

ADJUSTABLE CLAMP EMPLOYED IN STRUCTURAL CONCRETE CONSTRUCTION.

Patented Feb. 21, 1911.

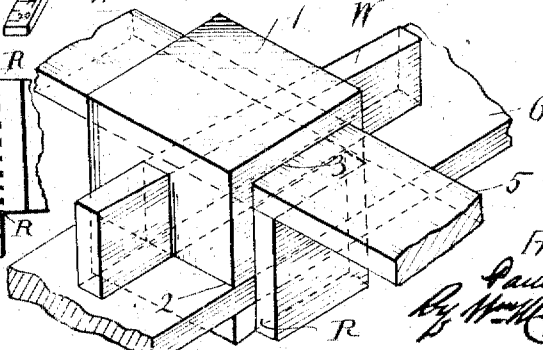
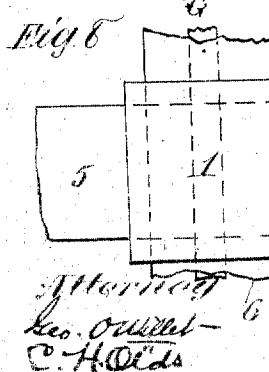
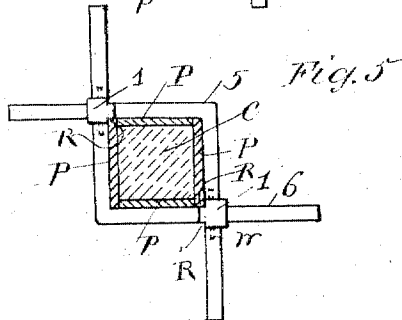
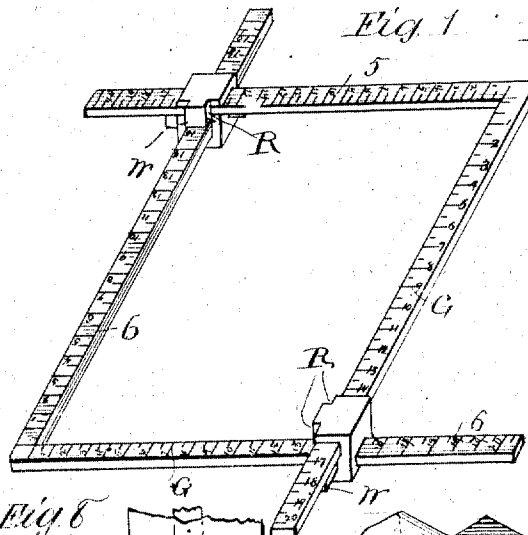
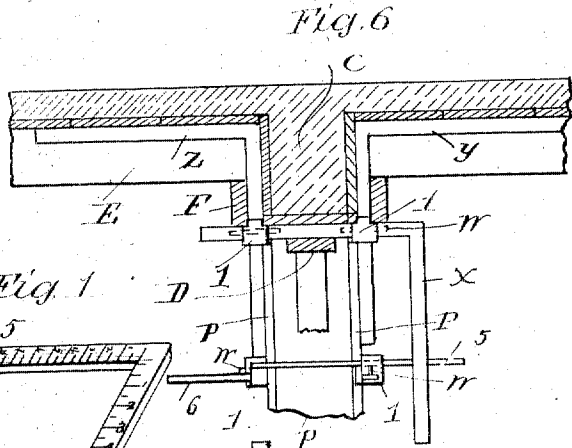
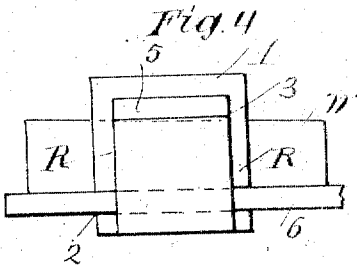
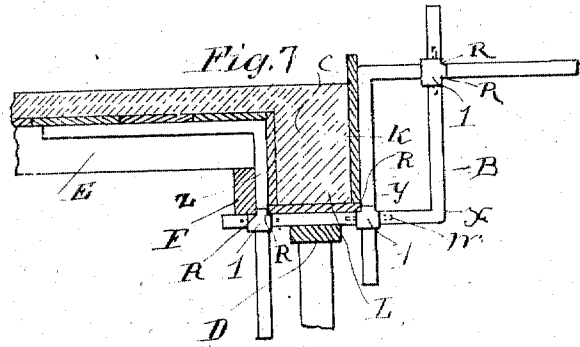


Fig. 2

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE CLAMP EMPLOYED IN STRUCTURAL-CONCRETE CONSTRUCTION.

985,086.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed December 18, 1908. Serial No. 468,247.

To all whom it may concern:

Be it known that I, PAUL WILKES, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Adjustable Clamps Employed in Structural-Concrete Construction, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The objects of the invention are to provide adjustable clamping and holding devices adapted to retain in position the planks which are employed in inclosing the girders and columns of concrete construction used in buildings and other structures and also adapted to inclose concrete work employed in fire proofing.

The invention comprises metal clamping blocks having openings transversely at right angles thereto, into which angular arms can be secured to engage the planks, on all necessary sides to support and retain them in position until the concrete has thoroughly set in its place, when by loosening the clamps the angular arms can be readily withdrawn.

The invention further comprises the combination and arrangement of parts and construction of details as hereinafter described, shown in the accompanying drawings and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the clamping device arranged in a rectangular inclosure; Fig. 2 is a perspective view of one of the clamping blocks; Fig. 3 is a side elevation of one of the blocks; Fig. 4 is a view from another side of the same; Fig. 5 is a horizontal section through a column showing the clamping device thereon; Fig. 6 is a transverse section through a ceiling the girder showing the position and arrangement of the clamping blocks, and supporting arms, and also shows a column inclosed in planks and a clamping device horizontally secured thereto; Fig. 7 shows the position of the clamping devices arranged to support an outer girder and also adapted to prevent the exposed front of the girder from bulging out. Fig. 8 is a plan view of one of the blocks from below.

In these views 1 is one of the blocks through which oppositely extending openings 2 and 3 pass. These openings are at

different levels and are preferably at right angles to each other. A narrow slot 4 connects these openings and extends in the same direction as one of them. In these openings are placed the angular arms 5 and 6 which can be combined and arranged in many different ways so as to support the planks P which inclose the concrete C until hardened. These arms are graduated at G so that accurate dimensions of the girder or column can be preserved at all parts thereof.

In use the arms are arranged in any convenient manner and when in proper position a wedge W is driven into the narrow slot 4 between the arms in each block and the arms are thus securely fastened in place.

By the use of the device described perfect concrete work can be constructed and rigid supports can be formed about standing work without the use of heavy timbers, and a considerable amount of labor and material can be saved. The clamps can be used over and over again as the work progresses without sorting and fitting wooden molds together.

The arms can be made of any length desired to suit the required work. Various combinations of the arms and blocks are possible, and the blocks can be adapted to either right or left hand application to the work and to the planking enveloping concrete structure, and the supporting framing therefor can readily be supported thereby in a large variety of positions as in ceilings, the faces of girders, and of columns.

In Fig. 7 a peculiarly rigid arrangement of three angular bars and three blocks is shown. A narrow rigid rectangle B is formed to support the outer face K of the concrete girder. The lower face L is also supported by one arm X and a third arm Z supports the inner face M and the ceiling O. A temporary column D holds the parts in position until the concrete has set. Temporary retaining beams, E, and F, are supported on the bar X. In Fig. 6 the three bars are connected to support an intermediate girder or beam C. In Fig. 5 two angular bars are shown securing the planks P in place about a vertical column. Here the graduated edges of the bars permit of uniform adjustment of the bars wherever used at all parts of the column.

To permit of quick variation and interchangeability of parts the blocks are each provided with an angular recess R cut at

of the corner of one side. This recess receives the projecting angle of the concrete work and permits the clamping bars to come up flush with the planks. This angular recess is duplicated in the opposite corner in the same face, so that the bars and blocks can be attached together for either right or left hand construction.

As shown the bars and blocks, are adapted for use in an immense variety of positions and hence are unusually efficient and practical for the construction of structural concrete and of fire proofing or concrete veneering of all kinds.

Having described the invention what I claim as new and desire to secure by Letters Patent is:—

1. In a clamping device for the purpose described, a clamping block provided with openings passing therethrough, at right angles to each other, a pair of graduated angular arms adapted to enter said openings, a narrow transverse opening in said block between said arms, a wedge adapted to enter said transverse opening and to engage both of said arms, the edges of said block parallel to the widest side of said wedge being cut away for the purpose described.

2. A clamping device for the support of planks for concrete construction and adapted for use with an angular structure, in combination, a pair of blocks having openings passing therethrough at right angles to each other and at different levels, a pair of angular arms passing through said openings, a central slot passing through said block intermediate of said openings and communicating therewith, and a wedge adapted to be inserted in said intermediate opening between said arms and to engage both of the same simultaneously, substantially as described.

3. A clamping device for the purpose set forth, comprising, a block having openings passing therethrough at different levels, and at right angles to each other and with an

intermediate narrow slot passing there-through in the direction of one of said openings and connecting both openings, a pair of graduated arms in said openings and a wedge in said slot intermediate between both said arms and engaging the same simultaneously, substantially as described.

4. In a clamping device adapted to inclose an angular object, a block having openings therethrough at angles to each other, and with a central transverse slot intermediate between and connecting both said openings, a pair of angular arms inserted in said openings and a securing wedge inserted in said slot transverse between said arms, said block having its edges parallel to the broad sides of the said wedge, cut away to adapt it to engage a corner of the inclosed object thereby and adapted for right and left hand use.

5. A clamping block comprising a solid body provided with openings passing therethrough at angles to each other, and with an intermediate narrow slot centrally connecting said openings, the corners of one face parallel to the broad sides of said slot, being cut away to form recesses at angles to said openings.

6. In a clamping device for supporting the casing, planks for concrete construction, said concrete construction having angular forms, a pair of blocks provided with oppositely extending openings therethrough, a series of angular bars passing through said blocks, a securing means for each bar in each of said blocks, each block being cut away in adjacent corners to provide for right and left hand use of said blocks and bars, and to enable the said bars to engage closely the angles of the work.

In testimony whereof, I hereunto set my hand this 10th day of December 1908.

PAUL WILKES.

In presence of—

GEO. O. WILLET,
WM. M. MONROE