

T. Stone. Water Grate .

No. 120,342.

Patented Oct. 24, 1871.

Fig. 1.

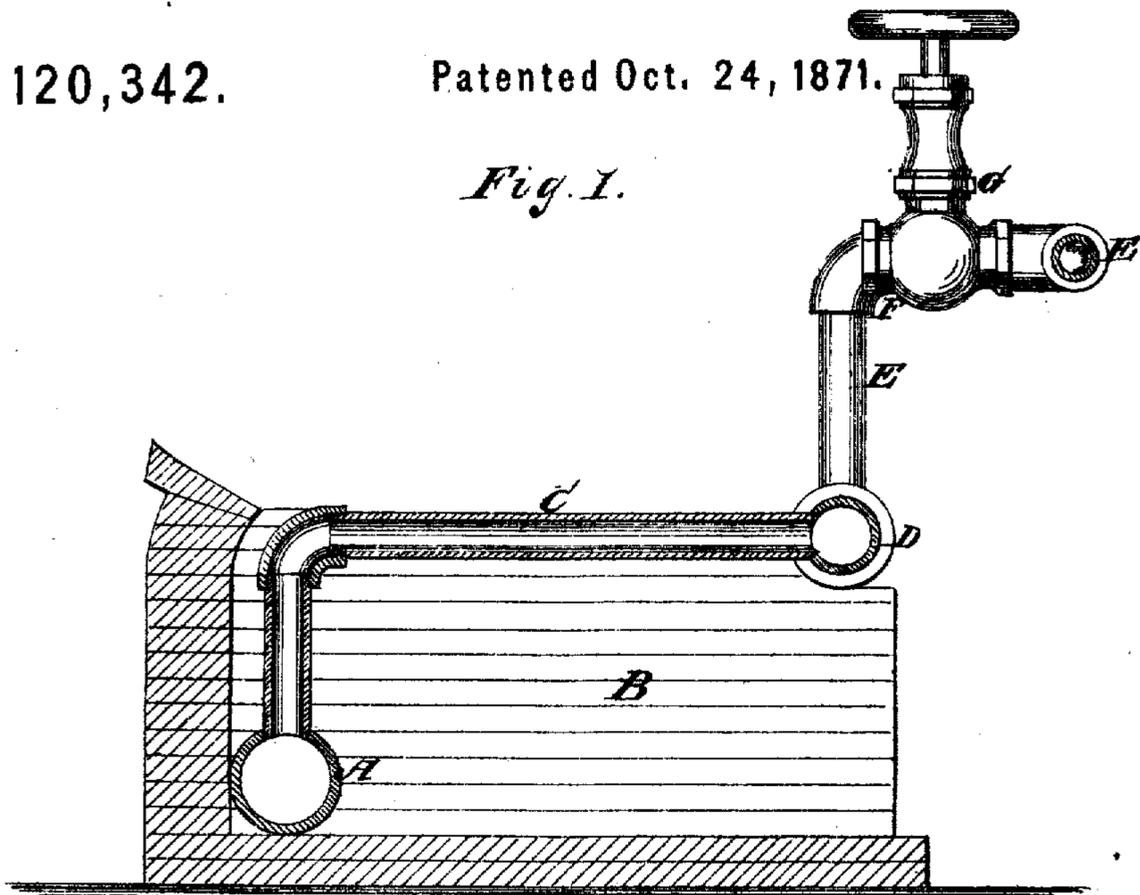
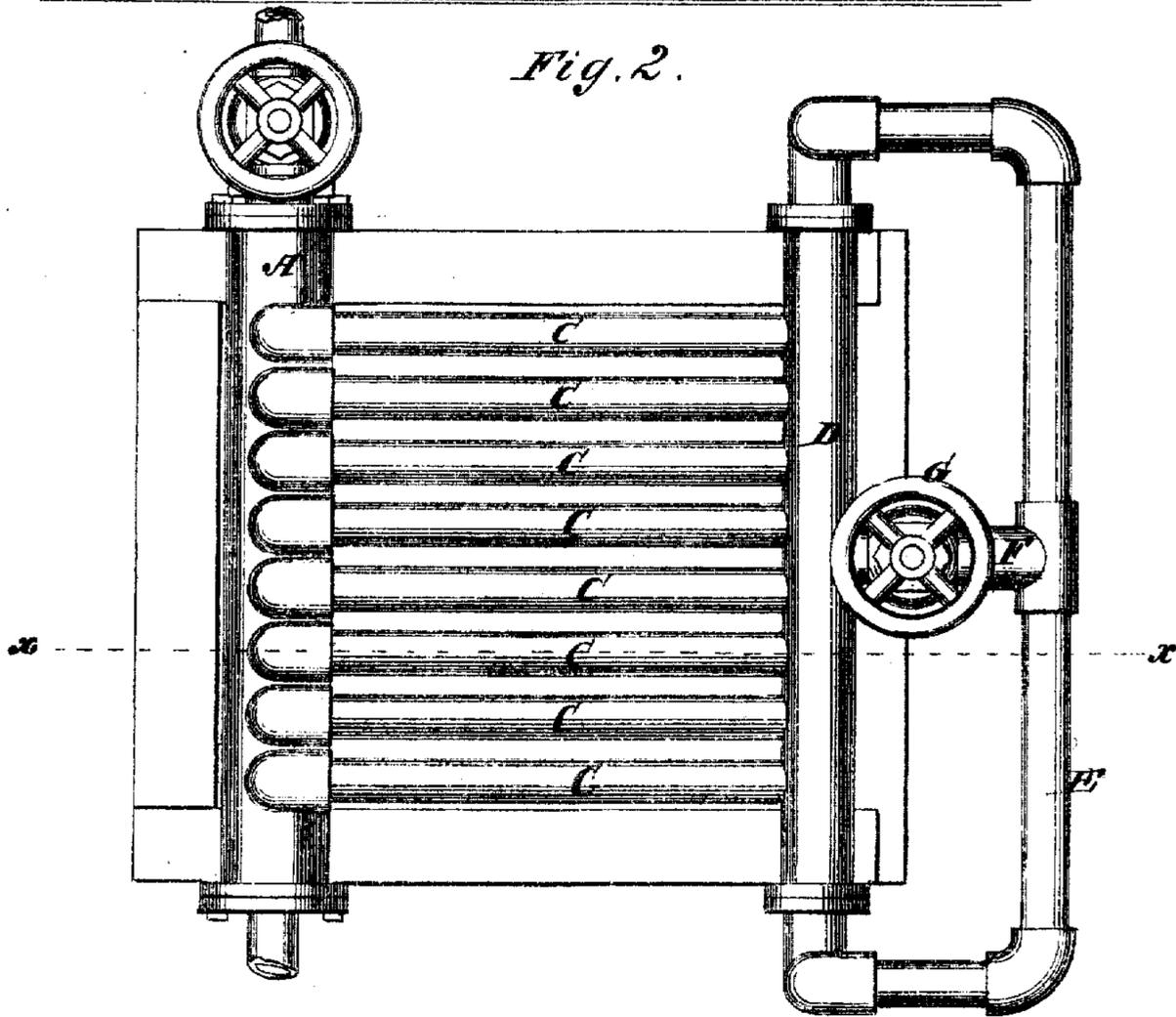


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS STONE, OF CARBONDALE, ILLINOIS.

IMPROVEMENT IN WATER-GRATES FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. 120,342, dated October 24, 1871.

To all whom it may concern:

Be it known that I, THOMAS STONE, of Carbondale, in the county of Jackson and State of Illinois, have invented a new and useful Improvement in Water-Grate; 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.

This invention relates to a mode of constructing water-grates for steam-boilers and arranging and connecting them with the boiler, whereby the steam-generating or fire-surface is greatly increased and the grate rendered durable; and it consists in the construction and arrangement of parts hereinafter described.

In the accompanying drawing, Figure 1 is a vertical section taken on the line *x x* of Fig. 2. Fig. 2 is a top or plan view.

Similar letters of reference indicate corresponding parts.

A is the mud-pipe, placed in the ash-pit B beneath the grates. C represents the grate-bars. D is a front transverse pipe over the ash-pit door, with which the grate-bars C are connected. The bars C curve down and are connected with the mud-pipe A separately, as seen in the drawing. The force-pump is attached to one end of

the mud-pipe, so that the feed-water is forced up through each of the grate-bars into the pipe D, and from the ends of the pipe D into the boiler through the pipe E and branch-pipe F. In this branch-pipe there is a stop-cock, G, for cutting off communication between the grate and the boiler whenever it may be necessary to do so; as, for instance, when it may be desired to discharge the water contained in the grate and retain the water in the boiler. It is designed to make the grate-bars of wrought iron, bent to the required curve. The water-grate bar joined in this manner will not be injured by expansion and contraction or the effect of heat and cold. The bars being always supplied with water are kept so cool that clinkers will not adhere to them, and as they furnish a large increase of fire-surface the power of the boiler is correspondingly increased and fuel economized.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The construction and arrangement of mud-pipe A, placed across the bottom of ash-pit B, the series of curved grate-bars C, and the transverse pipe D connected together and with the boiler-pipe E, as and for the purpose specified.

Witnesses: THOMAS STONE.

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(149)