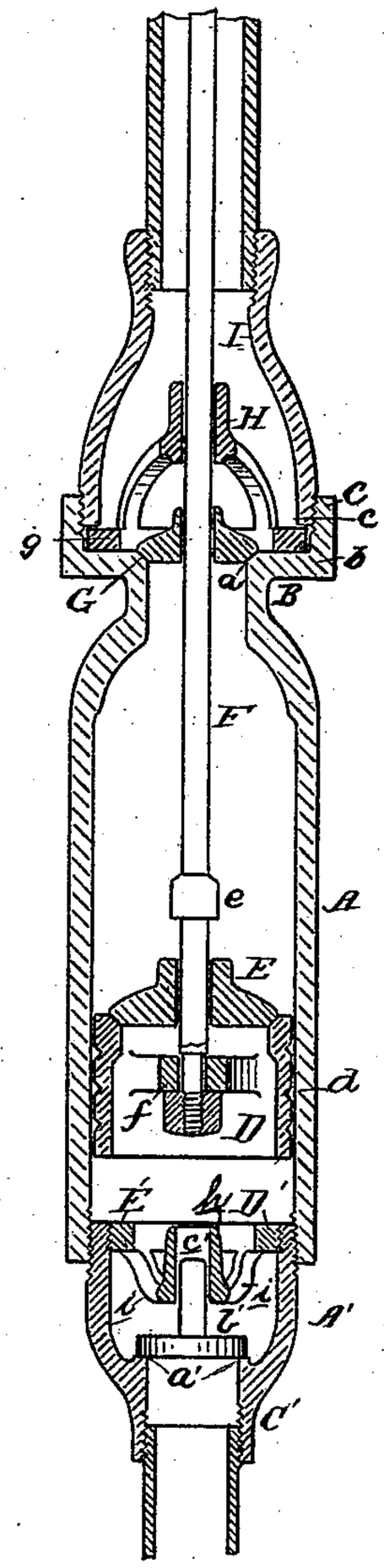
(No Model.)

# E. BARNES.

## PUMP.

No. 299,718. Patented June 3, 1884.




Attest
Jno. A. Kent.
W. E. Sprague

Inventor
Emory Barnes
by his Att'y
Thos. S. Sprague

# UNITED STATES PATENT OFFICE.

EMORY BARNES, OF MOUNT PLEASANT, MICHIGAN.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 299,718, dated June 3, 1884.

Application filed October 1, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, EMORY BARNES, of Mount Pleasant, in the county of Isabella and State of Michigan, have invented new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

This invention relates to certain new and useful improvements in the construction of pumps, by means of which such pump may be used either as a lifting or suction pump—that is to say, my improved pump is so constructed that it may be employed as a lifting-pump when immersed in the water or as a suction-pump when attached at the top of the pipe, the lower end of which communicates with the water under any and all circumstances where such pumps are required; and it is designed as an improvement on the device patented by me November 11, 1879, No. 221,494.

The invention consists in the peculiar construction of its parts and their combinations, as more fully hereinafter described.

In the accompanying drawing, which forms a part of this specification, my invention is shown in vertical central section, with all its parts in place, wherein—

A represents the pump-barrel with an open or perforated bottom, as may be desired. The upper end of this barrel is contracted in an arch form to a short neck, B, in the upper end of which is formed a valve-seat, *a*. This neck terminates in an annular flange, *b*, which is provided with the annular ring C, the barrel, neck, flange, and ring being all cast in one piece to secure economy of construction with greater durability. The inner face of the ring C is provided with a female thread, *c*, and the top of the flange *b* is made smooth.

D is a hollow piston, with one or more annular recesses, *d*, around its periphery, to form water-packing.

E is a valve seated upon the top of the hollow piston and sleeved upon the piston-rod, its throw being confined between its seat and the stop *e* on the rod F, the lower end of which is secured to the center of the spider *f* within the hollow piston.

G is a valve seated upon *a* and centrally sleeved on the rod F, which also passes through the center of the spider H, the foot-ring *g* of which is turned or ground smooth upon its upper and under surfaces. This valve G rests in the recesses formed by the annular flange *b* and the annular ring C, and incloses the valve G.

I is a dome-shaped shell, the lower end of which is provided with a male thread, to engage with the female thread of the ring C until the lower end of such shell rests upon the top of the foot-ring of the spider H, whereby the latter is held rigidly in place, and the joint at this point is made water-tight without other packing.

So far as above described this portion of my invention will be found fully shown and claimed in my patent above referred to, and the improvement designed to be covered in this specification I will now describe.

The lower end of the barrel A is interiorly threaded, and A′ is a semi-dome-shaped continuation of said barrel, the upper end of said continuation being provided with a male thread, with which such continuation is engaged with the lower end of said barrel. The lower end of this continuation is provided with a neck, C′, adapted by the use of any suitable coupling to be secured to the pipe connecting with the water below. At the junction of the continuation and neck, which are cast in one piece, is formed a valve-seat, *a′*, upon which rests and is seated the circular flat valve *b′*.

D′ is a spider provided with a centrally-located socket, *c′*, through which the stem of the valve last described passes. This spider at its top is provided with an annular ring, E′, exteriorly threaded and adapted to engage with an interior thread in the upper end of the continuation of the barrel. These parts are so constructed that the valve will at all proper times seat itself tightly and without the necessity of packing, the throw of such valve being limited by the socket of the spider, which forms a guide to retain such valve in place.

I am aware that there are pumps in use which are adapted to perform the functions required of them either as lifting or suction pumps. Therefore I do not broadly claim such pumps; but

What I claim as my invention is—

In combination with the barrel A, internally

threaded, and the inverted dome A′, externally and internally threaded, the spider D′, provided at its top with an annular ring, E′, exteriorly threaded, and a centrally-located socket, *c′*, formed in the hub *h*, situated between and held by the downward-projecting arms *i* of the spider, and the flat valve *b′*, having a stem working through said socket, all constructed and arranged substantially as described.

EMORY BARNES.

Witnesses:
H. S. SPRAGUE,
E. W. ANDREWS.