UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DYSON TECHNOLOGY LIMITED AND DYSON, INC.,
Petitioners,

v.

OMACHRON INTELLECTUAL PROPERTY INC.,
Patent Owner.

Case No. IPR2024-00766

U.S. PATENT NO. 10,568,477

PETITION FOR *INTER PARTES* REVIEW

TABLE OF CONTENTS

I. INTRODUCTION 1

II. STANDING (§42.104(a)) 6

III. RELIEF REQUESTED (§42.104(b)) 6

IV. OVERVIEW OF THE '477Patent 7

A. The Specification 7

B. The Prosecution History 9

1. The Examiner Found That Dimbylow Teaches All Elements Of Claim 1, Except The "Door Release Actuator" 9

2. The Examiner Allowed Claim 1 Based On The Addition Of Element [1d], Which Requires A Door Release Actuator 11

3. PO Buried The Examiner With Irrelevant Art, But Withheld Howes 12

V. OVERVIEW OF PRIOR ART 13

A. Dimbylow 13

B. Howes 15

C. Brown 17

D. Vuijk 19

VI. LEVEL OF ORDINARY SKILL IN THE ART 22

VII. CLAIM CONSTRUCTION 22

VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE 23

A. Ground 1: Dimbylow in Combination with Howes Renders Obvious Claims 1-7, 12, and 14-15 23

1. A POSA Would Have Combined Dimbylow and Howes 23

2. [1]/[14] 32

3. [2] 47

4. [3] 48

5. [4] 48

6. [5] 49

7. [6] 50

8. [7]/[15] 51

9. [12] 52

B. Ground 2: Brown Renders Obvious Claims 1-20 52

1. [1]/[13]/[14]/[18].....52

2. [2] 77

3. [3] 78

4. [4]/[5]/[6] 78

5. [7]/[15] 80

6. [8]/[16] 82

7. [9]/[17] 84

8. [10] 84

9. [11] 85

10. [12] 87

11. [19] 88

12. [20] 88

C. Ground 3: Brown In Combination With Vuijk Renders Obvious Claims 1-20 88

IX. DISCRETIONARY FACTORS FAVOR INSTITUTION 94

A. §314(a).....94

B. §325(d) 97

X. SECONDARY CONSIDERATIONS 100

XI. MANDATORY NOTICES UNDER 37 C.F.R. §42.8.....100

A. Real Parties-in-Interest.....100

B. Related Matters.....100

C. Lead and Backup Counsel, Service, and Power of Attorney.....100

XII. PAYMENT OF FEES UNDER 37 C.F.R. §42.103.....101

TABLE OF AUTHORITIES

Page(s)

Cases

Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH,
IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020).....97

Apple Inc. v. Fintiv, Inc.,
IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020).....94

Apple Inc., v. Fintiv, Inc.,
IPR2020-00019, Paper No. 11 (PTAB Mar. 20, 2020).....95

Dish Network v. Broadband iTV,
IPR2020-01280, Paper 17 (PTAB Feb. 4, 2021).....94

Fusion Orthopedics, LLC v. Extremity Medical, LLC,
IPR2023-00894 Paper 15 (PTAB Nov. 17, 2023).....97

General Plastics Indus. Co., Ltd. v. Canon Kabushiki Kaisha,
IPR2016-01357, Paper 19, 9-10 (PTAB Sept. 6, 2017).....97

Google LLC v. Valtrus Innovations Ltd.,
IPR2022-01197, Paper 12 (PTAB Mar. 29, 2023).....100

iRobot Corp. v. SharkNinja Operating LLC et al.,
19-cv-12125 (D. Mass.) (holding a *Markman* hearing on 8/6/2020
and issuing a *Markman* order on 1/14/21).....96

Reflex USA LLC v. Longyear TM, Inc. et al.,
IPR2023-00642, Paper 11 (P.T.A.B. Sept. 26, 2023).....98, 99

Samsung Electronics Co., Ltd. et al v. Staton Techiya, LLC,
IPR2022-00302, Paper 13.....95

SharkNinja Operating LLC v. Dyson, Inc.,
No. 1:23-cv-12372 (D. Mass.).....94, 95, 96, 100

SharkNinja, Inc. v. Dyson Technology Limited,
IPR2023-01322, Paper 7 (PTAB Feb. 27, 2024).....97

TSMC Ltd. v. Alidouble, Inc.,
IPR2023-00372, Paper 7 (PTAB July 13, 2023) 94

LIST OF EXHIBITS

Exhibit No.	Description
Ex1001	U.S. Patent No. 10,568,477 ("'477Patent")
Ex1002	Declaration of Robert Giachetti
Ex1003	*Curriculum Vitae* of Robert Giachetti
Ex1004	Excerpted File History of U.S. 10,568,477 (App. No. 15/685,962)
Ex1005	U.S. Patent Publication No. US 2017/0079489 ("Dimbylow")
Ex1006	U.S. Patent No. 8,021,453 ("Howes")
Ex1007	U.S. Patent No. 2,477,685 ("Brown")
Ex1008	International Publication No. WO 02/067753 to Vuijk ("Vuijk")
Ex1009	Ex. D-4 to Plaintiffs' Infringement Contentions in *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.)
Ex1010	Ex. A-4 to Plaintiffs' Infringement Contentions in *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.)
Ex1011	U.S. 10,405,710 to Conrad ("Conrad710")
Ex1012	https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distprofile1231.2023.pdf
Ex1013	Petitioners' Stipulation
Ex1014	The Parties' Revised Proposed Schedule in *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.)
Ex1015	Plaintiffs' Infringement Contentions in *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.)

LIST OF CHALLENGED CLAIMS

Reference Number	Claim Limitation
Claim 1	
[1pre]	A surface cleaning apparatus comprising:
[1a]	(a) an air flow path from a dirty air inlet to a clean air outlet and including a suction motor;
[1b]	(b) an air treatment member comprising a dirt collection region having an openable door;
[1c]	(c) an accessory removably connectable to the dirty air inlet wherein, when the accessory is connected to the dirty air inlet, the openable door is inhibited from opening; and,
[1d.1]	(d) an openable door lock comprising a lock engaging member and a door release actuator drivingly connected to the lock engaging member,
[1d.2]	the lock engaging member moveable between an engaged position in which the lock engaging member secures the openable door in a closed position and a disengaged position in which the openable door is openable
[1d.3]	wherein the lock engaging member is inhibited from moving to the disengaged position when the accessory is connected to the dirty air inlet.
Claim 2	
[2]	The surface cleaning apparatus of claim 1 further comprising a front end having the dirty air inlet and the openable door is provided on the front end.
Claim 3	
[3]	The surface cleaning apparatus of claim 1 wherein the accessory is removably mounted to the dirty air inlet.
Claim 4	
[4]	The surface cleaning apparatus of claim 1 wherein, when the accessory is connected to the dirty air inlet, the accessory physically inhibits the openable door from opening.
Claim 5	
[5]	The surface cleaning apparatus of claim 4 wherein, when the accessory is connected to the dirty air inlet, the accessory overlies a portion of the openable door.
Claim 6	

Reference Number	Claim Limitation
[6]	The surface cleaning apparatus of claim 5 wherein, when the accessory is connected to the dirty air inlet, the accessory abuts a portion of the openable door.
Claim 7	
[7]	The surface cleaning apparatus of claim 1 wherein the accessory has a blocking portion which inhibits the lock engaging member moving to the disengaged position when the accessory is connected to the dirty air inlet.
Claim 8	
[8]	The surface cleaning apparatus of claim 7 wherein the openable door lock includes a moveable portion which moves along a path from a first position when the lock engaging member is in the engaged position to a second position when the lock engaging member is in the disengaged position, the moveable portion has an abutment surface and the blocking portion is positioned in the path of the abutment surface when the accessory is connected to the dirty air inlet.
Claim 9	
[9]	The surface cleaning apparatus of claim 8 wherein the moveable portion is part of a drive member drivingly connecting the door release actuator to the lock engaging member.
Claim 10	
[10]	The surface cleaning apparatus of claim 1 further comprising a lock deactivation member and the accessory has a blocking portion which activates the lock deactivation member when the accessory is connected to the dirty air inlet.
Claim 11	
[11]	The surface cleaning apparatus of claim 10 wherein the lock deactivation member includes a moveable portion which moves along a path from a first position when the lock engaging member is in the engaged position to a second position when the lock engaging member is in the disengaged position, the moveable portion has an abutment surface and the blocking portion is positioned in the path of the abutment surface when the accessory is connected to the dirty air inlet.
Claim 12	

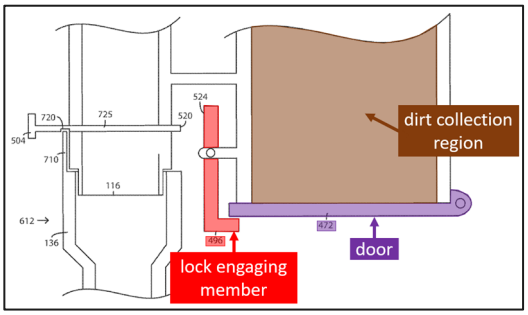
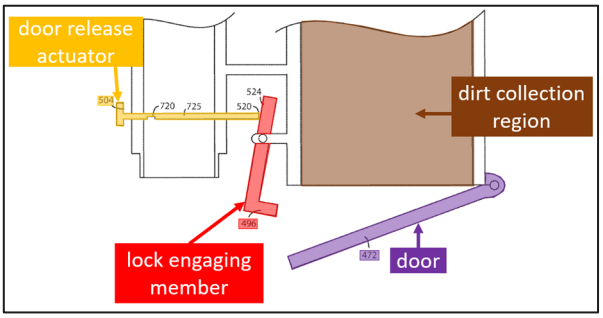
Reference Number	Claim Limitation
[12]	The surface cleaning apparatus of claim 1 wherein the accessory is a longitudinally extending rigid member air flow member, an accessory cleaning tool, or a flexible hose.
Claim 13	
[13pre]	A surface cleaning apparatus comprising:
[13a]	(a) an air flow path from a dirty air inlet to a clean air outlet and including a suction motor;
[13b]	(b) an air treatment member comprising a dirt collection region having an openable door wherein the dirty air inlet is positioned above the air treatment member;
[13c]	(c) an accessory removably connectable to the dirty air inlet wherein,
[13d]	wherein the openable door has first and second opposed sides, the first side having a hinge for the openable door and the second opposed side is positioned adjacent the dirty air inlet such that, when the accessory is connected to the dirty air inlet, the accessory overlies the second opposed side thereby inhibiting the openable door from opening.
Claim 14	
[14pre]	A surface cleaning apparatus comprising:
[14a]	(a) an air flow path from a dirty air inlet to a clean air outlet and including a suction motor;
[14b]	(b) an air treatment member comprising a dirt collection region having an openable door;
[14c]	(c) an accessory removably connectable in air flow communication with the dirty air inlet; and,
[14d.1]	(d) an openable door lock comprising a lock engaging member and a door release actuator drivingly connected to the lock engaging member,
[14d.2]	the lock engaging member is moveable between an engaged position in which the lock engaging member secures the openable door in a closed position and a disengaged position in which the openable door is openable
[14d.3]	wherein the lock engaging member is inhibited from moving to the disengaged position when the accessory is connected in air flow communication with the dirty air inlet.
Claim 15	

Reference Number	Claim Limitation
[15]	The surface cleaning apparatus of claim 14 wherein the accessory has a blocking portion which inhibits the lock engaging member moving to the disengaged position when the accessory is connected to the dirty air inlet.
Claim 16	
[16]	The surface cleaning apparatus of claim 15 wherein the openable door lock includes a moveable portion which moves along a path from a first position when the lock engaging member is in the engaged position to a second position when the lock engaging member is in the disengaged position, the moveable portion has an abutment surface and the blocking portion is positioned in the path of the abutment surface when the accessory is connected to the dirty air inlet.
Claim 17	
[17]	The surface cleaning apparatus of claim 16 wherein the moveable portion is part of a drive member drivingly connecting the door release actuator to the lock engaging member.
Claim 18	
[18pre]	A surface cleaning apparatus comprising:
[18a]	(a) an air flow path from a dirty air inlet to a clean air outlet and including a suction motor;
[18b]	(b) an air treatment member comprising a dirt collection region having an openable door;
[18c]	(c) an accessory removably connectable in air flow communication with the dirty air inlet; and,
[18d.1]	(d) an openable door lock securing the openable door in a closed position,
[18d.2]	a lock deactivation member and the accessory has a blocking portion which moves the lock deactivation member to a blocking position which inhibits the openable door lock moving to a door openable position when the accessory is connected in air flow communication with the dirty air inlet.
Claim 19	
[19]	The surface cleaning apparatus of claim 18 wherein the accessory has a blocking portion which inhibits the lock engaging member moving to the disengaged position when the accessory is connected to the dirty air inlet.

Reference Number	Claim Limitation
Claim 20	
[20]	The surface cleaning apparatus of claim 19 wherein the openable door lock includes a moveable portion which moves along a path from a first position when the lock engaging member is in the engaged position to a second position when the lock engaging member is in the disengaged position, the moveable portion has an abutment surface and the blocking portion is positioned in the path of the abutment surface when the accessory is connected to the dirty air inlet.

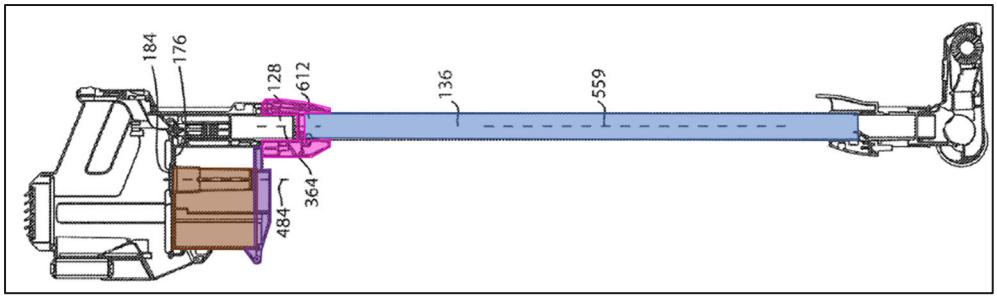
I. INTRODUCTION

The '477Patent "relates to surface cleaning apparatus[es]," with "a **dirt collection region** having an **openable door**" with a door lock. Ex1001, 1:13, 12:45-50, Abstract. The lock uses a "**lock engaging member**"—e.g., a tab—to hold the "**dirt collection region**" "**door**" in a closed position, and a "**door release actuator**"—e.g., a button connected to a push-rod—that a user presses to move the **lock engaging member**, thereby opening the door:

Locked Position	Unlocked Position
	

Ex1001, 35:23-29, Figs. 33-34; *see also id.*, claim 1; Ex1002 ¶45.

The '477Patent is also directed to inhibiting the **dirt collection region door** from inadvertently opening an accessory is connected, and one of the ways it purports to do this is with an **accessory** ("**wand 136**") with "a **collar 702** which is sized to overlie" and "abut[]" a portion of the **openable door**," "thereby inhibiting or preventing the openable door from opening when the **wand** is connected":



Ex1001, 36:33-47, Fig. 5A; Ex1002 ¶46.

In related litigation, Patent Owner ("PO") accuses Dyson hand/stick vacuums of infringing claims 1-7, 12, and 14-15 of the '477Patent:



Ex1009, 1. However, six months before the '477Patent's earliest claimed priority date, Dyson filed for its own related patent, US 2017/0079489 ("Dimbylow"), which is prior art and teaches a cleaner with an openable "**end wall**" that "is held in a closed position by a user-operable **catch 42**," and a connectable "**cleaning tool 10**" with "an **annular collar 43** that abuts the **end wall 26** [of the **dirt collector 38**] thereby holding the **end wall 26** in the closed position" to "prevent accidental opening of the **end wall 26** while the **cleaning tool 10** is attached":

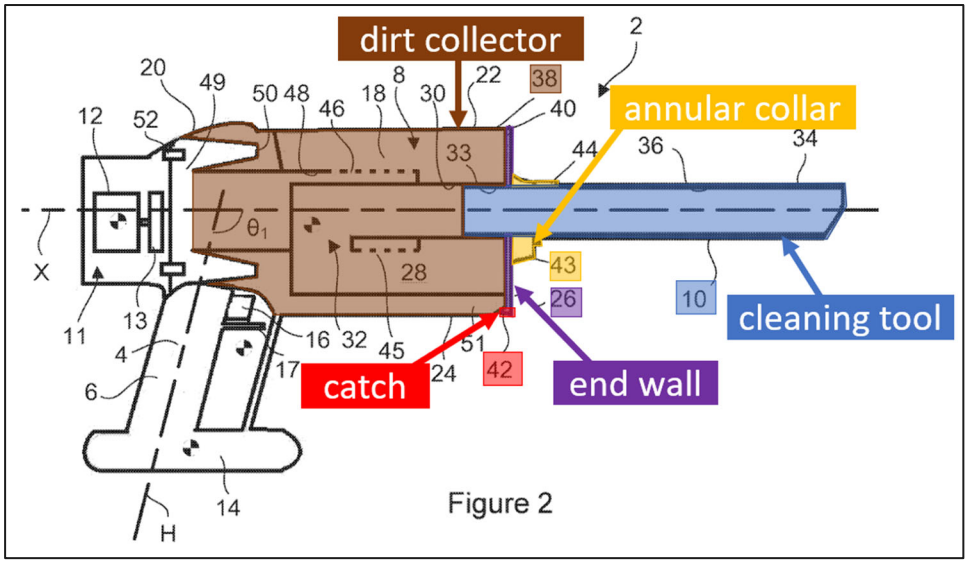
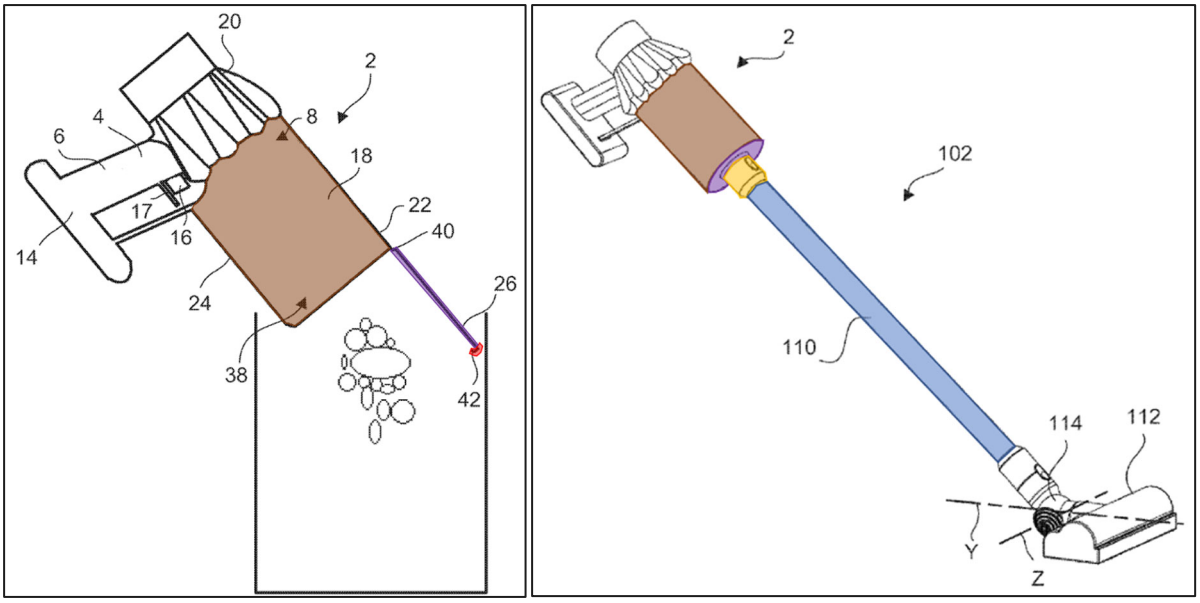


Figure 2



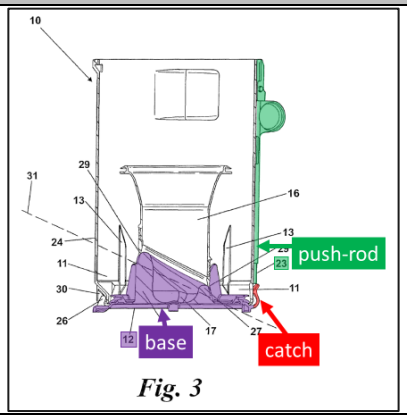
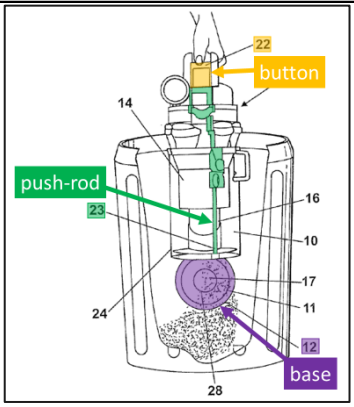
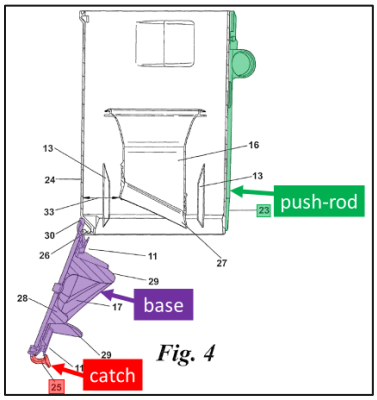
Ex1005 ¶37, Fig. 6, Figs. 2, 6, 8; Ex1002 ¶50.

The Examiner cited Dimbylow during prosecution of the '477Patent and found that it teaches nearly all limitations of claims 1 and 14, but allowed the claims based on Limitations 1(d) and 14(d), which require a "door release actuator" to "drivingly connect[]" with and "disengage[]" the "lock engaging member." *See*

Ex1004, 256-258, 310-311.[1] Petitioners ***agree*** that Dimbylow teaches everything in claims 1 and 14 except the claimed "door release actuator." What the Examiner missed in allowing the claims, however, is that other Dyson prior art, such as U.S. Patent No. 8,021,453 ("Howes")—which was never before the Examiner—teaches a nearly identical bin-locking configuration to Dimbylow, but with a door release actuator.

Like Dimbylow, Howes is a prior art Dyson patent that teaches "a separating unit" for a cyclonic vacuum cleaner with a pivot-open dirt collection chamber door (a "**base**") that is held in place by a "**catch**" that is be released "[i]n order to empty the separator unit." Ex1006, Abstract, 3:64-67, 4:1-10. However, whereas in Dimbylow, a user releases the door "catch" manually, Ex1005 ¶37, Howes teaches using a door release actuator: a user presses a "**button**" that is "linked to" a "**push-rod**" on a side of the dust bin that "is urged against" and releases the "**catch**," opening the "**base**":

[1] Ex1004 is an excerpted version of the '477Patent's 2,599-page prosecution history.

Howes: Locked Position	Howes: Unlocked By Pressing Button
 *Fig. 3*	  *Fig. 4*

Ex1006, Abstract, 4:2-10, Figs. 2b-4; Ex1002 ¶52.

It would have been obvious to use Howes's door release actuator teachings to open Dimbylow's pivotable door—both are prior art Dyson patents for opening a dirt bin using a "catch"—and Howes simply adds a button and push rod for operating that "catch" that makes it more convenient and hygienic for a user. A POSA would have been motivated to implement Howes's door release actuator teachings into Dimbylow:

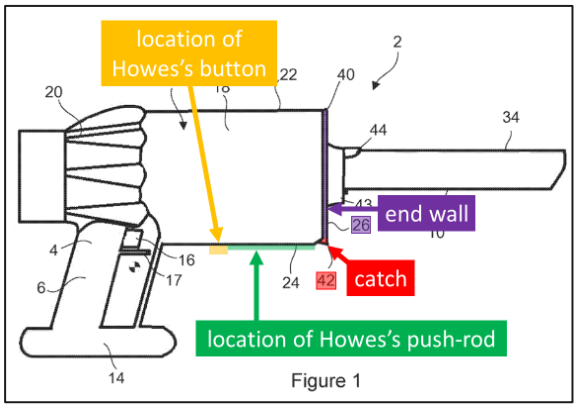


Figure 1

Ex1005, Fig. 1; Ex1006, 4:1-10; Ex1002 ¶¶53-54, 91-104. The combination of Dimbylow and Howes invalidates each claim that PO asserts against Dyson's accused products (claims 1-7, 12, and 14-15).

Further, all claims of the '477Patent (1-20) are obvious based on U.S. Patent No. 2,477,685 ("Brown")—a nearly 70 year old reference for a vacuum with a door lock—whether alone or in combination to with another Dyson bin-locking patent, International Publication No. WO 02/067753 (Vuijk). Neither was before the Examiner, and they invalidate all '477Patent claims.

II. STANDING (§42.104(A))

Petitioners certify that the '477Patent is available for IPR, and that Petitioners are not barred or estopped from requesting IPR to challenge the claims on the grounds herein.

III. RELIEF REQUESTED (§42.104(B))

Petitioners respectfully request review and cancellation under 35 U.S.C. §311 of claims 1-20 as follows[2]:

[2] Petitioners do not concede that any claims satisfy other requirements for patentability that cannot be raised in IPR, including §§101 and 112.

Prior Art
U.S. Patent Publication No. US 2017/0079489 ("Dimbylow"); filed September 19, 2016; published March 23, 2017; prior art under AIA 102(a)(1) and 102(a)(2)
U.S. Patent No. 8,021,453 ("Howes"); published September 20, 2011; prior art under AIA 102(a)(1) and 102(a)(2)
U.S. Patent No. 2,477,685 ("Brown"); published August 2, 1949; prior art under AIA 102(a)(1) and 102(a)(2)
International Publication No. WO 02/067753 ("Vuijk"); published September 6, 2002; prior art under AIA 102(a)(1) and 102(a)(2)

Grounds	Claims	Basis
1	1-7, 12, 14-15	§103; Dimbylow and Howes
2	1-20	§103; Brown
3	1-20	§103; Brown and Vuijk

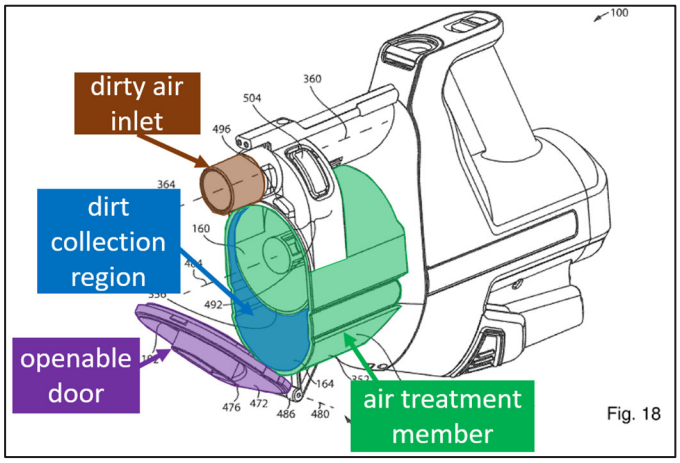
IV. OVERVIEW OF THE '477PATENT

The '477Patent, titled "Surface Cleaning Apparatus," issued from U.S. Application No. 15/685,962, filed August 24, 2017, and claims priority to U.S. Application No. 15/095,714, filed April 11, 2016. Ex1001, Cover.

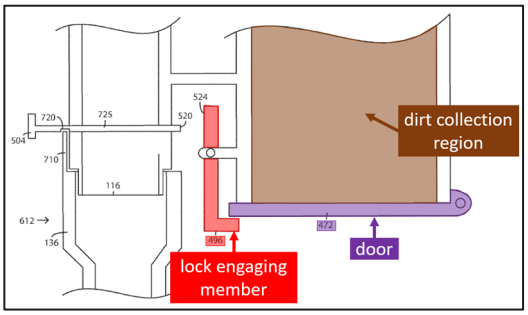
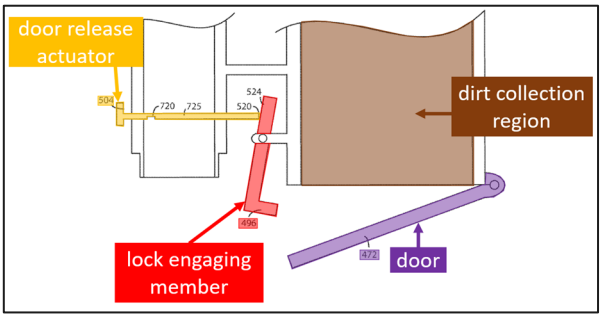
A. The Specification

The '477Patent's vacuum has "a **dirty air inlet** and an **air treatment member**," which "includes a **dirt collection region** having an **openable door**" that

is "inhibited from opening" "[w]hen an accessory is connected to the **dirty air inlet**":



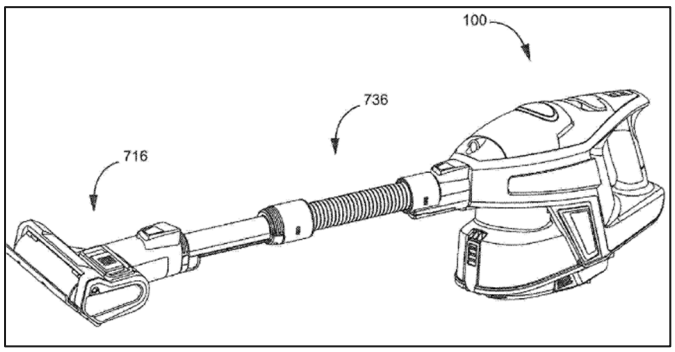
Ex1001, Abstract, Fig. 18; Ex1002 ¶57. The '477Patent's vacuum's **openable door** has a "lock" with a "**lock engaging member**" (*e.g.* a tab) that holds the "**door**" in a closed position, and a "**door release actuator**" (*e.g.*, a button with a push-rod) that a user presses to move the **lock engaging member**, opening the door:

Locked Position	Unlocked Position
	

Ex1001, 35:23-29, Figs. 33-34; *see also id.*, claim 1; Ex1002 ¶58.

According to the '477Patent, this "prevent[s] a user from inadvertently opening the dirt collection region" during use, as "the presence of a connected

accessory may indicate that it is more likely that the surface cleaning apparatus is being used to clean a surface." Ex1001, 12:42-13:3. However, the '477Patent's sole named inventor, Wayne Conrad, has elsewhere stated that such an arrangement is undesirable: in U.S. 10,405,710, he states that "[a]n ***advantage*** of this [10,405,710] design is that the ***cyclone bin assembly may be removed*** [for emptying] ***without disconnecting any tool or accessory*** connected to the inlet of the portable surface cleaning apparatus":



Ex1011, 1:62-65, Fig. 26B, *see also id.*, 9:26-31.

B. The Prosecution History

1. The Examiner Found That Dimbylow Teaches All Elements Of Claim 1, Except The "Door Release Actuator"

During prosecution, the Examiner found that Dimbylow teaches claim elements [1pre] through [1c] and essentially all of [1d], except for the "door release actuator" limitation.

During prosecution, PO's then-pending claim 1, shown below, contained identical elements to elements [1pre] through [1c] of issued claim 1:

CLAIMS:

1. A surface cleaning apparatus comprising:

(a) an air flow path from a dirty air inlet to a clean air outlet and including a suction motor;

(b) an air treatment member comprising a dirt collection region having an openable door; and,

(c) an accessory removably connectable to the dirty air inlet wherein, when the accessory is connected to the dirty air inlet, the openable door is inhibited from opening.

Ex1004, 89. The Examiner rejected then-pending claim 1 as anticipated by Dimbylow. *Id.*, 255-59. Thus, the Examiner found that Dimbylow teaches all of issued claim 1, elements [1pre] through [1c].

Further, then-pending claims 14 and 21 contained essentially all of the subject matter of issued claim [1d], except the claimed "door release actuator," as shown:

Then-Pending Claim 14	Then-Pending Claim 21	Issued Claim 1, Element [1d]
The surface cleaning apparatus of claim 1 further comprising: an openable door lock wherein the openable door is moveable to an open position when the openable door lock is moved to an open position and wherein the openable door lock is inhibited from moving to the open position when the accessory is connected to the dirty air inlet.	The surface cleaning apparatus of claim 20 wherein the lock deactivation member includes a moveable portion which moves along a path from a first portion when the lock engaging member is in the engaged position to a second position when the lock engaging member is in the disengaged position, the moveable portion has an abutment surface and	(d) an openable door lock comprising a lock engaging member and a door release actuator drivingly connected to the lock engaging member, the lock engaging member moveable between an engaged position in which the lock engaging member secures the openable door in a closed position and a disengaged position in which the openable door is openable wherein the lock engaging member is inhibited from moving to

	the blocking portion is positioned in the path of the abutment surface when the accessory is connected to the dirty air inlet.	the disengaged position when the accessory is connected to the dirty air inlet.

Id., 90-92; Ex1001, Claim 1. The Examiner likewise rejected then-pending claims 14 and 21 as anticipated by Dimbylow. Ex1004, 89, 255-59. Thus, the Examiner found that Dimbylow teaches nearly all of issued claim 1—essentially everything except the "door release actuator." PO never disputed that Dimbylow teaches these limitations, and Petitioners agree with the Examiner that Dimbylow teaches each of them.

2. The Examiner Allowed Claim 1 Based On The Addition Of Element [1d], Which Requires A Door Release Actuator

In the same Office Action, the Examiner found that then-pending dependent claim 8—which requires a door release actuator—"would be allowable if rewritten in independent form including all of the limitations of the base claim" (i.e., then-pending claim 1). Ex1004, 89-90, 257-58. PO then rewrote claim 8 in independent form, which issued as claim 1. *Id.*, 289-90, 294, 310.

The Examiner's Reasons for Allowance for claim 1 (and its dependent claims 2-12) stated that the "prior art of record" did not anticipate or render obvious element [1d]—which recites the "door release actuator"—in combination with the rest of the limitations in claim 1. *Id.*, 310. However, the prior art of record did not include

Howes, which teaches using a door release actuator in a nearly-identical locking system for a Dyson dust bin, and which a POSA would have combined with Dimbylow. *See* Ground 1, §1.

Issued claim 14 is substantially the same as issued claim 1, but does not require "the openable door [be] inhibited from opening" "when the accessory is connected to the dirty air inlet," and instead requires the accessory be removably connectable "in air flow communication with" the dirty air inlet. *Compare* Ex1001, Limitation [1c] *with* Limitations [14c], [14f]. Dimbylow's accessory is indisputably in airflow communication with the dirty air inlet, and thus the Examiner's findings with respect to issued claim 1 apply equally to issued claim 14.

3. PO Buried The Examiner With Irrelevant Art, But Withheld Howes

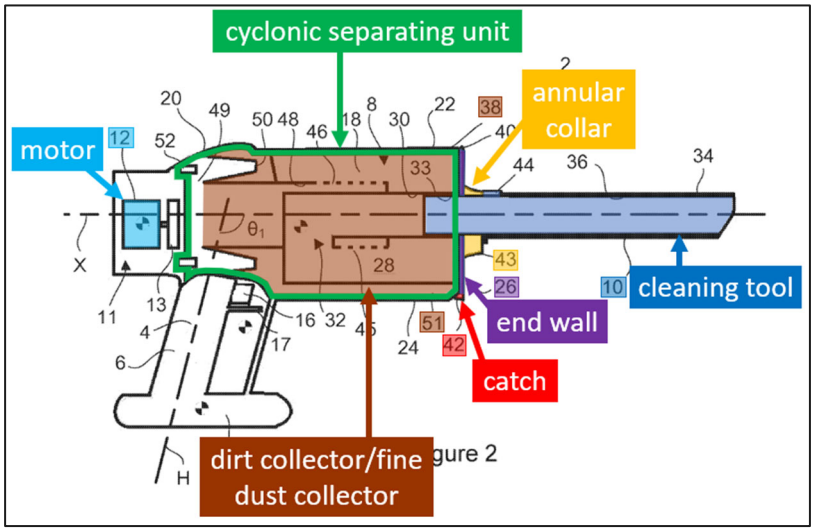
During prosecution, the Examiner found that "citation by [A]pplicant of a large number of prior art references, without pointing out how each reference is material to the examination of the application, can act to obscure any pertinent information by burying the information in a mass of document[s], rather than to clearly bring the information to the [E]xaminer's attention." Ex1004, 256 (collecting cases and citing MPEP 2004). The Examiner then asked the Applicant to "highlight those documents which … are known to be of significance." *Id.* PO did not do so. *See id.*, 288-301. Nor did the Applicant disclose Howes or any similar references showing a door release actuator—despite knowing about Howes, *e.g.*, by

citing it during the prosecution of 29 U.S. patents that issued prior to the '477Patent's 02/25/2020 issuance date. *E.g.*, U.S. Patent Nos. 8,640,304; 9,027,198; 9,161,699; 9,204,773; 9,227,151; 9,227,201; 9;238;235; 9,295,995; 9,314,139; 9,320,401; 9,326,652; 9,420,925; 9,427,126; 9,433,332; 9,451,853; 9,451,855; 9,545,181; 9,585,530; 9,591,958; 9,693,666; 9,820,621; 9,888,817; 9,949,601; 10,080,472; 10,136,778; 10,165,912; 10,251,519; 10,506,904; 10,537,216 (citing Howes).

V. OVERVIEW OF PRIOR ART

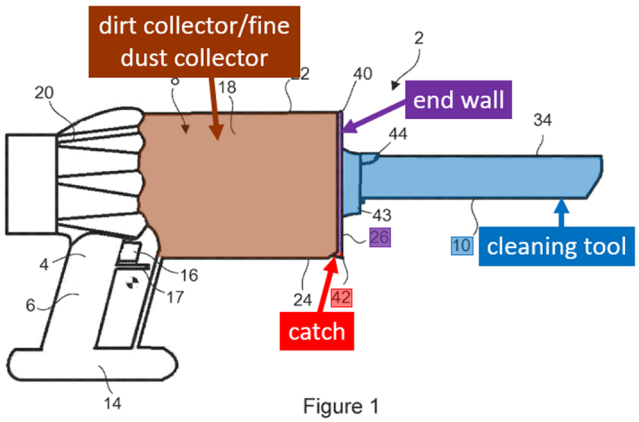
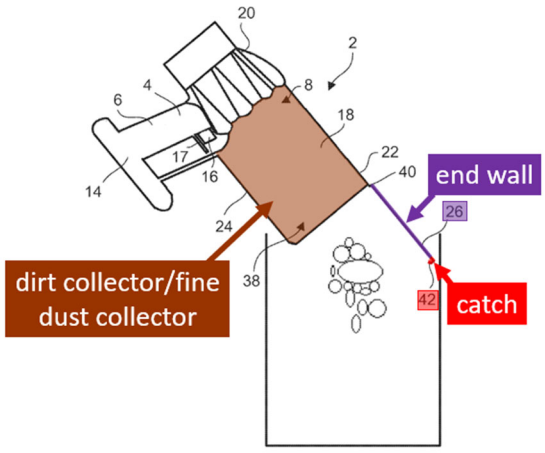
A. Dimbylow

Dimbylow is a 2017 Dyson U.S. patent publication. Ex1005, Cover. Dimbylow teaches a "handheld vacuum cleaner." *Id*. ¶8. Dimbylow's vacuum has a "**cyclonic separating unit 8**" with a "**dirt collector 38/fine dust collector 51**," a "**cleaning tool 10**" with an "**annular collar 43** that abuts the **end wall 26**," which "is held in a closed position by a user-operable **catch 42**," and a "**motor 12**":

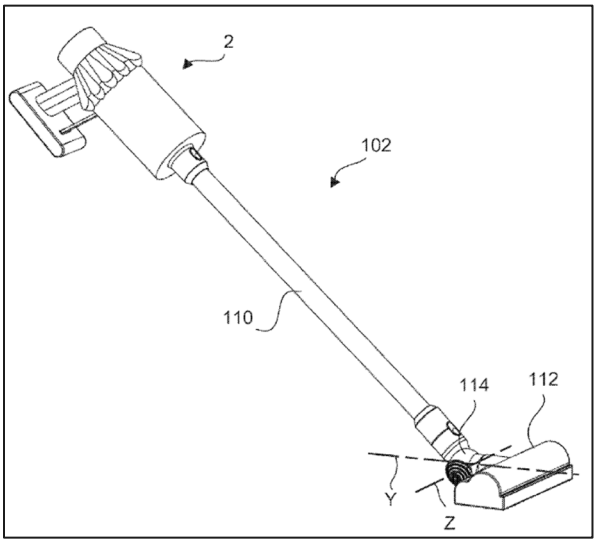
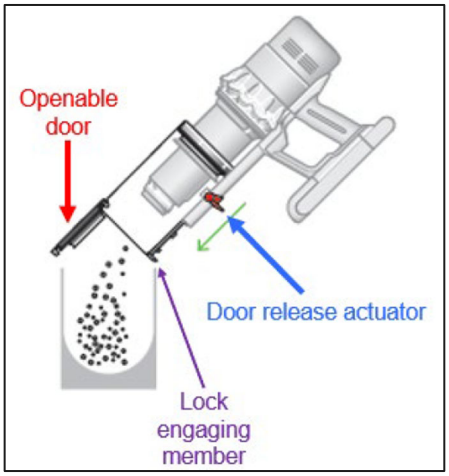
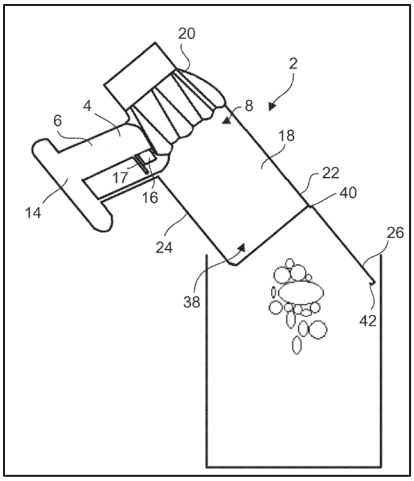


Id. ¶¶31, 37, 48, Fig. 2; Ex1002 ¶72.

To empty the cyclonic separating unit's "**dirt collector 38/fine dust collector 51**," "the user first disconnects the **cleaning tool 10**," then "release[s]" "**catch 42**" "and the **end wall 26** [is] pivoted from its closed position into its open position":

Dimbylow – Closed Position	Dimbylow – Open Position
	

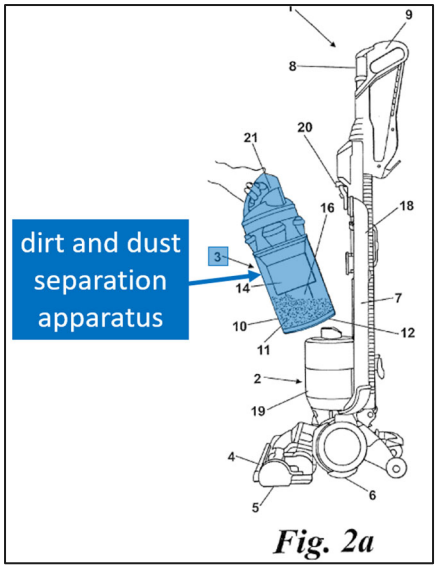
Ex1005 ¶48, Figs. 1, 8; Ex1002 ¶73. In the co-pending litigation, PO accuses products that resemble the Dimbylow patent's configuration of infringing claims 1-7, 12, and 14-15:

Accused Products	Dimbylow
	
	

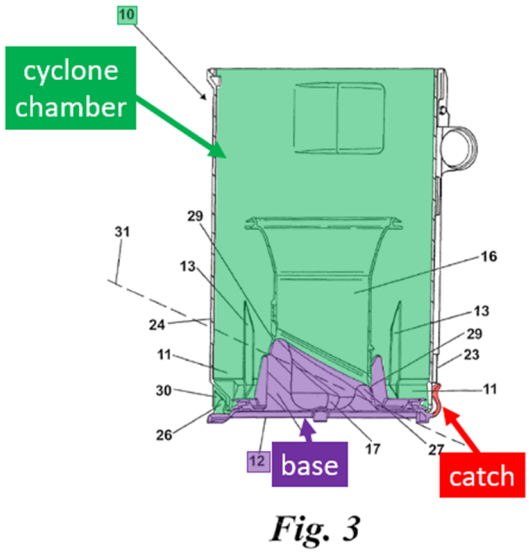
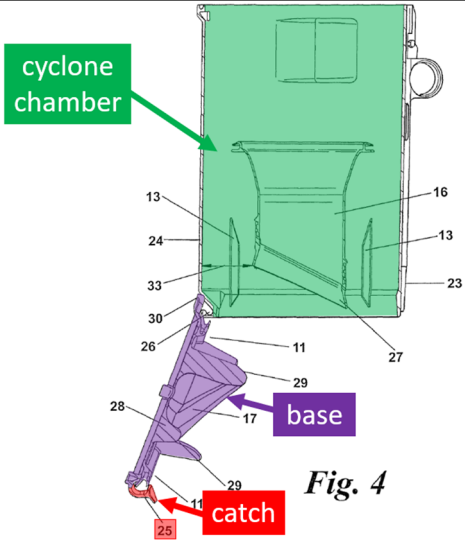
Ex1005, Figs. 6, 8; Ex1009, 2; Ex1010, 14 (annotations PO's).

B. Howes

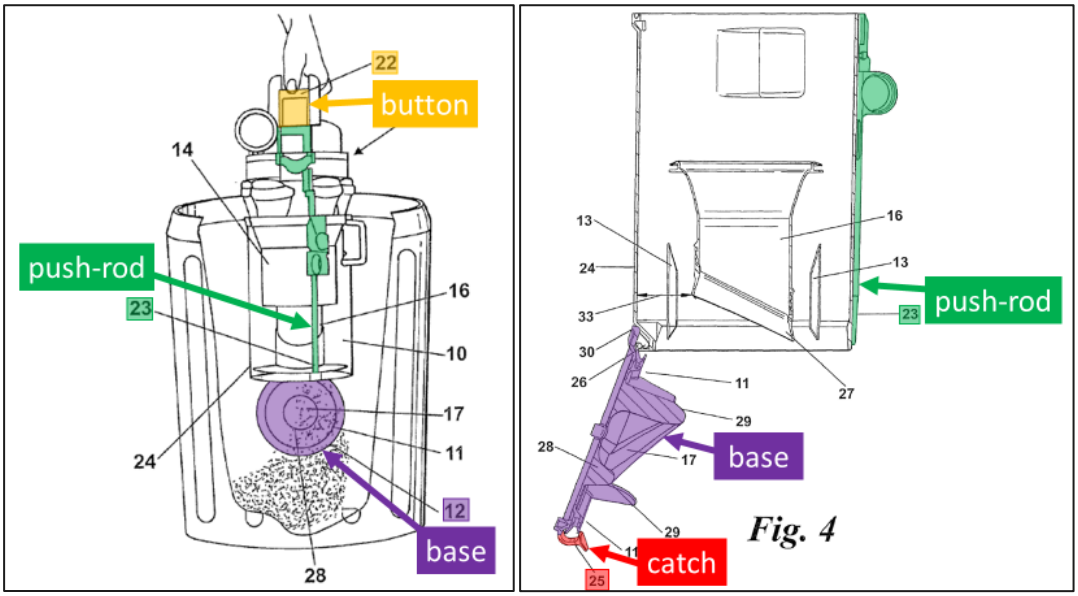
Howes is a 2011 Dyson patent. Ex1006, Cover. Howes teaches a detachable "**dirt and dust separation apparatus 3**" for a multi-cyclonic vacuum cleaner:



Ex1006, 3:3-5, Fig. 2a; Ex1002 ¶75. Like Dimbylow, Howes's dirt collection chamber for its multi-cyclonic cleaner has a pivot-open door ("**base 12**") that is held in place by a "**catch**" that is released to empty the dirt. Ex1006, 4:11-13. Howe's "**base 12** … attache[s] to the **cyclone chamber 10** by means of a **hinge 26** to allow pivotal movement of the **base 12** between the open and closed positions":

Howes – Closed Position	Howes – Open Position
	

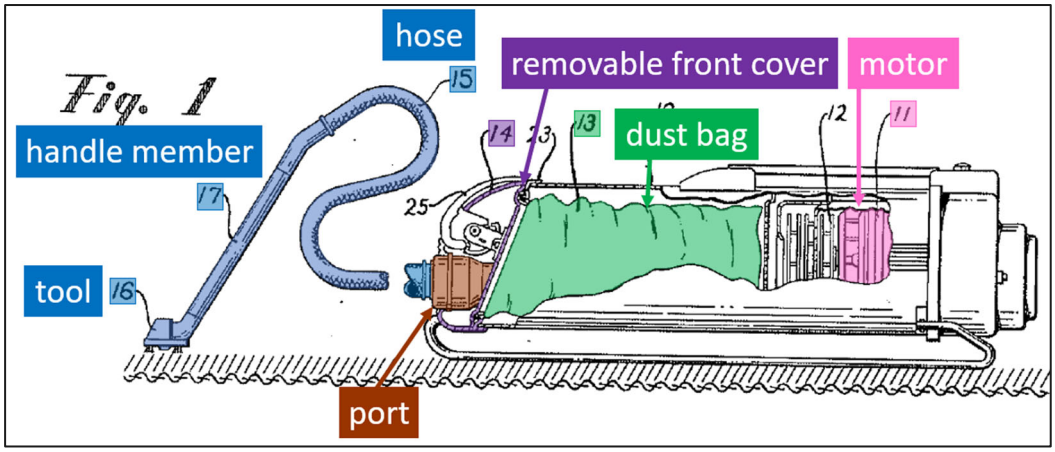
Ex1006, 4:11-13, Figs. 3-4; Ex1002 ¶76. While Howes and Dimbylow both use an identical or nearly identical "**catch**" to secure and open the chamber door, Howes differs from Dimbylow, however, in that it has a more convenient and hygienic way to release the catch and open the door: "[T]he user presses the **button 22**," such that the "**push-rod 23** is urged against [the] **catch 25**" and the "**base 12** … move[s] into the open position":



Ex1006, 4:2-10, Figs. 2b, 4; Ex1002 ¶77.

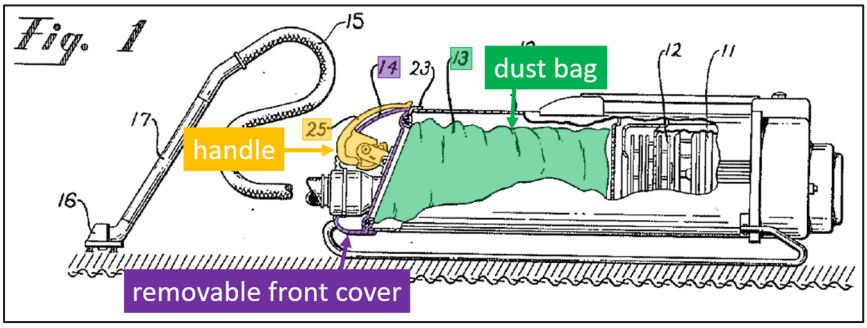
C. Brown

Brown is a 1949 U.S. patent. Ex1007, Cover. Brown teaches a "vacuum cleaner" with a "cover and cover latching means." *Id.*, Title, 1:4-11. Brown's vacuum includes a "**motor 11**," a "**dust bag 13**," a "**removable front cover 14**," and an accessory ("**hose 15**," "**handle member 17**," and "**cleaning tool 16**") removably connected to a "**port**":

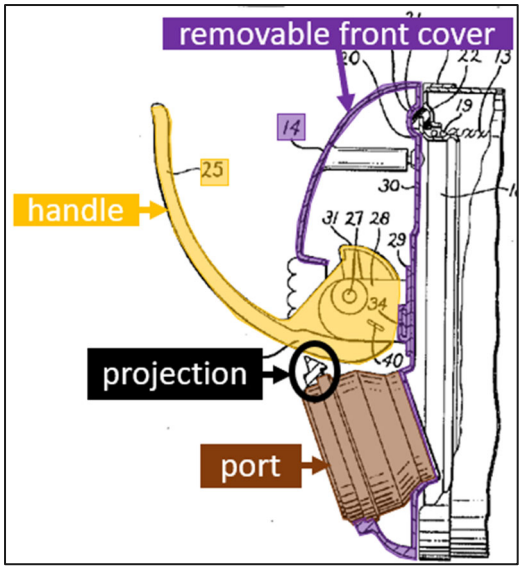


Id., 2:20-22, 1:40-46, 2:7-22, Fig. 1; Ex1002 ¶78.

Brown's vacuum has a "**handle 25**" that the user "grasp[s] and move[s] about" "when it is desired to remove the **cover**," thereby "permit[ting] access to remove **dust bag 13** to empty it":



Ex1007, 2:14-17, 3:24-32, Figs. 3, 1; Ex1002 ¶79. Brown's "**port**" contains a **projection** that provides resistance against "**handle**" movement, and opening Brown's "**cover**" requires bending Brown's "**port**":



Ex1007, Fig. 3; Ex1002 ¶80.

D. Vuijk

Vuijk is a 2002 Dyson PCT patent publication. Ex1008, Cover. Vuijk teaches a detachable "**separator unit 20**":

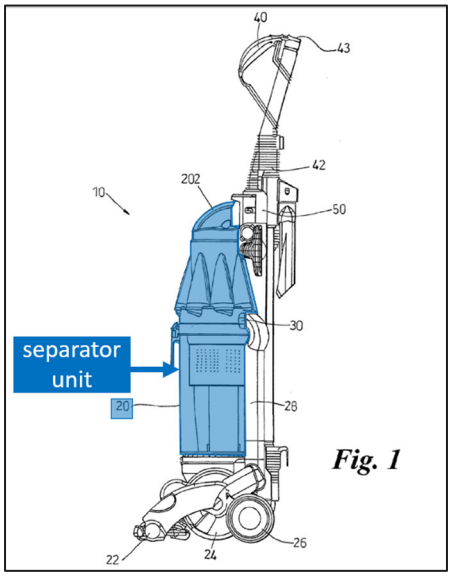
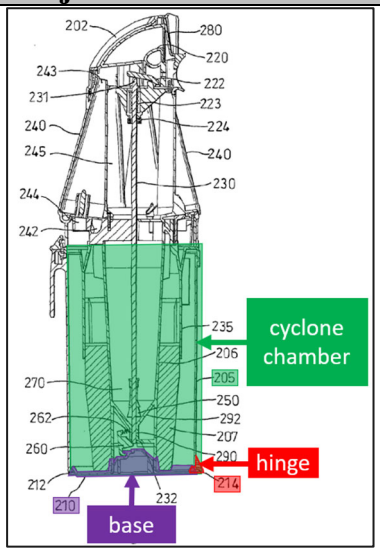
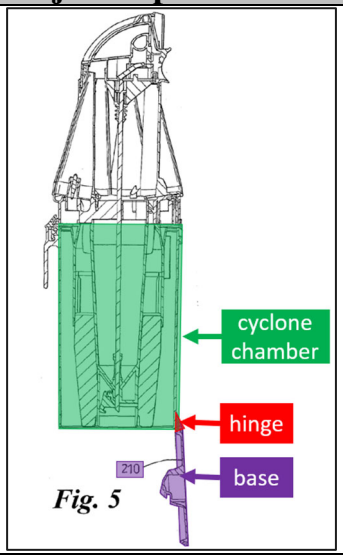


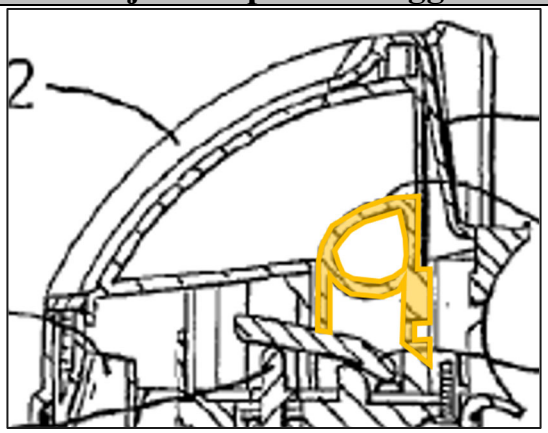
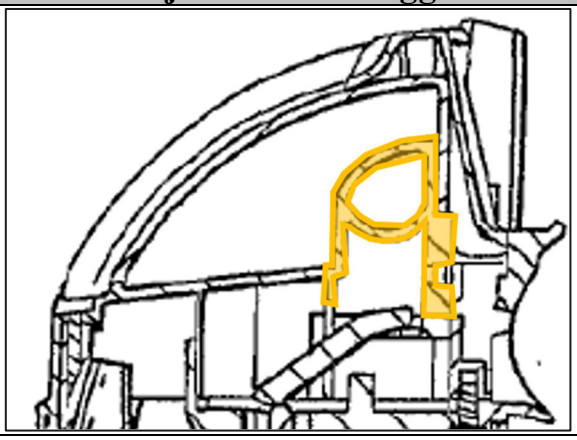
Fig. 1

Id., 5:29-30, Fig. 1; Ex1002 ¶81.

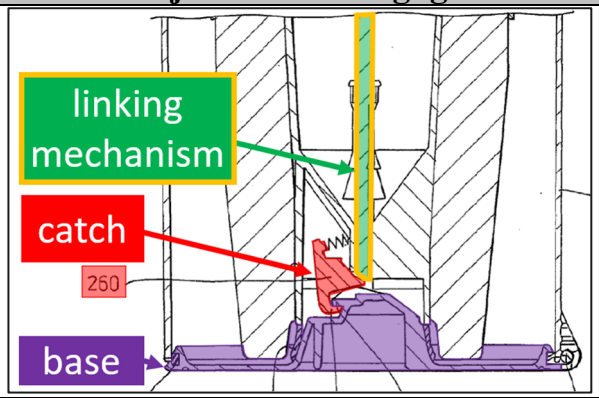
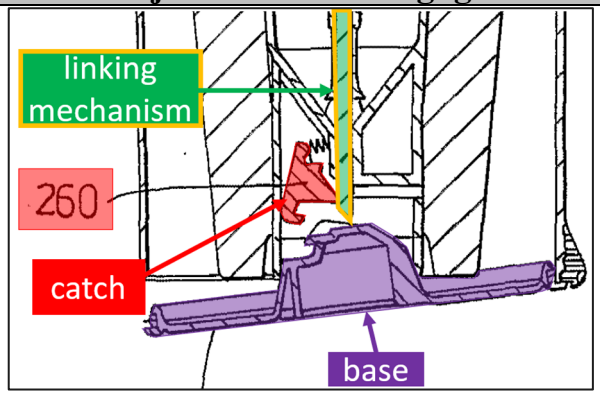
To empty the separator unit, "**base 210**," which "is **hinged 214** to the **cyclone chamber 205** to allow pivotal movement," moves from "a closed position" to "an open position":

Vuijk – Closed Position	Vuijk – Open Position
	

Ex1008, 2:22-23, 7:22-25, Figs. 1, 3, 5; Ex1002 ¶82. To unlock the **base 210** for emptying, the user pulls **trigger 220** upwards:

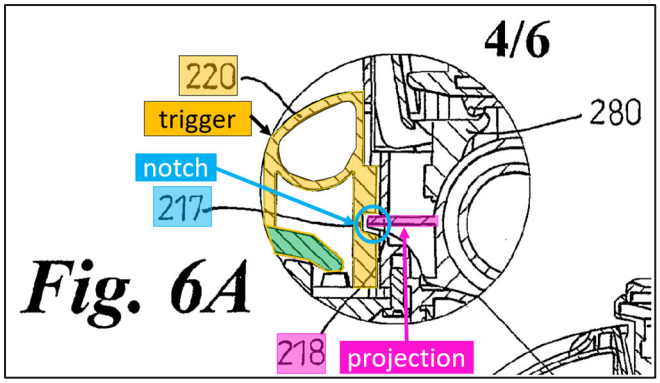
Vuijk – Unpulled Trigger	Vuijk – Pulled Trigger
	

Ex1008, 8:6-7, 9:28-31, Figs. 3, 5; Ex1002 ¶83. When "**trigger 220**" is pulled upwards, the "**linking mechanism**" "displac[es]" "**catch 260**," which was previously "engage[d] with" and "h[e]ld the **base 210** "in the closed position":

Vuijk – Catch Engaged	Vuijk – Catch Disengaged
	

Ex1008, 8:22-29, Fig. 7; Ex1002 ¶84.

Vuijk teaches a "feature … which inhibits movement of the trigger release mechanism," thereby inhibiting the base from pivoting open, which prevents a user from "accidentally releas[ing] the closure member" (i.e., "**base 210**"), which "avoids the mess which would result if the cleaner were operated with the closure member partially open." Ex1008, 3:7-25, 5:4-5. This feature includes "a **projection 218** which fits inside a **notch 217** on the **trigger 220**," which "inhibit[s]" "the **trigger 220** … from moving in the vertical direction which is necessary for the closure member [(i.e., base)] 210 to be released":



Ex1008, 10:7-12, Fig. 6A; Ex1002 ¶85.

VI. LEVEL OF ORDINARY SKILL IN THE ART

A Person of Ordinary Skill in the Art ("POSA") would have had a bachelor's degree in mechanical engineering or a similar field and 2-3 years of experience in machine design, including machines that include fluid dynamics or fluid paths, such as vacuum cleaners. Additional education could offset less experience and vice versa, and a POSA could have also obtained similar knowledge and experience through other means.

VII. CLAIM CONSTRUCTION

Petitioners are unaware of any "prior claim construction determination" related to the '477Patent. 37 C.F.R. §42.100(b). "[C]laim terms need only be construed to the extent necessary to resolve the controversy." *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (internal quotes and citation omitted). Petitioners do not believe any claim construction is necessary to

resolve the parties' controversy in this Petition, and the claims should be given their plain and ordinary meaning for purposes of this IPR.[3]

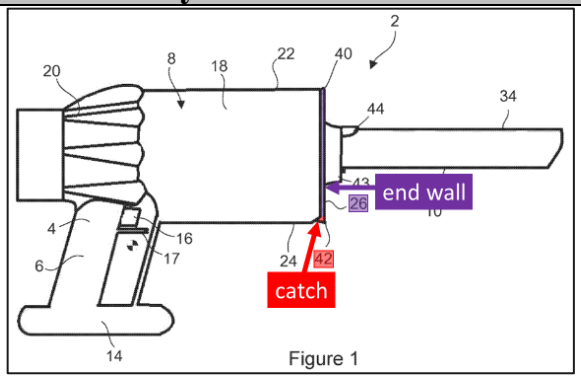
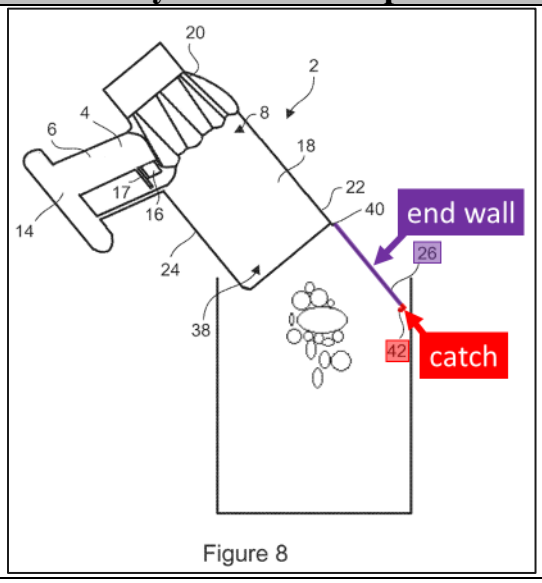
VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: Dimbylow in Combination with Howes Renders Obvious Claims 1-7, 12, and 14-15

1. A POSA Would Have Combined Dimbylow and Howes

Dimbylow is a 2017 Dyson patent publication that teaches "[a] handheld vacuum cleaner." Ex1005, Abstract. The dirt collected by a "cyclonic separating unit" is emptied by "first disconnect[ing] the cleaning tool 10 or the wand 110," "[t]hen, … point[ing] the vacuum cleaner 2 towards a suitable receptacle … into which the dirt is to be emptied," and, finally, "releas[ing]" "[t]he **catch 42**" (which, when engaged, holds a pivotable "**end wall 26**" closed), allowing "**end wall 26** [to be] pivoted from its closed position into its open position":

[3] Petitioners reserves all rights to raise claim construction arguments and other arguments in litigation.

Dimbylow – Door Closed	Dimbylow – Door Opened
 Figure 1	 Figure 8

Ex1005, Abstract, ¶¶37, 48, Figs. 1, 8; Ex1002 ¶¶91-92.

Dimbylow teaches two advantages to this dust-emptying design. First, it is "very intuitive and ergonomic": [s]ince the cyclonic separating unit 8 is pointed away from the user, there is no need for the user to adopt a different grip or posture from that which is adopted during normal cleaning." Ex1005 ¶48. Second, because "dirt exits the dirt collector 38/fine dust collector 51 from the end of the cyclonic separating unit 8 which is furthest from the handle 6 …, there is less risk that dirt will spill … onto a user during emptying." *Id.* However, Dimbylow does not specify the method by which "[t]he **catch 42** is … released by the user." *Id.*; *see also id.* ¶37 (describing the "user-operable **catch 42**").

Howes is a 2011 Dyson patent that teaches "a separating unit" for a "bagless vacuum cleaner" that "separate[s] dirt and dust by way of cyclonic, centrifugal or

inertial separation" and has a "**base**" that "is movable between a closed position and an open position":

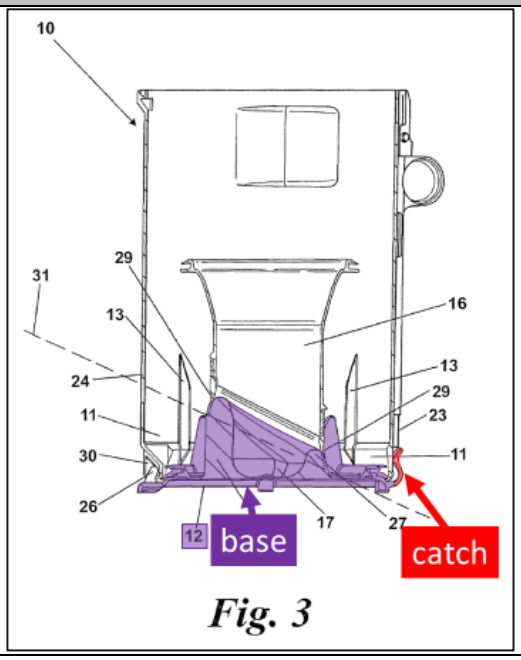
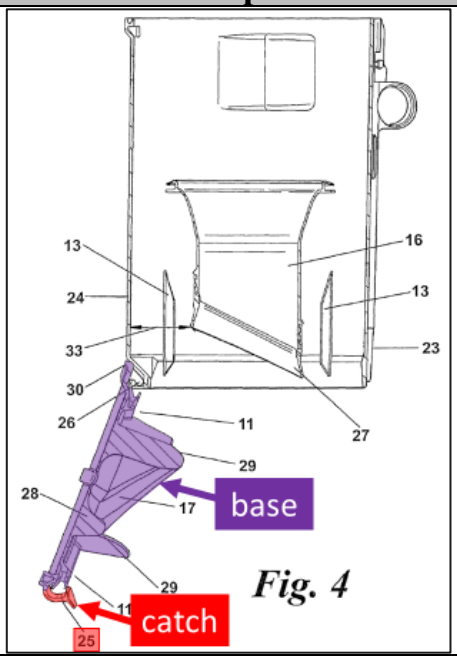
Howes – Closed Base	Howes – Open Base
	

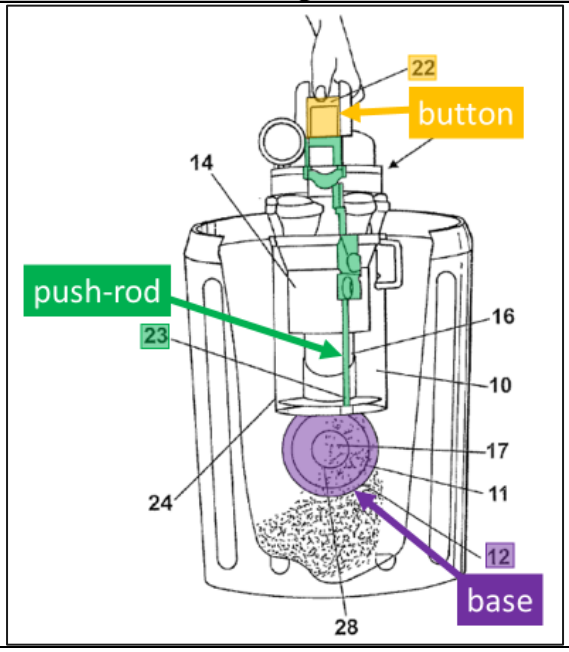
Fig. 3

Fig. 4

Ex1006, Abstract, 2:36-39, Figs. 3-4; Ex1002 ¶¶93-94. Howes's "**base 12**" is held in the "closed position" by "**catch 25**." Ex1006, 4:6-10, Figs. 3-4.

Howes teaches a convenient and hygienic method of releasing the catch to open the base to empty the separating unit: "to empty the separator unit 3, the user presses the button 22" that is "linked to" a "push-rod 23." Ex1006, 4:2-4, Fig. 2b. "When the user depresses the **button 22**, the **push-rod 23** is urged against a **catch 25** on the **base 12**," and "[t]he force exerted by the **push-rod 23** overcomes any resistance of the **base 12** to move into the open position":

Howes – Open Base



Howes – Button Not Pressed

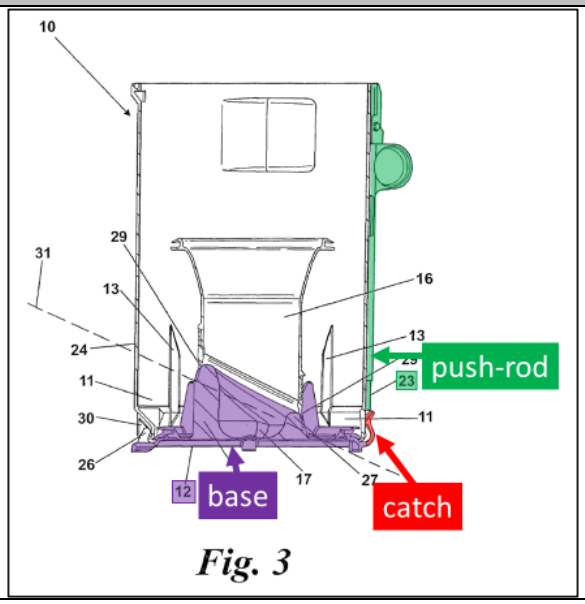


Fig. 3

Howes – Button Pressed

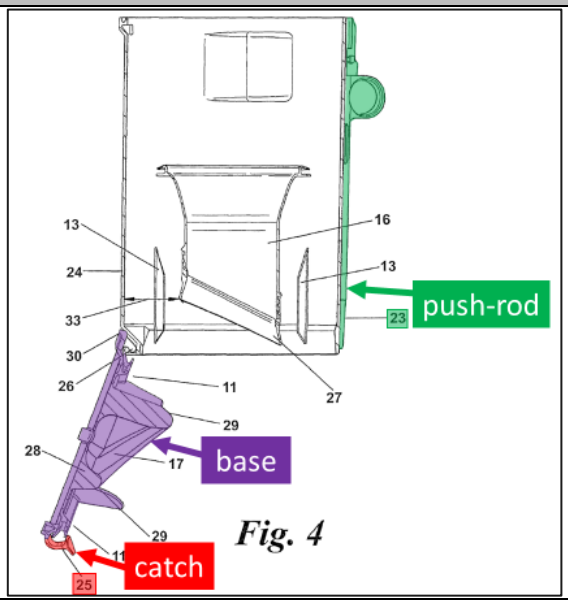
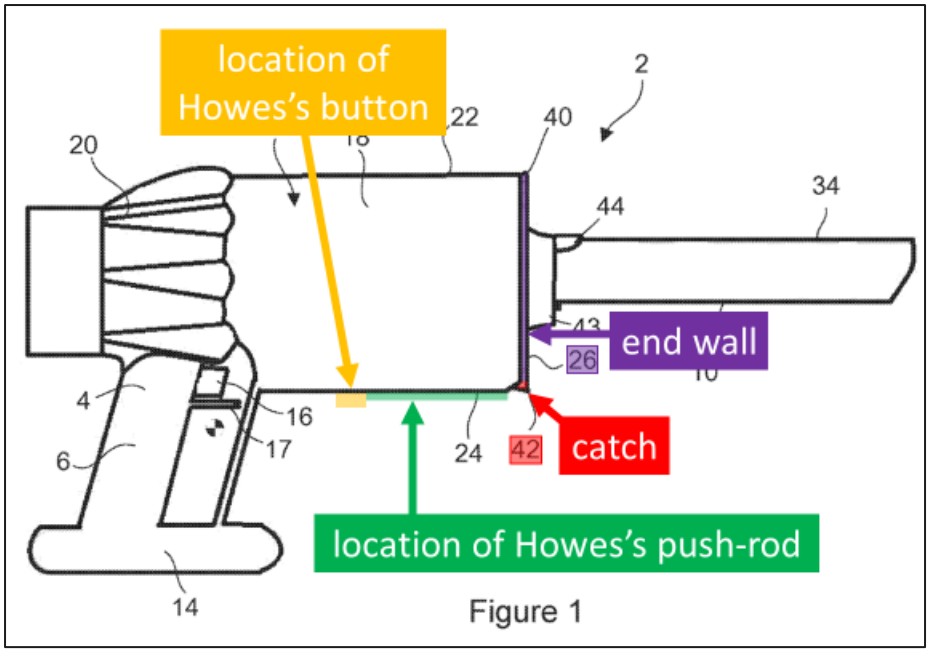


Fig. 4

Ex1006, 4:4-10, Figs. 2b-4; Ex1002 ¶95.

a. Motivation to Combine

A POSA would have been motivated to implement Howes's base "actuator mechanism" teachings, including "**button 22**" and "**push-rod 23**" as the method by which Dimbylow's "**catch 42** is … released by the user" to achieve Dimbylow's stated goal of "intuitive and ergonomic" dust emptying that reduces the "risk that dirt will spill … onto a user during emptying." Ex1006, 4:4-10; Ex1005 ¶48; Ex1002 ¶96. Specifically, a POSA would have been motivated to incorporate a button and a push-rod as taught by Howes on Dimbylow's "outer wall 24," adjacent Dimbylow's "**catch 42**," such that, as Howes teaches, "[w]hen the user depresses the **button 22**, the **push-rod 23** is urged against a **catch 25** [Dimbylow's **catch 42**] on the **base 12** [Dimbylow's **end wall 26**]," and "[t]he force exerted by the **push-rod 23** overcomes any resistance of the **base 12** [Dimbylow's **end wall 26**] to move into the open position":



Ex1005, Fig. 1; Ex1006, 4:1-10; Ex1002 ¶96.

Because Dimbylow does not teach how a user releases its "catch," a POSA would have been motivated to look for ways to do this. Ex1002 ¶97. A POSA would have been particularly motivated to look at similar references (e.g., references assigned to the same assignee, Dyson) that teach mechanisms to release a similar component (a catch) on a similar device (a dirt collection chamber door). Ex1002 ¶97. Howes is such a reference.

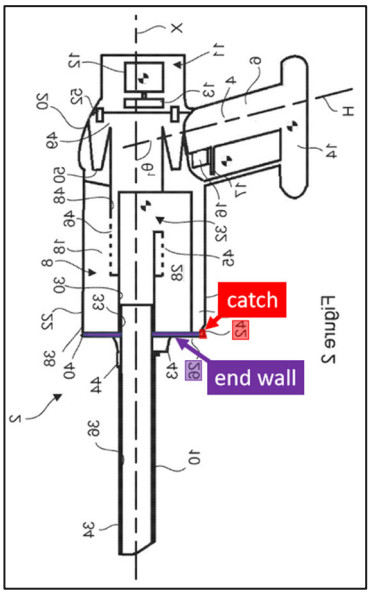
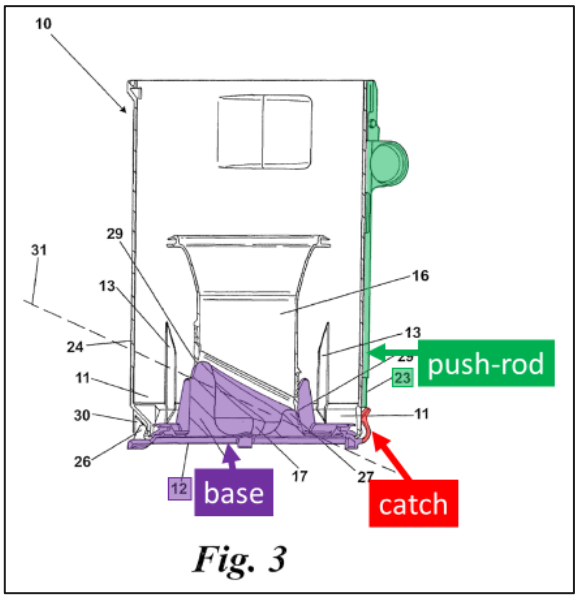
A POSA would have understood that Howes's "actuator mechanism" teachings would further Dimbylow's stated purpose of providing "intuitive and ergonomic" dust emptying, Ex1005 ¶48, because simply pushing a button with one hand while continuing to hold the cleaner's handle with the other hand is a highly intuitive and ergonomic method of emptying the collected dust. Ex1002 ¶98.

Moreover, a user could operate Howes's "actuator mechanism" with Dimbylow's cleaner while still meeting Dimbylow's beneficial teaching of "no[t] need[ing] … the user to adopt a different grip or posture from that which is adopted during normal cleaning." Ex1005 ¶48; Ex1002 ¶98. Further, simply pushing a button is more "intuitive and ergonomic" for a user than having to manually release Dimbylow's "catch 42," which Dimbylow teaches is located at a position "which is furthest from the handle 6." Ex1005 ¶48; Ex1002 ¶98.

A POSA would have understood that Howes's "actuator mechanism" teachings would also further Dimbylow's stated purpose of providing a dirt-emptying process that reduces the "risk that dirt will spill … onto a user during emptying" because the user would not need to place his or her hand in front of or even near the openable door of the dirt collection chamber, which, when opened, releases the collected dirt. Ex1005 ¶48; Ex1002 ¶99. Instead, a user would simply push a button located closer to the handle. Ex1002 ¶99. A POSA would understand that this had certain advantages over a user manually releasing Dimbylow's "catch 42," including the advantage that a user would not need to place his or her hand near the area where dust is emptied, which further reduces the risk that dirt will spill onto a user during emptying. Ex1002 ¶99.

A POSA reading Dimbylow would have been motivated to look to Howes to implement Dimbylow's catch-release functionality. Ex1002 ¶100. For example,

Dimbylow and Howes are analogous art. Ex1002 ¶100. Both are Dyson patents related to bagless, cyclonic vacuum cleaners having separation units with pivotable doors held in place by a releasable, user-operable catch. Ex1005, Abstract, ¶¶37, 48, Figs. 1, 8; Ex1006, Abstract, 2:36-39, 4:1-10, Figs. 2b-4.

Dimbylow	Howes
	

Ex1005, Fig. 2; Ex1006, Fig. 3; Ex1002 ¶100.

Further, this combination would have involved a simple substitution of known elements (namely, Howes's button linked to a push-rod) to obtain the predictable result of opening a pivotable door by releasing a catch. Ex1002 ¶101.

Also, this combination would have involved applying a known technique (Howes's button-actuated push-rod) to a known device ready for improvement (Dimbylow's manually operated catch) to yield predictable results (using the push-

rod to exert a force against the catch sufficient to release the catch and overcome any resistance of the openable door). *See* Ex1006, 4:1-10; Ex1002 ¶102.

Further, this combination would have been at least obvious to try as a POSA would have understood that there are a finite number of ways to release Dimbylow's user-operable catch, including manually releasing the catch and using an actuated push-rod to release the catch. Ex1002 ¶103.

b. Reasonable Expectation of Success

A POSA would have had a reasonable expectation of success implementing Howes's "actuator mechanism" teachings as the method for releasing Dimbylow's "user-operable catch 42," for the reasons stated above. Ex1006, 4:1-10; Ex1005 ¶37; Ex1002 ¶104. Further, as explained above, Dimbylow and Howes are very similar, including that they are both Dyson patents related to bagless, cyclonic vacuum cleaners having separation units with pivotable doors held in place by a releasable, user-operable catch, which would have further given a POSA a reasonable expectation of success. Ex1005, Abstract, ¶¶37, 48, Figs. 1, 8; Ex1006, Abstract, 2:36-39, 4:1-10, Figs. 2b-4. Further, implementing Howes's "actuator mechanism" teachings would have only involved incorporating a few simple, well-known parts—namely, a button linked to a push-rod. Ex1002 ¶104.

2. [1]/[14]

a. [1pre]/[14pre][4]

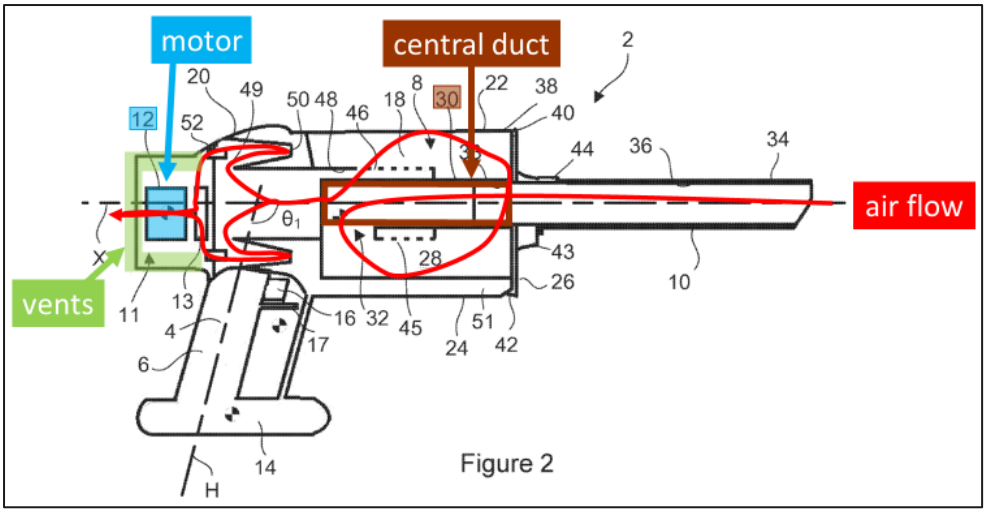
To the extent the preambles are limiting, Dimbylow teaches them. Ex1002¶¶105-07. Dimbylow teaches a "handheld vacuum cleaner … for cleaning confined spaces" and other "hard-to-reach surfaces." Ex1005 ¶¶8, 43, Figs. 1, 6. This is a surface cleaning apparatus. Ex1002 ¶106. During prosecution, the Examiner found that Dimbylow disclosed this limitation, which PO did not dispute. Ex1004, 256-257, 269-274. Petitioners agree.

b. [1a]/[14a]

Dimbylow teaches these limitations. Ex1002 ¶108-111.

Dimbylow teaches an air flow path from a dirty air inlet to a clean air outlet and including a suction motor. Ex1002 ¶109. In Dimbylow, "[d]irty **air** is drawn by the suction generator 11 through the inlet duct 30, 36" (which includes the "**central duct 30**"), "into the [primary] cyclonic separation chamber 28," then through the "secondary cyclones 20," whereafter the "cleaned air exits … through the suction generator 11," "comprising a **motor 12,**" and "out of **vents** (not shown) at the rear of the main body":

[4] *See* LIST OF CHALLENGED CLAIMS.



Ex1005 ¶¶31, 35, 42, Fig. 2; Ex1002 ¶109. The upstream portion of Dimbylow's "central duct 30" is a dirty air inlet; Dimbylow's "vents" are clean air outlets; Dimbylow's "motor 12" is a suction motor; and an air flow path extends between them. Ex1002 ¶110. During prosecution, the Examiner found that Dimbylow disclosed this limitation, which PO did not dispute. Ex1004, 256-257, 269-274. Petitioners agree.

c. [1b]/[14b]

Dimbylow teaches these limitations. Ex1002 ¶112-17.

Dimbylow teaches an air treatment member comprising a dirt collection region. Ex1002 ¶113. Dimbylow's "**cyclonic separating unit 8** comprises a **primary cyclonic separator 18**" with a "**dirt collector 38**," and "a plurality of **secondary cyclonic separators 20**," which are "in communication with a **fine dust collector 51**":

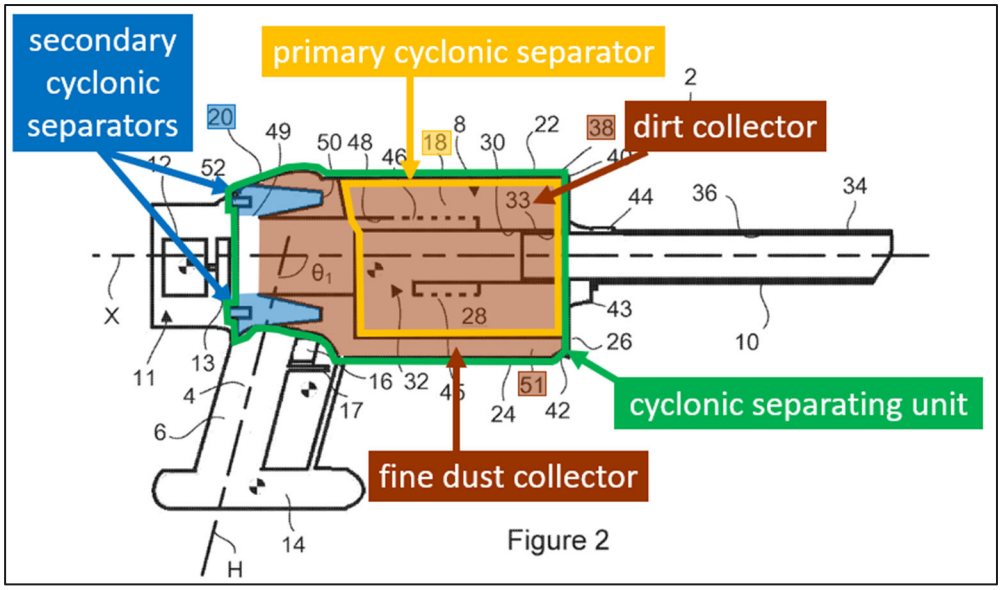
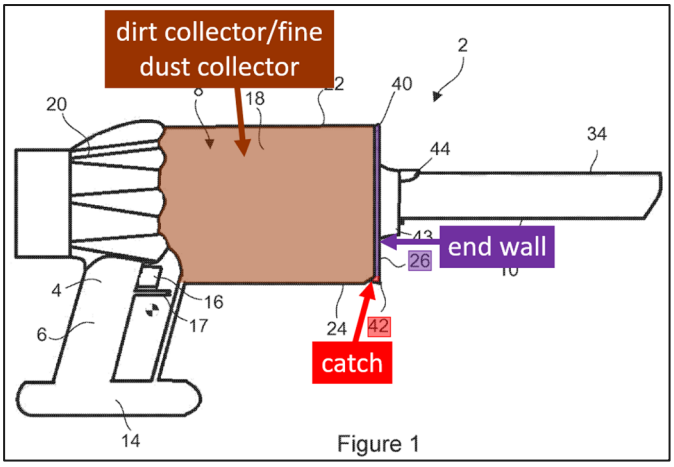
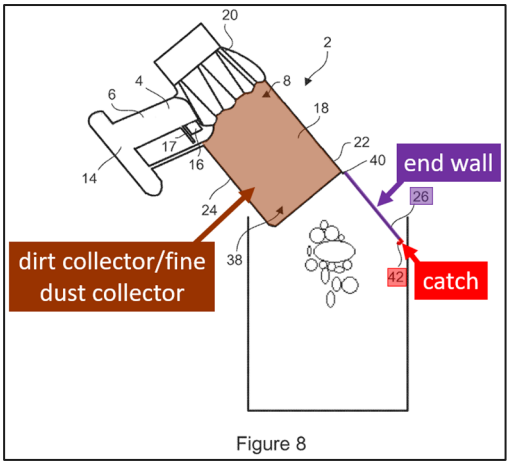


Figure 2

Ex1005 ¶¶32, 39, Fig. 2; Ex1002 ¶113. Dimbylow's "**cyclonic separating unit 8**" is an air treatment member because it treats the air using cyclonic airflow to separate dirt, and it comprises a dirt collection region, i.e., "**dirt collector 38/fine dust collector 51**," where separated dirt is collected. Ex1002 ¶114; *see also* Ex1005 ¶¶42, 48.

Dimbylow teaches that the dirt collection region has an openable door. Ex1002 ¶115. Dimbylow's "**dirt collector 38/fine dust collector 51**" has an "**end wall 26** [that] is connected to the cylindrical outer wall 24 by a pivot 40 and is held in a closed position by a user-operable **catch 42**":





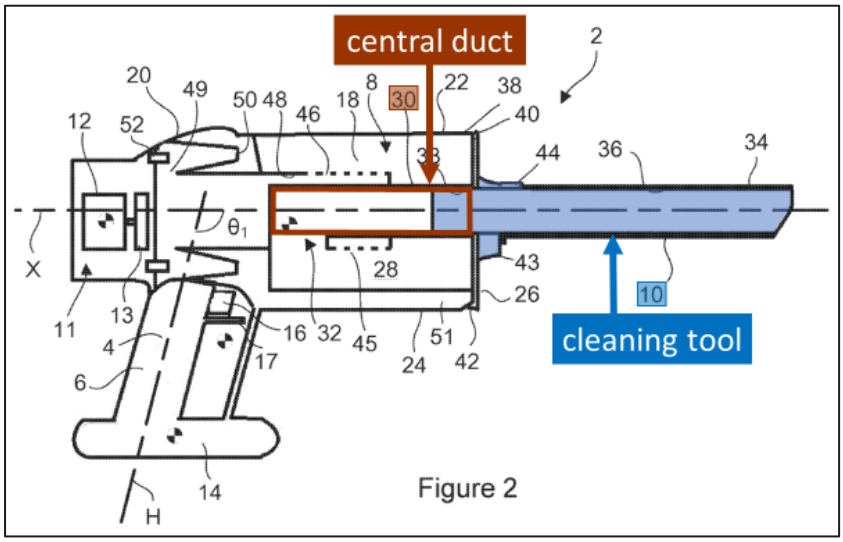
Ex1005 ¶¶37, 48, Figs. 1, 8; Ex1002 ¶115. "[T]o empty the **dirt collector 38** and the **fine dust collector 51**," the "user points the vacuum cleaner 2 towards a suitable receptacle," "release[s]" "**catch 42**," and the "**end wall 26** [is] pivoted from its closed position into its open position." Ex1005 ¶48. Dimbylow's "**dirt collector 38/fine dust collector 51**" is a dirt collection region having an openable door, i.e., "**end wall 26**." Ex1002 ¶116. During prosecution, the Examiner found that Dimbylow disclosed this limitation, which PO did not dispute. Ex1004, 256-257, 269-274. Petitioners agree.

d. [1c]/[14c]

Dimbylow teaches these limitations. Ex1002 ¶¶118-126.

Dimbylow teaches an accessory removably connectable to and in air flow communication with the dirty air inlet. Ex1002 ¶120. Dimbylow's vacuum includes a "**cleaning tool 10** [that] is provided with retaining features (not shown) which

engage with the **central duct 30** so as to secure the **cleaning tool 10** to the **central duct 30**":



Ex1005 ¶37, Fig. 2; Ex1002 ¶120. Dimbylow's "cleaning tool 10" is removably connectable: it "has a manually operated catch 44 that is actuated in order to disengage the retaining features … to remove the tool 10 [from] the cyclonic separating unit 8." Ex1005 ¶37. Further, Dimbylow teaches that "cleaning tool 10 [can be] replaced with a wand 110," which is also removably connectable:

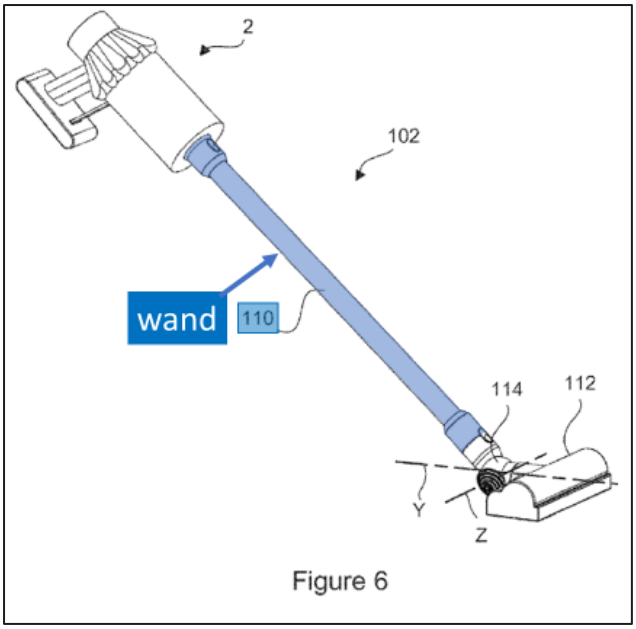
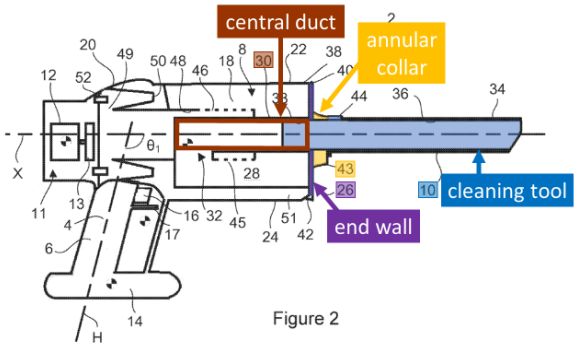
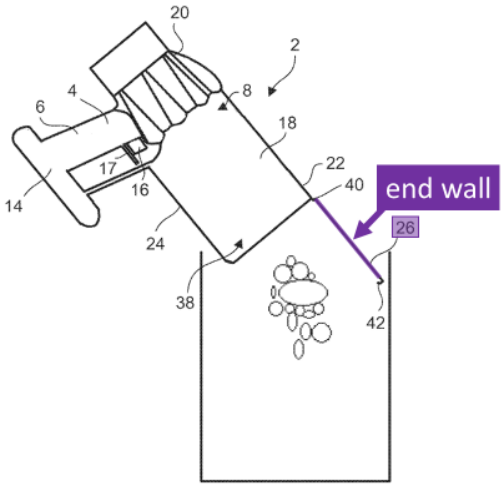


Figure 6

Id. ¶44, Fig. 6; Ex1002 ¶121. Dimbylow's "cleaning tool 10" and "wand 110" are accessories, and that they are removably connectable to and, when connected, in airflow communication with "central duct 30," the dirty air inlet. Ex1002 ¶122.

Regarding Limitation [1c], Dimbylow's openable door is inhibited from opening when the accessory is connected to the dirty air inlet. Ex1002 ¶123. Dimbylow's "**cleaning tool 10** further comprises an **annular collar 43** that abuts the **end wall 26** thereby holding the end wall 26 in the closed position, and so prevents accidental opening of the end wall 26 wh[en] the cleaning tool 10 is attached" to the "**central duct 30**":

Dimbylow – Cleaning Tool Attached	Dimbylow – Cleaning Tool Detached
 Figure 2	 Figure 8

Ex1005 ¶37, Figs. 2, 8; Ex1002 ¶123. So, too, for Dimbylow's "wand 110": "to empty the dirt collector 38 … the user first disconnects … the wand 110." Ex1005 ¶48. A POSA would understand that Dimbylow's openable door ("end wall 26") is inhibited from opening when the accessory ("cleaning tool 10" or "wand 110") is connected to the dirty air inlet ("central duct 30"). Ex1002 ¶¶124-25. During prosecution, the Examiner found that Dimbylow disclosed this limitation, which PO did not dispute. Ex1004, 256-257, 269-274. Petitioners agree.

e. [1d.1]/[14d.1]

Dimbylow in combination with Howes teaches these limitations. Ex1002 ¶¶127-135.

Dimbylow teaches the "lock engaging member" portion of the claimed "openable door lock." Ex1002 ¶128. Dimbylow's "**end wall 26** is connected to the

cylindrical outer wall 24 by a pivot 40 and is held in a closed position by a user-operable **catch 42**":

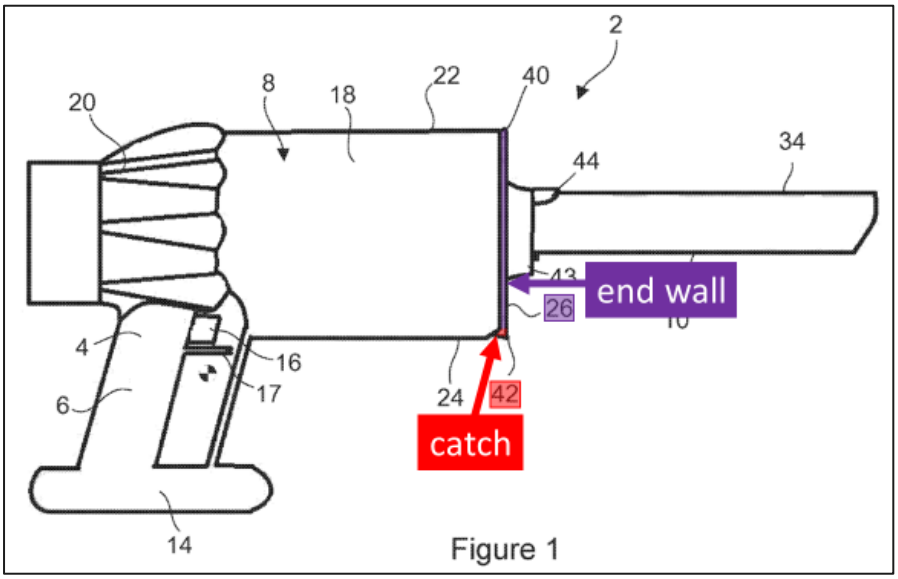
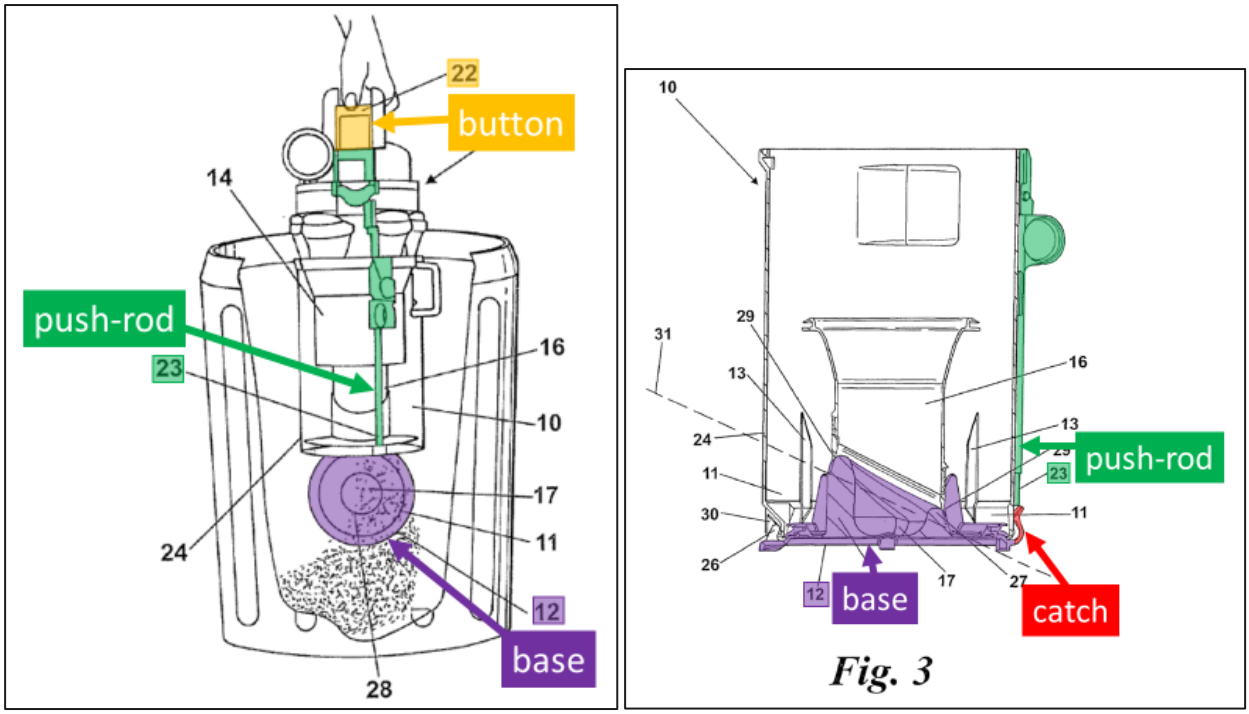


Figure 1

Ex1005 ¶37, Fig. 1; Ex1002 ¶128. Dimbylow's "user-operable catch 42" is a lock engaging member because it secures the openable door in a closed position. Ex1002 ¶129.

Howes teaches an openable door lock comprising a lock engaging member and a door release actuator drivingly connected to the lock engaging member. Ex1002 ¶130. Howes teaches "[a]n actuator mechanism in the form of a **push-button 22**" "linked to on[e] end of a **push-rod 23**," and the "other end of the push-rod 23 is adjacent the **base 12**," which is pivotable and, when closed, is held in place by a "**catch 25**":



Ex1006, 4:1-10, Figs. 2b-3; Ex1002 ¶130. A POSA would understand that Howes's base 12 actuator mechanism, including "push button 22," "push-rod 23," and "catch 25," together are an openable door lock. Ex1002 ¶131.

Further, a POSA would understand that Howes's "**catch 25**" is a lock engaging member because it holds "**base 12**" in a closed position:

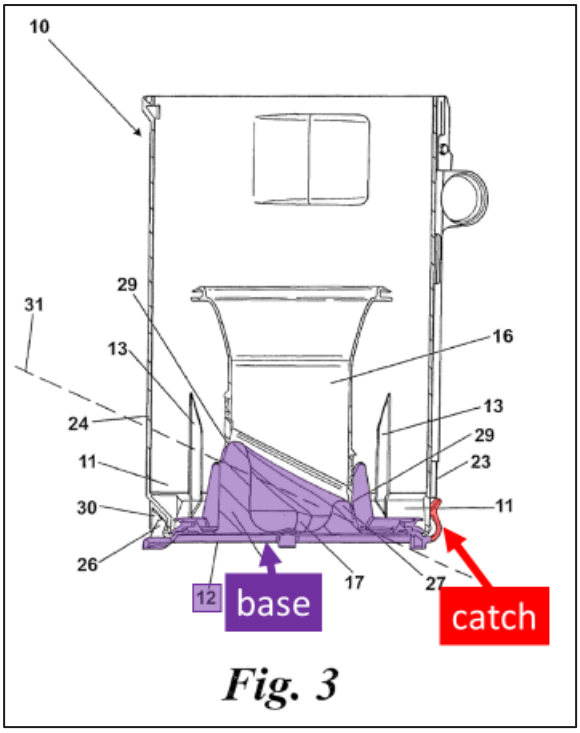


Fig. 3

Ex1006, 4:6-10, Fig. 3; Ex1002 ¶132.

Howes teaches a door release actuator drivingly connected to the lock engaging member. Ex1002 ¶133. A POSA would understand that Howes's "actuator mechanism" includes a door release actuator ("button 22") because pushing the button releases the door: "to empty the separator unit 3, the user presses the button 22," which causes "base 12 to move into the open position." Ex1006, 4:2-10; Ex1002 ¶133.

A POSA would understand that Howes's button is drivingly connected to the lock engaging member, "**catch 25**," via "**push-rod 23**," because "the **button 22** is linked to on[e] end of a **push-rod 23**" and "[t]he other end of the **push-rod 23** is

adjacent the **base 12**," such that "[w]hen the user depresses the **button 22**," the "**push-rod 23** is urged against [the] **catch 25**":

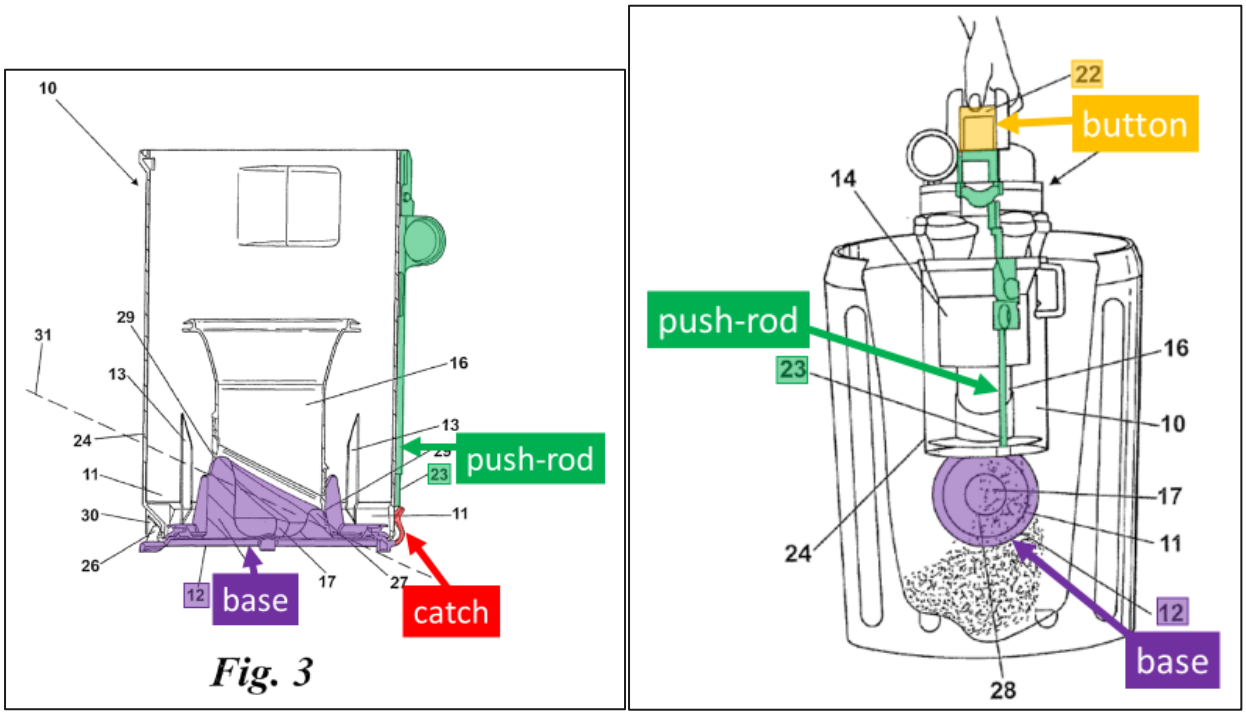


Fig. 3

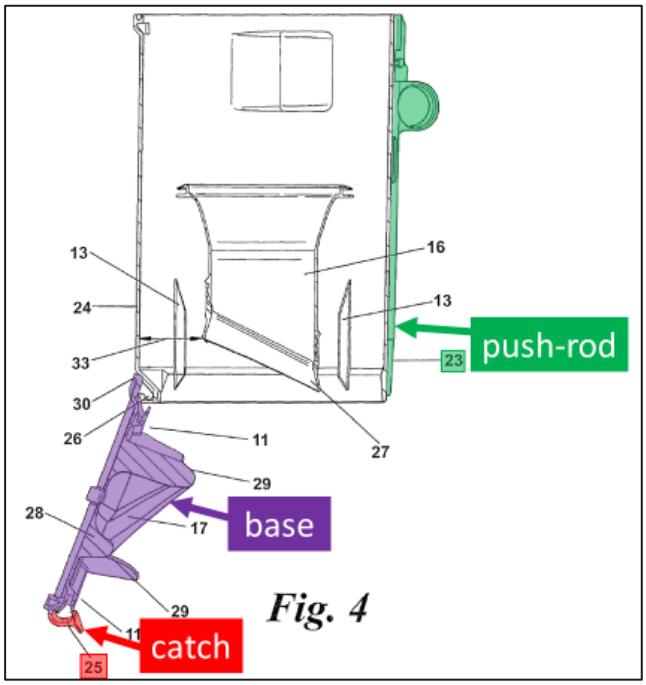


Fig. 4

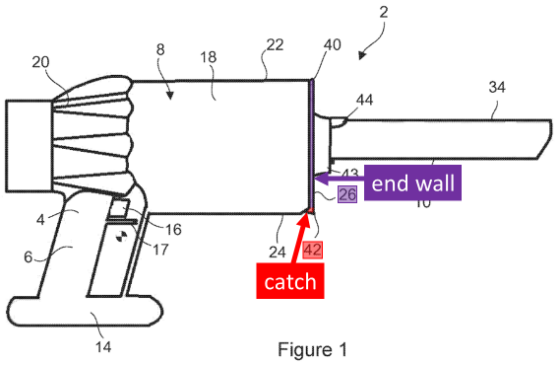
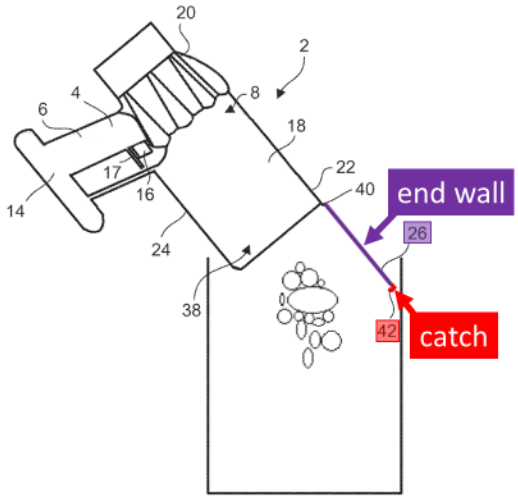
Ex1006, 4:1-10, Figs. 3, 2b, 4; Ex1002 ¶134.

As explained above, a POSA would have been motivated to incorporate Howes's actuator mechanism teachings into Dimbylow and would have had a reasonable expectation of success. *See* Ground 1, §1. The combined teachings meet these limitations because Dimbylow's openable "end wall 26" is locked by Dimbylow's "catch 42." Ex1002 ¶135. The combined teachings use Howes's "actuator mechanism" (including "button 22" and "push-rod 23") to release Dimbylow's "end wall 26" (by releasing Dimbylow's "catch 42") therefore meeting these limitations. Ex1002 ¶135.

f. [1d.2]/[14d.2]

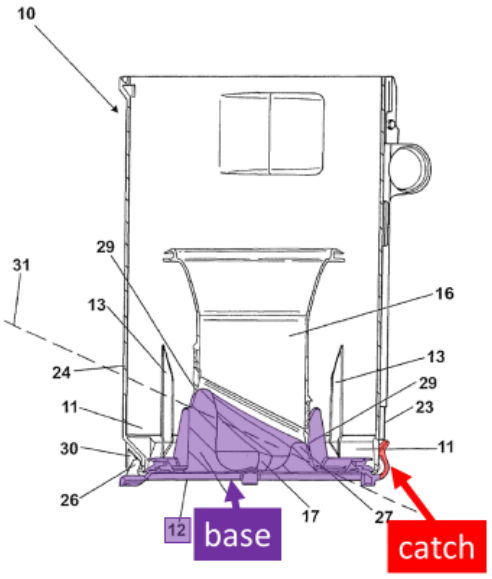
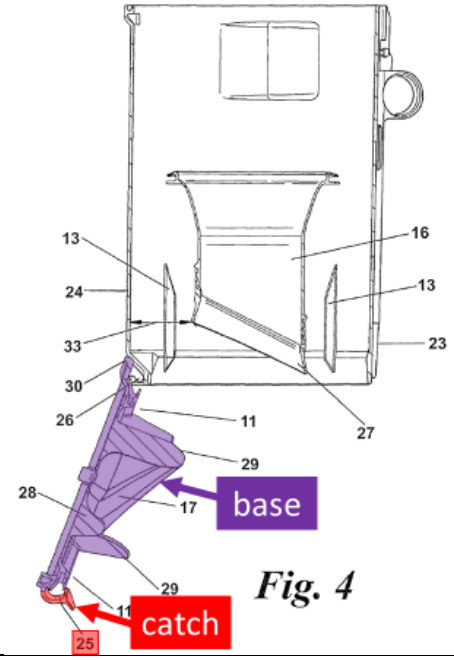
Dimbylow teaches these limitations, Howes teaches these limitations, and the combination of Dimbylow and Howes teaches these limitations. Ex1002 ¶¶136-140.

Dimbylow's lock engaging member is moveable between an engaged position in which the lock engaging member secures the openable door in a closed position and a disengaged position in which the openable door is openable: "**end wall 26** is … held in a closed position by a user-operable **catch 42**," and "can be moved from the closed position … to an open position … by releasing the **catch 42** and pivoting the **end wall 26** away from the end of the cylindrical outer wall 24":

Dimbylow – Lock Engaging Member Engaged	Dimbylow – Lock Engaging Member Disengaged
 Figure 1	 Figure 8

Ex1005 ¶37, Figs. 1, 8; Ex1002 ¶137. A POSA would therefore understand that Dimbylow's "catch 42" is moveable between an engaged position, when "catch 42" is engaged and it secures "end wall 26" in the "closed position," and a disengaged position, when "catch 42" is disengaged (or "release[ed]") and "end wall 26" is openable. Ex1005 ¶37, Figs. 1, 8; Ex1002 ¶138.

Likewise, Howes's lock engaging member is moveable between an engaged position in which the lock engaging member secures the openable door in a closed position and a disengaged position in which the openable door is openable: "**base 12** of the separator unit 3 is movable between a closed position," when "**catch 25**" is engaged, and "an open position," when "**catch 25**" is disengaged:

Howes – Lock Engaging Member Engaged	Howes – Lock Engaging Member Disengaged
 *Fig. 3*	 *Fig. 4*

Ex1006, 3:64-4:10, Figs. 3-4; Ex1002 ¶139.

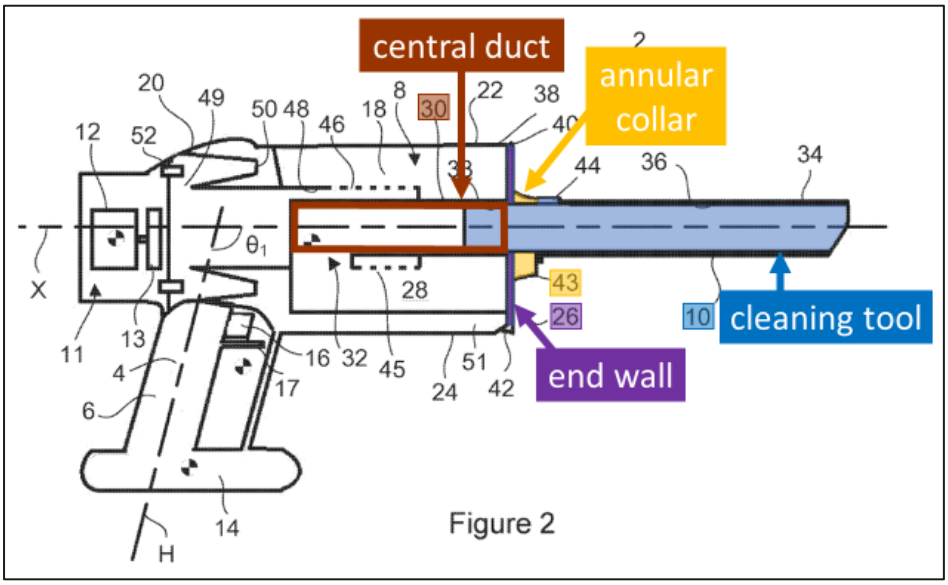
As explained above, a POSA would have been motivated to integrate Howes's actuator mechanism teachings into Dimbylow and would have had a reasonable expectation of success. *See* Ground 1, §1. For these reasons, the combined teachings also meet these limitations. Ex1002 ¶140.

g. [1d.3]/[14d.3]

Dimbylow teaches these limitations. Ex1002 ¶¶141-46.

Dimbylow teaches that the lock engaging member is inhibited from moving to the disengaged position when the accessory is connected to and in air flow communication with the dirty air inlet. Ex1002 ¶143. Dimbylow's "**cleaning tool 10** further comprises an **annular collar 43** that abuts the **end wall 26** thereby holding

the end wall 26 in the closed position, and so prevents accidental opening of the end wall 26 wh[en] the cleaning tool 10 is attached" to the "**central duct 30**":



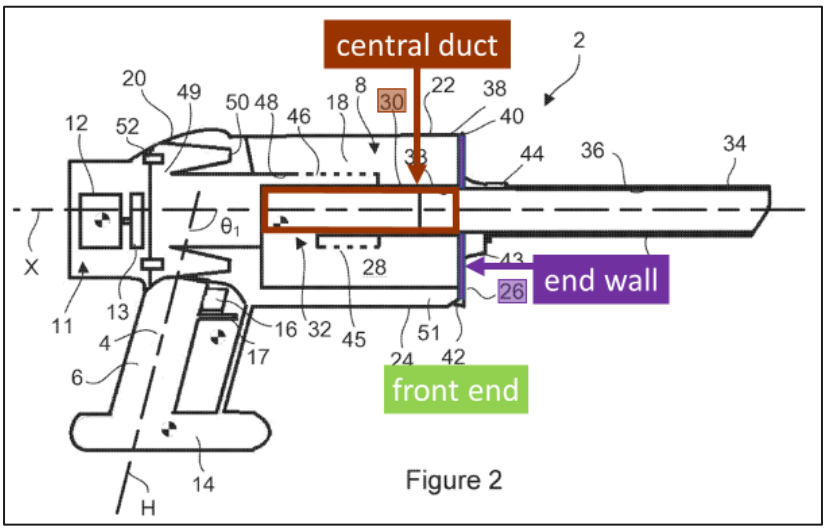
Ex1005 ¶37, Fig. 2; Ex1002 ¶143. A POSA would understand that Dimbylow's "**cleaning tool 10**"'s "**annular collar 43**" inhibits Dimbylow's "**catch 42**" (the lock engaging member) from moving to the disengaged position when "**cleaning tool 10**" or "**wand 110**" (the accessory) is connected to and in air flow communication with "**central duct 30**" (the dirty air inlet). *See* Ground 1, Limitation [1c]; Ex1002 ¶144. Because Dimbylow's "**catch 42**" is fixed to Dimbylow's "**end wall 26**," when Dimbylow's "**cleaning tool 10**"'s "**annular collar 43**" inhibits Dimbylow's "**end wall 26**" from opening, Dimbylow's "**catch 42**" is likewise inhibited from moving to the disengaged position in which the openable door is openable, *see* Ground 1, Limitations [1d.2]/[14d.2]; Ex1002 ¶145. Further, this is at least as much disclosure of these Limitations as PO accuses of infringement in the related Litigation. *See*,

e.g., Ex1009, 13-18, 44-49. During prosecution, the Examiner found that Dimbylow disclosed this limitation, which PO did not dispute. Ex1004, 256-257, 269-274. Petitioners agree.

3. [2]

Dimbylow in combination with Howes teaches claim 1 and the remaining limitations of this claim. *See* Ground 1, Claim 1; Ex1002 ¶¶147-49.

Dimbylow teaches the surface cleaning apparatus comprising a front end having the dirty air inlet and the openable door is provided on the front end. Ex1002 ¶148. Dimbylow's "**central duct 30**" and "**end wall 26**" are located at the "**front**" **end** of Dimbylow's "main body 4":



Ex1005 ¶41 Fig. 2; Ex1002 ¶148. Dimbylow teaches that the end where "cleaning tool 10" connects to "central duct 30" is the "front" end. *See* Ex1005 ¶41 ("FIG. 3 shows the vacuum cleaner 2 from the front. … The cleaning tool 10 therefore extends

within the outer profile of the cyclonic separating unit 8 as viewed from the front of the vacuum cleaner 2 along the longitudinal axis X."), Fig. 3; Ex1002 ¶149.

4. [3]

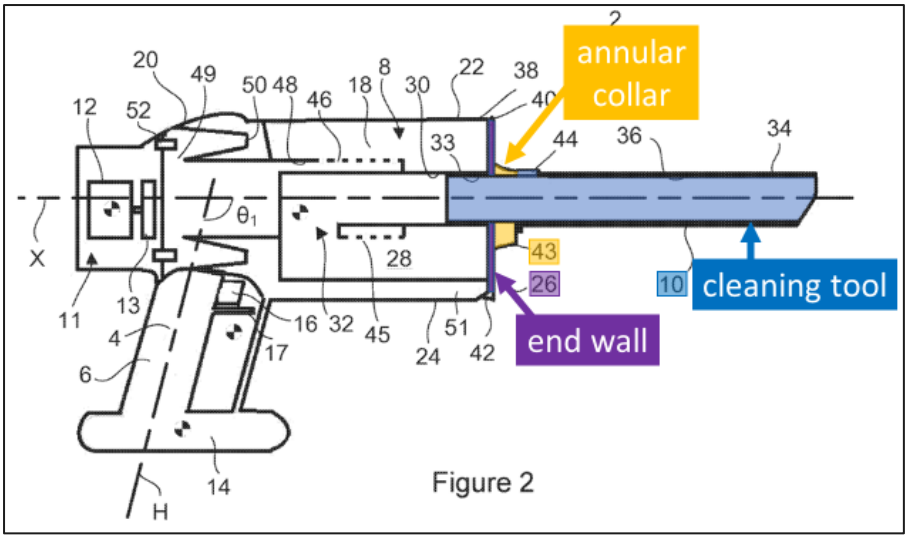
Dimbylow in combination with Howes teaches claim 1 and the remaining limitations of this claim. *See* Ground 1, Claim 1; Ex1002 ¶¶150-51.

Dimbylow's accessory ("cleaning tool 10" or "wand 110") is removably connectable to the dirty air inlet ("central duct 30"). *See* Ground 1, Limitation [1c]. For the same reasons, a POSA would understand that Dimbylow's accessory is removably mounted to the dirty air inlet. Ex1002 ¶151.

5. [4]

Dimbylow in combination with Howes teaches claim 1 and the remaining limitations of this claim. *See* Ground 1, Claim 1; Ex1002 ¶¶152-55.

When Dimbylow's accessory is connected to the dirty air inlet, *see* Ground 1, Limitation [1c], the accessory physically inhibits the openable door from opening: "**cleaning tool 10** further comprises an **annular collar 43** that abuts the **end wall 26** thereby holding the end wall 26 in the closed position, and so prevents accidental opening of the end wall 26 wh[en] the cleaning tool 10 is attached":



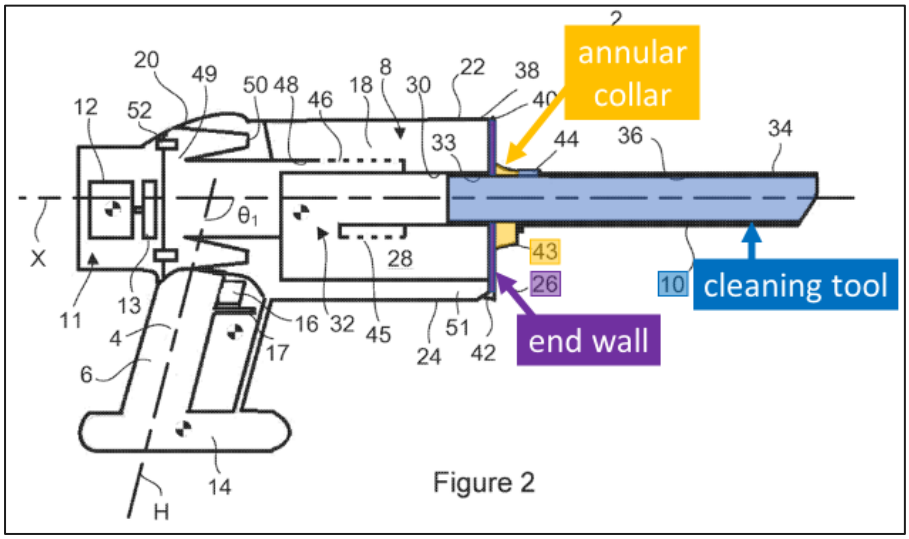
Ex1005 ¶37, Fig. 2; Ex1002 ¶153; *see also* Ground 1, Limitation [1d.3]. Dimbylow's "wand 110" also comprises an annular collar that a POSA would understand performs the same function. Ex1005 ¶44, Fig. 6; Ex1002 ¶154.

Further, a POSA would understand that Dimbylow's "end wall 26" (the openable door) is also inhibited from opening when Dimbylow's "cleaning tool 10" or "wand 110" (the accessory) is connected to the upstream end of Dimbylow's "central duct 30" (the dirty air inlet) because Dimbylow's "end wall 26" is closed when this occurs and Dimbylow's "catch 42" (the lock engaging member) is engaged. *See* Ground 1, Limitations [1d.1]-[1d.3]; Ex1002 ¶155.

6. [5]

Dimbylow in combination with Howes teaches claim 4 and the remaining limitations of this claim. *See* Ground 1, Claim 4; Ex1002 ¶¶156-58.

When Dimbylow's accessory it connected to the dirty air inlet, *see* Ground 1, Limitation [1c], the accessory overlies a portion of the openable door: "**cleaning tool 10** further comprises an **annular collar 43**" that overlies a portion of "**end wall 26**":

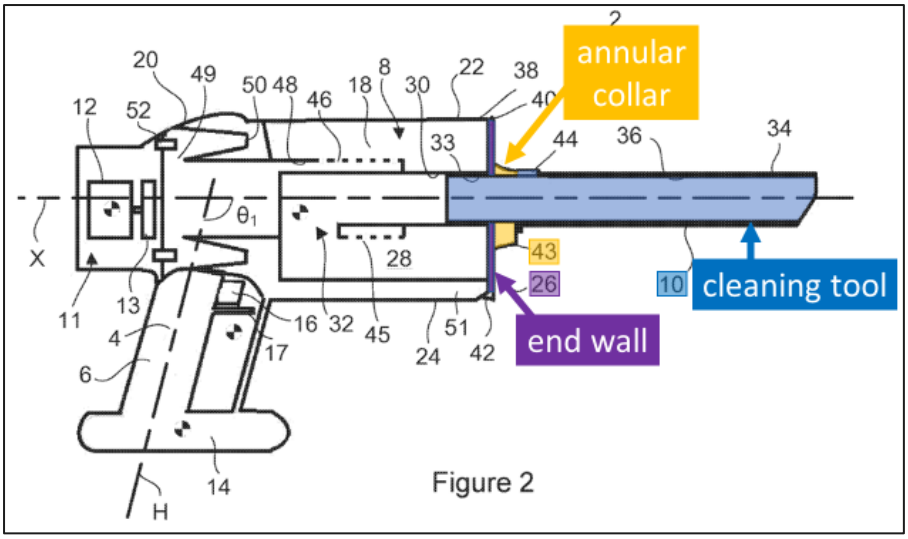


Ex1005 ¶37, Fig. 1; Ex1002 ¶157; *see also* Ground 1, Limitation [1d.3]. Dimbylow's "wand 110" also comprises an annular collar that a POSA would understand performs the same function. Ex1005 ¶44, Fig. 6; Ex1002 ¶158.

7. [6]

Dimbylow in combination with Howes teaches claim 5 and the remaining limitations of this claim. *See* Ground 1, Claim 5; Ex1002 ¶¶159-161.

When Dimbylow's accessory is connected to the dirty air inlet, *see* Ground 1, Limitation [1c], the accessory abuts a portion of the openable door: "**cleaning tool 10** further comprises an **annular collar 43** that abuts the **end wall 26**":



Ex1005 ¶37, Fig. 2; Ex1002 ¶160; *see also* Ground 1, Limitation [1d.3]. Dimbylow's "wand 110" also comprises an annular collar that a POSA would understand performs the same function. Ex1005 ¶44, Fig. 6; Ex1002 ¶161.

8. [7]/[15]

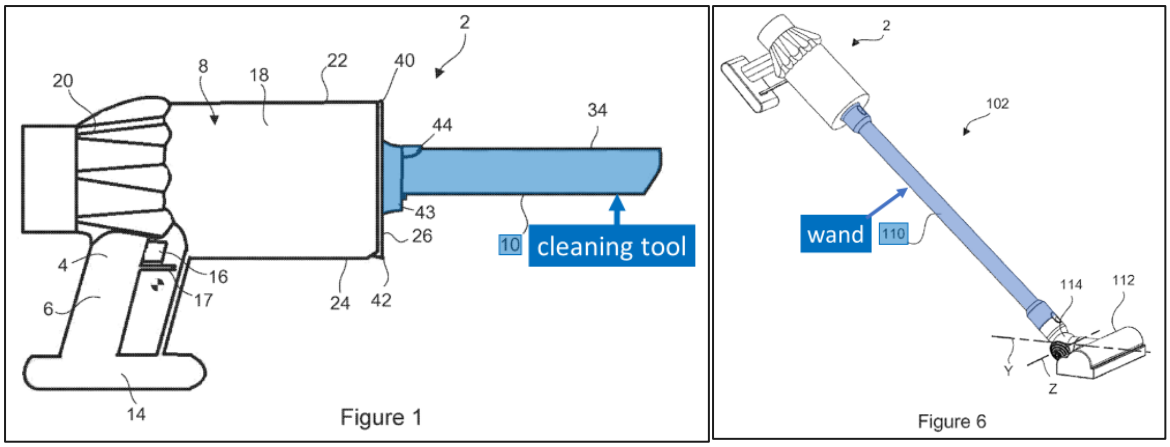
Dimbylow in combination with Howes teaches claims 1/14 and the remaining limitations of these claims. *See* Ground 1, Claims 1/14; Ex1002 ¶¶162-65.

For the reasons explained for Limitations [1c]/[1d.3] and Claims 4-6, Dimbylow's accessory ("cleaning tool 10" and/or "wand 110") has a blocking portion ("annular collar 43," alone or together with "catch 44") which inhibits the lock engaging member ("catch 42") moving to the disengaged position when the accessory is connected to the dirty air inlet ("central duct 30"). *See* Ground 1, Limitations [1c]/[1d.3], Claims 4-6; Ex1002 ¶164. Further, this is at least as much disclosure of these limitations as PO has accused of infringement in the related litigation. *See* Ex1009, 36-45.

9. [12]

Dimbylow in combination with Howes teaches claim 1 and the remaining limitations of this claim. *See* Ground 1, Claim 1; Ex1002 ¶¶166-68.

Dimbylow teaches that the accessory is a longitudinally extending rigid member air flow member, an accessory cleaning tool, or a flexible hose. Ex1002 ¶167. A POSA would understand that Dimbylow's "**cleaning tool 10**" is an accessory cleaning tool, and Dimbylow's "**wand 110**" with a "longitudinal axis" is a longitudinally extending rigid member air flow member:



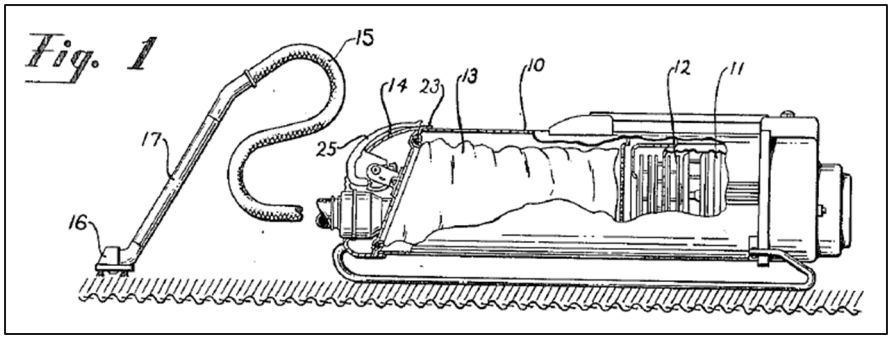
Ex1005 ¶¶43-44, Figs. 1, 6; Ex1002 ¶¶167-68.

B. Ground 2: Brown Renders Obvious Claims 1-20

1. [1]/[13]/[14]/[18]

a. [1pre]/[13pre]/[14pre]/[18pre]

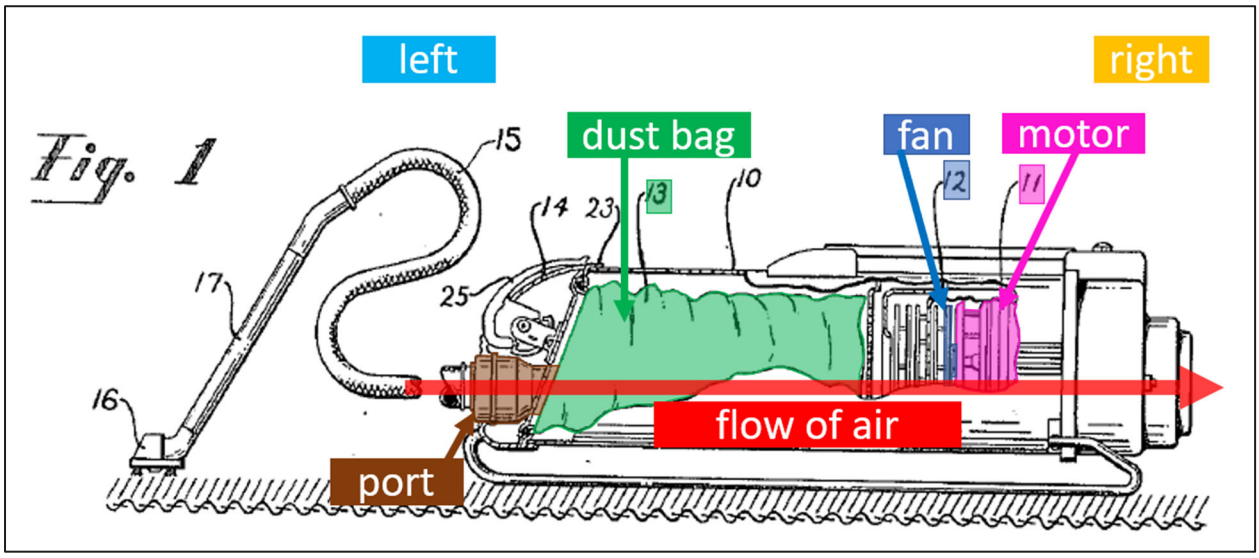
To the extent the preambles are limiting, Brown teaches them. Ex1002 ¶¶169-72. Brown teaches "a vacuum cleaner" that uses a "cleaning tool 16" to clean surfaces:



Ex1007, 2:7-25, Fig. 1.

b. [1a]/[13a]/[14a]/[18a]

Brown teaches these limitations. Ex1002 ¶¶173-76. In Brown, a "**flow of air** in casing 10," "produce[d]" by "a **motor 11** driving a … **fan 12**," flows "from **left**," where there is a "**port** for the admission of dust-laden air," "to **right** as viewed in Fig. 1," through "**dust bag 13**," which "separate[s] the dust from the air":

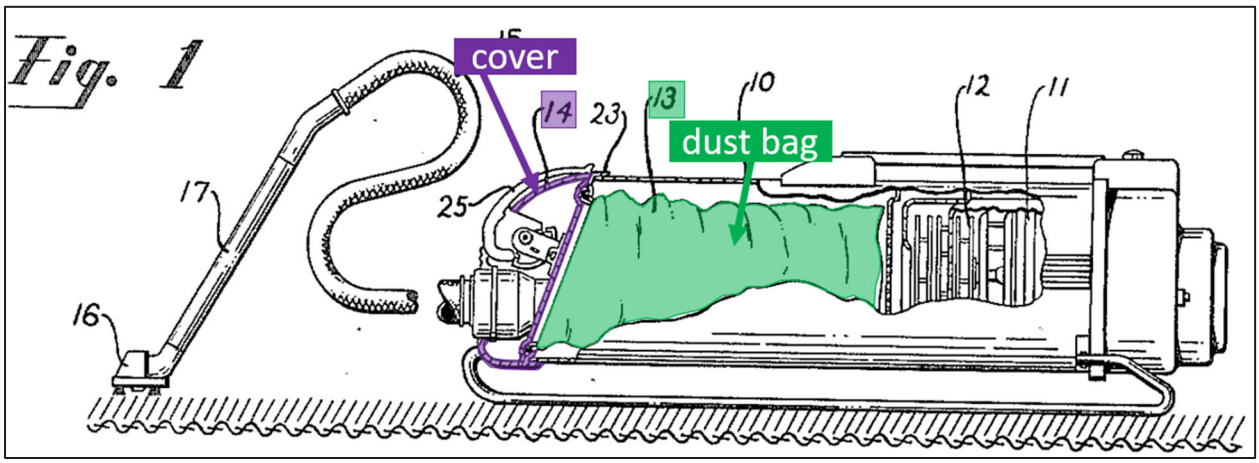


Ex1007, 2:10-17, 1:40-46, Fig. 1; Ex1002 ¶174. A POSA would have understood that Brown's "**port** for the admission of dust-laden air" at the "**left**" is a dirty air inlet and that Brown's "**motor 11**," independently or together with "**fan 12**," is a

suction motor in the air flow path, as depicted in Figure 1. Ex1002 ¶175. A POSA would also understand that, after the "**flow of air**" in Brown's cleaner has been cleaned by "**dust bag 13**," it exits out of a clean air outlet. Ex1002 ¶176.

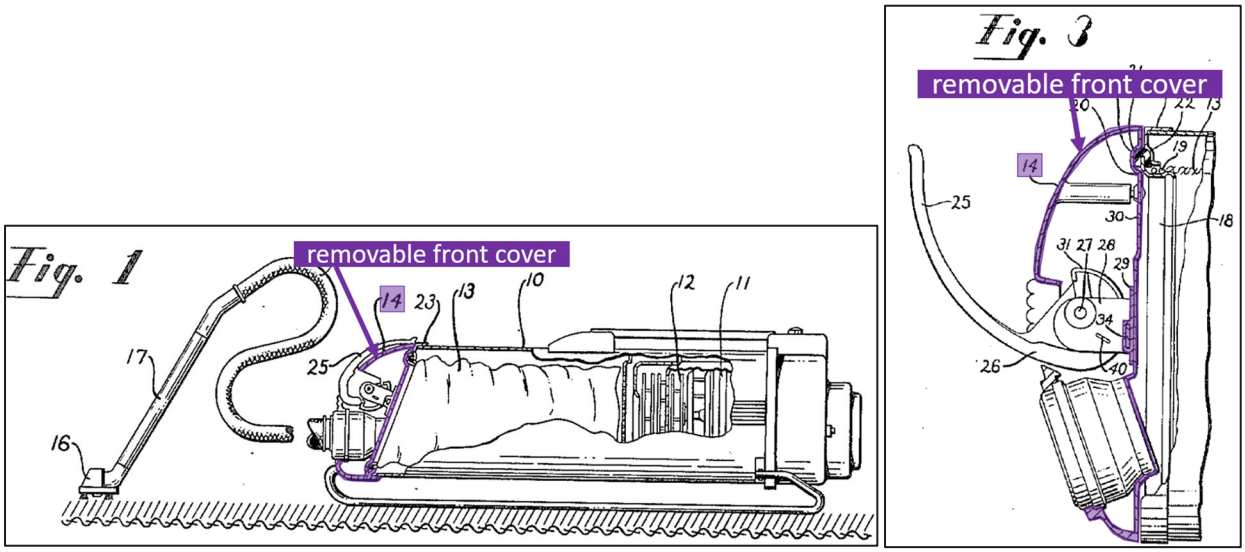
c. [1b]/[14b]/[18b]

Brown teaches these limitations. Ex1002 ¶¶177-181. Brown teaches an air treatment member comprising a dirt collection region having an openable door. Ex1002 ¶178. Brown teaches "a conventional tank type cleaner in which the **cover [14]** acts not only as a closure for the dust compartment but also as a retaining and sealing means for an internal **dust bag [13]**":



Ex1007 at 1:40-46, Fig. 1; Ex1002 ¶178. Brown's **dust bag 13** "separate[s] the dust from the air." Ex1007, 2:12-14. "A **removable front cover 14** secures **dust bag 13** in casing 10 … and permits access to remove **dust bag 13** to empty it." *Id.*, 2:14-17. A POSA would understand that Brown's "dust compartment," including "**dust bag 13**," is an air treatment member comprising a dirt collection region at least because it treats the air by "separate[ing] the dust" and it collects the separated dust.

Id., 2:12-14; Ex1002 ¶179. A POSA also would understand that Brown's dirt collection region has an openable door, "**removable front cover 14**":



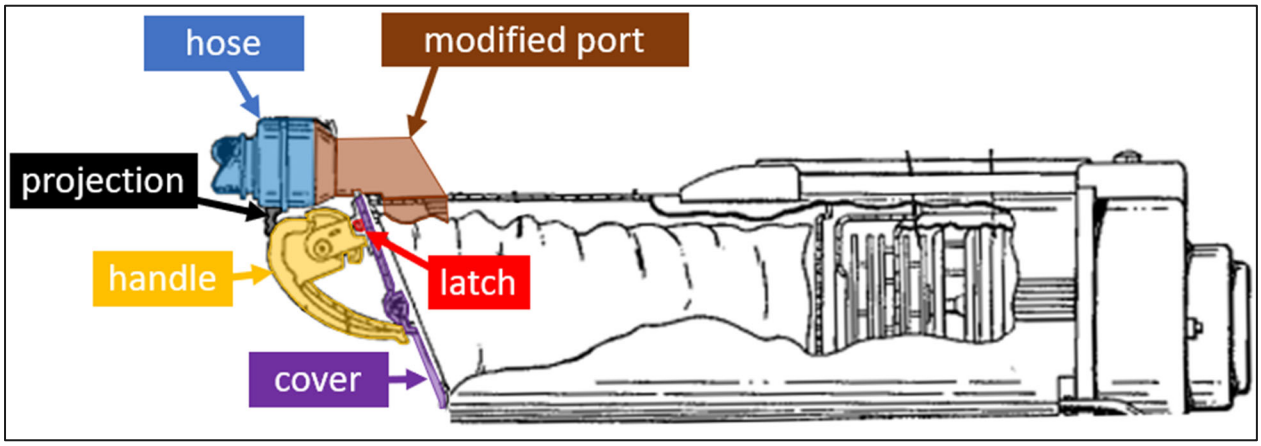
Ex1007, 2:14-17, Figs. 1, 3; *see also id.*, 1:12-23, 1:29-35, 1:40-50, 2:32-39, 3:6-38; Ex1002 ¶¶180-81.

d. [13b]

Brown renders this limitation obvious. Ex1002 ¶¶182-89. As explained for Limitations [1b]/[14b]/[18b], Brown teaches an air treatment member comprising a dirt collection region having an openable door. *See* Ground 2, Limitations [1b]/[14b]/[18b]. Brown renders obvious positioning the dirty air inlet (Brown's "**port**") above the air treatment member. Ex1002 ¶183.

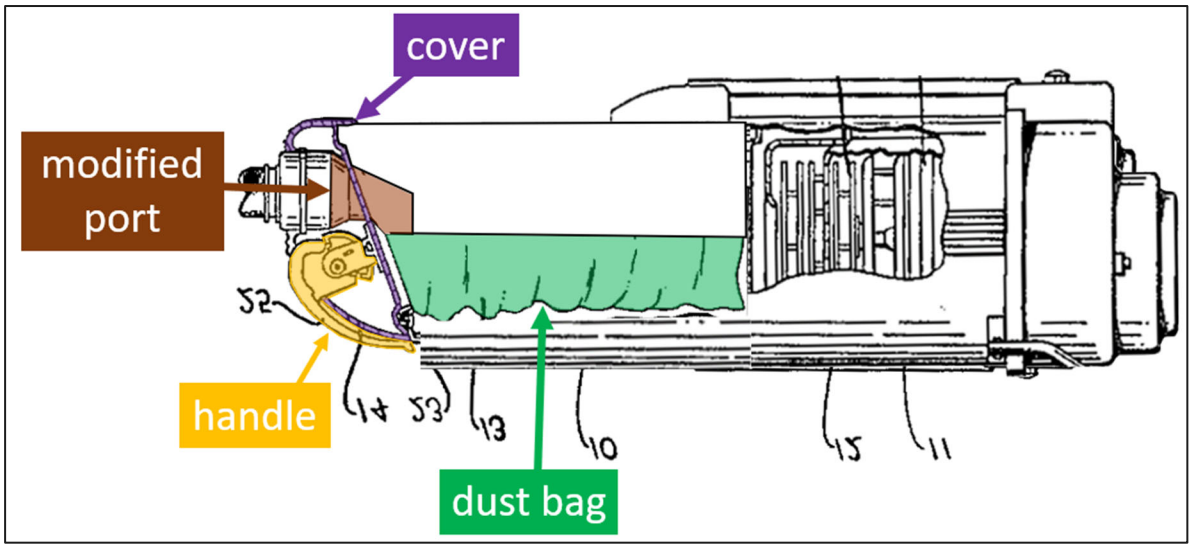
A POSA would have been motived to modify Brown to relocate Brown's "**port**" at the top of the front of Brown's cleaner, above Brown's "casing 10" rather

than on the bottom, as Brown teaches, and to reorient Brown's "**handle**" and accessory **projection** to accommodate this relocation, for example as shown:



Ex1007, Fig. 1 (modified); Ex1002 ¶184.

A POSA also would have been motivated to simply swap the positioning of Brown's "**port**" and "**handle**" such that the "**port**" would be located on the top of Brown's "**cover**" and the "**handle**" on the bottom, and to reduce the size of Brown's dust bag to accommodate the higher "**port**" position:



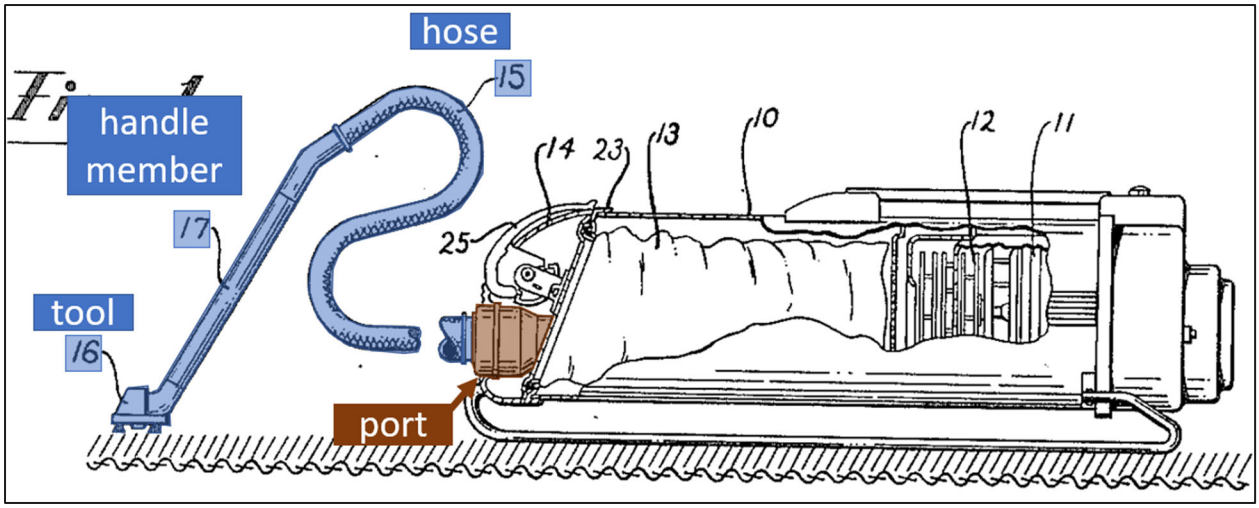
Ex1007, Fig. 1 (modified); Ex1002 ¶185.

These modifications would not alter the way in which Brown's door-locking-and-opening mechanisms function, apart from a user simply having to lift Brown's "**handle**" up, rather than down, to open Brown's "**cover**," which would have given a POSA a reasonable expectation of success. Ex1002 ¶186.

A POSA would have been motivated to make these modifications. Ex1002 ¶¶187-89. For example, placing Brown's "port" higher up on Brown's cleaner would make it easier for a user to connect an accessory to it, as the user would not need to reach or bend down as far to do so. Ex1002 ¶187. Further, this orientation would have at least been obvious to try, as there are a finite number of ways to orient Brown's "**handle**" and "**port**," including with a downwardly moving "**handle**" and a bottom-located "**port**," as Brown teaches, or an upwardly moving "**handle**" and a top-located "**port**," as described above. Ex1002 ¶188. When so modified, Brown's dirty air inlet ("**port**") is positioned above Brown's air treatment member. Ex1002 ¶189.

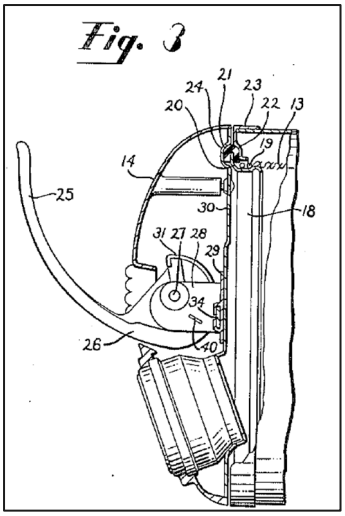
e. [1c]/[13c]/[14c]/[18c]

Brown teaches these limitations and renders them obvious. Ex1002 ¶¶190-212. In Brown, "[a] flexible **hose 15** is connected in an **inlet opening** in cover 14" (i.e., the "**port**") "and ***communicates*** with the interior of dust bag 13," and "[a] **cleaning tool 16** is connected to the other end of the **hose 15** by means of a rigid tubular **handle member 17**":



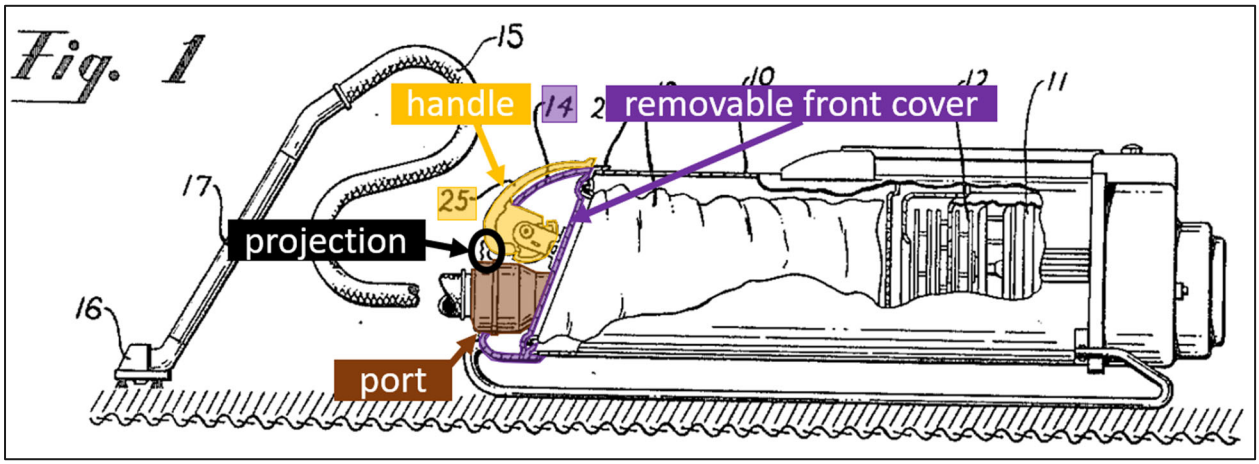
Ex1007, 2:17-22, Fig. 1; Ex1002 ¶193. A POSA would understand that Brown's "**hose 15**," independently or together with "**handle member 17**" and "**cleaning tool 16**," is an accessory in air flow communication with Butler's "**port**" (the dirty air inlet), at least because Brown depicts it as an accessory and describes it as "communicat[ing] with the interior of dust bag 13." Ex1007, 2:17-20; Ex1002 ¶194.

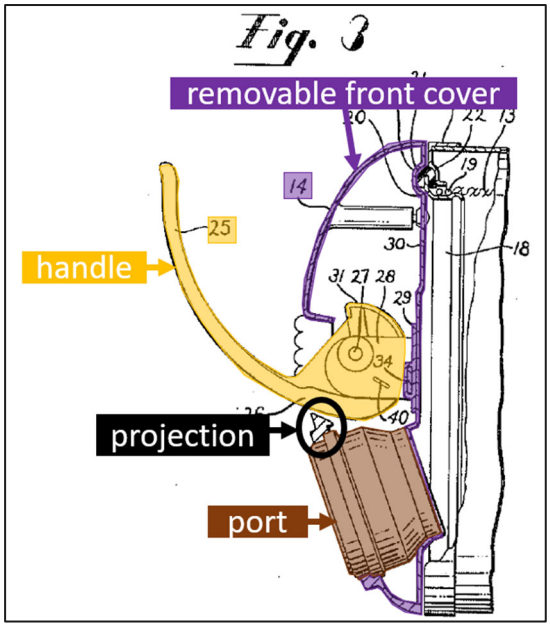
Further, Brown teaches that its accessory is removable. Ex1002 ¶195. Brown teaches that "**hose 15** is connected in an inlet opening in cover 14," and depicts the accessory as removed in Figure 3:



Ex1007, 2:17-18, Fig. 3; Ex1002 ¶195. A POSA would thus understand that Brown's accessory is removable. Ex1002 ¶196.

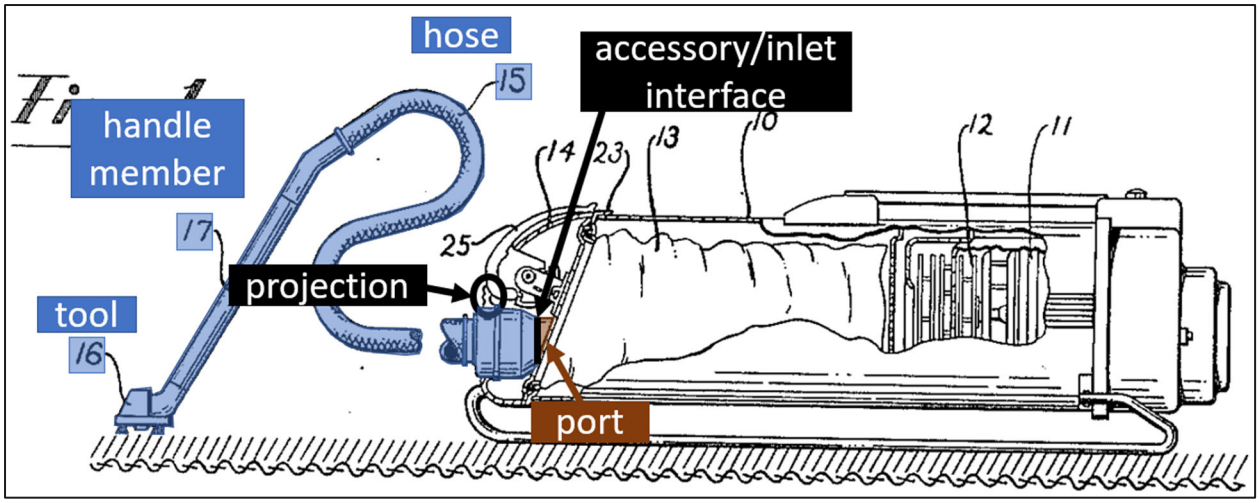
Regarding Limitation [1c], Brown teaches that the dirty air inlet inhibits the openable door from opening, including "when" the accessory is connected to the dirty air inlet. Ex1002 ¶197. Brown teaches a **projection** located on its "**port**" that inhibits Brown's "**removable front cover 14**" from opening because it contacts and provides resistance against Brown's "**handle 25**," which must be "grasped and moved about … the pintle 27" to open Brown's door (i.e., "to remove the **cover**"):

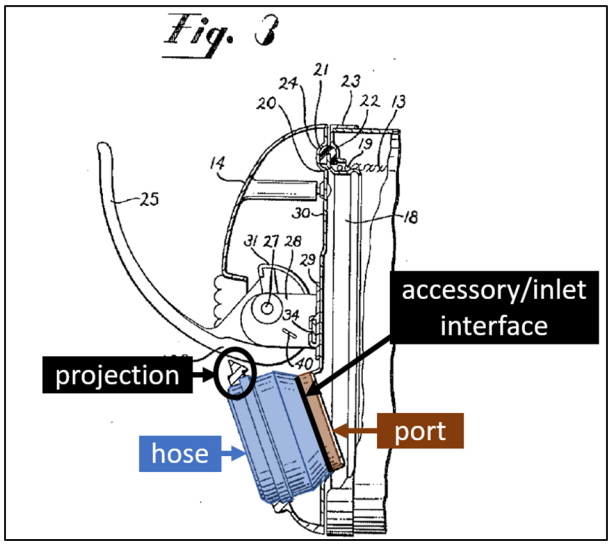




Ex1007, 3:24-38, Figs. 1, 3; Ex1002 ¶197. Further, as depicted in Figure 1, this also occurs "when" Brown's accessory ("**hose 15**," independently or together with Brown's "**handle member 17**" and "**cleaning tool 16**") is connected to the dirty air inlet (Brown's "**port**"). Ex1007, Fig. 1; Ex1002 ¶¶198-99.

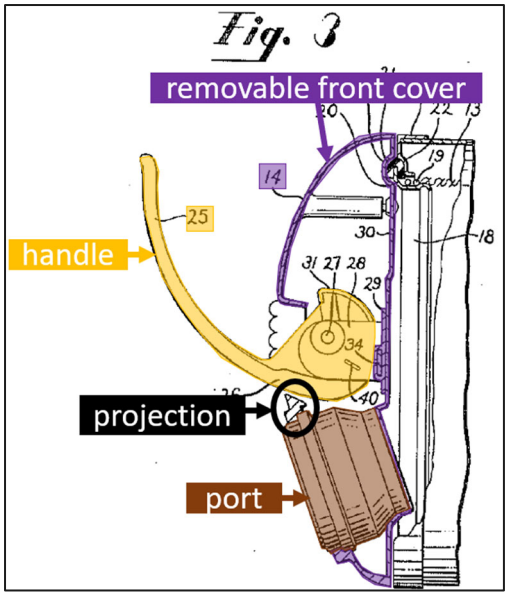
Further, it would have been obvious to modify Brown to move the interface between the dirty air inlet and the accessory backward, which would relocate the **projection** from Brown's "port" onto its accessory (e.g., "**hose 15**"), as shown:





Ex1007, Figs. 1, 3; Ex1002 ¶200.

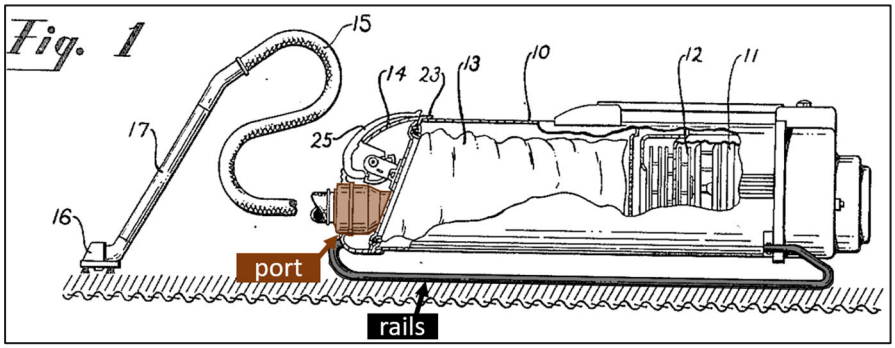
A POSA would have been motivated to make this modification. Ex1002 ¶201. In Brown's unmodified design, opening the door bends and stresses the port and its connections to the removeable front cover:



Ex1002 ¶201.

A POSA would have been motivated to modify Brown to relocate the interface between the port and accessory to avoid this bending, because this bending disadvantageously creates wear-and-tear on several of Brown's components, including the "**port**" and its connections to the removeable front cover and removing this bending would prevent this, thereby extending the life of these components and reducing the risk that they break or permanently deform. Ex1002 ¶¶202-03. Further, the process of removing the accessory is simplified, as the user more conveniently removes the accessory when he/she wants to open Brown's "**front cover 14**," and no longer needs to bend any components to do so, which furthers Brown's goal of a "simple and efficient" emptying process. Ex1007, 1:4-11; Ex1002 ¶204. And, this modification still allows Brown's door to remain shut when desired—i.e., when an accessory is connected.

This modification also furthers the purpose of Brown's **projection** by more effectively preventing accidental opening of Brown's "**removable front cover 14**." Ex1002 ¶205. A POSA would have been motivated to prevent Brown's "**removable front cover 14**" from accidentally opening during use, which could undesirably result in spilling collected dust onto the floor and/or the user. Ex1002 ¶205. A POSA would understand that Brown's accessory is typically, if not always, attached when the vacuum cleaner is in use, and therefore would have been motivated to prevent accidental removal of "**front cover 14**" during this time. Ex1002 ¶205. Indeed, it would be impractical to use Brown's vacuum cleaner design without its accessory, as other components, including the **rails**, would prevent Brown's short "**port**" from reaching the to-be-cleaned surface, making it more likely that the cleaner is not in use when the accessory is detached:



Ex1007, Fig. 1; Ex1002 ¶205. Thus, a POSA would have been motivated to facilitate "**front cover 14**" removal when the accessory is detached (and the cleaner is not likely to be in use) and to prevent such "**front cover 14**" removal when the accessory is attached (and the cleaner is more likely to be in use). Ex1002 ¶206. As

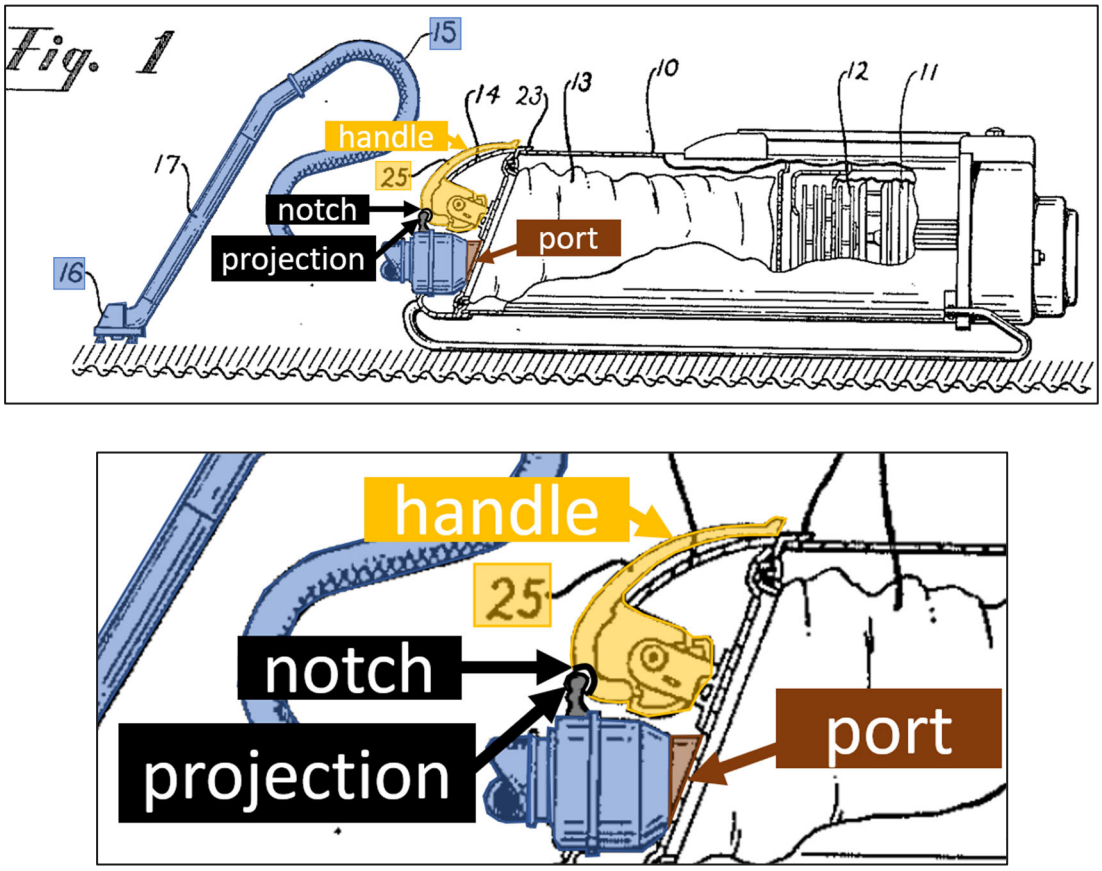
described above, relocating Brown's **projection** from the "**port**" to the accessory (e.g., "**hose 15**") by moving the "**port**"/accessory interface accomplishes this. Ex1002 ¶¶206-07.

A POSA would have had a reasonable expectation of success in making this modification, because it would have involved simply modifying the location of the accessory/inlet interface between Brown's accessory (e.g., "**hose 15**") and its "**port**" by a few millimeters (for example, by extending Brown's accessory connection and by shortening Brown's "**port**" connection by a few millimeters), and it would have yielded the predictable result of "simple and efficient" emptying as described above. Ex1007, 1:4-11; Ex1002 ¶208. Further, this modification would have involved using a known component (Brown's **projection**) in a known way (to inhibit the movement of Brown's "**handle 25**" in the same manner as Brown teaches—namely, by physically interacting with it). Ex1002 ¶209.

Regarding Limitation [1c], when so modified, Brown renders obvious when the accessory is connected to the dirty air inlet, the openable door is inhibited from opening. Ex1002 ¶210.

A POSA would further have been motivated to add a corresponding notch in Brown's "**handle 25**" to accommodate Brown's projection to ***prohibit*** door opening. Ex1002 ¶211. A POSA would have understood that the physical interaction between Brown's projection (when relocated to Brown's accessory) and an accompanying

notch would prevent the user from moving Brown's "**handle 25**" when an accessory is attached, thereby beneficially prohibiting accidental door opening during use with an accessory:

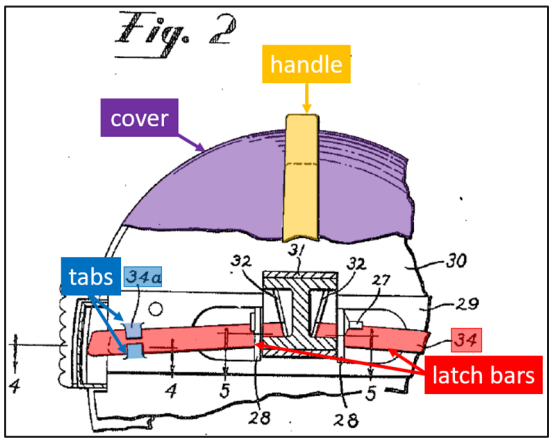


Ex1007, Fig. 1; Ex1002 ¶211. A POSA would have had a reasonable expectation of success because it would have involved the simple addition of a notch to a handle that would not otherwise affect the handle or any related components. Ex1002 ¶212.

f. [1d.1]/[14d.1]/[18d.1]

Brown teaches these limitations. Ex1002 ¶¶213-17. Brown teaches an openable door lock having a lock engaging member and a door release actuator. Ex1002 ¶215. Brown also teaches that the openable door lock secures the openable

door in a closed position. Ex1002 ¶215. When Brown's "**handle 25**" is in the "upward" position, "the outer ends of the **latch bars 34** are engaged" in the "***locking*** … position" by "[g]uiding and securing **tabs 34a**," thereby "***secur[ing]*** the **cover** in position":

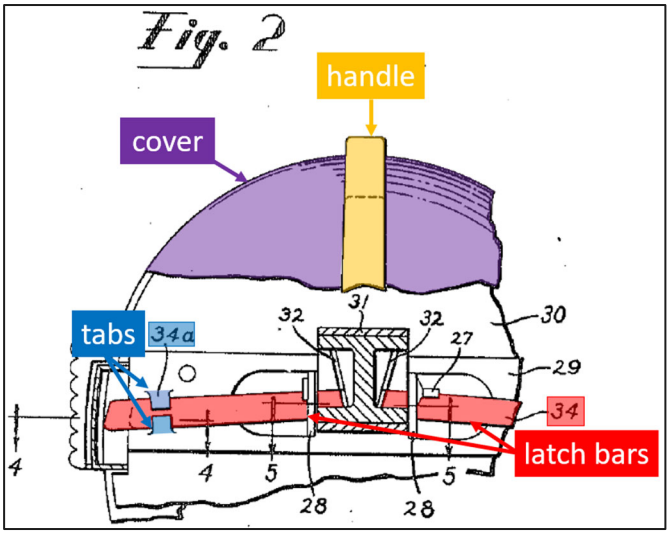


Ex1007, 3:1-38; Ex1002 ¶215. A POSA would understand that Brown's cover-securing mechanism, including "**handle 25**," "**latch bars 34**," and "**tabs 34a**," is an openable door lock because it "secure[s] the **[removable] cover [14]** in position." Ex1007, 3:13-20; Ex1002 ¶216. A POSA would further understand that Brown's "cover securing **latch bars**," the "outer ends" of which "are ***engaged*** under the walls 37 to secure the **cover** in position" and "are beveled … to assist in securely holding the **cover** in sealing relation with the gasket 21" are a lock engaging member. Ex1007, 2:52-3:20, Ex1002 ¶216. A POSA would also understand that Brown's "**handle**" is a door release actuator: it is a "**latch** actuating **handle**" that "constitutes a manipulating **handle** for the **cover** as well as the actuating member for the **latch**." Ex1007, 1:51-55; *see also id.*, 1:12-18, 2:40-3:5.

A POSA would further understand that Brown's door release actuator ("**handle**") is drivingly connected to the lock engaging member ("**latch bars**") at least because, when a user "move[s]" Brown's "**handle**," it, in turn, "move[s] the **[latch] bars** inwardly … permitting the **cover** to be removed." Ex1007, 3:24-32 ("[W]hen it is desired to remove the **cover**, the **handle 25** is grasped and moved about with the pintle 27 as its axis thus rotating the cam 29 whereby the slots 32 engage the ends 33 of the **latch bars 34** to move the bars inwardly thus withdrawing their ends 39 from the engagement with the keepers 35 and permitting the cover to be removed."); Ex1002 ¶217.

g. [1d.2]/[14d.2]

Brown teaches these limitations. Ex1002 ¶¶218-222. Brown teaches that its lock engaging member is movable to an engaged position in which the lock engaging member secures the openable door in a closed position. Ex1002 ¶219. When Brown's "**handle**" is in the "upward" position, "the outer ends of the **latch bars 34** are ***engaged***" in the "***locking*** … position" by "[g]uiding and securing **tabs 34a**," thereby "***secur[ing]*** the **cover** in position":



Ex1007, 3:1-38; Ex1002 ¶219. In this position, "the outer ends of the **latch bars 34** are ***engaged*** under the walls 37 to secure the **cover** in position" and "are beveled … to provide a slight camming action to assist in securely holding the **cover** in sealing relation with the gasket 21." Ex1007, 2:48-5, 3:13-20, Fig. 2; Ex1002 ¶220. A POSA would understand that this is an engaged position of the lock engaging member in which the lock engaging member ("**latch bars**") secures the openable door (Brown's "**cover**") in a closed position. Ex1002 ¶220.

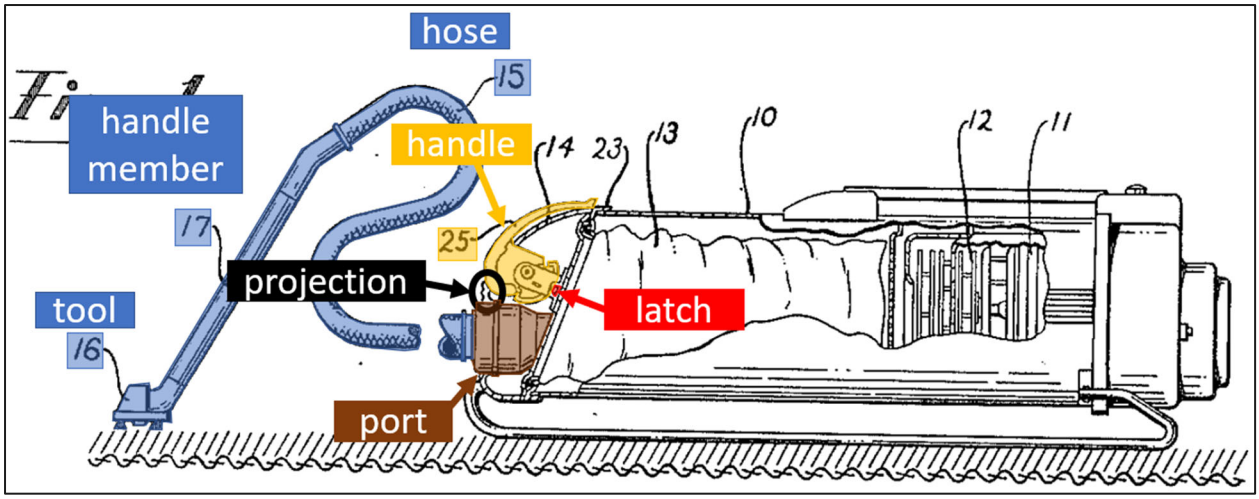
Brown teaches that the lock engaging member is movable to a disengaged position in which the openable door is openable. Ex1002 ¶221. "[W]hen it is desired to remove the **cover**, the **handle 25** is grasped and moved about with the pintle 27 as its axis thus rotating the cam 29 whereby the slots 32 engage the ends 33 of the **latch bars 34** to ***move the bars inwardly*** thus withdrawing their ends 39 from the engagement with the keepers 35 and ***permitting the cover to be removed***." Ex1007,

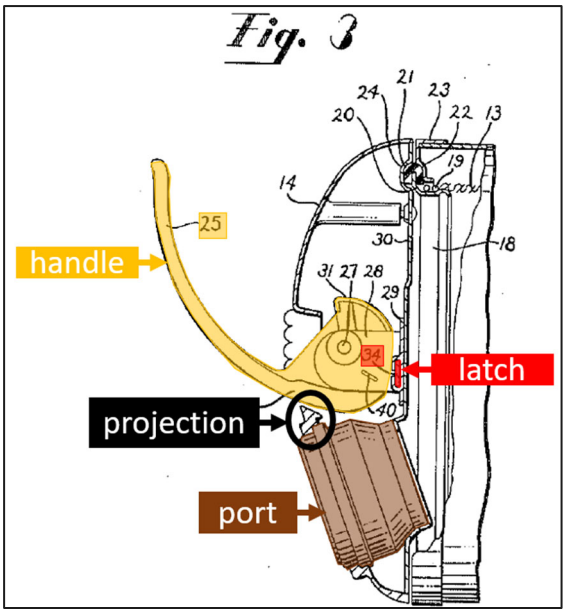
3:24-32. A POSA would understand that this is a disengaged position of the lock engaging member in which the openable door (Brown's "**cover**") is openable. Ex1002 ¶221.

As described above, Brown teaches the lock engaging member is moveable between those two positions by operation of Brown's "**handle**." Ex1007, 3:1-38; Ex1002 ¶222.

h. [1d.3]/[14d.3]

Brown teaches and renders obvious these limitations. Ex1002 ¶¶223-231. Brown teaches a **projection** that inhibits Brown's lock engaging member ("**latch bars**") from moving to the disengaged position when the accessory ("**hose**," independently or together with "**handle member**" and/or "**tool**") is connected to and in air flow communication with the dirty air inlet ("**port**"). Ex1002 ¶225. Brown's **projection** contacts and inhibits the movement of Brown's "**handle**" (this movement is required to move Brown's lock engaging member to the disengaged position, *see* Ground 2, Limitations [1d.2]/[14d.2]), including when Brown's accessory is attached:

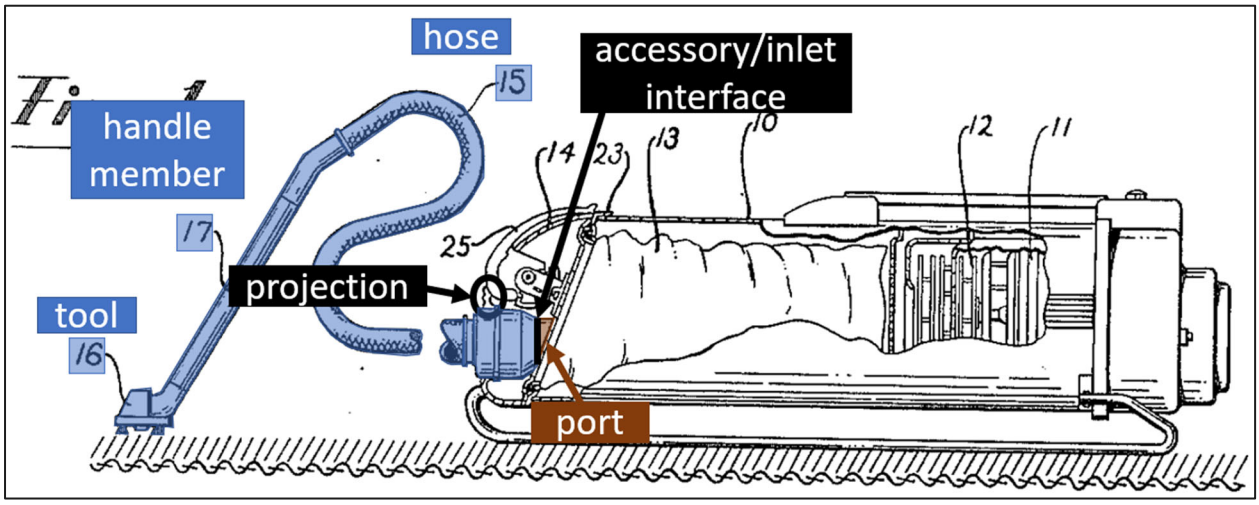




Ex1007, Figs. 1, 3; Ex1002 ¶225.

Further, it would have been obvious to modify Brown such that the lock engaging member is inhibited from moving to the disengaged position when the accessory is connected to and in air flow communication with the dirty air inlet. Ex1002 ¶226. As explained for Limitations [1c]/[13c]/[14c]/[18c], a POSA would

have been motivated to modify Brown such that its **projection** is located on the accessory, not the "**port**," and would have reasonably expected success:

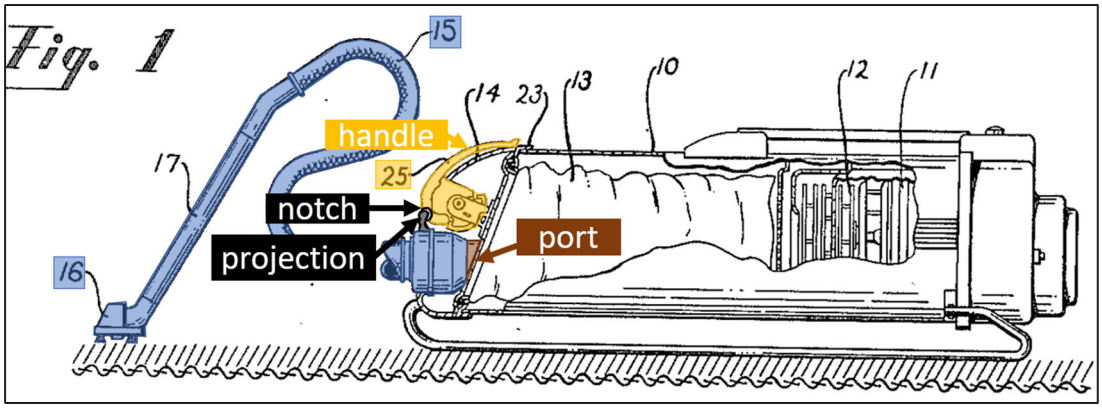


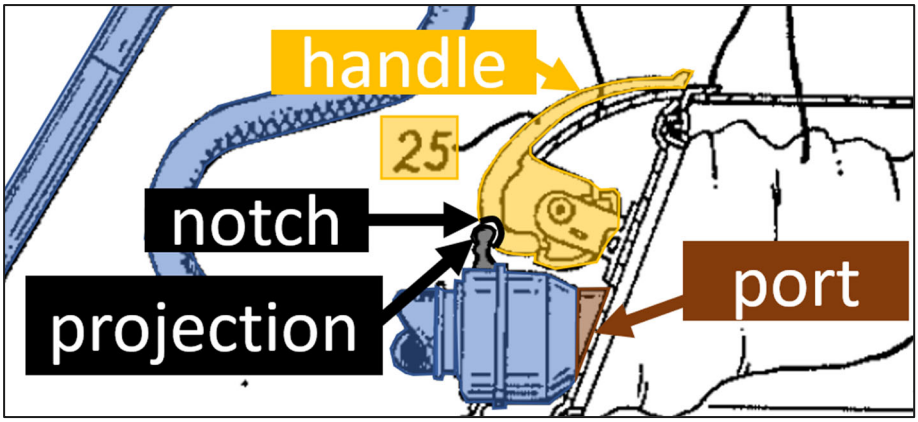
Ex1007, Fig. 1. *See* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]; Ex1002 ¶226. When so modified, Brown's **projection** would likewise inhibit Brown's lock engaging member from moving to the disengaged position in the same manner as described above, when Brown's accessory is connected to and in air flow communication with the dirty air inlet. Ex1002 ¶227. For example, a POSA would understand that Brown's **projection** provides resistance against the movement of the "**handle**," which therefore provides resistance against the "**handle**" moving Brown's lock engaging member ("**latch bars**"). Ex1002 ¶228. This is consistent with the plain and ordinary meaning of the term "inhibit" as well as the '477Patent's use of "inhibit." For example, the '477Patent specification states that having an air inlet at an upper portion of the cyclone sidewall "inhibits" dirt from exiting or blocking the air inlet:

> Alternately or in addition, in accordance with this aspect, the cyclone air inlet may be in an upper portion of the sidewall 168 of the cyclone. An advantage of this design is that it ***inhibits*** dirt that may remain in cyclone chamber 160 from exiting or blocking the air inlet when the apparatus is moved to various operating angles.

Ex1001, 20:53-58; *see also id.*, 21:62-66 ("For example, cyclone air inlet 180 may be positioned at an upper end 544 of cyclone 160. This allows gravity to assist with ***inhibiting*** dirt inside cyclone 160 from blocking or exiting cyclone air inlet 180."). A POSA would understand that such a design would not ***prevent*** dirt from blocking or escaping, but instead would only "inhibit" it. Ex. 1002 ¶229. Further, the specification discusses "inhibiting" and "preventing" separately, further distinguishing them. *See*, *e.g.*, Ex1001, 36:54-57 ("when an accessory is connected to the dirty air inlet, the door lock may be inhibited ***or prevented*** from being disengaged."); *see also id.*, 12:45-50, 12:65-13:3, 36:19-24, 36:40-45, 38:7-11 (using "inhibit ***or prevent***" in the context of door locking and opening).

Further, as also explained for Limitations [1c]/[13c]/[14c]/[18c], a POSA would have been motivated to modify Brown to add a notch to Brown's "handle" that interacts with Brown's **projection** thereby ***preventing*** "handle" movement:



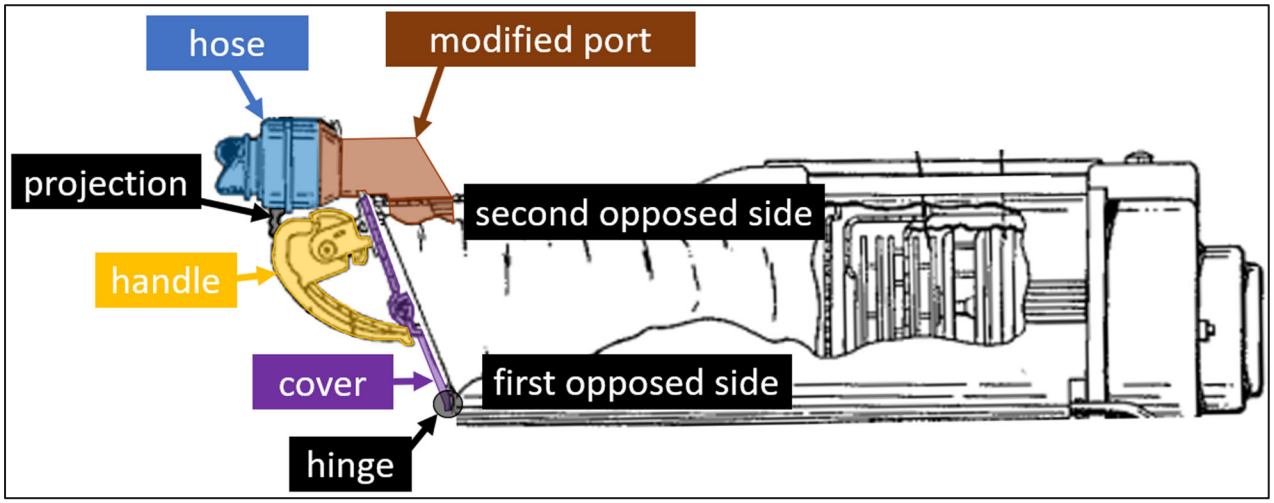


Ex1007, Fig. 1; Ex1002 ¶230; *see* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]. When so modified, Brown's **projection** would inhibit—and would prevent—Brown's lock engaging member from moving to the disengaged position by prohibiting movement of Brown's "**handle**" when an accessory is attached. Ex1002 ¶231.

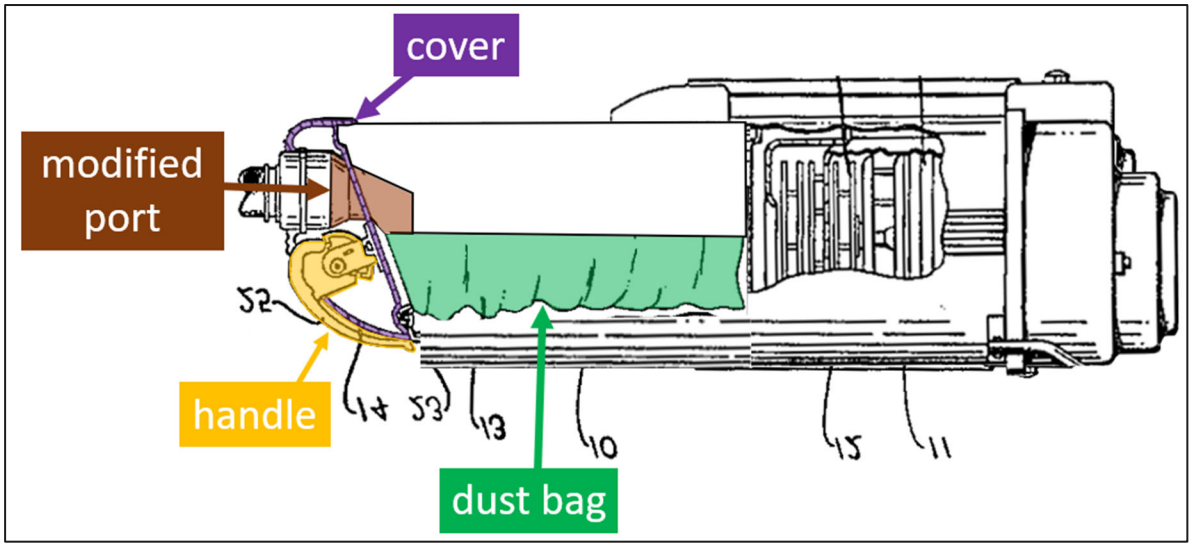
i. [13d]

Brown renders this limitation obvious. Ex1002 ¶¶232-34. As explained for Limitation [13b], it would have been obvious to modify Brown to position its "**port**" above the air treatment member. *See* Ground 2, Limitation [13b]. It would further have been obvious to add a **hinge** to Brown's openable door ("**cover**"), such that

Brown's openable door has **first** and **second opposed sides**, the **first side** having a **hinge** for the openable door and the **second opposed side** is positioned adjacent the dirty air inlet (Brown's "**port**") such that, when the accessory (e.g., Brown's "**hose**") is connected to the dirty air inlet, the accessory (specifically, Brown's accessory's **projection**) overlies the **second opposed side** thereby inhibiting the openable door from opening:



Ex1007, Fig. 1 (modified); Ex1002 ¶233. A POSA would understand that when Brown's accessory's **projection** would inhibit the openable door from opening by overlying the **second opposed side** as depicted above. Ex1002 ¶233. This is likewise true when Brown is modified such that the "**port**" and the "**handle**" are switched and the "**dust bag**" is resized, as depicted below:

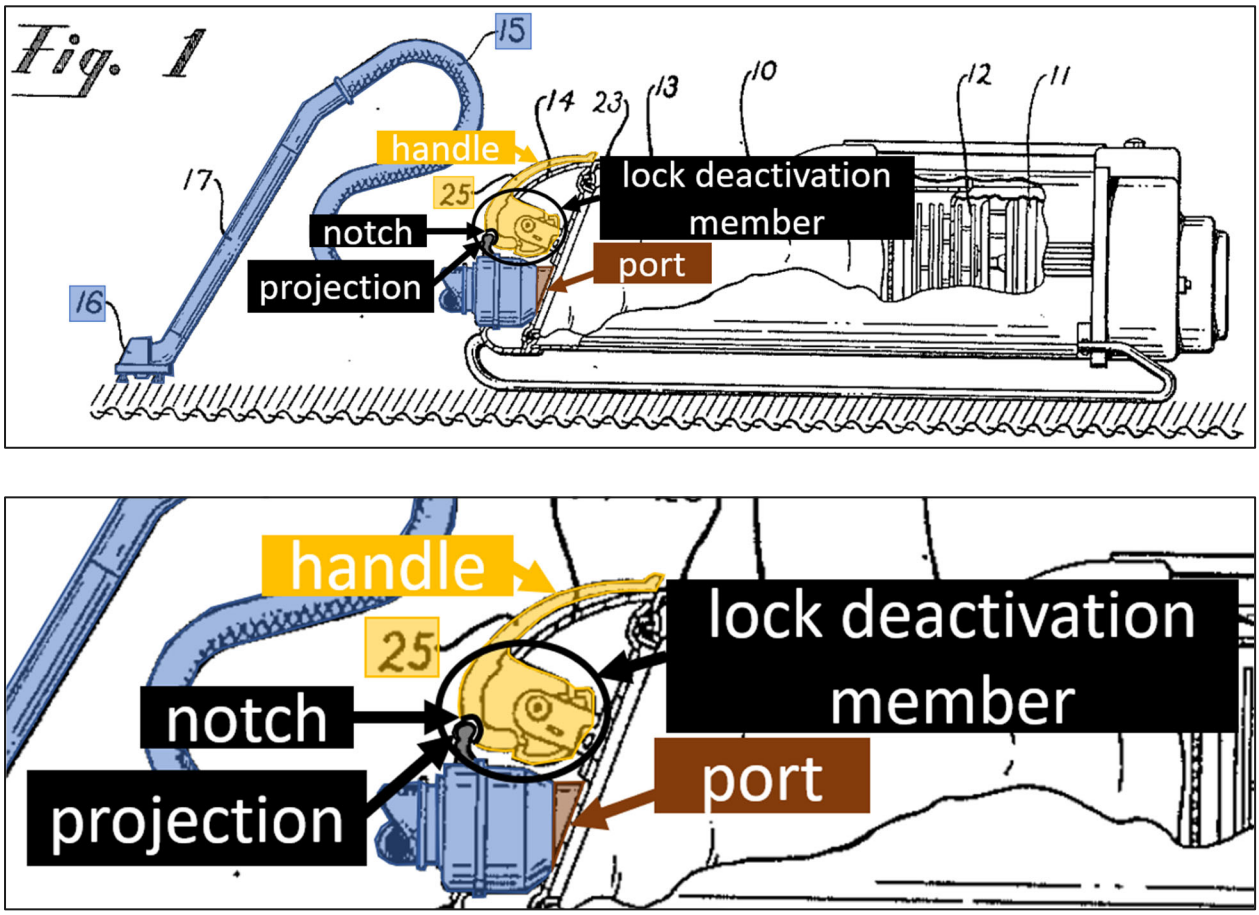


Ex1007, Fig. 1 (modified); Ex1002 ¶234.

j. [18d.2]

Brown renders this limitation obvious. Ex1002 ¶¶235-38. Brown renders obvious a **lock deactivation member** (the portion of Brown's "handle" containing the **notch**). *See* Ground 2, Claim 10. Brown also renders obvious that the accessory has a blocking portion (Brown's accessory's **projection**). *See* Ground 2, Limitations [1d.1]/[14d.1], [1d.3]/[14d.3]; Ex1002 ¶236. Brown's accessory's **projection** moves the **lock deactivation member** to a blocking position which inhibits the openable door lock moving to a door openable position when the accessory (e.g., Brown's "**hose**") is connected in air flow communication with the dirty air inlet (Brown's "**port**"). Ex1002 ¶237. Specifically, to lock Brown's "**cover**," a user attaches the accessory to Brown's "**port**" by moving the **notch** and the **projection** to mate with each other. Ex1002 ¶237. A POSA would understand that this moves

Brown's **lock deactivation member** to a blocking position at least because a user can attach the accessory by moving the accessory to meet the "**port**" and the accessory's **projection** to meet the **notch**, or by moving Brown's cleaner, including the "**port**" and the **notch**, to meet the accessory and its **projection** (or some combination of both movements):

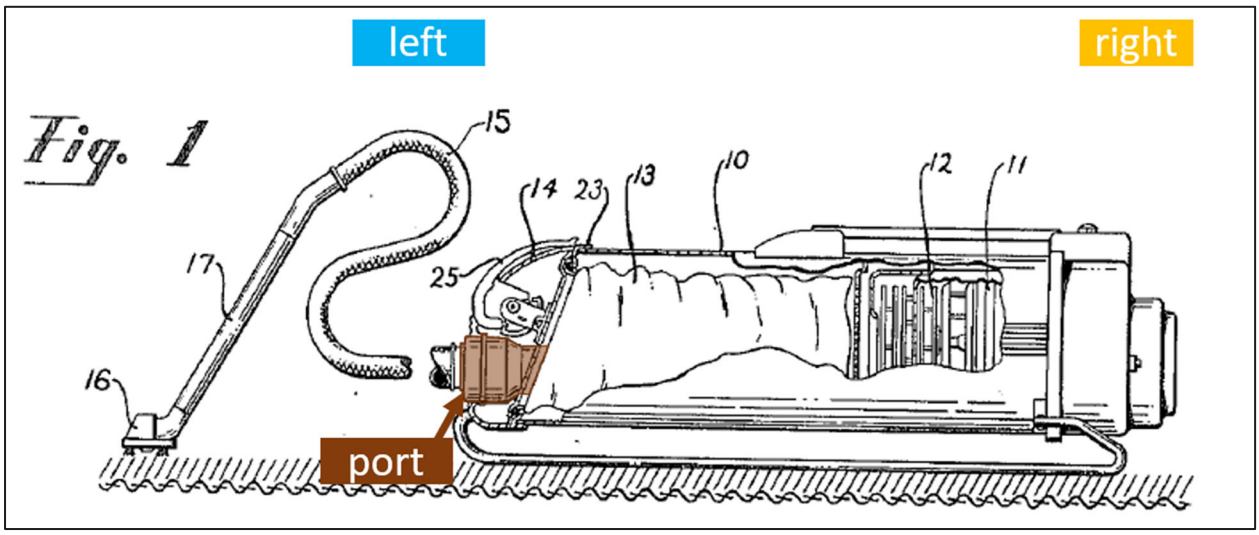


Ex1007, Fig. 1 (modified); Ex1002 ¶237. A POSA would understand that this is because Brown's accessory's **projection** engages and interacts with the **notch** on Brown's "**handle**" when Brown's accessory is connected with Brown's "**port**," and this interaction prohibits movement of Brown's "**handle**," thereby inhibiting

Brown's openable door lock from moving to the openable position (e.g., as shown in Brown Figure 3). Ex1002 ¶238; *see also* Ground 2, Limitations [1d.1]/[14d.1]-[1d.3]/[14d.3] (explaining operation of Brown's lock).

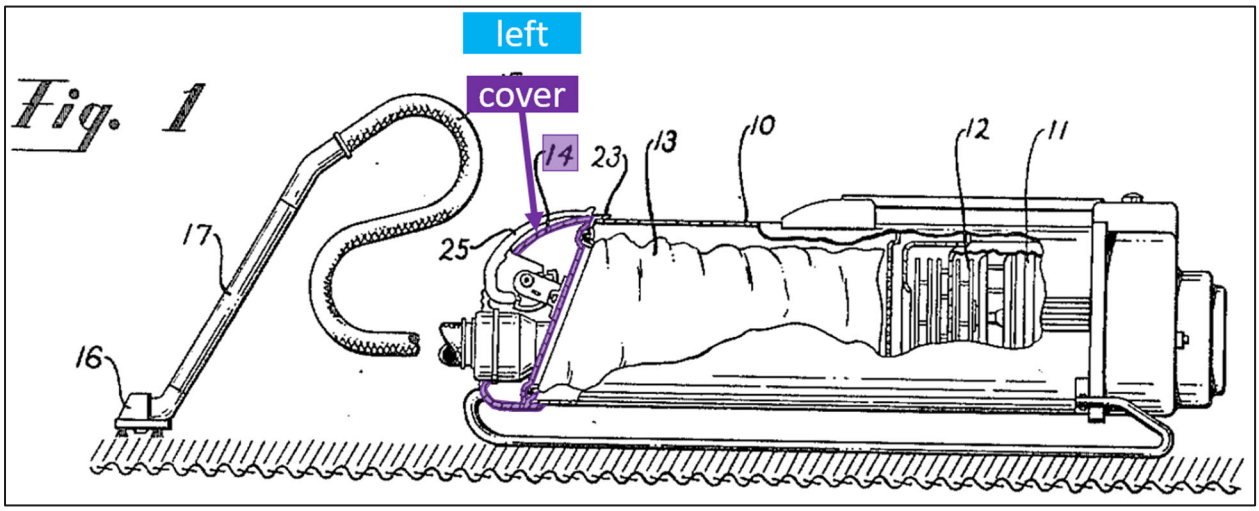
2. [2]

Brown renders claim 1 obvious and further teaches the remaining limitations of this claim. Ex1002 ¶¶239-42. Brown teaches a front end of the surface cleaning apparatus having the dirty air inlet, including when modified as described above. Ex1002 ¶240. Brown teaches that its "**port** for the admission of dust-laden air" is located at the "**left**" end of the vacuum cleaner, as viewed in Figure 1:



Ex1007, 2:10-17, 1:40-46, Fig. 1; Ex1002 ¶240; *see also* Ground 1, Limitation [1a]. A POSA would understand that the "**left**" end of Brown's vacuum cleaner is its front end because it is the end at which Brown's accessory is attached, it is the end at which the dirty air enters the cleaner, and it is opposite the end in which clean air exits the cleaner. Ex1002 ¶241.

Brown teaches that the openable door is provided on the front end. Ex1002 ¶242. As explained for Limitation [1b], Brown teaches an openable door, "**removable front cover**." *See* Ground 2, Limitation [1b]. Brown's "**removable front cover**" is provided on the front end (the "**left**" end) of Brown's cleaner:



Ex1007, 2:10-17, Fig. 1; *see also id.*, Fig. 3; Ex1002 ¶242.

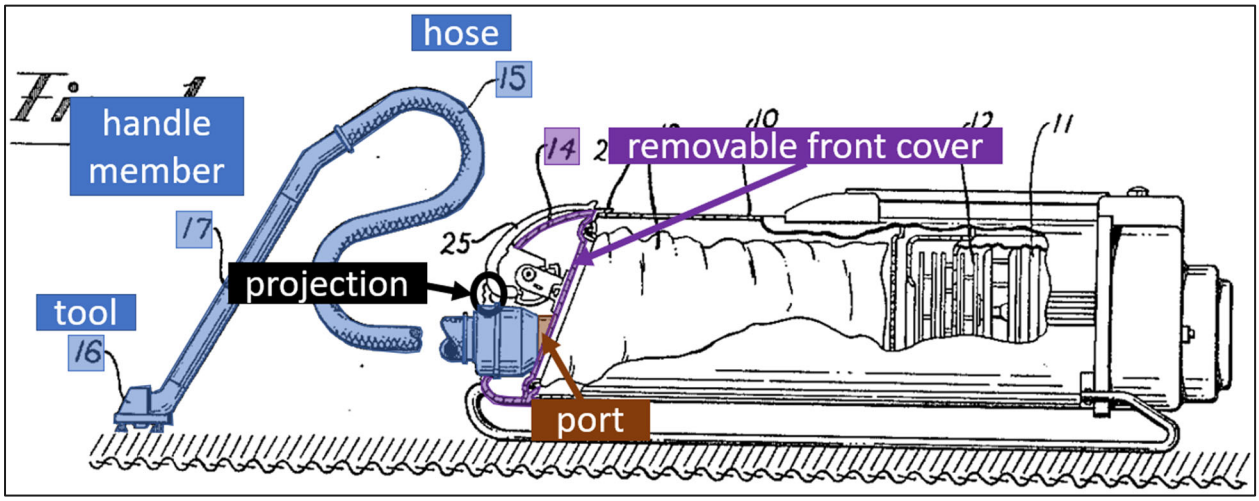
3. [3]

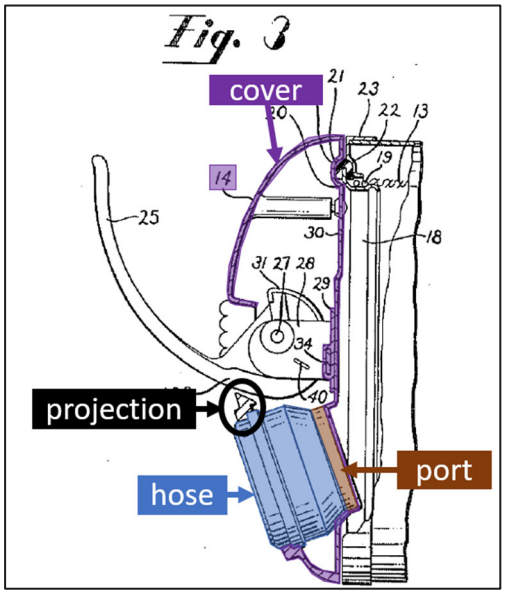
Brown renders claim 1 obvious and further teaches and renders obvious the remaining limitations of this claim for the reasons explained for Limitations [1c]/[13c]/[14c]/[18c]. *See* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]; Ex1002 ¶¶243-44.

4. [4]/[5]/[6]

Brown renders claim 1 obvious and further renders obvious the remaining limitations of these claims. Ex1002 ¶¶245-51. As explained for Limitations [1c]/[13c]/[14c]/[18c], a POSA would have been motivated to modify Brown such

that Brown's **projection** is positioned on its accessory (e.g., "**hose**"), rather than its dirty air inlet (Brown's "**port**"), and would have had a reasonable expectation of success:





Ex1007, Figs. 1, 3; Ex1002 ¶248; *see* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]. With respect to Claim 4, when so modified, Brown's accessory (specifically, the accessory's **projection**) physically inhibits Brown's openable door ("**removable front cover**") from opening, because the accessory's **projection** physically contacts

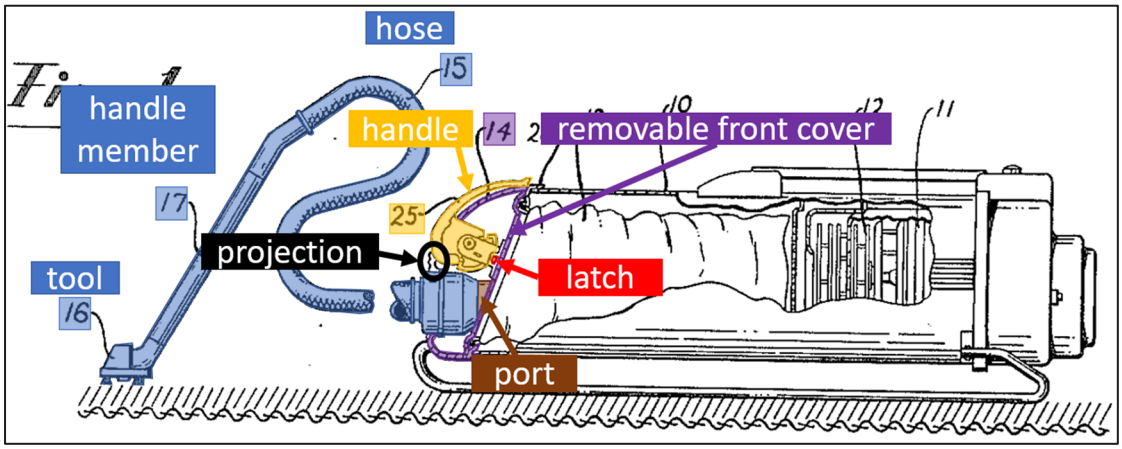
Brown's "**handle**," providing resistance against the movement of that is required to open Brown's openable door, for the reasons explained for Limitations [1c]/[13c]/[14c]/[18c]. *See* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]; Ex1002 ¶249. Further, when Brown is further modified to include a notch in Brown's "**handle**," Brown's accessory (the accessory's **projection**) physically inhibits Brown's openable door from opening by physically prohibiting movement of Brown's "**handle**" when the accessory is attached. *See* Ground 2, Limitation [1c]/[14c]; Ex1002 ¶250.

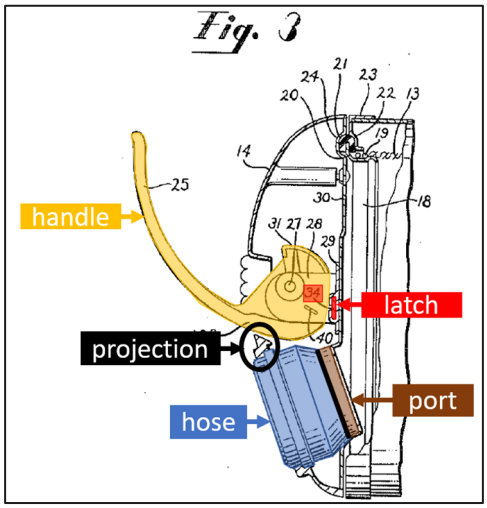
With respect to Claims 5 and 6, as depicted above, when Brown's "**port**"/accessory interface is so modified, Brown's accessory (including the accessory's **projection**) overlies and abuts a portion of Brown's openable door: Brown's accessory is located in front of and adjacent to Brown's openable door, which extends above and below the accessory when the accessory is attached to the dirty air inlet. *See* Ex1007, Figs. 1, 3; Ex1002 ¶251. This also occurs when Brown's "**handle**" is modified to include a notch. Ex1002 ¶251.

5. [7]/[15]

Brown renders claims 1 and 14 obvious and further renders obvious the remaining limitations of these claims. Ex1002 ¶¶252-56. As explained for Limitations [1c]/[13c]/[14c]/[18c], a POSA would have been motivated to modify Brown such that Brown's **projection** is located on its accessory (e.g., "**hose**"), rather

than on its dirty air inlet (Brown's "**port**"), and would have had a reasonable expectation of success:





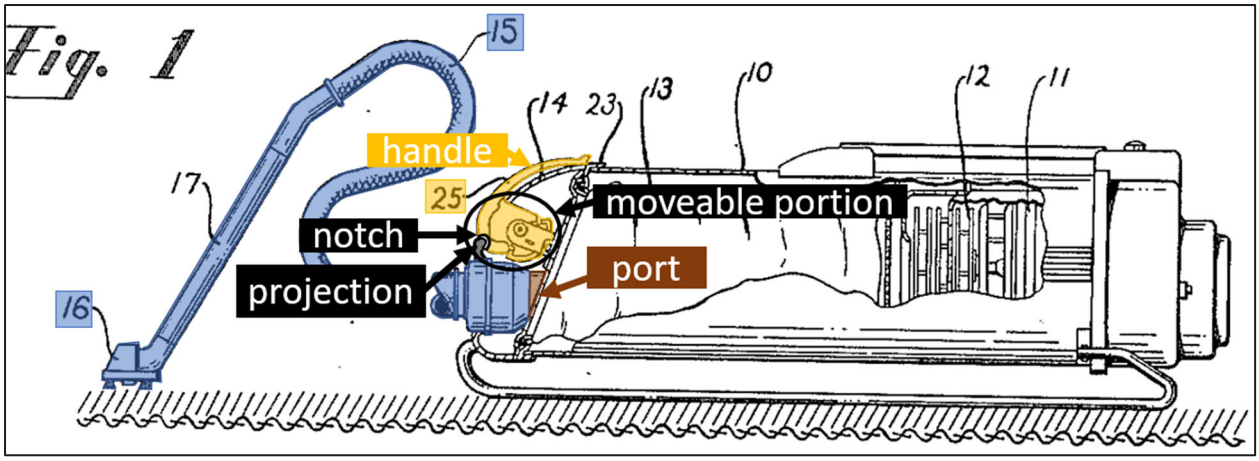
Ex1007, Figs. 1, 3; Ex1002 ¶254; *see* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]. When so modified, Brown's accessory has a blocking portion (the accessory's **projection**) which inhibits Brown's lock engaging member ("**latch**") from moving to the disengaged position when the accessory is connected to the dirty air inlet because the **projection** physically inhibits the movement of Brown's "**handle**" that is required to move Brown's lock engaging member to the disengaged position, as

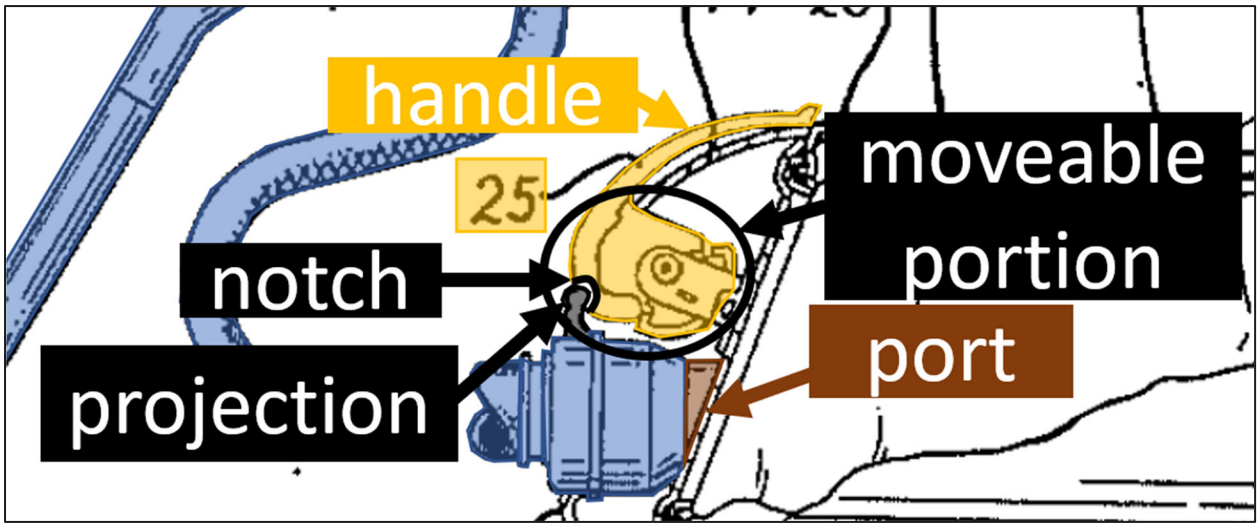
explained for Limitations [1c]/[14c]-[1d.3]/[14d.3]. *See* Ground 2, Limitations [1c]/[14c]-[1d.3]/[14d.3]; Ex1002 ¶255.

Further, when Brown's "**handle**" is modified to include a notch, Brown's accessory blocking portion (the accessory's **projection**) inhibits Brown's lock engaging member from moving to the disengaged position when the accessory is connected to the dirty air inlet because the interaction between Brown's **projection** and the notch in Brown's "**handle**" prohibits this by prohibiting the handle from moving when the accessory is attached. *See* Ground 2, Limitations [1c]/[14c]; Ex1002 ¶256.

6. [8]/[16]

Brown renders claims 7/15 and the remaining limitations of these claims obvious. Ex1002 ¶¶257-61. As explained for Limitations [1c]/[13c]/[14c]/[18c], it would have been obvious to modify Brown to add a **notch** to Brown's "**handle**." *See* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]. When so modified, Brown's "**handle**" contains a **moveable portion** which moves along a path from a first position when the lock engaging member (Brown's "**latch bars**") is in the engaged position (i.e., when Brown's "**cover**" is locked, *see* Ex1007, Fig. 1) to a second position when the lock engaging member is in the disengaged position (i.e., when Brown's "**handle**" is moved to open Brown's "**cover**," *see* Ex1007, Fig. 3):





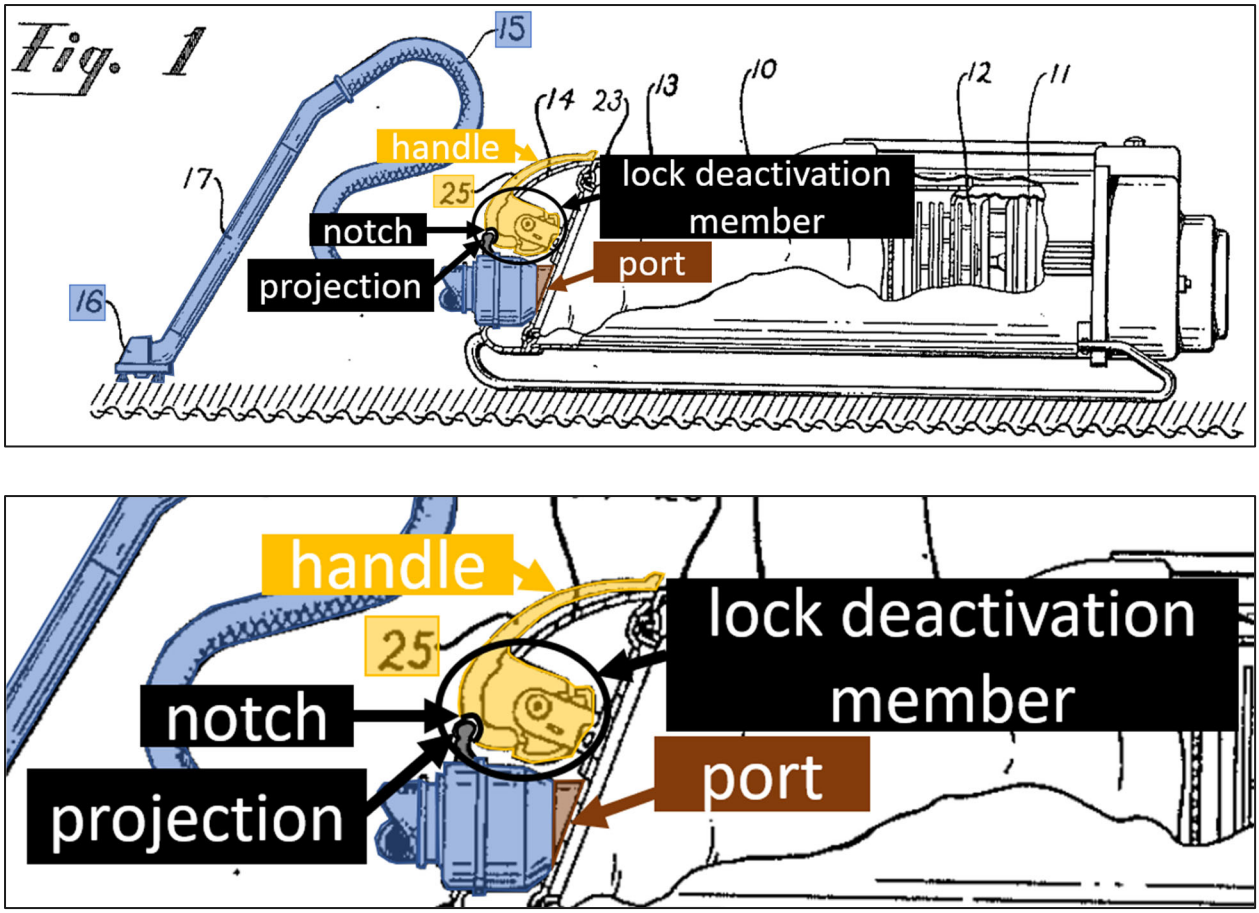
Ex1007, Fig. 1 (modified); Ex1002 ¶260. Further, when so modified, Brown's moveable portion has an abutment surface (the interior surface of the **notch** that is added to Brown's "**handle**") and the blocking portion (Brown's accessory's **projection**) is positioned in the path of the abutment surface when the accessory (e.g., Brown's "**hose**") is connected to the dirty air inlet (Brown's "**port**"). Ex1002 ¶261. For example, if a user were to try to move Brown's "**handle**" when an accessory was attached, the interior surface of Brown's "**handle**"'s **notch** would hit Brown's accessory's **projection**, which is in its path. Ex1002 ¶261.

7. [9]/[17]

Brown renders claims 8 and 16 obvious and teaches the remaining limitations of these claims. Ex1002 ¶¶262-64. Brown's moveable portion (the portion of Brown's "**handle**" containing the **notch**, *see* Ground 2, Claims [8]/[16]) is part of a drive member drivingly connecting the door release actuator (Brown's "**handle**") to the lock engaging member (Brown's "**latch bars**"), for the reasons explained in Limitations [1d.1]/[14d.1]-[1d.2]/[14d.2]. *See* Ground 2, Limitations [1d.1]/[14d.1]-[1d.2]/[14d.2]; Ex1002 ¶264.

8. [10]

Brown renders claim 1 and the remaining limitations of this claim obvious. Ex1002 ¶¶265-67. When Brown is modified to include a **notch** in Brown's "**handle**" (*see* Ground 2, Limitation [1c]), Brown's "**handle**" comprises a lock deactivation member (the portion of Brown's "**handle**" containing the **notch**) and Brown's accessory has a blocking portion (Brown's accessory's **projection**) which activates the lock deactivation member when the accessory is attached to the dirty air inlet (Brown's "**port**"):

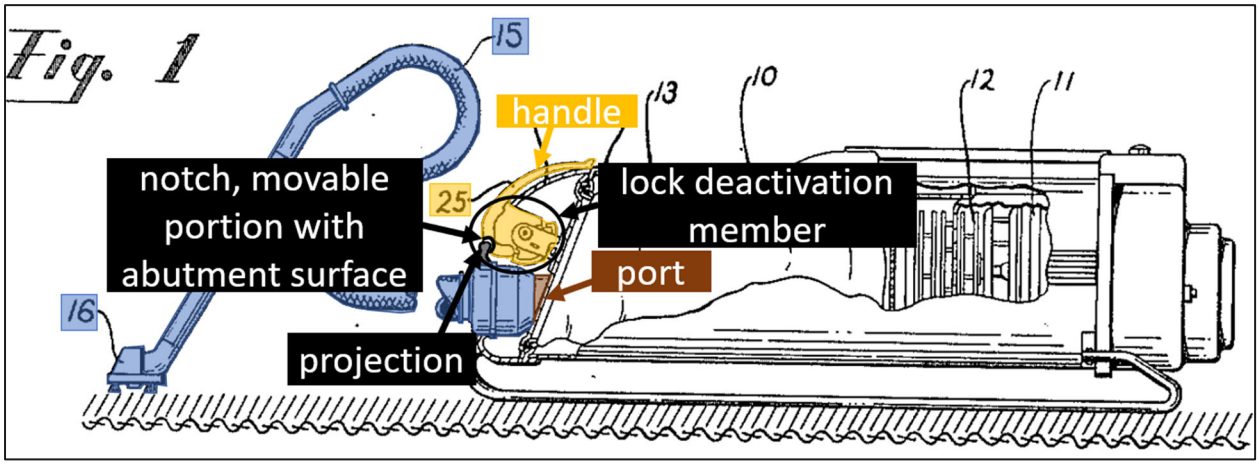


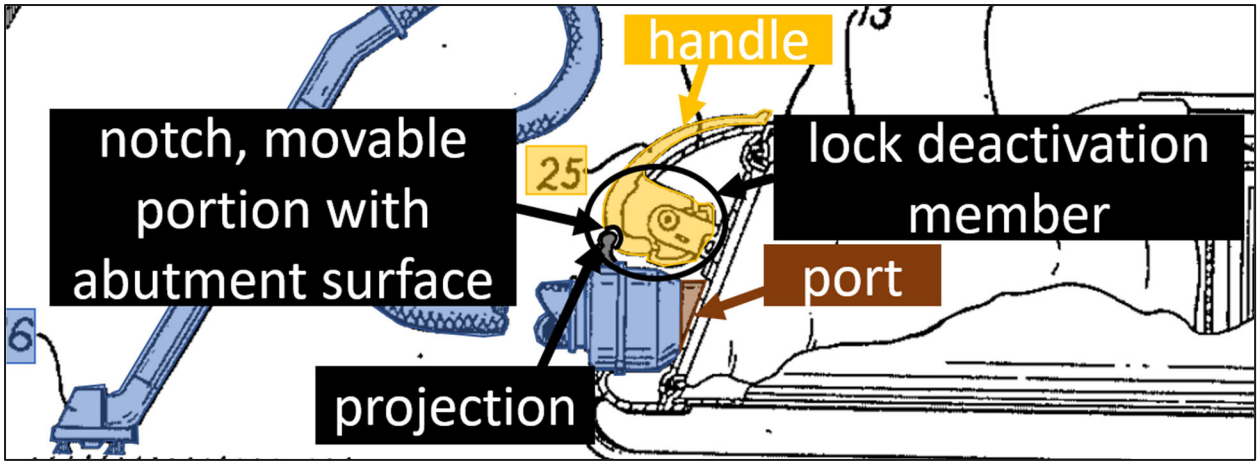
Ex1007, Fig. 1 (modified); Ex1002 ¶266. A POSA would understand that Brown's lock deactivation member (the portion of Brown's "**handle**" containing the **notch**) is activated by Brown's accessory blocking portion (Brown's accessory's **projection**) when the accessory is connected to the dirty air inlet (Brown's "**port**") because that is when the **projection** interacts with the **notch**. Ex1002 ¶267.

9. [11]

Brown renders claim 10 and the remaining limitations of this claim obvious. Ex1002 ¶¶268-270. Brown's lock deactivation member includes a moveable portion (the **notch** added to Brown's "**handle**") which moves along a path from a first

position when the lock engaging member is in the engaged position (i.e., when Brown's "**cover**" is locked, *see* Ex1007, Fig. 1) to a second position when the lock engaging member is in the disengaged position (i.e., when Brown's "**handle**" is moved to open Brown's "**cover**," *see* Ex1007, Fig. 3), the moveable portion has an abutment surface (the **notch**'s interior surface) and the blocking portion (Brown's accessory's **projection**) is positioned in the path of the abutment surface when the accessory (e.g., Brown's "**hose**") is connected to the dirty air inlet (Brown's "**port**"):

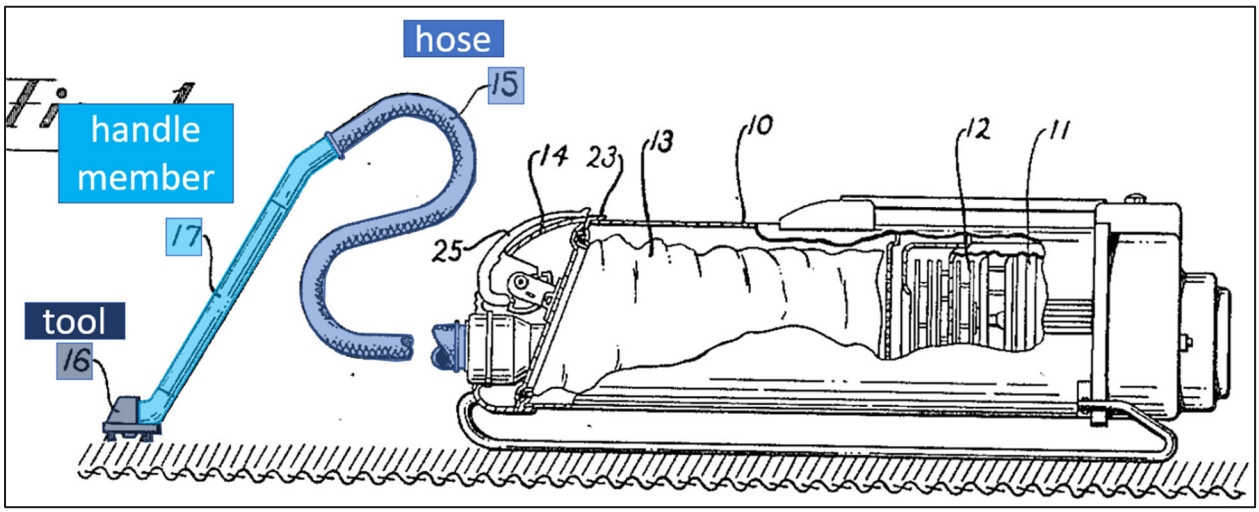




Ex1007, Fig. 1 (modified); Ex1002 ¶269. A POSA would understand that Brown's blocking portion (Brown's accessory's **projection**) is positioned in the path of the abutment surface (the **interior surface** of the **notch** added to Brown's "**handle**") when the accessory is connected to the dirty air inlet (Brown's "**port**") because that is when the **projection** interacts with the **notch**. Ex1002 ¶270.

10. [12]

Brown renders claim 1 obvious and further teaches the remaining limitations of this claim. Ex1002 ¶¶271-73. As explained for Limitations [1c]/[13c]/[14c]/[18c], Brown teaches "**hose 15**," which independently or together with Brown's "**handle member 17**" and/or "**cleaning tool 16**" is an accessory:



Ex1007, Fig. 1; Ex1002 ¶272; *see* Ground 2, Limitations [1c]/[13c]/[14c]/[18c]. Brown's "**hose 15**" is a flexible hose, Brown's "**handle member 17**" is a longitudinally extending rigid member air flow member, and Brown's "**cleaning tool 16**" is an accessory cleaning tool. Ex1002 ¶273.

11. [19]

Brown renders claim 18 obvious and further renders the remaining limitations of this claim obvious for the reasons explained for Claims [7]/[15]. *See* Ground 2, Claims [7]/[15]; Ex1002 ¶¶274-75.

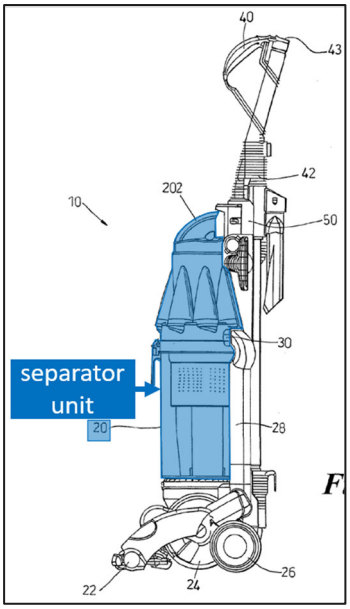
12. [20]

Brown renders claim 19 obvious and further renders the remaining limitations of this claim obvious for the reasons explained for Claims [8]/[16]. *See* Ground 2, Claims [8]/[16]; Ex1002 ¶¶276-77.

C. Ground 3: Brown In Combination With Vuijk Renders Obvious Claims 1-20

As explained in Ground 2, a POSA would have been motivated to modify Brown such that Brown's **projection** is located on its accessory (e.g., "**hose 15**"), rather than on its dirty air inlet (Brown's "**port**"), a POSA would have had a reasonable expectation of success, and, when so modified, Brown renders obvious the Challenged Claims. *See* Ground 2. A POSA would further have looked to Vuijk's teachings to accomplish this. Ex1002 ¶¶278-92.

Vuijk teaches a vacuum cleaner with a cyclonic "separator unit 20":



Ex1008, 5:29-31, Fig. 1; Ex1002 ¶281. Vuijk's cleaner "is more convenient for a user to manipulate" because its "**separator unit 20**" has a "**base 210**" that "is **hinged 214** to the **cyclone chamber 205** to allow pivotal movement" "between a closed position" "and an open position" "to permit emptying":

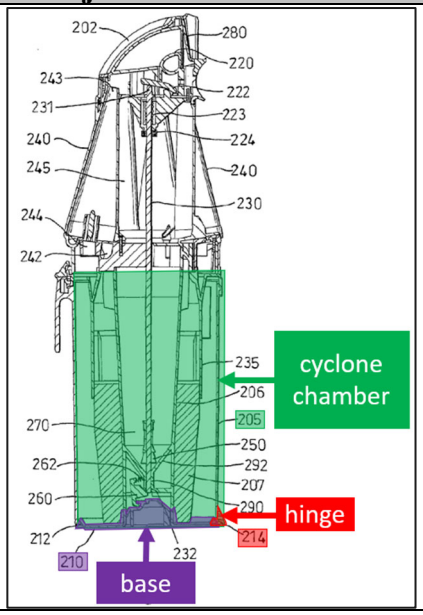
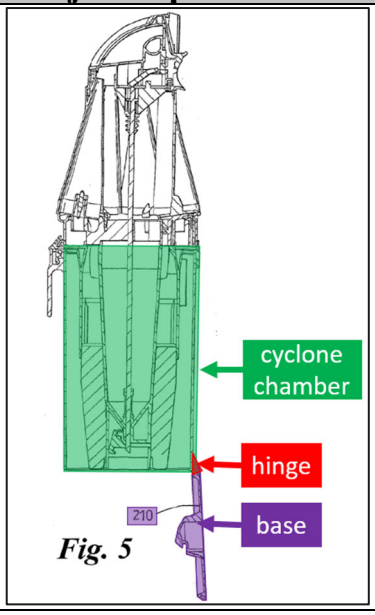
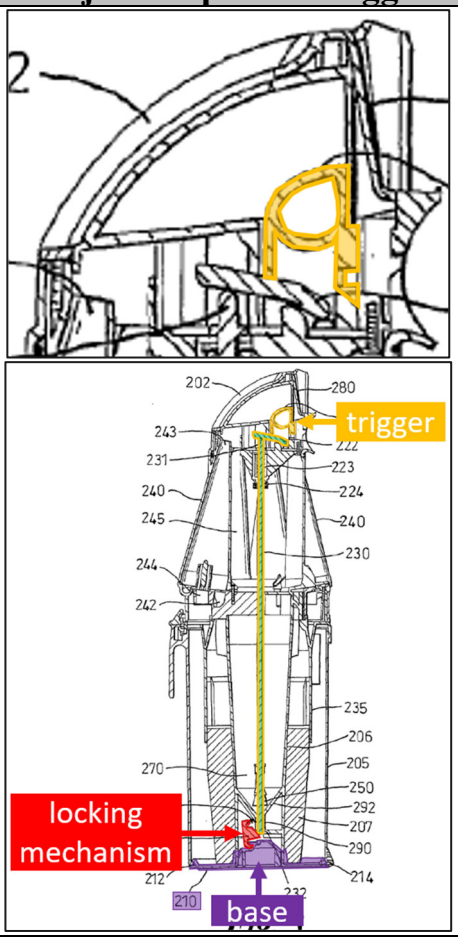
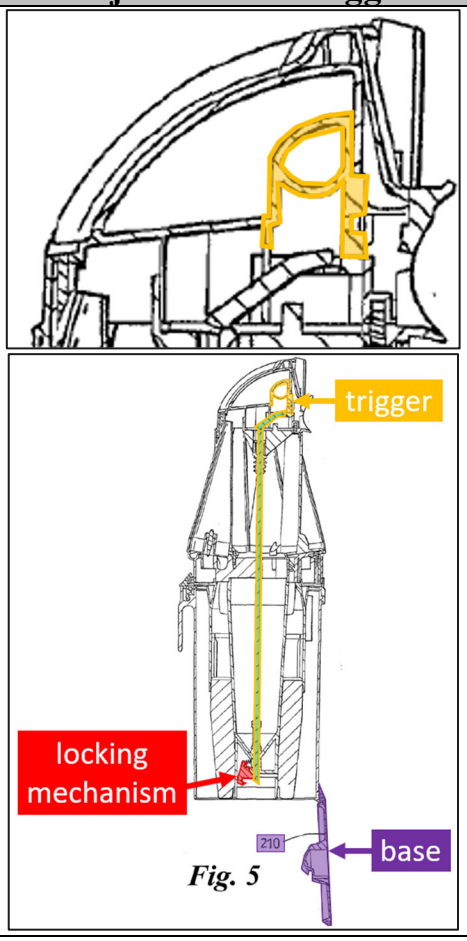
Vuijk – Closed Position	Vuijk – Open Position
	

Fig. 5

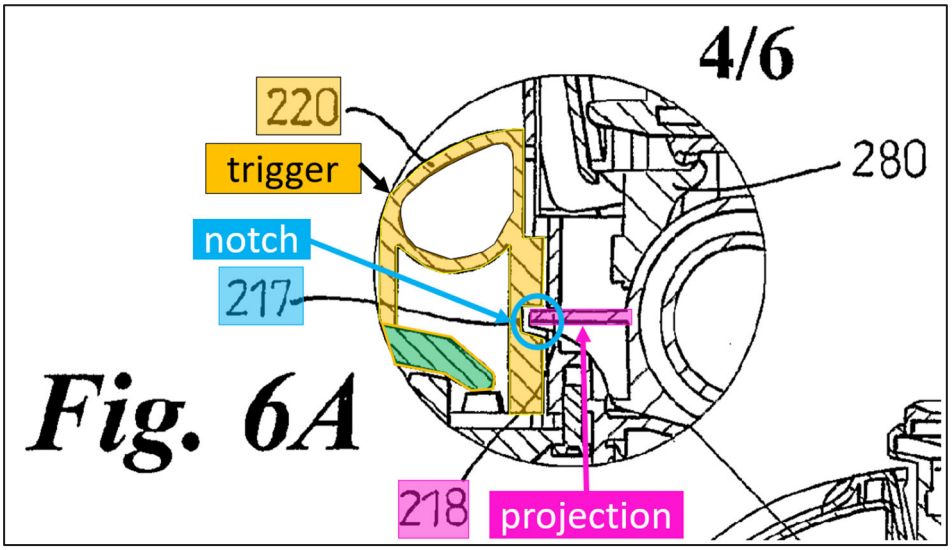
Ex1008, 2:22-23, 7:22-24, Figs. 1, 3, 5; Ex1002 ¶282. "The [**base 210**] **locking mechanism** is controlled by a manually operable **trigger 220**," which, when "pulled" up by the user, "causes the **base 210** to swing open and dirt, dust and debris which has been collected in the chamber 205 falls out of the unit 20 into the bin":

Vuijk – Unpulled Trigger	Vuijk – Pulled Trigger
	

Ex1008, 8:6-7, 9:28-31, Figs. 3, 5; Ex1002 ¶283.

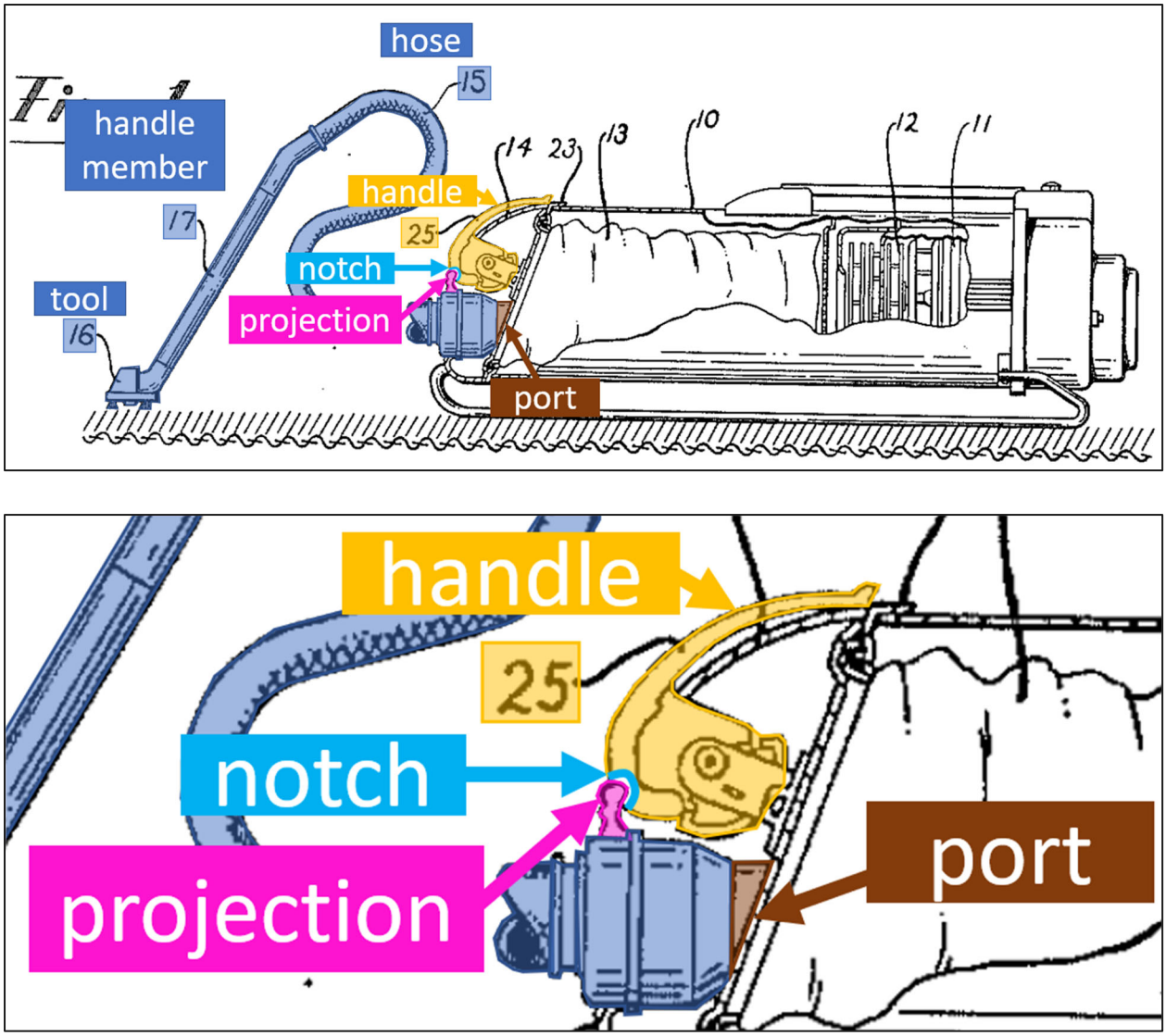
Vuijk's cleaner includes a "feature … which inhibits movement of the trigger release mechanism," thereby inhibiting **base 210** from opening. Ex1008, 5:4-5. This feature prevents a user from "accidentally releas[ing] the closure member"

("base 210") "when the cleaner is in use," which "avoids the mess which would result if the cleaner were operated with the closure member partially open." *Id.*, 3:6-13, 5:4-5, 10:7-10. To achieve this, Vuijk teaches "a **projection 218** which fits inside a **notch 217** on the **trigger 220**," which "inhibit[s]" "the **trigger 220** … from moving in the vertical direction which is necessary for the closure member [(base)] 210 to be released":



Ex1008, 10:6-12, Fig. 6A; Ex1002 ¶284.

A POSA would have been motivated to combine the teachings of Brown and Vuijk by incorporating a notch in Brown's **handle 25** that is engaged by a **projection** (Brown's **projection** or Vuijk's "**projection 218**") when an **accessory** (e.g., Brown's "**hose 15**") is connected to Brown's "**port**" to prevent accidental opening of Brown's openable door:



Ex1007, Fig. 1; *see also* Ex1008, 10:6-12, Fig. 6A; Ex1002 ¶285.

First, Brown and Vuijk are analogous art. Ex1002 ¶¶286-87. As shown above, like Brown, which teaches a **projection** that contacts and inhibits Brown's "**handle 25**" from moving in a way that is necessary to open Brown's openable door ("**removable front cover 14**"), *see* Ex1007, Fig. 1, Vuijk teaches the use of a "**projection 218**" that contacts and inhibits Vuijk's "**trigger 220**" from moving in a way that is necessary to open Vujk's openable door ("**base 210**"), Ex1008, 10:6-12.

Second, this combination would have involved a simple substitution of one known element (a handle with a notch) for another (a handle without a notch) to obtain predictable results (a projecting engaging with a notch to prevent movement of the handle). Ex1002 ¶¶288.

Third, this combination would have involved applying known techniques (adding a notch) to a known device (a handle) to yield predictable results (preventing handle movement when the projection engages the notch). Ex1002 ¶289.

Fourth, it would have at least been obvious to try this combination as there are a finite number of known ways to ensure that a projection inhibits movement of a handle, including by using a notch that is engaged by the projection. Ex1002 ¶290.

A POSA would have had a reasonable expectation of success making this combination for the reasons stated above, because the teachings of Vuijk and Brown are so similar, as noted above, and because the modification would have involved the simple addition of a notch in Brown's handle and the placement of Brown's projection on its accessory rather than its dirty air inlet, which a POSA would understand to be routine modifications. Ex1002 ¶291.

When the teachings of Vuijk and Brown are combined as described, they render obvious all Challenged Claims for the reasons described herein and in Ground 2. *See* Ground 2; Ex1002 ¶292.

IX. DISCRETIONARY FACTORS FAVOR INSTITUTION

A. §314(a)

Fintiv should not be followed because it exceeds the Director's authority, is arbitrary and capricious, was adopted without notice-and-comment rulemaking, violates the APA and AIA, and because "the PTAB will not rely on the *Fintiv* factors to discretionarily deny institution in view of parallel district court litigation where a petition presents compelling evidence of unpatentability," and this petition presents such compelling evidence. USPTO Interim Procedure For Discretionary Denials In AIA Post-Grant Proceedings With Parallel District Court Litigation, June 21, 2022, 42-5 (the "Guidance").

Nevertheless, *Fintiv* favors institution because each factor favors or is neutral for institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020).

Factor 1 is neutral: there is no evidence that the court will or will not grant a stay if IPR is instituted, and because no such stay motion has yet been filed, this factor is neutral. *See, e.g., TSMC Ltd. v. Alidouble, Inc., IPR2023-00372*, Paper 7 at 10 (PTAB July 13, 2023).

Factor 2 favor institution: while the scheduled Litigation trial date is July 21, 2025—approximately 16 months away—any comparison of a projected FWD date against the scheduled trial date is speculative. *See Dish Network v. Broadband iTV*,

IPR2020-01280, Paper 17 at 16 (PTAB Feb. 4, 2021) ("We cannot ignore the fact that the currently scheduled trial date is more than nine months away and much can change during this time"); Guidance at 8 ("Stakeholders correctly noted that scheduled trial dates are unreliable and often change[,]" and a "scheduled trial date … is not by itself a good indicator of [when] the district court trial will occur."). Instead, "when considering the proximity of the district court's trial date to the date when the PTAB final written decision will be due, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides." *Id.* at 3. The median time to trial in the District of Massachusetts is 34.6 months according to Federal Court Management Statistics (December 31, 2023). Ex1012. The district court litigation was filed on August 15, 2023, when the '477Patent was added to an Amended Complaint in Case No. 23-cv-11277, and which indicates an expected trial date of approximately July 1, 2026, approximately 10 months after a FWD. Because the expected trial date is after the FWD deadline, this factor weighs in favor of institution. *Samsung Electronics Co., Ltd. et al v. Staton Techiya, LLC*, IPR2022-00302, Paper 13 at 10-12.

Factor 3 favors institution. "If, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution … ." *Apple Inc., v. Fintiv, Inc.*, IPR2020-00019, Paper No. 11 at 10 (PTAB Mar. 20, 2020)

(precedential). No such substantive orders have issued with respect to the '477Patent, and none are expected prior to institution. A *Markman* hearing is scheduled for July 16, 2024, and a *Markman* order is not expected until several months after the hearing. *E.g.*, *iRobot Corp. v. SharkNinja Operating LLC et al.*, 19-cv-12125 (D. Mass.) (holding a *Markman* hearing on 8/6/2020 and issuing a *Markman* order on 1/14/21). Further, the parties' investments in co-pending litigation have been low and will remain low at the time of institution. In the co-pending litigation, PO added the '477Patent to an Amended Complaint on August 15, 2023 in Case No. 23-cv-11277, which the Court severed on October 13, 2023 as Case No. 23-cv-12372. On October 10, 2023, Dyson filed a motion to dismiss, which remains pending, and Dyson has not yet filed an Answer to the Complaint. Litigation, Dkt. 76. Fact discovery began on 10/30/2023, no depositions have yet been taken. Litigation, Dkts. 103–04. PO served its infringement contentions on December 15, 2023, and Petitioners filed this petition within four months of those contentions. Ex1014.

Factor 4 favors institution because there is little overlap between the two proceedings. This Petition challenges 10 claims not at-issue in the Litigation, *see* Ex1015, 2; and Petitioners stipulate that, unless the Board denies or later vacates institution of this Petition, Petitioners will not seek resolution of invalidity in the copending litigation based on the specific grounds asserted in this Petition. Ex1013.

Factor 5 favors institution because although Petitioners and PO are also parties to the parallel litigations, the expected timing of the trial date favors institution. *Fusion Orthopedics, LLC v. Extremity Medical, LLC*, IPR2023-00894 Paper 15, at 32 (PTAB Nov. 17, 2023).

Factor 6 favors institution because, as shown in Section VIII, this Petition presents a compelling case of invalidity, based entirely on arguments that were not of record during prosecution.

The *General Plastics* factors favor institution because this is the only petition against the ’477Patent. *General Plastics Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 9-10 (PTAB Sept. 6, 2017).

B. §325(d)

The §325(d) factors favor institution. The majority of the relied-upon references (Howes, Brown, and Vuijk) were not previously before the Office, nor are they cumulative. Although Dimbylow was cited by the Examiner against the challenged claims, Petitioners are not rehashing arguments previously made before the Patent Office, so the first part of *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7–8 (PTAB Feb. 13, 2020) (precedential) is not satisfied. *See SharkNinja, Inc. v. Dyson Technology Limited*, IPR2023-01322, Paper 7 at 12–14 (PTAB Feb. 27, 2024) (finding *Advanced Bionics* step one not satisfied where petition relied on at least one reference that was

not before the Examiner, and while the petition relied on one reference that was disclosed and another reference that was "similar to" a disclosed reference, the Patent Owner could not show that the "'same arguments' were previously considered by and resolved by the Office" because the Examiner "'chose not to combine'" those references "to form an obviousness rejection"). As described in Section IV.B, Petitioners ***agree*** with the Examiner agree that Dimbylow teaches Limitations [1pre]/[14pre], [1a]/[14a], [1b]/[14b], and [1c]/[14c], but does not teach "a door release actuator" as required by Limitations [1d]/[14d]. *See* Section IV.B. What the Examiner overlooked, however, is prior art that was not of record during prosecution, such as Howes, that supplies these missing limitations. *See* Section VIII.A.

The PTAB encountered this scenario before in *Reflex USA LLC v. Longyear TM, Inc. et al.*, IPR2023-00642, Paper 11 (P.T.A.B. Sept. 26, 2023). In *Reflex*, after the Examiner rejected an independent claim as obvious over the "Beach-127" reference, the applicant amended the claim to include an additional limitation, which overcame the objection. *Id*. at 15. In a subsequent IPR petition challenging that patent claim, the petitioners relied on "Beach-127" in combination with a reference that was not of record during prosecution and that taught the additional limitation (the "Wiese" reference). *Id*. at 16. Instituting IPR, the Board rejected the patent owner's argument that §325(d) denial was warranted, reasoning that "although

Beach-127 was considered by the Examiner, the combination of Beach-127 and Wiese was not," and "for the grounds that rely on the combination of Beach-127 and Wiese, the Petition relies on Beach-127 essentially to teach the same limitations that the Examiner previously found Beach-127 to teach or suggest." *Id*.

Like *Reflex*, the '477Patent Examiner found that Dimbylow taught the limitations of the originally filed claim 1 (Limitations [1pre]/[14pre], [1a]/[14a], [1b]/[14b], [1c]/[14c]), but did not teach the additional locking limitations of the amended claims (Limitations [1d]/[14d]). *See* Section IV.B. However, Howes—which was not of record during prosecution—supplies these missing limitations. "Thus, although [Dimbylow] was considered by the Examiner, the combination of [Dimbylow] and [Howes] was not," and, as described above, the combination renders obvious each of the challenged claims. *Reflex*, Paper 11 at 16; *see* Section VIII.A. Further, Petitioners agree with the Examiner's finding that Dimbylow does not teach the locking limitations. As shown above, "for the grounds that rely on the combination of [Dimbylow] and [Howes], the Petition relies on [Dimbylow] essentially to teach the same limitations that the Examiner previously found [Dimbylow] to teach or suggest." *Reflex*, Paper 11 at 16, *see* Section VIII.A. Thus, like *Reflex*, the Board should not deny institution under §325(d).

Moreover, because Petitioners "cannot be expected to anticipate every argument that may be raised by a patent owner" regarding §325(d), if PO raises such

a challenge, Petitioners request the opportunity to respond, including to address why such a challenge was not reasonably foreseeable; why the references that were not disclosed are non-cumulative; and/or why the Examiner misapprehended and/or overlooked the art at issue. *Google LLC v. Valtrus Innovations Ltd.*, IPR2022-01197, Paper 12 at 5 (PTAB Mar. 29, 2023) (vacating denial of institution based on §325(d)).

X. SECONDARY CONSIDERATIONS

Petitioners are unaware of any secondary considerations of non-obviousness.

XI. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

A. Real Parties-in-Interest

Petitioners identify themselves as the real parties-in-interest.

B. Related Matters

To the best of Petitioners' knowledge, apart from the above-mentioned litigation, *SharkNinja Operating LLC v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.) (the "Litigation"), the '477Patent has not been involved in any litigation, *inter partes* or post-grant review prior to this proceeding.

C. Lead and Backup Counsel, Service, and Power of Attorney

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Petitioners concurrently submit a Power of Attorney, 37 C.F.R. § 42.10(b), and consent to electronic service at DysonIPR@kirkland.com.

XII. PAYMENT OF FEES UNDER 37 C.F.R. §42.103

Petitioners concurrently electronically submit the required fees for this Petition. The Board is authorized to charge Deposit Account No. 506092 for any fee deficiency.

Date: April 3, 2024

Respectfully submitted,

/s/ Christian Huehns

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CERTIFICATE OF COMPLIANCE

This Petition complies with the type-volume limitations as mandated in 37 C.F.R. § 42.24, totaling 13,645 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/s/ Christian Huehns

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that a copy of the foregoing document with the accompanying Exhibits listed in Petitioners' Exhibit List was caused to be served by Federal Express, costs prepaid, to Patent Owner at the following address of record:

1059 – Bereskin & Parr LLP / S.E.N.C.R.L., srl.
40 King Street West
40th Floor
Toronto, ON
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A copy was also served via electronic mail and FTP on the attorneys of record in the following related matters:

SharkNinja Operating LLC v. Dyson, Inc., No. 1:23-cv-12372 (D. Mass.)

/s/ Sheryl A. Brongiel
Sheryl A. Brongiel