

tube to the water by forcing the flue gases against the walls of the flue tubes while also retaining the flue gases in the flue for a longer period of time. Generally, increasing the flue restriction will increase the heater efficiency. But a more restrictive baffle will also increase the pressure drop through the flue tube. And if the pressure drop through the flue tube is too high, the flue gases will not exhaust properly. So the efficiency of an atmospheric heater is limited by the allowable pressure drop through the flue tubes. By using a powered burner to increase the pressure of the flue gases exiting the combustion chamber, the heater can be designed with a more restrictive baffle for higher pressure drop, improved efficiency, and operate with higher BTU limits.

3. The invention recited in claim 1 of the '897 patent permits a water heater to have a power burner on the input end and an atmospheric vent on the output end. The invention therefore enables the water heater to operate at high energy input levels while avoiding the complex and costly venting configurations normally required with a power burner. As explained in the '897 patent, "a water heater according to the present invention can replace an existing atmospheric water heater without the need to modify the exhaust structure. Because of the relatively high capacity-to-size ratio of a water heater according to the present invention, the present water heater should be able to retro-fit into the space occupied by most existing gas water heaters without reducing, and in most cases actually increasing, the hot water capacity for the user." '897 *patent*, column 5, line 25 - column 6, line 5.

4. Defendant Bradford White competes with AOS in the same markets and has developed and is marketing water heaters under the product category "Commander Series™ Atmospheric Vent Models" which specifically includes Model No. UCG100H1993N among others (the "Commander water heaters"). A specification sheet available on Bradford White's

website¹ provides that the Commander water heaters include, among other features, the following: (a) “Premix Power Burner—A self compensating negative pressure system automatically regulates fuel flow when a change in combustion air is detected. This provides for optimum combustion and efficiency. Automatically adjusts for altitudes up to 10,000 ft.”; and (b) “Integrated Exhaust System—New configuration and vent connector height allow for easy replacement of existing atmospheric vent water heaters.”

5. The Commander water heaters incorporate AOS’s innovative and patented technology. The Commander water heaters directly infringe AOS’s ’897 patent or induce infringement by their users.

6. Bradford White’s unauthorized infringing activities are interfering with AOS’s customer relationships and causing AOS to incur monetary damages and suffer irreparable harm. AOS brings this action seeking relief for Bradford White’s ongoing patent infringement.

The Parties

7. A. O. Smith Corporation is a corporation duly organized and existing under the laws of the State of Delaware having its principal place of business at 11270 West Park Place, Suite 170, Milwaukee, Wisconsin.

8. AOS Holding Company is a corporation duly organized and existing under the laws of the State of Delaware having its principal place of business at Wilmington Delaware.

9. AOS Holding Company is a wholly owned subsidiary of A. O. Smith Corporation.

¹ https://s3.amazonaws.com/bradfordwhitecorp/wp-content/uploads/commercial_gas_ultra_low_nox_commander_series_atmospheric_vent_ucg_specsheet_741.pdf A true and correct copy of the Bradford White specification sheet (“the BW Spec Sheet”) is attached to this Amended Complaint as Exhibit B.

10. On information and belief, Bradford White is a corporation duly organized and existing under the laws of the State of Delaware. On information and belief, Bradford White has its principal place of business at 725 Talamore Drive, Ambler, Pennsylvania.

Jurisdiction and Venue

11. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has exclusive subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §§ 1331 and 1338(a).

12. This Court has personal jurisdiction over Bradford White because, on information and belief, Bradford White is a corporation duly organized and existing under the laws of the State of Delaware. Bradford White also has committed acts within this state that give rise to this suit, on information and belief, including importing, making, using, offering to sell, or selling infringing products such as those identified in this Complaint. At a minimum, Bradford White places products, including infringing products such as those identified in this Complaint, into the stream of commerce knowing and intending that such products will be used, sold, or offered for sale within this district. Exercising personal jurisdiction over Bradford White is appropriate and reasonable under the circumstances.

13. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b) because, on information and belief, Bradford White is a corporation duly organized and existing under the laws of the State of Delaware, and on information and belief, Bradford White, conducts regular and substantial business in this judicial district, and has committed acts within this judicial district that give rise to this suit, including importing, making, using, offering to sell, or selling infringing products such as those identified in this Complaint.

Background

14. The '897 patent, entitled "GAS WATER HEATER," was duly and legally issued by the United States Patent and Trademark Office on February 19, 2013 to inventors Herbert Edward Smith and Gordon Stretch. The '897 patent is valid and enforceable.

15. The owner of the '897 patent by assignment is AOS Holding Company. A. O. Smith Corporation is the only licensee of the '897 patent, and as such A. O. Smith Corporation is the only entity other than AOS Holding Company permitted to practice and/or profit from the invention embodied in the '897 patent.

16. AOS Holding Company is the sole owner of the '897 patent. As the owner of the '897 patent, AOS Holding Company is authorized and has standing to bring legal action to enforce all rights arising from the '897 patent.

17. Bradford White competes with AOS, offering to sell and selling within the United States the Commander water heaters, specifically including but not limited to Model No. UCG100H1993N.

18. The Commander water heaters, specifically including Model No. UCG100H1993N, embody each and every limitation of claim 1 of the '897 patent.

19. Bradford White does not have authority to make, use, offer to sell, or sell within the United States, or to import into the United States, the technology of the '897 patent.

20. In September 2017, AOS's Senior Vice President – Chief Technology Officer, Bob Heideman, sent a letter to Bradford White's Vice President of Engineering, Bruce Hill, which explained that AOS learned of Bradford White's U.S. Patent No. 9,429,337 "(the '337 patent"), issued on August 30, 2016, which describes a water heater having a positive-pressure burner in combination with an atmospheric venting arrangement. Dr. Heideman noted that the

combination described in the '337 patent is covered by the previously issued '897 patent. Dr. Heideman further expressed AOS's belief that the '337 patent describes the Commander water heaters and asked whether Bradford White was aware of the '897 patent, and if it had some reason to believe that the Commander water heaters avoid infringement of AOS's '897 patent.

21. On October 6, 2017, Mr. Hill requested more time and promised a response from Bradford White by the end of October.

22. On November 7, 2017, A. O. Smith received a letter from Bradford White's outside counsel, stating generally that Bradford White did not see any reason to conclude that the Commander water heaters infringe the '897 patent. In the same letter, counsel for Bradford White requested detailed claim charts and test results to show how the claim limitations are met by the Commander water heaters.

23. On November 20, 2017, AOS provided Bradford White through outside counsel a claim chart demonstrating how the water heater described in the '337 patent (Bradford White's patent) would infringe the '897 patent (AOS's patent). AOS again explained that the inquiry was based on AOS's understanding that the Commander water heaters are constructed and function substantially as described in Bradford White's '337 patent, and asked whether the Commander water heaters deviate in any material way from the disclosure of the '337 patent.

24. On December 13, 2017, having still received no substantive response from Bradford White, AOS renewed its request for a response through outside counsel.

25. On January 12, 2018, Bradford White sent a letter to AOS through outside counsel, expressing surprise that the claim chart referred to Bradford White's patent (the '337 patent), rather than the Commander product. Bradford White did not provide a response as to whether the Commander water heater functioned substantially as described in its '337 patent.

26. AOS then obtained Commander product available on the market (Model No. UCG100H1993N, Serial No. PL40538385) and, following investigation, believes that the Commander water heater is constructed and functions substantially as described in the '337 patent, thereby infringing on AOS's '897 patent.

27. Bradford White has refused to provide a substantive response to AOS's reasonable concerns that the Commander water heaters infringe claim 1 of AOS's '897 patent.

28. Bradford White has not identified any limitation of claim 1 of the '897 patent that is not performed by the Commander water heaters.

COUNT I
Infringement of U.S. Patent No. 8,375,897

29. AOS re-alleges and incorporates by reference into this Count I the paragraphs 1-28 of this Complaint as though fully set forth herein.

30. Bradford White has directly infringed the '897 patent at least by importing, making, using, offering to sell or selling within the United States the Commander water heaters that embody the technology of the '897 patent, including the inventions recited in claim 1 of the '897 patent (the "Asserted Claim").

31. The Commander water heaters perform a method of interfacing a natural convection vent construction with a water heater.

32. The BW Spec Sheet, for example, describes a water heater with a premix power burner that produces a self-compensating negative pressure that automatically regulates fuel flow when a change in combustion air is detected to optimize combustion and efficiency and automatically adjust for altitudes up to 10,000 feet.

33. The BW Spec Sheet also describes an integrated exhaust system with a new configuration and vent connector height to allow the Commander water heaters to serve as easy replacement of existing atmospheric vent water heaters.

34. The BW Spec Sheet also states that as an Automatic Storage Heater, all models are complete, self-contained water heating systems.

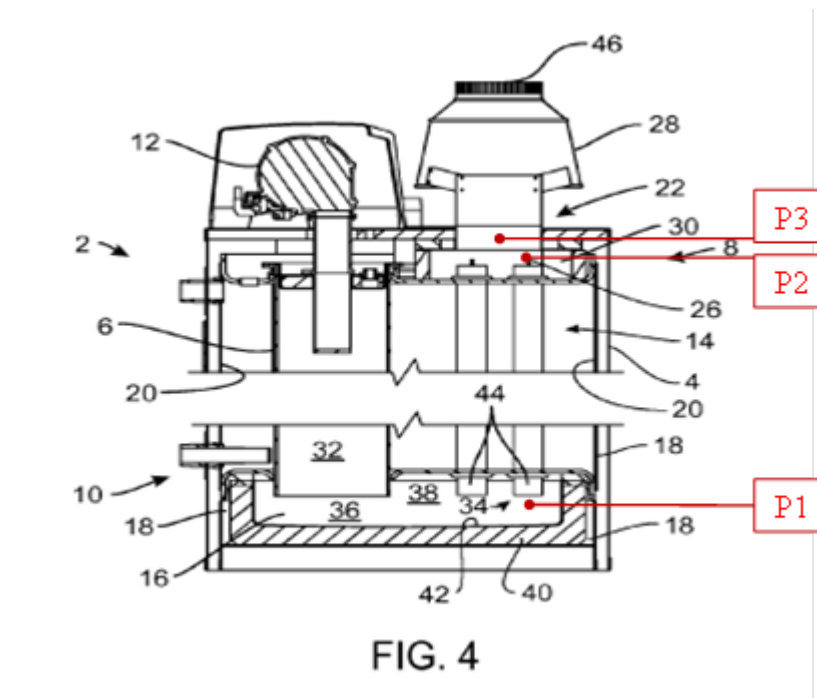
35. Bradford White directly performs all the steps of claim 1 of the '897 patent or directs or controls the performance of all the steps of claim 1 of the '897 patent, and therefore is the entity responsible for infringement of the '897 patent.

36. Alternatively, Bradford White induces infringement of claim 1 of the '897 patent by users of the Commander water heaters in that the Commander water heaters are manufactured and sold by Bradford White as complete, self-contained water heaters that when used as directed, encourage, recommend and/or promote use of the Commander water heaters in a manner that infringes claim 1 of the '897 patent.

37. The Commander water heaters provide a water heater having a burner, a blower, an exhaust plenum and at least one flue.

38. The BW Spec Sheet, the Bradford White Commander Series Ultra Low NOx Commercial Water Heaters Brochure ("the BW Brochure") (a true and correct copy of which is attached to this Amended Complaint as Exhibit C), the Installation/Operation Manual With Troubleshooting Guide (238-50463-00F REV 2/17) ("the Manual") (a true and correct copy of the BW Manual is attached to this Amended Complaint as Exhibit D) and/or Bradford White's website ("the BW Website") confirm that the Commander water heaters provide a water heater having a burner, a blower, an exhaust plenum and at least one flue.

39. The diagram below titled Fig. 4 illustrates the configuration of the Commander water heaters:



40. The diagram titled Fig. 4 illustrates the configuration of the Commander water heaters consistent with the configuration of the Commander water heaters shown in the BW Spec Sheet, the BW Brochure or the BW Manual.

41. The Commander water heaters create products of combustion with the burner.

42. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters create products of combustion with a premix power burner (as illustrated at 12 in Fig. 4) and as set forth in the sequence of operation description and drawings in the BW Brochure.

43. The Commander water heaters force the products of combustion into the flue under positive pressure with the blower.

44. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters have a blower (illustrated at 12 in Fig. 4)

which forces the products of combustion into the flue (illustrated at 34 in Fig. 4) under positive pressure of the blower.

45. Positive pressure is confirmed by measurement in the area of P1 in Fig. 4 where the products of combustion flow into the flues shown at 34 in Fig. 4, and is set forth in the sequence of operation description and drawings in the BW Brochure.

46. The Commander water heaters interpose an exhaust plenum between the flue and the natural convection vent construction.

47. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters interpose an exhaust plenum between the flue (as illustrated at or near 26 in Fig. 4 where the flue ends) and the natural convection vent construction (illustrated at 28 and 46 in Fig. 4) and as set forth in the sequence of operation description and drawings in the BW Brochure.

48. The Commander water heaters drop the pressure of the products of combustion to near atmospheric pressure within the plenum.

49. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters drop the pressure of the products of combustion to near atmospheric pressure within the plenum which is the area between the end of the flue (as illustrated at or near 26 in Fig. 4 where the flue ends) and the natural convection vent construction (illustrated at 28 and 46 in Fig. 4) as set forth in the sequence of operation description and drawings in the BW Brochure.

50. The measurable pressure within the plenum of the Commander water heater confirms that the pressure of the products of combustion drops to near atmospheric pressure within the plenum.

51. The Commander water heaters permit the products of combustion to rise out of the plenum and into the natural convection vent construction substantially entirely under the influence of natural convection.

52. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters permit the products of combustion to rise out of the plenum, which is between the end of the flue and before the products of combustion enter into the natural convection vent construction (illustrated at 28 and 46 in Fig. 4) substantially entirely under the influence of natural convection.

53. The measurable pressure in the area shown as P3 in Fig. 4 confirms that the Commander water heaters permit the products of combustion to rise out of the plenum and into the natural convection vent construction (illustrated at 28 and 46 in Fig. 4) substantially entirely under the influence of natural convection.

54. The Commander water heaters have a natural convection vent construction that includes a draft hood that mixes ambient air with the products of combustion as the products of combustion flow into the draft hood.

55. Specifically, as shown in the BW Spec Sheet, the BW Manual, the BW Brochure and on the BW Website, the Commander water heaters have a natural convection vent construction (illustrated at 28 and 46 in Fig. 4) that includes a draft hood (illustrated at 28 in Fig. 4), where ambient air and the products of combustion mix before flowing into the draft hood, as set forth, for example in the sequence of operation description and drawings in the BW Brochure.

56. AOS notified Bradford White of the granted patent and Bradford White's infringement as early as September of 2017, but Bradford White has failed to cease its infringing activities.

57. Bradford White has refused to provide a substantive response to requests from AOS for an explanation of Bradford White's position as to why the Commander water heaters do not infringe claim 1 of the '897 patent.

58. Bradford White has refused to identify one or more limitations in claim 1 of the '897 patent that are not provided or performed by the Commander water heaters.

59. Bradford White's infringement of the '897 patent is willful and deliberate.

60. As a direct and proximate result of Bradford White's conduct, AOS has suffered and will continue to suffer substantial injury and damage in an amount to be determined at trial, as well as irreparable harm, for which AOS has no adequate remedy at law, unless Bradford White is enjoined from infringing the '897 patent.

61. On information and belief, AOS's acts infringing the '897 patent will continue unless enjoined by the Court.

62. Unless preliminarily and permanently enjoined by this Court, Bradford White's acts of infringement will cause AOS further injury and damage, including immediate and irreparable harm that cannot be adequately compensated by monetary damages.

Prayer for Relief

WHEREFORE, AOS respectfully requests that the Court enter judgment in favor of AOS and against Bradford White, granting the following relief:

a. A judgment in favor of AOS that Bradford White has infringed the '897 patent, either directly or by inducing infringement by users of the Commander water heaters;

b. A preliminary and permanent injunction enjoining Bradford White and its agents, officers, directors, employees, customers and all persons in privity or active concert or participation with them, directly or indirectly, from infringing, inducing others to infringe, or contributing to the infringement of the '897 patent;

c. A judgment and award that Bradford White account for and pay to AOS damages adequate to compensate for Bradford White's infringement of the '897 patent, including at least a reasonable royalty, as well as damages for infringement of the patent after publication and prior to issuance;

d. A judgment and award of any supplemental damages sustained by AOS for any continuing post-verdict infringement of the '897 patent until entry of final judgment with an accounting as needed;

e. An award to AOS of treble damages due to the willful and deliberate nature of Bradford White's infringement of the '897 patent;

f. An order finding that this case is an exceptional case under 35 U.S.C. § 285 and awarding AOS its costs, expenses, and disbursements incurred in this action, including reasonable attorneys' fees, as available by law, to be paid by Bradford White;

g. An award of pre-judgment interest, post-judgment interest, and costs in this action; and

h. An award of any such other relief as this Court deems just and proper.

Jury Demand

AOS demands a trial by jury on all matters and issues properly tried to a jury pursuant to Federal Rules of Civil Procedure 38 and 39, and other applicable federal and state law.

Dated: May 11, 2018

Respectfully submitted,

/s/ John C. Phillips, Jr.

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