

S. LYON.
COLOR-SHADING WOOD.
(Application filed Feb. 11, 1902.)

(No Model.)

Fig. 1.



Fig. 2.

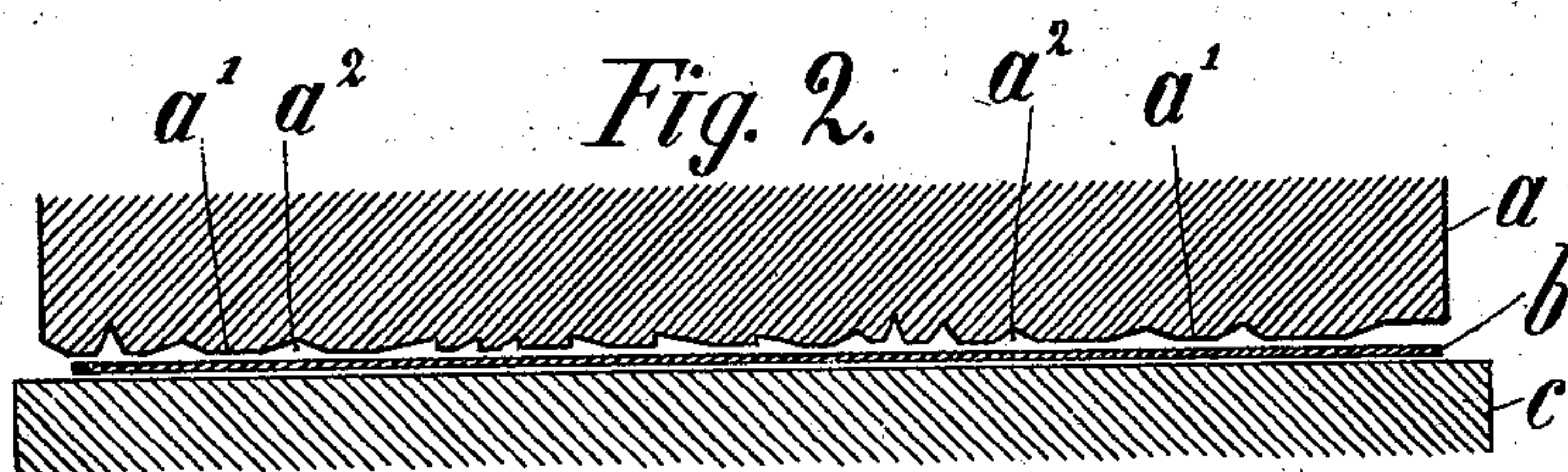


Fig. 3.



Fig. 4.

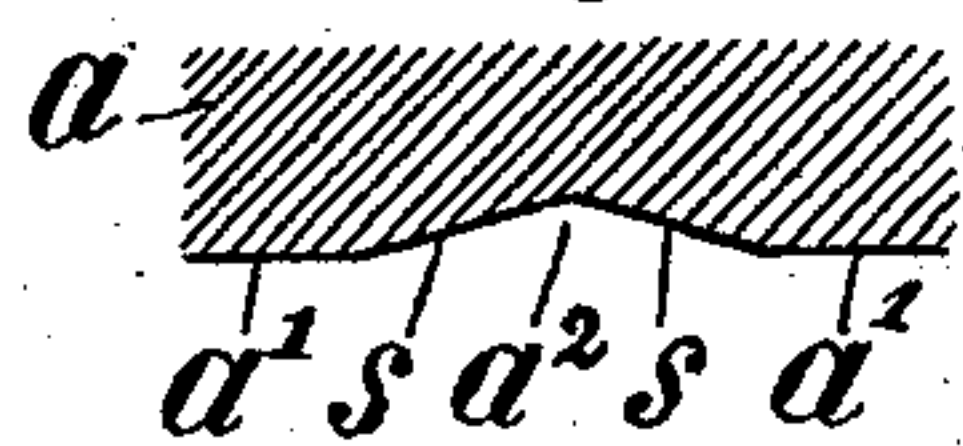


Fig. 5.



Fig. 6.



Fig. 7.

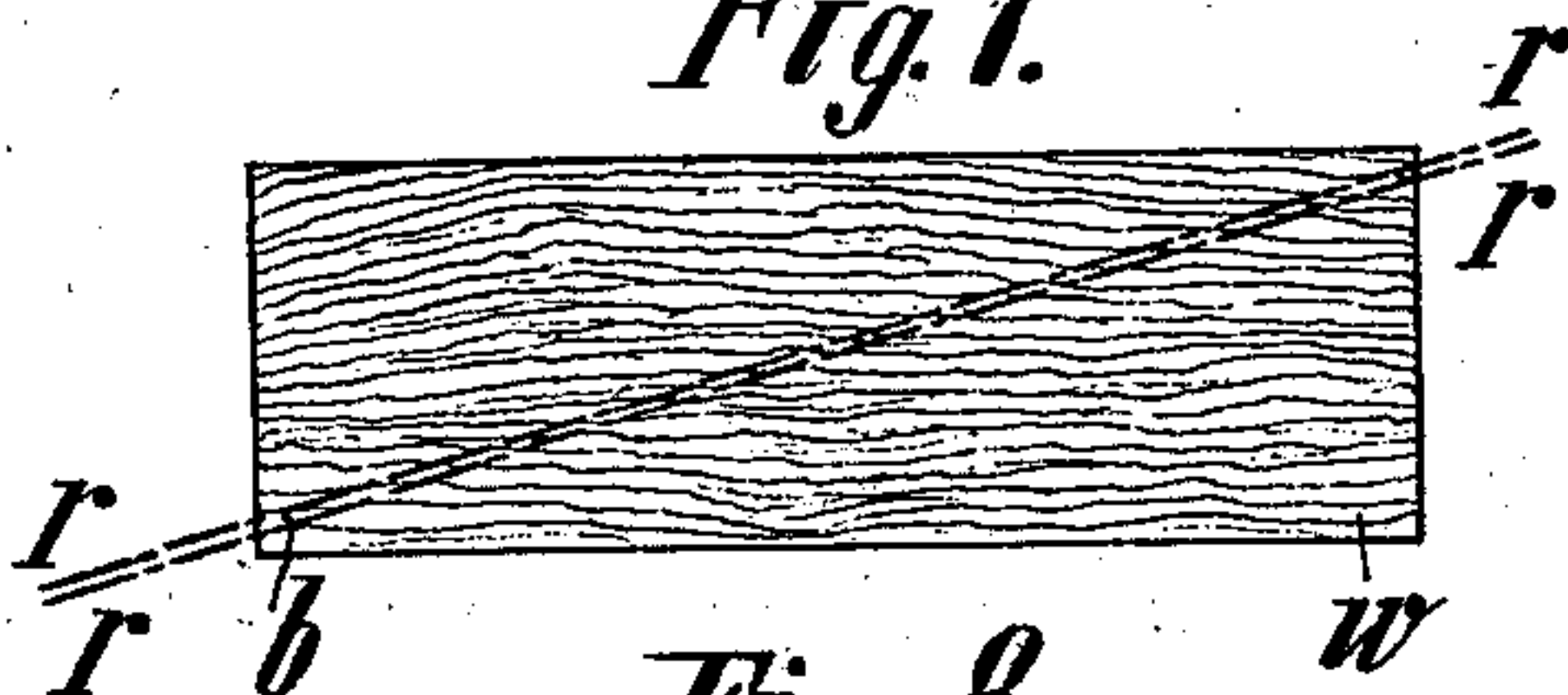
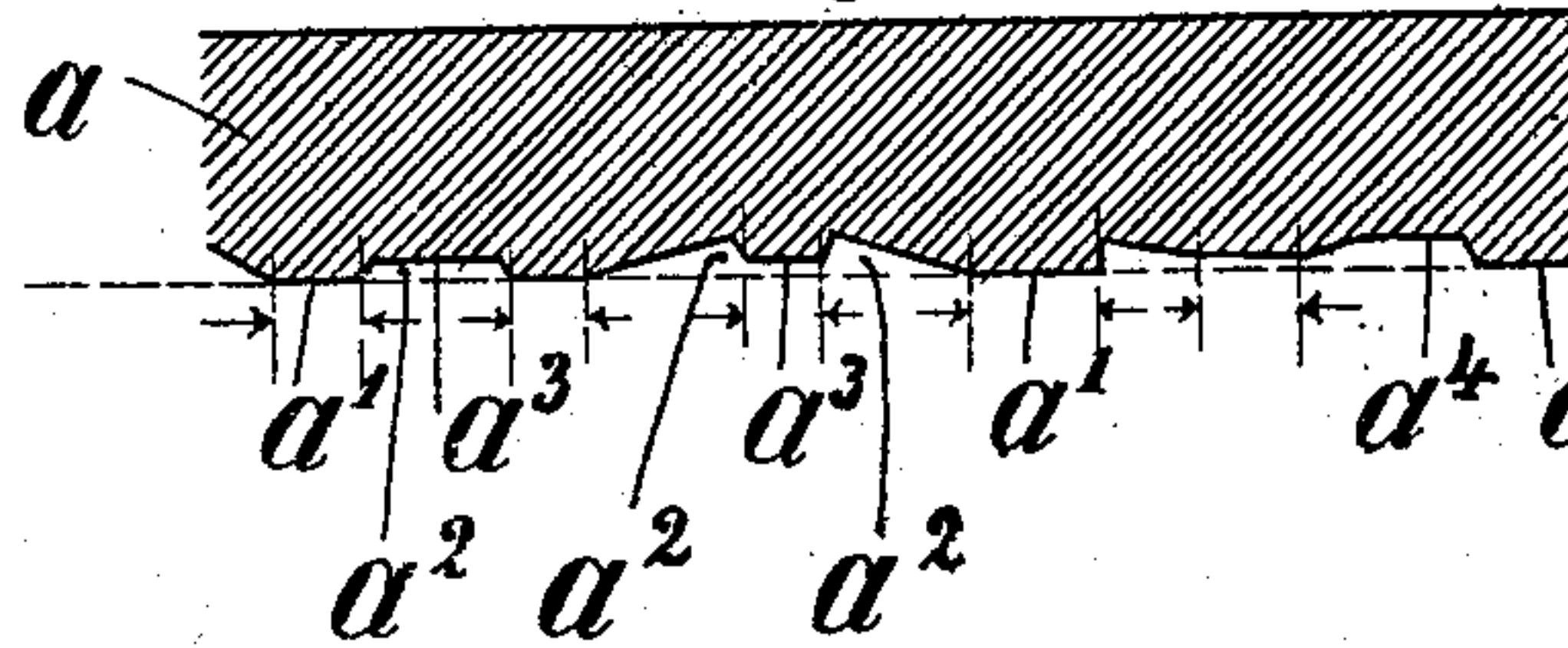


Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL LYON, OF HAMBURG, GERMANY.

COLOR-SHADING WOOD.

SPECIFICATION forming part of Letters Patent No. 700,348, dated May 20, 1902.

Application filed February 11, 1902. Serial No. 93,565. (No specimens.)

To all whom it may concern:

Be it known that I, SAMUEL LYON, a subject of the German Emperor, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Color-Shading Wood, of which the following is a specification.

This invention relates to improvements in the production of color-shading upon wood-surface, and is more particularly applicable for the production of imitation of wood-grain equal in appearance to the natural grain and with the vivacious natural play of lines and color-shading seen in the natural grain. Besides designs of wood-grain my invention also enables other designs with various color-shadings to be produced, and more especially to the pyrographic decoration of wood.

The essential part of the invention relates to special arrangement of the bottom or impression-surface of the dies—that is to say, to the manner in which the design to be produced is shaped or engraved on the die. In the impression-surface of the die the parts corresponding to the light tints, the half-tones, or graduated half-tones are recessed. Now according to this invention the recesses in my improved die, either all or some of them, are made more or less deep—that is to say, of a different depth—and in addition to which they may all or some of them have unsymmetrical outlines, while the parts in relief may be upon the same level or disposed so as to be upon different levels.

In order that my invention may be more fully understood by one skilled in the art to which it appertains, I will now proceed to describe the same in detail, reference being had to the accompanying drawings, whereon like parts are similarly designated, and in which—

Figure 1 represents the bottom view of a die a made in accordance with and embodying my invention. Fig. 2 is a vertical section through the die a on the line I II of Fig. 1, through a wooden plate or veneer b to be embellished, and through a suitable base or support c for the latter. Fig. 3 is a view of the finished wooden plate b as it appears after the brand or embellishment has been applied thereto by means of the die a . Figs. 4, 5, and 6 are sectional views of several portions of the die. These views are drawn on a somewhat-

larger scale and illustrate the characteristic shapes or configurations of the recesses or intaglio portions of the die. Fig. 7 shows a wooden block w , from which the plates or veneers may be cut in the manner indicated by the dotted lines $r r$; and Fig. 8 is a sectional view showing a modified form of my improved die.

When the hot or heated die is pressed upon the wooden plate b , the parts of the latter which are in immediate contact with the relief parts a' of the die are, as usual, burned to a deep black. The other parts of the wood beneath the recesses a^2 are less burned and remain all the lighter the deeper such recesses are, while, moreover, the transition or blending between the lighter and the darker shades alters with the distance that the walls of the recesses are from the wood. If the recesses are formed in a symmetrical manner with slanting sides s , Fig. 4, or s' , Fig. 6, such as an inverted-V shape, it will be found that the light tints on the wood beneath the remotest part of such recess a^2 disappears or blends gradually into the dark tints or charred portions of the wood beneath the two adjacent portions a' in relief that contact with the wood. If, however, the sides of the recesses are irregular, with an inclined side s^2 , Fig. 5, and a steep or vertical side s^3 , for example, there will be a gradual transition from light to dark at or beneath the inclined side s^2 , while a more or less sharp difference will be produced at or beneath the straight side s^3 , so that the charred tints on the wood at the latter part stand out more or less distinctly from each other, as is obvious from the embellished plate b , Fig. 3, without further explanation. It will thus be seen that the formation of the recesses and their sides is the cause of a more or less sharp or gradual transition or blending of the pyrographic decoration from light to shade, and, further, the tint on the wood will be the lighter the deeper the recesses.

In the modification shown in Fig. 8 the improved die is provided with relief portions a' a^3 a^4 , arranged on different levels in order to produce different pyrographic effects, the blending of which is again controlled by the distance of the surface of the heated die from the wood to be decorated.

Generally expressed, the impression-surface of the die affects the wood in such a manner that the carbonizing of the latter is effected by those parts that come into contact with the wood, and thus produces black. Lighter shades (half-tones) of uniform tint are produced by surfaces a^3 parallel to the contacting surfaces a' , the intensity of the tint or half-tone in any case being dependent upon the degree of heat transmitted to the surface of the wood beneath it, such degree being, in accordance with the well-known law of heat, inversely proportional to the square of the distance of the heating-surface from the surface heated. A shallow recess in the die produces, therefore, a correspondingly deeper tint, because the air in it is heated more intensely than when the recess is deeper. In this manner different tints may be produced, the outlines of which may be caused to appear more or less sharp or definite or graduated and indistinct, according to the described arrangement of the surfaces of the die. At the parts where the recesses are so deep that the heat radiated therefrom does not affect the wood its natural color remains to produce highlight.

It is an especial advantage to have the wood cut upon the cross-grain, as indicated in Fig. 7 by dotted lines $r r$. In this manner the longitudinal fibers of the wood are cut through and form fine channels between the two surfaces of the plate b , through which the carbonization advances to the lower surface. Consequently the wood thus marked with the design, and which may, for instance, be a ve-

neering-sheet glued to an ordinary deal-board, can be planed and scraped without fear of destroying the design.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The herein-described die for pyrographic decoration in which parts are projected so as to contact with the material sufficiently to char parts of the design, and the parts of the die immediately adjacent to said charring parts are arranged at angles that vary according as the surfaces bounding the charred portions of the contemplated design are intended to contrast or merge as to light and shade with said charred portions, substantially as and for the purpose set forth.

2. The herein-described die for pyrographic decoration in which parts are projected so as to contact with the material sufficiently to char parts of the design, the parts of the die immediately adjacent to said charring parts are arranged at angles that vary according as the surfaces bounding the charred portions of the contemplated design are intended to contrast or to merge as to light and shade with such charred and such portions of the die as are intended to produce areas of uniform tint of any shade, being maintained at a uniform distance from the surface acted upon, substantially as and for the purpose set forth.

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Witnesses:

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