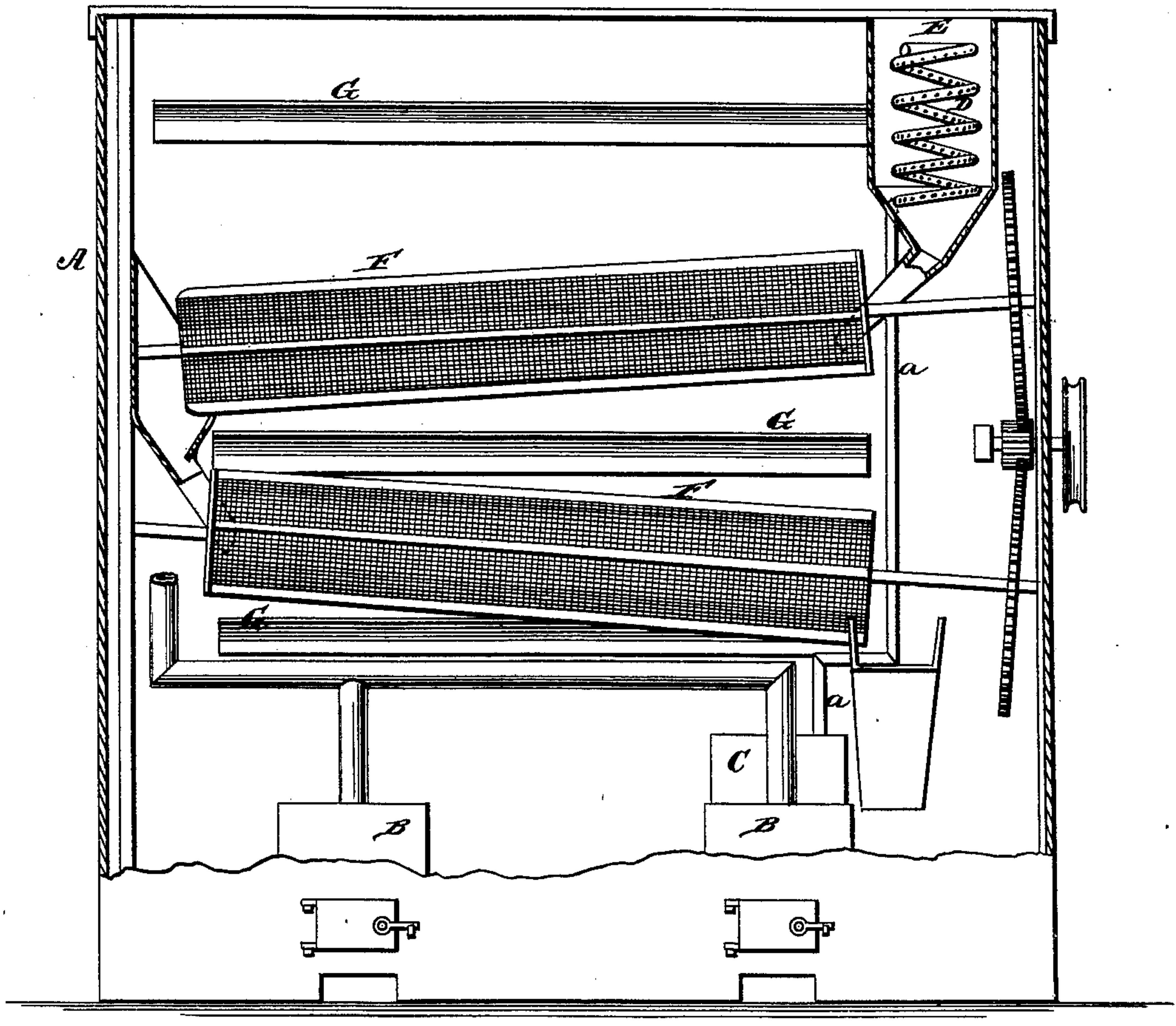


T. BROWN.
Grain-Drier.

No. 217,986.

Patented July 29, 1879.



WITNESSES
Robert Everett
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UNITED STATES PATENT OFFICE.

THOMAS BROWN, OF CEDAR RAPIDS, IOWA.

IMPROVEMENT IN GRAIN-DRIERS.

Specification forming part of Letters Patent No. **217,986**, dated July 29, 1879; application filed June 27, 1879.

To all whom it may concern:

Be it known that I, THOMAS BROWN, of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and valuable Improvement in Grain-Driers; 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 drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a vertical central section of my grain-drier.

This invention has relation to grain-driers; and it consists in the improvements in the construction of the same, hereinafter fully described, and particularly pointed out in the claims.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents the shell or casing of my grain-drier, in which are furnaces B B, one or more, with suitable smoke-pipes leading therefrom. One of these furnaces is provided with a boiler, C, from which a steam-pipe, *a*, extends upward and forms a coil, D, within a hopper or receiving-chamber, E.

F F represent inclined cylinders of perforated sheet metal, wire-cloth, or other suitable material. These cylinders are arranged in inclined positions alternately in opposite directions, and are rotated by any suitable or convenient means.

The top cylinder, F, receives the grain from the hopper or chamber E at its upper end, and from the lower end of this cylinder the grain passes into the upper end of the next cylinder, and so on until the grain is finally discharged from the lower end of the bottom cylinder.

The coil D is perforated with numerous

small holes, so as to cause the steam to escape downward in numerous small jets.

The grain being fed into the hopper E—which, in fact, becomes a steamer—is there subjected to the action of the jets of steam, thus heating and sweating the grain; then as it passes through the revolving cylinders it becomes dried by the action of the hot air radiated from the furnaces.

To the sides of the casing A are attached deflectors G, to conduct the hot air close to said cylinders.

In the roof or top of the casing there will be suitable ventilators for regulating the heat and allowing the moist air to escape.

I am aware that grain-driers have been constructed in which the grain has been first steamed and dampened, and afterward dried by being subjected to currents of hot air before leaving the machine. I do not claim, broadly, a machine of this class; but

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

1. In a grain-drier, the combination of a steamer, E D, and two or more revolving cylinders, through all of which the grain is caused to pass, whereby it becomes subjected first to the direct action of steam and then to hot air from furnaces B B, as set forth.

2. The combination of the casing A, furnaces B B, boiler C, with steam-pipe *a*, perforated coil D, hopper E, and rotating cylinders F, all constructed substantially as and for the purpose set forth.

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

THOMAS BROWN.

Witnesses:

JOS. F. SWAB,
RICH'D. M. LOVELL.