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W. H. ANDREWS

SLEEPER ANCHOR

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Fig. 1.

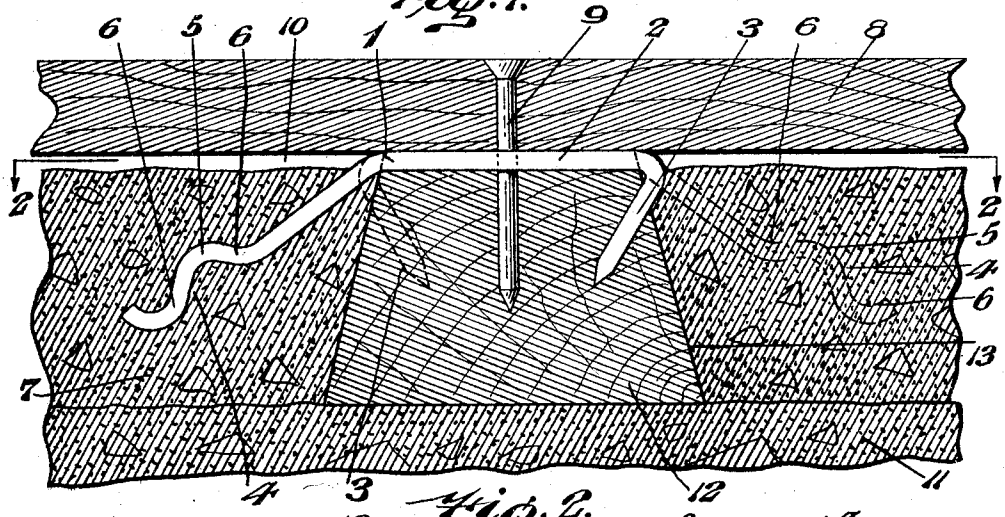


Fig. 2.

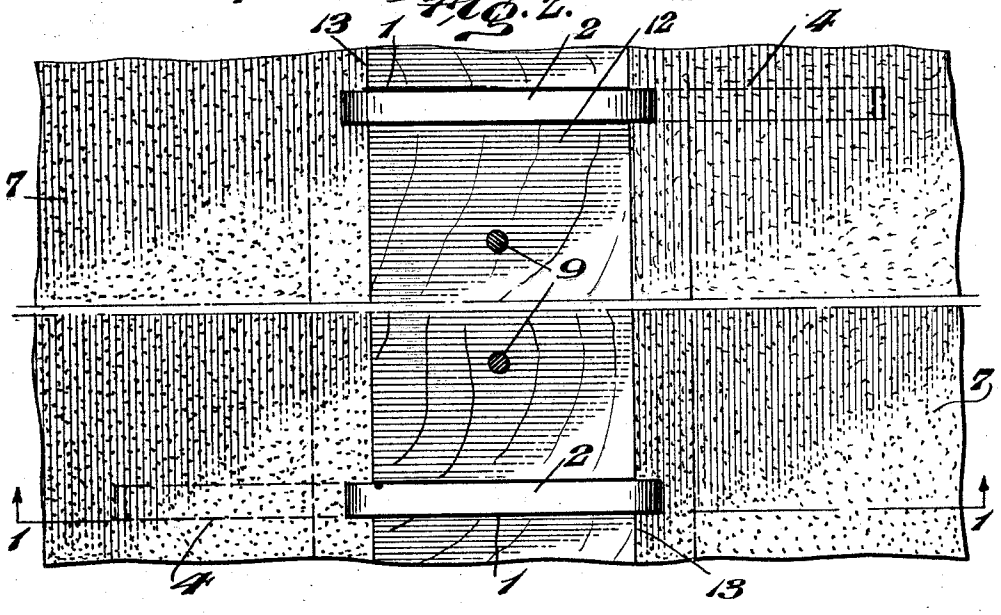
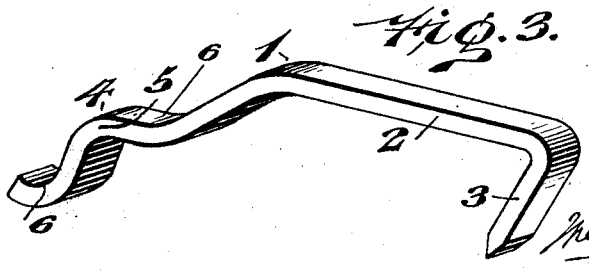


Fig. 3.



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WILLIAM H. ANDREWS, OF LOS ANGELES, CALIFORNIA.

SLEEPER ANCHOR.

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My invention relates to a new and useful anchor and more particularly to an anchor adapted for use in connection with wooden floor sleepers embedded in concrete or the like adapted more firmly to secure said sleepers in place and to prevent the working loose of the same due to tension or to vertical, lateral or longitudinal shrinkage.

My invention further relates to a novel anchor of this character made of a non-corrosive material, one end of said anchor being adapted to be driven into the sleeper obliquely or at an angle to the vertical axis thereof and the other end being provided with an anchoring terminal for interlocking with the concrete to render impossible the withdrawal or working loose of said anchor under normal conditions of use.

My invention further relates to an anchor of this character, which will, due to the manner of its engagement with the sleeper and the surrounding concrete, prevent splitting of said sleeper when the floor is nailed thereto, and will exert a correspondingly increased tension with the shrinkage of the sleeper thus preventing the rocking or moving of said sleeper in the surrounding concrete mould thereby preventing the squeaking of the floor.

To the above ends my invention consists of an anchor of the character described comprising a pointed, angularly inclined spur or engaging member adapted to be driven into one side of the sleeper at an angle to the vertical axis thereof, and an elongated terminal anchoring member adapted to extend over said sleeper and into the surrounding concrete on the opposite side of the sleeper.

My invention further consists in providing the elongated terminal anchoring member above referred to with a corrugated portion for interlocking with the concrete surrounding and embedding the same to prevent the working loose or withdrawal of the anchor.

My invention further consists in so forming and shaping the different parts and members of my novel anchor, as to insure maximum efficiency in the engagement and retention of the sleeper in position at all times and for any length of time.

For the purpose of illustrating my invention I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

Referring to the drawings:—

Figure 1, represents a side elevation of a sleeper anchor embodying my invention, the floor, concrete and sleeper being shown in section.

Figure 2, represents a plan view of Fig. 1.

Figure 3, represents a perspective view of the anchor in detached position.

Referring to the drawings in which like reference characters indicate like parts, 1, designates an anchor of non-corrosive material embodying my invention comprising the horizontal upper or body member 2, one end of which is pointed and bent or converged inwardly and downwardly at an acute angle to said body to form the spike or spur 3, and the other end of which extends downwardly and outwardly, at an obtuse angle to said horizontal member or body to form the terminal anchoring element 4, which is provided with the corrugations or anchoring points 5 and 6. The spike 3 is driven into the bevelled edge 13 of the sleeper 12, at an acute angle to the vertical axis thereof, the upper horizontal portion or body 2 being of a length equal to the width of the top or upper surface of the sleeper. The terminal anchor member 4 is provided with the anchoring points 5 and 6 and is adapted to extend outwardly and downwardly from the top of said sleeper and into the concrete 7. The concrete 7 in practice is poured substantially ¼ to ⅜ of an inch below the top of the sleeper 12 and the floor boards 8, nailed to the sleepers by the nails 9, rest on the upper surfaces of the series of sleepers employed, thus leaving an air space 10 between the concrete bed 7 and the floor boards 8 to prevent the shrinkage of the sleeper 12 and to prevent the contact of the floor boards 8 with the top of the concrete bed 7. The upper portions 2 of the anchors 1 are driven into the sleepers 12 which are made of a suitable soft wood, until the upper surface of said anchor portions is flush with the upper surface of said sleepers so that the floor boards 8 rest flat across the entire width thereof on the tops of said sleepers to produce an even, level floor surface. 11 designates a sub-course of concrete or the like on which floor sleepers 12 are arranged before the upper concrete 7 is poured. The

sleepers 12 are broader at their base than at their top or upper portions, that is their side walls converge upwardly so that when the concrete 7 has set, no upward movement or displacement of the sleepers is possible.

Due to the angular relation of the spike 3 to the sleeper 6 and the horizontal portion 2 of the anchor, any tension on the sleeper or on the terminal anchoring member 4 firmly held in the concrete 7, will tend to embed the spike 3 further into the sleeper and will thus more firmly hold and retain the same against any movement or displacement. Similarly the terminal locking points 5 and 6 interlock with the concrete 7 when it has set and thus firmly and rigidly maintain the anchor member 4 in position against any tension exerted on the spike 3 engaging the sleeper 6, it being obvious that any number of such interlocking terminal points may be employed.

In using my novel anchor for sleepers and the like, I preferably employ pairs of oppositely disposed or staggered anchors spaced at intervals along the length of the sleeper as may be desired. Thus, as shown in Fig. 1, one anchor (shown in full lines) is secured to one portion of the sleeper 12, while the other of said anchors (shown in dotted lines) is secured to an opposite portion of said sleeper, the body portions 2 of said anchors being driven into and straddling the top of said sleeper and the anchoring members 4 thereof, extending in opposite directions into the concrete 7 on either side of the sleeper. This arrangement enables one anchor to offset, or balance any undue tension on the other and results in more accurately and efficiently retaining the sleeper in a central or normal position.

It will be further apparent that by employing anchors of my novel construction it is not necessary to walk over the concrete 7 before it has set since the anchors can be driven into the sleepers 6 at the desired points, and the sleepers can then be arranged in proper position on the sub-course 11 and the concrete 7 is poured and allowed to harden or set without any additional interference or attention to the anchors.

It will be apparent from the foregoing that my novel anchor is a single element, which can be used as such or can be used in pairs close together or otherwise depending upon circumstances and requirements, the material of anchor construction being non-corrosive. It can be applied as desired, at any point on the sleeper without predetermination and regardless of the progress of work and further all applications of the anchor may be done with the sleeper in most convenient place for the mechanic to work before placing the sleeper on the sub-concrete floor, 11. The portion 3 of the anchor which enters the wooden sleeper will not be at right angles to the body 2, but distorted inwardly to assist in maintaining its position for driving direction, when hit with a hammer at the angle between the parts 2 and 3. The application of my novel anchors is such that they be placed and the spur or spike portions 3 driven into the wood alternately on opposite sides of the sleeper. The spur portions 3 of the anchor which enters the wooden sleeper is in practice about one inch long. The body portion 2 of the anchor will vary, to comply with the width of the top of the sleeper or anchored wood member to be used. The portion 4 of the anchor to be embedded in the concrete will in practice extend into the concrete about two and a half inches from its junction with the body 2 to its outer or left hand end. The points 6 are anchoring points, when the distortions of the anchor obviously pull against the concrete in opposite directions, when tension on the anchor sets up in an attempt to straighten the anchor and pull it from the concrete. Driving the spurs or spike portions 3 into the wooden sleepers alternately on opposite sides of the sleeper, retains the anchors in a fixed position impossible to move as the embedded anchors at the points 6 cannot be disturbed and the points 3 pulling entirely across the sleeper from opposite sides produce a constant clamping two-way action which shrinkage of wood sleeper, or splitting when floor boards are nailed into it, will not prevent the sleeper functioning as intended and will prevent sleeper movement by the floor nailed to it, even though there is shrinkage of wood and concrete. The angle of the obtuse angled portion of the anchor will be approximately 40° from the portion 2 or sufficient to keep the left hand terminal point about one half inch from the floor, so to permit said terminal to be completely surrounded by concrete when embedding sleepers. The anchors made of a non-corrosive metal may be flat, round or square, preferably flat with square edges, and in practice are from one-quarter to five-sixteenths inches wide and about one-eighth inch thick. It will be found to be economical to manufacture, as a special nail machine can do the work with but little change to an ordinary machine. The portion of the anchor extending from the left of the spur 3 may be twisted or otherwise distorted if desired to enhance its holding propensities in concrete embedding and across the wooden sleeper. The cross sectional dimensions of the anchor will be sufficient for factor of safety beyond any reaction possibility of the floor action from any cause whatsoever in a lifting action tending to bend or break the anchor. Such an action by the nailed floor through any cause, will withdraw the nails from the sleeper or pull them further into the floor boards without disturbing the anchor.

My novel anchor can obviously be applied to other uses than that described, as for an-

choring rough door frames in masonry or concrete walls or partitions also for anchoring floor joists or studding when secure anchoring is desired of wood work to masonry or concrete. While I have described the sleeper 12 as being of wood as is customary, it will be obvious that the sleeper may be made of other materials.

In Figure 1 I have shown a single hard wood floor nailed directly to the tops of the sleepers 12, but if desired an under floor of soft wood may be interposed between the tops of the sleepers 12 and said hard wood floor without departing from the spirit or scope of my invention.

It will now be apparent that I have devised a novel and useful construction of sleeper anchor, which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. An anchor for floor sleepers, comprising a top horizontal body portion having one end thereof pointed and bent inwardly and downwardly at an acute angle to said body and adapted to be driven into one side of a sleeper adjacent the top thereof, and having its other end extending in an opposite direction outwardly and downwardly at an obtuse angle to said horizontal body portion, the latter being of a length equal to the width of the top of a sleeper.

2. An anchor for floor sleepers, comprising a top horizontal body portion having one end thereof pointed and bent inwardly and downwardly at an acute angle to said body and adapted to be driven into one side of a sleeper adjacent the top thereof, and having its other end extending in an opposite direction outwardly and downwardly at an obtuse angle to said horizontal body portion, the latter being of a length equal to the width of the top of a sleeper, and said latter end of the anchor being provided with a plurality of anchoring points.

3. The combination of a sleeper and a plurality of anchors, each having a flat top body portion, inwardly inclined spur members driven into said sleeper from opposite sides thereof, and an opposite anchoring limb extending in an opposite direction at an angle to said body, and adapted to be embedded in concrete, the anchoring terminals of said anchors extending in an opposite direction to each other, and the spur members of each anchor converging downwardly towards each other.

WILLIAM H. ANDREWS.