

E. B. NEWCOMB.
Rotary-Pump.

No. 226,773.

Patented April 20, 1880.

Fig: 3.

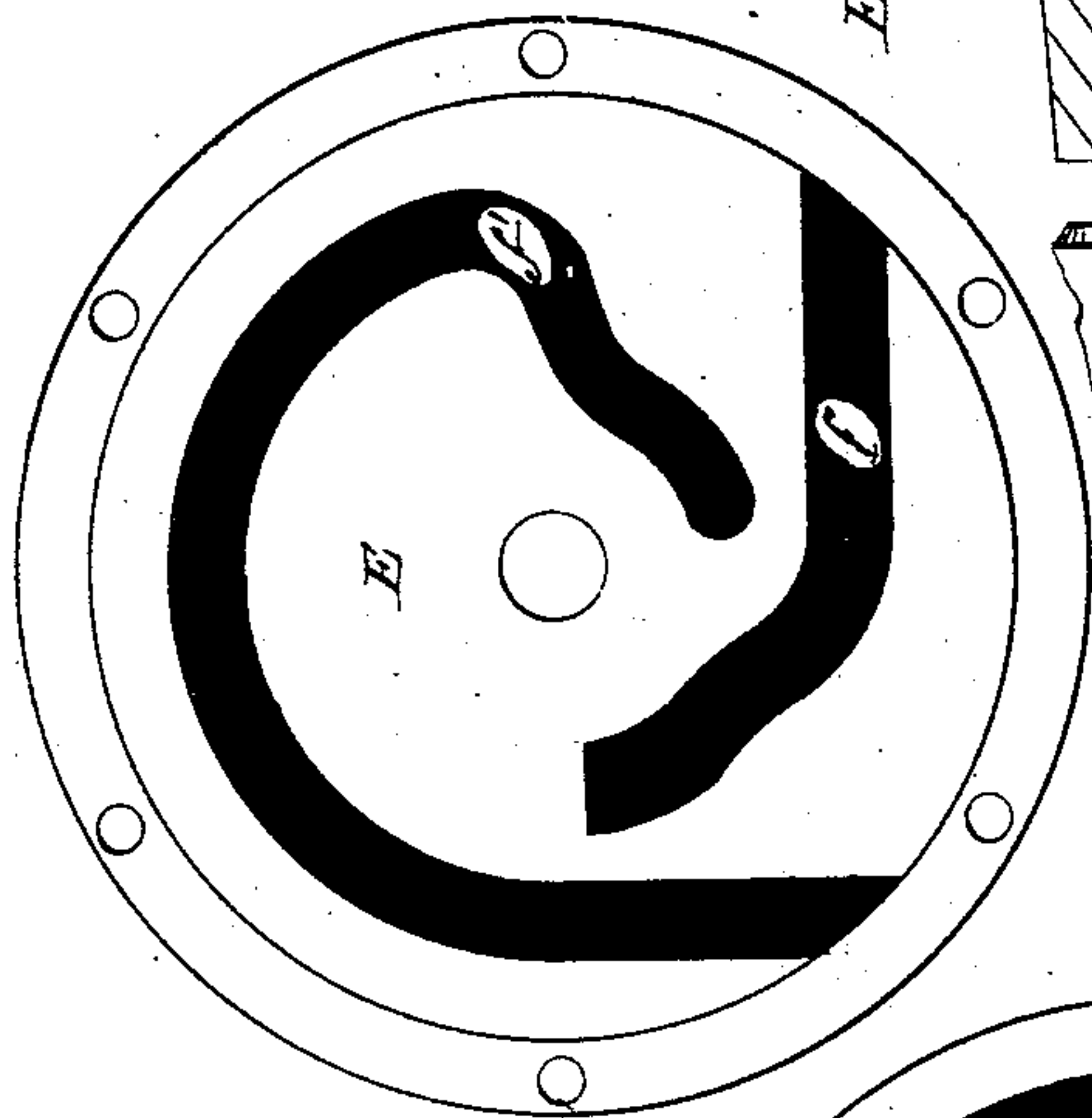


Fig: 1.

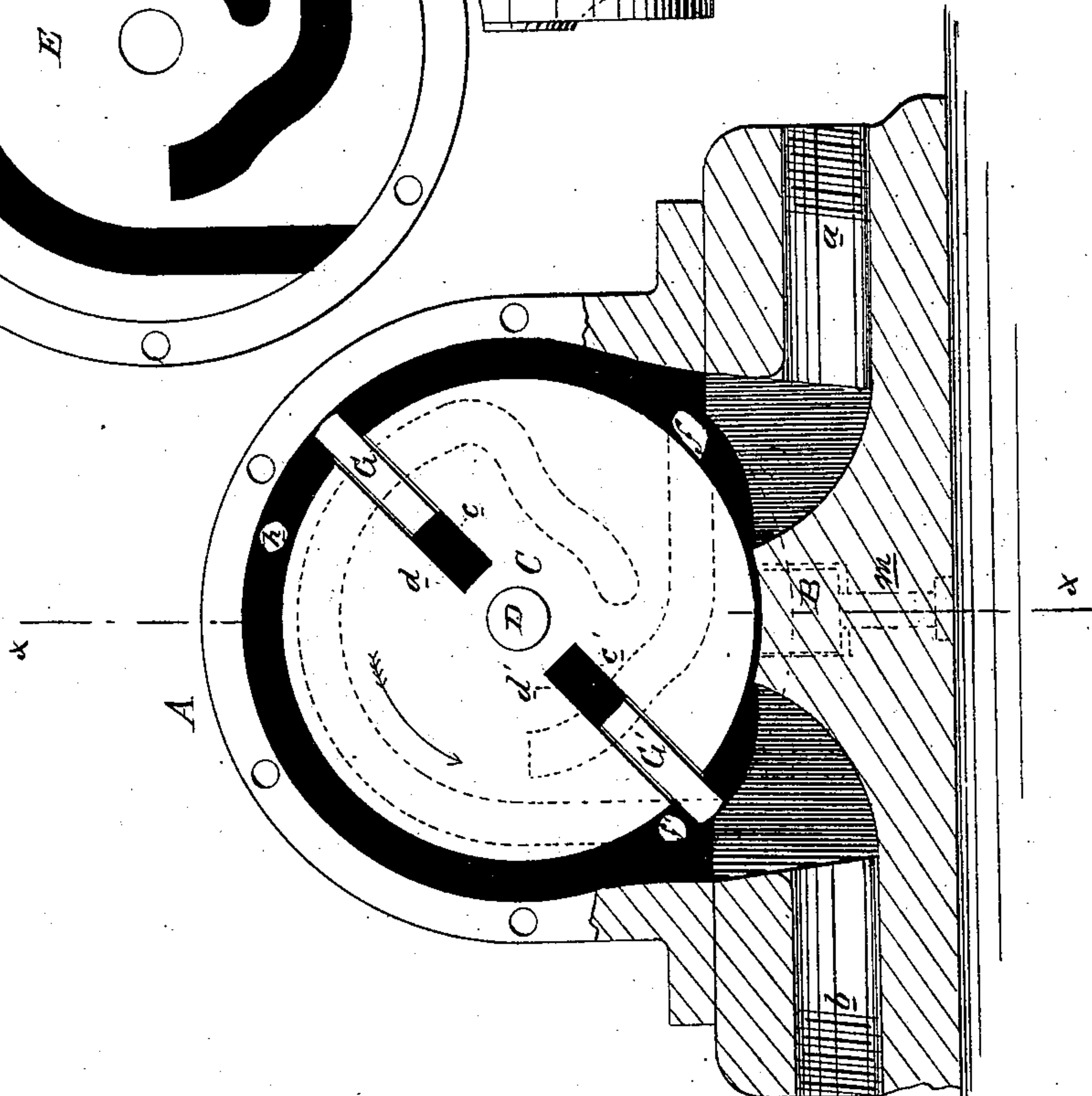
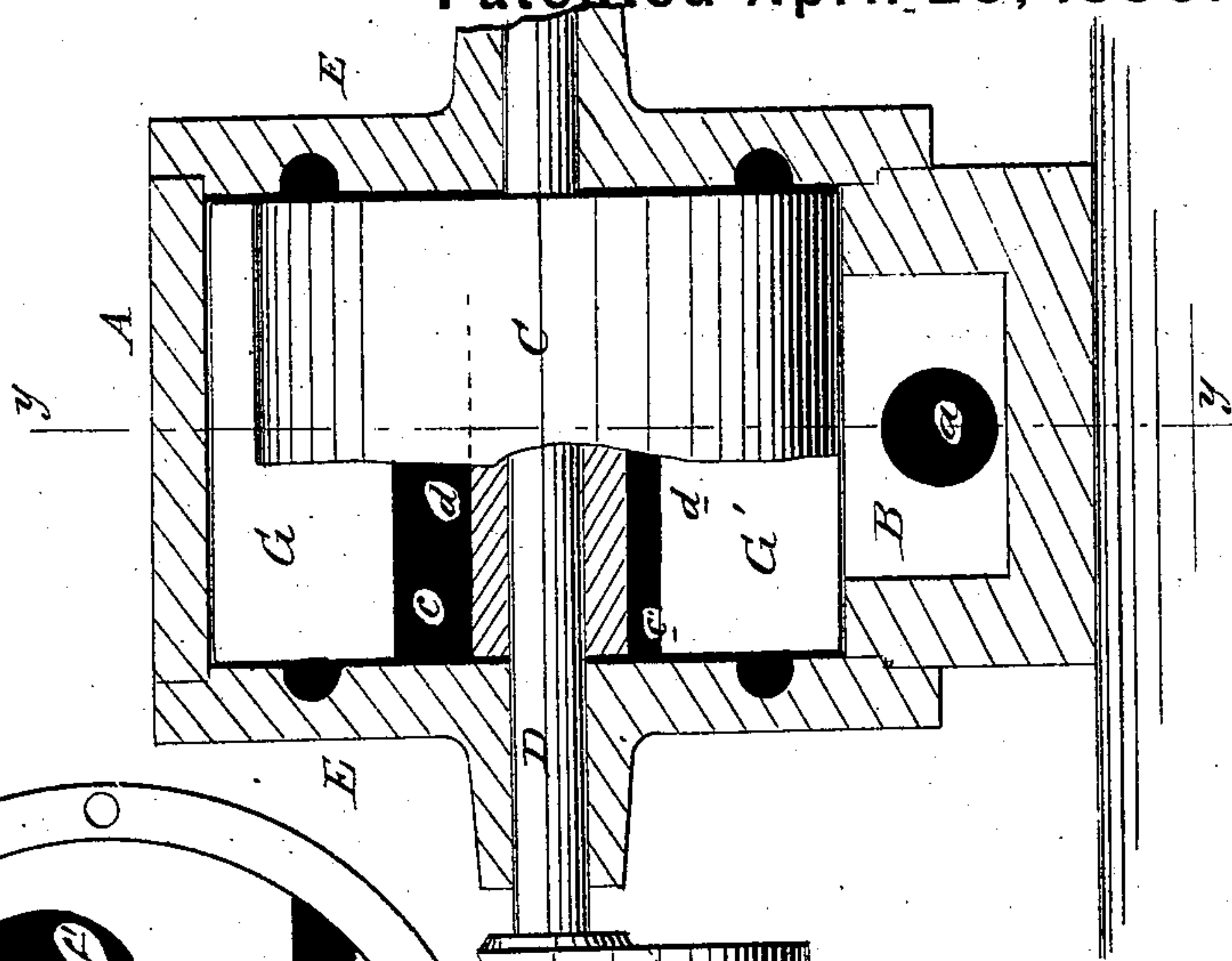


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ERWIN B. NEWCOMB, OF CUMBERLAND MILLS, MAINE.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 226,773, dated April 20, 1880.

Application filed November 22, 1879.

To all whom it may concern:

Be it known that I, ERWIN B. NEWCOMB, of Cumberland Mills, in the county of Cumberland and State of Maine, have invented a new and Improved Rotary Pump, of which the following is a specification.

Figure 1 is a sectional front elevation on line *y y*, Fig. 2. Fig. 2 is a sectional end elevation on line *x x*, Fig. 1. Fig. 3 is an elevation of the inner faces of the pump-heads.

Similar letters of reference indicate corresponding parts.

The object of this invention is to construct a rotary pump in such a manner that the floats shall be balanced and operated by the pressure of the water acting through ports or channels formed in the cylinder-heads and communicating with the exit and entrance ports of the pump and with the radial float-slots of the revolving cylinder.

My invention in rotary pumps has for its object to take the wear off the floats or cams, except what occurs on the cam on the vacuum side of the pump, the cam being arranged simply to allow the float to come into position easily. All the wear on the buckets is on the back edge, all pressure which would tend to push them harder against the shell being removed.

It will be seen that no leakage can take place on account of the wear of buckets, as the latter follow up the wear.

In the drawings, A represents the outer shell or cylinder, provided with entrance and exit ports or passages *a b*, respectively, and with an upward cam-like projection, B, between them. C is an internal revolving cylinder, of less diameter than the shell or outer cylinder, A, so that there is an annular space, *h*, between them, said cylinder C being keyed on the shaft D, that has bearings in the outer cylinder-heads, E E, and has fixed upon it a driving-pulley, F. Said cylinder C has also two or more radial slots, *c c'*, extending entirely across its face and from its periphery nearly to its center. In these slots *c c'* are fixed the floats G G'.

E E are the outer cylinder-heads, provided with irregularly-curved passages or channels *f f'*, formed in their inner faces.

As the cylinder C is made to revolve in the direction of the arrow in Fig. 1 by power applied to the pulley F, the vacuum created behind the floats G G' will draw water into the pump through the entrance-port *a*.

The cam-projection B may be adjustable by screw *m* or other convenient device, as shown in Fig. 1, or may be cast as part of the shell A.

When the cylinder C is in the position shown in Fig. 1 there is a vacuum in the channels *f* and a pressure in *f'*. Then the pressure at the exit-port *b* and vacuum in the channels *f* will combine to force inward the float G', and after the said float G' has passed the cam-projection B it comes opposite the channels *f'*, which are under pressure, and that pressure, combined with the vacuum at the entrance-port *a*, will, by taking effect through the slot *c'*, force the said float G' out again, and thus in succession each float G G' is operated upon by means of the channels *f f'*.

By making the slots *c c'* a little deeper than is necessary for the floats G G', a water cushion is obtained for the said floats to strike against at the termination of their inward stroke.

I am aware that floats have been operated by a cam to withdraw, and have been pushed out by a spring; but

What I claim is—

The combination, with the fixed shell A, having ports *a b*, between which is a projection, B, and heads with irregular channels *f f'*, of the rotary cylinder C, having the slide-floats G G' in opposite radial slots *c c'*, a space, *h*, being left between the shell and rotary cylinder, as shown and described.

ERWIN B. NEWCOMB.

Witnesses:

WM. L. LONGLEY,
JOS. DUNNELL.