

Rolls-Royce Ltd.'s Application (Manner of Manufacture)

IN THE APPEAL TRIBUNAL

21st June, 1963

ROLLS-ROYCE LTD'S APPLICATION

*Patent—Official objection—Manner of manufacture—Operating procedure.*5 *Patents Act, 1949, s. 6, 101.**An operating procedure for jet aircraft, using known controls at specified points during take-off so as to secure a reduction in noise, is not a manner of manufacture.*

The following cases were referred to :

10 By the Appeal Tribunal: *D. A. & K.'s Application* (1926) 43 R.P.C. 155, adopted.By the Superintending Examiner: *Lane-Fox v. Kensington &c. Electric Lighting Co.* (1892) 9 R.P.C. 413, distinguished; *G.E.C.'s Application* (1943) 60 R.P.C. 1, distinguished; *Reitzman v. Grahame-Chapman* (1950) 68 R.P.C. 25, distinguished; *Otto v. Linford* (1882) 46 L.T. 35, distinguished.

15 This was a decision upon an official objection to an application (No. 6029/1960) by Rolls-Royce Ltd. for a patent. The facts and circumstances, and the applicants' contentions, are set out in the decision (dated 21st September, 1962) of the Superintending Examiner, Mr. J. V. Hudson, which was as follows :

20 **Mr. Hudson.**—This application, accompanied by a provisional specification, was filed on the 19th February 1960, and a complete specification was filed on the 13th January 1961. The Examiner reported that the subject-matter of the application was not an invention within the meaning of s. 101 of the Act. Amendments were made in the complete specification but the Examiner still considered that the objection mentioned above, and certain other objections, had not been met. The 25 matter came before me at a hearing on the 7th May 1962, at which Mr. Douglas Falconer appeared as Counsel for the applicants.

30 The applicants' complete specification is entitled "Improvements in or relating to gas turbine engines," and their invention is a method of operating an aircraft powered by one or more gas turbine engines of the so-called compound by-pass type. The object of the invention is to provide a method of operating which will 35 reduce engine noise at the material part of the take-off climb, i.e., while the craft is over a built-up area. The invention is based upon appreciation of the fact that, in a compound by-pass engine, the air flow through the by-pass duct of the engine can be increased for throttle openings below maximum by increasing the effective area of the jet pipe final nozzle as compared with the normal effective area employed 40 for operation of the engine. This increased flow of by-pass air mixes with the jet gases before they pass through the final nozzle and results in a reduced jet velocity, giving, it is stated, a much reduced noise level. The invention is illustrated by the drawings accompanying the provisional specification. Figure 2 of these drawings shows a flight plan according to the invention. A represents the runway and B a

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length of open country between the runway and a built-up area C. The engine is shown diagrammatically in figure 1 and comprises a by-pass duct 2, a jet pipe 3 and a final nozzle the area of which is controlled by a pivoted flap 5. The flap normally extends into the nozzle, as shown. At take-off, the craft makes the shortest possible run D and climbs as rapidly as possible at a steep angle represented by the line 8, full engine power being used and the flap 5 extending into the nozzle giving the normal final nozzle area. At the point 9, above the built-up area, the engines are throttled back to cruise conditions and the flap 5 is retracted out of the nozzle. The rate of climb is changed to that, say 5°, at which the aircraft is only just climbing. The air flow through the by-pass duct 2 increases, the temperature and velocity of the exhaust gases drop and, it is stated, the noise from the engine is reduced far more than would be the case with a corresponding throttle opening if the effective area of the final nozzle had not been increased by retracting the flap 5. When the craft reaches a height sufficient for the noise level on the ground to be negligible, the flap 5 is returned to the position which gives the normal effective nozzle area.

Claim 1 reads :—

A method of operating and reducing the noise from an aircraft powered by one or more compound gas turbine by-pass engines including a variable area final jet nozzle comprising taking-off the aircraft initially with normal nozzle effective area, increasing the effective area of the final jet nozzle of said engine or engines during a subsequent shallow climb of the aircraft whereby the mass airflow through the by-pass duct of said engine or engines is increased and the cooler and lower velocity jet gas resulting produces less noise than is produced by the normal jet nozzle area, and then decreasing the jet nozzle area to the normal effective area.

Claims 2 and 3 are subordinate claims defining the method in more detail, claims 4 and 5 are subordinate claims directed to various ways of varying the nozzle area, and claims 6 and 7 claim the method "as hereinbefore described and illustrated."

It is not suggested in the specification, and Mr. Falconer did not submit, that any novelty lies in the provision of means for varying the area of the final jet nozzle and in fact the Examiner had already drawn the applicants' attention to a number of prior specifications which show compound gas turbine by-pass jet engines provided with this constructional feature.

From this it follows that the method of operating a compound gas turbine by-pass jet engine which consists in varying the area of the final jet nozzle has previously been proposed. It was not suggested that there is anything novel in causing the aircraft to undertake a shallow climb. The applicants' invention as I see it is essentially this: operating the known engine and the known aircraft by using the already-provided controls at certain specified points in the sequence of operations which the engine and aircraft pass through during take-off. I think it fair to say that what the applicants have devised is an operating instruction to perform a series of operational steps, each step involving no more than the manipulation of already-provided controlling means. The applicants have observed, or discovered, that the following of such an instruction results in a reduction of noise during take-off. I accept, of course, Mr. Falconer's submission that such a lessening of noise during take-off has great economic significance. Further, Mr. Falconer agreed that the purpose of the alleged invention viz., the reduction of noise during take-off, was not a new purpose.

I have to decide whether this contribution to knowledge could on any reasonable

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view be likely to be found to be a manner of manufacture. Only if, in my opinion, there is no reasonable doubt that the answer to such a question is in the negative, would it be proper and necessary for me to stop this application from proceeding.

Mr. Falconer, in his very helpful review of the authorities, particularly directed my attention to the case of *Otto v. Linford* (1882) 46 L.T. 35. In this case, Jessel, M.R., stated: "If you have a new principle, or a new idea, as regards any art or manufacture, and then show a mode of carrying this into practice, you may patent that; though you could not patent the idea alone, and very likely could not patent the machine alone, because that would not be new." Mr. Falconer submitted that this is authority for the proposition one can have a good patent for a new way of operating old apparatus. The invention claimed in the specification No. 2,081 of 1876 in suit in the *Otto* case was the introduction into the cylinder of a gas engine of a charge of air and also of a charge of a combustible mixture in such a way that the development of heat and the increase of pressure produced by the subsequent combustion were rendered gradual. It does not appear however, from a study of the specification No. 2,081 of 1876 that the *Otto* invention was a method of adjusting an already-provided operating control in an existing gas engine so as to produce the new result. The circumstances of the *Otto* case are thus not analogous to these in the present case and I do not agree with Mr. Falconer's contention that Sir George Jessel's statement, which I have quoted above, must be read so widely as to include the present alleged invention.

Mr. Falconer also relied on the judgment in *Lane-Fox v. The Kensington and Knightsbridge Electric Lighting Co. Ltd.* (1892) 9 R.P.C. 413 at 416, in which Lindley, L.J., stated that "A patentee must . . . make some addition, not only to knowledge, but to previously known inventions . . . the discovery that a known thing . . . can be used for a useful purpose is not alone a patentable invention, but on the other hand the discovery how to use such a thing for such a purpose will be a patentable invention if there is novelty in the mode of using it as distinguished from novelty of purpose." I would, with respect, submit that the learned Lord Justice, when speaking of "novelty in the mode of using," was referring to novelty in the actual functional arrangement of the apparatus. I do not see the applicants' invention as a "mode of using" in this sense.

Following the words of Lindley, L.J., I believe it to be the case that, while the applicants may have made a contribution to knowledge, they have not made any addition to previously known inventions.

After careful consideration of all the matters to which Mr. Falconer directed my attention, I have come to the conclusion that the applicants' alleged invention, which I regard essentially as an instruction to operate a known aircraft and known engine by operating the already-provided controls, is clearly not an invention which can in any reasonable view be regarded as a manner of manufacture.

Mr. Falconer referred to the *G.E.C.'s Application* (1943) 60 R.P.C. 1, in which Morton, J. (as he then was) said "a method or process is a manner of manufacture if it (a) results in the production of some vendible product . . ." and he drew attention to the necessity of avoiding a narrow interpretation of the phrase "vendible product." Further, Mr. Falconer drew my attention to the remarks of Jenkins, L.J. in the case of *Reitzman v. Grahame-Chapman* (1950) 68 R.P.C. 25 at 32 where, speaking of the "vendible product" rule, the learned Lord Justice said "any criticism to which it may be open is certainly not on the score of its being too wide." Since, however, I have already come to the conclusion that there is no reasonable possibility that the applicants' invention can be regarded as a manner

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of manufacture, it is not necessary for me to consider whether a method which has as its result the causing of an aircraft to become airborne with reduced noise is a method which results in a "vendible product."

I have so far referred to the applicants' invention as they claim it. I cannot find anything in their specification on which they could base claims which would not be open to the same objection as are the present ones. I must, therefore, acting under s. 6(2)(a) of the Act, refuse to proceed with this application.

The applicant appealed to the Appeal Tribunal, whose decision, dated 21st June 1963, was as follows :

Lloyd-Jacob, J.—The applicants Rolls-Royce Ltd. seek the reversal of a decision of Mr. J. V. Hudson (Superintending Examiner acting for the Comptroller General) dated 21st September 1962 whereby he refused to allow the application to proceed on the ground that it was not reasonably possible to conclude that it disclosed a manner of manufacture.

Despite the title of the specification "Improvements in or relating to gas turbine engines," it is not and cannot be suggested that the proposed monopoly claim—or any readily appreciable variation of it—has any relation to any engine improvements. The claim reads : "A method of operating and reducing the noise from an aircraft powered by one or more compound gas turbine by-pass engines including a variable area final jet nozzle comprising taking-off the aircraft initially with normal nozzle effective area increasing the effective area of the final jet nozzle of said engine or engines during a subsequent shallow climb of the aircraft whereby the mass airflow through the by-pass duct of the said engine or engines is increased and the cooler and lower velocity jet gas resulting produces less noise than is produced by the normal jet nozzle area to the normal effective area."

What all this comes to is the expression of an operating instruction for known aircraft with existing controls, whereby the manipulation of such controls provides a full power initial take-off, a change to a shallow climb for a period and then a resumption of full power engine operation. It is stated in the specification that the engine setting appropriate for the shallow climb results in greatly reduced engine noise, an advantage greatly to be desired whilst the aircraft is over a built-up area. For present purposes I assume that the applicants have made a contribution to existing knowledge, and proceed to consider whether they can reasonably claim to have formulated a manner of manufacture. The ambit of the phrase "manner of manufacture" which appears in the Patents Act as the definition of invention has been judicially considered with increasing frequency of recent years, as was perhaps to be expected having regard to the rapid development of scientific knowledge and its application in the useful arts. In a recent case, *Swift's Application* [1962] R.P.C. 37, a Divisional Court (Parker, L.C.J., and Ashworth, Fenton Atkinson, J.J.) adopted and approved a passage in a judgment of the High Court of Australia wherein the question proper to be posed when considering the objection raised on the present application is expressed to be : "Is this a proper subject of letters patent according to the principles which have been developed for the application of s. 6 of the Statute of Monopolies?" Section 1 of the Act declared to be void patents granting "the sole buying selling making working or using of anything." Section 6 excluded from the total ban of s. 1 grants for the sole working or making of any manner of new manufacture. Until quite recently, such exemption of manners of new manufacture from the avoidance of monopolies generally had been thought by the patent granting authorities to require them to hold and to apply a reasonably precise comprehension of what the expression

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“manner of new manufacture” can fairly be construed to mean. Manufacture had been taken as signifying something made by the exercise of a useful (as opposed to a fine) art as well as the art or practice of making that something. It was accepted that the things produced by the exercise of an invention, properly so called, were what are in popular parlance termed manufactures, and thus vendible articles, capable of being made the subject of commercial transactions. The reason for the then understood restriction to vendible articles appears to have been twofold : (1) Because if no vendible article was produced, the invention would not be used, and would thus provide no new employment, and provide no benefit to the public ; and (2) Because the intent of the patent is to reward the inventor by means of the profit arising from the making and selling of the patented articles during the continuance of the privilege. It was, at the same time, made clear that the courts were concerned to give to the word “manufacture” the most extensive significance it could bear, consistently with the context in which it appeared.

It was in accordance with the spirit of these decisions that, when the beneficial economic exploitation of new ideas was found to extend beyond mere buying and selling, the inapplicability of vendibility as an absolute test was appreciated, and recourse to principle directed. This necessarily presents practical difficulty, because, until very recently, statements of principle contained in judgments were without doubt made within a frame of reference embodying the vendibility concept.

The earlier decisions relevant to the present enquiry are found conveniently summarised by Sir Thomas Inskip, as he then was, in his judgment as Solicitor General in *D. A. & K.'s Application* (1926) 43 R.P.C. 155, wherein a succession of decisions by Sir Robert Finlay, Sir John Simon, Sir Stanley Buckmaster, Sir Ernest Pollock and Sir Henry Slesser are collated to justify the conclusion that a scheme or plan is not within the statutory definition, and the judgment is additionally noteworthy in that it specifically rejects the vendibility test.

I read the specification in suit as a disclosure of a general flight plan directing the initial operational movements of an aircraft between take-off and the commencement of free flying conditions, and this in my judgment is as much outside the operation of any of the useful arts as would be a trainer's direction to a jockey in his control of a racehorse.

It was pressed upon me that, in the present state of the authorities, rejection at the application stage can hardly ever be justified. As I understand my function, it is, so far as concerns the present case, to determine whether the Hearing Officer has misapprehended the law in concluding that the application disclosed nothing that can reasonably be termed a manner of manufacture. In my judgment he has not and I confirm his decision.

It must additionally be borne in mind that, even where a manner of new manufacture is disclosed in a patent application, s. 6 of the Statute of Monopolies excluded grants which are mischievous to the State by being generally inconvenient. The responsibility of a pilot of an aircraft in flight carrying scores of passengers is already sufficiently onerous without adding to his burden the task of avoiding infringement of a statutory monopoly in the operation of his standard engine controls unless the justification for grant is reasonably manifest. This consideration alone would suffice to outweigh the possibility that, within the next sixteen years or so, a well established line of authority will be found to have been wrongfully imposed.

I dismiss this appeal.