

Nov. 16, 1943.

L. B. HOPKINS

2,334,196

TRACK SHOE

Filed July 25, 1941

2 Sheets-Sheet 1

Fig. 1.

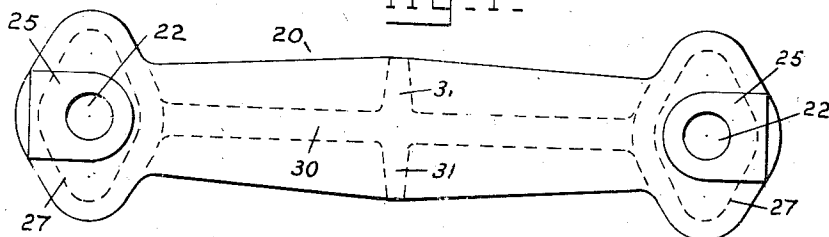


Fig. 2.

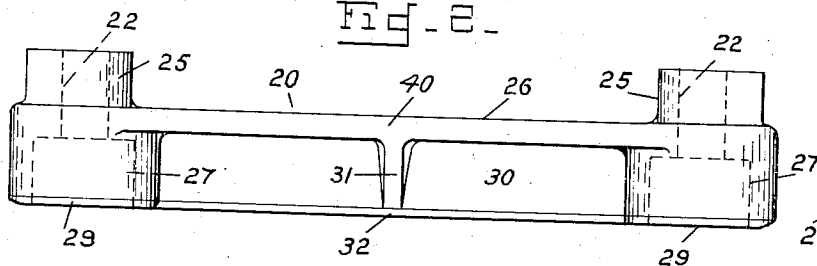


Fig. 3.

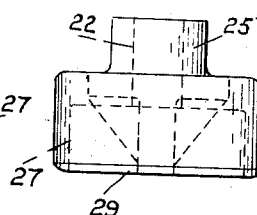


Fig. 4.

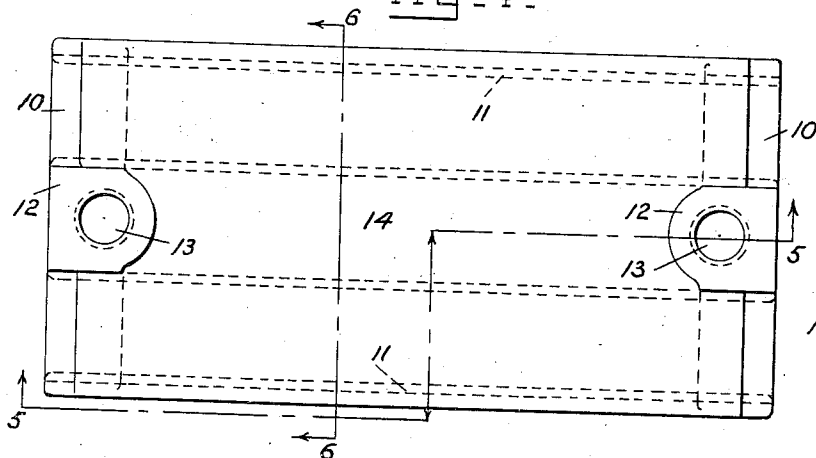


Fig. 6.

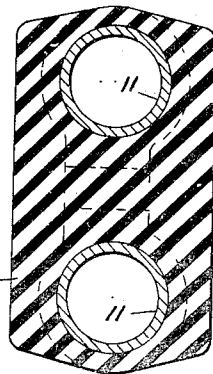
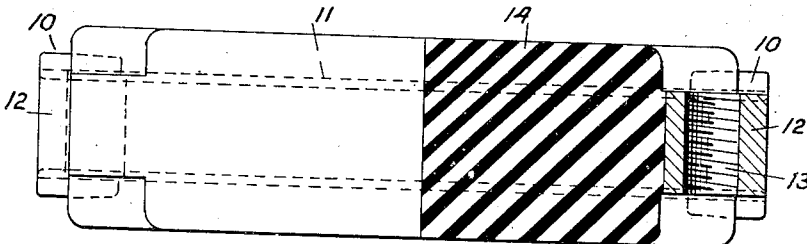


Fig. 5.



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UNITED STATES PATENT OFFICE

2,334,196

TRACK SHOE

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Application July 25, 1941, Serial No. 404,025

5 Claims. (Cl. 305—10)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

My invention relates to a track shoe for track laying vehicles.

An object of my invention is to provide a track shoe having detachable cleats or "grousers."

Another object of my invention is to provide a rubber faced track shoe with means to incorporate thereon a metal cleat or "grouser" so that with the cleat or "grouser" in place there is only a metal to metal contact between the "grouser" and the track.

Another object of my invention is to provide an improved cleat or "grouser" in which the weight of the tank is not entirely carried on a blade-like portion of the cleat or "grouser."

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a plan view of my cleat or "grouser."

Fig. 2 is a side view of my cleat or "grouser."

Fig. 3 is an end view of my cleat or "grouser."

Fig. 4 is a plan view of the track shoe.

Fig. 5 is a side view of the track shoe and discloses a sectional view taken substantially on the line 5—5 of Fig. 4.

Fig. 6 is a sectional view taken substantially on line 6—6 of Fig. 4.

Fig. 7 discloses the cleat or "grouser" attached to the track shoe and discloses a sectional view through the track shoe.

Fig. 8 is a sectional view taken substantially on line 8—8 of Fig. 7.

Figs. 9, 10, and 11 disclose plan, end and side views of the end plates which hold the tubes of the shoe frame in spaced relationship.

Referring to the drawings the metal frame of the track shoe consists of two end plates 10 and two tubular members 11. The ends of the tubular members are brazed in the holes in the end plates or else the tubular members and end plates may be formed in one casting operation if so desired. The end plates 10 have a thickened portion 12 which serves as a wall thickness for tapped holes 13 in the end plates. The exposed portions of the tubular members 11 and portions of the end plates 10 have elastic material such as rubber 14 bonded thereto preferably by vulcanization. The elastic material 14 extends between the tubes and is adapted to abut the wheels of the track laying vehicle as well as the ground when the

cleat or "grouser" to be described later, is not attached to the shoe frame.

The tubular members 11 are adapted to receive link pins and elastic bushings as is well understood in the art; a plurality of track shoes may thus be joined to form a complete track in a manner shown, for instance, in the Knox Patent 2,129,696.

One cleat or "grouser" 20 is to be attached to each track shoe by bolts 21 which pass through holes 22 in the "grouser" 20 through washer 24 and which are screwed in the tapped holes 13 in the end pieces 10.

Each "grouser" has projections 25 which are adapted to abut the end plates 10 and space the upper flat surface 26 of the "grouser" from contact with the ground side of rubber portion 14 so that there is only a metal to metal contact between the "grouser" and track shoe.

The walls which form open hollow portions 27 encase the heads 28 of bolts 21 so as to protect them from wear and abuse. The projecting ends of the walls which form hollow portions 27 have a hard alloy surfacing 29 to prevent excessive wear. A blade-like portion 30 extends between the walls which form open hollow portions 27 and is formed integral therewith as well as with the flat solid portion 40. Ribs 31 disposed between the blade-like portion 30 and solid portions 40 of the "grouser" serve to strengthen the blade-like portion. The outside edge 32 of the blade-like portion 30 has a hard alloy surfacing to prevent excessive wear.

It is noted that the stress due to the weight of the tank is not entirely transmitted through blade-like portion 30 but some of it is transmitted through the walls which form the open hollow portions 27. Thus, the walls of open hollow portions 27 serve multiple functions, namely, they protect the bolt heads 28; they support some of the weight of the tank; they provide some additional cleat or "grouser" action. Also, those walls have substantially an elliptical cross section with the major axis of the ellipse extending between the tubular members 11 and the minor axis in line with the blade-like portion 30. It is desirable to have the major axis extend a large distance between the tubular members 11 so that the "grouser" might be held more firmly to the end plates 10 when the "grouser" is subjected to impact; it is desirable to have the minor axis of the ellipse extend a short distance for then the maximum length of the blade-like portion 30 might be realized.

I claim:

1. In a track shoe, a pair of spaced tubular members, end pieces joining opposite ends of the tubular members, elastic material having a ground engaging surface bonded to and disposed between the tubular members, a cleat extending between the end pieces, means for fastening the cleat to the end pieces, and means for spacing the cleat from the ground engaging surface of the elastic material.

2. A pair of spaced tubular members, end pieces having an enlarged portion with a tapped hole and joining opposite ends of the tubular members, elastic material having a ground engaging surface bonded to and disposed between the tubular members, a cleat extending between the end pieces having at each of its ends a recess and a through opening in adjoining relation thereto, a bolt for the tapped hole passing through the through opening and having its head in the recess, and means for spacing the cleat from the ground engaging surface.

3. The same as in claim 2 and the last mentioned means comprises a projection on each end of the cleat.

4. A cleat for a track shoe comprising a blade-like central vertical span, both ends of said span being of increased area with respect to that of said span in the horizontal plane, end portions extending substantially to the bottom of the blade and provided with downwardly opening counter-bored recesses and upward extensions having through openings communicating with said recesses, and headed fastening devices having heads in said recesses and portions passing through said openings, said fastening devices heads only partially filling said recesses.

5. A cleat as in claim 4 wherein said end portions and said recesses have dimensions in a direction transverse to the central span in excess of their dimensions parallel to the line of said span.

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