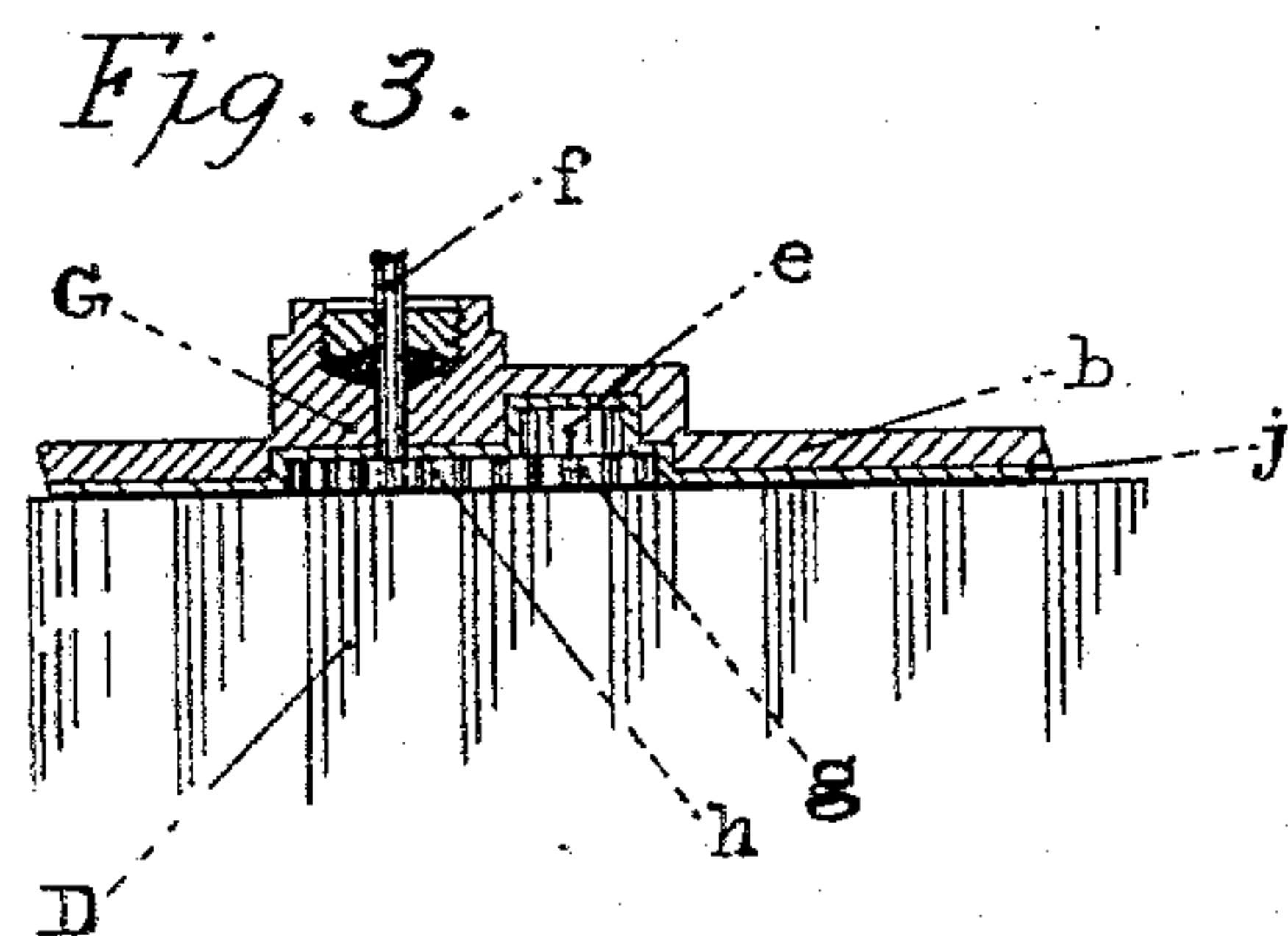
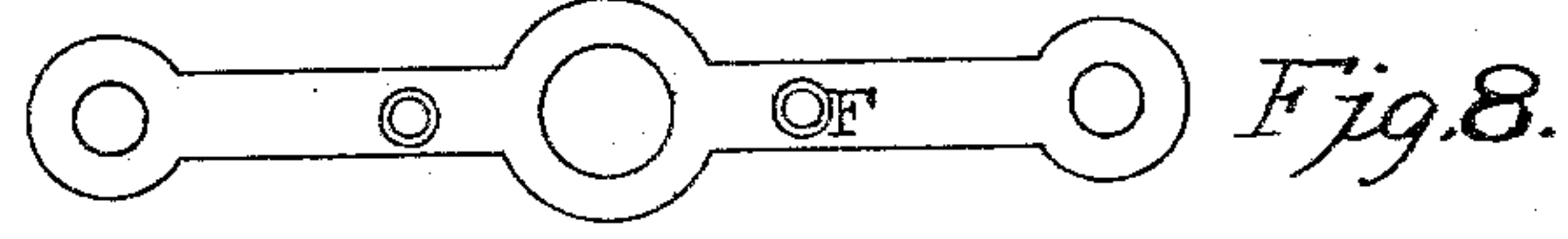
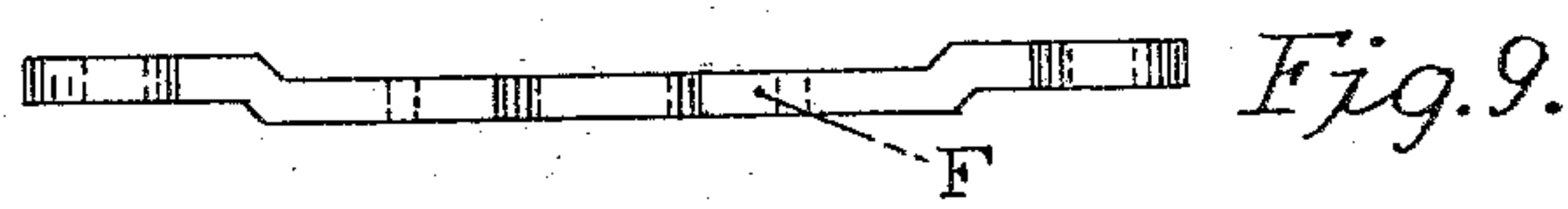
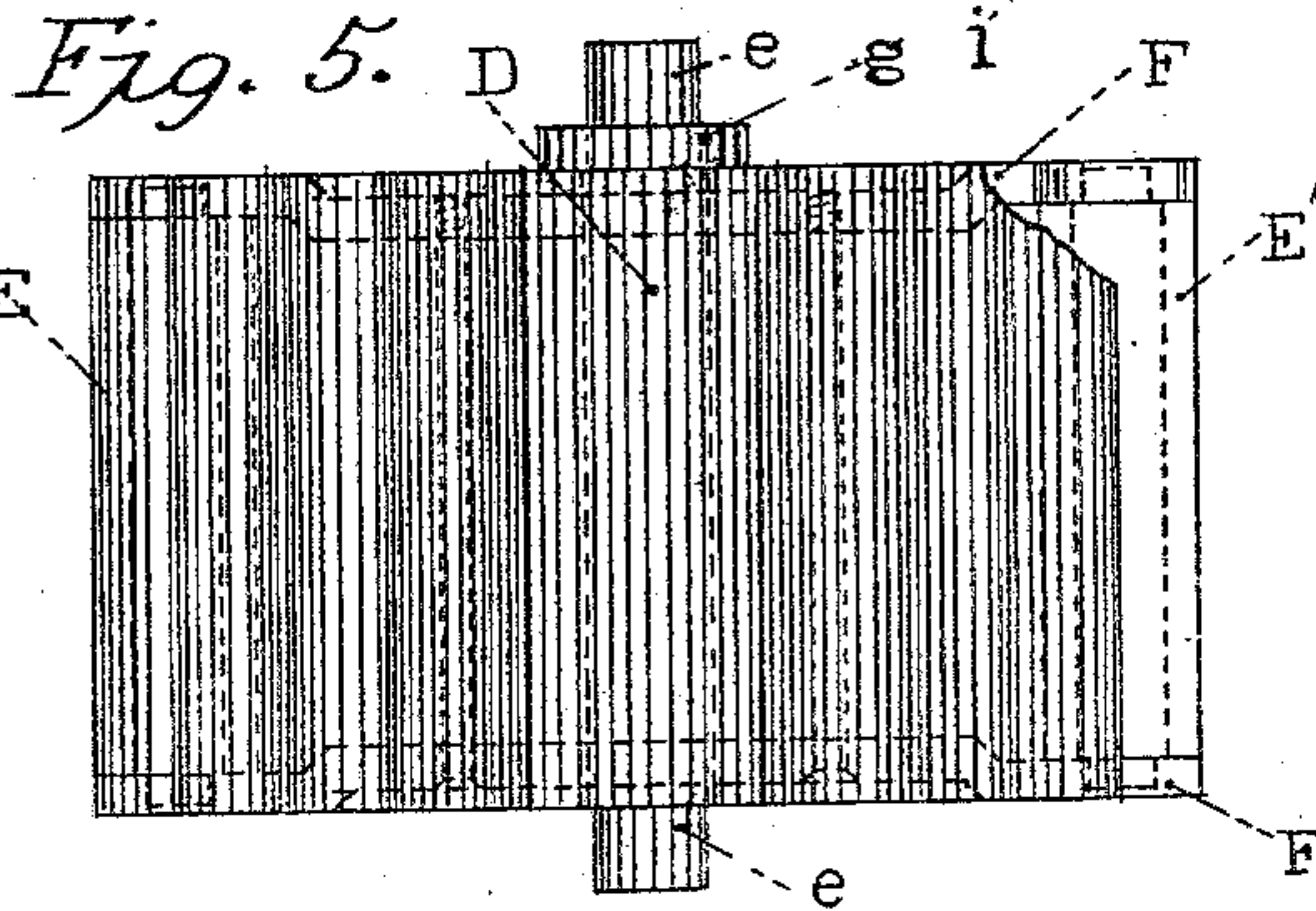
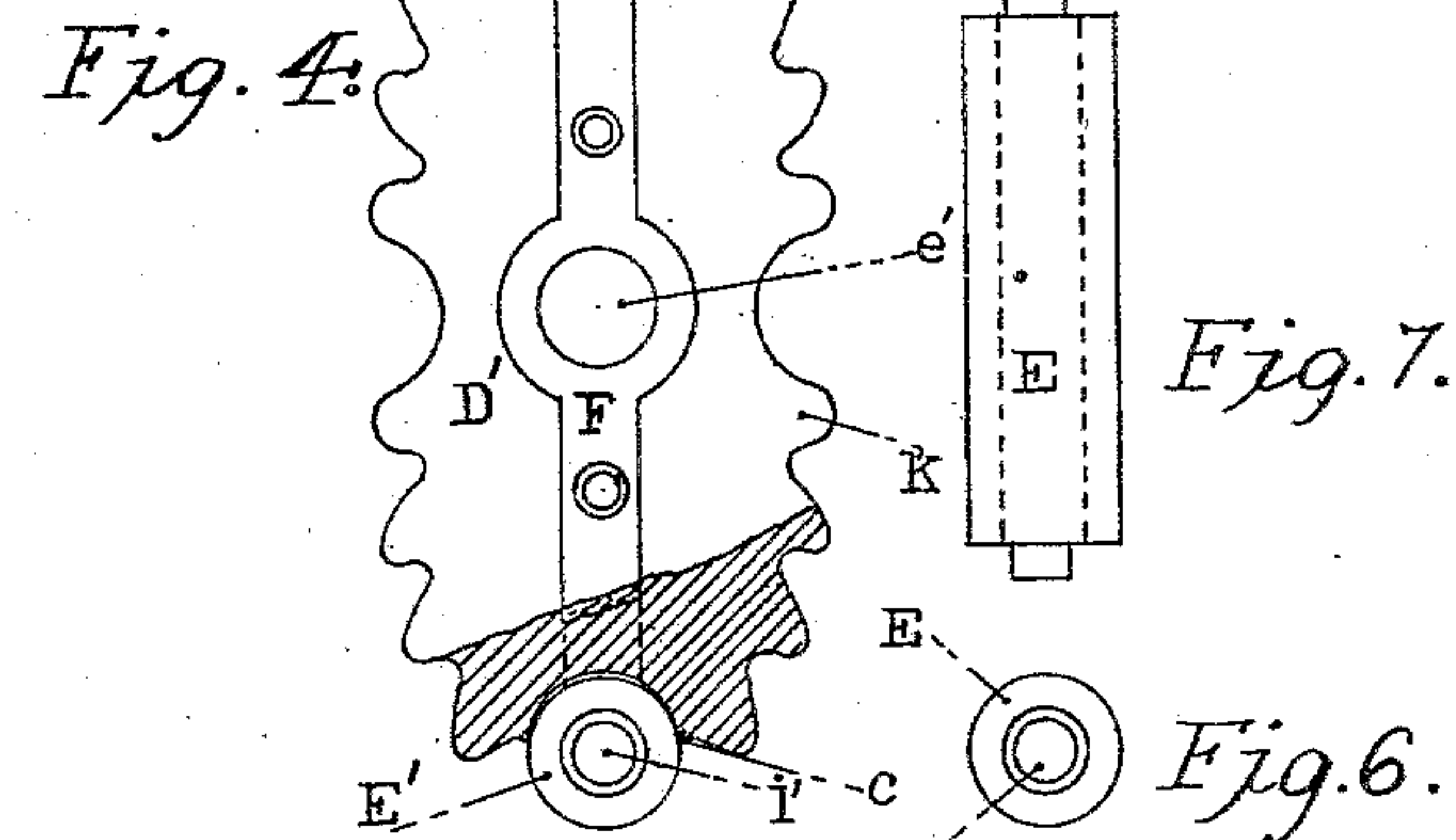
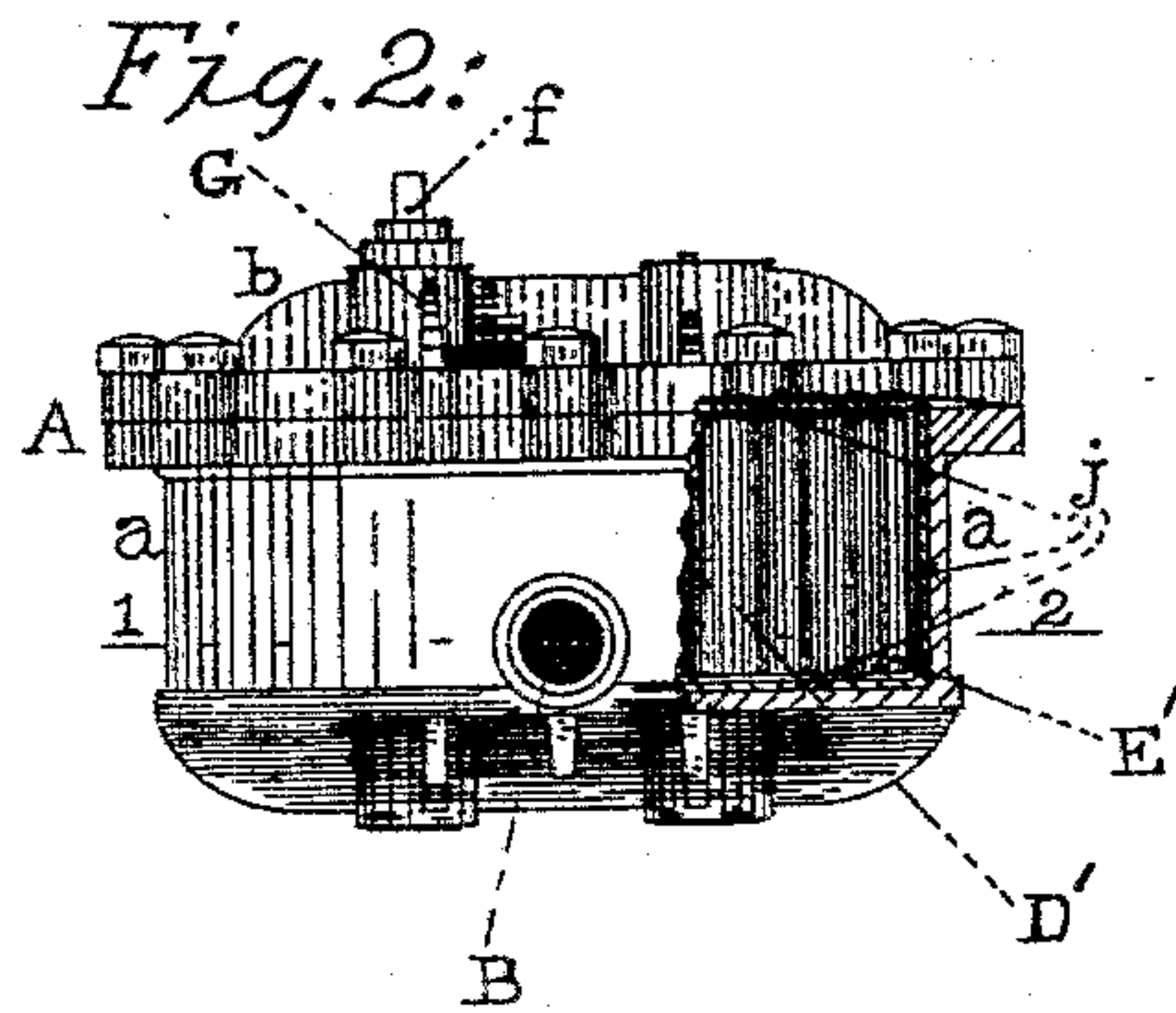
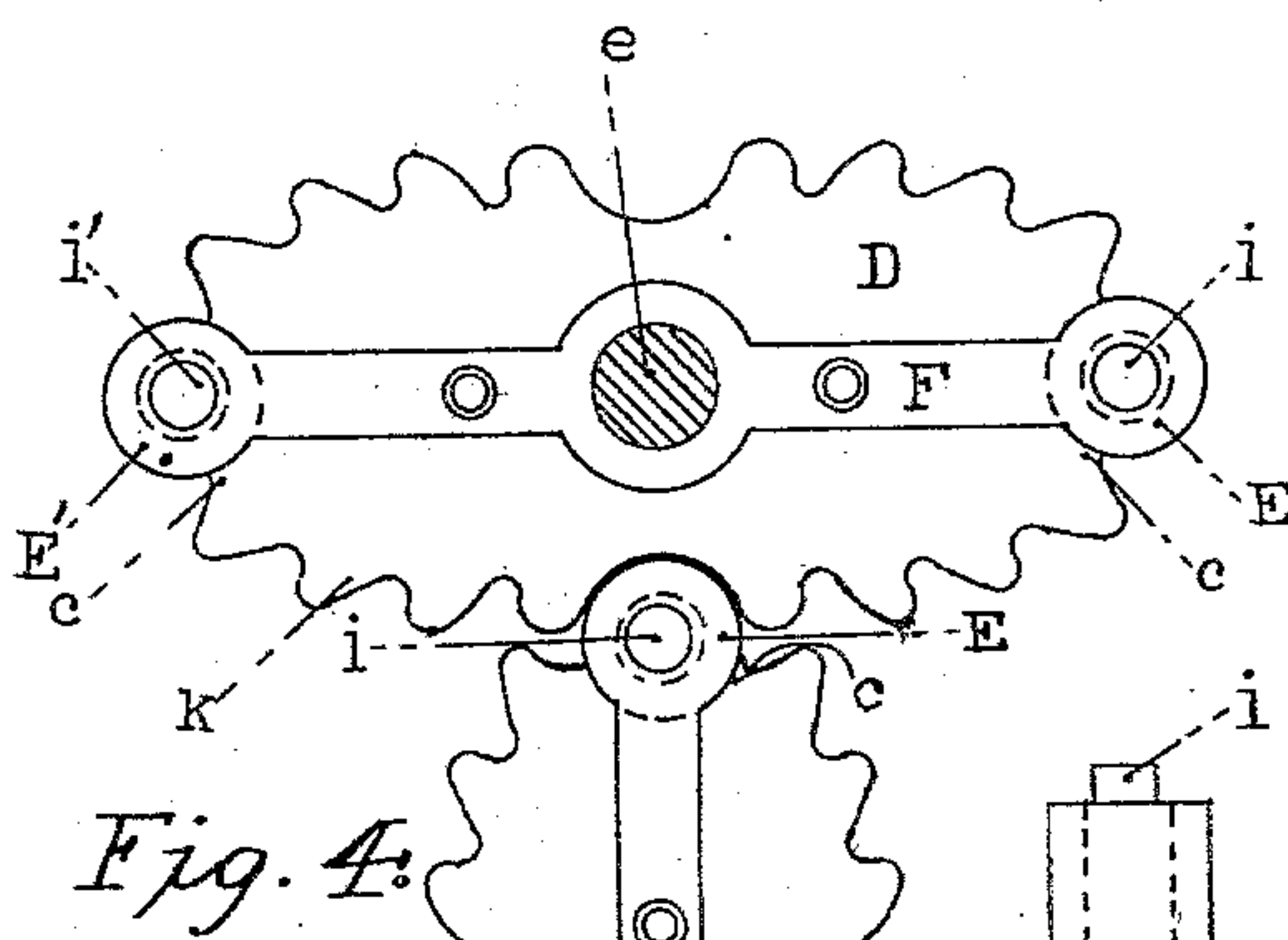
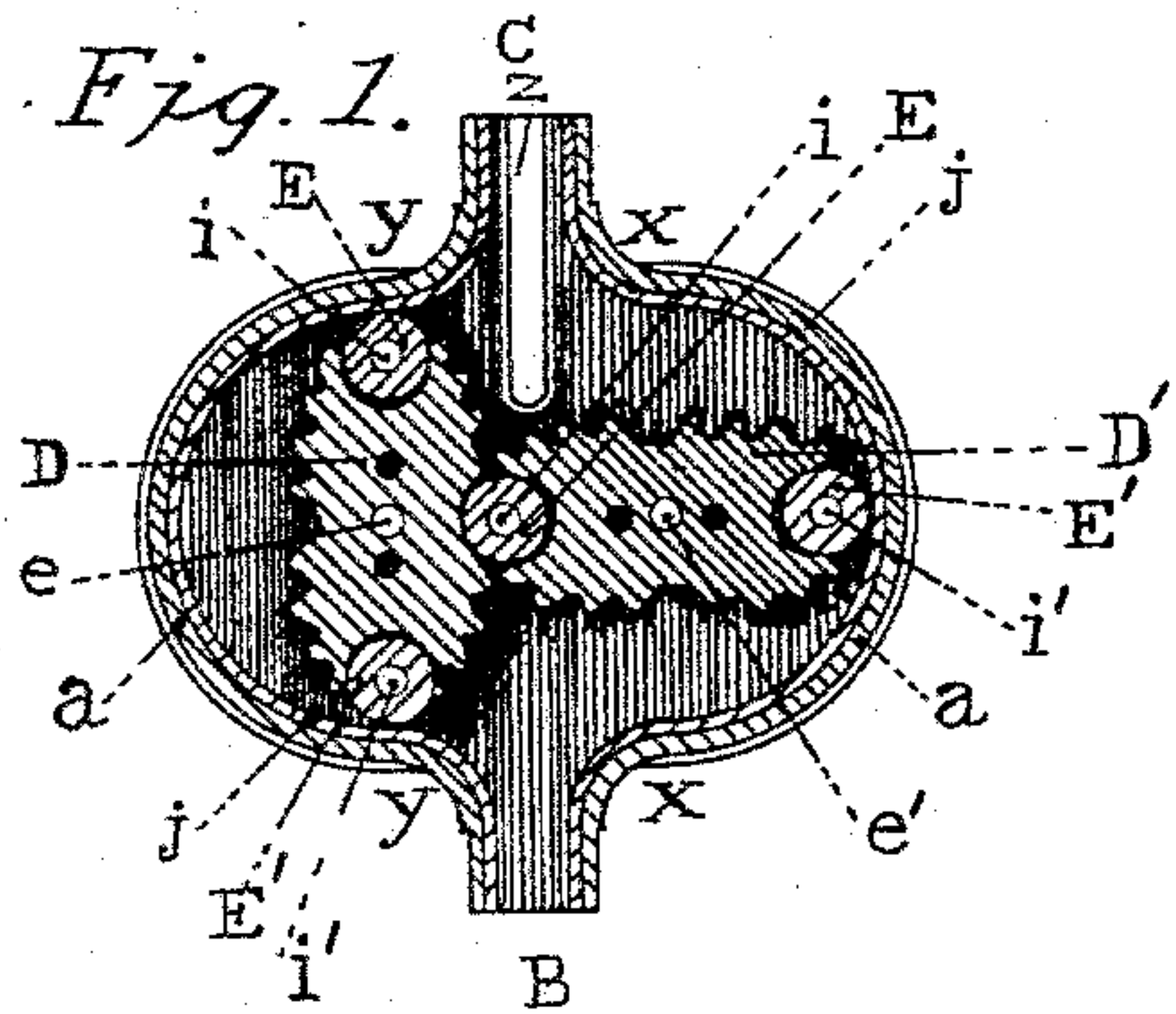


(No Model.)

E. W. SHEDD.
WATER OR OTHER FLUID METER.

No. 563,623.

Patented July 7, 1896.



Witnesses.
John Brien
Samuel B. Lord

Inventor.
Edward W. Shedd
per *Frederick E. Drown*
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UNITED STATES PATENT OFFICE.

EDWARD W. SHEDD, OF WORCESTER, MASSACHUSETTS.

WATER OR OTHER FLUID METER.

SPECIFICATION forming part of Letters Patent No. 563,623, dated July 7, 1896.

Application filed December 5, 1894. Serial No. 530,943. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. SHEDD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Water or other Fluid Meter, of which the following is a specification.

To illustrate the object and design of my invention, I refer to the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section of the meter on the line 1 2, Fig. 2; Fig. 2, an elevation of the meter; Fig. 3, a vertical section of the stuffing-box G; Fig. 4, a detail plan of the pistons or plungers D; Fig. 5, a detail elevation of the pistons or plungers D; Fig. 6, an end view of the rolls E; Fig. 7, an elevation of the rolls E; Fig. 8, a plan of the arms F, and Fig. 9 an elevation of the arms F.

Similar letters refer to similar parts throughout the several views.

The metallic case A of the meter is composed of two parts, which are respectively flanged and bolted together, so as to be water-tight at the joint, as shown in Fig. 2. The part *a* contains the revolving plungers or pistons D and D' with suitable interior bearings for one end of their shafts, and the portion *b* is the cover, which is furnished with similar bearings for the other end of the shafts.

The case A supports the clock-train-registering apparatus employed with the usual stuffing-box G to pack the spindle *f*, which passes through the cover *b* to the outside and drives the clock-train.

My improvement is illustrated more fully in detail Figs. 5, 6, 7, and 8. The water pistons or plungers are indicated by D and D', respectively. They are both elliptical and identical in form and character and are furnished with gear-teeth *k*. They are thus toothed gears as well as pistons, and perform the double function of gears and pistons. They are mounted, respectively, upon shafts *e* and *e'*, which have their bearings in interior journals formed in the case A. The ends of the elliptical pistons or plungers D and D' are grooved parallel with the gear-teeth for the rolls E. The rolls E and E' are substituted for the teeth at the ends of the pistons.

The rolls E and E' are mounted upon shafts *i* and *i'*, which have their ends secured in suitable bearings in the arms F and F', which are secured in seats in the top and in the bottom of the pistons or plungers D and D', respectively; but many modifications can be made to accomplish the mounting of the rolls E and E' in the ends of the pistons D and D' irrespective of the arms F and F' or the shafts *i* and *i'*.

The interior end surfaces of the part *a* of the case A from *x* to *x* and from *y* to *y* are true circles struck from the axes of the plungers, respectively, with a radius equal to one-half the major axis of the plungers.

The rolls E and E' in the ends *c* on each side of the major axis of the two plungers are fitted so as to make a practically water-tight joint with the circular part of the case A, and all the teeth of each gear are fitted so as to make practically water-tight joints with each other at all points in their revolution.

In Fig. 3, *g* is an annular gear secured to the plunger D. The annular gear *g* engages with the gear *h*, which is upon the spindle-shaft *f*.

B and C indicate, respectively, the induction and the eduction passages for the water, which is supposed to be entering through the pipe B under pressure, and to meet the prevailing custom at the present time the water-meter is placed in a horizontal position—that is, with the induction and eduction passages for the water in a horizontal position, as shown in Fig. 2, which will permit the meter to be placed and connected in a horizontal position—with the induction-passage B in the side of the case A and the eduction-passage C opposite with a recess Z in the bottom of the case A, the recess Z extending from the periphery of the minor axes of the pistons D and D' out through the side of the meter-case A, as shown in Fig. 1, for the purpose of permitting sediment, sand, and solid obstacles which enter the meter to pass off through the eduction-passage C.

My invention relates to the novel construction and arrangement of the parts of a water-meter, which I prefer to construct wholly or partially of aluminium or aluminium alloys, thereby providing pistons or plungers of a light-weight metal to insure a sensitive dis-

placing-meter under varying speeds and pressures and various temperatures of water or other fluids, to provide pistons or plungers and other parts of a meter made of a metal not materially susceptible to corrosion by the action of hot or cold water, and to provide pistons or plungers of aluminium or aluminium alloys of such a character of composition as to reduce the friction of the teeth of the gear-formed peripheries in contact in the operation of revolving the pistons.

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

15 1. The combination in a meter-case, of revolving elliptical pistons or plungers in constant direct gear connection by means of teeth formed on their peripheries, with the rollers

E and E' in each end of the elliptical pistons or plungers radial to their axis of revolution, 20 as set forth.

2. The combination in a meter, of revolving elliptical pistons or plungers in constant direct gear connection by means of teeth formed on their peripheries, the rollers E and 25 E' in each end of the elliptical pistons or plungers radial to their axis of revolution, and the induction-passage B in the side of the meter-case and eduction-passage C in the opposite side having a recess Z in the bottom of the 30 case, as described.

EDWARD W. SHEDD.

Witnesses:

FREDERICK E. DROWN,

ALDEN W. SIBLEY.