

GEORGE HIBBERD.

Improvement in Water Heaters for Stoves.

No. 120,518.

Patented Oct. 31, 1871.

FIG. 1.

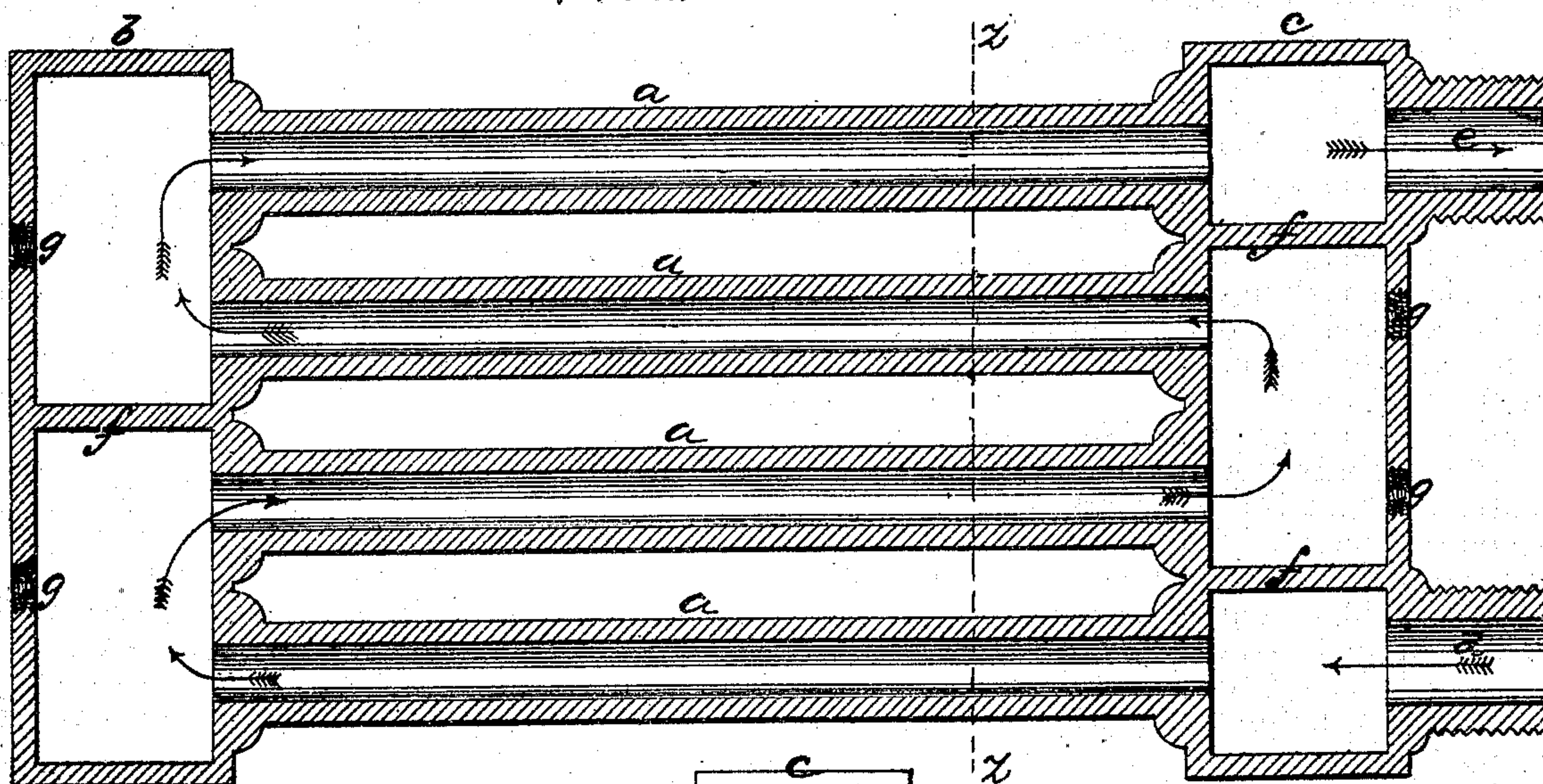
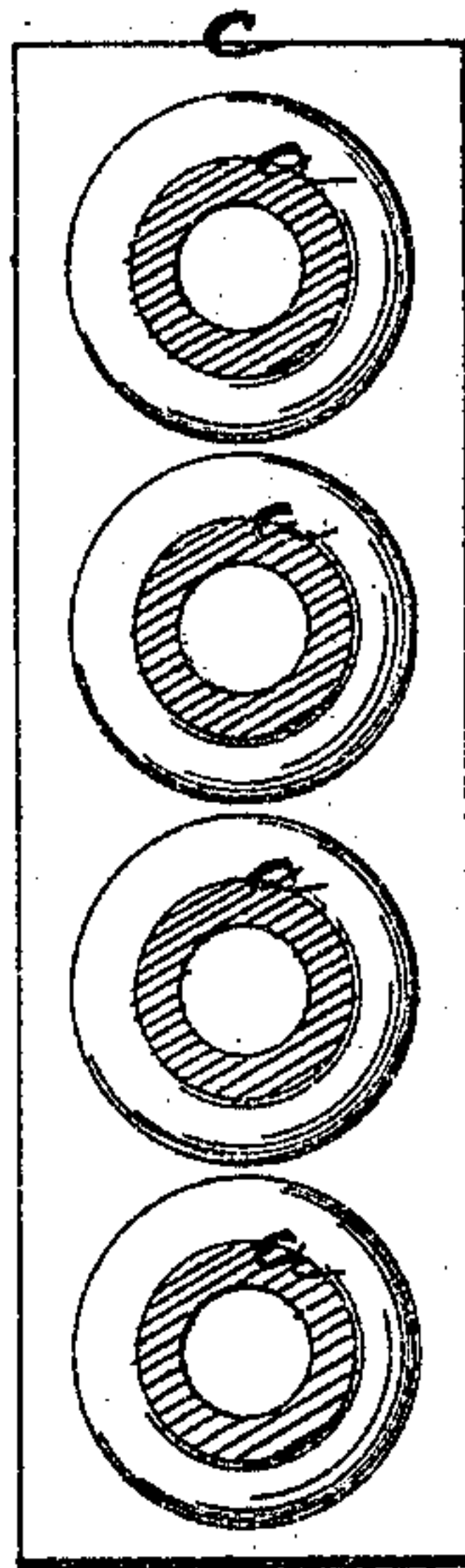


FIG. 2.



WITNESSES
Jas. L. Cwin
Walter Allen

INVENTOR
Geo. Hibberd
By *Wm. H. Knight*
Attorney

UNITED STATES PATENT OFFICE.

GEORGE HIBBERD, OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN WATER-HEATERS FOR STOVES.

Specification forming part of Letters Patent No. 120,518, dated October 31, 1871.

To all whom it may concern:

Be it known that I, GEORGE HIBBERD, of Wheeling, in the county of Ohio and State of West Virginia, have invented an Improved Water-Back or Water-Heater for Stoves, of which the following is a specification:

My invention relates to tubular circulating water-backs, composed of pipes and manifolds; and consists in making such a back without joint, and of superior cheapness and durability, by casting the same by the aid of cores, as hereinafter more fully set forth.

Figure 1 is a longitudinal section of a water-back of illustrative form, made according to my invention. Fig. 2 is a transverse section of the same on the line *z z*, Fig. 1.

My improved jointless water-back is composed of parallel pipes *a*, (four or more,) united at their ends by manifolds *b c*, with inlet and outlet-necks *d e* and partitions *f*, to compel the proper circulation through the several pipes, the whole cast in one piece.

In carrying out my invention I employ a suitable pattern by which to form the matrix, and a sand-core in one or more parts to form the cavities. The pattern being removed from the mold, the core is supported preferably at two or

more points at each end within the same, and the metal run in. The core is cleaned out of the casting in any suitable way, and the holes formed by the core-bearings tapped. Solid plugs *g* of the same material as the body of the heater are then screwed in and dressed off, and the necks *d e* threaded to receive conducting-pipes. The heater is then ready for use.

For material, I propose using brass, copper, or iron. The ends or back, or both, may be curved to adapt the heater for different stoves. The inlet and outlet-necks may also be arranged on the face of one of the manifolds instead of on its end. This would allow the pipes to pass into and out of the fire-box, so as to avoid doors which they would otherwise obstruct.

I claim as my invention—

As a new article of manufacture, the cast-metal water-back for stoves, constituted of an even number of pipes, *a a*, connections *b c d e*, partitions *f f*, and plugs *g*, for the core-support apertures, all substantially as specified.

GEO. HIBBERD.

Witnesses:

R. G. BARR,
S. O. TAYLOR.

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