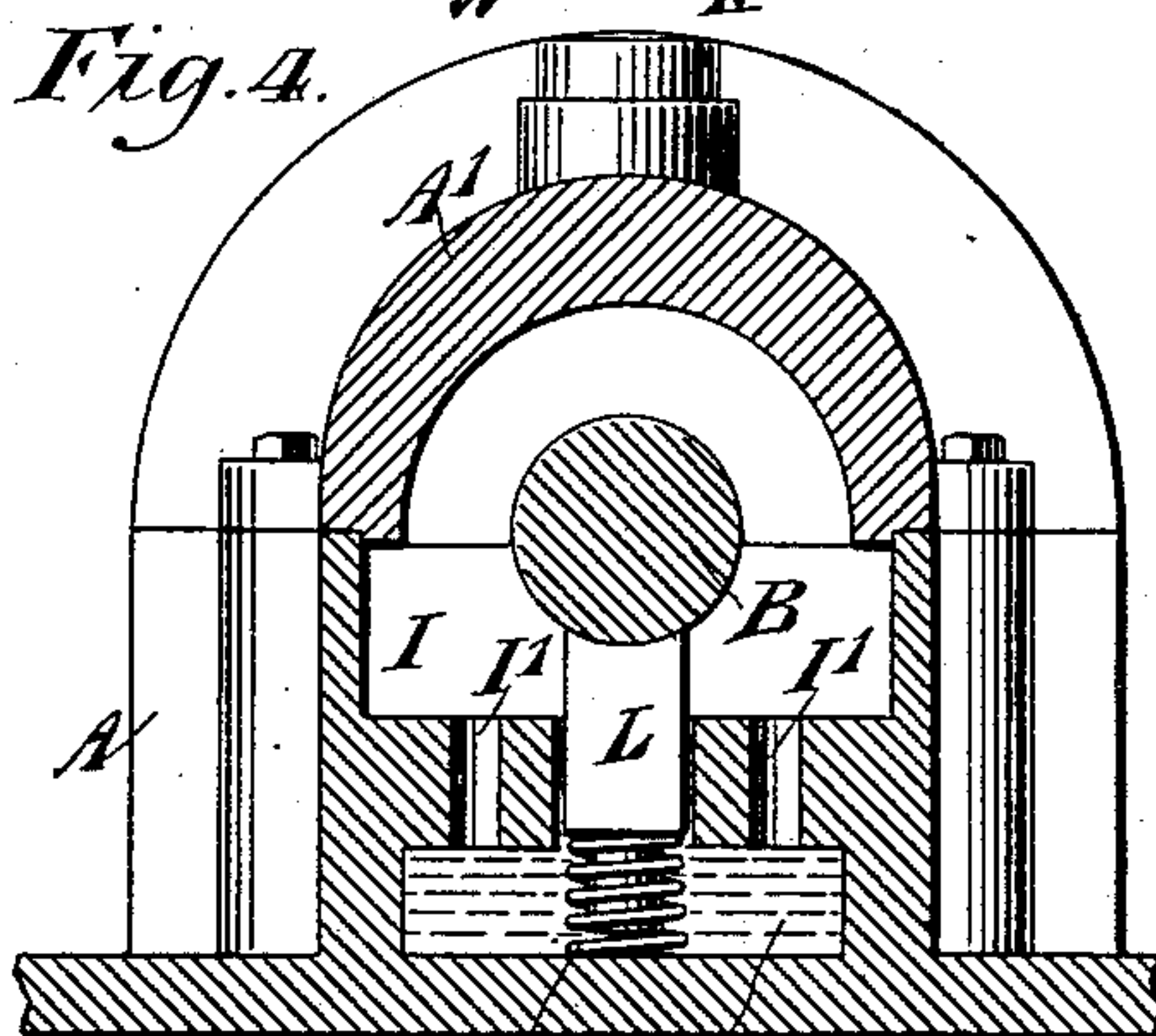
Fig. 3.



WITNESSES:

K

Fig. 4.



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DAVID LEE ALTMAN, OF EAU CLAIRE, WISCONSIN.

SELF-OILING JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 570,782, dated November 3, 1896.

Application filed December 26, 1895. Serial No. 573,287. (No model.)

To all whom it may concern:

Be it known that I, DAVID LEE ALTMAN, of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and Improved Self-Oiling Journal-Bearing, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved self-oiling journal-bearing arranged to supply and distribute the lubricant properly and evenly and in a filtered state on the revolving shaft and which prevents waste or scattering of oil and is completely dustproof, to keep the oil in good condition.

The invention consists principally of a central oil-well communicating at or near its upper end with filtering-chambers, adapted to contain a filter and leading to the journal or shaft.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement with the box-cover removed. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section of the same on the line 3 3 of Fig. 2, and Fig. 4 is a similar view of the same on the line 4 4 of Fig. 2.

The improved journal-bearing is provided with a box A, having a cover A', adapted to be fastened in place by suitable bolts or other means, said box and cover being longitudinally elongated and formed with longitudinal bores which jointly receive the shaft B.

On the shaft B and near the middle of the box A is secured a feed-wheel C, extending into a well D, containing the lubricant, as indicated in the drawings. From near the upper end of the well D extend longitudinally the slightly-inclined channels E, each leading to a filtering-chamber F, containing a wick or other suitable filtering material, said chamber being disposed vertically in the cover A' and leading to the bore thereof and the shaft B, so that the lubricant in a filtered state can pass to said shaft and lubricate the same.

The top of the chamber F is closed by a suitable plug H to prevent the escape of oil and to hold the filtering material G in place. Now it will be seen that when the shaft B is in motion the wheel C rotates with said shaft, and as it passes through the lubricant in the well D it takes up some of the lubricant and throws it, by centrifugal force, into the upper part of the well and into the longitudinally-extending channels E, through which the lubricant flows outwardly and downwardly into the filtering-chambers F and into the filtering material G, which retains any impurities contained in the lubricant, so that the filtered oil finally passes upon the shaft B. The filtering material G can be removed from time to time and replaced by fresh material, to insure proper filtering of the lubricant before it passes to the shaft.

Near each outer end of the box and surrounding the shaft B are arranged chambers I and J, of which the chamber J serves as a dust-chamber to receive any dust or other matter which may pass in at the ends of the box from the shaft B. The second chamber I is connected at its bottom by openings I' with a longitudinally-extending channel K, leading to and forming part of the oil-well D, so that any lubricant that works along the shaft B to the chamber I falls down the same and returns by the channel K to the well D. Thus it will be seen that as long as the shaft B is in motion the lubricant is supplied to the shaft by the centrifugal action of the feed-wheel and no lubricant whatever is lost, as the lubricant that works along the shaft B returns either directly to the well D or indirectly by the chamber I and channel K.

A scraper L is fitted to slide vertically in the bottom of each chamber I, and the upper end of the scraper is held in contact with the shaft B by a spring N, pressing against the lower end of said scraper. By this arrangement the lubricant that works along the shaft B into the chamber I is scraped off by the scraper L to prevent the oil from working past the chamber I into the chamber J and to the end of the box. It is understood that the oil scraped off the shaft B flows down into the chamber I and through the openings I' into the return-channel K, as previously explained.

One end of the channel K is provided with a filling-tube O for introducing the lubricant to the box, said tube being normally closed by a cap P, and by removing the cap it may
 5 be readily ascertained how much oil there is in the box A. When it is desired to drain the box A of the lubricant, then the pipe O can be turned down to form a drain-pipe.

It will be seen that by the arrangement described the shaft B is at all times properly
 10 lubricated, and the lubricant can be used continuously for a considerable length of time without requiring refilling of the well with fresh lubricant.

It will further be seen that it is wholly immaterial in which direction the shaft is running, as sufficient lubricant will be supplied by the feed-wheel C to the shaft B as long as the shaft is running.

As the chambers J and I are separated one from the other by a wall, any dust that may work into one end of the box will accumulate in the dust-chamber J and is not liable to pass into the chamber I.

The wheel C is preferably made in two parts bolted together, as illustrated in Fig. 3, and the cover A' is preferably provided with an inside flange fitting into the inside of the box A to hold the cover securely in place, as
 25 indicated in Figs. 2, 3, and 4. It will be seen that the wheel C, besides being a feeding-wheel, acts as a set-collar to prevent longitudinal movement of the shaft in the box.

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

1. The combination of an elongated box having an oil-well extending vertically in the box, said box having a horizontal channel
 40 communicating with the lower end of the oil-well, the upper portion of the oil-well communicating with two outwardly-extending passages in turn respectively communicating with filtering-chambers, the box also having
 45 a bore with which the filtering-chambers directly communicate, the box also having two

dust-chambers out of direct communication with the channel and communicating with the bore and the box having two end chambers respectively in communication with the
 50 ends of the channel, a shaft revolubly mounted in the bore, a wheel fixed to the shaft and revolving in the oil-well, and two spring-pressed scrapers located adjacent to the two end chambers and bearing against the shaft,
 55 substantially as described.

2. The combination of an elongated box having an oil-well extending vertically in the box, the box also having a horizontal channel communicating with the lower end of the
 60 oil-well, the box also having a longitudinal bore with which the oil-well communicates and the box having two end chambers communicating with the bore and with the respective ends of the channel, the upper end
 65 of the oil-well being in communication with oppositely-extending passages, in turn respectively communicating with filtering-chambers, a shaft revolubly mounted in the bore, a wheel fixed to the shaft and revolving
 70 in the oil-well, and spring-pressed scrapers located adjacent to the end chambers and engaging the shaft, substantially as described.

3. A journal-box longitudinally elongated and having a vertically-extending oil-well,
 75 the box having a horizontal channel communicating with the lower end of the oil-well and also having a bore extending horizontally and communicating with the oil-well, the box also having two end chambers in communication with the bore and respectively
 80 in communication with the ends of the channel, two dust-chambers directly communicating with the bore and out of direct communication with the end chambers, and two filtering-chambers in communication with the
 85 bore and with the oil-well, substantially as described.

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Witnesses:

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