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(71) Applicant: **Eggleton, Frederick**
10 Every Street
Nelson Lancashire BB9 7LZ(GB)

Applicant: **Fenwick, Constance Clare**
The Stone House Poole in Wharfdale
West Yorkshire, LS2l IJZ(GB)

Applicant: **Trafford, Judith Caroline**
4 Betton Rise East Ayton
Scarboruogh North Yorkshire, YOI3 9HU(GB)

(72) Inventor: **Eggleton, Frederick**
10 Every Street
Nelson Lancashire BB9 7LZ(GB)
Inventor: **Fenwick, Constance Clare**
The Stone House Poole in Wharfdale
West Yorkshire, LS2l IJZ(GB)
Inventor: **Trafford, Judith Caroline**
4 Betton Rise East Ayton
Scarboruogh North Yorkshire, YOI3 9HU(GB)

(54) Axial compressor rotor blades specifically shaped to confine the existence of the energy designated esp. to within their axial working length defined by the dimension L (I.3).

(57) An AXIAL FLOW AIR COMPRESSOR DESIGN SYSTEM to produce a compressor in which AIR SPRING ENERGY DESIGNATED Esp(1.2). which is generated between PLANES 1. & 2. is fully used between PLANES 2. & 3. The the blade arc width being such that the blades give full static coverage to its OUTLET PLANE 4. The lamina air flow through each FULL STAGE being as follows:-

PLANE 1.- W(1.3). + (va1^2.+ vcm1^2.)/2.g.+ y.p1.v1./(y-1.). =

PLANE 2.- W(2.3). + (va2^2).+ vcm1^2.)/2.g.+ y.p2.v2./(y-1.). + Esp(1.2). =

Plane 3.- (va3^2.+ vcm1^2.)/2.g. + y.p2.v2./(y-1.). =

PLANE 4.-(va3^2.+ vcm1^2.)/2.g. + y.p2.v2./(y-1.). - End of Rotor. Start of STATORS.

PLANE 5.- y.p2.v2./(y-1.). + (va3^2.+ vcm1^2.)/2.g. =

PLANE 6.- y.p2.v2./(y-1.). + (va6^2.+ vcm6^2.)/2.g.

PLANE 7.- ALL VALUES EXACTLY AS ON PLANE 6.

PLANE 8.- y.p8.v8./(y-1.). + (va8^2.+ vcm8^2.)/2.g.

NOTE:- p. = Air pressure EXCLUSIVE of that due to the presence of Esp(1.2) at PLANE 2.

WHILE NOT BEING STIPULATED, the Mean Mass Flow Values have been arranged such that sets of lamina values become also Mean Mass Flow Values, for EXAMPLE $Esp(1.2)_{r=x/2.}$ = m $Esp(1.2)_{r=x.}$ & $va2_{r=x/2.}$ = m $va2_{r=x.}$ etc.

Also:- $va8_{r=Max.No./2.}$ and $vcm8_{r=Max.No./2.}$ = $va1_{r=Max.No./2.}$ and $vcm1_{r=Max.No./2.}$ and are constant values for all stages of a compressor.

And $(va6_{r.}/vcm6_{r.})$ = $(va7_{r.}/vcm7_{r.})$ = $(va8_{r.}/vcm8_{r.})$.

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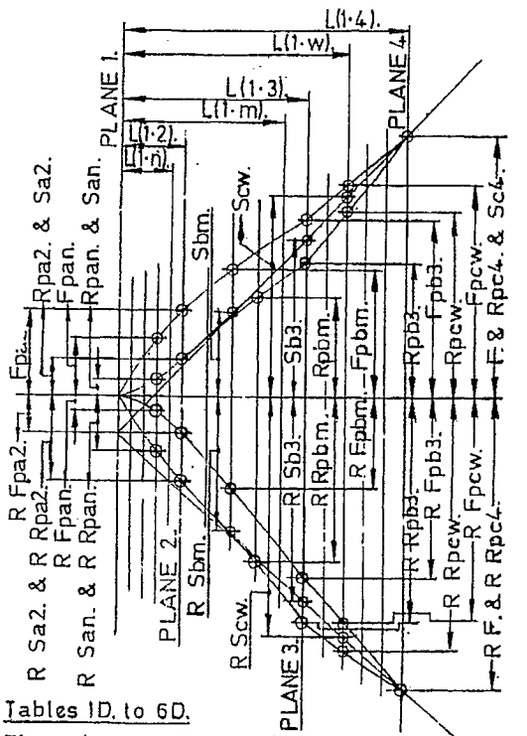
Figure 1. of 1. Sheet.



Tables 1D. to 6D.

Dimensions used to produce blade profile & air flow path on streamline surface.

Not to scale

F Eggleton

European Patent Office

PARTIAL EUROPEAN SEARCH REPORT

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

Application number

EP 89 31 2535

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
	No further relevant documents have been disclosed.		F 04 D 29/32

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

F 04 D

INCOMPLETE SEARCH

The Search Division considers that the present European patent application does not comply with the provisions of the European Patent Convention to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of some of the claims.

Claims searched completely:

Claims searched incompletely:

Claims not searched:

Reason for the limitation of the search:

The claims 1 and 2 are insufficiently clear. E.g. they are based on a new type of energy called "air spring energy." The description contains obscurities to the extent that it is impossible to arrive at a reasonable conclusion as to the scope of the claimed invention. The application lacks ready comprehensibility.

Place of search	Date of completion of the search	Examiner
THE HAGUE	28-03-1991	TEERLING

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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