June 21, 1938. E. C. ROBERTSON 2,121,302

ROAD JOINT BRACE

Filed April 19, 1937

Fig. 1

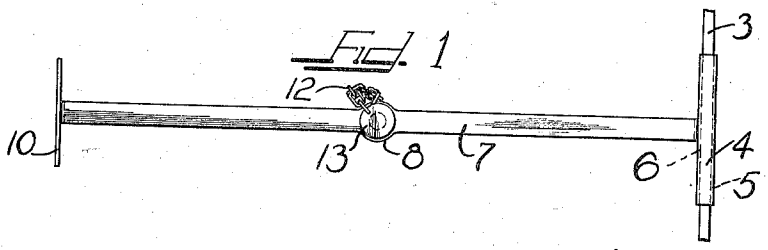


Fig. 2

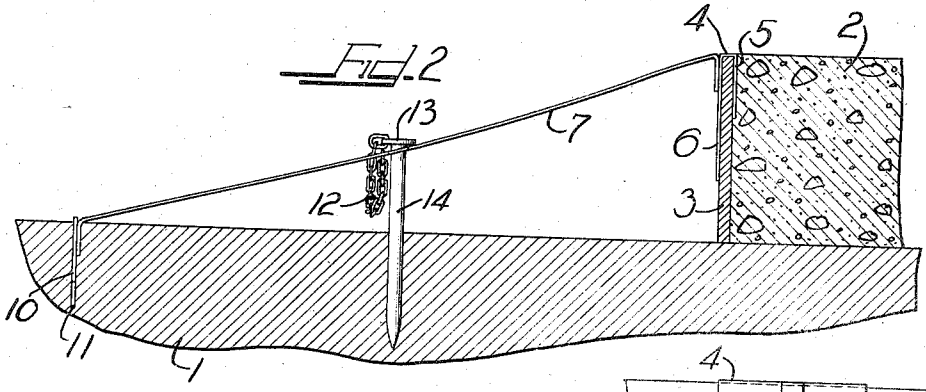


Fig. 3

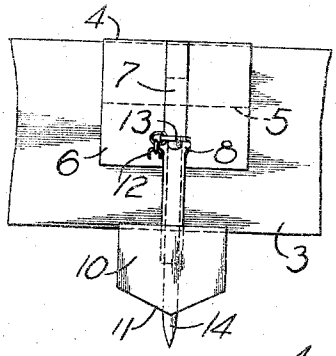
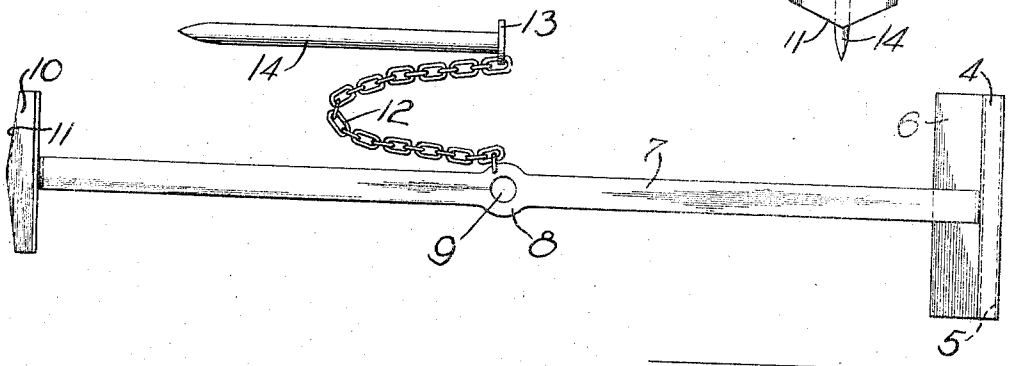


Fig. 4



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ROAD JOINT BRACE

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5 Claims. (Cl. 94—51)

The present invention relates to an improved type of concrete road form brace adapted to be used for temporarily holding road forms or road joints in position during the pouring of concrete on one side of the road form, and adapted to be temporarily embedded in concrete when the concrete depositing machine passes the braced road form as the concrete depositing machine advances toward the next braced road form. The improved brace or braces for temporarily holding a road form in position are adapted to be pulled out of the concrete on the braced side of the road form after the concrete depositing machine completes the embedding of a road form, and advances toward the next road form.

It is an object of this invention to provide an improved type of road form brace adapted to be positioned to one side of a road form to brace the same against the depositing of concrete against the opposite side of the road form.

It is also an object of this invention to provide a road form brace adapted to be removably positioned to one side of a road form and be releasably secured to the subgrade to brace the road form in position against the depositing of concrete against the opposite side of the form.

It is a further object of this invention to provide a removable road joint brace adapted to be engaged on a road form to hold the same in position during the depositing of concrete, said road brace including members for anchoring the brace to the road subgrade, and withdrawable from the subgrade with the removal of the brace from the concrete after the braced joint has been completely embedded in concrete.

It is an important object of this invention to provide an improved road joint brace to hold the road joint braced in position against the depositing of concrete around the joint, said brace including a channel cap or hood for seating over the top of the joint, said cap having secured thereto a brace member having anchoring means connected therewith for removable engagement in the road subgrade to hold the brace temporarily in position during the pouring of concrete to embed the road joint.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

The invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

As shown on the drawing:

Figure 1 is a top plan view of a road joint brace embodying the principles of this invention and showing one end of the brace engaged on a fragmentary portion of a road joint or form.

Figure 2 is a fragmentary vertical sectional view through a concrete road construction showing a portion of the road subgrade and a portion of a concrete slab and illustrating the side view of the improved road joint brace engaged with the road joint or form and bracing the same in position by means of anchoring members forming a part of the brace.

Figure 3 is an end view of the road joint brace shown in Figure 1 looking toward the road joint.

Figure 4 is an enlarged detailed plan view of the improved road joint brace disassociated from the joint and the road construction.

As shown on the drawing:

The reference numeral 1 indicates a road subgrade and 2 a concrete road slab formed by concrete deposited against one side of a road joint or form 3 positioned vertically upon the road subgrade in a selected position, and braced in position by means of the improved road joint brace against the depositing of concrete against one side of the joint. It will of course be understood that a selected number of braces are used for holding the road form or joint braced in position.

The improved road joint brace is constructed of galvanized metal and is intended for repeated reuse. The improved brace comprises a channel cross-sectioned cap or hood comprising a top or connecting plate 4, an outer plate or flange integrally formed at substantially right angles thereto and an inner flange or main brace plate 6 integrally formed on the opposite longitudinal edge of the plate 4 and substantially wider than the flange or plate 5. The channel cap is adapted to be releasably engaged over the top edge of a road joint or form 3, as clearly illustrated in Figures 1 to 3 inclusive, to temporarily grip and hold the road joint or form 3 in a vertical position as shown in Figure 2 supported upon the road subgrade 1.

Rigidly welded or otherwise secured to the upper central portion of the cap plate 6 is the upper end of a brace bar or rod 7. The brace bar or rod 7 may be of any selected length and cross-section and is provided or formed with a middle eye or ring portion 8 having an opening 9 therein. Rigidly secured to the lower or opposite end of the brace rod 7 by spot welding or other suitable means is an anchoring blade or foot piece 10 the lower end of which is provided with a point 11 to facilitate driving the anchoring blade or foot 10 into the road subgrade as illus-

trated in Figure 2. Attached to the intermediate portion of the brace bar or rod 7 is one end of a chain 12 the other end of which is connected through an opening in the head 13 of an anchoring stake or pin 14.

To brace a road joint or form 3 in position on a road subgrade, the channel cap of the brace is engaged over the top of the joint or form 3 as shown in Figure 2, and the anchoring foot 10 is then driven downwardly into the subgrade to hold the brace bar or rod 7 in an inclined bracing position. To assist in rigidly bracing the joint or form in place the anchoring pin or stake 14 is inserted through the opening 9 of the brace bar 7, and the point of the stake is driven downwardly into the subgrade 1 until the head 13 of the stake contacts the apertured portion 8 of the brace bar 7. The stake is driven downwardly into the subgrade until the stake head 13 causes the brace bar to be flexed downwardly or bent, as illustrated in Figure 2, to cause the brace to securely hold the joint or form 3 braced in position ready for the pouring of concrete to embed the joint or form. The chain 12 connected between the stake and the brace bar is adapted to hold the stake associated with the brace when the same is not in use and also serves the purpose of affording a means, so that a hook or the like may be projected downwardly through the concrete to engage the chain to pull the brace upwardly out of the concrete after the concrete has been deposited on both sides of the form.

When a form or joint is braced in position as shown in Figure 2, a concrete depositing machine advancing toward the joint deposits concrete on the side of the joint, opposite the braces, to form a concrete slab 2. With the advance of the concrete depositing machine, concrete is also deposited on the braced side of the joint and embeds the braces which hold the joint in position. After the joint has been completely embedded and the concrete depositing machine has advanced toward the next joint, hooks or other suitable means may be engaged in the concrete on the braced side of the joint to engage and pull the braces upwardly out of the concrete and out of engagement of the joint. The removed braces are then cleaned and are adapted for repeated reuse.

The brace cap is provided with the large flange or plate 6 on the braced side of the joint to form a larger bearing area against the side of the joint opposite from the side on which the concrete is deposited by the concrete depositing machine. The providing of a flat anchoring shoe or plate 10 at the lower end of the brace rod of the brace mechanism permits a greater resistance to be offered by the lower end of the brace with the depositing of concrete against the side of the joint opposite to the braces.

It will of course be understood that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and it is therefore not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A road joint brace for use in bracing a road joint or form in position on a road subgrade during the depositing of concrete to embed the joint or form, said brace comprising a channel cap for engagement over the joint or form, a brace bar having one end thereof rigidly secured to the cap, a tapered anchoring shoe rigidly secured to the opposite end of the brace bar for releasable engagement in the road subgrade, a stake for engaging the brace bar intermediate the ends thereof for tensioning the brace bar when the stake is driven into the subgrade, and a connecting member between the brace bar and the anchoring stake.

2. A road joint brace for holding a road joint braced in position upon a road subgrade against the force of concrete being deposited to embed the joint, said brace comprising a channel cap including parallel flange plates of different sizes, an apertured brace bar secured to one of the flange plates, a tapered anchoring plate secured to the opposite end of the brace bar, a chain connected with the intermediate portion of the brace bar, and an anchoring stake connected to the chain for releasable engagement through the apertured brace bar to assist the tapered anchoring shoe in rigidly bracing the road joint in position until after it is embedded in concrete.

3. A road joint brace comprising a brace bar, a clamping cap secured to one end thereof, an anchoring shoe secured to the opposite end of the brace bar, and means releasably engageable through the intermediate portion of the brace bar for deflecting the brace bar when in use to increase the bracing action of the brace.

4. A road joint brace for holding a joint form placed in position upon a road subgrade against the depositing of concrete for embedding the joint form, said brace comprising an apertured brace rod, a clamping cap rigidly secured to one end thereof, an anchoring shoe rigidly secured to the opposite end thereof, and a stake chained to the intermediate portion of the brace bar for engagement with the intermediate portion of the brace bar to tension the same when the stake is driven into the subgrade to assist in more securely holding the joint form braced in position.

5. A road joint bracing device for bracing a road joint in position upon a road subgrade against the depositing of concrete for embedding the joint, said bracing device comprising a brace rod having an opening therethrough, a channel cap connected to one end of the brace rod for engagement over the road joint to brace the same in position, an anchoring shoe rigidly connected to the opposite end of the brace rod for releasable projection into the road subgrade, a chain connected to the intermediate portion of the brace rod, and an anchoring stake connected with the chain for removable insertion through the opening in the brace rod to deflect the brace rod when the anchoring stake is driven into the subgrade.

EDGAR C. ROBERTSON.