

H. L. WEBER.
ANCHORAGE FOR CONCRETE WORK.
APPLICATION FILED JULY 26, 1910.

973,828.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.

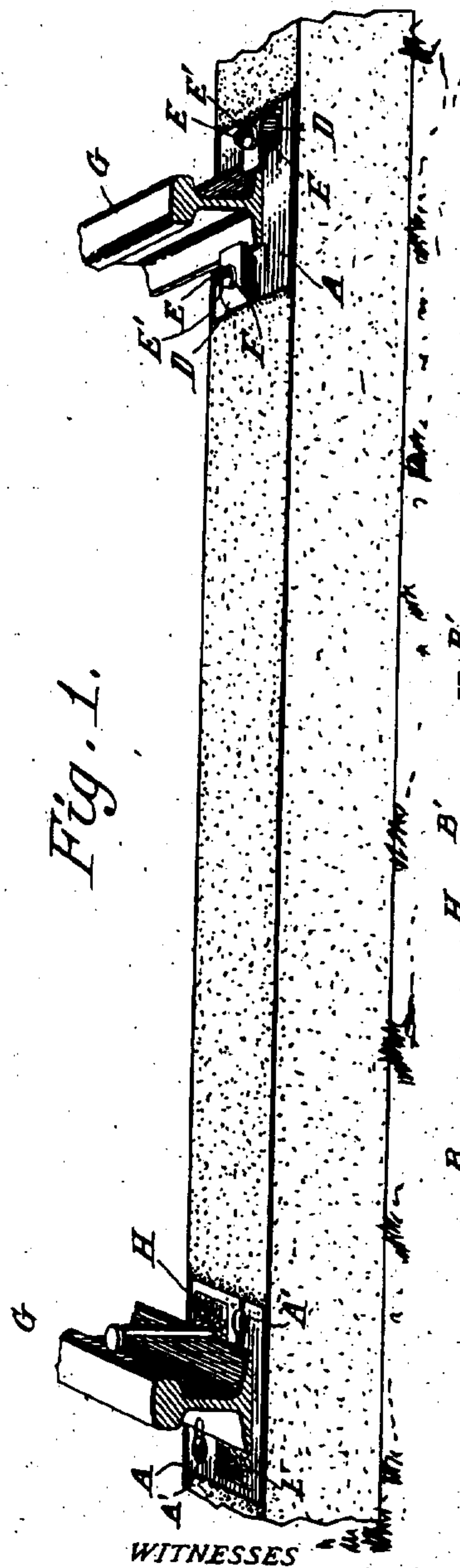


Fig. 1.

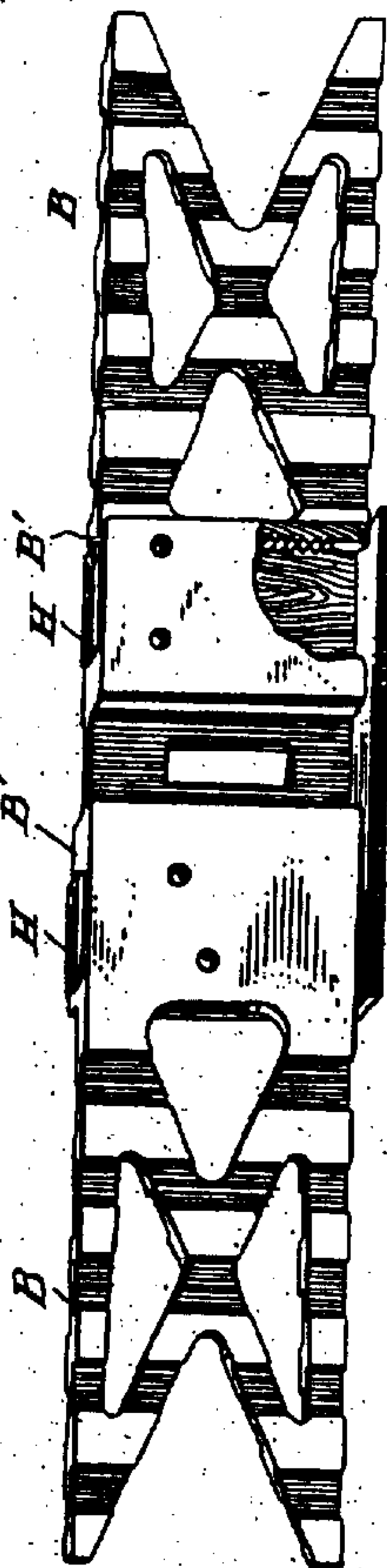


Fig. 5.

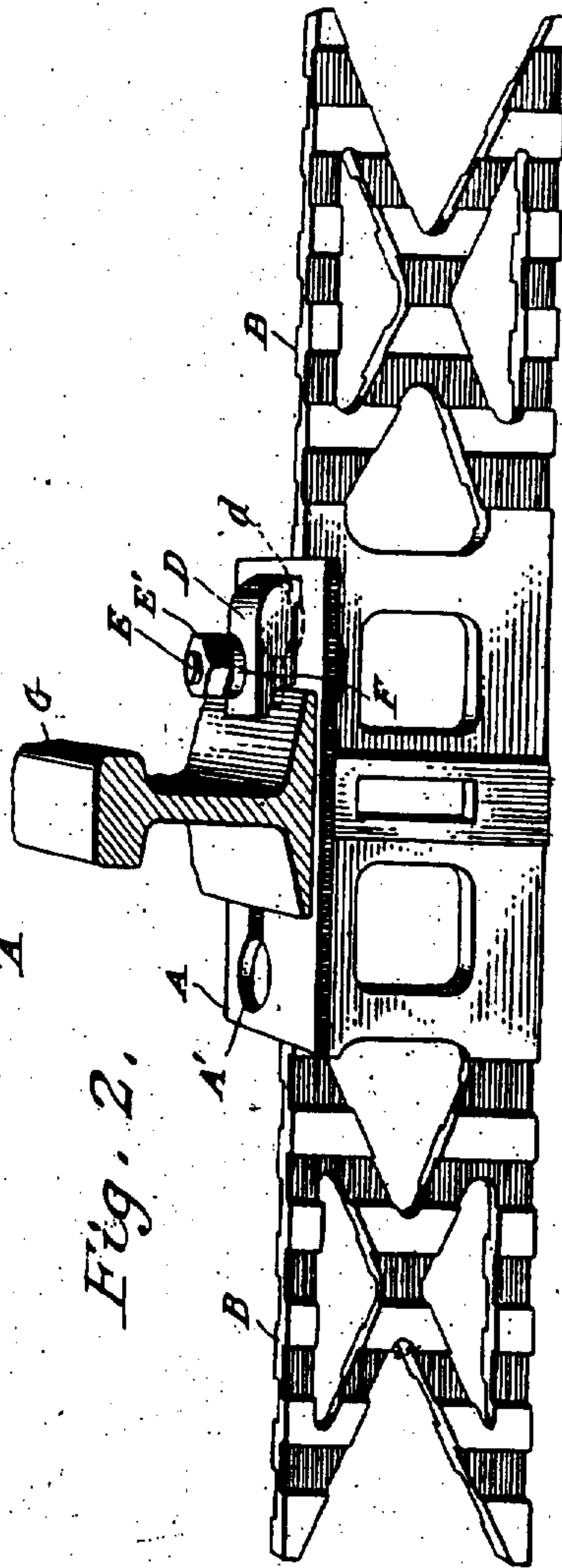


Fig. 2.

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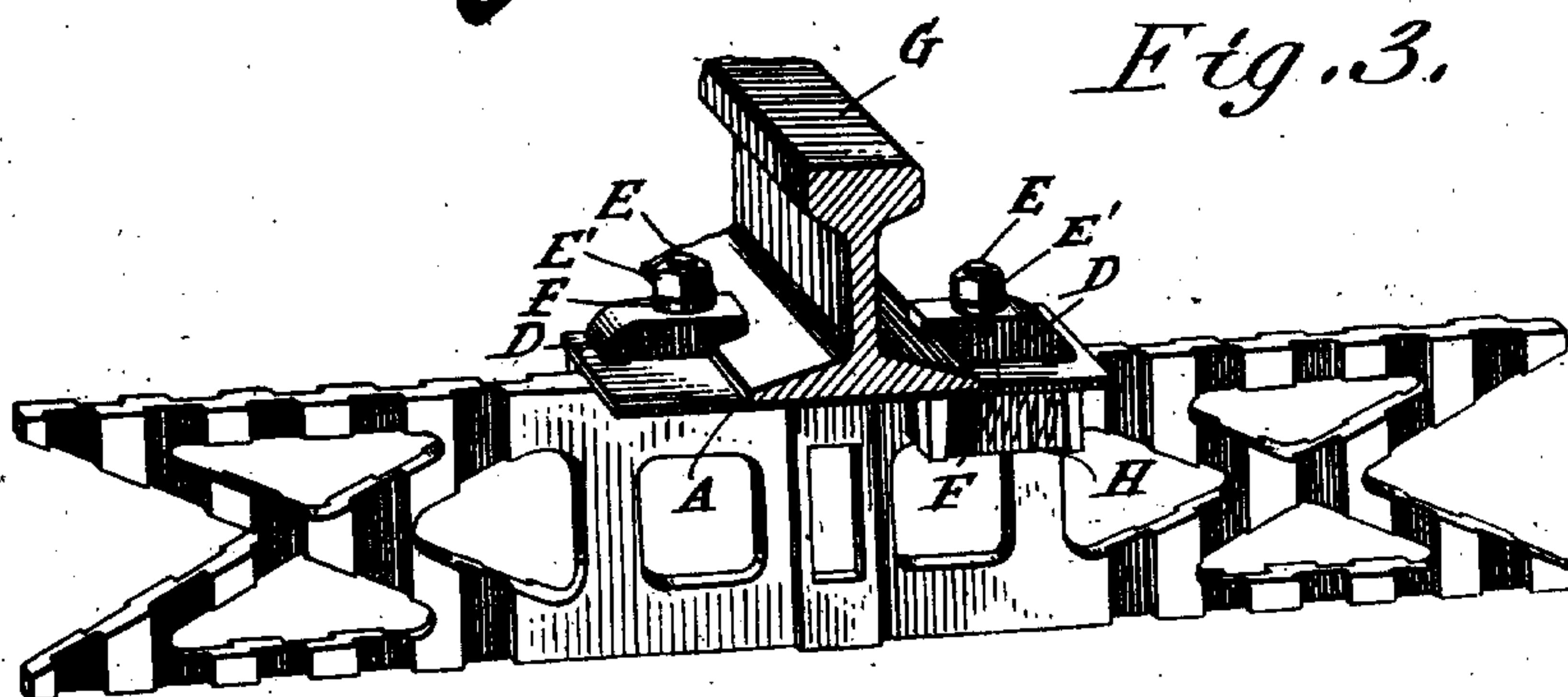
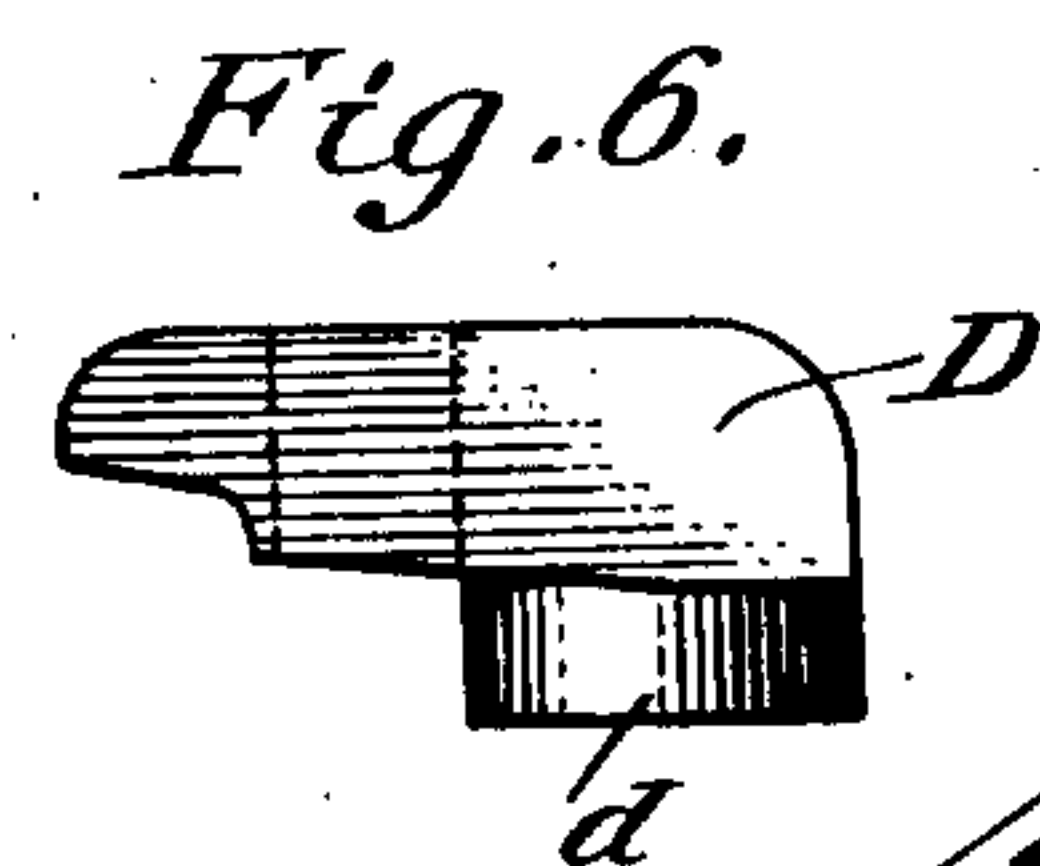
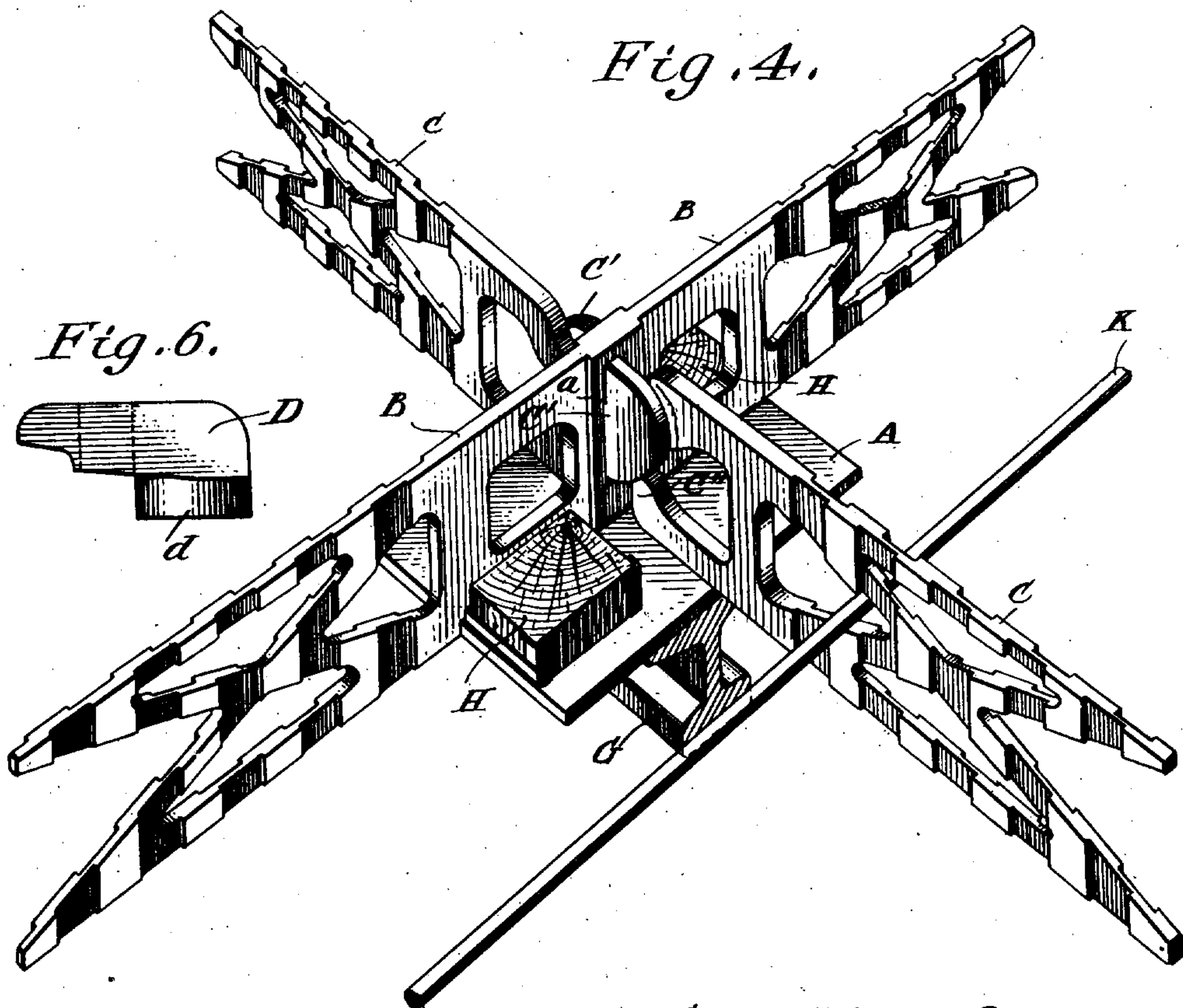
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2 SHEETS-SHEET 2.



WITNESSES.

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HARRY L. WEBER, OF BUCYRUS, OHIO.

ANCHORAGE FOR CONCRETE WORK.

973,828.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed July 26, 1910. Serial No. 573,861.

To all whom it may concern:

Be it known that I, HARRY L. WEBER, a citizen of the United States, residing at Bucyrus, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Anchorages for Concrete Work, of which the following is a specification.

This invention relates to anchorages for reinforced concrete work, generally, and particularly for railroad ties made of Portland cement, sand, gravel, crushed stone, or other suitable aggregate to form a concrete of a suitable nature for the purpose, reinforced with steel or iron rods, or other material commonly employed for reinforcing purposes, and the invention consists of the parts and the constructions, arrangements and combinations of parts which I will hereinafter describe and claim.

In the accompanying drawings forming a part of this specification, and in which similar reference characters indicate like parts in the several views. Figure 1 is a perspective view of a completed railway tie showing the track fastenings and part of the railway rail. Fig. 2 is a perspective view of a rail plate and anchor-
age removed. Fig. 3 is a perspective view of a slightly modified rail plate and tie-anchor embodying my invention. Fig. 4 is a perspective view of a four-armed anchorage designed for use in sheet concrete roadway construction. Fig. 5 is a modification to be hereinafter referred to. Fig. 6 is a side elevation of one of the rail clips.

In carrying out my invention I employ for the body of the proposed tie, when the invention is applied thereto, a composition of Portland cement, sand, gravel, crushed stone, or other aggregate suitable to form a concrete which will be satisfactory for the purpose, and I reinforce this concrete so as to make the tie meet the load and shock requirements.

In Figs. 2 and 3, I illustrate a preferred means for the reinforcement of the tie and to these figures I now call special attention. The anchorage shown in Figs. 2 and 3 includes a rail-plate, A, and oppositely extending arms, B, which are cast or drop-forged in one piece of malleable iron or steel, the arms having openings through them to form keys for the plastic concrete and, if desired, said arms may be corrugated

or otherwise roughened to produce a better lock for the concrete mass; the arms are set vertically on edge and have a depth which somewhat approximates that of the completed tie whereby the rail-plate will be exposed on the top surface of the tie and will be in position to receive and secure the track-fastenings.

In the style of anchorage requiring bolts to fasten the rails to the tie, (Fig. 2) I provide the rail-plate with key-hole-shaped openings, A', one or more upon each side of the center of the plate and which openings are designed to receive bolts which are passed first through the round and larger portion of the holes and are thence shoved into the narrower extensions. These bolts pass through suitable rail-clips, D, which have lugs or projections, d, on the undersides adapted to fit into the round part of the bolt-hole, A', in the rail-plate and thus back up against and hold the securing bolt in proper position, and when the nut, E', of the bolt, E, is tightened up, the rail-clip will hold the bolt in position and the rail to the tie-plate. If desired, a nut-lock, F, of any of the approved forms commonly used may be employed for locking the bolt after it has been tightened and the rail-clip is properly positioned in engagement with the flange of the rail, G. The arrangement of the bolt and the rail-clip with its bottom lug or projection entering the bolt-hole in the rail-plate and backing up against the bolt is important, as the bolt is thus secured against rocking or turning during the application of the securing nut and the attachment of the rail.

The form of anchorage heretofore described is especially designed for the construction of railroad ties, but it is apparent that the anchorage will be of great benefit in the construction of fence posts, and in all kinds of buildings and in bridge work, where it becomes necessary to place anchor-bolts, drift-pins, spikes, or nails for the purpose of attaching wood or iron to the concrete base.

The anchors will be made of various forms and sizes to suit the nature of the particular work and the changes for these purposes in the form heretofore described will be obvious to those skilled in the art.

In the anchorages designed for a railroad tie, the rail-plate is cast or otherwise made

an integral or rigid part of the arms, B, and the size of anchorage used will depend upon the load and shock the parts are to resist. In practice the anchorages for the
 5 railroad tie may be about thirty-four inches long and about five inches high; the tie-plate which forms the top of the anchorage and which is an integral or rigid portion thereof, may be seven inches wide, ten inches
 10 long and one-half an inch thick, and it will be cast or otherwise provided with the bolt-holes before mentioned.

If the anchorage is to be used in a railway tie where spikes are to be employed for
 15 securing the rail to the rail plate, A', Fig. 5, said anchorage will be provided with a box-like recess, B', or other suitable holder adapted to securely grip a wooden block, H, driven therein in line with an opening
 20 through the top of the rail-plate, as shown in Figs. 3 and 5; this box is corrugated on the inside edges to afford a better grip to the wooden block, which is driven into it, when the rail spikes are driven into the
 25 block. Into the blocks thus positioned the ordinary or any special form of railroad spike may be driven with its head engaging and holding the rail in proper position to the anchorage.

30 When the anchorage is used in connection with street, interurban steam, or other industrial railway or tramway, in sheet concrete roadway construction, I employ in addition to the parts heretofore described, the
 35 arms C, which may be substantial counterparts of the arms, B, before mentioned, except that they are, preferably, formed separate from the rail-plate and the arms, B, and are designed to be arranged at right-
 40 angles to the arms, B, to form substantially a cross beneath the rail-plate. To this end, the middle portion of the rail-plate is formed or provided with an opening, *a*, and the inner ends of the arms, C, are shaped or
 45 fashioned with hook-shaped portions, C', with shoulders, C'', adapted to abut against the opposite sides of the middle portion of the anchorage formed by the arms, B, as shown in Fig. 4, the inner ends of the arms,
 50 C, overlapping and being passed through the opening, *a*, so that one of the shoulders will abut against one face of the anchorage along one edge of the opening while the other shoulder will abut against the oppo-
 55 site face of the anchorage along the opposite edge of the opening, the arms, C, being corrugated or otherwise provided with means for affording a secure bond for the concrete material.

60 The anchorages are placed at desirable distances along the line of track, generally five feet centers, and opposite each other, and may be connected by means of a reinforcing bar, K, Fig. 4.

65 It will be understood that when using the

construction shown in Fig. 4 and which is especially designed for use in sheet roadway construction, the rail-plate, A, may be formed with the holes for the bolts as above mentioned, or they may have the inserted
 70 wooden blocks, H, for use in connection with spikes, without departing from the spirit of the invention.

It will also be understood that any additional form of reinforcing means in the
 75 form of rods, expanded-metal, or like construction may be used in association with the anchorage without altering the character of the latter, which I regard as the special feature of improvement, but what-
 80 ever form of reinforcement or arrangement is adopted, it will be with special reference as to size to meet the load requirements, or the requirements of excessive loadings on shock conditions.

85 Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. An anchorage for concrete work, said anchorage consisting of a plate with arms
 90 formed rigid therewith and extending for a substantial distance beyond opposite edges of said plate, and set vertically on edge, said plate being disposed at the upper central
 95 portion of the anchorage and the vertical height of the arms being substantially uniform throughout the length of said arms, said plate having openings adapted to receive securing devices.

2. An anchorage for reinforced concrete
 100 construction, said anchorage consisting of a plate and integral arms extending beneath the same and beyond opposite edges thereof, said arms having openings to receive the concrete, and said plate having openings
 105 adapted to receive securing devices.

3. An anchorage for reinforced concrete construction, said anchorage consisting of a plate and arms rigid therewith extending
 110 beneath the plate and beyond opposite edges thereof, and being set on edge, certain of said arms extending at right-angles to other arms, said plate having means for the attachment of securing devices.

4. An anchorage for reinforced concrete
 115 work, said anchorage consisting of a plate and a pair of alined arms integral therewith extending below the plate and beyond opposite edges thereof, and set on edge, and other alined arms at right-angles to the first-
 120 named arms, said second-named arms being separable from the first arms and said anchorage having a centrally located opening to detachably receive the inner overlapping ends of the second-named arms.

5. An anchorage for reinforced concrete
 125 work, said anchorage consisting of a plate and a pair of alined arms integral therewith extending below the plate and beyond opposite edges thereof, and set on edge, and other
 130

aligned arms at right-angles to the first-named arms, said second-named arms being separable from the first arms, and said anchorage having a transverse opening to detachably receive the inner overlapping ends of the second-named arms, the inner ends of the second-named arms having oppositely facing shoulders adapted to abut against opposite faces of the anchorage adjacent the walls of said opening.

6. An anchorage for a concrete railroad tie, said anchorage consisting of a rail-plate and oppositely extending arms rigid therewith and underlying the plate and projecting beyond opposite edges thereof, said arms being set on edge, and said plate having key-hole-shaped slots in opposite portions, a rail-clip adapted to engage the flange of the rail and having a projecting portion on its bottom to enter and fit the larger diameter of the opening in the rail-plate, and a bolt adapted to be passed through the larger diameter of the opening in the rail-plate and to be moved into the narrower diameter of said opening and to be backed by the said

projecting portion of the rail clip, and a securing nut for said bolt.

7. An anchorage for a railroad tie, said anchorage consisting of a rail-plate and oppositely extended arms rigid therewith and underlying the plate and projecting beyond opposite edges thereof, said arms being set on edge, said rail-plate having key-hole-shaped holes in opposite portions with a box-like recess beneath the rail-plate rigid therewith, the side of said box, a part of the extended arms, the inside ends of said boxed recess having corrugated surfaces to grip the wooden blocks driven therein in line with the openings through the top of the rail-plate, into which blocks a rail spike can be driven or screwed to secure the rail to the anchorage of the tie.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY L. WEBER.

Witnesses:

W. J. GALERNO,
SAMUEL E. AUCK.