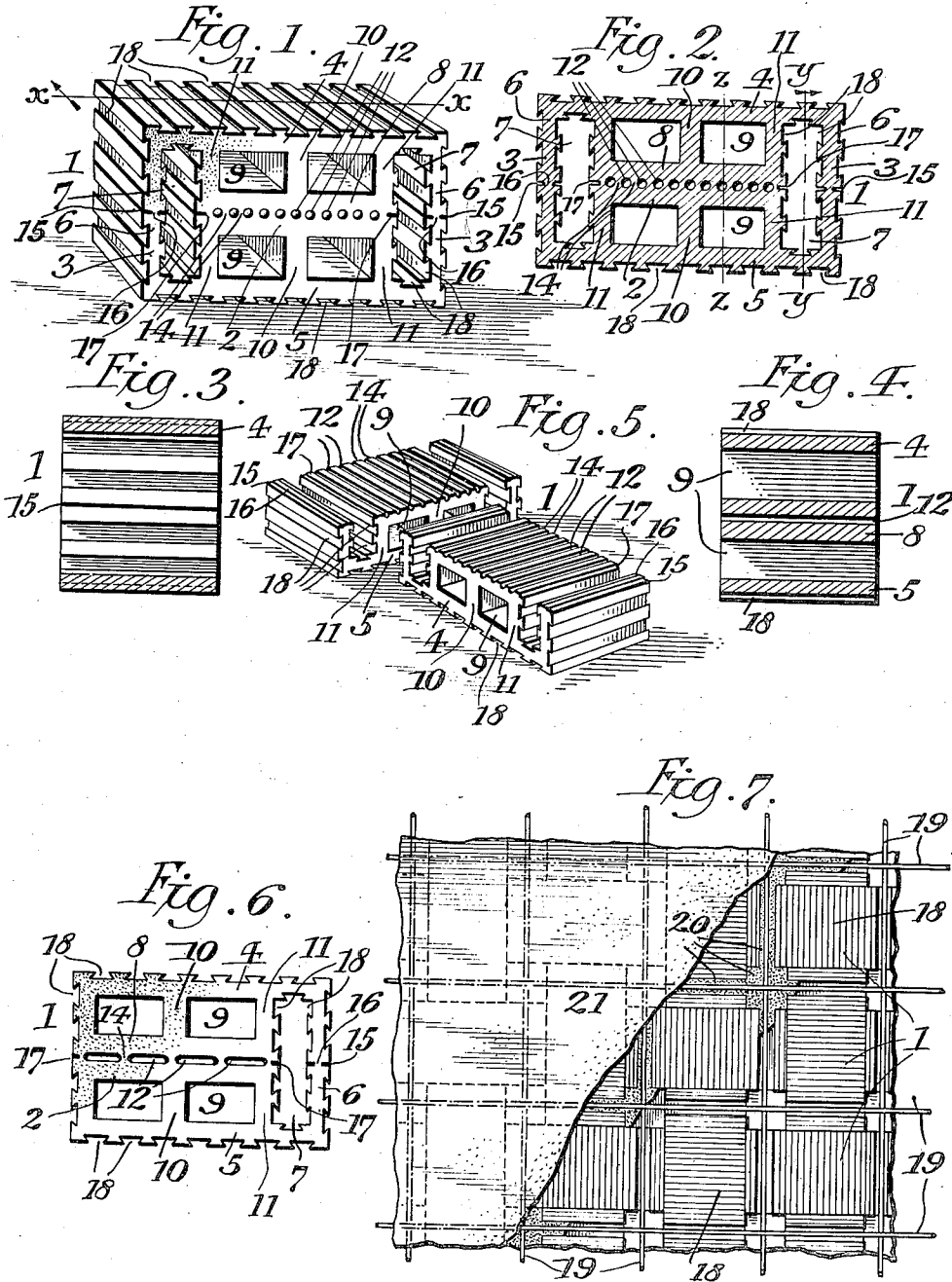


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FLOOR BLOCK FOR BUILDING CONSTRUCTIONS.
APPLICATION FILED DEC. 16, 1910.

1,125,908.

Patented Jan. 19, 1915.



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UNITED STATES PATENT OFFICE.

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FLOOR-BLOCK FOR BUILDING CONSTRUCTIONS.

1,125,908.

Specification of Letters Patent.

Patented Jan. 19, 1915.

Application filed December 16, 1910. Serial No. 597,643.

To all whom it may concern:

Be it known that I, ROBERT W. LYLE, a citizen of the United States, and resident of South River, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Floor-Blocks for Building Constructions, of which the following is a specification.

This invention relates to improvements in floor blocks for building constructions, and it has particular relation to an improved block adapted for the type of floor constructions as described in the co-pending application for patent filed December 8, 1910, by Christian A. Christiansen, Serial No. 596255. Such types of floor constructions produce a fireproof floor formed of hollow blocks of terra cotta or analogous material and reinforced concrete whereby the assembled blocks are connected in a rigid structure, and in the particular type of floor constructions to which my present improvements especially relate the blocks are of substantially rectangular and elongated form and have channeled end portions and are set at right angles to each other, whereby crossing channels extend continuously with relation to the set of blocks intermediately of the body portions thereof, crossing reinforcing and supporting rods and fillings of concrete or hardening plastic being set in said channels.

The object of my invention and improvements is to provide an improved block, adapted for use in floor constructions of the type just indicated, which can be effectively and economically manufactured by an ordinary clay die-press, and which in its form as produced by the press and burned in the kiln will have a uniform exterior surface without any projections or obstructions whatever.

A further object of my invention is to provide an improved block of this character which, by reason of its form and uniform and unobstructed exterior surfaces, will economize space in kiln burning and in transportation, which will have no projecting construction elements liable to chipping or breakage in manufacture or transportation or use, and which will furthermore possess advantages in point of simplicity, economy and convenience in manufacture and use, strength, and general efficiency.

In the drawings—Figure 1 is a perspec-

tive view of one of the improved blocks in its commercial form as produced from the die-press and kiln and ready for transportation and use. Fig. 2 is a detail cross-section on the line $x-x$, Fig. 1. Fig. 3 is a detail cross-section on the line $y-y$, Fig. 2. Fig. 4 is a detail cross-section on the line $z-z$, Fig. 2. Fig. 5 is a perspective view of the separated sections of the block, as applied in the floor construction. Fig. 6 is a side view of one of the blocks as constructed for the terminal portion of the floor construction adjacent the building side walls or beams between which the floor is set. Fig. 7 is a top or plan view of a section of floor construction, partly broken away to show the associate features of construction, as constructed with the block sections shown in Fig. 5.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the improved block, which is constituted in its entirety by terra cotta or analogous fireproof material. The block is in general of square or rectangular form, preferably elongated with respect to its width, and is adapted to be produced from a continuous length issuing from an ordinary clay die-press, by cutting the product issuing from the press transversely to produce the blocks of desired width. The block comprises a main or body portion, 2, which is hollow for purposes of lightness, and end portions, 3, provided beyond said body portion and also of hollow construction, which end portions are adapted to form the crossing channels for the reinforcing rods and concrete when the sections of the block are assembled in floor constructions. The hollow block comprises a top wall, 4, a bottom wall, 5, and end walls, 6—6, the latter being formed by longitudinal bores or cavities, 7, in the end portions 3 and extending from the top wall 4 to the bottom wall 5. The body portion 2, which is intermediate of the end bores or cavities 7, has a solid central portion, 8, extending between the end bores 7, and its hollow status is preferably produced by one or more longitudinal bores or cavities, 9, above and below the central portion 8, which when a plurality of such bores are provided are divided by longitudinal partitions, 10, respectively extending between the central

portion 8 and the top and bottom wall 4 and 5. The hollow construction of the body portion 2 produces side walls, 11, respectively above and below the central portion 8, which side walls in conjunction with the end portions of the central portions 8 form the inner sides of the end bores or cavities 7. The central portion 8, produced in the hollow construction of the body portion 2 as above described, is preferably of twice the thickness of the top and bottom walls 4 and 5, and said central portion 8 thus forms a wall or partition of double thickness with relation to the outside walls of the block, at the center of the hollow construction and extending across the middle of the body portion 2 between the bores or cavities 7 in the end portions 3 of the block.

The block, constructed as above described, has a uniform exterior surface entirely free from any obstructions or projections, and it comprises two half sections, constituted by the top and bottom portions, of identical form and construction. These corresponding half sections are separated or divided in the practical use of the block in floor constructions of the type to which my improvements relate, and the block is adapted for the convenient and ready separation of its sections. For this purpose, the top and bottom sections of the block are partly separated on a median line extending through the double-thickness central portion 8 and the end walls 6. The preferred construction for effecting this partly separated status of the top and bottom sections comprises a series of bores, 12, extending through the center of the central portion 8, transversely of the block and longitudinally with relation to the body bores or cavities 9, which bores 12 divide said central portion 8 into open spaces and intervening narrow ribs, 14. Said dividing bores 12 may be circular in cross-section, as shown in Fig. 2, or elongated, as shown in Fig. 6, or they may be of any other suitable or adapted cross-sectional contour. The preferred divisional construction also comprises means for the ready separation of the block sections at the end walls 6, and for this purpose said end walls are scored or kerfed, as at 15, transversely of the block and longitudinally with relation to the end bores or cavities 7 and on a median line corresponding to the plane of the series of dividing bores 12. The scores or kerfs 15 are preferably provided at the outer and inner sides of the end walls 6, and thus produce a narrow intermediate connecting rib, as at 16, and a corresponding score or kerf, as at 17, may be provided at the inner wall of the end bores or cavities 7 on a line intersecting the plane of the series of dividing bores 12. It will be understood that the dividing bores 12 and the kerfs 15 and 17 can be readily produced by knives or

formers suitably placed in the die of the press.

The improved block, constructed as above described, is in finished initial condition as it is produced from the die-press and burned in the kiln and ready for transportation and use, and it comprises a double block constituted by two half sections adapted to be separated for use in floor construction. The composite complete block has no projecting features whatever, liable to chipping or breakage in handling and use, its exterior surface being entirely without obstructions, and its form furthermore affords maximum economy in space for both kiln burning and transportation.

When the blocks are assembled in floor construction, the top and bottom half sections are separated and detached, which can be readily and conveniently effected, under the construction as above set forth, by simply driving a spike or suitable tool in the dividing bores 12, which will exert an expansive action and divide the block on its median line by breaking the narrow ribs 14 and 16 immediately of the dividing bores 12 and the kerfs 15. When thus divided, one of the half sections of the block has its bottom wall constituted by the top wall 4, its top wall constituted by the upper part of the central portion 8, and its end portions constituted by half of the end walls 6, with open channels constituted by half of the end bores or cavities 7, and the other half section is correspondingly constituted with its bottom wall formed by the bottom wall 5, and its top wall formed by the lower part of the central portion 8, as shown in Fig. 5.

The external surfaces of the block 1 are provided with grooves, as at 18, in a longitudinal plane with relation to the bores or cavities 7 and 9, which grooves provide a binding surface for the adhesion and locking of the plastic or cementitious material in the floor construction. Said binding surface is preferably constituted by grooves of undercut or dove-tail contour, as herein shown. The grooves 18 are preferably provided at the outer surface of the top and bottom walls 4 and 5 and the end walls 6, and in the walls at the inner opposite sides of the end bores or cavities 7 (to form a binding surface for the concrete filling in the floor construction), and they may also be provided if desired at the inner face of the top and bottom walls 4 and 5 with relation to the end bores or cavities 7. It will be understood that these grooves are readily produced by suitable formers in the dies of the clay press.

It will be understood that under some circumstances of construction the block 1 may have the end portion 3 formed at only one side of the body portion 2, as shown in

Fig. 6, to produce a block which is adapted for service at the edge of the floor construction adjacent the building walls or beams between which the floor is set.

5 In the improved floor construction produced by the blocks herein described, a suitable platform or scaffolding is first set between the building walls or beams, and on this the divided half sections of the blocks
10 1 are placed with the wall formed by the half of the central portion 8 forming the top surface and with the open channels constituted by half of the end bores or cavities 7 opening upwardly. The divided half sections
15 of the blocks 1 are of rectangular and elongated form, corresponding to the form of the block before said half sections are divided, and said sections are set upon the platform or scaffolding in reversed position
20 with respect to their elongated form, so that the end walls of one section set against the terminal ends of the body portion of adjoining sections and thus close the bores or cavities 9 in the hollow body portion 2 of the
25 respective sections, this closure being desirable to prevent the concrete or plastic from entering said bores and to preserve the lightness of the floor structure. The divided block sections are thus placed alternately at
30 right angles to each other, as shown in Fig. 7, and the open spaces or channels formed by half of the end bores or cavities 7 at the ends of the block thus extend continuously between the assembled set of block sections
35 and cross each other at right angles. Reinforcing rods, 19, are then set in crossing position in said channels, extending continuously of the set of block sections, the rods being secured or anchored in the usual
40 manner at their ends with relation to the building walls or beams between which the floor construction is set, and being suspended from said anchorage, whereby they operate as supports for the floor construction
45 in its final status. The concrete, as at 20, is then filled in said continuous and crossing open channels extending between the set of block sections, and surrounds the rods 19, and the top surfacing of concrete or cementitious material, 21, is applied over the top
50 surface of the floor construction, to form the floor base surface. When the plastic construction has suitably set, the supporting

scaffolding is removed and to the bottom surface of the floor construction is applied 55 a cementitious material or plastic to constitute the ceiling surface.

I do not desire to be understood as limiting myself to the detail construction and arrangement of parts as herein shown and 60 described, as it is manifest that variations and modifications therein may be resorted to, in the adaptation of my invention to varying conditions of use, without departing from the spirit and scope of my invention and improvements. I therefore reserve 65 the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claim.

Having thus described my invention, I claim and desire to secure by Letters Patent:

An integral hollow unit for the purpose described consisting of top and bottom walls, side walls connecting said top and bottom 75 walls, intermediate upright walls extending between said top and bottom walls and spaced from said side walls whereby continuous outer passages bounded by the said side and intermediate walls and portions of 80 the top and bottom walls are formed, and an intermediate relatively thick horizontal wall extending between said intermediate upright walls centrally between and parallel with said top and bottom walls whereby 85 continuous intermediate passages bounded by portions of the top, bottom and intermediate upright walls and by said intermediate horizontal wall are formed, said intermediate horizontal wall having a plurality of 90 bores extending lengthwise therethrough and said side walls having kerfs extending lengthwise thereof in the same horizontal plane with said bores whereby said unit is divisible on a median plane through said 95 central wall to form separate blocks each having substantially U-shaped parallel outer channels and an intermediate open ended hollow portion.

In testimony whereof I have signed my 100 name in the presence of the subscribing witnesses.

ROBERT W. LYLE.

Witnesses:

JOS. REED LITTELL,
BESSIE COSTIGAN.