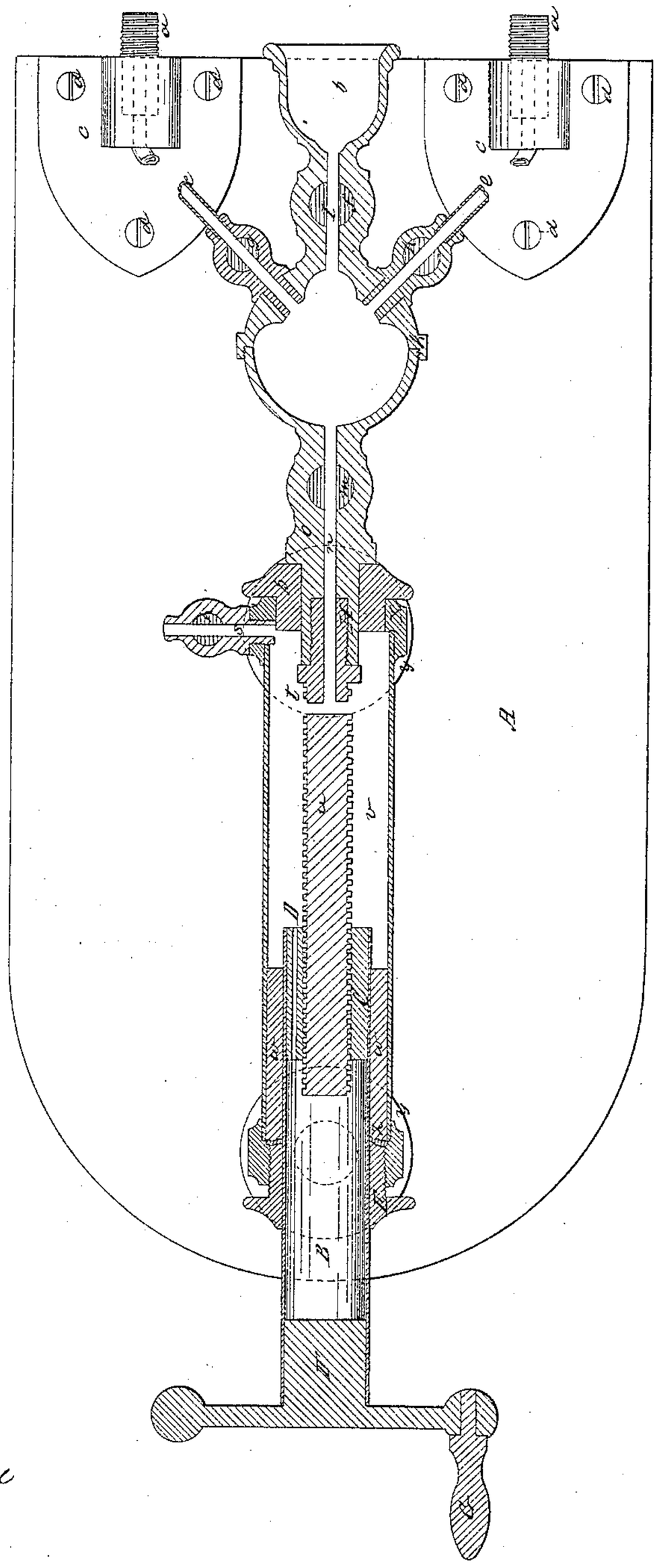
T. Shaw,

Test Pump,

No. 44,559. Patented Oct. 4, 1864.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND PHILIP S JUSTICE.

IMPROVEMENT IN TEST-PUMPS.

Specification forming part of Letters Patent No. **44,559**, dated October 4, 1864.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and Improved Mode of Constructing Test-Pumps; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in the combination of a screw and hollow piston-rod within a chamber, in the manner and for the purpose as hereinafter described.

The object of my invention is to have simple compact test-pump, capable of creating a gradual pressure for the purpose of testing steam-gages.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of the specification, the view represents a longitudinal section through the center of the pump, said pump being mounted on the board A, as hereinafter described.

B is a hollow piston-rod entering chamber *v*, having on its inner end a female screw, C, through which there is an aperture, D, and on its outer end a wheel, F, with its handle G, for the purpose as hereinafter described. *u* is a male screw screwed at H to the base of hollow sphere *j*. Through said screw there is a passage *t* and *n*, leading to hollow sphere *j*, for the purpose as hereinafter described. *r*, *m*, *h*, *g*, and *f* are stop-cocks, for the purpose hereinafter described; *p*, a brass cap intervening the base of hollow sphere *j*, and brass ring *x*. *x x* are brass rings firmly secured on each end of chamber *v*. The hollow sphere *j* is constructed of two hemispheres joined together at *k*. The whole is supported from the board A by means of two brackets or pillars *y* secured to rings *x*; *w*, a brass bearing for hollow piston-rod B, and is united by solder to chamber *v*; E, a brass cap screwed into ring *x* and against the bearing *w*, having intervening said cap and bearing a leather or gum ring, *z*, for the purpose of making a packed or hydraulic joint for the retention of the compressed fluid in chamber *v*, as hereinafter described.

c c are brass supports secured to the board A by means of screws *d*, said supports having on their upper end hollow steel screws *a a*, for the purpose of attaching thereon any article to be tested by pressure, as hereinafter described. Said steel screws *a* communicate with the chamber *j* by means of small brass tubes *e e*.

The pump is operated in this wise: Water (or any other suitable fluid) is poured into cup *b*, said fluid running down the passage *l* into the hollow sphere *j*, thence through the passage *n* and *t* into chamber *v*, expelling the air in said chamber out through the orifice *s* in air-cock *r*, said fluid running also down into hollow piston-rod B through the orifice D. Said piston-rod B is caused to make one stroke in and outof chamber *v* by revolving said piston-rod by means of the wheel F. The object of said movement is to expel the air from the interior of said piston rod. After this operation has been successfully performed the air-cock *r* is closed, also stop-cock *f*, leaving open the other stop cocks, provided there be any article upon or connected with the steel screws *a a* to be tested, when, by the revolving of wheel F, the fluid is compressed in chamber *v*, forcing itself out of the several passages to the article attached upon screws *a a*, where it will exert a force limited only by the strength of the material and power applied.

What I claim, and desire to secure by Letters Patent, is—

The combination of hollow piston-rod B with screw *u* and chamber *v*, for the purpose specified.

THOMAS SHAW. [L. S.]

Witnesses:

J. HOWARD MITCHELL,

GEO. C. MITCHELL.