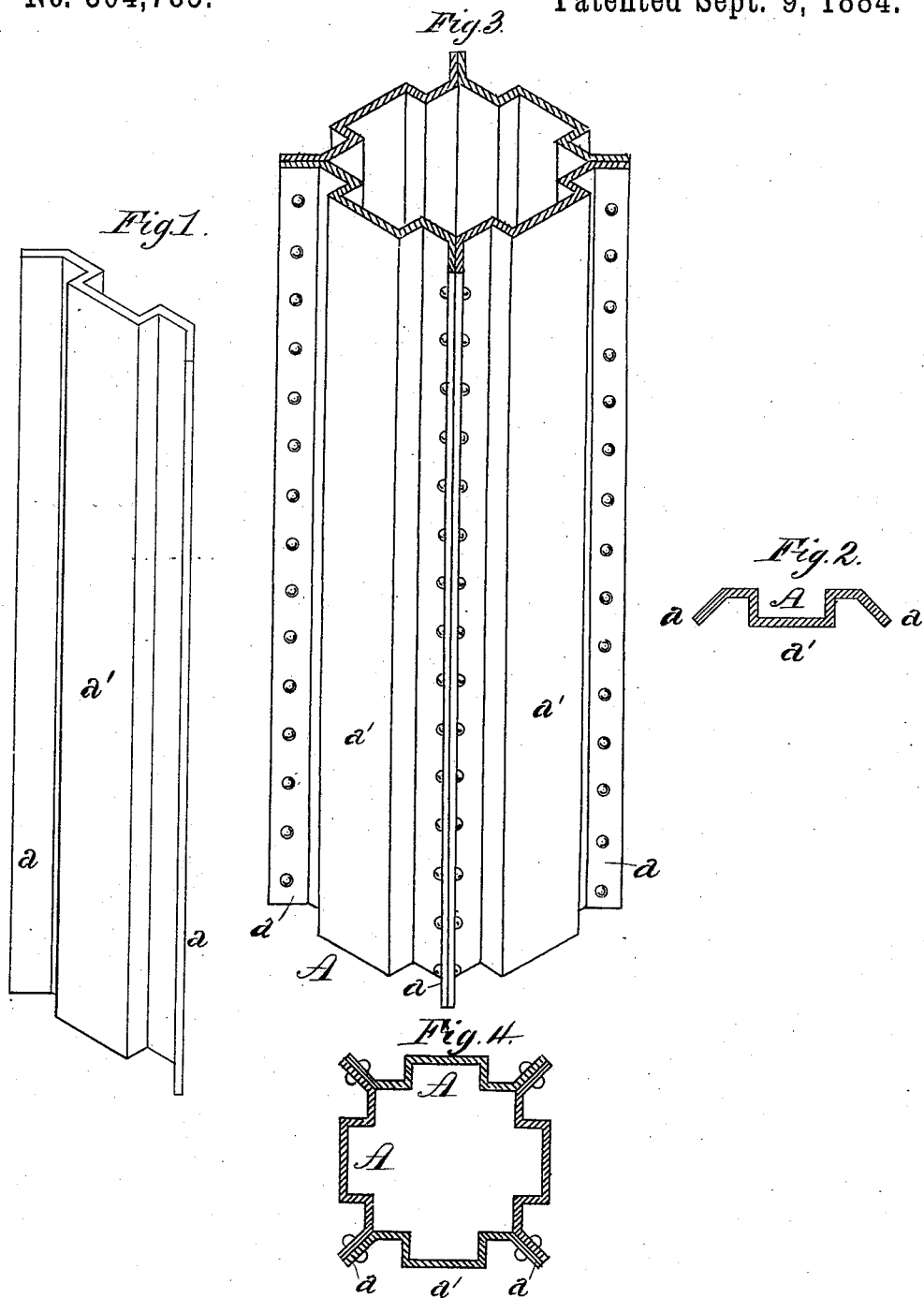


E. M. BUTZ.

STRUCTURAL SHAPE FOR COLUMNS, PILASTERS, &c.

No. 304,785.

Patented Sept. 9, 1884.



Witnesses  
J. Gordon Bell.  
C. M. Clark

Inventor.  
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By George H. Christy Atty.

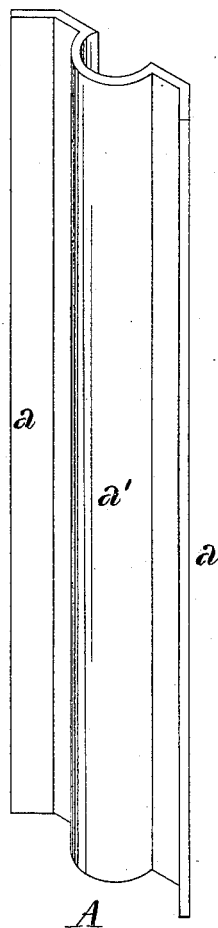
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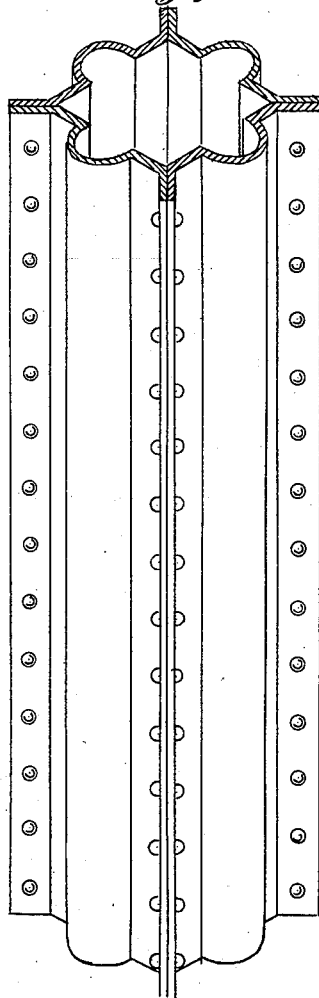
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*Fig. 5.*



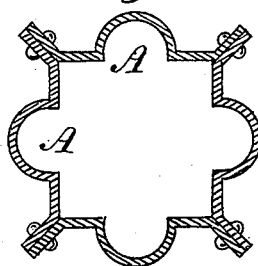
*Fig. 7.*



*Fig. 6.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

EDWARD M. BUTZ, OF ALLEGHENY, PENNSYLVANIA.

## STRUCTURAL SHAPE FOR COLUMNS, PILASTERS, &c.

SPECIFICATION forming part of Letters Patent No. 304,785, dated September 9, 1884.

Application filed January 10, 1884. (No model.)

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

Be it known that I, EDWARD M. BUTZ, a citizen of the United States, residing at Allegheny, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Structural Shapes for Columns, Pilasters, Girders, &c.; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1, Sheet 1, is a view in perspective of a metal shape plate or bar adapted for use in columns or girders embodying my invention; Fig. 2, a transverse section through the same; Fig. 3, a perspective section of a column illustrating an application of the same; Fig. 4, a plane transverse section through the same; Figs. 5 and 6, Sheet 2, a view in perspective and a transverse section, respectively, of a modification of the plate shown in the preceding figures; and Figs. 7 and 8, a perspective and a plan section, respectively, of a column illustrating an application of the plate shown in Figs. 5 and 6.

My invention relates to the construction of rolled-metal columns, pilasters, or girders for buildings, bridges, and other structures; and my improvements consist in a rolled-metal plate or bar, of section, as herein shown and described, and in a composite pilaster, column, or girder having one or more of its webs formed of a plate of said section, all as hereinafter fully set forth.

To carry out my invention I form, of rolled iron or steel, a plate or bar, A, the transverse section of which is that of a trough or channel, having an inclined flange, *a*, at each of its sides, and an outwardly-projecting tongue or face, *a'*, at and adjacent to its center. The metal of the plate A may be so bent that the tongue or face *a'* may either be bounded by plane surfaces, as in Figs. 1 to 4, or by a semi-circle or other curved surface, as in Figs. 5 to 8, the essential feature of my invention in this

particular consisting in the interposition of a central tongue or raised portion projecting from the flat surface between the side flanges of the plate.

My invention is specially applicable in the construction of pilasters for wrought-metal fronts for buildings, for the purpose of embodying therein strength and architectural ornamentation. To form a composite column, pilaster, or girder for such or for other uses, I take one or more shapes, A, of section, as described, and unite it or them by rivets or bolts to one or more rolled plates, which may be of similar or of any other section desired. A column composed of four similar shapes, A, having plane-faced tongues or projections and united by their side flanges, is shown in Figs. 3 and 4, and a column which is similar, except in the particular of having curved-faced tongues, is shown in Figs. 7 and 8.

It will be obvious that by combining a shape A with one or more shapes of different sections the transverse form and dimensions of the columns may be varied within a wide range, as may be desired or required.

I claim herein as my invention—

1. A structural rolled-metal plate, of shape or section as described, adapted to serve as a member of a column, pilaster, or girder, said plate being in the form of a trough or channel having an inclined flange at each side and a central tongue or face projecting above a flat surface adjacent to each side flange, substantially as set forth.

2. A composite column, pilaster, or girder formed of rolled-metal plates united at their edges, and having upon one or more of its faces a web formed of a plate of shape or section substantially as herein described and shown.

In testimony whereof I have hereunto set my hand.

EDWARD M. BUTZ.

Witnesses:

J. SNOWDEN BELL,  
R. H. WHITTLESEY.