Fig. 1
Grain Lines, forming alternate ridges and furrows (about 6x enlarged)

Fig. 2
Grain Lines, as used in matched panel design (for control of flow during softening)

Fig. 3
actual wood-grain impression on top of grain-lines.

INVENTOR.

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My invention relates to a method of creating pleasing and natural reproductions of wood grain or stone markings, in which silk screens may be employed, and an acceptable product produced. My invention comprises such other objects, advantages and capabilities as will later more fully appear and which are inherently possessed by my invention. While I have shown herein my preferred method, yet I wish it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawing Fig. 1 shows one form of my grain lines; Fig. 2 shows my grain lines for use in matched panel designs; Fig. 3 shows an actual wood grain impression on top of the grain lines.

My method is particularly directed toward furniture on which the simulation of a fine wood grain is desired. I first take a piece or article which will form part of said furniture and prepare the surface to be treated by applying a ground coat by spraying, painting, printing, dipping or the like, or by merely sanding, sizing or staining said surface.

I then apply or print on said prepared surface a plurality of grain lines from a silk screen, producing lines in substantially the same color as the ground coat or in a transparent medium to keep the grain lines nearly invisible as possible. The screen from which these grain lines are printed is made in such a way that the grain lines printed therefrom always go in the directions of actual wood grain.

The grain lines may be formed in continuous or broken lines in any desired number or shape. For example, the grain lines may form substantially parallel and alternate ridges and furrows as shown in Fig. 1.

My grain lines are important when the reproductions of the various wood grains of matched panels such as X matched, V matched or diamond matched panels are desired. For every different section of these matched panels grain lines are first provided as shown in Fig. 2 running in the same directions in this confined area as the grain design or impression will run.

While I have indicated that these grain lines are preferably produced by printing from silk screens having grain line producing portions because printing is fastest and most accurate, yet it is within the contemplation of my invention that the grain lines may be produced in any desirable way, such as by rollers, combs, metal brushes or other tools adapted to produce ridges and furrows, or simply by sanding and the necessary masking for matching.

After the grain lines are dry a grain design or impression in half tone dots is then applied or printed over said grain lines, preferably from a silk screen adapted to produce a desired design including all forms of matched panels. Said grain impression screen may be made in accordance with my Patent #1,959,992 of May 22, 1934. I prefer screens adapted to produce coarse half tones because said screens are simpler and easier to make and are easier to use in obtaining dependable uniformity in printing. Screens made by my Patent #1,959,992 afford the advantage of producing a more contrasting printing of different parts of the grain, thereby providing greater strength and distinction. My coarse half tone screens allow me to go to any size, even as large as four foot wide wallboard panels—sizes which for photographic screens would become impossible to print and prohibitive because of their cost. My screen permits the reproduction of any kind of wood grain or stone markings in one or several colors.

My method does not end with the applying of the wood design impression in half tone dots to the surface of the article because the appearance is at this stage too coarse, hard and artificial. While the impression is still wet a solvent is applied thereto by spraying said impression or dipping the article having said impression into a liquid. The solvent softens the impression.

The article is then held level or placed on a level surface so that the half tone dots, beginning to spread upon the softening of the impression, will spread in the grain lines to the softened line or streak of genuine wood grain. Where the grain lines of a matched panel extend in various different directions the half tone dots will follow the particular grain lines in each section and flow in the natural direction of genuine wood.

The softening can be controlled by adjusting the consistency and viscosity of the printing medium and the strength or qualities of the softening agent such as its speed of drying, evaporating and dissolving. A strong and slow drying solvent may flow out completely a grain impression and obliterate it. A weak and fast evaporating solvent may not be able to cause any softening at all on a highly viscous or tough bodied impression. I prefer lacquers since they are used predominantly as finishing material and because they can be easily adjusted by the wide range of viscosities and drying speeds.

The ground coat should be made so that it will...
not be attacked and softened too easily by the action of the solvents used in the softening process. This can be easily accomplished with any finishing material, since we have different groups of lacquers with their particular solvents and in oil, Japan or synthetic colors we do not need to fear the softening of the ground coat.

In cases where it is desired to reproduce single pieces where portions are not to be matched as shown in Fig. 2, I may eliminate that step in my method in which the grain lines are applied. In the reproduction of such pieces where the grain impression is normal and follows a general direction, immediately after the step in my method of applying the solvent I tilt the pieces so treated. This tilting causes the half tone dots to flow in natural channels to softed lines or streaks. Therefore in preparing such single pieces I omit that step in my method in which matched lines are applied and instead of leaving the solvent treated article level I tilt it to acquire the softening natural wood grain effect. Otherwise my method is the same.

It is obvious that tilting could not be used when there are matched portions because tilting can only be used when the flow of the half tone dots is in the same general direction. When matched panels are desired, flow in the direction for one panel would ruin another panel requiring flow in another direction. Therefore where matched panels are to be formed it is necessary to apply the grain lines extending in the direction of flow of each panel before the grain design is applied to the respective panels. Upon the solvent being added and article laid level the half tone dots will spread in the correct directions in each panel on the properly prepared grain lines.

My method is simpler and faster than other grainning methods such as spraying or rolling, requires no expensive special equipment and can be easily learned and properly used by the inexperienced in a short time.

While my method is particularly applicable to the reproduction of wood grains, it is equally effective in simulating marble or the like in which there are well defined markings.

The medium for obtaining the grain impressions may be water color, oil color, Japan color, synthetic color or lacquer.

Having thus described my invention I claim:

1. The method of simulating wood grain markings comprising applying lines to the prepared surface of an article to be treated, applying grain impressions in half tone dots over said lines, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said grain impressions and placing said article on a level surface so that the solvent will cause the half tone dots to spread on said lines and thereby soften and impart to said grain impressions the appearance of genuine wood grain.

2. The method of simulating wood grain markings comprising applying a ground coat to the surface of an article to be treated, applying lines on said ground coat, applying grain impressions in half tone dots over said lines, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said grain impressions and placing said article on a level surface so that the solvent will cause the half tone dots to spread on said lines and thereby soften and impart to said grain impressions when dry the appearance of genuine wood grain.

3. The method of simulating wood grain markings comprising printing substantially invisible lines on the prepared surface of an article to be treated, printing a grain design in half tone dots over said lines, applying a liquid solvent for said half tone dots to said grain design while the half tone dots are still wet and placing said article on a level surface so that the solvent will cause the half tone dots to spread on said lines and thereby soften and impart to said grain design when dry the appearance of genuine wood grain.

4. The method of simulating wood markings comprising forming grain lines on the prepared surface of an article to be treated, placing grain markings in half tone dots over said grain lines by use of a silk screen having a grain design, applying a liquid solvent for said half tone dots to said grain design while the half tone dots are still wet, and placing said article on a level surface so that the solvent will cause the half tone dots to spread on the grain lines and thereby soften and impart to said grain design when dry the appearance of genuine wood grain.

5. The method of simulating wood markings in matched sections comprising forming grain lines in sections on the prepared surface of an article to be treated, said grain lines extending within each section in the directions of the grain impressions to be superimposed thereon, placing matched grain impressions in half tone dots over corresponding sections of grain lines, applying a liquid solvent for said half tone dots to said matched sections while the half tone dots are still wet, and placing said article on a level surface so that the solvent will cause the half tone dots to spread on the grain lines in each section and thereby soften and impart to said matched sections when dry the appearance of genuine wood grains.

6. The method of simulating marble markings comprising applying lines to the prepared surface of an article to be treated, applying marble impressions in half tone dots over said lines, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said marble impressions and placing said article on a level surface so that the solvent will cause the half tone dots to spread on the lines and thereby soften and impart to said marble impressions when dry the appearance of genuine marble.

7. The method of simulating marble markings comprising applying marble impressions to the prepared surface of an article to be treated in half tone dots, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said marble impressions and tilting said article so that the solvent will cause the half tone dots to flow and thereby soften and impart to said marble impressions when dry the appearance of genuine marble.

8. The method of simulating wood grain markings comprising applying grain impressions in half tone dots to the prepared surface of an article to be treated, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said grain impressions and tilting said article so that the solvent will cause the half tone dots to flow and form lines and thereby soften and impart to said grain impressions when dry the appearance of genuine wood grain.
9. The method of simulating wood grain markings comprising applying a ground coat to the surface of an article to be treated, applying grain impressions in half tone dots over said ground coat, applying while said half tone dots are still wet a liquid solvent for said half tone dots on said grain impressions and tilting said article so that the solvent will cause the half tone dots to flow and form lines and thereby soften and impart to said grain impressions when dry the appearance of genuine wood grain.

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