

**United States Court of Appeals**  
**FOR THE EIGHTH CIRCUIT**

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No. 09-2722

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Thomas Dunn; Thelma Dunn,

Appellants,

v.

Nexgrill Industries, Inc.,

Appellee.

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Appeal from the United States  
District Court for the  
Eastern District of Missouri.

[PUBLISHED]

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Submitted: April 12, 2010

Filed: February 25, 2011

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Before WOLLMAN, HANSEN, and MURPHY, Circuit Judges.

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HANSEN, Circuit Judge.

Following a fire at the residence of Thomas and Thelma Dunn (the Dunns), the Dunns filed a complaint against Nexgrill Industries, Inc. (Nexgrill), the manufacturer of the propane fired gas grill they used on the night of the fire, claiming that the fire was caused by a design defect in the cabinet of the grill which allowed a rubber regulator hose to come in contact with a heated grease tray, then to melt and become breached, thereby allowing propane vapors to escape and become ignited by the grill's burners. As part of their case, the Dunns wanted to establish that the grill was defective by presenting the expert testimony of Randy Bicknese, including evidence

of certain tests he had performed. Nexgrill filed a motion to bar the testimony and opinions of Bicknese (Bicknese evidence), which the district court granted. Nexgrill then filed a motion for summary judgment, which the district court also granted. The Dunns appeal, arguing that the district court abused its discretion in excluding the expert testimony of Bicknese and erred in granting the motion for summary judgment. After a careful review of the record, we affirm the district court's judgment.

## I.

In May 2006, the Dunns purchased a new Jenn-Air gas grill (the grill) that was designed, manufactured, and sold by Nexgrill. The grill produces heat for cooking by the combustion of propane vapors. A portable replaceable cylinder shaped tank located in the bottom of the grill cabinet stores liquid propane under pressure until the propane is delivered to the grill's manifold through a regulator and hose assembly. The propane tank is equipped with a pressure relief valve which allows propane to be released in substantial quantity from the tank when the tank's internal pressure rises to the point where the tank might explode. In normal operation, propane vapors are delivered to the three main burners via control valves located on the front panel. A heat shield is located above the propane tank to protect the tank from the heat emanating during normal cooking from the bottom of the burners and from the grease tray located underneath the burners.

On the evening of August 24, 2006, Mrs. Dunn used the grill to cook dinner for herself, her husband, their daughter, and their granddaughter. She testified that she started the grill around 6:45 p.m. that evening, stopped grilling around 7:00 p.m., and at that time turned the burner control knobs to the "off" position on the grill. Mrs. Dunn then testified that her daughter and granddaughter left at approximately 8:30 that evening and the Dunns went to bed at approximately 8:45 p.m. She then awoke to "glass popping and breaking and trees popping and cracking" and "a big ball of

orange." (J.A. at 493.) Mrs. Dunn then called 911 and escaped their home. The record indicates that the fire alarm was activated at 9:42 p.m.

Following the fire, Richard Hewitt, a senior investigator from Grinnell Mutual Reinsurance Company (Grinnell), the Dunns' insurer, carried out an initial investigation of the fire on August 28, 2006. Hewitt examined the fire scene a second time on October 3, 2006, and was accompanied by Dr. Lloyd Brown, an electrical engineer retained by Grinnell; Alan Dudden, an engineer from Nexgrill; Randy Bicknese, of Schaeffer Engineering, Inc., a mechanical engineer retained by the propane cylinder's supplier; and Gary Railing, an insurance adjustor.

According to Hewitt's report, at the time of the fire, the grill had been located on a deck near the exterior west wall of the Dunns' home. There was no fire, heat, or smoke damage on the exterior south, east, and north sides of the home. The exterior west side, however, "received a severe amount of fire and heat damage." (J.A. at 315.) Hewitt reported that the other heat producing devices located on the outside of the home and in the garage, basement, and kitchen/dining area were eliminated as possible causes of the fire. In his report, Hewitt stated that "[t]he burn patterns exhibited to the grill, structure, and deck along with the fire movement and intensity patterns all indicate that the fire originated in the bottom cabinet located beneath the burners of the grill" and concluded that "[t]he fire was most probably caused from fugitive [liquid propane] gas escaping from the grill['s] fuel delivery system located in the lower or bottom cabinet of the grill." (*Id.* at 316.) Brown agreed with Hewitt's conclusion that the fire originated from inside the grill.

During the October 3 investigation, Bicknese observed that all of the grill's burner control valves were in the off position, the propane tank was empty, and the tank had a pressure relief valve. Bicknese theorized that the pressure relief valve was triggered during the fire and released a substantial amount of propane gas, which contributed to the magnitude of fire damage to the exterior west wall of the home and

its deck. Agreeing with Hewitt and Brown, Bicknese determined that the fire originated inside the lower compartment of the grill. During his observation, he hypothesized that "it [was] probable that the pressure relief valve in the cylinder's service valve operated during the fire," and "the release of propane from the cylinder's pressure relief valve contributed to the magnitude of fire damage to the west exterior wall and wood deck of the structure." (Id. at 742.)

Bicknese's services were then retained by the Dunns' counsel "to perform additional analysis and testing and to render professional opinions regarding what role, if any, the Jenn-Air grill had in the cause of the fire." (Id. at 743.) The model of Jenn-Air grill the Dunns had used was no longer available in retail stores, so Bicknese purchased a used grill (test grill) to perform certain tests. According to Bicknese's report, the test grill's original owner stated that "the [test] grill was in its original configuration and no repairs had been made, other than normal cleaning, since it was purchased." (Id.) Bicknese stated in his affidavit that the testing was done

to establish certain scientific principles: (1) to determine whether or not the propane hose can deteriorate sufficiently to leak when in contact with the grease tray during grill operation; (2) to determine if propane leaking from the deteriorated hose can be ignited by the operating burner; (3) to determine if a propane hose fire in the cabinet can be sustained after the burner controls are turned off; (4) to determine if a propane hose fire in the cabinet is readily detectable from outside the grill with the grill lid open and the cabinet door closed; (5) to document the operating characteristics of the grill's propane distributing system; (6) to determine the consumption rate of the propane hose as a result of the ignited leak.

(Id. at 737.)

While installing a propane tank in the test grill's cabinet (in the position indicated on the sliding tray that supports the tank located in the very bottom of the grill), Bicknese observed that on the test grill, the propane hose between the regulator

and the manifold that connects the two devices could come into contact with the grease tray as the propane tank was pushed into its stowed position within the grill cabinet, and that the grill had no retainer clip or other device to prevent the hose from coming into contact with the grease tray. He attributed the hose's tendency to ride up and touch the grease tray to a "slight curl" in the hose that occurred when the regulator, to which the hose is attached, was attached to the tank. He fired up the burners and measured the temperature of the grease tray (located beneath the burners but above the propane tank, regulator, and hoses). He observed some melting of the regulator's hose where it was touching the grease tray. Based on safety concerns, Bicknese then removed the propane tank from the grill, leaving the regulator and its hose assembly in the cabinet. He attached an extension hose between the removed propane tank and the regulator's intake connector and then intentionally placed the hose connecting the regulator with the manifold up against the grease tray by using a nylon tie-down to secure the hose to an existing metal horizontal "barrier bar" located within the cabinet. Bicknese explained that because he had removed the propane tank, he secured the propane hose to the horizontal bar barrier at a location consistent with where it would have been if the propane regulator were attached to a properly oriented and stowed propane tank and that the propane hose as secured by the tie-down was in a position consistent with where it would naturally come into contact with the grease tray as a result of sliding the propane tank to the indicated stowed position within the grill cabinet.

During his testing, Bicknese determined that the grease tray could reach temperatures sufficient to melt and breach the propane hose while food was being cooked on the grill. When the hose was breached while in contact with the grease tray, the operating burners ignited the escaping propane, starting a fire. According to Bicknese's report, "[t]he fire that existed at the location of the hose breach within the cabinet was not readily detectable from the exterior of the grill with the cabinet door closed" and the "fire continued until the service valve of the propane tank was closed."

(Id. at 743.) He reported that it took approximately 20 minutes for the fire to start, and he stopped the test once the fire started.

Several months after the first test, Bicknese conducted a second round of testing in response to tests conducted by Dudden on behalf of Nexgrill that challenged Bicknese's initial test and to reconfirm what he had observed during his test. In the second test, he used the compromised hose from the first test, and he allowed the test to run for an additional amount of time. He testified that he effectively recreated the conditions of the first test but instead of ending the test after approximately twenty minutes, he allowed the hose fire to continue burning. According to his report on the second test, the propane that escaped from the hose was ignited within a minute by the burners above, and was allowed to burn for approximately 50 minutes. The hose burned back toward the regulator and was being consumed by the fire. Bicknese reported that "[t]he [second] test was stopped before any visible exterior damage to the regulator occurred." (Id. at 38.) Bicknese reported that the second test continued to support his theory that the fire was the result of the deterioration of the rubber propane hose caused by contact with the heated grease tray.

Nexgrill filed a motion to exclude the Bicknese evidence. The district court granted that motion, finding that the experiment was done to recreate the fire at the Dunns' residence to determine the cause of the fire, not to test scientific principles. The district court also held that the test was not substantially similar to what occurred at the Dunn residence because the regulator hose was rerouted and was secured in place with a tie-down. The court also noted the difference in timelines between Bicknese's second test and the fire at the Dunns' home. The grill stopped being used at 7:00 p.m., and the fire was not detected until 9:42 p.m. The district court noted that Bicknese's test showed that "the regulator hose on the [test] grill nearly was engulfed

in flames after just 50 minutes of testing." (Add. at 8.)<sup>1</sup> Following the exclusion of the Bicknese evidence, Nexgrill filed a motion for summary judgment. The district court granted this motion, finding that the Dunns could not prove a product defect.

The Dunns appeal both the exclusion of the Bicknese evidence and the grant of Nexgrill's motion for summary judgment.

## II.

### A. Bicknese Evidence

We review the district court's exclusion of expert testimony for an abuse of discretion. DG&G, Inc. v. FlexSol Packaging Corp., 576 F.3d 820, 827 (8th Cir. 2009). Rule 702 of the Federal Rules of Evidence governs the admissibility of expert testimony. It states that

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702.

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<sup>1</sup>In fact, when one includes data from the initial test establishing that it took 20 minutes for the propane hose to be breached and the hose fire to commence, the second test showed that the actual total elapsed time for the second test would have been 70 minutes.

We have said that "[t]he admissibility of evidence of experimental tests rests largely in the discretion of the trial judge and [its] decision will not be overturned absent a clear showing of an abuse of discretion." McKnight v. Johnson Controls, 36 F.3d 1396, 1401 (8th Cir. 1994) (quoting Champeau v. Fruehauf Corp., 814 F.2d 1271, 1278 (8th Cir. 1987)). When a district court has discretion, "we do not mean that the district court may do whatever it pleases." Verizon Commc'ns., Inc., v. Inverizon Int'l, Inc., 295 F.3d 870, 872-73 (8th Cir. 2002) (quoting Kern v. TXO Prod. Corp., 738 F.2d 968, 970 (8th Cir. 1984)). Instead, the district court has a "range of choice," and "its decision will not be disturbed as long as it stays within that range and is not influenced by any mistake of law." Id. at 873 (quoting Kern, 738 F.2d at 970). A district court abuses its discretion when it (1) fails to consider a relevant factor that should have been given significant weight; (2) considers and gives significant weight to an irrelevant or improper factor; or (3) considers only proper factors but commits a clear error of judgment in weighing those factors. Id.

Previously, we have explained that "experimental evidence falls on a spectrum and the foundational standard for its admissibility is determined by whether the evidence is closer to simulating the accident or to demonstrating abstract scientific principles." McKnight, 36 F.3d at 1402. "In this case, like many others, the distinction between evidence offered as a reconstruction of the accident and evidence offered to demonstrate scientific principles is very difficult to draw. There is no bright line distinguishing these two categories of evidence." Id. (internal citation omitted). "A court may properly admit experimental evidence if the tests were conducted under conditions *substantially similar* to the actual conditions." Id. at 1401 (quoting Champeau, 814 F.2d at 1278). However, if "the experimental tests do not purport to recreate the accident, but instead the experiments are used to demonstrate only general scientific principles, the requirement of the substantially similar circumstances no longer applies." Id.



The Dunns assert that the Bicknese evidence was not intended to show how the fire began but was instead intended to show general scientific principles: that is, it was designed to show that the heated grease tray could breach the hose and the then-leaking propane could be ignited by the burner above to cause a fire. Nexgrill, however, argues that the district court properly excluded the Bicknese evidence because Bicknese's experiments were designed not to demonstrate scientific principles but to attempt to recreate the fire, because the tests were not substantially similar to the actual fire conditions, and because Bicknese did not provide the propane hose to Nexgrill, which prevented Nexgrill from reviewing and analyzing his work.

The Dunns' main argument is that the tests were conducted to test scientific principles and Bicknese's hypotheses, not to show exactly how the accident occurred. As explained in McKnight, when the purpose of the test is to demonstrate general scientific principles, the substantially similar requirement does not apply. Bicknese testified that the testing was designed "to establish certain scientific principles" including whether "the propane hose [could] deteriorate sufficiently to leak when in contact with the grease tray during the grill operation" and whether "propane leaking from the deteriorated hose can be ignited by the operating burner." (J.A. at 737.) He also testified that his photographs of the burning hose showing it had been compromised by contact with the heated grease tray was "what happened in this case," and that the pictures taken during his tests showed what he believed had occurred inside the grill cabinet during the period from approximately 7:00 p.m. to 9:42 p.m.

The district court's determination that Bicknese was not just testing scientific principles but instead was trying to recreate the cause and origin of the fire is one that we review for a clear abuse of discretion. Having reviewed the record carefully, we are unable to say that the district court clearly abused its discretion. Mr. Bicknese did not have to position the propane hose against the grease tray with a tie-down in order to test his theory that a heated grease tray could compromise the hose. Positioning the hose as he did is, in our view, a strong indicator that he was, in fact, trying to recreate

how and why the fire happened, and supports the district court's determination. As in McKnight, we find this to be a case "where some principles of some kind may be demonstrated but in a fashion that looks very much like a recreation of the events that gave rise to the trial." Id. at 1402 (quoting Fusco v. Gen. Motors Corp., 11 F.3d 259, 264 n.5 (1st Cir. 1993)). In McKnight, we relied on the fact that "[t]he experiments were conducted on the same type and make of battery as the accident battery, and the experiments were used to explain what probably happened during the accident," in holding that the "tests clearly were not limited to a demonstration of scientific principles in the abstract." McKnight, 36 F.3d at 1402, 1403. Much the same is true here, given the efforts by the Dunns to obtain and use an identical grill for the testing, including cooking food on the grill during the testing, and Bicknese's testimony that the tests and photographs showed "what happened in this case." As a consequence, in order for the Bicknese evidence to be admissible, the circumstances of the experiments must be "substantially similar" to those existing at the time of the fire.

The Dunns do argue in the alternative that the circumstances of Bicknese's experiments were substantially similar to the conditions existing at the time of the fire. The district court's contrary determination is reviewed for an abuse of discretion. McKnight, 36 F.3d at 1403. In resisting Nexgrill's argument that he was really attempting to recreate the fire (as opposed to testing scientific principles), Bicknese himself pointed out dissimilarities between his experiments and the fire, including his removal of the propane tank with its pressure relief valve from the cabinet and his use of a tie-down to secure the hose against the grease tray, conditions that obviously would not have existed in the Dunns' grill at the time of the fire. The district court relied on his "re-routing" of the regulator hose and his use of a "plastic tie-down" to hold it in what the court called an "unnatural position" for his experiments in determining the lack of substantial similarity. The district court also concluded that Bicknese's experiment was not substantially similar because it did not "comport" with the time line of the fire. Bicknese's experiment took only 70 minutes of elapsed time between the compromising of the hose, its ignition, and the resulting escaping

propane-fueled 1000-degree flames imperiling the regulator when other evidence showed that over two and a half hours elapsed between the time the grill ceased to be used and the discovery of the fire. The district court was of the opinion that the lack of substantial similarity would tend to confuse rather than enlighten the jury, a quintessential judgment call committed to a trial judge's sound discretion.

We pause to remind ourselves that the questions presented are not to be measured by what we may have done were we the district court. The question for us is whether or not the district court's decisions were a clear abuse of its discretion. Having studied the record in depth, including a complete reading of both of Bicknese's depositions and a careful examination of the color photographs he took of his tests, we conclude that the district court considered the proper relevant factors, did not give weight to any improper factors, and committed no clear error of judgment in its evidentiary rulings; consequently, it did not clearly abuse the discretion committed to it.

#### B. Motion for Summary Judgment

The Dunns next appeal the district court's grant of Nexgrill's motion for summary judgment. "We review a district court's grant of summary judgment de novo, drawing all reasonable inferences, without resort to speculation, in favor of the non-moving party." Anda v. Wickes Furniture Co., 517 F.3d 526, 531 (8th Cir. 2008) (quoting Johnson v. Ready Mixed Concrete Co., 424 F.3d 806, 810 (8th Cir. 2005)). "Summary judgment is appropriate if the facts, viewed in the light most favorable to the non-moving party, show that there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law." Id. (quoting Peterson v. Scott Cnty., 406 F.3d 515, 520 (8th Cir. 2005)).

Under the doctrine of strict liability in tort, which Missouri applies, "one who sells a product in a defective condition unreasonably dangerous to the user or

consumer is subject to liability for injury to the user or the user's property caused by the defect." Winters v. Sears, Roebuck & Co., 554 S.W.2d 565, 569 (Mo. Ct. App. 1977) (alteration and quotation marks omitted). The district court granted summary judgment because it found that after the Bicknese evidence was excluded, the Dunns lacked any evidence of a product defect. (See Add. at 12 ("Plaintiffs have no expert to testify that a defect in the grill caused the fire.").)

Under Missouri tort law, in order to establish a products liability claim, a plaintiff must demonstrate:

(1) the defendant sold a product in the course of its business; (2) the product was then in a defective condition, unreasonably dangerous when put to a reasonably anticipated use; (3) the product was used in a manner reasonably anticipated; and (4) the plaintiff was damaged as a direct result of such defective condition as existed when the product was sold.

Columbia Mut. Ins. Co. v. Epstein, 239 S.W.3d 667, 671 (Mo. 2007).

The Dunns have failed to offer an expert witness to support a claim that the grill was in a "defective condition, unreasonably dangerous" when they put it "to a reasonably anticipated use." See id. Initially the Dunns offered Randy Bicknese's expert testimony, but as discussed above, the district court correctly excluded it. The Dunns were then left with the expert testimony of Richard Hewitt and Dr. Lloyd Brown. However, neither Hewitt nor Brown were able to testify that the grill was in a defective condition or that a defect caused the fire. Nexgrill offered the testimony of Alan Dudden, who asserted that "[t]here [was] no evidence of a design of manufacturing defect with respect to the involved grill." (Appendix at 145.) Because the Dunns failed to offer any admissible evidence to contest this, there is no genuine issue of material fact as to whether the grill was in a "defective condition, unreasonably dangerous when put to a reasonably anticipated use." See Columbia Mut. Ins. Co., 239 S.W.3d at 671.

The Dunns assert that they should have been allowed to prove product defect from circumstantial evidence. The Dunns acknowledge that they did not plead a *res ipsa loquitur* theory of liability. Because they did not plead *res ipsa*, and because they pled specific acts of negligence on the part of Nexgrill, they cannot recover under a *res ipsa* theory. See England v. Downey, 589 F.3d 374, 377 n.5 (8th Cir. 2009) ("Res ipsa is applicable only when the plaintiff does not know the cause of the accident. By delineating specific acts of negligence on [defendant's] part in [plaintiff's] complaint, [plaintiff indicated that he knew the cause of the accident." (internal citation omitted)).

However, the Dunns argue that this does not prohibit them from proving the existence of a product defect through circumstantial evidence under a "res-ipsa type" theory of liability. Yet even if they could assert this type of claim without pleading *res ipsa loquitur* and with pleading specific acts of negligence from Nexgrill, they have failed to establish that they could offer sufficient evidence to prove a product defect through circumstantial evidence. "To prove a product liability claim by inference from circumstantial evidence without proof of a specific defect, a plaintiff must offer evidence that (1) tends to eliminate other possible causes of the injury or property damage, (2) demonstrates that the product was in the same basic condition at the time of the occurrence as when it left the hands of the defendants, and (3) the injury or damages is of a type that normally would not have occurred in the absence of a defect in the product." Hickerson v. Pride Mobility Prods. Corp., 470 F.3d 1252, 1258 (8th Cir. 2006).

The Dunns identify several cases they claim support their contention that they can prove a product defect in the grill through circumstantial evidence. They point to Hickerson, Klein v. General Electric Co., 714 S.W.2d 896 (Mo. Ct. App. 1986), Fain v. GTE Sylvania, Inc., 652 S.W.2d 163 (Mo. Ct. App. 1983), and Winters v. Sears, Roebuck & Co., 554 S.W.2d 565 (Mo. Ct. App. 1977), in support of their argument. However, all of those cases are inapposite.

In all of the cases the Dunns identified, fires were alleged to have been caused by items that do not ordinarily ignite or explode without product defects. For example, in Hickerson, we allowed an expert to testify, without evidence of a specific product defect, that the origin of a house fire was a motorized scooter chair. Hickerson, 470 F.3d at 1257. However, in explaining the decision, we emphasized that common experience suggests that spontaneous ignition of a scooter would not occur in the absence of a defect. Id. at 1260. Likewise, in both Fain and Winters, courts determined that a jury could have found that a television caused a fire without proof of a specific defect in the television set based on the "common experience" that some accidents do not happen absent a defect. Fain, 652 S.W.2d at 165; Winters, 554 S.W.2d at 570. Thus, Hickerson, Fain, and Winters all involved products that do not normally combust without a product defect, as opposed to a grill, which is designed to ignite as a part of normal use and contains a highly flammable substance—propane. In fact, a grill is more like the cigarette lighter that allegedly started a fire in Willard v. Bic Corp., 788 F. Supp. 1059 (W.D. Mo. 1991), than a motorized scooter chair or a television set. In Willard, the district court distinguished Winters by noting that, "unlike a television set, the very purpose of a cigarette lighter is to produce a flame." Id. at 1069.

Finally, in Klein, a coffeemaker was alleged to have started a house fire. Klein, 714 S.W.2d at 899. However, in Klein, the plaintiffs offered expert testimony as to specific potential defects in the construction and design of the coffeemaker that could have caused the fire. Id. at 900. Here, the Dunns cannot offer any comparable expert testimony as to specific potential defects in the construction and design of the grill. Moreover, like in the previously discussed cases, a coffeemaker does not combust without a product defect. Accordingly, the cases identified by the Dunns (Hickerson, Fain, Winters, and Klein) are inapposite.

Ultimately, the Dunns have failed to establish any genuine issue of material fact as to whether there was a product defect in the grill and whether such defect caused

the fire. Without Bicknese's testimony, their experts' testimony is limited to the origin and source of the fire and does not establish how the fire actually started. The Dunns have further failed to offer any circumstantial evidence that the fire was caused by a product defect within the grill. The cases the Dunns cite do not support their argument because the products in those instances were completely different and (unlike a grill) did not generally ignite without a defect. In contrast, grills are designed specifically to ignite, like the cigarette lighter in Willard. Because the Dunns have failed to raise a genuine issue of material fact, the district court did not err in granting Nexgrill's motion for summary judgment.

### III.

Accordingly, the judgment of the district court is affirmed.

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