

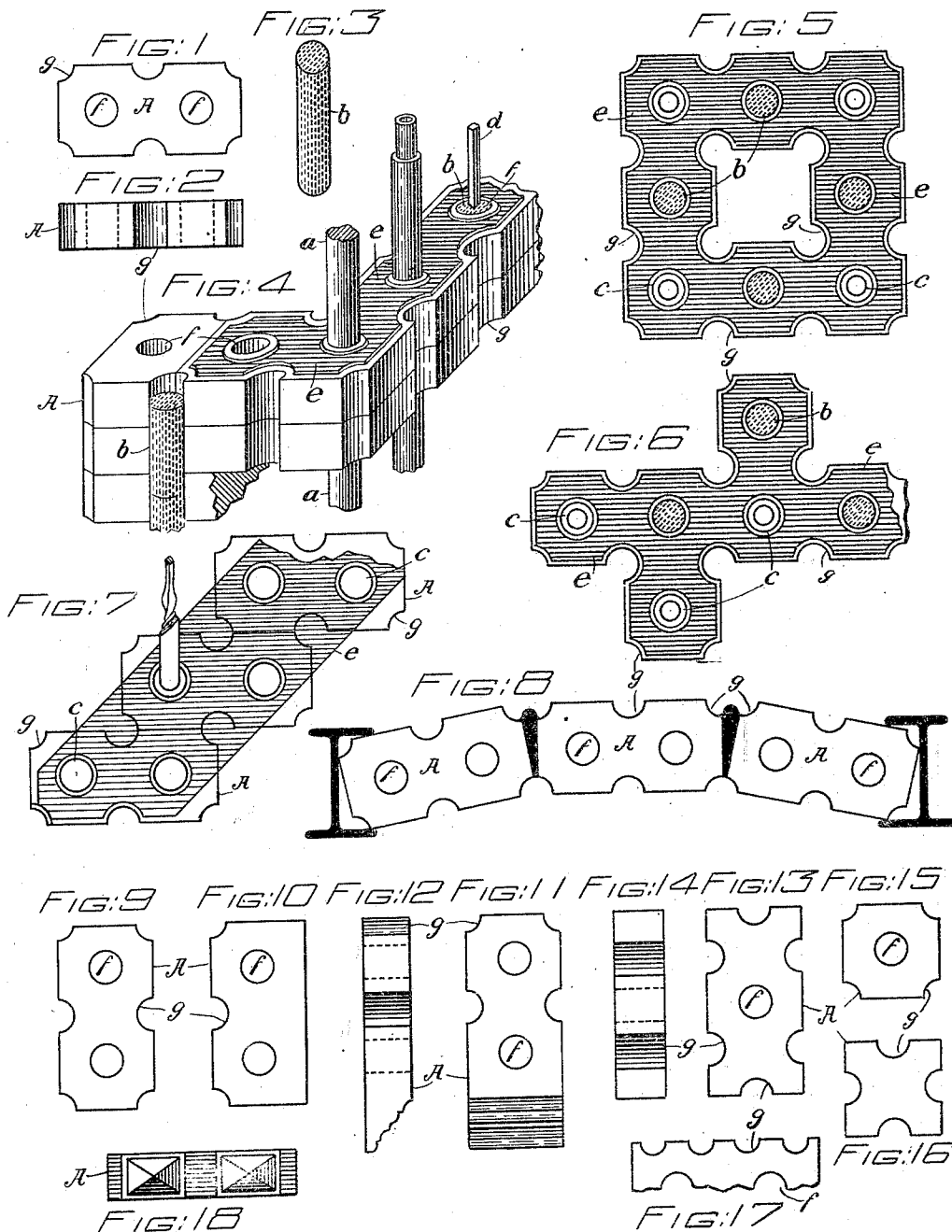
(No Model.)

2 Sheets—Sheet 1.

J. J. HESZ.
BRICK STRUCTURE.

No. 497,959.

Patented May 23, 1893.



WITNESSES:

W. A. Schaefer
Thomas M. Smith.

INVENTOR:

Josef Julius Hesz
By Walter Dimpf
ATT'Y.

(No Model.)

2 Sheets—Sheet 2.

J. J. HESZ.
BRICK STRUCTURE.

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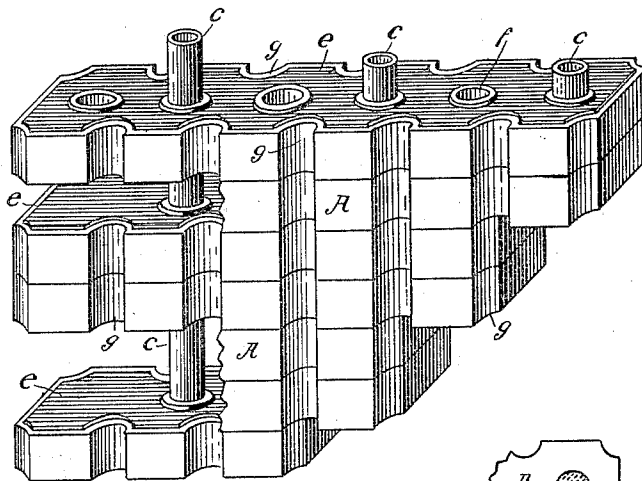


FIG. 19

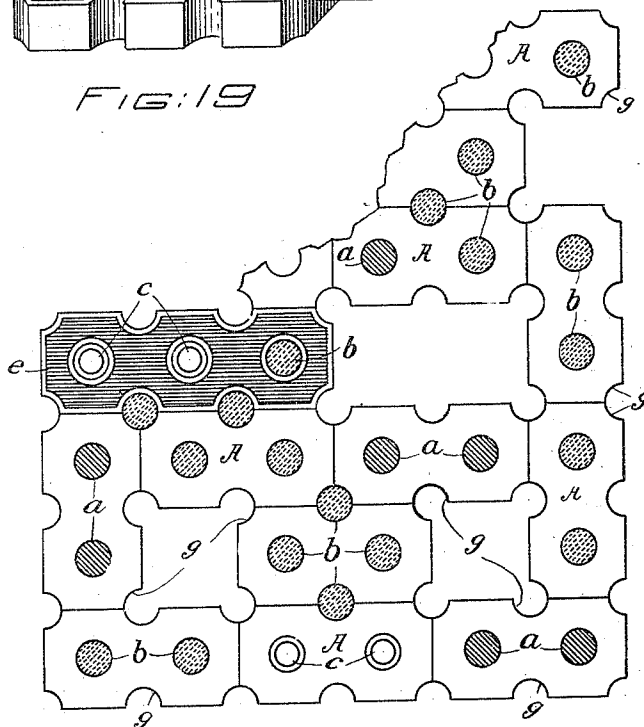


FIG. 20

WITNESSES:
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UNITED STATES PATENT OFFICE.

JOSEF JULIUS HESZ, OF VIENNA, AUSTRIA-HUNGARY.

BRICK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 497,959, dated May 23, 1893.

Application filed November 5, 1892. Serial No. 451,130. (No model.)

To all whom it may concern:

Be it known that I, JOSEF JULIUS HESZ, a subject of the Emperor of Austria-Hungary, and residing at Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Brick Structures, of which the following is a specification.

My invention relates to the manufacture of bricks for building and other purposes; and more particularly to their construction and arrangement and means for uniting and connecting the same.

The principal objects of my invention are first, to provide an ornamental, neat, durable, and efficient brick for building and other purposes; second, to provide a brick having openings in the body thereof and with recesses or channels in the peripheral surface for the reception of tie-rods and distance-pieces at the union of the edges of the bricks with each other; and fourth, to provide a brick with openings extending through the body thereof and with peripheral recesses or channels and tie-rods or pieces adapted for insertion through the openings and recesses or channels of the united bricks and perforated sheets or plates adapted to the surface or face of the brick for resisting sidewise strain or pressure and for maintaining the tie-rods in proper position in respect to the bricks.

My invention consists of the improvements in bricks hereinafter described and claimed.

The nature, general features and scope of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which—

Figures 1 and 2, are respectively front and side elevations of a brick embodying the main features of my invention. Fig. 3, is a perspective view of a clay or other material tie-rod adapted for insertion through one of the openings in a brick of my invention and of the type illustrated in Fig. 1. Fig. 4, is a perspective view of a certain number of layers of bricks of my invention and this view representing a corner wall of a building made up of bricks placed in position and also showing several forms of tie-rods or bonds extending through the internal openings in the body of the bricks and also showing the perforated reinforce or spanning plates or sheets inter-

posed between united bricks. Figs. 5 and 6 are top or plan views of a brick constructed so as to form a fixed column and a party wall. Fig. 7 is a perspective view of a fire proof step composed of bricks of my invention with metal tubular tie-rods or pieces inserted through and holding the bricks in position and with a suitable banister applied to the extremity of one of the tubular tie-rods or pieces. Fig. 8, is an elevational view of an arch comprising end I-bars with interposed bricks of my invention supported in position by tie-rods or pieces and distance-pieces or wedges at the union of the edges of the bricks composing the arch. Figs. 9 to 18 inclusive, represent elevational views of bricks of my invention for inside or outside walls, moldings, channeled columns and for other purposes in connection with building operations. Fig. 19, is a perspective view of a beam bearing having tubular tie-rods extending therethrough and with sheet metal plates interposed between certain of the layers or courses of the bricks mounted in position; and Fig. 20, is a top or plan view of a series of bricks showing their application to masonry in general, but as illustrated more particularly to the main wall of a building and having as so arranged spaces or passages in the several layers or courses of the bricks mounted in position for the insertion of gas, water or other pipes and electric wires.

Referring to the drawings A represents the brick of my invention composed of clay or other suitable material or materials and each having one or more openings *f*, extending through the body portion thereof for the reception of the tie-rods or pieces composed of clay, wood, metal or other suitable material. These tie-rods may be formed of tarred wood *a*, clay or similar material *b*, sheet iron formed into tubes *c* or of rectangular bars *d* adapted to be cemented in the opening *f*, of the bricks, arranged in courses to form a structure substantially the manner illustrated in Figs. 4 and 19. Between each or certain of the courses are interposed sheet iron or other metal plates *e*, in order to maintain the tie-rods in their proper position and against end or sidewise strain, pressure, expansion or contraction of the bricks mounted upon each other in layers or courses to form a structure.

The bricks A, are provided with peripheral

recesses or semi-circular or other channels *g*, in order that when the bricks are placed in position and suitably cemented to each other at the sides or ends the recesses or channels *g*, will form openings into which may be inserted any of the several forms of tie-rods or bonds illustrated in Figs. 3 and 4, of the drawings.

The half-brick A illustrated in Fig. 15, is provided with but one opening *f*. The peripheral recesses or channels *g* thereof may be arranged so that the openings *f*, will be formed at the corners or sides or at the center as shown in Fig. 16, or in such manner that the peripheral recesses or channels are distributed at the ends and sides of the bricks as illustrated in Figs. 13 and 17.

The formation of the openings in the bricks is effected either by pressing the bricks in a suitable mold or by the cutting or pressing out of the material so as to form the openings therein. The holes in the bricks also serve, together with the usual mortar binding, for connection with each other by means of the ties as illustrated at *a*, *b*, *c* and *d*, Fig. 4, and which may be made of either metal tubes or angle-irons, rolls of brick material or tarred or other preferred wood rods. Any peripheral recesses or channels remaining unprotected can be used for the reception of gas and water pipes or speaking tubes and the like.

In using my improved bricks they should be arranged in courses or layers in such manner as that the openings will preferably cover the respective peripheral recesses or channels, so that, by being laid over and next to each other, hollow cylinders may be formed into which are fitted the bonds or ties hereinbefore explained.

In Figs. 4 and 19, is illustrated the manner of arranging my improved bricks found practically efficient in building operations, and there is also shown in connection with them the best mode of connecting the bonds or tie-rods *a*, *b*, *c* and *d* therewith and for maintaining the same in position in courses or layers to form a structure. For maintaining the bricks at equal distances apart and for resisting any strain or sidewise pressure or movement, the iron plates *e*, provided with holes corresponding with the openings *f*, in the bricks may be employed with excellent results. These plates

are in building interposed between the respective courses of bricks. It may be remarked that these iron plates should correspond with the building line and in form may be either flat, angular or of other preferred shape for this purpose. The use of the iron plates *e*, arranged in connection with the bricks and their ties as hereinbefore explained greatly strengthen the structure, for example, prevent swaying or vibration, and especially in the construction of railway embankments and the like.

In walls having many layers or courses of bricks in thickness, it is in many cases desirable in order to obtain greater rigidity through the ties, that the rows of bricks should be laid upon each other longitudinally and cross-wise.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a brick provided with internal openings and external recesses or channels and tie-rods, substantially as described.

2. In combination, a brick provided with openings and recesses or channels in the periphery thereof, tie-rods or pieces adapted to be inserted through the openings and spanning strips or wedges, substantially as described.

3. The combination, in a brick provided with peripheral recesses or channels, sheets or plates and tie-rods or pieces for supporting and preventing sidewise strain or pressure, substantially as described.

4. The combination, in a brick provided with recesses or channels, tie-rods or pieces adapted to be inserted through said brick and a metallic plate or piece, substantially as described.

5. In combination, a brick provided with peripheral recesses or channels and openings in the body thereof, perforated sheets or plates, and tie-rods adapted to be inserted through the openings of said brick, substantially as described.

In witness whereof I hereunto set my hand in presence of two witnesses.

JOSEF JULIUS HESZ.

Witnesses:

W. B. MURPHY,
VICTOR TISCHLER.