J. CARSON.
Agricultural Boiler.

No. 196,112. Patented Oct. 16, 1877.

Fig. 1.

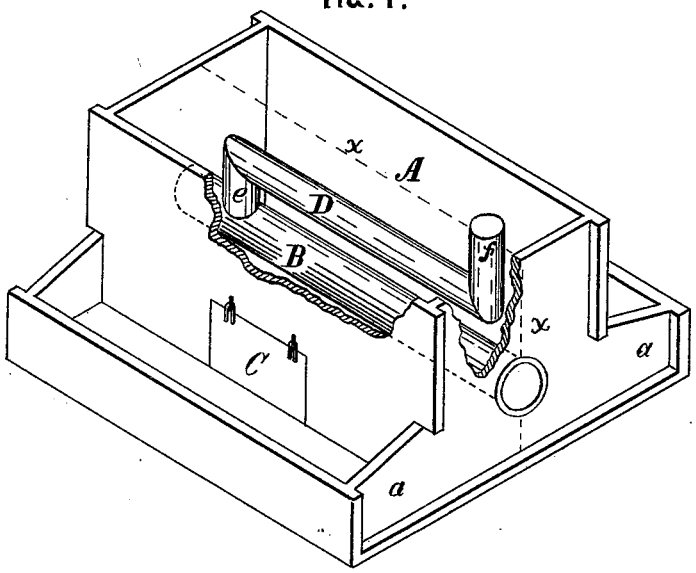
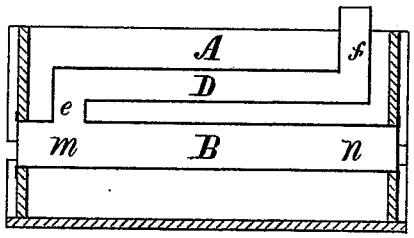


Fig. 2.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN CARSON, OF JERSEYVILLE, ILLINOIS.

IMPROVEMENT IN AGRICULTURAL BOILERS.

Specification forming part of Letters Patent No. **196,112**, dated October 16, 1877; application filed February 19, 1877.

To all whom it may concern:

Be it known that I, JOHN CARSON, of Jerseyville, in the county of Jersey and State of Illinois, have invented a new and Improved Stock-Feed Boiler; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to an improvement in stock-feed boilers; and consists in a novel and very effective disposition of the furnace and heating-flues in the boiler, whereby a small body of fire is, in consequence of the strong draft and very perfect combustion of the gases secured by the within-described arrangement of double fires, rendered more effective than heretofore in this class of boilers. Further, the device has the advantage of being very simple in construction, and consequently inexpensive. It is also well adapted to be moved about without injury, the furnace and flues being all contained within the boiler.

In the drawing, Figure 1 is a perspective view of the boiler, the top being removed, and a part of the side and end broken away to exhibit the interior arrangement of the flues and furnace. Fig. 2 is a sectional view of the same, taken in the line *x x*, Fig. 1.

In the drawing, A represents a rectangular boiler, provided with side troughs *a a*, the latter having communication with the boiler, when required, by means of the doors C. In the lower part of each end of the boiler is a circular aperture, in which is inserted a strong iron tube, B, which constitutes the furnace, and extends from end to end of the boiler, and is made water-tight by means of flanges secured to the outside of the ends, the furnace lying horizontally a few inches above the bottom. From the upper side of the furnace B, and near the end *m*, Fig. 2, rises a branch flue, *e*, which, by means of an elbow, leads into a horizontal return-flue, D, and the latter, by a second elbow, *d*, into a vertical smoke-pipe, *f*. As this boiler is to be heated only by wood, no grates are required.

The manner of operating the device is as follows: The side doors C being securely closed and made water-tight, and the boiler being filled with water and feed, a small fire is first kindled in the end *m* of the furnace. This fire being immediately under the vertical flue *e*, a strong draft is created. A larger fire is then kindled in the opposite end, *n*, which, by reason of the draft produced and maintained by the first fire, burns with more than ordinary vigor, thereby considerably hastening the operation of raising the water to the boiling-point.

A further advantage attending the employment of a fire in the end *m* of the furnace is, that the unconsumed gases from the larger fire in the opposite end must, in their effort to escape, pass over the small fire, and are consequently nearly wholly consumed, and the heat evolved utilized in the return-flue D.

To empty the boiler, the side doors are opened, and its contents allowed to flow into the two side troughs, from which it may be conveniently removed when cool.

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

A stock-feed boiler provided with a horizontal tubular furnace, B, adapted for firing at both ends, and provided with a vertical outlet for smoke immediately above the fire in the end *m*, these parts being contained wholly within the walls of the boiler, substantially as and for the purpose described.

This specification signed and witnessed this 12th day of February, 1877.

his
JOHN F CARSON.
mark.

Witnesses:
HENRY D. FIELD,
CHAS. H. GILLHAM.