

**No. 681,728.**

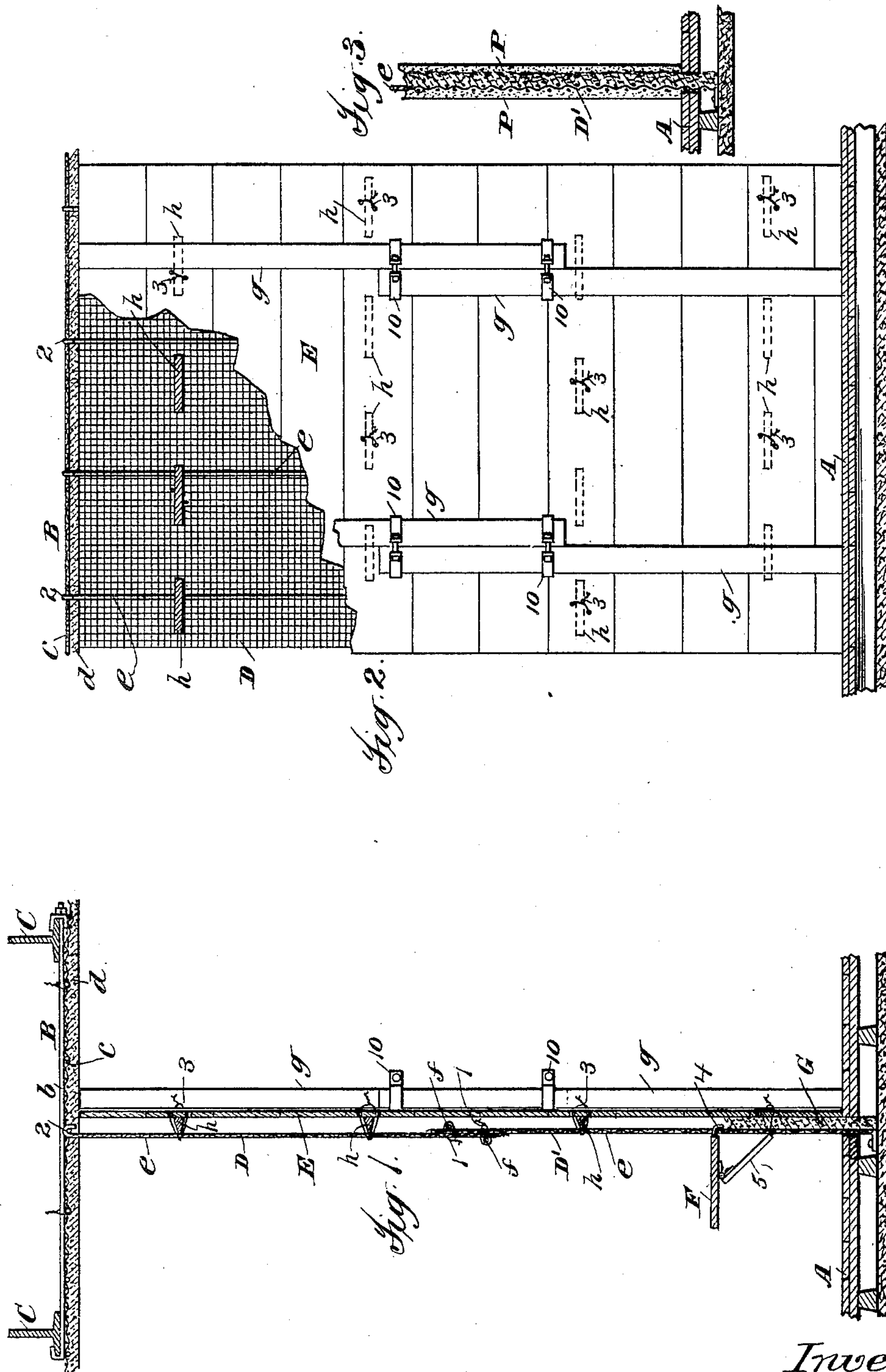
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**W. ORR.**

### FIREPROOF CONSTRUCTION AND METHOD OF MAKING SAME.

(Application filed Aug. 23, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FIREPROOF CONSTRUCTION AND METHOD OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 681,728, dated September 3, 1901.

Application filed August 23, 1900. Serial No. 27,774. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ORR, a citizen of the United States, residing at Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in Fireproof Constructions and Methods of Making the Same, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide a cheap strong fireproof partition or wall formed of reticulated metal and plastic material and an improved apparatus and method for making the same, the especial object being to provide a partition having the required fireproof qualities and strength while employing but a single layer of reticulated metal.

As a full understanding of the invention can best be given by an illustration and detailed description of constructions embodying the same, such a description will now be given in connection with the accompanying drawings, forming a part of this specification, and showing a partition embodying all the features of the invention in their preferred form, and the features forming the invention will then be particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical section of a partition in process of construction. Fig. 2 is a side elevation of the same looking to the left in Fig. 1, with the mold-frame partly broken away and the offsetting supports sectioned to show the construction. Fig. 3 is a vertical section showing a portion of the completed partition.

Referring now to the drawings, A is the floor, and B the ceiling, between which the partition is to be built. The ceiling B is shown as of a common fireproof construction, with ceiling-supporting rods *b* extending from beam to beam and carried by the flanges of the I-beams C, reticulated metal *c*, which is shown as common woven-wire lathing supported by and below the rods *b*, and the plastic material *d*, applied on the lower side of the reticulated metal *c*. It will be understood, however, that the ceiling or floor construction at the top of the partition as well

as at the base of the partition may be of any suitable construction.

Referring now to the partition construction, the reticulated metal employed consists of a plurality of sheets, two sheets D D' being shown, the width of which is such that when the sheets are placed vertically one above the other they extend from ceiling to floor and overlap at the center, as shown, the overlapping being sufficient so that these sheets may be used in constructing partitions of different heights, thus avoiding the necessity for making reticulated metal of special widths for different partitions. Each of these sheets of reticulated metal has supporting-rods *e* secured thereto or woven therein, which rods extend the full width of the sheets of the reticulated metal and project therefrom, so as to be used in securing the reticulated metal to the ceiling or to the floor. These rods in the successive sheets of reticulated metal overlap, therefore, between the ceiling and floor when placed together to form the partition, and these overlapping portions are secured together, so as to make a continuous layer of reticulated metal, extending vertically between the ceiling and floor. As shown in the drawings, the overlapping portions of the sheets of reticulated metal and of the rods *e* are secured together by horizontal rods *f*, extending along the opposite sides of the overlapping portions and secured by wire ties *l* to the rods *e* at suitable intervals. The rods *e* are shown as bent at right angles and flattened at their lower ends for nailing to the floor and at their upper ends are shown as formed with hooks *2*, which are hooked through the lathing and around the stiffening-rods of the lathing. It will be understood, however, that these ends of the rods *e* may be formed and secured to the ceiling and floor in any other suitable manner.

The reticulated metal D D' is shown as woven-wire lathing; but it will be understood that this may be of any suitable form, either of woven or netted wire or metal rods or strips or perforated or expanded metal, preferably with the mesh such that the plastic material may be forced through the meshes, so as to form a body of plastic material on



one side of the reticulated metal, as herein-  
after described. Concrete will preferably be  
used, so as to form a strong partition, so that  
the metallic lathing will be of quite large  
5 mesh or size of opening, which reduces largely  
the cost of the reticulated metal as compared  
with constructions in which fine metal is used  
with a fine plastic material, such as plaster,  
applied thereto, so that large-mesh metal with  
10 the concrete enables the production of a very  
cheap fireproof partition, while at the same  
time the desired strength and fireproof quali-  
ties are secured.

Upon one side of the reticulated metal D  
15 D' is mounted a vertical mold-frame or cen-  
tering E, this mold-frame preferably being  
formed with vertical supports *g*, which are  
adjustable in length, so that they may be used  
for partitions of varying heights, these ver-  
20 tical supports *g* being shown as consisting of  
bars overlapping at their ends and secured  
together by bands 10. These supports *g* may  
be held in place in any suitable manner, as  
by struts from the floor or otherwise, and  
25 serve as the backing for the molding-frame  
E, which in the form shown consists simply  
of boards arranged one upon the other edge-  
wise between the supports *g* and the reticu-  
lated metal D D'.

30 For the purpose of holding the reticulated  
metal D D' rigidly in a vertical plane while  
avoiding the necessity for the heavy rigid  
vertical bars commonly used to support re-  
ticulated metal in partition constructions I  
35 preferably use offsetting supports upon the  
molding-frame E, which extend the depth of  
the body of plastic material desired and serve  
as gages to determine the proper position of  
the molding-frame relatively to the reticu-  
40 lated metal, while at the same time support-  
ing the latter against the pressure of filling  
the plastic material through the interstices of  
the metal. As shown, these offsetting sup-  
ports *h* consist of ribs on some of the boards  
45 forming the molding-frame, these ribs pref-  
erably being wedge-shaped, as shown, so as to  
be withdrawn readily from the plastic mate-  
rial after the latter is filled in and leave only  
narrow openings to be filled, and the reticu-  
50 lated metal is secured to the molding-frame,  
so as to prevent its being pressed out of ver-  
tical line by the pressure of the plastic mate-  
rial as the latter is filled in, by wire ties 3,  
tied around the ribs *h* and through holes in  
55 the molding-frame E. By cutting these ties  
3 after the plastic material has been filled in  
and allowed to set the molding-frame may  
readily be removed.

The plastic material C is preferably filled  
60 in through the openings in the reticulated  
metal in the manner illustrated in Fig. 1, a  
board F being supported on the reticulated  
metal by hooks 4 on the board extending  
through the metal and hinged struts 5 on the  
65 under side of the board bearing against the  
metal. This board F is placed in position  
upon the reticulated metal, the concrete or

similar plastic material placed thereon and  
then filled by trowel or otherwise through the  
openings in the metal into the space between 70  
the latter and the molding-frame E. When  
the space below the board F has been thus  
filled, the board is removed and moved up-  
ward on the reticulated metal to the desired  
point and the process thus continued until the 75  
full height of the partition is formed. While  
this is the preferred method of applying the  
plastic material, it will be understood that  
the moldboard or centering on one side of the  
structure may be used with plastic material 80  
filled in in any suitable manner, either through  
the meshes of the reticulated metal on the op-  
posite side of the partition from the centering  
or from above before the reticulated metal is  
put in place. After the space between the 85  
reticulated metal and the moldboard or cen-  
tering has been filled in and the material is  
set the moldboard or centering is removed  
and the opposite sides of the partition are  
then preferably finished by coating with plas- 90  
ter P, which keys onto the metal and por-  
tions of concrete which project through its  
meshes on one side and are held by the molded  
concrete on the opposite side of the partition.

It will be understood that this construction 95  
may be used with plaster only on one side in  
case the construction is to be placed adjacent  
to a wall instead of forming a partition or  
that such construction may be used without  
finishing in plaster on either side. It is espe- 100  
cially designed, however, for partition and  
similar constructions finished with plaster on  
opposite sides.

It will be seen that the construction is very  
simple and cheap, while at the same time 105  
quite strong for the amount of material used,  
and that it may be made very cheaply with  
metal of large mesh and requiring no labor  
of special skill. The body of concrete or simi- 110  
lar plastic material not only makes a strong  
construction, but also reduces largely the  
amount of plaster required as compared with  
constructions in which the plaster is applied  
to the metallic lathing in forming either solid 115  
or hollow partitions without such a body of  
plastic material as a base for the plaster,  
thus aiding also in securing a cheap con-  
struction.

What I claim is—

1. A fireproof construction comprising a 120  
single vertical center of reticulated metal,  
and a body of concrete or similar plastic ma-  
terial molded on one side of said center and  
filling the openings in the reticulated metal,  
substantially as described. 125

2. A fireproof construction comprising a  
single vertical center of reticulated metal, a  
body of concrete or similar plastic material  
molded on one side of said center and filling 130  
the openings in the reticulated metal, and a  
covering of plaster or similar material ap-  
plied on the reticulated-metal side of the  
structure thus formed, substantially as de-  
scribed.



3. A fireproof construction comprising a single vertical center of reticulated metal, a body of concrete or similar plastic material molded on one side of said center and filling the openings in the reticulated metal, and a covering of plaster or similar material on both sides of the structure thus formed, substantially as described.

4. A fireproof construction comprising a single vertical center of reticulated metal, and a body of concrete or similar plastic material molded on one side of said center and filling the openings in the reticulated metal, said reticulated metal being of such mesh as to permit the body of plastic material to be applied through the openings in the metal from the opposite side of the latter, substantially as described.

5. A fireproof construction comprising a single vertical center of reticulated metal, a body of concrete or similar plastic material molded on one side of said center and filling the openings in the reticulated metal, said reticulated metal being of such mesh as to permit the body of plastic material to be applied through the openings in the metal from the opposite side of the latter, and a covering of plaster or similar material on the reticulated-metal side of the structure thus formed, substantially as described.

6. A fireproof construction comprising a vertical body of concrete or similar plastic material with reticulated metal on one side only and consisting of sheets of metal having vertical rods woven therein or secured thereto with the successive sheets overlapping horizontally and having the overlapping portions secured together, substantially as described.

7. A partition consisting of a body of concrete or similar plastic material with reticulated metal on one side only and consisting of sheets of metal having vertical rods woven therein or secured thereto with the successive sheets overlapping horizontally and having the overlapping portions secured together, and a covering of plaster or similar material on one or both sides of the structure, substantially as described.

8. The method of making a fireproof construction, which consists in erecting a vertical center of reticulated metal, mounting on one

side of said metal a mold-frame with a space between it and the reticulated metal, and filling the space between the reticulated metal and mold-frame with plastic material, substantially as described.

9. The method of making a fireproof construction, which consists in erecting a vertical center of reticulated metal, mounting on one side of said metal a mold-frame with a space between it and the reticulated metal, filling the space between the reticulated metal and mold-frame with plastic material by introducing it through the reticulated metal, and removing the mold-frame, substantially as described.

10. The method of making a fireproof construction, which consists in erecting a vertical center of reticulated metal, mounting on one side of said metal a mold-frame with a space between it and the reticulated metal and with offsetting supports between the frame and metal for supporting the latter against pressure, and filling the space between the reticulated metal and mold-frame with plastic material by introducing it through the reticulated metal, substantially as described.

11. The combination with the vertical reticulated-metal center, of the removable mold-frame, and offsetting projections on said frame by which the metal center is offset from the frame and supported against pressure tending to force it toward the frame, substantially as described.

12. The combination with the vertical reticulated-metal center, of the removable mold-frame, offsetting projections on said frame, and means for connecting the metal to the frame, substantially as described.

13. The combination with the vertical reticulated-metal center, of the removable mold-frame, wedge-shaped offsets on said frame, and means for securing the metal to the frame, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM ORR.

Witnesses:

EDWIN W. ARNOLD,  
GEO. W. FELTY.