

S. H. STARR.
Subaqueous Gas-Stoves.

No. 145,458.

Patented Dec. 9, 1873.

Fig 1.

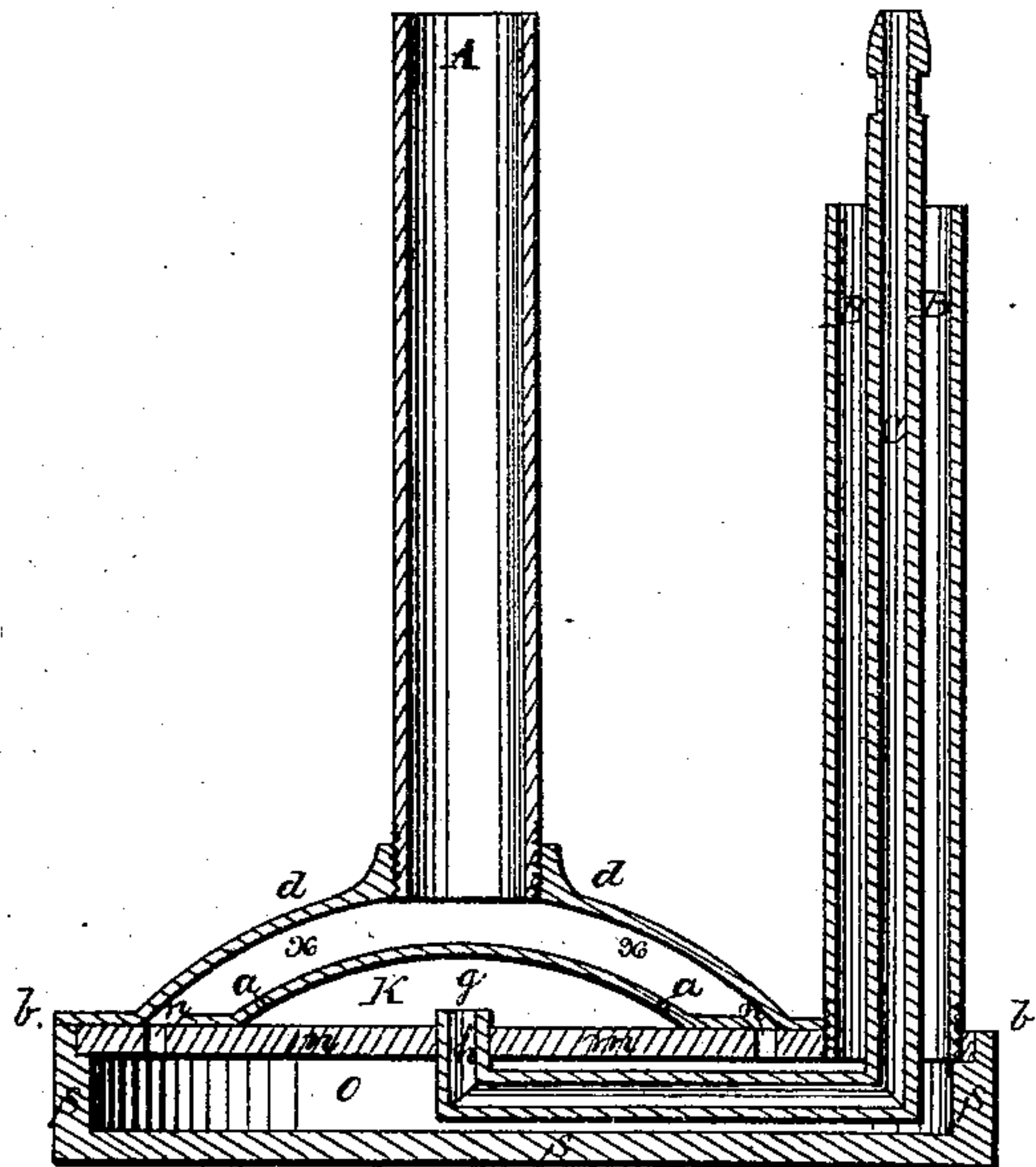


Fig 2.

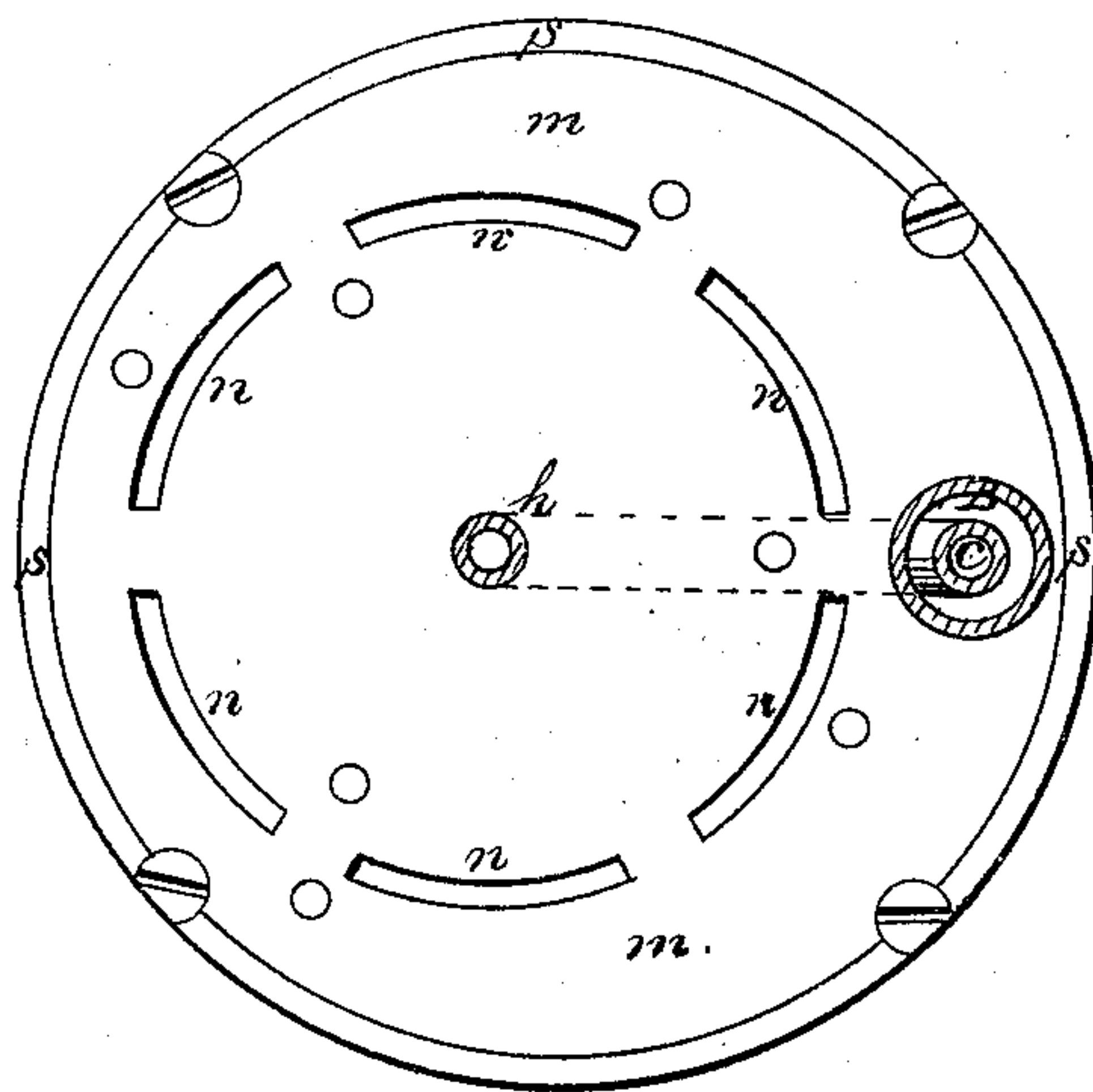


Fig 4.

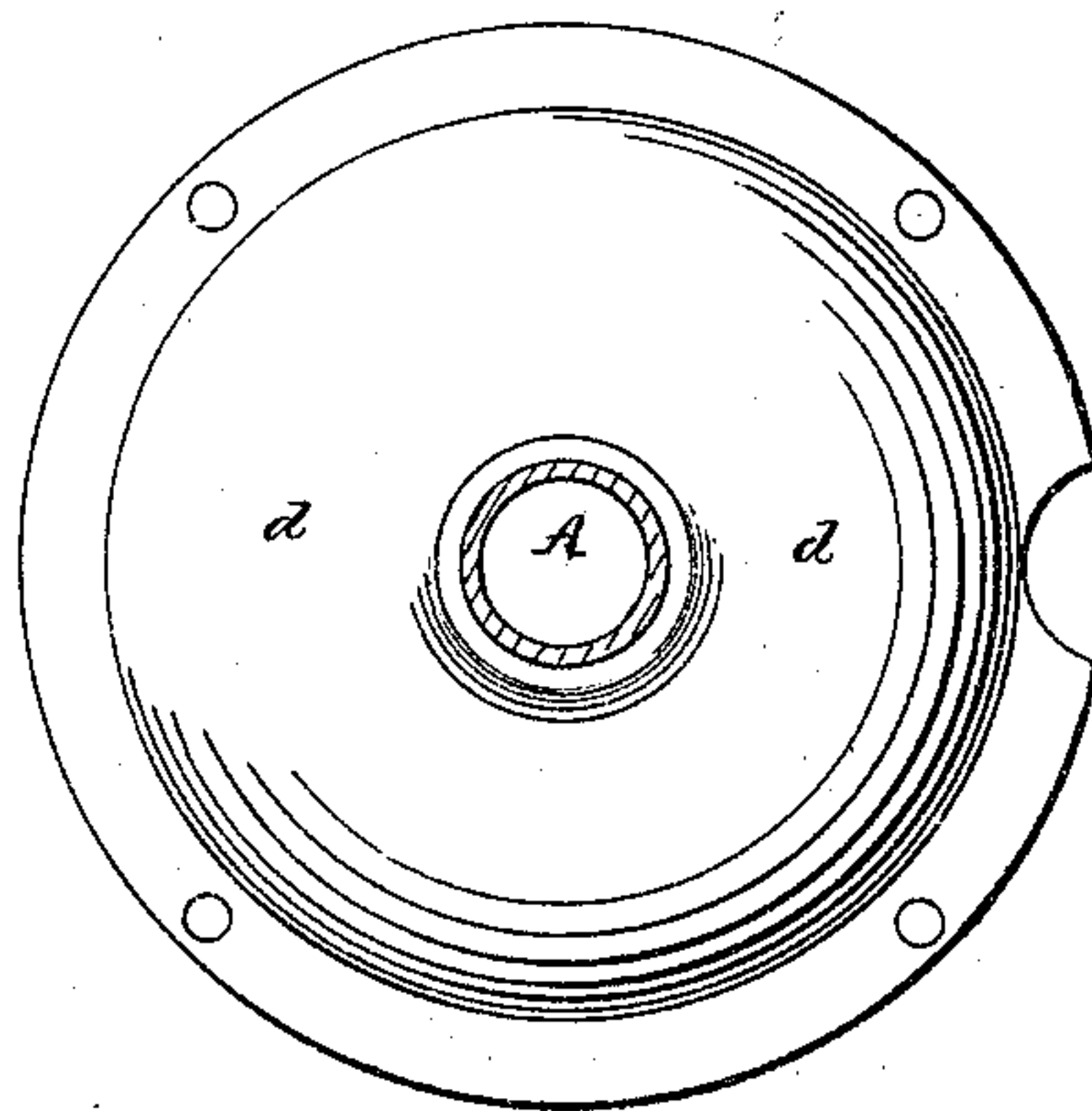
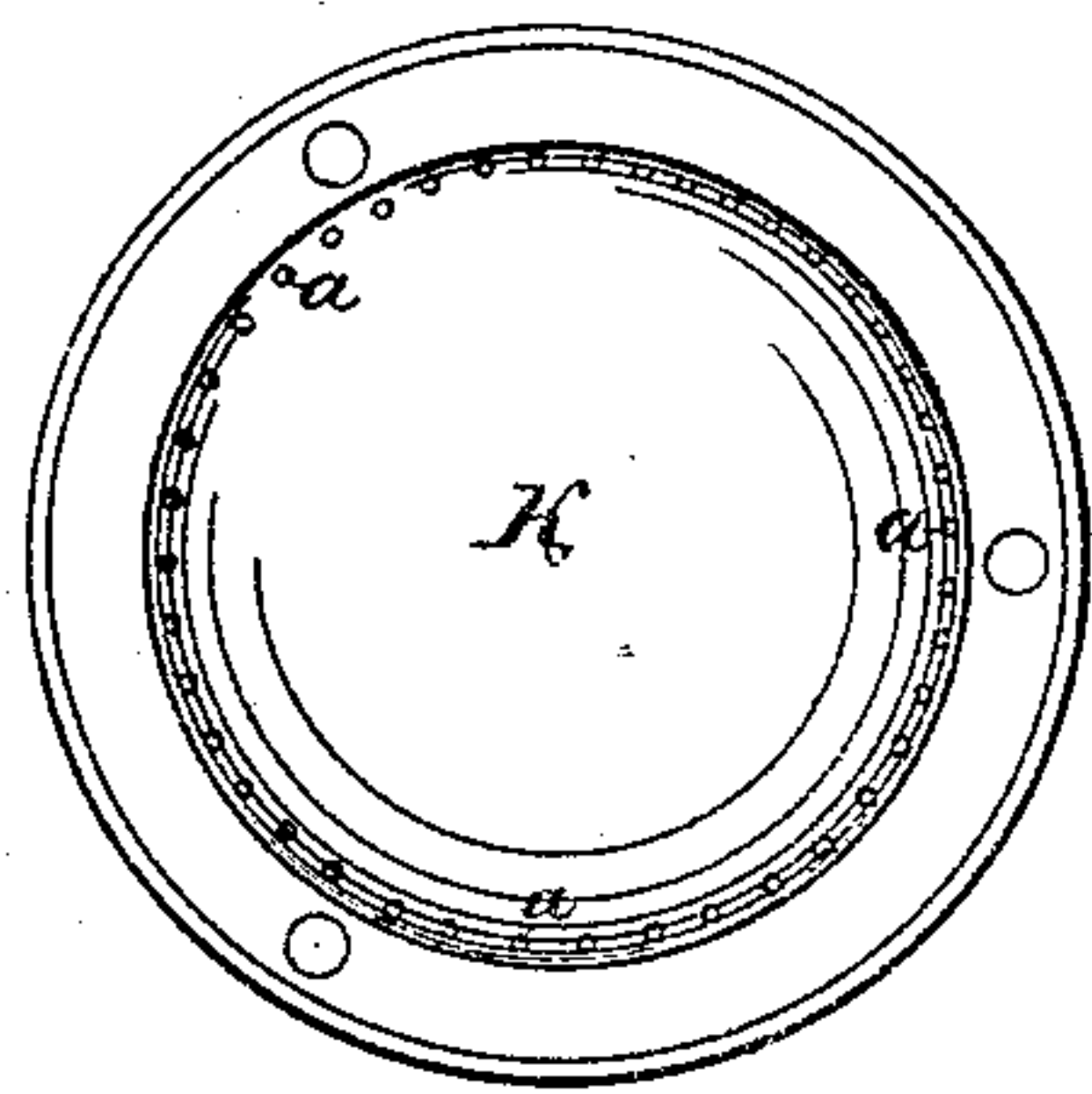


Fig 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

SAMUEL H. STARR, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SUBAQUEOUS GAS-STOVES.

Specification forming part of Letters Patent No. **145,458**, dated December 9, 1873; application filed September 20, 1873.

To all whom it may concern:

Be it known that I, SAMUEL H. STARR, of the city of Philadelphia, State of Pennsylvania, have invented a Subaqueous Gas-Stove, of which the following is a specification:

The object of my invention is to economize gas in the heating of water or other liquids by means of a gas-stove. This I accomplish by the complete submergence of the gas-stove in the water, whereby a much greater proportion of heat is absorbed by the liquid than in the ordinary gas-stoves in use.

The stove is illustrated in the accompanying sketches, Figure 1 being a vertical section of the stove (which is circular) through its center; Fig. 2, a plan of the plate *m*; Fig. 3, a horizontal section of the disk *K* through the line *b b*; Fig. 4, a horizontal section of *d* through the same line.

A is the chimney; *B*, the air-inlet; *C*, the gas-pipe; *S*, the base plate or bottom of the stove. This is hollowed out to form an air-chamber, *o*, to supply the burners *a a*, &c., Figs. 1 and 3, with air. The air-pipe *B* communicates with *o*, as shown. The gas-pipe, descending into this chamber *o*, and passing to its center, conducts the gas into the gas-chamber *g* through the opening *h*. *m* is the circular plate shutting in the air-chamber *o*, through the slots of which, *n n*, &c., Figs. 1 and 2, air is supplied to the gas-jets in the chamber *x*. *K*, Figs. 1 and 3, is the disk, forming, with the plate *m*, the gas-chamber *g*. Through this disk the pin-holes *a a*, &c., are pierced, forming a

ring of burners around its periphery. *d* is the upper disk or top plate of the stove. (This, as also the disk *K*, may be hemispherical or of other form, as shown by the dotted lines, Fig. 1.) It incloses the burning-chamber *x*. In this chamber the gas, entering through the pin-holes *a a*, &c., is consumed as above described.

The chimney and air-pipe should be long enough to project a few inches above the water of the vessel into which the stove is plunged. Sheet-iron pressed in dies is preferable, as, manufactured of that material, the stove may be of much lighter weight and of less cost. It is intended that the joints be turned and luted to make them air and water tight.

To use the stove, it is first immersed in the fluid it is desired to heat, and allowed to rest on the bottom of the vessel, (which may be of wood.) A rubber gas-hose is then used to connect it with the burner in the room. The gas is then turned on, lightly at first, and a lighted match applied at the top of the chimney.

I claim as my invention—

The combination, in a subaqueous gas-stove, of the convex disks *D* and *K*, the plate *m*, the base-plate *s*, and the pipes *A* and *B*, substantially as described, and for the purpose set forth.

SAMUEL H. STARR.

Witnesses:

SAMUEL B. STARR,
JO U. STARR.