

A. J. TEWKSBURY.

Tray, or Screen for Coal-Gas Purifiers.

No. 161,296.

Patented March 23, 1875.

Fig. 1. C

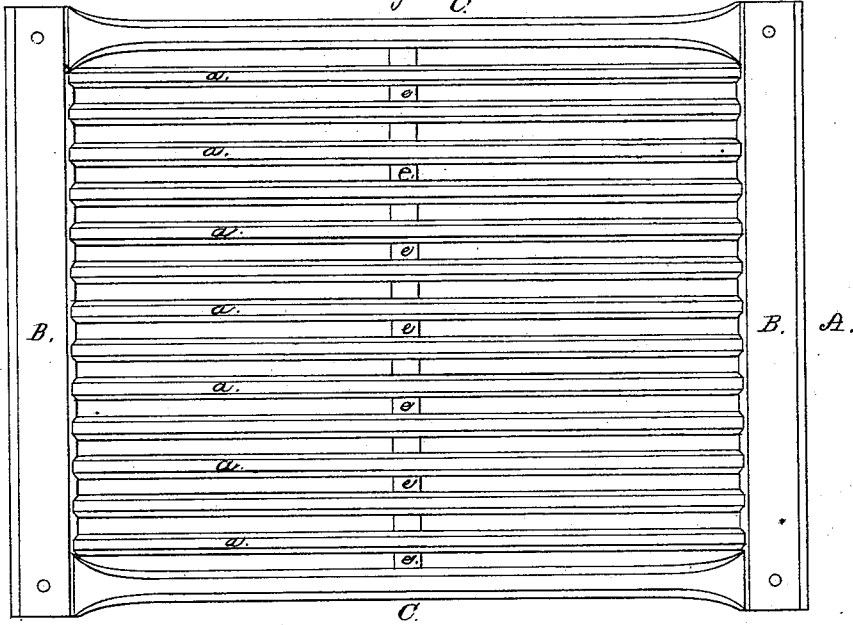


Fig. 2.

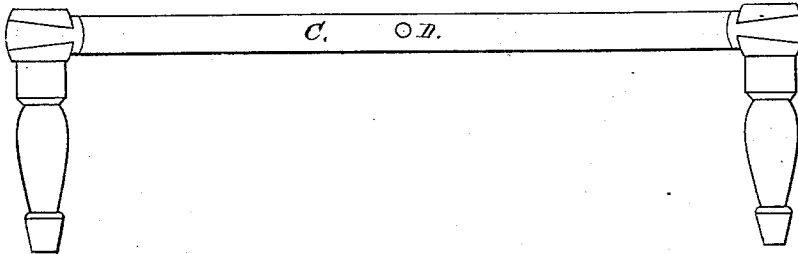


Fig. 3.

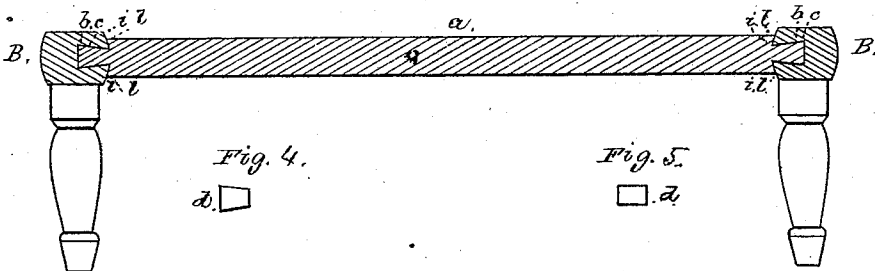


Fig. 4.



Fig. 5.



Fig. 6.



Witnesses

Geo Gray
F. L. Hale

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UNITED STATES PATENT OFFICE.

ANDREW J. TEWKSBURY, OF HAVERHILL, MASSACHUSETTS.

IMPROVEMENT IN TRAYS OR SCREENS FOR COAL-GAS PURIFIERS.

Specification forming part of Letters Patent No. **161,296**, dated March 23, 1875; application filed January 8, 1875.

To all whom it may concern:

Be it known that I, ANDREW J. TEWKSBURY, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Trays or Screens for Coal-Gas Purifiers; 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 which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

In the said drawing, Figure 1 is a top view, Fig. 2 a side view, and Fig. 3 a longitudinal and vertical section, of a tray constructed in accordance with my invention. Figs. 4 and 5 are, respectively, side and top views of one of the end spacing-blocks. Fig. 6 is a transverse section of one of the slats.

The object of my invention is to provide a strong, effective, and durable tray to be used in gas-purifying boxes—one which shall not only afford a larger area of purifying-surface, but better retain the normal status of the parts than devices of this character as ordinarily constructed.

In the said drawing, A denotes the frame of the tray, the same consisting of two end bars, B B, and two side bars, C C, the whole being dovetailed and pinned together at their ends. *a a*, &c., are the series of slats extending longitudinally of the frame. Each of the end bars B has formed in its inner face, and longitudinally thereof, a dovetailed groove, *b*, which extends the entire length of the bar. Each of the slats has a corresponding dovetail, *c*, made on each of its outer ends, and by which it is connected with the end bars. Between the ends of each two of the slats *a a* a dovetailed spacing-block, *d*, is arranged. D is a rod, which extends transversely across the frame, and through the middle of the slats, and is connected with the side bars C C, an annular button or spacing-block, *e*, being arranged on the rod, and between each two of the slats. Each of the end bars is formed on its inner face with inclined shoulders *i i*, and each end of the slats made with corresponding inclined shoulders *l l*, the object of such

shoulders *i* and *l* being to better support the slat under its superincumbent load, and not bring the whole strain thereof upon the tenons of the slat, as would be the case were the shoulders made rectangular in the ordinary manner. Each of the side bars C is hollowed out on its inner vertical face, so as to form an opening or space equal to the distance between the slats. Each of such bars is also hollowed out on its outer vertical face, of a width equal to one-half of such distance, so that when two trays are placed side by side in the purifying-box such shall present an opening between the bars corresponding with that between the slats.

In putting together my improved tray the two end bars B are first connected to one of the side bars C, and the middle transverse rod D next connected to the side bar. Next, one of the slats has its dovetailed ends inserted in the correspondingly-shaped grooves in the end bars, and with the end of the rod D projecting into the socket in the slat. The latter is next moved forward until it abuts against the inner face of the side bar. A dovetailed spacing-block is next placed in the outer end of each of the dovetailed grooves in the end bars, and an annular button or block put upon the middle bar or rod, and each pushed forward until it impinges against the located slat, such operation being repeated until the frame is filled, when the remaining side bar is next applied to the rod and end bars, and secured by wooden pins. Each of the slats *a* has its top and bottom edges beveled on each of its sides, the upper beveling being for the double purpose of enabling the slats to better support the lime and allow a freer egress of the gas, and the under beveling serving to give the ascending currents of gas a more ready access to the lime.

The tray thus constructed may be used in the ordinary purifying-box by resting on the ledges thereof in the usual manner; but I prefer to provide the same with legs E E, &c., whereby the ledges may be dispensed with, the trays being arranged in a series, one above another, the legs of one resting on the top of the frame of the one beneath it. By thus dovetailing the frame together, and forming the end bars with dovetail grooves, and the

end of the slats with corresponding dovetail tenons, and interposing between the ends of the slats dovetail spacing-blocks, as described, a tray of great strength and durability is attained, the dovetailing of the slats preventing the end bars from being warped and drawn away from the slats, as often occurs where the bars and slats are connected by round tenons and mortises.

Having described my invention, what I claim is—

1. In a tray for gas-purifier, the bars B B, formed with dovetailed grooves *b*, the series of slats *a*, having their ends formed with corresponding dovetailed tenons *c*, and the spacing-blocks *d*, arranged and combined together in manner as shown and described.

2. In a tray for gas-purifying boxes, the bars C C, having their outer vertical faces formed concave, as and for the purpose set forth.

3. In a tray for gas-purifying boxes, substantially as described, the end bars B, formed with shoulders *i i*, in combination with the slats, formed with inclined shoulders *l l*, as and for the purpose set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

ANDREW J. TEWKSBURY.

Witnesses:

F. P. HALE,
F. C. HALE.