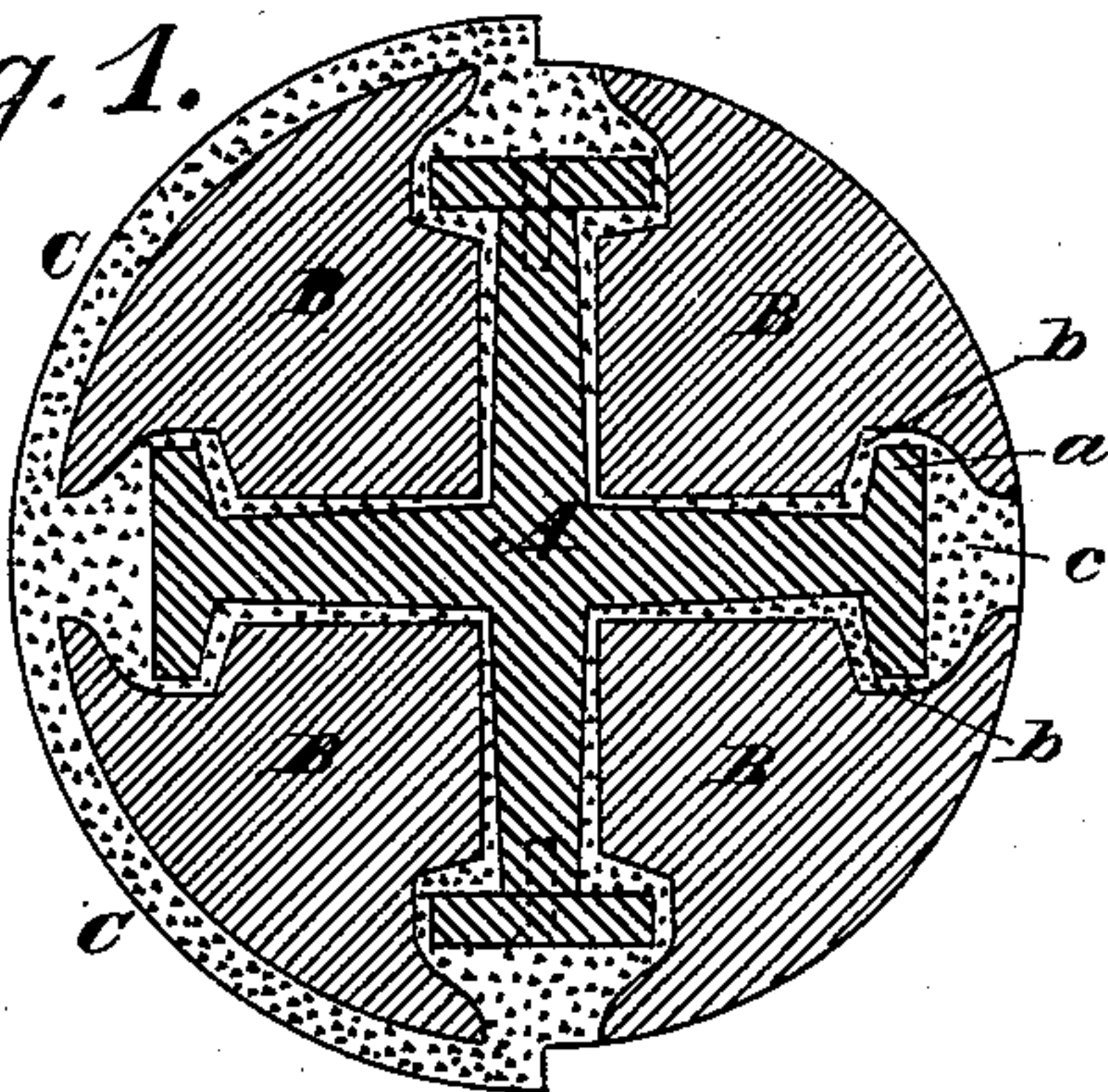


P. B. WIGHT,  
Fire-Proof Column.

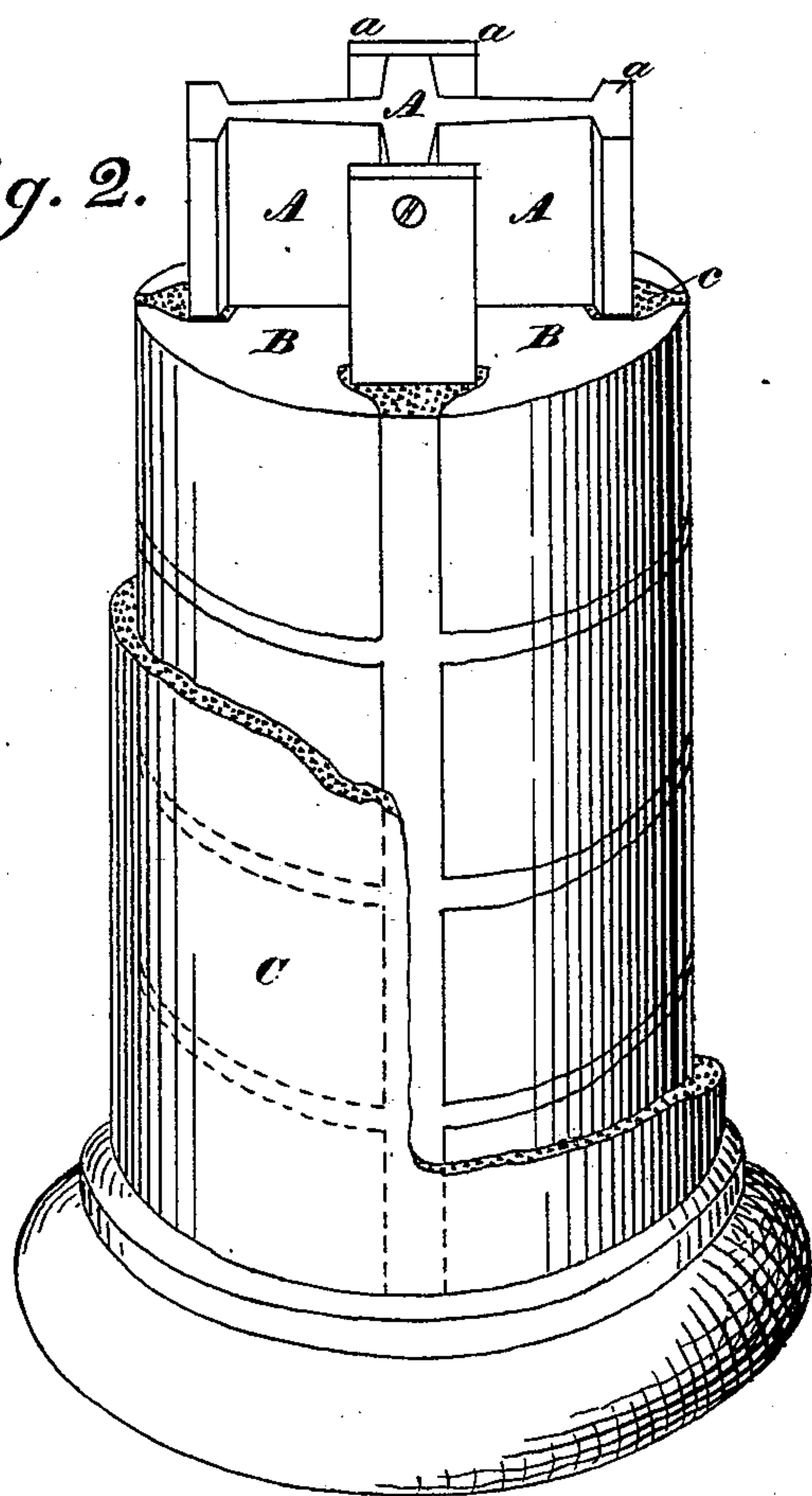
No. 199,887.

Patented Jan. 29, 1878.

*Fig. 1.*



*Fig. 2.*



Witnesses  
*J. M. Hester.*  
*Harry King.*

Inventor  
*P. B. Wight*  
*by Stansbury & Munn*  
*his attys*



# UNITED STATES PATENT OFFICE.

PETER B. WIGHT, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO HARVEY B. MERRELL, OF MORRISTOWN, NEW JERSEY, AND THOMAS FERGUSON, OF DETROIT, MICHIGAN.

## IMPROVEMENT IN FIRE-PROOF COLUMNS.

Specification forming part of Letters Patent No. **199,887**, dated January 29, 1878; application filed December 21, 1877.

### *To all whom it may concern:*

Be it known that I, PETER B. WIGHT, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fire-Proof Columns; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a fire-proof post, pillar, or column which will resist not only the action of the fire in a burning building, but that of water suddenly thrown on when the exterior of the column is heated. It is an improvement of a fire-proof column, composed of a core of iron, having three or more projecting flanges or webs, protected by a non-conducting and incombustible material, placed between the webs or flanges, and projecting beyond the exterior edges of these flanges.

Figure 1 is a horizontal section, and Fig. 2 is a perspective view of my column, showing the core partially exposed.

In this column the exterior edges of the flanges are furnished with side flanges *a*, as shown, giving them the form of a letter **T**, and continued along the whole length of the column. The iron core may be of cast or wrought iron, or of both combined, and must be of sufficient strength to carry the imposed load. The gores for protecting the core may be of porous terra-cotta, bricks of burnt clay, cements, concretes, or mortars such as are in general use, blocks of wood, or any non-conducting or incombustible material. The gores may be in short lengths, like bricks, or may run the entire length of the columns. They may be placed in position after being made, or made in position, in one continuous length from bottom to top of column. On the sides of the gores are grooves *b*, nearly corresponding with the smaller flanges on the main flanges of the iron core. On the exterior sides of the grooves, or toward the exterior of the column, the ma-

terial of the gores projects over and partly covers the most exposed parts of the flanges; and the spaces left by two opposite gores are narrower at the exterior of the column than at the outer surfaces of the iron flanges, leaving a receptacle, *c*, best calculated to contain a cementing material for the protection of the most projecting parts of the gores from the effects of fire or water.

When it is desired to make a fire-proof column of the pattern and construction herein intended, a stanchion, post, or core, *A*, of cast or wrought iron, with continuous flanges, **T**-shaped in section at their outer edges, is set up. Gore-shaped blocks *B*, of fire-resisting material, as above described, are then built up between the flanges, set on beds of cement, mortar, or plaster, like common brick, so that the edges of the smaller flanges are within the grooves on the sides of the gore-shaped blocks. Then cement, plaster, or grout is run in the interstices between the gores and the iron, filling both the grooves *b*; and when the gores have been set on opposite sides of any one **T**-flange, the space *c* between the sloping sides of the gores is filled with cement or plaster, thus covering the exterior edges of the flanges out to a line with the exterior surfaces of the gores. Thus a column of smooth exterior is formed, consisting of iron within and a non-conducting material on the outside of it, which is calculated to make the iron part of the column stand secure against the effects of fire in any burning building. There are no interstices between the iron and the protecting material for the fire to penetrate. The hardening of the grouting material in the grooves and behind them, against the sides of the main flanges, enables the smaller flanges to hold the protecting material firmly in place, so that it cannot be displaced by any process except chopping it out in detail.

The coherence of the material forming the gores, and its connection with the cementing material held over the most projecting part of the flanges and between the sloping sides of the gores, forms the protection to the edges of the gores, which are the most exposed parts of the iron-work.



In practice, if wooden gores are used, they may be of the same length as the columns, and may be driven into place from the ends before the columns are set. The exterior openings between adjoining gores may be covered with battens, and then the remaining interstices between the gores and battens on the one hand and the iron cores on the other may be grouted with plaster or cement. The gores will be held in place, as in other cases, by the smaller flanges bearing against the inner sides of the grooves in the gores.

Where terra-cotta or concrete is used for the gores, the whole column may have an exterior coating of plaster, C, as a further protection.

I am aware that fire-proof columns have been made having flanged cores, gores projecting beyond the flanges, battens, and grouting; also, columns in which the gores are secured by buttons at intervals, screwed to the exterior edges of the flanges; also, that columns have been made having continuous T-shaped flanges.

What I claim, and desire to secure by Letters Patent, is—

1. In a fire-proof column constructed as described, the protecting-gores B, provided with the grooves *b*, as and for the purpose set forth.

2. The combination of the grooved gores with the continuous flange *a*, when constructed and arranged as described.

3. The combination of the grooved gores B and continuous flanges *a*, when constructed and arranged as described, with the grouting material filling the interstices between the same, for the purpose of securing the gores firmly in place, as set forth.

4. The combination of the cementing material with the gores B and the continuous T-shaped flanges, when arranged to fill the space between the same out or near to a line with the exterior surfaces of the gores, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

PETER B. WIGHT.

Witnesses:

HENRY S. JAFFRAY,  
DANIEL P. WIGHT.