

No. 612,365.

Patented Oct. 11, 1898.

W. T. SEARS.
CONSTRUCTION OF BUILDINGS.

(Application filed Mar. 16, 1898.)

(No Model.)

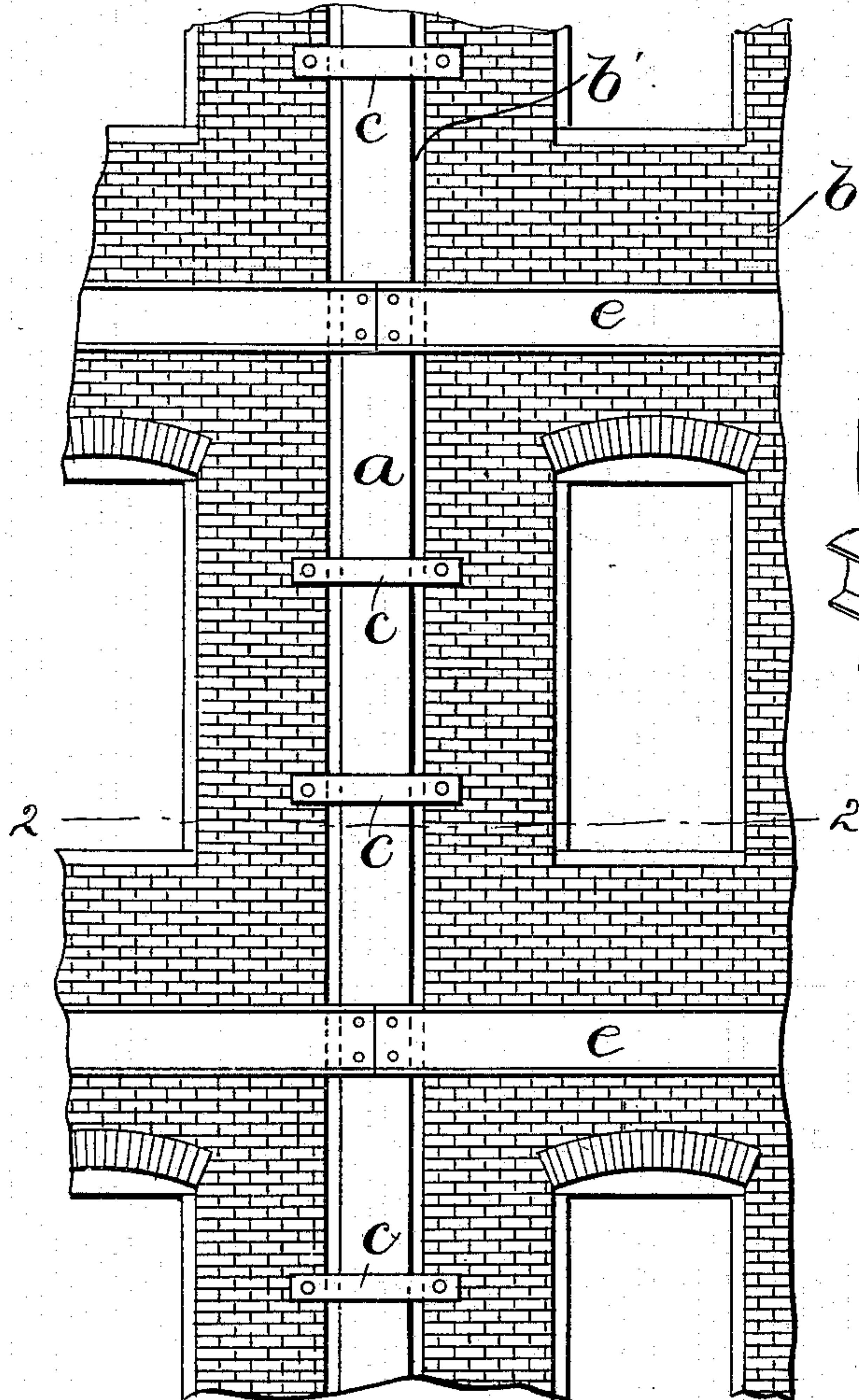


FIG. 1.

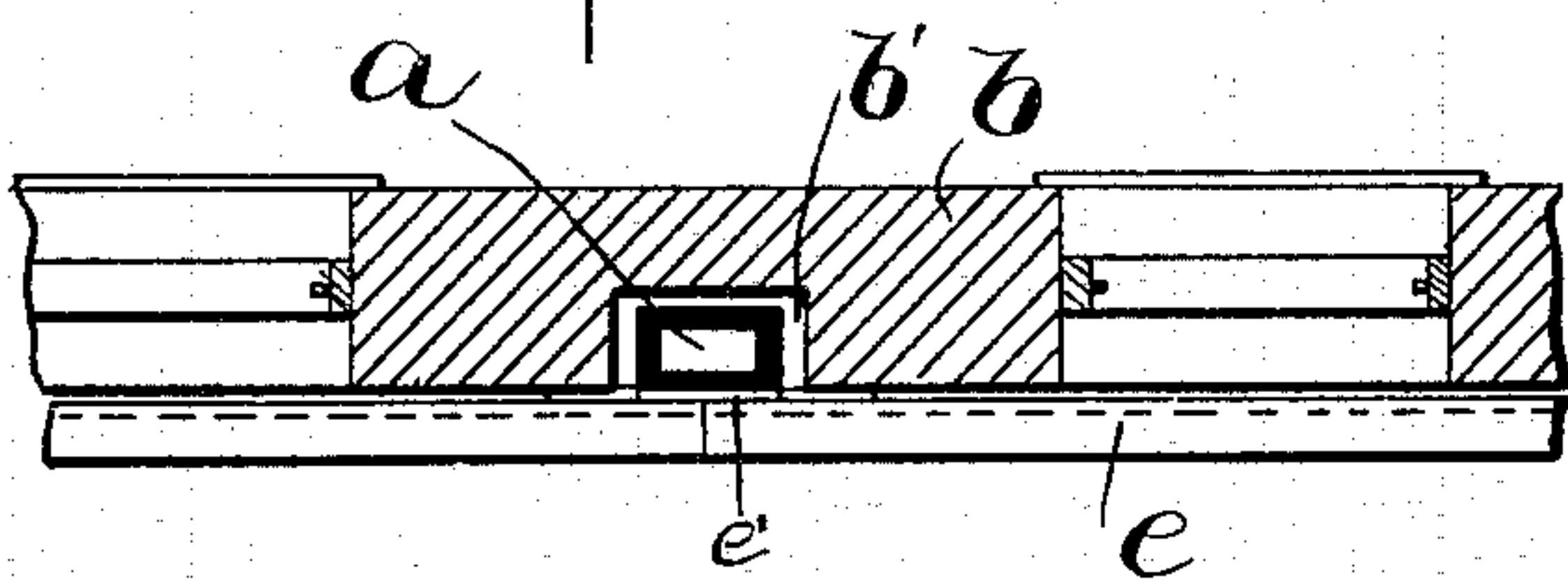


FIG. 2.

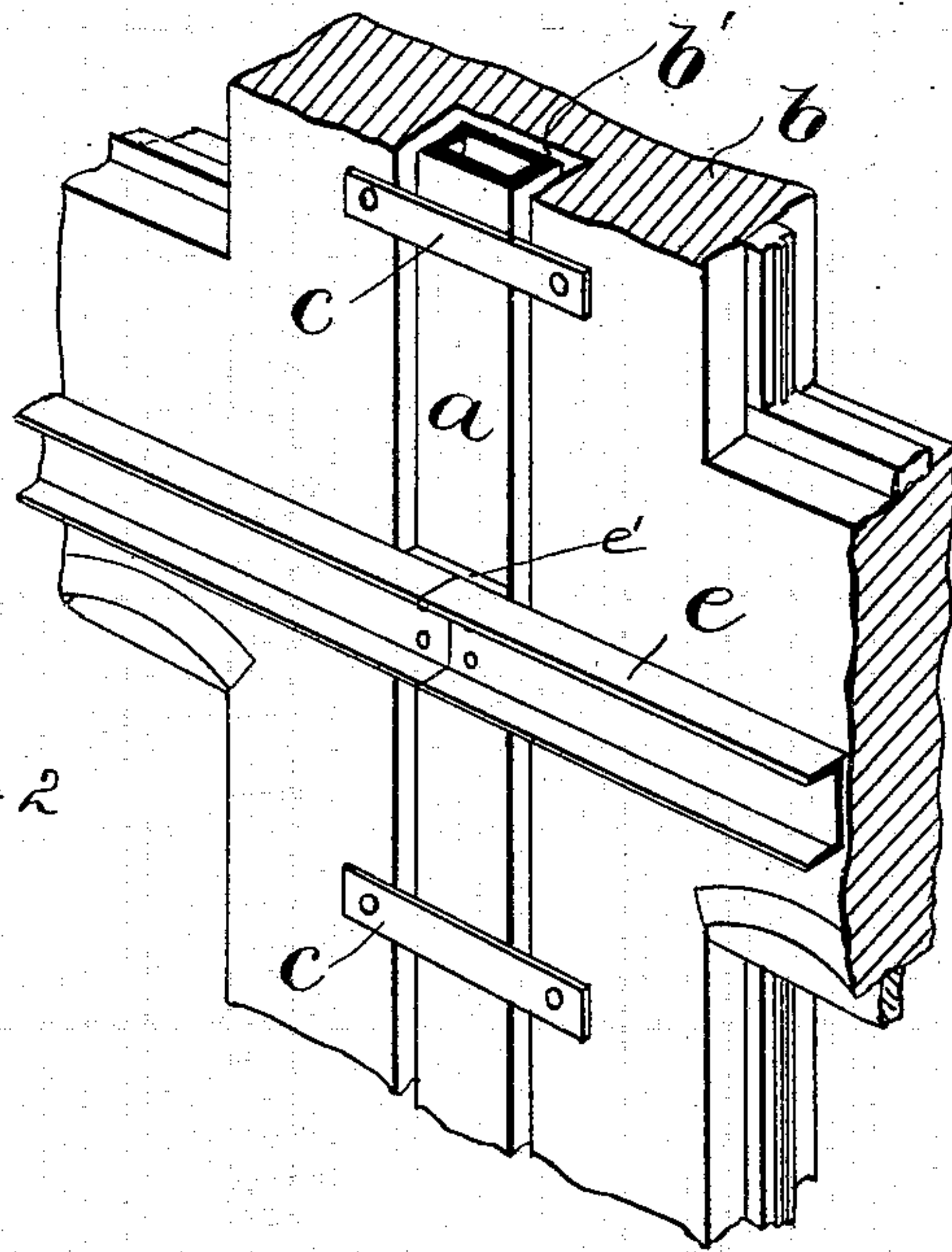


FIG. 3.

WITNESSES:

A. S. Harrison.

P. W. Pezzette.

INVENTOR:

W. T. Sears

by Wright Brown & Quincy
Atty.

UNITED STATES PATENT OFFICE.

WILLARD T. SEARS, OF BOSTON, MASSACHUSETTS.

CONSTRUCTION OF BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 612,365, dated October 11, 1898.

Application filed March 16, 1898. Serial No. 674,070. (No model.)

To all whom it may concern:

Be it known that I, WILLARD T. SEARS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in the Construction of Buildings, of which the following is a specification.

This invention relates to composite buildings composed of a skeleton frame of iron or steel or other material and a covering of masonry, the frame being located within the covering, as is now the common way.

It is the common practice in constructing buildings of this type to build the covering directly in contact with the members of the metal frame or to fill in any space that may exist between the masonry and the frame with cement or grouting, so that the surfaces of the members of the frame are practically inaccessible to air, thus allowing the moisture contained in the masonry to come in contact with the frame and oxidize the latter.

It is the object of my invention, first, to provide for a continuous circulation of air vertically along the upright members of the frame in order that the surface of these members may be kept in a dry condition and oxidation thereof prevented, and, secondly, to provide a construction that will permit the support of the entire covering by the foundations of the building independently of the frame.

The invention consists in a building comprising a skeleton or frame, preferably constructed wholly or in part of metal, and a covering having vertical slots or recesses formed not only to receive the vertical members of the frame, but also to create vertical air-spaces extending along the surface of the said vertical members, as I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents an elevation showing the inner side of a portion of one of the walls of a building embodying my invention. Fig. 2 represents a section on line 2 2, Fig. 1. Fig. 3 represents a perspective view of a portion of a building embodying my invention.

In the drawings, *a a* represent the vertical members of a skeleton frame, which may be composed of posts, beams, or sections of any

suitable form and united in any suitable manner.

b represents the covering which forms the external surface of the building, and may be composed of brick, stone, or other material and constructed in any suitable manner. I would remark, however, that instead of constructing the covering *b* in horizontal bands or sections, each supported by horizontal beams or supports attached to the frame, I prefer to support the covering independently of the frame—that is to say, the covering is preferably built free from the frame from the foundation upwardly, the foundation directly supporting the entire structure of the covering, so that the shrinkage or settlement of the covering will not be obstructed. The covering is provided with continuous vertical slots or recesses *b'*, formed to receive the uprights *a* of the frame, the cross-sectional area of said slots or recesses being larger than that of the uprights *a*, so that air-spaces are formed extending along the surface of said uprights, each upright being thus surrounded by a continuous air-space extending from its lower to its upper portion. The lower portions of the said vertical air-spaces may, if desired, be provided with suitable air-inlets, while their upper portions may be provided with suitable air-outlets, so as to allow a continuous flow of air from the lower to the upper portion of each air-space, the air flowing in contact with the surface of the uprights of the frame and ventilating the said uprights to such an extent that injurious oxidation and dampness of their surfaces will be prevented.

The wall or covering *b* may be held to the uprights *a* to prevent lateral displacement of the wall by means of plates *c*, which are preferably rounded on the faces next to the posts and bolted or otherwise affixed to the inner surface of the wall and extending across the slots or recesses *b'* in contact with the inner surface of the uprights *a*, said plates being preferably free from positive attachment to the uprights *a*, so that they can slip upon the uprights to any extent that may be required by relative vertical movements of the wall or covering and frame. Provision is thus made for any independent settling of either the wall or frame that may take place.

Incidentally the above-described air-spaces give additional protection to the frame-uprights *a* against injurious action from external heat, as in case of a fire in the vicinity of the building.

The horizontal beams *e*, that support the floors, are bolted to the uprights *a* and are preferably slightly offset therefrom by plates *e'*, interposed between the said beams and uprights, so that the beams *e* are not in contact with the wall *b*, but are separated therefrom by narrow crevices, as shown in Fig. 2.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without having attempted to set forth all the forms in which it may be embodied or all the modes of its use, I declare that what I claim is—

1. A building of the character specified, comprising a wall having vertical slots or recesses, and a frame the upright members of which are contained in said recesses, the slots being of greater cross-sectional area than the

said upright members, whereby vertical air-spaces are formed extending along all the surfaces of the uprights.

2. A building of the character specified, comprising a wall having vertical slots or recesses, a frame having upright members contained in said recesses, said wall and uprights being free from positive connection, whereby the wall may settle without obstruction.

3. A building of the character specified, comprising a wall having vertical slots or recesses, a frame having upright members contained in said recesses and free from engagement with the sides thereof, and horizontal members attached to the upright members at the inner sides of the wall, and free from engagement with the wall.

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

WILLARD T. SEARS.

Witnesses:

C. F. BROWN,

A. D. HARRISON.