F. O. MATTHIESSEN & A. A. GOUBERT.

DEVICES FOR COLLECTING AND SAVING THE PARTICLES OF SUGAR RISING WITH THE STEAM FROM VACUUM PANS.

No. 191,537. Patented June 5, 1877.

Figure 1.

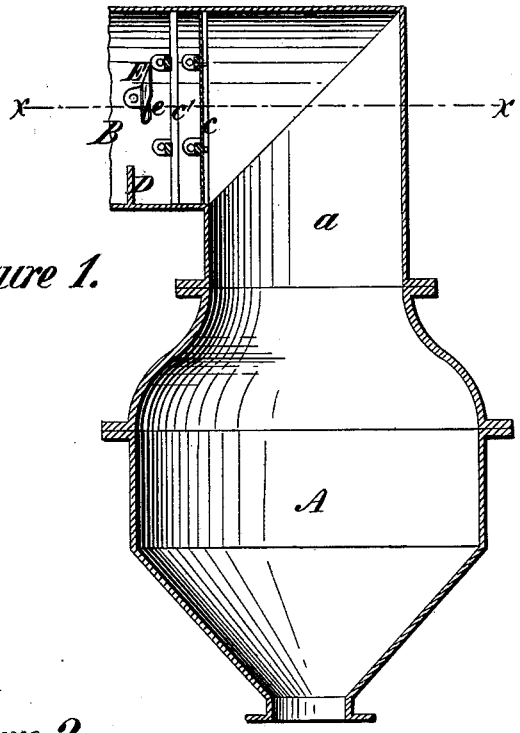


Figure 2.

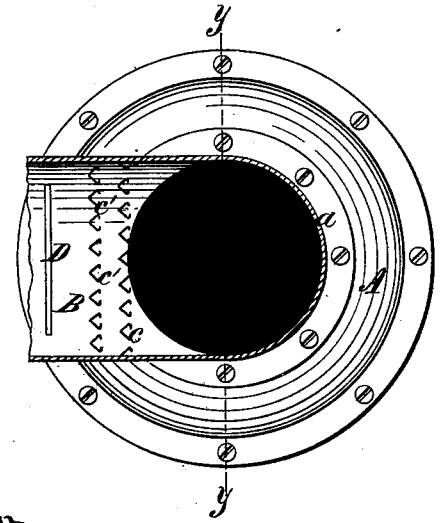
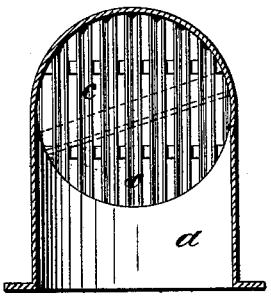


Figure 3.



Witnesses:
Edw^d Paxson
Geo. H. Miatt

Inventors:
Franz O. Matthiessen
and
Auguste A. Goubert
Per Edw. E. Linsley
their Atty.

UNITED STATES PATENT OFFICE.

FRANZ O. MATTHIESSEN, OF IRVINGTON, AND AUGUSTE A. GOUBERT, OF NEW YORK, N. Y., ASSIGNORS TO SAID MATTHIESSEN.

IMPROVEMENT IN DEVICES FOR COLLECTING AND SAVING THE PARTICLES OF SUGAR RISING WITH THE STEAM FROM VACUUM-PANS.

Specification forming part of Letters Patent No. **191,537**, dated June 5, 1877; application filed March 15, 1877.

To all whom it may concern:

Be it known that we, FRANZ O. MATTHIESSEN, of Irvington, New York, and AUGUSTE A. GOUBERT, of the city and State of New York, have invented an Improvement in Vacuum-Pans, of which the following is a specification:

Our improvement relates to that class of vacuum-pans which are provided with a goose-neck or chamber extending laterally from the upper part of the pan; and the object of our improvement is to prevent the loss of the sugar-liquor which boils over from the vacuum-pan.

Our invention consists in erecting in the goose-neck two or more series of narrow deflectors, arranged in vertical planes across the goose-neck.

Our invention includes a peculiar formation of the deflectors, which consists in providing them with inwardly-curved edges, as and for the purpose hereinafter described.

The deflectors arranged in the goose-neck present surfaces against which fine particles or drops of sugar-liquor thrown from the vacuum-pan are projected, while the steam rebounds from the deflectors, and makes its way onward through the spaces between the deflectors. The drops of sugar-liquor adhere slightly to the surfaces of the deflectors, and, under the influence of their own gravity, fall to the bottom of the goose-neck, and from thence run back into the sugar-liquor in the vacuum-pan.

The accompanying drawings are as follows:

Figure 1 is a central vertical section of a vacuum-pan, and a portion of the goose-neck. Fig. 2 is a horizontal section through the line *x x* on Fig. 1. Fig. 3 is a transverse vertical section of the goose-neck, and the upper portion of the neck of the vacuum-pan, through the line *y y* on Fig. 2.

No means for heating the vacuum-pan are shown, as steam-pipes and other devices for that purpose are well known and in common use.

The drawings represent a vacuum-pan, A, of ordinary form, with its neck *a* joined to the lateral chamber or goose-neck B. Arranged in parallel vertical planes across the goose-neck are two series of V-shaped deflectors, *c* and *c'*. It will be seen that the second series of deflectors *c'* are arranged immediately behind the spaces between the front series of deflectors *c*. It will also be observed that the edges of the deflectors are curved inwardly, as shown in section in Fig. 2.

The deflectors may be made of wood, sheet metal, or any other suitable material. At their lower ends they should be in close contact with the shell of the goose-neck, to enable them to act efficiently in conducting to the shell of the goose-neck the sugar-liquor which collects upon them.

Behind the second series of deflectors *c'* there is erected, across the bottom of the goose-neck, the vertical wall D, the object of which is to hold back any sugar-liquor which may fall to the bottom of the goose-neck, and which might otherwise run along the bottom of the goose-neck toward the condenser.

The deflectors, instead of standing vertically, may be set diagonally across the goose-neck, one above another. In this case, instead of being V-shaped, the deflector is a flat strip, set with its upper edge inclined toward the neck of the vacuum-pan, and having its lower edge curved upward, to form a trough or gutter for carrying to the side of the goose-neck drops of sugar-liquor caught by the deflector. A part of one such deflector is shown in Fig. 1, in which E is the upper end of the deflector, where it is bolted to the shell of the goose-neck, and *e* is a section of it where it is cut by the section-line of the drawing. This alternative mode of arranging the deflectors is also indicated in dotted lines in Fig. 3.

In operation, drops or fine particles of sugar-liquor carried along in the current of steam from the vacuum-pan are caught upon the faces of the deflectors, and run down the deflectors by their own gravity into the bottom of the goose-neck, and from thence back into the vacuum-pan, while the steam makes its way onward through the interstices between the deflectors.

We claim as our invention—

1. In combination with the goose-neck of a

vacuum-pan, two or more series of deflectors, each of such deflectors having one or both of its edges curved, as shown, to form troughs or gutters, substantially as and for the purpose set forth.

2. The vertical wall D, extending transversely across the goose-neck, for the purpose of holding back liquor collected upon the bottom of the goose-neck, and thus preventing such liquor from flowing away from the vacuum-pan.

FRANZ O. MATTHIESSEN.
AUGUSTE A. GOUBERT.

Witnesses:
JOHN SHELBERG,
GEO. W. MIATT.