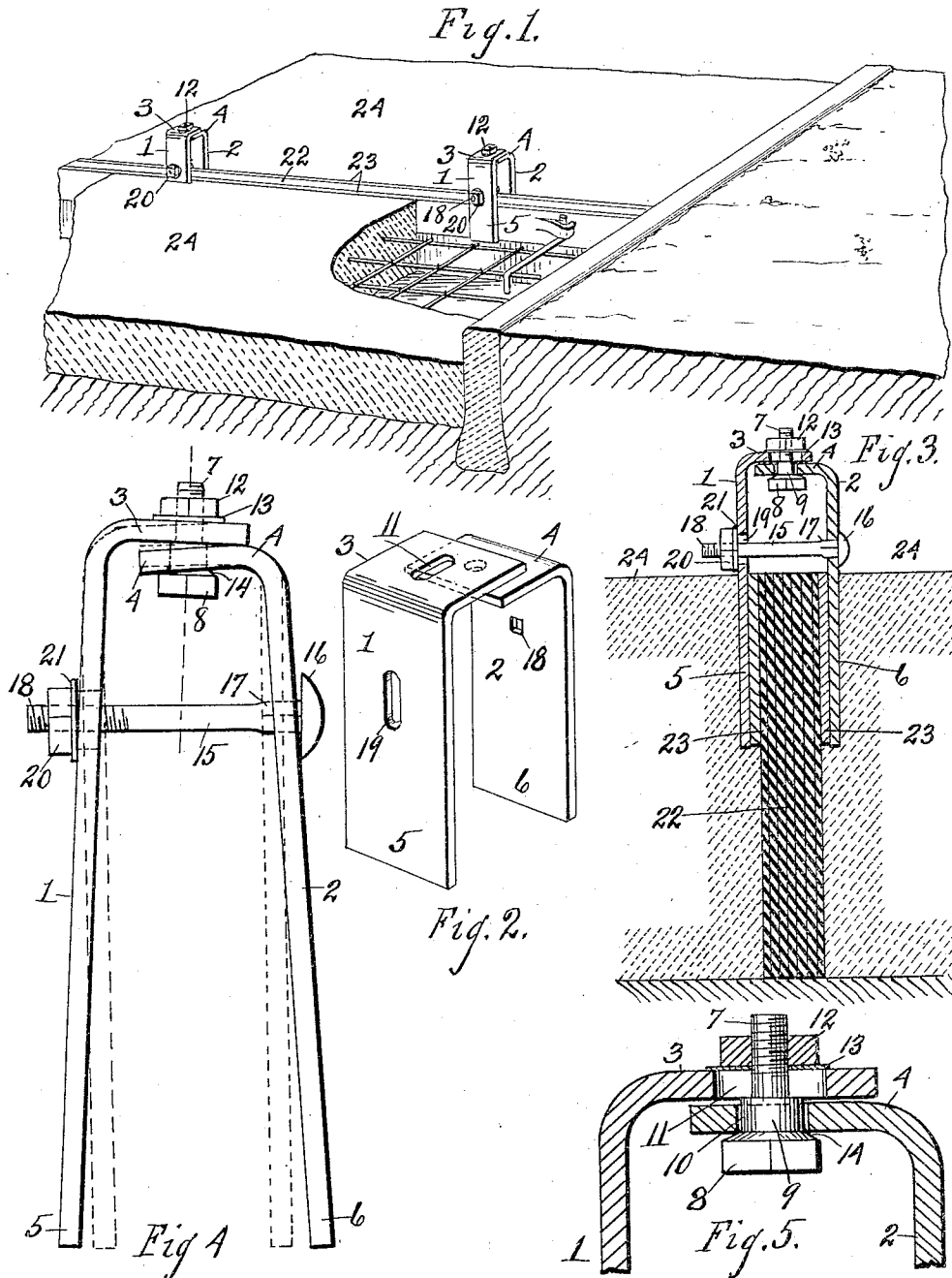


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CLAMP FOR JOINT FILLERS IN CONCRETE ROADWAYS.
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1,236,972.

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CLAMP FOR JOINT-FILLERS IN CONCRETE ROADWAYS.

1,236,972.

Specification of Letters Patent.

Patented Aug. 14, 1917.

Application filed February 21, 1916. Serial No. 79,516.

To all whom it may concern:

Be it known that I, FREDERICK P. OBENAUER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Clamp for Joint-Fillers in Concrete Roadways, of which the following is a specification.

This invention relates to clamps for use in the laying of reinforced concrete roadways and consists in the novel features of construction and application as hereinafter set forth and claimed.

The invention has for its object the provision of a clamp of simple and improved form for binding the pliable filler between the guard or protecting strips employed in the joints of reinforced concrete roadways, in such manner as to enable the parts to be readily assembled and firmly held preparatory to embedding the whole between the adjoining sections of the road-bed in the operation of building the roadway, and wherein the construction is such as to enable the clamp to be readily adjusted to accommodate variations in thickness of the members comprising the filler to maintain the sides or jaws of the clamp in parallel relation upon the filler within the concrete, and permit of the ready disengagement and withdrawal of the clamp from the work with a minimum displacement of the concrete about said clamps at the joints of the road-bed.

A preferred embodiment of the essential features of the invention is illustrated in the accompanying drawings, in which,

Figure 1 is a perspective view of a section of concrete roadway showing the clamps applied to the filler of the joint, in which a portion of the concrete about one of the clamps is broken away to better show the relation of the parts.

Fig. 2 is a perspective view of the body portions of the clamp disengaged.

Fig. 3 is a central vertical section through the clamp in position upon the filler in the joint of the road-bed.

Fig. 4 is an edge elevation of the clamp detached, showing the sides or jaws in angular extended positions and indicating by dotted lines the closed parallel clamping position of the jaws.

Fig. 5 is an enlarged sectional detail through the engaging ends of the body

members of the clamp, showing the parts adjustably and hingedly connected upon a shouldered stud or bolt.

The parts of the device herein referred to are designated by corresponding characters of reference marked on the several views of the accompanying drawings.

In forming the clamp I employ two body members 1 and 2, each of which consists of a rectangular sheet metal plate having one end bent at right angles to the plane of the body to form a laterally extending portion 3 and 4, respectively. These plates are assembled in reversely opposed relation with the lateral extensions 3 and 4 overlapping each other and with the body portions 1 and 2 lying in substantially parallel spaced relation and forming at their free ends clamping jaws 5 and 6, respectively, between which the work to be clamped is embraced.

To provide for connecting the plates together at their angular extensions so as to enable them to be adjusted and secured relatively to accommodate variations in the thickness of the work to be clamped and to insure the parallel engagement of the jaws thereon, and also to provide in such connection sufficient flexibility to permit of a limited angular movement of the plates when adjusted to facilitate the engagement and disengagement of the jaws with the work without disturbing the adjustment of the clamp, I employ a screw-threaded stud or bolt 7, having at the head 8 an enlarged annular shoulder or collar 9 which extends freely through an aperture 10 formed in the extension 4 of the plate 2. This collar, which is slightly longer than the thickness of the member 4, is drawn into engagement with the under face of the overlapping extension 3 by the stem of the bolt which extends through an elongated aperture 11 formed in said extension and in which said bolt is adjustably anchored by means of a jam nut 12 and washer 13 embracing the bolt and engaging the upper face of said extension, as clearly shown in Fig. 5. By this arrangement the two plates of the clamp may be adjusted toward or from each other to vary the distance between the jaws and then secured against bodily movement by shifting and locking the bolt within the aperture 11. The clearance afforded between the overlapping extensions 3 and

4, by the length and loose fit of the collar 9 in the aperture 10, which relieves said members from binding engagement and which may be further relieved by beveling the under face of the head 8 of the bolt as at 14, permits the plates to swing or tilt a limited angular distance and open the jaws sufficiently to accommodate variations and enable the clamps to be readily engaged and disengaged without disturbing the adjustment of the pivotal connection thus formed, and which, when properly set, will insure the parallel engagement of the jaws upon the work.

15 The jaws are drawn toward each other to embrace and bind the work under pressure by means of a transverse tie-bolt 15, the head 16 of which engages the outer face of the plate 2 and is provided with a square shoulder 17 which is seated to prevent rotation in a squared aperture 18 formed in the body of said plate near the connected end thereof. The threaded end 18 of said bolt extends through an elongated aperture 19 formed in the plate 1 in alinement with the aperture 18 of the plate 2, and embracing the threaded end of said bolt in engagement with the outer face of the plate 1 is a binding nut 20 and washer 21. Said elongated aperture affords clearance for the movement of the bolt with the angular movement of the plates as the jaws are drawn upon the work through the rotation of said nut.

35 The clamp thus constructed is especially adapted for use in binding the pliable strip of filling material 22 between the parallel protecting strips 23 to retain said strips in alinement when placing them in position to be embodied in the joint between the concrete sections 24 in laying the road-bed, in which operation the end portions or jaws of the clamps extend into and are embedded in the concrete mass astride the joint filling, as shown in Figs. 1 and 3. As the clamps remain in position upon the work during the setting of the concrete from which they are afterward withdrawn, it is desirable that they occupy as little area as possible and that they may be readily disengaged

from the filler and withdrawn without disturbing the concrete or leaving comparatively large openings therein. This is provided for in that the jaws are comparatively thin in transverse section, and being adjustable to insure their parallel relation when embracing the filler and embedded in the concrete no angular or wedging resistance will be offered by the engaged surfaces of the jaws with the concrete to retard their direct withdrawal therefrom when released by the binding nut of the tie-bolt.

I claim:

1. A clamp comprising a pair of plates each having a lateral extension at one end thereof, said plates being assembled in spaced relation with their lateral extensions overlapping each other, connecting means anchored in one of said lateral extensions and loosely engaging the other of said extensions to permit relative angular movement of said plates thereon, and contractible binding means engaging said plates for drawing the free ends thereof toward each other.

2. A clamp comprising a pair of plates each formed at one end to provide a lateral extension having an aperture therethrough, one of which apertures is elongated, said plates being combined with said lateral extensions overlapping each other and with the body portions of said plates spaced to form clamping jaws at their free ends, a connecting stud extending freely through both of said apertures, said stud having a shouldered head engaging the outer face of one of said extensions and bearing against the inner face of the extension having the elongated aperture therein and carrying a nut engaging the outer face of said extension for binding said stud adjustably in said elongated aperture, and a tie-bolt anchored at one end in one of said plates and extending freely through the other of said plates and having a binding nut engaging the latter for drawing said jaws toward each other.

In testimony whereof I sign this specification.

FREDERICK P. OBENAUER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."