



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/888,573	11/02/2015	Byungsook HAN	16681-000009-US-NP	7732
28997	7590	10/01/2020	EXAMINER	
Harness Dickey (St. Louis) 7700 Bonhomme, Suite 400 St. Louis, MO 63105			JELLETT, MATTHEW WILLIAM	
			ART UNIT	PAPER NUMBER
			3753	
			NOTIFICATION DATE	DELIVERY MODE
			10/01/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

bkamer@hdp.com
stldocket@hdp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BYUNGSOOK HAN

Appeal 2020-001135
Application 14/888,573
Technology Center 3700

Before JENNIFER D. BAHR, CHARLES N. GREENHUT, and
MICHAEL J. FITZPATRICK, *Administrative Patent Judges*.

FITZPATRICK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant, Byungsook Han¹, appeals under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–6, 8, 9, and 11–14.² We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ “Appellant” refers to the applicant as defined in 37 C.F.R. § 1.42. Appellant identifies applicant/Appellant as the sole real party in interest. Appeal Br. 3.

² Page 1 of the Final Action erroneously omits claim 6 as a pending or rejected claim. Final Act. 1. In fact, claim 6 is pending and rejected. *See* Appeal Br. 17 (listing claim 6 as pending and appealed); Final Act. 12–13 (rejecting claim 6).

STATEMENT OF THE CASE

The Specification

The Specification “relates to an overflow chamber for emission of rainwater and soil [to] reduce sewage treatment cost by preventing rainwater and soil from flowing into a sewage treatment plant.” Spec. ¶1. Figure 3 is reproduced below.

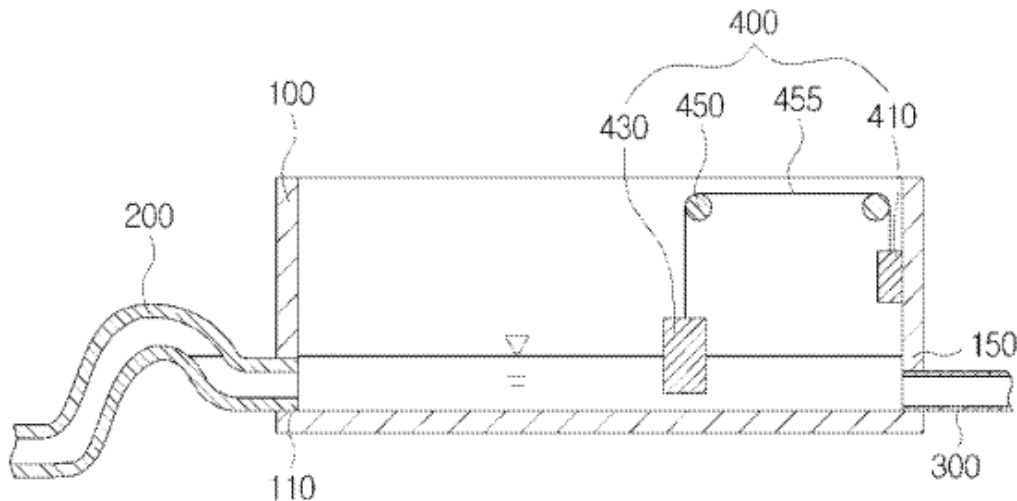


Figure 3, reproduced above, “schematically illustrat[es] an overflow chamber that can discharge rainwater and soil according to an embodiment of the present invention.” *Id.* ¶31. The chamber includes receiving unit 100 for receiving sewage, rainwater, and/or soil, discharge port 110 for discharging to a river during peak flow periods, and interceptor port 150 for discharging to a sewerage treatment plan during normal flow periods. *Id.* ¶¶40, 45, 49, and 54.

A normal flow period is depicted in Figure 3. Thus, the illustrated level of sewage, rainwater, and/or soil is insufficient to cause discharging through first discharge pipe 200, which bends convexly upward and then convexly downward as it extends from receiving unit 100. *Id.* ¶¶ 13, 50–53. The level is also insufficient to cause floater 430 to rise and,

correspondingly, cover plate 410 to lower and close the interceptor port 150.
Id. ¶¶ 55, 58–68.

Figure 4 is reproduced below.

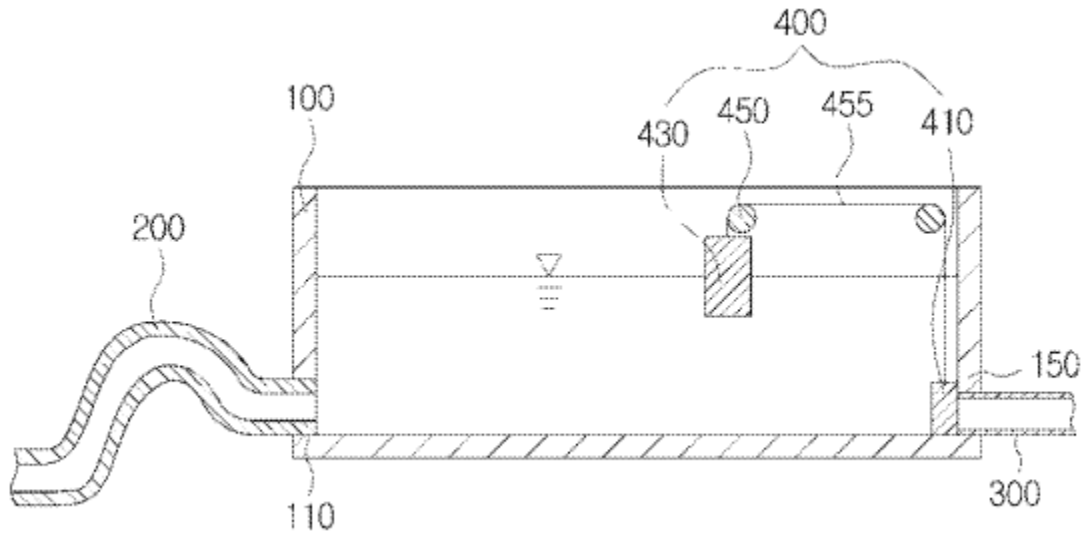


Figure 4, reproduced above, shows “operation of the overflow chamber” (i.e., during a peak flow event). *Id.* ¶57. Here, the illustrated level of sewage, rainwater, and/or soil is high enough to have lifted floater 430 and, correspondingly, lowered cover plate 410 to close interceptor port 150. *Id.* ¶67. It is also high enough to cause discharge through the first discharge pipe 200. *Id.* ¶53.

The Claims

Claims 1–6, 8, 9, and 11–14 are rejected. *See supra* n.2. Claims 7 and 10 are cancelled. Appeal Br. 17–18; Final Act. 2. No other claims are pending. Appeal Br. 16–19; Final Act. 2. Claims 1 and 13 are independent. Appeal Br. 16, 18–19. Claim 1 is illustrative and reproduced below.

1. An overflow chamber that can discharge rainwater and soil, comprising:

a receiving unit having a receiving space;

an interceptor port formed at a side of the receiving unit and selectively opening/closing in accordance with the amount of the rainwater or soil received in the receiving unit;

a discharge port formed at another side of the receiving unit;

a first discharge pipe communicating with the discharge port, wherein said discharge pipe first convexly bends upward relative to the level of and proximal to the discharge port at least one time and then convexly bends downwards relative to an apex of the upwards bend; and

an opening/closing unit comprising:

a cover plate covering and selectively opening or closing the interceptor port; and

a floater being floated on the rainwater or soil by buoyancy, vertically moving, and connected with the cover plate such that the cover plate moves vertically along a plane parallel with a plane of the side containing the interceptor port,

wherein when the floater is moved up in the receiving unit by buoyancy, the cover plate moves vertically to close the interceptor port, and when the floater is moved down in the receiving unit, the cover plate moves vertically to open the interceptor port.

Appeal Br. 16.

The Examiner's Rejection

The Examiner rejected all pending claims, namely claims 1–6, 8, 9, and 11–14, under 35 U.S.C. § 103, as unpatentable over Brown,³ Ward,⁴ Dempsey.⁵

³ US 2,150,359, issued Mar. 14, 1939 (“Brown”).

⁴ US 4,318,421, issued Mar. 9, 1982 (“Ward”).

DISCUSSION

Brown discloses an “AUTOMATIC SEWER REGULATOR.” Brown, Title. The Examiner found that Brown teaches much of the subject matter of claim 1. Final Act. 4–6 (citing Brown Figs. 1–2, 2:1–10). However, the Examiner concedes that it does not teach “wherein said discharge pipe first convexly bends upward relative to the level of and proximal to the discharge port at least one time and then convexly bends downwards relative to an apex of the upwards bend,” as recited in claim 1. *Id.* at 6–7.⁶

For that limitation, the Examiner turns to Ward, which discloses “FLOAT CONTROLLED SYPHON VALVE FOR SWIMMING POOL COVER.” Ward, title. The Examiner finds that Ward teaches a discharge pump meeting the bending requirements of claim 1. Final Act. 7 (citing Ward Fig.1 (ref. 14)). The Examiner determines:

It would have been obvious to one of ordinary skill in the art at the time of filing of the invention to utilize in lieu of merely a weir as taught in Brown to maintain the fluid level for entering the float chamber, to extend the downstream horizontal outlet emergency pipe of Brown up and over the weir by connecting the inlet pipe as taught in the Ward siphon to the outlet line of Brown, with the Ward siphon having an upwards concave bend and downwards concave bend at the apex thereof for the line of Brown so that after the storm water has filled the intermediate reserve space of Brown (as taught in Col 2 lns 35-50 of Brown) and closed the sewage treatment line, automatic evacuation of

⁵ US 3,956,137, issued May 11, 1976 (“Dempsey”).

⁶ The Examiner concedes that Brown also does not teach “the cover plate moves vertically along a plane parallel with a plane of the side containing the interceptor port,” as recited in claim 1. Final Act. 6–7. However, our Decision does not turn on the Examiner’s findings with respect to that limitation.

the storm water in the chamber may be accomplished by initiating a siphon over the embankment/weir [sic] of Brown as taught in Ward, where the fluid may be drawn/siphoned quickly downstream via the lower elevation at the downstream location of Brown as taught in Ward, thus taking advantage of increased head pressure between the top of the weir of Brown and the base of the weir and the downstream outlet of the pipe of C, as is common in the art and as taught in Ward, all for the purpose of lowering a body of water level as taught in Ward

Id. at 7–8.

Appellant argues, among other things, that “Ward is directed to a float controlled system to remove standing water weighing down a pool cover” and that merely because “the pipe of Ward is bent in a manner similar to that recited in Claims 1 or 13 does not necessarily mean it would be obvious to incorporate this feature into the sewer regulator of Brown.” Appeal Br. 12.

Appellant elaborates as follows:

The issue is not whether the siphon principle was known but whether it would have been obvious to incorporate a discharge pipe shaped to utilize the siphon principle. Ward only indicates that pipes utilizing the siphon principle were known but provides no teaching to use said pipe shape in sewer regulators. Moreover, the sewer regulator of Brown is incorporated within a sewer systems (Brown, c. 1, 1. 1-3) and neither the art nor the Examiner provide any guidance regarding how the convexly bent pipe of Ward can be incorporated into the sewer regulator of Brown. In the absence of any such teaching, the Examiner's justifications are the very conclusory statements specifically warned against in *Kahn*.

Id. at 13–14.

Appellant’s arguments are persuasive of Examiner error. Indeed, we cannot discern how and where precisely the Examiner is proposing to incorporate Ward’s bent discharge pipe into Brown’s sewer regulator.

The Examiner proposes “to extend the downstream horizontal outlet emergency pipe of Brown up and over the weir by connecting the inlet pipe as taught in the Ward siphon to the outlet line of Brown.” Final Act. 7. In making this proposal, the Examiner does not identify the purported parts of Ward (i.e., “downstream horizontal outlet emergency pipe,” “weir,” and “outlet line”) that he references. *Id.* Nor does the Examiner identify such parts in his findings regarding what Ward teaches. *Id.* at 4–6. Similarly, there is no antecedent basis in the Final Action for the Examiner’s reference to “the pipe of C.” See Final Act. 8 (“thus taking advantage of increased head pressure between the top of the weir of Brown and the base of the weir and the downstream outlet of the pipe of C”).

Despite our review of Brown, we cannot discern how and where precisely the Examiner is proposing to incorporate Ward’s bent discharge pipe into Brown’s sewer regulator. For example, Brown does not refer to any “downstream horizontal outlet emergency pipe.” It does illustrate a horizontal outlet pipe (20) but describes it as being used for normal use. Brown, Fig. 1 (ref. 20), 2:10–12 (“A pipe 20 is connected to the chamber 11 and forms an outlet for conducting sanitary or dry weather flow to another part of the sewer.”), 2:17–19 (“During normal or dry weather flow there is a substantially continuous flow into the pipe 20.”). As another example, Brown refers to two weirs and labels them with reference numerals. The Examiner has not adequately identified the parts of Brown to which he refers in his proposed modification, for example, by employing Brown’s reference numerals.

For the foregoing reasons, we reverse the rejection of claim 1, as well as that of claims 2–6, 8, 9, 11, and 12, which ultimately depend therefrom.

Similar to claim 1, independent claim 13 recites “a first discharge pipe communicating with the discharge port, wherein said discharge pipe first convexly bends upward relative to the level of and proximal to the first discharge pipe at least one time and then convexly bends downwards relative to an apex of the upwards bend.” Appeal Br. 18. The Examiner rejected claim 13 based on essentially the same findings and rationale as claim 1. *See* Final Act. 8–11. Thus, we likewise reverse the rejection of claim 13, as well as that of claim 14, which depends therefrom.

SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–6, 8, 9, 11–14	103	Brown, Ward, Dempsey		1–6, 8, 9, 11–14

REVERSED