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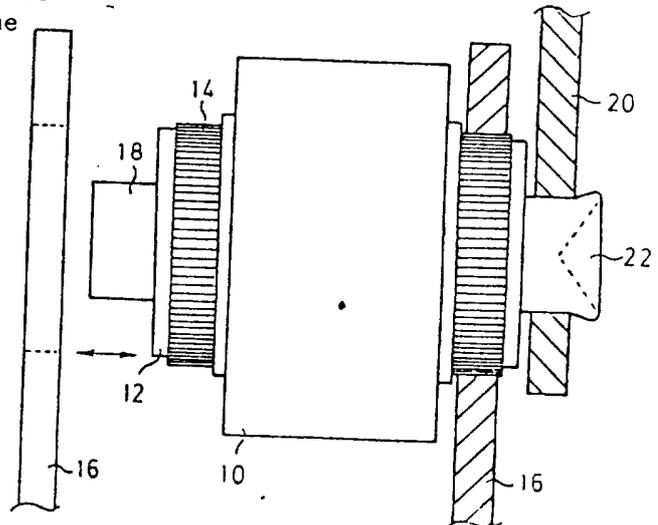
<p>(21) Application Number: AP/P/86/00057</p> <p>(22) Filing Date: 29.01.87</p> <p>(24) Date of Grant &amp; Publication: 28.07.88</p>	<p>(73) Applicant(s): J A K ENGINEERING (PRIVATE) LIMITED</p>								
<p>(30) Priority Data:</p> <p>(33) Country: —</p> <p>(31) Number: —</p> <p>(32) Date: —</p>	<p>(72) Inventor(s): UDO DUSKE NO. 6 WELCH ROAD MOUNT PLEASANT HARARE</p>								
<p>(84) Designated States:</p> <table border="0"> <tr> <td>BOTSWANA (BW)</td> <td>THE GAMBIA (GM)</td> </tr> <tr> <td>GHANA (GH)</td> <td>KENYA (KE)</td> </tr> <tr> <td>SUDAN (SD)</td> <td>UGANDA (UG)</td> </tr> <tr> <td>ZAMBIA (ZM)</td> <td>ZIMBABWE (ZW)</td> </tr> </table>	BOTSWANA (BW)	THE GAMBIA (GM)	GHANA (GH)	KENYA (KE)	SUDAN (SD)	UGANDA (UG)	ZAMBIA (ZM)	ZIMBABWE (ZW)	<p>(74) Representative: GALLOWAY &amp; COMPANY P.O. BOX 2609 HARARE</p>
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(51) International Patent Classification Int. Cl.<sup>4</sup> B21L 9/02

(54) Title: IMPROVEMENTS IN THE CONSTRUCTION OF CHAIN LINKS

(57) Abstract:

The invention relates to an improved method of manufacturing chains for the transmission of mechanical power and in particular provides for the manufacture of such chains by the provision of one or more upstanding formations on to which are pressed the various chain link plates which are securely retained without the need for welding.



(56) References cited:  
US 3,706,199  
US RE-28,169  
SU 803239

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COPY

IMPROVEMENTS IN THE CONSTRUCTION OF  
CHAIN LINKS

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This invention is concerned with chains for the transmission of mechanical power, particularly those of the kind used in conjunction with conveyor belts and is particularly directed at a new method of construction of same.

It is generally accepted that in the manufacture of such chains, the various link plates are fuse welded to the bearing support assemblies, thus enabling the various components to be heat treated for hardness prior to assembly which of course greatly increases the resistance to wear.

This manufacturing technique is of course perfectly acceptable and results in a good product. However, in the less industrialized countries, it is frequently the case, that sophisticated engineering equipment, such as for example, fuse welding machines, are not available, usually for reasons of foreign currency restraints which prevent importation of such expensive equipment.

In these circumstances, it has been the practice up until now to make do by manufacturing such chains using ordinary welding techniques which precludes the all important hardening treatment. The resultant chains have a very high wear factor resulting in frequent breakdowns in service and early replacement.

The inventor has devised what is believed to be a novel method of overcoming the abovementioned drawbacks, and thereby to produce a chain of a standard which is equivalent to that produced in the more developed countries whilst needing no specialized equipment.

According to the invention therefore, there is provided a chain for the transmission of mechanical power comprising in working combination, an assembly of components individually comprising a journal shaft adapted to rotate within and to locate a bearing assembly and further to receive and retain at either opposite end, one or more link plates; the bearing assembly in turn is adapted firstly to receive and locate an outer bearing and secondly to receive at either opposite end, one or more link plates and thereby to join individual components into a chain, the invention being characterized by the method of fixing the link plates to the bearing assembly which has one or more upstanding formations at each opposite end over which the link plates are pressed in a manner so as to prevent rotation of the bearing assembly and to permanently locate the link plates fast with the bearing assembly.

In order to facilitate further understanding, the invention will now be described in detail by way of example with reference to the accompanying drawings in which, Fig. 1 is a side elevation of a single chain element; and Fig. 2 is a plan elevation showing a single chain element and the method of attaching the link plates thereto.

The following description should not be construed so as to limit in anyway the inventive concept of the invention.

Throughout the description, like reference numerals will refer to the same parts.

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Referring to the drawings generally, reference numeral 10 shows the outer bearing intended to support for example a conveyor belt or the like. The bearing 10 is free to rotate about the bearing support assembly 12 which in the example illustrated can be seen to have upstanding formations 14 in the form of knurling at each opposite end.

It is this knurling 14 which enables the bearing support assembly 12 to be hardened by heat treatment prior to assembly. The chain link plates 16 are then pressed into position and are firmly locked in place without the need to weld them in position. The inner journal shaft 18 is free to rotate within the internal bore of the bearing assembly 12 in the normal manner and the outer link plates 20 are retained in position on the journal shaft 18 by the action of punching the ends of the shaft 18 during assembly as seen at 22, so as to bell out the end and thereby to prevent the link plates 20 from becoming detached.

To those persons familiar with this field of the art, the application of known and accepted engineering principles in order to overcome the need for expensive ancillary equipment will be readily apparent.



Fig. 1 is a side elevation of a single chain element; and  
Fig. 2 is a plan elevation showing a single chain element and  
the method of attaching the link plates thereto.

The following description should not be construed so as to limit in  
any way the inventive concept of the invention. Throughout the  
description, like reference numerals will refer to the same parts.

Referring to the drawings generally, the reference numeral 10 shows  
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To those persons familiar with this field of the art, the application  
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C L A I M S

CLAIM 1. A chain for the transmission of mechanical power comprising in working combination an assembly of components individually comprising a journal shaft adapted to rotate within and to locate a bearing assembly and further to receive and retain at either opposite end one or more link plates; the bearing assembly in turn is adapted firstly to receive and locate an outerbearing and secondly to receive at either opposite end one or more link plates and thereby to join individual components into a chain whereby the link plates are pressed to the bearing assembly which has one or more upstanding formations at each opposite end over which the link plates are pressed in a manner so as to prevent the rotation of the bearing assembly and permanently to locate the link plates fast with the bearing assembly characterised in that the upstanding formations take the form of one or more splines, whether tapered or otherwise.

CLAIM 2. A chain for the transmission of mechanical power as claimed in Claim 1 wherein the upstanding formations are created as a result of knurling.

CLAIM 3. A chain for the transmission of mechanical power as claimed in any one of Claims 1 or 2 when assembled by pressing the link plates over one or more upstanding formations of the bearing assembly rather than securing by welding in any form.



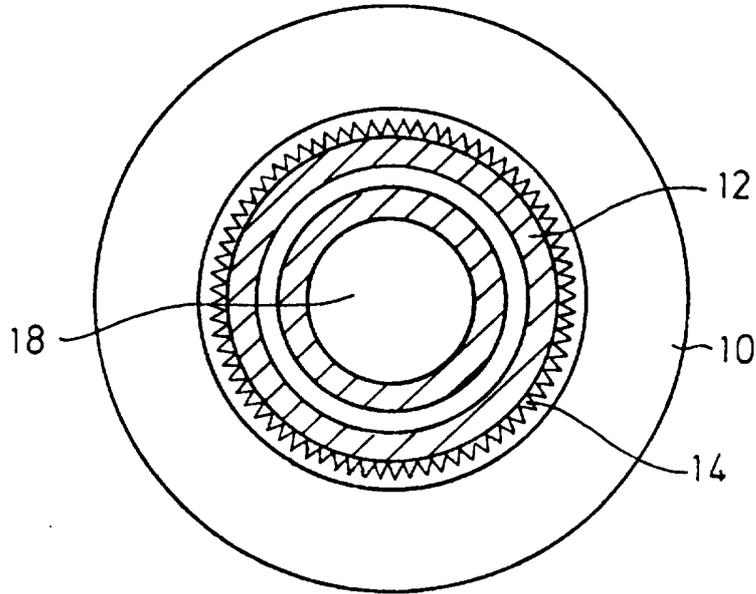


FIG 1

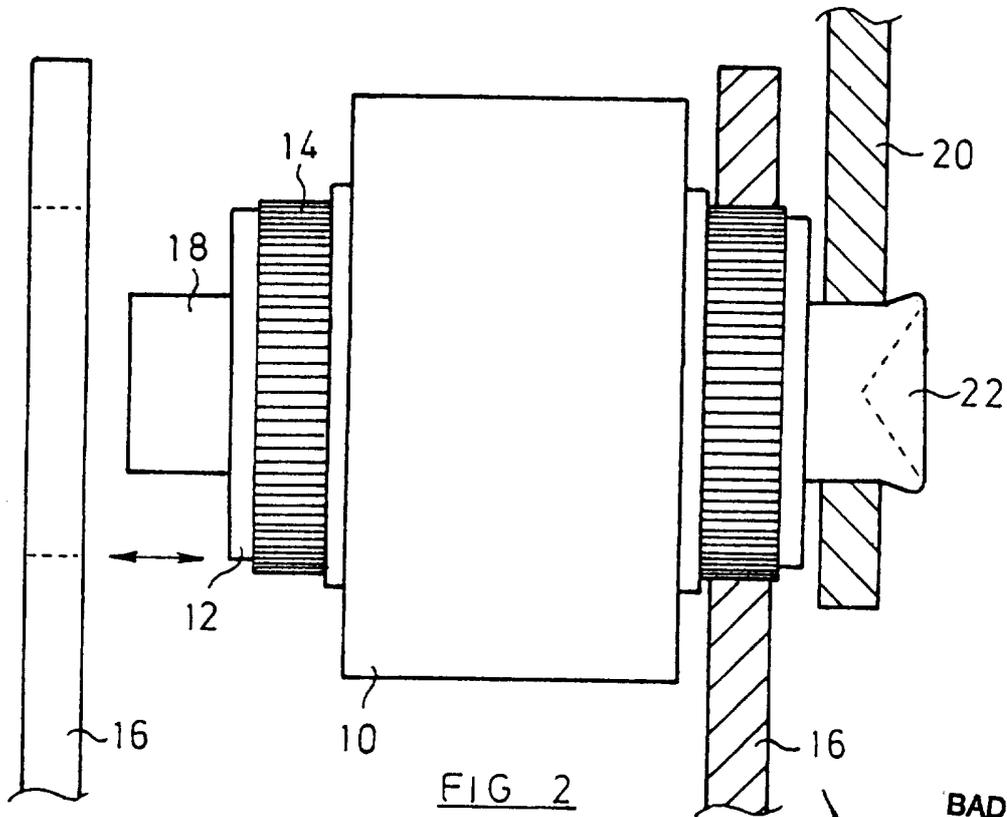


FIG 2

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*[Signature]*  
PATENT AGENT FOR THE APPLICANT