J. E. CRANE.

Wool Dryer.

No. 51,562. Patented Dec. 19, 1865.

Fig. 2.

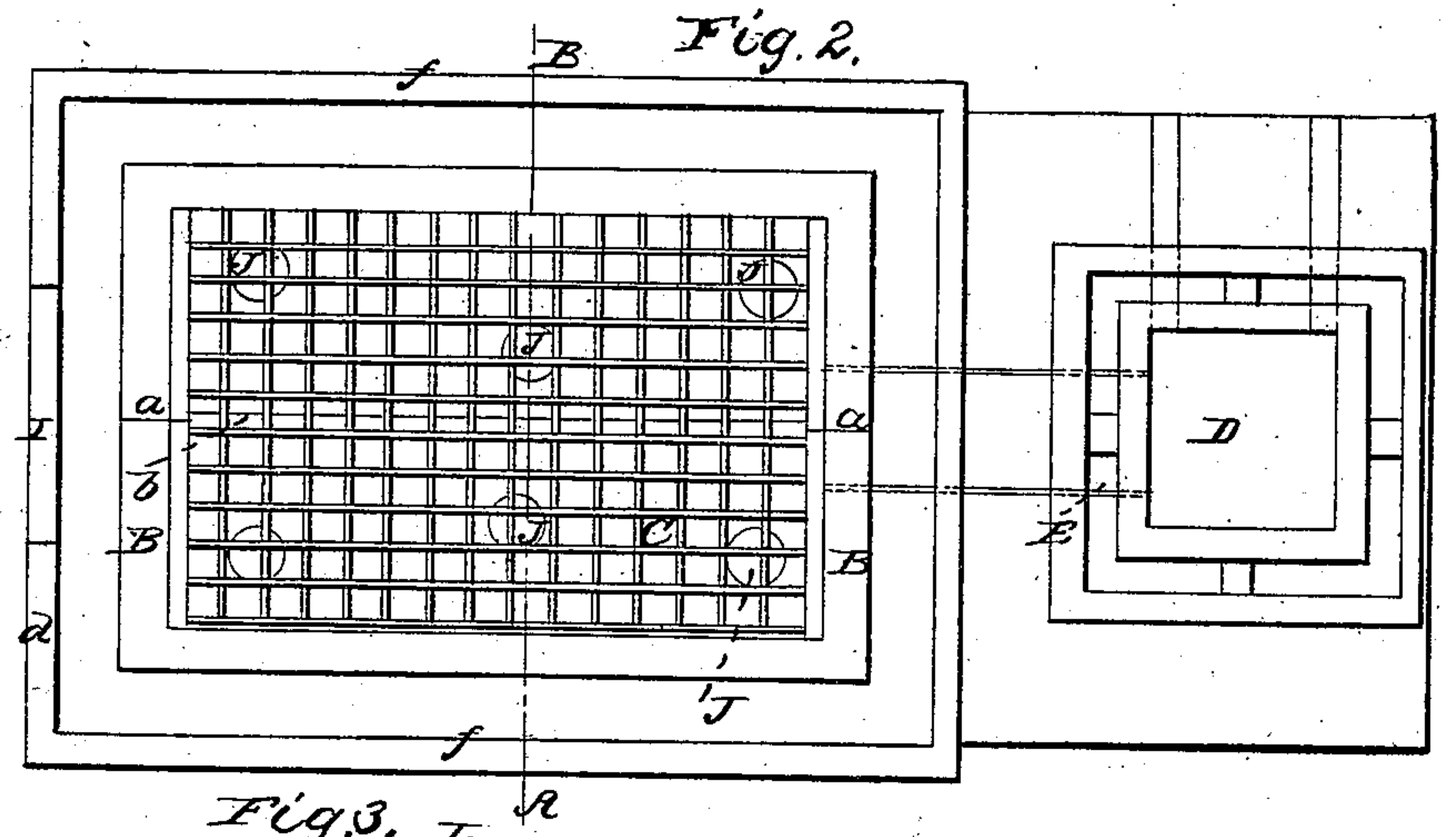

Fig. 3.

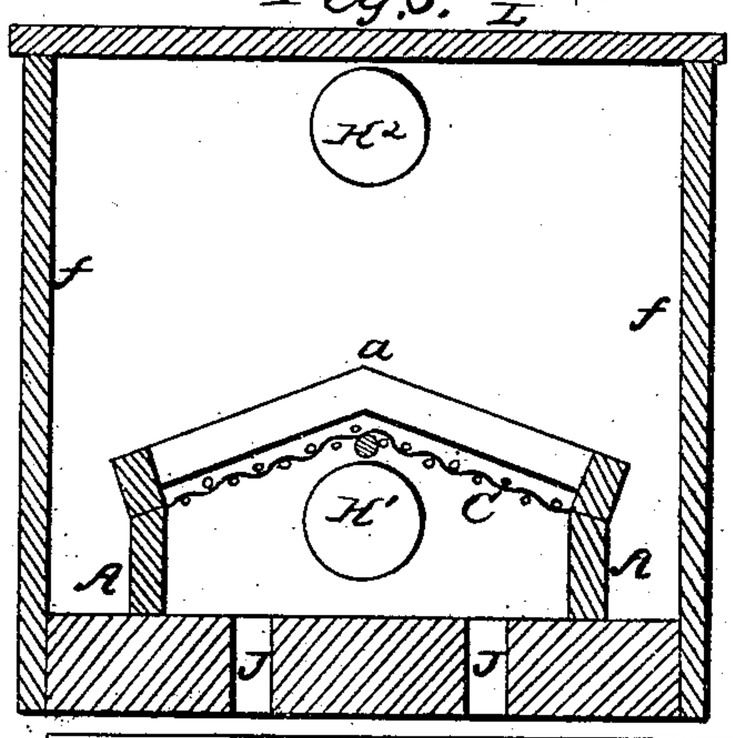

Fig. 1.

Witnesses:
D. S. Whitney
Dexter Lymond

Inventor:
John E. Crane

UNITED STATES PATENT OFFICE.

JOHN E. CRANE, OF LOWELL, MASSACHUSETTS.

WOOL-DRIER.

Specification forming part of Letters Patent No. **51,562,** dated December 19, 1865.

To all whom it may concern:

Be it known that I, JOHN E. CRANE, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful improvement in the machines or apparatus which are used in conjunction with a current or blast of air for the purpose of drying wool or other fibrous substance; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a vertical central section of my invention. Fig. 2 is a top view of the same after the top L has been removed. Fig. 3 is a cross-section of Fig. 2 on the line A B.

Similar letters of reference indicate corresponding parts.

The nature of my invention consists in connecting a machine or apparatus which is used for drying wool with the flue of a high chimney, and in so arranging the said apparatus that the draft of the chimney will draw atmospheric air through the wool, and carry off the water dampness it contains.

I construct my wool-drier in any convenient form, and generally from eight to ten feet wide, and from twelve to twenty feet long. The sides A A are from twenty-four to thirty inches high, and the ends B B are about four feet high at the center, *a*, and of the same height of the sides where the sides and ends join together. The top girt, *b*, extends along between the ends B B, about six inches below the top at the center, *a*, and forms the top support for the screen C, which is arranged over the girt *b*, and drawn downward to the sides A A, and outward to the ends B B, and is fastened thereto about six inches below the top edges of the said sides and ends. Other supports may be placed between the girt *b* and the sides A A to hold the screen C up in its place.

I place my wool-drier within a suitable inclosure, situated at any convenient distance from a high chimney, and by a tube or tubes, H′ H², or other convenient air passage or passages, I connect the wool-drier, or the inclosure containing the same, with the inner flue, D, or the outer flue, E, of the chimney, or with both flues, D and E, if desired. A proper flue or smoke-passage extends from beneath the boiler or boilers to the inner flue, D, of the chimney, through which heat from the fire which is used for generating steam, or for other purposes, passes into and upward through the flue D, causing a strong and powerful draft to the chimney, by which means a strong current of air is drawn upward or downward through the screen and the wool, carrying off all wet or dampness from the wool without the aid of a fan, or its mechanical equivalent, which is the object of this invention.

When dry air is drawn downward through the wool the air is admitted into the inclosure at or near the top, or through an opening, I, made in the top part of the end *d* of the inclosure, or through either of the sides *f f* of the same, and passes downward through the wool and the screen C, and off through the passage H′ into the flue or flues of the chimney, as indicated by arrows 1, in which case the passage H², leading to the chimney, and the openings J through the floor K are closed, and when dry air is drawn upward to dry the wool the air is admitted through openings J beneath the screen, and passes upward through the screen C, and off through passage H², into the flue or flues of the chimney, as indicated by arrows 2, in which case the passage H′ leading to the chimney, and the opening I in the top of the end *d* of the inclosure, are dispensed with.

My wool-drier may be placed over a steam boiler or boilers, and the waste heat over the same used for drying wool, by drawing the heated air upward through the openings J and the screen C, and out at the passage H².

By placing the wool-drier on a level with the floor of the boiler-room heated air may be drawn through the opening I into the inclosure, downward through the screen C, and out through the passage H′.

I claim—

To dry wool or other fibrous substance by atmospheric air drawn through the wool by means of the draft of a high chimney, substantially as specified.

JOHN E. CRANE.

In presence of—
JOHN SHOREY,
J. S. WHITNEY.