

E. M. BUTZ.

CONSTRUCTION OF METAL BUILDINGS.

No. 304,793.

Patented Sept. 9, 1884.

FIG. 1.

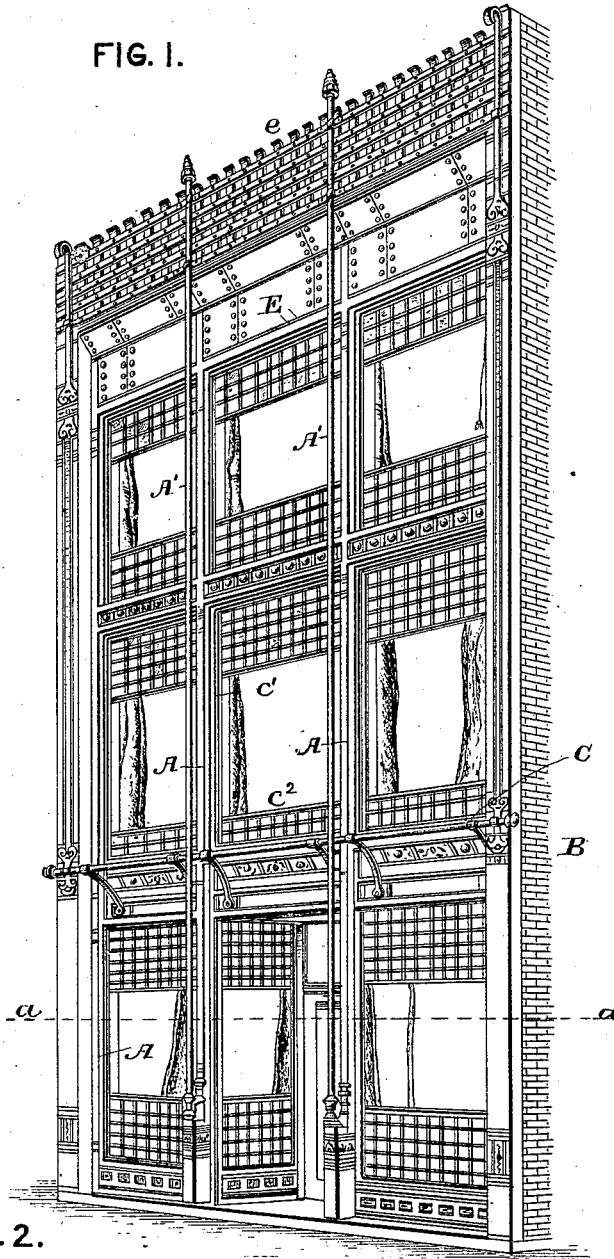
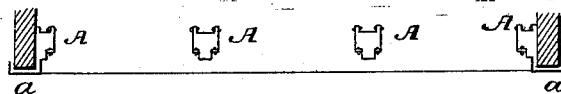


FIG. 2.



ATTEST.
J. Henry Kaiser.
Harry L. Amer.

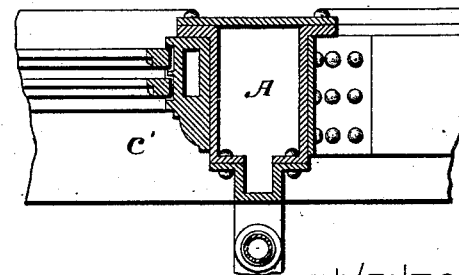
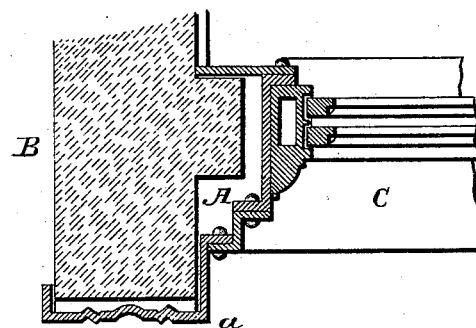
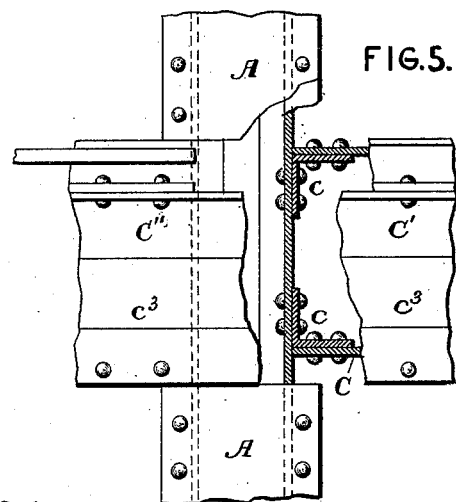
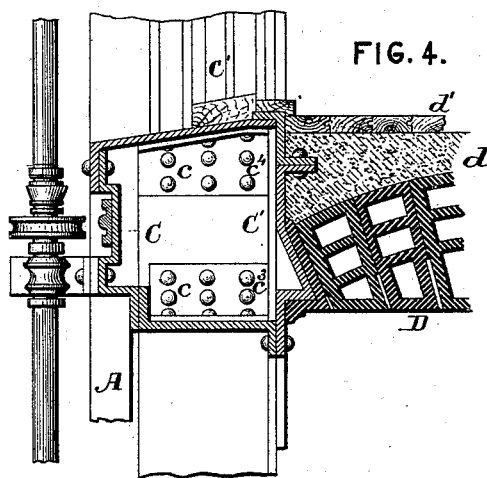
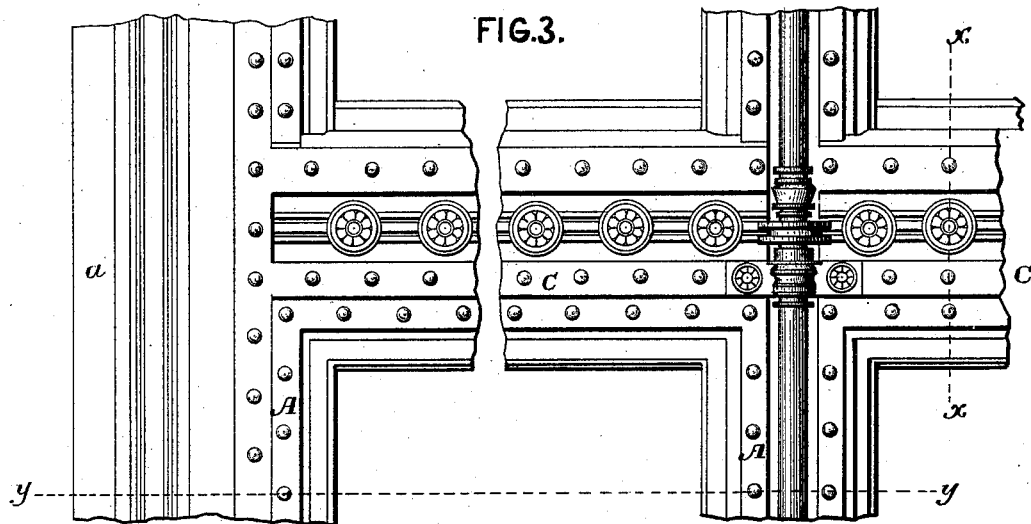
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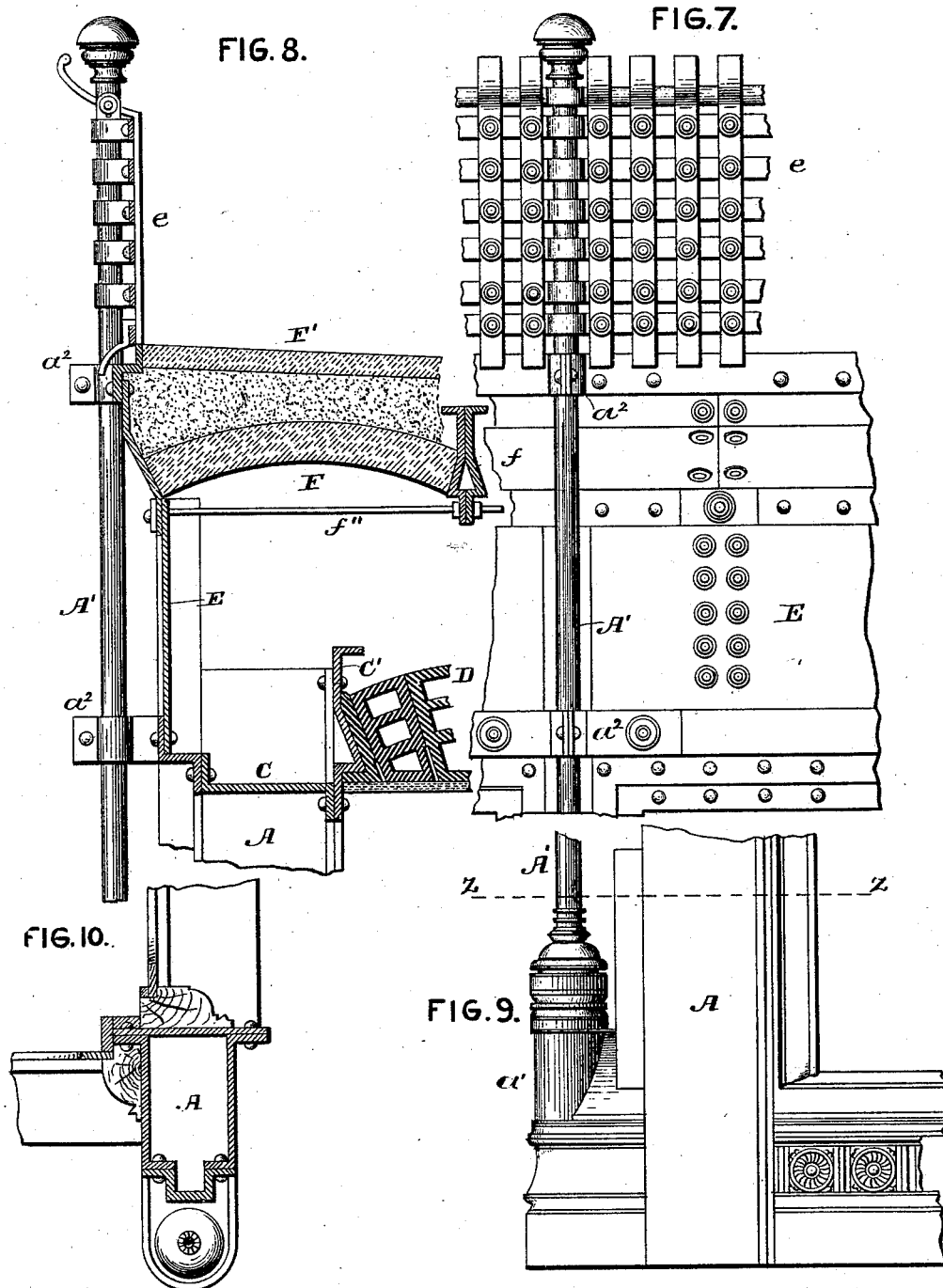
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UNITED STATES PATENT OFFICE.

EDWARD M. BUTZ, OF ALLEGHENY, PENNSYLVANIA.

CONSTRUCTION OF METAL BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 304,793, 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, in the county of Allegheny, and State of Pennsylvania, have invented or discovered a new and useful Improvement in the Construction of Metal Buildings; 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 building-front embodying my invention; Fig. 2, a horizontal section through the same; Fig. 3, Sheet 2, a front view, in elevation and on an enlarged scale, of a portion of the same; Fig. 4, a vertical section through the same at the line *x x* of Fig. 3; Fig. 5, a view, partly in elevation and partly in section, of a portion of the same as seen from the inside, with the arch supporting the flooring and ceiling removed; Fig. 6, a horizontal section through the same at the line *y y* of Fig. 3; Fig. 7, Sheet 3, a view in elevation of a portion of the cornice and adjacent members; Fig. 8, a vertical section through the same; Fig. 9, a view in elevation of the base of a pilaster at one side of the entrance-way, and Fig. 10 a horizontal section through the same at the line *z z* of Fig. 9.

The object of my invention is to provide a building-front of rolled iron or steel which, while possessing proper strength to support the floors, ceilings, and roofs connected to it, shall also serve as a suitably ornamented facing or inclosure, and which may be fitted together and erected in place with facility, accuracy, and dispatch.

To this end my improvements, generally stated, consist in a rolled iron or steel column or pilaster extending from a base or foundation through two or more stories of a building, and constituting an element both of support and of exterior architectural ornamentation, and in the combination of lateral attachments at different floor-levels with columns of said description, all as hereinafter more fully set forth.

In the practice of my invention I employ in the construction of a building-front, as the

main supporting members of the same, and of the several floors and ceilings, a series of vertical columns or pilasters, *A*, which are composed of plates of rolled iron or steel riveted together into any desired appropriate form in transverse section, and are fixed upon a base or foundation of the usual construction.

The pilasters selected for illustration herein are substantially rectangular in section, with smaller rectangular projections upon their faces, (see Figs. 6 and 10,) but such specific form does not, *per se*, constitute part of my present invention, said form being one of a series devised by me adaptable to the application of said invention, as well as to other uses, and which will constitute the subject-matter of other applications for Letters Patent by me.

In the construction of the pilasters *A* it is only essential that the same shall be of sufficient strength, and shall extend through all the stories of the building; and, further, that they shall present flat or flattened sides and backs to admit of properly and conveniently connecting lateral members thereto at the several floors and roof, as presently to be described.

The pilasters which adjoin the side or party walls *B* of the building are provided with facing-plates *a*, of any desired form and design, inclosing and covering the ends of said walls.

The pilasters *A* are connected laterally one to the other at each of the floors of the building by horizontal composite beams or lintels *C*, which are likewise composed of plates of rolled iron or steel riveted together into desired form, and are riveted at each end to the adjacent pilaster, in this instance being united thereto by angle-irons or bent plates *c*. The inner sides of said beams afford attachment and support to the floors and ceilings, and their upper sides support the window-frames *c'* either directly or through the intermediation of vertical plates, and exterior guards, *c''*, may also be extended along the beams *C*, between adjacent pilasters.

The floors and ceilings of the building may be constructed in any suitable manner, and supported by rafter, girders, or arches, as preferred. In either case the inner webs of the beams *C* are adapted to afford attachment

and end support to each floor and ceiling, and are provided with bearings or flanges proper for the purpose, the form and location of which may be varied as required by the particular floor construction adopted.

In Figs. 4 and 8 a fire-proof floor and ceiling are illustrated, composed of terra-cotta arches D, having a superimposed bed of concrete or analogous material, *d*, on which is laid the planking or tiling *d'* of the floor, and the major portions of the inner webs, *C'*, of the beams C are formed of plates having inclined faces *c*² adjacent to their lower sides, said inclined faces serving as skewbacks or abutments to support the arches D, by which they are covered and protected from the access of heat. The upper flanges by which the webs *C'* are connected to the double-angle plates *c'*, which unite them with the upper webs of the beams C, are inclosed in the concrete bed *d*.

A floor and ceiling substantially similar to that above described are set forth in an application for Letters Patent filed by me under date of December 13, 1883, Serial No. 114,427, and are not herein claimed.

Where rafters or girders are employed in lieu of arches, the inner web may be provided with flanges or bearings, properly located to receive and sustain the ends of the rafters or girders, and adapted to be connected thereto, if required.

The inclosure of the front is completed at top by cornice or frieze plates E, of wrought metal, of any appropriate form and design, which are connected to the tops of the pilasters A and to the upper horizontal beams, C.

The cornice-plates may be inclined outwardly and provided with an ornamental cornice, *e*, and in this instance act as outer abutments for arches F, of brick-work, masonry, or concrete, which support the roof F'.

Beams *f*, having skewbacks on their sides, and connected by the rods *f'* with the front and rear of the building, serve as the intermediate abutments of the roof-arches.

Any other preferred form of roof-structure may be employed, if desired.

The design and ornamentation of the front may be greatly varied by changes in the form of the pilasters, cornices, and horizontal beams, and by making attachments of different kinds thereto.

One or more posts, A', of wrought-metal tubing, may be added to the pilasters, and may be either wholly relieved therefrom, as shown, or be recessed to a greater or less extent in their faces. Said posts are supported in sock-

ets *a'*, adjoining the bases of the pilasters, and in clamps *a*² or other fastenings on the cornice-plates.

Bases and capitals of appropriate design may be connected to the pilasters, and the latter, as well as the horizontal beams, may be ornamented by rosettes, paneling, or other work of like character.

I claim herein as my invention—

1. A vertical column or pilaster forming part of a building-front, and acting both as an element of support and of exterior architectural ornamentation therein, said pilaster being composed of plates of rolled iron or steel united in tubular or box form, so as to present a closed face and flat surfaces on the sides and back of the pilaster for the attachment of floor and ceiling supporting members, and extending uninterruptedly through two or more stories of the building, substantially as set forth.

2. A building-front in which are combined a series of rolled-metal vertical tubular or box columns or pilasters, the faces of which form part of the outer surface of the front, and which extend uninterruptedly through two or more stories of the building, and a series of rolled-metal lintels or horizontal beams connecting the pilasters laterally at the several floor-levels, and acting as floor and ceiling supporting members, substantially as set forth.

3. In a building-front, the combination of a series of rolled iron or steel columns or pilasters, a series of rolled-metal lintels or horizontal beams connecting the pilasters laterally at the several floor-levels, and a wrought-metal cornice-plate connected to the pilasters at their upper ends, substantially as set forth.

4. In a building-front, the combination of vertical members of rolled iron or steel extending uninterruptedly through two or more stories of the building, horizontal members of wrought metal connecting said vertical members at the several floor-levels, and floor and ceiling structures connected to and supported by said horizontal members, substantially as set forth.

5. The combination of a rolled-metal column or pilaster, and a facing-plate connected thereto, and adapted to cover the end of a side or party wall, substantially as set forth.

In testimony whereof I have hereunto set my hand.

EDWARD M. BUTZ.

Witnesses:

J. SNOWDEN BELL,
R. H. WHITTLESEY.