

No. 632,669.

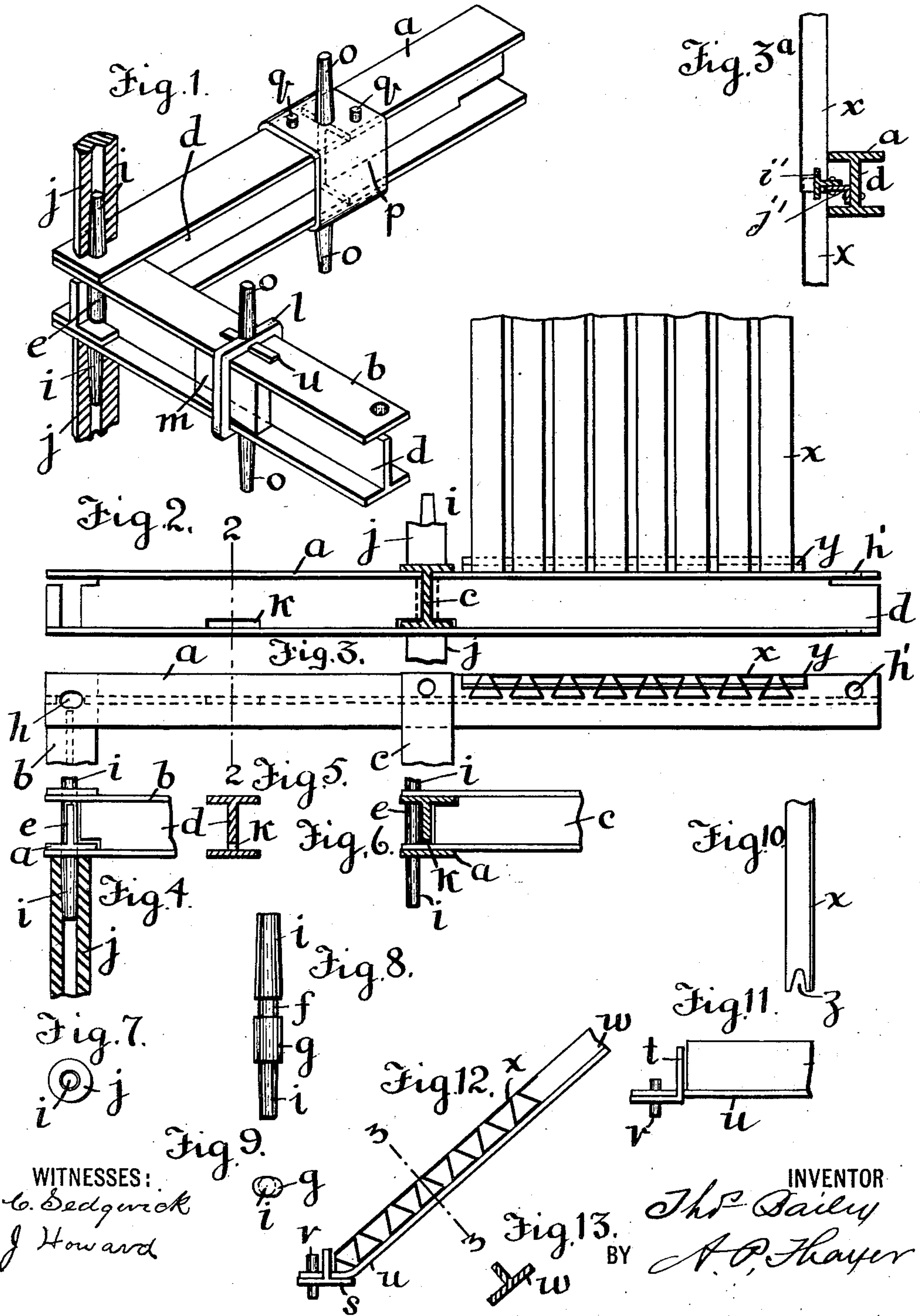
Patented Sept. 5, 1899.

T. BAILEY.
METALLIC BUILDING CONSTRUCTION.

(Application filed Nov. 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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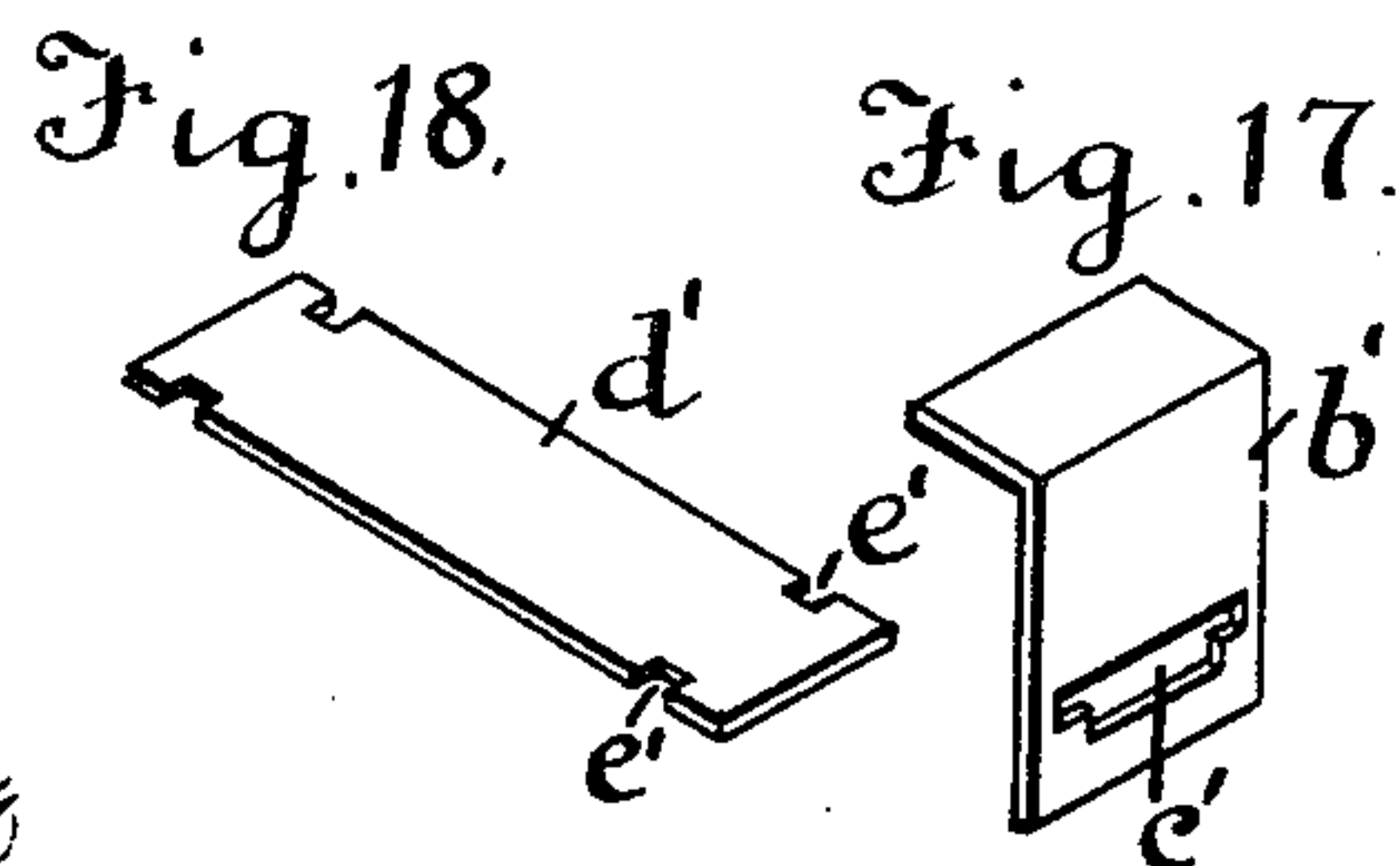
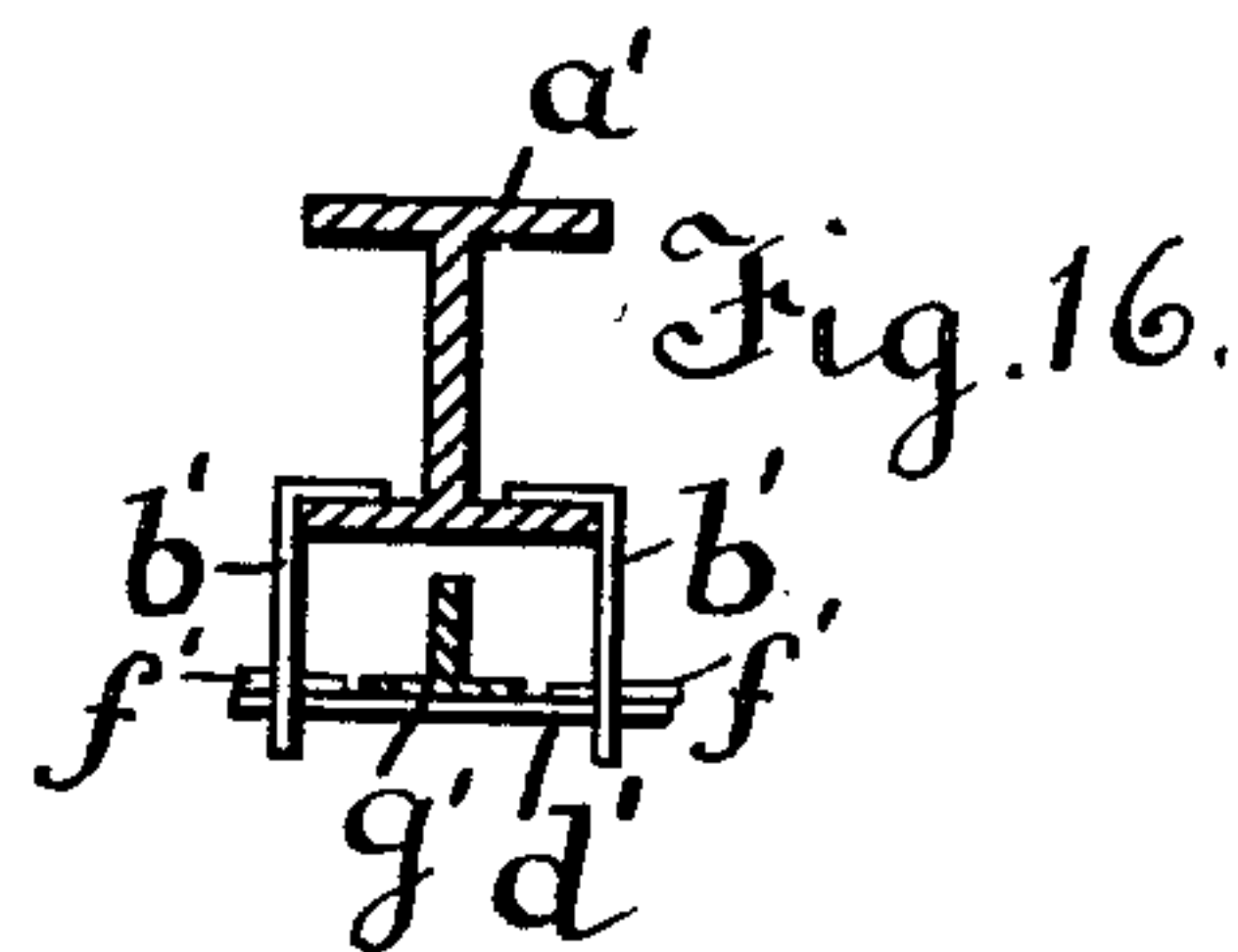
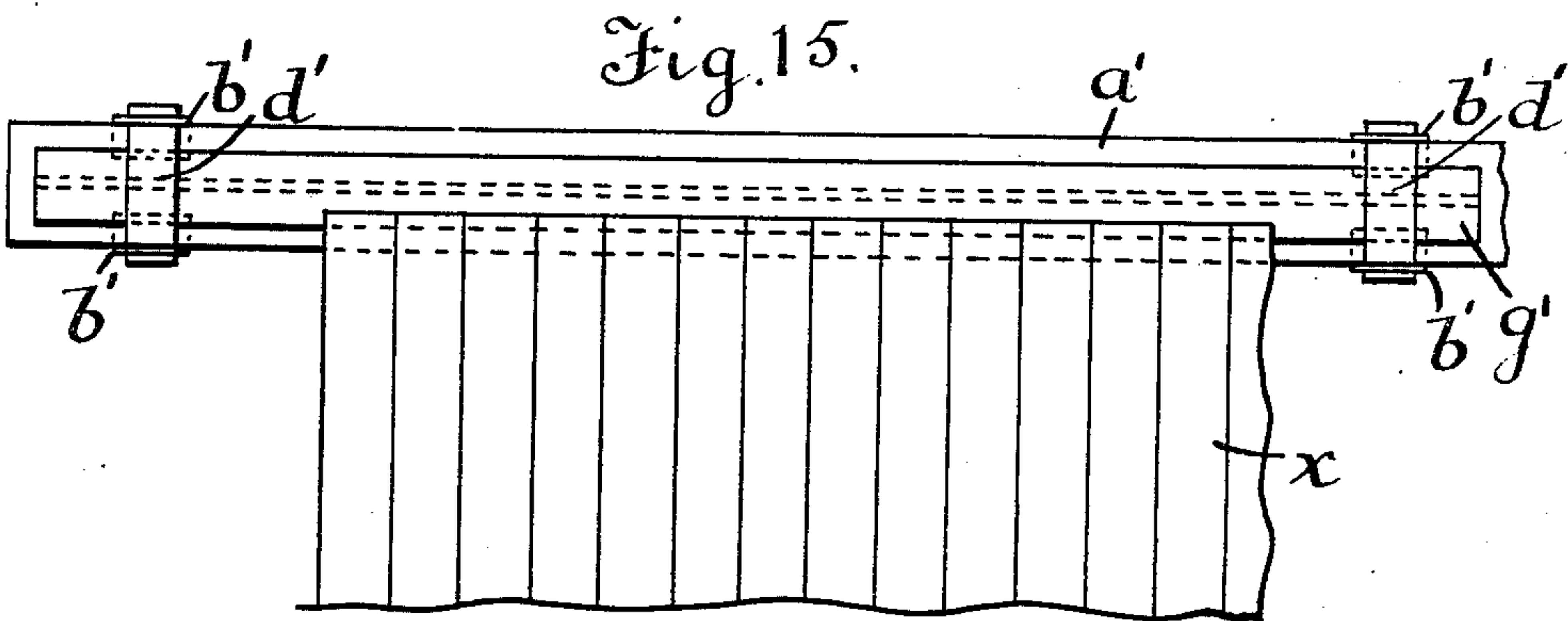
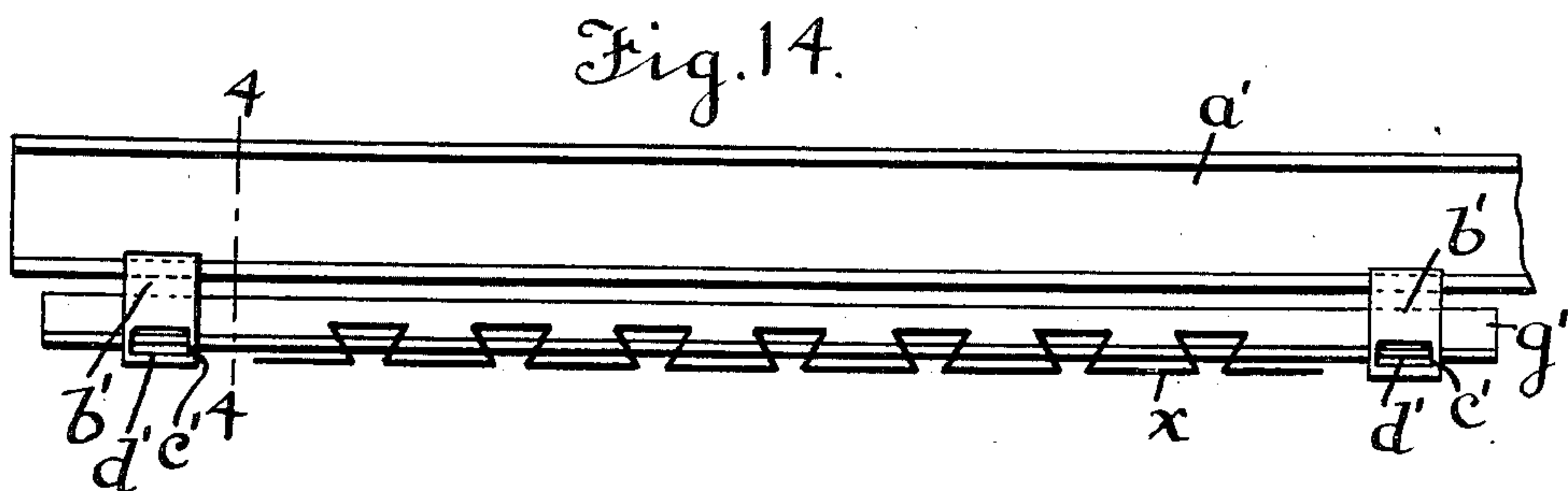
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2 Sheets—Sheet 2.



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THOMAS BAILEY, OF NEW YORK, N. Y.

METALLIC BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 632,669, dated September 5, 1899.

Application filed November 30, 1898. Serial No. 697,937. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BAILEY, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Metallic Building Constructions, of which the following is a specification.

My invention relates to metallic building constructions; and it consists of improvements in the frame construction and in the sheet-metal plaster-holding plates for the floors, walls, ceilings, and roofs. The improvements are especially adapted for small buildings which it may be desirable to take down for removal, but they are also applicable for large permanent buildings, all as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of a corner section of a second or other upper story beams and some adjuncts. Fig. 2 is a side elevation of a side beam, transverse section of an intersecting beam, and a side view of a wall or partition sheet, also parts of supporting-posts. Fig. 3 is a plan view of the parts shown in Fig. 2. Fig. 3^a is a detail showing the preferred form of applying the inclosing wall sheets. Fig. 4 is a side view of a corner section of beams with a section of part of a supporting-post and showing a connecting-pin for coupling the beams and post. Fig. 5 is a transverse section of a beam on line 2 2 of Figs. 2 and 3. Fig. 6 represents an elevation of a corner section of beams, with one of the beams in transverse section, showing a modification in the application of the coupling-pin. Fig. 7 is a top view of a post and a coupling-pin. Fig. 8 is a side elevation of a coupling-pin of modified form. Fig. 9 is a top view of the coupling-pin of Fig. 8. Fig. 10 is an edge view of the wall or partition-plate of Figs. 2 and 3. Fig. 11 is an elevation of the end of a top frame-plate and side of a transverse plate, as for a flat roof, showing an L-shaped form for the top plate. Fig. 12 is an end and side view of the top plate and a rafter in a slanting roof, with a section of the corrugated metallic plaster-holding roof-sheet as applied when the sheet is to be

covered with cement, showing an inverted-T form for the top plate. Fig. 13 is a transverse section of the rafter on line 3 3 of Fig. 12. Fig. 14 is an elevation of a beam and end view of a ceiling-sheet with improved means of suspending the sheet from the beam, showing an air-space under the beam and showing a modification in the form of the sheet. Fig. 15 is a plan view of the devices of Fig. 14, inverted. Fig. 16 is a transverse section of Fig. 14 on line 4 4. Figs. 17 and 18 are perspective views of some of the devices for suspending the ceiling-sheets.

The side beams, as *a*, *b*, and intermediate beams *c* are preferably to be of I form. The webs *d* of these beams are to be notched at the ends in any approved way suitable for interlocking at the corners, and they are perforated for a pin, as *e* or *f*, to connect the interlocking parts. The perforations may be through the center, as in Fig. 1 and at the left hand of Figs. 2 and 3, the webs *d* being cut out, or they may be at one side of the web, as *h'*, at the right hand of Figs. 2 and 3. The pin may be of plain round form to fit like holes snugly, as *e*, Figs. 1 and 4, or it may have an oval middle section, as *g*, Fig. 8, to be inserted through an oval hole, as *h*, in the upper web of the beam, Fig. 3, so that after being inserted the pin can be turned so as to bind in the vertical webs below the top web. Whatever the form of the pin may be it has taper extensions *i* below the beams and above also when below the top beams, and also above in the case of the sills of the frame for connecting with the posts *j*, which consist of tubes which receive said extensions in their hollow ends, the said ends being reamed to size and a little tapering and the pins being correspondingly fitted as to size and shape for close and stable connections. Intermediate beams, as *c*, are notched in the end of the web, as in Fig. 6, and the side beams slotted in the web, as at *k*, for their connection, and they are also secured by a pin, as *e*, said pin also having the extensions *i* for connecting with posts. Where intermediate posts are required, a yoke, as *l*, is applied, so as to be shifted along the side beam to the place for the posts and secured by one or more keys *m*,

said yoke having projecting pins, as *o*, for connecting with the posts. For splicing beams a wide band *p* is placed to receive the abutting ends to be spliced and is fastened to each with a pin *q*, and the band is also provided with post-connecting projections *o* for posts to be located at the splice-joints. For the top plates inverted-T bars, as *s*, or L-bars *t* will be used, and they will be joined at the corners, or where intermediate bars are employed by the head *u* of one bar having a portion of the web cut off inserted through a slot of the web of the other bar and secured by a pin *v*. If the roof is to be sloped, L or T shaped rafters, as *w*, are to be similarly connected to the plate with the head inserted in the slot suitably bent for the requisite pitch of the roof.

For the side walls, partitions, floors, ceilings, and roofs I use corrugated metallic sheets *x*, plastered on one or both sides for the covering, and where these sheets are set up lengthwise I connect them by L or T bars, as *y*, attached to the sills and beams with one flange upright, and I slot the corrugated sheets in the ends, as *z*, for connection with these flanges to be held in place. When it is desired to inclose the side beams entirely, T-bars, as *i'*, Fig. 3^a, will be connected to the beams by brackets *j'* or any other approved means, so that the heads of said bars will range up and down in a position a little outward of the flanges of the beams to receive the slotted ends of the corrugated sheets *x*, which being applied to meet above and below on said T-bars will effectually cover and protect the exterior sides of the beams. For the sills and upper beams, below and above which the inclosing sheets will not extend, L-bars may be substituted for the T-bars. While it is preferred to use the dovetail corrugated sheets represented, it is to be understood that sheets having any form of corrugations may be used. The corrugated sheets will in some cases for floors, ceilings, and roofs have the grooves of the upper side made wider than those of the under side to facilitate packing the plaster in more solid than is feasible if the grooves are narrow, as in Figs. 14 and 15. This makes the plastered sheets more rigid.

For suspending the ceiling below the supporting-beams *a'* I provide angle-plates *b'*, adapted to hang on the lower flanges of the beams, as in Figs. 14, 15, and 16, with a slot *c'* near the lower end of the pendent part, said slot being offset and shorter in the lower part than the upper part, in which slots I connect a cross-plate *d'*, notched in the edges, as at *e'*, to drop into the said shorter part of the slot after entering the longer part and be secured with a key *f'*, and on these cross-plates I arrange supporting-bars *g'* for the corrugated sheets *x* to receive the plaster. The supporting-bars *g'* may consist of inverted

T-bars and the corrugated sheets may be laid on the upper sides of the flanges or the notched ends *z* may engage the flanges, as when set upright on the flanges of bars *y*. Either way it will be seen that the assembling of the parts requires but little labor, and they may be readily taken apart for removal, and this is also true of the frame-joints, all of which are to be prepared in the shop, so that the process of erection is reduced to the mere assembling and connecting the parts.

What I claim as my invention is—

1. In metallic building-frame construction, the side beams notched and interlocked at the corners, and secured with vertical pins and said pins extended for connection with tubular supporting-posts substantially as described.

2. In metallic building construction, intermediate beams notched and interlocked with side beams and secured with vertical pins and said pins extended for connection with tubular supporting-posts substantially as described.

3. In metallic building construction, the combination of beams notched and interlocked at the connections, securing-pins for said connections extended for connection with tubular supporting-posts, and said tubular posts connected with the beams by said extensions of the pins inserted in the posts substantially as described.

4. In metallic building construction, the combination with a beam, of an adjustable yoke having a projecting pin for connection with a tubular post substantially as described.

5. In metallic building construction, the combination with beams to be spliced, of the splicing-band secured to the ends to be spliced and having a projecting pin for connecting with a tubular supporting-post substantially as described.

6. In metallic building construction, the combination with the beams, of corrugated wall-sheets notched in the ends transversely of the corrugations, and placed upright so as to connect at the ends with upper and lower beams respectively, and bars attached to the beams and securing the sheets in position in such connection by a flange engaging the notched ends of the sheets substantially as described.

7. In metallic building construction, the combination with the side beams, of corrugated wall-sheets notched in the ends transversely of the corrugations, and placed upright so as to connect at the ends with upper and lower beams respectively, and bars attached to the beams and securing the meeting ends of upper and lower sheets by flanges engaging the notched ends of the sheets and supporting them suitably to inclose the sides of the beams substantially as described.

8. The combination with the ceiling-supporting beams having lower flanges, of the

angle-plates hooked on said flanges and having the offset-slots in the lower pendent parts, notched cross-plates inserted and locked in said slots, bars supported on said cross-plates
5 below the beam and dovetail corrugated plaster-holding sheets supported on said bars substantially as described.

Signed by me at New York, N. Y., this 20th day of October, 1898.

THOMAS BAILEY.

Witnesses:

C. SEDGWICK,
J. HOWARD.