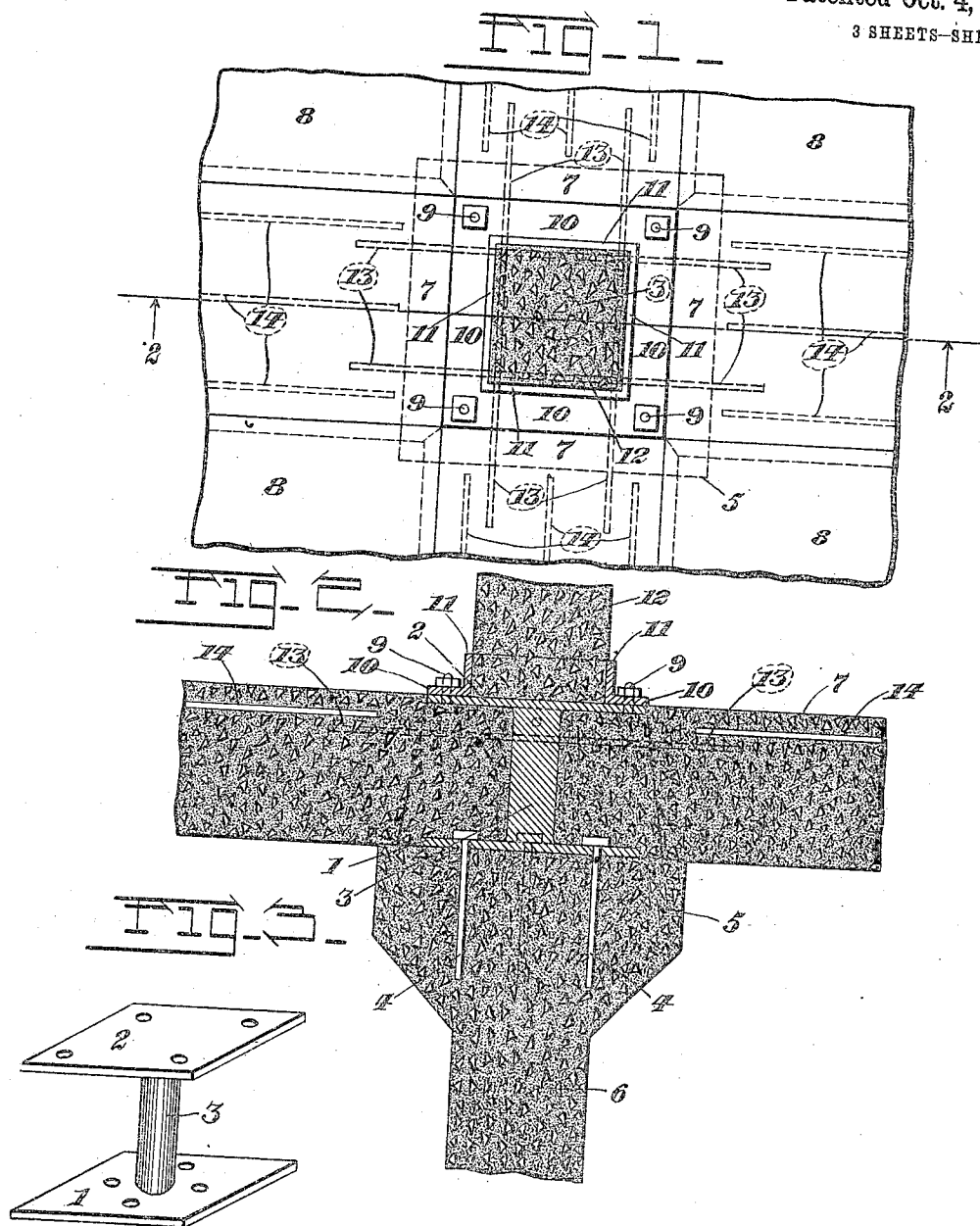


971,665.

J. E. CONZELMAN.
CONCRETE CONSTRUCTION.
APPLICATION FILED NOV. 16, 1909.

Patented Oct. 4, 1910.
3 SHEETS—SHEET 1.



Witnesses:

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George L. Anderson.

Inventor:

John E. Conzelman,
By Hugh N. Wagner,
His Attorney.

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FIG. 4

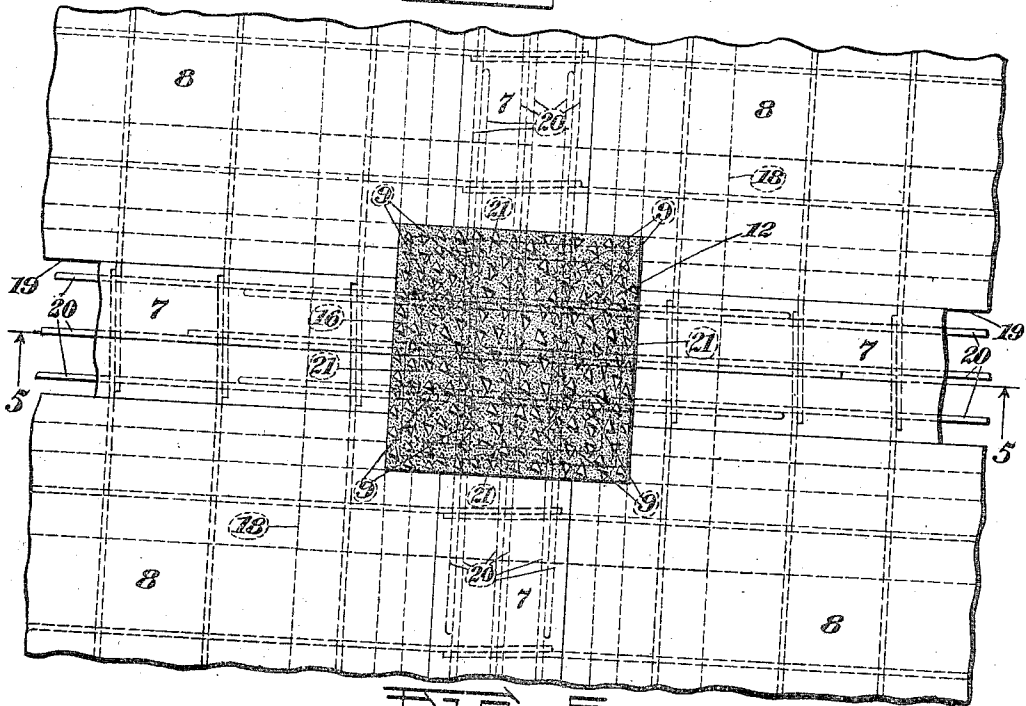
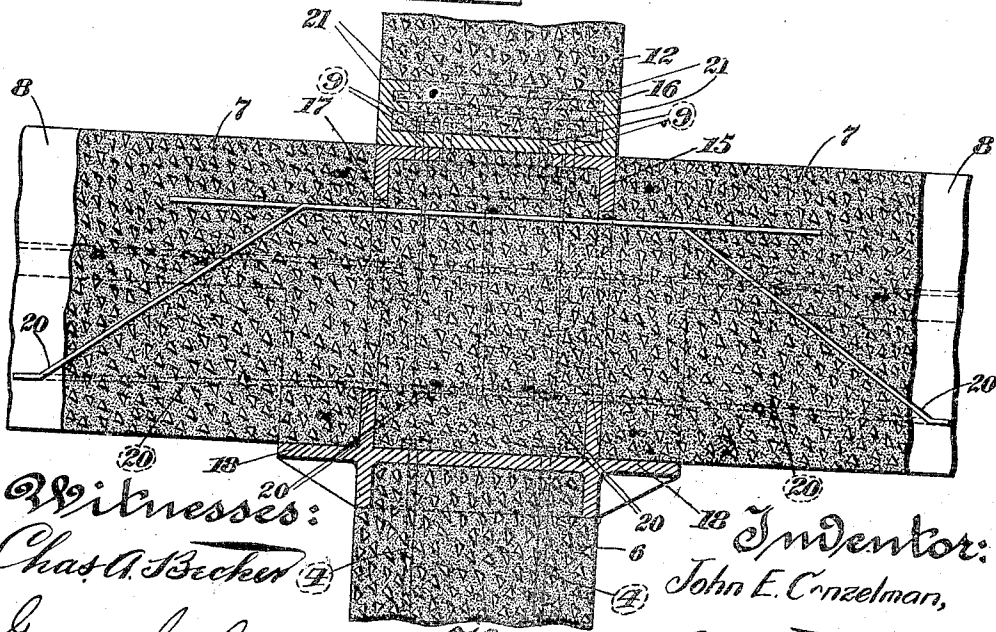


FIG. 5



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3 SHEETS—SHEET 3.

Fig. 6.

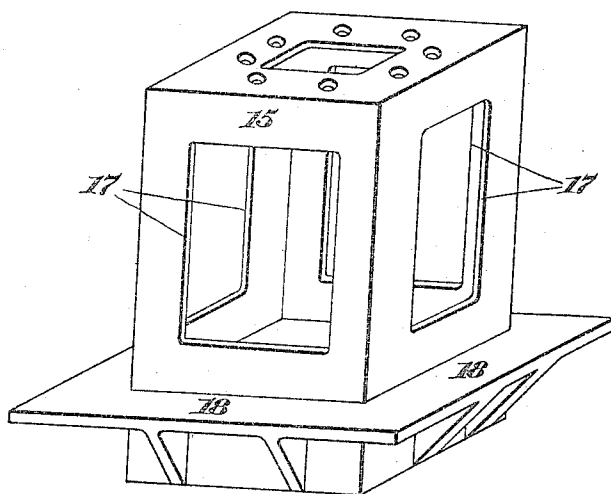
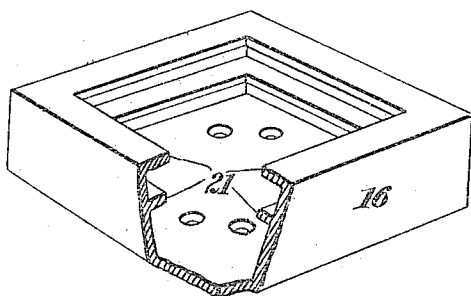


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CONCRETE CONSTRUCTION.

971,665.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed November 16, 1909. Serial No. 528,274.

To all whom it may concern:

Be it known that I, JOHN E. CONZELMAN, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Concrete Construction, (Case G.) of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to concrete building structures and refers particularly to a construction in which superposed columns are joined to form a rigid and secure structure, and horizontal floor and ceiling members are used and are supported at the junction points of said columns.

It is the object of this invention to provide means for securing superposed columns rigidly together and, also, to unite the horizontal floor or ceiling members together at the juncture of said columns to form a unitary structure.

In the drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a plan view; Fig. 2 is a sectional view on the line 2—2, Fig. 1; Fig. 3 is a perspective view of a casting for connecting columns together; Fig. 4 is a plan view; Fig. 5 is a sectional view on the line 5—5, Fig. 4; and Figs. 6 and 7 are perspective views of the means for binding columns together.

In Figs. 1 and 2, the casting shown in Fig. 3 is utilized, the same consisting of a base-plate 1, a top-plate 2, and a shank 3 firmly connected to both said plates. Long bolts 4 pass through perforations in base-plate 1, and are embedded deeply in the concrete of cap 5 on column 6, thus binding said casting firmly to said column. Concrete beams 7 are formed between slabs 8 and over said base-plate 1, and additionally bind the same and shank 3. Bolts 9 pass through perforations in top-plate 2 and through perforations in the flange 10 of collar 11, which not only encircles column 12, but binds the same by reason of the same having been "set" within said collar. Reinforcing bars 13 extend underneath column 12 and through the space between plates 1 and 2, and underlap bars 14.

In Figs. 4 and 5, the alternate form of casting 15 shown in Fig. 6 and the casting 16 shown in Fig. 7 are used. Each side of

said casting 15 is provided with an opening 17. A bracket or projection 18 is formed on casting 15 and preferably extends entirely around said casting. Said casting 15 is secured to column 6 by bolts 4 which pass through perforations in the bottom of said casting. The corners of each slab 8 rest upon bracket 18 and said slabs are so arranged that a space 19 is left between each two adjoining slabs. A so-called form (not shown in the drawings) is placed underneath opening 19 between the adjoining edges of each two adjacent slabs, and grout or wet-concrete is poured upon said form and into said space 19. The grout or wet-concrete in each space 19 is leveled off flush with the surface of slabs 8, and, when it sets, forms beam 7, the ends of which rest on bracket 18 and unite said slabs integrally together. When the concrete is poured into each opening 17 and fills the interior space in said casting, thereby uniting all of said beams together over column 10. Reinforcing bars 20 are embedded in the lower part of each beam 7, and, adjacent the end thereof turn upwardly and then extend through an opening or openings 17 and overlap rods 20 embedded similarly in the beams 7 on the opposite side of said column. The casting 16, which is substituted for collar 11, is fastened to the casting 15 by the bolts 9. Each side of said casting 16 is provided with a projection 21 or a plurality of such projections. Column 12 is formed in casting 16 and by reason of the concrete entering the space between projections 21 said column is firmly secured in said casting.

I claim:

1. A concrete structure comprising a pair of superposed columns, a beam, and a casting embedded in said beam interposed between said columns adapted to bind said columns to said beam, said casting comprising a base-plate, a top-plate, and sides uniting the same, each of said sides being provided with an opening through which the beam extends.

2. A concrete structure comprising a pair of superposed columns, a beam, and a casting embedded in said beam interposed between said columns adapted to bind said columns to said beam, said casting comprising a base-plate, a top-plate, and sides uniting the same, each of said sides being provided with an opening through which the beam extends.

vided with an opening through which the beam extends, and a bracket formed on said casting and adapted to support said beam.

3. A concrete construction including a column, a base plate seating on the column, bolts secured at one end to the base plate and projecting downwardly therefrom into the column, a top plate spaced from the base plate, a beam filling said space between the base and top plates, a collar bolted to the top plate, and a second column arranged in said collar.

4. A concrete construction including a pair of superposed columns, a member seated on top of one column and formed with a surrounding bracket, a top plate on said member which supports the other column, sides formed with openings connecting the bracket and top plate, slabs seated on the bracket and arranged to have a space therebetween at points adjacent said member, and a beam filling the space between the slabs and columns, and projecting through the openings of said sides to fill the interior of said member.

5. In a concrete construction, in combination with a pair of spaced superposed columns, a hollow member arranged in said space and formed with openings, slabs abutting said member and a beam arranged between the slabs, projecting through said openings of the member and filling the interior thereof.

6. In a concrete construction, in combination with a pair of spaced superposed columns, a hollow member arranged in said space and formed with openings, slabs abutting said member and a beam arranged between the slabs, projecting through said openings of the member and filling the in-

terior thereof, said member being formed with means on which the slabs and beam rest and receive support.

7. In a concrete construction, in combination with a pair of spaced superposed columns, a hollow member arranged in said space and formed with openings, slabs abutting said member, a beam arranged between the slabs, projecting through said openings of the member and filling the interior thereof, said member being formed with means on which the slabs and beam rest and receive support, and a casting bolted on top of said member and supporting the uppermost column.

8. In a concrete construction, in combination with a pair of spaced superposed columns, a hollow member arranged in said space and formed with openings, slabs abutting said member, a beam arranged between the slabs, projecting through said openings of the member and filling the interior thereof, and reinforcing bars passing through said openings in said member to strengthen the beam.

9. In a concrete construction, a beam, a series of slabs, a pair of spaced superposed columns, and an element interposed in the space between said columns, said element being of box-like form having openings in its sides and also having means on its sides to support the slabs, said beam extending through said openings and filling the interior of said element.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHN E. CONZELMAN.

Witnesses:

GLADYS WALTON,
GEORGE G. ANDERSON.