No. 662,871. Patented Nov. 27, 1900.

D. KILPATRICK.

FIREPROOF STRUCTURE.

(Application filed Nov. 13, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 3.

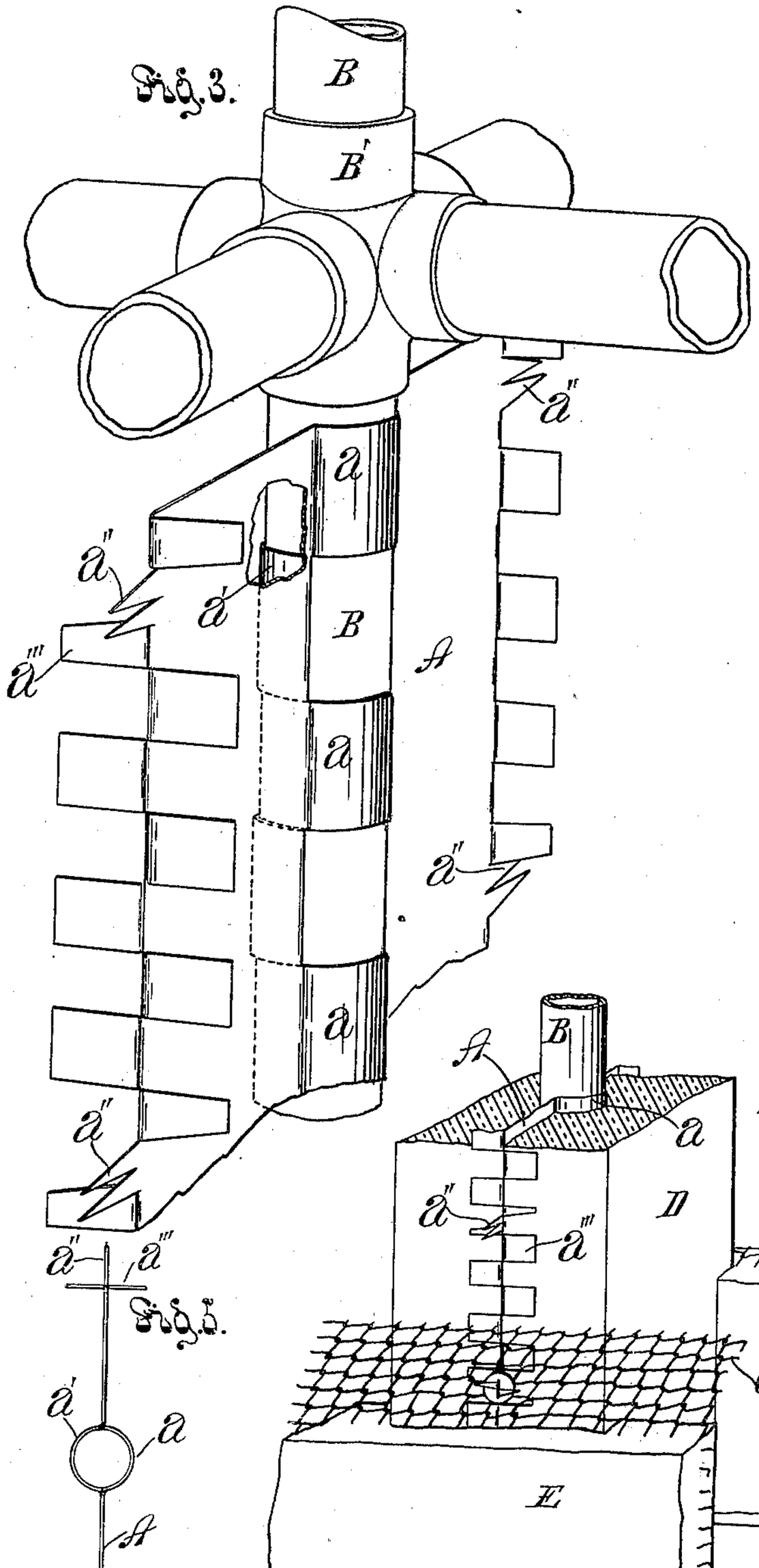

Fig. 2.

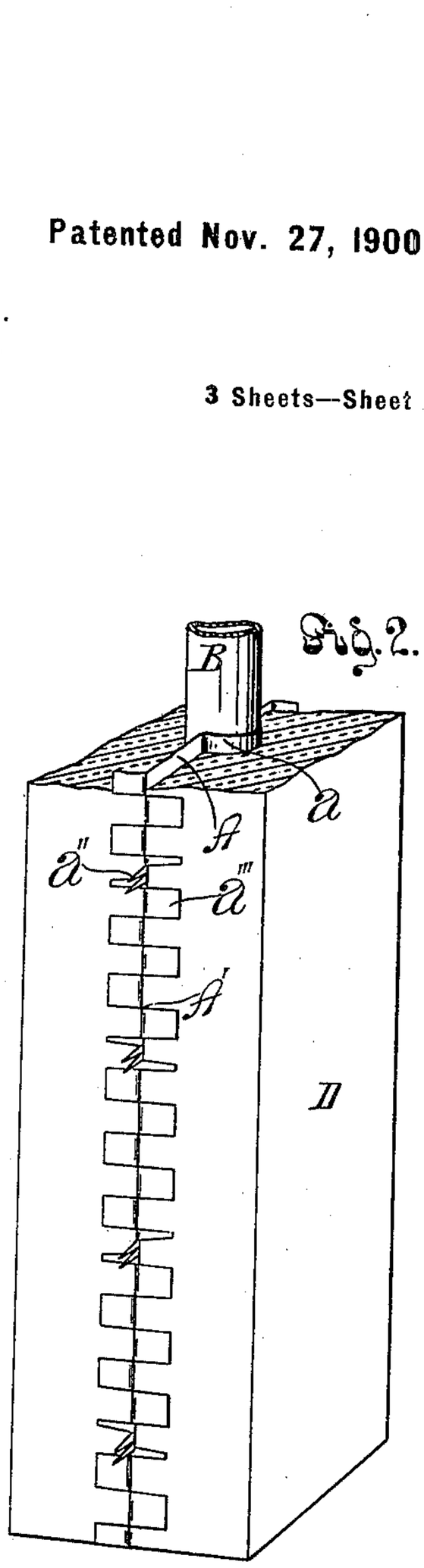

Fig. 1.

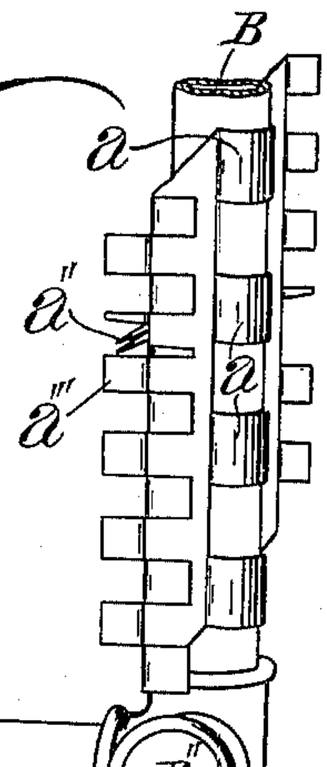

Fig. 5.

Fig. 4.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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3 Sheets—Sheet 2.

Fig. 6.

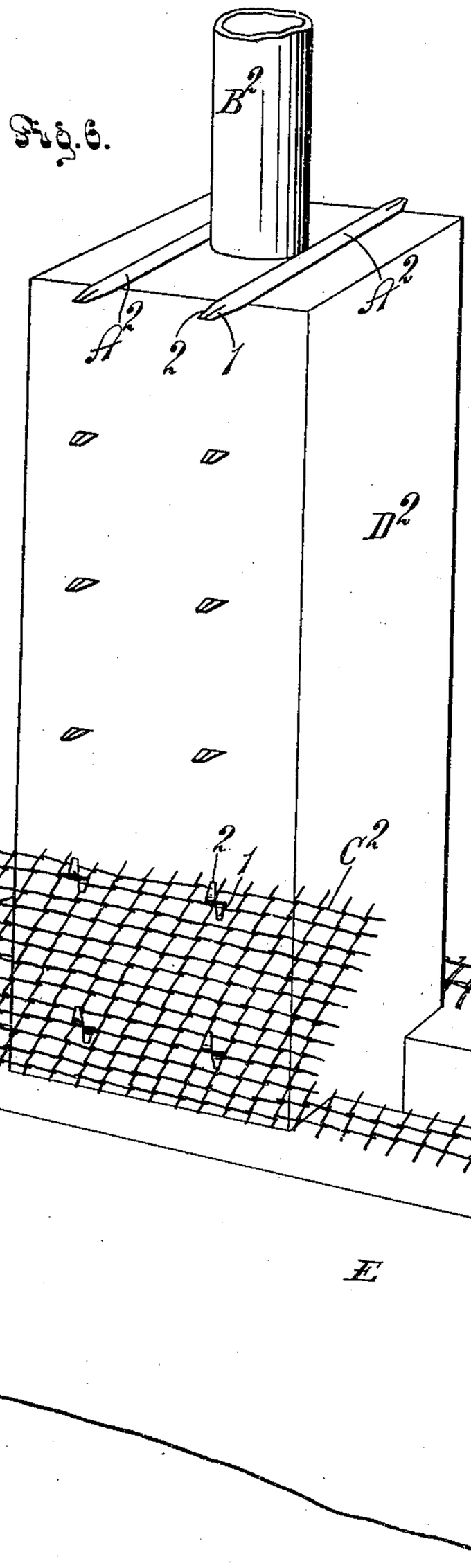
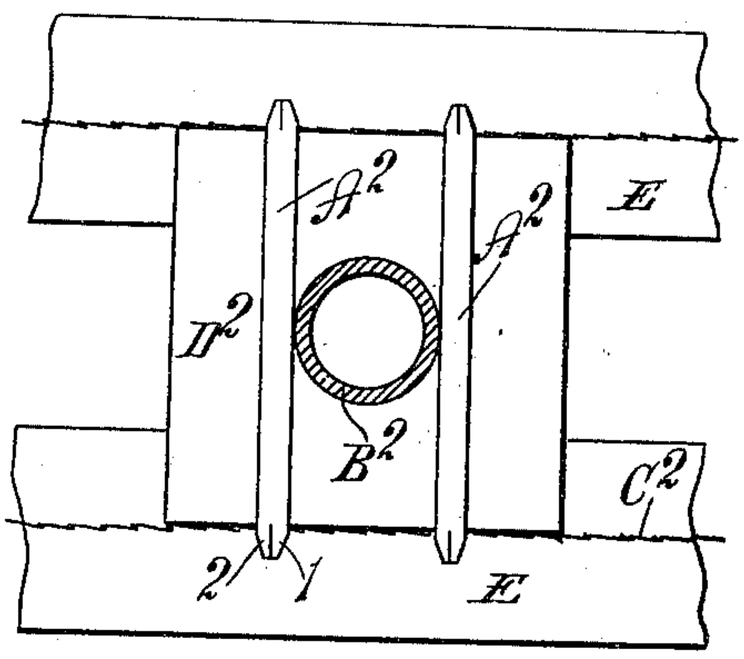


Fig. 7.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 8.

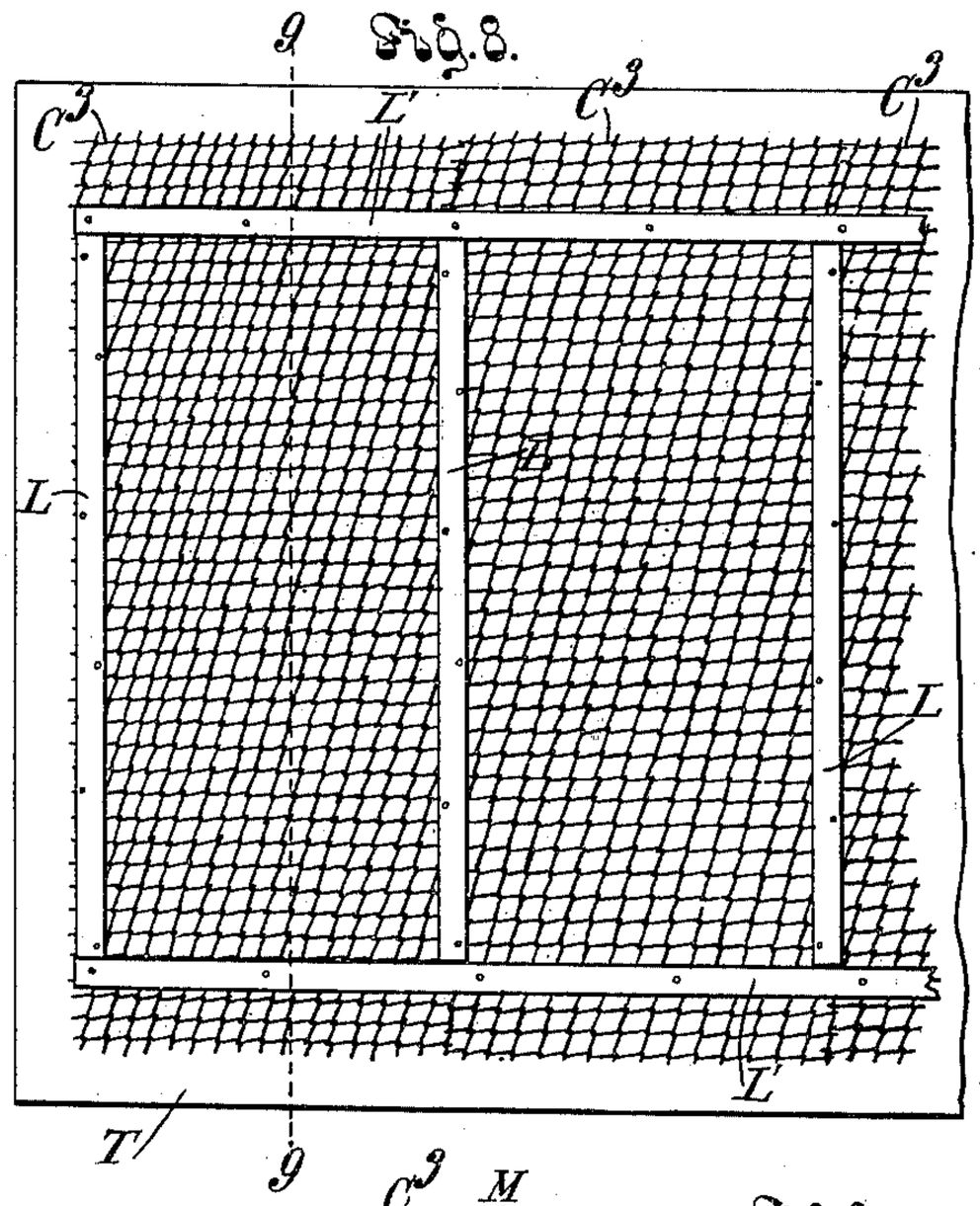


Fig. 10.

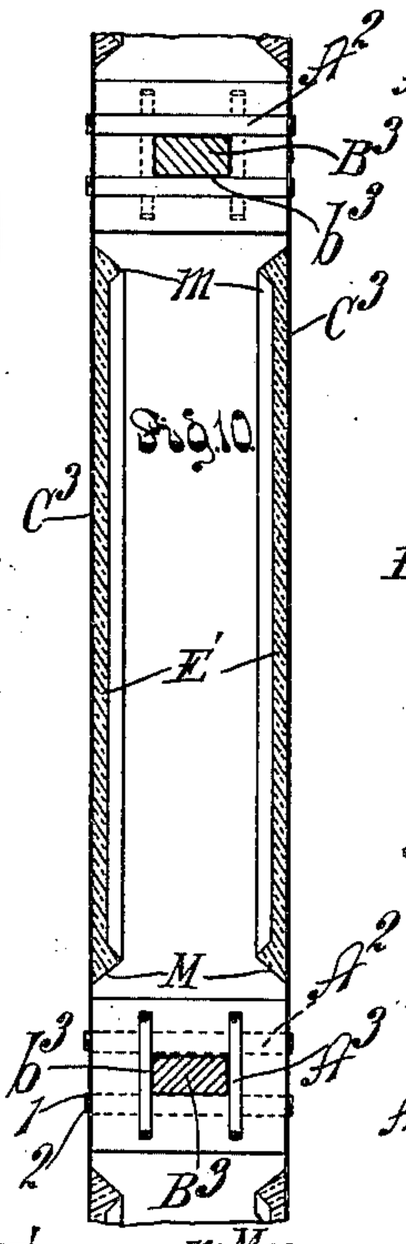


Fig. 11.

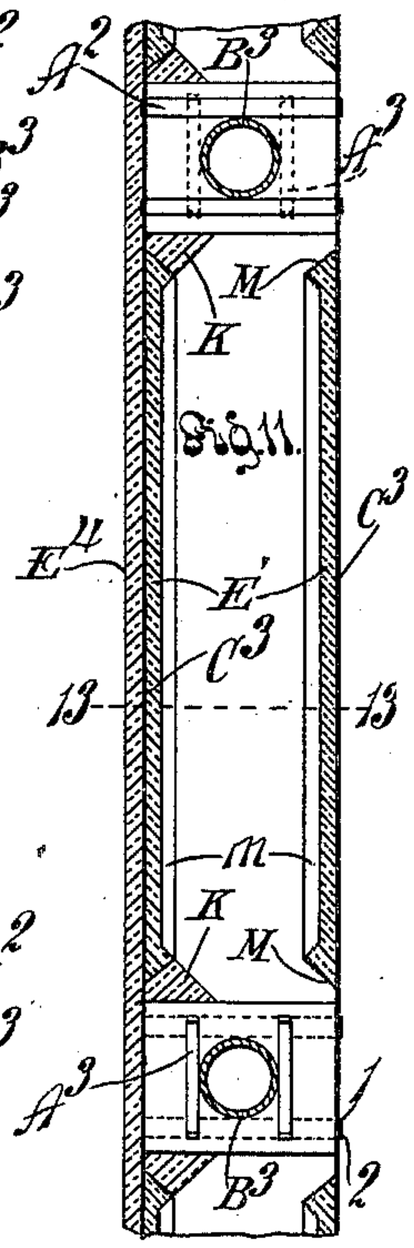


Fig. 9.

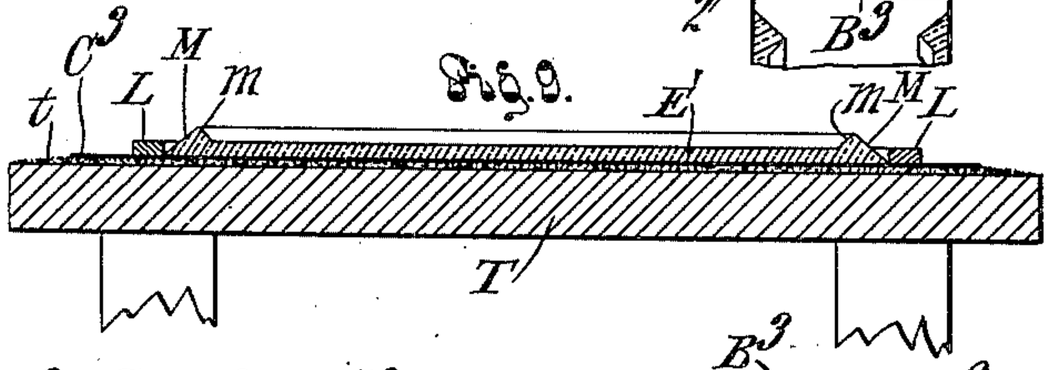


Fig. 12.

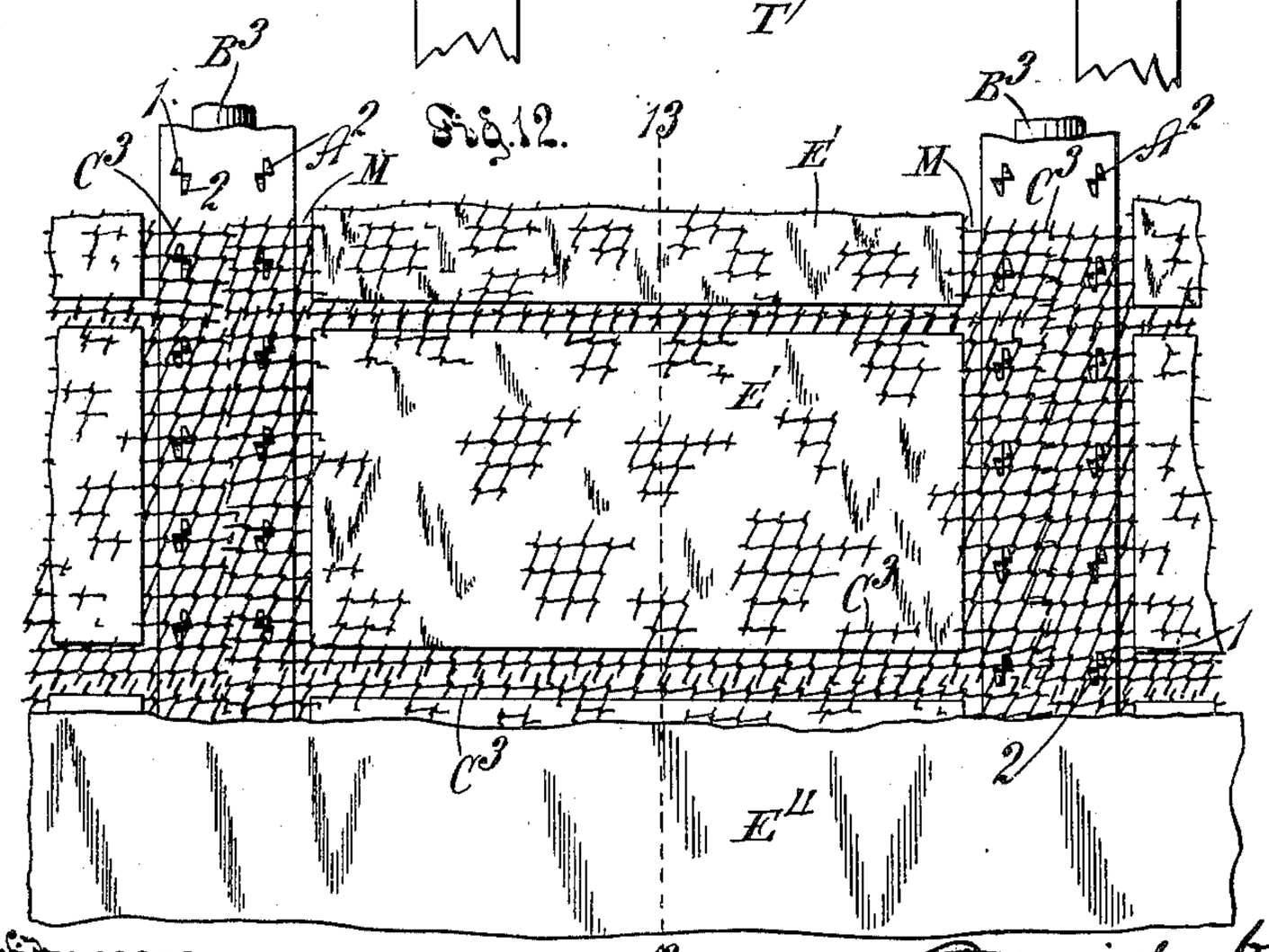
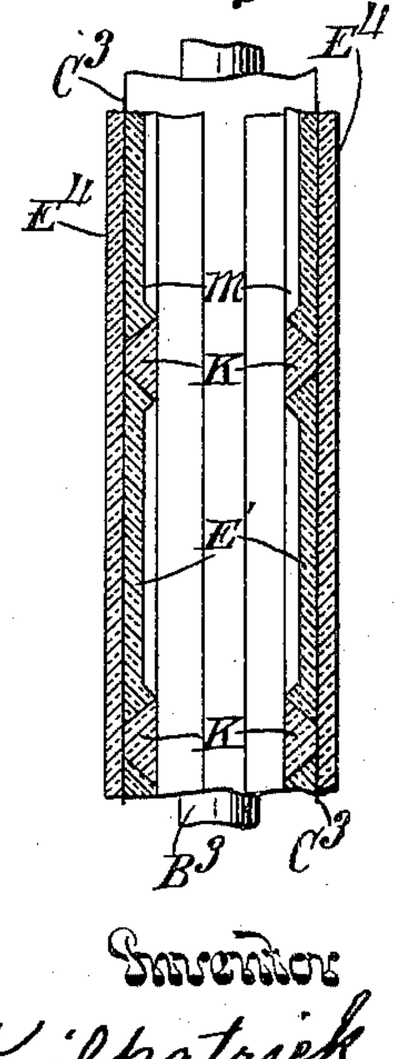


Fig. 13.



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UNITED STATES PATENT OFFICE.

DAVID KILPATRICK, OF LOS ANGELES, CALIFORNIA.

FIREPROOF STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 662,871, dated November 27, 1900.

Application filed November 13, 1899. Serial No. 736,874. (No model.)

To all whom it may concern:

Be it known that I, DAVID KILPATRICK, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Fireproof Structures, of which the following is a specification.

One object of my invention is to provide a cheap, light, and strong structure which will be absolutely fireproof and which will be a good insulator against heat and moisture.

A further object of my invention is to provide for the convenient and inexpensive use of metallic lathing upon walls having widely-separated studding or supports for the plaster.

By my invention I am able to dispense with any framework or supporting appliances between the uprights of the building and I avoid any necessity of cutting into the framework of the building to produce seats for supporting the plastering.

My invention can be applied for the construction of both hollow and solid walls and with both wooden and metal framing.

The accompanying drawings illustrate my invention as applied in hollow walls.

Figure 1 is a perspective fragmental detail illustrating my newly-invented construction in one form in which it may be embodied. Fig. 2 is a fragmental perspective view of one of the piers formed in carrying out my invention in the form shown in Fig. 1. Fig. 3 is a fragmental perspective view of the upper end of one of the metal posts with the form of anchor shown in Fig. 1. Fig. 4 is a fragmental sectional plan, on a smaller scale, further illustrating my newly-invented structure. Fig. 5 is a plan of the form of anchor shown in the preceding views. Fig. 6 is a fragmental view illustrating a simpler form of construction embodying my invention. Fig. 7 is a plan of the form illustrated in Fig. 6. Fig. 8 is a plan view of sections of lathing-strips ready to receive the inside coating of plaster in applying the invention in its most approved form. Fig. 9 is a section on line 9 9, Fig. 8, after the wall-slab has been formed by applying plaster to the sheet of lathing shown in Fig. 8. Fig. 10 is a fragmental plan of a wall in the course of construction with the form of slabs shown in Fig. 9 and with wooden studding-posts. Fig. 11 is a like plan showing a section of the wall nearly completed with metal pipes for posts. Fig. 12 is a side elevation of a fragment of the wall in the course of construction as indicated in Fig. 10. Fig. 13 is a vertical section on line 13 13, Figs. 11 and 12.

Referring first to the form illustrated in Figs. 1 to 5, inclusive, A indicates a strip of sheet metal slitted transversely and bent into oppositely-arranged loops a a' and provided at its edges with fastenings a'' to hold lathing, and also provided on its edges with lathing-supports a''' and a suitable support, such as a post B, formed of iron pipe inserted through the loops a a' to support the strip A. C C′ indicate metal lathing fastened to the strip A. D indicates a concrete body inclosing the support B and the body of the strip A and extending to the support a''', which serve to bind the concrete material, as well as to form a gage for the lathing. The concrete body D, support B, and strip A form a pier for the fireproof structure. B′ B″ indicate fittings for connecting different members of the support B. These fittings may be of any required form. B′ shows a double cross-fitting, the same being designed for a floor and joist support at the corner of four rooms.

The supporting, gaging, and binding strips A are preferably slitted outside the concrete body to form a binding and lathing support or tongue a''', and said supports are formed by oppositely bending the tongues laterally.

It is to be understood that the piers will be set at any desired distance apart and that the plastering E may be as thick as desired and be on one or both sides of the lathing, as preferred. I deem it preferable to well coat both sides of the lathing, as indicated in the drawings.

In the form shown in Figs. 6 and 7 and which form I prefer to the form shown in Figs. 1 to 5, for the reason that it is less expensive and is easier to build than said other form, the sheet-metal strips A^2, which form the anchors for the lathing and plaster, consist of narrow pieces of sheet-iron about three-fourths inches wide laid on either side of the pipe or stud B^2 and projecting about one inch on either side of the concrete pier D^2. The

ends of each strip are preferably slit to form two points 1 2 to be bent over upon the lathing C^2 to hold the same firmly in place.

To build a structure of the kind illustrated in Figs. 6 and 7, the post B^2 (which may be a wooden stud or may be a metal pipe, as shown, at the pleasure of the constructor) being in place the pier D^2 will be built up in the ordinary manner of building concrete piers to the level where the first anchors are to be placed—say, an inch, more or less, from the base. Then two of the anchor-strips A^2 will be laid in place, as indicated in Fig. 7 and also at the top of Fig. 6, with their edges preferably contacting with the pipe or post B^2. Then concrete will be placed to build the pier to a height where the next anchors are required, and anchors are then placed as before and the pier again built, and so on until the pier is built to a height sufficient for the lathing to be fastened in place. When the piers required are thus built to a desired height and firmly set, the forms in which the piers are molded are removed and the lathing C^2 placed against the pier and fastened by bending the ends of the iron anchors over the lathing. This is done on each side of the pier, as indicated in Figs. 6 and 7, and after being thus completed the plaster will be applied in the ordinary manner, thus completing the wall to the top of the pier.

The piers may be built to any desired height, including one or more stories of a building.

In Figs. 8 to 13, inclusive, I have illustrated a form of construction and a method of making the same which I deem preferable to any of the forms or methods previously described. In this form of construction I first prepare slabs formed of definite strips or sheets of metallic lathing and a stiffening coating of plaster, a portion of the lathing being uncoated at the edges of each strip, thus providing vacant spaces for the purpose of fastening the completed slab to the piers and also for the purpose of allowing a subsequent application of cement or plaster after the slabs are in place for perfectly locking and keying the slabs with relation to each other and to the piers of the wall.

I will now describe the manner of constructing a wall in the most approved form.

In Figs. 8, 9, 10, 11, and 12 I have illustrated a manner of building my newly-invented construction which I deem preferable. In this form the lathing C^3 is cut into lengths to extend from center to center of the piers. Then a number of such lengths of lathing are placed upon a table T, the surface of which has previously been sanded, as at *t*. Laths L are then fastened in place at each edge of the lathing-strips to hold the metallic lath flat along the edges, and laths L′ are fastened in place across the strips of lathing, so as to leave a space between the laths L′ somewhat less than the space between the piers of the proposed wall. A coating E′, of plaster or cement, is then applied to the strips of lathing C^3 between the laths L and L′, coating the lathing to a desired thickness—say about one-half inch. A trowel is then run around inside the laths L L′ to bevel the coat, as at M, around the edges and also to raise a ridge *m* around the edge of the slab of plaster or cement, thus strengthening the slab and providing for a space to receive the plaster or cement for a binding-key in the finishing of the wall, as hereinafter set forth. The coat thus applied is then allowed to set and dry. The laths L L′ are then removed, and the slabs of lathing and plaster or cement are then ready to be applied to the piers, which have been built in the manner indicated with relation to the forms shown in Figs. 6 and 7. The slabs are then placed on said piers with the coated faces inward and extending between the piers, but not contacting with them. Then the lathing is fastened in place by the anchors A^2, and the vacant spaces M around the coats E′ are then filled in with fresh plaster or cement, which is allowed to set to form strengthening-keys K. Then other composite slabs are placed in position in like manner, and finally the finishing-coats E^4, of plaster or cement, are applied to the outside faces of the wall.

Where wooden studding is used, as indicated in Fig. 10, it is necessary, in order to avoid any danger of cracking the pier by reason of the swelling of the wooden studs, that the studding B^3 before being put in position shall be coated with asphaltum or other waterproof material, as indicated at b^3. Anchors A^3, laid parallel with the sides of the wall, are also preferably employed in this construction in order to further strengthen the pier.

In Fig. 11 the final coat E^4 is shown as applied to only one of the sides of the wall. It is to be understood that to complete said wall a finishing-coat of like character will be applied to the other side of the wall.

By providing the lathing with the preliminary inside coating of plaster or cement and afterward filling the spaces and plastering entirely over the other face of the metallic lathing said lathing is completely incased within the plaster or cement and is hermetically sealed from the atmosphere. Furthermore, by thus coating the inside of the lathing and allowing the coat to harden before the slab is applied to the wall the lathing is so stiffened that the supports, piers, or studding can be set much farther apart than is practicable in the use of metallic lathing applied in the ways heretofore in vogue. I am able by this means to successfully use metallic lathing in the satisfactory construction of walls in which the piers or studding are fully four feet apart. It is to be understood in this connection that the use of the slabs as set forth in this specification is not limited to the means which are herein illustrated for supporting such slabs, as they are of equal value in the con-

struction of buildings in which the lathing is supported simply by wooden studding.

Strong wire-netting or any other form of metallic netting may be used as the lathing for my improved structure.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A fireproof structure comprising a concrete pier; metal anchors partially embedded in said pier; lathing secured to projecting portions of said anchors; and plastering on said lathing.

2. A fireproof structure comprising a concrete pier; sheet-metal strips partially embedded in said pier and having portions projecting from the pier; lathing secured to said pier by the projecting portions of said strips; and plastering on said lathing.

3. A fireproof structure comprising an upright post; a concrete body around said post; sheet-metal strips partially embedded in said concrete body and having portions projecting from said body; and lathing secured to said body by said projecting portions.

4. A fireproof structure comprising a post; a concrete body around said post; sheet-metal strips contacting with said post and partially embedded in the concrete body and having portions projecting from said body; and lathing secured to said body by said projecting portions.

5. A slab for structural purposes comprising a strip of metallic lathing and a coat of cement or plaster thereon with beveled and ridged edges.

6. A wall comprising concrete piers with metallic anchors projecting from the piers; slabs composed of lathing and a stiffening coat of cement or plaster on the inner side of said lathing between said piers and a coating over the outside of said lathing.

7. A wall comprising concrete piers with metallic anchors projecting from the pier; slabs composed of lathing and a stiffening coat of cement or plaster on the inner side of said lathing between said piers with spaces around the edges of said coat; cement or plaster in said spaces; and a coating over the outside of said coat.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 23d day of October, 1899.

DAVID KILPATRICK.

Witnesses:
JAMES R. TOWNSEND,
FRANCIS M. TOWNSEND.