Dec. 17, 1968 H. E. EASTMAN 3,416,846

REVERSIBLE CRAWLER TYPE TRACTOR TRACK

Filed Sept. 22, 1966 2 Sheets-Sheet 1

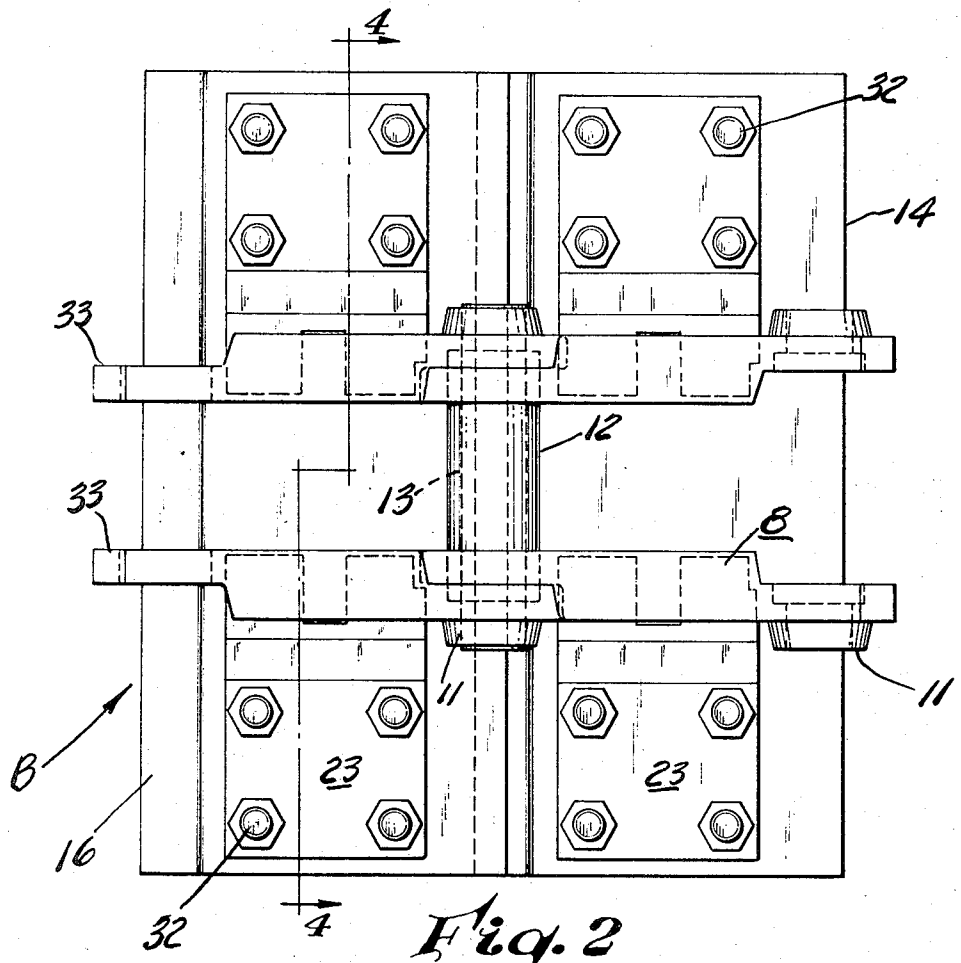


Fig. 2

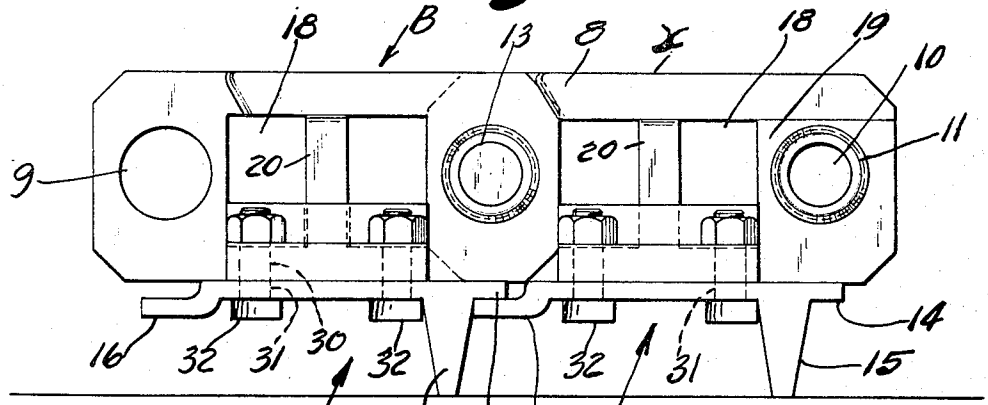
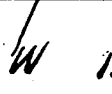


Fig. 1



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REVERSIBLE CRAWLER TYPE TRACTOR TRACK

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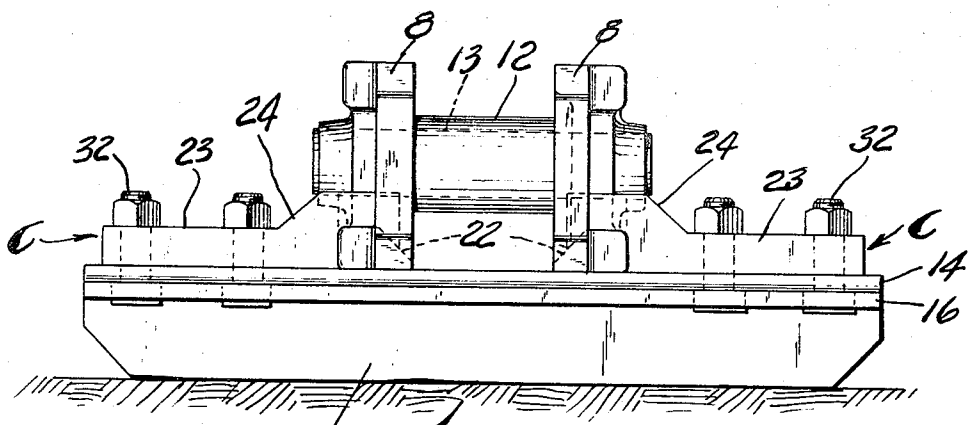


Fig. 3

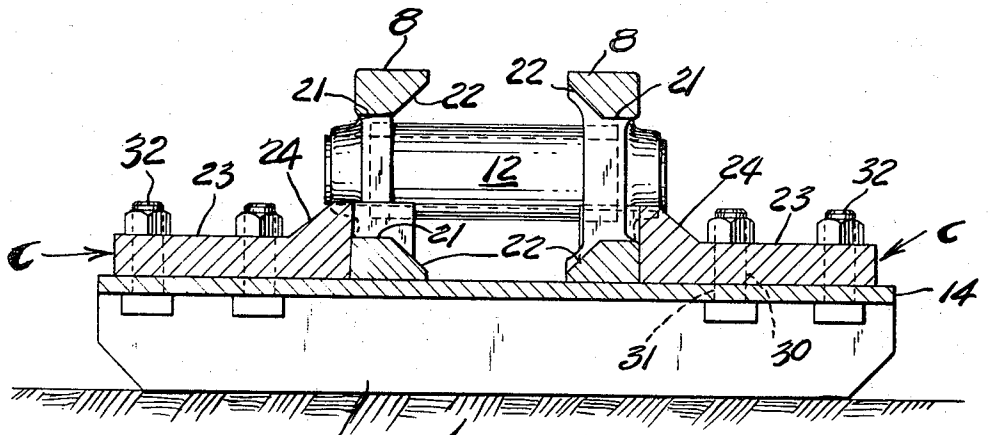


Fig. 4

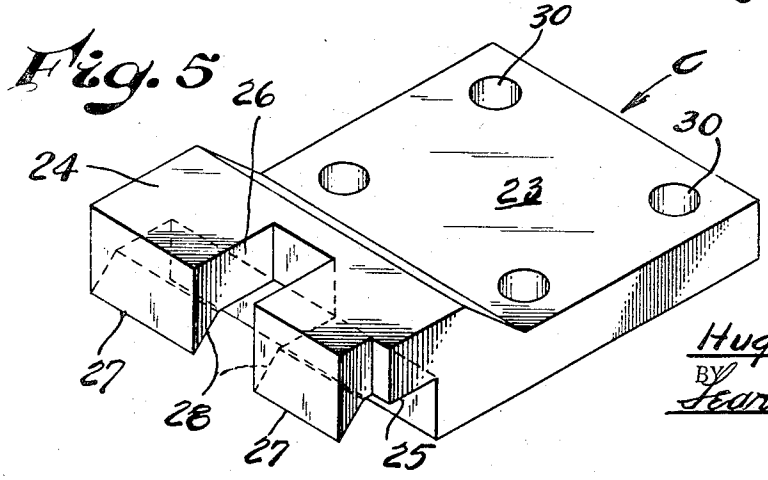


Fig. 5

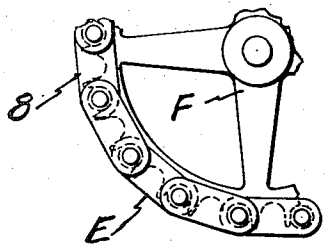


Fig. 6

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REVERSIBLE CRAWLER TYPE TRACTOR TRACK

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ABSTRACT OF THE DISCLOSURE

A reversible tractor rail chain with connected rail link units secured together in end-to-end relationship to form an endless chain which, when worn, can be readily disassembled and the link units turned completely over so that the lower worn face of the unit becomes the upper face of the unit, and the upper unworn face of the unit becomes the lower working face of the unit.

This invention relates to track links such as used for crawler-type tractors and machines of a similar nature, and more particularly to track link units linked together in endless relation to provide an endless rail for the machine to travel on.

One of the prime objects of the invention is to provide a plurality of rail link units secured together in end to end relation to form an endless chain which, when worn, can be readily disassembled and each link unit turned completely over so that the inner worn face of the unit becomes the outer face of the unit, and the outer unworn face of the unit becomes the inner working face of the unit.

A further object of the invention is to provide a releasable link unit, the wearing surfaces of which can be easily and quickly reversed so that the inner worn sections of the links and bushings now become the outer sections, and the unworn working surfaces now become the inner working sections. These units are identical in construction and are very economical to disassemble, turn, and reassemble, providing a rail chain having two identically similar working surfaces which can be quickly changed when worn, with a minimum of down time.

Still a further object of the invention is to design a movable track consisting of links, bushings, and track shoes which links comprise spaced apart forgings shaped to have left and right hand corresponding counterparts connected by bushings, so that when turned over, the shoe side of the entire track becomes the rail side, and the former rail side now becomes the shoe side, this turning of the units presenting a completely unworn surface of the unit for continued use.

A further object still is to provide a track link unit which can be easily disassembled, turned to present an unworn working face, and repaired by unskilled personnel with the simplest of hand tools, without the use of welding equipment or other heavy tools and equipment in a minumum length of time.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings:

FIG. 1 is a side elevational view showing a pair of connected rail links;

FIG. 2 is a top plan view thereof;

FIG. 3 is an end elevational view, showing the grouser shoe and assembled bushing;

FIG. 4 is a transverse, sectional view taken on the line 4—4 of FIG. 2;

FIG. 5 is a perspective view of one of the clamps;

FIG. 6 is a fragmentary section of a sprocket driving wheel and a portion of the chain track in contact therewith.

Track links of crawler type tractors and the like are of the same general design, the links **8** being of generally elongated planar construction and having apertures **9** and **10** formed in the opposite end portions thereof, a boss **11** being formed on one end of the said apertures. These aperatures are provided for the reception of horizontally disposed bushings **12**, including a pin **13** which has a press fit in the bushing. Each bushing is countersunk in the rail link and is engageable by a drive sprocket F, provided on the machine for driving said chain. The individual links **8** and bushings **12** are mounted on shoes **14** and form a unit B, the links of which are linked together to form an endless track. The shoes **14** are relatively flat and are provided with grousers or lugs **15** for contact with the ground over which the machine is operated, the forward end of each shoe being formed with a depressed lip section **16** to accommodate the rear end section **17** of the adjacent shoe for rolling contact therewith.

Openings **18** are provided in the web or sidewalls **19** of each individual link **8** and a vertically disposed rib **20** spans each opening. The openings define radially inner and outer web portions which are flatted as at **21** and provided with wedge surfaces **22** angled to accommodate the head of the clamp C shown in FIG. 5 of the drawings. Each clamp comprises a flat body section **23** formed with a raised claw-shaped head **24** having a face **25** shaped to snugly fit the flatted shouldered edge **21** of the link. Each head **24** is centrally slotted as at **26** and forms a pair of claw-shaped sections **27**, adapted to accommodate the rib **20** therebetween, and having wedge angled surfaces **28** fitting the angled edges **22**. Because the head **24** is slotted as at **26** to accommodate the rib **20**, it prevents "play" therebetween when the clamp is secured in position.

Spaced apart openings **30** are provided in the clamp body C and register with similar openings **31** provided in the shoes **14**, and bolts **32** are provided for securing the links in upright position on the shoe and providing a rigid connection thereat.

By reference to FIG. 2 of the drawings, it will be noted that the outer bearing face **33** of the one end of the link is offset inwardly relative to the bearing face on the opposite end of the link so that the bearing faces of each succeeding link bear against each other. These end sections of the links are of reduced thickness and are offset with relation to each other to form a close connection which permits the links to turn to accommodate the ends of the bushings **12**.

When these link units B are secured in end to end relation to form an endless chain E, and the machine (not shown) is operated until the working face of the chain becomes badly worn and requires change or repair, the operator first removes the endless chain, releases the clamps C by removing the bolts **32**, and then turns the endless chain upside down so that the worn face W is now positioned as the outer face of the chain, and the previously unworn face X now becomes the working face of the chain. Further, the worn area of the bushing engaged by the sprocket F of the tractor (not shown), now becomes the outer area, and the unworn face of the bushing is then exposed to wear by the chain driving means. After the turning operation the sprockets, of the machine now engage the unworn surface of the bushing which is the same as engaging a new bushing.

Should there be a slight variation in the lower face of the clamps due to uneven wear, shims are inserted to hold the clamps in proper alignment.

From the foregoing description it will be obvious that I have perfected a very simple, practical, and inexpensive apparatus and method of disassembling, turning, and reassembling the rail link units to provide unworn working surfaces which fit and operate the same as new parts.

I claim:

1. An endless chain for tractors and the like comprising: a plurality of shoes for engaging the ground; connected interchangeable rail link units with sprocket engaging pin means mounted on each shoe in connected end-to-end relation and each having side links with open side walls defining radially inner and outer web portions; a separate clam plate secured on each side of said shoe adjacent each side link and having a raised head with a claw-shaped section thereon forming a socket for receiving one of said web portions; said side links being symmetrical about a longitudinal bisecting line so as to be reversible; and fastener means spaced outwardly from said side links for releasably securing said clamp plates on said shoes.

2. The combination defined in claim 1 in which said inner and outer web portions are bridged by a connecting rib and each clamp plate has a pair of projecting claw-shaped sections received on opposite sides of the rib.

3. The combination defined in claim 1 in which each web portion has a wedge surface over which the terminal end of the claw-shaped sections is received when the web portion is being clamped; said claw-shaped section having a mating wedge surface to engage therewith.

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