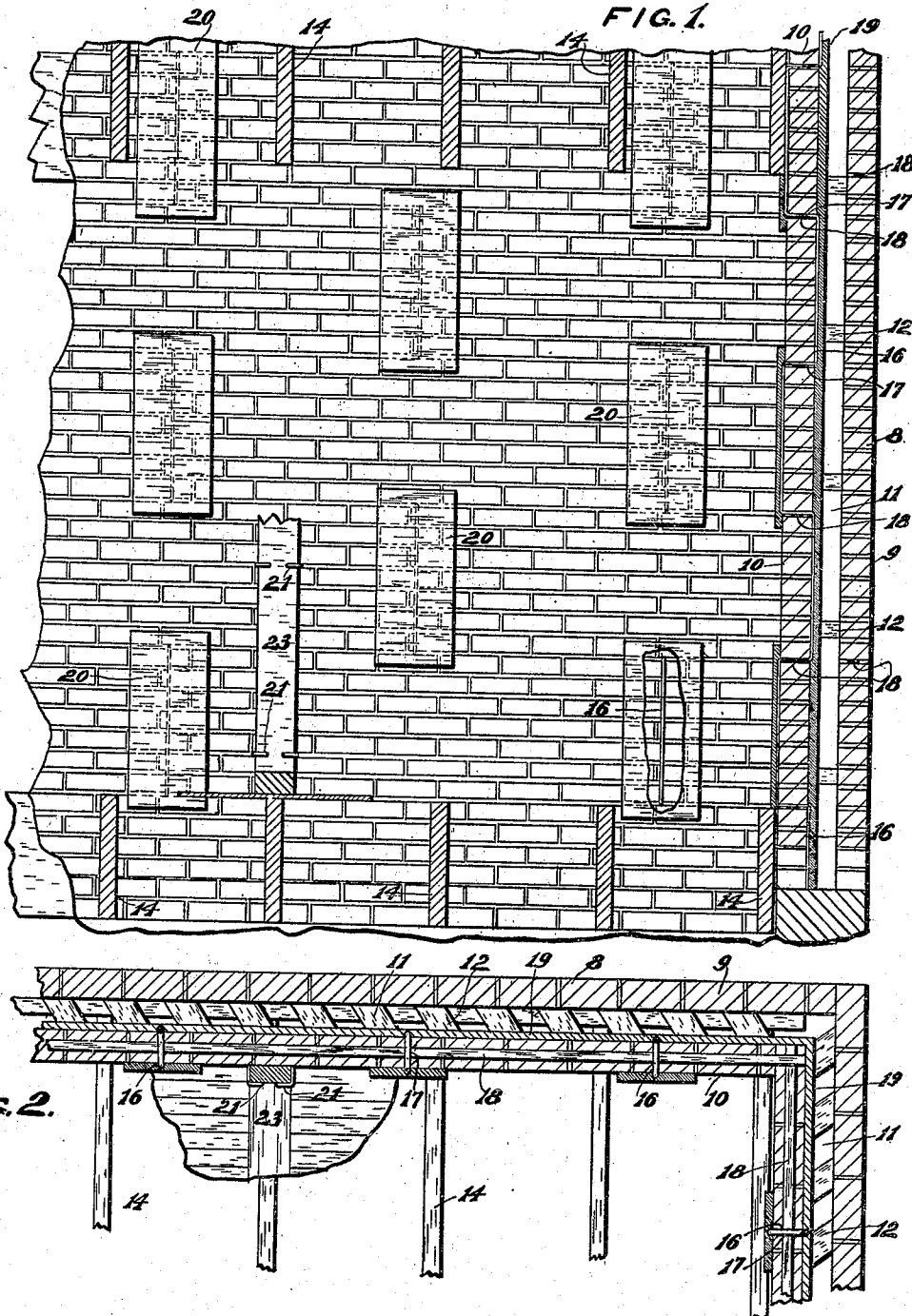


A. M. HILBIG.
BUILDING CONSTRUCTION.
APPLICATION FILED OCT. 7, 1907.

930,377.

Patented Aug. 10, 1909.

2 SHEETS—SHEET 1.



WITNESSES.

L. O. Thuermer
Anna E. Schmidbauer

INVENTOR.

Arthur Max Hilbig
By *Benedict, Morse & Caldwell*
ATTORNEYS.

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FIG. 3.

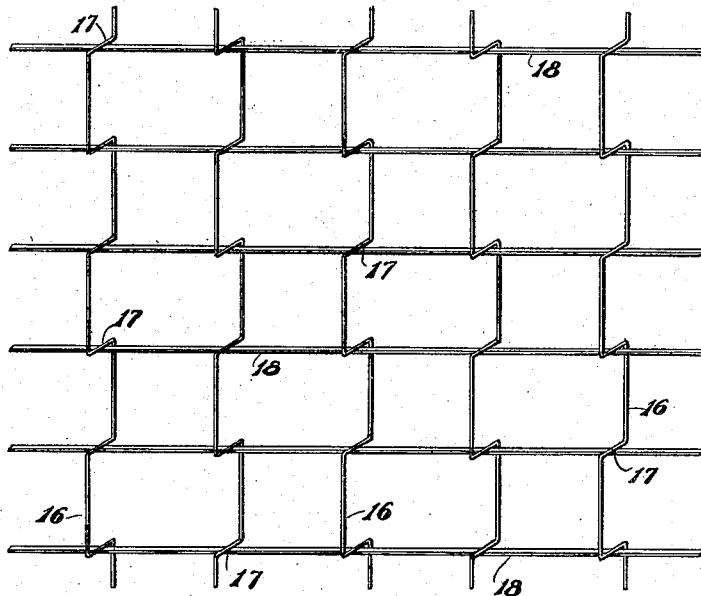


FIG. 4.

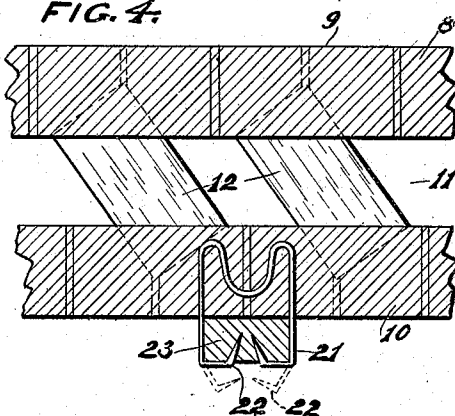
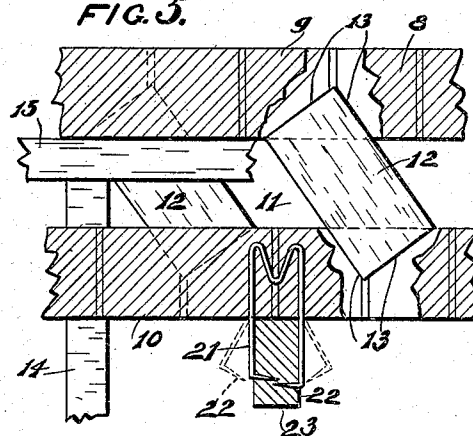


FIG. 5.



WITNESSES.

L. O. Thuermer
Anna F. Schmidtbauer

INVENTOR.

Arthur Max Hilbig
By *Benedict, Morsell & Caldwell*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ARTHUR MAX HILBIG, OF MILWAUKEE, WISCONSIN.

BUILDING CONSTRUCTION.

No. 930,377.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed October 7, 1907. Serial No. 396,173.

To all whom it may concern:

Be it known that I, ARTHUR MAX HILBIG, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Building Construction, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 This invention relates to improvements in building construction and more particularly to buildings formed of brick.

The essential object of this invention is to provide a wall construction in which the wall is but the thickness of one brick reinforced and bound together by means of band iron and iron rods, thereby forming a wall which is less expensive to construct and is stronger and more durable than walls formed of a thickness of a plurality of bricks.

Another object of this invention is to form walls provided with air spaces in which the face wall and the back wall are each of but the thickness of one brick.

25 A further object of this invention is to provide improved means for distributing the load of the floor joists to both walls.

A still further object of this invention is to provide improved means for attaching the studs forming part of the partitions to the brick wall.

30 With the above, and other, objects in view, the invention consists in the building construction and combination of parts and all equivalents.

35 In the accompanying drawings, in which like characters of reference refer to the same parts; Figure 1 shows a fragment of a building construction after my improved plan, parts being in section and other parts broken away; Fig. 2 is a sectional view thereof taken on line 2—2 of Fig. 1; Fig. 3 is a perspective view of the metallic reinforcements bent into the positions they would assume if built in a wall; Fig. 4 is a detail in horizontal section showing the method of binding the face and back walls together, and also means for connecting the partition studs to the wall; and Fig. 5 is a view similar to Fig. 4, except that the means for attaching the partition stud is slightly modified.

40 In the drawings the numeral 8 indicates a wall formed of brick. This wall consists of a face or outside wall 9 and a back wall 10 spaced apart to form an air chamber 11. These two walls are each of the thickness of

one brick and by means of my improved construction are capable of supporting an ordinary two-story building, which would ordinarily require the face wall to be constructed of the thickness of two bricks, thereby causing a considerable saving in the cost of erecting a building. The two walls are combined every seventh or other predetermined course by means of a combining course 12 connecting the walls together. This combining course consists of bricks diagonally disposed with relation to the wall so that one corner of each combining brick will be supported respectively, on the face wall and on the back wall. The corners 13, 13 of the adjacent opposite bricks are cut away at an angle to correspond to the angle of the corners of the combining bricks so as to provide proper spaces in each wall for said combining bricks. The combining bricks also serve to support and distribute the load of the floor joist 14 to both walls of the building. This result is accomplished by extending the floor joist through the back wall and fastening their ends to a wall plate 15 which is supported on the combining bricks. It will be seen that by this construction the joists are directly supported on the back walls and by means of the wall plates resting on the combining courses of brick, the load is also partly carried by the face wall.

The back wall has built therein a plurality of reinforcing tie rods 16, 16 which extend vertically against one face of the back wall for a certain distance usually seven courses, and are then bent at right angles horizontally as indicated by the numeral 17, and pass through the wall between two courses of brick to the other face of said wall and are bent at right angles vertically for a distance of seven courses, when they are again bent at right angles horizontally and pass back through the wall and the bends are repeated every seventh, or other predetermined course, from the bottom of the wall to the top, and each tie rod alternates, or is staggered, with the adjacent tie rod with relation to the position of the vertical portions of said rod being against the same side of the wall. The horizontal portions of the stay rods preferably, but not necessarily, pass through the wall between the same courses of brick, and being substantially of less thickness than the space between the courses of brick occupied by mortar it is not necessary to space the brick farther apart than ordi-

narily spaced, or to cut into the brick in order to accommodate these tie rods. Reinforcing band irons 18, 18 also disposed between the same courses of brick as the tie rods, are positioned centrally between the courses of brick and extend in a line parallel horizontally to the wall and are adapted to further reinforce and bind all parts of the wall together. These band irons are embedded and covered with the mortar or cement between the two courses so that they are protected from moisture and air and thereby prevented from corroding. The outer surface of the back wall, or that part within the air space, is entirely covered with cement or plaster 19, which also covers the vertical portions of the tie rods within the air space. The vertical portions of the tie rods on the inner surface of the back wall are also covered with a cement or plaster 20, 20, the plastic material covering these rods being of sufficient height and width to firmly adhere to the brick adjacent to the rods so as to form a moisture proof and air tight covering for said rods, and thereby prevent their corrosion.

In placing partitions within a building it is desirable to attach the studs forming part of the partitions and adjacent to the wall, firmly thereto, and to accomplish this result I provide staples 21, 21 constructed as clearly shown in Fig. 4 of the drawings. These staples, initially open, as indicated by dotted lines, are approximately U-shaped with bent and pointed ends 22, 22. In building a wall the U-shaped portion of the staples are placed between courses of brick and embedded in the mortar therebetween wherever it is desired to place a partition, and as soon as the mortar has hardened the staples will be securely held in position with their pointed ends projecting out from the wall in position to engage a stud 23 by hammering the points of the staples into the wood of the stud and thus firmly connect the stud to the wall. Two forms of this staple are shown in the drawings, one form adapted to engage a stud with its side to the wall, and the other form adapted to engage a stud with its edge to the wall.

In constructing a wall the tie rods may be previously bent and formed to the proper shape and the wall then built in connection therewith or straight rods may be used and bent to proper shape as the building of the wall progresses. Band iron may also be used in the face portion of the wall above and below the window sills and door frames if so desired.

A building constructed in accordance with this improved plan will require less brick and will therefore be less expensive to build than a like building constructed in the ordinary way. The walls are light and strong and the face wall and the back wall are firmly bound

together by means of the combining courses of brick. The walls being proportionately light, the foundation and all sub-structure may also be made lighter and the cost of the building further lessened. On account of the less number of brick being used the building may be quickly constructed.

What I claim as my invention is:

1. A building construction, comprising a wall formed of blocks of material, and tie rods positioned vertically against one face of the wall for a certain distance and then bent at right angles and passing through said wall and again bent at right angles and extending vertically against the face of the opposite side of the wall.

2. A building construction, comprising a wall formed of blocks of material, tie rods positioned vertically against one face of the wall for a certain distance and then bent at right angles thereto and passing through said wall are again bent at right angles vertically and extend against the face of the opposite side of the wall, and reinforcing horizontally disposed strips built in said wall and extending parallel to the face of the wall.

3. A building construction, comprising a wall formed of blocks of material, tie rods positioned vertically against one face of the wall for a certain distance and then bent at right angles horizontally thereto and passing through said wall are again bent at right angles vertically and extend against the face of the opposite side of the wall, reinforcing horizontally disposed strips built in said wall and extending parallel to the face of the wall, and a plastic material disposed against the faces of the wall and positioned to cover the vertical portions of the tie rods.

4. A building construction, comprising a wall formed of blocks of material spaced apart to form an air chamber, tie rods positioned vertically against one face of the inner portion of said wall for a certain distance and then bent at right angles horizontally thereto and passing through said wall are again bent at right angles vertically and extend against the face of the opposite side of the inner portion of the wall, and reinforcing horizontally disposed strips built in the inner portion of said wall and extending parallel to the face of the wall.

5. A building construction, comprising a wall formed of blocks of material spaced apart to form an air chamber, tie rods positioned vertically against one face of the inner portion of said wall for a certain distance and then bent at right angles horizontally thereto and passing through said wall are again bent at right angles vertically and extend against the face of the opposite side of the inner portion of the wall, reinforcing horizontally disposed strips built in the inner portion of said wall and extending parallel to the face of the wall.

allel to the face of the wall, and a plastic material disposed against both faces of the inner portion of the wall and positioned to cover the vertical portions of the tie rods.

5 6. A building construction, comprising a wall formed of blocks of material spaced apart to form an air chamber, diagonally positioned combining blocks connecting the two portions of the wall together at certain
10 courses, tie rods positioned vertically against one face of one portion of the wall for a certain distance and then bent at right angles horizontally thereto and passing through said portion of the wall are again bent at
15 right angles vertically and extend against the face of the opposite side of said portion of the wall, reinforcing horizontally disposed strips built in the same portion of the wall and extending parallel to the face of the
20 wall, and a plastic material disposed against both faces of one portion of the wall and positioned to cover the vertical portions of the tie rods.

7. A building construction, comprising a

25 wall formed of blocks of material spaced apart to form an air chamber, diagonally positioned combining blocks connecting the two portions of the wall together at certain courses, joists passing through one portion
30 of the wall and connected to a face plate supported by said combining blocks, tie rods positioned vertically against one face of one portion of the wall for a certain distance and then bent at right angles horizontally there-
35 to and passing through said portion of the wall are again bent at right angles vertically and extend against the face of the opposite side of said portion of the wall, and reinforcing horizontally disposed strips built in the
40 same portion of the wall and extending parallel to the face of the wall.

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

ARTHUR MAX HILBIG.

Witnesses:

C. H. KEENEY,
ANNA F. SCHMIDTBAUER.