

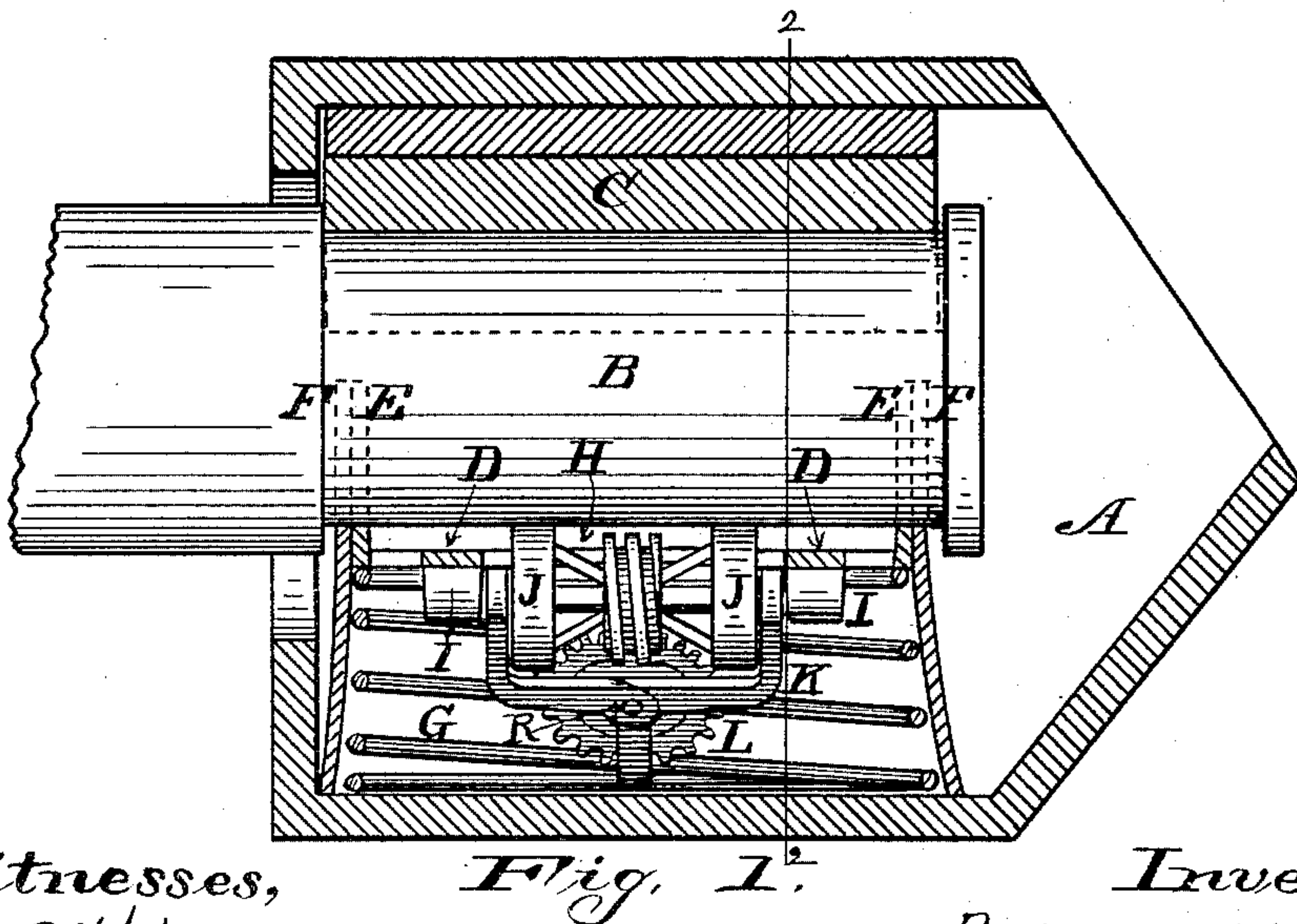
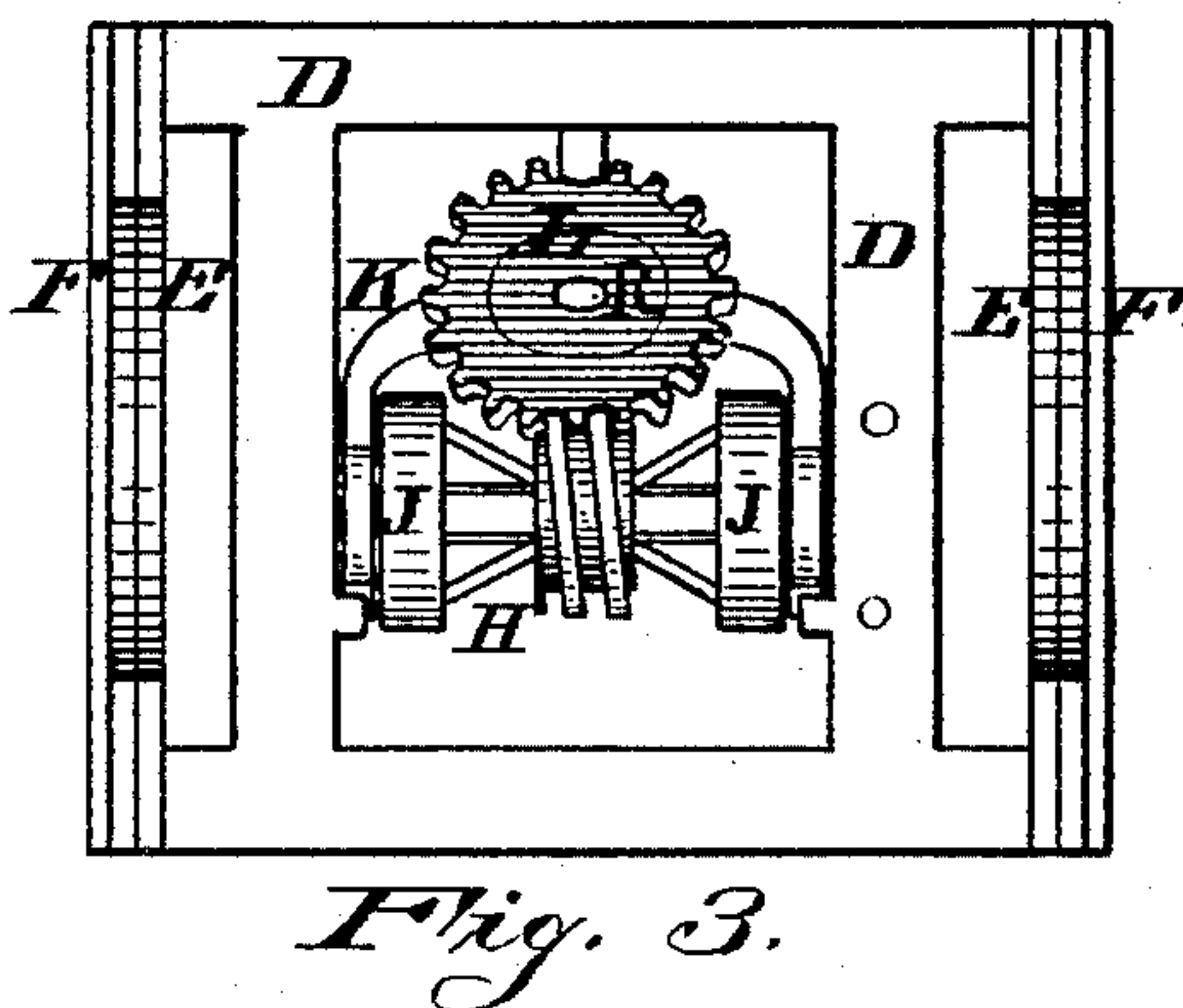
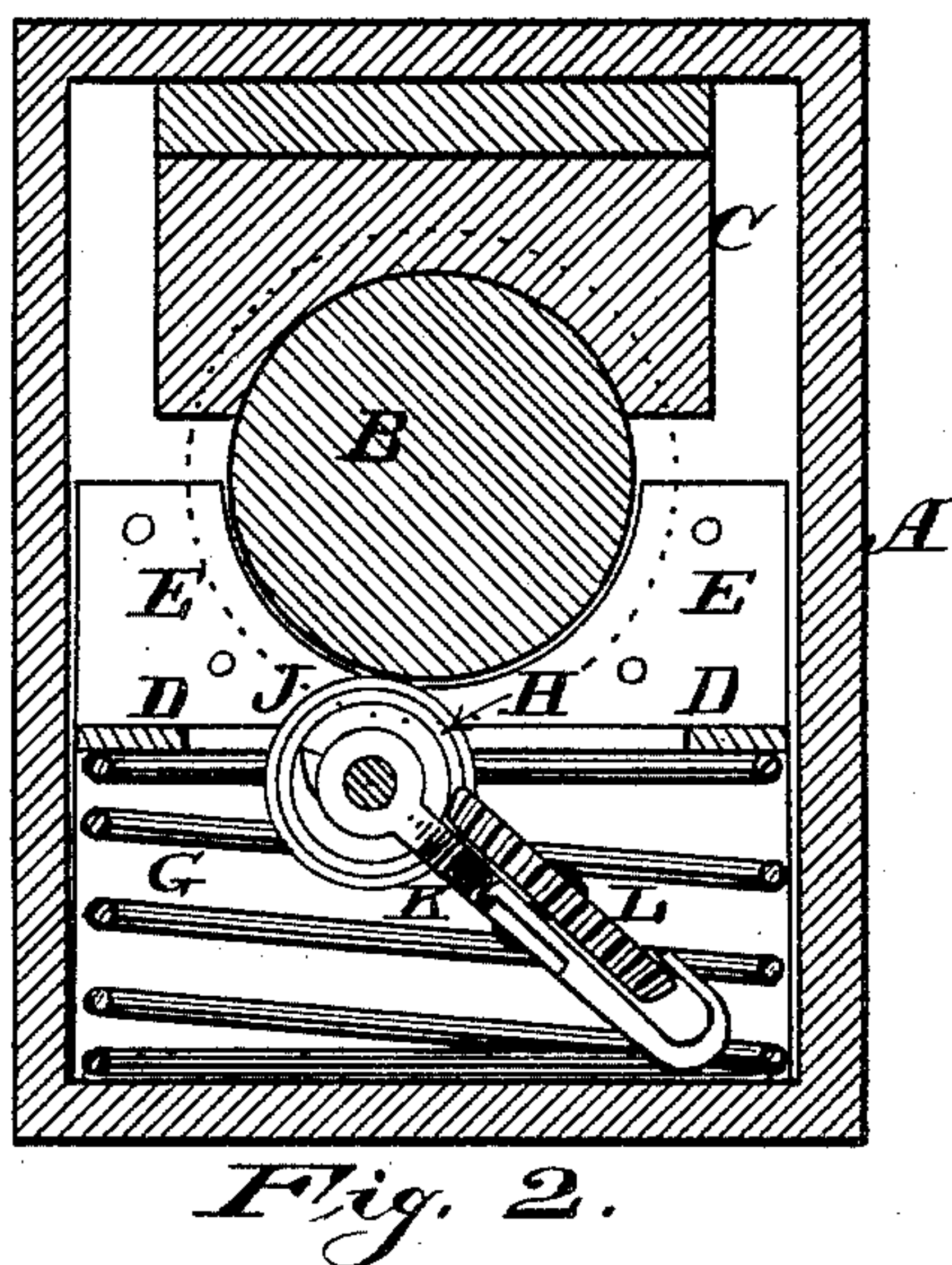
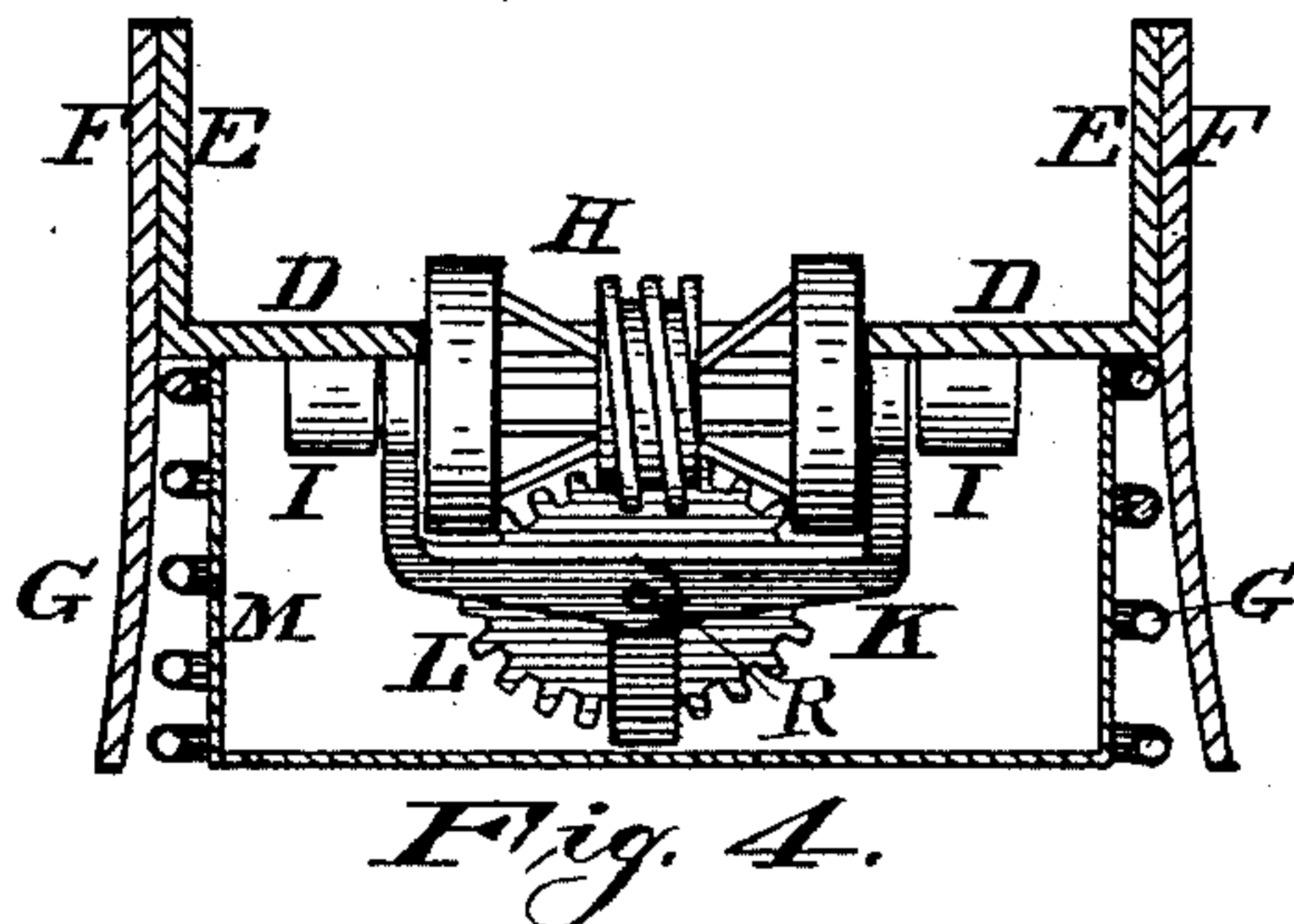
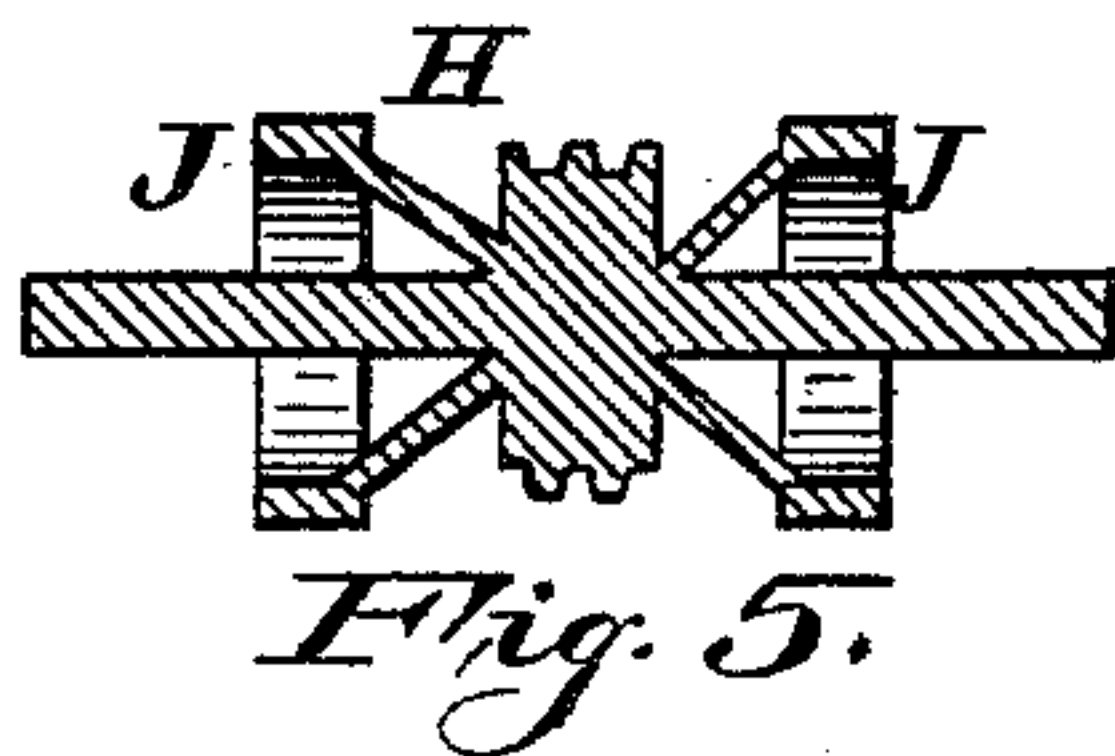
(No Model.)

W. H. & F. C. BURDEN.

CAR AXLE LUBRICATOR.

No. 394,096.

Patented Dec. 4, 1888.



Witnesses,  
Ida M. Warren  
Chas. H. Kuntz.

Fig. 1.

Inventors,  
William H. Burden,  
Frederick C. Burden,  
by Geo. W. Tibbitts, Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM HENRY BURDEN AND FREDERICK CHEEVER BURDEN, OF  
CLEVELAND, OHIO.

## CAR-AXLE LUBRICATOR.

**SPECIFICATION** forming part of Letters Patent No. 394,096, dated December 4, 1888.

Application filed July 27, 1887. Serial No. 245,409. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM HENRY BURDEN and FREDERICK CHEEVER BURDEN, of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Journal Lubricators, of which the following is a specification.

This invention relates to a device for conveying oil to the journals in car-axle boxes; and it consists in the peculiar construction and combination of the parts adapted to be placed in the journal-box below the journal for feeding oil to the central part of the journal in small quantities sufficient to lubricate the journal without waste. It is also so constructed as to exclude dust and dirt from the oil, and is arranged to operate in combination with the journal, substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical and longitudinal section of a car-journal-box having our device attached, showing its location and manner of working in connection with the journal. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is a top or plan view of our lubricating device detached. Fig. 4 is a side elevation of the same, partly in section, showing an inner cup or chamber for holding oil. Fig. 5 is a detached sectional view of the feed-roller.

A represents a car-journal box, and B is the journal. C is the bearing for the journal. These may be of the common and well-known kinds and construction.

Our device is constructed as follows:

D is a frame or plate having an upright flange, E E, at each end. To the said flanges are secured, by rivets or other suitable means, plates of heavy leather, F F, or other suitable material, preferably leather, on account of its elasticity. The upper sides of the said flanges E and plates F are cut out to fit up and partly embrace the journal B. To the under side of the plate or frame D is secured a spring, G, which also bears upon the bottom of the box and serves to support and hold the device up to the journal.

H is a feed-roller, consisting of a worm-

wheel and shaft set in bearings I I on the under side of the frame or plate D.

J J are two rings located one on each side of the worm-wheel, and are attached by means of diagonal spokes, forming cone-shaped frame-work at each side of the said worm-wheel. The rings J J are of a little greater diameter than the worm-wheel, and they, together with the worm-wheel, project a short distance above the frame D through an opening for that purpose, and the said rings only are in contact with the journal B, by which the said feed-roller derives its rotary motion.

K is a yoke having eyes which fit on the shaft of feed-roller loosely and permit freedom of play thereon, while the arm k of the yoke may lie on the bottom of the box.

L is a gear-wheel journaled on a pin or rivet, R, in the yoke, and with its teeth meshing with the worm-wheel, and from which said gear-wheel derives rotary motion. The yoke is made in two parts, and the rivet R, which serves as the pivot for the gear-wheel, also serves to secure the two parts of the yoke together.

If desired, an inner box, M, fitted to hang suspended from the frame D and within the spring G, to contain the oil and the mechanism for feeding it, may be employed for the purpose of providing a safeguard against the ingress of dirt.

The operation of this device is as follows: The revolutions of the journal B impart a rotary motion to the feed-roller H, and from thence to the gear-wheel L, which reaches down into the oil. The oil is thus conveyed in the teeth of said gear-wheel to the worm-wheel, from which it is taken up by the journal by capillary attraction at its middle part, and thereby supplying the lubricant to the journal-bearings.

From the foregoing it will be seen that this device possesses the following advantages. It feeds the oil in small but sufficient quantity and to the central part of the journal, from whence it is equally distributed along the bearing. It accommodates itself to position under the journal under all conditions, pre-



serving the alignment of the feed-roller with the journal, thus avoiding friction. It incloses the oil in a practically-tight box, thus securing it against the ingress of dust or dirt, thereby preserving the oil free from grit.

Having described our invention, we claim as follows:

1. The feed-roller consisting of a shaft having a worm-wheel on its central part, and the rings flanking said worm-wheel and attached by diagonal spokes, substantially as described.

2. The feed-roller consisting of a shaft, worm-wheel, and rings, as described, and a gear-wheel pivoted to a yoke fixed on the shaft of said feed-roller and meshing with the said worm-wheel, substantially as described.

3. The feed-roller consisting of a shaft, a worm-wheel, and rings, as described, a yoke fixed on the shaft of said roller and carrying the gear-wheel, in combination with a plate or frame having the curved-out flanges and end plates and supported on a spring constructed and operating substantially as and for the purpose specified.

4. The end plates, in combination with the frame or plate supporting a feed mechanism in a journal-box, whereby dust and dirt are excluded from the journal, substantially as described.

5. The end plates, in combination with the flanges of the frame or plate, each having the curved-out space, substantially as described.

6. The feed-roller consisting of a shaft, worm-wheel, and rings, as described, a yoke fixed on the shaft of said feed-roller and carrying the gear-wheel, in combination with a plate or frame having the curved-out flanges and end plates, the supporting-spring, and an inner box or cup containing oil and inclosing the feed mechanism, substantially as described.

7. The end plates attached to the flanges and each having the curved-out space, in combination with the feed-roller consisting of a shaft, worm-wheel, and rings, as described, supported on a frame or plate resting on a spring, said flanges and end plates partly embracing the journal within the journal-box, substantially as described, and for the purpose specified.

8. The combination, with the journal-box and journal, of the feed-roller consisting of a shaft, worm-wheel, a yoke, and gear-wheel supported in a frame or plate having curved-out flanges and end plates and the supporting-spring, all constructed and arranged to operate substantially in the manner and for the purpose specified.

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Witnesses:

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