March 19, 1929. C. L. BEST 1,705,802

METHOD OF PROVIDING TRACK SHOES

Filed Jan. 9, 1928 3 Sheets-Sheet 1

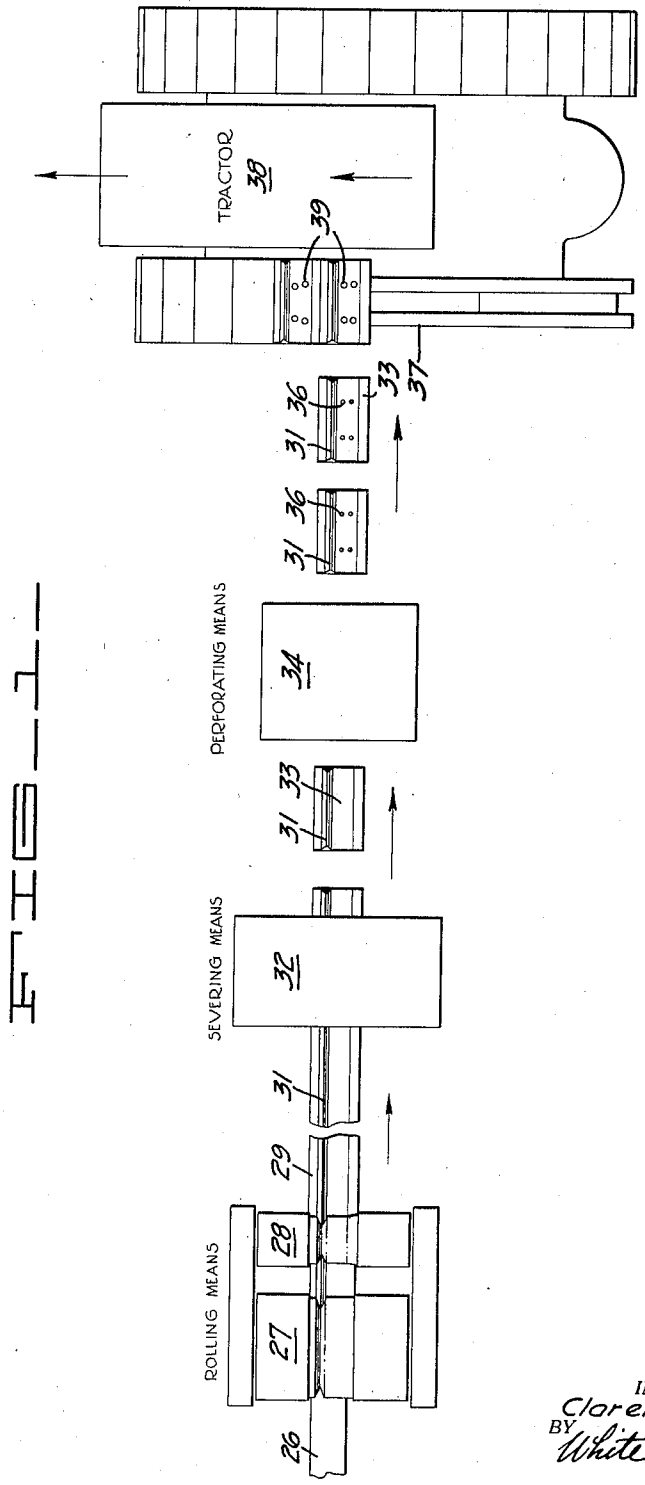


FIG. 1.

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Filed Jan. 9, 1928 3 Sheets-Sheet 2

FIG. 2.

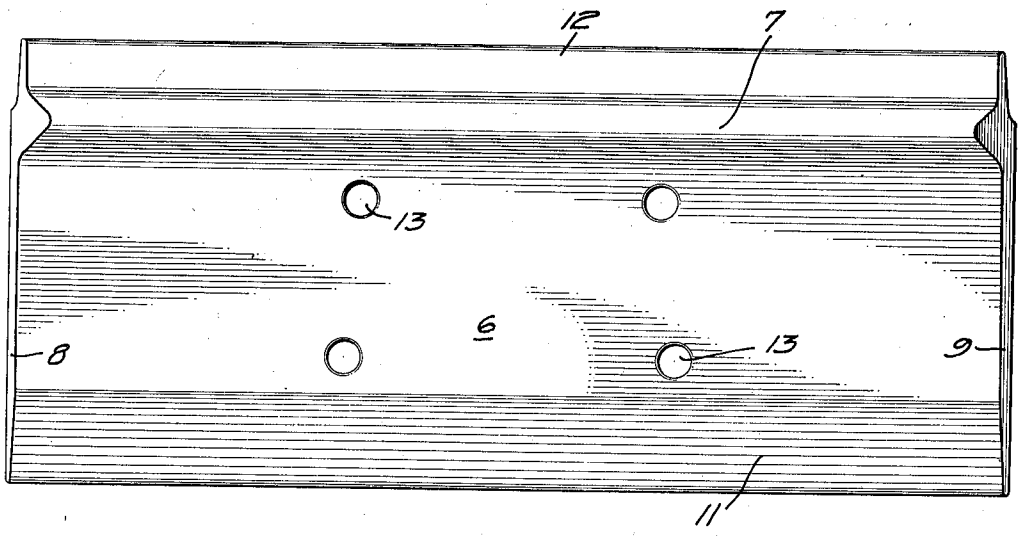


FIG. 3.

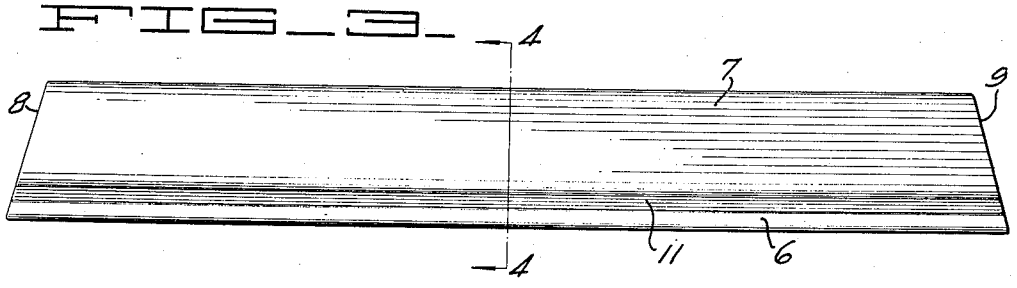
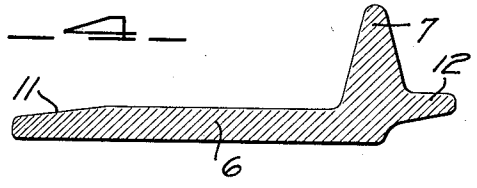


FIG. 4.



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Filed Jan. 9, 1928 3 Sheets-Sheet 3

FIG. 5.

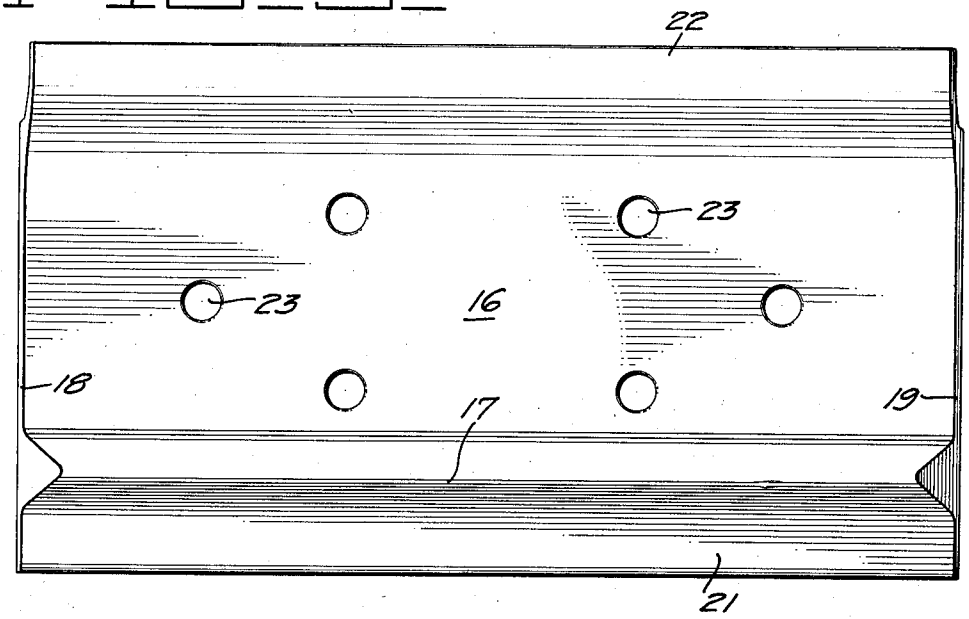


FIG. 6.

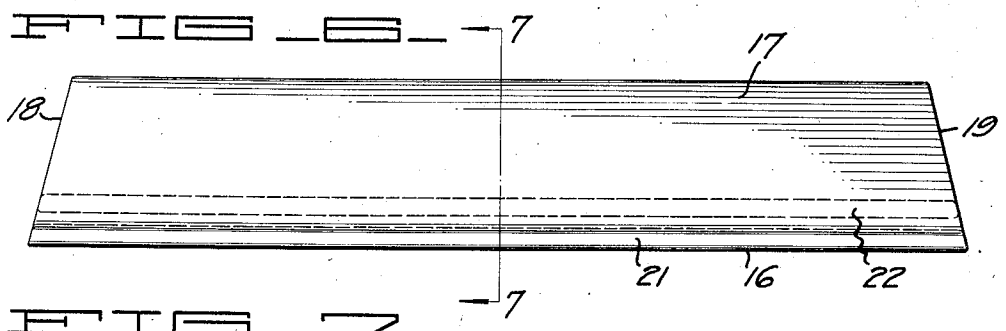
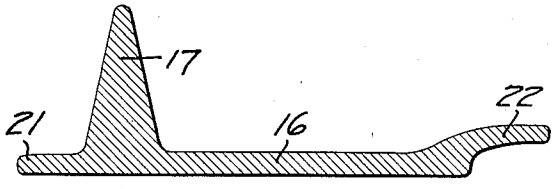


FIG. 7.



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UNITED STATES PATENT OFFICE.

CLARENCE LEO BEST, OF SAN LEANDRO, CALIFORNIA, ASSIGNOR TO CATERPILLAR TRACTOR CO., OF SAN LEANDRO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

METHOD OF PROVIDING TRACK SHOES.

Application filed January 9, 1928. Serial No. 245,299.

My invention relates to a method of providing track shoes which are especially applicable to track type tractors.

In experimenting with and developing tractors over a long period I have found that one of the most important features affecting the commercial success of a track type tractor is the track shoe. Track shoes of almost every conceivable kind and form have been experimented with and utilized by me with varying results. Among all of the different kinds, a few have stood out as decided improvements and when they have been put to practical tests on tractors actively engaged in the field it has been found, other things being equal, that the life and serviceability of the tractor is increased almost exactly in accordance with the improvement in the track shoes.

For these reasons, it is an object of my invention to afford a method of providing track shoes which produces a track shoe superior to those now in use.

Another object of my invention is to afford a method of providing track shoes which is relatively inexpensive and is well adapted to quantity production.

My invention possesses other advantageous features, some of which with the foregoing will be set forth at length in the following description where I shall outline in full that form of the method of providing track shoes of my invention, which I have selected for illustration in the drawings accompanying and forming part of the present specification. In said drawings I have shown one form of my method of providing track shoes embodying my invention, but it is to be understood that I do not limit myself to such form since the invention, as set forth in the claims, may be embodied in a plurality of forms.

In the drawings:

Fig. 1 is a diagram indicating the method of my invention.

Fig. 2 is a plan of one form of shoe produced by my novel method.

Fig. 3 is a side elevation of the shoe shown in Fig. 2.

Fig. 4 is a cross section of the shoe disclosed in Fig. 3, the plane of section being indicated by line 4—4 of that figure.

Fig. 5 is a plan of a modified form of shoe produced by my method.

Fig. 6 is a side elevation of the shoe shown in Fig. 5.

Fig. 7 is a cross section on the line 7—7 of Fig. 6.

The method of my invention preferably comprises rolling a metal bar into a strip which is in length a multiple of the length of a single track shoe, severing the strip into a plurality of plates, perforating the plates for the reception of fasteners, and arranging the finished shoes so formed in overlapping relationship on a track and in a direction normal to the direction in which they were rolled.

In the form of finished shoe shown in Figs. 2 to 4, inclusive, there is usually provided a body or plate 6 of generally rectangular outline having a grouser or rib 7 extending thereacross for traction purposes. This rib can project any desired amount from the main body of the plate 6. Preferably, the ends 8 and 9 of the plate are inclined at an obtuse angle to the ground-contacting surface thereof to aid the shoe in slipping laterally over the ground when it is in use on a tractor. In most instances, the plates 6 are used in overlapping relationship and I therefore provide a tapered edge 11 along one side of the plate 6 which is adapted to be overlaid by a projection 12 extending from the opposite side of a similar plate. The track shoes are preferably secured to track link by fasteners, not shown, which pass thru suitable perforations 13 piercing the body of the plate 6.

A similar track shoe is disclosed in Figs. 5 to 7, inclusive, and usually comprises a plate 16 having a grouser or rib 17 thereacross and being provided with inclined or beveled ends 18 and 19. To afford an overlapping relationship between the individual shoes of a series, there is formed a projection 21 adjacent the rib 17 and an overhanging lip 22 along the side remote from the rib 17. This plate also is provided with a plurality of apertures 23 for the reception of fasteners securing the finished shoe to a track.

In producing the track shoes of the type described, I preferably employ a bar 26 of suitable metal. This bar is passed thru a rolling means including one or more sets of rollers 27 and 28 which are suitably contoured to effect the desired cross section in the finished track shoe. The length of the bar 26 is preferably such that when the bar has emerged from the rolling means, as at 29, it is a multiple of the length of an individual

track shoe. It will be noted that the rolled strip 29 has an integral rib 31 extending longitudinally thereof and parallel to the direction of rolling.

Emerging from the rolling means, the strip 29 passes thru a severing means 32 which can include a shear of any standard kind capable of severing the strip into a plurality of plates approximately the length of the finished track shoe. The severing action of the shear preferably cuts the strip 29 transversely of the rib 31 and transversely of the direction in which the strip progresses thru the process. In addition, the cutting plane of the shear is preferably inclined to the upper and lower faces of the strip to produce beveled edges at both ends of the issuing plates 33. These plates are of the requisite cross section and dimensions of the finished track shoes but are further processed by being passed thru a perforating means 34 which pierces suitable perforations 36 thru them.

The track shoes thus finished are secured to the track link 38 of a tractor 37 by suitable fasteners 39, with the leading and trailing extremities of each shoe lapping the corresponding extremities of the adjacent shoes. The ribs 31 of the adjacent shoes are arranged so that their direction of motion in use is normal to the direction in which they passed thru the rolling means. Advantage is thus taken of the flow of the metal in rolling and of the crystal arrangement resulting from the process to afford a maximum resistance to ordinary wear.

It has been found in practice that track shoes produced according to my improved method are of excellent quality primarily due to the rolling process, and are quickly and economically produced, as is evidenced by the "straight-line" production indicated in the diagrammatic view.

I claim:

1. A method of providing track shoes comprising rolling a metal bar into a strip having portions adapted to lap suitable portions on a similar strip, severing said strip into a plurality of plates, and perforating said plates to provide a finished track shoe.

2. A method of providing track shoes comprising rolling a metal bar into a strip having a longitudinal rib, severing said strip transversely of said rib into a plurality of plates, perforating said plates for the reception of fasteners, and fastening said plates to a track with the ribs on said plates disposed to travel in a direction normal to their direction of production.

3. A method of providing track shoes comprising rolling a metal bar into a strip having a longitudinal rib and a longitudinal surface and being equal in length to a plurality of track shoes, severing said strip transversely of said rib and at an inclination to said surface to form a plurality of plates with bevels on said severed edges, and perforating said plates for the reception of fasteners.

4. A method of providing track shoes comprising rolling a metal bar into a strip having portions adapted to lap suitable portions on a similar strip, severing said strip into a plurality of plates, and arranging said plates in overlapping relationship in a direction normal to the direction in which they were rolled.

In testimony whereof, I have hereunto set my hand.

CLARENCE LEO BEST.