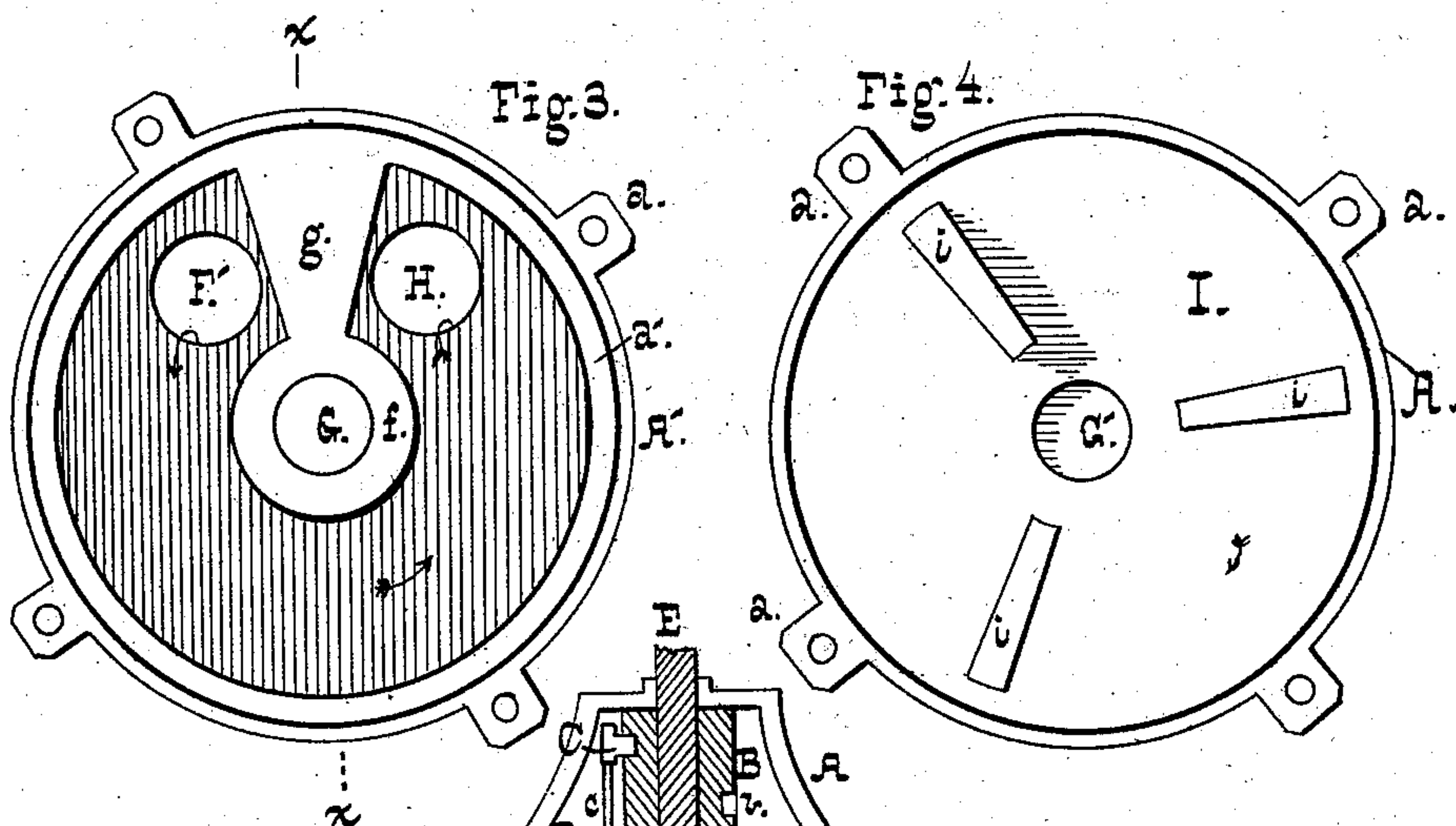
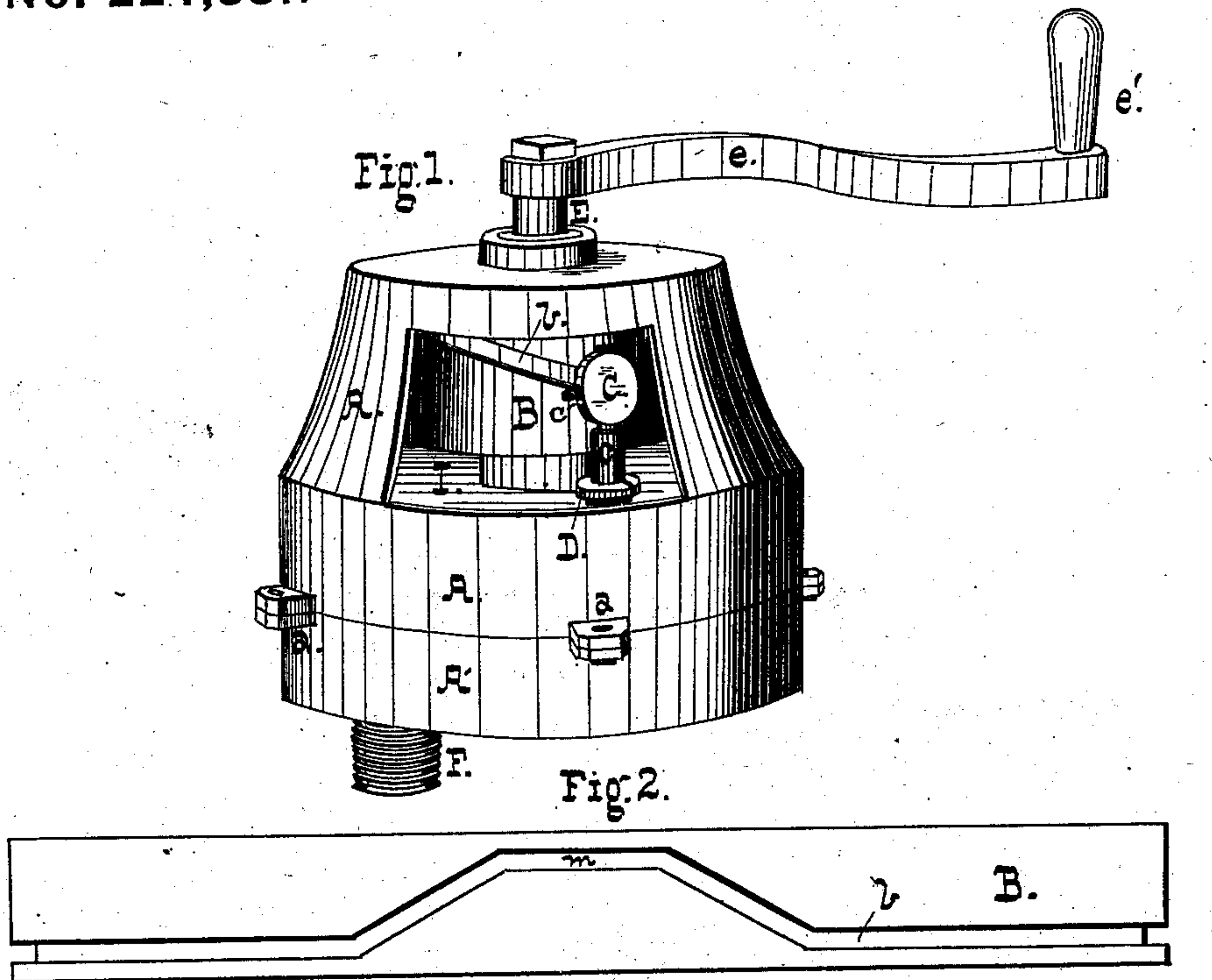


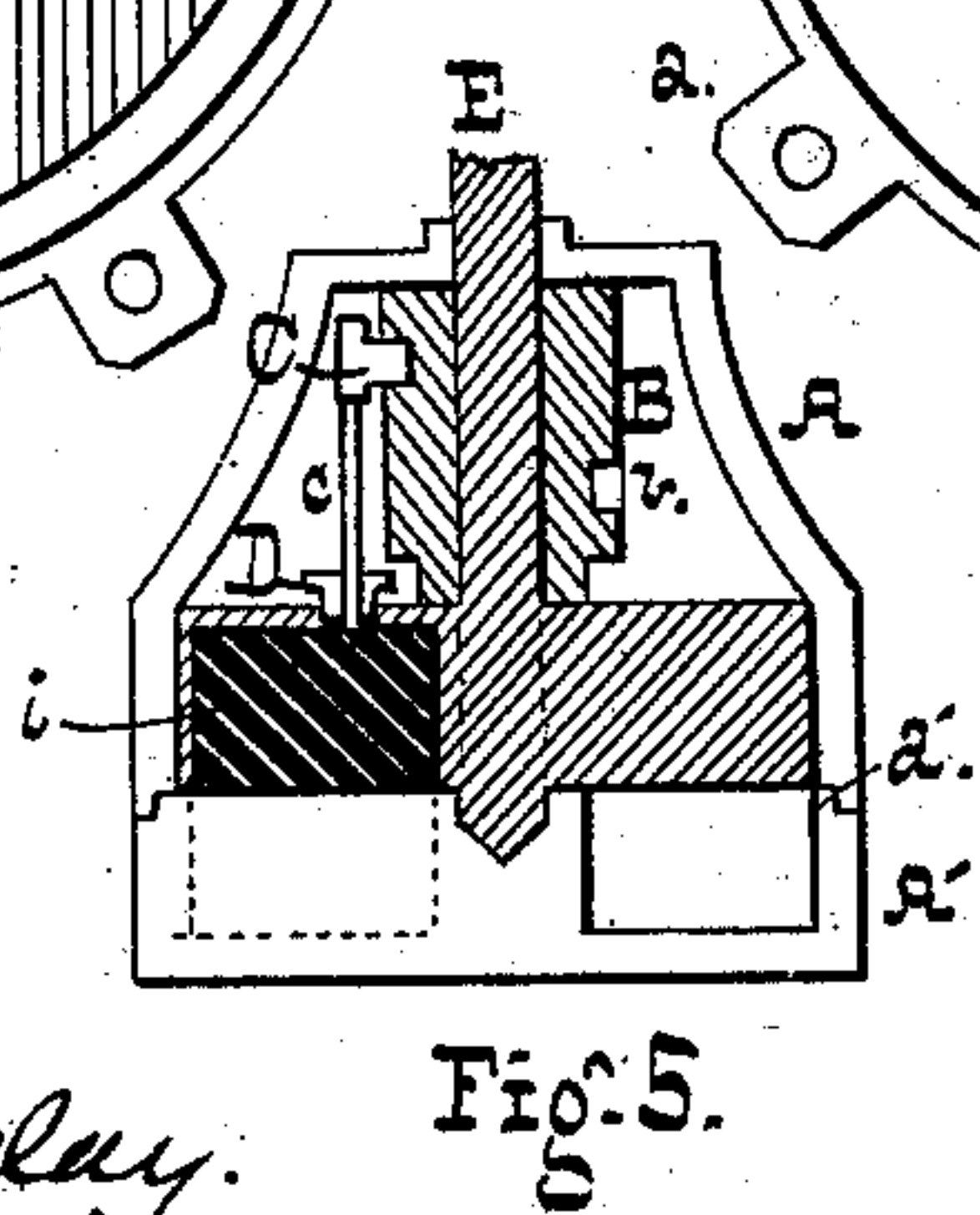
J. F. GELLETLY.  
Pump.

No. 224,331.

Patented Feb. 10, 1880.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

JAMES F. GELLETLY, OF BALTIMORE, MARYLAND.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 224,331, dated February 10, 1880.

Application filed November 4, 1879.

*To all whom it may concern:*

Be it known that I, JAMES F. GELLETLY, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Pumps; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the device; Fig. 2, a projection of the cam; Fig. 3, a plan of the base; Fig. 4, a similar view of the disk carrying the rotating pistons; and Fig. 5 is a vertical central sectional view of the device.

The object of my invention is to furnish a simple and effective continuous-discharge pump, not liable to get out of order, and, being devoid of packing and valves, adapted to force a stream of liquid in either direction.

In the accompanying drawings, A A represent the main casing, in the upper part of which is secured a cylinder, B, having a cam-race, *b*, as shown. Through the center of this cylinder passes a shaft, E, which is firmly secured to a disk, I, that is adapted, by means of the crank *e* and handle *e'*, to be rotated within the cylindrical part of the casing A. Through stuffing-boxes D in the disk I pass rods *c*, carrying at their lower ends the pistons *i*. The upper ends of the rods are secured in disks C by means of screws *c'*; and pins on the inside of these disks engage with the cam-race *b*. The casing A fits down around a flange, *a'*, on the cylinder A', the two being secured together by bolts passing through lugs *a*. The center-post *f* in the casing A' fits closely against the disk I when the parts are brought together, the pin G entering a hole, G', in the disk, and serving as a pivot for the latter. A bridge, *g*, of equal height with the post *f* and flange *a'*, connects them, and of course also fits closely against the disk I. On either side of the bridge is an opening, F' H, serving, respectively, as inlet and outlet ducts for the liquid. Both are provided with threaded nozzles F for the attachment of a hose.

It will be seen that as the crank is revolved the disk I is caused to turn within the cylinder or casing A, carrying with it the pistons *i*. The cam-race is so arranged with reference to the bridge *g* that its highest portion, *m*, is di-

rectly thereover, so that the pistons are lifted by means of the pins on the disks C and the rods *c* as they approach the bridge, and retained in their lifted position until they pass it, when they are caused to descend by the same means and traverse the annular channel between the post *f* and flange *a'*, which channel they are made of a size to exactly fit.

At each rotation of the shaft E a volume of water is forced through the outlet H equal to the cubical contents of the channel, the device operating, in this respect, somewhat upon the principle of the ordinary chain-pump, without being open to the disadvantages of the latter in point of waste and wear.

From the foregoing description of the device it will be seen that the pump works equally well in either direction—a point which is of importance, or becomes of importance as the cam-race wears away, because upon reversing the motion of the pump the opposite face of the race actuates the pins.

As the pistons are made to revolve close to the walls of the channel, the only parts of the device upon which any wear whatever falls are the race and pins on the disks C and the stuffing-boxes D. The wear on the race may, as above described, be transferred to the opposite face, with which the pins, in revolving with the shaft in one direction, have never come in contact, and upon taking out the screws *c'* the disks C may be inverted, bringing new surfaces of the pin into contact with the race. Finally, wear of the boxes D may be taken up by slightly turning them, they being in the form of externally-threaded split sleeves.

The simplicity of the device, the facility it affords for taking up wear, and its thorough efficiency in use eminently fit it for any purpose for which it is desired to lift and force liquids with a continuous flow.

What I claim is—

1. In a pump, an annular barrel having a bridge or partition and one or more pistons adapted to travel around in the barrel and be lifted over the bridge by means of mechanism substantially as described.

2. In a pump, an annular barrel having a bridge or partition and a series of pistons arranged to travel around in said barrel and be



lifted and depressed as they approach and recede from the bridge by means of a cam-race, with which pins projecting from the piston-shafts engage, as set forth.

5 3. In combination with the casing A', having annular channel, and bridge *g*, the vertically-reciprocating pistons and disk I, substantially as described.

10 4. In combination with the casings A A', cylinder B, having cam-race *b*, the annular barrel or channel, and pistons *i*, having reversible disks C, substantially as set forth.

5. The combination, in a pump, of a revolving disk carrying reciprocating pistons adapted to travel in a bridged annular barrel, and a stationary cam-race adapted to lift the pistons, whereby the pump is adapted to force liquid in either direction, and facility is afforded, as described, for taking up wear, substantially as set forth.

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