

**J. L. CHEESMAN.**  
**Gas Purifier-Trays or Gratings.**

No. 139,702.

Patented June 10, 1873.

Fig. 1.

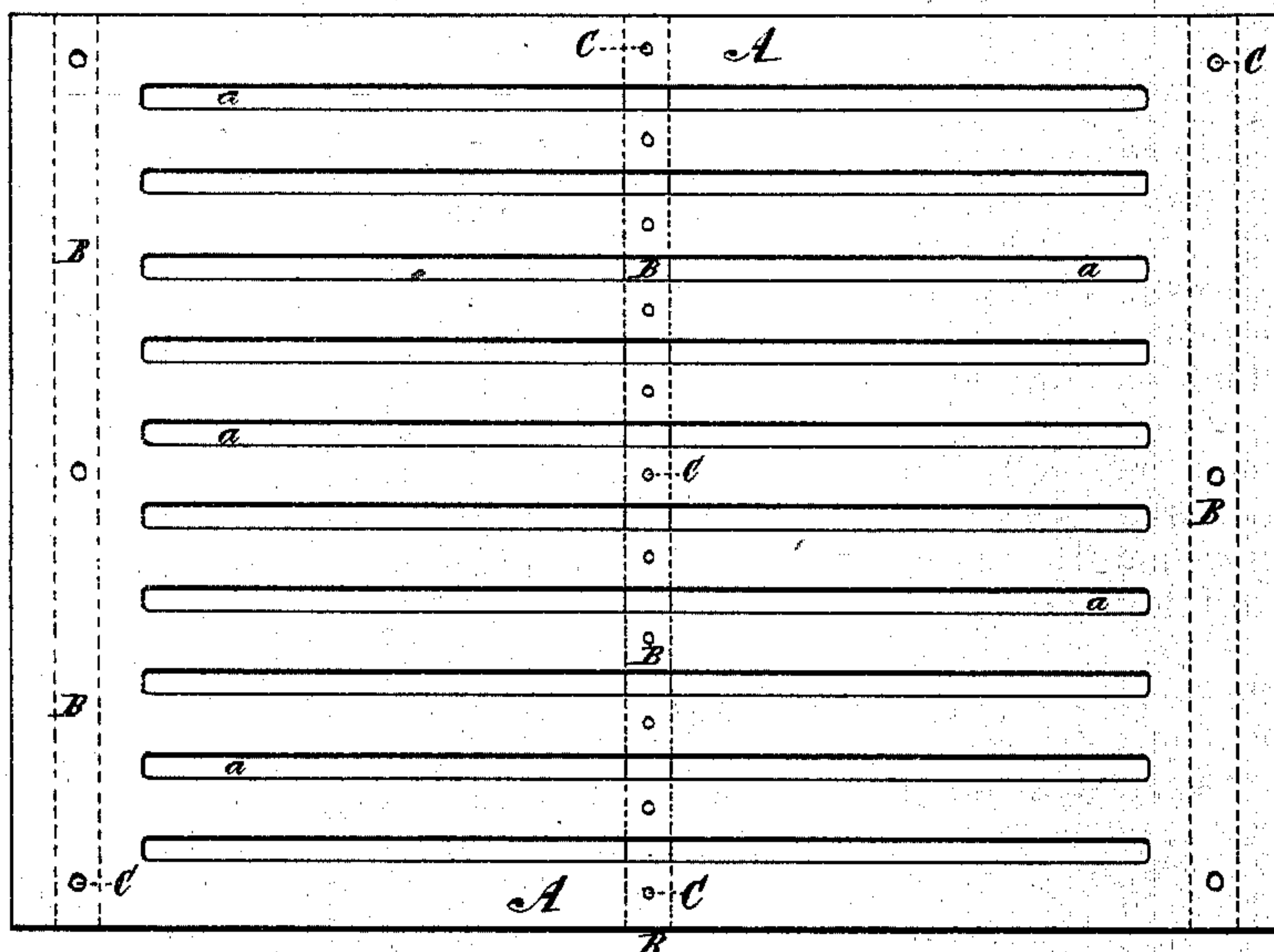


Fig. 2.

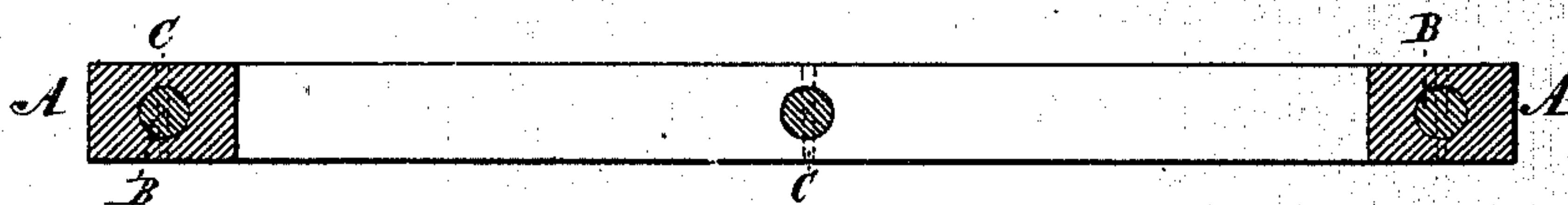
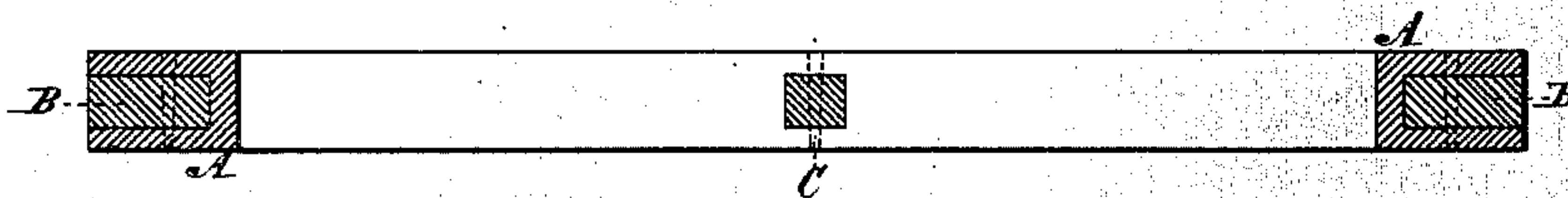


Fig. 3.



Witnesses.

*Alf. Westbrook*

*Wm C Dey*

Inventor.

*John L Cheesman*  
*by his atty J. L. Cheesman*



# UNITED STATES PATENT OFFICE.

JOHN L. CHEESMAN, OF NEW YORK, N. Y.

## IMPROVEMENT IN GAS-PURIFIER TRAYS OR GRATINGS.

Specification forming part of Letters Patent No. **139,702**, dated June 10, 1873; application filed May 23, 1873.

*To all whom it may concern:*

Be it known that I, JOHN L. CHEESMAN, of New York city, in the State of New York, have invented certain new and useful Improvements in the Construction of Trays for Gas-Purifiers, of which the following is a specification:

The trays, sometimes called sieves, in common use, are gratings formed by cutting parallel slots in short lengths of pine boards extending longitudinally nearly from one end to the other. It is important, for several reasons, that the boards be wide so as to give a large number of slats in a single piece. To strengthen the tray against warping and splitting cross-pieces are nailed across on the under side, at each end.

The action of the lime and gases with the heat and wet severely tries the material, and is particularly destructive on the nails employed to fasten the cross-cleats. I have devised a construction which overcomes the difficulties and allows the cross-pieces to be confined by very slight fastenings. The fastenings may be pegs of wood or slight zinc nails, which are unaffected by the chemicals.

Instead of attaching cleats on either face, I insert transverse pieces of hard wood through the body of the tray. I insert one such transverse strengthening at each end, and one or more across the tray, near the middle. I hold the end pieces against displacement by one or more slight pegs. I hold the central cross-piece or cross-pieces, and also hold the several slats in their proper relative positions, by putting a peg or nail into the cross-piece through each slat.

The accompanying drawings form a part of this specification.

Figure 1 is a plan view; and Figs. 2 and 3 are transverse sections, showing two forms. Fig. 2 corresponds to Fig. 1. Fig. 3 is a little different.

Similar letters of reference indicate corresponding parts in all the figures.

A is the body of a pine board, and *a a*, &c., are the longitudinal slots formed therein by suitable machinery in the ordinary manner; B B B are cross-pieces of oak or other hard

wood, fitted tightly in holes produced through the board in the positions represented. The central piece extends crosswise through all the spaces *a*. Pegs or nails C, driven through the pine into the oak, hold the oak pieces against displacement. The pegs driven into the central piece A not only hold the same against displacement, but also hold each of the slats or gratings at exactly the proper distance from its neighbors.

Figure 2 shows the transverse bars B as round. Fig. 3 shows them as of rectangular section.

The improved trays may be handled with all the roughness of the ordinary ones, and no amount of exposure to destructive influences will affect the efficiency of the transverse stiffening supports. Slender nails of zinc, which would be too weak to afford any considerable support applied directly to strips on the outside, when driven into these strips are sufficient to keep them and the several slats in place. Zinc is unaffected by the chemical agencies; so also would be pins of hard wood.

I esteem it particularly important that the use of iron, as fastenings, shall be dispensed with, because of the liability of iron to rapid destruction by corrosion. Iron might, when applied as a mere fastening to prevent the end movements of my transverse pieces, B, serve a useful purpose for a long period, but I greatly prefer small nails of zinc.

As constructed the tray forms an efficient and highly durable article, and presents nothing subject to corrosion.

I claim as my invention—

The improved tray described, composed of the grated board A *a*, with the transverse pieces B inserted through holes in the body of the same, and with the incorrodible pegs or nails C, arranged as herein set forth.

In testimony whereof I have hereunto set my hand this 20th day of May, 1873, in the presence of two subscribing witnesses.

JOHN L. CHEESMAN.

Witnesses:

WM. C. DEY,  
CHAS. ROETTIG.