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Letters Patent

No. 1007191.

Country GREAT BRITAIN.

Date 7th April 1964.

Patentee AUTOSSET (PRODUCTION) LIMITED.

Title Improvements relating to Bearings.


Drawings See

Taxes Due 7th April 1968 and annually
thereafter.

Working Due

Marking "PATENT NO. 1007191".



 Elizabeth the Second by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith: To all to whom these presents shall come greeting:

WHEREAS Autoset (Production) Limited, a British Company, of 72-77 Stour Street, Birmingham 18,

(hereinafter referred to as the said applicants) have prayed that a patent may be granted unto them for the sole use and advantage of an invention for Improvements relating to bearings,

AND WHEREAS the said applicants (hereinafter together with their successors, and assigns, or any of them referred to as the patentees) have declared that there is no lawful ground of objection to the grant of a patent unto them:

AND WHEREAS the complete specification has particularly described the invention:

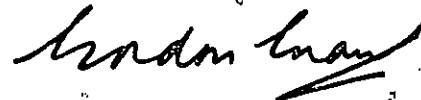
AND WHEREAS We, being willing to encourage all inventions which may be for the public good, are graciously pleased to condescend to their request:

KNOW YE, THEREFORE, that We, of our especial grace, certain knowledge, and mere motion do by these presents, for Us, our heirs and successors, give and grant unto the said patentees our especial licence, full power, sole privilege, and authority, that the said patentees by themselves, their agents, or licensees, and no others, may subject to the conditions and provisions prescribed by any statute or order for the time being in force at all times hereafter during the term of years herein mentioned, make, use, exercise and vend the said invention within our United Kingdom of Great Britain and Northern Ireland, and the Isle of Man, and that the said patentees shall have and enjoy the whole profit and advantage from time to time accruing by reason of the said invention during the term of sixteen years from the date hereunder written of these presents: AND to the end that the said patentees may have and enjoy the sole use and exercise and the full benefit of the said invention, We do by these presents for Us, our heirs and successors, strictly command all our subjects whatsoever within our United Kingdom of Great Britain and Northern Ireland, and the Isle of Man, that they do not at any time during the continuance of the said term either directly or indirectly make use of or put in practice the said invention, nor in anywise imitate the same, without the consent, licence or agreement of the said patentees in writing under their hands and seals, on pain of incurring such penalties as may be justly inflicted on such offenders for their contempt of this our Royal command, and of being answerable to the patentees according to law for their damages thereby occasioned:

PROVIDED ALWAYS that these letters patent shall be revocable on any of the grounds from time to time by law prescribed as grounds for revoking letters patent granted by Us, and the same may be revoked and made void accordingly:

PROVIDED ALSO that nothing herein contained shall prevent the granting of licences in such manner and for such considerations as they may by law be granted: AND lastly, We do by these presents grant unto the said patentees that these our letters patent shall be construed in the most beneficial sense for the advantage of the said patentees.

IN WITNESS whereof We have caused these our letters to be made patent
as of the seventh day of April
one thousand nine hundred and sixty-four and to be sealed.



PATENT SPECIFICATION

1,007,191

DRAWINGS ATTACHED

Inventor:—DAVID JAMES TOWNSEND.

Date of filing Complete Specification (under Section 3(3) of the Patents Act, 1949): April 7, 1964.

Application Date: Jan. 9, 1963. No. 1084/63.

Application Date: March 8, 1963. No. 9205/63.

Application Date: April 18, 1963. No. 15231/63.

Complete Specification Published: Oct. 13, 1965.

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1,007,191



Index at Acceptance:—F2 A(5B3, 5B6, 23).

Int. Cl.:—F 06 c.

COMPLETE SPECIFICATION.

Improvements relating to Bearings.

We, AUTOSSET (PRODUCTION) LIMITED, a British Company, of 72—77, Stour Street, Birmingham, 18, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention relates to bearings and its object is to provide a particularly simple and cheap ball-bearing unit.

It is of course well known that ball-bearings offer a particularly low-friction bearing support, and are commonly used in two forms: one form uses cones or the like which are adjusted to provide the desired loading, and the other is the self-contained bearing unit in which the balls are (usually) permanently retained so that the unit can be tilted as a whole without any adjustment being necessary. The latter form utilises inner and outer races comprising hardened steel tracks ground and lapped to precision dimension to accommodate the balls; the main objection to these races is their cost, whereas the objection to the cone-form is the cost of assembly and the skill needed to adjust them correctly.

In accordance with this invention, a self-contained bearing unit comprises inner and outer housings each carrying a pair of wire races in the form of gapped loops, and a plurality of balls located between the races.

Hence the invention dispenses with the necessity for highly accurate ground and lapped races, and uses relatively cheap wire rolled or formed into the loops for the races. The housings may be pressings, castings, or of any other form.

Four illustrative embodiments of the invention are now described with reference to the accompanying drawings, wherein:—

[Price 4s. 6d.]

Figure 1 is a part sectional elevation of a first bearing unit;

Figure 2 is a similar view of a second unit; 45

Figure 3 is a similar view of a third unit, and

Figure 2 is a similar view of a second unit; Referring first to Figure 1 there is shown a unit comprising a pair of angle section pressings of sheet-metal, 10, 11, which are assembled to make a channel shape and accommodate a pair of circular cross-sectioned hard wires 12, 13, which provide outer race tracks for the balls 14. The wires are rolled into loops with small gaps, i.e., of the order of $\frac{1}{8}$ " between the ends of each length of wire. This bearing unit utilises a cast, moulded or like inner part 15 which also accommodates a pair of wires 16, 17, forming the inner track of the race. The unit is completed by deforming a portion 10a of one angle-shaped part from the position shown in dotted lines, after assembling by locating first the wires 12, 16 and then the balls, then the wire 17, and lastly the angle section 11 and wire 13. The complete unit may be coin-pressed to final dimensions and/or a predetermined loading. If desired the deformed flange may be made part-inclined, i.e. between the dotted and full-lines, prior to assembly to facilitate the final deformation. 50 55 60 65 70

Further, the bearing unit may be made to contain lubricant and/or exclude dirt by locating an annular washer, possibly with a felt or like packing, between each two wires and the adjacent flanges. 75

In Figure 2, the unit is modified first in that instead of spacing the wires at 90° spacing, the two 12, 13 forming the outer race are closer together, and widely spaced from the two 16, 17, which are similarly closer together. This gives a unit adapted for 80

Autoset (Production) Limited

The printed specification attached to this document is in the form of the specification at the date of sealing of the patent.

Date of Patent 7 April 1964

Date of Sealing 2 FEBRUARY 1966

(see Sections 33, 37 and 40 of the Patents Act, 1949.)

Note.—The continuance of this Patent is conditional on the payment (by way of Patents Form No. 24) of the prescribed fees which, under the Patents (Amendment No. 2) Rules, 1964, are:—

Revised Renewal Fees

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Before the expiration of the 4th year from the date of Patent, and in respect of the 5th year	6	0	0	half only
" " 5th " " " " " " 6th "	7	0	0	ese fees
" " 6th " " " " " " 7th "	10	0	0	able if,
" " 7th " " " " " " 8th "	12	0	0	long as,
" " 8th " " " " " " 9th "	14	0	0	ent is
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" " 11th " " " " " " 12th "	22	0	0	—see
" " 12th " " " " " " 13th "	24	0	0	35 of
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One-half only of the above fees is payable for the renewal of a Patent endorsed "Licences of Right."

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1998 Wt.40131 D 7245 50M 12/64 T.P. Gp.658.

No reduction of extension fees is made in the case of a Patent endorsed "Licences of Right".

If any person becomes entitled by assignment, transmission or other operation of law to this patent, or a part interest therein, or to any interest as mortgagee or licensee or otherwise, application must be made to the Comptroller to register such title or interest (see Section 74 of the Act). Particulars as to the manner of making such application may be obtained from the Patent Office.

PROCEDURE FOR PAYMENT OF FEES

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Blank Patents Forms and fee sheets (FS.1) can be obtained from the Clerk of Stationery, Room 156, The Patent Office, 25, Southampton Buildings, London, W.C.2.

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OUR REF: H. 0110:
1631 - 1652:

YOUR REF

17th March 1966.

Messrs. Autaset (Production) Ltd.,
72-77, Stour St.,
Birmingham, 18.

Dear Sirs,

PATENT NO. 1007191. BEARINGS.

Herewith we have pleasure in enclosing the Official Sealed Letters Patent as above, safe receipt of which kindly acknowledge.

Now that the Patent has been granted it is possible to Register this in certain British Overseas Colonies, for example, Singapore and Hong Kong. If you wish us to do this or advise on the possibilities perhaps you will let us know.

Yours faithfully,

George Fuery