UNITED STATES PATENT OFFICE.

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PLASTIC COMPOSITION.

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To all whom it may concern:

Be it known that I, ARNOLD WEXLER, a subject of the Emperor of Austria, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Plastic Compositions, of which the following is a specification.

My invention relates to a new composition of matter and has for its object to produce a composition which shall be light, tough (so as not to be easily broken), shall be capable of being penetrated by a nail, and will be sufficiently elastic to hold such nail.

In accomplishing the foregoing advantages, I employ in the said composition a large percentage of fibrous matter, such as paper pulp, and with this I incorporate matter whereby it is given stiffness and rigidity, such as plaster of Paris and other substances for giving the mass strength and binding the particles thereof together, such as glue and resin, and, if desired, a small proportion of shellac.

In carrying my invention into effect, I prefer to employ fibrous matter, such as paper pulp, as the principal constituent in the composition for the reason that the same is light, easily molded to shape and not easily broken. This paper pulp is preferably employed by me in the state in which it is prepared for making paper in the beating engine of a paper mill wherein the fibers have been sub-divided and drawn out. I prefer to employ the said pulp in its wet condition. To this paper pulp I add a small amount of plaster of Paris and this may be added dry and dissolved by the moisture in the paper pulp. The plaster imparts stiffness and rigidity to the article produced from my new composition.

I also add to the said composition a small quantity of liquid glue, for which purpose I may employ any of the usual commercial glues. The glue is employed as an adhesive and binder to hold the particles more firmly together. If desired, in addition to the glue I may employ a small quantity of liquid shellac and, when the shellac is employed, it will preferably take the place of an equal amount of glue.

Another ingredient which I employ in my improved composition is resin, which is dissolved in turpentine previous to being added to the said composition.

The proportions in which I wish to employ the said ingredients are about three-fourths ($\frac{3}{4}$) by weight of the paper pulp and one-fourth ($\frac{1}{4}$) by weight of the plaster of Paris, glue and resin. When liquid shellac is used, I prefer to employ slightly more than one-half ($\frac{1}{2}$) the quantity of glue specified and to replace the omitted glue with shellac so that, assuming the total weight of ingredients to be one hundred (100) pounds, the weight of the different ingredients will be substantially as follows:

Paper pulp—seventy-five (75) pounds,
Plaster—eight and one-third ($8\frac{1}{3}$) pounds,
Glue—eight and one-third ($8\frac{1}{3}$) pounds,
and
Resin—eight and one-third ($8\frac{1}{3}$) pounds.

If liquid shellac is employed, I would use about three (3) pounds of shellac and five and one-third ($5\frac{1}{3}$) pounds of glue in place of the eight and one-third ($8\frac{1}{3}$) pounds of glue.

The composition prepared of the foregoing ingredients, after being mixed, should be dried in a drier wherein it is exposed to heat evenly. When the composition is thoroughly dry, it will be found to be extremely light, to be strong and tough so that, if an article made from it is dropped upon the floor, it will not break, and to hold a nail which may be driven into it. Should, for any reason, I desire to make the composition harder, this can be done by reducing the quantity of paper pulp and increasing the other ingredients. To make the composition softer, the quantity of paper pulp should be increased and that of the other ingredients should be reduced.

The said composition is useful for a variety of uses. Among the uses for which the same is particularly adapted is for the manufacture of hat blocks. Hat blocks are used for the purpose of shaping and drying hats. They have, to a large extent, been previously made of wood or plaster of Paris. Vast numbers of these blocks are used, as the styles are constantly changing. The manufacture of blocks made of wood is expensive, and plaster of Paris, while largely employed for the purpose, is subject to many disadvantages, chief among which are the fact that they are easily broken and, further, that they will not hold a nail. My improved composition has shown itself to be particularly well adapted for this use.

In the foregoing specification I have stated the best manner of carrying my invention into effect now known to me, but the same may be modified within the limits of the appended claims, both in regard to the particular proportions of ingredients specified, which may be varied according to the use, and as to whether the resulting composition is to be harder or softer. The composition may be further varied by omitting the shellac, which I regard as desirable but not essential.

What I claim is:—

1. A new composition of matter containing fibrous material, plaster of Paris, glue and resin.

2. A new composition of matter containing paper pulp, plaster of Paris, glue and resin.

3. A new composition of matter containing paper pulp, plaster of Paris, glue, shellac and resin.

4. A new composition of matter containing about seventy-five per cent. (75%) of paper pulp and about twenty-five per cent. (25%) of plaster of Paris, glue and resin in substantially equal quantities.

5. A new composition of matter containing about seventy-five per cent. (75%) of paper pulp, about eight and one-third per cent. (8⅓%) of plaster of Paris, about eight and one-third per cent. (8⅓%) of resin, about three per cent. (3%) of shellac, and about five and one-third per cent. (5⅓%) of glue.

6. A new composition of matter the major portion by weight of which consists of finely-divided paper pulp and the balance of substantially equal quantities of plaster of Paris, resin and an adhesive.

7. A new composition of matter the major portion by weight of which consists of finely-divided paper pulp and the balance of substantially equal quantities of plaster of Paris, resin, and of a mixture composed of glue and shellac.

In witness whereof, I have hereunto signed my name.

ARNOLD WEXLER.