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1,446,238.

G. YUMURA.
BRICK.
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Fig. 1.

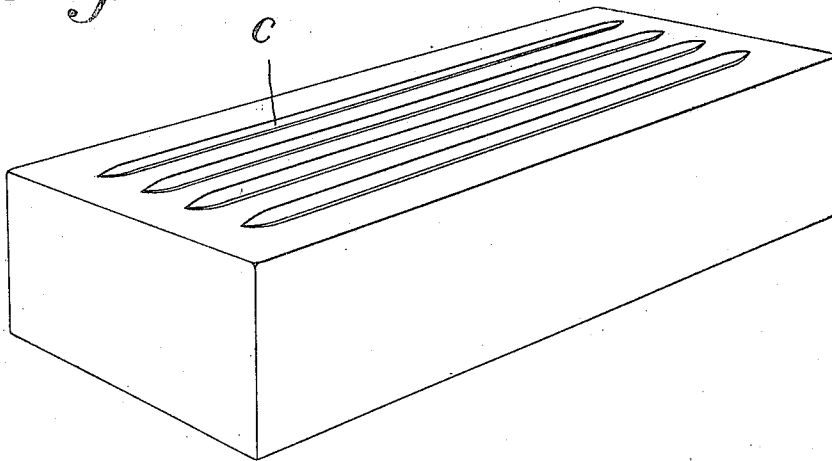
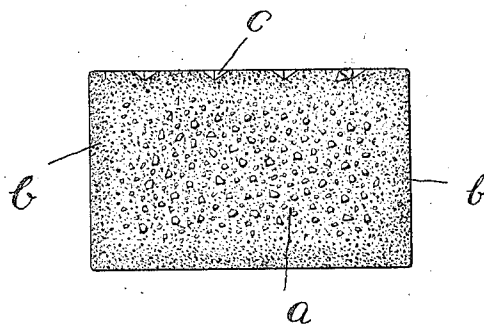


Fig. 2.



Inventor:
G. Yumura,
By Mark Clerk
Attys.

UNITED STATES PATENT OFFICE.

GENTARO YUMURA, OF TOKYO-FU, JAPAN.

BRICK.

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To all whom it may concern:

Be it known that I, GENTARO YUMURA, a subject of the Empire of Japan, residing at No. 1599 Oi-Machi, Ebara-Gun, Tokyo-Fu, Japan, have invented certain new and useful Improvements in Bricks, of which the following is a specification.

The present invention relates to improvements in bricks and has for its particular object to provide a relatively light, durable and fire-proof brick.

More particularly the present invention resides in the provision of a brick which is composed of crushed grains or gravels of liparite closely mixed with usual brick-earth or clay, the material being moulded to any suitable form and burned in a kiln in the usual manner.

Other objects, as well as the nature, characteristic features and scope of the invention will be more readily apparent from the following description taken in connection with the accompanying drawings and pointed out in the claim.

The invention is clearly illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of one of the improved bricks.

Fig. 2 is a cross sectional detail thereof.

Referring now, more particularly to the drawing, there is employed liparite which is a quartz-like trachyte. This liparite is preferably in the form of lava and rock and is secured from Nii-Jima Island, Idzu, Japan, the same being a porous, relatively light and comparatively strong and fire-proof rock. The rock is crushed into small grains or gravels and in this particular instance possesses desirable qualities, that is, they are refractory and self-fluxing so that when mixed with ordinary brick-earth or clay they are securely bound with the clay.

In forming the particular bricks indicated in the drawings subsequent to crushing the liparite the crushed pieces are divided into two classes, by a suitable shaking action, the coarser grains being of one-fourth to three-sixteenths of an inch in diameter and the finely crushed pieces being one-sixteenth of an inch or less in diameter. The particles

of the two classes are respectively mixed with clay in suitable proportion, for instance, one part of liparite and three parts of clay. The material is suitably moistened with water and kneaded in any desirable manner and afterwards moulded to form a brick, the inner part *a* of which is made of a material containing the coarsely crushed portions to provide for strength, while the outer part *b* is made of the finely crushed liparite and clay to obtain a smooth surface as shown in Figure 2. The bricks are dried and burned in a kiln in a suitable manner known in the brick making art. If desirable fine powder of liparite produced while the rock is being crushed may be added with either of the aforesaid materials in suitable proportion.

Although the bricks may be made in any shape, a desirable shape is illustrated in Figure 1. Also as indicated in this figure, the upper surface of the rectangular body of the brick may be formed with longitudinal grooves to facilitate the anchoring of the mortar, subsequent to the laying of the brick.

Bricks constructed according to the present method being very light and at the same time durable, lessen the weight of buildings and permit of other advantages in architecture, especially in the construction of walls, arches, floors, etc., as by reducing the dead weight of bricks. Moreover, owing to their fire-proof nature, the bricks are adapted for the construction of fire-walls, furnaces, etc.

It is believed in view of the foregoing that further detail description of the invention is entirely unnecessary. Likewise, it is believed that the advantages both from a constructional and commercial standpoint are appreciated.

Having thus fully described the invention what is claimed as new and desired to be secured by Letters-Patent is:

A brick composed of a mixture of crushed grains of liparite and clay.

In testimony whereof I have affixed my signature.

GENTARO YUMURA.