

UNITED STATES PATENT OFFICE.

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PROCESS FOR THE MANUFACTURE OF A RESISTIVE PAPER MASS FOR INDUSTRIAL PURPOSES.

1,001,446.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, STEFAN RADVÁNYI RIEGLER, a subject of the King of Hungary, residing at Üllői 52, Budapest, Austria-Hungary, have invented certain new and useful Improvements in Processes for the Manufacture of a Resistive Paper Mass for Industrial Purposes, of which the following is a specification.

10 The object of the present invention is a process for the manufacture of a paper mass which can be quickly and easily molded, which becomes tough and hard after drying, and is lighter than soft wood, so that it can be technically worked in any suitable manner. As the raw material to be worked in the process, such as waste paper or any other suitable paper, as well as the process of manufacture are extremely inexpensive, the product obtained can be employed for the most varied industrial purposes.

15 The manner of carrying the process into practice is the following:—The paper is softened for a relatively long time, preferably for 24 hours in cold water, and then thoroughly boiled. After boiling the paper mass is again softened in cold water for a relatively long time, preferably for 24 hours, and by means of this double softening and the intermediate boiling impurities and foreign bodies are removed from the paper mass. The paper thus preliminarily treated is thereupon disintegrated in suitable well-known hollanders or devils and then freed from its water contents by means of pressure. After pressing the paper mass is again subjected to a process of disintegration (for instance in suitable mills), in order to separate again the parts compressed during the compression process. Thereupon a little glue water, then a diluted and then a concentrated starch solution is added to the now finely divided paper mass, which may be bleached by any suitable well-known bleaching process for the purpose of destroying the color caused by the impurities, and thereupon a little water-glass and chlorid of zinc dissolved in water and zinc oxid is admixed to the mass. After adding these admixtures, the mixture is thoroughly kneaded, whereupon a plastic clay-like mass results, which can be molded or cast in any desired manner by hand molding or by stamping in molds or by pressing between

the dies of a press. The castings are then dried, and through the drying process the material becomes as hard as stone and extremely tough. The dried mass or the castings can be worked in any suitable manner; for instance, they can be turned, ground or polished.

The mass produced according to the new process is suitable for the production of fancy articles, articles for decoration and toys; if it is impregnated with any suitable waterproof rendering impregnating means, then it is also suitable for the production of building blocks, tiles and the like articles of use.

By the admixture of suitable filling materials the properties of the paper mass can be altered according to a given purpose. For instance, the mass may be made fireproof by the admixture of asbestos or by impregnating the castings in any suitable manner known for this purpose. By means of this at the same time a greater rigidity of the mass can be obtained, and by the addition of gypsum, cement, lime, sand, natural or artificial stone powder or the like, and by the addition of any well-known waterproof rendering means a tough and correspondingly heavy mass can be obtained, which is especially suitable for architectural purposes, and from which building blocks, roofing tiles and the like can be pressed. The paper mass can also be suitably colored by admixing suitable dye stuffs soluble in water.

The mass obtained by the new process has a further very valuable property, in as far as it is a very good electrical insulator and can replace the hitherto usual very expensive ebonite-porcelain-marble tablets and the like insulators.

The amount and the property of the admixtures can be varied according to the purposes in view, and the materials mentioned can be replaced by other materials acting in a similar manner without falling away from the scope of the present invention.

A paper-mass of the following composition has proved suitable:—1 kg. waste or any other paper. 3 dkg. of diluted glue solution. $\frac{1}{4}$ kg. of a diluted starch solution. $\frac{1}{4}$ kg. of a concentrated starch solution. 1 dkg. of water-glass, chlorid of zinc dissolved in water and zinc oxid.

What I claim as new and desire to secure by Letters Patent is:—

1. The process of manufacturing plastic material which consists in softening paper in cold water, then boil the softened paper in water then further soften the mass in cold water, disintegrate the mass and compress it to remove the water, again disintegrate the mass and add glue water and a starch solution, water-glass and chlorid of zinc dissolved in water and zinc oxid, knead the mass and then dry the mass.

2. The process of manufacturing plastic material, which consists in softening 1 kg. of waste paper in cold water, then boil the softened paper in water, then disintegrate the mass and compress it to remove the water, again disintegrate the mass and add 3 dkg. of diluted glue solution, $\frac{1}{4}$ kg. diluted starch solution, 1 dkg. of water glass, chlo-

rid of zinc dissolved in water and zinc oxid, knead the mass and dry the same.

3. The process of manufacturing plastic material, which consists in softening paper in cold water, then boil the softened paper in water, then further soften the mass in cold water, disintegrate the mass and compress it to remove the water, again disintegrate the mass and add glue water and a starch solution, water-glass and chlorid of zinc dissolved in water and zinc oxid, gypsum, cement, asbestos, knead the mass, and then dry the mass.

In testimony whereof I affix my signature in presence of two witnesses.

STEFAN RADVANYI RIEGLER.

Witnesses:

HUGH KEMENT,
C. SCHERT.