



FEDERAL SUPREME COURT
IN THE NAME OF THE PEOPLE
JUDGMENT

X ZR 19/21

Delivered on:
January 31, 2023
Anderer
Judicial Employee
as Clerk of the
Court Registry

in the patent nullity case

Reference book: yes
BGHZ: no
BGHR: yes

Vacuum cleaner

EPC Art. 56

Based on a citation in which several elements of a device that functionally work together are designed in such a way that they can be made in one piece at most with a great deal of effort, a one-piece design is not obvious simply because it is possible for the person skilled in the art to change the shape and orientation of these elements in such a way that they can be manufactured without difficulty as a component injection molded in one go.

BGH, Judgment of January 31, 2023 - X ZR 19/21 - Federal Patent Court

The X. Civil Senate of the Federal Supreme Court, at the hearing on January 31, 2023, by the Presiding Judge Dr. Bacher, the Judges Dr. Kober-Dehm, Dr. Marx, and Dr. Rombach, and the Judge Dr. Rensen

ruled:

On appeal by the defendant, the judgment of the 5th Senate (Nullity Senate) of the Federal Patent Court of September 24, 2020, is amended.

The action is dismissed.

The plaintiff shall bear the costs of the proceedings.

By law

Facts of the Case:

1 The defendant is the owner of European patent 1 434 512 (patent in suit), which was granted with effect for the Federal Republic of Germany, was filed on September 20, 2002, claiming a German priority of October 1, 2001, and relates to a vacuum cleaner.

2 Claim 1, to which eight further patent claims are referred back, has received the following version in opposition proceedings (amendments to the granted version are highlighted):

Vacuum cleaner (SS) for sucking up and collecting particles (ST) in at least one collecting chamber (SR), with at least one receiving chamber (MR) for suction means (MO, GB) comprising a fan (GB) driven by a motor (MO), wherein the collecting chamber (SR) and the receiving chamber (MR) are separated from one another by a partition wall (TW) which has an inlet opening for an air flow (LF) from the collecting chamber (SR) to the suction means (MO, GB) and wherein the partition wall (TW) has, as inlet opening for coupling of the collecting chamber (SR) to the suction means (MO, GB) of the receiving chamber (MR), an air guide funnel (LT) which narrows from its entry surface (RE) at the collecting chamber (SR) in direction towards the suction means (MO, GB) and the entry area (RE) of which forms the substantial part of the partition wall area (TW), characterized in that the air guide funnel (LT) has in its funnel base an intrusion protection element (ES) which is formed by a ribbed body, which widens in dome-like manner or is otherwise shaped in direction towards the collecting chamber (SR) and which has gaps for substantially unobstructed passage of the air flow (LF) from the collecting chamber (SR) to the suction means (MO, GB) and the protective ribs of which project in the direction of the collecting chamber (SR) in the center of the funnel of the air guide funnel (LT), i.e. toward the opening to the fan (GB), and in that the partition wall (TW), the air guide funnel (LT) and its preceding intrusion protection element (ES) form a one-piece component.

3 The plaintiff, who is being sued for infringement of the patent in suit, has argued that the subject matter of the patent in suit is not patentable and goes beyond the content of the documents originally filed. Furthermore, with regard to the combination of features l2, m and n, the invention was not disclosed in such a way that a person skilled in the art could carry it out.

4 The defendant defended the patent in suit in the version from the opposition
proceedings and with eight auxiliary requests in amended versions.

5 The Patent Court has declared the patent in suit invalid. The defendant
appeals against this decision and continues to pursue its first-instance claims and
submits four further auxiliary claims. The plaintiff opposes the appeal.

Reasons for Decision:

6 The appeal is admissible and well-founded. It leads to the dismissal of the
action.

7 I. The patent in suit concerns a vacuum cleaner.

8 1. According to the description of the patent in suit, the suction power of
ultra-compact vacuum cleaners, such as floor vacuum cleaners, can be too low.
This could be caused by an angled guidance of the suction air flow due to the
extremely compact arrangement of the individual components inside the housing.
Furthermore, due to the limited space available, often only less powerful blower or
suction units can be used (para. 2).

9 2. Against this background, the patent in suit concerns the technical
problem of improving the suction power with a compact design and at the same
time avoiding the risk of injury from rotating fan blades (para. 9).

10 3. As a solution, the patent in suit, in the version of claim 1 in force,
proposes a vacuum cleaner whose features can be divided as follows:

- a) Vacuum cleaner (SS) for sucking up and collecting particles (ST).
- b) in at least one collection chamber (SR),

- c) with at least one receiving chamber (MR) for suction means (MO, GB) comprising a fan (GB) driven by a motor (MO).
- d) The collecting chamber (SR) and the receiving chamber (MR) are separated from one another by a partition wall (TW).
- e) The partition wall (TW) has an inlet opening for an air flow (LF) from the collection chamber (SR) to the suction means (MO, GB).
- f) The inlet opening is used to couple the collection chamber (SR) to the suction means (MO, GB) and has an air guide funnel (LT).
- g) The air guide funnel (LT) has an entry area (RE),
 - h) which is located at the collecting chamber (SR),
 - i) and narrows from the entry area (RE) towards the suction means (MO, GB).
- j) The entry area (RE) of the air guide funnel (LT) forms the main part of the partition wall area (TW).
- k) The air guide funnel (LT) has an intrusion protection element (ES) in its funnel base, which is formed by a ribbed body,
 - l1) which widens in dome-like manner in the direction of the collecting chamber (SR)
 - l2) or is otherwise shaped,
 - m) which has gaps for substantially unobstructed passage of the air flow (LF) from the collecting chamber (SR) to the suction means (MO, GB)
 - n) and whose protective ribs protrude in the center of the air guide funnel (LT), i.e. towards the opening to the fan (GB), in the direction of the collecting chamber (SR).
- o) The partition wall (TW), the air guide funnel (LT) and its front-mounted intrusion protection element (ES) form a one-piece component.

11 4. Some features require explanation.

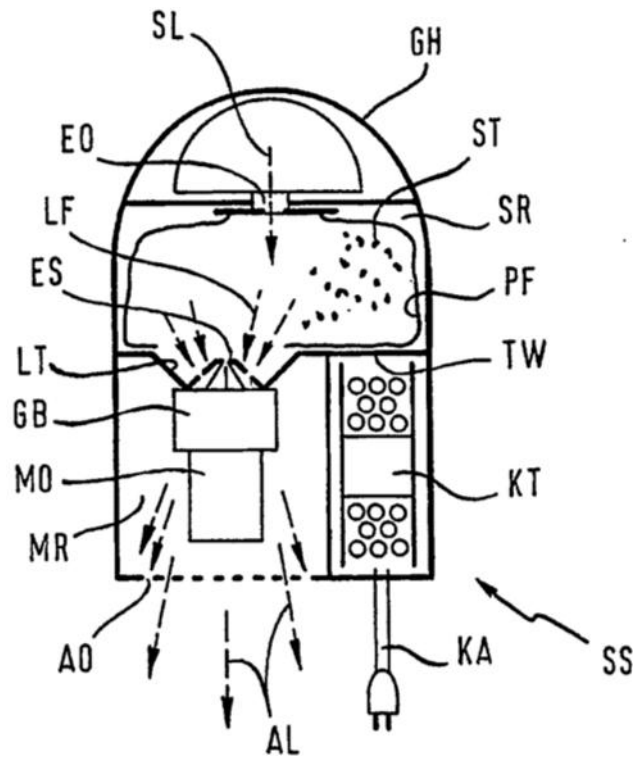
12 a) The mandatory elements of the vacuum cleaner include a collection
13 chamber and a receiving chamber.

13 The collection chamber is used to collect particles to be aspirated. It can be
14 designed to accommodate a filter bag or dust bag (PF) (para. 18).

14 The receiving chamber, which is also referred to in the description as the
15 receiving space, is used in particular to house and store suction means, which may
16 consist of a fan and a motor. In addition, further components may be
17 accommodated in the receiving chamber, for example a cable drum for winding up
18 the electrical connection cable (para. 20).

15 An example of an embodiment is shown in Figure 1 reproduced below:

Fig. 1

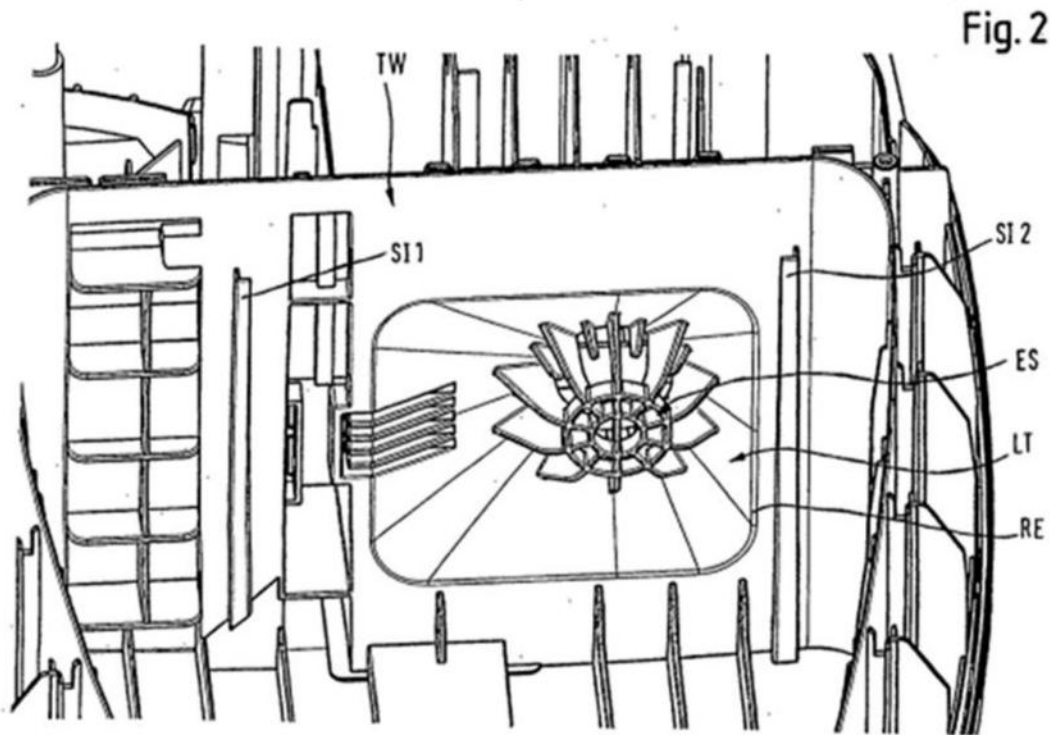


16 b) Whether the term "partition wall" within the meaning of feature d means the entire wall arranged between the collecting chamber and the receiving chamber can be left open for the decision on the appeal. The decision on the validity of the patent does not depend on the answer to this question.

17 c) Special importance is attached to the air guide funnel (LT) provided for in feature f and specified in more detail in features g to j.

18 aa) According to the description, the design of the inlet opening arranged in the partition wall as an air guide funnel enables a targeted guidance of the air flow. For this purpose, the air guide funnel tapers from its inlet area at the collection chamber (SR) in the direction of the suction means (GB, MR [probably meant: MO]; para. 21 lines 21-31), as provided in feature j.

19 A practical embodiment of such an air guide funnel is shown in Figure 2 reproduced below.



20 In this embodiment, the air guide funnel (LT) has a substantially rectangular entry area (RE) that is substantially flush with the partition wall (TW). Its inner walls run toward each other in the manner of a cone in the direction of the suction means and finally form an exit opening of approximately circular cross-section for positive coupling of the blower discharge tube (GB; para. 22 lines 34-47). Due to the large entry area, a pressure drop is largely avoided (para. 23 lines 13-16). The narrowed shape causes a homogeneous transition of the air flow (LF) from the collection chamber to the suction means coupled to the outlet opening. Furthermore, it causes an additional suction effect as well as a bundling or focusing of the air flow (para. 23 lines 16-32). This design also largely avoids air turbulence back into the collection chamber (col. 5 para. 23 lines 42-43).

21 bb) The Patent Court correctly assumed that not all features of this
preferred embodiment were reflected in claim 1.

22 Against the background of the description, the features of the air guide funnel
defined in features f to j do indeed serve to realize the functions listed above.
Contrary to the view of the defendant, however, it does not follow from this that all
advantages of the embodiment example described as appropriate in the
description must necessarily be fully realized. For the realization of these features,
it is therefore irrelevant to what extent the intended effects, such as a
homogeneous transition and a bundling of the air flow or an avoidance of air
turbulence, actually occur. Rather, it is sufficient that the vacuum cleaner has the
design envisaged in features f to j which create the possibility of realizing these
advantages.

23 cc) Accordingly, feature i does not imply that the inclination of the side walls
must be without steps or that all side walls must have the same inclination
throughout. Rather, it is sufficient if the cross-section of the hopper decreases in
the direction from the collecting chamber to the suction means.

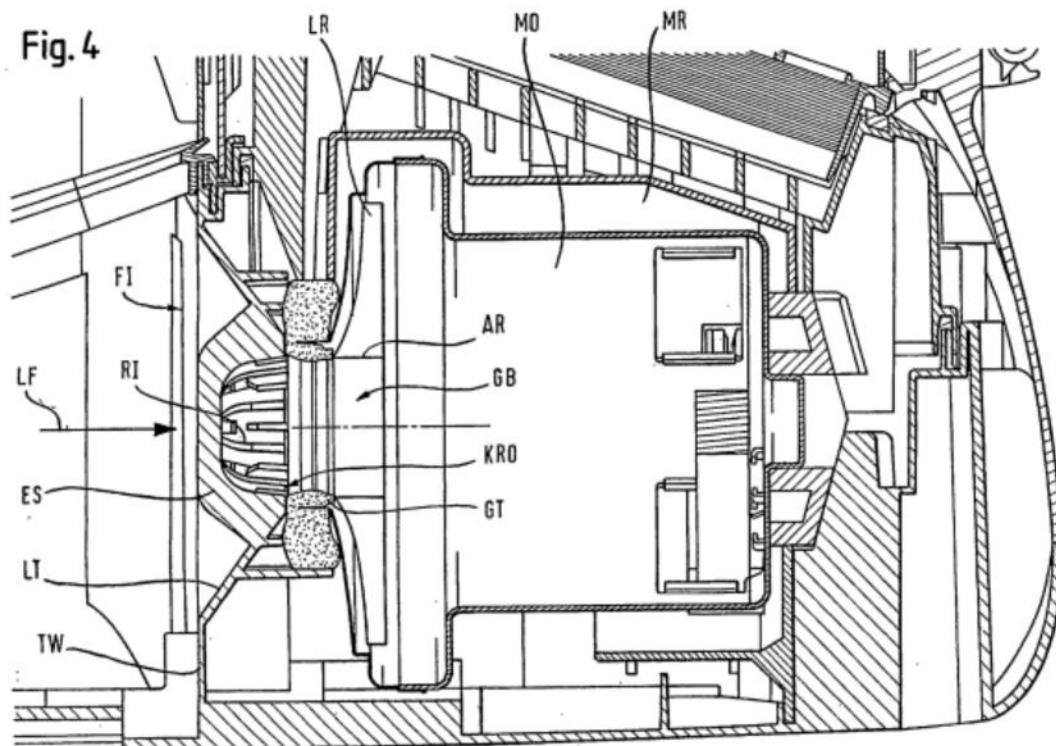
24 This result is confirmed by claim 5, which provides for a substantially steady
narrowing.

25 Contrary to the opinion of the appeal, there are no indications from the patent
specification that the term "continuous" in claim 5, deviating from the usual
linguistic usage, describes not only a course of the narrowing that is not
interrupted, i.e. does not exhibit any jumps, but a narrowing with a constant
gradient.

26 With the requirement "largely continuous", even claim 5 leaves open the
possibility that the narrowing has minor steps. This confirms that no requirements
arise from feature i in this respect.

27 dd) Accordingly, the requirement that the collection chamber be coupled to
the suction means by means of the air guide funnel in such a way that the air flow
is optimally guided in all respects cannot be inferred from feature f.

28 Feature f does not specify in more detail how the collection chamber must be
coupled to the suction means. It is also not to be inferred from it that the hopper
must be connected to the motor or the blower without intermediate elements.
According to the description of the patent in suit, it is not excluded to provide a
sealing element (GT) as a buffer between the outlet opening (KRO) of the air guide
funnel (LT) and the suction means (para. 22 col. 4 lines 47 et seq.). An example
of such a sealing element is shown in Figure 4 reproduced below.



29 ee) However, it follows from the requirement defined in feature i that the air guide funnel (LT) must narrow from the entry area (RE) towards the suction means (MO, GB), and from the requirement formulated in feature f that the funnel serves to couple the collection chamber (SR) to the suction means, that the cross-section of the air guide funnel is reduced at the end so that it substantially matches the cross-section of those components of the suction means to which it is coupled.

30 Contrary to the opinion of the Patent Court, this excludes designs in which a substantial part of the funnel wall at the bottom of the funnel runs parallel to the entry area and thus transversely to the air flow.

31 As the appeal rightly asserts, the designation as a funnel and the explanations in the description referring thereto, according to which the funnel-shaped design is to enable the most efficient guidance of the air flow possible, already speak in favor of this. As has already been explained, claim 1 does not require optimal air guidance in all respects, as is aimed at in the embodiment examples. However, with the requirements that the air guide funnel narrows in the direction of the suction means and serves to couple the collecting chamber to the latter, it is expressed sufficiently clearly that the funnel is designed in such a way that the air flow entering through the inlet opening must not collide at the bottom of the funnel with a wall extending transversely thereto, but must be guided completely to the receiving opening of the coupled suction means.

32 d) According to feature o, the component shall be designed as a one-piece.

33 According to the description, components consisting of three individual components mechanically coupled to each other do not belong to the invention (para. 27). From these statements, which are to be understood as a definition, it can be inferred that a component consisting of three individual parts connected by frictional or positive locking is not a one-piece within the meaning of feature o.

34 Mechanical coupling in this sense, on the other hand, does not include a connection by material closure, e.g. by bonding or welding.

35 In this context, it can be left open whether the explanations to be found in the handbook "Grundlagen der Konstruktion" (published by Werner Krause, BK6 Section 4) under the heading "Mechanische Verbindungselemente und -verfahren" (Mechanical fasteners and fastening methods), according to which "fasteners" are generally subdivided into substance-locking, form-locking and force-locking connections, reflect the general technical understanding of the term "mechanical connection" on the priority date. Even if this were to be affirmed, this would not be of decisive importance for the interpretation of feature o. With this feature, the patent in suit does not exclude every type of connection, but only a mechanical "coupling". The patent in suit does not contain any further information on how a coupling differs from a connection. However, it can be inferred from the word combination "mechanical coupling" that only such connections are excluded in which the individual elements are still distinguishable from each other and are present in a materially separate manner. Accordingly, a component whose individual elements are connected to each other in a materially bonded manner can be regarded as a one-piece component.

36 II. The Patent Court essentially justified its decision as follows:

37 The subject matter of claim 1 as in force is not patentable because it is obvious to a person skilled in the art, an engineer specializing in mechanical and electrical engineering, from Japanese disclosure Hei11-137484 (D25).

38 D25 discloses a vacuum cleaner having a collection chamber and a receiving chamber separated by a partition wall 11a. A fan driven by a motor serves as the suction means. An intake grille is provided between the collection chamber and the receiving chamber, which is oriented towards the collection chamber

and widens from the receiving chamber towards the collection chamber. The described embodiments of the suction grille are located in the area of the partition wall and serve as an inlet opening for the air flow of the sucked-in air, which passes through the paper bag and flows from the collecting chamber to the fan in the receiving chamber. Depending on the design, the air flow is smoothed, which reduces suction losses. The fan is attached to the intake grille by means of retaining rubbers with the intake opening. Thus, features a to n are disclosed and feature o is at least suggested. It is within the grasp of the person skilled in the art to choose between a one-piece and a multi-piece design. The housings shown in Figures 4 and 5 of D25 as an example of an embodiment could only be manufactured in one-piece with considerable effort or not at all. However, this did not mean that the skilled person had necessarily excluded a one-piece design on the basis of D25. In the course of routine considerations of the skilled person, he/she had been able to change the shape and orientation of the struts of the intrusion protection element in such a way that production by injection molding in a single pass was possible without any problems.

39 The objects defended by auxiliary claims 1 to 8 were also not based on inventive step.

40 III. This assessment does not withstand appellate review in one crucial respect.

41 Contrary to the opinion of the Patent Court, the subject-matter defended by the main request was not obvious on the basis of D25.

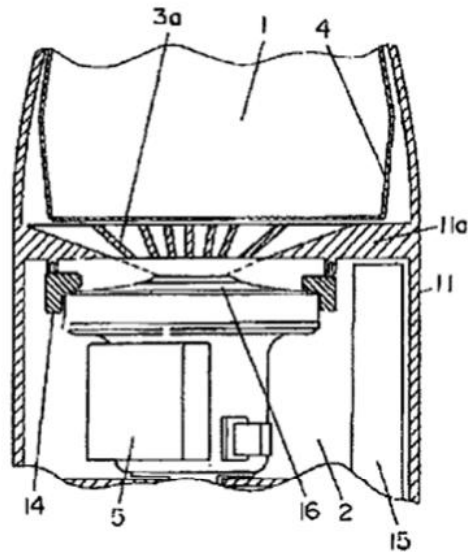
42 1. As the Patent Court also assumed, the defended subject-matter proves to be new compared to D25.

43 a) D25 discloses a vacuum cleaner with a particular design of the intake grille.

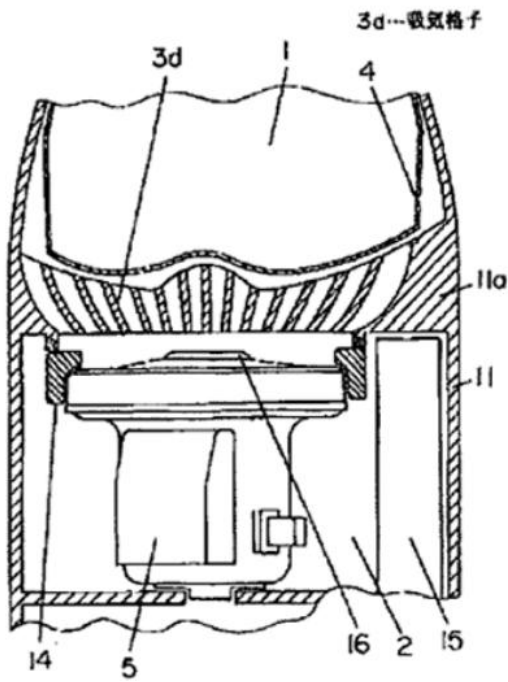
- 44 According to D25's description, the intake performance of conventional vacuum cleaners is reduced by the fact that the air must pass through an intake grille (D25de para. 6). To solve this, D25 proposes to improve the shape of the intake grille so that the airflow is smoothed at the front of the intake opening of the electric fan (D25de para. 7 et seq.).
- 45 The total of five embodiments each have a dust collection chamber (1) and a motor chamber (2), which are separated from each other by a partition wall (11a). An electric fan (5) for suction is arranged in the motor chamber (2). An intake grille (3) is provided on the partition wall (11a), which is arranged further forward than the intake opening (16) of the electric fan (5) (D25en paras. 3, 9 and 15). The fan (5) is attached to the grille (3) by means of a retaining rubber (14) with the intake opening (para. 3).
- 46 The five embodiments differ in the shape of the intake grille (3a, 3b, 3c, 3d and 3e). Exemplary figures 1, 4 and 5 are reproduced below, each showing the aforementioned components (3a, 3d, 3e) in a cross-sectional view.

【図1】

- 1...集塵室
- 2...モータ室
- 3a...吸気格子
- 4...紙袋
- 5...吸引用電動送風機
- 11...本体
- 16...吸込口

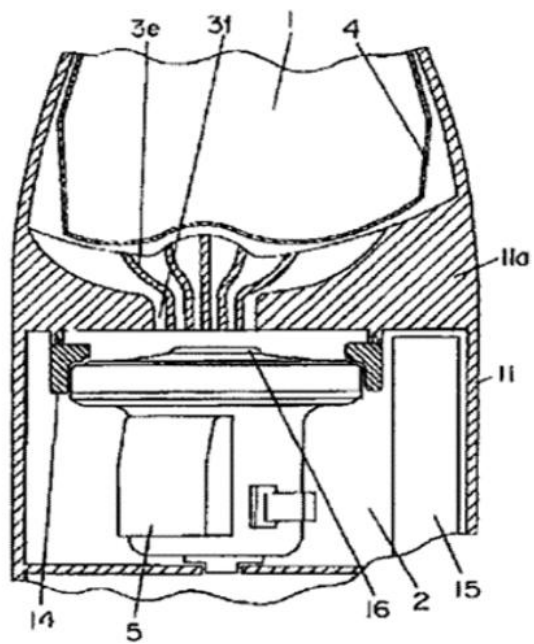


【図4】



【図5】

- 3e...吸気格子
- 3f...スレート部



47 In the embodiment example according to Figure 1, the lateral boundary lines run straight and approach each other in the direction of the motor chamber. In the embodiment examples according to Figures 2 to 4, the lines run in an arc. In the embodiment example according to Figure 5, they run in an arc in the upper part and straight and parallel to each other in the lower part.

48 b) Thus, as also the appeal does not doubt, the features a to e are disclosed.

49 c) As the Patent Court correctly assumed, D25 also discloses an air guide funnel with features f to i.

50 The course of the two lateral boundary lines shown in Figures 1 to 5 and the explanations of this in the description indicate that the passage narrows towards the fan.

51 The design as an intake grille does not prevent this. According to the invention, this allows the air flow to pass through in order to smooth it. Instead of a grille, the patent in suit provides ribs, so that in the patent in suit, too, the air flow is directed only through gaps.

52 aa) The fact that the course in Figure 5 has a step is irrelevant because feature i does not exclude such a design for the reasons explained above.

53 bb) It is also irrelevant that it is not clear from the figures and the description whether the cross-section narrows continuously on all sides or whether, for example, the walls not shown in the illustration run parallel to each other in individual areas.

54 As has also been explained above, the latter design is not excluded by feature i.

55 cc) It is decisive that it is sufficiently clear from the description of D25 that the intake grille designed as an air guide funnel within the meaning of the patent in suit is coupled to the blower and narrows in such a way that the entire air flow is guided into the fan.

56 This follows from the explanations in the description, according to which the air flow is guided from the dust collection chamber (1) via the intake grille (3) to the fan (5) and is additionally smoothed by the special design of the grille (para. 16). With these explanations, the assumption that on the side of the intake grille facing the fan there could be partial surfaces which are transverse to the air flow is not compatible.

57 Figures 1 to 5 also contain no indications to support the latter assumption. When viewed in isolation, the drawing could theoretically be interpreted to mean that the grille narrows on two sides only, while its side walls run parallel to each other on the other two sides. However, this interpretation would also contradict the explanations given in the description.

58 For the same reason, contrary to the opinion of the appeal, there is no indication from the drawing that the retaining rubber (14) used to couple the intake grille to the fan has gaps so that the air could escape laterally in individual areas.

59 d) Likewise, the Patent Court correctly assumed that D25 also anticipates the interference protection element according to features k to n.

60 It is true that D25 does not clearly mention a ribbed body and protection against reaching into the engine chamber (2). However, the indication that the air inlet is designed as an intake grille makes it sufficiently clear that ribs are present to at least make it difficult to reach in. Feature k does not specify anything more.

61 As the Patent Court also correctly pointed out, figures 4 and 5 show in the
area of the center a dome-like design of the lattice in the sense of (in any case
optional) feature l1.

62 e) Not directly and clearly disclosed is feature o.

63 The description does not contain any indications as to which materials and
how many assembled components the vacuum cleaner consists of. The hatching
representation in figures 1 to 5 does not allow any clear conclusions in this respect,
as the Patent Court also correctly assumed. Even if it were to be inferred from it
that all components consist of the same material, it would not follow from this that
they consist of a one-piece within the meaning of feature o.

64 2. Contrary to the opinion of the Patent Court, feature o was also not
obvious on the basis of D25.

65 a) The dispute of the parties as to whether the specialist has a training as
a university engineer or, as the defendant believes, only a training as a toolmaker,
technician or engineer, is of no significance here.

66 Defendant does not show that individual suggestions conveyed from D25 or
other prior art would be apparent only to a skilled person with a college education.

67 b) Contrary to the opinion of the Patent Court, a design with a one-piece
component according to feature o was not suggested on the basis of D25.

68 aa) According to the findings of the Patent Court and the Technical Board
of Appeal of the European Patent Office in the opposition proceedings (EPO,
decision of September 14, 2018 - T 0621/15 - 3.2.04), which are consistent in this
respect, a one-piece production of an intake grille as shown in figures 4 and 5 of

D25 would be possible at best with considerable effort. From this, the Technical Board of Appeal correctly concluded that a one-piece construction was not obvious.

69 The consideration made by the Patent Court that it was possible for the skilled person to change the shape and orientation of the struts of the intrusion protection element shown in D25 in such a way that the intake grille could easily be manufactured as a component injection molded in one go is not sufficient to qualify such a construction as obvious. It is true that the appeal does not point to any specific evidence that would cast doubt on the correctness of the findings regarding the technical possibilities available on the priority date. However, in order to classify the subject-matter of the patent in suit as obvious, a suggestion was required to make use of these technical possibilities in the products disclosed in D25.

70 Such a suggestion did not result from D25. No attention is paid there to the question of how many individual parts the proposed construction should be made of. Instead, the focus is on the practical design of the intake grille to ensure the most favorable air flow possible. This did not give rise to any reason to modify the proposed design with regard to specific manufacturing methods. Such considerations would have involved a departure from the basic idea at the heart of D25, according to which the design is of decisive importance.

71 bb) The suggestion was not dispensable because one-piece production was a general means that could also be used in the context of D25.

72 It can be left open whether and to what extent one-piece production of plastic parts by injection molding can be regarded as a general solvent to be considered for a wide range of applications. Based on D25, there was in any case no sufficient

indication that this agent can also be used in the context described there. In this respect, too, it is decisive that in D25 the focus is not on suitability for different manufacturing methods, but on the special shaping to bring about a particularly favorable air flow.

73 The possibility of production by injection molding using two machines cited by the plaintiff may have been an option, despite the expense involved, if other circumstances had argued in favor of aiming for one-piece production. On the basis of D25, however, there was precisely no preference in this respect.

74 IV. The judgment under appeal does not prove to be correct in its result for other reasons (Sec. 119 (1) Patent Act).

75 1. The subject matter of claim 1 is also not anticipated by the other citations.

76 a) The obviously pre-used vacuum cleaner of the type M. documented in the set of exhibits D20 does not have an air guide funnel with a narrowing in the sense of features f and i.

77 aa) As can be seen from the photographs reproduced below, the pre-used vacuum cleaner has a chamber for holding a dust bag and a chamber separated therefrom by a partition wall and containing a motor-driven fan.



D20.8 Image



D20.8 Image



D20.8 Image



D20.3 Image

78 The partition wall has a rectangular opening through which air can pass from the first chamber to the fan. A rib-like structure is formed in this opening, comprising a plurality of concentrically arranged cylindrical ribs on one side. The partition consists of a unitary component that is not composed of multiple components.

79 bb) As the defendant also does not doubt, features a to e are thus disclosed.

80 cc) Contrary to plaintiff's view, features f and i are not disclosed.

81 (1) It can be left open whether the side walls of the opening formed in the partition wall have a lateral inclination and whether, contrary to the opinion of the Technical Board of Appeal, such an inclination could also be regarded as a narrowing if it is based solely on peculiarities of the manufacturing process.

82 As the Technical Board of Appeal at any rate correctly decided in the result, there is at least a lack of the narrowing required by features f and i, through which the entire air flow entering the inlet area is directed to the fan without encountering an area running transversely thereto at the end of the grille lying in the direction of the fan.

83 (2) The gradation in the vicinity of the outlet demonstrated at the oral hearing on the basis of a sawn-open specimen of the partition is likewise not sufficient for the realization of features f and i.

84 In this respect, too, it can be left open whether and to what extent the shaping in this area is predetermined by the manufacturing process. Irrespective of this, this oblique area is also so small, that the air in the area of the coupling to the

suction means impinges on a transversely running wall over almost the entire cross-section. Thus, a funnel in the sense of features f and i is also lacking in this respect.

85 b) German disclosure document 198 02 345 (D1) does not disclose features k and n.

86 aa) D1 discloses a low noise electric vacuum cleaner.

87 D1 states that electric vacuum cleaners known in the prior art are relatively loud. Causes are the high-speed motor, the air flow through the vacuum cleaner and vibrations generated in the suction unit, which are transmitted to the remaining parts (col. 1 line 6-19).

88 To reduce noise, D1 suggests suspending the suction unit in a damper (col. 2 lines 9-14).

89 In addition, a diffuser duct is proposed which has a cross-sectional area that decreases continuously in the direction of flow of the air stream. An example of such a diffuser duct is shown in longitudinal section in Figure 3 below.

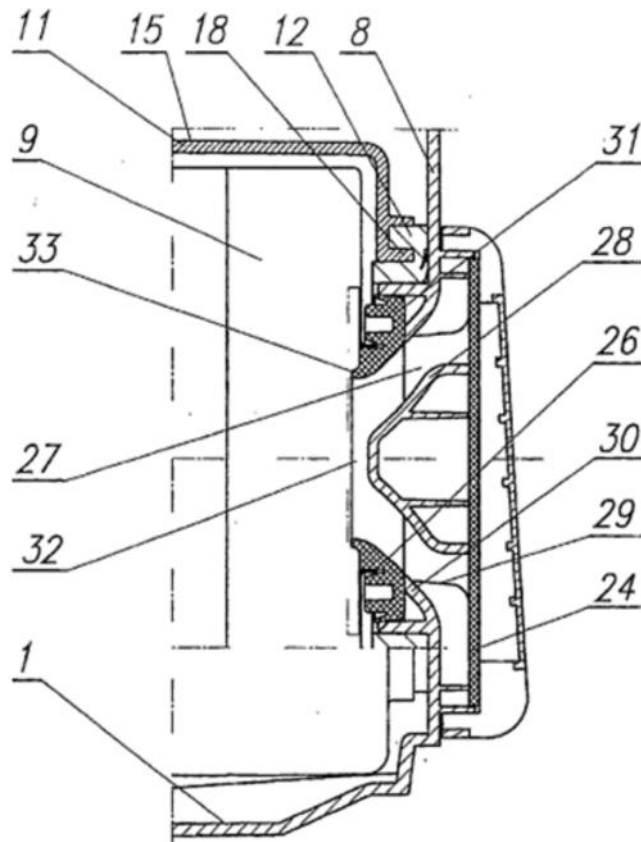


Fig. 3

90 The air flow is directed from the front chamber (7) through the conical diffuser duct (27) into the inlet opening (26) of the suction unit (6). The diffuser duct is formed by walls of the noise-shielding partition wall (8) and by an opposite conical protective wall (28). The protective wall (28) is connected to the conical outer wall (30) of the shielding partition wall (8) by conical longitudinal ribs (29). The radii of curvature of the two opposing surfaces are adapted to each other to achieve a streamlined shape of the diffuser channel (col. 2 line 66 to col. 3 line 20; col. 4 line 56).

91 bb) Features a to e are thus disclosed.

92 cc) Also disclosed are features f to i.

93 Due to the conical shape of the diffuser walls (8), the cross-section of the air inlet opening is reduced, starting from the inlet area in the direction of the suction unit, to such an extent that at the end it coincides with the cross-section of the connecting piece for the suction unit. As the Board of Appeal also assumed, this is sufficient for the realization of features f and i.

94 The fact that the cross-section available for the air flow is additionally restricted by the protective wall (28) does not lead to a different assessment without further ado. Claim 1 does not necessarily exclude such additional elements.

95 dd) Contrary to the plaintiff's opinion, however, there is no disclosure of the features k and n.

96 It can be left open whether the opinion of the Technical Board of Appeal is correct that the protective wall (28) cannot be regarded as intrusion protection because the filter (24) installed in front of it already prevents intrusion.

97 In any case, the conical protective wall (28) is not designed in such a way that it is formed in the bottom of the hopper and its ribs protrude in the center of the hopper in the direction of the collecting chamber, as provided by features k and n. The protective wall (28) does have ribs in the center of the hopper opening. However, these do not protrude in the direction of the collecting chamber, but in the direction of the fan. In addition, the protective wall (28) does not allow air to pass through in this area, as would be required by feature k.

98 The ribs (29) attached to the outer wall (30) extend toward the collection chamber but not toward the center of the hopper. The same applies to the

connection between the protective wall (28) and the ribs (29), which is only mentioned in the description.

99 c) In any case, U.S. Patent Specification 3 454 978 (D6) does not disclose features k through n.

100 aa) D6 describes an electric cleaning device.

101 D6 states that in devices known in the prior art (i.e., in 1966), pressure drop or overheating of the motor could occur because of the small dimensions (col. 1 lines 28-45).

102 Against this background, D6 proposes to provide an annular passage between the dust collection chamber and the compression chamber, which can create a venturi effect. The interaction of this effect with the suction effect of the fan would lead to an increase in performance (col. 1 lines 53-72).

103 An example of an embodiment is shown in Figure 1 reproduced below.

Fig. 1.

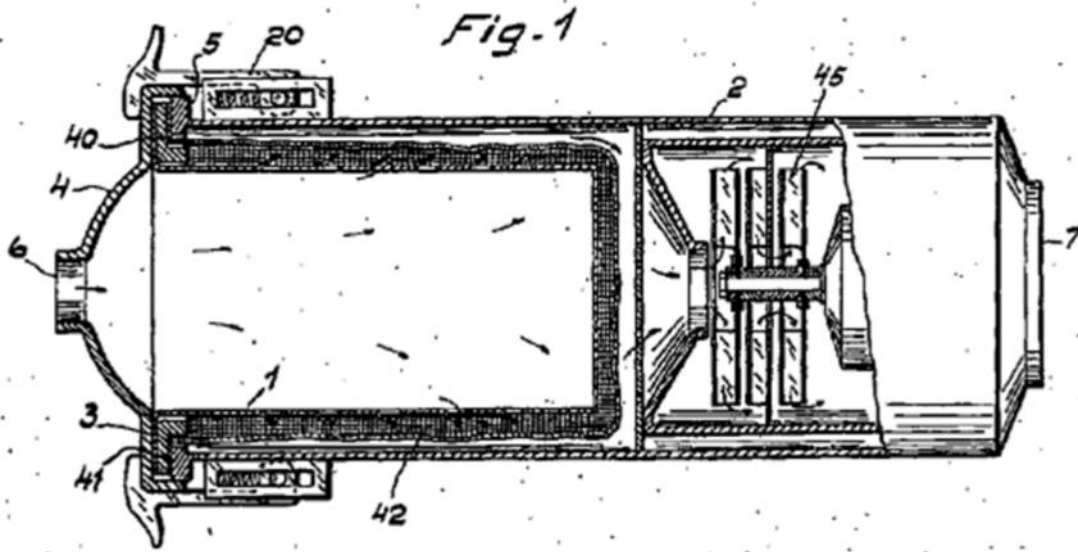


104 The front end of the motor (15) is hemispherically shaped and projects into the interior of a grommet (9). This forms an annular passage (d) having a venturi-shaped longitudinal portion between the motor (15) and the opening pipe (16) (col. 2 lines 56-60). A dust filter (37) is attached to the annular grommet section (9) (col. 2 lines 23-25).

105 bb) Thus, as the plaintiff also does not doubt, there is in any case no disclosure of an element of protection against interference within the meaning of features k to n.

106 d) Nothing to the contrary applies to US patent specification 2 237 499 (D8).

107 aa) D8, published in 1941, deals with the problem of providing a vacuum cleaner bag which can be cheaply manufactured and easily folded (col. 1 lines 2-19). For illustration purposes, the main parts of a vacuum cleaner are shown in Figure 1 reproduced below (col. 1 lines 24-26).



108 A dust bag (1) is housed in the left part of the housing (2). The air flows from
the suction nozzle through the opening (6) into the bag and subsequently passes
through the fan (45) and the outlet (7) (col. 1 lines 42-54).

109 bb) Thus, there is also at least a lack of disclosure of features k to n.

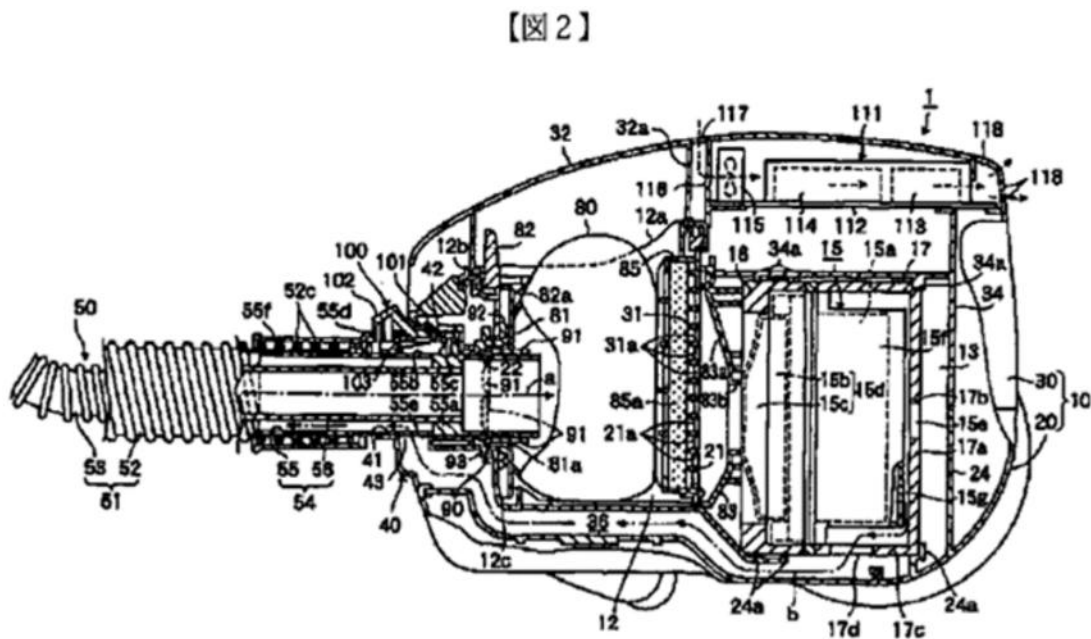
110 e) The same applies to Japanese disclosure 2000-325269 (D13).

111 aa) D13 discloses an electric vacuum cleaner.

112 D13 states that prior art vacuum cleaners contain a motor with commutator
and carbon brushes. Wear results in carbon particles which are blown out together
with the exhaust air stream (D13en para. 2). As a remedy, it was suggested that a
dust filter be placed in front of the fan and that the air blown out of the fan be
returned to the floor nozzle, creating circulation. This would lead to an increased
space requirement and to reduced performance (D13en para. 5 et seq.).

113 For improvement, D13 suggests using a brushless motor. This would eliminate the need for a filter to trap carbon particles and an exhaust chamber to collect them (D13en para. 13).

114 An example of an embodiment is shown in Figure 2 reproduced below.



115 The main body housing (10) consists of a lower shell (20) and an upper shell (30). Walls (21, 31) arranged therein form a partition wall separating a dust collection chamber (12) from a fan chamber (13). The walls (21, 31) have slot-shaped air guide holes (21a, 31a) (D13de para. 19). An electric blower (15) with a brushless motor (15a) is arranged in the fan chamber (13). A guide member (83) is provided in the front portion, which has an approximately conical guide wall (83a) and in the bottom of which a through hole (83b) is formed. The edge of the guide wall (83a) lies close to the walls (21, 31) (D13en para. 25).

116 A suction opening (22) is formed on the front wall of the upper shell (30) and
the lower shell (20), into which a sealing element (90) made of rubber is inserted
(para. 21).

117 bb) Thus, the disclosure of an interference protection element within the
meaning of features k to n is also lacking.

118 f) European patent application 636 336 (D24) does not disclose feature o.

119 aa) D24 discloses a silencer device for absorbing operating vibrations of a
vacuum cleaner.

120 D24 states that in known silencers of this type, the exhaust flow is directed
over a relatively short path and is only let out through an opening. This impairs the
noise absorbing effect (col. 1 lines 16-34).

121 For improvement, D24 suggests, among other things, absorbing engine
operating vibrations, suppressing exhaust noise, and distributing exhaust airflow
(col. 2 lines 15-24).

122 The second of the two embodiments is illustrated in Figures 7 and 9
reproduced below.

FIG. 7

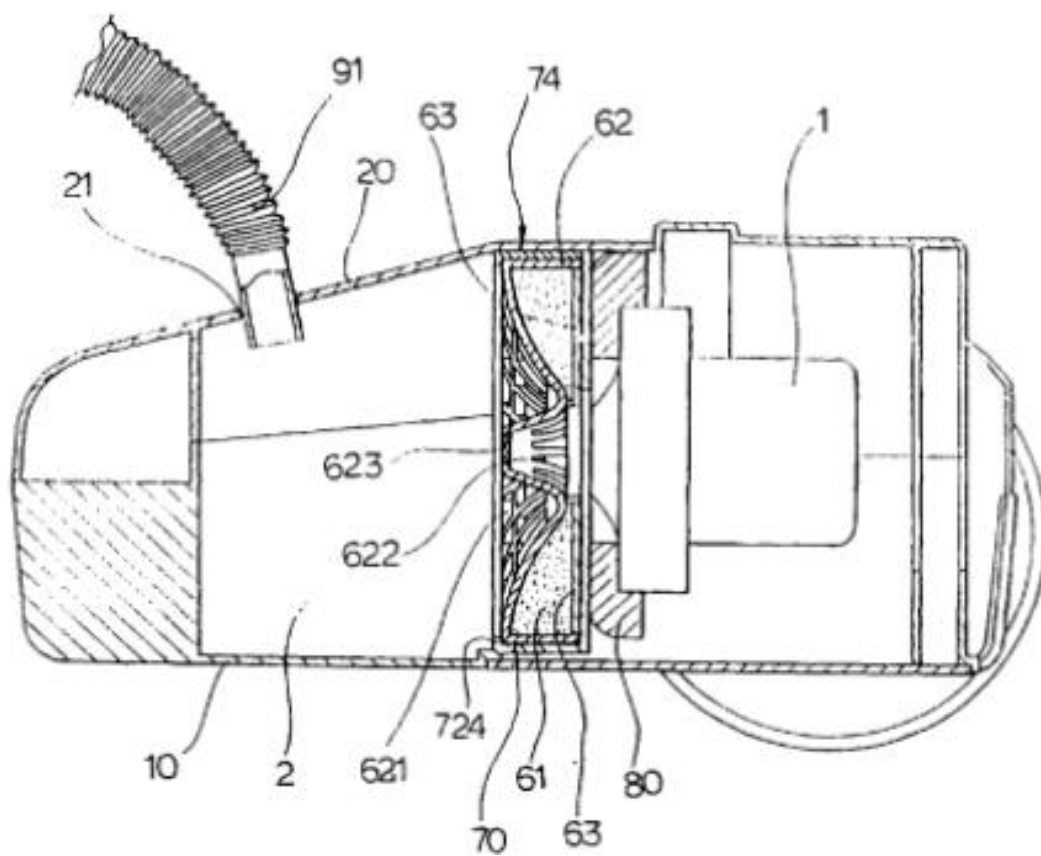
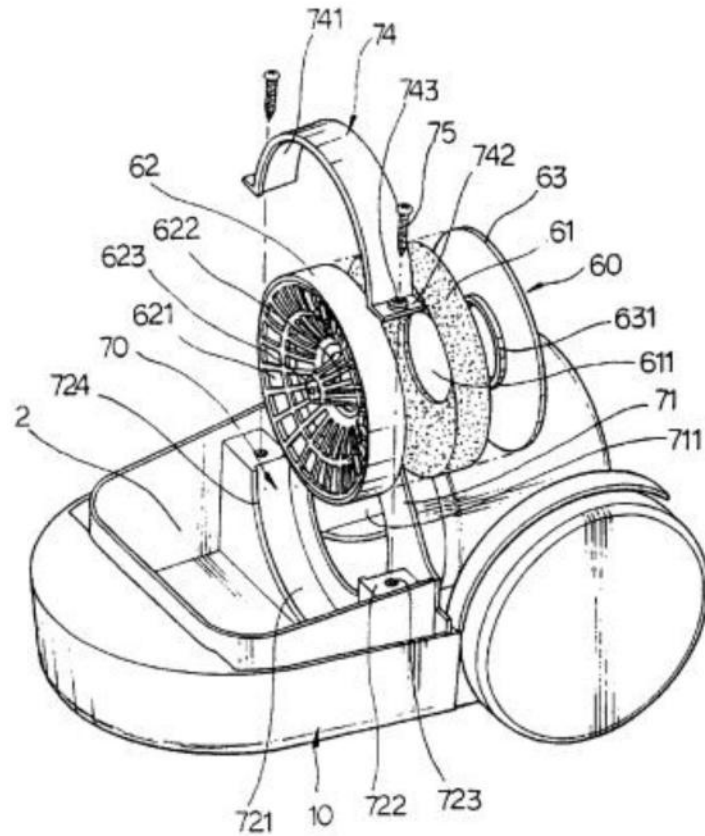


FIG.9



123 The muffler (60) includes a noise absorber (61), a cover (62), and an absorber support (63) (col. 10 lines 45-47). The cover (62) has a streamlined wall. This has a radial rib structure (621) to absorb noise. Furthermore, a ribbed structure (622) is provided on the side surface of the projection (623) to prevent eddy current but allow more air into the motor (1) (col. 11 lines 15-23). The lower housing (1) is equipped with a support (70) to support the muffler (60) (col. 11 lines 35-37).

124 bb) Thus, the feature o is not disclosed.

125 The illustration in Figure 9 shows that the two chambers of the housing are not separated from each other solely by the silencer (60), but also at least by the support (70). This is constructed as a separate component.

126 g) In any case, Japanese disclosure 1996-303394 (D28) does not disclose features k and o.

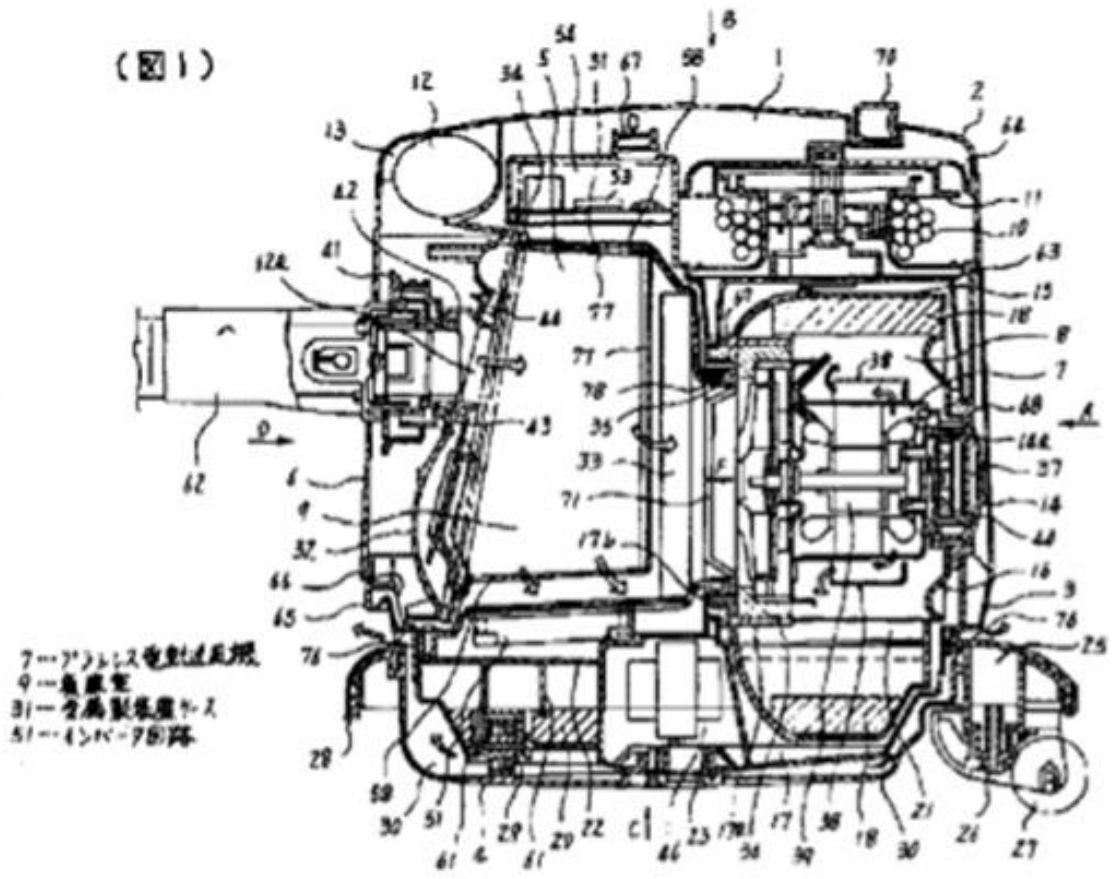
127 aa) D28 also addresses noise reduction in vacuum cleaners.

128 In prior art devices, the inlet angle of the diffuser is small to allow a compact design. As a result, the efficiency is impaired (D28en para. 7).

129 For improvement, D28 proposes to establish a rounding at the air inlet of a side plate forming the impeller, the leading edge of which is enveloped by the fan housing (para. 9).

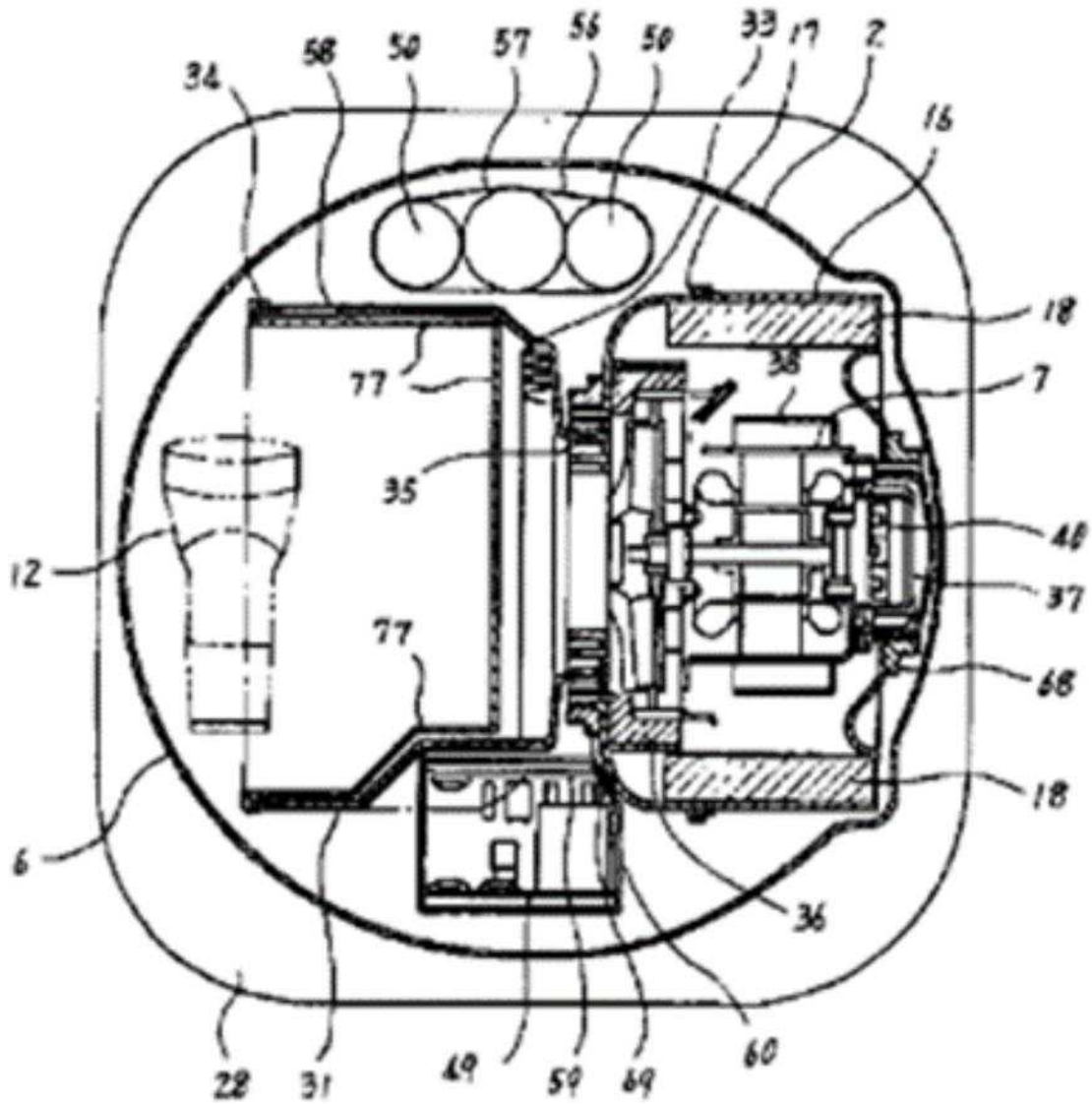
130 An example of an embodiment is shown in Figures 1 and 4 reproduced below.

【図1】



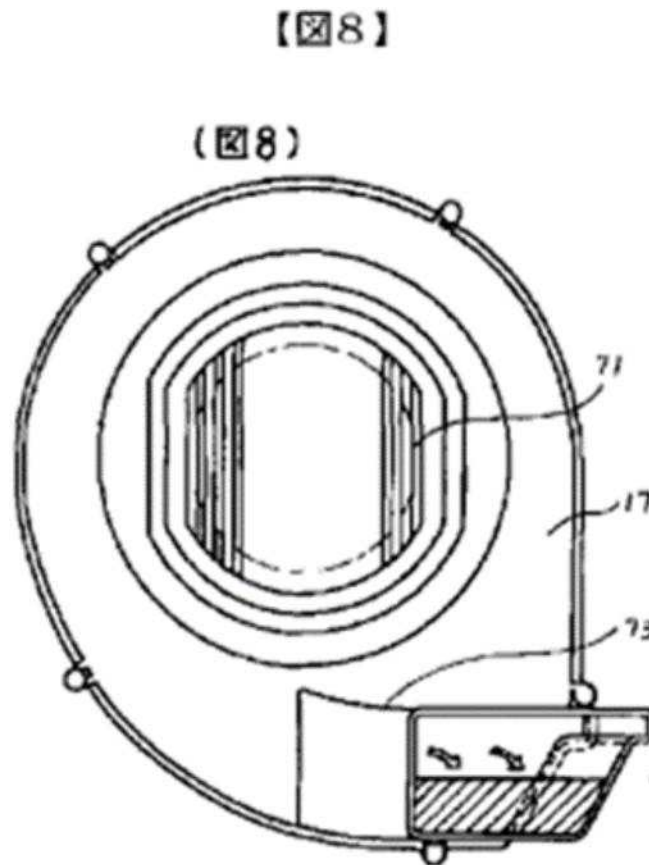
【図4】

(図4)



131 A fan chamber (8) and a dust collection chamber (9) are provided in the housing (1) (D28en para. 23). The collection chamber (9) contains a microfilter (33) and a box-shaped filter housing (58) with a dust collection filter (5) received therein (D28en para. 28).

132 Protective ribs (71) are attached to the fan housing (17). These can be seen in Figure 8 reproduced below, which shows a front view of the fan housing (D28en after para. 76).



133 bb) Thus, as also the plaintiff does not doubt, there is in any case no disclosure of feature o.

134 The protective ribs (71) are attached to the housing (17) and are thus not integral with the filter housing (58), which the plaintiff regards as an air guide funnel within the meaning of the patent in suit.

135 cc) Contrary to the opinion of the plaintiff, feature k is also not disclosed.

136 D28 does not contain any explanations as to what the ribs (71) provide protection against. Nor does the graphic representation in Figures 1 and 8 indicate that they prevent engagement with the fan chamber. There is also no evidence to support a firm conclusion that Figure 8 shows only part of the ribs and that they extend over the entire diameter of the passage opening.

137 2. The subject matter of claim 1 was not suggested by the prior art.

138 a) Contrary to the view expressed in the reference of the Patent Court, there was no suggestion, based on the prior use M. , to redesign the partition wall in such a way that it forms an air guide funnel with features f and i.

139 aa) It can be left open whether an air guide funnel within the meaning of features f and i would be present if the end face of the partition wall of the pre-used vacuum cleaner were continuously inclined, and whether the construction of the partition wall of the pre-used vacuum cleaner was unfavorable from a technical point of view.

140 Even if both questions were to be answered in the affirmative, the aforementioned finding would not result in the suggestion that the partition wall be provided with sloping end faces. It is true that a construction along the lines of a funnel was known from numerous of the citations pointed out above. However, the pre-used vacuum cleaner just does not have such an element. The shallow depth of the partition offers little scope for such a construction. The arrangement of a deeper hopper would run counter to the design of the pre-used vacuum cleaner, which was recognizably aimed at the most compact possible construction.

141 bb) Whether there was reason to add a silencer based on the D24 model to
the pre-used vacuum cleaner also does not require a decision.

142 Even if this question were to be answered in the affirmative, there would have
been no reason to design the cover (62), which belongs to the silencer (60) and is
designed as a separate component, as an integral part of the partition wall present
in the pre-used vacuum cleaner. A suggestion not to take over the entire silencer,
but only the cover (62), also did not result from a synopsis of the pre-use and the
citation.

143 b) On the basis of the citations disclosing an air guide funnel with features
f and i, there was in any case no reason to construct this funnel in one-piece with
an intrusion protection element with features k through n.

144 3. The subject matter of claim 1 does not go beyond the content of the
originally filed documents.

145 a) The Patent Court correctly assumed that the application (NK2)
already discloses, in addition to a dome-like expanded rib body within the meaning
of feature l1, alternatively also a differently shaped rib body within the meaning of
feature l2 and that the combination with features m and n is disclosed for both
embodiments as belonging to the invention.

146 As the Patent Court correctly explained in detail, it is sufficiently clear from
the description of a rib body with a dome-like widening and the features m and n
(NK2 p. 6 lines 12-33) as well as the subsequent reference that, in addition to a
dome-like widening shape, a differently shaped rib body may also fulfill a safety
function (NK2 p. 6 lines 33-36), that a differently shaped body may also have the
features m and n. The Patent Court also stated that a rib body with a dome-like
widening may also have the features m and n.

147 b) The Patent Court was also correct in considering feature n as originally
disclosed.

148 As the patent court correctly pointed out, it is sufficiently clear from the
explanations in the application, according to which protective ribs in the form of a
dome-like intrusion protection element projecting in the direction of the collecting
chamber can be provided in the center of the air guide funnel, i.e. toward the
opening to the fan (NK2 p. 6 lines 30-33), that not only the intrusion protection
element as a whole projects in the manner described, but also the individual ribs
of which it consists. Such an embodiment is also shown in Figures 2 to 4.

149 c) The omission of the features "inlet opening EO at the front side of the
housing", "air flow directed essentially in a straight line", "the outlet opening AO in
the housing GH" as well as "the mechanical coupling of the blower GB, in particular
of the sealing element GT" does not lead to an inadmissible generalization, if only
because claim 1 formulated in the application already claims a device without these
features.

150 A different assessment also does not result from the fact that the version of
claim 1 in force provides for further features without also including the above-
mentioned features. The plaintiff does not show that the features not included have
a compelling technical connection with the features provided for in claim 1.

151 4. Likewise, the Patent Court correctly assumed that the invention is
disclosed so clearly and completely that a person skilled in the art can carry it out.

152 According to the findings of the Patent Court, a combination of the features
12, m and n is executable with recourse to the know-how in any case in such a way
that the ribbed body has the shape of a cuboid or cube instead of a dome-like
shape.

153 The plaintiff does not point to any specific evidence that would cast doubt on
the completeness or correctness of these findings.

154 V. The case is ripe for final decision (Sec. 119 (5), second sentence, Patent
Act).

155 The challenged subject matter proves to be legally valid for the reasons set
out above. The action must therefore be dismissed.

156 VI. The decision on costs is based on Sec. 121 (2) Patent Law and Sec. 91 (1) ZPO.

Bacher

Kober-Dehm

Marx

Rombach

Rensen

Lower court:

Federal Patent Court, decision of 24.09.2020 - 5 Ni 25/18 (EP) -