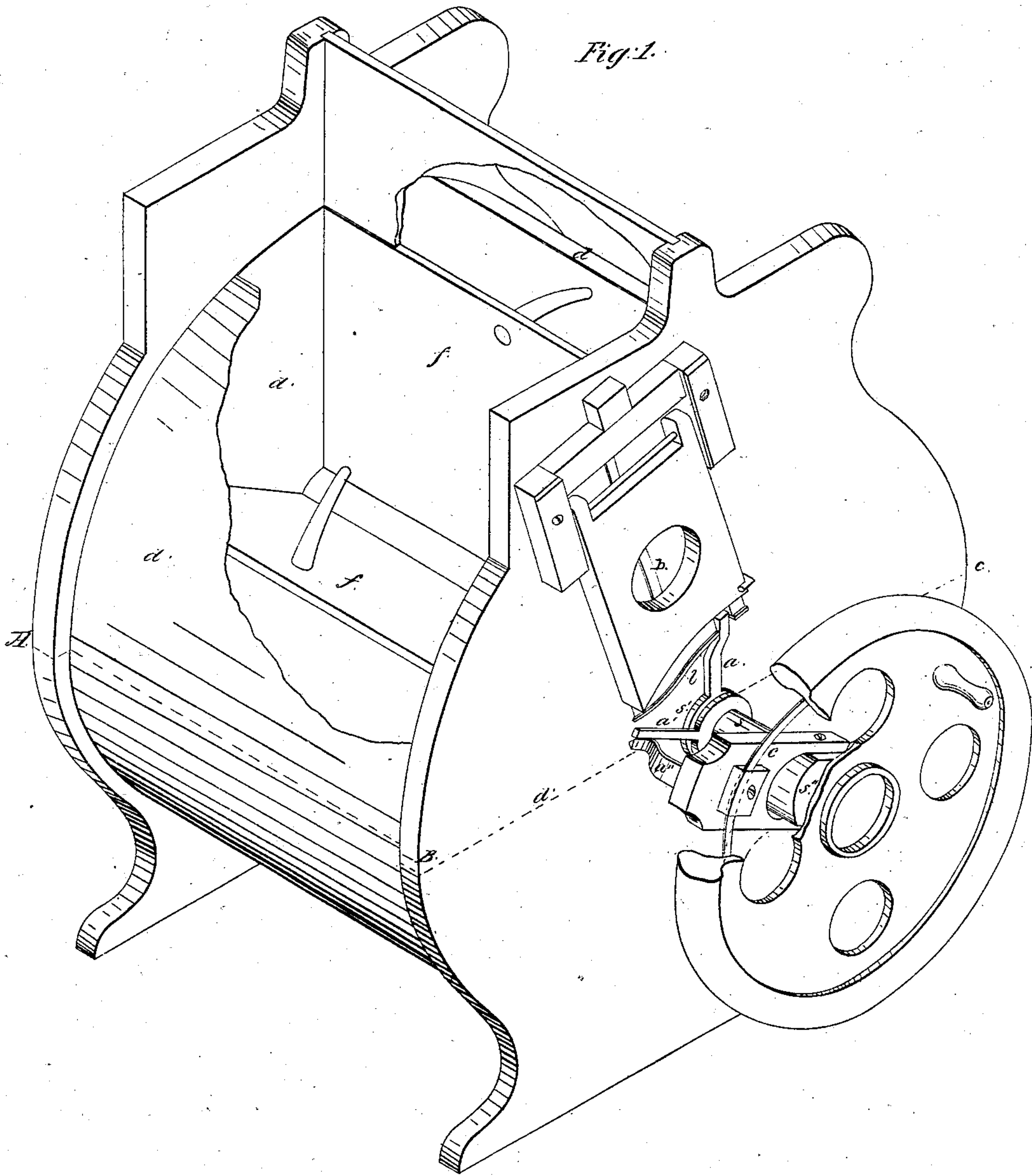


*Shedd & Edson,
Centrifugal Pump.*

No 41,327.

Patented Jan. 19, 1864.

Fig. 1.



Witnesses:

*Albert F Hall
A. Hun Bery*

Inventor:

*J. Herbert Shedd
William Edson*

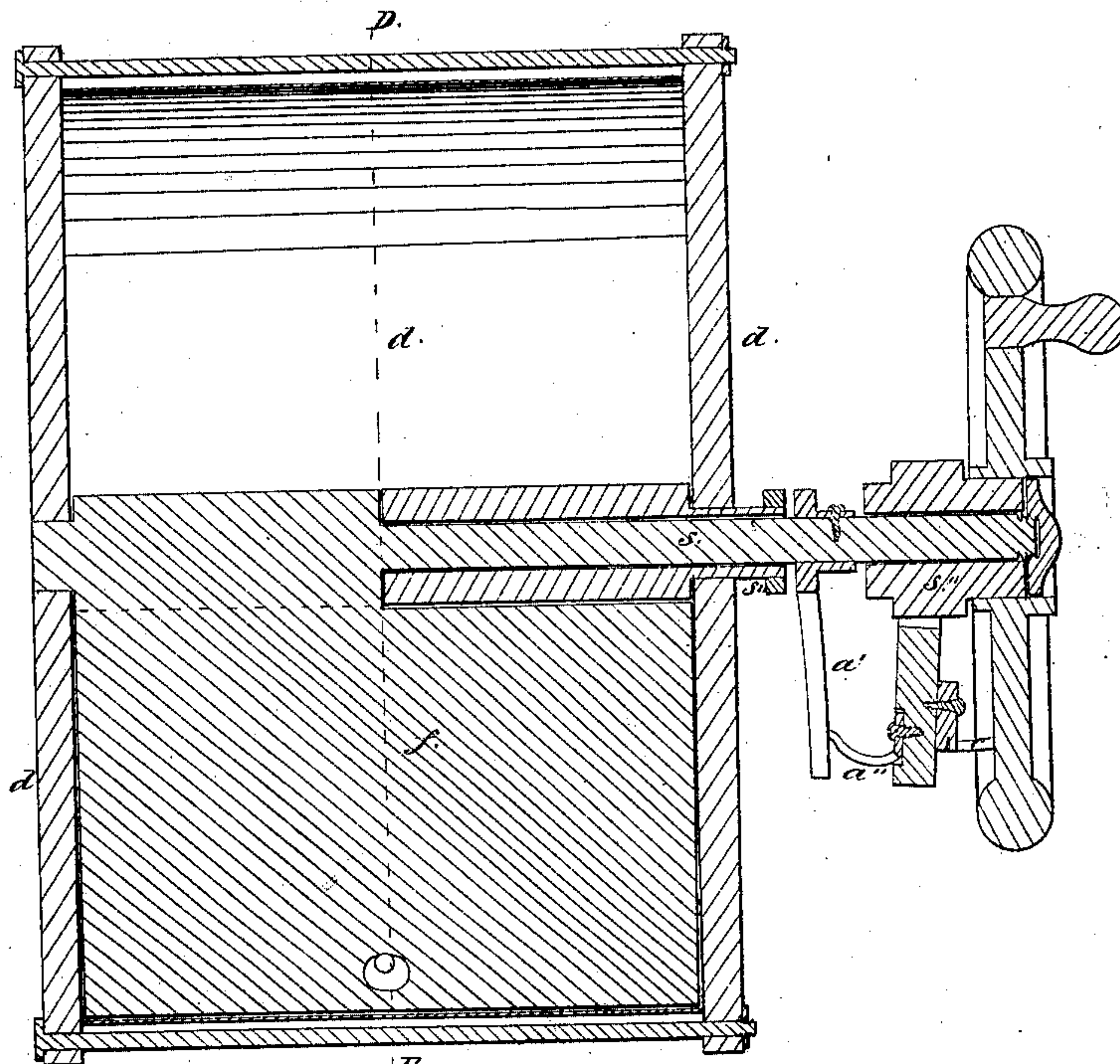
Shedd & Edson.

Centrifugal Pump.

No 41,327.

Patented Jan. 19, 1864.

Fig. 2.



SECTION THROUGH A.B.C. FIG. 1

Witnesses:

Albert F. Hall
A. Henry Perry

Inventor:

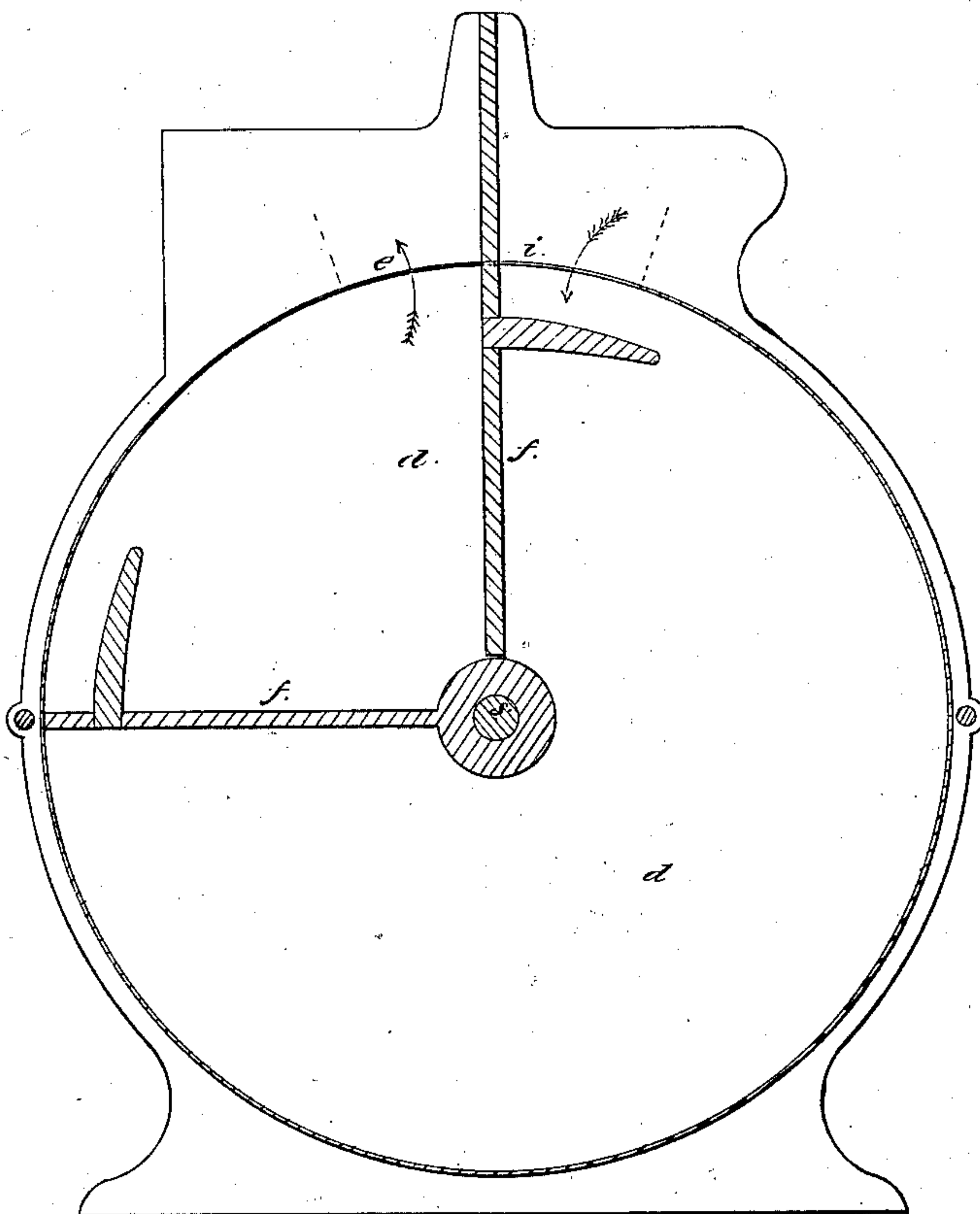
J. Herbert Shedd.
William Edson

Shedd & Edson,
Centrifugal Pump.

No. 41,327.

Patented Jan. 19, 1864

Fig. 3.



SECTION THROUGH D E FIG. 3.

Witnesses:

Albert F. Hall
A. H. Perry

Inventor:

J. Herbert Shedd
William Edson

UNITED STATES PATENT OFFICE.

J. HERBERT SHEDD AND WILLIAM EDSON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. 41,327, dated January 19, 1864.

To all whom it may concern:

Be it known that we, J. HERBERT SHEDD and WILLIAM EDSON, both of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Fluid-Pump, which is also adapted for use as a motor and as a meter; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a horizontal section, and Fig. 3 is a vertical section.

d d represent the drum; *f f*, the fans or buckets; *a a'*, arms of the fans; *s*, shaft attached to one fan; *s'*, hollow shaft attached to the other fan; *l*, latch; *b*, spring of latch; *a''*, propelling-arm; *c*, spring of propelling-arm; *s''*, hollow shaft of propelling-arm.

The nature of our invention consists in the arrangement of two fans or buckets within a drum, each of which is alternately held stationary in position as a diaphragm, while the other revolves on its axis, forcing out the fluid before it and receiving fluid behind it into the drum for the following purposes—that is to say: As a pump for drawing and forcing fluid, to be moved by power applied from without the drum through the shafts to the fans or buckets, acting alternately, as herein described. As a motor, any fluid under pressure being applied directly to each of the fans or buckets alternately, while the other is in position as a diaphragm, as herein described, causes such fan or bucket to revolve, and thus power may be transferred through the shafts to any work outside the drum. As a meter, at each revolution of each fan or bucket acting alternately, as herein described, a quantity of fluid measured by the known capacity of the drum is discharged and the revolution is recorded on a dial outside the drum by clock-work, or otherwise, or for any similar purpose.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

We provide a drum, *d d*, usually a cylinder, made of wood and metal, or entirely of metal, through the middle of which we place a metal

shaft or axle, *s*, playing freely in boxes outside of the drum at each end. To one half in length of this shaft within the drum is securely attached a fan or bucket, *f'*, which forms a partition reaching the whole length of the drum and from the center to the outside. Over the other half of the shaft *s*, inside of the drum, and also extending outside of the drum at one end, a hollow shaft, *s'*, plays freely, to which within the drum is attached another fan or bucket, *f*, which also forms a partition, as above described. Through the outer surface of the drum are two openings, at one of which, *i*, No. 3, the fluid finds ingress, and at the other, *e*, it finds egress.

Outside of the drum two arms are attached, the one, *a'*, to the shaft *s*, which is fixed to one fan, and the other, *a*, to the hollow shaft *s'*, which is fixed to the other fan. By means of these arms one fan or bucket is held as a diaphragm between the two openings in the outer surface of the drum, while the other is put in motion. The power may be applied externally to the arms to put the fans in motion, or internally to the fans to put the arms in motion. It may be applied to the arms as follows: Provide a latch, *l*, moved by a spring, *b*, having at one end a notch to hold an arm, and at the other end an inclined plane, so that the other arm in coming forward may run on the plane to push the latch back and loose the arm held there, while the latch remains pressing against the arm in motion, ready to catch and hold it in the notch on its reaching that point. Instead of the spring *b*, for moving the latch *l*, a hanging weight may be used.

The power is applied in any convenient way to a revolving shaft or to a hollow shaft, *s''*, which we will call the "propelling-shaft," playing freely over the shaft of the pump. To the propelling-shaft is attached an arm, *a''*, pivoted upon the shaft *s''*, and while revolving held in place against an arm of the pump by a spring, *c*, or other simple contrivance until it is pushed off by the greater force of the spring *b'* or weight upon the latch *l*, which acts upon said arm *a''*, when the arm of the pump is caught in the notch of the latch. Being thus pushed from one arm of the pump it slides by that arm, and immediately on passing the latch is acted upon by the spring

c, and comes against the other arm of the pump, moving that forward, as before.

The power may be transferred from one fan to the other by means of cog-wheels without arms, and by cams, both of which ways we have successfully used; but we prefer the latch and arms, as above described.

The power may be applied to the fans or buckets by letting in fluid under pressure, while one fan is held a diaphragm to act upon the other and put it in motion, in which case the latch may be applied in a simple manner directly to the fans as they successively come to position.

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

The arrangement of two fans or buckets moving on the same center within a drum, each of which is alternately held in position as a diaphragm while the other revolves, forcing out the fluid before it and receiving fluid behind it, substantially as herein described, and for the purposes set forth.

J. HERBERT SHEDD.

WILLIAM EDSON.

Witnesses:

ALBERT F. HALL,

A. HUN BERRY.