No. 843,218. PATENTED FEB. 5, 1907.

J. LALLY.

COLUMN.

APPLICATION FILED SEPT. 25, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

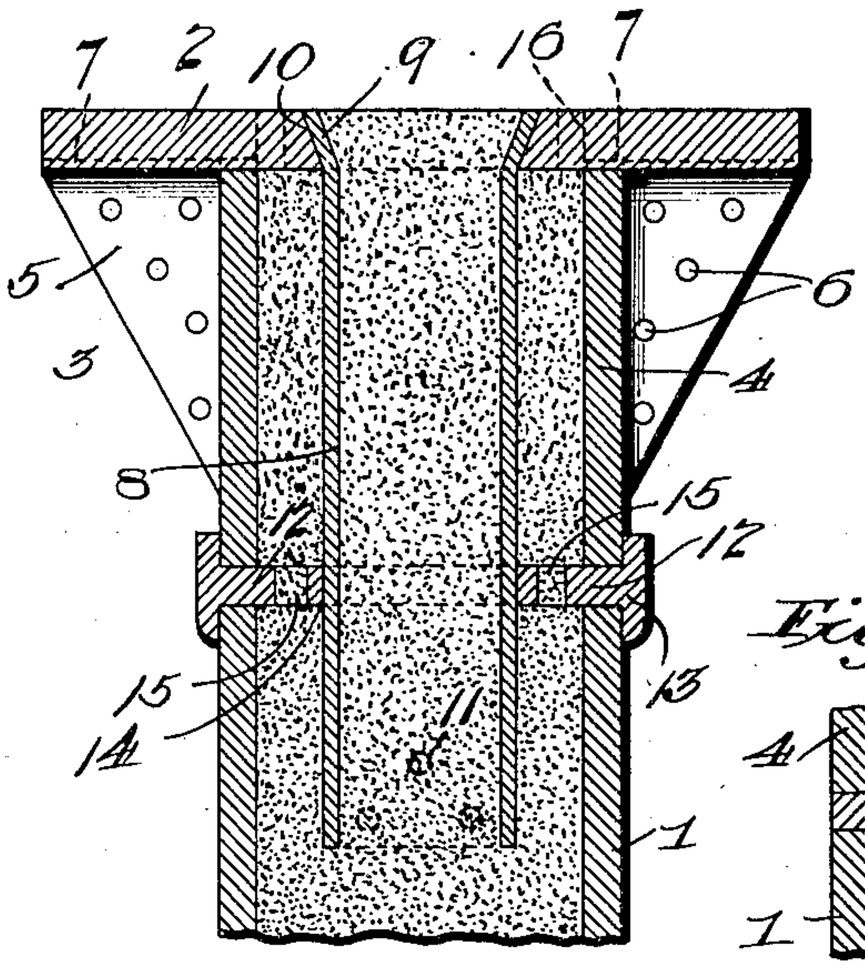



Fig. 2.

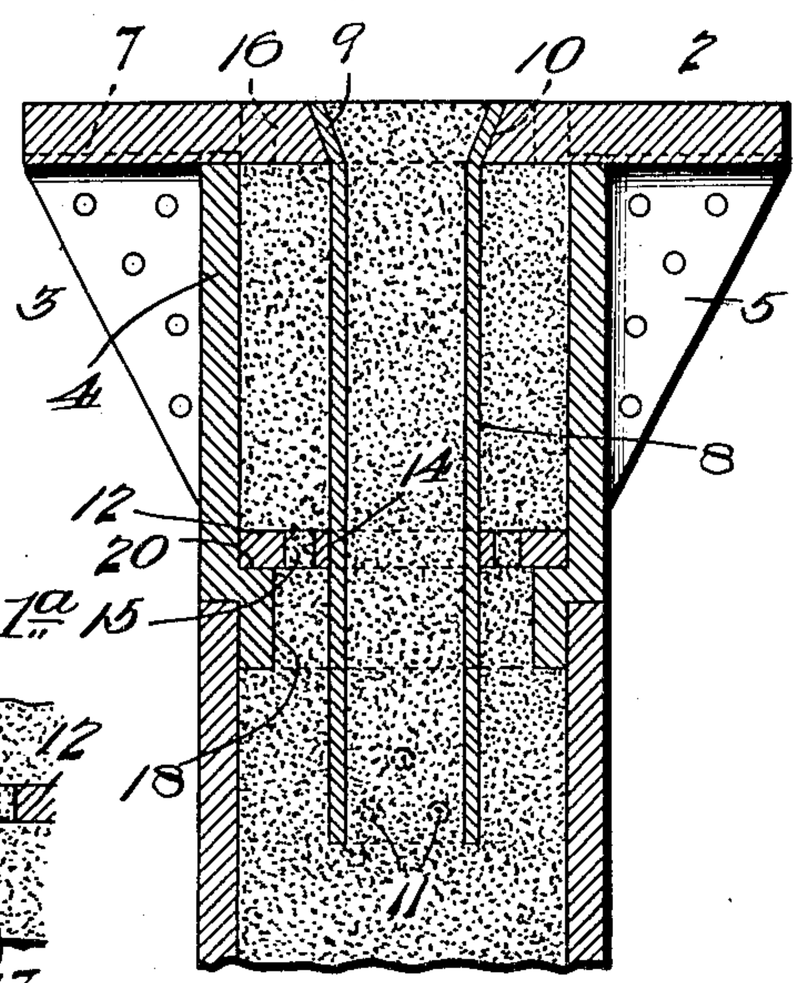



Fig. 1a.

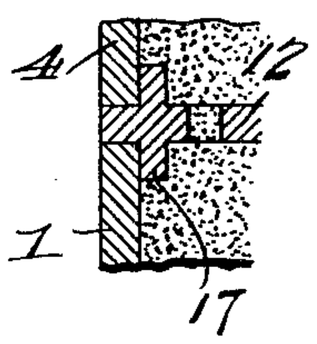



Fig. 3.

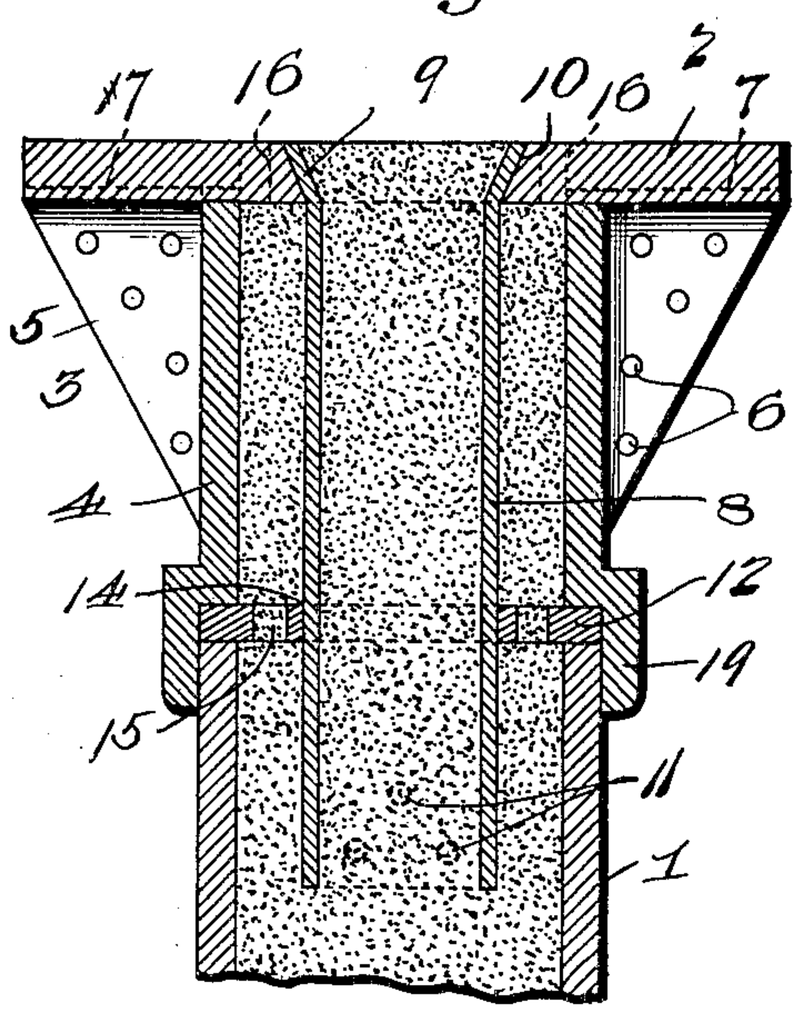
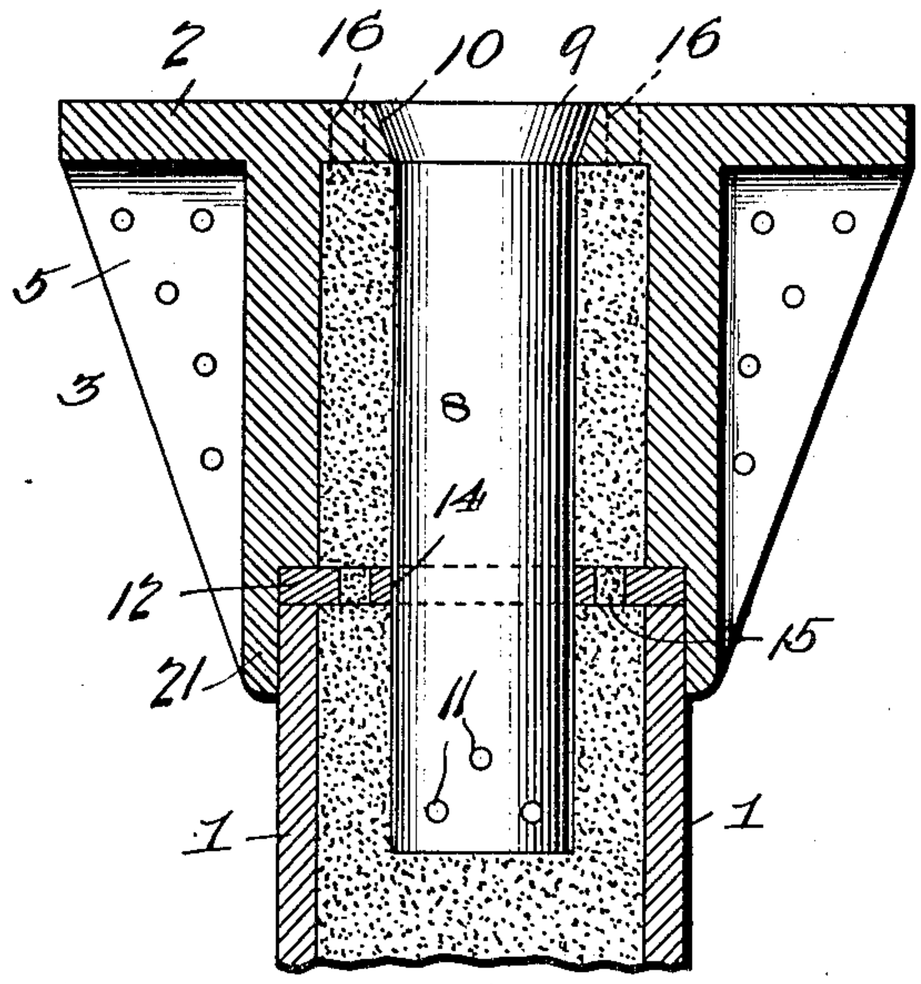



Fig. 4.




Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

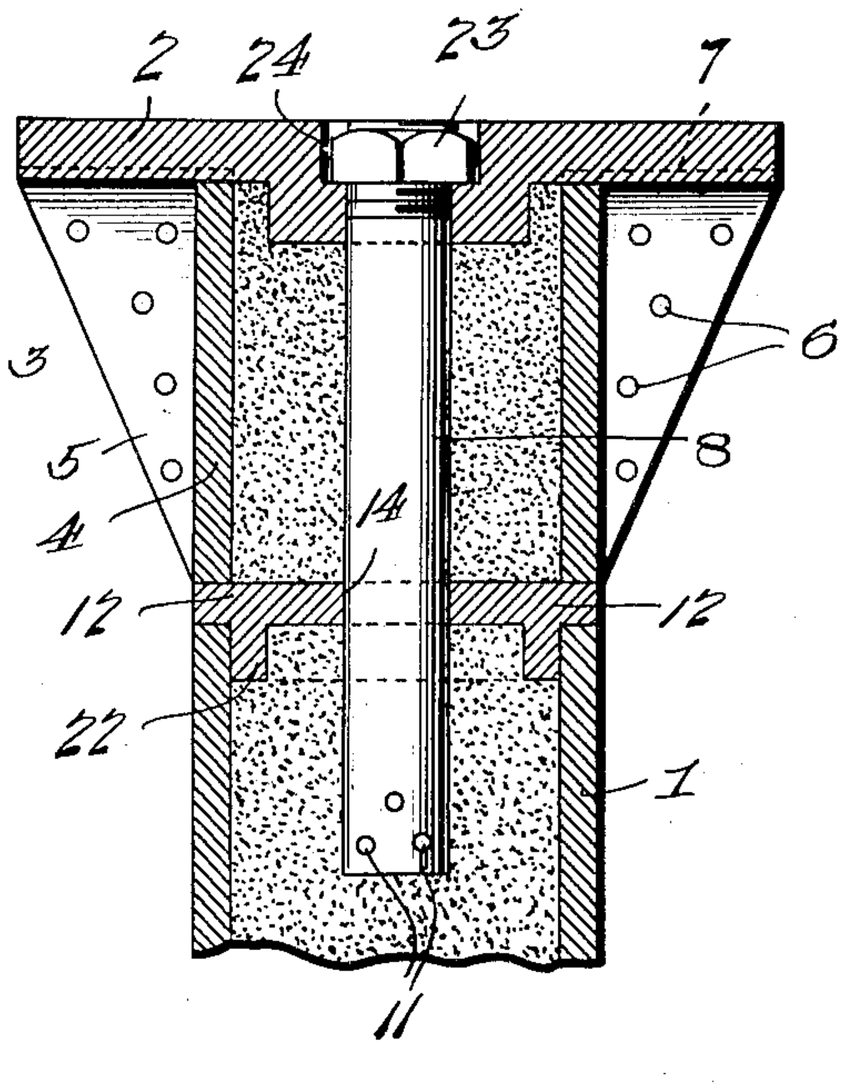



Fig. 6.

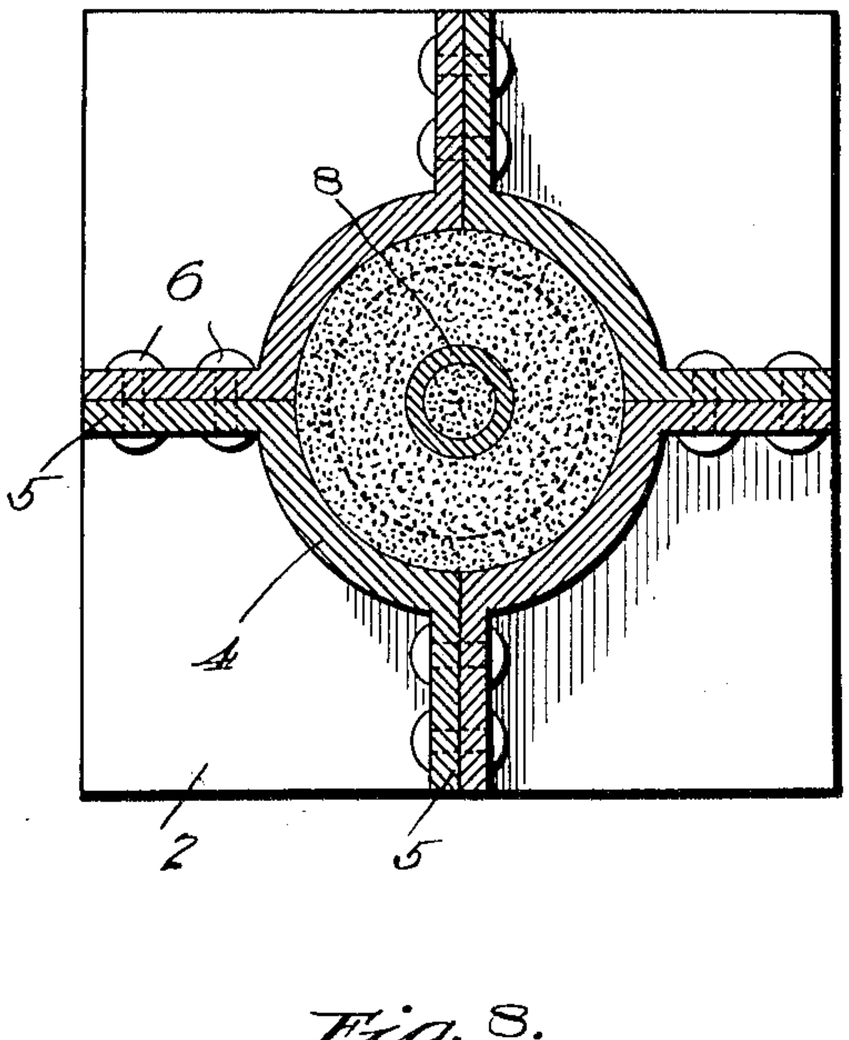



Fig. 7.

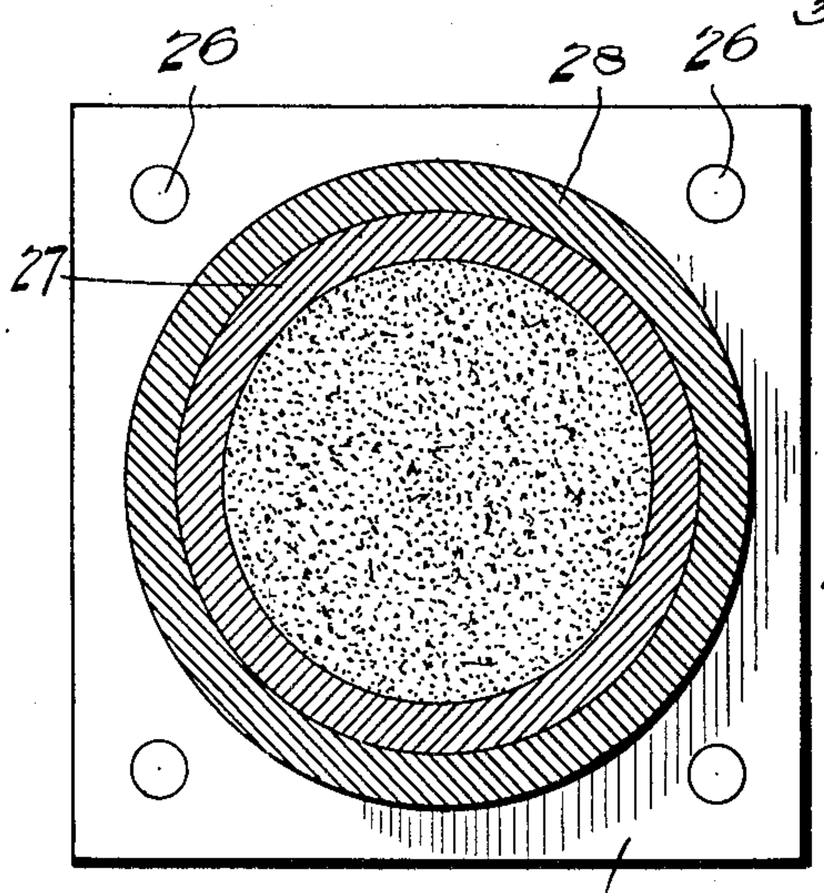
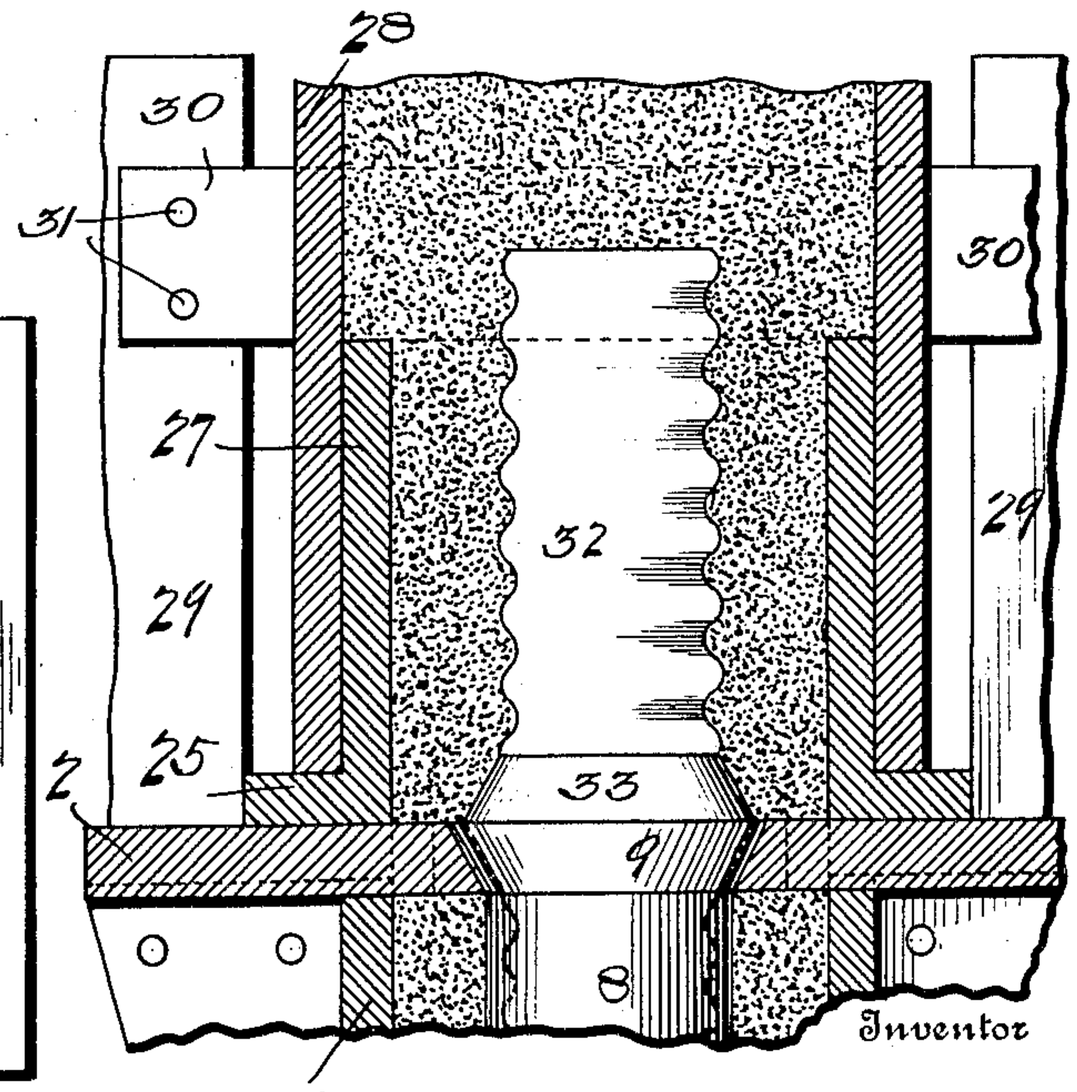



Fig. 8.




Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN LALLY, OF WALTHAM, MASSACHUSETTS.

## COLUMN.

No. 843,218. Specification of Letters Patent. Patented Feb. 5, 1907.

Application filed September 25, 1906. Serial No. 336,160.

*To all whom it may concern:*

Be it known that I, JOHN LALLY, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Column, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to columns used in structural work, the object of the present invention being to provide a novel form of connection or cap for columns the construction of which enables the same to be made out of wrought iron or steel, thereby adding greatly to the strength and durability of the column as a whole.

A further object of the invention is to provide a cap or connection of sectional construction, whereby the several parts of the same may be the more readily made up separately and then combined to form a strong cap or connection especially adapted for heavy work without increase of weight in the column itself.

A further object of the invention is to provide novel means for centering and accurately and properly associating the parts of the column as a whole; also, to provide novel means for anchoring or securing the cap or connection to the casing and bracing the parts relatively to each other.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts herein fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a vertical section through a column embodying the present invention. Fig. 1ª is a detail section showing a slight change in the centering-plate. Fig. 2 is a vertical section similar to Fig. 1, showing another way of centering the parts. Fig. 3 is a similar view illustrating another variation in the form of the cap or connection. Fig. 4 is a similar view showing the entire cap or connection made in one piece. Fig. 5 is a similar section showing a slight modification in the anchoring means. Fig. 6 is a bottom plan view of the sectional cap or connection. Fig. 7 is a top plan view of the base which rests upon the cap or connection to receive and hold the upper casing or column section. Fig. 8 is a vertical section through the same, showing the manner in which the said base is secured to the underlying cap or connection.

In the drawings, 1 represents the column-casing in the form of a hollow, and preferably cylindrical, shell designed to receive a filling of concrete in a plastic condition, which hardens therein and forms a solid fireproof construction.

Superimposed upon the casing 1 is the column cap or connection which embodies the beam-rest or crown-plate 2 and the reinforcing or strengthening bracket 3, the latter, under the preferred embodiment of the invention, being formed separately from the plate 2 and being of sectional construction. To this end the bracket part of the cap or connection is constructed in similar sections, as shown in Fig. 6, in which it is seen that four sections are employed, each comprising an arcuate or segmental body part 4 and triangular bracing webs or flanges 5, which in making up the cap or connection are fastened together face to face by bolts, rivets, or the like, as indicated at 6. The bottom of the plate 2 is channeled or recessed to receive the top edges of the bracket-sections, as indicated in dotted lines at 7, said edges of the section fitting snugly in the channels or recesses provided in the plate 2 therefor and the parts being held securely in the relation shown and described by the anchor hereinafter particularly described.

The anchor 8 consists of a pipe or tube of any desired length, having one end thereof swaged outward or flared to form a head 9, and the plate 2 is formed with a central countersunk opening 10, in which the head 9 fits and finds its seat, the construction and arrangement being such that the outer surface of the head of the anchor lies flush with the top surface of the plate 2, as shown, thus providing for seating the superimposed base of the next higher column section or casing thereon. The anchor 8 extends down into the casing 1, where it is provided with a suitable number of bond-holes 11, and when the casing and the hollow anchor are filled with the plastic composition referred to said composition finds its way into and through said holes, the filling of the casing combining and knitting with the filling of the anchor, and a number of bonds being thus formed which permanently fasten the anchor to the casing, while the anchor fastens the cap or connection as a whole in place on the casing.

In associating the parts hereinabove described a centering-plate 12 is interposed between the cap or connection described and

the top of the casing 1, and, as shown in Fig. 1, said centering-plate may be provided with a flange 13 at its outer edge, extending above and below the plate, within which the top edge of the casing 1 and the bottom edge of the cap or connection fit. The plate 12 is provided with a central opening 14 of suitable size to receive the anchor 8, and thus said plate serves to center and accurately position the anchor, as well as the casing and cap or connection. The plate 12 may be provided with holes 15 to allow the filling to pass by the same in the process of filling the column, and the crown-plate 2 may likewise be provided with holes 16 either to admit the plastic composition or receive fasteners, such as bolts, to secure the superimposed column section-base to the cap or connection above described.

Instead of locating the flange 13 outside of the casing and cap or connection, as shown in Fig. 1, a flange may be located to lie within the same parts, as shown at 17 in the detail section, Fig. 1ª, the said last-named flange answering the same purpose as the flange 13. It is of course within the scope of this invention to employ both flanges 13 and 17; but this is seldom necessary.

If desired, the cap or connection itself may be provided with a flange 18, fitting into the upper end of the casing 1, as shown in Fig. 2, or with a flange 19, fitting around the top of said casing, as shown in Fig. 3. Under the arrangement shown in Fig. 2 a shoulder 20 is provided, upon which the centering-plate is seated, while under the arrangement shown in Fig. 3 said centering-plate is inserted between the opposing edges of the casing and cap or connection and within the flange 19. In some cases the entire cap or connection may be made in one piece, as shown in Fig. 4, and provided with an integral flange 21, within which the centering-plate 12 lies, interposed between the casing and cap or connection. The centering-plate may have a flange 22 on but one side thereof, as shown in Fig. 5, and the anchor instead of having the end thereof flared may be screw-threaded to receive a retaining-nut 23, while the crown-plate 2 may be recessed in its top face, as shown at 24, to allow the said nut to lie within the plane of the top face of said plate, as shown in the same figure.

Where another column-section is to be set upon the cap or connection above described, I employ a base-plate 25, provided with holes 26, which line up with the holes 16 of the plate 2, so that suitable fasteners, such as bolts, may be inserted therethrough to secure the base to the cap. Said base is provided with an upstanding annular flange or hollow cylindrical body 27, around which the upper casing 28 fits, as shown in Figs. 7 and 8. 29 designates beams or girders which rest on the cap or connection, and 30 designates one of a pair of straps which pass around the opposite sides of the column and have their opposite ends bolted or otherwise fastened to the beams or girders, as shown at 31.

Another important feature of the invention resides in the employment of a pin or dowel 32, one end of which extends down into the anchor, and preferably to a point below the centering-plate 12, the other end extending up into the superimposed base of the upper column section or casing and as far as may be desired into the upper casing itself, where it is embedded in the filling. Where the flare-ended anchor is employed, the dowel pin may be provided with a correspondingly-shaped conical shoulder 33 to fit the flared end of the anchor, as shown in Fig. 8, and where the column is to be subjected to special lateral or eccentric strain the outer surface of the pin 32 may be corrugated, threaded, or roughened, as indicated in said figure, to obtain a more secure hold upon the filling within the cap or connection and the casings.

I claim—

1. In a column, a column-casing, a cap or connection therefor, and a centering-plate for positioning said parts relatively to each other.

2. In a column, a column-casing, a cap or connection therefor, and a centering-plate having a flange which engages one of said parts.

3. In a column, a column-casing, a cap or connection therefor, and a centering-plate having a flange which engages both of said parts.

4. In a column, a column-casing, a cap or connection therefor, an anchor for securing the casing and cap together, and a centering device for the casing, cap and anchor.

5. In a column, a column-casing, a cap or connection therefor, an anchor for securing the casing and cap together, and means for centering all of said parts.

6. In a column, a column-casing, a cap or connection therefor, an anchor for connecting said parts, and a centering device adapted to hold the casing and cap in their proper relative positions and also hold the anchor centrally of the casing and cap.

7. In a column, a column-casing, a cap or connection therefor, and a centering-plate for said parts having openings for the filling of the casing and cap.

8. In a column, a column-casing, a cap or connection therefor having a recessed top, and an anchor passing through the cap into the casing and having a head seated within the plane of the cap-top.

9. In a column, a casing, a cap or connection therefor having a recessed top, and a tubular anchor having a head seated in the recessed top and provided with bond-holes for the filling of the casing.

10. In a column, a casing, a cap or connection therefor having an opening, a filling within said casing, and an anchor having a head seated in said opening and provided with bond-holes in that portion which enters the casing.

11. In a column, a casing, a filling therefor, a cap or connection embodying separate crown-plate and bracket portions, and an anchor extending from the cap into the casing and embedded in the filling and serving to secure all of said parts together.

12. In a column, a casing, a filling therefor, a sectional cap or connection, and an anchor embedded in the filling and holding the sections of the cap together and also holding the cap as a whole upon the casing.

13. In a column, a casing, a filling therefor, and a sectional cap or connection embodying a channeled beam-rest or crown-plate and bracket-sections let into the channels of the plate.

14. In a column, a casing, a filling therefor, a sectional cap or connection embodying a channeled crown-plate and bracket members let into the channels of said plate, and an anchor having one end thereof fastened to the crown-plate and the other end embedded in the filling within the casing.

15. A column comprising a casing, a filling therefor, a cap or connection for said casing, a tubular anchor having its upper end inserted through and fastened in the cap and extending into the casing, and a filling for the anchor.

16. In a column, a casing, a filling therefor, a cap or connection for the casing, a tubular anchor having one end flared to engage the cap and the othor end formed with bond-holes, and a filling for the anchor.

17. In a column, a casing, a filling therefor, a cap or connection for the casing, an anchor having a head at one end seated flush within the cap, said anchor extending down into the casing and being embedded therein, and a superimposed base having a flat bottom resting upon the cap or connection and fastened thereto.

18. In a column, a casing, a filling therefor, a cap or connection for the casing, a hollow anchor embedded in the filling and connected with the cap, and a pin or dowel entering the anchor and extending upward above the cap or connection.

19. In a column, a casing, a filling therefor, a cap or connection for the casing having an opening therein, and a pin or dowel passing through said hole and having one end embedded in the filling and the other end projecting above the cap.

20. In a column, a casing, a filling therefor, a cap or connection for the casing, a tubular anchor having one end flared and connected with the cap and the other end embedded in the filling, and a dowel-pin extending down into the anchor and up above the cap and provided with a shoulder resting in the flared part of the anchor.

21. In a column, a casing, a filling therefor, a cap or connection for the casing, a tubular anchor embedded in the filling and connected with the cap or connection, and a dowel having a roughened outer surface, a portion of said dowel extending down into the anchor and another portion thereof extending above the cap or connection.

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

JOHN LALLY.

Witnesses:

WILLIAM L. CAHALAN,

EDWARD M. SHANLEY.