(No Model.) 2 Sheets—Sheet 1.

J. DARRIGAN.

BRICK.

No. 306,137. Patented Oct. 7, 1884.

Fig. 4.

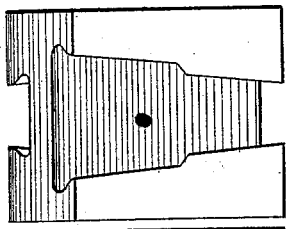


Fig. 3.

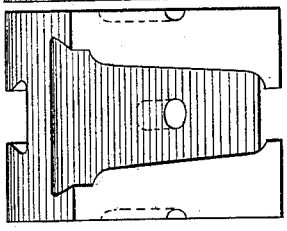


Fig. 6.

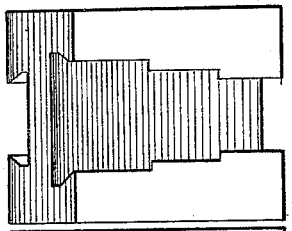


Fig. 5.

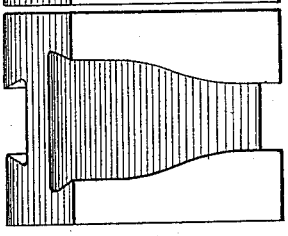


Fig. 2.

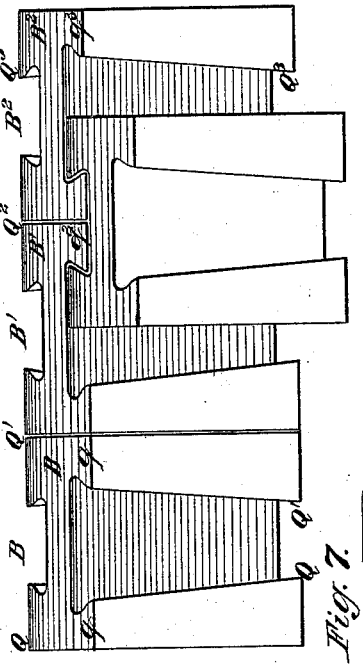


Fig. 9.

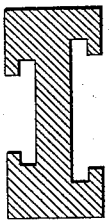


Fig. 10.

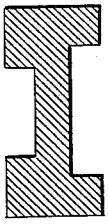


Fig. 8.

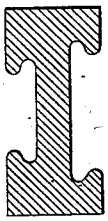
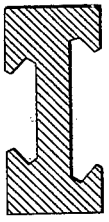


Fig. 11.



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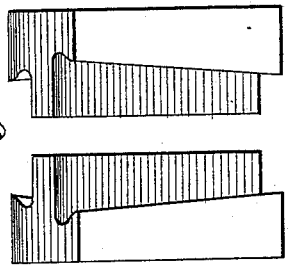
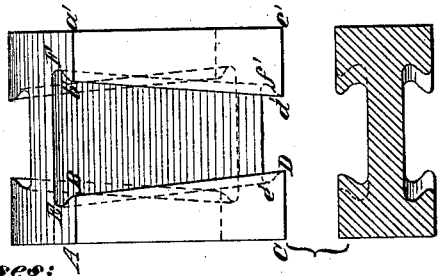


Fig. 1.



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BRICK.

No. 306,137. Patented Oct. 7, 1884.

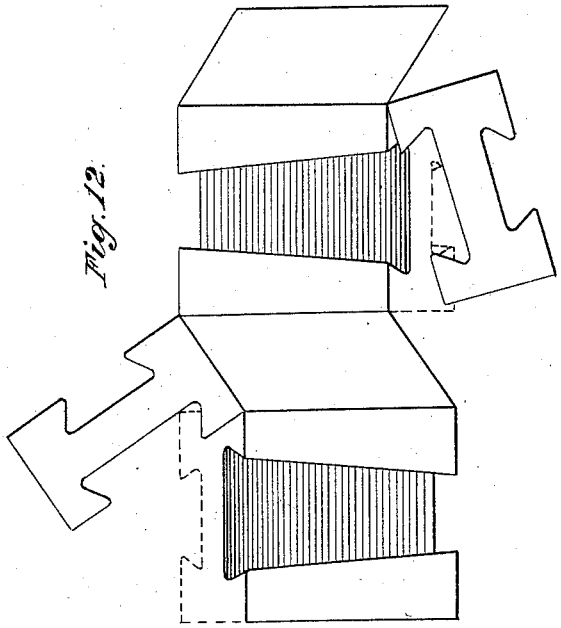

Fig. 12.

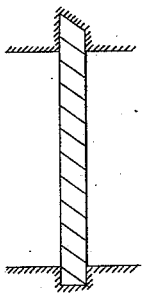

Fig. 18.

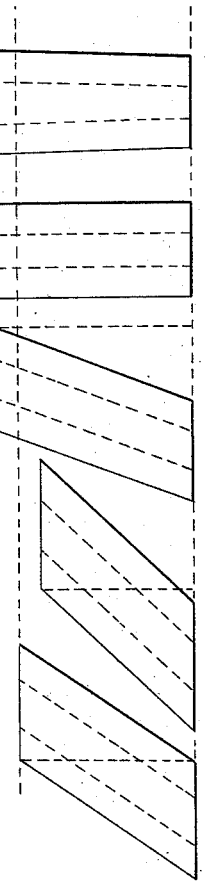

Fig. 17. Fig. 16. Fig. 15. Fig. 14. Fig. 13.

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UNITED STATES PATENT OFFICE.

JEAN DARRIGAN, OF CAGNOTTES, FRANCE.

BRICK.

SPECIFICATION forming part of Letters Patent No. 306,137, dated October 7, 1884.

Application filed January 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JEAN DARRIGAN, of Cagnottes, in the Department of Landes, in the Republic of France, have invented a new and useful Improvement in Bricks, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to a description of double-jointed bricks called "interlocking bricks," adapted for all kinds of buildings, but more particularly for flooring, terraces, flagging, vaults, flat or arched, stairs, partitions, &c., which, owing to their construction, do not necessitate the use of any horizontal supporting-pieces of wood, iron, or other material.

My improved brick is distinguished by having formed on each of its two opposite broad faces a cavity which is of trapezoidal form in planes parallel with said faces, and is of dovetail form in transverse section, the said cavities being disposed in inverse directions, or having reverse taper upon the two sides of the brick, their average breadth being equal to one-half of the breadth of the brick. In this manner the projecting parts of two adjoining bricks are interlocked, and are accurately inserted and make a perfectly solid whole, either in a transverse or a longitudinal direction. For this reason it is understood that the inversion in the oblique cavities and projections of the mass of bricks makes it impossible to take out any brick from the structure without breaking it. From whichever side the pressure is exerted the very act of abstraction makes the mortar, plaster, or cement employed more adhesive. Although bricks set in this way may be used like common bricks for building walls or partitions, they are more particularly intended to be arranged vertically, or oftener in an oblique position for building floors, vaults, terraces, &c., and they have not only a perfectly resisting quality, but also present the advantage of not exercising any lateral pressure upon the walls which they support. These walls, on the contrary, being solidly formed, are bound in a vertical direction. Again, be it understood that instead of employing trapezoidal shapes for the clamped surface of my bricks, I may equally well make use of two half-bricks of the form described, with one or more projections, which are severally disposed upon the two opposite faces of each brick. This attains the same end as the brick with trapezoidal cavities. In either case bricks manufactured according to my invention are particularly intended to be used in an oblique position, such as in the spring of an arch, their small lateral faces generally presenting the form of a parallelogram in which the angle determines the inclination at which the bricks ought to be placed. This arrangement has the effect of carrying back part of the pressure, which is generally exercised upon the surface of the floor, as will be hereinafter described. These bricks can also be made of lateral rectangular shapes, and be placed horizontally upon the surface of the masonry to stay it.

I have represented in the complete drawings annexed to this specification several forms of bricks embodying my invention, and the manner in which they are arranged and joined together.

Figure 1 represents a perspective and a plan view of a brick illustrating my invention. Fig. 2 is a perspective view of a series of my improved bricks. Fig. 3 is a view of a brick with holes for receiving dowels. Figs. 4, 5, and 6 are modified forms of bricks. Fig. 7 is a perspective of two half-bricks. Figs. 8, 9, 10, and 11 are transverse sections of different forms in which we can make the bricks. Fig. 12 is a projection of the several faces of one of the bricks. Figs. 13, 14, 15, 16, and 17 show different profiles which may be given to the bricks to adapt them to different uses. Fig. 18 represents on a smaller scale a floor composed of such bricks as are shown in Figs. 13, 14, and 15, supported only at the ends of the course.

The form and dimensions of the bricks may be varied; but they ought always to be constructed in such a manner that the trapezoidal inclinations are placed in a direction symmetrically opposite upon the two faces of the brick. The large end E F, Fig. 1, of the cavity on one of the faces may contain the two united projections C D and c' d', and the small end e' f' of the cavity may contain the two united projections A B and a' b'. The lines which unite the point B to the point D and

the point b' to the point d' may be straight, curved, or broken, as shown in Figs. 1, 3, 4, 5, 6 in the drawings. The drawings show the construction clearly, and also the dovetailed form of the cavity of each brick. The bricks ought to be placed side by side, forming a series, B B′ B², &c., as shown in Fig. 2, so that the narrow ends of the projections and the broad ends of the cavities will be in the same line, and vice versa. They will then produce at their junction complete dovetailed projections Q Q′ Q² upon one of the faces of the series, and q q' q^2 upon the other. These inversions of the bases occur in such a manner that all the projections on the front face in the row of bricks B B′ B² may be exactly and correctly clamped by the cavities C C′ C² of the rear face of the succeeding row, and so on.

The sectional forms of the cavities of the bricks may be varied, as has before been said, and Figs. 6, 7, and 11 show three of these modes of variation.

Fig. 10 represents one of the ends of a brick, in which the cavities are perpendicular. This brick may be used in buildings where there is a sufficient stay upon two opposing lines, and it can be employed for doubling a surface already strengthened in every direction.

For ordinary buildings I use a beveled brick—that is to say, having bases oblique to the body of the brick, which gives it on two sides a rhomboidal form. It is consequently set sloping, as indicated by Figs. 13, 14, and 15. As it is likewise indicated in those figures, the slope may be varied at pleasure. This slope gives the bricks much more solidarity the one with the other; but for small surfaces—such as steps of stairs, &c.—the form shown in Fig. 16 with vertical sides will be preferable. When required to make a centered arch they may be of the form shown in Fig. 17, thicker at one end than the other in proportion to the rise which we wish to give to the arch, but always leaving the cavities and projections to make the joint. The oblique or rhomboidal profile, or this difference of thickness, only appears on the plain full faces of the brick, and not on the faces having the grooves and projections.

In molding the bricks a certain looseness is provided for between the projecting parts of each brick and their corresponding trapezoidal cavity in the other. This looseness is equally distributed between all the surfaces, and is intended to receive the mortar, cement, plaster, or any other plastic material employed for cementing the bricks in juxtaposition.

These bricks may be made not only of baked clay, but also of cement or hardened plaster—in short, of any susceptible (soft) material which will form ornamental stone. In short, I claim I can manufacture hollow bricks prepared in the same way for building, where the greatest possible lightness with solidity is required.

I may also manufacture bricks by my system leaving the interior faces of the cavities parallel. In this case the bricks may be drawn through a draw-plate.

This kind of brick, with profile of the oblique-angled figures shown in Figs. 13, 14, and 15, can be used, as represented in Fig. 18, without using any horizontal auxiliary supports but the exterior supporting-walls.

I am aware of British Letters Patent No. 2,046, granted A. D. 1795 to Cartwright, and I do not claim anything therein shown or described as of my invention. In said patent each of two opposite faces of a brick is composed of or comprises a trapezoidal cavity and two projections, the aggregate dimensions of which are equal to those of the cavity. My bricks also have opposite faces, each composed of or comprising a similar cavity and projections. The essential difference between Cartwright's bricks and mine is that in his patent the two cavities and projections on opposite faces of a brick taper in the same direction, or are parallel, while according to my invention the cavities and projections on one face of the brick have a reverse taper to the projections and cavity on the opposite side of the brick.

Although Cartwright's bricks might be employed advantageously to build an arch or a wall they could not possibly be used to lay a horizontal pavement or floor unless props or other sustaining devices are employed to hold up such pavement or floor as fast as it is laid. With my bricks the pavement or floor will be self-sustaining as fast as it is laid. Suppose, for example, the first line of bricks are fast in a wall, with their projections extending beyond the face thereof, the larger ends of the cavities being uppermost. The next row or line of bricks are then placed by pushing them downward, their projections sliding into the downwardly-tapering cavities of the bricks of the first row or line. The cavities on the outer or exposed faces of the bricks of the second row or line will have their wider or larger ends uppermost, and a third row or line of bricks may be slid downward into engagement with the bricks of the second row or line, and so on till the floor or pavement is laid, each course or line being sustained by the preceding course, and in its turn sustaining the next succeeding course or line. It is because of the reverse taper of the cavities on the opposite faces of each brick that the bricks of each succeeding row may be placed by sliding them downward, and that the cavities in the exposed faces of the bricks of each course or line always have their larger or wider ends presented upward, to permit of so placing the bricks of the next course or line.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A brick for use as herein described, having opposite faces each composed of or comprising a trapezoidal cavity and two corresponding projections, the aggregate dimen-

sions of which are equal to those of the cavity, the cavity and projections on one face having a taper reverse to those on the other face, substantially as and for the purpose herein described.

2. A brick for use as herein described, having opposite faces of rhomboidal form and other opposite faces each composed of or comprising a trapezoidal cavity and two corresponding projections, the aggregate dimensions of which are equal to those of the cavity, the cavity and projections on one face having a taper reverse to those on the other face, substantially as and for the purpose herein described.

JEAN DARRIGAN.

Witnesses:
EUG. DUBUIL,
AUG. HASLER.