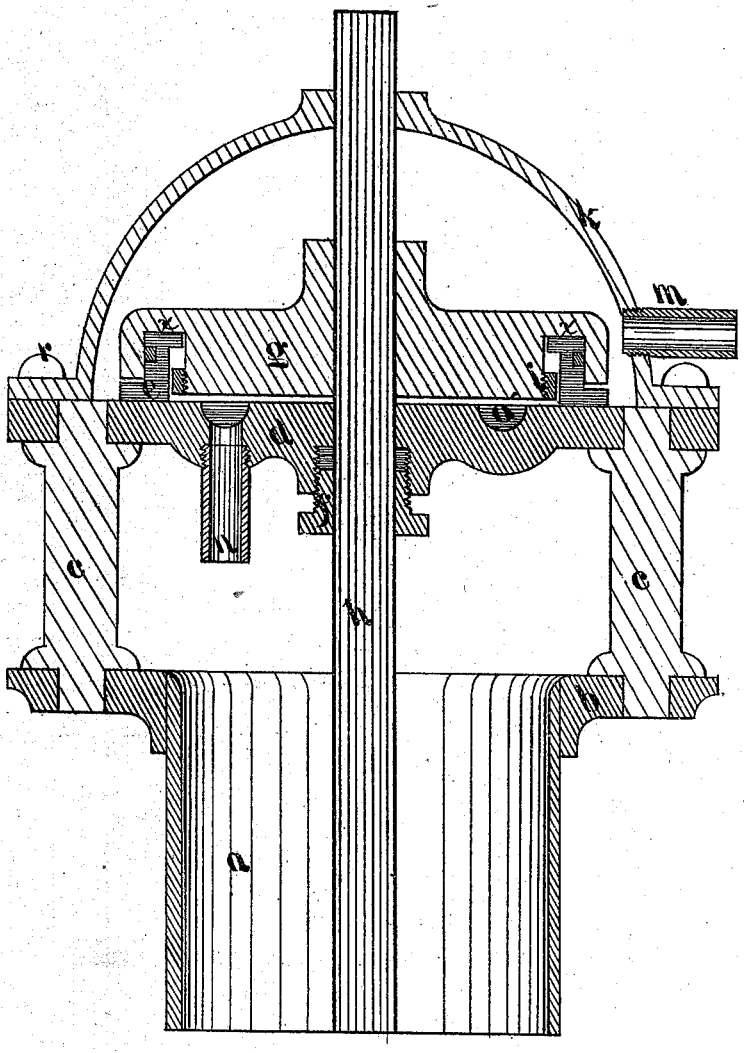
THOMAS SHAW.

Improvement in Hydraulic Disks.

No. 115,365. Patented May 30, 1871.




Witness. J. G. Mitchell

Witness. Wm. L. Gilmore

Inventor. Thomas Shaw

# UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN HYDRAULIC DISKS.

Specification forming part of Letters Patent No. 115,365, dated May 30, 1871.

*To all whom it may concern:*

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Steam or Hydraulic Disk for sustaining the end thrust of heavy-laden revolving shafts; 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 a hydraulic or steam disk for supporting heavily-laden revolving shafts, as will hereinafter be more fully set forth and described.

The accompanying drawing represents a vertical section of my disk.

*a* represents a section of pipe, which is used when my invention is applied to a pump. When used for other purposes this part may be dispensed with. *b* is the bed-plate or support upon which the device rests, and which has a number of pillars or standards, *c*, extending upward for the support of the bed-plate *d*. This bed-plate consists of a circular plate, of any desired size, and which has a circular groove, *o*, cut in its face, and an opening through it so as to connect the groove, by means of the pipe *n*, with a steam-boiler or forcing-pump. *h* is a shaft, to the lower end of which is attached the revolving load, of whatever kind. Secured to the shaft is a revolving disk, *g*, which has a deep groove cut in its bottom, near the outer edge, for the reception of the piston *e*. This piston, being of the shape shown in the drawing, is provided with a common packing-ring, *l*, and bears on the bed-plate until the pressure from the pump or steam-boiler reaches a certain limit. Screwed into the groove in the disk *g* is a circular ring, *i*, which, as the disk is being raised upward by the pressure from beneath, catches under the inwardly-projecting edge of the piston, and, as soon as the pressure exceeds a desired limit, lifts the piston from its seat so as to let the surplus pressure escape into dome *k*, and from thence through the pipe *m*. Between the ring *i* and piston *e* there is left sufficient space to allow the pressure from the pipe *n* to bear downward upon the top *x* of the piston so as to keep it pressed firmly upon the bed-plate *d*.

In order that the friction shall not be too great upon the face of the piston as it revolves with the disk a larger bearing-surface is given to the lower end of said piston.

It will be evident that the packing and location of piston can be variously modified without any alteration in the result.

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

1. The revolving disk *g*, provided with an annular piston, *e*, and ring *i*, substantially as described.

2. In combination with the above, the grooved bed-plate *d* and pipe *n*, substantially as described.

THOMAS SHAW. [L. S.]

Witnesses:

J. G. MITCHELL,

JNO. L. TIBNEY.