

No. 814,134.

PATENTED MAR. 6, 1906.

J. H. HOOD.
COMPOSITE STRUCTURE.
APPLICATION FILED FEB. 17, 1905.

2 SHEETS—SHEET 1.

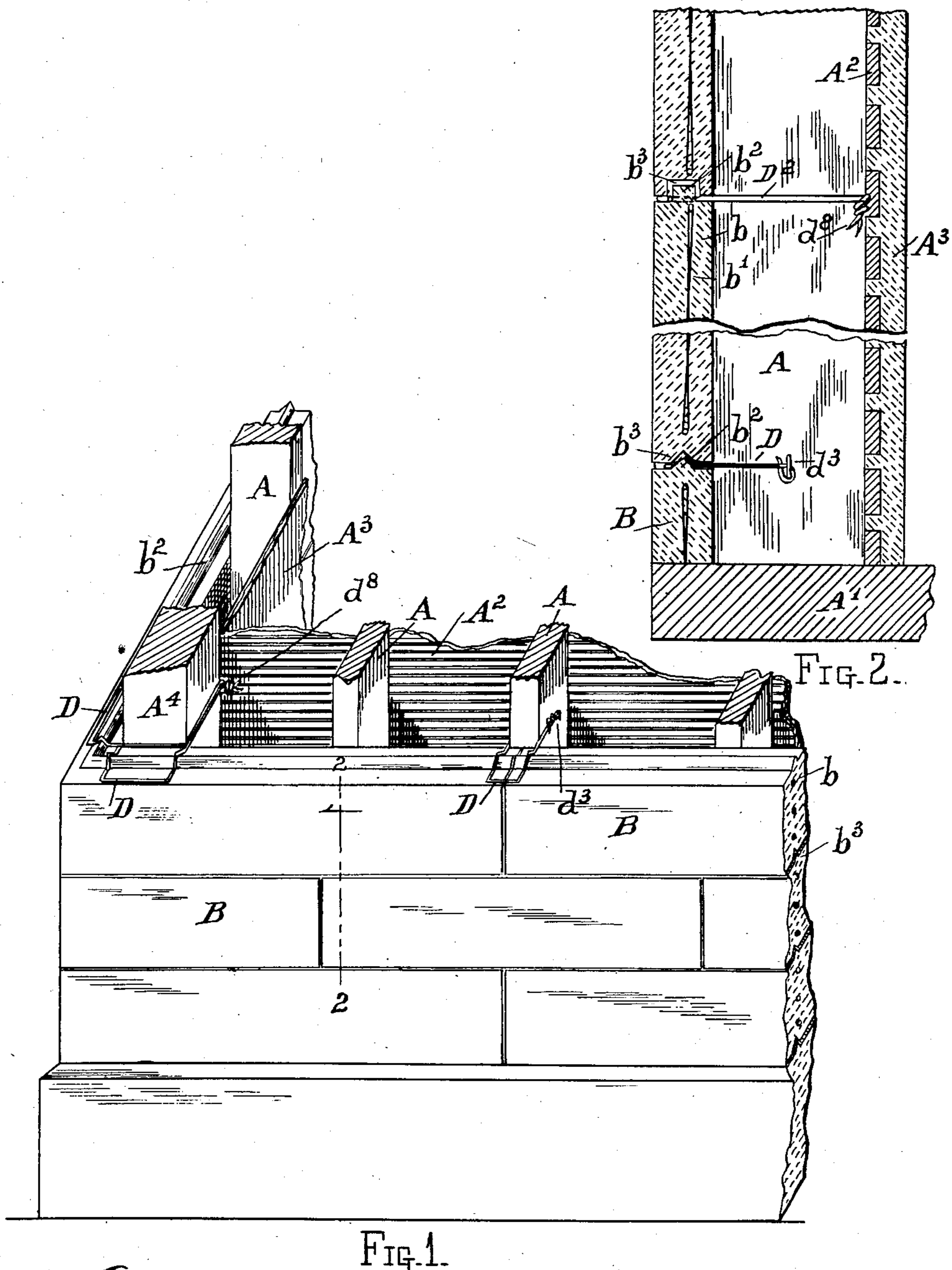


FIG. 1.

Witnesses.
Lymon & Browne.
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2 SHEETS—SHEET 2.

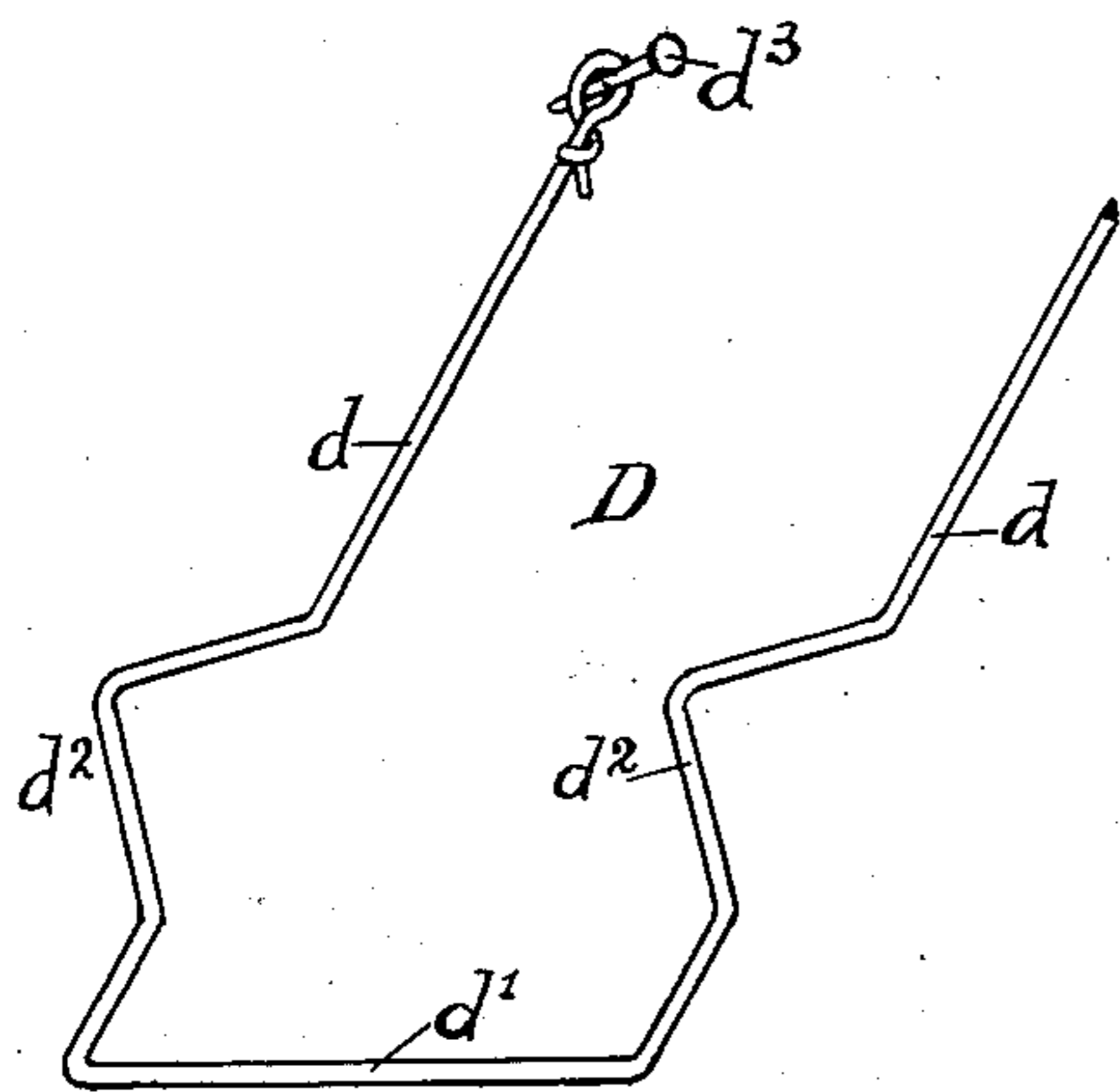


FIG. 6

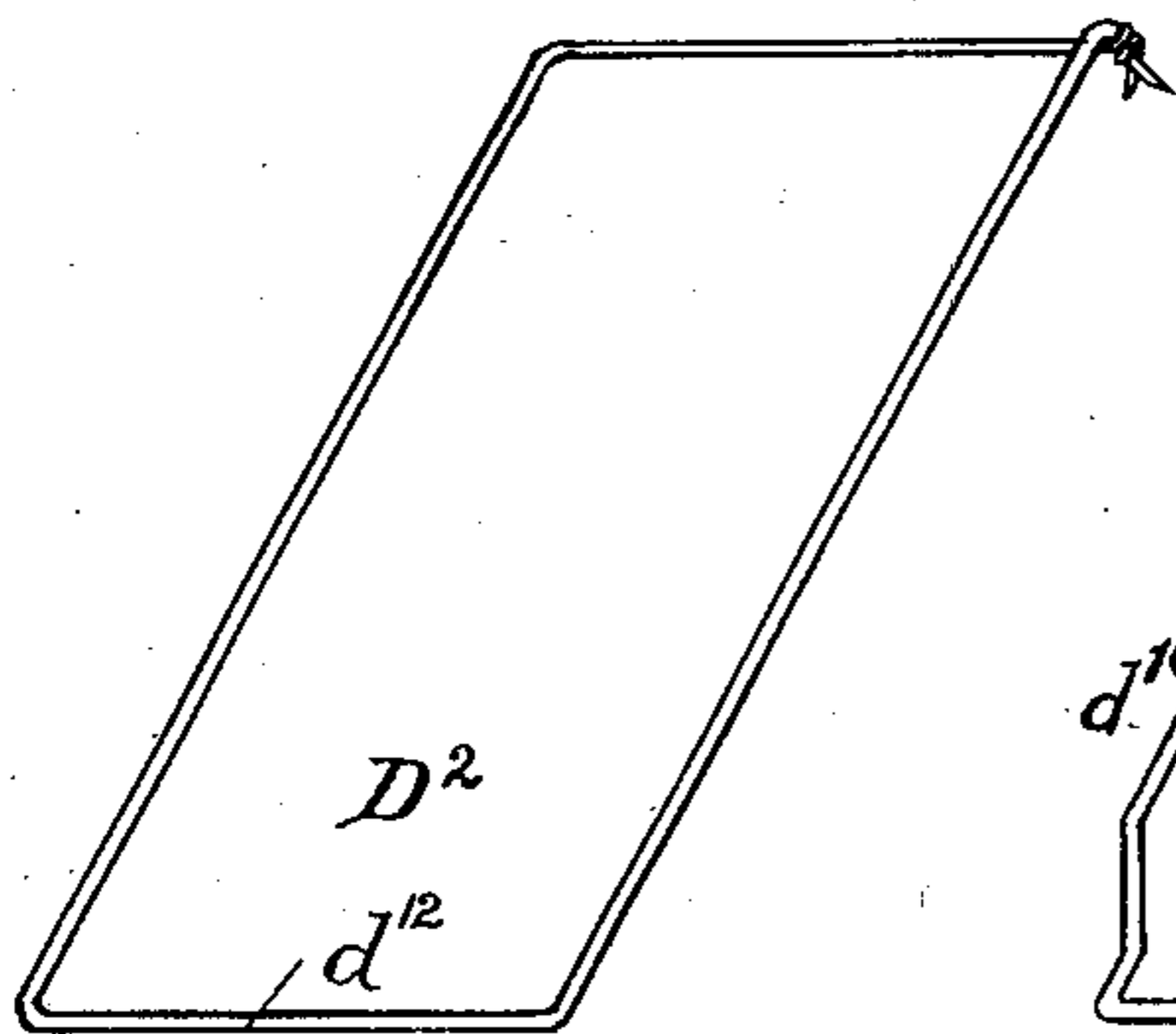


FIG. 7

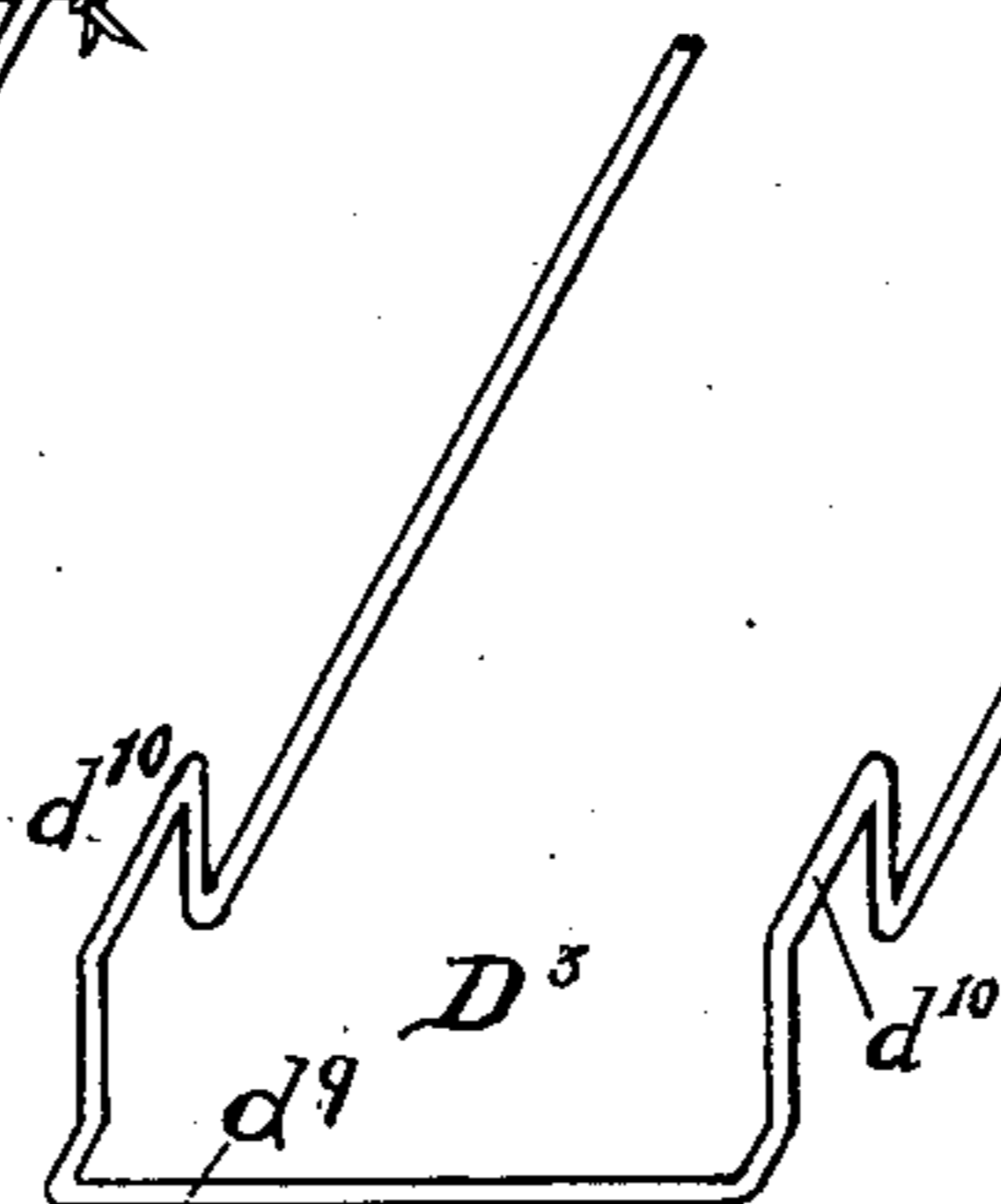


FIG. 8

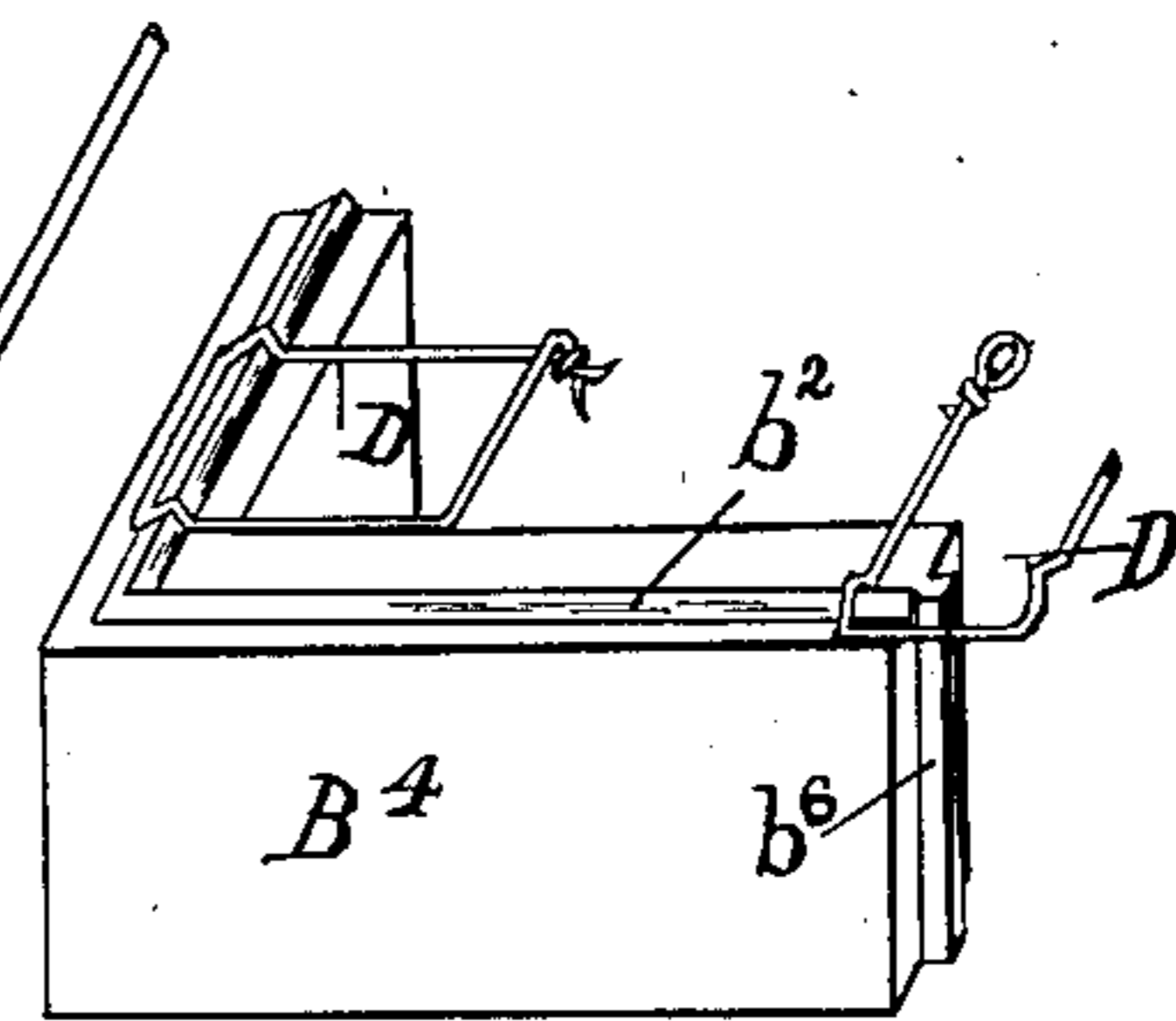


FIG. 3

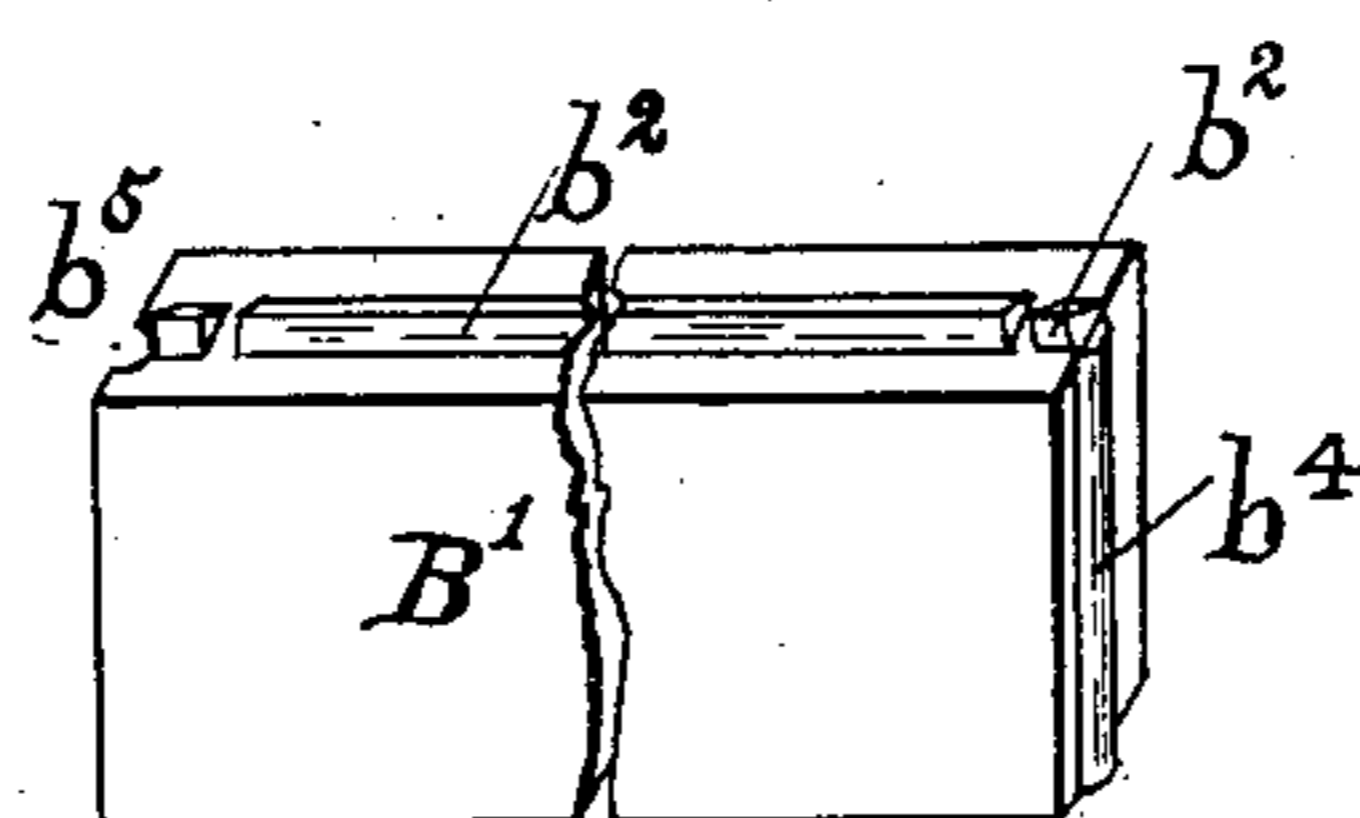


FIG. 5

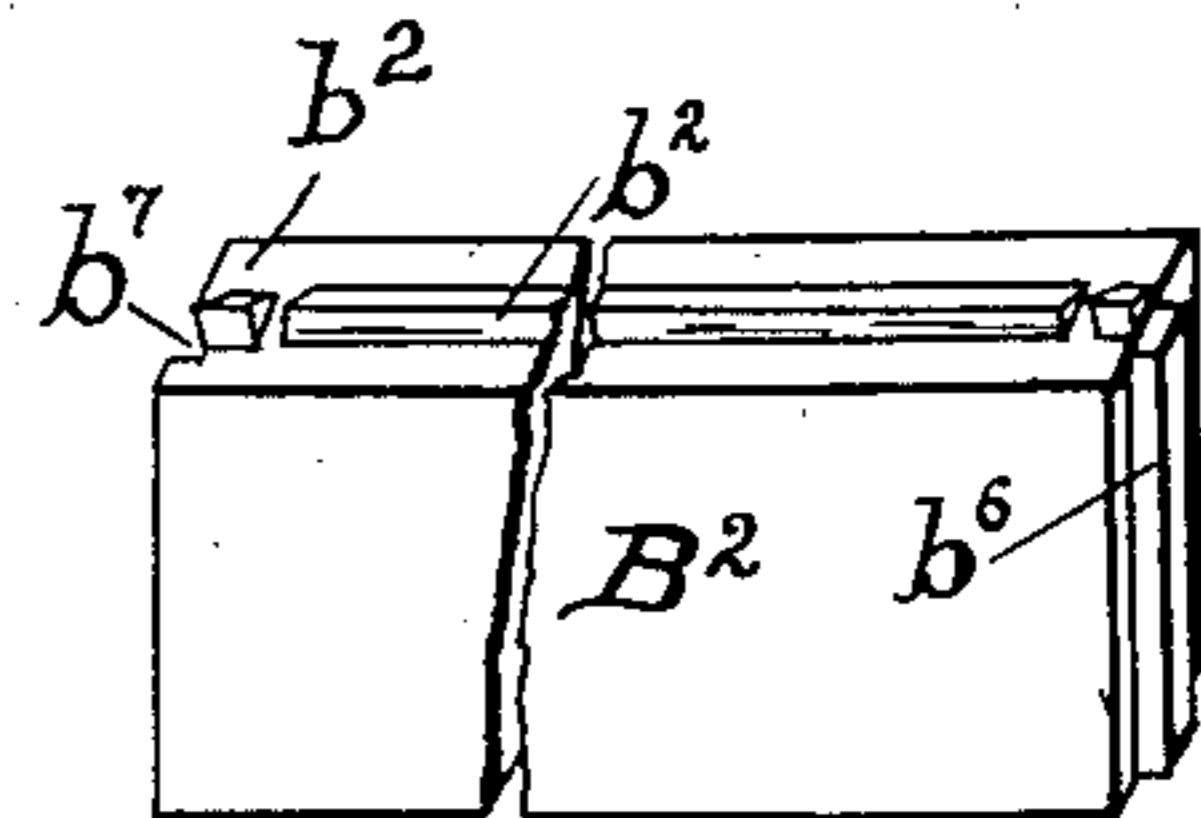


FIG. 4

Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES H. HOOD, OF SPRINGFIELD, ILLINOIS.

COMPOSITE STRUCTURE.

No. 814,134.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed February 17, 1905. Serial No. 246,150.

To all whom it may concern:

Be it known that I, JAMES H. HOOD, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Composite Structures, of which the following is such a full, clear, and exact description, as will enable others skilled in the art to which it appertains to make and use my said invention.

My invention relates to structures, such as buildings, made partly of wood and partly of cement blocks.

The purposes of my invention are to provide a structure comprising interlocking building-blocks, preferably of cement, connected with suitable framework and adapted to give great stability to the structure, with anchors of improved construction adapted to anchor the blocks to the framework.

With these ends in view my invention consists in the novel features of construction and combinations of parts shown in the annexed drawings and hereinafter particularly described, and finally recited in the claims.

Referring to the drawings, in which similar reference-letters designate like parts in the several views, Figure 1 is an isometric projection of a part of a building embodying my invention. Fig. 2 is an enlarged partial vertical section on the line 2 2 of Fig. 1. Fig. 3 is an isometric projection of a corner-block and shows anchors in position on the block. Figs. 4 and 5 are isometric projections of slightly-modified forms of block; and Figs. 6, 7, and 8 are enlarged isometric projections of anchors of different forms, but all having a member lying lengthwise of the block and a side member extending transversely of the block and connectible to the studding to pull transversely on the studding.

Studdings A are secured in a vertical position at suitable distances apart on horizontal sills A'. Lath A² is secured to the studding and is covered with plaster A³ in the usual manner.

The cement blocks B, B', B², and B³ are cast in the usual manner in molds of suitable form. The blocks are strengthened by longitudinal rods *b*, embedded in the cement and connected by a network of wires *b'*, as shown in Fig. 2. The tops and bottoms of the blocks have longitudinal ribs *b*² and corresponding longitudinal channels *b*³. The rib *b*² of one block matches the channel *b*³ of the complementary block. In the drawings I

have shown two forms of ribs *b*² and two forms of corresponding channels *b*³; but a great variety of forms of ribs and channels which will readily occur to those skilled in the art may be used without departure from my invention.

I have illustrated two forms of blocks B and B'. The forms of the blocks are such that when the blocks are in place in the wall the ends of the blocks interlock so as to bind the blocks firmly together. Furthermore, the forms of the interlocking ends are such as to make zigzag or circuitous joints between the blocks well adapted to retain the mortar and also adapted to prevent air or water from being driven through the joints in case any of the joints are imperfectly filled with mortar. As a means for connecting the blocks with the studding I employ anchors, which are embedded in the mortar in the joints between the blocks and are secured to the studding. In the drawings I have shown five different forms of anchors D D' and D², D³, and D⁴. The anchor D is of wire bent, as shown, to form two parallel members *d*, joined by an integral cross-bar *d'* and having V-shaped parts *d*², fitting over the V-shaped ribs *b*² of the blocks B B', &c. The anchors are connected with the studding by nails *d*³ or equivalent securing devices to pull transversely on the studding, and the ends of the members *d* are twisted around the securing devices substantially as shown in Figs. 11 and 12, or the ends of the anchor may be twisted together at one corner of the studding, as shown in Figs. 1 and 2. The anchors D' have a V-shaped part *d*⁴, fitting over the ribs of the blocks, and the wire is bent to form at one end of the anchor a U-shaped part *d*⁵, which is embedded in mortar along the entire length of both of its members, as hereinafter explained. The anchor D² consists of a single wire bent in rectangular form to fit around short rectangular ribs *b*², Figs. 6 and 7, and around the studding A and having its ends twisted together at one corner of the studding, as at *d*⁸, Fig. 1. The anchor D³ has its side members connected by a cross-bar *d*⁹ integral with the side members. The side members have parts *d*¹⁰, bent to fit over the rectangular ribs *b*². The anchor D⁴ is exactly the same as the anchor D', except that instead of having a V-shaped part *d*⁴, adapted to fit over a V-shaped rib it has a rectangular part *d*¹⁰, adapted to fit over a rectangular rib. It will be observed that the anchor

Dispractically the double of the anchor D' and the anchor D³ is practically the double of the anchor D⁴. The anchors of all of the different forms when in place in the wall lie across or
 5 around the ribs of the blocks, and the parts d', d⁵, d', d⁹, and d¹² of the anchors, respectively, are entirely embedded in the mortar in the joints between the blocks, and the mortar when it is set holds the anchors firmly, so
 10 that they cannot be pulled out.

In Fig. 9 I have shown a corner-block B⁴, which may be used with anchors of any of the different forms.

In erecting a structure embodying my improvements, the sills A' being in position, the corner-posts A⁴ and studding A are secured in vertical position on the sills at suitable distances apart, the distance between the studding preferably being such that the vertical
 15 joints between the ends of every tier of blocks will lie lengthwise of and central to the studding. When the first tier of blocks is set, the anchors are placed in position on the blocks and secured on the studding. The mortar is
 20 then spread, and the next tier of the blocks is set and the anchors placed thereon and secured, and so on as long as the work continues. The lath and plaster are then applied in the usual manner.

30 The practical advantages of the construction above set forth are that the structure does not require the use of sheathing. The end joints of the block are along the face of the studding, so that one tie may connect to
 35 one studding the adjacent ends of two blocks, and the form of the anchor and its connection with the studding are such that the full tensile strength of the anchor is effective in securing the blocks to the studding. The
 40 strain on the anchor is a tensile strain, and the pull of the anchor is transverse to the studding, so that there is no danger of pulling out the connection of the anchor with the studding. Comparatively thin cement blocks
 45 may be used, thereby cheapening the cost of producing the blocks, and by reason of the lightness of the blocks facilitating the handling and permitting expeditious setting of the blocks. The blocks may be secured in
 50 position as the work progresses without interfering with the setting of the mortar. When the mortar hardens, the anchors are firmly held therein. The walls, being hollow,

afford ample air-space, and the structure when completed has the appearance of stone
 55 at a cost not much greater than the cost of a wooden structure.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A structure comprising stationary vertical studding, blocks contacting with said studding and having ribs and complemental channels and dimensions to form end joints between said blocks along said studding alternately, anchors having side pieces fitting over the ribs of said blocks said side pieces being connected by an intermediate integral member lying lengthwise of said ribs, and means for connecting both ends of said anchors with said studding to secure to a single studding the abutting ends of two adjacent blocks.

2. A structure comprising stationary studding, blocks contacting with said studding and having ribs and complemental channels and dimensioned to form end joints between said blocks along said studding alternately, anchors having side pieces extending across the ribs of said blocks, the side pieces of each anchor being connected by an intermediate member lying lengthwise of said block, and means for connecting said anchors with said studding to secure to a single studding the abutting ends of two adjacent blocks; the pull of said anchors being transverse to said studding.

3. A structure comprising stationary studding, blocks contacting with said studding and having ribs and complemental channels and dimensioned to form end joints between said blocks along said studding alternately, anchors having side members extending across the ribs of said blocks also having intermediate members connecting the side members of said anchors and lying lengthwise of the ribs of said blocks and means for connecting both side members of said anchors to pull transversely on said studding.

In witness whereof I have hereunto subscribed my name, at Springfield, Illinois, this 27th day of January, 1905.

JAMES H. HOOD.

Witnesses:

LYMAN L. BROWNE.

W. J. AURELIUS.