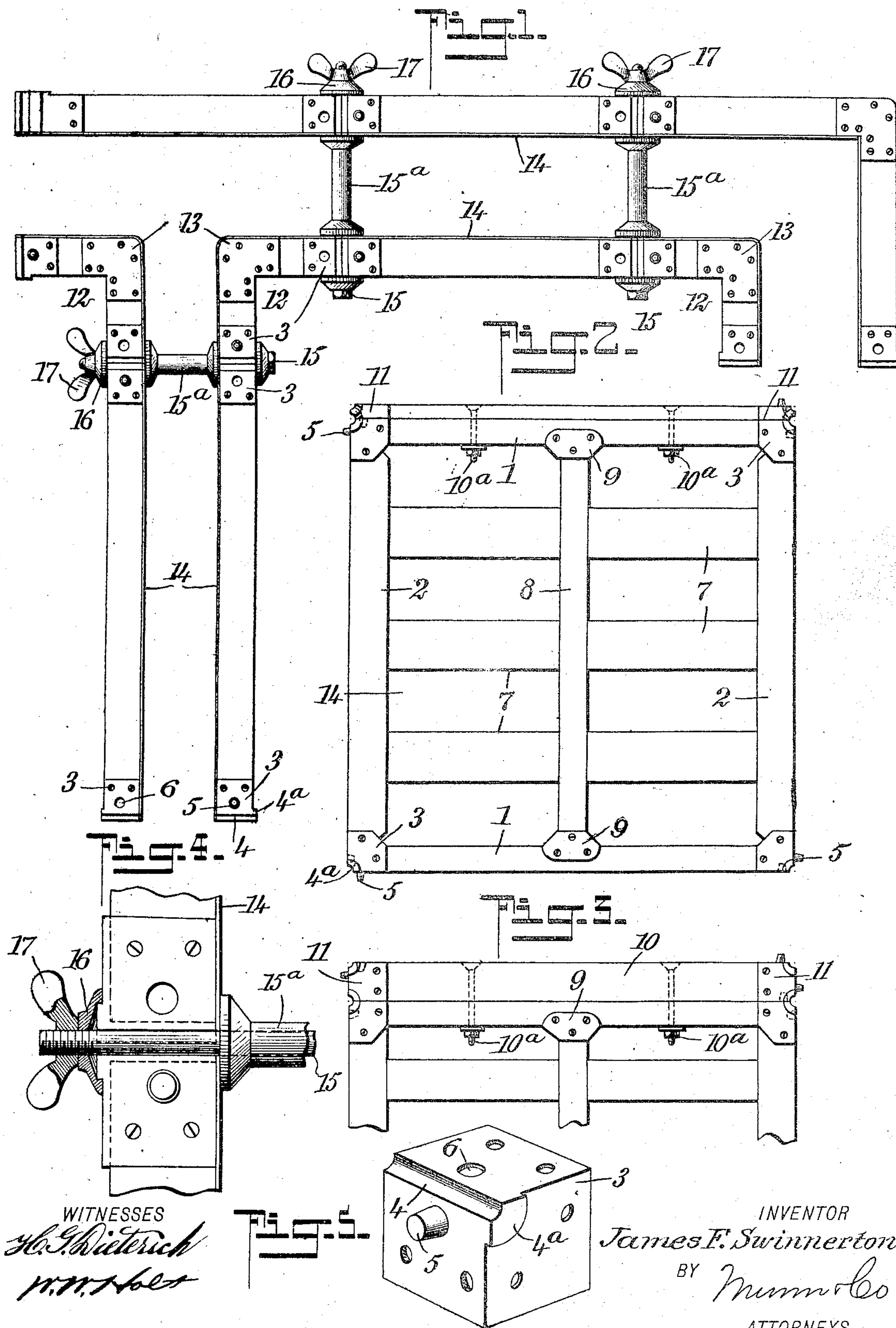


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PATENTED JAN. 29, 1907.

J. F. SWINNERTON.
MOLD FOR CONCRETE CONSTRUCTION.

APPLICATION FILED MAY 10, 1906.



WITNESSES

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MOLD FOR CONCRETE CONSTRUCTION.

No. 842,722.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 10, 1906. Serial No. 316,099.

To all whom it may concern:

Be it known that I, JAMES F. SWINNERTON, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, county and State of New York, have invented a new and Improved Mold for Concrete Construction, of which the following is a full, clear, and exact description.

This invention is an improved mold or form for concrete-work, relating to molds built up in sections which can be made of any desired dimension in the building of concrete walls or the like.

The cost of temporary molds or forms as at present used in the construction of concrete-work is a serious obstacle to bringing this form of structural work into general use.

Among the objects of this invention is to overcome this difficulty by providing a plurality of strong durable frames which can be readily attached to provide molds of any desired dimension and detached after use and repeatedly used in concrete construction. This permits of the frames forming the molds to be packed in a small compass and easily carried from place to place. The frames are made of wood and built in such a manner that distortion resulting from swelling due to moisture is reduced to a minimum and are covered on their inner faces with sheet metal, plain or ornamental, giving a smooth surface to and avoiding the rapid and injurious waste of water from the concrete as the latter dries out.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of several plane and angular frames secured together to form the walls of the concrete mold. Fig. 2 is a side elevation of one of the frames with an extension-strip attached to one edge thereof. Fig. 3 is a fragmentary view of one end of a frame similar to Fig. 2, but with an extension-strip somewhat wider secured to it. Fig. 4 is a fragmentary view, partly in section, of the means for attaching the frames and the walls of the mold together, and Fig. 5 is a detail view of one of the metal corner-pieces used in the frame construction.

The plane frame shown in Fig. 2 is built in the form of a square; but it is to be understood that it may be rectangular, if desired, and consists of rails 1 mitered at their ends, connected with mitered stiles 2 by means of

metal corners 3, as shown in detail in Fig. 3, held by screws to the mitered ends of the stiles and rails. These corners are composed of three plates at right angles to each other, with a groove 4, the quarter of a circle passing through the edge of an intersection of two of the plates, with the segment of a boss 4^a concentric with the groove on the third plate.

At each side of the groove 4 is respectively a tapered dowel-pin 5 and a recess 6, of the same size, in which a dowel-pin of an adjacent frame is adapted to project when the frames are secured together in alinement. As shown, the metal corners 3 are of like construction and not made in rights or lefts, which formation throws one dowel and one recess at each edge of the frame.

The stiles 2 are mortised to receive the tenons of an intermediate number of rails 7, and the rails 1 are braced by an intermediate stile 8, mortised in the rails 7 and connected to the end rails 1 by metal plates 9.

For increasing the length or breadth of the frame are provided strips 10, of any desired width—as, for example, shown in Figs. 2 and 3—which may be secured to any or all of the edges of the frames by bolts 10^a passing through holes in the rails and stiles for the purpose. These strips are provided with metal ends 11, with dowels, recesses, grooves, and bosses, as on the corner-plates of the frames, with which they are adapted to register when secured together.

In connection with the plane frame for the building up of the mold are angle-frames 12, constructed of wood, with reinforced angular metal plates secured in the angles at each corner and metal corner-plates 3 at each end of the same, as employed in the plane frames.

The frames and extension-strips are covered over on one face with sheet metal, which may be ornamented, if desired, to imitate brick, stone, or other material.

In the building up of the mold the number of frames, both angular and plane, and extension-strips required in the construction are selected and are assembled with the sheet metal on the inner face and the dowels of each frame engaging the recesses in the opposed frames forming the walls of a mold of the required dimension—as, for example, as shown in Fig. 1. These walls are spaced apart the thickness of the wall of concrete required to be molded and

are secured together at the juncture of four corner-plates 3 by means of bolts 15, passing through pipes 15^a with removable flanges at their ends. It is evident from the corner-plate construction that when four of them are placed together a circular hole is provided through their center, surrounded on one side by a concentric boss resulting from the grooves 4 and sector 4^a, respectively. These bosses are embraced by dished washers 16, one under the bolt-head and another on the threaded end of the bolt engaged by a winged nut 17, which not only clamps the walls against the pipes 15^a and holds them the proper distance apart, but through the action of the dished washers prevents the frames from lateral displacement. After the frames of which the mold is composed have been completely assembled and the concrete placed in it and sufficiently hardened the bolts 15 are withdrawn, which permits the disassembling of the frames, leaving only the pipes 15^a passing through the concrete wall. These pipes are found convenient in securing scaffolding or other temporary work used in the construction of the building, after which they may be sealed up or they may be used for attaching permanent parts to the structure.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A concrete-mold composed of a plurality of detachable wooden plane and angular frames forming a wall for the mold, metal corner-plates attached to the corners of the frames, a dowel and a recess carried by each corner-plate, a groove and a sector of a boss at the corner of each plate, whereby when the frames are placed in alinement, the recesses and the dowels of the corner-plates will hold the frames in alinement and form a hole surrounded by a boss at the juncture of four corner-plates, a dished washer seated over the boss about the hole of the corner-plates, a bolt passing through the dished washers and hole, a pipe having flanges through which the bolt also passes for holding the walls of the mold apart, and nuts threaded on the bolts whereby when they are tightened the walls of the mold are rigidly held spaced apart and the frames are held from lateral displacement.

2. A concrete-mold composed of a plurality of detachable frames lined with metal on

one face, and means passing through the corners of the frames for holding them rigidly spaced apart, said means also at the same time securing the frames from lateral displacement.

3. A concrete-mold composed of a plurality of detachable frames, corner-plates on said frames having means for holding them in alinement, holes formed in the corner-plates when the frames are assembled, pipes alining with the holes, bolts passing through the holes and pipes for holding the frames rigidly spaced apart, and means on said bolts for holding the frames from lateral displacement.

4. A concrete-mold composed of a plurality of detachable frames, means for increasing and decreasing the dimensions of said mold, sheet metal lining the inner faces of said frames, and bolts passing through the corners of abutting frames for rigidly holding them spaced apart.

5. In a concrete-mold, a corner-plate, a dowel-pin and a recess in said plate, a groove in the edge of said plate, and the sector of a boss concentric with said groove, for the purpose described.

6. A concrete-mold composed of a plurality of detachable frames forming the walls of the mold, means projecting from the face of each frame bolts for securing the walls in spaced relation, and dished washers carried by the bolts and cooperating with said projecting means for holding the frames from lateral displacement.

7. A concrete-mold composed of detachable frames, a plate at the corner of each frame, and means adapted to pass through the abutting corners of a plurality of frames and cooperating with said plates for locking the frames together.

8. A concrete-mold composed of a plurality of frames, a plate secured to the corner of each frame having a groove surrounded by a concentric boss, and means adapted to embrace a plurality of adjacent bosses for securing the frames together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES F. SWINNERTON.

Witnesses:

G. A. DAYTON,
PIERRE A. GEIS.