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PROCESS FOR MANUFACTURING A CELLULOSE ESTER MOLDING BATCH HAVING A METALLIC APPEARANCE AND THE BATCH PRODUCED THEREBY

Thomas J. Hillery, Boonton, N. J., assignor to George Benda, Inc., Boonton, N. J., a corporation of New Jersey

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This invention relates to a process for manufacturing a batch of molded material which gives a metallic appearance as of brass, bronze, silver, chrome or gold. The invention also applies to plastic molding material processed so that any object molded of the material gives the appearance of being made of one of said metals.

The plastic compound used for this process may be identified by its urea resin base or cellulose acetate base. Materials of the urea resin base, such as formaldehyde urea resin, is preferable in the natural shade and may include any of the varied fillers used in molding compounds, prepared with this base.

The basic molding substance used is ground to a fineness of sand particles, which has a fineness suitable for introduction into a stamping machine. The stamping machine used consists preferably of a revolving cam, for lifting and dropping a shaft to which are attached steel shoes that strike against the bottom of a kettle of steel. This process produces a flaked or floured material.

The thus obtained basic molding material is introduced in this stamping machine together with a small quantity of binding grease such as lard, for instance, to give to said material body a flour like or flaky consistency. The time required for reducing the molding material from a grain to a floured or flaked consistency depends upon the type of material used.

The stamping process, no matter what basic material is used, is continued until the same is reduced to a floured or flaked consistency of about 200 mesh.

In order to produce a batch of molding material, which simulates brass, bronze, gold, silver or chrome, it is now necessary to add to this flaked basic material a quantity of bronze in flakes of about 200 mesh in the case of alloys of brass, bronze and gold or aluminum ink flake, and also in case or simulation of silver or chrome. The bronze flake ink or the aluminum flake is treated in the same type of stamping machine and is the result of the reduction of hammered, leafed metals of bronze or aluminum.

It is to be understood that a fine bronze flake or aluminum flake will flow better and will permeate the molding material when the curing in the molding process takes place.

To the floured molding substance a bronze flaked ink or aluminum flake of 200 mesh with a stearine consistency is added in the proportions of about one ounce of bronze flake or aluminum flake to two ounces of flour molding substance. The bronze or aluminum ink is lighter in shade

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than the final brass or gold tone required, because the molding process will oxidize the bronze or aluminum flake and thereby regulate the bronze or gold shade desired. The same process also applies to aluminum or tin flake when used in place of the bronze flake in order to obtain a silver or chrome finish.

After the flour molding substance and the flakes have been mixed, the complete mixture is then polished in a brush mill until the metal flakes are adhering to the flour substance and thereby adding lustre when brushed on the metal flakes.

The basic substance consisting of urea resin, such as formaldehyde urea resin, or cellulose acetate is first prepared so that it can be ground to a finish to make it suitable for introduction into a specially constructed stamping mill to be mashed or crushed. In this mill the substance is reduced to a flour-like or flake-like consistency of about 200 mesh. Thereupon a binding grease such as lard is added to give the material body.

The metal flakes, whether bronze, aluminum or other metal after completion of the stamping process, are placed in a polishing mill and polished with stearic acid, a tablespoonful of which is added to approximately 15 pounds of metal flake. The polishing process, as stated, is accomplished by a series of brushes, operating on a central shaft, rubbing against the corrugated surface of the walls of the cylindrical polishing mill. This process is continued for 12 or 24 hours depending upon the brilliancy desired on the flake of metal.

When the flaked part of the molding material has been prepared and the bronze flake or aluminum flake have been prepared in like manner, the two ingredients, the flaked molding material and the bronze flake or the flaked molding material and the aluminum flake, are mixed in quantities of 2 ounces of flaked molding material to 1 ounce of bronze flake or aluminum flake.

The cylindrical polishing mill polishes by rubbing the bronze flake or enclosed material against the inside corrugated surface of the mill with a series of brushes. The flakes of the plastic material and the metal flour or flakes are brushed until they adhere to each other.

It is of great importance that the mixed materials during the polishing operation do not become overheated since they tend to stick in the mill. It is, therefore, preferable not to continue this operation over 30 minutes, because this time is sufficient for brushing the flaked or floured substance particles and the metal particles to-

gether. This process will add an additional lustre to the mixture. The combined material is now suitable for molding.

When quantities of this material are introduced in the proper weights into the steel molds, the cured product has the appearance of brass where bronze flake is used or of silver or chrome where aluminum flake is used. This material can be used industrially for the fabrication of plastic hardware, pipe fittings, or in whatever industrial field a substitute plastic product is desired.

This molding material is then ready to be put into steel molds and molded into objects which give a striking resemblance to brass, bronze or gold. Or in the case of the aluminum or tin flakes, a resemblance to silver or chrome.

The time for curing should be limited since over exposure causes added oxidation resulting in a dark appearance void of lustre.

It is to be understood that the invention as here described is not limited to the details herein but that the same may be varied widely without departing from the spirit of the invention as defined by the subjoined claims.

Having described the invention, what is claimed as new is:

1. The process for manufacturing a batch of molding material having a lustrous metallic appearance to simulate metal when molded, which process consists in first grinding cellulose acetate as a base, then crushing said base to obtain a flaky or flourlike consistency and adding lard as binding material to give body to said base, crushing a metallic element into flake-like consistency as that of said base, then metallizing said flaky base material by intimately mixing with said flaky base the flaky metallic element to be simulated in the proportions of approximately two parts of the former to one part of the latter, to cause adherence of the metallic flake to the base flake to flow better and permeate the base material when cured in the heat molding process to simulate the solid metal of the metallic element.

2. The process for manufacturing a batch of molding material having a lustrous metallic appearance, to simulate metal when molded, which process consists in first grinding cellulose acetate as a base, then crushing said base to obtain a flaky or flourlike consistency of about 200 mesh and adding lard as binding material to give body to said base, crushing a leafed metallic element into flake-like consistency as that of said base, then metallizing said base body by intimately mixing therewith the flaky metallic element to be simulated in the proportions stated until the metallic flakes adhere to the base flakes and polishing the same and to cause the metallic flakes to flow and permeate the molding material when cured in heat molding to simulate the metal used.

3. The process for manufacturing a batch of molding material to simulate metal when molded, which process consists in first grinding cellulose acetate as a base, then crushing said base to obtain a flaky or flourlike consistency of about 200 mesh and adding lard as binding material to give body to said base, crushing a hammered leafed metallic element into the same flaky consistency as said base, then metallizing said base body by intimately mixing therewith the flaky metallic element to be simulated after having been crushed into flake-like consistency of about the same mesh as the base, and then polishing the mixture in a brush polishing mill with stearic acid in the approximate proportions of a table spoonful of stearic acid to 15 pounds of metallic flake and 30 pounds of base while preventing overheating, until the metallic flake adheres to the base flake and to cause the metallic flake to flow better and permeate the molding material when cured in the molding process.

4. The process for manufacturing a batch of molding material to simulate metal when molded, which process consists in first grinding cellulose acetate in the natural shade as a base, then crushing said base to obtain a flaky or flourlike consistency of about 200 mesh and adding lard as binding material to give body to said base, crushing a hammered leafed metallic element into the same flaky consistency as said base, then metallizing said base body by intimately mixing therewith the flaky metal to be simulated in suitable proportions after having been crushed and reduced from hammered leaf form into flake-like consistency of about the same mesh as the base, and then polishing the mixture in a brush mill within a time duration of 30 minutes, with stearic acid in the approximate proportions of a tablespoonful of stearic acid to 15 pounds of metallic flake and 30 pounds of base to cause adherence of the flake materials to each other with added lustre, and to cause the metal flake to flow into and permeate the material when heat molded.

5. A molding batch simulating metal when molded, comprising an intimate mixture of cellulose acetate as a base in flake-like floured form and metal to be simulated in similar form polished and with the flake adhering to each other with added lustre, with lard as a binder, in proportions of about 30 pounds of base and 15 pounds of metal and the mixture, together with a tablespoonful as polishing material of polished stearic acid.

THOMAS J. HILLERY.