

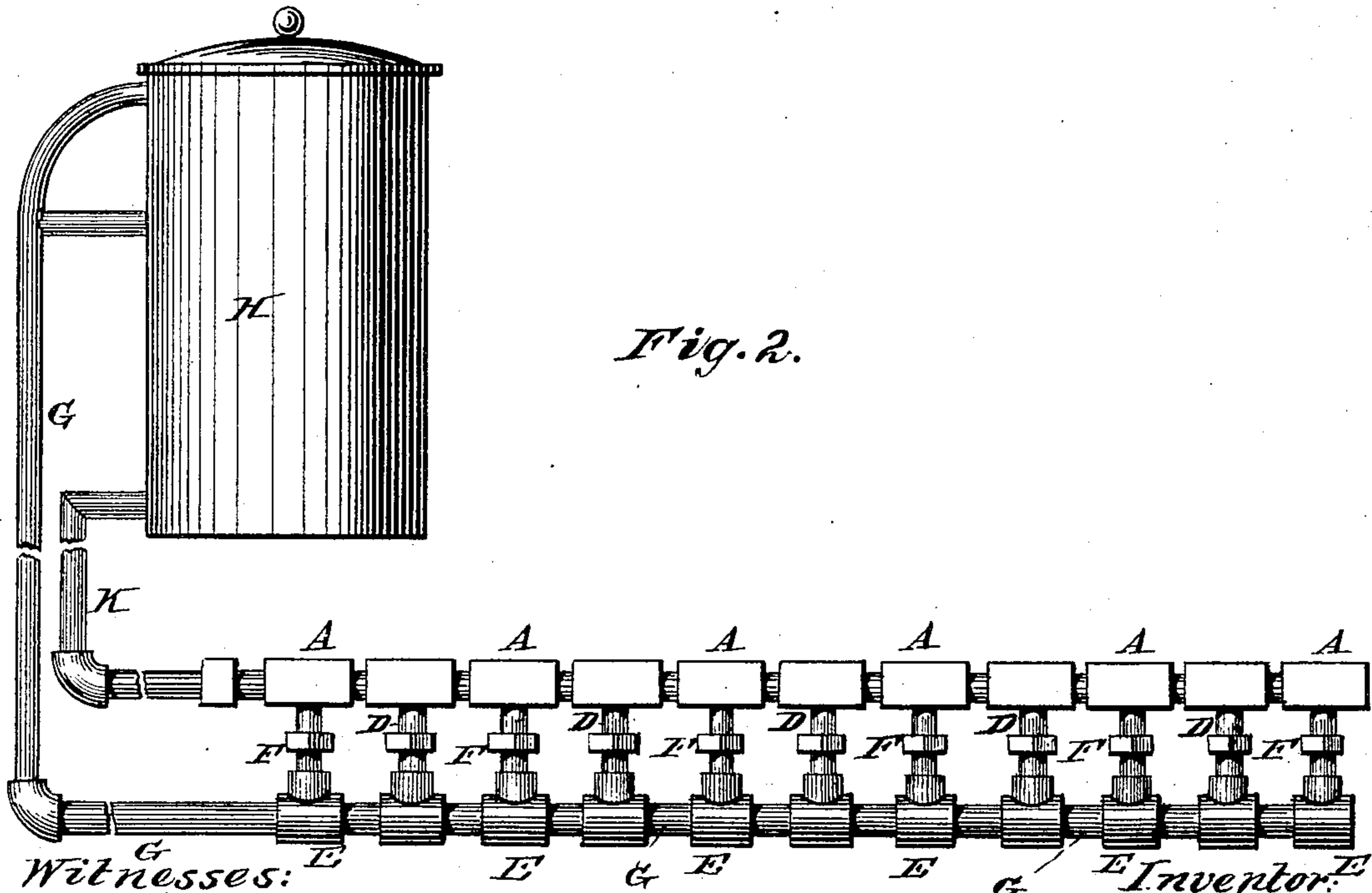
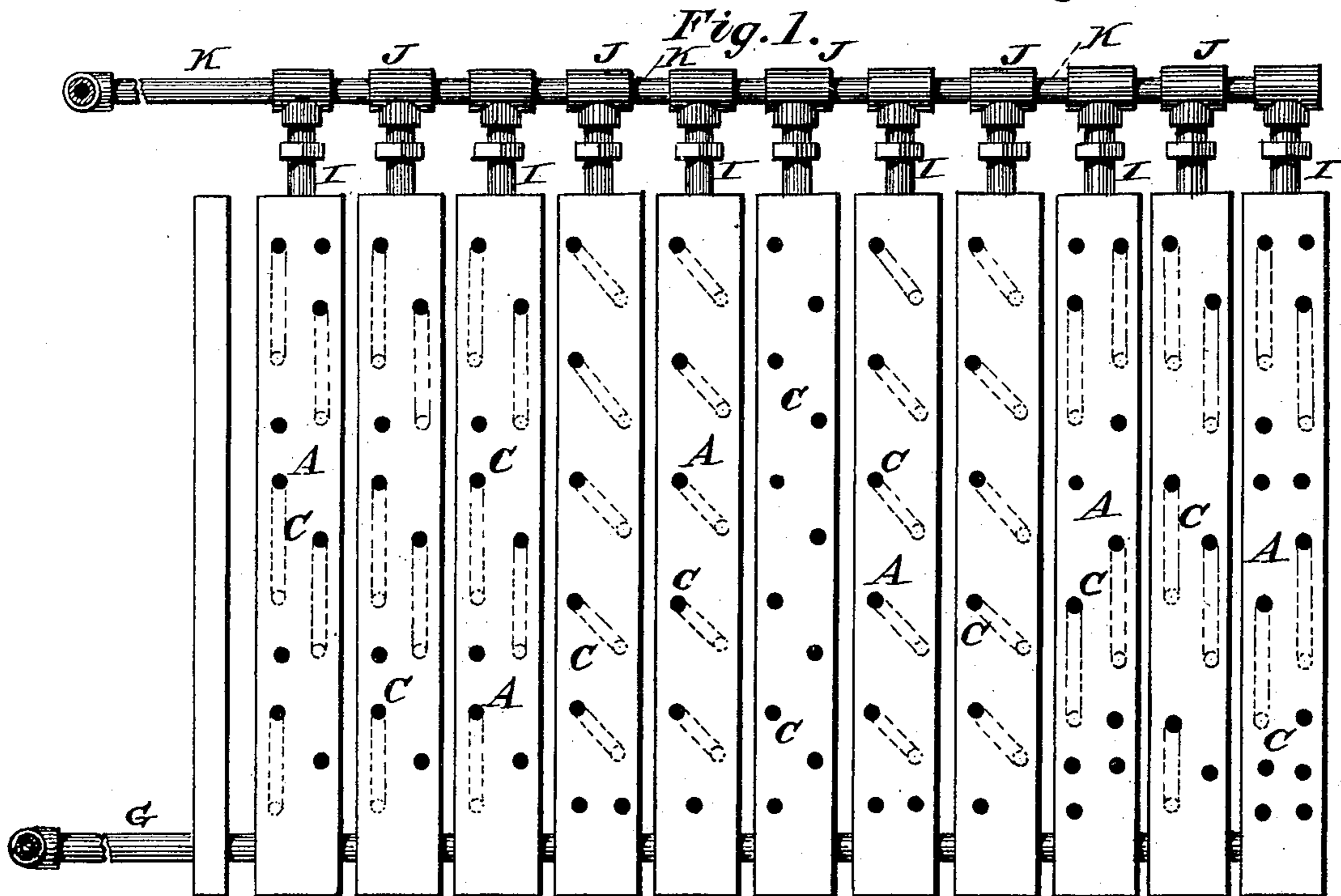
(No Model.)

2 Sheets—Sheet 1.

A. S. PARKE.  
FURNACE GRATE.

No. 245,552.

Patented Aug. 9, 1881.



Witnesses:  
*Fred. G. Dietrich*  
*P. C. Dietrich*

*Amos J. Parke,*  
*by C. A. Snow & Co. Attorneys.*

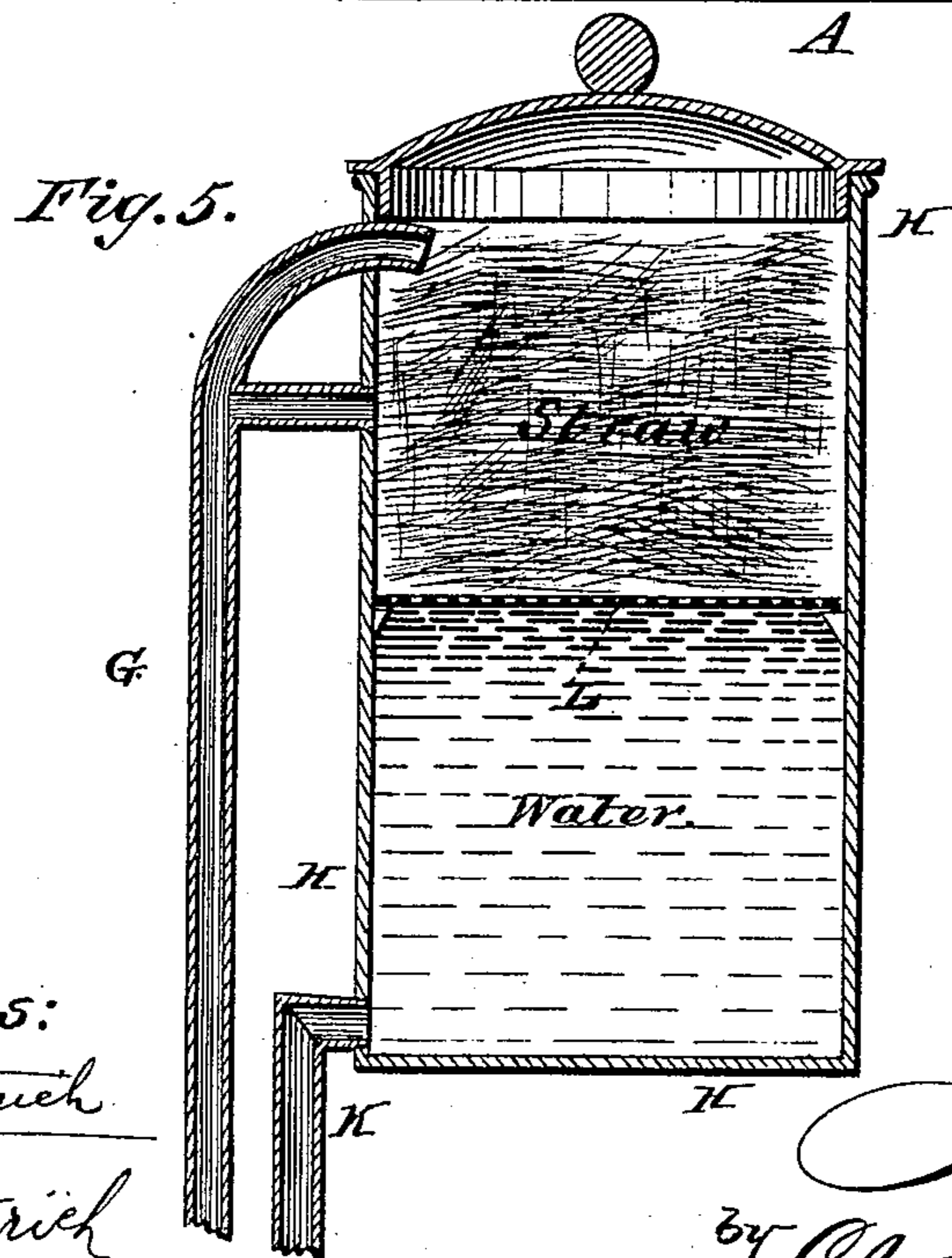
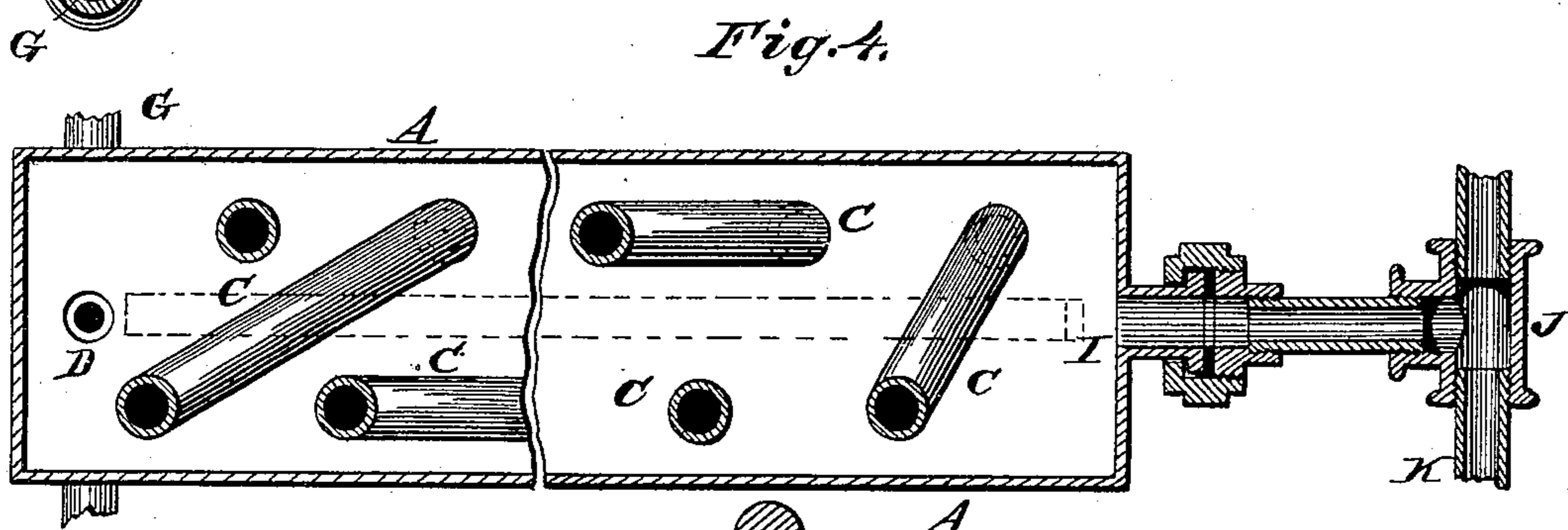
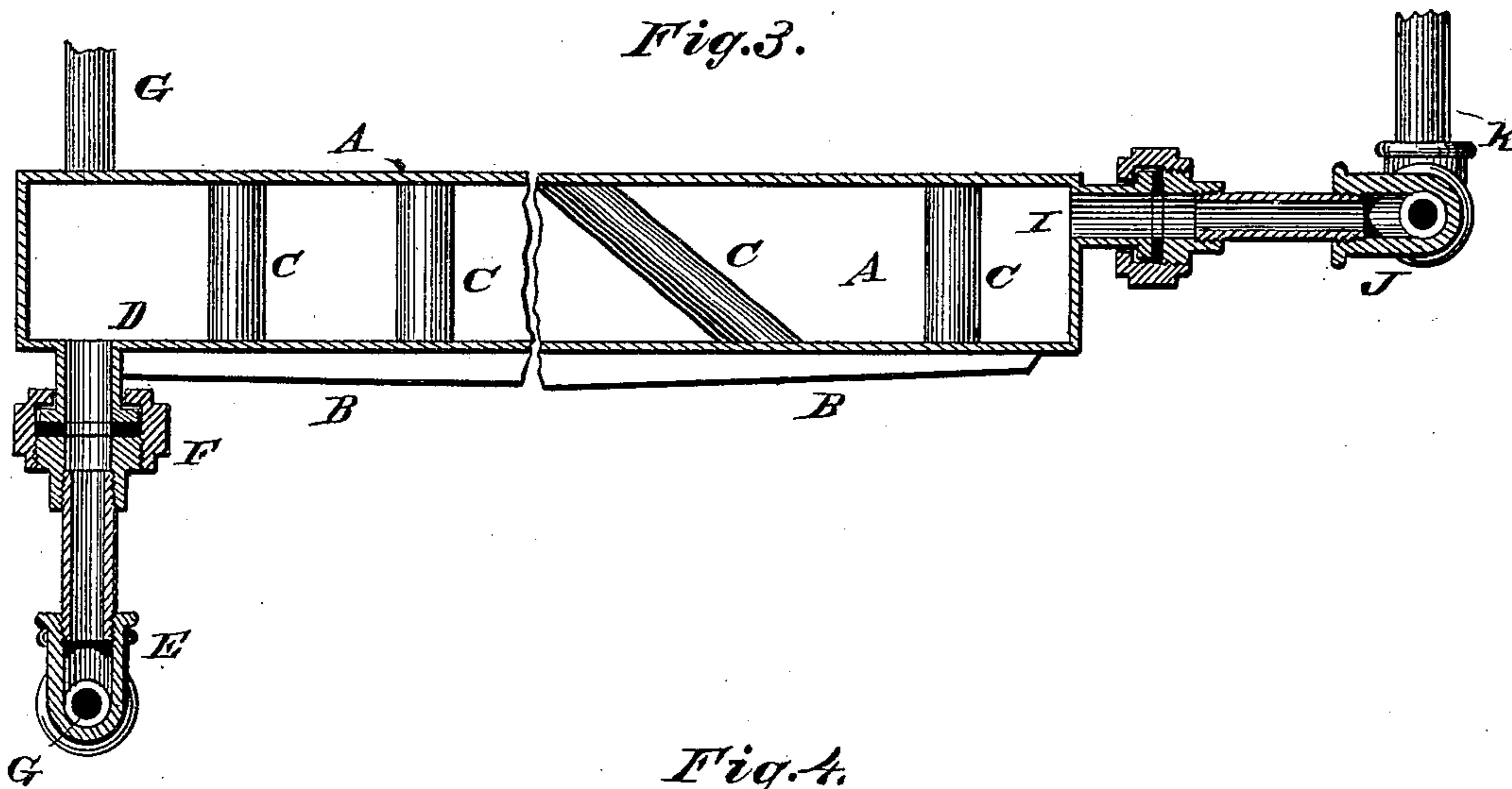
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Witnesses:  
Fred G. Dietrich  
P. C. Dietrich

Inventor:  
A. S. Parke,  
by Chas. Shoy & Co. Attorneys.

# UNITED STATES PATENT OFFICE.

AMOS S. PARKE, OF BAY CITY, MICHIGAN.

## FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 245,552, dated August 9, 1881.

Application filed December 9, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, AMOS S. PARKE, of Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Furnace-Grates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a plan view of my improved furnace-grate. Fig. 2 is an end view of the same. Fig. 3 is a vertical sectional view of one of the grate-bars. Fig. 4 is a horizontal sectional view of the same; and Fig. 5 is a vertical sectional view of the water-supply tank.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to that class of furnace-grates which are composed of a set of hollow bars, through which a continuous flow or circulation of water is kept up to prevent the said bars from burning out; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claim.

In the drawings hereto annexed, A A represent the grate-bars, which consist of hollow rectangular castings, of suitable dimensions, provided upon their under sides with strengthening-ribs B, and having their upper and lower sides connected by pipes or tubes C, which may be arranged either vertically or slantingly—in the latter case diagonally, if desired. The drawings hereto annexed illustrate the draft-tubes C in these several positions, the two latter of which are calculated to supply air to any fuel which may remain supported upon the grate-bars, and thus promote its combustion.

The grate-bars A are provided upon their under sides, near one end, with nipples D, to which T-couplings E are connected by union nuts F, the T-couplings being connected, form a continuous pipe, G, by which water is sup-

plied to the grate-bars from a tank, H, located at a suitable elevation, so as to feed the water by gravity. The opposite ends of the grate-bars are provided with nipples I, connected by T-couplings J, which form a continuous discharge-pipe, K, through which the water or steam is conducted back to the supply-tank.

The tank H is provided with a horizontal perforated plate or strainer, L, above which a quantity of straw, brush, or other filtering material is placed to filter the water before being supplied to the hollow grate-bars, in which deposits of mud, scales, &c., is thus, to a large extent, prevented.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

It is well known that ordinary furnace-grates are liable to be burned out or injured by the great heat to which they are subjected. By supplying a constant circulation through them of water, as by my invention, this is prevented, and the grate thus rendered far more durable, not to mention the frequent delays for repairs which are necessary in other furnaces.

Deposits in the hollow grate-bars of scales or other impurities, by which the flow of water might be obstructed, are prevented by my improved filtering-tank, and the ribs upon the under side of the grate-bars give to the latter sufficient strength.

In practice the grate-bars are located some distance—say one inch—apart, as shown in the drawings, to permit the ashes to drop down freely into the ash-pit, should the tubes C prove insufficient for this purpose. The grate-bars being necessarily of considerable width, the slanting and diagonal draft-tubes will be found to exercise an important function in supplying air to any fuel which may remain supported upon the grate-bars.

I am aware that hollow grate-bars adapted for the circulation of water are old, and such I do not wish to be understood as claiming, broadly, as of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

5 The combination of the grate-bars A, having ribs B and draft-tubes C, induction-tube G, discharge-pipe K, and the supply-tank H, having strainer L, all constructed, arranged, and operating substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as 10 my own I have hereto affixed my signature in presence of two witnesses.

AMOS SYLVESTER PARKE.

Witnesses:

S. A. PARKE,

E. W. BRELSFORD.