

(No Model.)

B. F. TABER.

ROTARY PUMP.

No. 344,063.

Patented June 22, 1886.

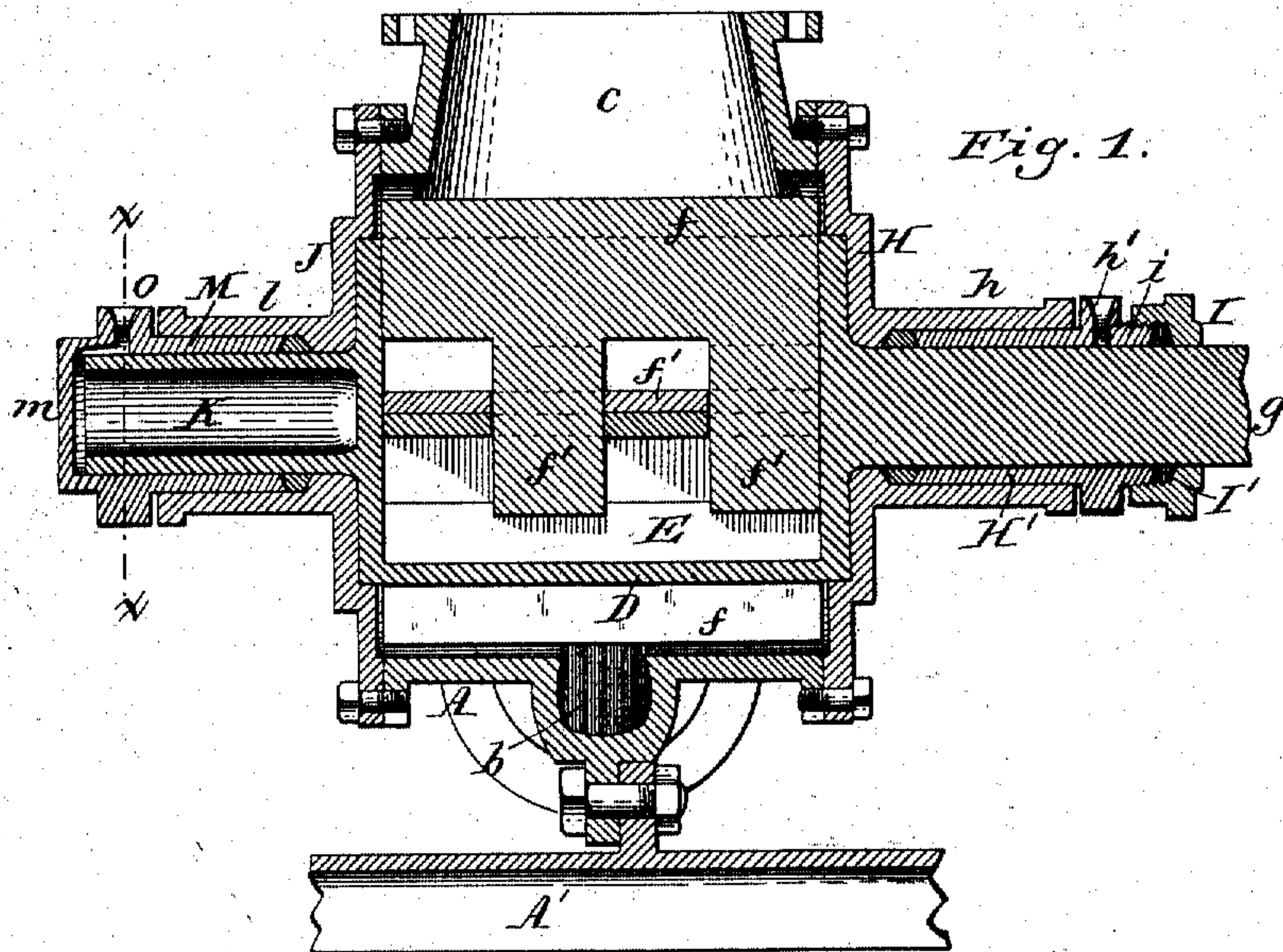


Fig. 2.

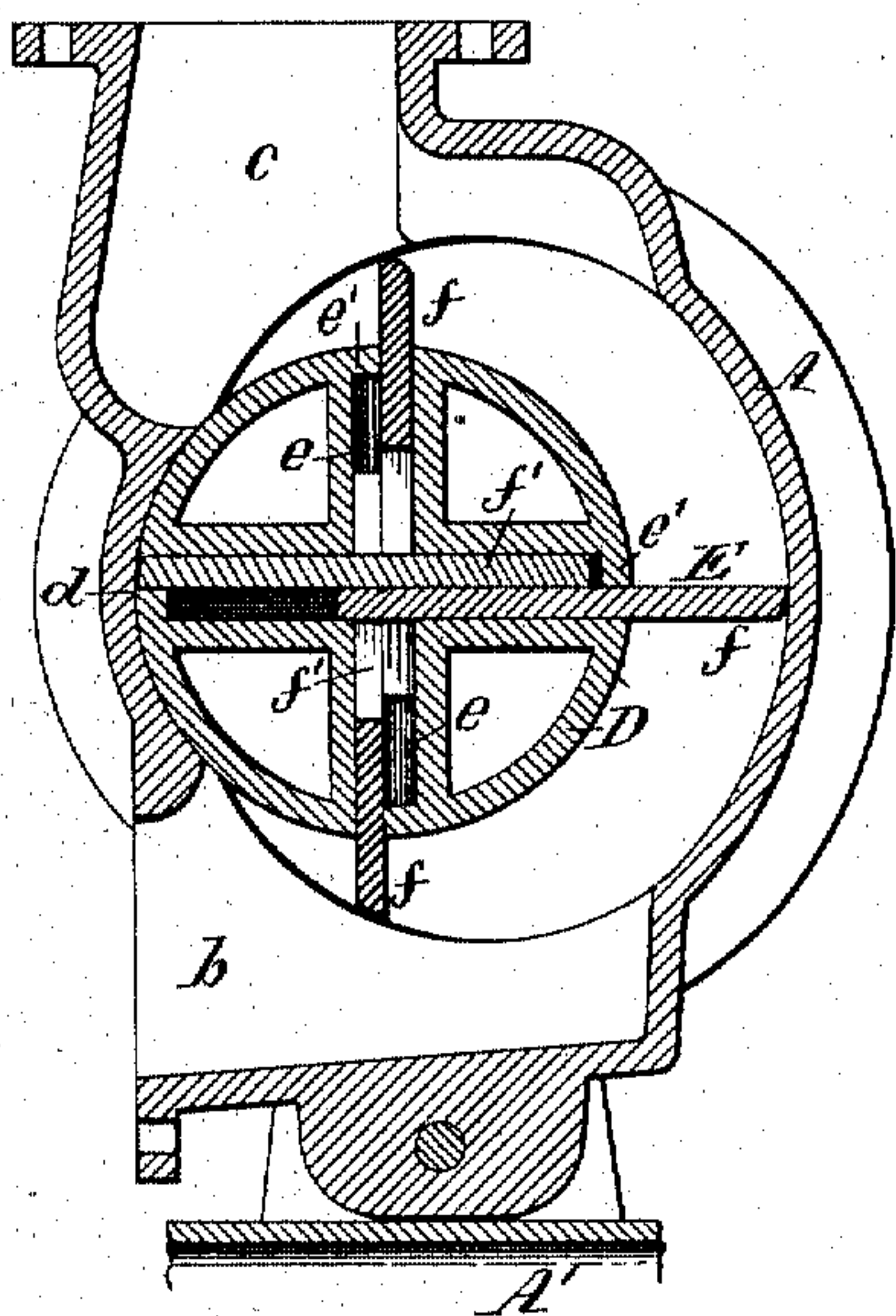
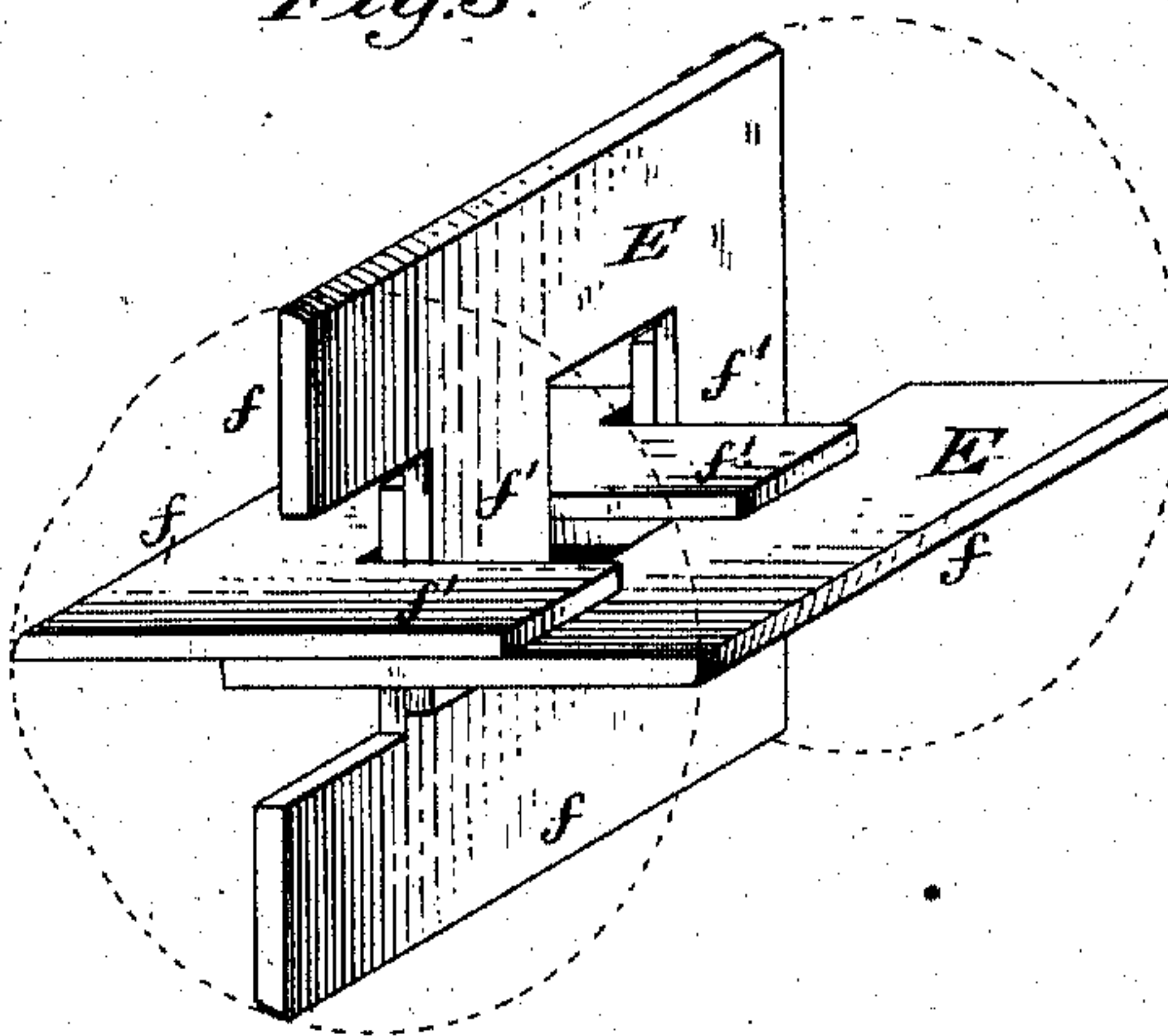


Fig. 3.



Chas. J. Richheit  
Theodore L. Popp } Witnesses.

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. TABER, OF BUFFALO, NEW YORK.

## ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 344,063, dated June 22, 1886.

Application filed June 9, 1885. Serial No. 168,178. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. TABER, of the city of Buffalo, in the county of Erie and State of New York, have invented new and  
5 useful Improvements in Rotary Pumps, of which the following is a specification.

This invention relates to an improvement in that class of pumps which consists of a revolving cylinder arranged eccentrically in the in-  
10 closing shell or case and provided with sliding pistons which revolve with the cylinder and run with their outer edges in contact with the inclosing case.

The object of this invention is to construct  
5 a simple and efficient pump of this kind which is suitable for pumping water and other liquids which do not interfere with the free sliding movements of the pistons in the cylinder.

My invention consists, to that end, of the im-  
20 provements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved pump. Fig. 2 is a vertical section at  
25 right angles to Fig. 1. Fig. 3 is a perspective view of the pistons.

Like letters of reference refer to like parts in the several figures.

A represents the inclosing shell or case of  
30 the pump, supported on a suitable base-frame, A', and provided with a suction-nozzle, b, and a discharge-nozzle, c.

D represents the piston-cylinder, arranged eccentrically in the base A, with its periphery  
35 in close contact with the abutment d of the case A, between the suction and discharge nozzles thereof.

E represents the sliding pistons, arranged in grooves or ways e, formed in the cylinder D at  
40 right angles to each other. Four pistons, E, are employed and arranged each in a separate groove or way, e. The latter are arranged in two pairs at right angles to each other, so that the two pairs of grooves intersect each other  
45 at the center of the cylinder D. The pistons are similarly arranged in pairs, so that the pistons of each pair bear against each other with their inner portions and move with their outer portions independently, each in its own  
50 way or groove e. Each piston consists of an outer portion or plate, f, and arms f', projecting inwardly therefrom and separated by in-

tervening spaces. The arms f' of the two pistons forming a pair overlap each other, or rest upon each other, so that these arms re-  
55 main in contact with each other as the pistons slide in the cylinder D in adjusting themselves to the case A, while each piston is not limited in its movement by the other piston of the same pair. The arms f' of one pair of pistons  
60 pass through the spaces between the arms of the other pair, as clearly shown in Fig. 3. Each groove or way e is open in the periphery of the cylinder D where the plate f of the piston moves in the groove e, and is closed at the  
65 back or opposite end, as clearly shown at e' in Fig. 2, whereby the pressure of the column of the liquid in the discharge-pipe is removed from the backs of the pistons. When a piston has passed by the abutment d, it drops by  
70 gravity until the outer edge of its plate f rests against the inner surface of the shell A, and this descending movement is facilitated by the absence of any considerable pressure on the  
75 pistons during this movement. The pistons move, therefore, in contact with the shell without any considerable friction, but are held in contact with the shell by gravity, sufficiently close to insure the proper working of the pump in water and similar liquids which do not im-  
80 pede the free movements of the pistons.

g represents the driving-shaft, formed on one end of the cylinder D, and h is the stuffing-  
85 box, formed in the adjacent head H of the shell A, and embracing the shaft g.

H' is the gland of the stuffing box, secured thereto in any suitable manner, and provided on its outer end with a screw-threaded collar, i, which receives an internally-threaded stuff-  
90 ing-nut, I. A suitable packing, i', is interposed between the nut I and the collar i, to retain on the journal the oil which is introduced through the aperture h'.

K is a journal formed on the opposite end of the cylinder D.  
95

l is a stuffing-box formed on the adjacent head J of the shell A, and embracing the journal K.

M is the gland of the stuffing-box l, constructed at its outer end with a cap, m, which  
100 closes the outer end of the gland and covers the outer end of the journal K, whereby the escape of oil from the gland is prevented. As the journal K is the only support of the cyl-



inder D at the end on which it is formed, it requires this extra protection against running dry, while the shaft *g*, which is supported in several bearings, is more easily kept properly lubricated.

It is obvious that the particular form of the inclosing-shell is immaterial, and also that the machine may be employed as a motor without material change in its construction.

10 I claim as my invention—

1. The combination, with an inclosing shell, of the piston-cylinder D, provided with ways *e*, open at the front and closed at the rear, and sliding pistons E, constructed with overlapping inner arms, *f'*, and arranged in the ways *e* to drop by gravity after passing the abutment of the shell, and while being relieved from the pressure of the column of liquid by

the closed backs of the ways *e*, substantially as set forth.

2. The combination, with an inclosing-shell, of the piston-cylinder D, provided with ways *e*, open at the front and closed at the rear, and pistons E, each composed of a plate, *f*, and inwardly-projecting arms *f'*, said pistons being arranged in pairs, with the arms *f'* of the pistons of each pair overlapping each other without limiting the movements of each other, and the arms *f'* of one pair passing through the spaces between the arms of the other pair, substantially as set forth.

Witness my hand this 4th day of June, 1885.

BENJ. F. TABER.

Witnesses:

JNO. J. BONNER,

OSCAR SCHAUB.

It is hereby certified that in Letters Patent No. 344,063, granted June 22, 1886, upon the application of Benjamin F. Taber, of Buffalo, New York, for an improvement in "Rotary Pumps," an error appears in the printed specification requiring the following correction, viz: In line 34, page 1, the word "base" should read *case*; and that the Letters Patent should be read with this correction therein to make it conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 29th day of June, A. D. 1886.

[SEAL.]

D. L. HAWKINS,  
*Acting Secretary of the Interior.*

Countersigned:

M. V. MONTGOMERY,  
*Commissioner of Patents.*