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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ADAIR GEORGE WILMOT WILLIAMS, DAVID MICHAEL JONES, IAN ASHMORE, and RICARDO GOMICIAGA-PEREDA

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Appeal 2019-001823  
Application 14/919,581  
Technology Center 1700

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Before CATHERINE Q. TIMM, JEFFREY T. SMITH, and JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge* SMITH.

Opinion Dissenting filed by *Administrative Patent Judge* TIMM.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–15. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Dyson Tech. Ltd. Appeal Br. 2.

We REVERSE.

The following rejections are presented for appeal:

I. Claims 1–7 and 15 are rejected under 35 U.S.C. § 102(a)(1) as anticipated by GB 1549535 (hereinafter “GB’535”).

II. Claims 8–14 are rejected under 35 U.S.C. § 103 as unpatentable over GB’535.

Appellant’s invention relates to an apparatus for separating particles from an airflow. (Spec. ¶ 5.) Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. An apparatus for separating particles from an airflow, the apparatus comprising:
  - a housing comprising an inner wall; and
  - a body positioned within the housing and separated therefrom so as to define an annular flow path between the body and the inner wall;
    - the housing being rotationally stationary, and the body being rotatable relative to the housing about a rotational axis, the body comprising:
      - an impeller section having a first set of blades extending from the body into the annular flow path towards the inner wall of the housing, the impeller section being rotatable for generating airflow through the apparatus and for generating swirl within the airflow, and
      - a turbine section located downstream of the impeller section and spaced along the rotational axis from the impeller section, the turbine section having a second set of blades for recapturing rotational energy from the airflow.

Appeal Br. 17.

OPINION<sup>2</sup>

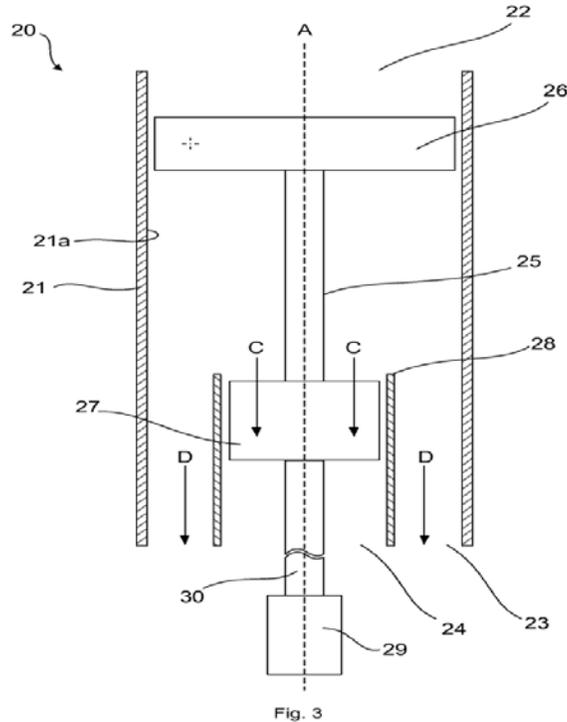
We have reviewed each of Appellant's arguments for patentability. We will not sustain the Examiner's rejections for essentially those reasons expressed by Appellant. (Appeal Br. 3–15.)

Appellant argues GB'535 fails to disclose an apparatus comprising a turbine section located downstream of an impeller section and the turbine section having a second set of blades for recapturing rotational energy from the airflow as required by independent claim 1. (Appeal Br. 5.)

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<sup>2</sup> We limit our initial discussion to independent claim 1, the only independent claim on appeal.

An example of Appellant's invention corresponding to claim 1 is illustrated in Figure 3 of the Specification, which is reproduced below:



Specification Figure 3, depicting a schematic illustration of an apparatus 20.

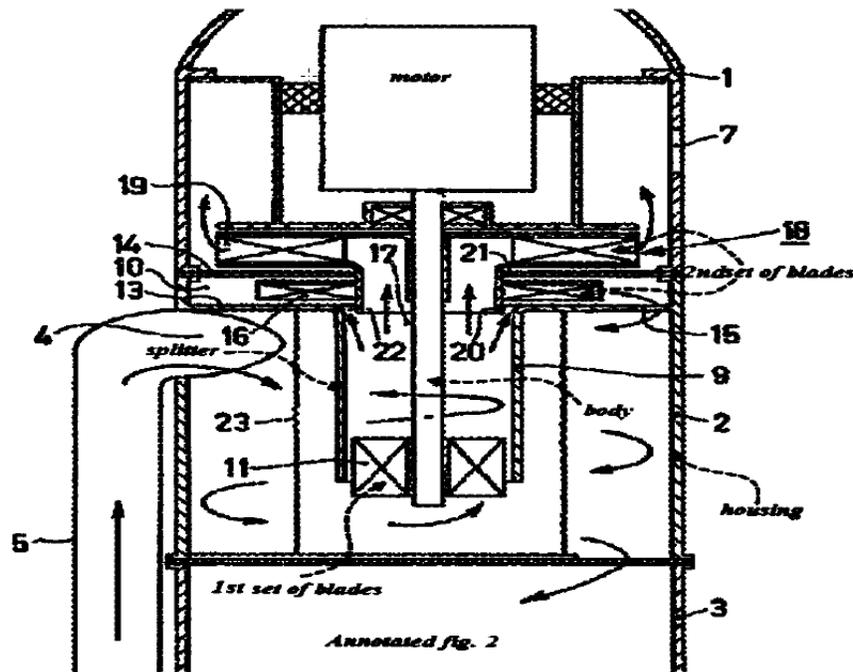
Specification Figure 3 depicts apparatus 20 for removing dirt from an airflow comprising housing 21, the body 25 within the housing, and impeller 26 at the upstream end of the body 25 nearest the inlet 22 and a turbine 27 at the downstream end of the body 25. (Spec. ¶¶ 55, 56.) Specification paragraph 62, reproduced below, further describes the airflow within the body:

The turbine 27 is located downstream of where the splitter 28 separates the two portions of airflow. Both the dirty and clean portions of airflow downstream of the splitter still contain a large amount of the energy that was introduced by the impeller 26. This energy is useful in the dirty portion of airflow D as it can be used downstream

of the apparatus 20 in a further separation stage in order to remove the dirt from the relatively small amount of air that remains. However, the residual energy contained within the clean portion of airflow can be recaptured by the turbine 27. As the clean portion of airflow C passes through the turbine which is connected to the body 25, the swirl energy within the airflow results in a rotational force being transferred from the clean portion of airflow C to the blades with the turbine 27. As such, less energy is required from the motor in order to rotate the body 25. This increases the energy efficiency of the apparatus 20.

(Spec. ¶ 62.)

The Examiner finds GB'535 describes an apparatus having the same structure as the claimed invention. The Examiner finds GB'535 describes an apparatus having first blades and a turbine comprising second blades that anticipates the claimed invention. (Final Act. 3.) The Examiner refers to GB'535 annotated Figure 2 reproduced from the final action below:



GB'535 annotated Figure 2, depicting an apparatus exemplifying impeller 16 (second set of blades) and impeller 11 (first set of blades).

The Examiner determined:

[A]nnotated fig. 2 of GB'535 discloses a turbine section (18) having a second set of blades (19; col 2, ln 36–38). The rotor 19 of compressor 18 of GB'535 discloses the 'turbine section' captures rotational energy (even a very small amount of capturing rotational energy) due to the airflow moving upwards from the impeller section (11) but also generating rotational energy.

(Ans. 4.)

We cannot sustain the Examiner's anticipation rejection of independent claim 1. GB'535 discloses an apparatus wherein the compressor rotor 19, the impeller 11, and impeller 16 are configured to add energy to the airflow through the vacuum cleaner. (GB'535, 2, ll. 33–34.) Impeller 11 is located in the second whirl chamber 9 and produces a rotating air current so that very light dust particles are moved to the inner wall of the second whirl chamber 9. Impeller 16 is located in the intermediate chamber 10 to amplify the whirling action. (GB'535, 2, ll. 25–50.) Consequently both impeller 11 and the impeller 16 add energy to the airflow. As depicted in Specification Figure 3, the turbine section 27, comprising the second set of blades for recapturing rotational energy from the airflow, is connected to the central body 25 and is located downstream of the impeller section 26 and spaced along the rotational axis from the impeller section. The Specification discloses the residual energy contained within the clean portion of airflow is recaptured by the turbine 27. (Spec. ¶ 62.) The Examiner has not directed us to evidence that GB'535 necessarily or inherently describes an apparatus comprising a turbine section located downstream of an impeller section and the turbine section having a second set of blades for recapturing rotational energy from the airflow. A

For the reasons above, we do not sustain the Examiner's rejection of independent claim 1.

DECISION

The Examiner's rejections are reversed.

DECISION SUMMARY

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-7 and 15	§ 102(a)(1) GB'535		1-7 and 15
8-14	§ 103 GB'535		8-14
<b>Overall Outcome</b>			1-15

REVERSED

TIMM, *Administrative Patent Judge*, dissenting.

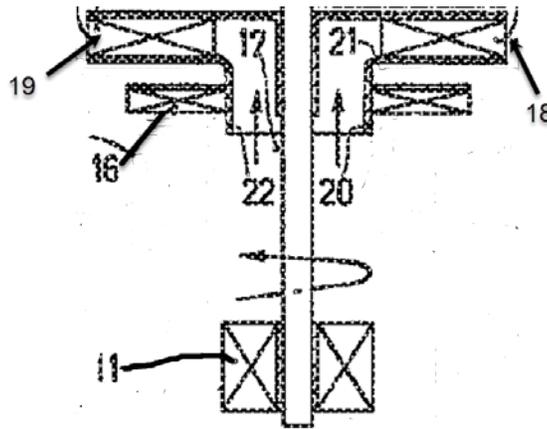
I respectfully dissent from the decision of my colleagues. To be patentable, a claim to an apparatus must set forth a structure that is structurally distinguishable from that of the prior art. *See Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990) (“apparatus claims cover what a device *is*, not what a device *does*.”). In my opinion, Appellant has not identified a reversible error in the Examiner’s finding that GB’535 discloses the same structure as claimed.

As explained by Appellant, “GB’535 discloses an upright vacuum cleaner that includes a compressor (18) having a rotor (19) for generating suction through the vacuum cleaner and two impellers (11, 16) for generating rotating air current in the airflow generated by the compressor.” Appeal Br. 5–6 (citing GB’535 1:17-19, 2:18-50). As further pointed out by Appellant, “[t]he compressor rotor 19 and the two impellers (11, 16) share a common drive shaft and motor.” (*Id.*) Appellant also acknowledged that the motor drives all three components (impellers 11, 16 and the rotor 19). (*Id.*)

Appellant contends that “none of these components recaptures rotational energy from an airflow” and “none of these components is a ‘turbine section having a second set of blades for recapturing rotational energy from the airflow,’ as required by claim 1.” (Appeal Br. 6.)

However, Appellant’s contention does not adequately address the Examiner’s finding that “[t]he rotor 19 of compressor 18 of GB’535 discloses the ‘turbine section’ captures rotational energy (even a very small amount of capturing rotational energy) due to the airflow moving upwards from the impeller section (11) but also generating rotational energy.” Ans. 4.

According to Appellant, the Examiner's finding is based on "pure conjecture" and "the Examiner cites no evidence." (Reply Br. 3.) However, the Examiner finds that the structure of GB'535 is the same as that claimed and would have the same operational function. (Ans. 5.) And the disclosure of GB'535 supports the Examiner's finding. GB'535 discloses a rotatable body including impeller section with blades 11 and further including a turbine section (combination of compressor 18 with rotor 19 and blades 16. This structure is shown in GB'535 Figure 3. I reproduce the portion of Figure 3 that shows the body below:



The above figure is a schematic cross-section of the body within GB'535's Figure 3.

Like Appellant's body, the body of GB'535 includes an impeller section with blades 11 and a turbine section (structure including intake spout 20, central opening 21, compressor 18, rotor 19, and blades 16). (See above Fig.) The turbine section is located downstream from the airflow and spaced along the rotational axis from the impeller section having blades 11 and which has a second set of blades 16. (*Id.*)

Although GB'535 does not expressly state that the second set of blades (blades 16) are "for recapturing rotational energy from the airflow,"

blades 11 push air past blades 16 in the same, or in a similar manner, as Appellant's blades. Thus, the Examiner's finding that some of the energy of that air moving past blades 16 would translate into mechanical energy to push the blades thereby recapturing rotational energy from the airflow is reasonable. Because impeller 11 is forcing air past blades 16, the load on the motor is lessened. Even a very small amount of energy translation meets the requirements of the claims. "Under the principles of inherency, if a structure in the prior art necessarily functions in accordance with the limitations of a process or method claim of an application, the claim is anticipated." *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986).

Because Appellant has not rebutted the Examiner's reasonable finding of inherency, I determine that Appellant has not identified a reversible error in the Examiner's inherency finding.

Appellant further contends that the Examiner erred in finding that GB'535 includes the turbine and impeller sections of the claims. Appeal Br. 10-14. For the reasons provided by the Examiner in the Advisory Action and Answer, I disagree.