

C. ROGERS.  
Siphon Steam-Pumps.

No. 153,378.

Patented July 21, 1874.

Fig. 1.

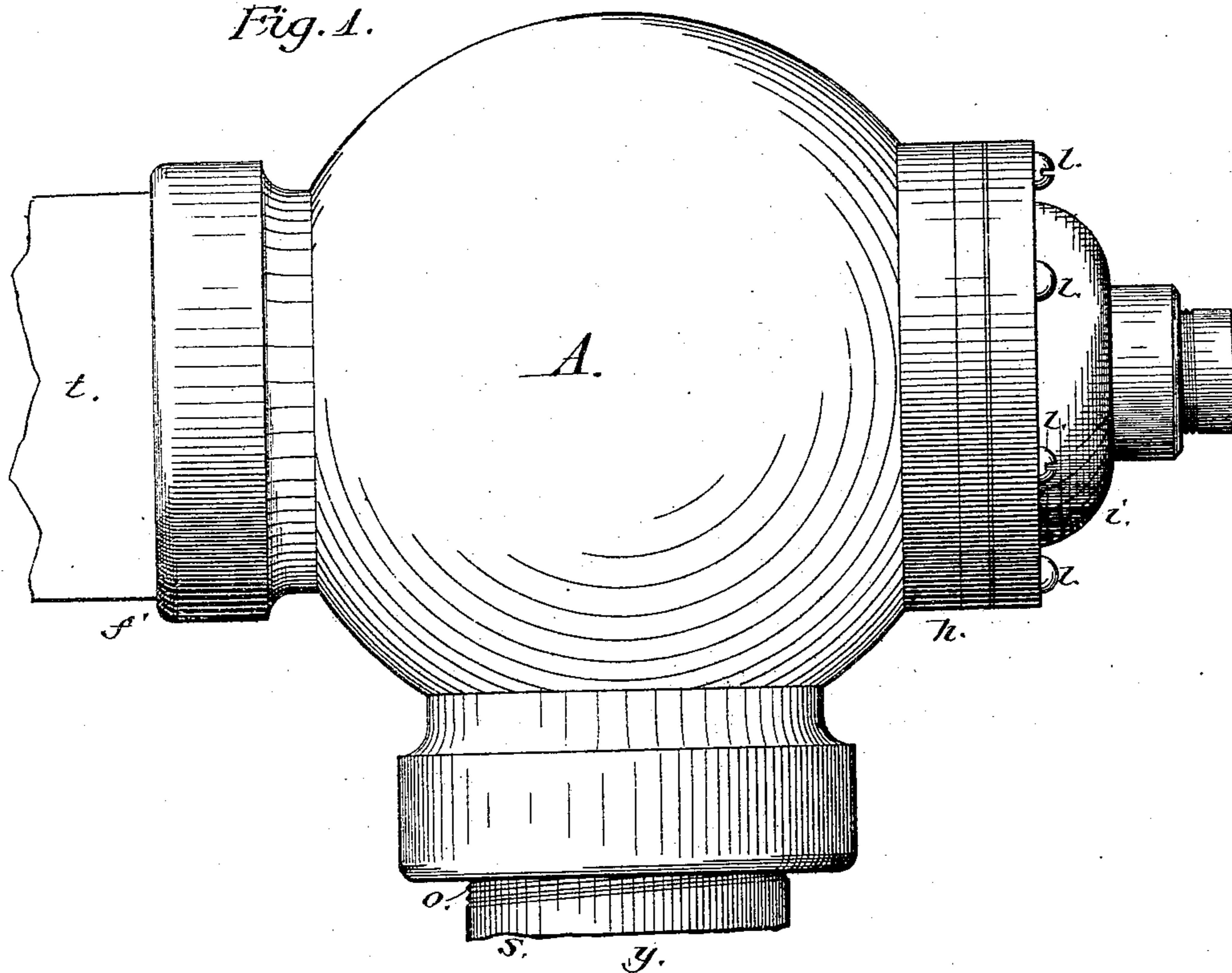
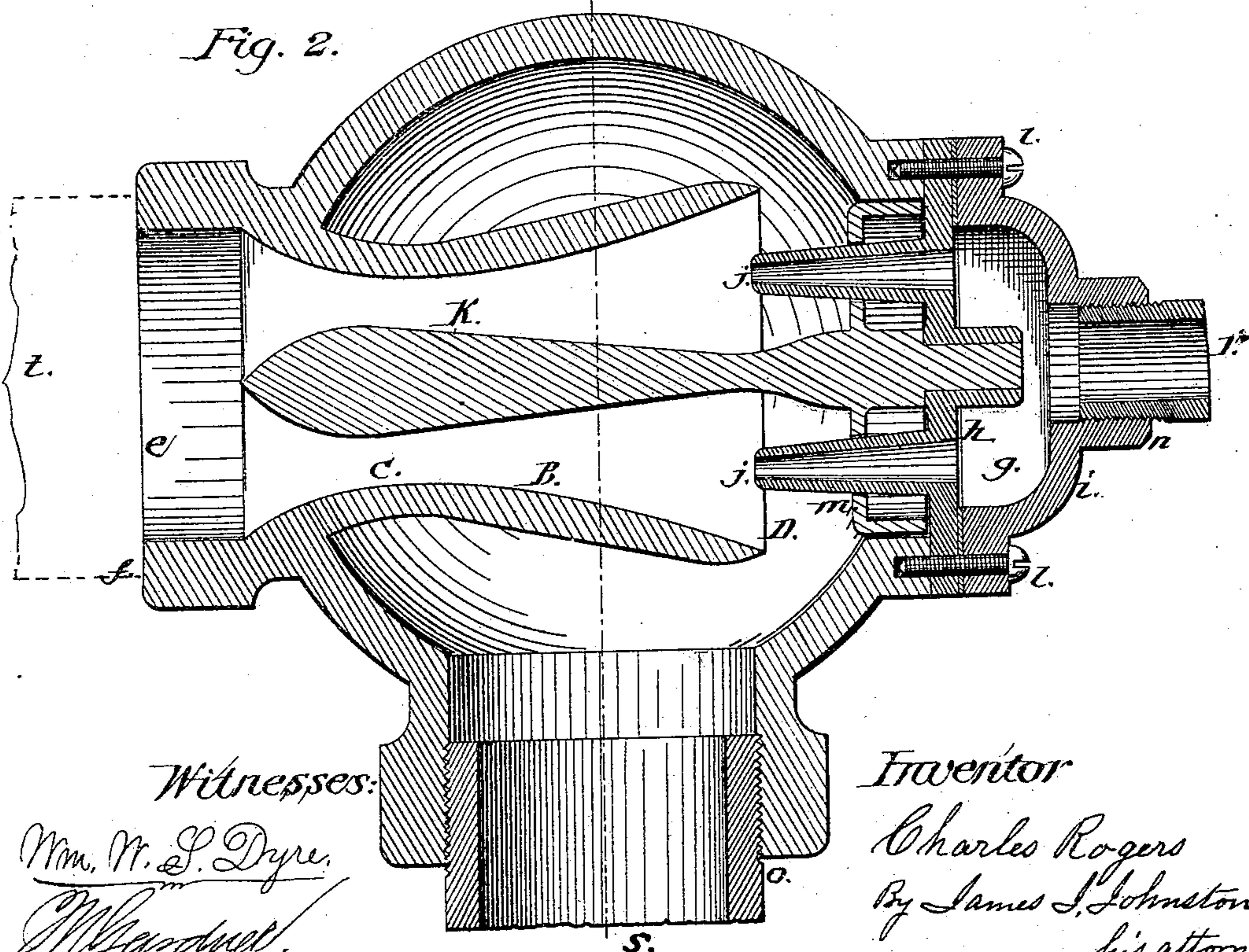


Fig. 2.



Witnesses:

Wm. W. S. Dyre.  
M. J. J. J.

Inventor

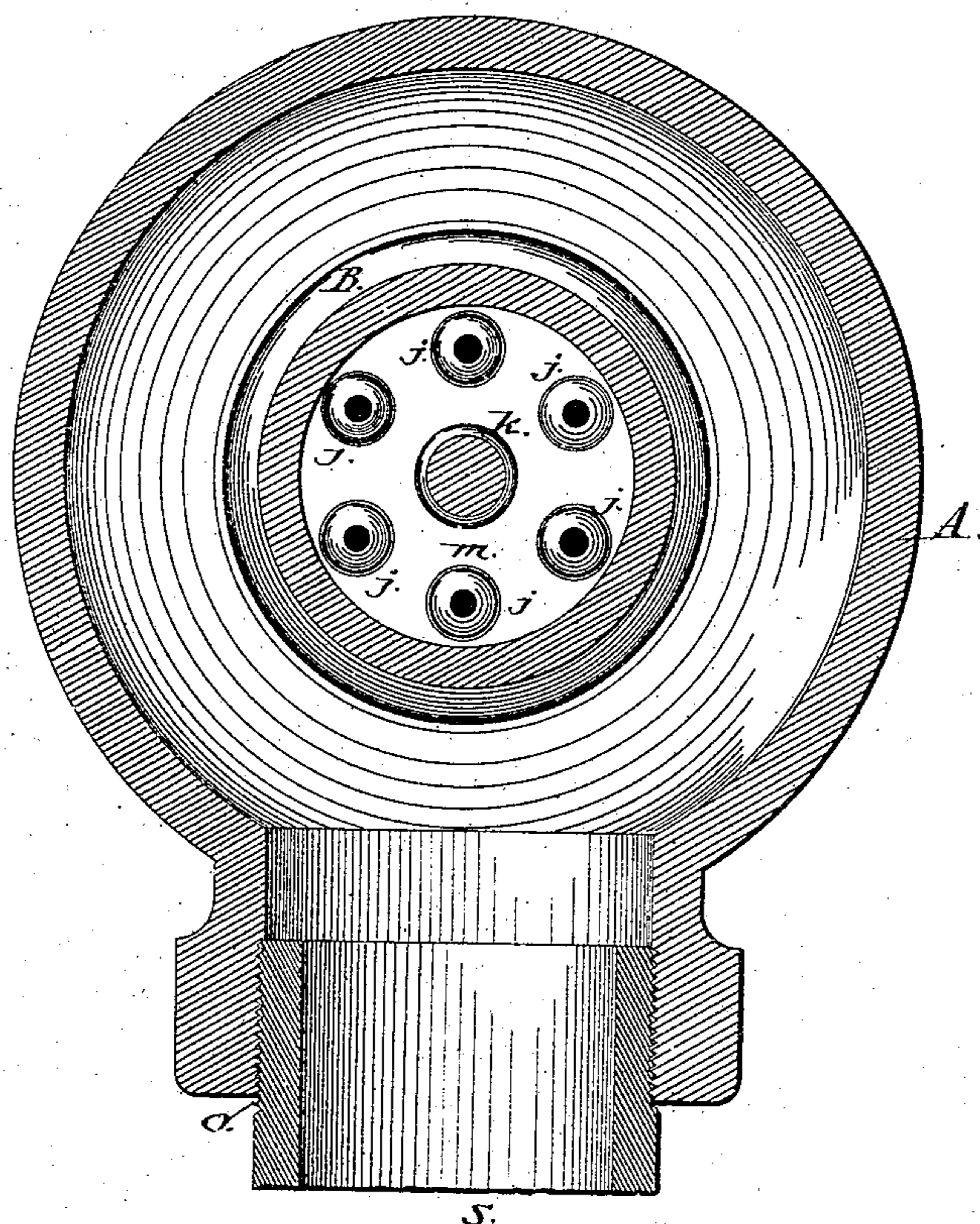
Charles Rogers  
By James I. Johnston  
his attorney

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*Fig. 3.*



*Witnesses:*  
*Wm. W. S. Dyre,*  
*M. J. J. J.*

*Inventor:*  
*Charles Rogers*  
*By James I. Johnston*  
*his attorney*

# UNITED STATES PATENT OFFICE.

CHARLES ROGERS, OF ALLEGHENY, PENNSYLVANIA.

## IMPROVEMENT IN SIPHON STEAM-PUMPS.

Specification forming part of Letters Patent No. **153,378**, dated July 21, 1874; application filed March 14, 1874.

*To all whom it may concern:*

Be it known that I, CHARLES ROGERS, of the city and county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Siphon Steam-Pumps; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to an improvement in siphon steam-pumps; and consists of a shell provided with a cylinder, the bore of which is contracted between its inlet and outlet, the said shell also having a steam-chamber furnished with a series of small discharge-pipes, surrounding a center-piece, which, with the said pipes, is held concentric to the bore of the said cylinder through the medium of a flanged disk.

To enable others skilled in the art to which it pertains to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a side elevation of my improvement in siphon steam-pumps. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical and transverse section of the same at line *y* of Fig. 1.

In the accompanying drawings, A represents the shell, having a cylinder, B, which is contracted at C, a point about midway between its inlet D and its outlet *e*, the bore of which is about equal to the bore of the discharge-pipe attached to the shell A at *f*. To the shell A is attached a steam-chamber, *g*, consisting of the parts *h* and *i*. The part *h* is furnished with a series of steam-pipes, *j*, surrounding a center-piece, *k*, the contour of which corresponds to the bore of the cylinder B, the said pipes and center piece being arranged concentric to the axis of the cylinder B. The part *i* of the steam-chamber *g* is secured to the part *h* through the medium of screws or bolts, as indicated at *l*. The pipes *j* and center-piece *k* are held in position with relation to the bore of the cylinder B through

the medium of flanged disk *m*, the interior of which, to prevent condensation of the steam in pipes *j* by cold water or other fluid, is packed with any suitable material, preference being given to asbestos. The steam-supply pipe *r* is attached to the part *i*, as indicated at *n*, and the pipe *s*, through which the liquid is drawn up into the shell A, is attached as indicated at *o*, and the discharge-pipe *t*, which conveys the liquid off to the place desired, is attached to the shell, as indicated at *f*.

By constructing the siphon steam-pump as hereinbefore described, the space between the inner wall of the cylinder B and the center-piece *k* being narrow and contracted, the steam, rushing into the cylinder B in jets through the pipes *j*, will be rapidly condensed by the cold water or other liquid coming into contact with the outer wall of the cylinder B, and the condensation of the steam will form a vacuum in the cylinder, which will give power and force to the action of the pump, whereby the liquid will readily flow with force through the pipe *s* into the shell A, and, passing through the cylinder B, will be discharged with great rapidity through the pipe *t* attached to it.

The efficiency of the siphon steam-pump depends on the rapidity of the condensation of the steam, and it will be readily observed that by the arrangement of the parts hereinbefore described a sudden condensation of the steam will be effected, and therefore an increase of the power and efficiency of the pump will be the result.

Having thus described my improvement, what I claim as of my invention is—

In a siphon steam-pump, the shell A, provided with a cylinder, B, contracted at or near the center of its bore, in combination with the center-piece *k* and steam jet pipes *j* surrounding it, substantially as herein described, and for the purpose set forth.

CHAS. ROGERS.

Witnesses:

JAMES BLACK,  
CHAS. S. BLACK.