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GRAINING DEVICE.  
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919,439.

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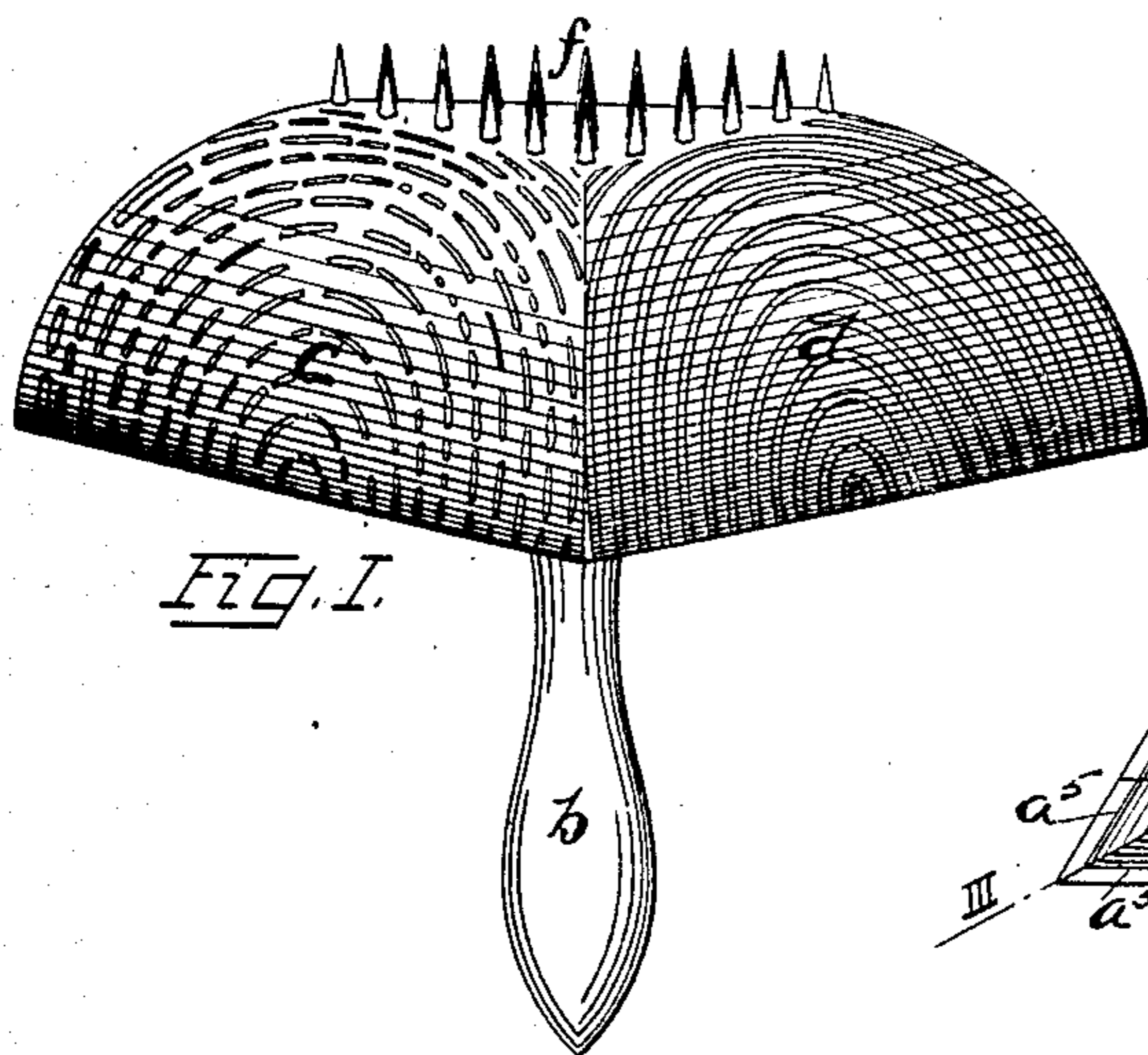


Fig. I.

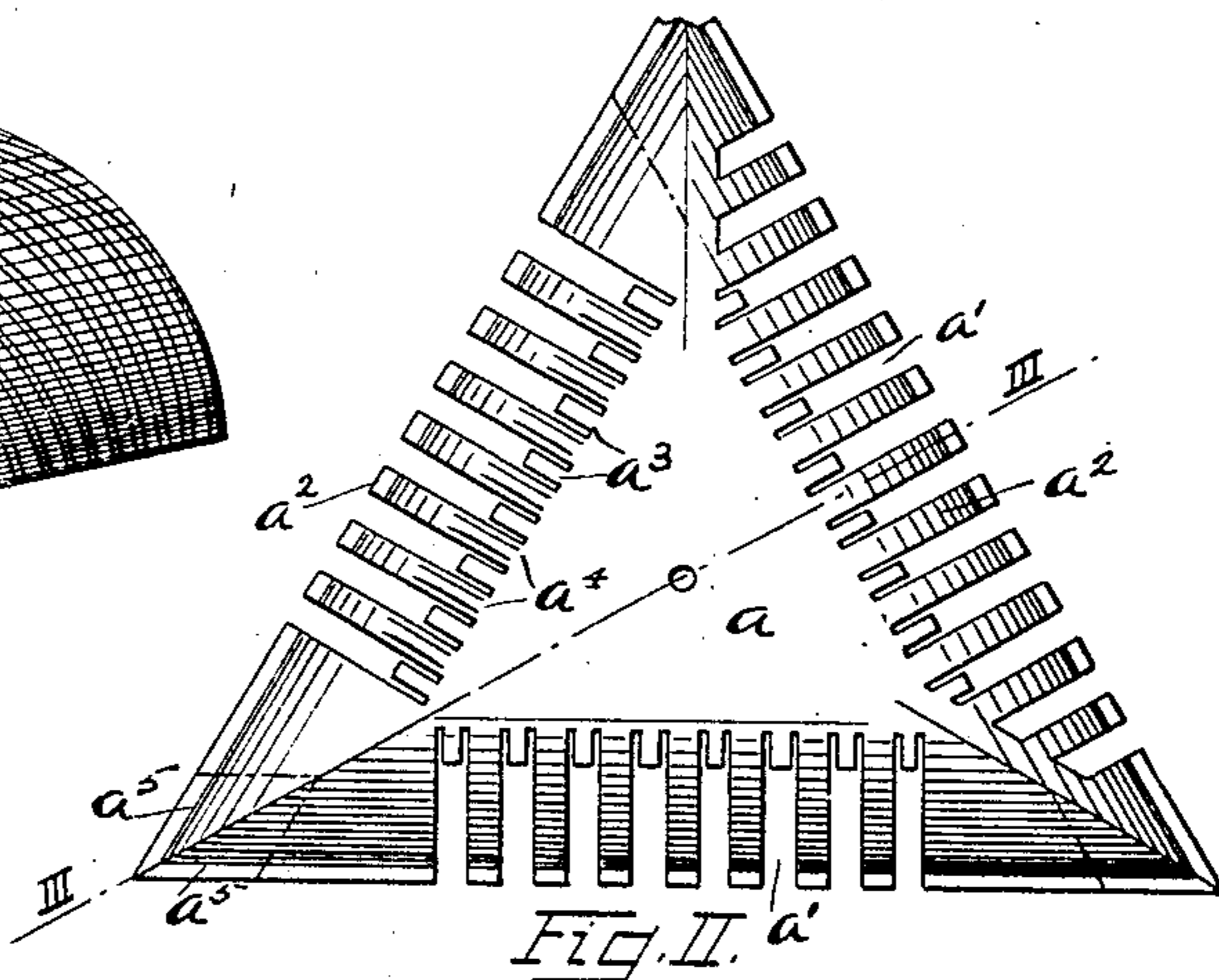


Fig. II.

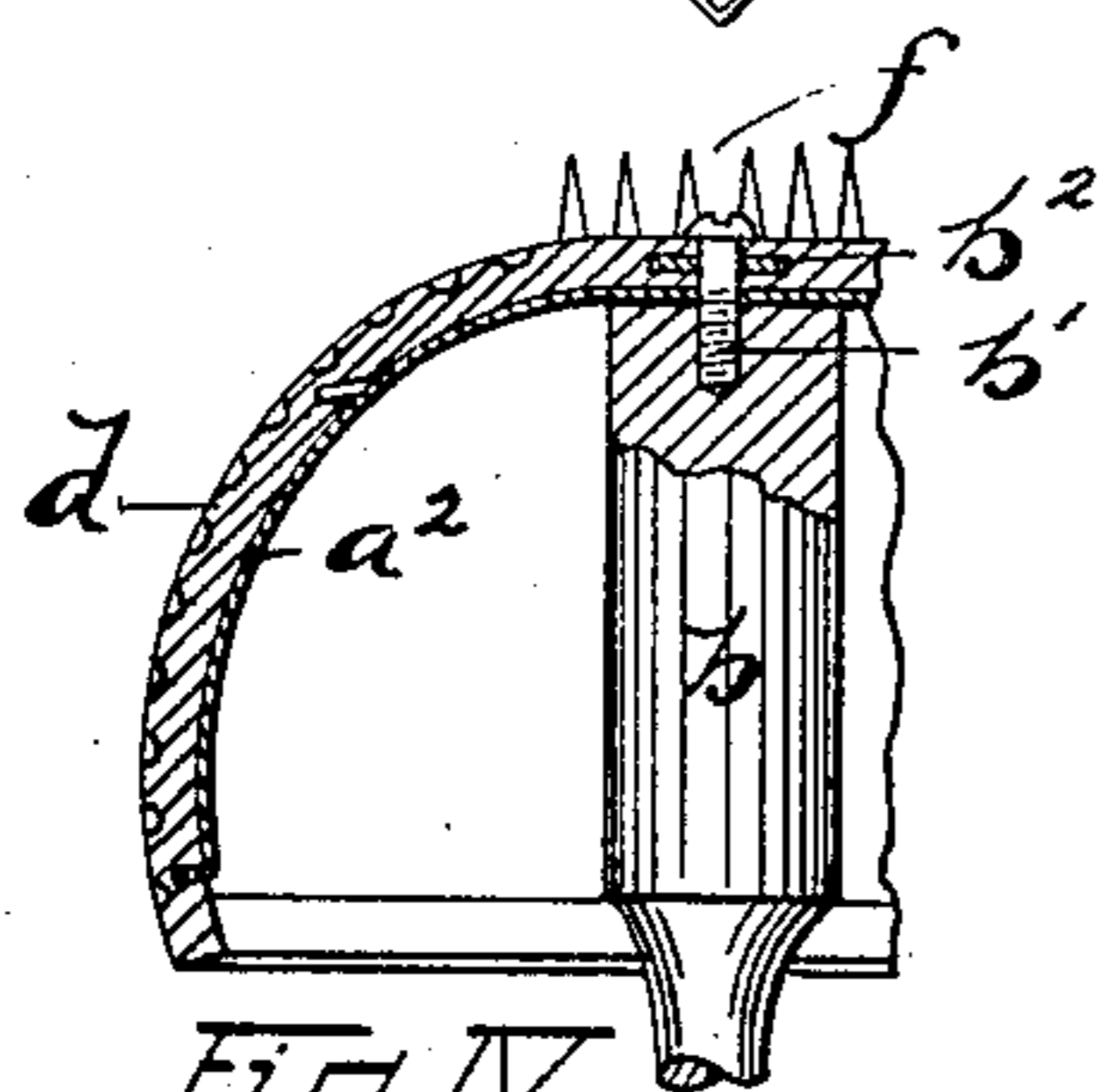


Fig. III.

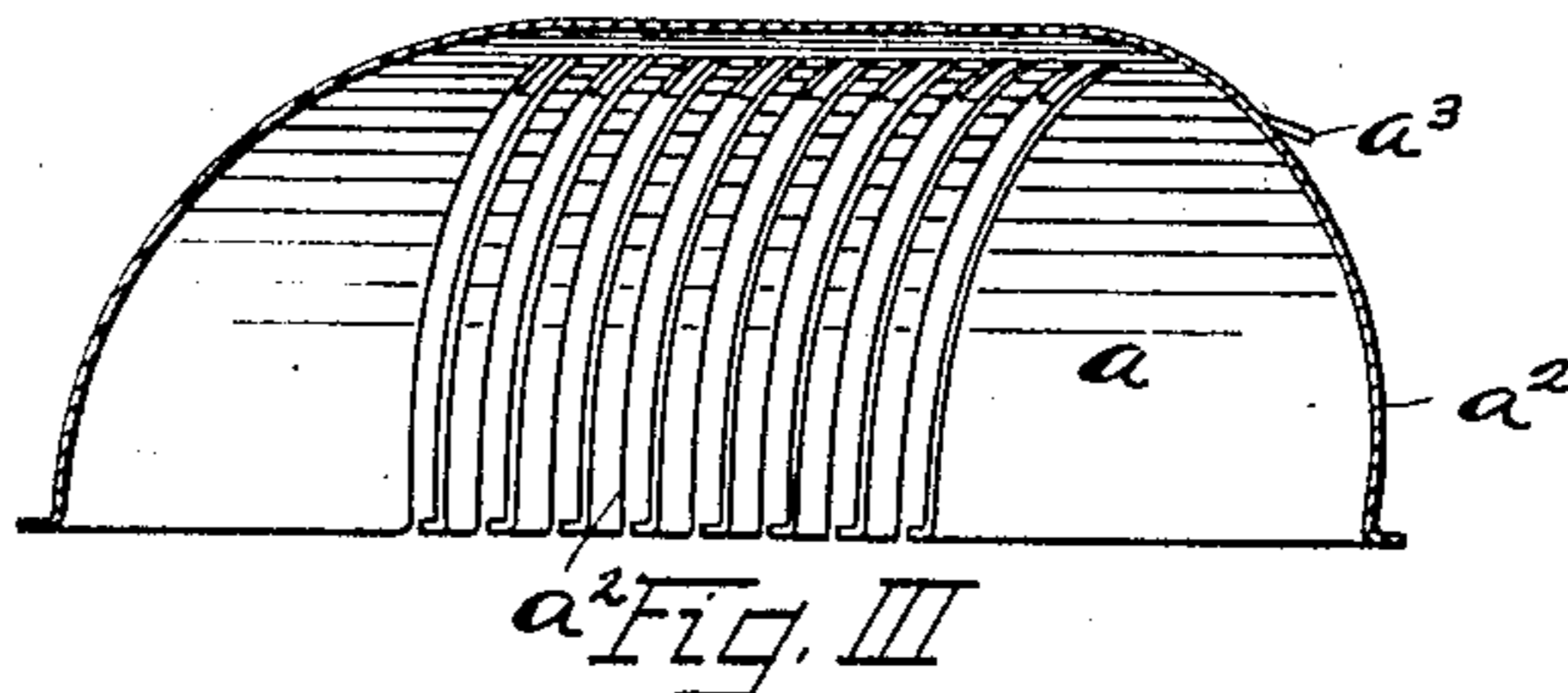


Fig. IV.

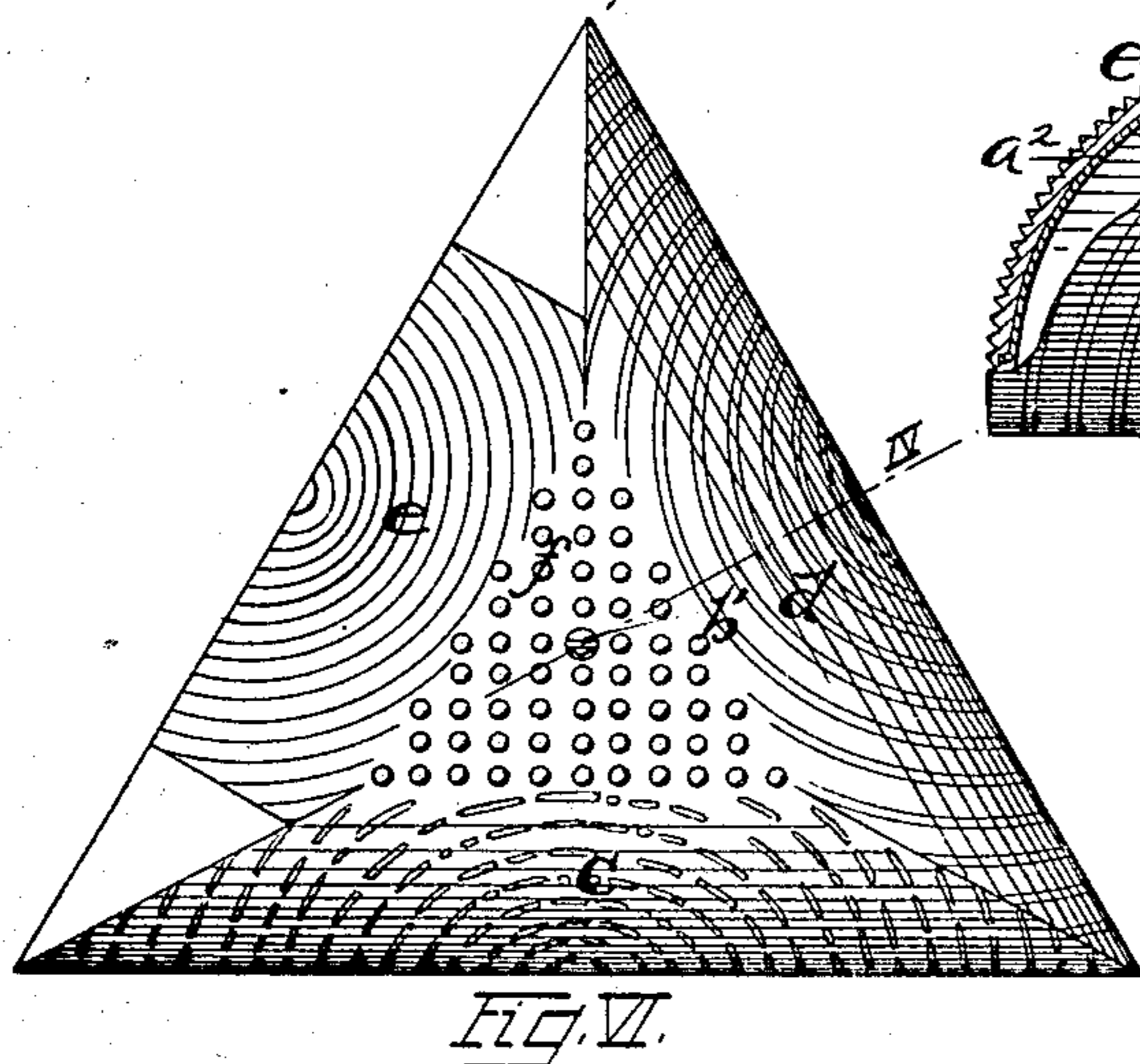


Fig. V.

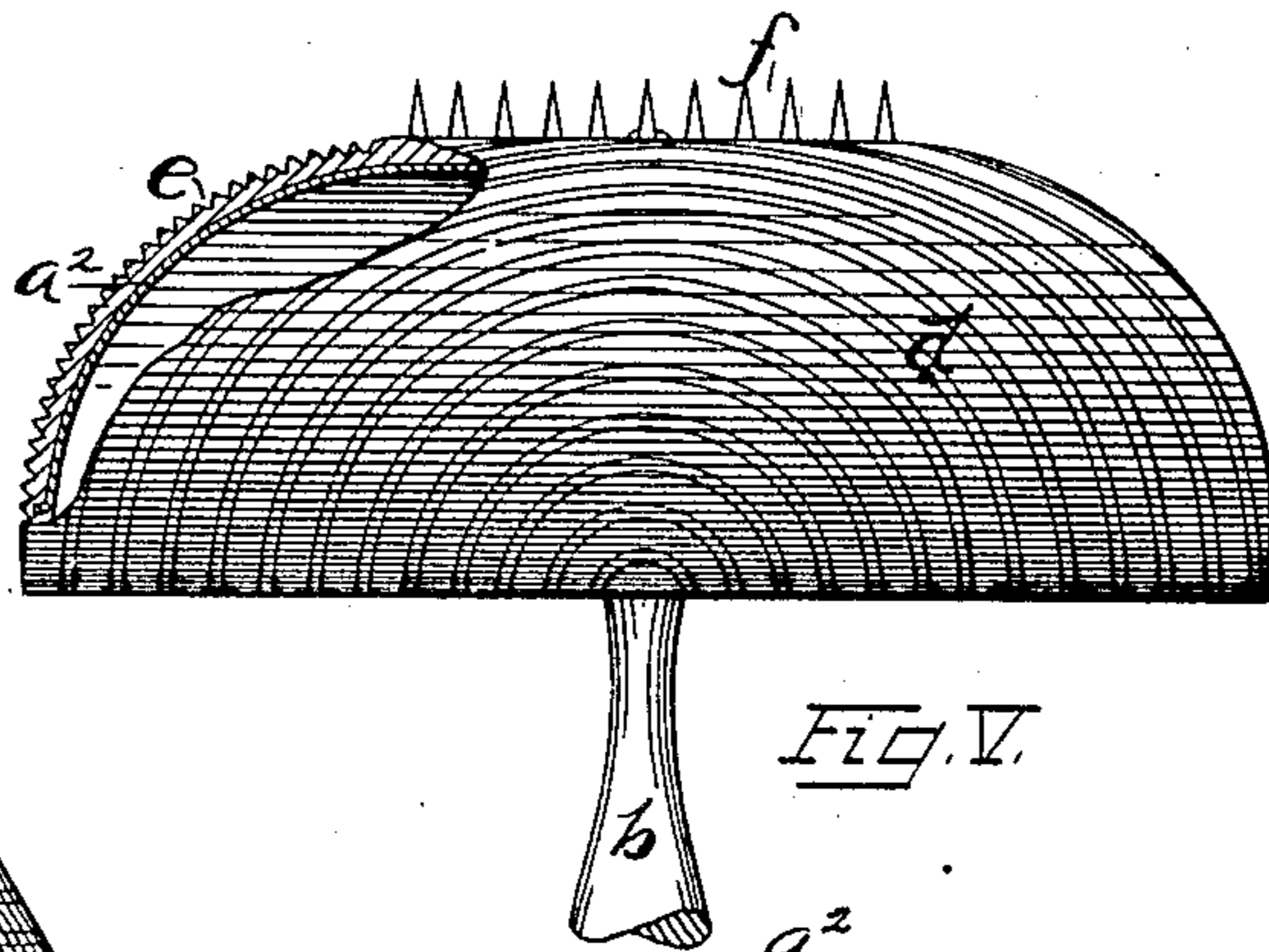


Fig. VI.

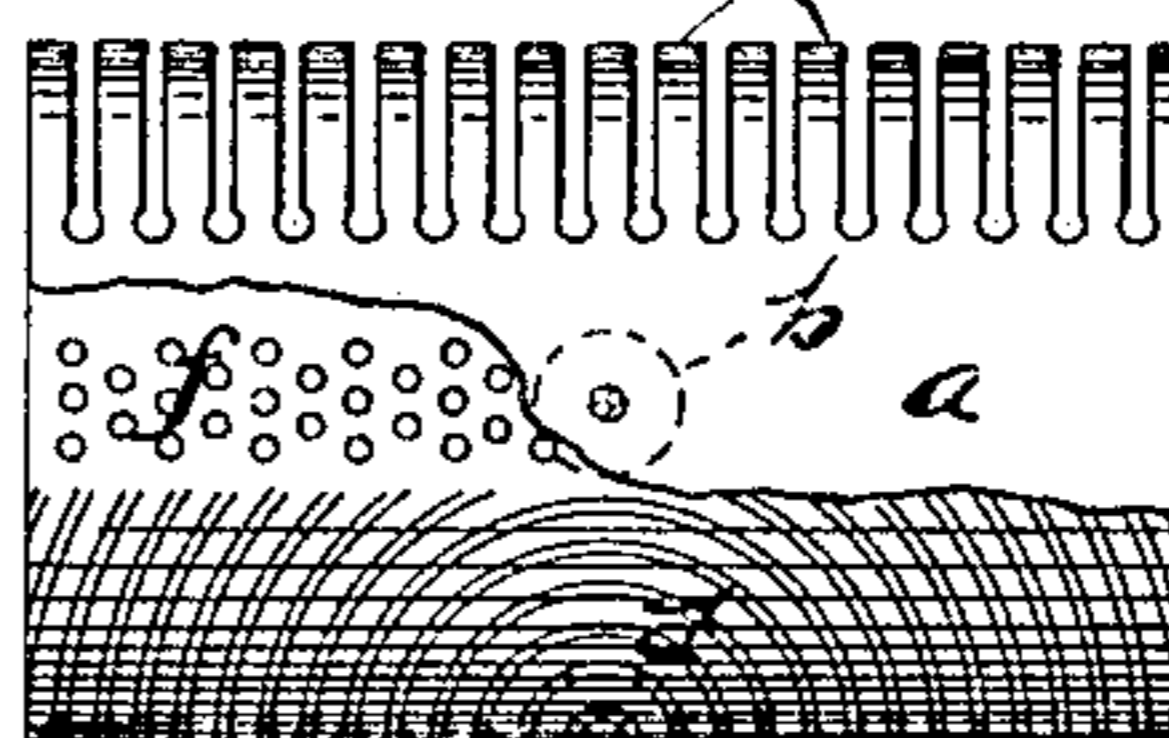


Fig. VII.

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# UNITED STATES PATENT OFFICE.

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## GRAINING DEVICE.

No. 919,439.

Specification of Letters Patent.

Patented April 27, 1909.

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*To all whom it may concern:*

Be it known that I, ALBERT LYNN LAWRENCE, a citizen of the United States of America, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Graining Devices, of which the following is a specification, having reference as well to the accompanying drawings.

My invention relates to improvements in graining devices, and has for its object the production of such an appliance which shall be of simple and cheap construction, durable and readily used by anyone without experience.

This invention relates more particularly to a type of graining device possessing a flexible face, having a pattern formed or molded thereon, adapted to be drawn or wiped over the surface to be grained, and thereby producing an irregular pattern resembling the desired variety of wood. In such an appliance, however, it is desirable to combine in a single tool means for "combing" the pattern, rather than to resort to a separate device, as has been done hitherto. Moreover it is desirable to apply two or more graining patterns to this style of grainer, and in such manner that one will not interfere with the other.

This general result has been attempted upon a tubular or cylindrical grainer, but the patterns necessarily are of short length, and either lend little variation to the grained surface, or will interfere with each other. Such interference is not necessarily avoided so far as the comb is concerned, since this device almost invariably is subsequently applied to the grained pattern. Again, it is highly desirable that it shall be self-adaptable to the graining of more or less irregular surfaces, and where the graining surface is made of a high grade of soft rubber, a sufficient body thereof will accomplish this result in some measure, but the cost of the completed tool is thereby enhanced. Accordingly, it has been my intent to combine in a single, simple tool, all of the advantageous features indicated, while avoiding the objections inherent in prior devices.

Briefly stated, my improvements consist in providing a backing or frame, preferably of sheet metal, over which is suitably formed or molded a resilient graining face bearing the different patterns desired. These graining surfaces preferably are arranged in such

position as to insure non-interference, as for example, by placing them at an angle with one another. Moreover, the sheet metal frame preferably is formed with spring fingers, or is otherwise rendered resilient, in order to make the device self-adapting, in large measure, and the whole is mounted upon a suitable handle for convenient manipulation. These, and other features, however, will be more readily gathered by making reference to the accompanying sheet of drawings, wherein—

Figure I is a triangular graining tool embodying my invention. Fig. II illustrates the frame or metallic shell over which the graining face is molded. Fig. III is a section through said shell or backing on line III—III. Fig. IV is a fragmentary view of the tool partially in section. Fig. V is a face view of one side of the tool, partially broken away. Fig. VI is a top view of said tool, indicating by line IV the section shown in Fig. IV. Fig. VII is a top view upon somewhat smaller scale of a modified form of my invention; a portion of the graining face being broken away.

Throughout each of the several figures I have employed the same character of reference to indicate similar parts.

Preferably the device of my invention is molded over a frame *a* of sheet metal, such as shown in Figs. II or VII, for example; the same being provided with one or more curved surfaces formed of resilient or spring-like fingers, formed integrally with a body portion of the frame, which in turn is mounted upon the handle. A suitably shaped sheet metal frame formed of the gage of metal affording sufficient body for applying the graining surface, ordinarily would present too rigid an edge or curved surface for the graining pattern to accommodate itself to other than small irregularities in the grained surface, but for some purposes, this is not requisite. Where a number of graining faces are to be used, the sheet metal frame is given the form of a polygon, as for example the metal frame *a*, Fig. II, having the triangular faces *a'* formed along its sides by means of curved spring fingers *a''* cut therefrom. Between these fingers, lugs *a'''* may be formed, which are bent up to assist in retaining the rubber in place, while the ends of said fingers or teeth may likewise be slightly turned up for the same purpose, although this is not

necessary, particularly upon small tools. The fingers may be corrugated as at  $a^4$  to strengthen them somewhat, while in order to add to the resiliency, the corners of the metal frame, as at  $a^5$  may be cut away along the dotted lines, and the teeth may be differently formed, as indicated upon the right-hand side of Fig. II. All of these features are details, however, and may be adopted or discarded in forming the blank for constructing my improved device. For example, in the small device of Fig. VII, these curved spring fingers are arranged in parallel planes upon either side of a narrow flattened connecting portion. The central handle  $b$  is rigidly secured by means of a screw  $b'$ , and embedded washer  $b^2$  to said supporting frame, as best shown in Fig. IV.

The disposition of the several patterns is optional, depending upon the particular use for which the device is intended, but I have shown the employment of four different patterns,  $c$ ,  $d$ ,  $e$ , and  $f$ , the latter being a comb, while the others are arranged along the curved sides of the frame. The covering or graining surface, preferably is molded from a thin sheet of rubber directly upon the frame, although rubber-composition, printer's roller-composition, guttapercha and the like, may be utilized. Since the body of the rubber may be relatively thin, however, the expense thereof is not great, and a grade of rubber may in consequence be used, which will resist alcohol, oils and the like, without adding unduly to the cost. Graining pattern  $c$  is formed of interrupted or broken segments, concentrically arranged and well adapted to simulate quartered oak. Pattern  $d$  is formed of concentric ribs adapted for simulating Georgia pine, and graining pattern  $e$ , comprises acute-edged and generally concentric ribs adapted for the imitation of oak, while the conical rubber points  $f$  may admirably be used in lieu of the comb for finishing the graining.

An extremely adaptable tool conforming to my invention, is shown in the small view, Fig. VII, adapted to receive two graining patterns along corresponding curved surfaces, with an intermediate comb. This device is molded over the simple sheet steel frame  $a$  with the rubber covering its entire area, and supported thereby, and although the patterns are relatively adjacent, it will be noted that the comb is intermediate of these patterns. Inasmuch as the comb is almost invariably applied, however, there is no opportunity for the one pattern to interfere with the other, and this device not only is cheaper to make, but is adapted for graining close to the edges of moldings and baseboards, or over simple moldings. It will be understood, however, that my improvements are applicable to devices of widely varying sizes, embodying more or less of the several

features herein set forth; the principal utilities of which will now be explained.

The wood-work, floor or other article, which it is desired to grain, ordinarily has a ground coat initially applied thereto, which is permitted to dry. After this, the graining coat is applied, and the curved pattern of the graining tool is drawn over the article with a slightly rocking motion, thereby bringing different portions of its irregular or concentric face in contact with the wet surface, and forming the graining coat into a pattern resembling the desired variety of wood. The comb is then drawn over the grained surface, and with a little practice, close imitations of different varieties of wood may be produced by any user of my improved tool.

It will be seen that the edges of the graining patterns are unsupported, and by reason of the resilience of the metal, said patterns are rendered self-conforming to considerable variations in the grained surface, without any attention whatever from the user. The sheet steel frame, however, permits sufficient pressure being applied, even with a large tool, to insure ample contact between the graining pattern and the grained surface for wiping the graining coat into the semblance of a natural pattern of the desired wood. Inasmuch as the several graining patterns are disposed either at an angle to one another, or oppositely and distantly positioned upon the frame, there is no possibility of one pattern interfering or blending into another when this device is used.

The pattern may occupy the entire or only a portion of the curved surface of the device, as indicated respectively upon the right and left of Fig. VI.

Preferably a simple wooden handle  $b$  is centrally and rigidly attached to the frame, as indicated in Fig. IV, or by the dotted circle in Fig. VII, but any suitable handle obviously may be employed, since my invention is not limited to the precise means for practicing the same, herein set forth.

Having now described the preferred embodiments of my invention, I claim the several novel features thereof, and desire to secure by Letters Patent, the following:—

1. In a device of the class described, the combination with a sheet-metal frame having a curved face terminating in an unsupported resilient edge, of a resilient graining-face applied and conforming to the curved portion and free edge of said frame substantially throughout its entire area, and a handle-member attached rigidly to the interior of the frame, substantially as set forth.

2. In a device of the class described, the combination with a polygonal supporting-frame having curved side-portions, of resilient graining-faces of different pattern mounted upon said side-portions at an angle with one another, and a handle-portion for applying

ing any of said faces, substantially as set forth.

3. In a device of the class described, the combination with a sheet-metal frame having a curved face formed of spring-fingers presenting an unsupported outer rim or edge, of a resilient graining face exteriorly conforming to and supported by said fingers, and a handle-member attached to the interior of frame, substantially as set forth.

4. In a device of the class described, the combination with a backing or frame provided with curved spring-fingers presenting an unsupported outer rim or edge, of a convex graining-pattern mounted upon said frame and supported by its free edge, and a handle-member secured interiorly to the frame, for applying the graining-face of the device, substantially as set forth.

5. In a graining-tool, the combination with a sheet-metal backing presenting an unsupported outer rim or edge, of a handle rigidly secured thereto, and a graining-pattern molded over a curved portion of the backing and along its free edge, whereby the pattern is rendered self-adapting to irregularities of surface, substantially as set forth.

6. In a graining-device, the combination with a polygonal resilient metal frame or backing, of a plurality of graining-patterns convex in form and carried by the resilient backing along the edges thereof, in position to avoid interference with each other, substantially as set forth.

7. In a graining-device, the combination with a resilient frame or backing having free or unsupported curved edges, of different graining-patterns mounted along said edges in position to avoid interference with each other, and a graining comb positioned upon a relatively flat portion of the frame intermediate of the graining-patterns, substantially as set forth.

8. In a graining-device, the combination with a sheet-metal backing having convex sides formed of spring-fingers, and graining-patterns mounted along the convex sides and resiliently supported by said fingers, substantially as set forth.

9. In a graining-device of the class described, the combination with a sheet-metal backing, of a central handle secured thereto, a graining-comb positioned above the handle, and a plurality of graining-patterns molded along the convex sides and free edges of the backing, substantially as set forth.

10. In a device of the class described, the combination with an integral sheet-metal backing having convex sides and free edges formed of resilient fingers, a central handle-

member secured to the backing, and a rubber face molded over the convex sides and free edges of the metal and provided with different graining-patterns, substantially as set forth.

11. In a graining tool, the combination with a curved plate, of a central projecting handle connected with the inner or concave surface, a flexible cover on the outer or convex side of the plate, part of which is formed with continuous curved ridges and intervening spaces, and part provided with radially projecting yielding teeth; said handle being capable of rocking the device and at the same time of drawing it along the surface to be operated upon, whereby either or both surfaces of the flexible covering may be used to produce various designs, substantially as set forth.

12. In a graining tool, a curved plate having a central projecting handle detachably connected thereto on the inner or concave surface, a flexible cover on the outer or convex side of the plate, part of which is formed with continuous curved ridges and intervening spaces, and part provided with radially projecting yielding teeth, said handle being capable of rocking the plate and at the same time of drawing it along the surface to be operated upon, whereby either or both parts of the flexible covering may be used to produce various designs, substantially as set forth.

13. In a graining device, a curved plate having a central projecting handle connected therewith upon its concave side, a flexible cover on the convex side of the plate, part of which is formed with an elevated or ridged graining pattern, and part provided with radially-projecting yielding teeth; said handle being capable of rocking the plate and at the same time of drawing it along the surface to be operated upon, whereby either or both parts of the flexible covering may be used to produce varying designs, substantially as set forth.

14. In a device of the class described, the combination with a resilient sheet metal frame shaped to present a convex or partly cylindrical face, of a convex graining face applied exteriorly of and conforming thereto, and a handle-member attached centrally to the concave side of said frame, whereby a resilient convex graining face and freely conforming edge are provided, substantially as set forth.

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