W. A. KURMAN.

WALL FORMING DEVICE.

APPLICATION FILED MAY 25, 1909.

954,636. Patented Apr. 12, 1910.

Fig. 1.

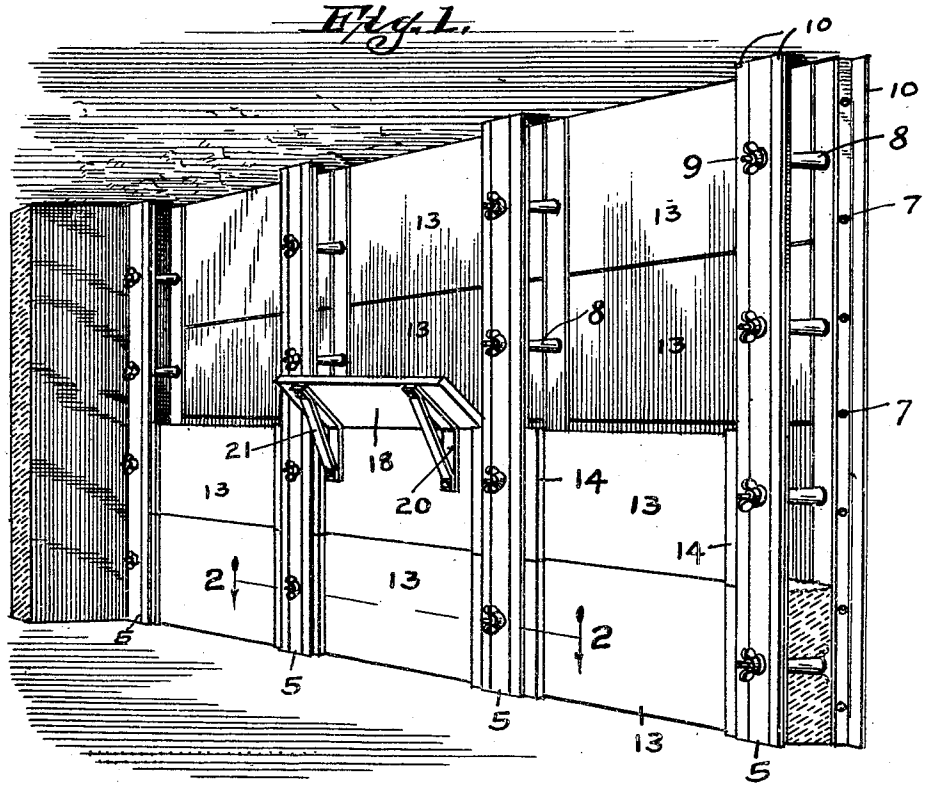

Fig. 2.

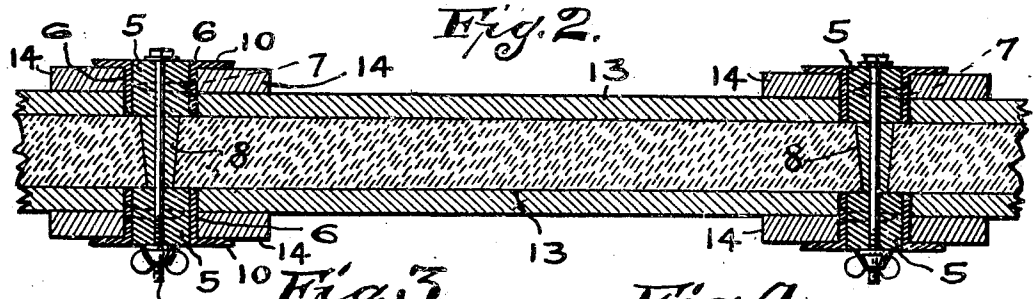

Fig. 3

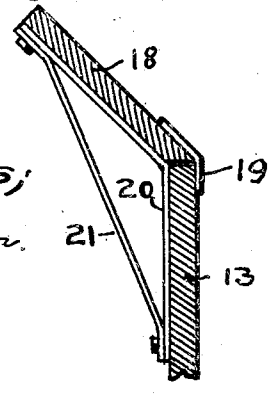

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM A. KURMAN, OF INDIANAPOLIS, INDIANA.

WALL-FORMING DEVICE.

954,636. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed May 25, 1909. Serial No. 498,345.

To all whom it may concern:

Be it known that I, WILLIAM A. KURMAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Wall-Forming Devices, of which the following is a specification.

This invention relates to improvements in molds or forms for shaping the walls of buildings which are made out of a material of a plastic nature at the time of the formation of the wall and which becomes hard and firm when dry.

The invention is applicable to use with various compositions of concrete, plaster of paris and the like, and may be used for all manner of walls but is particularly adapted for the construction of inside walls or partitions of buildings.

The object of the invention is to provide a simple and inexpensive wall-forming device which will be easy to assemble for use, and afterward to remove, and which will be capable of forming a straight vertical wall of uniform thickness.

I accomplish the object of the invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a view in perspective of my invention in operative position, showing a wall under process of construction. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a vertical section of the oblique board for directing the plastic material into the space between the sides of the mold, and Fig. 4 is a detail in perspective view of one of the spacers which determines the thickness of the wall.

Like characters of reference indicate like parts throughout the several views of the drawing.

My improved form is retained in a desired position by means of a series of vertical supports 5, which for ordinary purposes will be of wood two inches square in cross section, reinforced on two opposite sides by angle-bars 6 extending the full length of said wooden piece and secured thereto by screws or bolts 7. The vertical supports thus formed are assembled in pairs, the members of each pair being separated from each other a distance equal to the thickness of the proposed wall. This distance and thickness of wall is determined by means of spacing sleeves 8. The sleeves are longitudinally perforated to allow the passage therethrough of a bolt 9 and are made tapering to make them easy of removal by blows delivered against their small ends after the forms are taken away. The bolt 9 passes through suitable holes in each of the supports 5, and also through one of said spacing sleeves, in the manner clearly shown in Fig. 2, and the two vertical supports thus connected are drawn firmly against the ends of the sleeve by nuts on the threaded ends of bolts 9. The nuts will preferably have wings as shown, for easy manipulation. One of the flanges 10 of the angle-bars 6 will be extended laterally and outwardly of the wooden support 5, in alinement with the outer face of said support.

The vertical supports, bolted together in pairs as above described, are assembled in a series arranged a uniform distance apart, along the line of the proposed wall, and will be temporarily fastened to the ceiling and floor of the building where the wall is to be constructed. The flanges 10 of the adjacent pairs of vertical supports will provide means for limiting the outward movement of a series of molding boards 13 which are assembled edgewise on each other inside of and against said flanges. The distance between two adjacent pairs of vertical supports 5 is equal to the length of each molding board 13. Each molding board 13 has a batten 14 at each of its ends of such thickness that the combined thickness of the board and batten equals the distance from the inner face of the vertical support 5 to the inner face of the flange 10, so that when the molding board 13 is in operative position its inner face will be in alinement with the inner face of the vertical support 5 whereby a continuous unbroken surface will be presented by the combined molding boards and vertical supports. For convenience in handling, the molding boards 13 will preferably be made in sections of from two to three feet in width, and as many of these will be used as may be necessary to secure the desired height of mold for the proposed wall.

In practice the first operation will be to set the pairs of vertical supports in proper alinement and at proper distances from each other; then the molding boards 13 for one side of the wall will be placed in position all of the way up. The lower tier of molding boards for the opposite side of the wall will next be placed and the composition of matter

for the wall will then be deposited between the two sets of molding boards to the height of the tier on the open side of the form. The second tier of molding boards is then placed in position and additional wall material in plastic form is added, and this operation is repeated in succession until the entire wall is made, going from the bottom up. By adding the last molding boards, a tier at a time, ample opportunity is afforded for introducing the wall material over the tops of each tier as a tier is placed.

To facilitate the introduction of the wall-forming material between the two vertical rows of molding boards I provide an upwardly and outwardly oblique board 18 having an inside hook 19 adapted to engage the top of a molding board 13. The oblique board 18 will have a bar 20 to bear against the outer side of the molding board 13 and a diagonal brace 21 extending from the bottom of bar 20 to the upper edge of the board 18. The wall-forming material deposited upon the board 18 will slide down the latter by gravity and will be directed by the oblique board into the space between the vertical walls of the mold. This oblique board 18, by the above construction, is readily removable from its supporting molding board 13 whereby it may be changed from one place to another as the exigencies of the work require.

It will be understood that I do not limit my invention to use with any particular composition of material or to the formation of walls for any particular purpose, and while I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention what I claim as new and wish to secure by Letters Patent of the United States, is—

1. In a wall-forming device, a plurality of vertical supports in two series or rows, tapering sleeves between the vertical supports of the two rows to separate them a distance equal to the thickness of the proposed wall, bolts passing through the vertical supports and said sleeves to unite said parts, a pair of angle bars extending longitudinally one on each side of said vertical supports, each angle bar having one flange bolted to the adjacent support and the other flange extending laterally and outwardly of its vertical support in alinement with the outer edge of the latter, and molding boards closing the spaces between the vertical supports of each row and held against outward displacement by said laterally disposed flanges of said angle bars.

2. In a wall-forming device, a plurality of vertical supports in two series or rows, conical spacing sleeves between opposite vertical supports of the two rows, bolts passing through said vertical supports and sleeves, said bolts having threaded ends and nuts on said ends, a pair of angle bars extending longitudinally one on each side of each vertical support, one of the flanges of each angle bar being secured to its support and the opposite flange of said angle bar being disposed laterally and outwardly of its vertical support in alinement with the outer edge of the latter, molding boards closing the spaces between the vertical supports of each row and held against outward displacement by the laterally projected flanges of said angle bars, said molding boards being in a plurality of horizontally divided sections.

3. In a wall-forming device, a plurality of vertical supports in two series or rows, conical spacing sleeves between opposite vertical supports of the two rows, bolts passing through said vertical support and sleeves, said bolts having threaded ends and nuts on said ends, a pair of angle bars extending longitudinally one on each side of said vertical support, one of the flanges of each angle bar being secured to its support and the opposite flange of said angle bar being disposed laterally and outwardly of its vertical support in alinement with the outer edge of the latter, molding boards closing the spaces between the vertical supports of each row and held against outward displacement by the laterally projected flanges of said angle bars, said molding boards being in a plurality of horizontally divided sections, the molding boards of one side being placed in horizontal tiers only partially filling the vertical space on that side, said tiers being added as the construction of the wall progresses in height and an oblique filling board and means for removably securing said board to the top edge of an uppermost one of said molding boards.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this, 20th day of May A. D. one thousand nine hundred and nine.

WILLIAM A. KURMAN. [L. S.]

Witnesses:

J. A. MINTURN,

F. W. WOERNER.