Letters Patent.

Reference .....

Country AUSTRALIA.

Number 240,304.

Date 4th October 1960.

Patentee AUTOSET (PRODUCTION) LIMITED.

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Invention MOUNTING OF LOAD BEARING BALLS OR LOAD-BEARING ROLLERS.

No. 240,304

COMMONWEALTH OF AUSTRALIA.

LETTERS PATENT.

Elizabeth the Second, by the Grace of God of the United Kingdom, Australia and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith:

To all to whom these presents shall come Greeting:

WE DO, by these Letters Patent, give and grant to the person whose name is specified hereunder Our Special Licence and the exclusive right, subject to the laws in force from time to time in Australia or a part of Australia, by itself, its agents and licensees, at all times during the term of these Letters Patent, to make, use, exercise and vend throughout Australia the invention the title of which is specified hereunder and being the invention that is fully defined in the claim or claims of the complete specification accepted in accordance with the *Patents Act* 1952-1960 in such manner as it thinks fit, so that it shall have and enjoy the whole profit and advantage accruing by reason of the invention during that term.

Name of Patentee : AUTOSET (PRODUCTION) LIMITED,

Address of Patentee : Stour Street, Birmingham 18, England,

Name of Actual Inventor : CLAUDE MORTIMER TOWNSEND,

Title of Invention: Improvements in or relating to the mounting of load bearing balls or load-bearing rollers,

Number of Complete Specification: 240,304

Term of Letters Patent: Sixteen years commencing on 4th October, 1960

These Letters Patent have been granted on a Convention application. Particulars of the basic application on which the Convention application is based are as follows:

Name of Convention Country in which basic application filed: Great Britain

Date of basic application : 18th May, 1960

Application number of the basic application : 17488/60

IN WITNESS whereof Our Commissioner of Patents has caused these Our Letters Patent to be dated as of the Fourth day of October, One thousand nine hundred and Sixty, and to be sealed with the seal of the Patent Office this Twentieth day of February, One thousand nine hundred and Sixty-three

K. B. PETERSSON,

Commissioner of Patents

ALTERATION OF ADDRESS OF THE

GRANTEE TO Devonshire House

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made in the Register of Patents

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this eighteenth day of December 1967

COMMONWEALTH PATENT OFFICE

240304

COMMONWEALTH OF AUSTRALIA.

PATENT SPECIFICATION

65, 160/60

Complete Specification Lodged ..... 4th October, 1960.

Application Lodged (No. 65, 160/60) ..... 4th October, 1960.

Applicant..... Autoset (Production) Limited.

Actual Inventor..... Claude Mortimer Townsend.

Convention Application.
(Great Britain, 18th May, 1960).

Complete Specification Published ..... 6th September, 1962.

Complete Specification Accepted ..... 24th August, 1962.

Classification 60.8; 78.6.
International Classification F 06 c; A 47 b.
Drawing attached.

COMPLETE SPECIFICATION.

"IMPROVEMENTS IN OR RELATING TO THE MOUNTING OF LOAD BEARING BALLS OR LOAD-BEARING ROLLERS".

The following statement is a full description of this invention, including the best method of performing it known to us:-

The present invention relates to load-bearing balls carried in mountings, and applicable as ball castors for furniture, and for supporting loads, such as metal plates and sheet glass during translatory movement from place to place whilst lying flat upon the periphery of several load balls arranged in a common plane with their exposed surfaces facing upwardly.

In our United Kingdom Specification No. 856,745 there is disclosed a load carrying ball and mounting therefor in which the load-carrying ball was supporting ball bearings provided in an endless track, a proportion only of the ball bearings being adopted to be in rolling contact with the load-carrying ball at any given instant, each ball bearing being able to circulate within the endless track as it rotates successively contacting the load-carrying ball, moving out of contact therewith, recirculating, returning into contact therewith, and so on as rotation of the load-carrying ball proceeds.

Whilst the forms of construction of load carrying balls described by way of example in our specification above referred to are generally efficient, it is accepted that such load bearing balls are called upon to operate in varying climatic conditions and dust laden atmosphere, and are subjected to sudden load and to rough usage. The inventor has

appreciated that it is most desirable to ensure that each ball bearing shall freely circulate within the endless track under most conditions met with, and the primary object of the present invention is to provide a simple and inexpensively manufactured load-carrying ball which fulfils this desideratum.

According to the present invention there is provided a load-carrying ball comprising a ball capable of rotation in a mounting and having supporting ball bearings provided in an endless track, a proportion only of the ball bearings being adapted to be in rolling contact with the load-carrying ball at any given instant, each ball bearing being able to circulate within the endless track as it rotates successively contacting the load-carrying ball, moving out of contact therewith, recirculating, returning into contact therewith, and so on as rotation of the load-carrying ball proceeds, a part of the endless track being provided by a hemispherical partition arranged centrally above the load ball, said partition being arranged to have a limited rocking movement relative to the mounting.

Preferably, the partition is provided with a central spherical proejction which rockably engages a central seating on the floor of the mounting, and the seating is provided in a central recess of a cylindrical member in the head of the mounting.

Alternatively, the seating is formed integral with the mounting.

In order that the invention may be thoroughly understood and readily carried into effect, two forms of construction of load bearing balls are illustrated by way of example in the accompanying drawing wherein:-

Fig. 1 is a vertical section of a load-bearing ball according to the invention.

Fig. 2 is a vertical section of a modified form of construction of load-bearing ball

As will be observed in Fig. 1 of the drawing, there is provided a skid type load-bearing ball comprising a mounting 6 for a ball member 7 which is mounted for rotation in a spherical mouth 8½ the mounting 6 has an external attachment flange 11 provided with holes 12 for reception of fixing screws.

The mounting 6 has several supporting ball bearings 13 arranged in an endless track 14 above the ball member 7 and serving as a recirculating enclosure for the ball bearings 13.

The endless track 14 is provided by a substantially hemispherical recess provided between the floor 19 of a cylindrical member 15 and a hemispherical partition 16 arranged centrally above the load ball 7 and carried by an axially disposed spherical neck 17, which is symmetrical of the member 15 and engages a central seating 18 on the floor 19.

The concave-convex partition 16 provides in combination with the floor 19 of the cylindrical member 15 and the load ball 7, a two tier ball track 14 in which the floor 19 of the recess provides one wall, and the outer wall 20 of the partition 16 the other wall of the recirculating part of the track, whereas the inner wall 21 of the partition 16 and the adjacent periphery of the load ball 7 respectively provide co-operative ball contacting parts of the endless track.

In the construction of Fig. 1 the load ball 7 is retained in the mounting 6 by the spherical bore thereof of which the mouth 8 serves to resist the entry of dust. In Fig. 2, the mounting 6 is provided inwards of the mouth with a dust resisting washer 22 made of flexible material which is located in an annular groove 23 and embraces the load ball 7. If desired the washer 22 may be backed up by a snap ring as indicated at 25 on Fig. 2 of our specification referred to.

The ball mounting 6 provides the floor 19 of the said recess, and an annular

floor of the mounting. (18th May, 1960).

3. A load-carrying ball according to claim 2, wherein the seating is provided in a central recess of a cylindrical member in the head of the mounting. (18th May, 1960).

4. A load-carrying ball according to claim 2, wherein the seating is formed integral with the mounting. (18th May, 1960).

5. A load ball substantially as described with reference to the accompanying drawings. (18th May, 1960).

PHILLIPS, ORMONDE, LE PLASTRIER & KELSON.
Patent Attorneys for Applicant.

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Related Art:

Serial No.	Application No.	Classification.
130,690	1613/46	78.6
	8231/22	78.6
	17,886/34	60.8.

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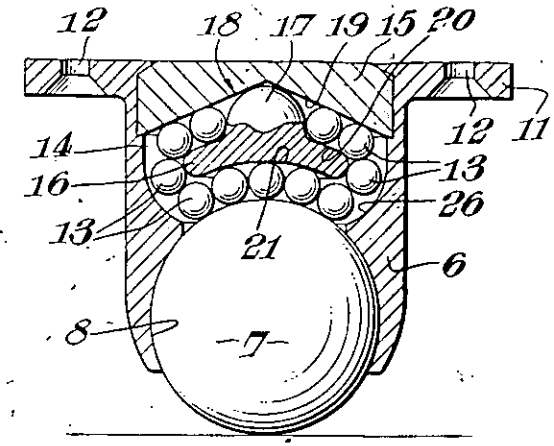

Fig. 1.

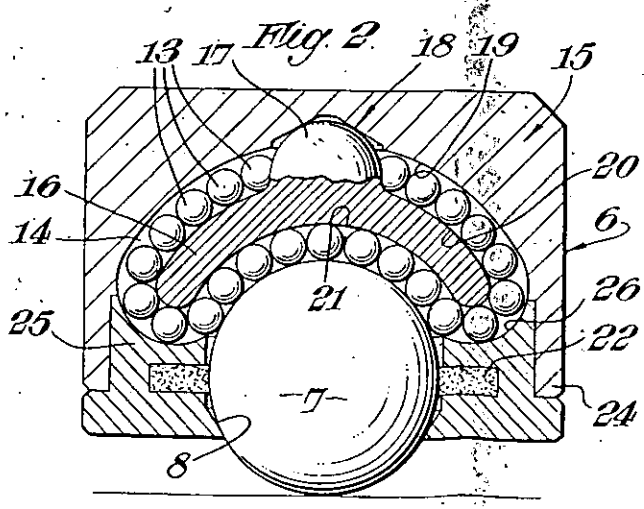

Fig. 2.