

March 2, 1926.

R. H. WHITE

1,575,475

SHEET METAL TRACK BELT UNIT

Filed May 5, 1922

2 Sheets-Sheet 1

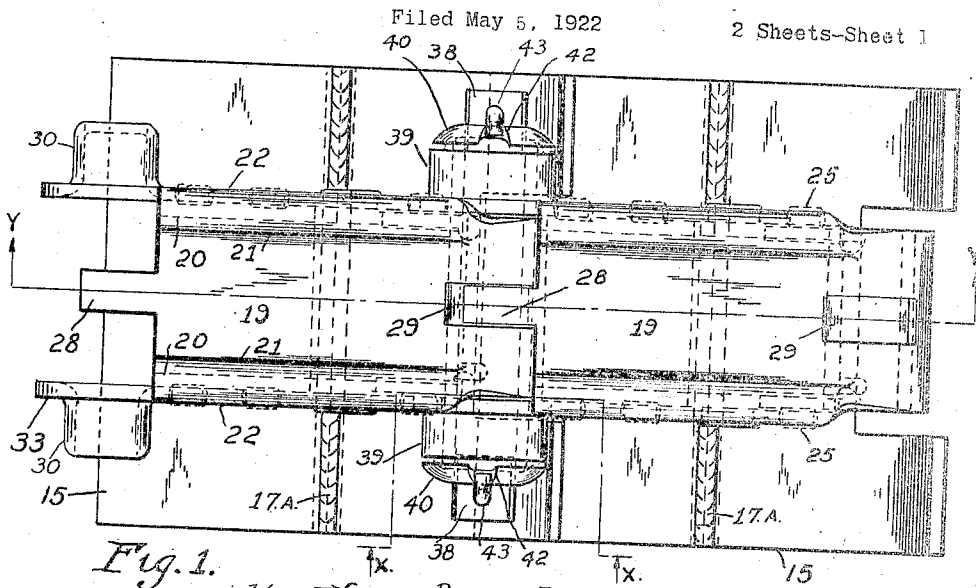


Fig. 1.

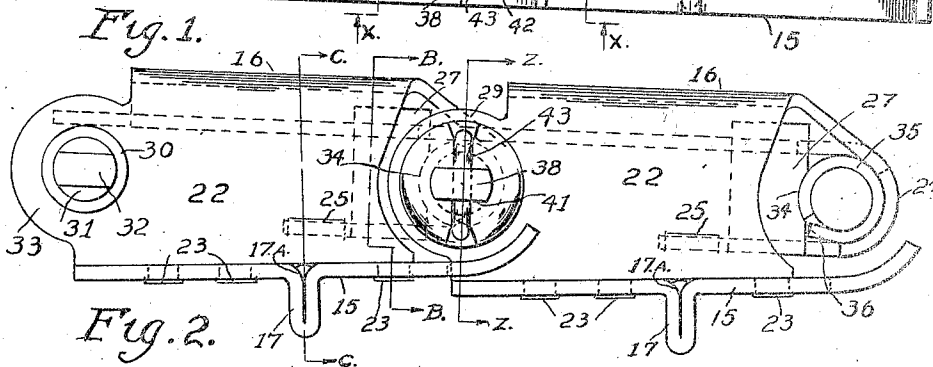


Fig. 2.

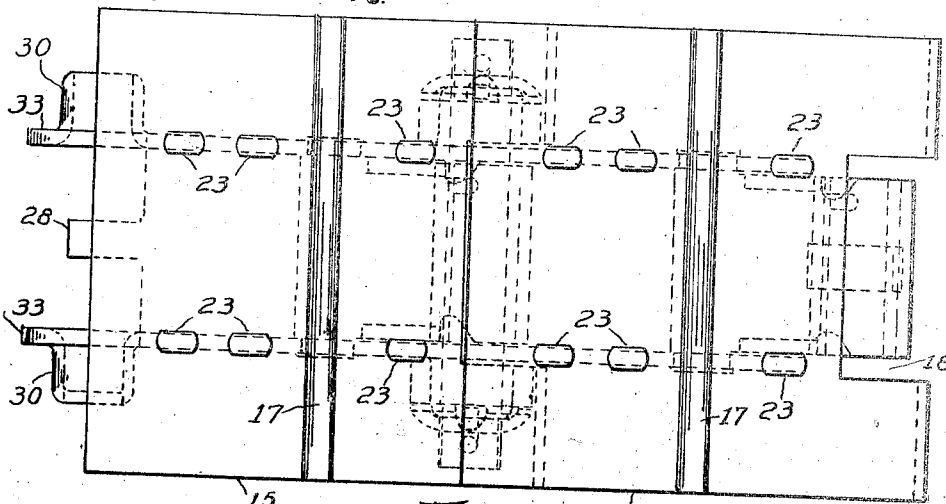


Fig. 3.

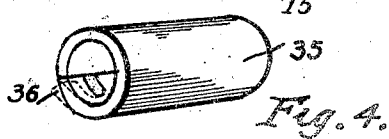


Fig. 4.

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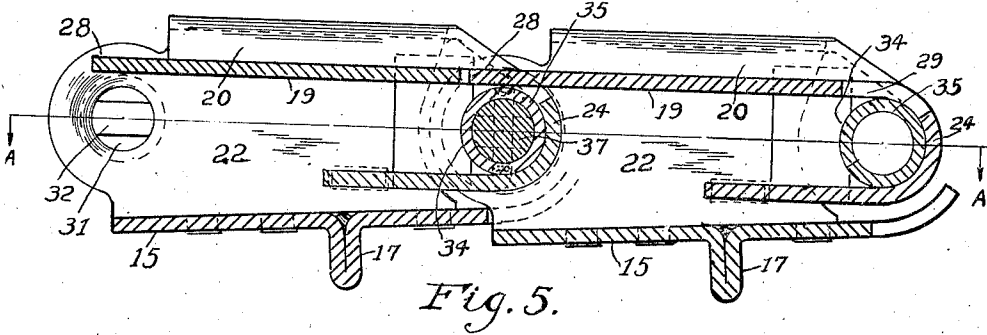


Fig. 5.

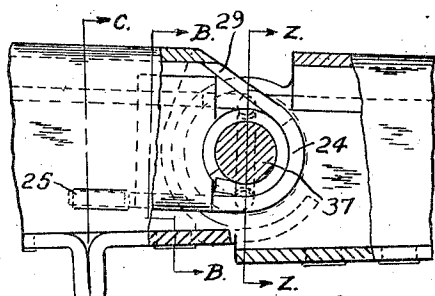
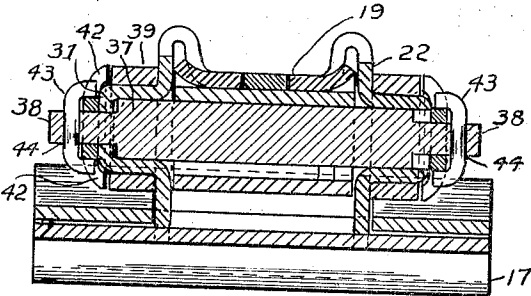


Fig. 7.

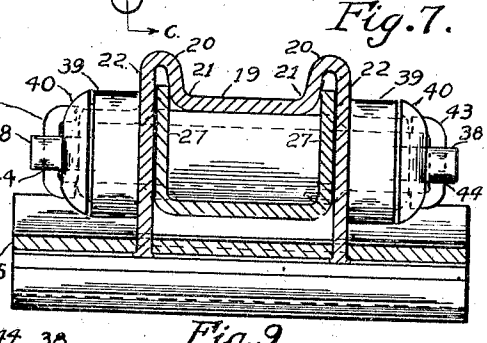
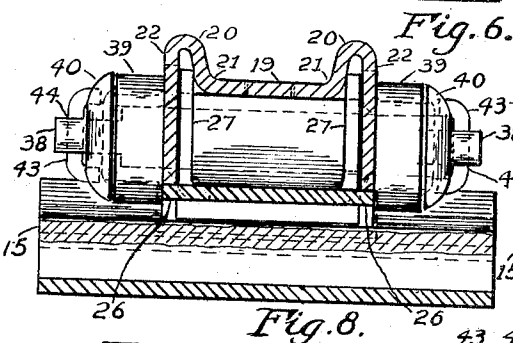
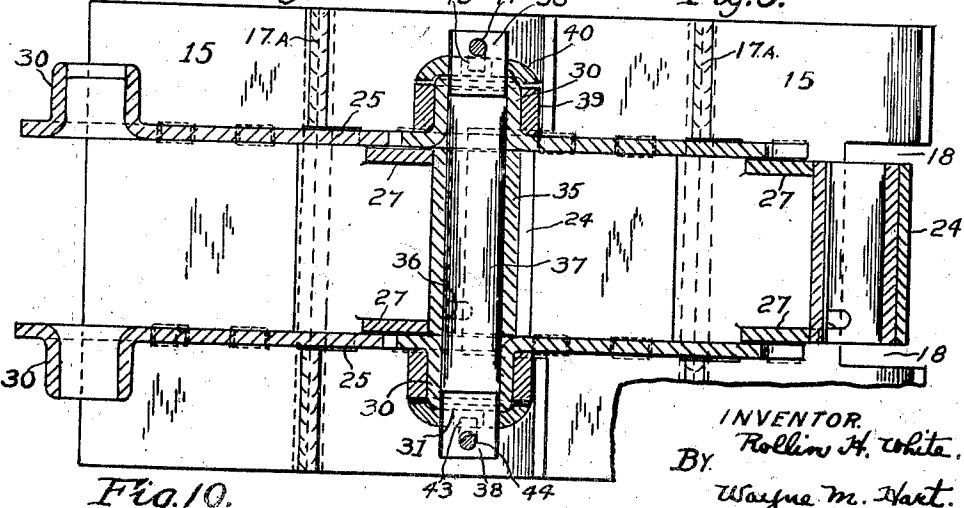


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

ROLLIN E. WHITE, OF CLEVELAND HEIGHTS, OHIO, ASSIGNOR TO THE CLEVELAND TRACTOR COMPANY, OF EUCLID, OHIO, A CORPORATION OF OHIO.

SHEET-METAL TRACK-BELT UNIT.

Application filed May 5, 1922. Serial No. 558,721.

To all whom it may concern:

Be it known that I, ROLLIN H. WHITE, a citizen of the United States, residing at Cleveland Heights, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Sheet-Metal Track-Belt Units, of which the following is a full, clear, and exact description.

This invention relates to improvements in track belts for track laying tractors.

One of the objects of this invention is to form each track unit from two pieces of sheet metal, which are secured together to form a rigid construction providing a ground engaging shoe and a track spaced therefrom.

Another object of my invention is to provide mechanism for pivotally securing the adjoining ends of the track units together, to form an endless belt.

Another object of my invention is to provide a loop at one end of a track unit, the end of which extends between the rail sides and is secured thereto.

Another object of my invention is to provide a loop at one end of a track unit, the end of which extends under the rail plate and is provided with struts which support the rail plate.

Still another object of my invention resides in a bushing for the units and the manner in which portions thereof are used to engage the rail, and prevent rotation of the bushing.

These and other objects will appear in the appended specification describing my invention and the novel features of which will be set forth in the appended claims.

Referring to the drawings, Figure 1 is a top plan view of two track units pivotally secured together;

Fig. 2 is a side elevation of the same;

Fig. 3 is a bottom plan view of the same;

Fig. 4 is a perspective view of the bushing;

Fig. 5 is a vertical section taken on line Y—Y of Fig. 1;

Fig. 6 is a cross sectional view taken on line Z—Z of Fig. 2;

Fig. 7 is a fragmentary view partially in section taken on line X—X of Fig. 1 to show the manner of locking the bushing in position;

Fig. 8 is a section on line C—C of Fig. 2;

Fig. 9 is a section on line B—B of Fig. 2; and

Fig. 10 is a plan section on line A—A of Fig. 5.

The endless track belt is made up of a plurality of like units pivoted together, each unit consisting of a bottom shoe plate 15 formed from a single sheet of metal, and a rail member 16 formed from a single sheet of metal, which shoe plate and rail member are rigidly connected together.

The bottom shoe plate 15 is formed from a rectangular piece of sheet metal which has a central portion thereof pressed, to form a transversely depending double thick grouter 17. A flux 17^a fills in the gap between the metal caused by pressing the grouter from the blank, and prevents longitudinal displacement of the shoe at this point. The forward end of the shoe plate is cut out centrally providing an opening 18, which is of a slightly greater width than the rail member 16. The front ends of the shoe plate on each side of the opening 18 are curved upwardly. In the completed unit this shoe plate inclines upwardly slightly from the rear end toward the front end thereof, so that it may overlap the rear end of the adjoining shoe plate.

The rail member 16 of each unit is formed from a sheet of pressed metal and is so shaped, cut, and bent as to have the integral parts now to be specified. The central longitudinal portion of the blank forms a rail plate 19 upon which the rollers supporting the tractor bear. Along the sides of this rail plate and extending longitudinally therewith, the metal is bent up at 21 and outwardly therefrom at an angle forming rail plate sides 20. The blank on each side of the bent up rail plate sides are then bent down substantially at right angles to the rail plate and form rail sides 22, which support the rail plate upon the shoe. The lower edges of these rail sides are secured to the bottom shoe plate 15 in any suitable manner, but preferably lugs 23 are provided and project through holes in the shoe plate, and the projecting ends of the lugs are upset against the bottom face of the shoe plate. Each side of the rail blank is cut at an angle to allow the shoe plate to incline upwardly as previously described and at the same time al-

low the rail plate to lie in a horizontal plane. The lugs 23 are formed by cutting away the edges of the blank.

The sides of the rail member at one end and cut away providing a tongue forming a continuation of the rail plate which tongue is bent under forming a loop 24, the end of which extends in a horizontal plane below the rail plate and above the shoe plate. The metal blank is so cut, that ears 25 extend from the side edges of the end of the loop and these ears project through slots 26 in the rail sides 22. The projecting ends of these ears 25 are upset against the outer face of the rail sides and serve to rigidly secure the loop in position and also to brace the rail sides. The metal blank is also cut to provide an extension on each side of the loop end, in the front of the ears 25, and these sections are bent up and lie parallel with the rail sides forming struts 27. The ends of these struts extend into the angular spaces between the inside of the rail sides and the rail plate sides, and bear against the sides thereof thereby adding rigidity to the looped end of the unit. The ears 25 prevent longitudinal distortion of the looped end of the rail member, and the struts 27 assist in preventing vertical distortion of the rail member.

The rear end of the rail member is cut away on each side forming a central tongue 28 which projects into an opening 29 cut in the top of the loop 24 of the adjoining unit. The tongue is of sufficient length to lie within the opening in any position the adjoining units can assume when pivoted together thereby providing a continuous rail plate surface under all working conditions for the rollers of a tracklaying track to roll on.

Near the rear end of each side 22 of the rail member, the metal is pressed out and worked to form aligned outwardly extending hollow bosses 30. The boss on one side of the rail member has an open end and the boss on the other side of the rail member has an end wall 31 which is cut away to provide a slot 32. The ends of the sides 22 are cut to form semi-circular ears 33 which extend beyond the bosses and lie outside of the sides of the loop of the adjoining unit when the track is assembled.

A central portion of the outer edges of the braces is cut away forming semi-circular recesses 34, and a cylindrical bushing 35, the same width as the loop 24, is inserted and lies snugly within the loop and the recesses in the braces. Each end of the bushing is cut and bent outwardly to provide tongues 36 which bear against the lower edge of the braces and prevent rotation of the bushing when in position in the unit.

When it is desired to assemble the like

units described, the looped end 24 of each unit is inserted between the rail sides of the rear end of the adjoining unit, so that the bushing within the loop and the bosses are in alignment. A cylindrical pin 37 having flat ends 38 is inserted into the open boss and is pressed therein and through the bushing 35 and the slotted opening 32 in the end wall of the boss on the opposite rail side. Rollers 39 are then placed on the bosses and dished washers 40 having a slotted opening 41 are pushed on the flat projecting ends of the pin until the edges bear against the outer edges of the rollers. The washers are provided with recesses 42 in their periphery, and cotter keys 43 are inserted through holes 44 extending through the flat ends of the pin. The ends of the keys are bent into the recesses 42 of the washers, thereby locking the pin, the washers and the rollers in position. It will be seen that the pin is secured rigidly within the bosses, because the flat end thereof extends through the slot in the end of one of the bosses, and that it hinges within the bushing secured within the loop of the adjoining unit.

The curved end of the shoe plate overlaps the end of the adjoining shoe plate and the ears 33 overlap the sides of the loop of the adjoining unit and are free to pivot in this position. The tongue 28 projects into the slot 29 in the loop forming a continuous roller bearing surface when the units are assembled. Sprocket teeth not shown engage the rollers on the bosses for driving the track.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention and I do not limit my invention to the specific construction shown and described herein.

What I claim is:—

1. A track belt unit comprising a shoe plate, and a rail member formed from a sheet metal blank, said rail member comprising a rail plate, depending sides secured to said shoe plate, said sides having openings therein, said rail plate having one end looped under and extending between said sides, and ears on said loop secured within the openings in said sides.

2. A track belt unit comprising a shoe plate, and a rail member, said rail member comprising a rail plate, sides depending from said rail plate secured to said shoe plate, said sides having openings therein, a loop bent under from said rail plate extending between said sides, and ears extending from the sides of the end of said loop and projecting through the openings in said sides, said ears being upset against the outer wall of said sides.

3. A track belt unit comprising a shoe plate, and a rail member formed from a

sheet metal blank, said rail member comprising a rail plate, sides depending from said rail plate secured to said shoe plate, a loop at one end of said rail member, and
 5 rigid means extending upward from each side of said loop to engage the sides of said rail plate.

4. A track belt unit comprising a shoe plate, and a rail member formed from a
 10 sheet metal blank, said rail member comprising a rail plate, sides depending from said rail plate secured to said shoe plate, a loop at one end of said rail member, and struts extending upward from the bottom
 15 of said loop at each side thereof engaging the sides of said rail member.

5. A track belt unit comprising a shoe plate, and a rail member formed from a sheet metal blank bent to provide a rail plate
 20 having side flanges, rail sides depending from said rail plate flanges and secured to said shoe plate, a forwardly extending loop, and struts bent up from the sides of said loop to extend between and engage said rail
 25 plate sides and said depending rail sides to support said rail plate.

6. A track belt unit comprising a shoe plate, and a rail member rigidly secured together, said rail member comprising a
 30 rail plate, sides depending from said rail plate, and aligned hollow bosses extending from said sides, one of said bosses having

a transverse end wall provided with a slotted opening and the other boss having an open end.

7. A sheet metal track belt unit bushing, comprising a single sheet of metal curved to form a split cylindrical tube and having an integral projection extending transversely to the longitudinal axis thereof, each end
 35 adapted to engage a track belt unit to prevent the bushing from rotating therewith.

8. A sheet metal track belt bushing, comprising a single sheet of metal curved to form a cylindrical tube and having tongues
 40 struck out from its wall projecting at an angle transversely to the periphery thereof which are adapted to engage a unit of the track belt to prevent rotation of the bushing in relation to the unit.

9. A track belt unit comprising a shoe plate, a rail member including a loop and upwardly extending struts therein, said struts having a semi-circular recess in the ends thereof, and a bushing positioned
 45 within the loop and the semi-circular recesses in said struts, said bushing having a tongue projecting from its periphery at each end, and engaging said struts to prevent rotation of said bushing in relation
 50 to said rail member.

In testimony whereof, I hereunto affix my signature.

ROLLIN H. WHITE.