

(No Model.)

W. M. HAZEL.
BUILDING BRICK.

No. 547,721.

Patented Oct. 8, 1895.

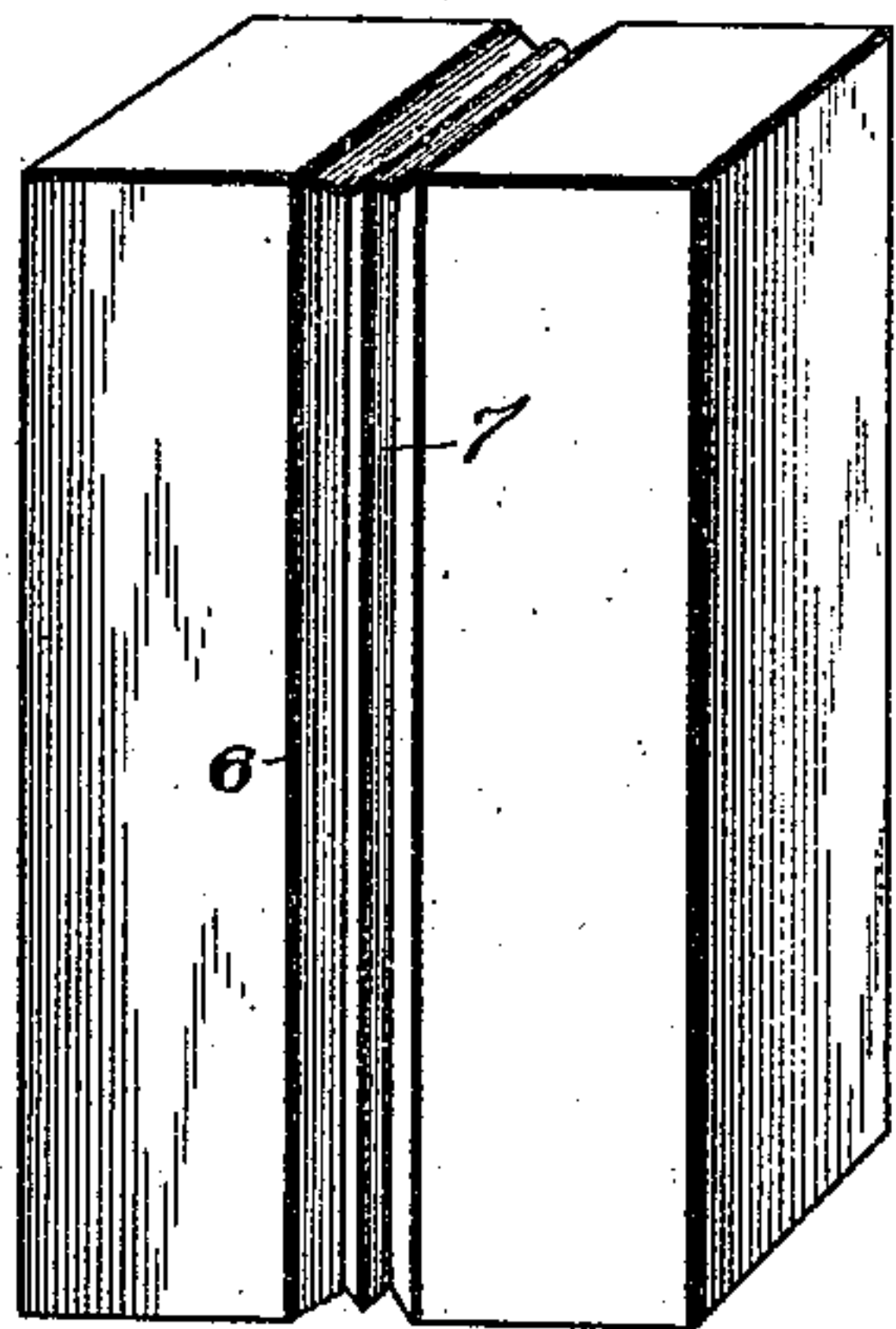


FIG. 1.

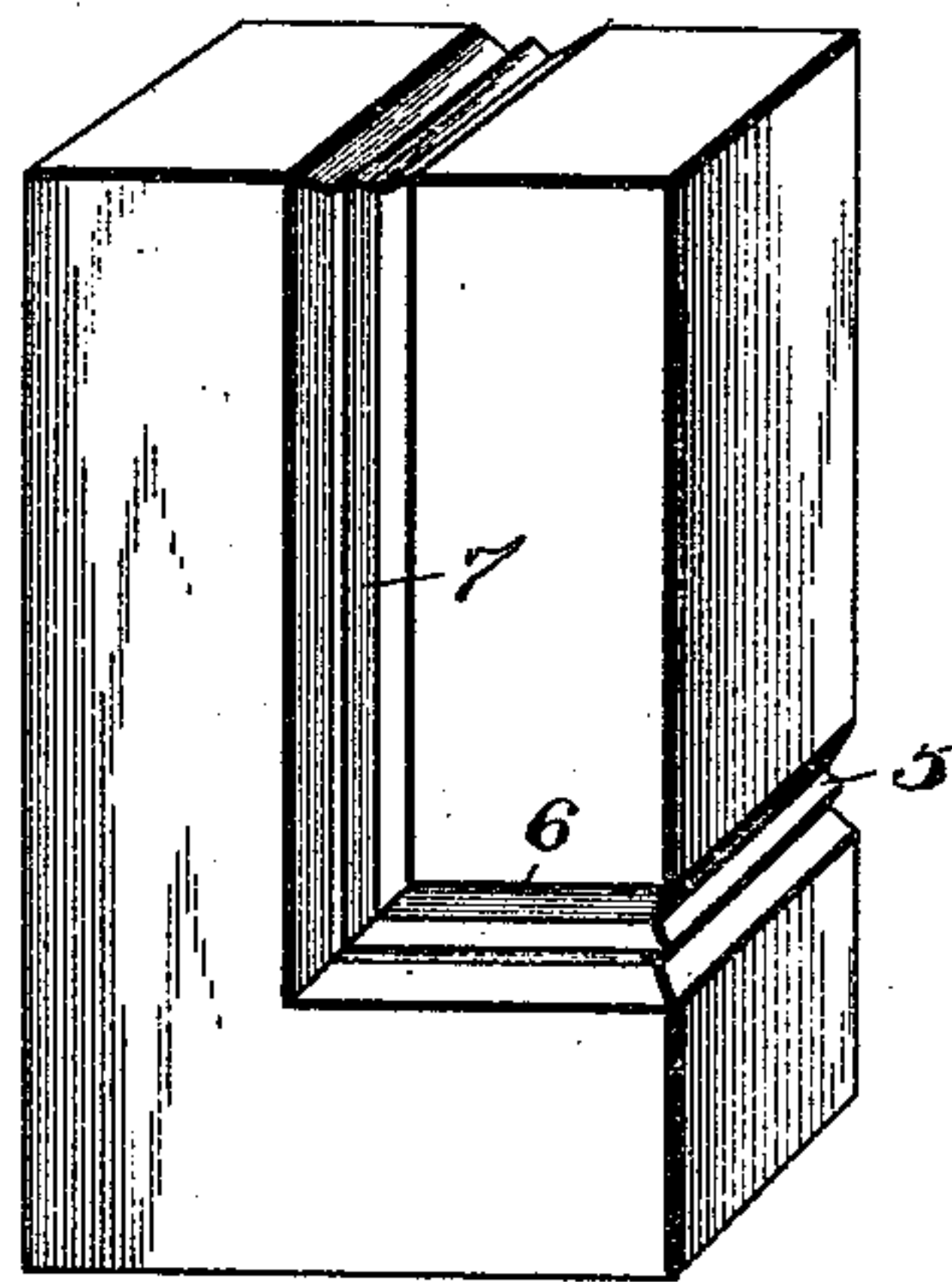


FIG. 2.

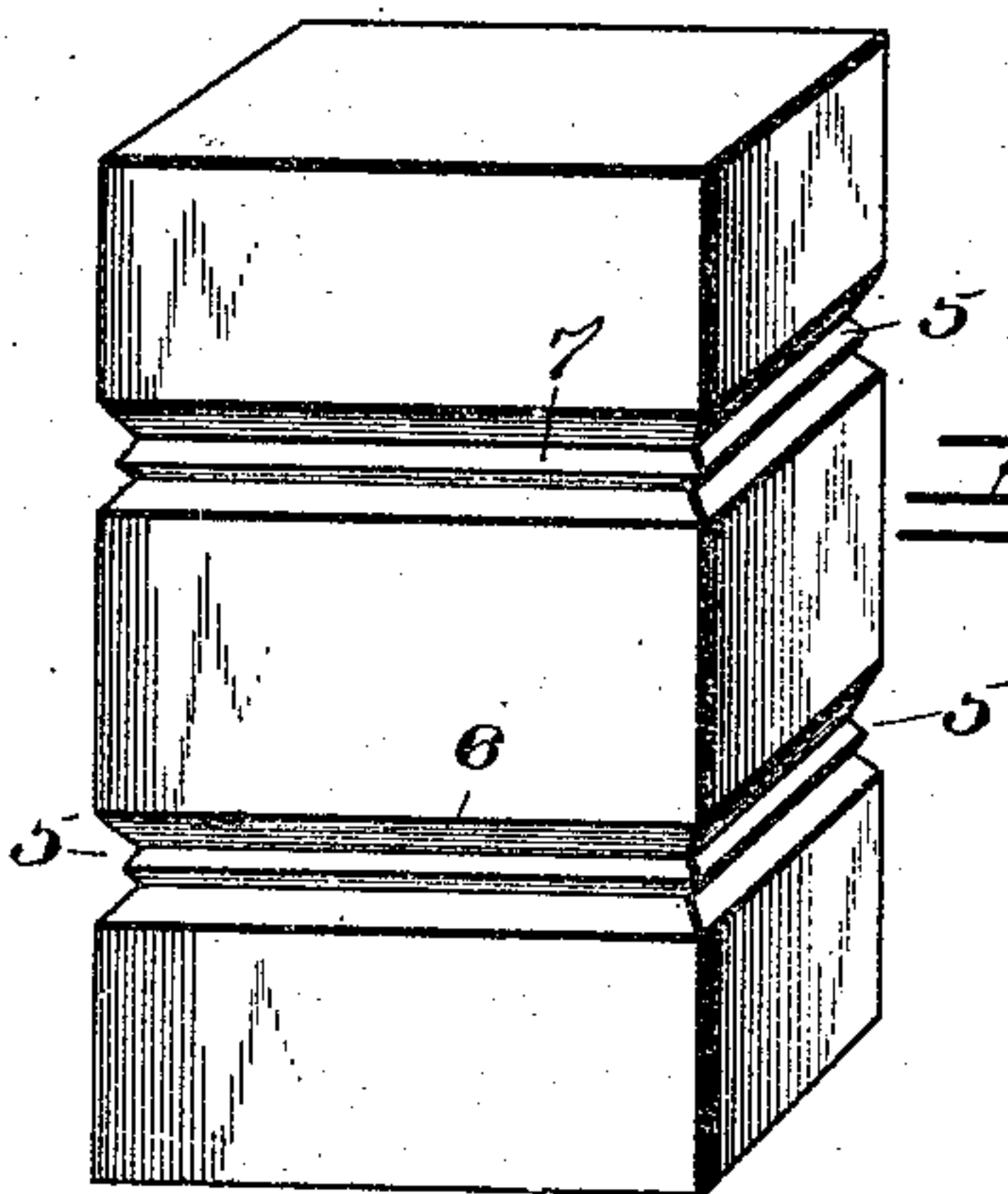


FIG. 3.

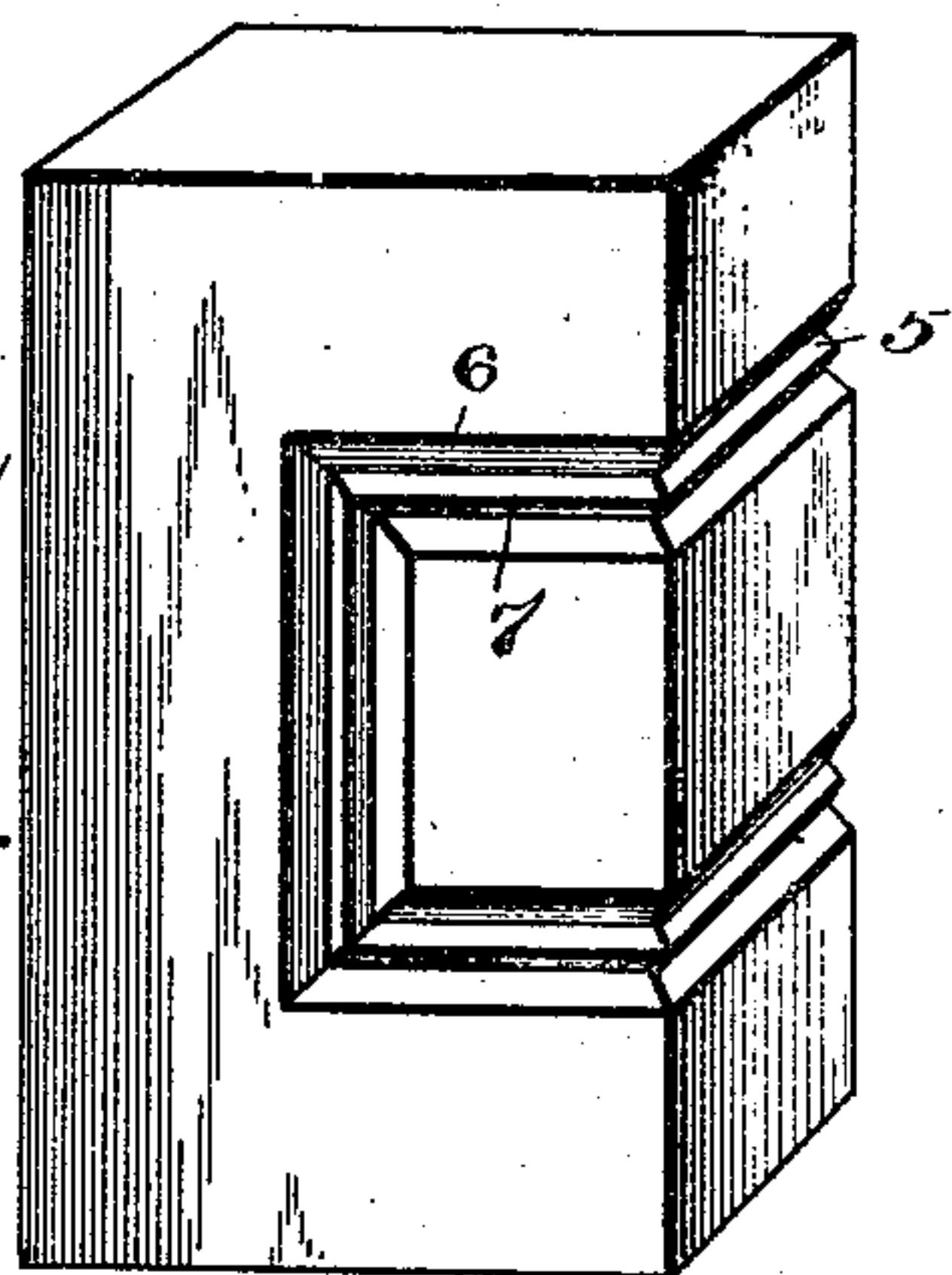


FIG. 4.

FIG. 5.

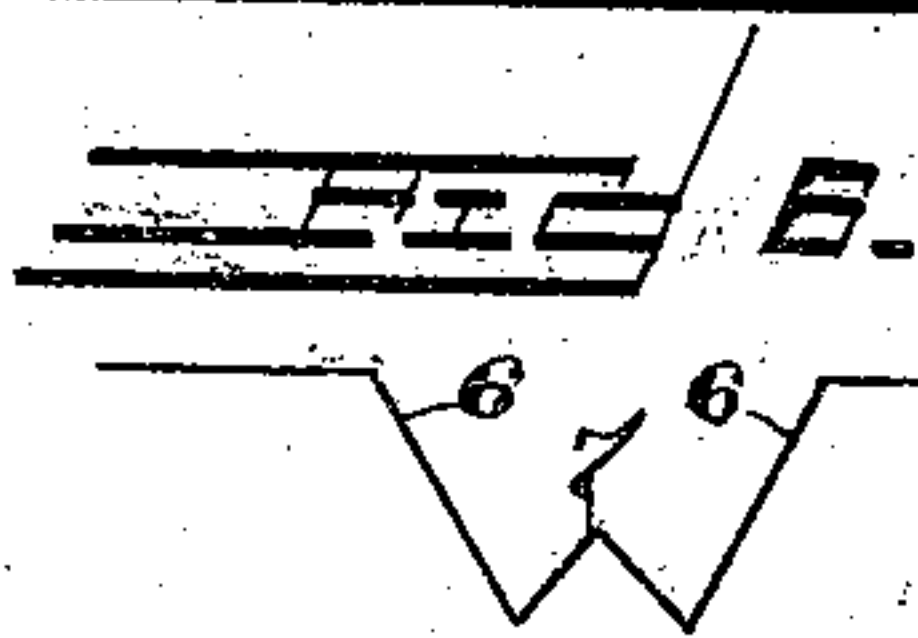
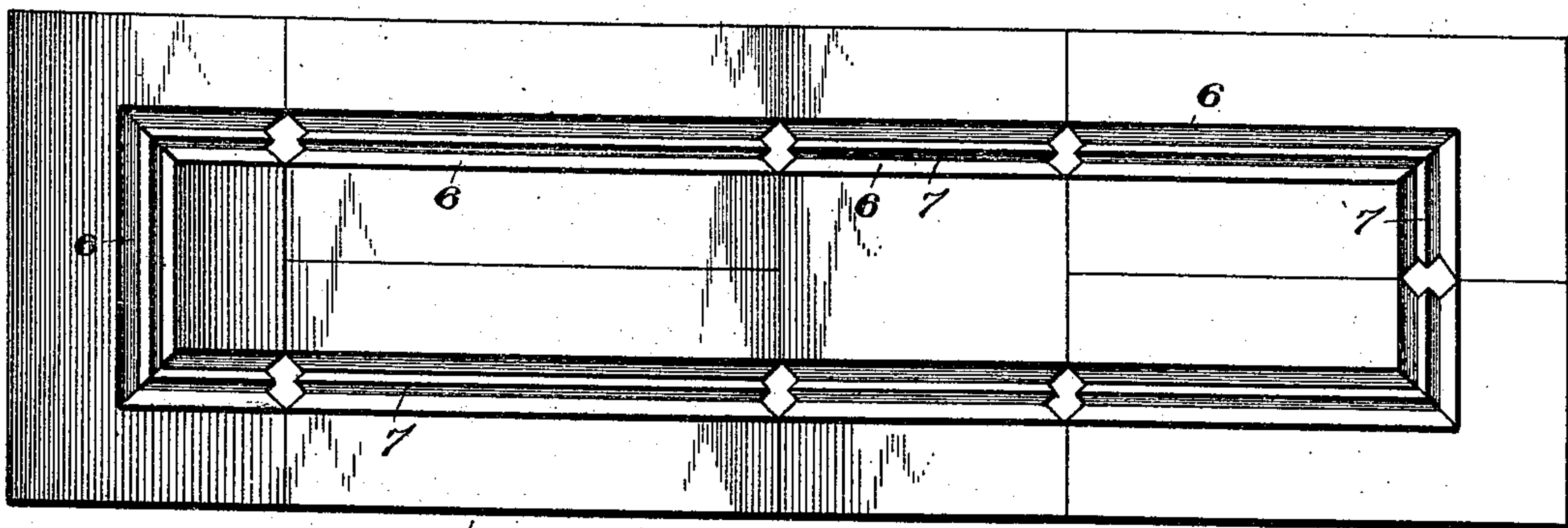


FIG. 7.



FIG. 8.

Witnesses
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BUILDING-BRICK.

SPECIFICATION forming part of Letters Patent No. 547,721, dated October 8, 1895.

Application filed May 28, 1895. Serial No. 550,998. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. HAZEL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Building-Brick, of which the following is a specification.

The object of this invention is to so construct building bricks or blocks of clay, stone, or similar material that when they are set in a high wall, arch, flue, reservoir, sewer, foundation, or built in a structural iron or wood frame each brick or block will be so keyed or tied to the other horizontally and vertically that there will be much greater strength, firmness, and durability insured than can be obtained by those now in common use.

The improvement consists of a building brick or block having a groove whose side walls incline outwardly and having the bottom or inner wall roughened, serrated, or corrugated, the side walls being higher than the inner or bottom wall. The outwardly-inclined walls, together with the roughened inner wall, form a strong keyed wall and admit of the brick or block being readily molded, because the mold will easily slide out of or draw from the article, as will be readily comprehended.

The invention also consists of the peculiar and novel arrangement of the grooves formed in the top, bottom, ends, and sides of four bricks or blocks in such a manner as to bring about the desired results in a simple and efficient manner, as will appear more fully from the following description and claims, and which are illustrated in the accompanying drawings, in which—

Figure 1 illustrates a brick or block having the groove centrally located and extending throughout its length, top, bottom, and ends. Fig. 2 illustrates a brick or block having the groove made in its end, a portion of its length, top, and bottom, and then turned at right angles to its length, top, and bottom and extending across the side near the opposite end. Fig. 3 illustrates a brick or block having two grooves extending entirely around its body in parallel relation and in proximate relation to the ends of the said brick or block. Fig. 4 illustrates a brick having the groove extending part of its length and turned at right an-

gles near each end and extending around one edge to the corresponding groove on the under side of the said brick or block. Fig. 5 shows the invention applied. Figs. 6, 7, and 8 show modified forms of the groove.

The vital features of the invention reside in the peculiar formation and arrangement of the grooves in the face of the bricks or blocks, whereby the cement or mortar joint formed between the meeting faces of bricks or blocks constructed in accordance with the present invention will form a key and hold the said bricks or blocks in vertical alignment and from any possible lateral or horizontal movement. This groove 5, as shown in Fig. 6, has its side walls 6 oppositely inclined and the inner or bottom wall 7 ribbed, the form of the rib in cross-section being of an inverted V. In Fig. 7 the bottom or inner wall 7 is formed with two ribs or flutes, which are of similar construction to the single rib shown in Fig. 6. In Fig. 8 the bottom or inner wall 7 is roughened in any suitable and desired manner, and in practice will be provided with any suitable inscription, such as the name of the maker or the word "patented," the lettering being so formed as to attain a broken or roughened surface.

Fig. 1 shows what may be designated a "stretcher," and the groove 5 therein extends entirely around the body in a longitudinal direction. The brick or block shown in Fig. 2 is a corner-stretcher, and the groove 5 formed therein extends across one end a distance lengthwise thereof on the top and the bottom, thence laterally and across one side in proximate relation to the ungrooved end.

In Fig. 3 is shown an intermediate bond having two grooves 5 extending transversely around the body in parallel relation and at an equal distance from the ends thereof, so as to match with the longitudinal groove of an intermediate or corner stretcher.

Fig. 4 shows a corner or end bond, and the groove 5, formed therein, extends for a short distance of the length of the brick, thence laterally at each end and across a side of the said brick, and joins with the groove formed on the bottom side of the brick.

The grooves are so formed and related in the four sets of bricks or blocks that when

the latter are combined and laid in a wall, flue, foundation, arch, or by the side of or over the windows, doors, or other openings in the wall they will be so keyed or tied to each other as to make a much stronger structure than is possible with the bricks in common use.

It is a well-known fact among builders that masons, in constructing brick walls, in order to have them secure, after having run up the stretchers or front layers of bricks end to end, when five or seven rows are thus laid one upon the other, are then compelled to flush up the line-course level and put in a tie or header by laying bricks lengthwise across the wall its entire length as a bond to hold the wall together, or to hold it by a Flemish bond, which is every other brick laid crosswise the wall in every five or seven rows. By the present invention fewer bonds are needed, and in some cases none not more frequently than every ten or twelve rows even in high walls, because in laying the bricks with the grooves in them each brick laid is tied or keyed to the other top, bottom, and ends, as most clearly shown in Fig. 5, thereby forming a completely keyed and tied wall, exceptionally strong and durable. When the bricks are laid with mortar or cement, the latter hardens in the grooves and completely keys or wedges each course upon the other, so that the possibility of the walls cracking, separating, or bulging is reduced to a minimum. It will be observed that a continuous key is formed by the mortar or cement, so that each brick when in its position in the wall is completely and securely keyed together, both vertically and horizontally, in each layer.

When the invention is applied to the construction of arches or for finishing over windows and doors, it will be seen that each brick will, by the key made by the mortar or cement resting in the groove, in turning the arch or making the finish, hang upon the said key, thereby preventing the possibility of one brick or block slipping past the other out of its proper position when subjected to great strain, thereby insuring a firm and strong arch and finish. When common bricks form a foundation in damp places, the dampness will ooze through the wall at the seams, particularly where there is imperfect masonry in joining. By the present invention this cannot occur, because the key, of mortar or cement, resting in the groove across all seams, prevents the water and dampness from passing through, thereby rendering the wall dry.

A wall or flue constructed in accordance with the principles of the present invention will be fireproof, in that the key extending across the joint will preclude the possibility of sparks or fire passing or working their way through the wall between the joints.

This invention is particularly adapted for constructing high buildings with structural iron frames, since the wall will not settle,

crack, bulge, or press away from the ironwork, which results cannot be attained by the ordinary smooth-faced brick. In constructing that class of houses having an interior framework and a casing or veneering of brick the present invention fills a long-felt want, because the wall is held in an upright position securely in place and by crossing all seams, both vertically and horizontally, the water is prevented from beating through during storms, thereby insuring a dry wall and house.

The building brick or block may be given any required form according to the shape and outline of the wall, and it may be curved on one or both sides, made angular, or provided in polygonal outline for use in bay-windows or in any other brickwork that may have a carved edge, or it may be applied to an ornamental and enameled brick or block without departing from the nature of the invention. Therefore it is to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Another important use for which the invention is designed is in constructing the wall and bottom of reservoirs and sewers, where the wall so often leaks and breaks out when made of smooth-face brick or stone. The device by crossing all seams with the key of mortar or cement will entirely prevent the leaking and breaking of wall or sinking of bottom, because each brick, being keyed and tied to the other, guarantees so much more strength and resistance to the structure, thus making it a valuable addition to this class of work.

Having thus described the invention, what is claimed as new is—

1. A building brick or block having a groove in its face whose side walls incline outwardly in opposite directions, and whose inner wall is ribbed, the side walls being higher than the walls of the rib and forming therewith a groove whose outline in cross section approximates the letter **W**, substantially as set forth.

2. A building brick or block having a centrally-disposed groove extending lengthwise entirely around its body, the sides of the groove being oppositely inclined and the inner wall roughened or ribbed, substantially as set forth.

3. A wall formed of building bricks or blocks comprising stretchers having a groove extending lengthwise around their bodies, corner stretchers having a groove arranged in a portion of their length and laterally on opposite sides, and the said groove extending across one end on one side, intermediate bonds having grooves extending transversely around their bodies, and corner bonds having a groove extending lengthwise thereof, thence laterally at each end and across one side, the grooves of the several bricks or blocks hav-

ing their side walls oppositely inclined and
the inner wall ribbed or corrugated, and all
the grooves registering so that when the
bricks or blocks are properly positioned keys
5 will be formed and extend across the joints,
substantially as described for the purpose set
forth.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
presence of two witnesses.

WILLIAM M. HAZEL.

Witnesses:

JOHN F. TURNER,
GEO. B. ABEL.