

D. L. CAMERON.
Plenum and Vacuum Pumps.

No. 157,191.

Patented Nov. 24, 1874.

Fig. 1.

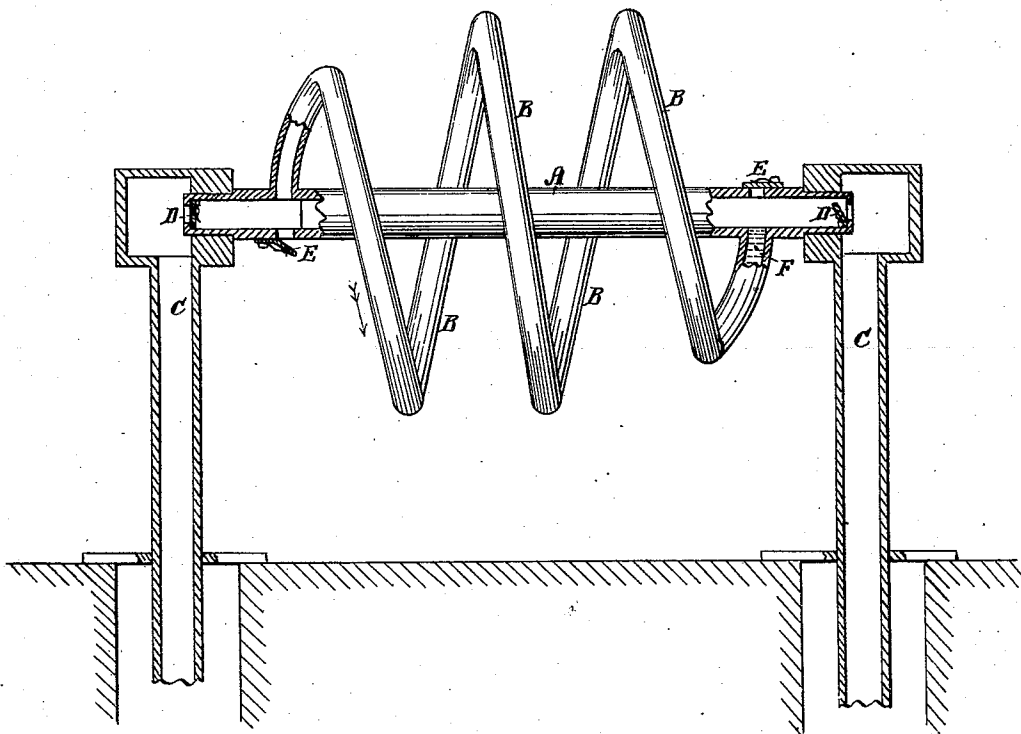
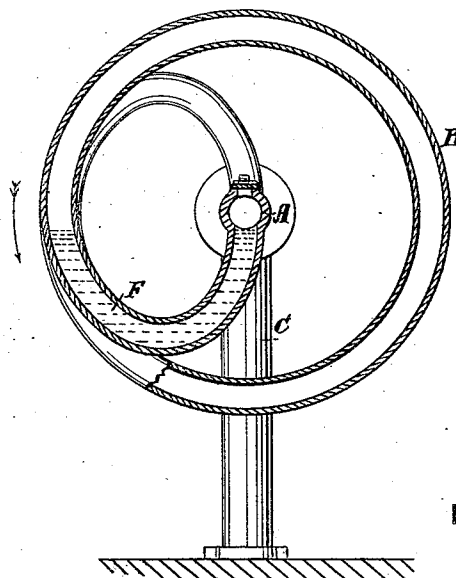


Fig. 2.



WITNESSES:

A. Benneken
C. Edgerton

INVENTOR:

D. L. Cameron
Wm. H. Le

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL L. CAMERON, OF MADISON STATION, MISSISSIPPI.

IMPROVEMENT IN PLENUM AND VACUUM PUMPS.

Specification forming part of Letters Patent No. **157,191**, dated November 24, 1874; application filed July 18, 1874.

To all whom it may concern:

Be it known that I, DANIEL L. CAMERON, of Madison Station, in the county of Madison and State of Mississippi, have invented a new and Improved Plenum and Vacuum Apparatus, of which the following is a specification:

This invention relates to certain improvements in plenum and vacuum apparatus; and consists in the particular construction and arrangement of parts, as will first be fully described, and then pointed out in the claim.

Figure 1 is partly a side elevation and partly a longitudinal sectional elevation of my improved apparatus. Fig. 2 is a transverse section.

Similar letters of reference indicate corresponding parts.

A represents a hollow tube; B, a coiled tube; C, hollow supports for shafts or pipes, such as may be used if the apparatus is to be employed for pumping water. D represents an inlet-valve at each end of the shaft, to receive the water from pipe C. E represents exhaust-valves, near each end, exhausting into the air. The shaft is partitioned between the ends, so as to cut off communication through it from one end of the coiled tube to the other. F represents a portion of the coil filled with mercury as high as the arms of the shaft, which should be equal to or greater than twenty-eight inches, in order to overbalance atmospheric pressure.

It will be seen that, by turning the coil in the direction indicated by the arrows, the mer-

cury, flowing along the tube from one end to the other, will create a vacuum in the side and plenum on the other side, and will draw air or water through valve D at one end of the hollow shaft, and expel it at the other end through valve E. If the motion be reversed when the mercury has traversed the length of the coiled tube B, the suction will open valve D and close valve E at the other end, and close valve D and open valve E of the first end, thus producing continuous suction from the well or cistern and continuous exhaust. If the inlet-valves be arranged at E, and exhaust-valves at D, the apparatus may be used for an air-compressor, of which the tubes C may be the conductor to the reservoir.

I know that mercurial pumps have been constructed in the form of a wheel, and operated on the same broad principle as shown in my invention. I disclaim any broadness of invention therefor, and confine myself to my particular devices, as embodied in the claim.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The apparatus consisting essentially of the hollow partitioned shaft A, coiled tube B, mercury F, channels C C, inlet-valves D, and outlet-valves E, all constructed and arranged substantially as and for the purpose described.

DANIEL L. CAMERON.

Witnesses:

J. O. CALLAGHAN,
D. P. MONTGOMERY.