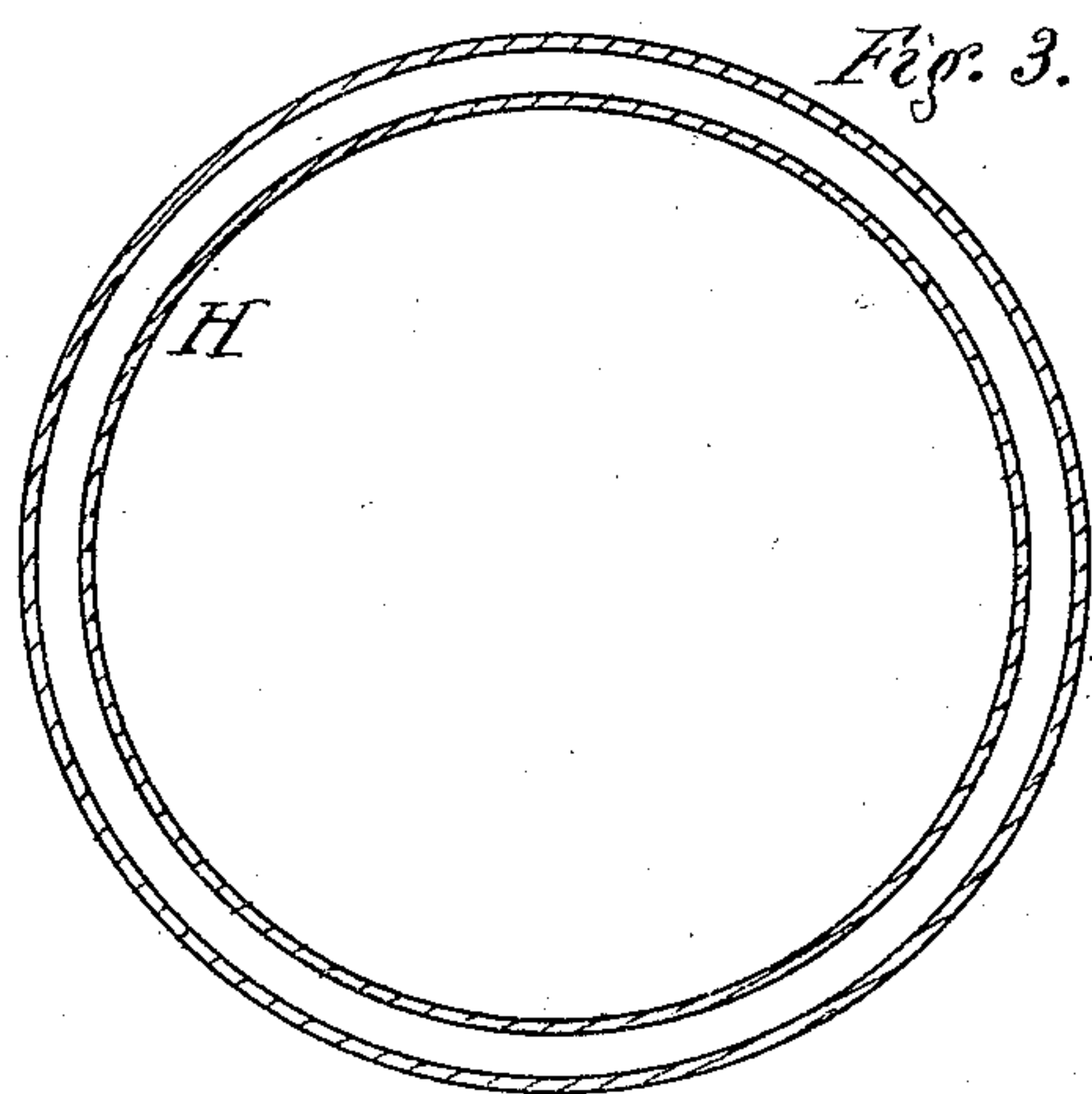
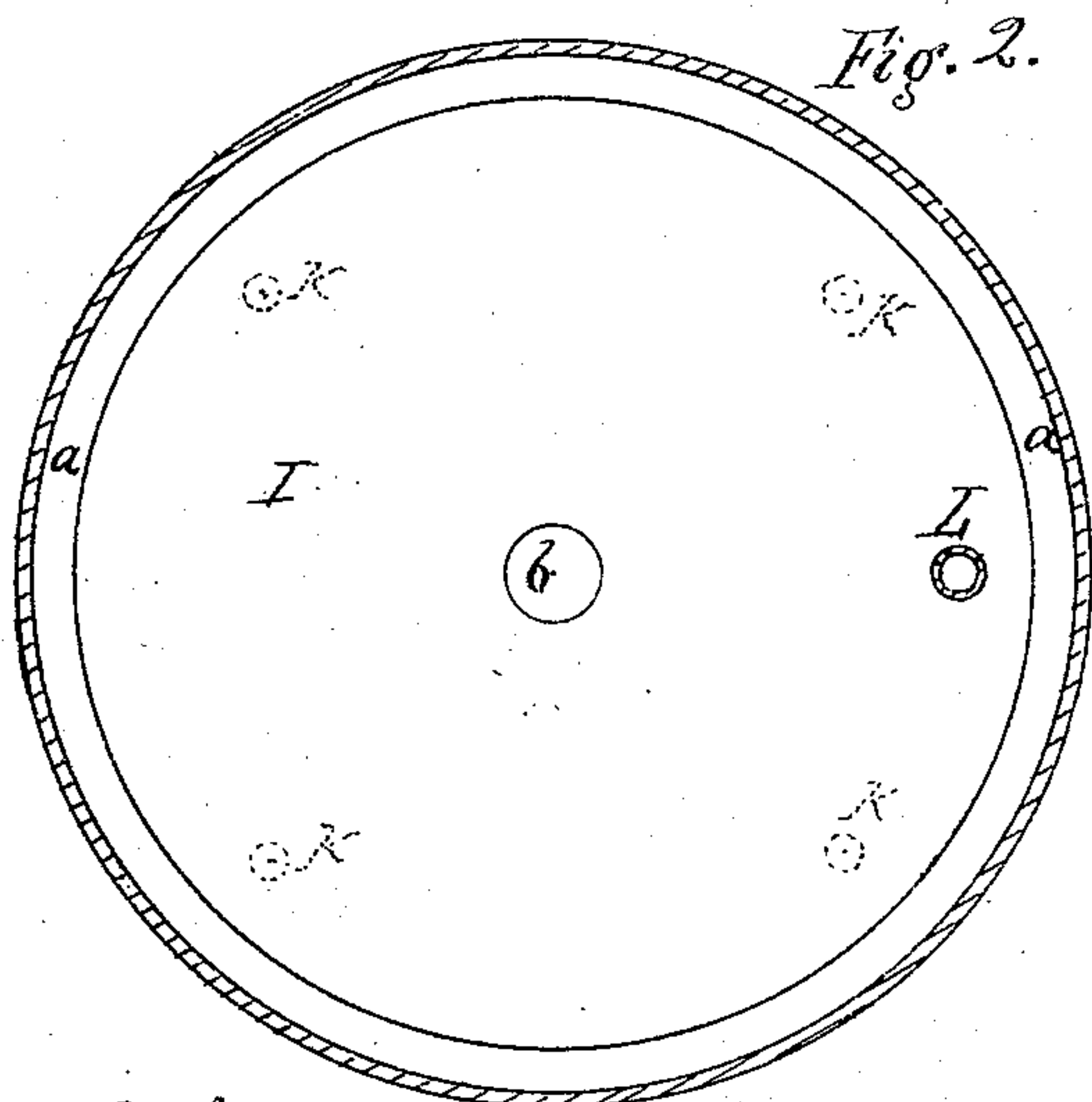
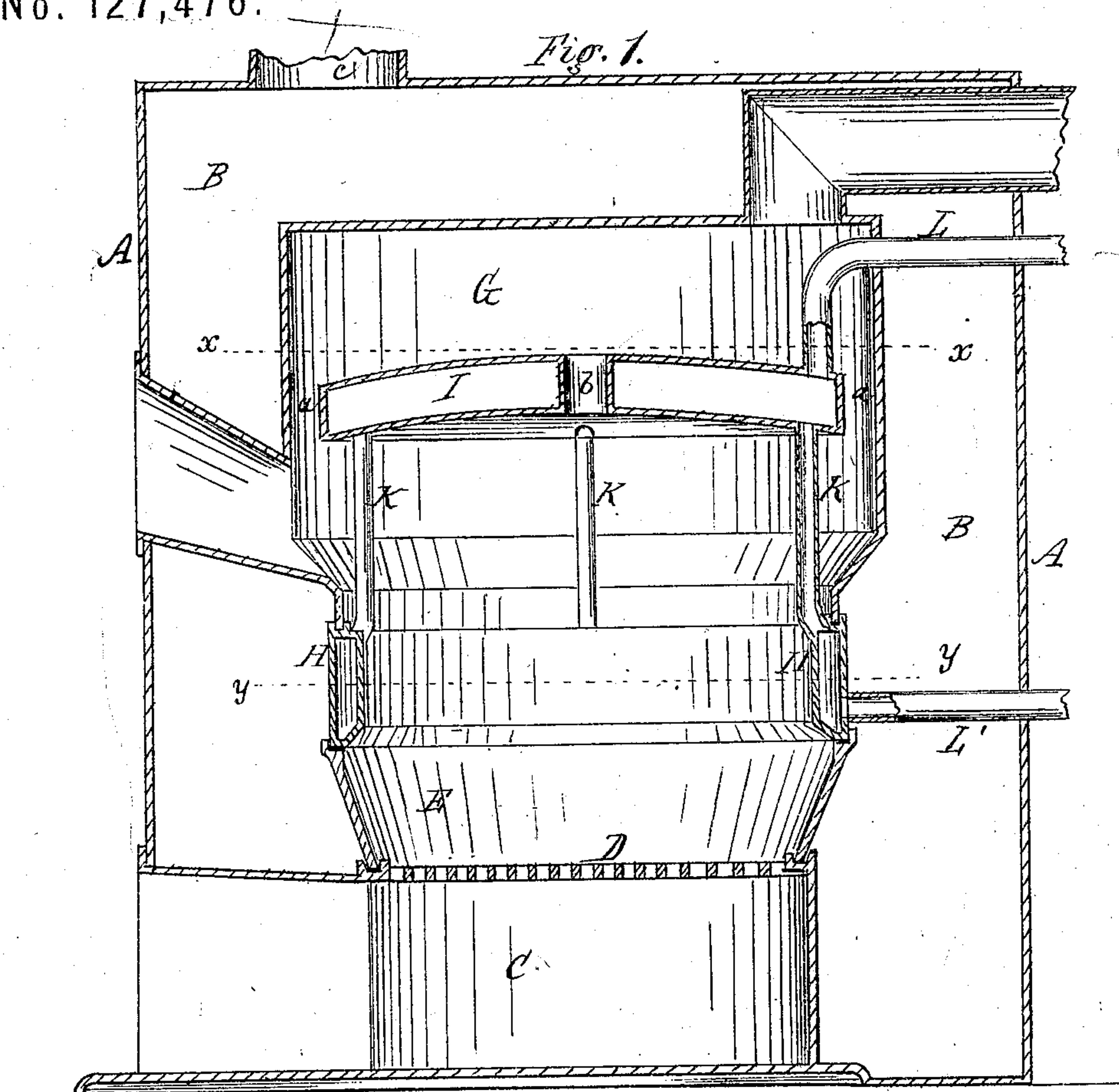


B. GOMMENGINGER.
Hot-Air Furnace.

No. 127,476.

Patented June 4, 1872.



Witnesses,
Anna Palmer
Archie Barne

Inventor:
Bartholomew Gommenginger,
per Burke Fraser & Osgood,
Attys.

UNITED STATES PATENT OFFICE.

BARTHOLOMEW GOMMENGINGER, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 127,476, dated June 4, 1872.

Specification describing a certain Improvement in Furnaces, invented by BARTHOLOMEW GOMMENGINGER, of the city of Rochester, in the county of Monroe and State of New York.

This invention consists of a water-heating apparatus combined with a hot-air furnace, constructed, arranged, and operating as hereinafter described.

In the drawing, Figure 1 is a vertical section of my improved furnace; Fig. 2, a cross-section in line *x x*, Fig. 1; Fig. 3, a similar section in line *y y*, Fig. 1.

A represents the outer casing or wall of the furnace, which leaves the hot-air space B surrounding the furnace proper. The furnace consists of the ash-pit C, grate D, fire-pot E, and dome G, not differing essentially from the corresponding parts in other furnaces. I combine with these parts a hot-water apparatus, as follows: Between the fire-pot and dome I interpose a jacketed ring, H, of suitable size, as shown in Figs. 1 and 3. This is designed to hold a body of water between the walls, suspended just above and projecting over the fire-pot, so as to get the best benefit of the direct heat of the latter. In the body of the dome I also locate a hot-water receptacle, I, which is preferably in the form of a concavo-convex disk, jacketed similarly to the ring before described, but may be made of different shape, or may be composed of a system of pipes, if desirable. This receptacle is connected with the water-ring below by a series of upright pipes, K K. The diameter of the disk I is such as to leave a small space, *a*, between its periphery and the walls of the dome, and it is provided with a central tube or passage, *b*, the object of which will be presently described. If desired, both the ring H and disk I may be duplicated, but a single one of each is generally sufficient. From the disk I extends one or more distributing-pipes, L, and from the ring H one or more return-pipes, L'.

These pipes may be carried through a church, hall, dwelling-house, or any other building, and make a circuit, by which means a constant current of hot water is made to pass and return,

by which such building or room may be heated. This, it is understood, may be in addition to the ordinary function of heating by hot air in the usual manner, the air escaping by pipe *c*.

The construction of the water apparatus above described has some special advantages. The ring H is made portable so as to be built in or removed at pleasure. It projects inward over the fire-pot so as to get the best effect of the heat. The disk I is located in the dome, directly over the fire, so as to receive its best action. The heated currents, as they pass along its concave bottom, are delayed so as to impart as much caloric as possible, and then, in passing up the narrow space *a*, they are concentrated against the walls of the dome, to expend the remaining heat thereon before escaping, thereby heating the casing a greater degree at the top and producing a greater radiating power. The central passage *b* allows a direct draught through the center of the disk, which checks the too rapid escape around the periphery and serves to equalize the heat around the disk.

A special object of this construction is to enable the water apparatus to be easily applied or removed, which is not the case in ordinary heating devices, where the parts are solidly built in.

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

The combination, with a hot-air furnace, of the jacketed ring or rings H, located in the walls, the connecting-tubes K, and water jacket or receptacle I, with central passage *b* surmounting the tubes, said parts being arranged as described so as to be easily removable, and employed in connection with the distributing and return pipes L L', in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

B. GOMMENGINGER.

Witnesses:

R. F. OSGOOD,
ARCHIE BAINE.