UNITED STATES PATENT OFFICE.

CARL GRÜNZWEIG, OF LUDWIGSHAFEN-ON-THE-RHINE, GERMANY, ASSIGNOR TO GRÜNZWEIG & HARTMANN, OF SAME PLACE.

BUILDING-BLOCK.

SPECIFICATION forming part of Letters Patent No. 482,890, dated September 20, 1892.

Application filed August 7, 1891. Serial No. 401,981. (Specimens.)

To all whom it may concern:

Be it known that I, CARL GRÜNZWEIG, a subject of the King of Bavaria, residing at Ludwigshafen-on-the-Rhine, in the Kingdom of Bavaria, German Empire, have invented new and useful Improvements in Building-Blocks, of which the following is a specification.

It is well known that from oils, fats, gum-resins, &c.—*i. e.*, from bodies which are insoluble in water—by grinding and mixing the same with mucilaginous binding agents—such as gum, sugar, yelk of eggs, or milky mixtures—so-called "emulsions" can be obtained, in which microscopically finely-divided small fat pellets are maintained in suspension. The behavior of tar in this respect is similar to that of oils, fats, &c. In lieu of organic mucilaginous binding agents finely ground in water, clay may also be used for producing the emulsion. Emulsions obtained by these means offer, moreover, still the advantage to form, after drying at a temperature as high as possible, (increased up to 160° centigrade,) for the purpose of expelling the volatile foreign associates, solid and at the same time elastic masses. Owing to their capability of resisting liquids, emulsions are particularly fit for serving as binding agents, in particular for vegetable bodies. An emulsion made of tar and clay, for instance, is an excellent binding agent for cork. By means of small quantities of such emulsion small cork pieces may be united to a plastic mass, which after having been thoroughly dried at a temperature of 160° centigrade forms a mass in many respects similar to the natural cork, but superior to the latter in numerous applications. The product is tough and elastic like cork, and it has the properties of the latter— viz., of serving as a bad conductor of heat. The size of the blocks or pieces to be formed is unlimited, and planks of any optional length and thickness may be made therefrom, which after drying are capable of being worked like wood, while cork can be obtained only in pieces of determined size. In addition to this cork is hygroscopic and shrinks in the heat, which is not the case with the artificially-obtained material, which property is particularly important when this material is used in high temperatures as a bad conductor of heat. Cork combines as little as wood with mortar or other plastering materials. With respect to the latter the new material has the same behavior as bricks or stones for building, so that it can be employed quite in the same manner as the said building materials and very often advantageously replace the same on account of its high degree of resistance to compressive and breaking strain, its low weight, and its property of being a bad conductor of heat.

In carrying out my invention I proceed as follows: One part of clay is mixed with four parts of water to form a uniform pulp. To this is added one-half part of tar, and this mixture is stirred until the tar has disappeared and a blue-white milky aqueous emulsion is obtained. Of this emulsion forty parts are added to two hundred and twenty parts of small cork chips, or the above-mentioned substances are employed in similar proportions. The product is molded and dried at a high temperature, so that the volatile particles of the tar are evaporated with the water. The resultant mass will consist of clay that has absorbed within its pores the finely-divided solid particles of the tar, and this constitutes the peculiar feature of my improved binding mass by means of which the small cork pieces are united, so as to form a solid simple body.

What I claim is—

The method of manufacturing blocks, which consists in forming an aqueous solution of clay and tar to constitute a pulp, stirring the same to form a milky blue-white emulsion, adding cork chips, and molding and drying the product to cause an evaporation of the volatile components of the tar, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL GRÜNZWEIG.

Witnesses:
C. MESSER,
R. H. GROPP.