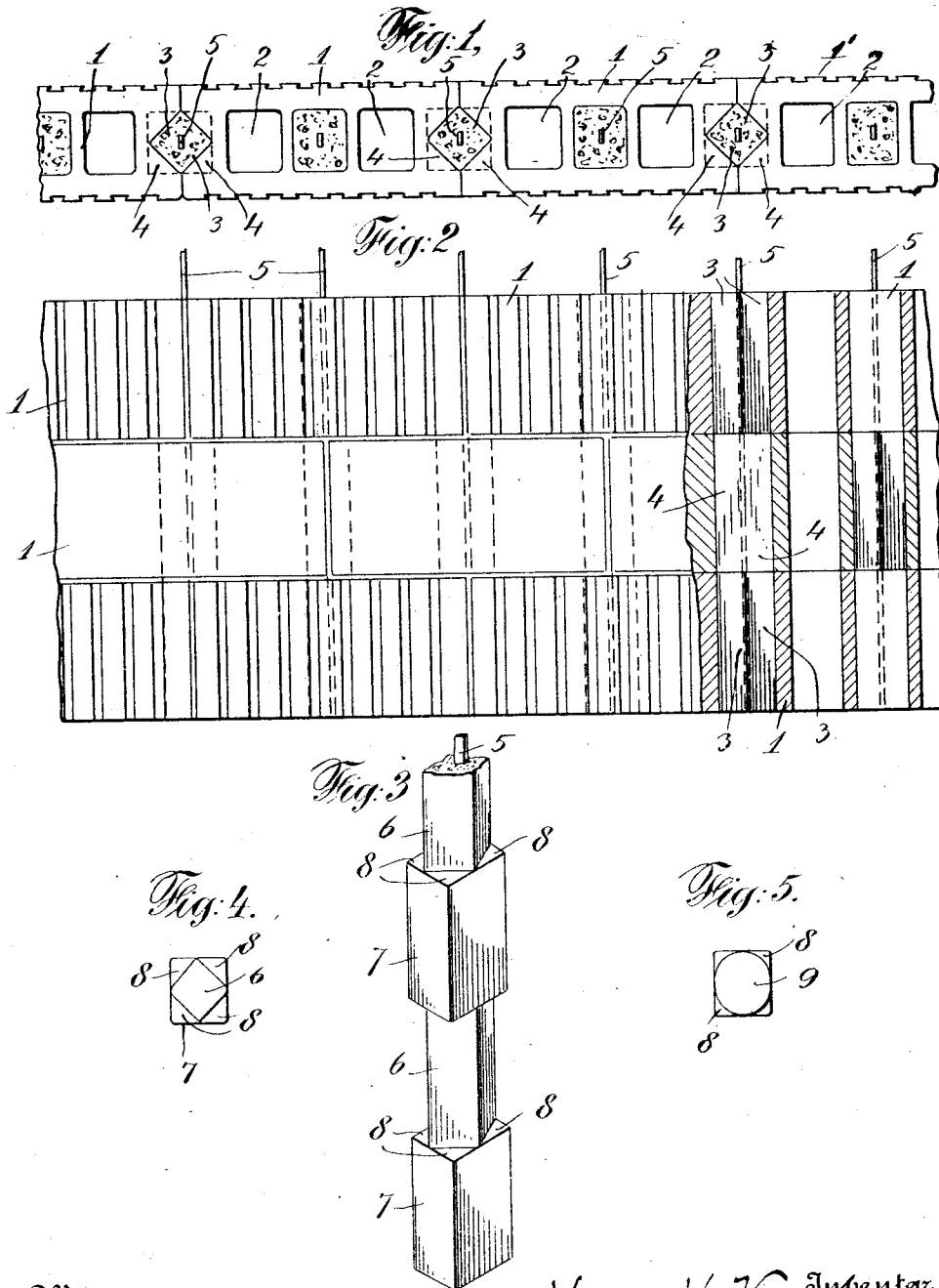


H. H. VOUGHT, JR.
CONSTRUCTION OF WALLS AND PARTITIONS OF BUILDINGS.
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Witnesses:
Max B. A. Doring
J. W. Orsbeck

Harry H. Vought, Jr. Inventor
By his Attorney
Phillips Abbott

UNITED STATES PATENT OFFICE.

HARRY H. VOUGHT, JR., OF MOUNT VERNON, NEW YORK.

CONSTRUCTION OF WALLS AND PARTITIONS OF BUILDINGS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY H. VOUGHT, Jr., a citizen of the United States, and a resident of the city of Mount Vernon, county of Westchester, State of New York, have invented a new and useful Improvement in the Construction of Walls and Partitions of Buildings.

The invention relates to the blocks themselves and also includes the method by which they are used in practice.

Generally stated, the purpose of the invention is to avoid the settlement of walls and partitions made of hollow building blocks, which occasions interior and exterior cracks, one or both, and also tends to weaken the structure as a whole.

I accomplish the desired object by forming the blocks with at least one centrally disposed and vertically arranged opening or hollow space and at each end of each block an inwardly extending recess of a different shape from the opening made at the central part thereof, and in laying up the walls or partitions the blocks in succeeding courses are arranged in so-called regular bond, *i. e.*, so as to break joints, that is to say, the open space formed by the recesses in the ends of abutting blocks in one course will register with the open space through the center of the blocks in the courses above and below and so on indefinitely throughout the wall or partition, with the result that the shape of the open spaces in the successive courses will differ, presenting in every alternate course shoulders, ledges, or similar surfaces into and upon which the fluid concrete which forms the vertical studs will flow when it is poured into such channels or openings and thus constitute a concrete stud which may, if desired, be strengthened by the usual metal reinforce; thus every alternate course will rest upon and be supported by the shoulders or ledges upon the vertical concrete stud which has been formed by the flowing of the concrete into and filling the differently shaped spaces or openings in the several courses. The vertical studs preferably foot at their lower ends upon the solid foundation of the structure.

Referring to the drawings, Figure 1 illus-

trates a plan view of the top of a wall embodying my invention; Fig. 2 illustrates an elevation of a section of a wall, partly broken away, embodying the invention; Fig. 3 illustrates in perspective one of my concrete studs as it will appear if the building blocks which originally inclosed it are broken away, thus leaving the stud standing alone by itself; Fig. 4 illustrates a plan view of the preferred shape to be given to the several sections of the stud; Fig. 5 illustrates a modification.

1, 1, 1, represent the building blocks. They are shown as having three substantially square and vertically arranged openings extending through them, which are marked 2, 2, 2, one of which is at the center of the block, and recesses in the abutting ends, which in the drawings are shown as half diamond shape and marked 3, 3, 3.

In Fig. 2 the blocks are shown as they will be when laid up in "regular bond." The semi-diamond shaped openings formed by the recesses in the abutting ends of adjoining blocks are brought together, thus producing a vertical open space of complete or full diamond shape and these openings register with the square vertical openings in the center of the blocks in the course immediately below and also in the course immediately above. The reinforcing metal is represented at 5.

From what has been said above, the method of practising the invention is obvious. The several courses of blocks are laid up in so-called regular bond, or break-joint fashion, so that the abutting ends of each alternate course come opposite and register with the openings at or near the center of the blocks in the adjoining courses and this method or arrangement is repeated throughout the entire wall or partition. After a few courses have been laid, the metallic reinforce, if it is to be used, is introduced through the differently shaped openings in the several courses and it preferably extends down to or nearly to the underlying foundation of the structure. Thereupon fluid concrete prepared in any of the preferred ways and of any preferred composition, is poured in at the top of the openings con-

taining the reinforce. The concrete dropping vertically through the openings in the several courses will be compressed by its own weight and fluidity into all the spaces accessible to it in the several courses, thus forming a vertical stud strengthened interiorly by reinforcing metal, if it be used, and having at every alternate course shoulders or ledges upon which the superposed course rests and by which it is permanently sustained against settlement. This is fully illustrated in Fig. 3 which illustrates the concrete stud standing alone by itself, the blocks having been stripped off. In this figure 5 illustrates the reinforcing metal and 6 the diamond shaped sections of the stud, 7 the square sections thereof and 8, 8, represent the horizontal shoulders or ledges upon which the superposed courses of building blocks are supported. The same construction is shown in Fig. 4. It will of course be understood that in the wall or partition made under my invention the stud bonds itself rigidly in with the building blocks, so that if the blocks are properly laid up with cement of suitable composition, the blocks and the stud composing the wall or partition become in effect monolithic.

I call particular attention to the following features which are characteristic of, and, as I believe, differentiate my method of construction from anything heretofore known, that is to say, the vertical studs, whether reinforced or not, resulting from my method or process of forming half recesses in the ends of the building blocks, in conjunction with differently shaped openings at or near the center of the blocks, they being then laid up in regular bond, enable me to produce within the open spaces thus made and arranged and by the flowing process, what I term deformed vertical studs and the deformation consists in providing at suitable places, preferably at every alternate course, enlargements or shoulders or ledges, whatever the form may be, upon the stud, which shall, as above set forth, afford support to every two courses of blocks throughout the entire height of the wall or partition, so that settling will be wholly, or at least measurably precluded inasmuch as the weight of every two courses of blocks through the entire wall or partition, irrespective of its height, will be carried by the vertically arranged, closely spaced studs and will not be imposed upon the underlying or lower courses, as is usually the case, and which sometimes results in breaking the bond or grip of the concrete or cement upon smooth sided studs, thus permitting settlement and resulting in serious and sometimes dangerous disorganization of the structure.

It will be obvious to those who are familiar with this art that a number of modifications or departures from that which I have

above described may be practised and still the essentials of the invention retained, that is to say, although I prefer that the alternate deformations in the vertical studs shall be square and diamond shaped as illustrated because the square form presents the largest area of shoulder or ledge and the diamond shape gives the greatest tensile strength with the least amount of concrete, nevertheless any other preferred shape may be given to the deformations of the studs. One such I show in Fig. 5 wherein the smaller section or deformation is shown at 9 and is oval in form. The underlying deformation or section is shown as square, the same as before. In this construction it will be noted that the ledges or shoulders of the squared part are not so well adapted to support the superposed courses of building blocks because they are materially smaller in area than are the like shoulders shown in Fig. 4. Also although I prefer to use reinforcing metal in the center of each vertical stud, such is not essential, especially in relatively low buildings, or in buildings in which the walls are made very thick. Also although I show in the drawings hereof building blocks having dove-tailed projections on the outer and inner surfaces in order to hold more securely the outer finishing skin and the inner coating of plaster or equivalent material, nevertheless this feature forms no essential part of the invention. Any form of building block made of any preferred material and of any preferred shape, provided it has the end recesses and the substantially central open spaces referred to, may be used.

Although I prefer to employ, particularly for exterior walls, salt glazed or vitrified or similarly treated blocks, because they are waterproof and much stronger than blocks not so treated, nevertheless obviously this feature also is not essential to the invention.

I claim as my invention.

1. A building block having through its body a plurality of vertical openings, one of them being in the longitudinal center of the block, and a vertical recess at each end of the block, the construction and arrangement of the latter being such that when adjoining blocks are brought together end to end the vertical openings made by the contiguous recesses will be so different from the central opening as to produce shoulders in the concrete filling at every alternate course.

2. A wall embodying building blocks, each having through its body a plurality of vertical openings, one of them being in the longitudinal center of the block, and a vertical recess at each end of each block, said blocks being laid up in regular bond, so that the adjoining blocks being brought together

end to end, the vertical openings made by contiguous recesses in their ends will be different from the central opening in each block, the vertical spaces thus made extending through the several courses being filled with concrete.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

HARRY H. VOUGHT, JR.

Witnesses:

PHILLIPS ABBOTT,
F. M. DAUSEBACK.