

T. O'SHEA.
BUILDING CONSTRUCTION.

(Application filed June 3, 1899.)

(No Model.)

2 Sheets—Sheet 2

Fig. 6.

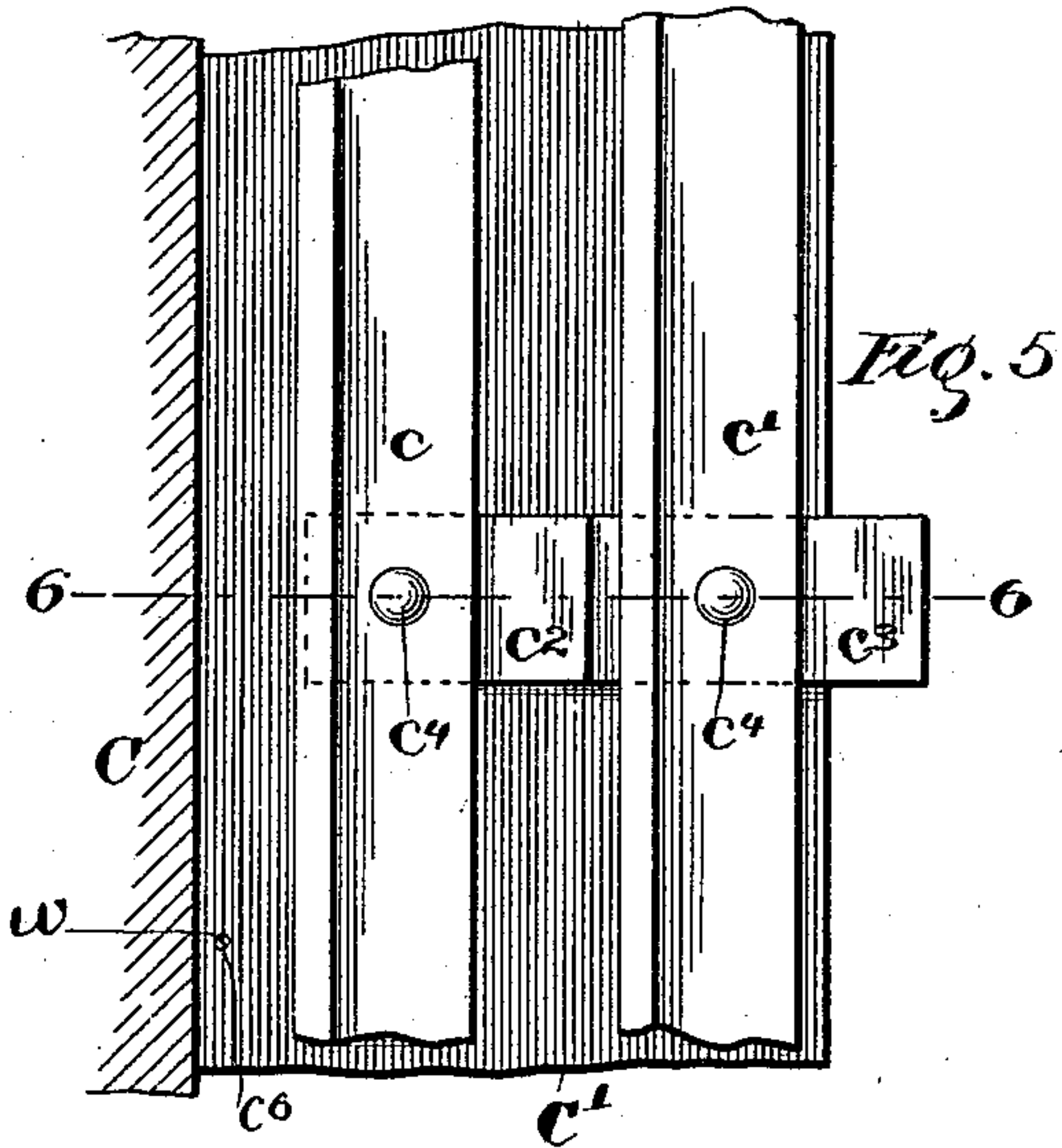
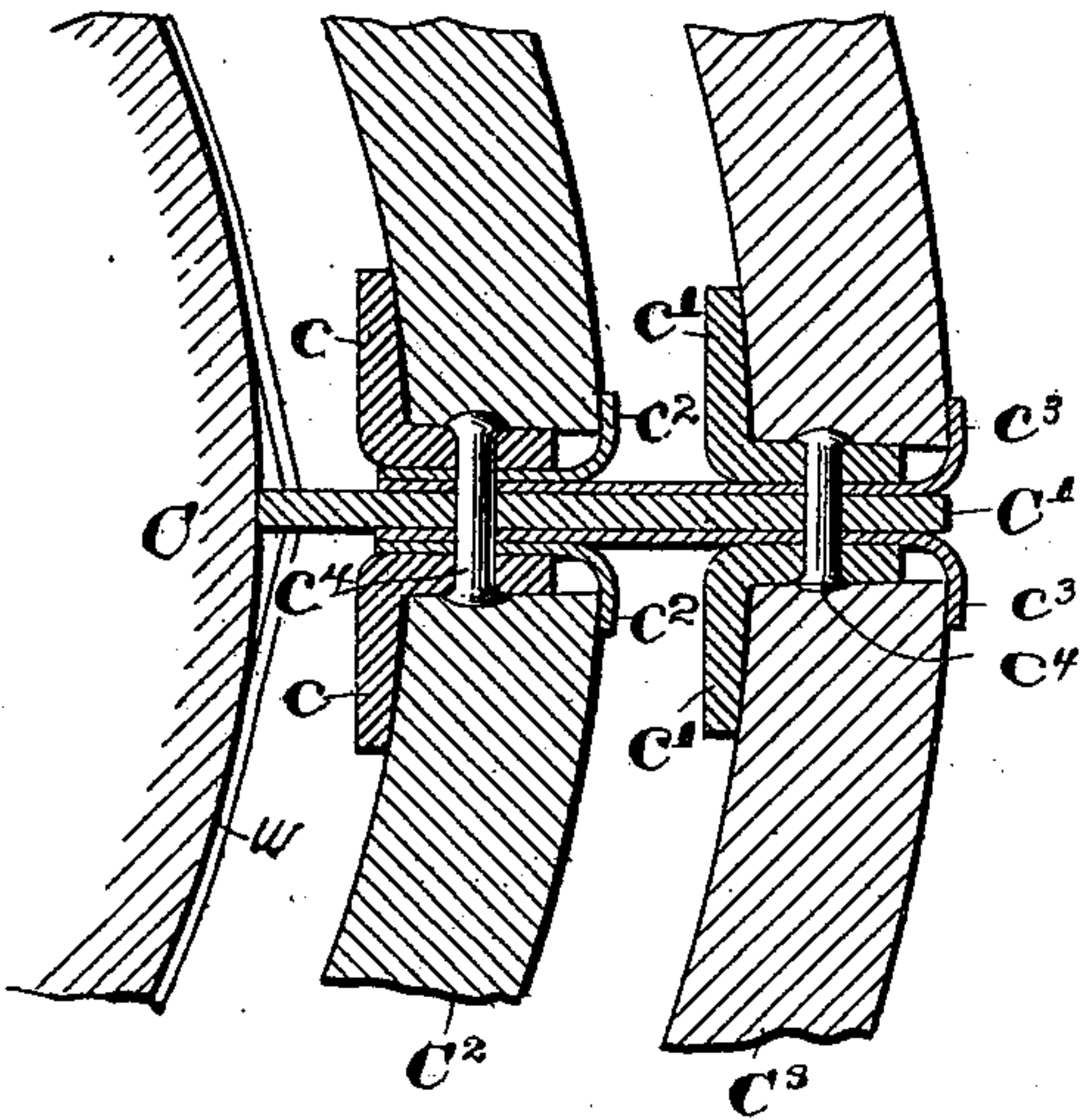


Fig. 8.

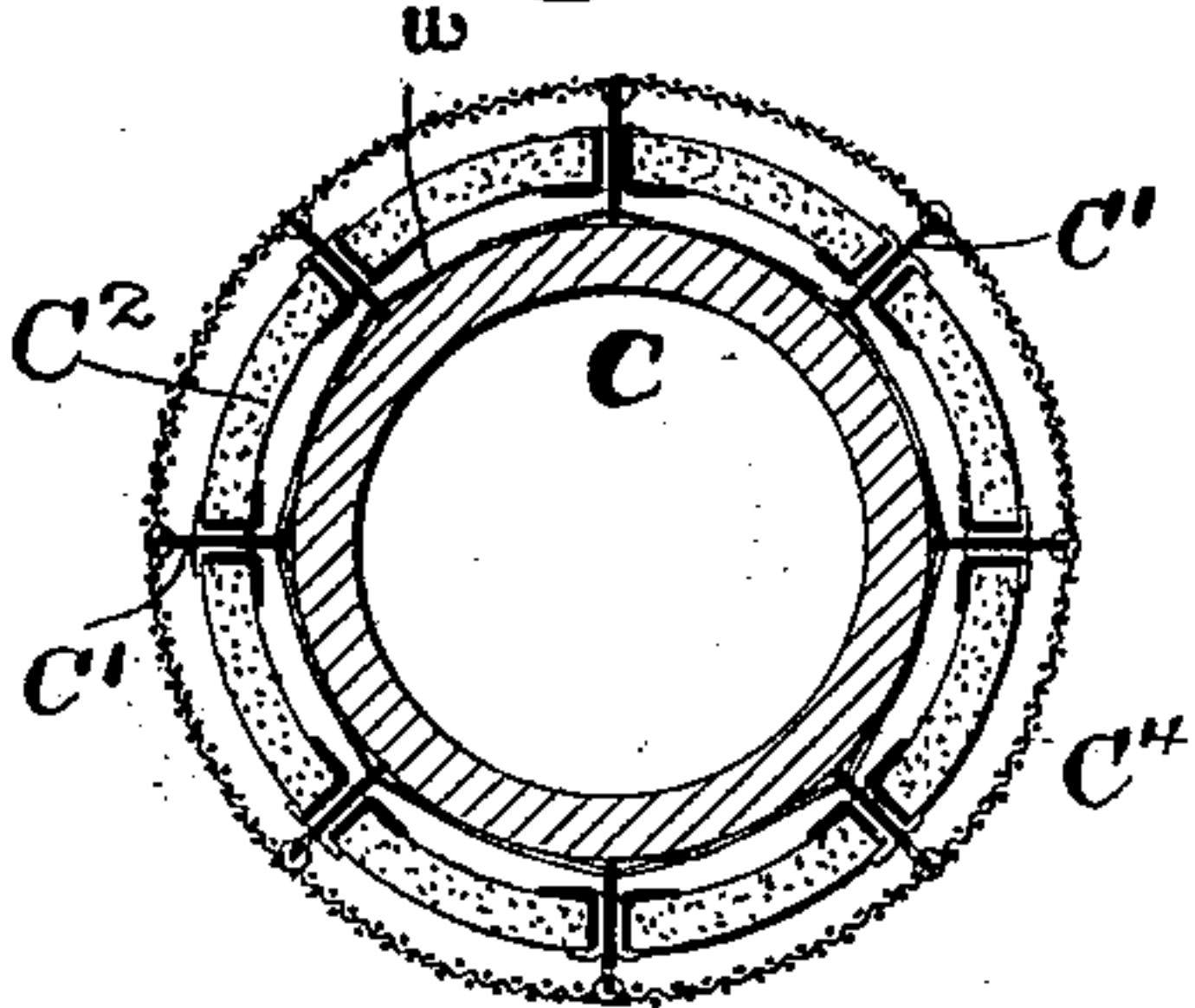


Fig. 11.

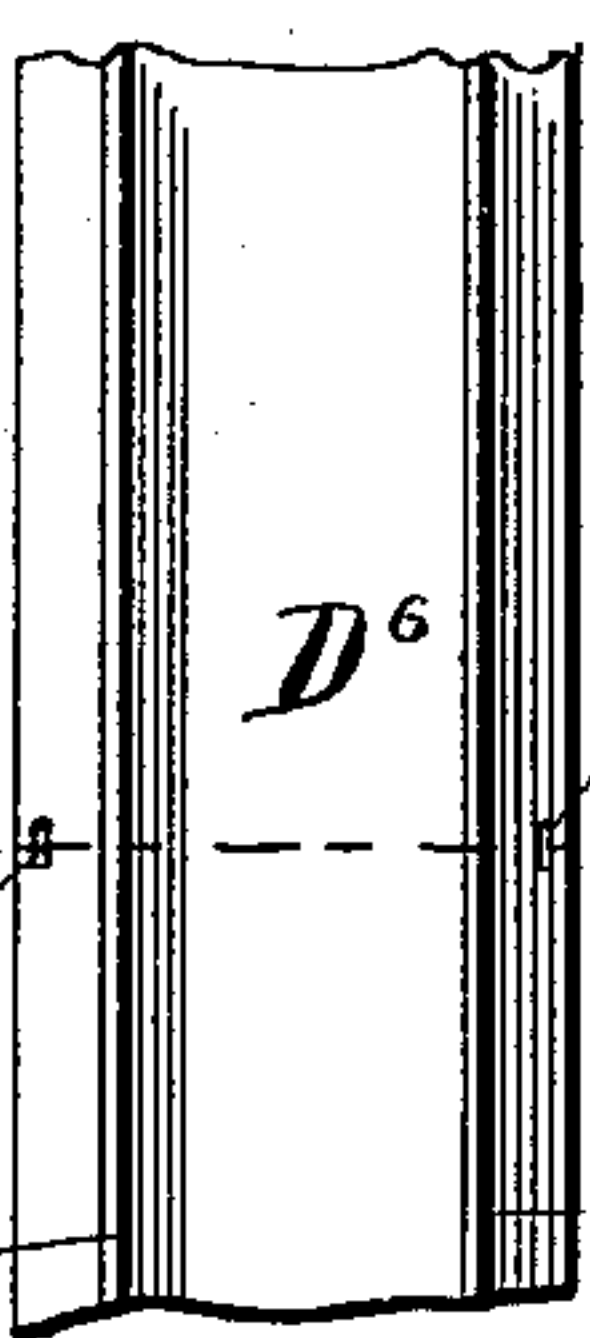


Fig. 12.

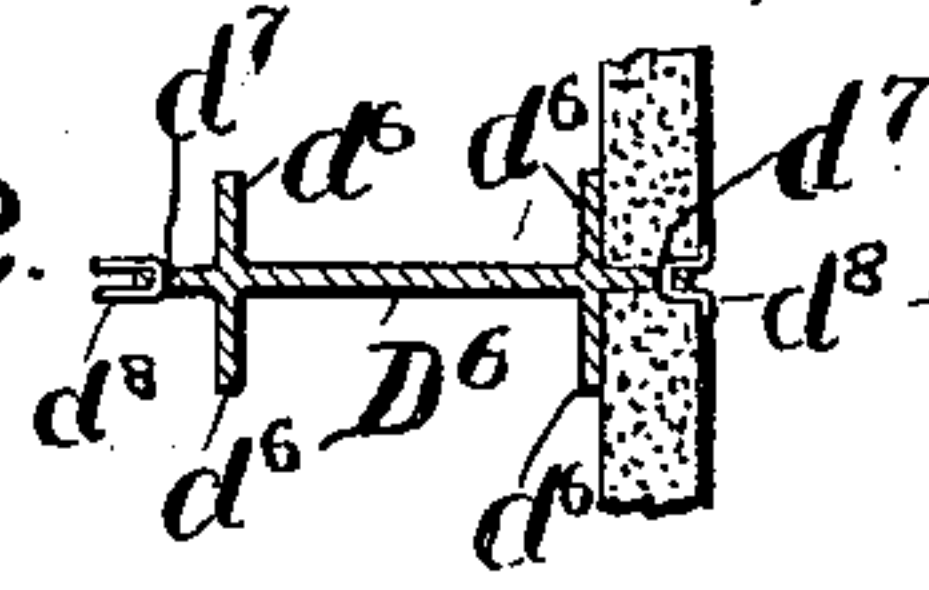


Fig. 9

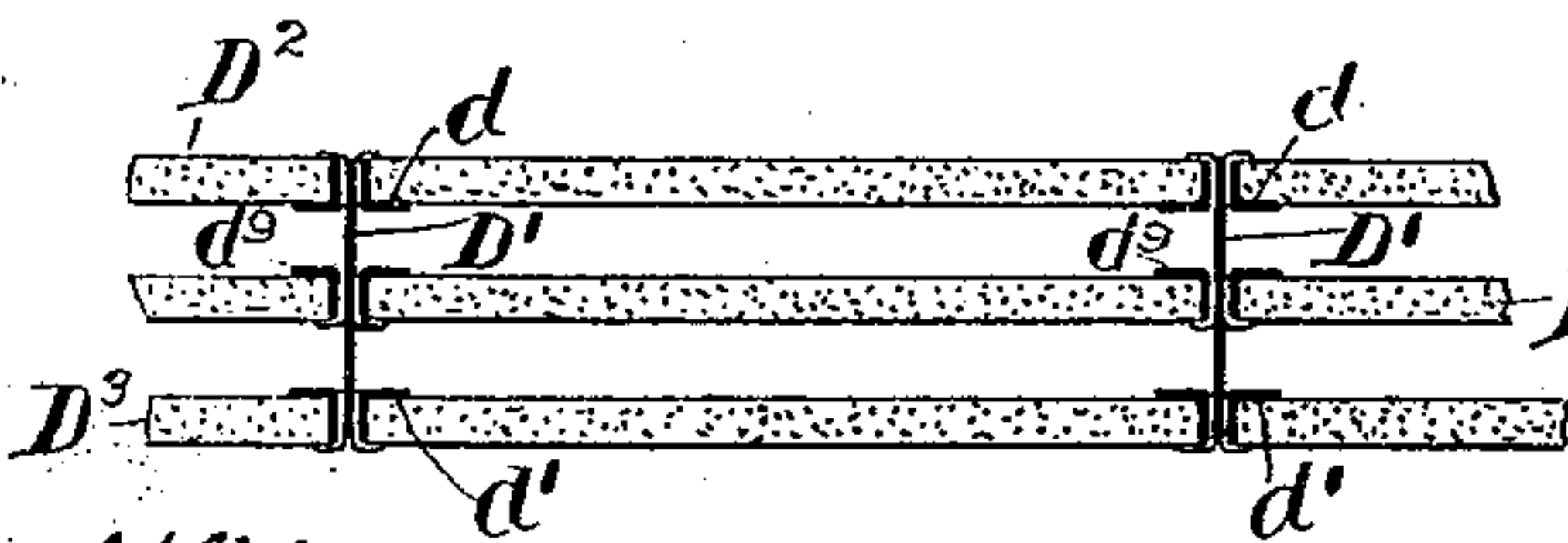
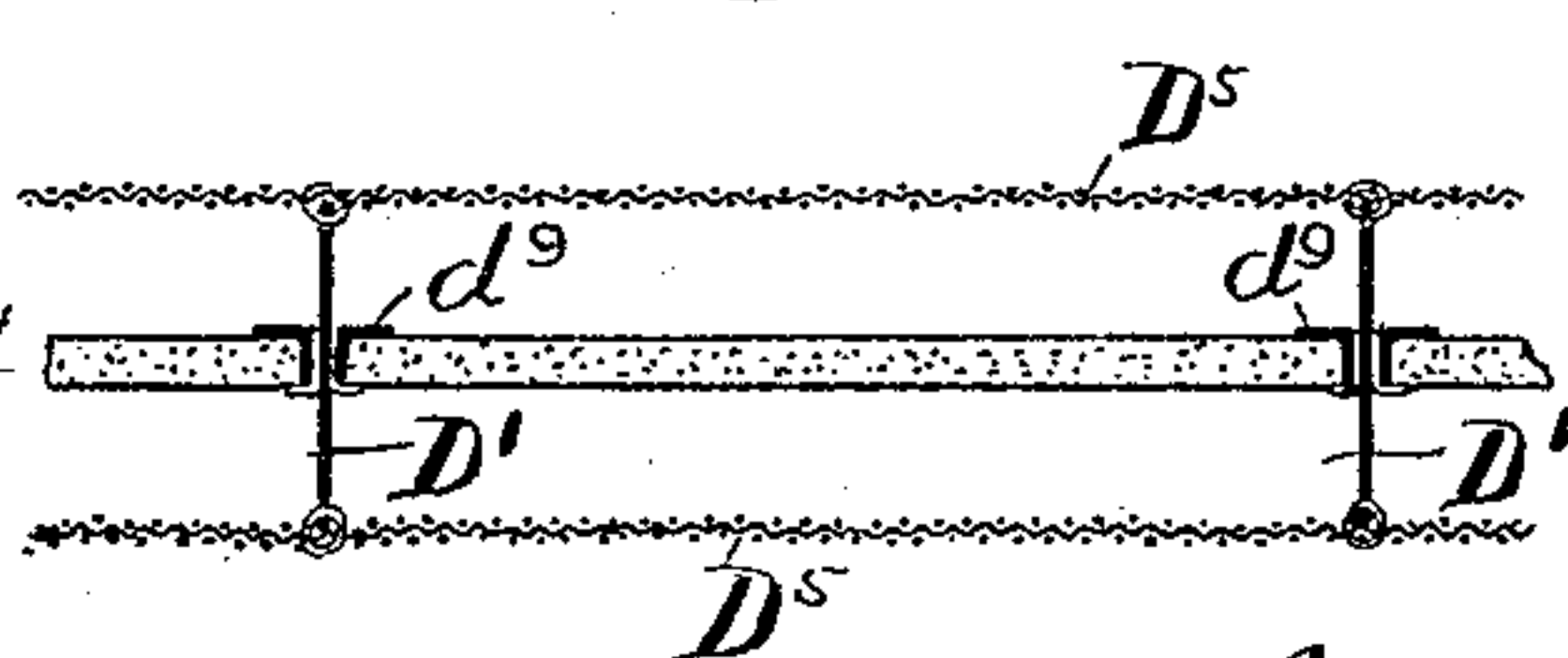


Fig. 10.



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UNITED STATES PATENT OFFICE.

TIMOTHY O'SHEA, OF CHICAGO, ILLINOIS.

BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 646,503, dated April 3, 1900.

Application filed June 3, 1899. Serial No. 719,187. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY O'SHEA, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Building Constructions, of which the following is a specification.

My invention relates to certain improvements in building constructions, and more particularly to the interior portions of buildings—such as supporting-columns, partitions, &c.—the object being to construct them in a light, strong, and durable manner and so as to be absolutely proof against fire.

To such end the invention consists in certain novel features of construction, which will be clearly described in this specification and more definitely pointed out in the claims appended hereto.

The invention is shown in the accompanying drawings, of which—

Figure 1 is a side view of the skeleton framework of a column, a partition, and the outer wall of a building, certain portions being broken away to illustrate important parts which would otherwise be hidden from view. Fig. 2 is a horizontal cross-section through the column, the line of section being indicated at 2 2 in Fig. 1. Fig. 3 is a similar section in line 3 3 of Fig. 1. Fig. 4 is a similar section in line 4 4 of Fig. 1. Fig. 5 is a detail side elevation of a portion of one of the vertical members, which rest against the columns and are adapted to carry the inclosing fireproofing material. Fig. 6 is a detail horizontal section in line 6 6 of Fig. 5. Fig. 7 is a side elevation of a slightly-modified form of fireproofing adapted to the columns. Fig. 8 is a horizontal cross-section in line 8 8 of Fig. 7. Figs. 9 and 10 are horizontal cross-sections of modified forms of partitions. Fig. 11 is a side elevation of a portion of a slightly-modified form of upright for supporting the fireproofing material, and Fig. 12 is a horizontal section in the line 12 12 of Fig. 11.

Referring to Fig. 1, A represents the outer wall of a building, which may be of brick, terra-cotta, or similar material; a , the ceiling-line, and a' the floor-line, of a room. Upon the wall A are secured furring-strips B, preferably composed of T-irons formed with openings b in their flanges b' , through which nails

may be inserted and driven into the wall. Openings b^2 are also formed in the flanges b^3 , and wire lathing B' is stretched across the front edges of the furring-strips and wired to them. This wire lathing may be plastered in the ordinary manner. One of the supporting-columns of the building is seen at C, and to make it proof against fire I have surrounded it by a double wall of fireproofing material, leaving air-spaces between them, so that the fire must first burn away the outer wall before it can attack the inner one and then burn that away before it can reach the supporting-column itself. The means for supporting these inclosing walls are best seen in Figs. 2, 5, and 6, and consist of a series of vertical webs C' , arranged around the column, angle-irons c' , fastened upon said webs, and strips of metal c^2 c^3 , preferably confined between the angle-irons and the webs and secured in place by means of the rivets c^4 , which fasten the angle-irons to the web. Against these angle-irons are placed plates C^2 C^3 , composed of some fireproof substance, these plates being separated from the column and from each other, as clearly indicated in Figs. 2 and 6, thus forming air-spaces to protect the column from fire. The plates C^2 C^3 are held in place by means of the strips c^2 c^3 , the ends of which are bent over to engage the ends of the plates.

In securing the fireproofing material about the columns the webs, with the angle-irons and strips secured to them, are arranged about the column at the proper points and bound to the column by wires w , which are passed through holes c^6 , formed near the inner edges of the webs, the ends of said wire being twisted together or united in any other suitable manner. A wall of fireproof plates C^2 is then placed against the angle-irons c and the projecting ends of the strips c^2 afterward bent over the edges of the plates. After this the outside wall of fireproof plates C^3 may be secured upon the angle-irons c' and the projecting ends of the strips c^3 bent over the adjacent edges of the plates. In this manner the fireproof material may be built up about the entire column, thus protecting the same from injury by fire. This outer wall of fireproof material may be plastered and ornamented in the ordinary manner.

The partitions D are constructed in a manner similar to the fireproofing about the columns and, as shown in Figs. 1 and 3, are composed of webs D', secured to ceiling-plates d^3 and floor-plates d^4 by means of angle-irons e , riveted to said webs and to the ceiling and floor plates. These plates may be secured to the ceiling and floor, respectively, by nailing them thereto or in any other similar manner. Angle-irons d d' and strips d^2 are secured upon the webs D' in a manner similar to that in which the fireproof supporting members are fastened to the webs C'. The adjacent webs D' are preferably connected by bridging E to make a perfectly-rigid framework, and fireproof plates D^2 D^3 are placed upon the angle-irons d d' and secured thereto by bending the projecting ends of the strips d^2 over and upon their edges. In providing for doorways the angle-irons d d' adjacent to the opening are omitted from the webs D' and a strip or plate E' is secured to said webs D' at the proper distance above the floor-line by means of angle-irons e' . The intermediate webs D' over the door-opening are of the proper length to reach from the ceiling-plate d^3 to the plate E' and are secured thereto by means of angle-irons e' e' . The door-frame E² may be secured to the webs D' and plate E' by nailing it thereto.

Figs. 7 and 8 illustrate a slightly-modified form of construction, and, as here shown, only one set of angle-irons are secured to the webs about the column, and upon the outer edge of said webs are formed openings c^5 , by means of which wire lathing C⁴ may be wired to the webs. This lathing may be plastered, thus forming a second insulating-wall about the column.

Fig. 9 illustrates a partition in which two air-spaces are formed by arranging an intermediate wall D⁴ upon the webs in a manner similar to the outer walls D^2 D^3 . In Fig. 10 wire lathing D⁵ is secured upon the outer edges of the webs, and an intermediate wall of fireproof plates is secured upon the webs by means of angle-irons and strips.

In Figs. 11 and 12 the upright or web which supports the fireproofing material is shown as formed with laterally-extending flanges d^6 and with holes d^7 near its edges. The clamping-strips d^8 are passed through said holes, bent outward, the fireproof plates placed against the flanges d^6 , and the ends of the clamping-strips bent over and upon the fireproofing plates.

From the above it will be seen that an exceedingly light, cheap, and durable construc-

tion is obtained, which can be manufactured at any convenient place and readily embodied in the general construction of a building.

I claim as new and desire to secure by Letters Patent—

1. In building construction, the combination with a series of spaced rigid metal webs set with their corresponding edges approximately parallel and provided with flanges of like character parallel to and at some distance from said edges, of a wall of fireproof plates resting against said flanges, and a series of pliable metal strips secured to each of said webs in position to be bent over the edges of the contiguous plates to bind them against the flanges, substantially as set forth.

2. In building construction, the combination with a surface to be protected, of a series of spaced metal webs fixed, edgewise, to said surface and provided with central, longitudinal flanges on their sides, an incombustible wall secured to the free edges of the webs, and a wall of fireproof plates secured against said flanges, substantially as set forth.

3. In a fireproof construction for columns and the like, a series of vertically-extending webs arranged about the column, angle-irons secured upon said webs at suitable distances from the inner edges thereof, fastening-strips secured upon said webs, fireproof plates secured upon the angle-irons by means of said strips and a second encircling wall secured upon the outer edges of the webs; substantially as described.

4. In a fireproof construction, a series of vertically-extending webs having angle-irons secured to them, bridging connecting said webs and fireproof plates resting against said angle-irons and strips secured to said webs and adapted to be bent over to engage the plates; substantially as described.

5. In a fireproof construction for columns and the like, a series of uprights having laterally-extending flanges near their edges, wires connecting said uprights and binding them to the column, fireproof plates resting against said flanges and clamping-strips secured to the uprights and adapted to be bent upon the edges of the fireproof plates; substantially as described.

In witness whereof I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, this 31st day of May, 1899.

TIMOTHY O'SHEA.

Witnesses:

W. J. MCALLESTER,
CHAS. O. SHERVEY.