Sept. 4, 1928. 1,682,750

W. S. HALDEMAN

CONCRETE FLOOR MOLD

Filed Feb. 10, 1922 3 Sheets-Sheet 1

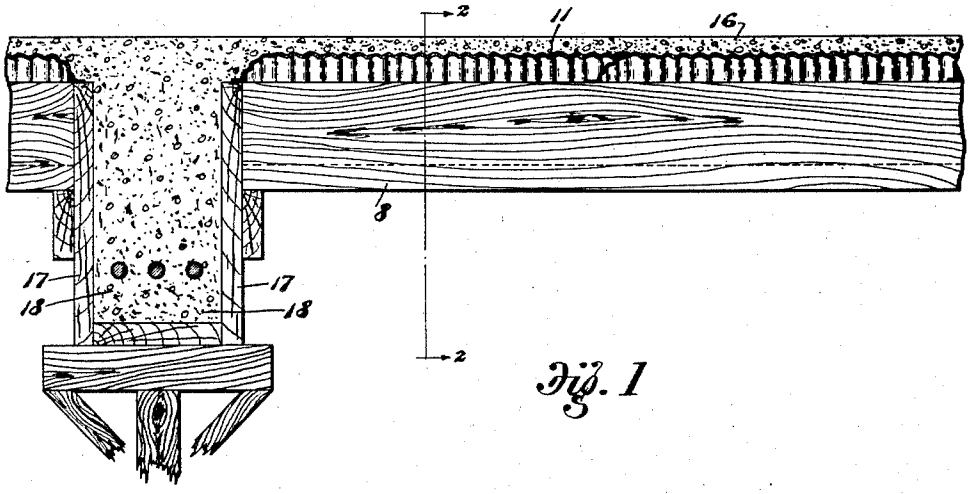

Fig. 1

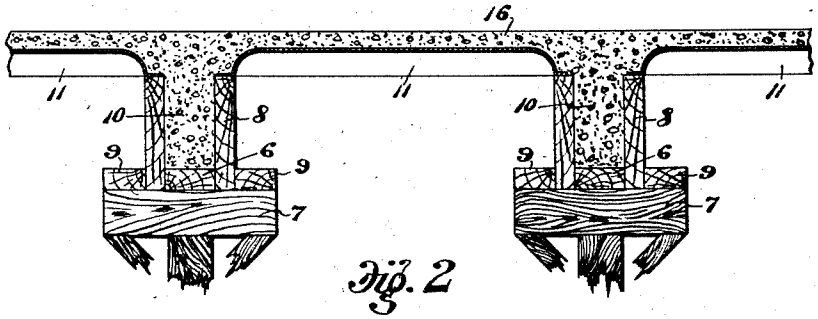

Fig. 2

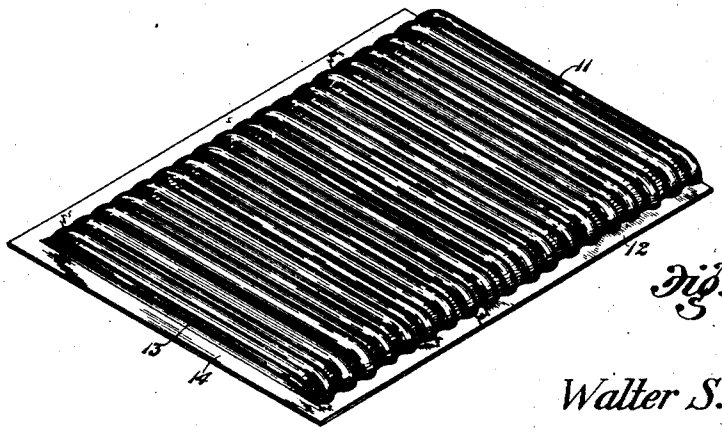

Fig. 3

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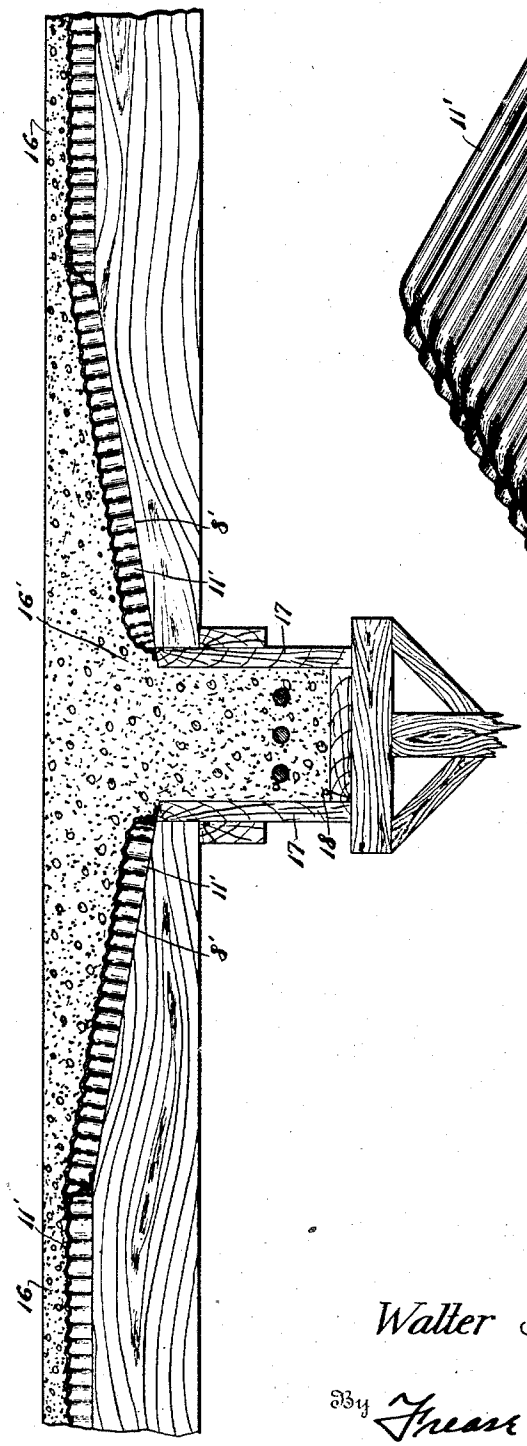

Fig. 4

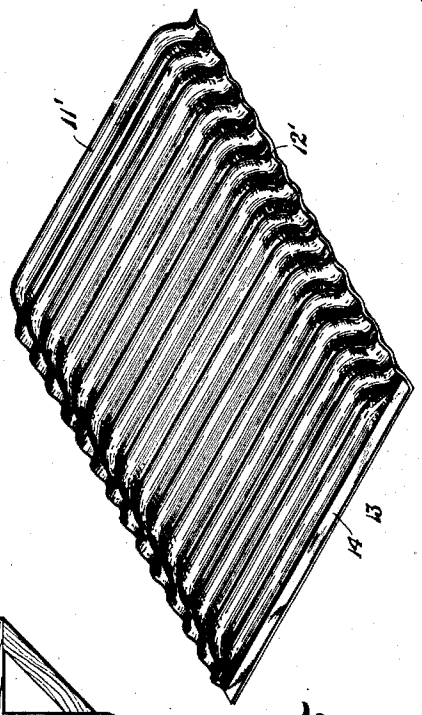

Fig. 5

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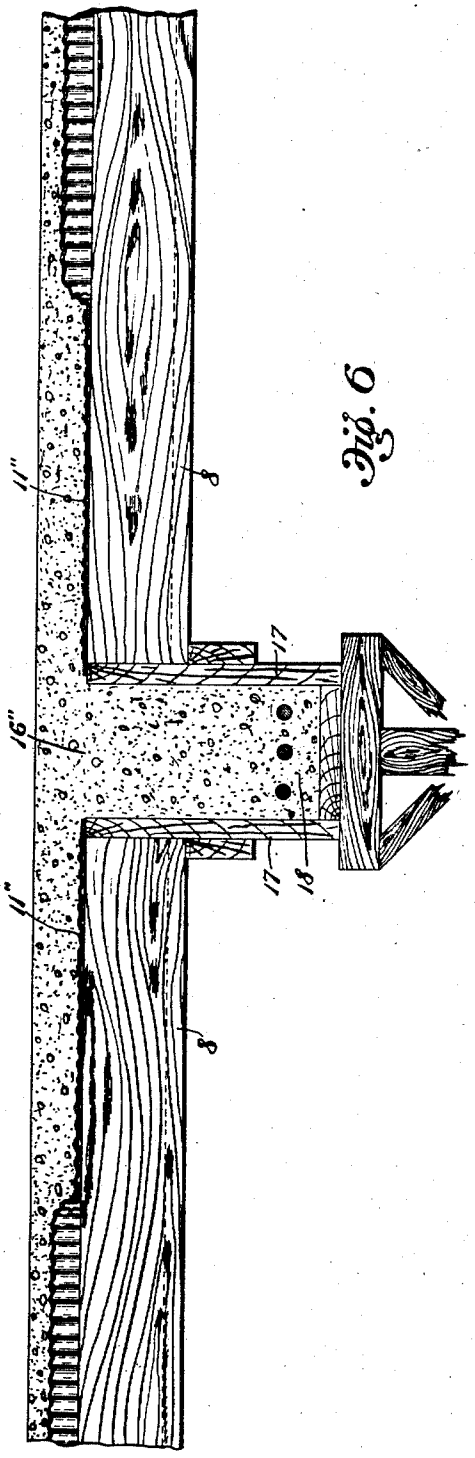

Fig. 6

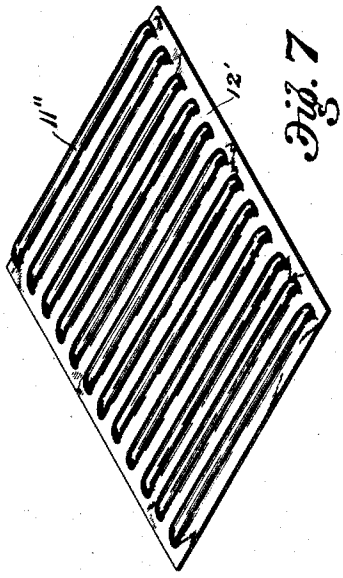

Fig. 7

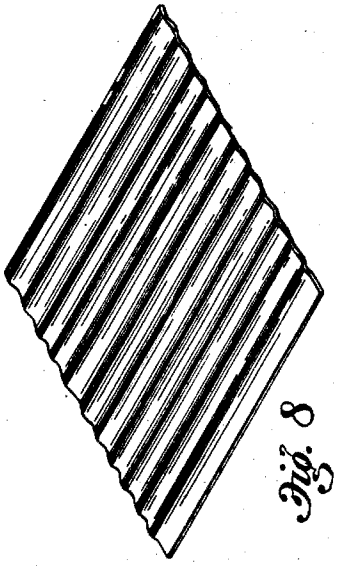

Fig. 8

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Patented Sept. 4, 1928. 1,682,750

UNITED STATES PATENT OFFICE.

WALTER S. HALDEMAN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE BERGER MANUFACTURING COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

CONCRETE-FLOOR MOLD.

Application filed February 10, 1922. Serial No. 535,536.

The invention relates to the construction of concrete floors to produce a monolithic formation of the girders, the joists and the floor slab; and the object of the improvement is to combine a wood and metal mold and core for the joists and slab, which can be readily assembled to form concrete joists of different depths and widths.

Floor joists of many different depths and widths must be built to meet the varying loads and strains imposed upon different floors, and the formation of the same by transversely arched cores made entirely of sheet metal, requires so many sizes and shapes of cores as to render their use burdensome, if not prohibitory in ordinary building construction.

Likewise, the making of such cores entirely of wood requires so much lumber, especially for the top or span plates which must have considerable thickness to support the load of a green cement slab, as to make the cost burdensome, if not prohibitory in ordinary building construction.

The present invention involves the use of wooden planks for the soffit and sides of a joist mold, combined with sheet metal plates, provided with a continuous series of corrugations extending transversely straight throughout the body of the plate and being arched downward at the edges only for resting upon the upper edges of the side planks and forming top plates of the core thus made, to support the slab between the joists of the floor.

The shallow sheet metal core plates thus formed may be provided with base flanges, either plain or corrugated, extending along each side for resting upon the upper edges of the side planks, and also with a depending transverse web having a base flange at one end, for sustaining the overlapping edge of an adjoining core plate and strengthening the joints between the plates.

Preferred embodiment of the invention is illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is an elevation section of a floor across a girder and through the slab between adjacent joists, showing the joist molds and the slab cores and their temporary supports in position;

Fig. 2, a cross section of joists and slab on line II—II, Fig. 1;

Fig. 3, a perspective view of the improved top plate;

Fig. 4, an elevation section of a floor across a girder and through the slab between adjacent joists, showing the method of thickening the slab adjacent to its junction with the girder;

Fig. 5, a perspective view of a modified core plate with corrugated side flanges;

Fig. 6, an elevation section of a floor across a girder and through a slab between adjacent joists, showing another method of thickening the slab adjacent to its junction with the girder, with another modified core plate;

Fig. 7, a perspective view of the modified core plate, shown in Fig. 6; and

Fig. 8, a perspective view of a further modification of the core plate.

Similar numerals refer to similar parts throughout the drawings.

The joist mold may be made of a soffit plank 6 laid flatwise upon a temporary support 7, and side planks 8 set edgewise upon or along side the soffit plank, and the same may be held in position by side strips 9 secured to the temporary support along side the base of the mold thus formed in which a concrete joist 10 may be formed. The width and depth of the concrete joists is determined by the width and spacing of the soffit and side planks, and can, of course, be varied at will to meet the requirements of any particular construction.

The shallow core plates 11 or 11′ are made of sheet metal in the form of a flat body and arched edges with base flanges 12 or 12′ on each side, which flanges may be made plain, as shown in Fig. 3, or corrugated, as shown in Fig. 5; and the body of the plates may be provided with a continuous series of transversely extending corrugations as shown, which gives them sufficient strength to span a considerable space between the molds for adjacent joists.

One end of each core plate is curved or deflected downward to form a transverse depending web 13, which may have a base flange 14 on its lower edge connecting the side flanges of the core; thus giving a web-truss support for stiffening and strengthening this end of the plate, and supporting the overlapped end of an adjoining plate.

In use, the core plates are placed with their side flanges on the top edges of the side planks

of adjacent joist molds, and may be secured in position by nails or other fastening means, whereupon concrete may be poured into the joist molds and upon the core plates to form the joist 10 and the slab 16 of the floor. After the concrete is set and hardened the mold planks and the core plates may be readily removed after withdrawing the supports, or the core plates may remain in the floor, as may be desired.

The ends 8′ of the side planks may be inclined or beveled on their upper edges adjacent to their junction with the side planks 17 forming the girder mold between the joist molds; so that the terminal core plate 11′ on each side of the girder 18 will be inclined downward to gradually thicken the depth of the slab and increase the strength of the T-head 16′ formed by the junction of the slab with the girder, as shown in Fig. 4.

Or a flatter core plate 11″ may be used upon the side planks of the joist mold immediately adjoining each side of the girder mold, to thicken the depth of the slab and increase the strength of the T-head 16″ formed by the junction of the slab with the girder, as shown in Fig. 6.

In the latter event the core plate may be formed as shown in Fig. 7, with the lower curves of the corrugations in substantially the same plane with the base flanges 12′ along each side, and the upper curves of the corrugations rising along the plane of the base flanges, to give the flat body formation to the edge-arched core plates.

It will be understood that the use of base flanges along the sides of the transversely corrugated core plate, is not essential, and they may be omitted from the higher or lower forms of flat-body edge-arched plates 11, 11′ and 11″, in which event the downturned ends of the corrugations will rest directly upon the upper edges of the side planks of the joist molds.

It will also be understood that in some instances, where the space between joist molds is not great, or the thickness of the slab does not impose a heavy load, the transversely corrugated core plate need not be arched or flanged at all and may take the form shown in Fig. 8; but the flat arched form of core plates with plain base flanges on each side is preferred for the added strength given by the arch, and the greater facility for neatly fitting and being secured to the edges of the mold planks which is given by the flanges.

I claim:

1. A mold for concrete floor joist and the like made of soffit and side planks, and flat-arched sheet-metal core plates for a concrete slab spanning the space between the side planks of adjacent joist molds, each core plate having a transverse depending web on one end overlapped by the opposite end of an adjoining plate.

2. A mold for concrete floor joist and the like made of soffit and side planks, and flat-arched sheet-metal core for a concrete slab spanning the space between the side planks of adjacent joist molds, each core plate having a transverse depending web with a base flange on one end overlapped by the opposite end of an adjoining plate.

WALTER S. HALDEMAN.