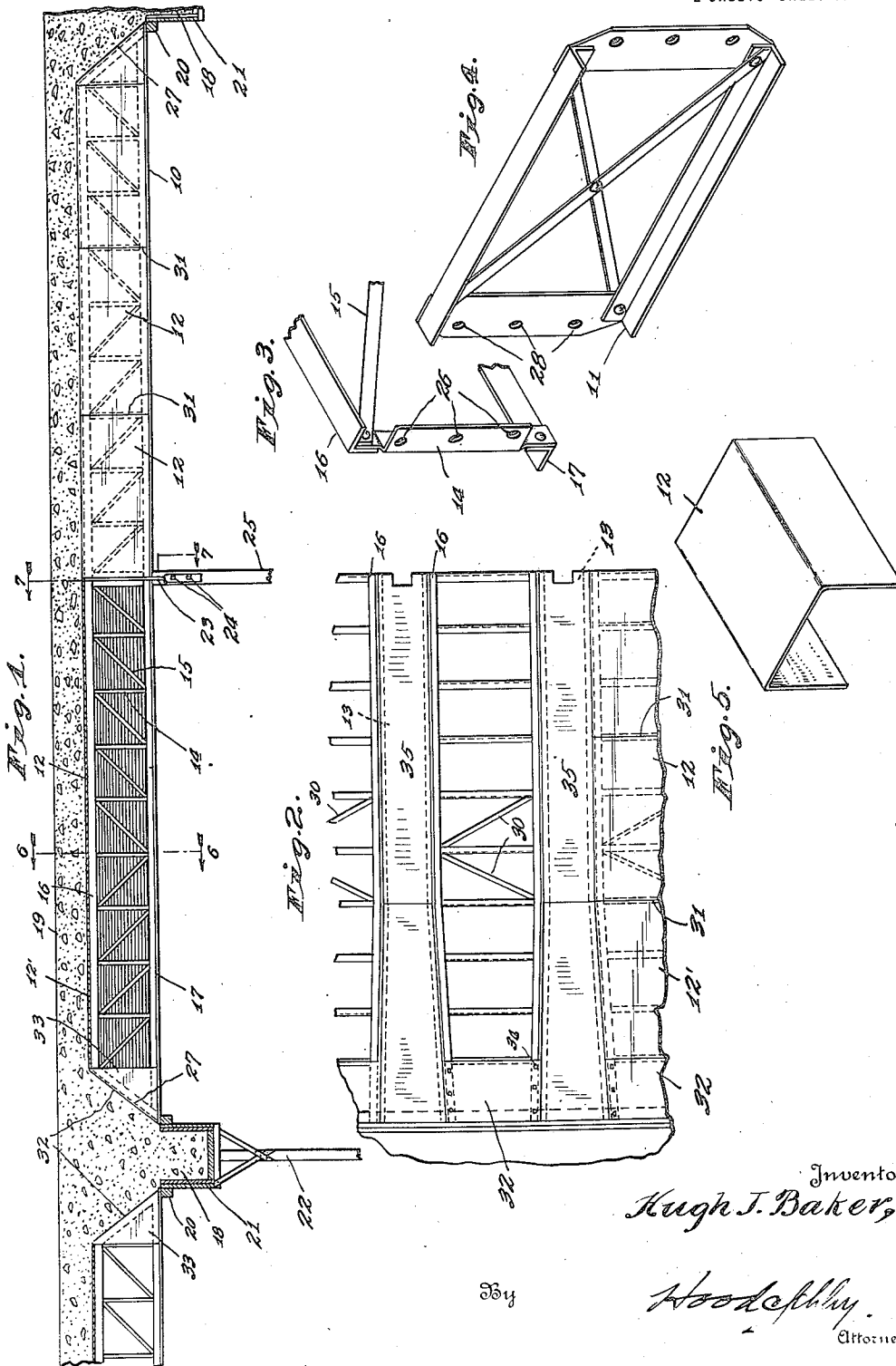


H. J. BAKER.
 COLLAPSIBLE FALSEWORK FOR CONCRETE FLOORS.
 APPLICATION FILED JAN. 21, 1921.

Patented Aug. 15, 1922.

2 SHEETS—SHEET 1.

1,425,823.



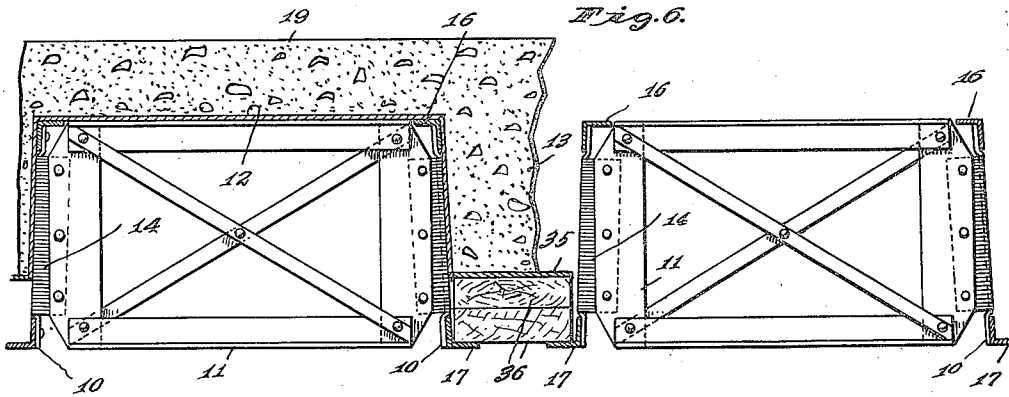
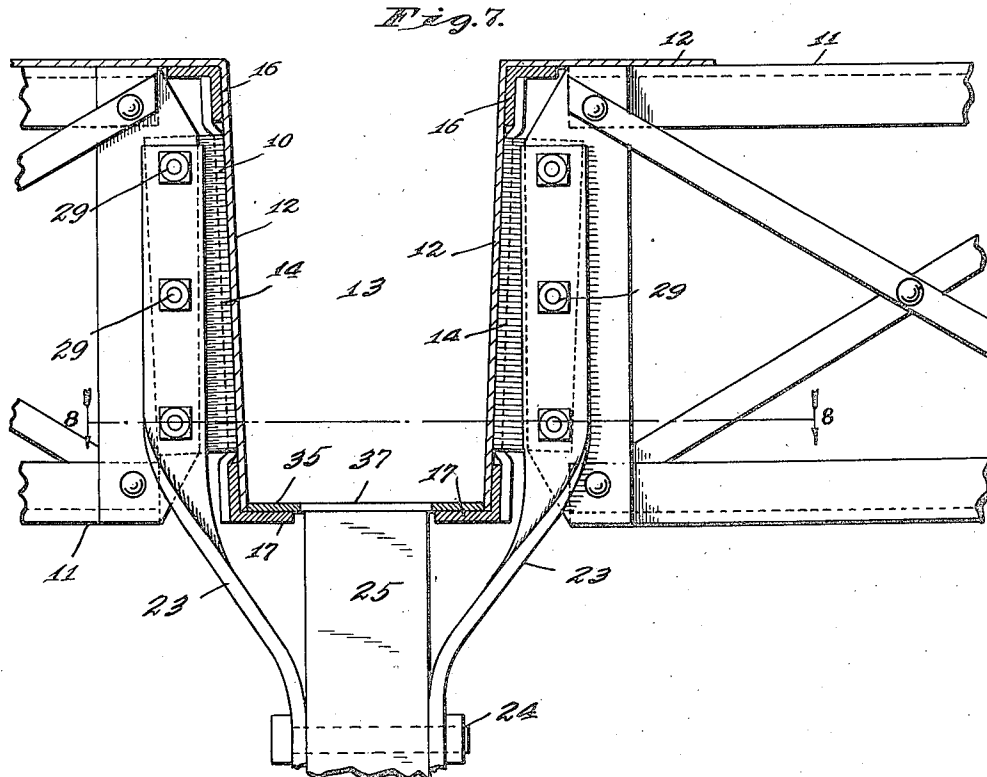
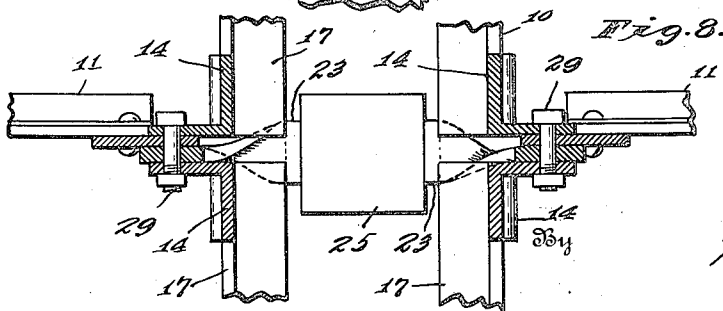
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE FALSEWORK FOR CONCRETE FLOORS.

1,425,823.

Specification of Letters Patent.

Patented Aug. 15, 1922.

Application filed January 21, 1921. Serial No. 438,814.

To all whom it may concern:

Be it known that I, HUGH J. BAKER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Collapsible Falsework for Concrete Floors, of which the following is a specification.

It is the object of my invention to produce a collapsible falsework for ribbed concrete floors, which falsework has a collapsible supporting skeleton, preferably formed of separable structural-steel parts, arranged to support a sheet-metal sheath which directly engages the concrete, and which is readily adaptable to various lengths and depths of joists and various spaces between joists.

The accompanying drawings illustrate my invention: Fig. 1 is a vertical longitudinal section through my improved collapsible falsework, showing both its supports and the superposed concrete floor; Fig. 2 is a fragmentary plan of the falsework of the left-hand part of Fig. 1; Fig. 3 is a perspective sectional view of a fragment of one of the side trusses, showing the plate to which a cross member is attached; Fig. 4 is a perspective view of such cross member; Fig. 5 is a perspective view, on a somewhat smaller scale, of one of the sheath sections; Fig. 6 is a fragmentary vertical section on the line 6—6 of Fig. 1, on a somewhat enlarged scale, showing part of the concrete in place, and with the sheet-metal sheath removed in the right-hand half of the figure; Fig. 7 is an enlarged vertical section on the line 7—7 of Fig. 1; and Fig. 8 is a transverse section on the line 8—8 of Fig. 7.

The falsework is composed generally of side trusses 10, cross members 11, and a sectional sheet-metal sheath 12. The side members 10 correspond in height to the maximum depth of the proposed concrete ribs or joists 13, and are made as structural-steel trusses with vertical and oblique members 14 and 15 connecting upper and lower members 16 and 17, which latter are in the form of oppositely disposed angle irons parallel to each other as is clear from Figs. 3, 6, and 7. The parts of each truss are suitably fastened together, conveniently by spot-welding. The side trusses 10 are suitably supported. As shown, each side truss is half the length between adjacent beams

or girders 18 of the concrete floor 19, so that two trusses are used to span the space between such adjacent beams or girders. The ends of the side trusses at the beams or girders may rest on removable strips 20 on the sides of the forms 21 for such beams or girders, the bottoms of which forms are supported on suitable shores 22. The ends of the side trusses between the beams are shown as meeting, though it is not essential that they meet as they may be spaced apart more or less if the distance between beams makes that desirable in order to use trusses of standard length, and as shown are carried in common by bent-iron arms 23 removably fastened, as by bolts 24, to intermediate supporting shores 25, each shore 25 having two such arms, bolted to its opposite sides, which arms are spaced apart sufficiently to receive the joist 13 and the necessary part of the falsework between them. The arms 23 are shown bolted to vertical members 14 of the trusses, which vertical members are angle irons of which one part projects inwardly to form an attaching flange, not only for the arms 23 but also for the cross members 11, as is clear from Figs. 3, 6, and 7. The inwardly extending part of each vertical angle-iron member 14 is provided with a plurality of bolt-receiving holes 26, preferably arranged in a line which is slightly oblique with respect to the plane of the side trusses as a whole, so that when the line of such holes is vertical the trusses as a whole will be slightly tilted, as is shown in Figs. 6 and 7, to provide downward draft between the falsework and the joists 13.

If it is desired to make the joists 13 flaring where they join the beams or girders 18, the side members 10 may be slightly bent, as shown in Fig. 2, so that the two side members of a pair approach each other at their ends toward each beam. These same ends of the side members may be cut off at an oblique angle 27 if it is desired that the beam or girder 18 join the floor 19 with flaring sides, as is indicated in Fig. 1, which oblique cut-off 27 may or may not extend all the way to the bottom of the side members.

The cross members 11 are formed of top, bottom, and side pieces, and the corners connected by oblique pieces, as is clear from Figs. 4, 6, and 7. The top and bottom pieces are conveniently angle irons, but the end pieces are flats; and in these end pieces are

holes 28 corresponding with the holes 26 to receive bolts 29 by which the cross pieces may be fastened to the side trusses. The arms 23 have corresponding holes, and may also receive the bolts 29 which pass through the members 14 at the ends of the side trusses between the girders, and at such ends the cross members 11 may also be provided if desired, as shown, though they are not essential. The lines of the holes 28 are parallel to each other, and perpendicular to the top and bottom pieces of the cross members 11, and are thus vertical when the parts are assembled so that such cross members may be reversed in position without affecting the tilting which is given the side trusses. The cross members 11 are interchangeable throughout the greater part of the length of the side trusses, but those close to beams 18 may be made successively shorter, as is clear from Fig. 2, to correspond to the bending of the side trusses if they are bent. To prevent skewing between the side trusses, supplementary oblique cross rods 30 may be provided to interconnect the two side trusses of a pair, as is clear from Fig. 2.

The side trusses and cross members when assembled constitute a skeleton framework, which is collapsible by the removal of the attaching bolts 29. In this skeleton framework, the horizontal parts of the angle irons 16 of the two side trusses of a pair project toward each other, while the horizontal parts of the angle iron 17 of such pair project away from each other and toward the adjacent pairs, as is clear from Fig. 5. Over this skeleton framework is placed the sheet-metal sectional sheath 12. This sectional sheath consists fundamentally of U-shaped sections, such as shown in Fig. 5, which fit upon this skeleton framework, extending over the top thereof and fitting around the corners formed by the angle irons 16 of a pair of side trusses, and extending down along the sides of such side trusses to the inner corners of the lower angle irons 17. These sections preferably meet one another on butt joints 31, but may overlap or have other kinds of joints as desired, and the end section 12' is tapered to conform to the bending of the side truss if it is bent, as is clear from Fig. 2. Instead of U-shaped sections at the oblique ends 27, I provide a flat plate 32 which lies upon such oblique ends, as is clear from Figs. 1 and 2; and on the sides of the side trusses at such end I provide triangular corner pieces 33. The corner pieces 33 may be permanently fastened in place, but the plate 32 is preferably detachable from the side trusses, as by being attached thereto by bolts 34. Bottom plates 35 are supported on the projecting horizontal flanges of the adjacent bottom angle irons 17 of each pair of trusses, either by resting directly thereon if the joist 13 is of

maximum depth, as is indicated in Fig. 7, or by resting on blocks 36 which in turn rest on such angle irons 17 to make the joist 13 of less depth, as is indicated in Fig. 6. The bottom plates 35 are notched at their ends where necessary to clear the shores 25, so that they may be removed while such shores are still in place; but if desired a small metal plate 37 may rest on each shore 25 to fill such notches and directly engage the bottom of the joist 13, as is indicated in Fig. 7. The bottom plates 35, with the small plates 37, complete the sheathing which engages the concrete, the bulk of such sheathing being formed by the U-shaped section 12.

In use, the side trusses 10 are set up on their supports and fastened to the cross members 11 and to the arms 23 by the bolts 29, after which the sheathing sections 12, the oblique end plates 32, the corner plates 33 if they are not permanently attached to the side trusses, and the bottom plates 35 and 37, are put in place as shown. The bottom plates 35 and 37 may be blocked up by blocks 36 if that is desired in order to make the joists 13 of less than maximum depth. The distance between the two side trusses may be varied, while still using the same side trusses, by using cross members 11 and sheath sections 12 of desired width. When the falsework has been set up, the concrete for the floor 19 is poured, forming such floor with its joists and girders. The reinforcing which would ordinarily be used in this concrete is not shown, since that is no part of my present invention. When the concrete has sufficiently set, the falsework may be removed, the removal usually being piecemeal. In removing the falsework, the bolts 29 are taken out to release the cross members 11, which are then removed. This also releases the side trusses from the arms 23. The side trusses may now be moved relatively, and the two side trusses of each pair are swung toward each other and lowered. Then the sheet-metal sheathing sections 12 may be pulled off without difficulty and without tearing the concrete loose. The bottom plates 35 may now be stripped off. All this is done without disturbing the girder forms 21 or the supporting shores 22 and 25, which may remain in place until the concrete has further set, the small plates 37 remaining on top of the shores 25 if such plates are used.

I claim as my invention:

1. A falsework for concrete floors, comprising side members, cross members separably attachable to said side members to constitute therewith a framework, and a sheet-metal sheath detachably resting upon said framework, said cross members and side members being provided with bolt holes for receiving attaching bolts, and the bolt

holes being arranged to make the side members which are joined by said cross members tilt with respect to each other.

2. A falsework for concrete floors, comprising side members, cross members separably attachable to said side members to constitute therewith a framework, and a sheet-metal sheath detachably resting upon said framework, said cross members and said side members being provided with cooperating rows of holes for receiving attaching bolts, the rows of holes in the cross members being parallel to each other.

3. A falsework for concrete floors, comprising side members, cross members separably attachable to said side members to constitute therewith a framework, and a sheet-metal sheath detachably resting upon said framework, said cross members and said side members being provided with cooperating rows of holes for receiving at-

taching bolts, the rows of holes in the cross members being parallel to each other, and the rows of holes in the side members being oblique with respect to the planes of the side members.

4. A falsework for concrete floors, comprising side members, cross members separably attachable to said side members to constitute therewith a framework, and a sheet-metal sheath detachably resting upon said framework, said cross members and said side members being provided with cooperating rows of holes for receiving attaching bolts, the rows of holes in the side members being oblique with respect to the planes of the side members.

In witness whereof, I have hereunto set my hand at Indianapolis, Indiana, this 4th day of January, A. D. one thousand nine hundred and twenty.

HUGH J. BAKER.