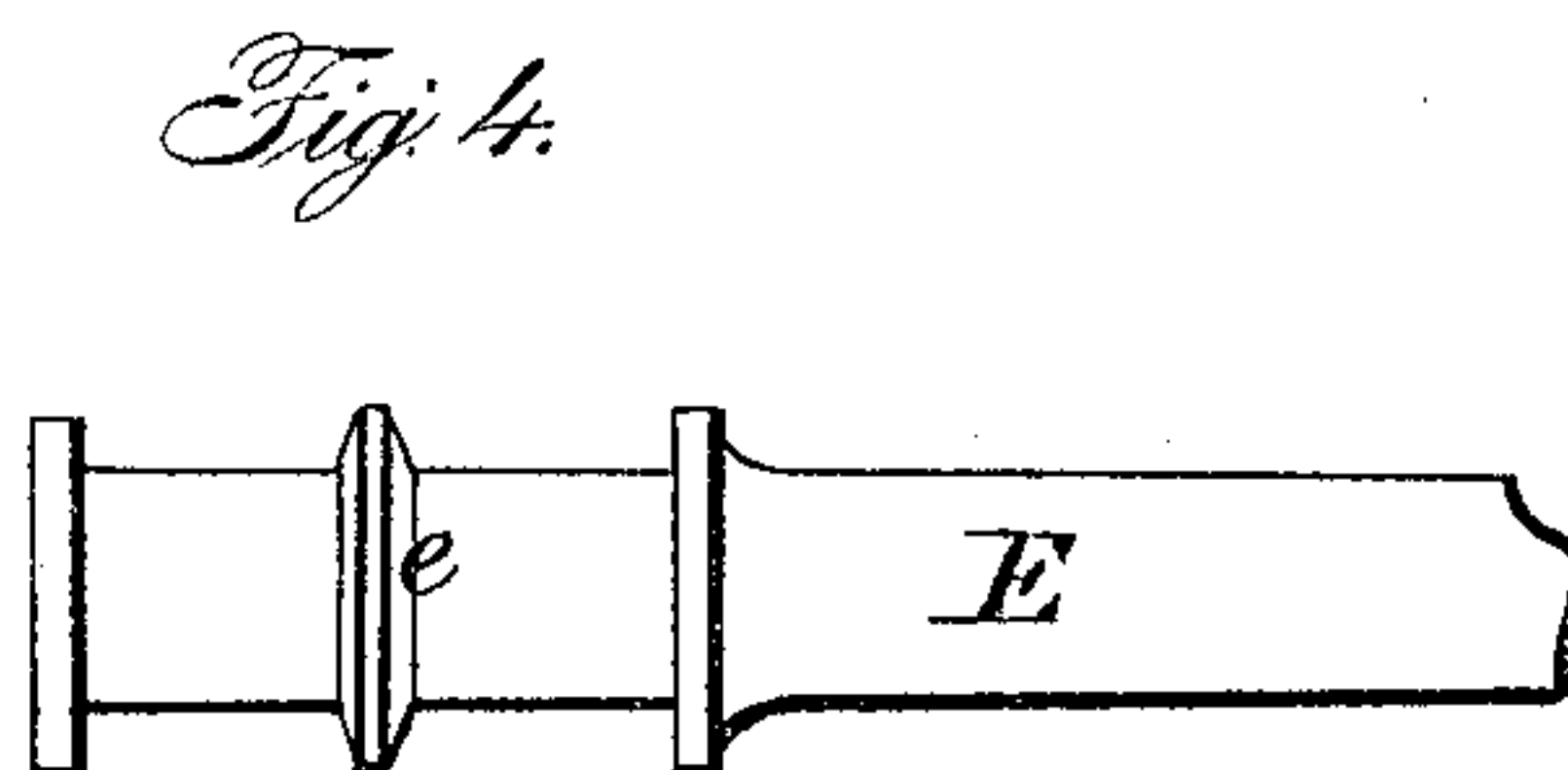
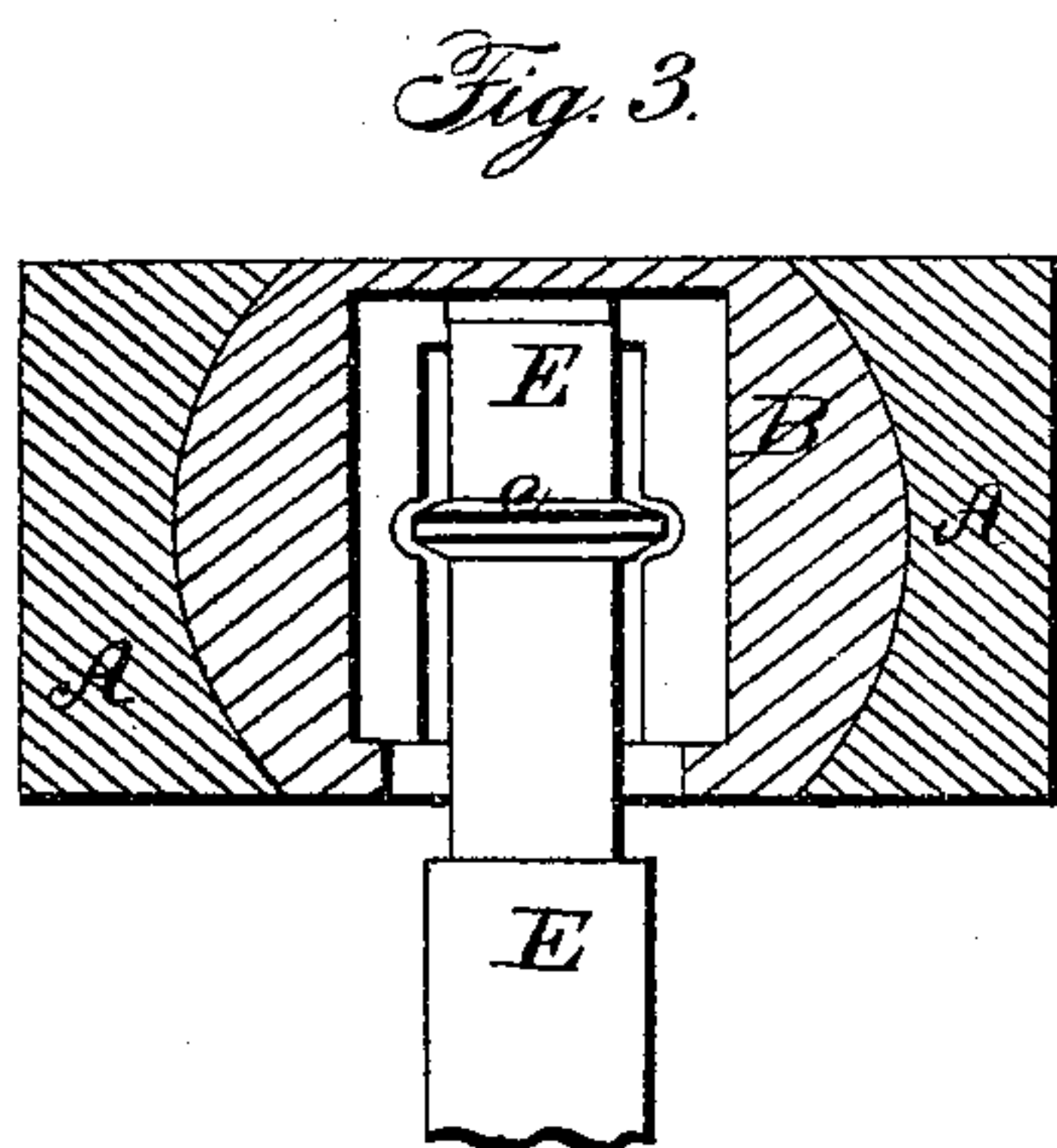
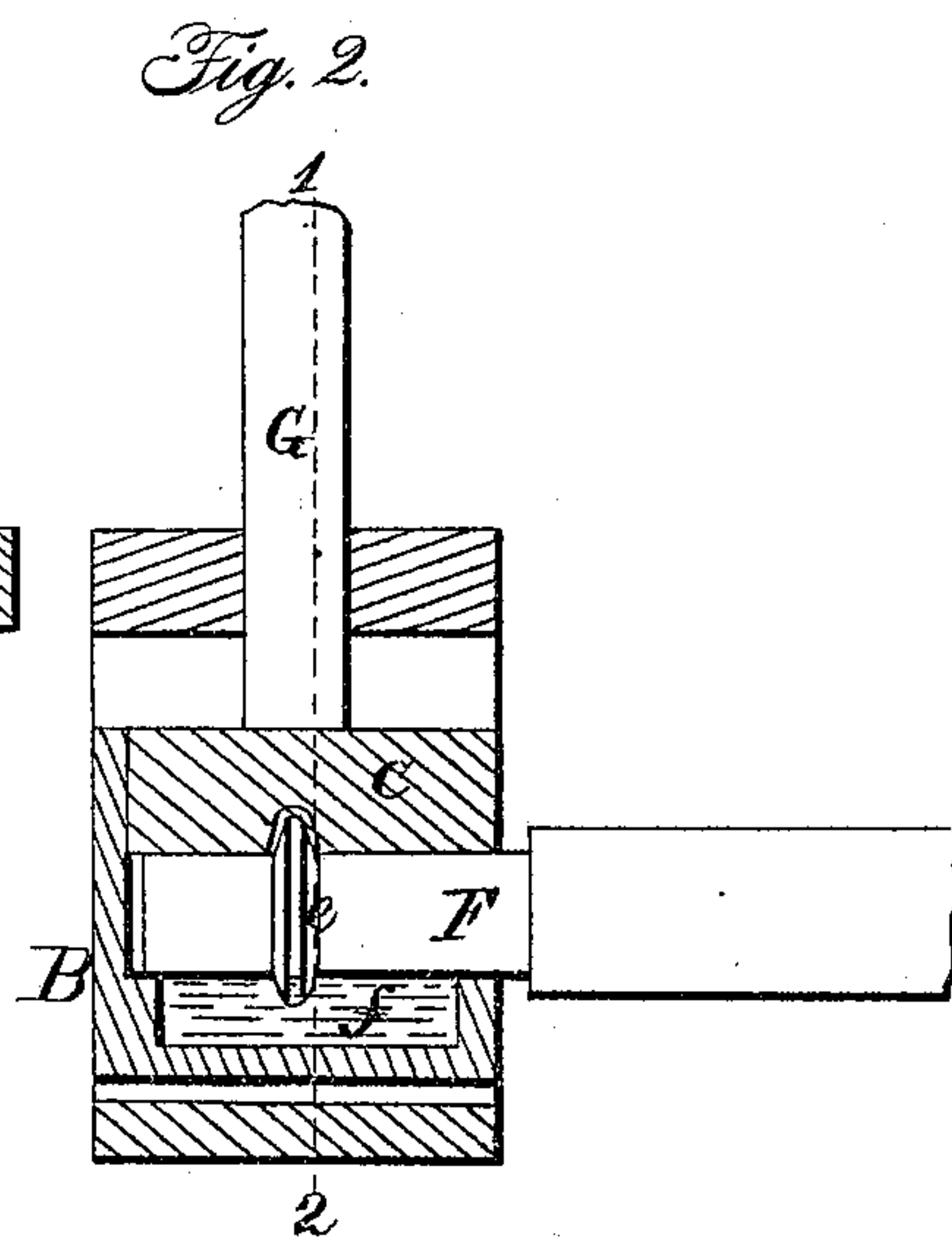
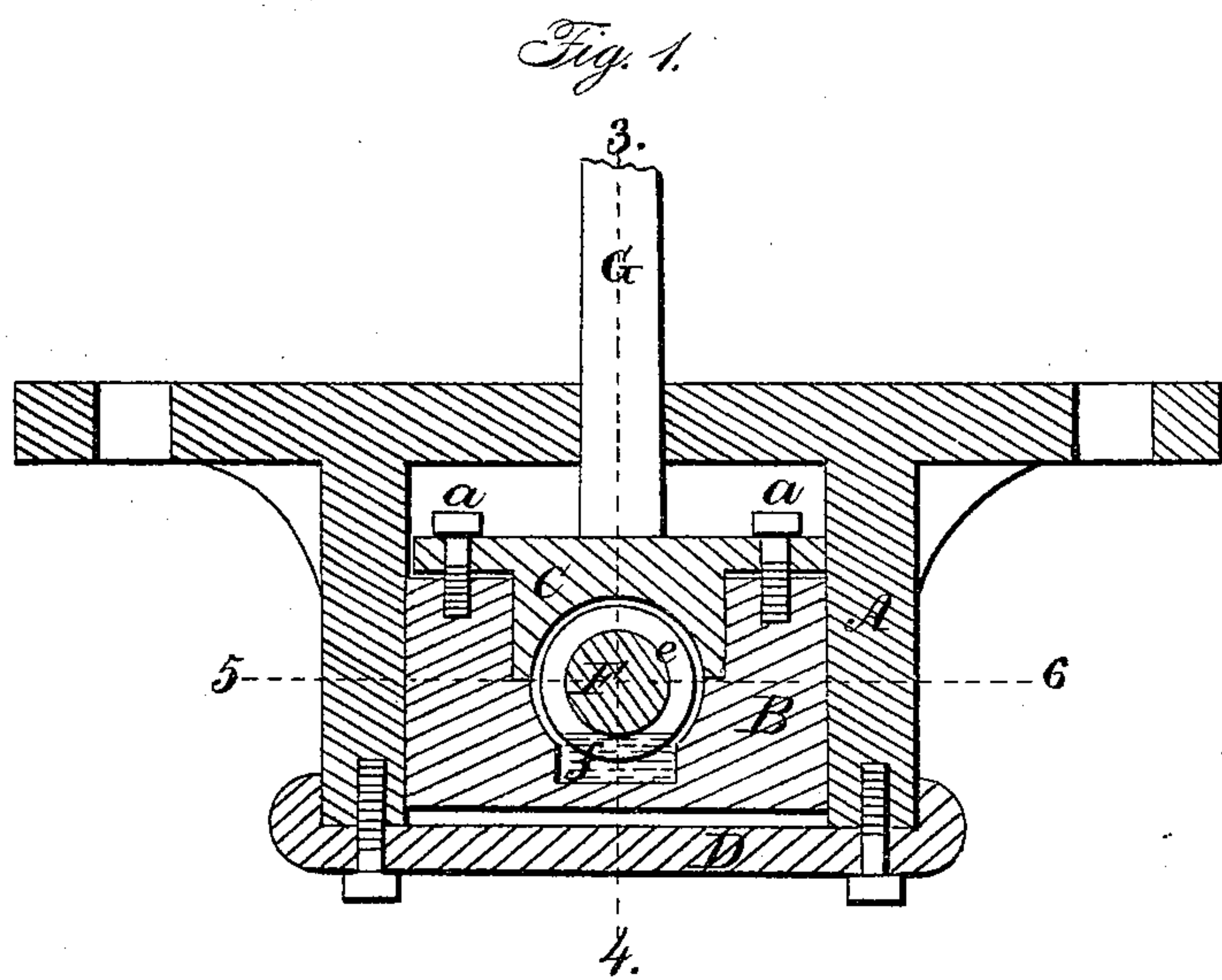


I. P. WENDELL,  
Car-Axle Box.

No. 19,530.

Patented Mar. 2, 1858.





# UNITED STATES PATENT OFFICE.

ISAAC P. WENDELL, OF PHILADELPHIA, PENNSYLVANIA.

## BOX AND JOURNAL FOR RAILROAD-CAR AXLES.

Specification of Letters Patent No. 19,530, dated March 2, 1858.

*To all whom it may concern:*

Be it known that I, ISAAC P. WENDELL, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Construction of Boxes and Journals for Car-Axles and other Shafts; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in constructing the journals of car axles and other shafts with a collar, so situated as regards an oil reservoir which I form in the journal box, that the said collar shall revolve in contact with the oil and carry around a continuous supply of the same into a recess formed in the upper bearing, said recess being wider and deeper than the collar, thus allowing the oil an opportunity of being thoroughly dispersed throughout the frictional surface, as fully set forth hereafter.

In order to enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation—

On reference to the drawing which forms a part of this specification—Figure 1 is a sectional elevation (on the line 1, 2, Fig. 2) of the hanger, axle box and axle of a railroad car, illustrating my improvements. Fig. 2, a transverse section on the line 3, 4, (Fig. 1;) Fig. 3, a sectional plan on the line 5, 6, (Fig. 1;) Fig. 4, a modified form of journal, to be used when no end play is desired.

In reference to Figs. 1, 2 and 3, A is the hanger secured to the frame of the car; B, the lower half, and C the upper half of the axle box; D, the cap of the hanger and E the axle. In the lower half B of the axle-box is formed a chamber *f* for containing the oil or other lubricating matter, in contact with which the collar *e* on the journal of the axle revolves. In the upper half C of the box is formed a recess, within which the central collar *e* revolves, this recess being deeper than the collar is high and being wider than the collar to an extent sufficient

to allow for that end play usually required in car axles. The two halves of the box may be connected together by stud bolts *a a* as shown in the drawing or in any other convenient manner.

G is a rod connected at the top with the usual car spring, its lower end bearing on the top of the box.

When no end play of the shaft or axle is required, I form the journal in the manner illustrated in Fig. 4, that is, with the usual collars for receiving the end strain, and an intermediate collar *e* arranged to revolve in an oil reservoir formed in the lower bearing of the box, and within a recess formed in the upper bearing, this recess being deeper and wider than the collar as in the case above referred to. In excessively long journals I propose to use two or more intermediate collars, revolving in oil chambers below and in enlarged recesses above. As the journal revolves, a continuous supply of oil is carried around into the recess in the upper bearing, where, on account of the recess being larger than the collar, it circulates freely, and becomes disseminated thoroughly throughout the frictional surface of the journal on each side of the collar.

The advantage of the collar revolving in an enlarged recess in the upper bearing, as regards lubricating effect, is particularly prominent in the case of the axle box illustrated in Figs. 1, 2 and 3, in which no external collars are used, the end strain being received by the central collar bearing first on one and then on the opposite side of the recess, as the axle plays endwise in the box by the curves of the track on which it is used. For, as the collar bears on one side of the recess, there must be a space on the opposite side for the free circulation of the oil, which thus thoroughly lubricates both the side of the recess and the collar, preparatory to being brought into severe frictional contact by any sudden change in the track.

I am aware that intermediate collars have been heretofore used for the purpose of lubricating axles, but, in all instances, such collars have fitted tightly into recesses in

the upper bearing, which thus prevents efficient lubrication. Disclaiming therefore the exclusive use of a central lubricating collar,

I claim and desire to secure by Letters  
5 Patent:

Employing in connection with the boxes and journals of car axles and other shafts, a central lubricating collar, revolving in an oil chamber formed in the lower bearing, in

combination with a recess in the upper bearing, when the said recess is wider and deeper than the collar, as herein set forth and for the purpose specified. 10

ISAAC P. WENDELL.

Witnesses:

HENRY HOWSON,  
WILLIAM DUTTON.