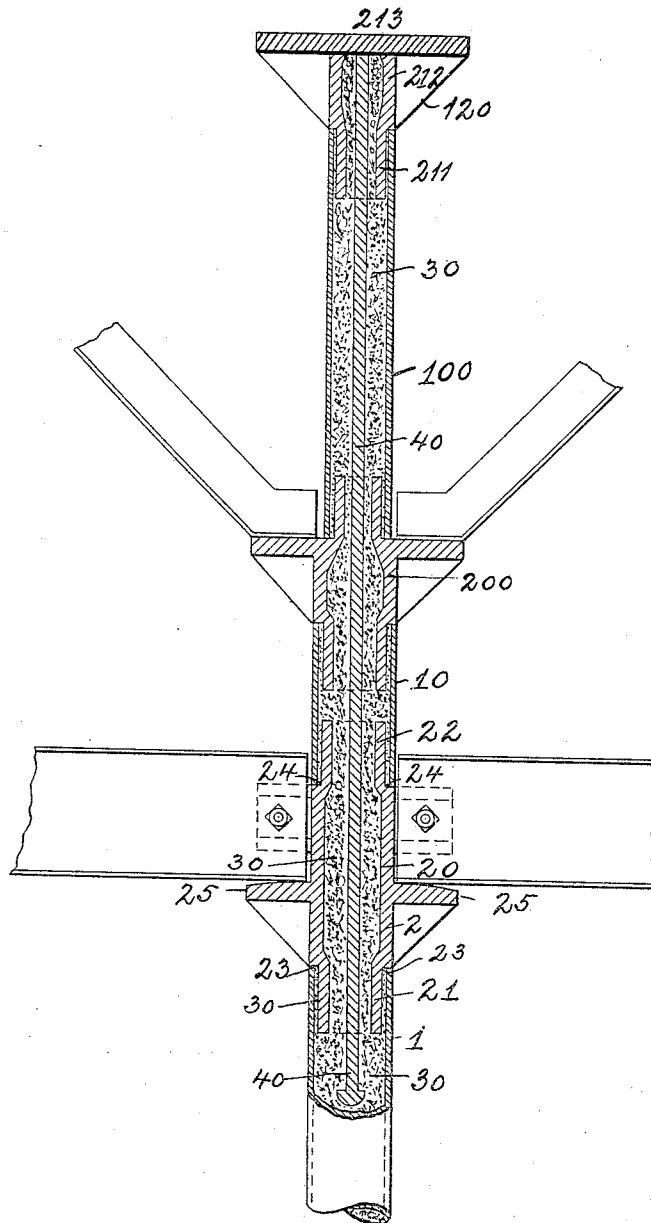


No. 835,718.

PATENTED NOV. 13, 1906.

G. F. THORN.
COLUMN FOR BUILDING CONSTRUCTION.
APPLICATION FILED JAN. 27, 1906.



Attest:

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George F. Thorn Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE F. THORN, OF NEW YORK, N. Y.

COLUMN FOR BUILDING CONSTRUCTION.

No. 835,718.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed January 27, 1906. Serial No. 298,116.

To all whom it may concern:

Be it known that I, GEORGE F. THORN, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Columns for Building Construction, of which the following is a specification.

My invention relates to columns adapted to be employed as materials of construction; and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

The purpose of the invention is to provide columns arranged in series, each made of a casing of light strong metal like rolled steel and a filling of cement and provided with intermediate couplings of cast metal—for instance, cast-iron—whereby the top of each column resembles the ordinary cast-iron column construction and can be used in place of such cast-iron construction, but all of the columns constitute, in effect, a monolithic or integral structure, together with certain other features and elements whereby the column is especially well adapted to be employed in certain usual forms of building.

In the drawing there is represented a central vertical section of a series of columns embodying my invention. The parts being usually cylindrical in shape, no sectional views need be shown in order to disclose the invention.

I wish to premise the description of the construction of the present invention by the statement that it forms one of a series of columns which I have invented and for which I have filed several applications for United States patents, of which the others are as follows: Serial No. 277,213, filed September 6, 1905; Serial No. 283,099, filed October 17, 1905, and Serial No. 290,427, filed December 5, 1905. All of these concurrently-pending applications contain certain generic features in common relating to a column which comprises an exterior casing having a filling of cement or other suitable material, a member which is seated upon the casing and is adapted to support the casing above and also to support the floor or other beams or girders, and a means embedded in the filling and connecting one member with a contiguous casing or casings, or two or more casings with each other.

The novel features common to this and any other cases are not broadly claimed here-

in, as they are made the subject-matter of the earlier filed cases, the present case being founded more particularly on those features of the device which are peculiar to it and which may be generally stated to comprise a novel means by which the casings or columns are connected with each other and whereby a most advantageous structure is provided which, among other things, permits the use of a continuous filling of cement throughout the length of the series. A sectional column is thus formed which to a high degree is, in effect, a monolithic or integral structure and which may be built of any required height and possesses all the requisites of a most efficient column of pleasing appearance.

In the drawing, 1 is a shell or casing made of any suitable size, shape, and material, but preferably of a cylinder of rolled steel suitably secured together at its edges.

2 is a cap or top therefor preferably made of cast metal, as cast-iron, and having a cylindrical body 20, a downwardly-extending restricted neck 21, and an upwardly-extending restricted neck 22, shoulders 23 and 24 being formed at the junction of the necks with the body and spaced apart vertically from each other to leave a tubular body of predetermined definite or appreciable length between them. Externally-projecting flanges 25 25 are provided and preferably made integral with the body of this cap or top for the purpose of affording support for the beams or other elements of construction.

Above the cap 2 is placed a second shell or casing 10, the lower rim of which rests upon and is supported by the shoulders 24 24 of the cap. Above this second shell 10 is placed another cap 200, in all respects like the cap 2, and above this is a third shell 100, and so on until the series is completed, a crowning-cap 120 being the uppermost member of the series. This crowning-cap has a downwardly-extending neck 211, but its tubular body 212 is provided at the top with a flat plate or disk 213 instead of with the upwardly-extending restricted neck of the other caps or tops.

The entire interior of the columns and caps and the space between the necks of the caps and the surrounding casings, when any such space is permitted to exist, is filled with cement 30, which serves to lute or firmly connect together the parts and forms a continuous filling within the series of columns, so

that the entire structure becomes monolithic or unitary in its nature.

Where it is deemed desirable and an additional strength and rigidity is sought to be secured, a central connecting-rod 40, of any suitable material, such as steel or a steel tube filled with cement, is inserted centrally within the cement filling.

It will be observed that the caps or tops placed intermediate the cement-filled steel casings serve as couplings for such casings and unite them firmly together without any projecting straps, ridges, or flanges except the brackets provided for the support of the beams, as above stated.

The caps or couplings are preferably made of substantially the same external diameter as that of the steel casings which they serve to unite, whereby the strains are transmitted vertically, all the weight upon the girders passing downward through the column in a vertical direction, in which direction the column is strongest to resist rupture.

What I claim as new is—

1. The combination with two hollow columns arranged in vertical series, of an intermediate coupling comprising a tubular body of substantially the same external diameter as the columns and provided with a downwardly-extending restricted neck adapted to fit within the interior of the lower column and an upwardly-extending restricted neck adapted to fit within the interior of the upper column, the space between the necks and the columns and inside of the necks and the columns being filled with cement.

2. The combination with two hollow columns arranged in vertical series, of an intermediate coupling comprising a tubular body of substantially the same external diameter as the columns and provided with a downwardly-extending restricted neck adapted to fit within the interior of the lower column and an upwardly-extending restricted neck adapted to fit within the interior of the upper column, the space between the necks and columns and inside of the necks and columns being filled with cement, and a connecting-rod embedded in the cement and extending through the coupling and into the columns.

3. The combination with two hollow columns arranged in vertical series, of an intermediate coupling comprising a tubular body of substantially the same external diameter as the columns provided with one or more laterally-extending brackets and provided with a downwardly-extending restricted neck adapted to fit within the interior of the lower column and an upwardly-extending restricted neck adapted to fit within the interior of the upper column, the space between the necks and the columns and inside of the necks and columns being filled with cement.

4. The combination with a plurality of hollow columns arranged in vertical series, of

intermediate coupling-pieces, each inserted in the top of one column and the bottom of the next column of the series, and provided with an internal filling of cement extending continuously through all of the columns and couplings and having a connecting-rod embedded in the cement and extending substantially throughout the length of the series.

5. The combination with a plurality of hollow columns arranged in vertical series, of intermediate coupling-pieces each having substantially the same external diameter as the columns, each inserted in the top of one column and the bottom of the next column of the series, and provided with an internal filling of cement extending continuously through all of the columns and couplings.

6. The combination with a plurality of hollow columns arranged in vertical series, of intermediate coupling-pieces, each inserted in the top of one column and the bottom of the next column of the series, and provided with an internal filling of cement extending continuously through all of the columns and couplings, each coupling-piece being of substantially the same external diameter as the columns and each provided with one or more laterally-extending brackets.

7. A column for building construction, comprising a hollow casing made in sections, hollow couplings connecting a plurality of the casing-sections with each other, a reinforcing element which extends through the hollow coupling from one casing-section to another and a filling of cement which surrounds the reinforcing element and extends continuously through the casing-sections and coupling.

8. A column for building construction, comprising a casing and an interior filling; the casing made in sections and having hollow couplings connecting a plurality of its sections with each other and the couplings having flanges adapted to support beams or girders, and the filling extending continuously through the sections of the casing and couplings; and a connecting-rod embedded in the filling and extending substantially throughout the length of the column.

9. A column for building construction, comprising a casing sectional and an interior filling; the casing having its sections united by a coupling-piece comprising a tubular body of approximately the same diameter as the casing-sections, having spaced shoulders which engage the contiguous ends of the sections, respectively, and restricted necks which extend into the sections, and the filling extending continuously through the sections and coupling-piece.

10. A column for building construction, comprising a casing sectional and an interior filling; the casing having its sections united by a coupling-piece comprising a tubular body of approximately the same diameter as

the casing sectional, having spaced shoulders which engage the contiguous ends of the sections, respectively, and restricted necks which extend into the sections, and the filling extending continuously through the sections and coupling-piece; and a connecting-rod embedded in the filling and extending substantially throughout the length of the column.

10 11. In a sectional column for building construction, a sectional casing, a coupling-piece for the sections thereof, comprising a tubular body portion having spaced shoulders extending from its remote portions or ends, adapted to engage the casing-sections, respectively, said body portions also having restricted necks which project from the flanges into the respective casing-sections, and a filling which extends through the casing-sections and couplings.

12. In a sectional column for building construction, a sectional casing, a coupling-piece for the sections thereof, comprising a tubular body portion having spaced shoulders extending from its remote portions or ends, adapted to engage the casing-sections, respectively, said body portion also having restricted necks which project from the flanges into the respective casing-sections and an outwardly-extending flange which is arranged between the planes of the shoulders and is adapted to support a beam or the like.

13. In a sectional column for building construction, a sectional casing, a coupling-piece for the sections thereof, comprising a tubular body portion having spaced shoulders extending from its remote portions or ends, adapted to engage the casing-sections, respectively, said body portion also having re-

stricted necks which project from the flanges into the respective casing-sections and an outwardly-extending flange which is arranged between the planes of the shoulders and is adapted to support a beam or the like, and a filling which extends through the casing-sections and coupling.

14. In a column for building construction, a sectional casing, and a coupling-piece for the sections thereof, comprising a tubular body of approximately the same diameter as the casing-sections, having spaced shoulders engaging the sections and restricted necks extending into the sections.

15. In a column for building construction, a sectional casing, a coupling-piece for the sections thereof, comprising a tubular body of approximately the same diameter as the casing-sections, having spaced shoulders engaging the sections and restricted necks extending into the sections, and a filling extending through the sections and coupling.

16. In a column for building construction, a sectional casing, a coupling-piece for the sections thereof, comprising a tubular body of approximately the same diameter as the casing-sections, having spaced shoulders engaging the sections and restricted necks extending into the sections, and a filling extending through the sections and coupling; and a rod extending substantially throughout the column and embedded in the filling.

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

GEORGE F. THORN.

Witnesses:

ROBERT J. HOSKEN,
WILLIAM R. BAIRD.