

**D. M. WESTON.**  
**Centrifugal-Machines.**

No. 149,553.

Patented April 7, 1874.

Fig 1

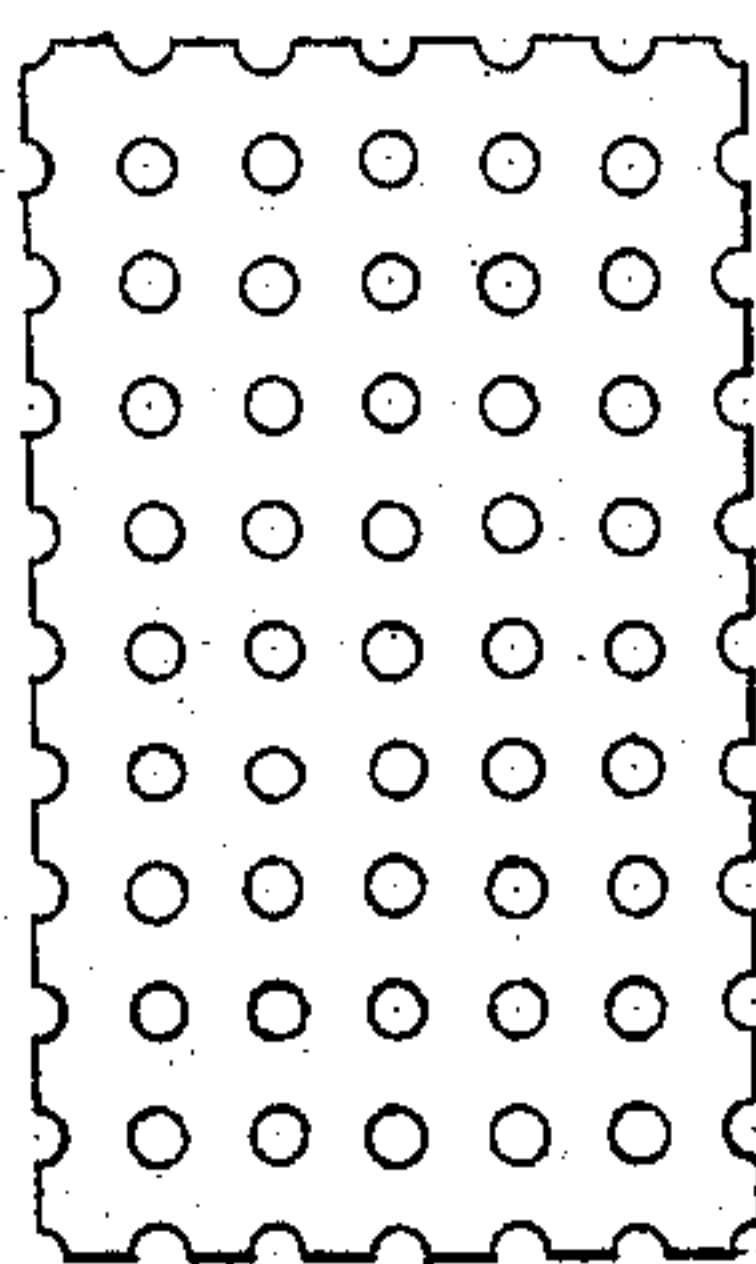


Fig 3



Fig 2

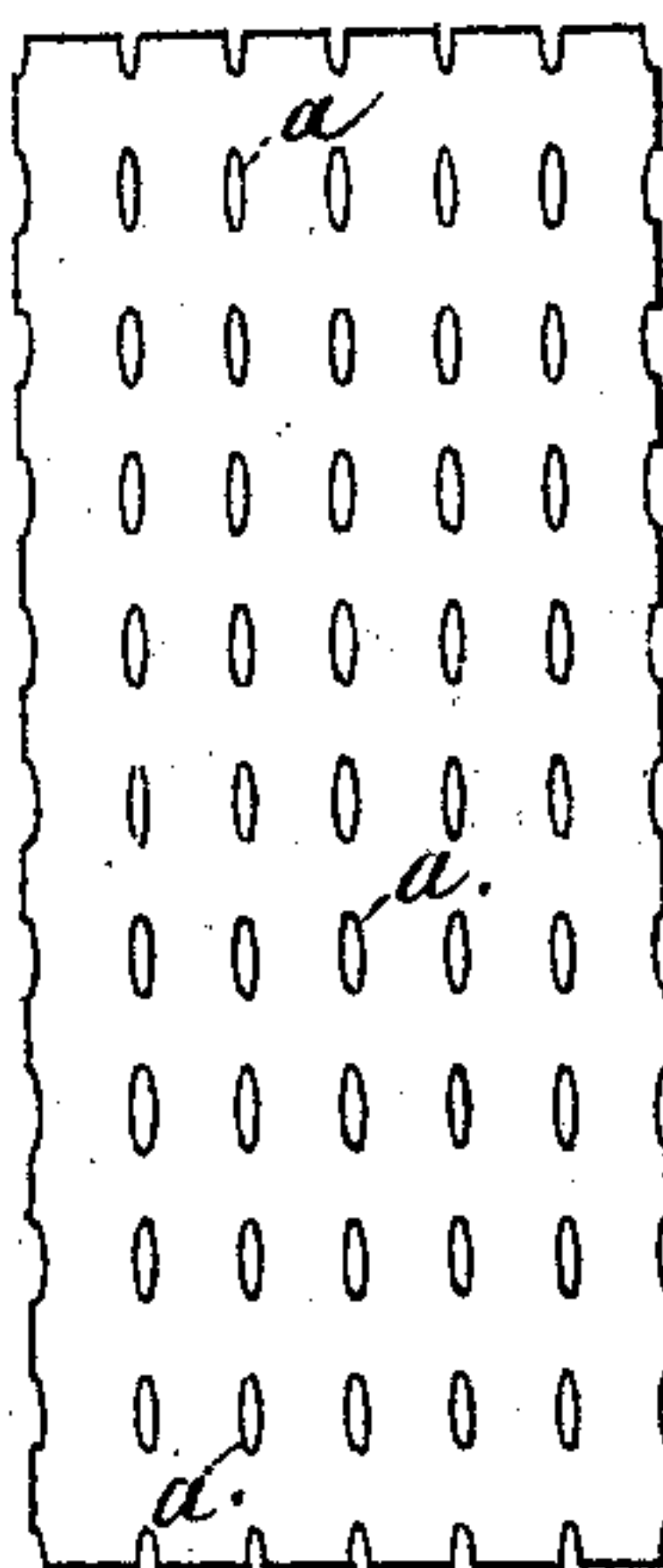


Fig 4



Witnesses

W. R. Odell.  
Geo. T. Smallwood Jr.

Inventor

David M. Weston  
by John J. Halsted  
his atty.

# UNITED STATES PATENT OFFICE.

DAVID M. WESTON, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. **149,553**, dated April 7, 1874; application filed March 9, 1874.

*To all whom it may concern:*

Be it known that I, DAVID M. WESTON, of Boston, Massachusetts, have invented an Improved Perforated Plate for Centrifugal Machines, &c., and process of making the same, of which the following is a specification:

My invention relates to an improved perforated plate, such as is adapted for the baskets or linings of the baskets of centrifugal machines used in the purging of sugar; and it consists in the method or process of manufacturing the same, and in the plate made by such process, as more particularly hereinafter described.

I take a sheet or plate of perforated metal, (a piece of which is shown in Figure 1 on an enlarged scale, the better to display the perforations,) and which has been perforated with small circular openings or punctures, the plate being of a thickness greater than is desired when finished, ready for use, and then, by any appropriate means or machine, "roll down" the plate to the required thickness, thus causing the narrowing of the punctures in the direction across the plate, and the elongation of the same in the direction of the length of the plate—that is, in the direction of the feed of the plate between the rolls. This operation results in converting each perforation into a narrow slot having parallel or nearly parallel sides and rounded ends, of the general form and character shown, also on an enlarged scale, at *a* in Fig. 2, the breadth of the slot being much less than that of the punctures from which it was reduced.

Figs. 3 and 4 are vertical sections of Figs. 1 and 2.

This rolling operation also hardens the plate by compacting its texture, thus rendering it more durable; and giving it greater strength and power of resistance. It also makes it smoother and more elastic, and gives a smooth

finish to the openings by reducing any burr or irregularity which may be left by the punching.

When used in centrifugal machines, these elongated slots make a better outlet for the escape of the sirup or other liquids, and serve a still higher purpose in retaining within the bucket or vessel the smallest crystals, thus causing a great saving of the crystallized matter and a corresponding economy in the manufacture. My process of manufacture also avoids the need of making the holes as small as they would need to be if not afterward to be reduced, and thus dispenses with the necessity of making and using very small and delicate punches and dies heretofore required for that purpose.

The amount of rolling required may, of course, vary with the thickness of the plate, the size of the original punctures, the desired fineness of the finished slot, and the degree of hardness required in the finished plate; but it is evident that the punch and die may, if preferred, be very materially larger than is customary, and the reduction and elongation may be to any extent desired to adapt the plate for the special use intended, such plates being adapted for many branches of art other than the manufacture of sugars.

I claim—

1. The metallic perforated plate described, having its perforations reduced from a circular to a narrowed and elongated or elliptical form, substantially as set forth.

2. The described process of making the plate, the same consisting in rolling a perforated plate, and thereby hardening the metal and partially closing the perforations.

DAVID M. WESTON.

Witnesses:

ARIEL C. WALL,  
A. G. W. CATES.