

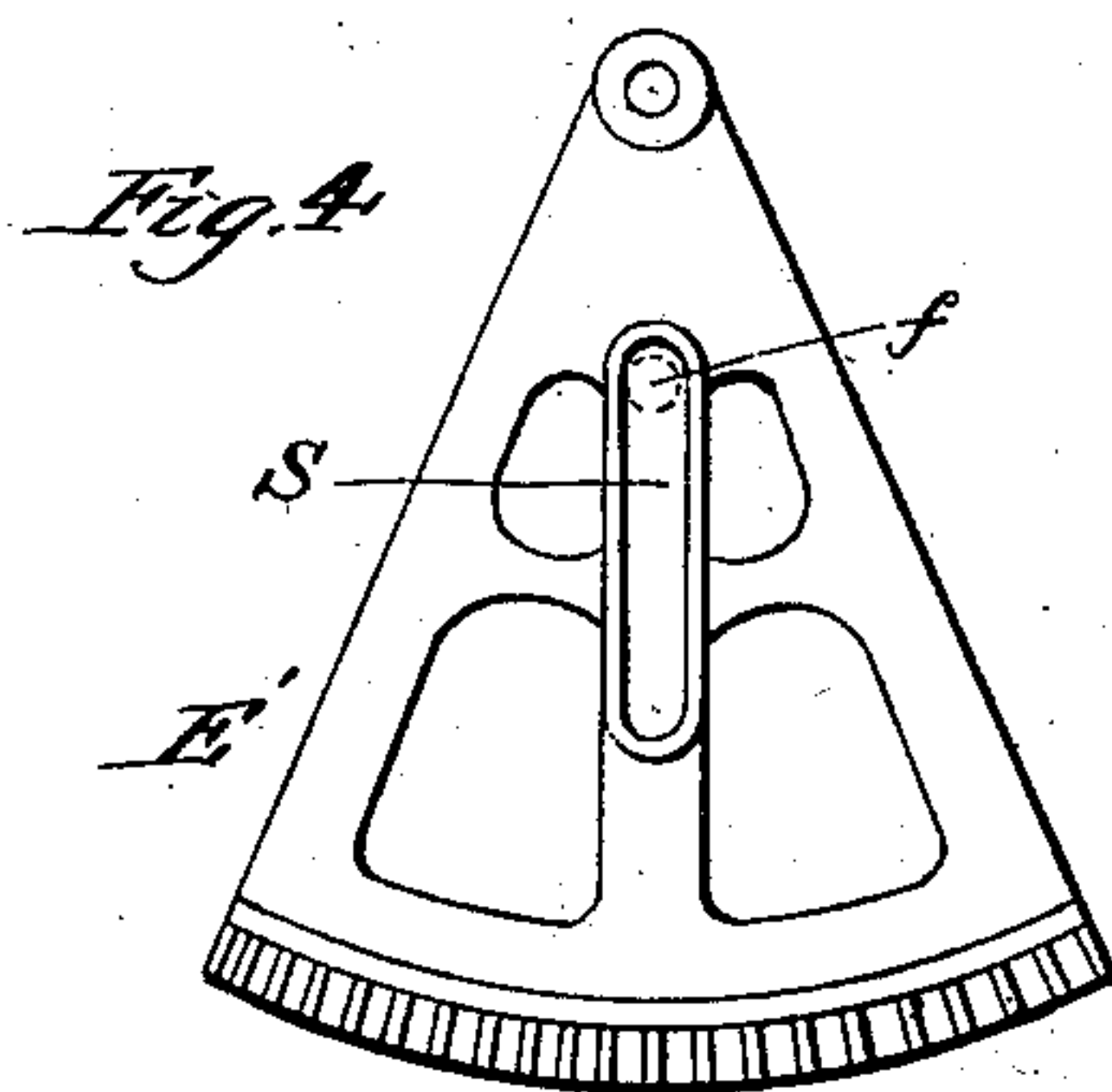
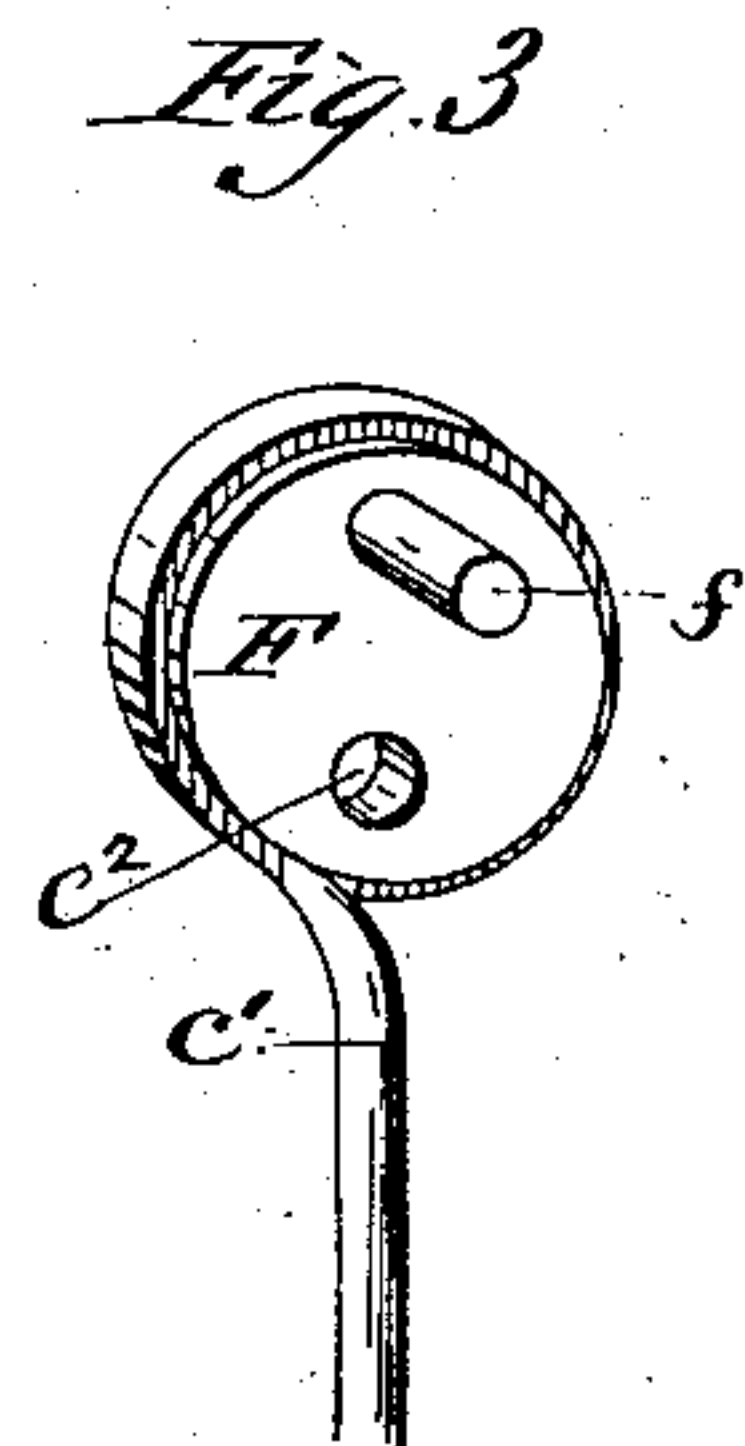
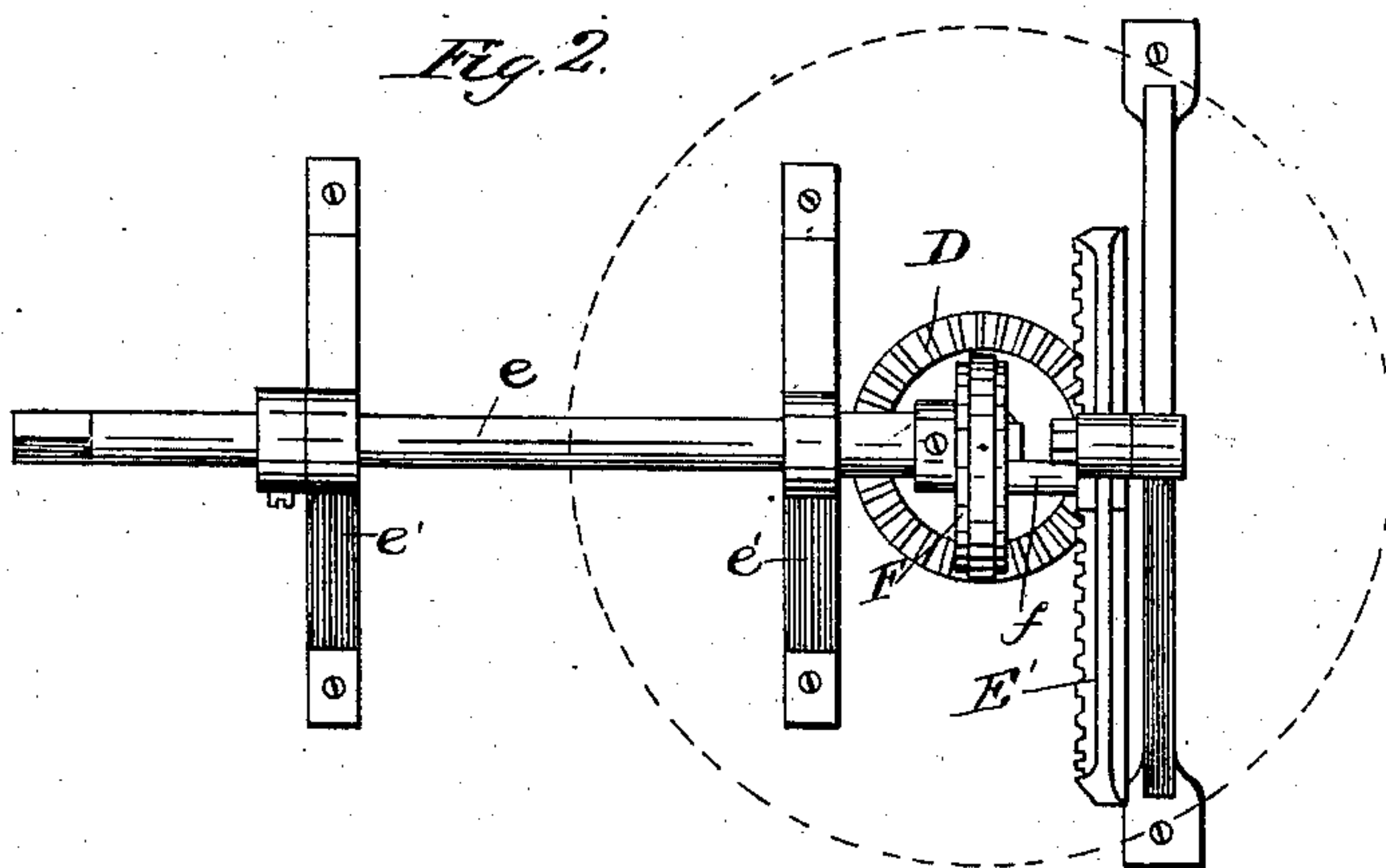
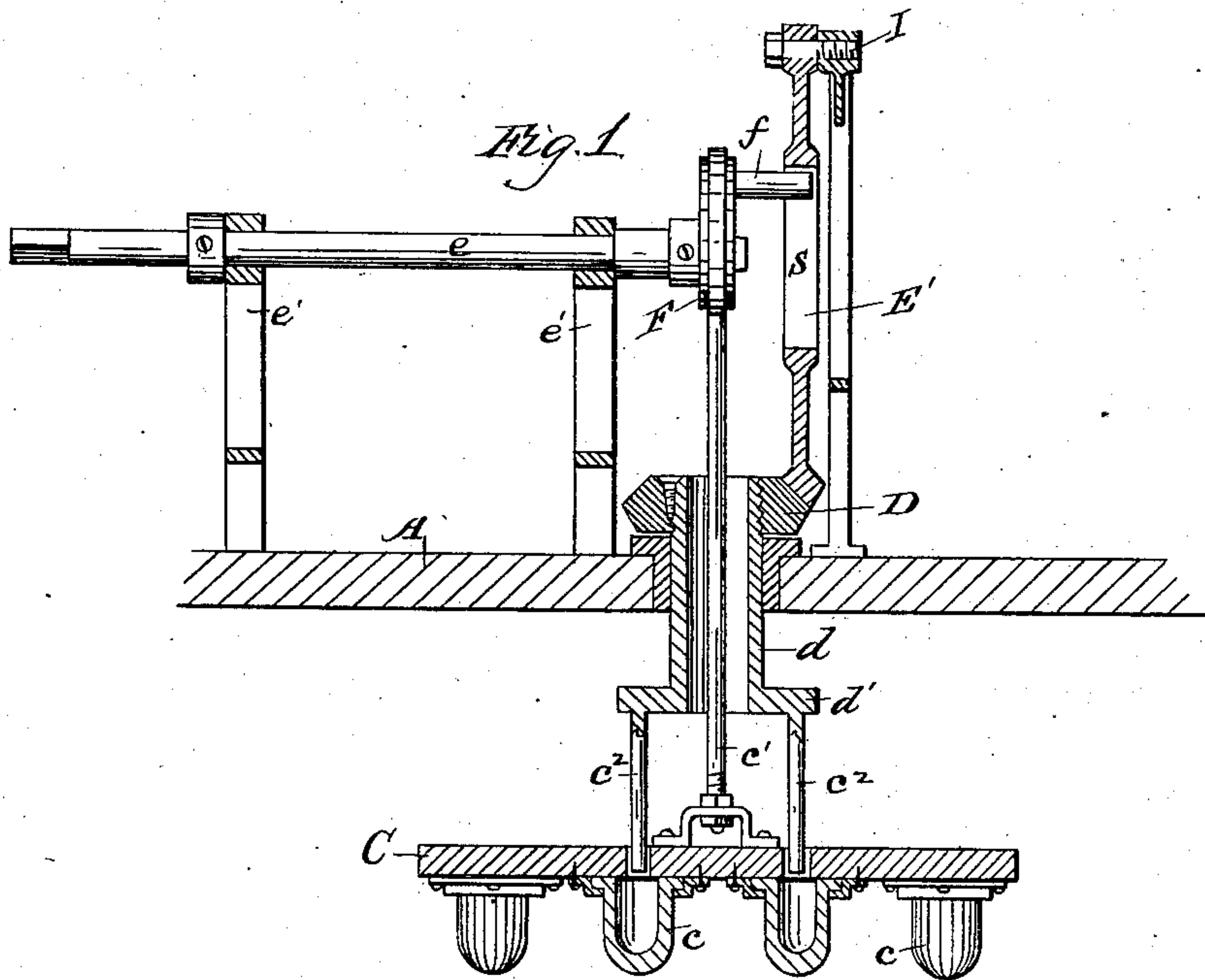
(No Model.)

C. A. BENTZEN, P. NISSEN & B. REFSUM.

DEVICE FOR CONVERTING MOTION.

No. 244,729.

Patented July 26, 1881..



WITNESSES—
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UNITED STATES PATENT OFFICE.

CHARLES A. BENTZEN, PETER NISSEN, AND BODVAR REFSUM, OF CHICAGO, ILLINOIS; SAID NISSEN AND REFSUM ASSIGNORS TO SAID BENTZEN.

DEVICE FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 244,729, dated July 26, 1881.

Application filed June 23, 1881. (No model.)

To all whom it may concern:

Be it known that we, CHARLES A. BENTZEN, of the city of Chicago, county of Cook, and State of Illinois, PETER NISSEN, a subject of King William, the emperor of the German Empire, but residing in the said city, county, and State, and BODVAR REFSUM, a subject of King Oscar, of Norway and Sweden, but residing in the said city of Chicago, county of Cook, and State of Illinois, as aforesaid, have invented certain Improvements in Mechanical Devices for Converting Motion, of which the following is a specification.

The object of our invention is to provide a mechanical device by means of which a horizontal shaft may be made to convert its rotary motion into reciprocating vertical motion in a vertical shaft and into reciprocating horizontal circular motion in another vertical shaft, both shafts delivering their respective motions to the same machine; and our said device is designed especially to operate a washing-machine like the one described and claimed in the Letters Patent of the United States issued to Charles A. Bentzen, dated March 22, 1881.

We have accomplished our said object by means of the parts and combinations of parts hereinafter described with reference to the accompanying drawings, in which—

Figure 1 represents a central vertical section made through some of the parts of the device, and the rubbing and agitating device of a washing-machine in connection therewith; Fig. 2, a plan of the device; Fig. 3, a perspective in detail of the fast grooved wheel F and a vertical shaft, *e'*; and Fig. 4, a front face view, in detail, of the toothed sector E'.

A indicates the top of the box of washing-machine; *e' e'*, two upright standards upon the same; *e*, a horizontal shaft, to which rotary motion may be imparted in any suitable manner, and it is furnished with bearings in the standards; and upon the inner end of the shaft is fastened the wheel F, eccentrically, as shown, and that wheel has a groove in the periphery for the reception of the ring of the upper end of the shaft *e'*, so that when shaft *e* revolves the wheel F will revolve, and, by means of its eccentricity upon the shaft, the shaft *e'* will reciprocate vertically, and impart that motion to the disk C, furnished with rubber *c*, designed to rub and agitate clothing to be washed.

On the outer face of wheel F projects the wrist or wrist-pin *f*. This wrist is designed to work in slot S in the toothed sector E', which is pivoted to its standard I upon the top of A, (the box,) and is provided on the lower edge of its face with bevel-gear, as shown, to mesh with the bevel-gear D, which is securely fastened upon the upper end of hollow shaft *d*, the lower end of which extends through and below the top A and encircles shaft *e'*, and is there provided with a flange, *d'*, from which extend downward two guide-rods, *c² c²*, through holes in the disk C, so that when the disk is drawn up they enter into the interiors of two of the rubbers *c c*.

In Fig. 1 the toothed sector is shown in a vertical position, the wrist *f* in the same vertical line with shaft *e*, and the shaft *e'* in its lowest position. Now, when the shaft *e* is turned either to the right or to the left, the shaft *e'* and disk C are raised, and the wrist *f* in slot S of the toothed sector E', in passing down, forces the sector sidewise, and it revolves bevel-wheel D and its shaft *d*, and with it disk C, and thus by revolving shaft *e* the shaft *e'* is made to reciprocate vertically and the shaft *d* to reciprocate horizontally, and our object is accomplished.

The device hereinbefore described is an improvement upon the one described and claimed in the Letters Patent of the United States for a mechanical device issued to the said C. A. Bentzen, bearing date the 11th day of January, 1881.

What we claim as our invention, and desire to secure by Letters Patent, is—

The wheel F, fixed upon shaft *e* eccentrically, and provided with wrist *f* and ring-shaft *e'*, in combination with toothed sector E', having slot S and bevel-gear to mesh with bevel-wheel D, and adapted to change rotary motion in the shaft *e* into vertical reciprocating motion in shaft *e'* and reciprocating horizontal motion in shaft *d* and deliver such motions to the same machine, substantially as described.

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