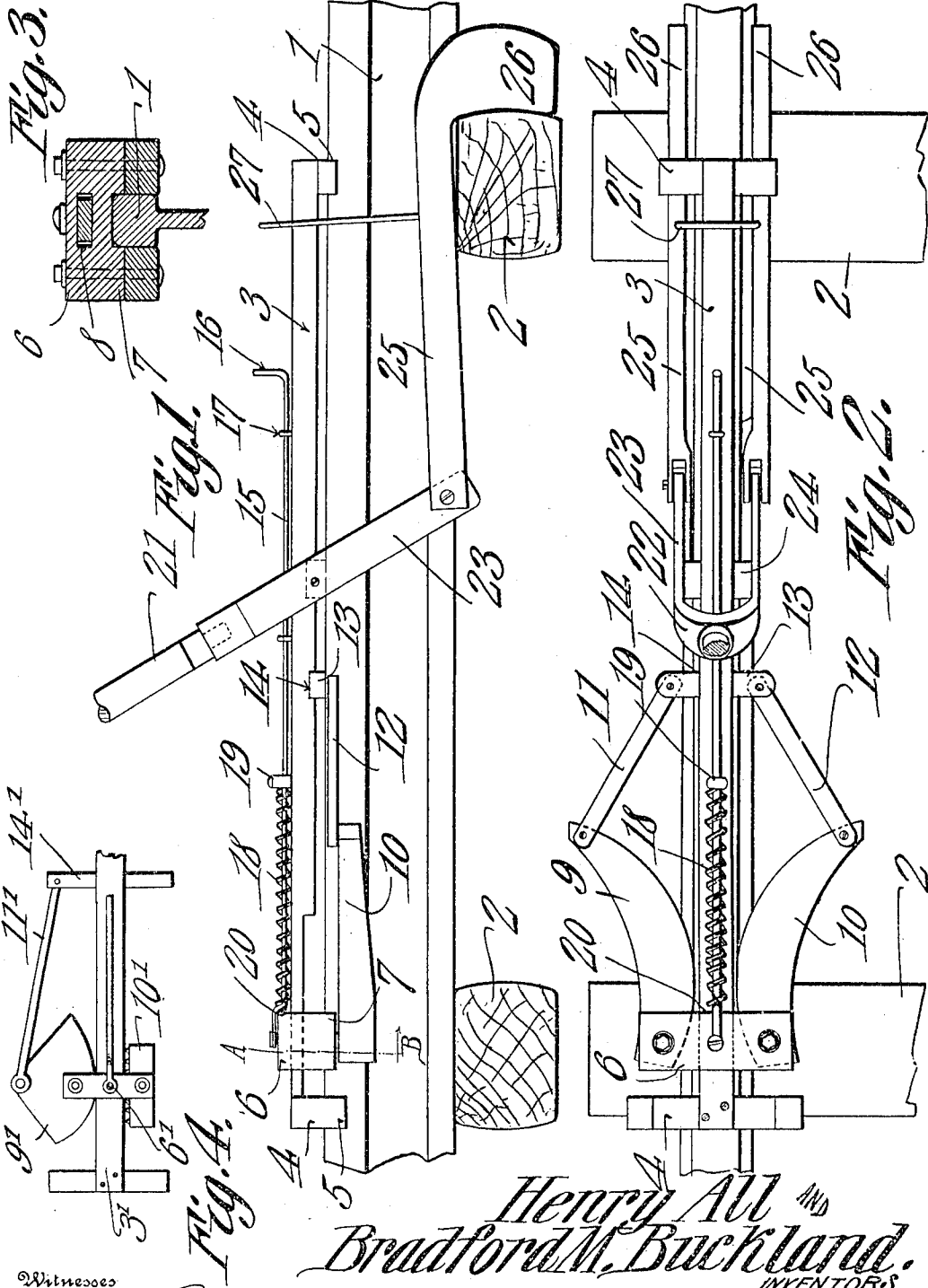


H. ALL & B. M. BUCKLAND.
RAILROAD TIE SPACER.
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Witnesses
Francis Boyle

Henry All
Bradford M. Buckland.
INVENTORS

By C. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

HENRY ALL AND BRADFORD M. BUCKLAND, OF SULTANA, CALIFORNIA.

RAILROAD-TIE SPACER.

949,207.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HENRY ALL and BRADFORD M. BUCKLAND, citizens of the United States, residing at Sultana, in the county of Tulare, State of California, have invented a new and useful Railroad-Tie Spacer, of which the following is a specification.

Our invention relates to railway tie spacers, and has for an object to provide a device of this character that can be adjustably mounted on the rail head and will engage the tie on each side of the rail and evenly advance the tie to any desired position from the secured tie.

A further object is to provide a tie spacer which when once applied to a rail may be advanced along the rail but will automatically bind the rail head and prevent movement in the opposite direction.

A further object is to provide a tie spacer in which the clamping members may be readily released from locked position on the rail so that the device may be slid backward to any desired position on the rail.

The usual manner of spacing railway ties is to use a heavy maul or crow-bar to jump the ties to the desired position. The ties are more or less tilted from the impact of the tools and a great deal of time and labor expended in properly spacing the ties by this method. Our present invention obviates these disadvantages by the provision of a frame adapted to clamp the head of the rail and having gravitating hooks which are operated through the medium of a lever pivoted on the frame to evenly slide the ties to their proper position.

With the above advantages and other objects in view which will appear as the nature of the invention is better understood, our invention embraces the structure illustrated in the accompanying drawing, described in the following specification, and set forth in the appended claims.

In the accompanying drawing, Figure 1 is a side elevation of a rail and ties showing a tie spacer constructed in accordance with my invention in applied position. Fig. 2 is a plan view of the same. Fig. 3 is a fragmentary sectional view taken on the line A—B of Fig. 1. Fig. 4 is a plan view of a modification of the rail clamping jaw.

Like characters of reference designate similar parts in the views shown.

Referring now to the drawing 1 designates a rail; and 2 designates ties loosely inserted underneath the rail.

The frame or body portion of the tie spacing device comprises a bar 3 adapted to extend along the head of the rail and held spaced therefrom by terminal cross pieces 4 which have downwardly extending projections that loosely engage the sides of the rail head and guide the body portion in its sliding movement along the rail head.

Arranged adjacent the forward end of the body portion is a movable member 6 having terminal projections 7 which slidingly fit the opposite sides of the rail head. The movable member 6 may be secured to the body portion 1 in any preferred manner, the connection in this instance being made by passing the body portion through a suitable aperture 8 formed transversely the movable member.

Positioned below the movable member is a pair of curved jaws 9 and 10, the opposed faces of which are adapted to clamp the lateral sides of the rail head. One end of the jaws is pivotally connected to the extremities 7 of the movable member, the opposite end being connected by links 11 and 12 to the extremity 13 of a stationary member 14 disposed transversely the body portion and adjacent the movable member.

In Fig. 4 is shown a modification of the rail clamping jaws. In this instance the jaw 10' is provided with a toothed working surface, and the cam jaw 9' is connected at its intermediate portion to the actuating link 11' which latter is connected in turn to a stationary member 14' as before described. The jaws 9' and 10' are pivotally connected at their intermediate portions to the extremities of a movable member 6' mounted upon the body portion 3'. Slidingly mounted on the top face of the body portion is a pull rod 15, one end of which is rigidly secured to the movable member and the opposite end turned up to provide a finger grip 16. The pull rod is guided in its sliding movements by eyes 17 projecting from the top face of the body portion, as shown. Surrounding the pull rod is a spiral spring 18, one end of which is rigidly secured to an apertured lug 19 projecting from the top face of the body portion and the opposite end of which bears upon the lateral face 20 of the movable member. The spring is held under tension between the lug 19 and movable member and exerts an outward pressure on the latter whereby to yieldingly hold the

jaws in engagement with the opposite sides of the rail head. By this arrangement of the parts any movement of the body portion 1 in a forward direction, designated on the drawing by an arrow, will operate through the medium of the stationary member 14 and links 11 and 12 to spread the rear ends of the jaws and permit the device to be slid along the rail, the spring 18 operating to return the jaws to their initial position the moment the advancing motion of the body portion ceases. At the beginning of the reverse movement of the body portion the rear ends of the jaws will be drawn together and the rounded working faces thereof will bind the sides of the rail head and prevent the device from being slid rearwardly along the rail until the pull rod is operated to force back the movable member against the tension of the spring.

Positioned intermediate the ends of the body portion 1 is a lever 21 terminating at one end in a yoke 22, the lateral branches of which are sufficiently spaced to embrace the base flange of the rail and are pivotally connected intermediate the ends to the end faces of a transverse block 24 carried by the body portion.

Pivotally connected to the terminals of the lever branches 23 are a pair of hook members 25 which terminate in bent portions 26 that gravitate and engage the tie on both sides of the base flange of the rail. In order to limit the gravitating movement of the hook members a yoke 27 is terminally connected to the hook members and arches up over the body portion, as shown, the shoulder of the yoke being adapted to bear upon the top face of the body portion and support the hook member in operative position.

The operation of the device is as follows: The body portion is placed in engagement with the rail head and the hooks dropped into engagement with the rear faces of the tie to be spaced. The handle lever 21 is then pulled backwardly which causes the jaws 9 and 10 through the medium of the stationary member and links to clamp the lateral sides of the rail head, any further movement of the handle operating to draw forward the hooks and the end of the tie engaged thereby to the desired distance from the secured tie. It is desirable to have a pair of the devices in operation at the same time so that both ends of the tie may be uniformly advanced. When the tie has been secured in position, the rail flange may be spiked down in the usual manner and the device advanced along the rail to the next tie. In advancing the device the hooks are held against the tie by the operator's foot and the lever thrown forward which operates to release the jaws from their clamped position and slide the body portion 1 forward when the hooks may be disengaged and the lever pulled back suffi-

ciently to place the hooks in engagement with the succeeding tie. For clearness a pair of widely spaced ties is shown in the drawing, but in actual practice the ties would be very close together so that one operation of the lever would advance the body portion of the device a sufficient distance along the rail head to permit the hooks to be engaged in operative position without removing the device from the rail. If for any reason the device must be moved back on the rail the pull rod is operated to release the jaws when the device may readily be slid backward to any desired position.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes in the form, proportion and minor details of construction may be made without sacrificing any of the advantages or departing from the spirit of the invention.

What is claimed is:

1. In a tie spacer, the combination of a body portion to engage the head of a rail, a movable member disposed adjacent one end of said body portion, a pair of jaws pivoted on said movable member and adapted to clamp a rail head, means cooperating with said movable member to yieldingly hold said jaws in engagement with said rail head, a pair of hook members disposed below and on opposite sides of said body portion and adapted to engage a tie, and an operating lever pivotally mounted on said body portion and adapted to advance the hook members substantially as described.

2. In a tie spacer, the combination of a body portion to engage the head of a rail, a movable member disposed adjacent one end of said body portion, a pair of jaws pivotally connected to the extremities of said movable member and adapted to engage the opposite sides of a rail head, means cooperating with said movable member for yieldingly holding said jaws in engagement with said rail head, an operating lever terminating in a bifurcated head the lateral branches of which are pivotally connected to said body portion, and hook members pivotally connected to the extremities of said lateral branches and adapted to engage a tie substantially as described.

3. In a tie spacer, the combination of a body portion having transverse extensions adapted to engage the head of a rail, a movable member disposed adjacent one end of said body portion, a stationary member positioned on said body portion adjacent said movable member, a pair of jaws pivotally connected at one end to said movable member and adapted to engage the opposite sides of a rail head, links connecting said movable

jaws with said stationary member, means for yieldingly holding said jaws in engagement with said rail head, hook members adapted to gravitate and engage a tie, and an operating lever pivotally mounted on said body portion and connecting the shanks of said hook members to said body portion substantially as described.

4. In a tie spacer, the combination of a body portion having terminal extensions adapted to engage the head of a rail, a movable member disposed adjacent one end of said body portion adapted to loosely engage the head of a rail, a pair of jaws pivotally connected to the extremities of said movable member and adapted to engage the opposite sides of a rail head, a stationary member carried by said body portion adjacent said movable member, links connecting said jaws to said stationary member, a spring carried by said body portion and exerting a pressure on said jaws whereby to yieldingly hold the same in engagement with said rail head, means for releasing the jaws from operative position, a pair of hook members adapted to gravitate and engage a tie on opposite sides of the rail, and an operating lever connecting said hook members to said body portion substantially as described.

5. In a tie spacer, the combination of a body portion having transverse extensions adapted to loosely engage the head of a rail,

a movable member disposed adjacent one end of said body portion having terminal extensions adapted to slidingly fit the opposite sides of a rail head, a pair of curved jaws connected at one end to said terminal extensions and adapted to engage the opposite sides of a rail head, a stationary member carried by said body portion, links connecting said jaws with the terminals of said stationary member, a spring carried by said body portion and exerting a pressure on said movable member whereby to yieldingly hold said jaws in engagement with said rail head, a pull rod attached to said movable member and operating to compress said spring whereby to release said jaws from operative position, a pair of hooks disposed on opposite sides of said body portion and adapted to engage a tie on each side of the rail, an operating lever pivotally mounted on said body portion and pivotally connected to the shanks of said hooks substantially as described.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

HENRY ALL.
BRADFORD M. BUCKLAND.

Witnesses:

F. W. CONKEY,
B. F. KNOTT.