

(No Model.)

J. L. GEIER.

APPARATUS FOR CRYSTALLIZING TIN PLATES.

No. 322,056.

Patented July 14, 1885.

Fig. 1.

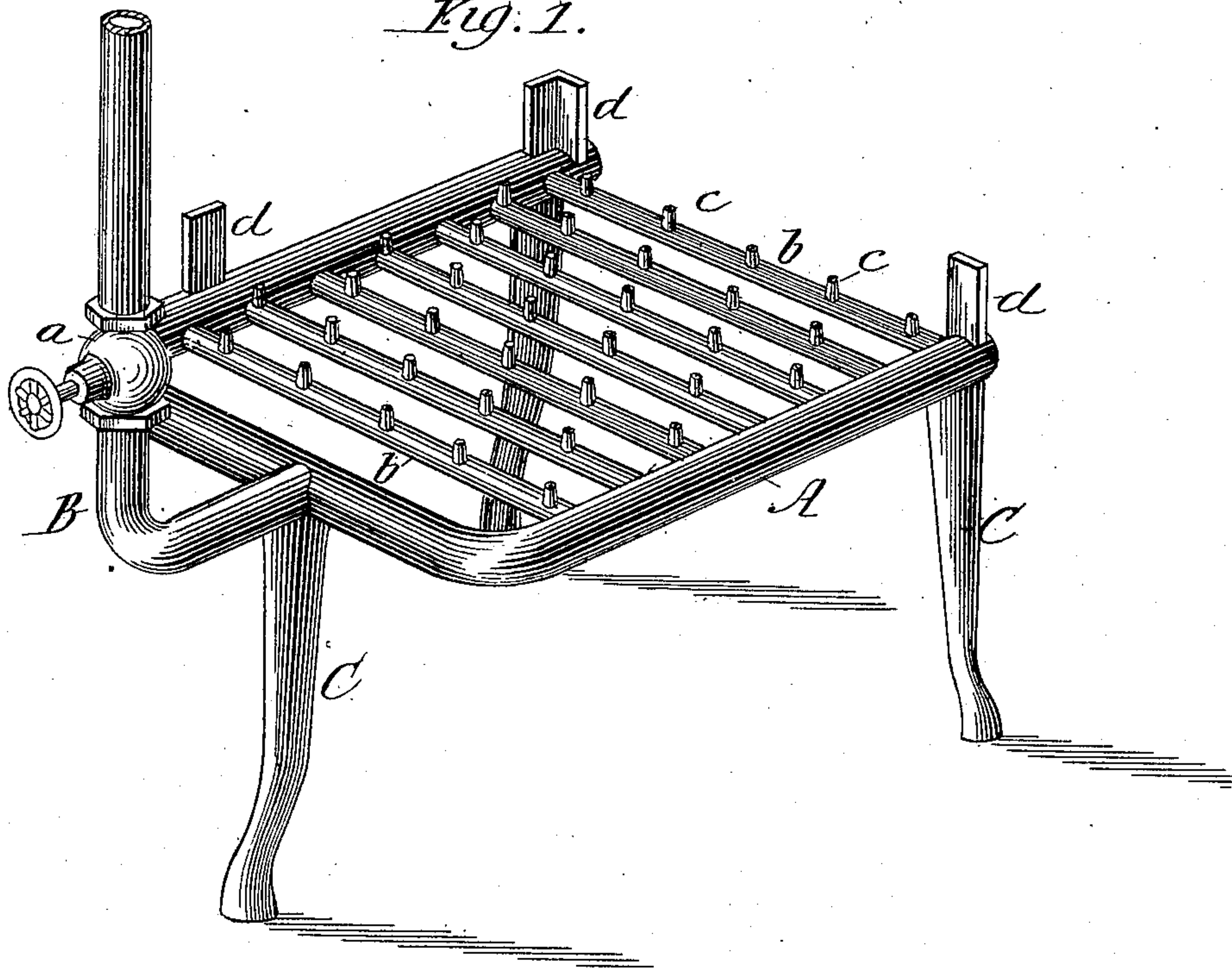


Fig. 2.

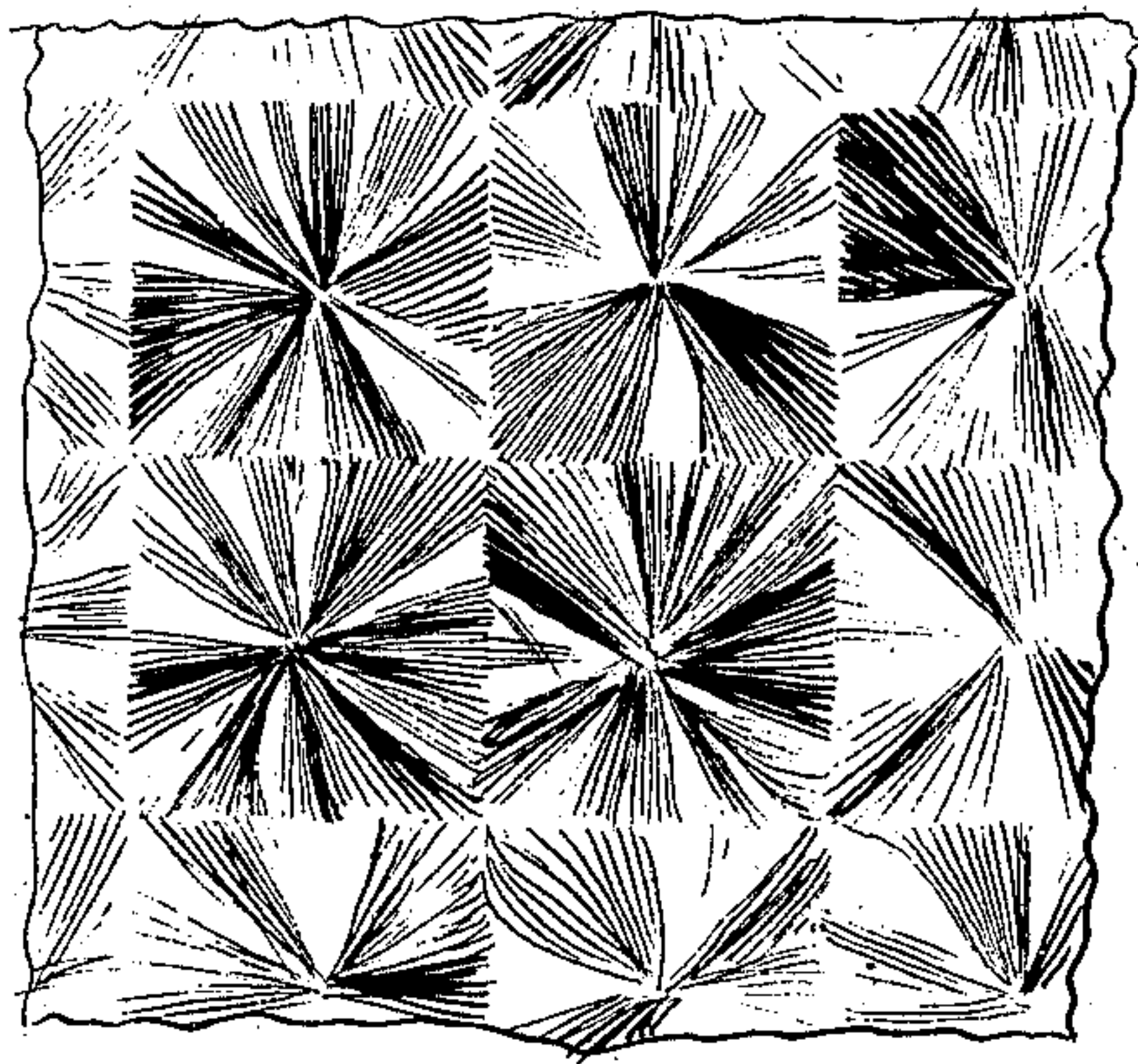
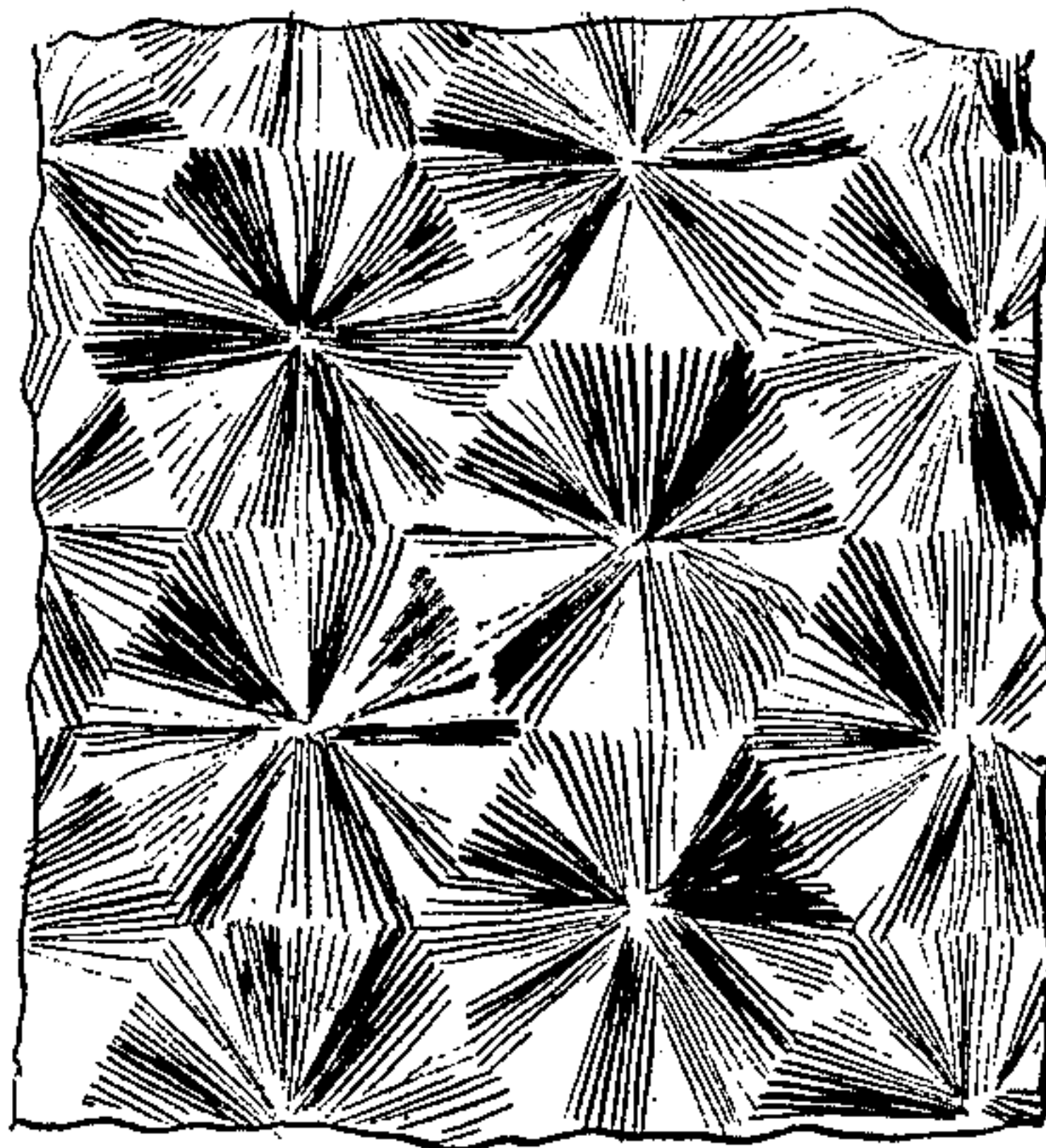


Fig. 3.



Witnesses:

Frank Blanchard
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UNITED STATES PATENT OFFICE.

JOHN LEO GEIER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HERMANN
RENDTORFF, OF SAME PLACE.

APPARATUS FOR CRYSTALLIZING TIN-PLATE.

SPECIFICATION forming part of Letters Patent No. 322,056, dated July 14, 1885.

Application filed March 17, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN LEO GEIER, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Process and Apparatus for Crystallizing Tin, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to an improved apparatus for crystallizing tin plates. The object it has in view is to obtain a simple apparatus, and one by the use of which the work may be satisfactorily done.

15 To the accomplishment of the above the invention consists of a frame formed with an open-work bottom formed of pipes and provided with nipples, through which the suitable agent is forced.

20 In the accompanying drawings, Figure 1 represents a perspective view of the cooling apparatus, and Figs. 2 and 3 represent figures or designs of crystallization as produced by my new process and apparatus.

25 In Fig. 1, A denotes a U bent pipe connected at its center with a supply-pipe, B, that is provided with a stop-valve, *a*. The parallel ends of pipe A are connected by a series of smaller transverse pipes, *b*, each of which has
30 tapped in its top side a series of small nipples, *c*. This pipe A is supported on legs C, and has guide or gage standards *d* to its top edges. The heated tin-plate being held against the guide-standards *d* and let down upon the
35 nipples *c*, the small jets of water or air issuing from these nipples *c* will cool the spots of the plate first touching, and then by degrees will cool the intermediate surfaces, and thus the desired figures will be formed, which are brought

out afterward by treating with acids. When 40 these nipples are arranged upon the cross-pipes on parallel lines at equal distance apart, the figures of crystallization will be squares of uniform size, as shown by Fig. 2, and when placed intermediate in alternate order the figures of crystallization will be hexagons, as 45 shown by Fig. 3, each figure in either case consisting of radial rays of different shade extending from the central point.

In place of pipes A and *b*, a flat reservoir 50 may be used with the nipples *c* tapped in its upper shell.

It will be readily understood that the nipples *c* can be arranged to produce upon the tin plates variously-shaped patterns, the beauty of 55 the device being that any number of plates thus treated on the same apparatus will have almost uniform designs of crystallization. The nipples *c* may also be connected with the supply chamber or pipes each by a rubber hose, 60 so as to enable the changing of positions of the nipples in a suitable frame for producing different designs.

What I claim is—

1. An apparatus for crystallizing tin, which 65 consists of a suitable frame and an open-work bottom formed of pipes provided on their upper faces with suitable nipples, as set forth.

2. In a tin-crystallizing apparatus, U-shaped pipe A, cross-pipes *b*, nipples *c*, mounted on 70 the latter, and suitable means for supplying water to the pipes, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN LEO GEIER.

Witnesses:

M. J. CLAGETT,
LOUIS NOLTING.