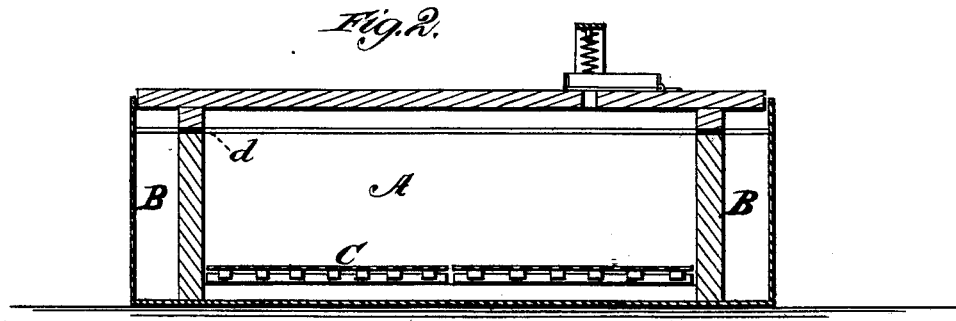
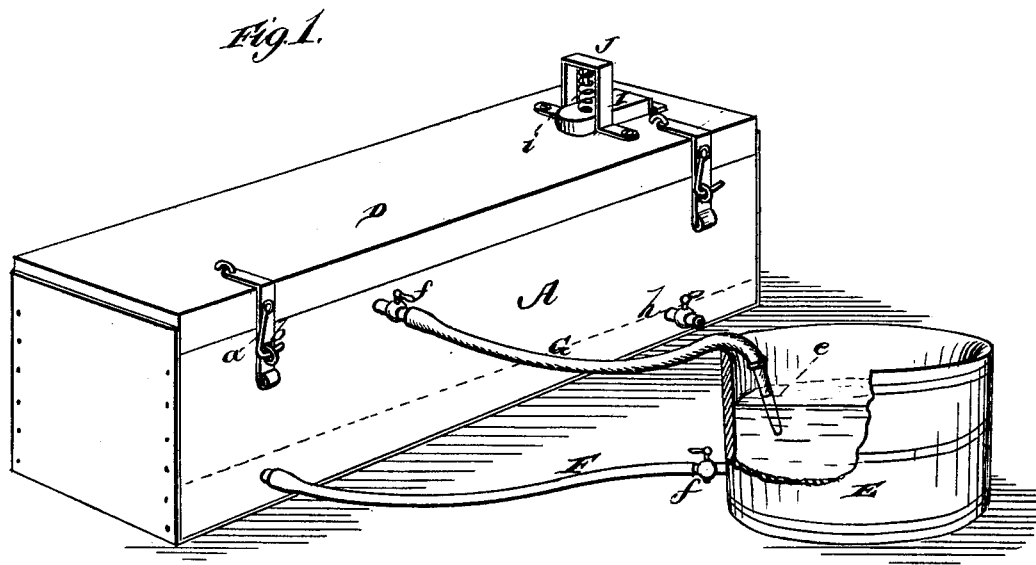


H. S. GROVES.  
Feed-Steamer.

No. 220,828.

Patented Oct. 21, 1879.



WITNESSES  
*Robert L. Smith*  
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# UNITED STATES PATENT OFFICE.

HARVEY S. GROVES, OF EMERSON, IOWA.

## IMPROVEMENT IN FEED-STEAMERS.

Specification forming part of Letters Patent No. **220,828**, dated October 21, 1879; application filed July 12, 1879.

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

Be it known that I, HARVEY S. GROVES, of Emerson, in the county of Mills and State of Iowa, have invented certain new and useful Improvements in Feed-Steamers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective of my feed-steamers, partly in section; and Fig. 2 is a longitudinal sectional view of a part of the same.

The nature of my invention consists in the construction and arrangement of a feed-steamer, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

A represents a rectangular box of any suitable dimensions, having its sides made of wood and bottom of sheet metal. At each end is formed a separate chamber, B, as shown, for retaining the heat.

The box A is provided with a grating, C, on which the feed to be steamed is placed. This grating is made in sections, so that it can be easily removed for cleaning and other purposes.

D is the lid of the box, hinged to one side and fastened by hasps *b* and hooks *a*. Rubber or other suitable packing, *d*, is introduced between the top edges of the box and the lid, to prevent the escape of steam.

E is a tub, which is to be placed at a suitable elevation, and is, by a rubber pipe, F, connected with the steamer below the grating. Another rubber hose, G, leads from the upper part of the box, for conducting steam to the tub. This pipe G is provided with a nozzle, *e*, and both pipes F and G have suitable stop-cocks *f*.

*h* is a gage in the side of the box. I is a hinged safety-valve on top of the lid D, said valve being held down by a spring, *i*, arranged in a yoke, J, over the valve.

The steamer is to be placed on a stationary brick furnace, designed for burning any kind of fuel, and with a wide and shallow flue under the steamer, so that the blaze will pass close to the bottom of the steamer.

In placing the steamer on the furnace, the end that is over the strongest or hottest fire should be about half an inch lower than the end at the smoke-stack, having the back end barely covered with water. The dotted lines in the face A represent the surface of the water in the inclined box. The front portion of the water is the deepest where the fire is hottest. Steam will then be generated at the back as quickly as at the front end, and consequently the feed will cook at the same time all over.

By starting with a small amount of water in the steamer steam is immediately generated, and through the lower hose, F, water is let in from the tub E as fast as needed. Through the upper hose, G, steam is conducted into the tub E, to heat the water before entering the steamer. By this means the feed may be steamed in a very short time.

The gage *h* is simply used to ascertain the state of the water in the steamer.

I am aware that most of the elements herein shown and described have been separately used, and I claim none of them, broadly.

I claim—

The inclined box A, provided with heat-retaining chambers B B, the sectional grating C, and hinged lid D, with interposed packing *d*, in combination with the tub E, water-pipe F, and steam-pipe G, substantially as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HARVEY S. GROVES.

Witnesses:

J. H. EAMES,  
D. C. ABEL.