2 Sheets—Sheet 1.

C. W. FROST.

Building Block.

No. 228,052. Patented May 25, 1880.

Fig. 1

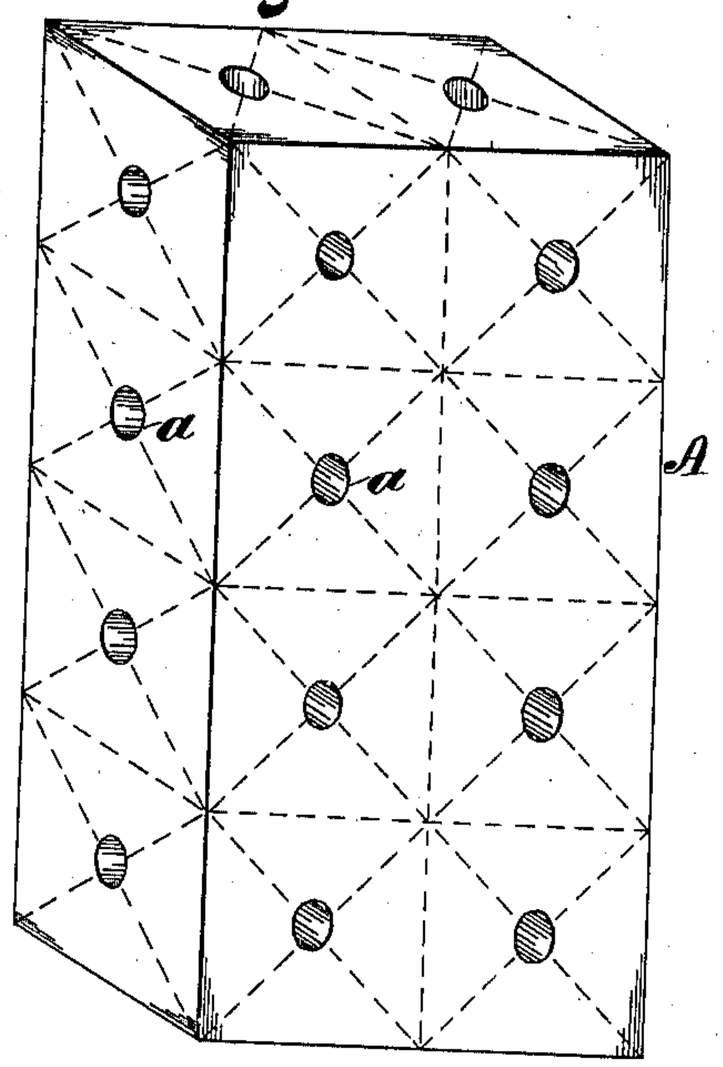
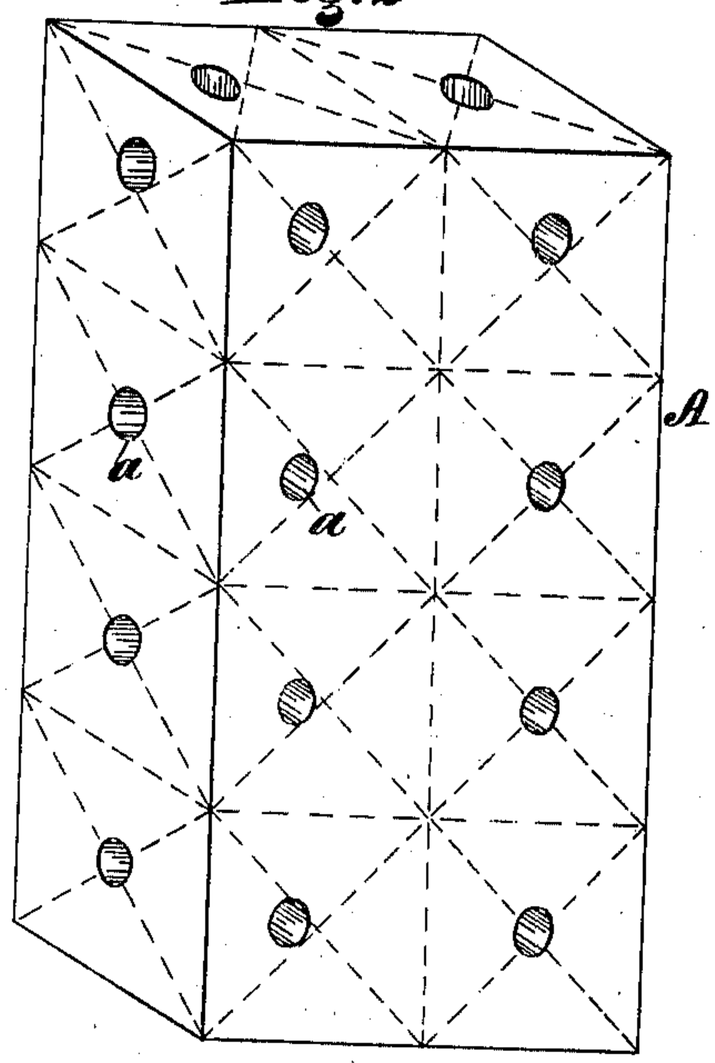


Fig. 2



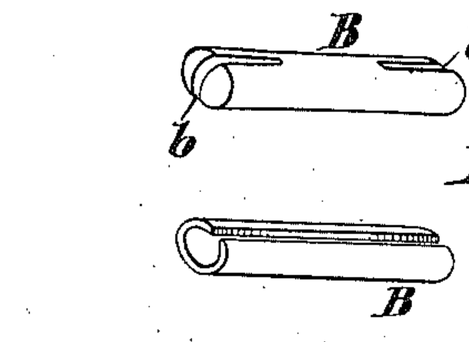


Fig. 4

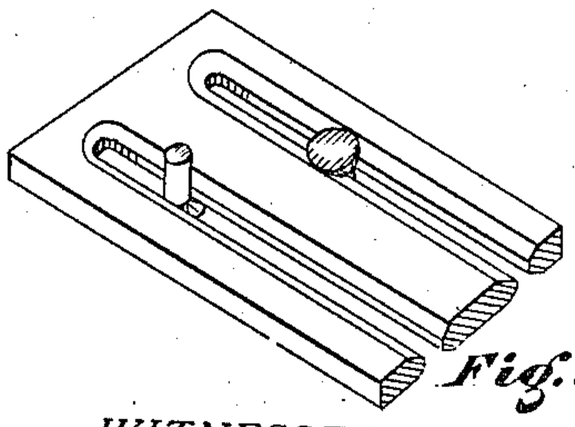


Fig. 5

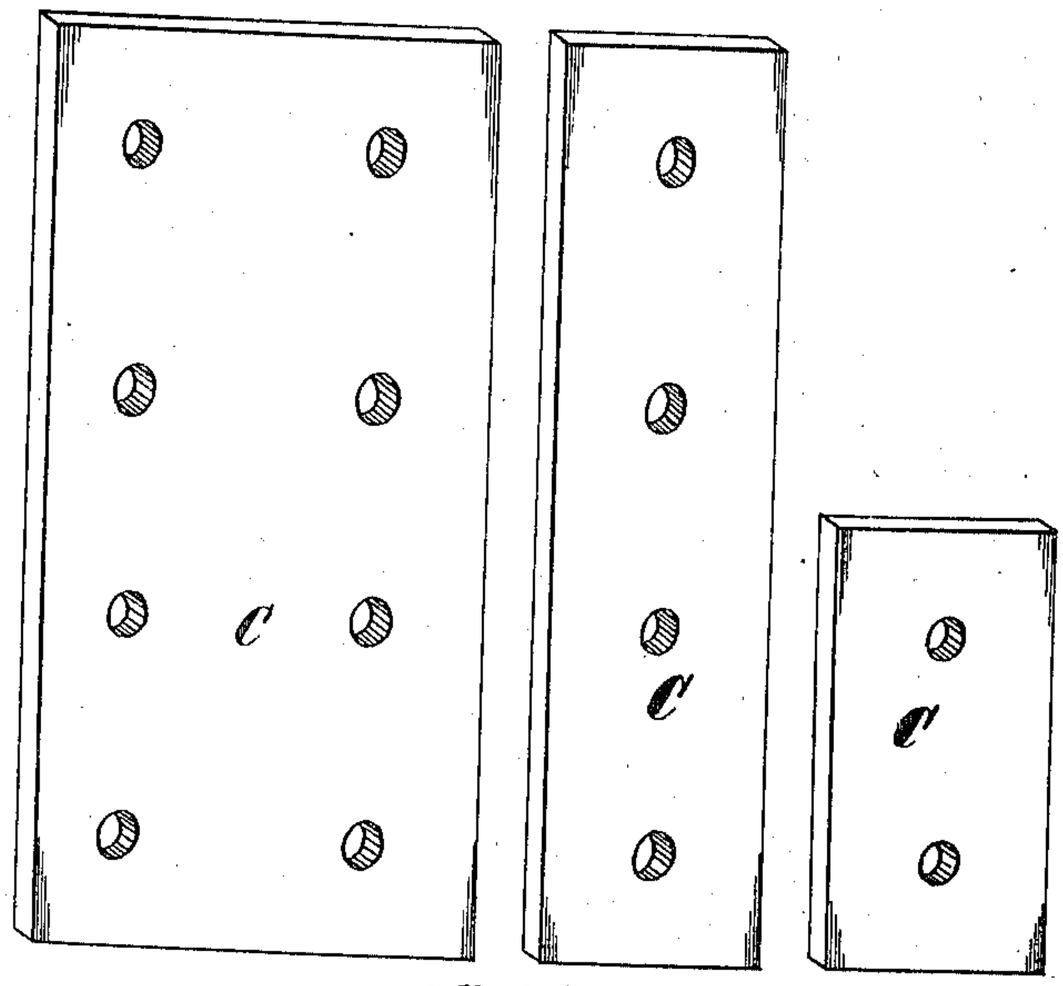


Fig. 3

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2 Sheets—Sheet 2.

C. W. FROST.
Building Block.

No. 228,052. Patented May 25, 1880.

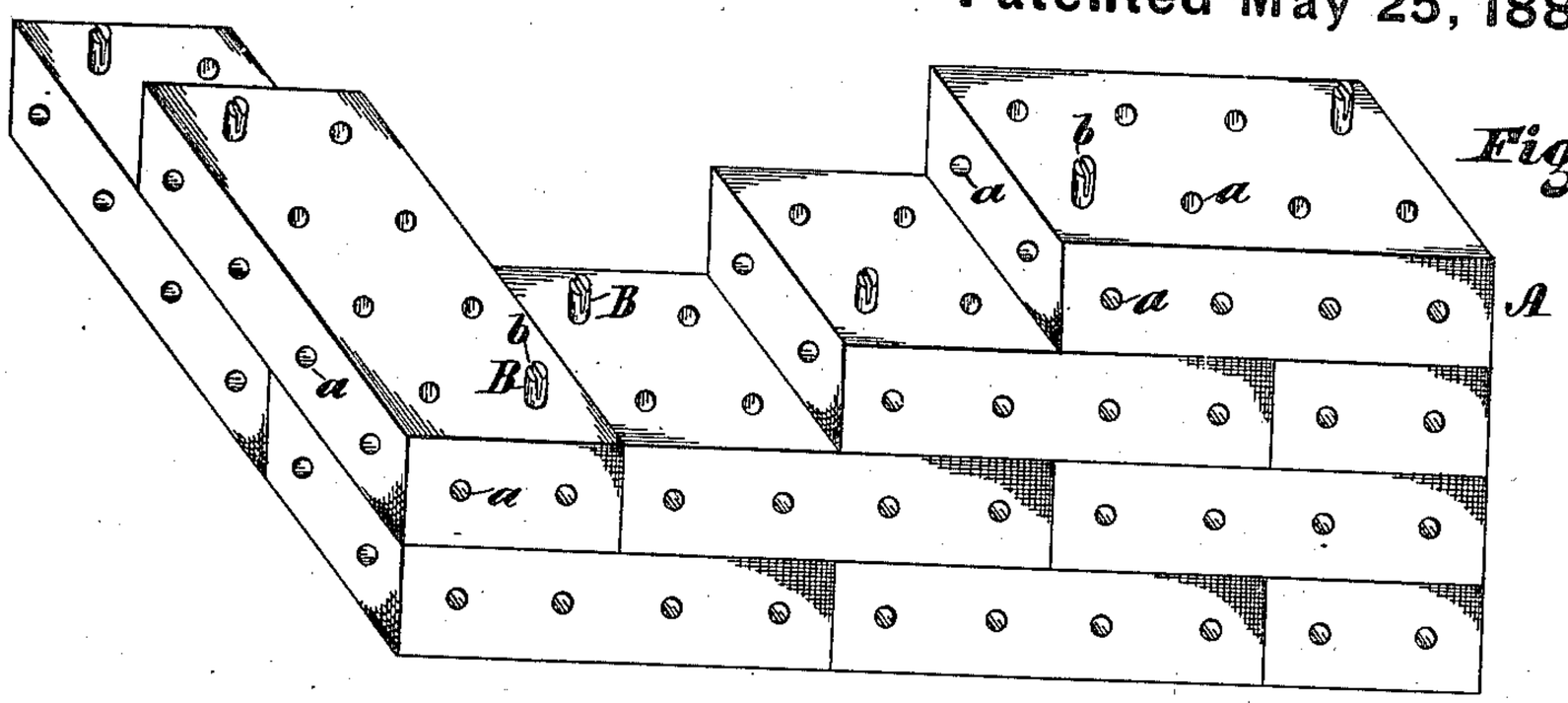

Fig. 6

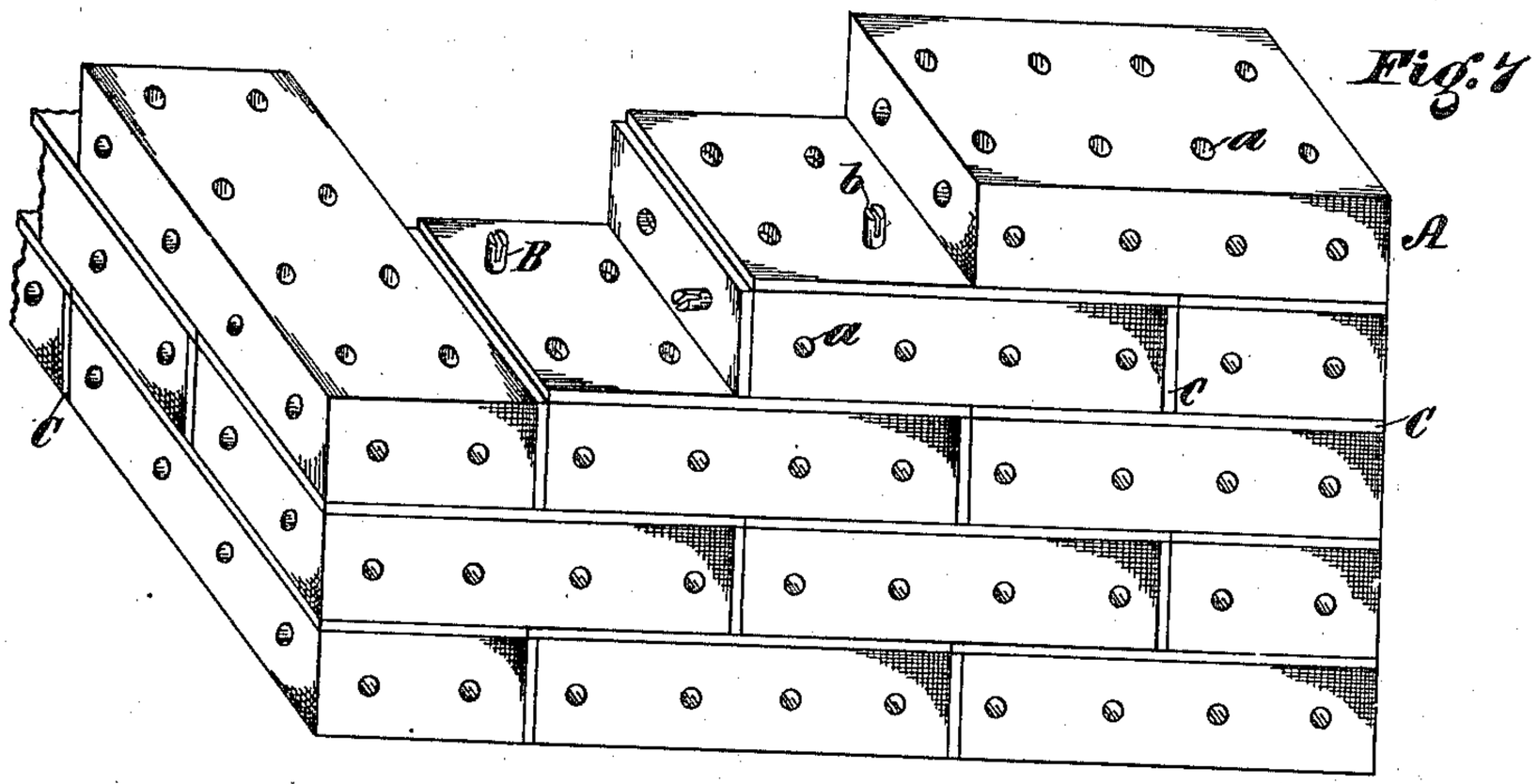

Fig. 7

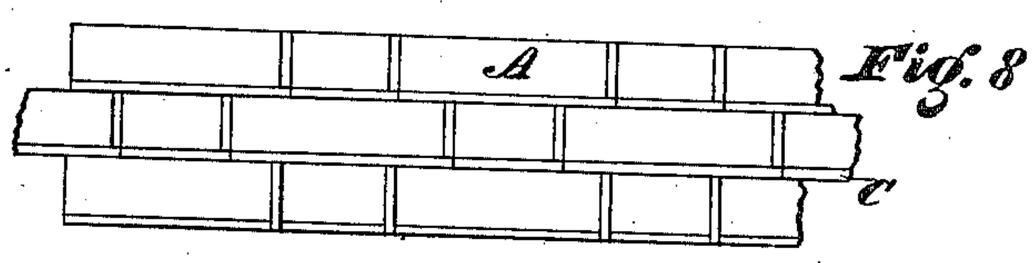

Fig. 8

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UNITED STATES PATENT OFFICE.

CHARLES W. FROST, OF PHILADELPHIA, PENNSYLVANIA.

BUILDING-BLOCK.

SPECIFICATION forming part of Letters Patent No. 228,052, dated May 25, 1880.

Application filed October 16, 1879.

To all whom it may concern:

Be it known that I, CHARLES W. FROST, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Building-Blocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a perspective of a building-block to be used without mortar-boards; Fig. 2, a like view of a block to be used with the mortar-boards. Fig. 3 shows perspectives of the mortar-boards. Fig. 4 represents perspectives of two kinds of connecting pins or pegs. Fig. 5 is a detail view of modification of mortar-board and connecting pins or pegs. Figs. 6 and 7 represent perspectives of walls built with my improved blocks, respectively without and with mortar-boards. Fig. 8 is an elevation of a wall and mortar-boards.

My invention has for its object to provide means whereby building-blocks of the same outlines and substantially the same relative proportions as ordinary building-bricks may be securely fastened together by an unadhesive substance or material which will permit the ready detachment of said blocks for reuse or reunion in changed or modified combinations.

My invention has for its further object to provide means whereby structures composed of such building-blocks may show divisions between the individual blocks and their courses, corresponding to mortar as appearing and used in ordinary brick-work, whereby such structures will be rendered more natural in appearance and design, while at the same time the proportions and measurements resulting from the use of mortar in ordinary brick-work will be duly preserved.

My invention has for its further object to construct building-blocks capable of being joined to and detached from each other by means of a detachable unadhesive substance or material, the angles and edges of said blocks being preserved solid or unbroken.

My invention accordingly consists, first, of a block, brick, or parallelopipedon having perforations, openings, sockets, or passages in its various sides, ends, and faces for the reception of pins, whereby two or more of such blocks or bricks may be fastened together; second, in the provision of plates having openings corresponding to those in the blocks and adapted for the reception of pins or pegs, whereby said plates may be fastened between said blocks as a substitute for mortar; third, in the peculiar construction of the fastening-pins, which consist of pegs of any suitable form and material, slitted at either end longitudinally, so as to permit their ready insertion in the openings in the blocks and dividing boards or plates, and thereby effectually holding the same together.

For convenience of description I shall designate the parallelopipedons as "blocks" and the dividing-plates as "mortar-boards."

Referring to the accompanying drawings, A designates one of the blocks, having, by preference, the proportions of being in length twice its width and in thickness one-half of such width, these being about the proportions of ordinary building-bricks. All of the sides and faces of said block have perforations, openings, or sockets *a a*, said openings (when the mortar-boards are not employed) being equidistant from each other on each face, end, and side, so that when two or more of said blocks are brought truly and evenly together the openings in each will be directly opposed one to the other, so as to permit a pin or peg to be passed into both.

B represents the pins or pegs, which may be of any appropriate form in cross-section, and which have slit ends *b b*, whereby they may be compressed to enter the openings *a a*, said ends expanding after entering said openings, thereby rendering themselves secure.

To build a structure with these blocks and pins, the former are laid side by side and in courses, as ordinary building-bricks are, the fastening-pins being inserted in one of the bricks before bringing two of them together. Should the mortar boards or plates C be employed the pins or pegs may be first therein inserted, and said boards or plates then fastened in position by being placed between two

of the blocks, either horizontally or vertically, and said blocks then pushed toward or down on said plates or boards.

When the mortar-boards are used it is obvious that the distances between the pin-openings in the blocks must not be uniform, but must be so arranged or laid out that the pins which fasten said blocks together will pass in a straight line from one of said blocks to the others, to which it is fastened. This arrangement is effected by shifting two perforations at one end of the block and the perforations upon one side of the upper and under surface and ends to a distance equal to the thickness of the mortar-board used—that is, if mortar-boards one-sixteenth of an inch thick are used then two perforations at one end of the blocks will be shifted one-sixteenth nearer the edge, and so on in equal proportions. In lieu of the plain perforations, recesses or sockets of a different character may be made; but whatever be the kind of pin-openings formed in the blocks, they must be such as will not destroy the solid angles and edges of such blocks. The perforations in the wide surfaces of the blocks should pass completely through, but those in the side may extend only partially through.

In lieu of the pins having slitted ends, as already suggested, said pins may consist of tubes or hollow cylinders slit lengthwise their entire extent, and said pegs may be integral with and permanently attached to or fastened in the strips, plates, or boards which represent mortar. So, in lieu of perforations in the mortar-blocks, a slot running longitudinally to within a short distance of either end and countersunk on both sides, may be used in connection with a peg of half the length of those used for perforated mortar-blocks and with a head to correspond with the counter-sink.

By the use of a mortar-board and peg of this sort the necessity of using blocks with perforations of different distances to allow for the mortar-boards, as above described, is obviated, as the pegs will slide in the slots to match holes above or below the slots, as may be required.

From the foregoing it appears there will be two holes at right angles to each other in each cubic section of the block. Where the mortar-boards are not employed these holes will be directly through the center of their respective cubes. Where such boards are employed some of the holes, as already suggested, will be slightly out of the center of their cubes.

What I claim as my invention is—

1. A building-block consisting of a parallelopipedon having openings, perforations, or sockets for the reception of fastening-pins in all its various sides, ends, and faces, substantially as shown and described, said openings or sockets leaving all the solid edges and angles of the block intact, and there being two holes at right angles to each other in each cubic section of the block, substantially as shown and described.

2. In a system of building-blocks, dividing plates, boards, or strips having openings or projections, substantially as specified, whereby they may be fastened between the blocks in similitude of mortar, substantially as shown and described.

3. The combination, with building-blocks in the form of parallelopipedons, of dividing plates or strips to represent mortar and pegs or pins for fastening the parts together, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of October, 1879.

CHAS. W. FROST.

Witnesses:
ANGELO T. FREIDLEY,
WM. BROOKE RAWLE.