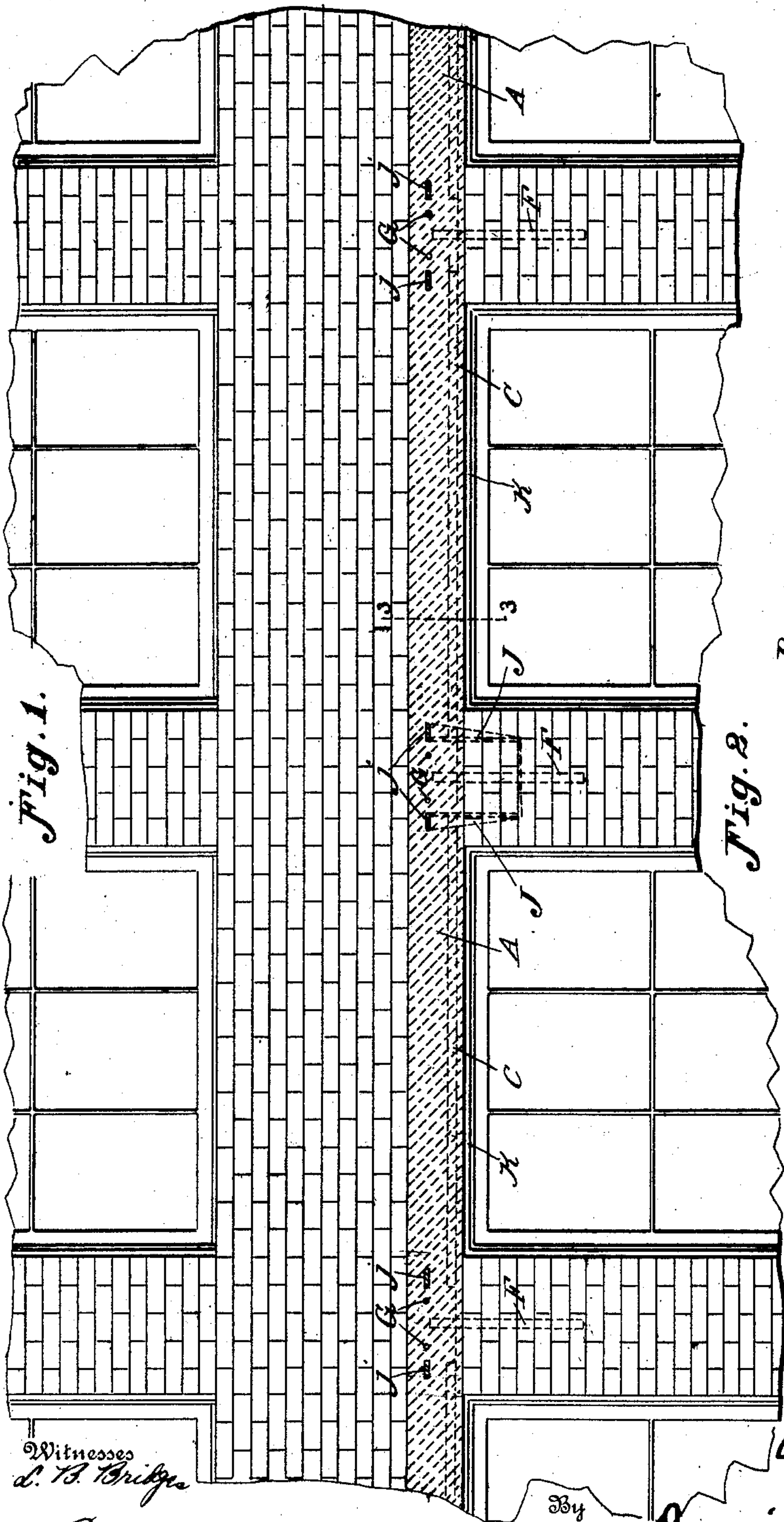


No. 859,471.

PATENTED JULY 9, 1907.

A. F. WALKER.
BUILDING STRUCTURE.
APPLICATION FILED MAY 2, 1906.

2 SHEETS—SHEET 1.



Witnesses
L. B. Bridges

R. W. Bishop

By

A. F. Walker
Davis & Davis

Attorneys

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Fig. 3.

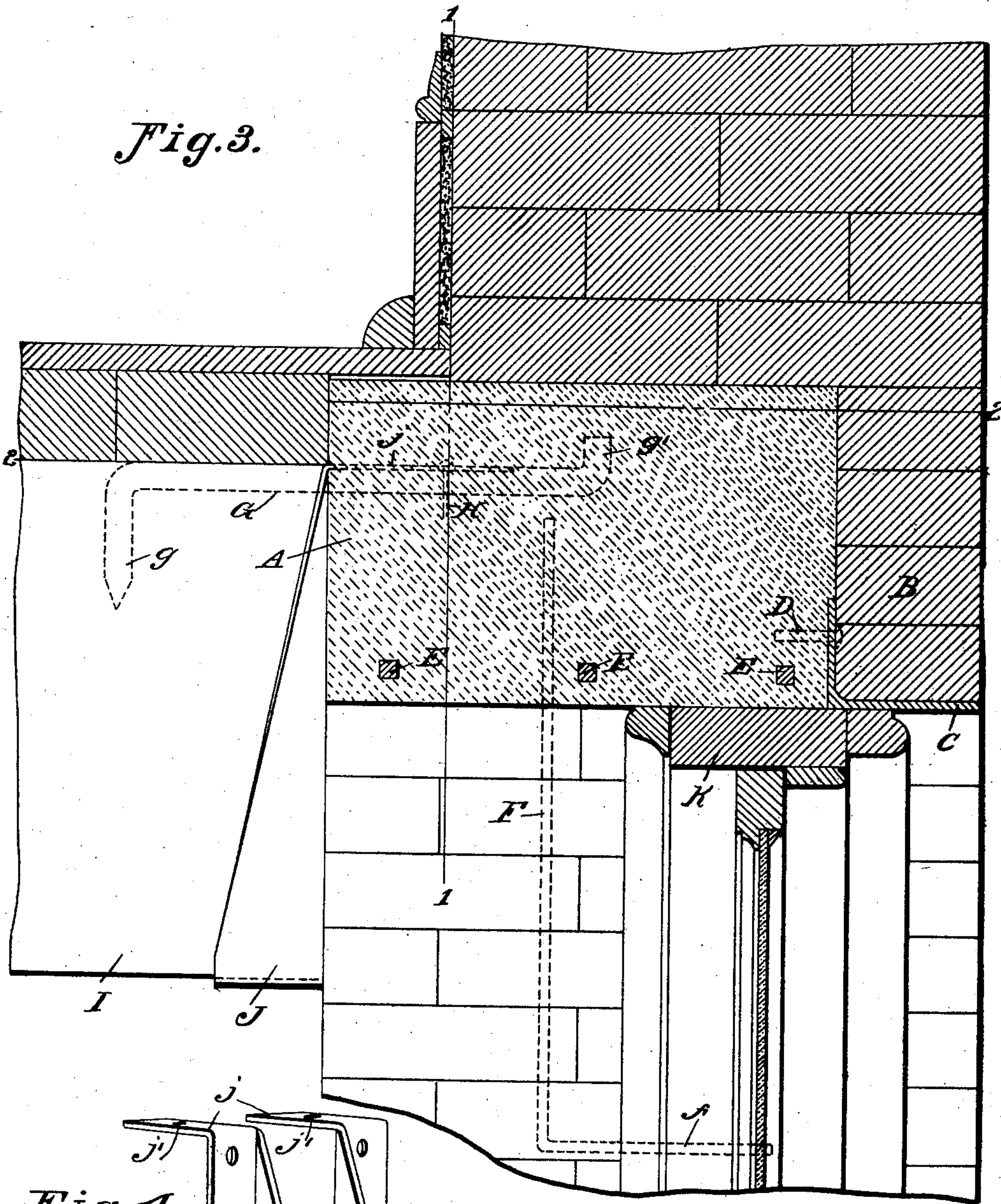
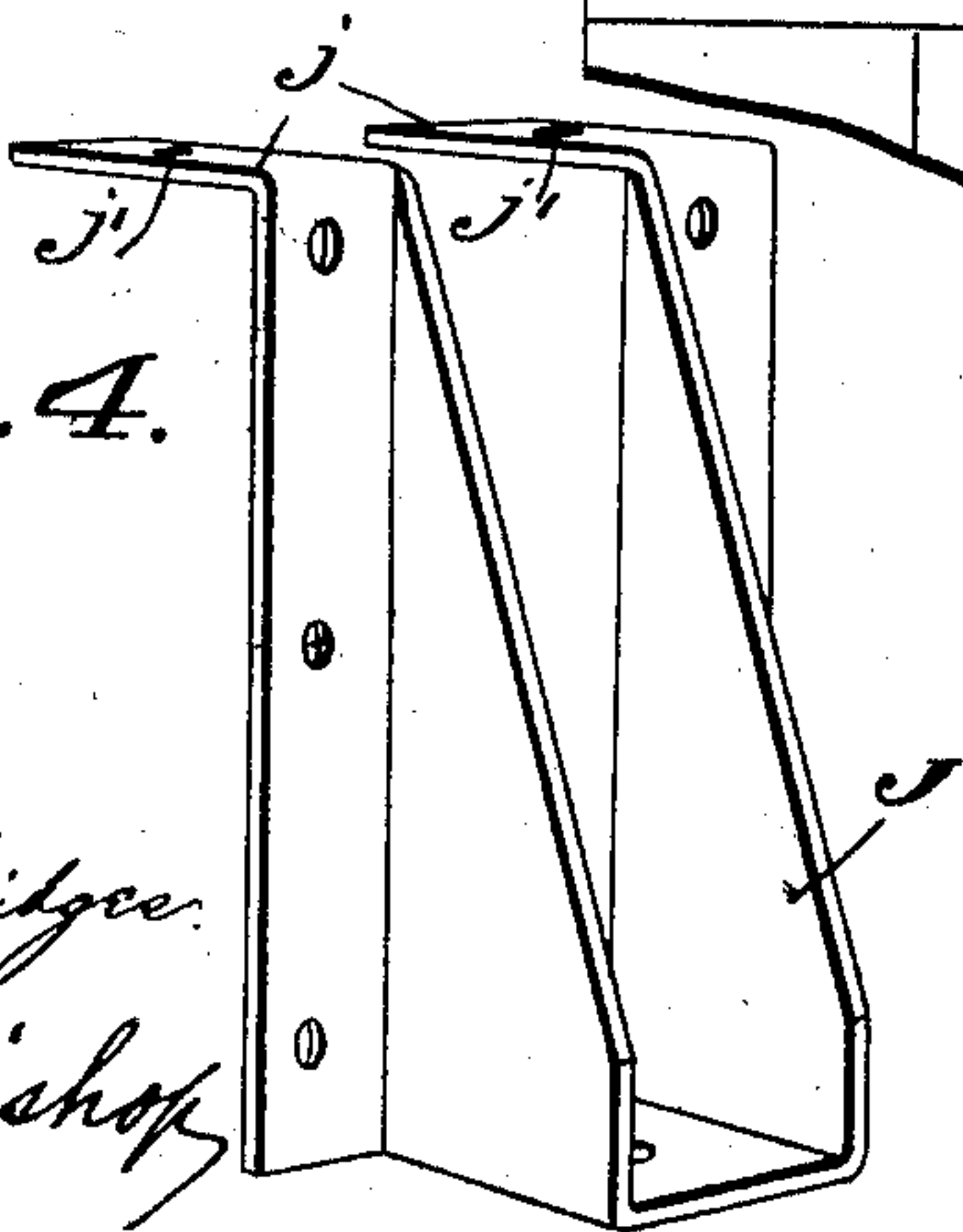


Fig. 4.

Witnesses
L. B. Bridges.

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By

Inventor
Arthur Francis Walker,
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UNITED STATES PATENT OFFICE.

ARTHUR FRANCIS WALKER, OF ATLANTA, GEORGIA.

BUILDING STRUCTURE.

No. 859,471.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed May 2, 1906. Serial No. 314,885.

To all whom it may concern:

Be it known that I, ARTHUR FRANCIS WALKER, a citizen of the United States of America, and a resident of Atlanta, county of Fulton, State of Georgia, have

invented certain new and useful Improvements in Building Structures, of which the following is a full and clear specification, reference being had to the accompanying drawing, in which—

Figure 1 is an exterior view of a portion of a building showing my continuous lintel built therein; Fig. 2 a horizontal section taken through the lintel and looking downward; Fig. 3 a vertical section taken on the line 3—3 of Fig. 1; and Fig. 4 a detail perspective of a form of joist hanger I prefer employing.

The object of this invention is to so employ concrete in a masonry building (*i. e.*, a structure built up of bricks or blocks) that it is possible to materially reduce the width of the piers between the windows and also whereby the weakening of the walls by the insertion of the ends of the floor beams therein is avoided, as more fully hereinafter set forth.

According to the preferred method of carrying out my invention I use a continuous concrete lintel or beam (preferably reinforced with steel rods) built in place so as to bridge the tops of the masonry wall piers so as to thereby support the superimposed loads over the window and door openings and form a longitudinal tie or bond between all the piers. I embed in the lintel when the same is in a plastic state, at suitable points, suitable metal hangers and anchors for supporting the framework of the building and bonding it to the masonry walls, as more fully hereinafter set forth.

Referring to the drawings annexed, A indicates the concrete lintel spanning several openings over the window-heads and bonding longitudinally the piers between the windows. Reinforcing rods E are embedded in the lintel to give tensile strength, and an angle iron C extends along in front of the lintel across the tops of the piers and windows to support a veneer of brick-work B in front of the lintel, the inner vertical flange of this angle iron being tied or anchored to the front face of the lintel by suitable rods D. F is a steel anchoring rod for assisting in bonding the masonry of the pier to the lintel, the lower end of this anchor being preferably bent horizontally, as at *f*, while its upper end extends up into the lintel a suitable distance. One or more of these anchors F is used in each pier.

J designates a metal hanger of the usual construction for supporting the floor beam I. One of these hangers is preferably employed at each beam or girder to be supported and its outwardly bent upper ends *j* are embedded in the inner face of the lintel, preferably at a point below its upper edge. Through the usual holes *j'* in these outwardly bent ends *j*, nails

or rods H may be passed to assist in bonding the hanger to the lintel. G are metal anchors for supporting and bonding the framework to the concrete lintel. Two of these anchors G are preferably used with each joist, their outer ends being bent down and driven or inserted in holes and grooves in the upper face of the joist, and their inner ends being extended into and embedded in the body of the lintel, their outer extremities being preferably bent up as at *g'*.

It will be observed that a concrete beam, especially when reinforced, extending across a row of piers and built into place, forms a perfect continuous bend with the masonry of the piers supporting it, uniting each pier with all the other piers, and differing from an ordinary lintel of metal or stone which is simply bedded in mortar and seldom spans more than one opening and therefore breaks the tie or bond at frequent intervals.

It will be obvious that the concrete is laid in the plastic state and sets firmly to the masonry below and to the hangers and anchors placed to support the framework and anchor the same to the lintel and wall.

In building this structure, the floor beams or girders are first supported on temporary posts, the hangers J and anchors G being fastened to the ends of the joists in such manner that their outwardly projecting ends project into the space to be occupied by the lintel. The forms or "centers" are placed on the under side of the lintel between the piers and also along the front and rear sides of the lintel, and then the concrete and reinforcing rods are laid within the forms and the concrete is allowed to harden or set. When the concrete has hardened sufficiently the forms and the props are removed, thereby throwing the weight of the framework entirely on the walls.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible and I, therefore, do not wish to be limited to the exact arrangement and construction shown.

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

1. In a masonry building structure having windows and masonry window piers, a concrete lintel embedded in the masonry wall of the structure and extending continuously across and resting upon and having direct bonding contact with the masonry tops of said window piers and being reinforced throughout its length, means for tying the lintel to the masonry of each pier, said means being partly embedded in the lintel, and means for supporting and tying the floor system to the inner face of the lintel at intervals, said means being partly embedded in the lintel, for the purposes herein set forth.

2. In a masonry building structure having windows and masonry window piers, a concrete lintel embedded in the masonry wall of the structure and extending continuously across and resting upon the tops of said window piers, said lintel having direct bonding contact with the masonry tops of the piers and being reinforced throughout its length, and means for tying the floor system to and sup-

porting it from the inner face of the lintel at intervals, said means being partly embedded in the lintel.

3. In a masonry building structure having windows and masonry window piers, a concrete lintel embedded in the
5 masonry walls of the structure and extending continuously across the tops of said window piers and being reinforced throughout its length, said lintel having direct bonding contact with the masonry tops of the window piers and the surrounding portions of the masonry wall, and
10 means for supporting and tying the floor system to the in-

ner face of the lintel at intervals, said means being partly embedded in the lintel and the ends of the floor beams terminating exterior to the inner face of the lintel.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 30th day of April 1906. 15

A. FRANCIS WALKER.

Witnesses:

GEO. B. HINMAN,
JACK HOOD.