COMMISSIONER'S DECISION

Indefinite Claims: Truing of Wheels

"Radial runout" of a vehicle wheel rim is accomplished by the application of adhesive material. Some of the claims failed to define the "centre of rotation" of the wheel as they were attempting to cover both "radial and axial" runout.

Rejection - Affirmed.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated August 12, 1974, on application 055,230 (Class 26-190). The application was filed on June 24, 1969, in the name of Edward J. Hayes et al, and is entitled "Method Of Truing Bead Seats Of Wheels By Application Of Adhesive." The Patent Appeal Board conducted a Hearing on September 24, 1975, at which Mr. H.W. Rock represented the applicant.

The application relates to a method for forming a truly round or circular surface for the rim bead seat section of a vehicle wheel rim.

In the Final Action the examiner rejected claims 16, 19, 23 and 25 through 38 as indefinite.

In that action the examiner stated (in part):

The amendments and arguments pertaining to claims 25 through 32 do not overcome the objections made in the last Office Action. The rejection of these claims is maintained and the reason(s) for such rejection are; that the said claims are indefinite insofar as they attempt to define the ultimate shape and location of the surface of the structural material upon which the tire bead will be seated and that such definition is so broad as to include inoperable methods the performance of which will not provide the expressed object of "surfaces having a constant or uniform radius from the center of rotation of the wheels".

Claim 25 refers to "a surface that is uniformly spaced from a surface defined by a preselected geometric shape". This gives no indication of the shape or location of the surface.

Claims 26 and 27 refer to "a surface that is symetrically arranged relative to a predetermined portion of the wheel rim". This does not define the shape of the surface or its location. The "predetermined portion of the wheel rim" could be any part of the wheel but only certain parts may be selected to define the location of the surface if the desired object is to be attained.

In regard to claims 25, 26 and 27, it must be recognized that to attain the desired result of tire bead-seating surfaces having a constant radius from the center of rotation of the wheel, it is necessary to define the shape of the bead seat and the location of the bead seat. The bead seat must be circular (i.e. of constant radius) and it must also be concentric to the axis of rotation of the wheel. A wheel having a bead seat which, though circular, is located eccentrically to the axis of rotation, will not satisfy the object of the invention since such a wheel will vibrate when rotated. It cannot be assumed that a method which provides only a circular bead seat will meet the object of the invention. The method defined must also locate the circular bead seat concentric to the axis of rotation. The geometric center of the bead seat is not necessarily located at the center of rotation of the wheel and it is this concentricity which must be provided to satisfy the object of the invention.

Dependent claims 28 through 31 add no further definition relative to the above objections.

Claim 32 refers to the structural material being applied "in a manner such that said surface accommodates for the maximum runout area of the wheel rim". To merely accommodate an imperfection does not specifically define either the manner in which such accommodation is performed or the structure attained. To attain the desired result it is obligatory that the surface have a radius relative to the axis of rotation, which is equal to or greater than the radius of the maximum runout area relative to the axis of rotation. This is the broadest definition, available to the applicant, of a surface which will provide the desired result.

Claims 25 through 32 are rejected.

The applicant in his response dated February 10, 1975 made amendments to some of the claims and the disclosure. We will comment on these amendments later. In that response he also stated (in part):

The Examiner then went on to reject claims 25 to 32 with the main objections being levied at claims 25, 26 and 27. The objection to those claims is that the definition of the ultimate shape and location of the surface of the structural material is so broad as to include inoperable methods. Applicant is unable to agree with the rejection of those claims under the grounds as stated. In particular, it is pointed out that no prior art has been cited against any of claims 25, 26 or 27 and no call for restriction has been made on such grounds. Each of claims 25, 26 and 27 reads on the invention as disclosed in the original disclosure. While the exact terminology defining the material surface did not appear in the disclosure it is clearly seen that the terminology utilized defines the invention in equivalent terms. For example, in claim 25 the terminology states that the material is "formed with a surface that is uniformly spaced from a surface defined by a preselected geometric shape". Such a shape could clearly involve a cylinder which is coaxial with the axis of rotation of the wheel, the material surface being uniformly spaced from the outer periphery of such a cylinder. It is immaterial whether the surface be real or imaginary. It is readily seen that the definition given in claim 25 is fully the equivalent of a definition which relates the material surface to the axis of rotation of the wheel.

In order to aid in clarifying the invention applicant has proposed an amendment to the disclosure on page 2 wherein the equivalents of the terminology in claim 25 is explicitly shown with respect to the axis of rotation. Claim 25 fully defines the invention as specified in the original cisclosure and cannot be considered overly broad in view thereof.

Applicant has proposed amendments to each of claims 26 and 27 which are believed to remove them from the difficulties previously envisaged by the Examiner. It is readily seen that the "predetermined portion of the wheel" referred to in each of claims 26 and 27 as amended includes the axis of rotation. Since the surface is "symmetrically arranged relative to a predetermined portion of the wheel" it is seen that the terminology is equivalent to stating that the surface is at a constant or uniform radius from the axis of rotation. A wheel is of necessity a body of revolution and hence symmetry in such a device will relate to the centre of revolution, in this case the axis of rotation. Applicant accordingly believes that claims 26 and 27, with the proposed amendments therein, cannot be considered as overly broad in view of the disclosure.

In view of the above comments it is applicant's strong belief as well that each of claims 25, 26 and 27 meets each of the objects as presented.

It is also applicant's belief that claims 28 to 32, dependent on claim 27 add further definition to that claim which is appropriate and explicit.

The Examiner has continued to reject claim 32 in view of the terminology "accommodates for the maximum runout area". It would appear that claim 32 is not being read in light of the definition given in claim 27. Claim 32 further defines the imperfections in the wheel rim which are obviated with the method according to claim 27. According to claim 27 the method "compensates for dimensional irregularities in selected areas of the rim upon which the material has been distributed". Claim 32 further defines those irregularities as "maximum runout areas" and stipulates that the method will accommodate such runout areas. The claim then goes on to include further definition of the steps introduced in claim 27, which steps will result in a wheel which meets the objects of the invention. Accordingly applicant also believes that claim 32 is fully definitive of the invention when read in conjunction with claim 27 on which it is dependent.

This application is for the method of truing a vehicle wheel bead seat by applying a thermo-setting adhesive material. The wheel rim is centre mounted

on a support arrangement which is adapted to rotate. An adhesive dispenser is located adjacent the wheel bead seat of the rim. As the wheel rotates an adjustable trowelling tool serves to distribute the dispensed material to form a surface of uniform radius with respect to the centre of rotation. Then the wheel is placed in a drying oven to cure the material and effect a positive bond to the wheel rim.

The question to be decided is whether or not claims 25 to 32 are indefinite. Claim 25 reads:

In the method of manufacturing vehicle wheels comprising an annular wheel rim having a rim bead seat section, the steps which include: discharging a layer of structural material from a source thereof; providing relative movement between the wheel rim and the source of material to thereby apply the material to preselected areas of the wheel rim adjacent the bead seat section and orienting a material distributing means relative to the rim such that upon relative rotational movement between the rim and the material distributing means the material is engaged by the distributing means and the material is distributed to a position on the wheel rim where it will ultimately be engaged by the bead of an associated tire, (with the material being formed with a surface that is uniformly spaced from a surface defined by a preselected geometric shape.)

The rejection of that claim by the examiner is based on the last two lines which give "no indication of the shape or location of the surface." At the hearing the applicant argued that a preselected geometric shape could clearly involve a cylinder which is coaxial with the axis of rotation of the wheel and that the material surface would be uniformly spaced from the outer periphery of such a cylinder. An outline of the objects of the invention is found on page 2 where it states: "... for manufacturing vehicle wheels that have an extremely accurate degree of "roundness" or absence of eccentricity... to define surfaces having a constant or uniform radius from the centre of rotation of the wheels, with the result that the bead sections of the associated tires will seat upon a truly circular surface." We agree that a geometric shape in the form of a cylinder which is coaxial with the rotation of the wheel would form a surface having a uniform radius from the centre of rotation of the wheel. However, if the geometrical shaped cylinder is not coaxial with the rotation of the wheel then the resulting surface produced would be eccentric.

In the present situation we are concerned with Section 36(2) of the Patent Act which reads:

The specification shall end with a claim or claims stating distinctly and in explicit terms the things or combinations that the applicant regards as new and in which he claims an exclusive property or privilege.

In claim 25 the term "uniformly spaced from a surface defined by a preselected geometric shape" does not distinctly or explicitly indicate the location or the configuration to be used. By the same token a problem arises as to whether the disclosure of a specification supports an indefinite claim. In <u>Radio Corporation of America v. Raytheon Mfg. Co</u>. (1956-60) Ex.C.R. 98

at 108 we find:

It is a cardinal principle of patent law that an inventor may not validly claim what he has not described. In the patent law jargon it is said that the disclosures of the specification must support the claims. If they do not, the claims are invalid. Moreover, there is a statutory duty of disclosure and description that must be complied with if a claim for an invention is to stand.

In summary the requirements of valid claims may be stated in two general propositions: (1) The claim must be framed in distinct and clear language; (2) The claim must not embrace more than that which the patentee has invented and has described in his specification. The Patent Act, as mentioned, provides that the claim or claims shall state "distinctly" the matter that the applicant regards as new. The claims, therefore, must be framed in language that is specific, distinct and admits of no doubt of their meaning. It is also settled law that the applicant may not claim what he has not adequately described, in other words the disclosure of the specification must support the claims (Vide: Radio Corporation v Raytheon, supra).

The problem of radial run-out due to "out of round" condition of the wheel rim has been outlined in the disclosure. In order to overcome that problem the applicant developed a means to form a surface of "constant radius" from the centre of rotation of the wheel. The use of the term "from a surface defined by a preselected geometrical shape" cannot be considered as a clear or distinct alternative for the "centre of rotation", nor is that term adequately described in the disclosure. Claim 25 therefore, in our view, fails to meet the requirements of a valid claim as set out above.

The examiner rejected claims 26 and 27 as they refer to "a surface that is symmetrically arranged relative to a predetermined portion of the wheel rim." In his response the applicant proposed amending the claim by deleting the word "rim" and states that the "predetermined portion of the wheel referred to in each of claims 26 and 27 as amended includes the axis of rotation." While it is true that a "predetermined portion of the wheel" may include the axis of rotation, it may also include any portion in the central area of the wheel and this would result in an eccentric surface with respect to the "centre of rotation" of the wheel. The invention disclosed is for a surface having a constant or uniform radius from the centre of rotation of the wheel and the claims must be clear and distinct in this respect. Consequently, we conclude claims 26 and 27 fail to comply with Section 36(2) of the Patent Act.

Claims 28 to 31, which depend directly on claim 27, specify the step of applying and curing the structural material. These do not further define the requirement that the radius be constant with respect to the centre of rotation and the remarks to refuse claim 27 are applicable to them.

Claim 32, which is dependent on claim 27, specifies "the step of applying the material to the wheel rim in a manner such that the said surface accommodates for the maximum runout area of the wheel rim." Placing of the material to <u>accommodate</u> the maximum runout fails to spell out the essential disclosed feature that the final bead surface is of uniform radius from the centre of rotation and the remarks to refuse claim 27 also apply here.

We are satisfied that claims 25 to 32 as presently worded are not framed in distinct and clear language (Section 26(2) of the Patent Act), and that the subject matter of these claims is not fully described in the disclosure (Vide: Radio Corporation v Raytheon, supra).

The Board recommends that the decision to refuse claims 25 to 32 be affirmed.

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The amendments to claims 16, 19 and 23, which were requested by the examiner, have been accepted. Due to a discussion at the hearing, however, we are of the opinion that a further amendment to claims 19 and 23 is necessary. It is observed that claims 19 and 23 state the "material defining a uniform cylindrical surface the radius of which is no greater than the radius of maximum runout area of the wheel rim." This indicates that a radius <u>less than</u> that of the maximum runout area could be used. When this condition is encountered the radius would not be uniform due to the fact that a portion of the rim is of greater radius to begin with. Furthermore in order to operate as disclosed there must be some indication that the radius is uniform about the <u>centre of rotation</u>. In our view these features are essential and must be included in claims 19 and 23.

The supplementary disclosure, which refers to an extension of the use of a hardenable material for correcting axial run-out, is acceptable. The minor amendments to lines 8, 9 and 12, are also acceptable. The amendment to line 11, page 2 would be acceptable if amended to read: "...a uniform spacing from the surface of an imaginary <u>circular</u> cylinder coaxial with the axis of rotation of the wheel." The reason for this is that a "cylinder" may have any closed shape. For the attainment of the object of the invention the applicant must refer to "circular cylinder."

We recommend that claims 25 to 32 be refused as indefinite. We also recommend that claims 19 and 23, and the amendment to line 11, page 2, be accepted if amended according to the guide lines set out above.

J.F. Hughes Assistant Chairman Patent Appeal Board

I agree with the recommendations of the Patent Appeal Board. Accordingly, I refuse claims 25 to 32 in their present form. I will accept claim 16 as amended and claims 19 and 23 if amended according to the recommended guide lines. The amendment to page 2 will also be accepted if the proposed amendment is made. The applicant has six months within which to delete claims 25 to 32, submit the related proposed amendments, or to appeal this decision under the provision of Section 44 of the Patent Act.

A. Brown

Acting Commissioner of Patents

Dated at Hull, Quebec

this 7th. day of

November, 1975

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