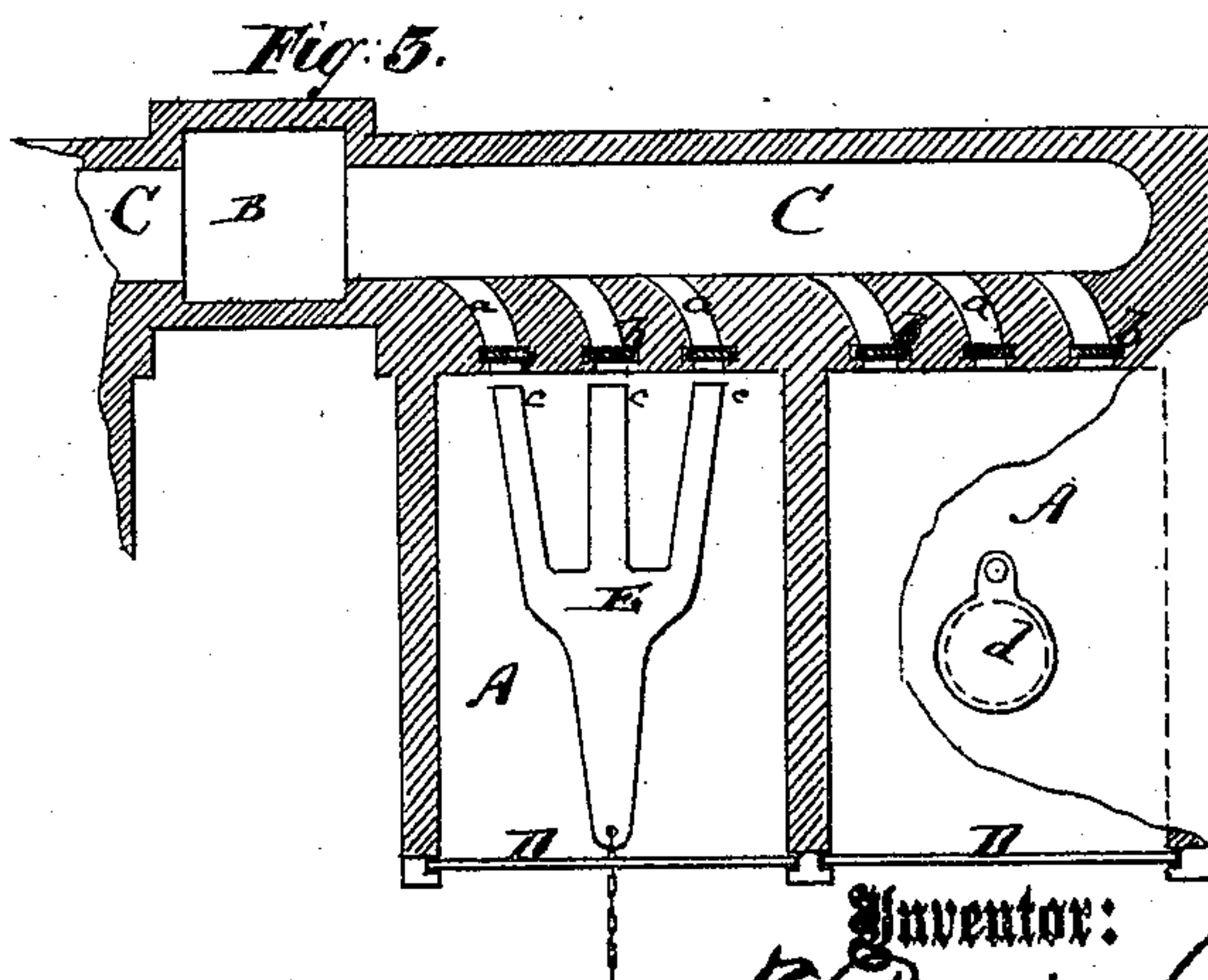
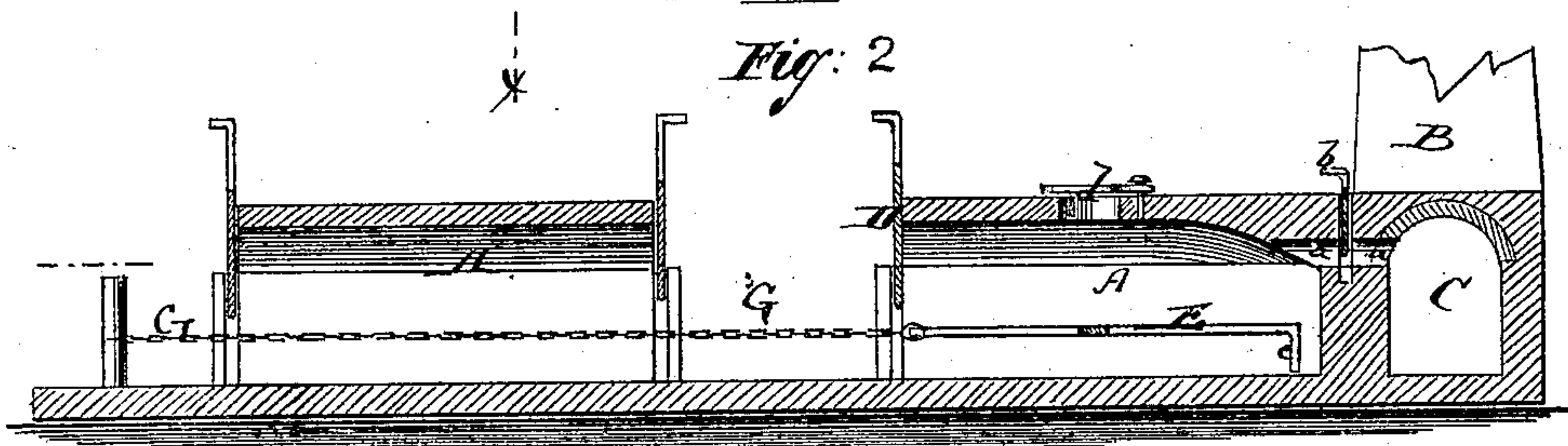
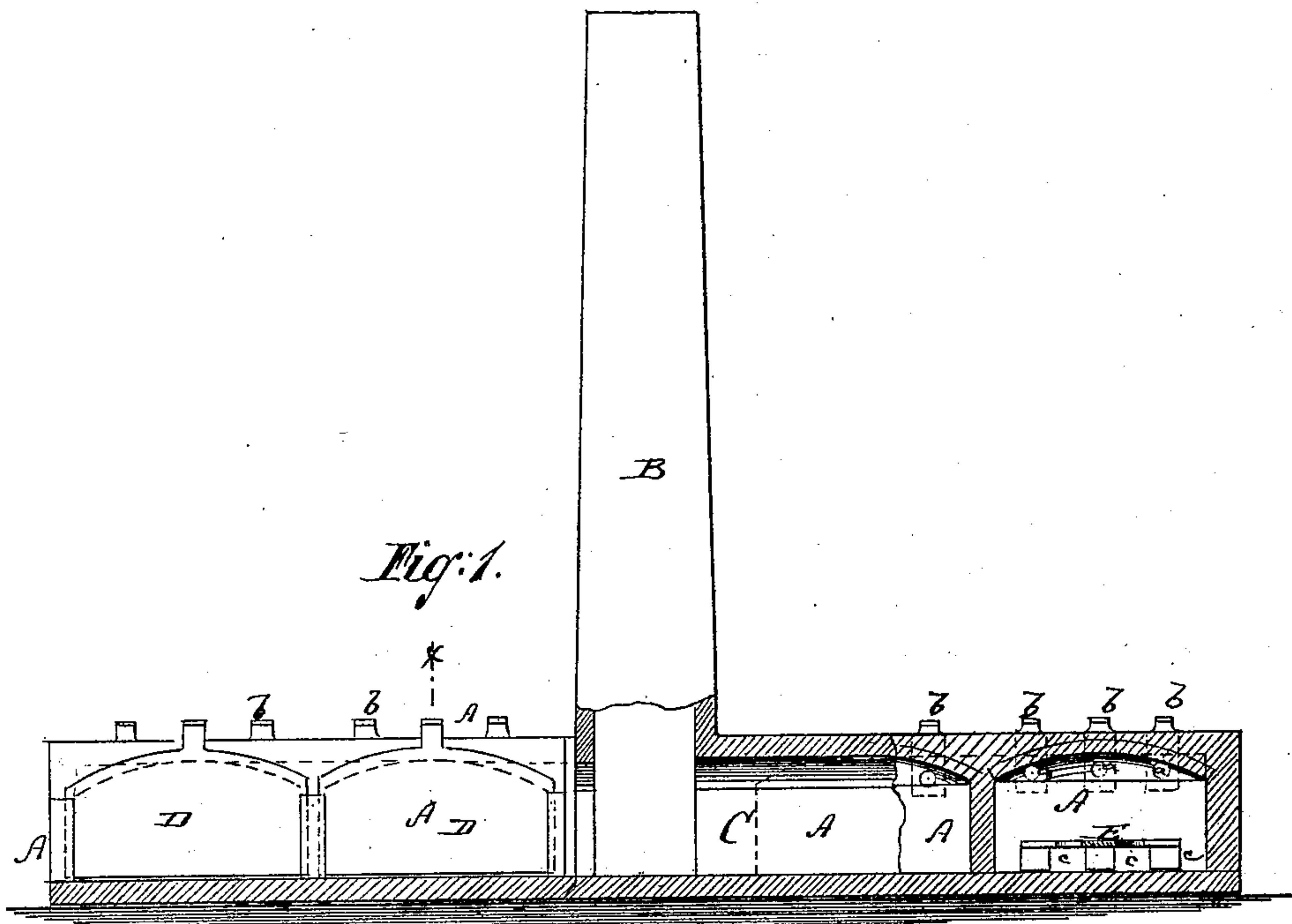


T. PRICE.  
COKE FURNACE.

No. 109,940.

Patented Dec. 6, 1870.



Witnesses:  
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# United States Patent Office.

THOMAS PRICE, OF STEUBENVILLE, ASSIGNOR TO HIMSELF AND JAMES CRUTHERS, OF WEST NEWTON, OHIO.

Letters Patent No. 109,940, dated December 6, 1870.

## IMPROVEMENT IN COKE-FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, THOMAS PRICE, of Steubenville, in the county of Jefferson and State of Ohio, have invented a new and improved Coke-Furnace; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a front elevation, partly in section, of my improved coke-furnace.

Figure 2 is a vertical transverse section of the same, taken on the plane of the line *x x*, fig. 1.

Figure 3 is a partial horizontal section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new furnace for producing coke free from sulphur or other impurities, so that it may be used for the production of pure iron. The chief difficulty in the preparation of iron is to obtain pure carbon for the smelting and roasting-furnaces. Sulphur is generally contained in coke, and, entering into composition with the iron, impures the same.

My invention consists chiefly in constructing a coke-furnace with a sliding cradle or grate, on which the coal is burnt and removed; also in a novel manner of connecting the furnaces with the main flue and smoke-stack, by means of curved channels, for insuring direct draught.

A in the drawing represents one of the twelve (more or less) furnaces which are used in connection with one smoke-stack, B, three on each side, in front and rear of the stack.

Each furnace is by three (more or less) curved channels, *a a*, connected with the arched main flue C, through which the products of combustion are conveyed to the smoke-stack.

The channels *a* have slides or gates, *b b*, for regulating the draught. By having the channels *a* curved toward the smoke-stack, as shown in fig. 3, more perfect draught will be obtained, as the sharp corners otherwise in use are avoided.

Each furnace A has a gate or door, D, at the front end, through which a cradle, E, can be inserted.

The cradle E constitutes the grate on which the coal is burnt, and is made in form of a fingered or slotted plate, resting on ears or rollers *c* so as to be elevated above the bottom of the furnace.

The coal is, through an opening, *d*, in the top of the furnace, dumped upon the cradle, and is then burnt in the furnace until all the impurities, including sulphur, have been evaporated.

The door D is then opened and the cradle drawn out by means of a chain, G, and windlass or other apparatus.

By thus having the entire load always on a movable grate the manipulation of the coal and coke is much facilitated.

In line with the front end of each furnace A is built a carbonizing furnace, H, into which the cradle is drawn with all its contents. The furnace H is then closed on all sides, and the coke left in it to carbonize. Finally the cradle is drawn out of the furnace H, with a load of perfectly pure coke.

Two cradles should be provided for each furnace A, so that when one is drawn out another may be immediately inserted.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The cradle E, placed into the coke-furnace to serve as a grate and conveyer for the coal, substantially as herein shown and described.

2. The coke-furnace A, provided with the curved smoke-channels *a a*, as specified.

3. The furnace H, arranged in line with the furnace A, to receive the cradle containing the coke, substantially as herein shown and described.

THOMAS PRICE.

Witnesses:

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