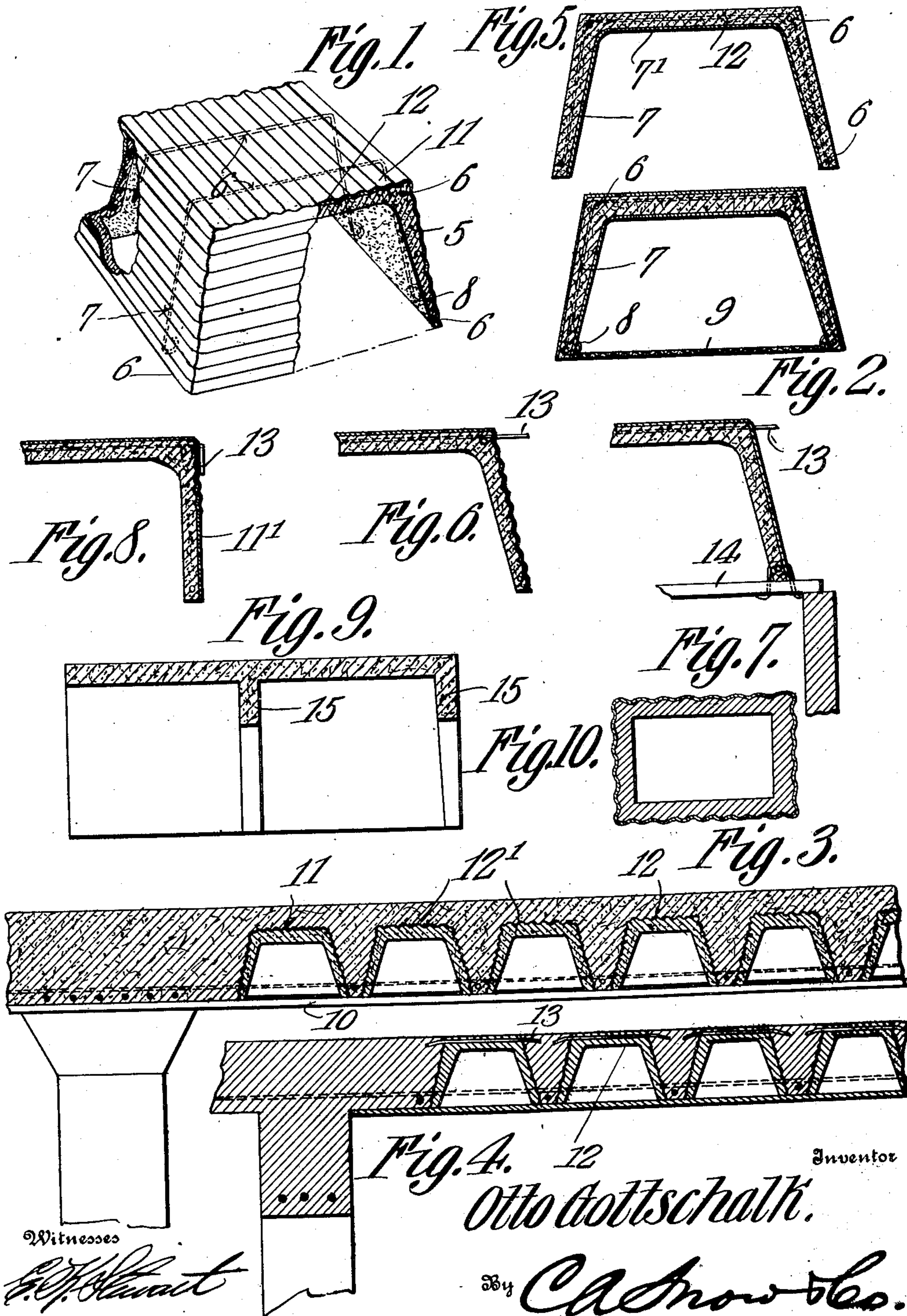


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CONCRETE FLOOR CONSTRUCTION.
APPLICATION FILED AUG. 13, 1908.

Patented Apr. 6, 1909.

917,050.



Witnesses
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Fig. 4. 12
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CONCRETE FLOOR CONSTRUCTION.

No. 917,050.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OTTO GOTTSCHALK, a subject of the Emperor of Germany, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Concrete Floor Construction, of which the following is a specification.

This invention relates to building construction and more particularly to an artificial stone block especially designed for use in the construction of reinforced concrete floors.

It is a well known fact that in reinforced concrete construction the concrete is valuable only in compression, while all parts below the neutral axis are not reliably effective and merely add to the dead weight or load.

The object of the present invention is to provide a hollow block which shall be strong and durable in construction and relatively cheap to manufacture, the concrete forming the body of the block being subjected to compression, thereby to give additional strength to the same.

A further object is to provide a block in which the upper portion or top is of a better grade of material than the rest of the block, thus enabling the tops of the blocks to act in compression, combined with the slabs in which they are embedded or built.

A further object is to provide a hollow block having an exterior jacket of tough paper which not only protects the block and prevents chipping or cracking of said block when handling the same but also assists in holding or binding the material together and thus permits the employment of cheap material for the body of the block.

A still further object of the invention is to reinforce and strengthen the block by the provision of one or more wires or cords, which latter are embedded in the concrete with the terminals thereof extended laterally for attachment to suitable laths or woven mesh fabric to permit the application of a coat of plaster.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a perspective view of one of the hollow blocks

used in the construction of a fire proof floor.

Fig. 2 is a transverse sectional view of the same, the enveloping jacket being shown applied to both the interior and exterior walls of the block. Fig. 3 is a longitudinal sectional view showing the application of the block to a crosswise reinforced floor slab, using beams of the same depth as slab. Fig. 4 is a similar view, the tops of the blocks being formed of a high grade of material so as to present a pressure resisting surface and thus dispense with the layer of concrete on top of the blocks. Fig. 5 is a transverse sectional view of a block showing the paper jacket applied to the interior wall thereof. Figs. 6 to 9 inclusive are sectional views illustrating modified forms of the invention. Fig. 10 is a transverse sectional view of a further modification showing the block in the form of a hollow prism, both ends being open and walls formed of concrete or plaster with paper jacket.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved floor construction forming the subject matter of the present invention comprises a plurality of hollow blocks 5, which may be either frusto-pyramidal or parallelepipedal in shape, and formed of cement, plaster, concrete or other suitable material. The side walls of the blocks are reinforced and strengthened by the provision of longitudinally disposed rods or wires 6, preferably extending the entire length of the block and intersected by one or more transverse reinforcing wires 7. The lower ends of the wires 7 are extended within the cavity or compartment of the block to form terminal hooks 8 to which may be attached a strip of woven mesh wire or other foraminous material indicated at 9, in Fig. 2 of the drawings, which material extends transversely across the base of the block and forms a support for a coat of plaster. The block 5 is surrounded by a jacket, preferably formed of relatively tough corrugated paper 11, which latter not only serves to reinforce and strengthen the block but also serves to hold or bind the material together and permits the use of relatively cheap material in the construction of the block. The blocks are constructed in a suitable mold, whereby it is possible to compress the upper portions of the blocks and make

the tops thereof of a better grade of material than the side walls, which latter may be formed of a cheap grade of material.

In constructing the floor from blocks shown in Fig. 1 of the drawing, said blocks are positioned on the I beams of the building with the inclined side walls thereof spaced apart to form wedge shaped recesses for the reception of a quantity of concrete 12' constituting the upper surface of the floor. Thus it will be seen that the wedging action exerted by the cement on the inclined walls of the blocks will securely bind the same together while the fabric strip 9 forms a support for the plaster which may be subsequently applied to the lower face of the floor.

If desired, a paper jacket may be applied to both the inner and outer faces of the block, as indicated in Fig. 2 or to the inner or outer faces and in some cases only to the inner face thereof, as indicated at 7' in Fig. 5 of the drawing.

In Fig. 8 of the drawings the side walls of the blocks are disposed parallel with each other while the top of the paper jacket or cover is smooth and the side walls thereof corrugated for a portion of the height of the block, as indicated at 11'.

A further modification is illustrated in Fig. 6 of the drawings in which the tough paper jacket is applied to the exterior walls of the block similar to that shown in Fig. 1, the difference being that the paper jacket shown in Fig. 6 is smooth at the top of the block and corrugated at the side walls thereof, the corrugations running the entire height of the side walls.

If desired, the transverse reinforcing wires may be extended laterally beyond the side walls of the block to form anchoring members 13 shown in Figs. 6 and 7, or said anchoring members may be bent laterally in engagement with the paper jacket to assist in holding said paper jacket in position on the block, as illustrated in Fig. 8. In some cases the woven wire strip 9 may be dispensed with and the terminals of the wire 7 employed for supporting suitable laths indicated at 14 in Fig. 7 of the drawings.

A further modification is illustrated in Fig. 9 of the drawings in which the block is substantially rectangular in shape and provided with one or more spaced depending reinforcing ribs 15. These ribs 15 may be arranged at either or both ends of the blocks or said ribs may be omitted at the ends of the block and a single rib provided at the center thereof.

Instead of covering the blocks with a layer of cement, as shown in Fig. 3 the interstices may be filled with concrete and troweled off flush with the upper surface of the blocks. In this case the tops of the blocks are made strong enough in compres-

sion to render unnecessary the employment of the concrete slab on top of the blocks shown in Fig. 4, the corrugated jacket and reinforcing wires 13 being deemed sufficient to give the desired strength and solidity to the blocks.

A further modification is shown in Fig. 10 of the drawings in which the block is in the form of a hollow prism or rectangular parallelepiped constructed of concrete or plaster and having both ends thereof open, said block being inclosed in a paper jacket and designed to be built into the slab in the same manner as the clay tiles already in use.

While I have shown and described several of the blocks or tiles as being frusto-pyramidal in shape, it will of course be understood that said blocks or tiles may have different shapes without departing from the spirit of the invention.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. In fire-proof floor construction, a hollow block comprising a body portion formed of hardened plastic material and provided with an enveloping jacket of tough paper.

2. In fire proof floor construction, a hollow block comprising a body portion formed of hardened plastic material and provided with an enveloping jacket of corrugated paper.

3. In fire proof floor construction, a hollow concrete block having obliquely disposed side walls and provided with a jacket of tough paper.

4. In fire proof floor construction, a hollow block formed of hardened plastic material, reinforcing wires embedded in the body of the block and having their terminals provided with attaching hooks, and an enveloping jacket surrounding the exterior walls of the block and formed of tough paper.

5. In fire proof floor construction, a hollow substantially frusto-pyramidal block of hardened plastic material having an enveloping jacket of tough paper.

6. In fire proof floor construction, a hollow block of hardened plastic material, reinforcing wires embedded in the block and provided with terminal attaching hooks, foraminous material supported on the hooks and extending across the base of the block, and a jacket surrounding the block and formed of tough paper.

7. In fire proof floor construction, a hollow block of hardened plastic material having its top closed and formed from one grade of material and its side walls inclined

laterally formed of a cheaper grade of material, and a jacket surrounding the block and formed of tough paper.

5 8. In fire proof floor construction, a hollow block of hardened plastic material having its upper portion compressed and formed of one grade of material and its side walls formed of a cheaper grade of material, and a paper jacket disposed in contact with
10 the top and side walls of the block.

9. In fire proof floor construction, a substantially frusto - pyramidal block of hardened plastic material having its upper portion compressed and formed of one grade of
15 material and its side walls reinforced and formed of a different grade of material and a corrugated paper jacket surrounding the block and disposed in contact with the top and side walls thereof.

20 10. In fire proof floor construction, a sub-

stantially frusto - pyramidal block of hardened plastic material having its upper portion compressed and formed of one grade of material and its side walls reinforced and formed of an inferior grade of material, a
25 corrugated paper jacket surrounding the block and disposed in contact with the top and side walls thereof, and transverse reinforcing members embedded in the top of the block and having their terminals projecting
30 beyond the adjacent sides of said block to form anchoring members.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

OTTO GOTTSCHALK.

Witnesses:

LEONA RÜMLER,
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