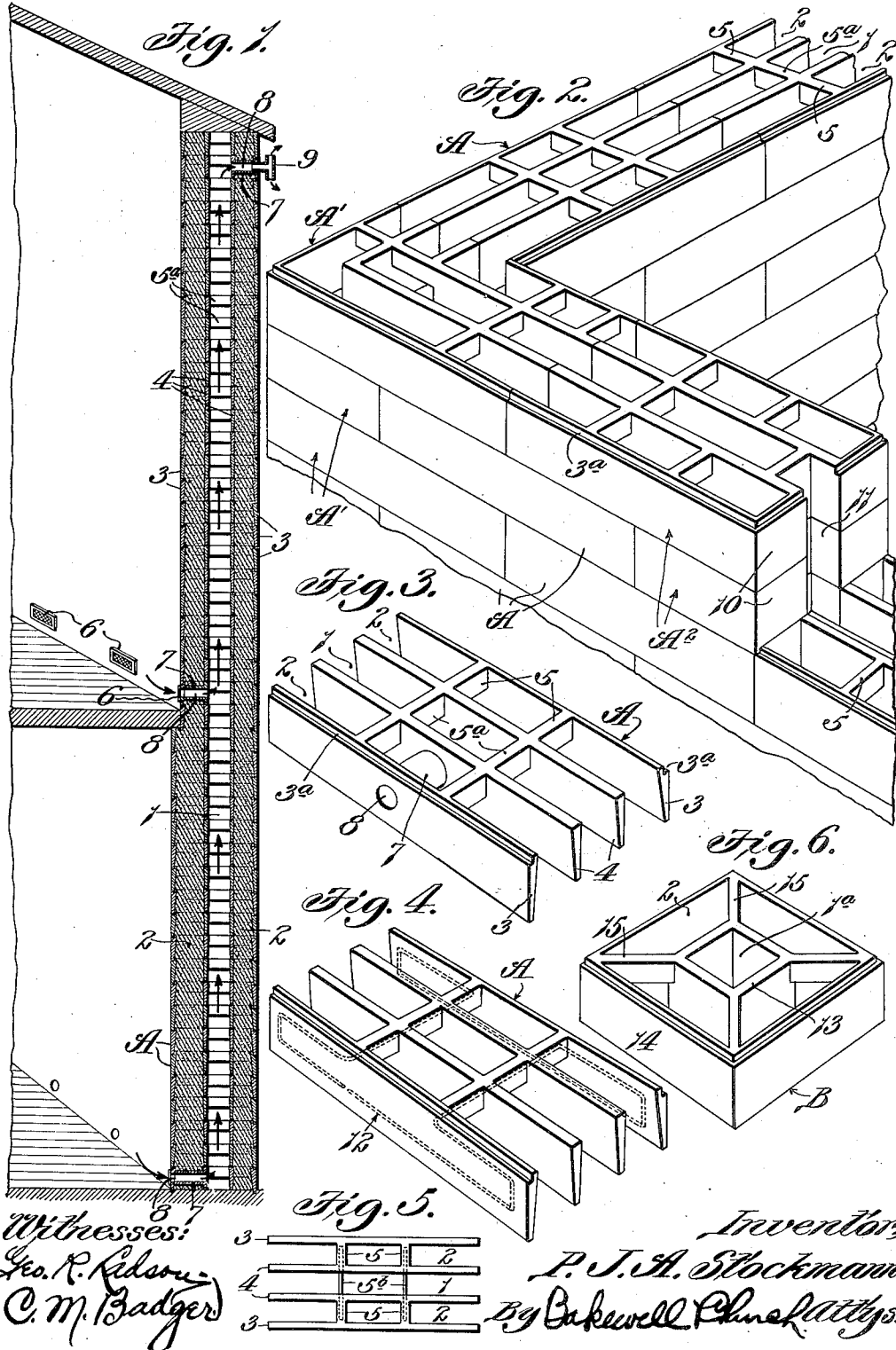


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 MOLDED WALL AND COLUMN STRUCTURE.
 APPLICATION FILED NOV. 11, 1913.

1,131,437.

Patented Mar. 9, 1915.



Witnesses:
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 By Bakerwell & Pines Attys.

UNITED STATES PATENT OFFICE.

PETER J. A. STOCKMANN, OF ST. LOUIS, MISSOURI.

MOLDED WALL AND COLUMN STRUCTURE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER J. A. STOCKMANN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Molded Wall and Column Structures, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to walls and columns, and particularly to structures of the character mentioned that are molded from concrete or other suitable material.

One object of my invention is to provide a molded monolithic wall that has a hollow space at the center thereof, up through which a current of air can circulate and thus prevent the moisture which passes through the outer portion of the wall from penetrating into the inner portion of the wall.

Another object is to provide a hollow wall or column composed of courses of shells or hollow members that serve as forms for the molded load-carrying portion formed from concrete that is poured into the shells, said shells having alining spaces that extend upwardly through the molded concrete load-carrying portion so as to form a conduit for a current of air that evaporates and carries away the moisture which penetrates through the outer portion of the wall; and still another object is to provide a structure of the character just-described in which the shells or permanent forms are interlocked with each other and are so constructed that they can be molded easily in rigid or one-piece molds.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a perspective view illustrating a building provided with a wall constructed in accordance with my invention, said wall being in vertical section; Fig. 2 is a perspective view of one corner of the building illustrating the method of building my improved wall; Fig. 3 is a perspective view of one of the shells or permanent forms used in the wall illustrated in Figs. 1 and 2; Fig. 4 is a perspective view of a reinforced wall shell or form; Fig. 5 is a top-plan view of a wall shell or form of

slightly different construction; and Fig. 6 is a perspective view of a column shell or form.

Referring to the drawings which illustrate the preferred form of my invention, A designates shells or forms that are laid up in courses, as shown in Fig. 2, so as to form a wall, each of said shells or forms being provided with a center air space 1 that lies between spaces 2 that are adapted to be filled with concrete or some other suitable material which is poured into the shells after the shells have been arranged in operative position in the wall so as to produce a hollow wall that has an open space extending upwardly through the middle of same, as shown in Fig. 1. The shells A may be formed in various ways but I prefer to construct each shell from two face-slabs 3 and two partition-slabs 4 arranged between the face-slabs and spaced away from same, as shown in Fig. 3. Said slabs are preferably molded from concrete although they could, of course, be formed from any other suitable material, and they are tapered or substantially wedge-shaped in vertical cross section, as shown in Fig. 3, so as to enable them to be withdrawn easily from rigid or one-piece molds. The slabs 3 and 4 can either be integrally connected together by means of transverse webs 5 that connect the face-slabs to the partition-slabs, and transverse webs 5^a that connect the partition-slabs together, said webs being formed from the same material as the slabs and molded integral therewith, as shown in Fig. 3; or, if desired, the two center partition-slabs can be connected together by means of metal tie members 5^b, as shown in Fig. 5, and the face-slabs 3 connected to said partition-slabs by means of integral transverse webs 5 of the same material as the slabs. The partition-slabs 4 are of less depth than the face-slabs 3 and said face-slabs are provided at their upper edges with notches 3^a so that the lower edges of the face-slabs of one course will fit in the notches 3^a in the upper edges of the face-slabs of the course under same and thus interlock the shells of the various courses together.

When the wall is completed it will comprise an inner and an outer monolithic load-carrying portion arranged on opposite sides

of an air space or conduit up through which a current of air can circulate continuously and thus evaporate and carry off the moisture which penetrates through the outer portion of the wall. Some of the shells at the lower portion of the wall are so constructed that the air can escape from the building into the hollow air space in the wall and some of the shells adjacent the upper edge of the wall are so constructed that the air can escape from the hollow space in the wall, as indicated by the arrows in Fig. 1. In other words, my improved wall is so designed that it serves to ventilate the rooms of the building in that it comprises a hollow space having exit openings at its upper end and inlet openings which are preferably located adjacent the floors of the building. If desired, registers 6 can be set in the wall so as to control the passage of the air from the building into the hollow space in the wall and thus regulate the ventilation of the building. One convenient way of forming the shells A that are provided with inlet openings, is to mold a tubular-shaped portion integral with the inner face-slab of the shell and with the adjacent partition-slab so as to form an air inlet opening 8 that extends from the inner face of the shell into the hollow air space in the center of same. The shells or forms at the upper edge of the wall, through which the air escapes from the hollow inner space of the wall, are of similar construction except that the tubular-shaped members 7 are formed integral with one of the partition-slabs and the outer face-slab of the shell. If desired, hollow T-shaped members 9 or other suitable devices can be arranged in the exit openings at the upper edge of the wall, as shown in Fig. 1, so as to tend to prevent air from blowing into the hollow space in the wall.

The shells or forms A' that are used to form the corners of the wall are of substantially the same construction as the shells A except that the transverse webs or tie members that connect the various slabs of the shells together are of slightly different arrangement. These corner shells embody the same characteristics, however, as the shells A in that they each comprise a center air space and spaces on each side of the air space for receiving the concrete that forms the load-carrying portion of the wall.

The shells or forms A² that are used at the door and window openings are provided at one end with end walls 10 and also with recesses 11 which are adapted to be filled either with concrete or with a wooden nailing strip so as to enable the door or window frame to be securely attached to the wall. If desired, the shells or forms can be rein-

forced and strengthened in any suitable manner, as, for example, by means of a metal reinforcement 12, shown in dotted lines in Fig. 4, that is embedded in the two face-slabs 3 and which extends through the transverse tie webs 5 and 5^a that connect the partition-slabs and the face-slabs together.

A wall of the construction above-described can be built quickly; it is exceptionally strong and rigid in view of the fact that it comprises a monolithic load-carrying portion which is completely surrounded by shells that are interlocked with each other and which form the exposed faces of the wall. There is no danger of the inner portion of the wall becoming damp because the current of air that circulates up through the hollow space in the wall absorbs and carries away any moisture which may penetrate through the inner portion of the wall; and it serves to ventilate the building without liability of cold air from the outside blowing into the building. And still another desirable feature of such a structure is that the shells which form the exposed faces of the wall can be manufactured at a low cost from concrete or other suitable material, and can be cast in rigid or one-piece molds in view of the fact that the slabs or concrete retaining portions of the shells are tapered or substantially wedge-shaped in vertical cross section so that they can be withdrawn easily from the molds.

In Fig. 6 of the drawing I have illustrated one of the shells or permanent forms B that I prefer to use when building a column, said shell comprising a center air space 1^a which is surrounded on all sides by hollow spaces 2^a that are adapted to be filled with concrete or other suitable material, the inner and outer portions or slabs 13 and 14, respectively, of the shell being tied together by integral webs 15, and the upper edges of the outer slabs or portions 14 of the shell being notched so as to receive the lower edge portion of the shell arranged above same.

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

A building block comprising outer and inner slabs that extend longitudinally throughout the length of the block, each of said slabs being provided on its upper edge with a rabbet that extends the entire length of said slab, and having its lower edge reduced in thickness so as to fit in the rabbet of an adjacent block, a plurality of longitudinal partitions arranged intermediate said outer and inner slabs, the upper edge of each of said partitions being flush with the upper edge of said outer and inner slabs, and the lower edge lying in a higher horizontal plane than the lower edges of said

slabs, and a plurality of transversely extending tie members that integrally connect said partitions, said tie members being inwardly removed from the end portions of
5 the block and having their lower edges lying in a higher horizontal plane than the lower edges of said partition members.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this seventh day of November 1913.

PETER J. A. STOCKMANN.

Witnesses:

W. L. CHURCH,
GEORGE BAKEWELL.