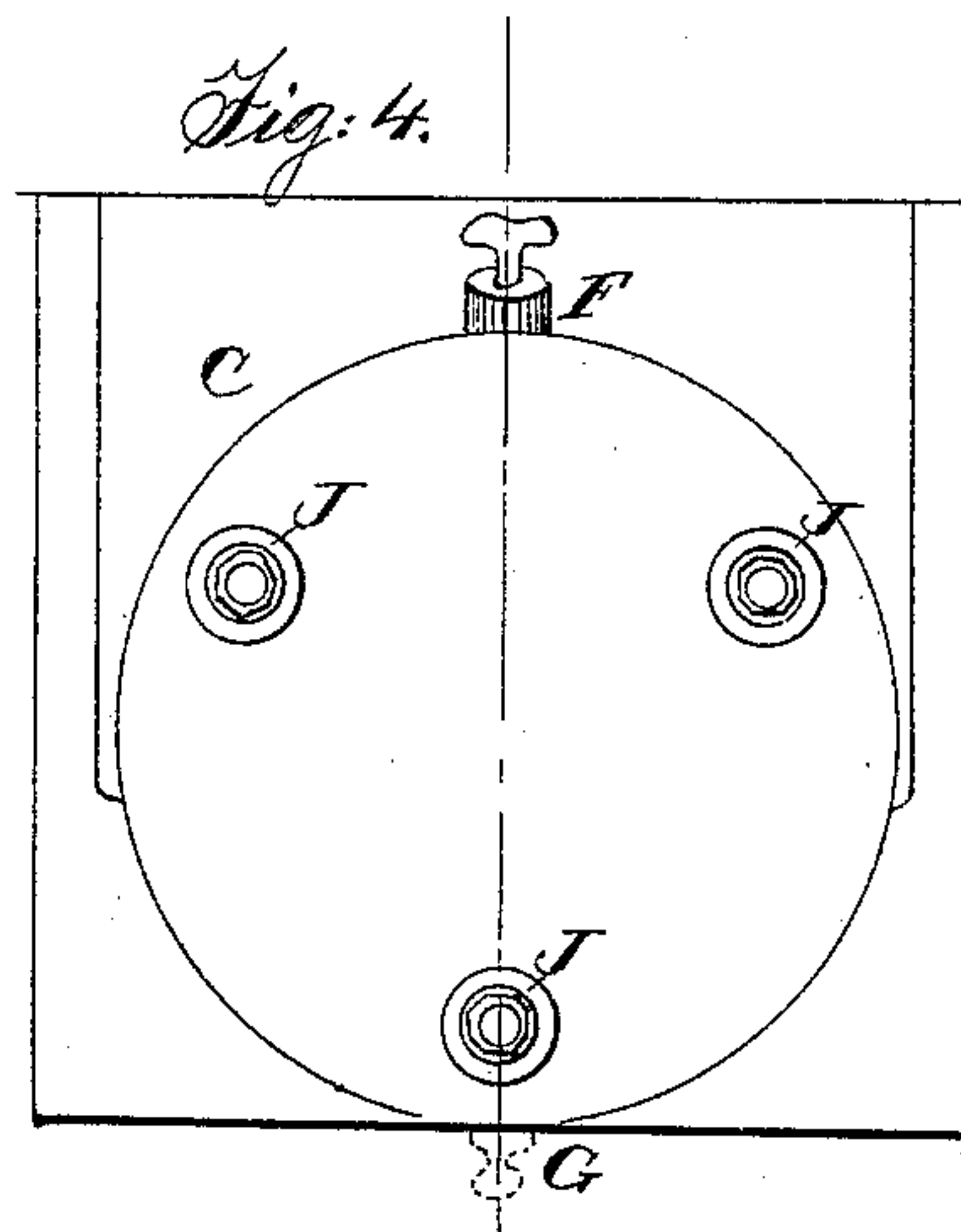
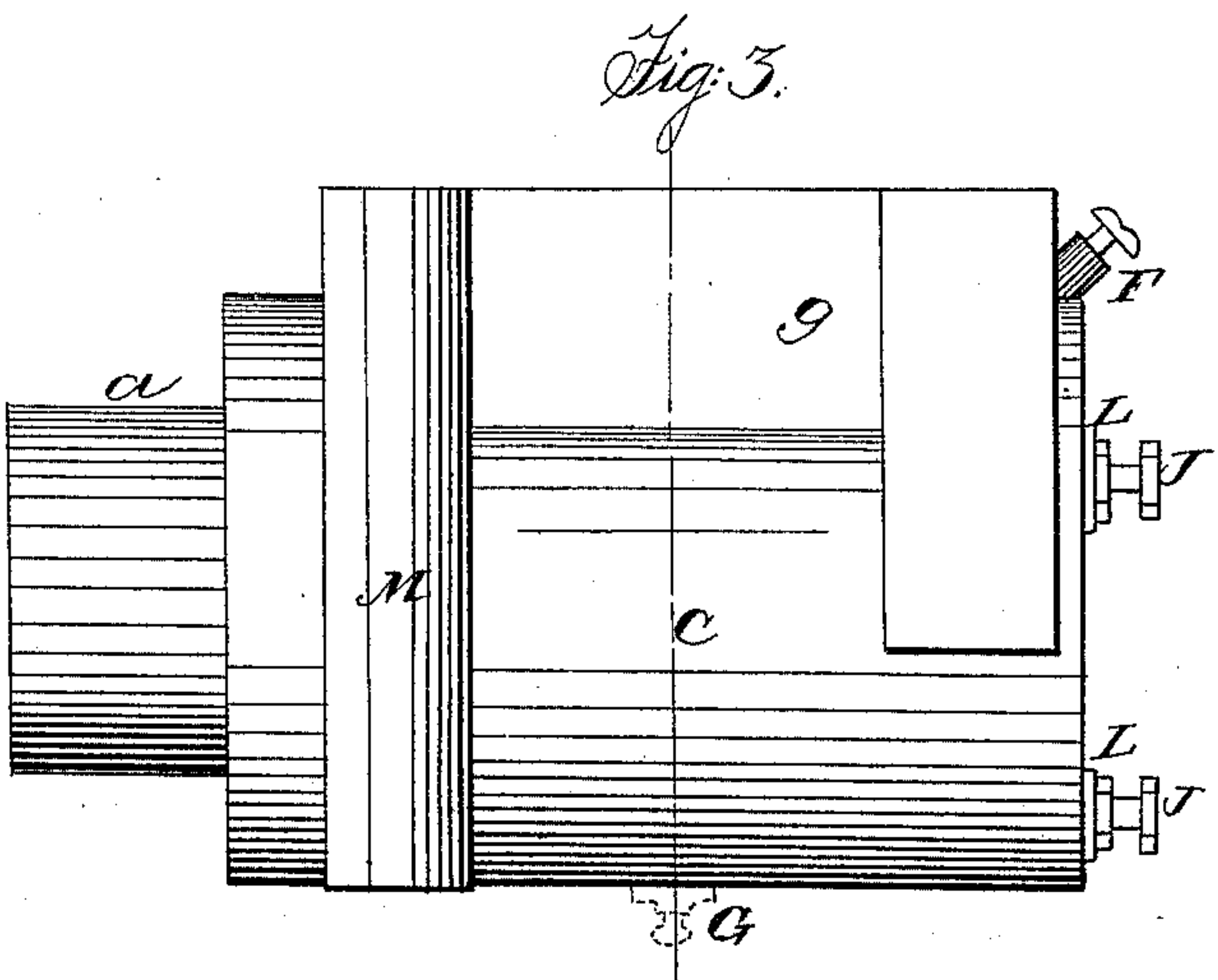
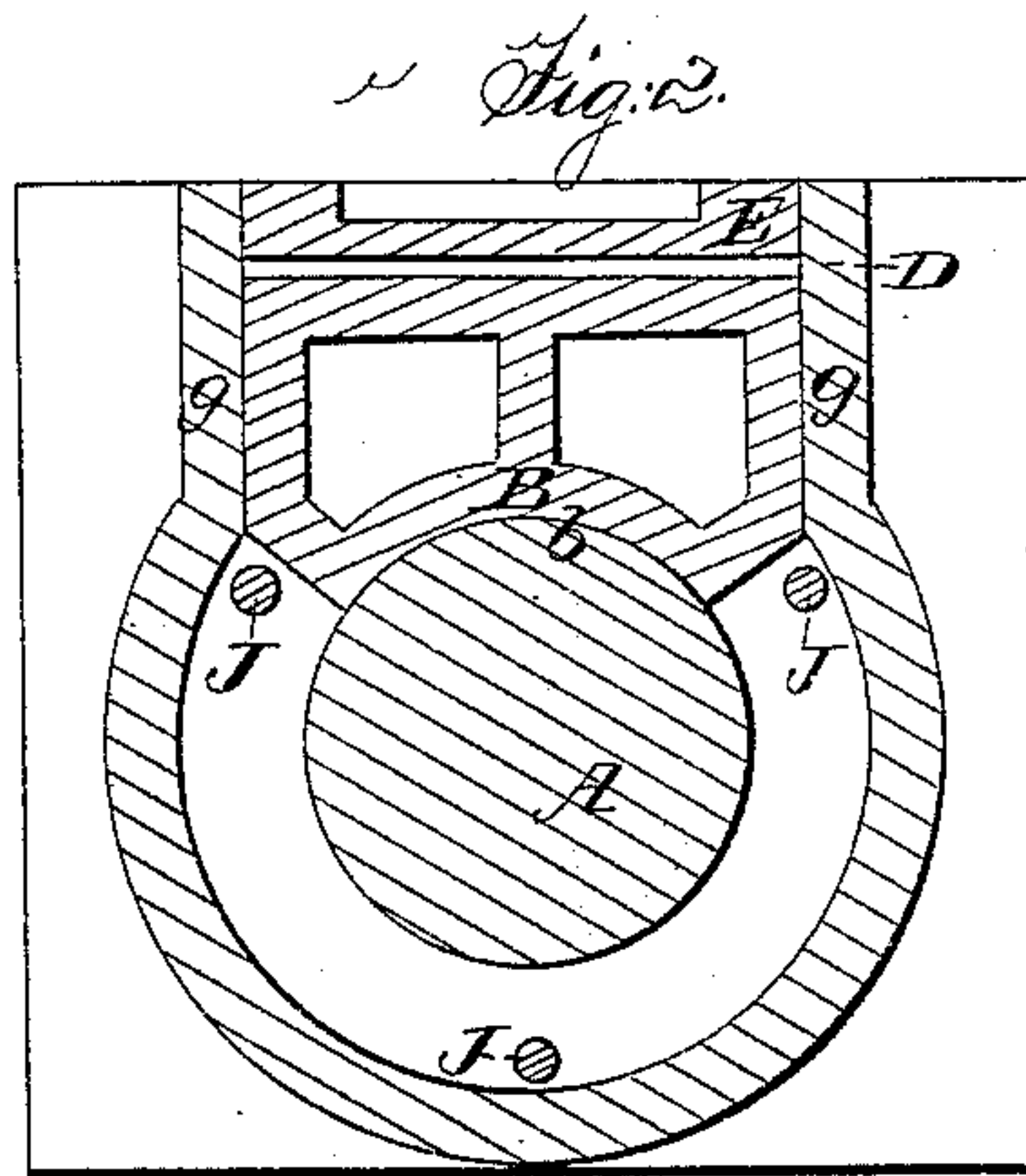
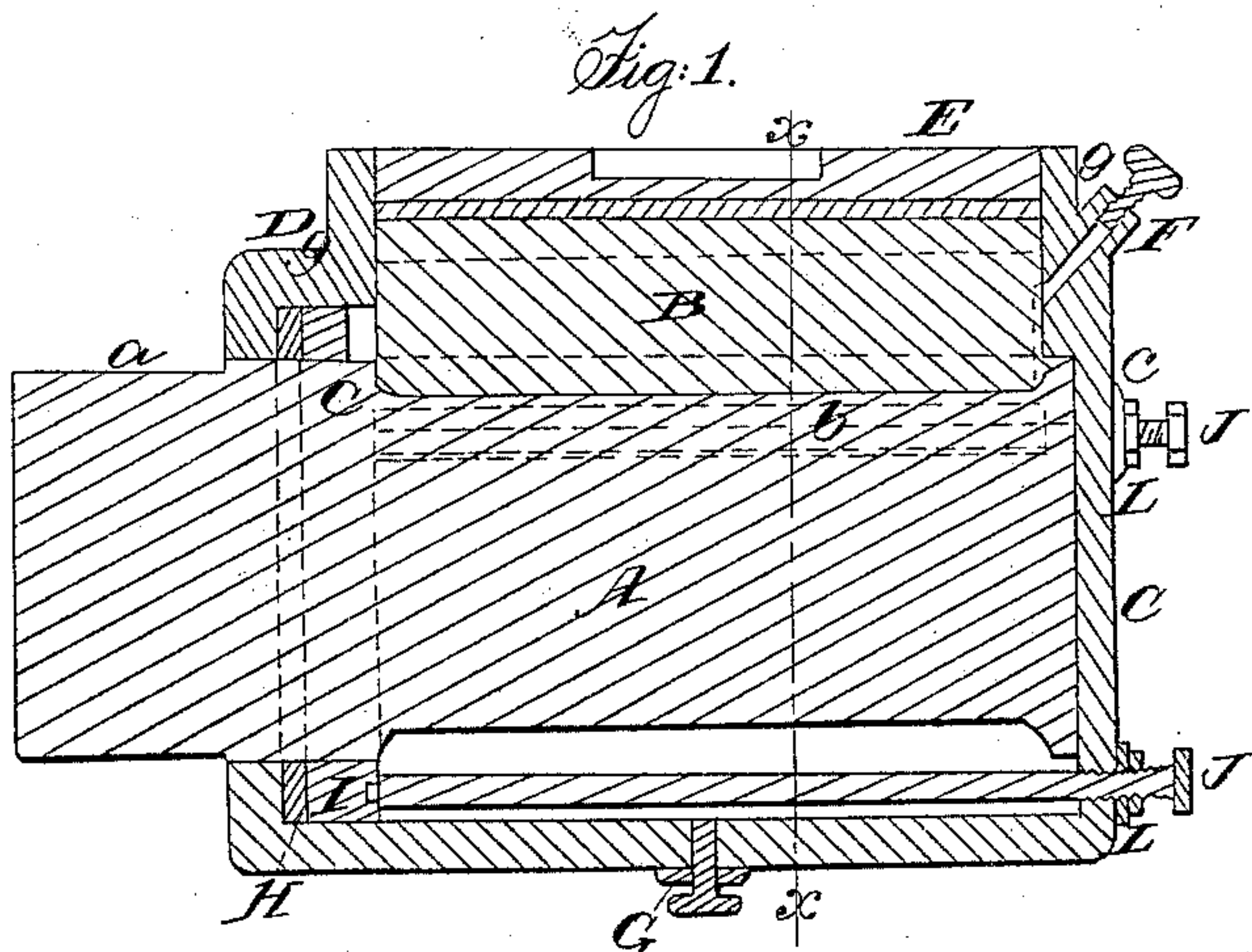


Car-Axle Box.

Patented Nov. 13, 1866.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

CALEB M. OLIVER, OF PORT CARBON, PENNSYLVANIA.

IMPROVEMENT IN AXLE-BOXES.

Specification forming part of Letters Patent No. 59,632, dated November 13, 1866.

To all whom it may concern:

Be it known that I, CALEB M. OLIVER, of Port Carbon, in the county of Schuylkill and State of Pennsylvania, have invented a certain new and useful Improvement in Axle-Boxes, which I term the "Lubricating Axle-Box;" and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable one skilled in the art to which my invention appertains to construct and use the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a vertical central section longitudinally of the axle. Fig. 2 is a transverse section on the line *x x*, Fig. 1. Fig. 3 is a side elevation. Fig. 4 is an outside end elevation.

The axle-box occupies the usual position in the jaws of the pedestal, and the weight of the car is thrown upon a brass bearing above the axle. This bearing is vertically adjustable in the box, and the latter does not bear the weight of the car. The axle is maintained in its position in the box by the brass, which occupies a neck between two collars on the axle.

The exudation of oil or ingress of dirt into the box is prevented by a packing-ring of rubber around the axle, between the brass bearing and wheel-bearing, and provision is made for the supply of oil to the interior of the box and its discharge therefrom.

In the drawings, A is the axle, *a* being the wheel-bearing; *b*, the neck occupied by a brass bearing, B, and *c c* are collars on the axle, which enable the bearing to maintain the proper longitudinal position of the axle in the box C when the bearing is in place, as shown in Fig. 1.

The bearing which, as has been said, rests upon the axle, occupying the neck *b* thereof, is made of brass, or some other suitable alloy or metal proper for the purpose. It slips between the bounding sides *g g* of the upper

portion of the box C, which hold it with the requisite rigidity, but admit its vertical depression as it wears in course of time by friction against the axle, and also permits it to be removed and replaced, as may be required, when the superincumbent weight is removed for that purpose.

The bearing B is shown hollow to diminish its weight, the thickness of the portion bearing upon the axle being sufficient for the purpose.

Above the bearing B is a diaphragm or membrane, D, which intervenes between the bearing and the follower E. This membrane keeps dirt from getting into the box, and forms an elastic interposed substance between the follower and the brass bearing, tending to protect the latter.

Upon the follower E is placed the spring which supports the car. This spring may be of any kind, the upper surface of the follower being adapted to receive it.

In the illustrations, Figs. 1 and 2, the central depression in the follower is intended to be occupied by the lug below the band of the spring.

The oil is supplied to the interior of the box through the opening F, and discharged, if required, through an opening, G.

The leakage of oil from the box is prevented by the packing-ring H, Fig. 1, which surrounds the axle between the bearing-brass B and the portion of the axle occupied by the wheel. This ring is packed by a metallic ring, I, which is pressed against it by set-screws J J J, which are threaded into the wall of the box and retained in position by set-nuts L.

The packing H occupies a recess in the box, and if it and the metallic ring I are not thicker than the depth of the recess the ring I may be a complete circle; but if the packing H be thick, the metallic piece I may be required to have a portion of its inner face removed, so as to permit the bearing B to pass. This diminution in thickness appears in Fig. 1.

The slots M are occupied by the inner edges of the jaws upon which the box slips up and down in the pedestal.

In use the box may be filled with oil, which is prevented from leaking out by the packing.

The outer collar c has an upper bearing in the box, which steadies the position of the box in the pedestal.

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

The bearing B and follower E, in combination with the axle-box C, the former being arranged in relation to the latter, so as to relieve the box of pressure, substantially as described.

C. M. OLIVER.

Witnesses:

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GEORGE W. ROTHWELL.