

AUSTRALIA

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623238 ^{CONVENTION}

APPLICATION FOR A STANDARD PATENT

Ringfeder GmbH

Postfach 486, D-4150 Krefeld 11, FEDERAL REPUBLIC OF GERMANY

hereby applies for the grant of a standard patent for an invention entitled:

"IMPROVED TRAILER DRAWBAR CONNECTION MEANS".

which is described in the accompanying complete specification.

Details of basic application(s):-

P3921111.8

FEDERAL REPUBLIC OF GERMANY

June 1989

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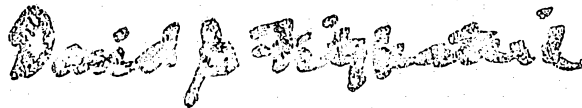
DATED this TWENTY NINTH day of MARCH 1990

PHILLIPS ORMONDE & FITZPATRICK

Attorneys for:

Ringfeder GmbH

By:



Our Ref : 166153

POF Code: 1620/1620

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DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

In support of the Convention Application made for a patent for an invention entitled:

HITCH PIN FOR TRAILER VEHICLES

I,Ulrich Coenes..... (Full Name)

ofDE-4150 Krefeld, Kieler Str. 22.....(Full Address)

do solemnly and sincerely declare as follows:

1. I am authorized by Ringfeder GmbH, the applicant for the patent to make this declaration on its behalf.
2. The basic application/s as defined by section 141 of the Act were made in FEDERAL REPUBLIC OF GERMANY on 28 June 1989,.
RINGFEDER GmbH
3. Horst-Dieter Schäfer: Süchtelner Str. 149, D-4156 Willich 2, Federal Republic of Germany; Rolf Vandeweerd: Teutonenstr. 3, D-4130 Moers 1, Federal Republic of Germany; Peter Bonacker: Am Gieselberg 35, D-4172 Straelen, Federal Republic of Germany; Udo Wensing: Holderstr. 22, D-4200 Oberhausen 11, Federal Republic of Germany; Joachim Rossbach: Rotdornweg 44, D-4060 Viersen, Federal Republic of Germany is/are the actual inventor/s of the invention and the facts upon which Ringfeder GmbH is entitled to make the application are as follows:

The applicant is the assignee of the actual inventor/s.

4. The basic application/s referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention the subject of the application.

Declared atKrefeld..... this20.....th day of April. 1990

.......... (Signature)
Ulrich Coenes (Typed Name)

To: The Commissioner of Patents

PHILLIPS ORMONDE & FITZPATRICK
Our Ref : 166153
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(12) PATENT ABRIDGMENT (11) Document No. AU-B-52370/90
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 623238

(54) Title
IMPROVED TRAILER DRAWBAR CONNECTION MEANS

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(57) Claim

1. Drawbar connection means for connecting a drawbar comprising an eyelet and a shaft to a hitch pin on a trailer, said shaft of said drawbar and said hitch pin having flanges which, during connection, are in face-to-face contact with each other, said drawbar connection means including sleeve elements which surround and clamp said flanges together axially and radially.

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IMPROVED TRAILER DRAWBAR CONNECTION MEANS

The invention relates to a drawbar connection means for trailer vehicles, particularly for a single or tandem-axle trailer. The connector is used to connect the drawbar to a hitch pin on a trailer. The drawbar comprises an eyelet and a shaft, the latter of which has a flange for connection to another flange attached to the hitch pin. In order to be connected, these flanges are orientated so as to face each other and are engaged by a detachable connector.

From DIN 74 053 Part 1 page 3, a drawbar (Form D) with a flange is known. The drawbar has holes which are parallel to the longitudinal axis of the drawbar shaft. A flange of the hitch pin on the trailer has corresponding holes, so that the drawbar and the hitch pin can be connected to each other by means of bolts. The bolts must carry all the tensile forces between the motor vehicle and the trailer and, particularly in case of single or tandem-axle trailers, considerable supporting forces. An overloading, which may occur for example when the hitch pin of a trailer, positioned relative to the motor vehicle at an angle greater than at right angles, collides with the chassis of the motor vehicle, leading to the loosening of the bolted joints due to the plastic elongation of the bolts. This represents a risk to the driving safety.

Accordingly, it is an object of the present invention to provide a drawbar connection which overcomes or reduces the above problems.

According to the present invention, there is provided a drawbar connection means for connecting a drawbar comprising an eyelet and a shaft to a hitch pin on a trailer, said shaft of said drawbar and said hitch pin having flanges which, during connection, are in face-to-face contact with each other, said drawbar connection means including sleeve elements which surround and clamp said flanges together axially and radially.

In the following, the invention and its advantageous developments mentioned in the sub-claims are described in



detail based on an embodiment illustrated in the accompanying drawings.

5 The following description refers to a preferred embodiment of the drawbar connector of the present invention. In the description, reference is made to the accompanying drawings illustrating the drawbar connector and in which:

10 Fig. 1 - is a partially sectioned side view of the front area of a hitch pin of a trailer vehicle.

Fig. 2 - is the top view of Fig. 1, and

Fig. 3 - is the front view of Figs. 1 and 2.

15 A drawbar 1 has on its front end an eyelet 1a for connection to a trailer coupling, and a shaft 1b, which at the rear end of the drawbar 1 becomes a flange 1c. A hitch pin 2 on the trailer is provided with a flange 2a, which is facing the flange 1c of the drawbar. Both flanges 1c and 2a are surrounded by the sleeve elements 3a, which serve as means of connection 3 and are
20 constructed in this present embodiment as half-sleeves.

As can be seen from Fig. 1, the flanges 1c and 2a, as well as the sleeve elements 3a, which have an approximately U-shaped cross-section, are provided with interacting tapered surfaces. The bolts 3b, shown in
25 Figs. 2 and 3 are arranged tangentially to the flanges 1c and 2a and serve to provide the axial and radial clamping made possible by this arrangement.

The drawbar 1 and the hitch pin 2 are also held together in the circumferential direction due to the
30 force-locking arising from the clamping. In addition, in the region of the flanges 1c and 2a, means preventing relative rotation 4 is provided, which also facilitates the assembly. This means 4 comprises according to Fig. 1, eccentric axial holes 1d and 2b, respectively, in both
35 flanges 1c and 2a and a pin 4a, engaging these holes 1d and 2b. To enable the transfer of large supporting forces acting on the drawbar 1 by form-locking, both flanges 1c and 2a are connected through a shear spigot 1e and a hole 2c (see Fig. 1) as means of a centering.



The hitch pin according to the invention is suitable to transfer the largest tensile forces between the motor vehicle and the trailer as well as the supporting forces of the heaviest single or tandem-axle trailers due to its stability achieved without great expense, while the sleeve bodies would withstand even overloads. Consequently, the hitch pin provides better driving safety.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Drawbar connection means for connecting a drawbar comprising an eyelet and a shaft to a hitch pin on a trailer, said shaft of said drawbar and said hitch pin having flanges which, during connection, are in face-to-face contact with each other, said drawbar connection means including sleeve elements which surround and clamp said flanges together axially and radially.

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2. Drawbar connection means according to claim 1, wherein the sleeve elements are half-sleeves.

3. Drawbar connection means according to claim 1 or 2, wherein the sleeve elements are clamped by bolts arranged tangentially to the flanges.

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4. Drawbar connection means according to any one of claims 1 to 3, further comprising means for preventing relative rotation, arranged between the flanges.

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5. Drawbar connection means according to claim 4, wherein the means for preventing relative rotation comprises eccentric axial holes in both flanges, and a pin engaging said holes.

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6. Drawbar connection means according to any one of claims 1 to 5, further including a shear spigot and a corresponding hole connecting said flanges together.

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7. Drawbar connection means, substantially as herein described with reference to the accompanying drawings.

DATED: 14 February 1992

35 PHILLIPS ORMONDE & FITZPATRICK

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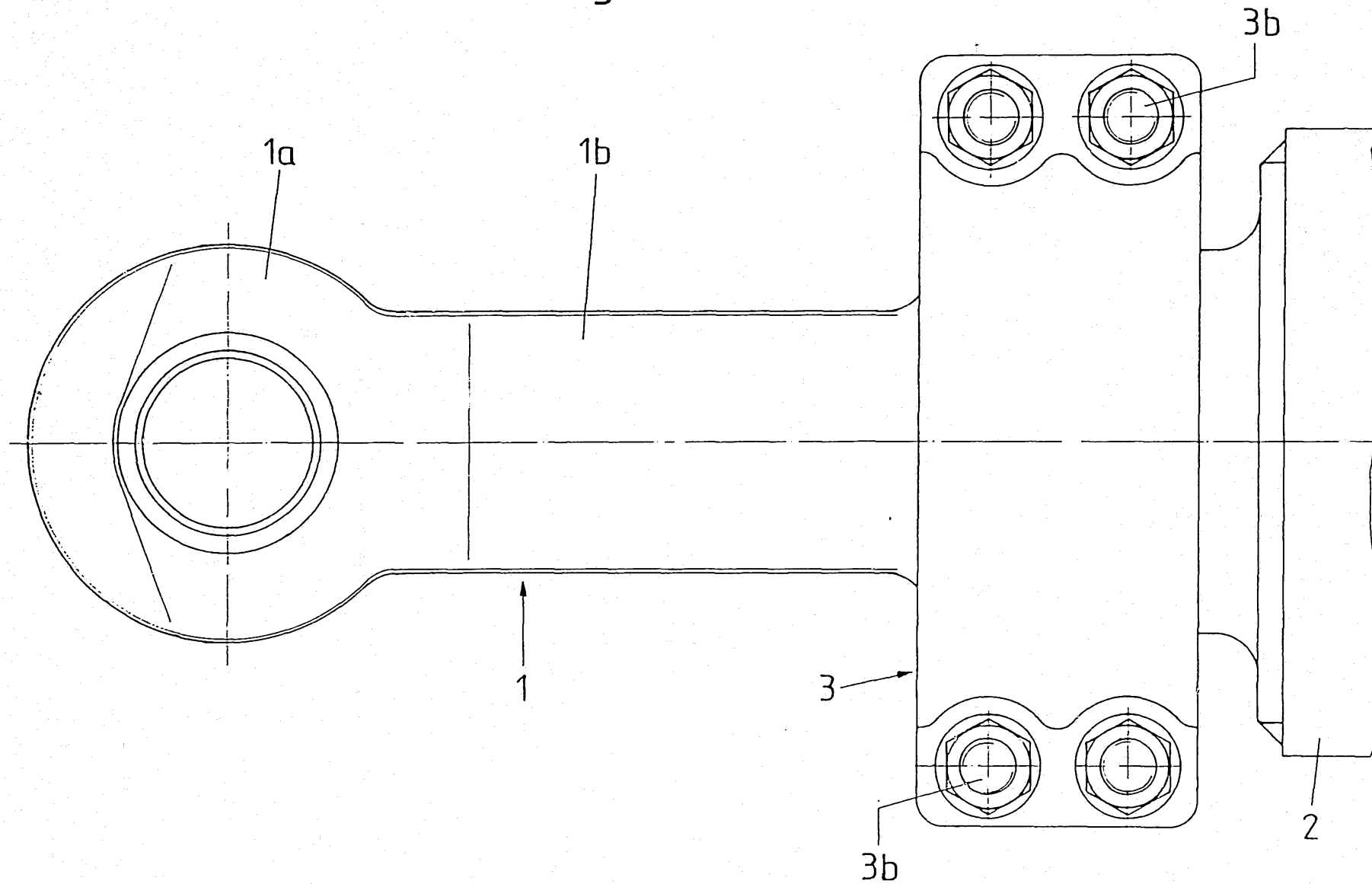
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Fig. 2

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Fig. 3

