

No. 681,700.

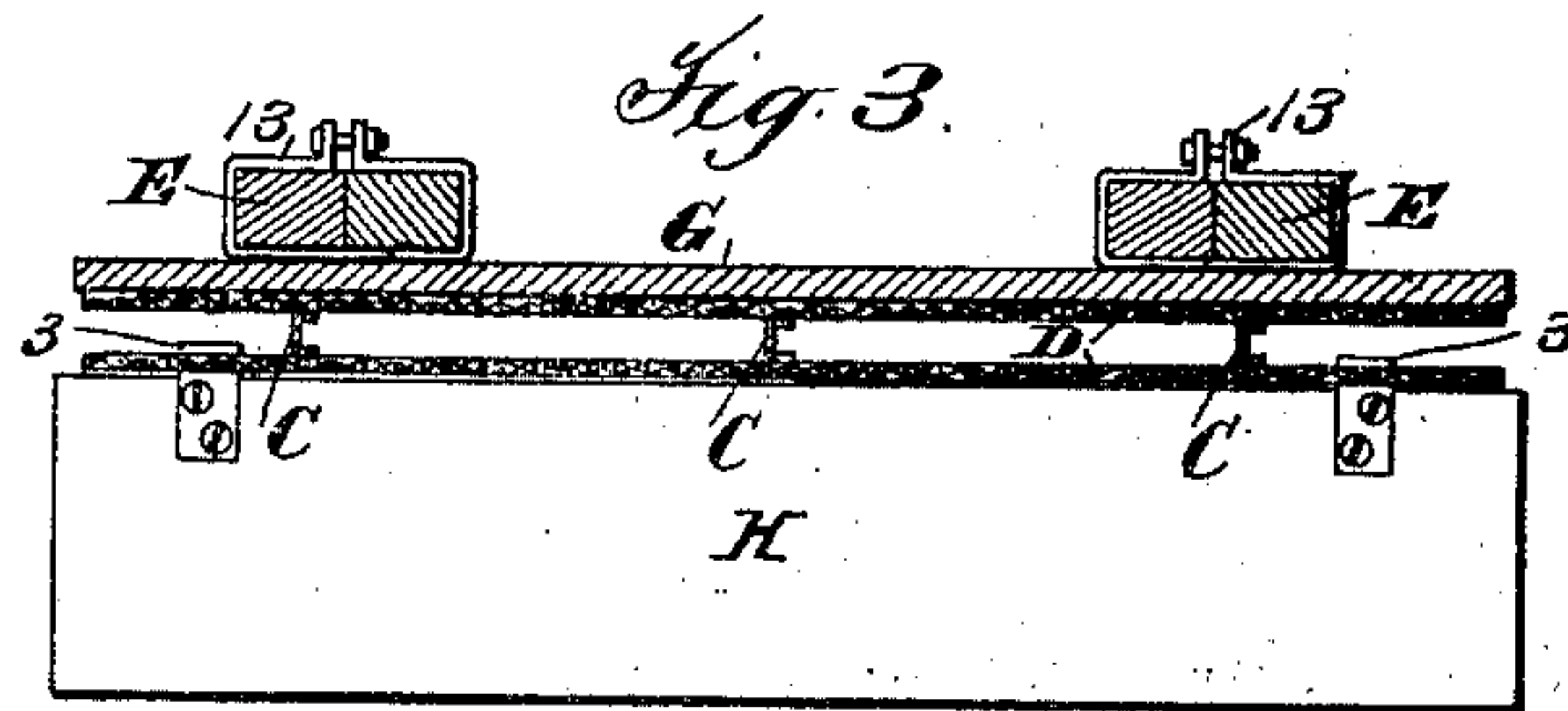
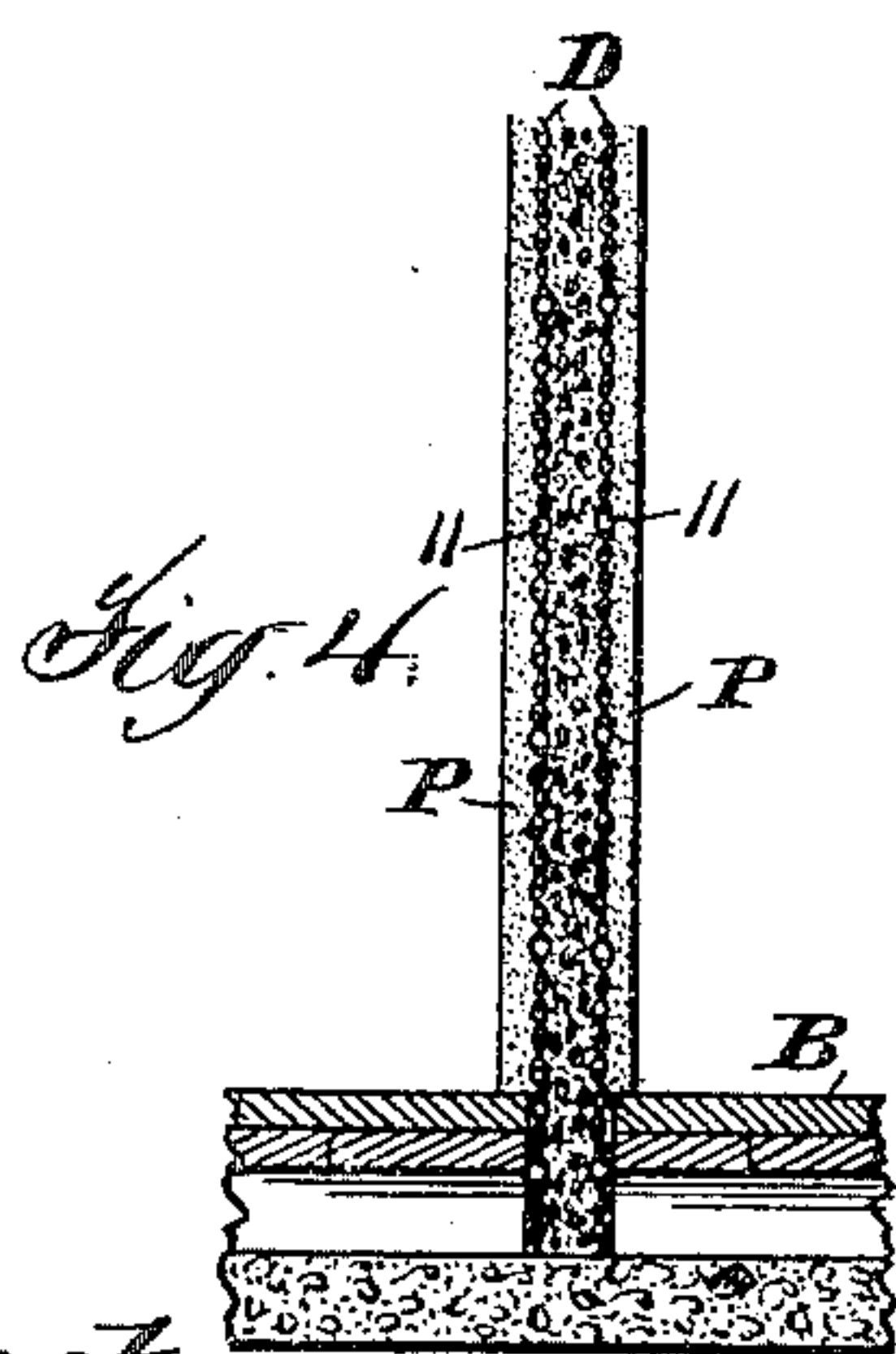
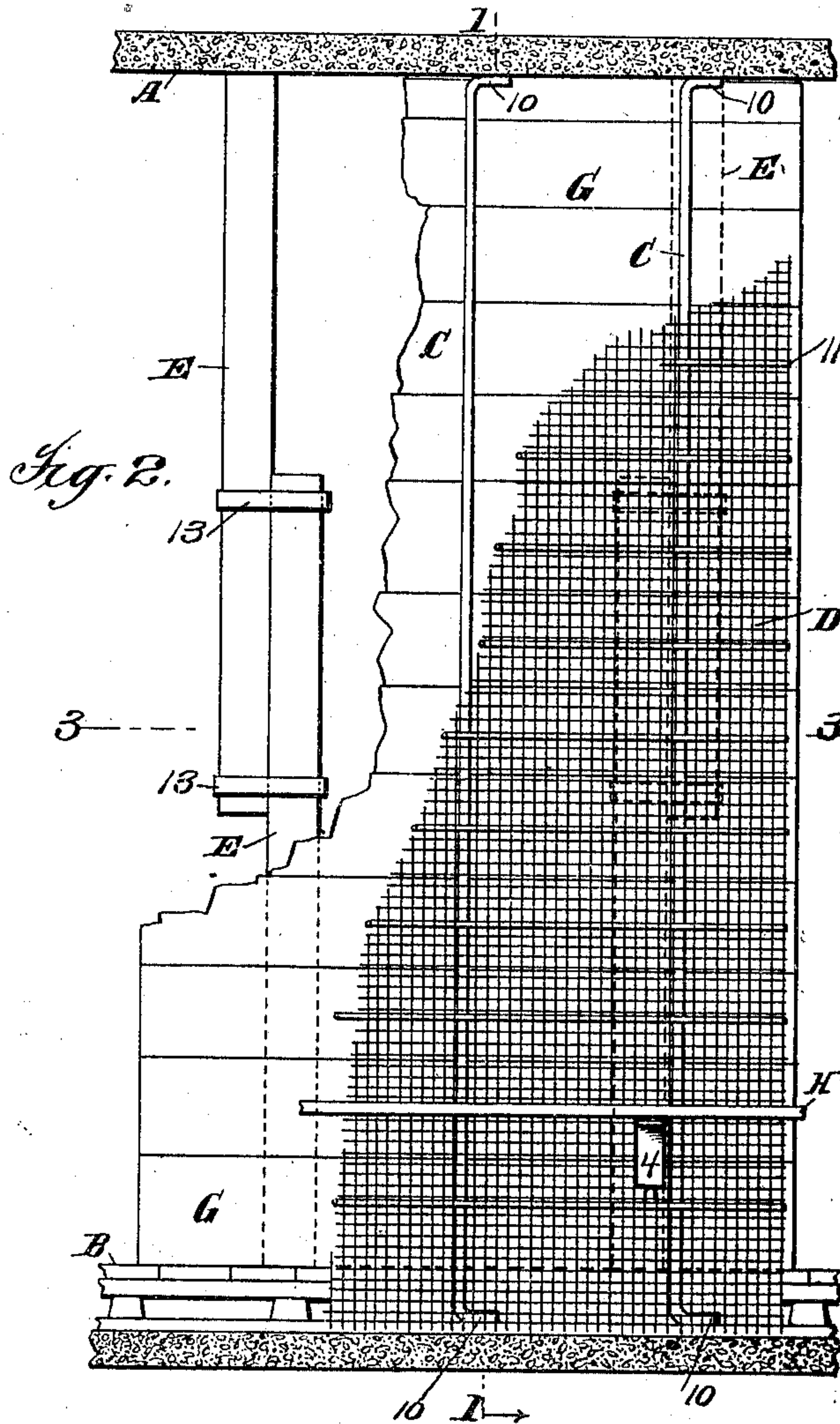
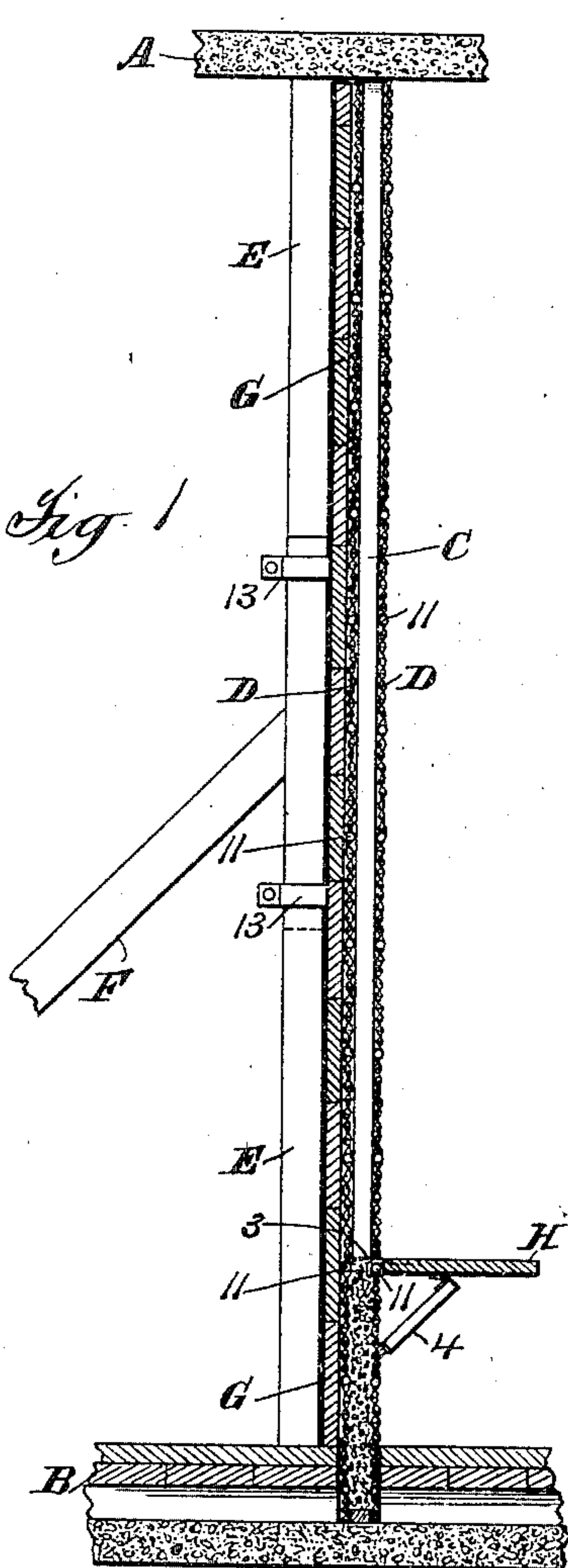
Patented Sept. 3, 1901.

A. L. A. HIMMELWRIGHT.

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. 681,700, dated September 3, 1901.

Application filed August 23, 1900. Serial No. 27,751. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM L. A. HIMMELWRIGHT, a citizen of the United States, residing at New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Methods of Making Fireproof Constructions, 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 an improved fireproof partition and method of making the same; but the invention is applicable also wherever it is desired to use a similar vertical fireproof construction, the especial object of the invention being to provide a strong and durable construction with cheap metal-work and which may be rapidly constructed by unskilled labor.

As the invention is especially applicable in connection with partitions, it will be illustrated and described in connection with such a construction, and a full description of a partition of the preferred form and the method of making the same will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a vertical section of the partition in process of construction. Fig. 2 is a side elevation of the construction before filling with concrete, partly broken away for purpose of illustration. Fig. 3 is a horizontal section on the line 3 of Fig. 2. Fig. 4 is a vertical section of the completed partition.

Referring to said drawings, A is the ceiling and B the floor, between which the partition is formed, which ceiling and floor may be of any suitable construction. Extending from ceiling to floor are a series of upright studs C of the width desired for the thickness of central filling in the partition, said studs being shown as channel-irons, which is preferable for strength, and as formed with bent ends 10 at top and bottom, by which the studs are secured to the ceiling and floor. It will be understood, however, that these studs may be of any other suitable form and secured to

the ceiling and floor in any suitable manner. Upon opposite sides of these studs are secured sheets of woven or netted wire or perforated or expanded sheet metal or centers of any other suitable reticulated metal, so as to form a hollow space between the reticulated metal on opposite sides of the studs, the construction shown being formed of common wire lathing D, with rods 11 interwoven at suitable intervals, and the sheets of wire lathing are shown as secured to the studs C by tying the rods 11 to the studs by wire ties, although it will be understood that the lathing may be otherwise secured to the studs. The hollow space formed between the metal lathing D on opposite sides of the studs C is to be filled with a body of concrete or similar coarse fireproof material, which is to be filled in while in a plastic state and allowed to harden, so as to form a rigid partition, the plastic material being held in place by the metallic lathing D while setting, keying into the metallic lathing, so as to form an integral structure therewith, and in turn after setting forming a key for the plaster which is preferably used as a finish and applied subsequently on opposite sides of the structure, thus forming a partition finished on both sides with plaster held by the metallic lathing and concrete. The lathing or other reticulated metal D used in the structure is preferably of quite large mesh, so as to permit suitable plastic material to be forced through the meshes of the metal for filling the space between the two centers of reticulated metal, it being preferable to use for filling this space a coarse strong material, such as the cinder-concrete now usually employed in fireproof constructions. The use of this coarse-mesh lathing or other reticulated metal also reduces largely the cost and weight of metal in the structure.

The vertical stud C having been secured in place and the lathing D or other reticulated metal placed in position on opposite sides of the studs the process of building the structure is as follows: Upon the side of the studs opposite to that from which it is desired to apply the concrete in filling a vertical mold frame or centering is supported, this center-

ing being shown in the construction as consisting of vertical bars E, which extend from floor to ceiling and are preferably made in two parts arranged to slide on each other for
 5 adjustment and held together by bands 13, so that the same bars E may be used with ceilings of different heights. Two or more sets of the vertical bars E are used, two being shown in Fig. 2. These bars E of the
 10 mold framework or centering may be supported in position in any suitable manner, but, as indicated in Fig. 1, are supported from the floor by inclined struts F. Upon the face of these bars next the reticulated metal D
 15 and held by the bars in position against the metal, so as to support the latter while the concrete is being applied and forming a mold-frame for the concrete, are boards G, which are preferably separate boards built edge-
 20 wise on each other to the height required in the structure, this feature, together with the vertical adjustable bars E, providing a mold frame or centering which may be used with spaces between floors and ceilings differing
 25 widely in height. The mold frame or centering having been placed in position against the reticulated metal D on one side of the studs C the concrete or similar plastic material is filled in through the reticulated metal
 30 on the opposite side preferably by supporting a table, such as table H in the drawings, upon the metal, from which the plastic material may readily be forced in through the
 35 meshes of the metal to fill the space within the partition, being molded against the mold frame or centering formed by the boards G. The table H is shifted upward as the filling process proceeds, the table being constructed
 40 in any suitable manner, so as to be readily attached to and detached from the reticulated metal, as desired. In the construction shown the table is formed with hooks 3, which hook over the rods 11 of the lathing and is supported by hinged struts 4, engaging
 45 in the meshes of the lathing. It will be understood, however, that the mold board or centering upon one side of the structure may be used with the plastic material filled in in any suitable manner, either through the
 50 meshes of the reticulated metal on the opposite side of the partition or from above before all the reticulated metal on the opposite side from the centering is put in place. After the space within the partition between
 55 the two centers of reticulated metal has been filled in the mold board or centering is removed, and after the plastic material in the partition has set the opposite sides of the partition are finished by coating with plaster
 60 P, which keys onto the lathing and portions of concrete which project through the meshes of the lathing, thus forming a very strong construction.

It will be understood that this construction
 65 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. The construction is especially designed, however, for
 70 partitions and similar constructions finished with plaster on opposite sides.

It will be seen that the construction is very simple, strong, and durable, while at the same time it may be made very cheaply with
 75 metal of large mesh and requiring no labor of special skill. The central filling of concrete or other plastic material reduces largely the amount of plaster required as compared with previous partition constructions in
 80 which the plaster is applied to the metallic lathing in forming either solid or hollow partitions without such a body of plastic material as a base for the plaster, thus aiding also in securing a cheap construction of great
 85 strength.

What I claim is—

1. The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying
 90 a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or similar plastic material applied in the plastic
 95 state and molded against said mold frame or centering, substantially as described.

2. The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying
 100 a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or similar plastic material applied in the plastic
 105 state by introducing said plastic material through the reticulated metal on the opposite side of the structure from the mold frame or centering and molding the plastic material against the mold frame or centering, sub-
 110 stantially as described.

3. The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying
 115 a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or similar plastic material applied in the plastic
 120 state and molded against said mold frame or centering, and applying a covering of plaster or similar material on the side of the structure opposite the mold frame or centering, substantially as described.

4. The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying
 125 a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or similar plastic material applied in the plastic
 130 state and molded against said mold frame or centering, removing the mold frame or cen-

tering, and applying coverings of plaster or similar material on both sides of the structure, substantially as described.

5 The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or
10 similar plastic material applied in the plastic state by introducing said plastic material through the reticulated metal on the opposite side of the structure from the mold frame or centering and molding the plastic material against the mold frame or centering, and
15 applying a covering of plaster or similar material on the side of the structure opposite the mold frame or centering, substantially as described.
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6. The method of making a vertical fire-proof construction which consists in erecting two vertical centers of reticulated metal arranged with a space between them, applying a mold frame or centering on the outside of one of said centers, and filling the space between said centers with a body of concrete or similar plastic material applied in the plastic state and molded against said mold frame or centering, removing the mold frame or centering, and applying coverings of plaster or similar material on both sides of the structure, substantially as described.

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

ABRAHAM L. A. HIMMELWRIGHT.

Witnesses:

C. J. SAWYER,
A. A. V. BOURKE.