Apr. 10, 1923

1,451,613

F. HODGKISS

TRACTOR

Original Filed May 10, 1921

2 sheets-sheet 1

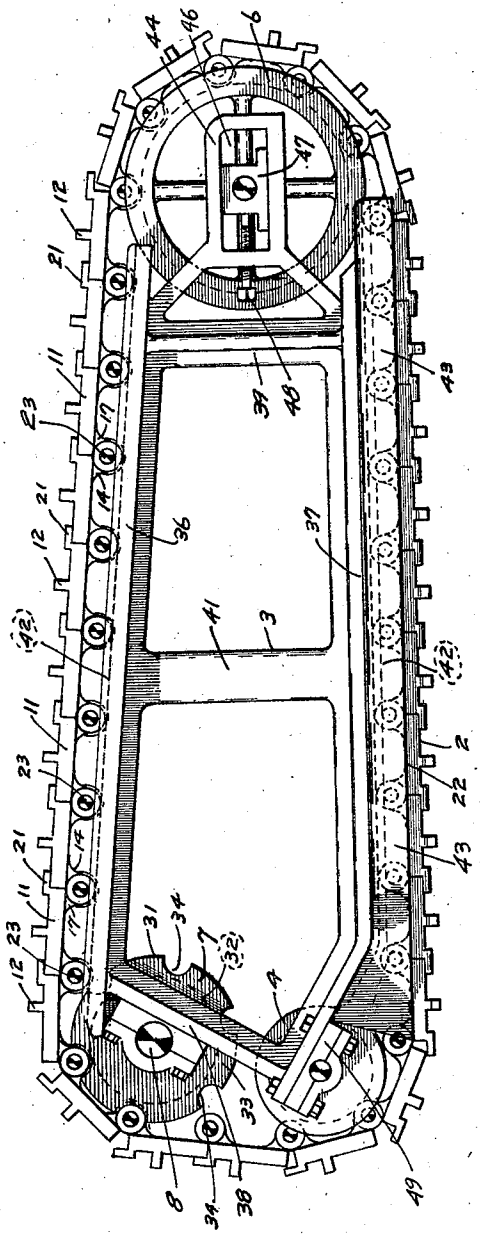


Fig. 1.

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Apr. 10, 1923 1,451,613

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Original Filed May 10, 1921 2 sheets-sheet 2

Fig. 2.

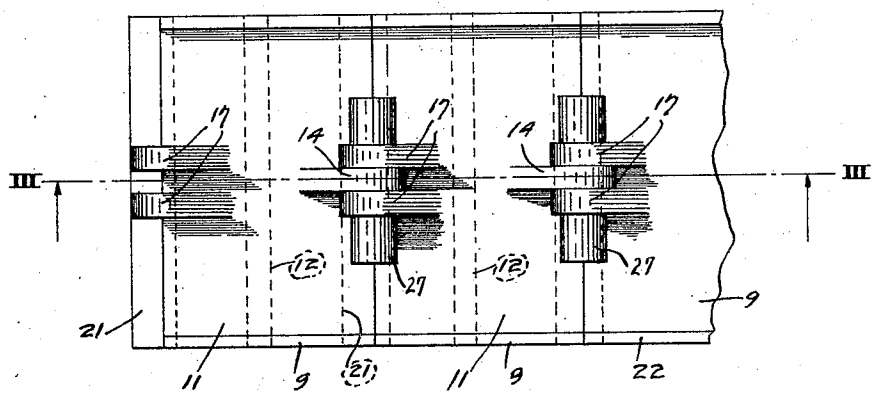


Fig. 3.

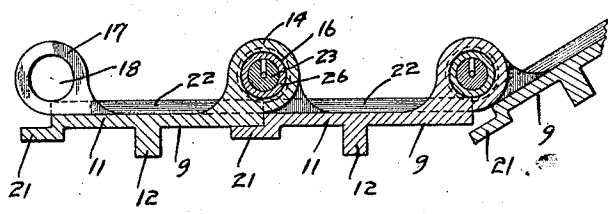
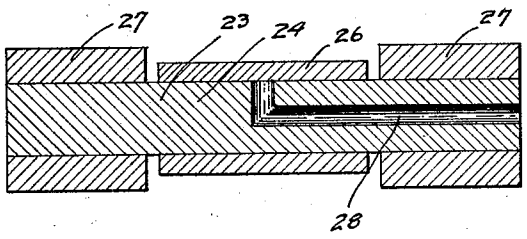


Fig. 4.



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Patented Apr. 10, 1923. 1,451,613

UNITED STATES PATENT OFFICE.

FRANK HODGKISS, OF OAKLAND, CALIFORNIA.

TRACTOR.

Original application filed May 10, 1921, Serial No. 468,338. Divided and this application filed December 21, 1921. Serial No. 523,972.

To all whom it may concern:

Be it known that I, FRANK HODGKISS, a citizen of the United States, and resident of Oakland, county of Alameda, and State of California, have invented a new and useful Tractor, of which the following is a specification.

The present invention relates to improvements in tractors and is a divisional application of that filed by me on May 10, 1921, Serial No. 468,338. The principal object is to provide a new track laying mechanism which is exceedingly simple and reduces friction to a minimum, including a new sprocket wheel and track laying links co-operating with the same.

With this object in mind I have illustrated the preferred form of my invention in the accompanying drawing in which Figure 1 represents a side elevation of my device showing the track layer mounted on its frame, Figure 2 is a detail view showing several of the links of my track layer in plan view, Figure 3, a cross section along line 3—3 of Figure 2, Figure 4 a cross section through a hinge member by means of which two adjoining links are joined together. While I have illustrated only one preferred form of my invention I wish to have it understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

Referring to the drawings in detail the tractor is supported on two endless tracks (2) each of which is adapted to travel on and around a track-frame (3), two idlers (4) and (6), and a sprocket wheel (7) adapted to transmit motion to the track from its shaft (8). The track is illustrated in detail in Figures (2) and (3) and comprises a plurality of links (9), all of which have the same shape. Each link comprises a substantially rectangular metal plate (11) having, when viewed as lying on the ground as in Figure (3), a downward projection (12) adapted to dig itself into the soil, an upwardly extending lug (14) at one end having a perforation (16) therein and two parallel upwardly extending lugs (17) with perforations (18) therein. The two lugs (17) are spaced so as to be adapted to receive the lug (14) of the next adjoining link, the perforations (16) and (18) registering when the lugs are joined. I wish to point out that I do not think it necessary to provide two spaced lugs at one end, since one lug may do just as well, if properly placed. When I use only one lug at either end, I arrange them in staggered relation, either staggering them on each link, so that in the series of links each lug would be alined with the corresponding lug of the next link, or staggering them linkwise, that is, in such manner that the two lugs on the link would be alined with each other and with both lugs on each third link, the lugs on each second link being alined with each other. Either of these arrangements will give satisfactory results and I do not wish to be confined to any one of them, the principal point of my invention being that only one central hinge is provided between each two links. To prevent dirt from working into the links and hinges and to provide additional gripping means I provide a lip (21) on each link adapted to overlap the near edge of an adjoining link when the track is lying flat. Each link is also provided with longitudinal upwardly extending flanges (22) adapted to contact corresponding flanges secured to the frame and to thereby guard the links from dirt and dust.

The links are hinged together by means of the bearing members (23) extending through the registering perforations in the adjoining lugs of each two links. One of these members is shown in detail in Figure 4 and comprises a pin (24), a central sleeve (26) thereon and two rollers (27) rotatably secured thereto. The central sleeve is co-extensive with the width of the lugs, and the rollers, being of a somewhat larger circumference than the sleeve, are adapted to hold the lugs in their place on the sleeve. A central axial grease hole (28) extends from one end of the pin to its center, then turns in radial direction and is adapted to deliver grease to the central part of the bearing surface of the hinge connection.

To impart motion to the endless track made of these single links, I provide the sprocket wheel (7), shown in side view in Figure 1. This sprocket wheel is an ordinary wheel with a rather wide rim (31) and has an annular groove (32) in said rim. This groove is of sufficient width to receive the lugs (14) and (17) while the two flanges (33) of the rim flanking the groove, are provided with a plurality of transversely

alined notches (34) adapted to be engaged by the rollers (27).

The track frame (3) consists of two substantially horizontal members (36) and (37), two substantially vertical end members (38) and (39) and a central vertical brace (41). Its horizontal members which come in contact with the track are provided with central grooves (42) corresponding to and alined with the groove in the sprocket wheel. The lower one of the horizontal members, which rides on the rollers of the track is provided with guards (43), extending downwardly to come within close reach of the flanges (22) on the links of the track, as mentioned hereinbefore so as to allow as little dirt as possible to enter the link connections, without, however, touching the links and aiding in anyway in the support of the frame. The track frame is provided with a forwardly extending bracket (44) which has a horizontal slot (46), in which is secured a bearing (47) for the idler (6). The bearing may be adjusted in the slot by means of the screw (48) and in this manner any possible slack, that may develop in the track, may be taken up. At the rear end, in the lower corner, the track frame supports, in the bearing (49), the second idler (4). Both idlers are provided with grooves alined with the groove in the sprocket wheel and with proper bearing surfaces for the rollers of the track.

It will be seen that in this manner a self-laying track is secured that is exceedingly simple in construction, and allows the track frame to ride directly on the hinges connecting the track links, without any intervening wheels, or the necessity of extra ball bearings, the rollers secured to the pins allowing the track frame to ride easy on the track.

I claim:

1. A hinge engagement between two links of the character described, comprising a central lug rising from one of the links and a pair of spaced lugs rising from the other adapted to receive the single lug between the same, a pin having a central sleeve thereon engaging the three lugs and extending beyond the same at either end, with collars at either end of larger diameter than the sleeve for holding the lugs in engagement with the sleeve.

2. A hinge engagement between two links of the character described, comprising a central lug rising from one of the links and a pair of spaced lugs rising from the other adapted to receive the single lug between the same, a pin having a central sleeve thereon engaging the three lugs and extending beyond the same at either end, with collars at either end of larger diameter than the sleeve for holding the lugs in engagement with the sleeve, said collars being of sufficient width to allow the link to be forwarded thereby.

3. A hinge engagement between two links of the character described, comprising a central lug rising from one of the links and a pair of spaced lugs rising from the other adapted to receive the single lug between the same, a pin having a central sleeve thereon engaging the three lugs and extending beyond the same at either end, with collars at either end of larger diameter than the sleeve for holding the lugs in engagement with the sleeve, and means for introducing a lubricant between the pin and the sleeve.

FRANK HODGKISS.