

GOODMAN MANUFACTURING )  
COMPANY, L.P. and GOODMAN )  
DISTRIBUTION, INC., )  
 )  
Plaintiffs, )  
 ) Civil Action No. \_\_\_\_\_  
v. )  
 ) (JURY TRIAL DEMANDED)  
CARRIER CORPORATION, )  
 )  
 )  
Defendant. )

Plaintiffs Goodman Manufacturing Company, L.P. and Goodman Distribution, Inc. (hereinafter collectively referred to as “Goodman”) bring this action against Defendant Carrier Corporation (hereinafter referred to as “Carrier”), for declaratory judgment of unenforceability of United States Patent Nos. 7,775,452 and 7,243,004. Goodman hereby avers and complains as follows:

1. Goodman’s complaint arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.* This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

2. Venue is proper in the judicial district as to Defendant Carrier Corporation, inter alia, by virtue of its being subject to personal jurisdiction in this district. See 28 U.S.C. § 1391(c).

3. Carrier maintains offices, has agents, transacts business or is found within this judicial district. Goodman's claims arise in part within this district, and Carrier's unlawful conduct has had harmful effects in this district.

### **PARTIES**

4. Plaintiff Goodman Manufacturing Company, L.P. is a limited partnership organized under the laws of Texas with a principal place of business at 5151 San Felipe Drive, Suite 500, Houston, TX 77056.

5. Plaintiff Goodman Distribution, Inc. is a corporation organized under the laws of Texas with a principal place of business at 5151 San Felipe Drive, Suite 500, Houston, TX 77056.

6. In its Complaint in Case No. 12-930 (SLR), which is currently pending in this District, Defendant Carrier Corporation has alleged that it is a Delaware corporation having its principal place of business at One Carrier Place, Farmington, CT 06032.

### **EXISTENCE OF AN ACTUAL CONTROVERSY**

7. Goodman realleges and incorporates by reference each of Paragraphs 1 through 6 above.

8. There is an actual controversy within the jurisdiction of this Court under 28 U.S.C. §§ 2201 and 2202.

9. On information and belief, Carrier is the owner of U.S. Patent No. 7,775,452, entitled "Serial Communicating HVAC System" ("the '452 patent," attached hereto as Exhibit A) by assignment of the inventors Rajendra K. Shah and Jerry D. Ryan. On information and

belief, Carrier is the owner of U.S. Patent No. 7,243,004, entitled “Self-Configuring Controls for Heating, Ventilating and Air Conditioning Systems” (“the ‘004 patent,” attached hereto as Exhibit B) by assignment of the inventors Rajendra K. Shah and Jerry D. Ryan.

10. Carrier has accused Goodman of infringing the ‘452 and ‘004 patents, *inter alia*, by asserting the ‘452 and ‘004 patents in a lawsuit in this court (Case No. 12-930 (SLR) (hereinafter “the 12-930 action”)) filed on July 19, 2012 alleging that Goodman makes, uses, sells and/or offers to sell, and induces others to make, use, sell and/or offer to sell, HVAC systems that embody or use the inventions claimed in the ‘452 and ‘004 patents. For these reasons, an actual controversy within this Court’s jurisdiction exists under 28 U.S.C. § 2201.

## **COUNT I**

### **(Declaratory Judgment of Unenforceability)**

11. Goodman realleges and incorporates by reference each of Paragraphs 1 through 10 above.

12. On information and belief, the one or more claims asserted by Carrier of the ‘452 patent are unenforceable due to inequitable conduct in the procurement of the ‘452 patent. The basis for this claim is set forth in paragraphs 14-57 below.

13. On information and belief, the one or more claims asserted by Carrier of the ‘004 patent are unenforceable due to inequitable conduct in the procurement of the ‘004 patent. The basis for this claim is set forth in paragraphs 14-57 below.

14. The claims of U.S. Patent Nos. 7,775,452 and 7,243,004, both issued to inventors Rajendra Shah and Jerry Ryan, are unenforceable due to misrepresentations and omissions related to the withholding of highly material prior art during the prosecution of those patents.

**Misrepresentations and Omissions During Prosecution of the '452 Patent**

15. United States Patent No. 7,775,452 issued from a patent application (Serial No. 10/752,626) filed on behalf of inventors Rajendra K. Shah and Jerry D. Ryan on January 7, 2004. In a declaration and oath filed with that application, Shah and Ryan represented that they were the original and first inventors of the subject matter it purported to claim. In that declaration and oath, Shah and Ryan also confirmed that they had reviewed and understood the contents of the specification and claims.

16. In that application, Shah and Ryan presented claims to the following HVAC systems.

1. An HVAC system comprising:

a thermostat incorporating a central control, and operator input switches;  
a data bus communicating control signals from said central control to an indoor HVAC unit, said indoor HVAC unit being operable to provide a heating function to air within an environment, said indoor HVAC unit being provided with a control that directly controls said indoor HVAC unit, and which receives control signals on said data bus from said central control.

12. An HVAC system comprising:

a data bus including four wires communicating signals from a central control to a control for an indoor HVAC unit, said data bus including two control wires carrying a plurality of distinct control signals and two power wires carrying power, said indoor HVAC unit providing a power source for providing power over said two power wires, said central control being a system control for generating and sending controls signals to said indoor HVAC unit control, said indoor HVAC unit being operable to provide heating and a fan function to move air within an environment; and  
an outdoor HVAC unit provided with four wires, with two power wires carrying power signals, and two control wires carrying a plurality of distinct

control signals from said outdoor HVAC unit to said central control, said central control providing control signals to said outdoor HVAC unit control to operate said outdoor HVAC unit.

In their declaration and oath, Shah and Ryan represented that they were the original and first inventors of such HVAC systems.

17. This representation was false. By January 7, 2004, Shah and Ryan knew that the use of a data bus including four wires to communicate control and power between the central control and other elements of an HVAC system was neither unique nor developed by them. Specifically, Shah and Ryan were aware of an HVAC system that their employer, Defendant Carrier Corporation, commercialized in the 1990's under the trade name "Comfort Zone II," in which a data bus including four wires was used to communicate control signals and power between the central control thermostat and other elements of the system such as the equipment controller and the smart sensors.

18. The Infinity system, which Carrier asserts is a commercial embodiment of the patented inventions, has a communication system using a four wire data bus and a Carrier communications protocol named "CCN." Comfort Zone II also had a communication system using a data bus that included four wires and used the Carrier CCN protocol.

19. Prosecuting counsel repeatedly reinforced the inventors' misrepresentation throughout prosecution of the patent application that eventually issued as the '452 patent. On August 1, 2005, Shah and Ryan through their counsel represented to the United States Patent and Trademark Office (U.S. PTO) that "Applicant has developed a unique method of communicating control and power between a central control and various elements in an HVAC system. Utilizing four wires has benefits in minimizing the number of wires needing to be placed within a

building. These four wires would be essentially all that is required in applicant's claimed invention."

20. On August 1, 2005, Shah and Ryan through their counsel represented to the U.S. PTO that "It is not applicant's contention that it has invented an interface unit. However, the inclusion of an interface unit for controlling an associated HVAC unit that does not have a control capable of receiving control signals over a data bus is unique, particularly where taken in context of the control structure required by the independent claims."

21. On January 30, 2008, Shah and Ryan through their counsel represented to the U.S. PTO's Board of Patent Appeals and Interferences that "It is certainly not Appellant's claim that it has invented either a furnace or a fan/heater combination. Rather the invention is to incorporate a control on such a unit and communicate with the central control over the data bus."

22. These representations were false. By January 7, 2004, Shah and Ryan knew that they did not invent the use of an interface unit in an HVAC system that communicates with a central control over a data bus. Specifically, Shah and Ryan were aware that the "Comfort Zone II" HVAC system employed an interface unit, such as the equipment controller, that communicated with a central control over a data bus, which used four wires to communicate control and power between the central control and other elements of the system.

### **Misrepresentations and Omissions During Prosecution of the '004 Patent**

23. United States Patent No. 7,243,004 issued from a patent application (Serial No. 10/752,628) filed on behalf of inventors Rajendra K. Shah and Jerry D. Ryan on January 7, 2004. In a declaration and oath filed with that application, Shah and Ryan represented that they were the original and first inventors of the subject matter it purported to claim. In that declaration and

oath, Shah and Ryan also confirmed that they had reviewed and understood the contents of the specification and claims.

24. In that application, Shah and Ryan presented the following claim to a control for an HVAC system.

7. A control for an HVAC system comprising:

a central control for receiving information from each of a plurality of HVAC units, said central control being operable to receive information about characteristics of the plurality of HVAC units, and to access a memory of control algorithms associated with the particular combination of characteristics of the plurality of HVAC units that report to the control, and said central control being operable to control the plurality of HVAC units.

In their declaration and oath, Shah and Ryan represented that they were the original and first inventors of such an HVAC system.

25. This representation was false. By April 10, 2006, on information and belief, and upon an opportunity for further investigation and discovery, at least Ryan knew that he did not invent a central control that automatically identifies associated units in an HVAC system then selects from a plurality of algorithms for controlling them. Specifically, on information and belief, and upon an opportunity for further investigation and discovery, at least Ryan was aware of at least one HVAC system commercialized by his employer, Carrier, under the trade name “Aquasmart” by 2002, in which a central control utilized “plug and play” technology to automatically identify characteristics (*i.e.*, models) of associated HVAC units in the system for controlling them. For example, as stated in a machine translation of a 2002 Carrier press release relating to the Aquasmart system, “Thanks to the ‘Plug & Play’ is possible the immediate connection of the inlet to the air conditioning system of the building and the heat dissipation from the capacitor,” and “The setting of the addresses and the identification of the terminal units

take place in a fully automatic way.” Also, as stated in an Aquasmart System Manager manual, “The Sm now automatically searches all Tcs connected to the bus and creates its data base.”

26. Prosecuting counsel repeatedly reinforced the inventor’s misrepresentation throughout prosecution of the patent application that eventually issued as the ‘004 patent. On April 10, 2006, Shah and Ryan through their counsel represented to the U.S. PTO that “In the real world, there are numerous available type furnaces, air conditioning systems, ventilators, etc. A control that will control each of these combined units in the past has not been able to quickly associate the particular set of units that have been assembled with it in a field location. In the past, this configuration has been performed manually. With the present invention, that central control will now quickly be informed of the particular set of units the control will be controlling. The control is provided with the plurality of algorithms or strategies, and can quickly select the one best suited for its actual application. In this manner, the present invention improves upon the prior art.”

27. On September 26, 2006, Shah and Ryan through their counsel represented to the U.S. PTO that “claim 1 has been amended to make clear that what is being claimed here includes the concept of particular HVAC units reporting to a central control to identify the particular model that the HVAC unit might be. This is not shown in the prior art to Wagner, nor is it shown elsewhere in the prior art.”

28. These representations were false. As explained above in Paragraph 26, by September 26, 2006, at least Ryan knew that in the prior art Aquasmart system, HVAC units reported to a central control to identify their particular model.



**Carrier's Continued Misrepresentations and Omissions About the Prior Art  
During Reexamination**

29. In 1999, Carrier acquired Inter-City Products ("ICP"), a co-developer and distributor of the Varitech System created and sold during the 1990s.

30. U.S. Patent No. 5,475,986 issued on December 19, 1995 to Bahel, *et al.* ("Bahel"). Bahel was assigned to Copeland Corporation, who co-developed the Varitech system for distribution by ICP. Bahel discloses various aspects of the control system for the Varitech System.

31. On November 1, 2012, U.S. PTO instituted reexamination of the '452 patent and rejected all claims as anticipated by or obvious over Bahel.

32. Carrier responded to these rejections on February 1, 2013, submitting declarations by former Copeland Corporation employee Mickey Hickey and ICP employee Thomas Hughes that make certain statements about the Varitech systems. In particular, Mr. Hughes declared, under penalty of perjury, that ICP "had to recall all Varitech systems and replace them with conventional HVAC systems."

33. This representation is false. By virtue of the declaration submitted by Dr. C. Keith Rice in the reexamination, the attorneys prosecuting the '452 patent reexamination for Carrier are aware that at least Dr. Rice currently has a Varitech system in his home that was not returned or replaced with a conventional HVAC system. Moreover, Carrier continued to fulfill ICP's warranty obligations as to existing Varitech systems by selling spare parts compatible with those systems as late as 2006, which Carrier's attorneys have not disclosed to the U.S. PTO.

34. Purportedly based on Mr. Hughes' declaration, the attorneys prosecuting the reexaminations for Carrier asserted to the U.S. PTO that the Varitech System "failed in the marketplace."

35. This representation is false. Carrier is aware that ICP sold hundreds of Varitech systems in the 1990s, and Carrier continued to fulfill ICP's warranty obligations as to existing Varitech Systems, selling spare parts compatible with the Varitech sold by ICP as late as 2006. Neither the declarants nor Carrier's attorneys have disclosed these facts to the U.S. PTO.

### **The Inventors' Knowledge of Undisclosed Prior Art**

36. At least inventors Rajendra Shah and Jerry Ryan, as well as other Carrier engineers, were aware of Comfort Zone II, and its significance to their alleged inventions of the '452 and '004 patents, at least as early as 2000 as a result of their participation in development projects leading to the alleged inventions.<sup>1</sup>

37. At least Jerry Ryan was aware of Aquasmart and its significance to the alleged inventions as early as 2000 in relation to the development projects leading to the alleged patented invention.<sup>2</sup>

### **Materiality of the Inventors' Misrepresentations and Omissions**

38. The Comfort Zone II HVAC system is prior art to the '452 patent. Not one claim of the '452 patent satisfies the conditions for patentability defined by 35 U.S.C. §§ 102, 103 when measured against the capabilities and functionality of the Comfort Zone II system.

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<sup>1</sup> More specific allegations relating to Shah and Ryan's knowledge of the Comfort Zone II system and its relevance to the '452 patent could be made but for Carrier's designation the relevant deposition testimony as confidential under the protective order governing this case.

<sup>2</sup> More specific allegations relating to Ryan's knowledge of the Aquasmart system and its relevance to the '004 patent could be made but for Carrier's designation the relevant documents as confidential under the protective order governing this case.

39. Shah and Ryan's declaration and oath claiming original inventorship of the subject matter claimed in the '452 patent was false and made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

40. The U.S. PTO relied upon Shah and Ryan's misrepresentations regarding the purported novelty of the HVAC system they falsely claimed to have invented. Specifically, the U.S. PTO Examiner identified as a reason for allowing the '452 patent to issue that the claims in another patent previously cited in a rejection for double patenting "do not teach a control that directly controls the indoor unit, and which receives control signals on the data bus from the central control. As Applicant notes, this feature was found patentable by the Board of Appeals."

41. The Aquasmart HVAC system is prior art to the '004 patent. Not one claim of the '004 patent satisfies the conditions for patentability defined by 35 U.S.C. §§ 102, 103 when measured against the capabilities and functionality of the Aquasmart system.

42. Shah and Ryan's declaration and oath claiming original inventorship of the subject matter claimed in the '004 patent was false and, upon information and belief, and upon an opportunity for further investigation and discovery, was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

43. The U.S. PTO relied upon Shah and Ryan's misrepresentations regarding the purported novelty of the HVAC they falsely claimed to have invented. Specifically, the U.S. PTO Examiner identified as reasons for allowing the '004 patent to issue that "The prior art of record does not disclose a control for an HVAC system comprising: at least one of said plurality of HVAC units being of a type that there are several available models and at least one of the characteristics of said one of the plurality of HVAC units is an identification of the particular

model which has been incorporated into a system, receiving said central control with the particular model being included in said particular set of combination of characteristics of the plurality of the HVAC units, said control selecting one of said plurality of control algorithms associated with the particular combination of characteristics of the plurality of HVAC units that report to the control. The prior art also does not disclose determining an optimal control strategy for said indoor unit and said outdoor unit based upon said reported characteristic information, said central control storing a plurality of optimal control strategies, and selecting a particular one of said optimal control strategies to utilize based upon the particular characteristic information reported from said indoor unit and said outdoor unit. The allowability, at least in part, resides on these facts.”

#### **Intent to Deceive of Inventors Rajendra Shah and Jerry Ryan**

44. Carrier’s inventors improperly obtained the ‘452 patent and the ‘004 patent by failing to disclose the existence of Carrier’s own prior art HVAC systems (*i.e.*, at least the Comfort Zone II and Aquasmart systems), and by failing to disclose publications related to those systems.

45. Shah and Ryan’s misrepresentation that they were the first and original inventors of the HVAC systems as claimed in at least original claims 1 and 10 of the ‘452 patent application was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

46. Upon information and belief, and upon an opportunity for further investigation and discovery, Shah and Ryan’s misrepresentation that they were the first and original inventors of a control for an HVAC system as claimed in at least original claim 1 of the ‘004 patent

application was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

47. Shah and Ryan's misrepresentation through counsel during prosecution of the '452 patent regarding the novelty of using four wires to communicate control and power between the central control and other elements of an HVAC system was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

48. Shah and Ryan's misrepresentations through counsel during prosecution of the '452 patent regarding the novelty of using an interface unit in an HVAC system that communicates with a central control over a data bus were made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

49. The inventors' intent to deceive the PTO regarding Comfort Zone II during prosecution of the '452 patent is further shown by their failure to disclose Comfort Zone II despite the inventors' use of the 4-wire bus and communication system of Comfort Zone II in the development of its patented system, and use of Comfort Zone II field trial models for early field tests of systems allegedly incorporating the patented inventions.

50. In the "Background of the Invention" section of the '452 patent application, the inventors described that "the assignee of the present application developed a thermostat control which communicates multiple control signals over two control wires to a main control panel. However, the main control panel is still hard-wired to the indoor and/or outdoor units." On information and belief, this description refers to the Comfort Zone II system. However, the inventors and their attorneys failed to specify the commercialized Comfort Zone II system, or disclose its four-wire communication of control and power or its data bus, the latter of which the

U.S. PTO found to be the novel aspect of the alleged invention of the ‘452 patent. The inventors’ passing reference to the Comfort Zone II in the “Background” section while failing to disclose the key facts about that system or cite information about that system in an Information Disclosure Statement further evidences their knowledge of that system and intent to deceive the U.S. PTO by hiding the most salient details of the system from the U.S. PTO.

51. Upon information and belief, and upon an opportunity for further investigation and discovery, Shah and Ryan’s misrepresentation during prosecution of the ‘004 patent regarding the novelty of using a central control that automatically identifies associated units in an HVAC system then selects from a plurality of algorithms for controlling them was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

52. Upon information and belief, and upon an opportunity for further investigation and discovery, Shah and Ryan’s misrepresentation during prosecution of the ‘004 patent regarding the novelty of having HVAC units report to a central control to identify their particular model was made with the intent of misleading the U.S. PTO into issuing them a patent on subject matter they did not invent.

53. Inventor Ryan’s intent to deceive the U.S. PTO regarding Aquasmart is further shown by his failure to disclose Aquasmart during the prosecution of the ‘004 patent, even though he was aware of Aquasmart and, upon information and belief, and upon an opportunity for further investigation and discovery, its similarity to the system they designed and ultimately patented.

54. The inventors' intent to deceive the U.S. PTO regarding both the '452 patent and the '004 patent is also shown by their failure to disclose a *single* piece of prior art in an Information Disclosure Statement during the prosecution of either patent, despite Carrier's significant presence in the HVAC industry.

55. This conduct stands in stark contrast to the prosecution of other Carrier patents. For example, U.S. Patent Application No. 10/803,766, filed March 18, 2004 and titled "Refrigerated Compartment with a Controller to Place the Refrigeration System in Sleep Mode," issued as U.S. Patent No. 7,152,415, was prosecuted by Carlson, Gaskey, and Olds, the same law firm that prosecuted the '452 patent and the '004 patent. In that application, Carrier's attorneys disclosed 101 prior art references in a single Information Disclosure Statement submitted with the filing of the application.

56. Inventors Shah and Ryan have committed inequitable conduct before the U.S. PTO by deliberately misrepresenting as novel an HVAC system they knew was embodied in at least the prior art Comfort Zone II and Aquasmart systems, with the intent of deceiving the U.S. PTO into granting them patent rights they did not deserve, misrepresentations that the U.S. PTO relied upon to its detriment and that of the general public.

57. The foregoing misrepresentations, omissions, and conduct constitute breaches of the duty of candor, and collectively evidence a pattern of conduct designed to deceive the U.S. PTO in breach of the duty of candor in obtaining the '452 patent and the '004 patent. This inequitable conduct committed in obtaining the '452 patent and the '004 patent renders them both unenforceable.

### **PRAYER FOR RELIEF**

WHEREFORE, Goodman prays that this Court enter judgment:

- A. That one or more claims of each of the '004 and '452 patents, including at least those claims asserted against Goodman Mfg. & Distribution, are unenforceable;
- B. That Carrier and its agents, servants, employees, affiliates, divisions, branches, subsidiaries, parents and others acting in concert with any of them be preliminarily and permanently enjoined from enforcement of the '452 and '004 patents and be preliminarily and permanently enjoined from filing or maintaining baseless patent infringement suits against Goodman or other competitors;
- C. That Goodman be awarded its reasonable attorneys' fees and costs of suit as allowed by law; and
- D. That the Court grant Goodman such other and further relief as the Court may deem just and proper.

### **JURY DEMAND**

Goodman Mfg. & Distribution hereby demands a trial by jury as to all issues so triable.

OF COUNSEL:

Scott F. Partridge  
BAKER BOTTS L.L.P.  
One Shell Plaza  
910 Louisiana Street  
Houston, Texas 77002  
(713) 229-1569

Dated: December 9, 2013

/s/ Frederick L. Cottrell, III

Frederick L. Cottrell, III (#2555)  
Jason J. Rawnsley (#5379)  
RICHARDS, LAYTON & FINGER, P.A.  
920 North King Street  
One Rodney Square  
Wilmington, DE 19801  
(302) 651-7700  
cottrell@rlf.com  
rawnsley@rlf.com

*Attorneys for Plaintiffs Goodman  
Manufacturing Company, L.P. and Goodman  
Distribution, Inc.*