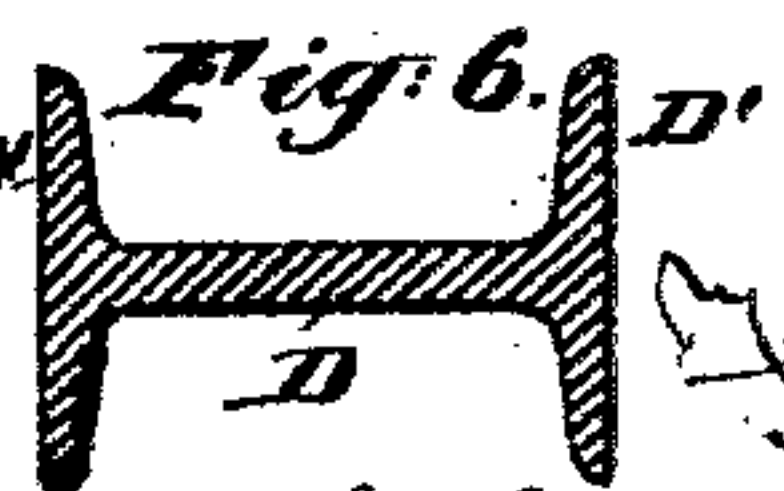
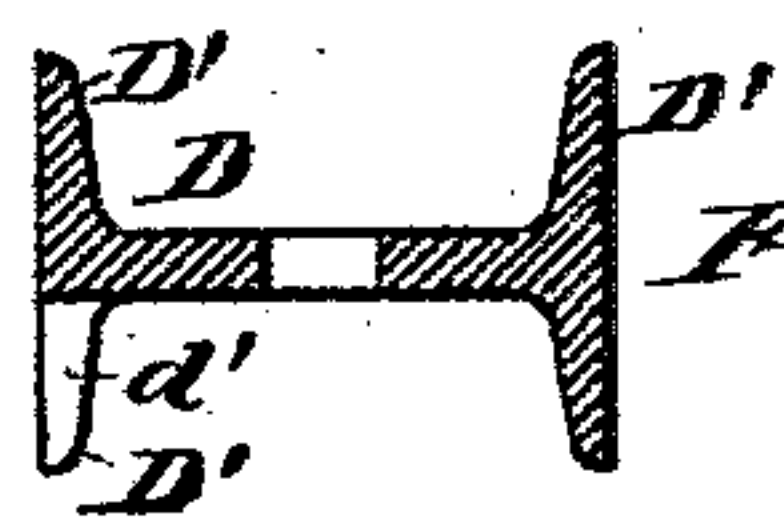
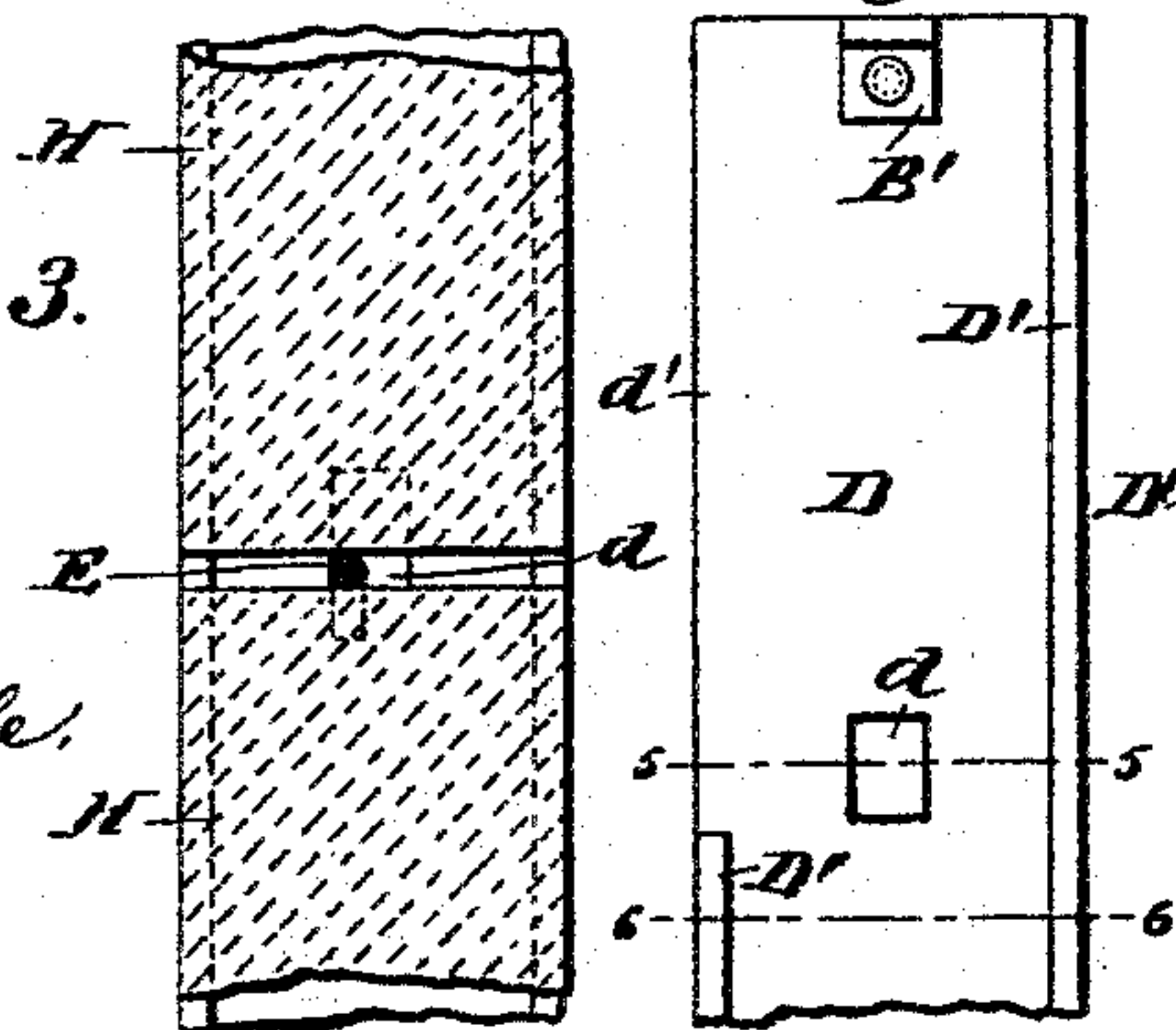
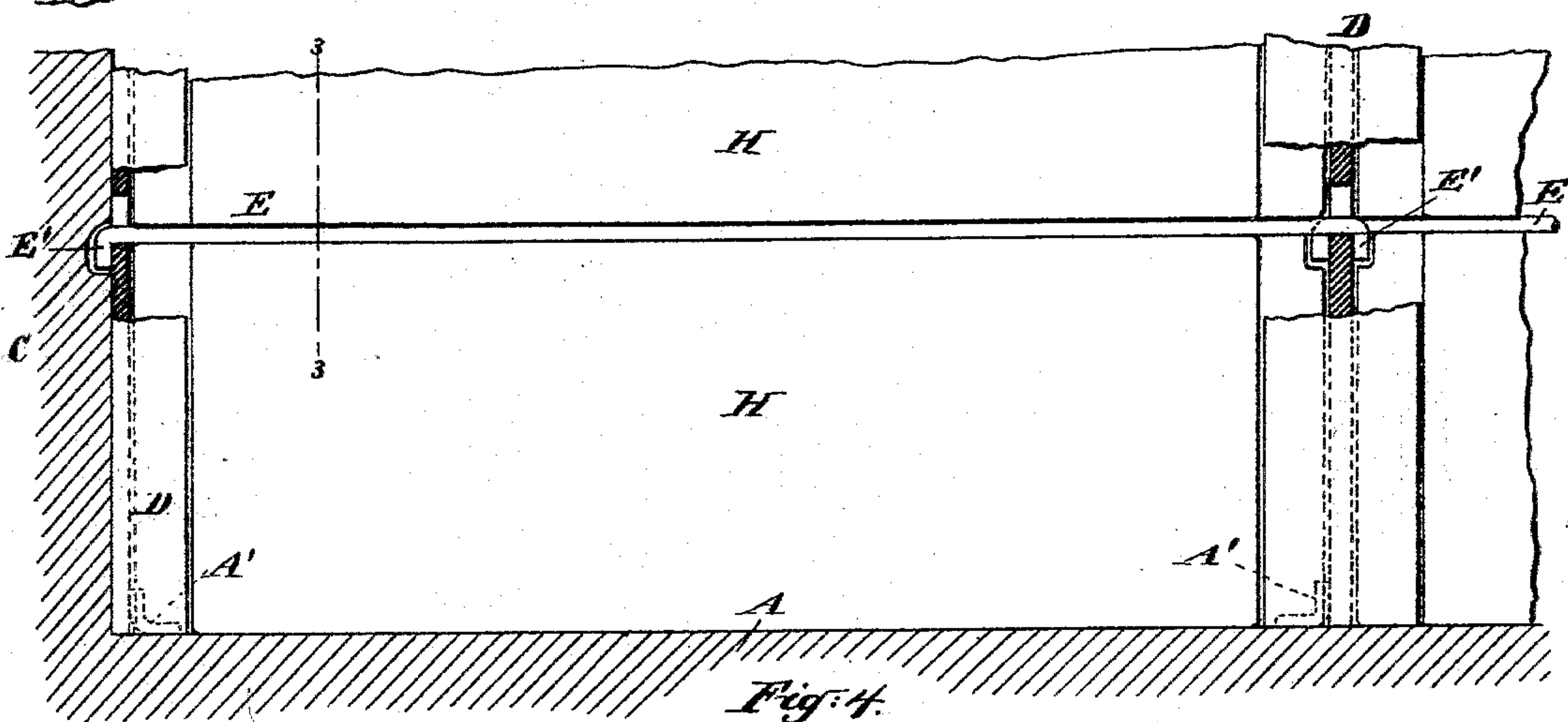
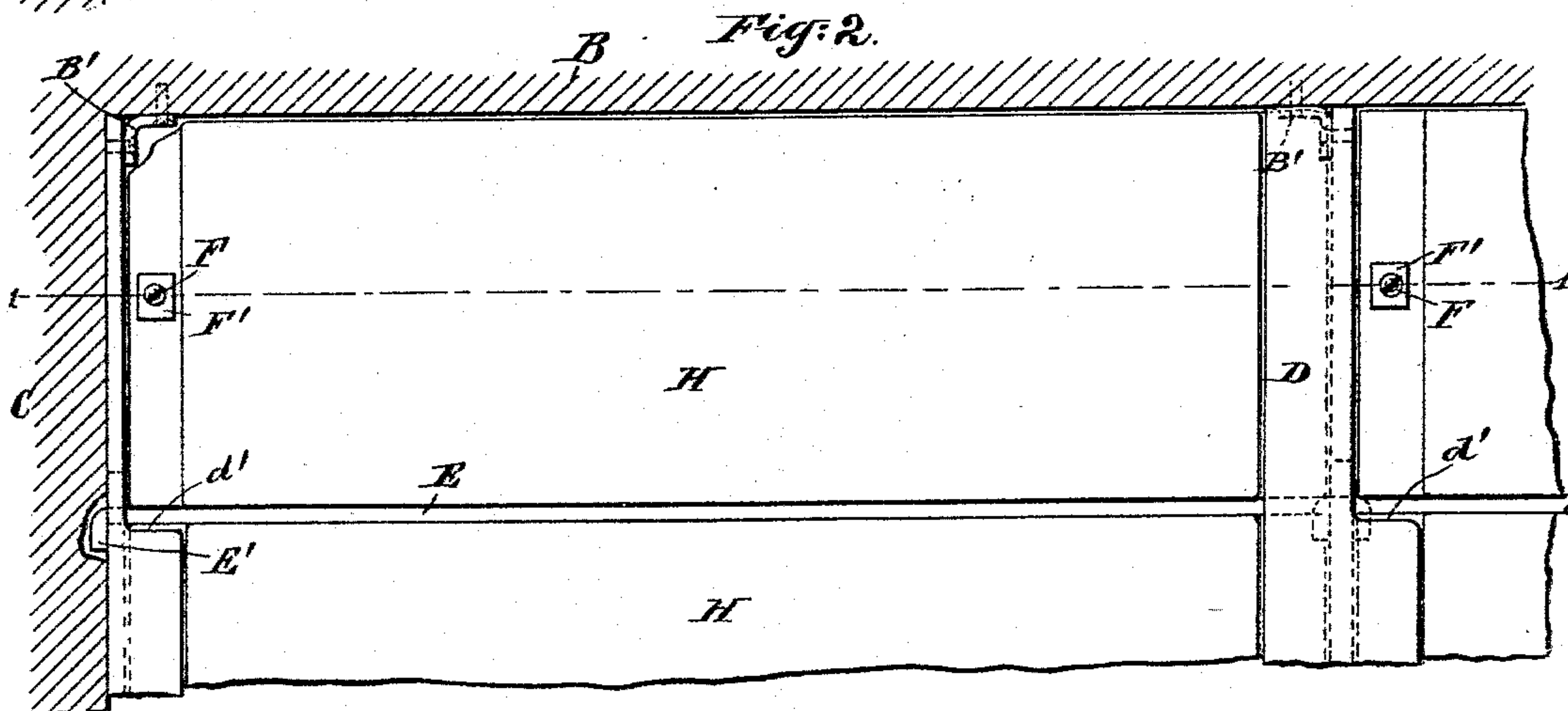
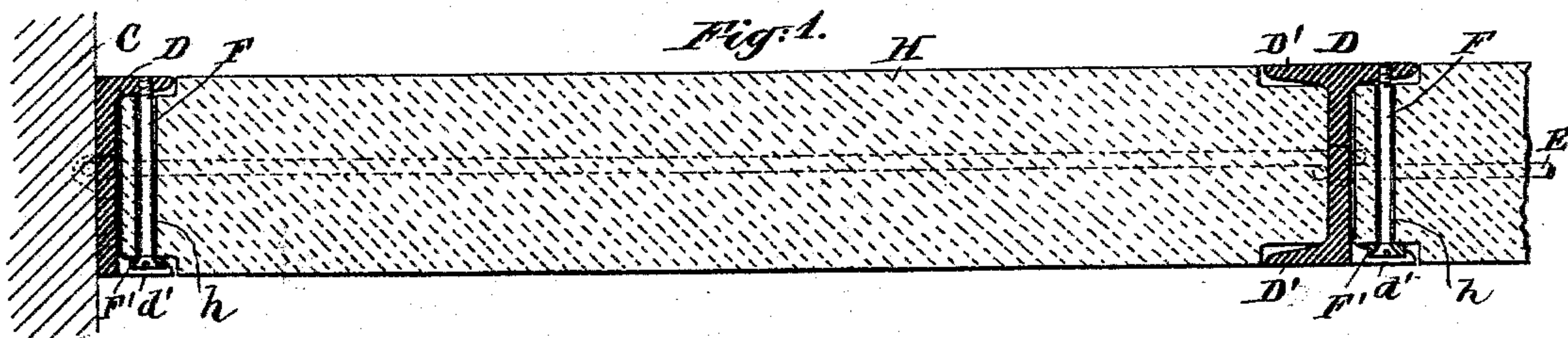


(No Model.)

F. H. MELA.
FIREPROOF PARTITION.

No. 515,496.

Patented Feb. 27, 1894.



Witnesses:
Charles R. Seale,
M. J. Boyle.

Inventor:

F. H. Mela
By his attorney
James D. Sisson

UNITED STATES PATENT OFFICE.

FERDINAND H. MELA, OF NEW YORK, N. Y.

FIREPROOF PARTITION.

SPECIFICATION forming part of Letters Patent No. 515,496, dated February 27, 1894.

Application filed June 21, 1893. Serial No. 478,336. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND H. MELA, builder, residing in the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Fireproof Partitions, of which the following is a specification.

The present invention is an improvement based on that set forth in a patent to me dated May 16, 1893, No. 497,383.

I have devised means to facilitate the placing of the slabs of terra-cotta lumber or analogous fire-proof material and an improvement which facilitates the manufacture and the application of the horizontal tie-bars.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a horizontal section on the line 1—1 in Fig. 2. Fig. 2 is an elevation showing the upper and lower parts of a partition partly in vertical section, with a vertical section of portions of the adjacent wall floor and ceiling. Fig. 3 is a vertical section of a portion on the line 3—3 in Fig. 2. Fig. 4 is an elevation of a portion of one of the metallic uprights. Fig. 5 is a horizontal section thereof on the line 5—5, and Fig. 6 is a horizontal section on the line 6—6. Fig. 7 is a side view of a portion of a tie-rod. It shows a modification.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the floor below, and A' A', shown in dotted lines in Fig. 2, are metallic knees secured thereon.

B is the ceiling, and B' metallic knees secured thereto.

C is one of the main walls of the building, and sufficiently recessed at certain points to admit the ends of the tie-rods, to be presently described.

D is one of a series of metallic uprights, which it will be understood are set at proper distances apart in the line of the partition. D' are flanges on these uprights. A portion of one of these flanges in each upright near the ceiling, is cut out as indicated at d', to allow the slabs of fire-proof material to be conveniently

inserted, as will presently appear. I punch or otherwise produce holes d at the required levels in the bodies of these uprights.

E E are the horizontal tie-rods. Each is formed of a length only a little greater than the distance between two uprights, and each end-portion E' is bent at a right angle. The holes d are sufficiently wide to allow two of these rods E to lie therein side-by-side. I apply them thus, one reaching to the right and one to the left.

H are rectangular slabs of porous brick, terra cotta or analogous fire-proof material, adapted to afford the necessary mechanical strength and fire-proof qualities, with lightness and reasonable cost. I prefer what is sometimes called terra-cotta lumber. The holes d and the rods E are arranged with reference to the height of these blocks so that a tie-rod shall extend horizontally in the space between each slab and the corresponding slab lying next above. Each slab is narrowed a little at each end so that it can move up and down between the flanges D' of the uprights. After the uprights are erected and strongly confined to the ceiling and floor, I apply the several slabs H and rods E E' in the proper succession with sufficient mortar to fill the joints; and when the whole is completed, cover both faces first with rough-coat and finally with hard-finish, and the walls are complete. All the slabs, including those that go to the bottom and lie upon the floor, are introduced by holding them upright on edge, lifting them to the level of the apertures d', and then first inserting one end between the complete flanges D' D' of one upright, the one on the right in the figures, and after this end is approximately in position the other end is moved bodily inward through the aperture d'. Now the slab is in place except that it is too high, and it is next lowered, guided by the flanges D' D', at each end until it rests on the floor. Having thus inserted the first slab in the space between each upright and the next, a set of the tie-rods E E' are next inserted and lowered a little so that their ends will engage reliably. The depth of the holes d must be equal to the extent of the bent portion E', and the width equal to the diameter of two of the rods. The rods lie in the holes side by side, one serving to support

the upright against strains impelling the latter to the right, and the other holding it against strains impelling it to the left. After the next tier of slabs has been laid in position, the next set of tie-rods is applied, and so on to the top. The last tier of slabs is held reliably by the flanges at one end, and the other end requires to be fastened to the single flange which is there presented. I effect this by means of a bolt F tapped through the standing flange. I insert it through a hole *h* provided in the slab, and provide it with a washer F', affording a reliable bearing on the slab. All the joints are liberally filled with or pointed with mortar applied during the laying, or immediately after.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. I can by giving a slightly greater excess of length, to the tie-rods and bending them in the heated state by hand or by machinery, to the form shown in Fig. 7 make it serve strut-wise as well as tension-wise and thus brace the uprights in which it is engaged against displacement either to the right or left.

To avoid the necessity of manufacturing special slabs to receive the bolts F, I can make a hole adapted to receive such bolt in each slab, but only the upper slab in each tier requires such. Instead of a hole a simple notch may serve. When occasion requires that a slab shall be used for the top which has not been perforated, a notch can be roughly made by breaking. I can break a corner to allow for the knee A'. I have shown such a provision for the uppermost in Fig. 2, but it may be preferable to make each slab with

two corners properly shaped to thus apply. The die for punching the hole *d* may have rounded corners, and correspondingly produce holes only approximately rectangular.

Parts of the invention can be used without the hole. I can use the apertures *d'* and insert the slabs in the manner described at the top and lower them into place using other forms of tie-rods, as for example, that set forth in my patent of May 1893, referred to.

The cutting away of a large portion of the flange required to produce an aperture *d'* may be effected by machinery, as by sawing at the mill where the uprights are manufactured.

I claim as my invention—

1. In a fire-proof partition, the slabs H, in combination with the flanged uprights D having portions *d'* removed to facilitate their introduction, arranged to serve as herein specified.

2. The fire-proof partition described having the flanged uprights D with holes *d* to receive tie-rods and cut-out spaces *d'* to facilitate the introduction of fireproof slabs H, in combination with such slabs and with tie-rods E having ends E' adapted to engage and support the uprights, and with means as the bolts F and washers F' for holding the upper slabs, all arranged for joint operation substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

FERDINAND H. MELA.

Witnesses:

CHARLES R. SEARLE,
M. F. BOYLE.