UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

Amit Agarwal, Plaintiff, v. Jeff Buchanan, an individual doing business as "Jeff Buchanan Tree Services," and "Buchanan Industries;" Defendant.	No. CV17-02182 **SECOND AMENDED COMPLAINT** **DEMAND FOR BENCH TRIAL**

Second Amended Complaint

With Defendant's written consent, this amended complaint brings greater focus to this suit.

One patent claim (Pat. 6,418,004 claim 1).

One product ("Wood Chipper Safety Shield")

No pursuit of legal damages (no more past infringement damages).

Only equitable relief (ongoing royalties).

Neither party has a constitutional right to a trial by jury in such a case. Such focus should merit a stay pending mini-*Markman* on claim terms selected exclusively by Defendant.

1. Plaintiff: Amit Agarwal ("Amit") is a private investor who transferred this patent from an LLC to himself so as to be held personally responsible if this suit is deemed baseless.

2. Defendant: Jeff Buchanan is an individual doing business as (i) Jeff Buchanan Tree Services Services (www.treeservicespecialists.com); (ii) Buchanan Industries; and (iii) Wood Chipper Safety Shield (http://www.woodchippersafetyshield.com).

Jurisdiction and Venue

3. Subject matter jurisdiction is proper under 28 U.S.C. § 1338(a). This Court has general and specific personal jurisdiction over Mr. Buchanan who is at home in this District and who has committed the specific acts of infringement through his businesses located in 108 Waldo Ave., Fullerton, California 92833 serving both Los Angeles County and Orange County, also in this District. Venue is proper in this judicial district pursuant 28 U.S.C § 1400(b) because Mr. Buchanan resides in this District, has a regular and established place of business in this District, *and* has committed acts of infringement in this District.

Factual Allegations Relating to Infringement

4. Morbark is a manufacturer of wood chippers.
5. The Morbark Beever M6R, M8D, M12D, M12RX, M12R, M15RX, M15R, M18RX and M18R brush chippers are all wood chippers equipped with a hydraulic infeed system.
6. In a federal pleading, specifically, an Answer to a Complaint, accessible to Defendant and anybody else on the internet, *Agarwal v. Morbark*, Doc. 13 at ¶¶ 10-15, 17, 21, 23-25, 8:17-cv-133-CHE-AEP (M.D. Fl. Jan. 19, 2017), Morbark admitted that Morbark's Beever M6R, M8D, M12D, M12RX, M12R, M15RX, M15R, M18RX and M18R brush chippers with the ChipSafe Operator Safety Shield and related accessories ("Morbark Litigation Accused Products") are wood chipping machines including chipping blades that rotate to chip material delivered to the machine, *id.* at ¶ 11, include feed rollers that grip and feed the material to the chipping blades, *id*. at ¶ 12, include a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers" *id*. at ¶ 13, and include a motor that drives the feed rollers and the chipping blades, *id.* at ¶ 14.

7. Put differently, Morbark admitted that its wood chipping machines satisfy the structural claim limitations highlighted below.

What is claimed is:

1. A wood chipping machine comprising a safety system, said wood chipping machine including:

chipping blades that rotate to chip material delivered to the machine;

a feed rollers that grip and feed the material to the chipping blades;

a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers; and

a motor that drives the feed rollers and the chipping blades;

said safety system comprising:

at least one passive sensor incorporated in a band worn by a user of the wood chipping machine;

at least one sensing coil mounted on one of the walls of the chute, the sensing coil generating a signal when the passive sensor is in the passage; and

means for stopping the chipping blades and/or the feed rollers in response to the signal.

8. Defendant makes a product called "Wood Chipper Safety Shield" ("WCSS")

9. WCSS is a safety system for use in machines such as wood chipping machines.

10. Defendant uses a wood chipping machine equipped with WCSS.

11. Defendant sells WCSS.

12. Defendant offers to sell WCSS.

13. Defendant maintains that WCSS can be installed on any manufacturer's wood chipper

equipped with a hydraulic infeed system. *See* http://www.woodchippersafetyshield.com.

14. WCSS comprises a transmitter sewn into a hook-and-look fastener band worn on the wood chipper operator's wrists. The below photograph is a fair and accurate image of the band comprising the WCSS transmitter.

15. The WCSS transmitter does not have any power supply such as a battery.

16. The WCSS transmitter is a magnet.

17. The WCSS transmitter has a magnetic field.

18. Moving a magnetic field near a coil of wire may induce a current or electromotive force in the wire.

19. The WCSS comprises a sensing coil.

20. The sensing coil of the WCSS system is mounted on one of the walls of the wood chipping machine's chute.

21. As the transmitters enter the user-defined signal area of the WCSS, the sensing coil generates a signal.

22. The motion of the transmitter near the WCSS sensing coils induces an electric current in the WCSS sensing coils.

23. The motion of a magnetic field near a coil of wire induces an electric current in the coil of wire.

24. If the speed with which the transmitter is moving reaches a certain threshold, the WCSS sends the sensing coil's generated signal to a hydraulic solenoid safety valve.

25. This hydraulic solenoid safety valve is responsible for stopping the feed rollers.

26. The WCSS contains a transmitter incorporated in a band worn by a user of the wood chipping machine, a sensing coil mounted on one of the walls of the chute, the sensing coil generates a signal when the transmitter is in the passage, and a hydraulic solenoid safety valve for stopping the feed rollers in response to the signal. Below is a depiction of how the WCSS relates to the sole claim-in-suit.

What is claimed is:

1. A wood chipping machine comprising a safety system, said wood chipping machine including:

chipping blades that rotate to chip material delivered to the machine;

a feed rollers that grip and feed the material to the chipping blades;

a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers; and

a motor that drives the feed rollers and the chipping blades;

said safety system comprising:

at least one passive sensor incorporated in a band worn by a user of the wood chipping machine;

at least one sensing coil mounted on one of the walls of the chute, the sensing coil generating a signal when the passive sensor is in the passage; and

means for stopping the chipping blades and/or the feed rollers in response to the signal.

27. The below is a copy of the infringement contentions that I served on Defendant on July 6, 2017.

Pat. 6,418,004	
Claim Language	**Infringement Contention**
1. A wood chipping machine comprising a safety system, said wood chipping machine including: chipping blades that rotate to chip material delivered to the machine; a feed rollers that grip and feed the material to the chipping blades; a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers; and a motor that drives the feed rollers and the chipping blades;	 Wood Chipper Safety Shield in Action! Jeff Buchanan 3 months ago • 52 views Tree man and **Wood Chipper** Safety Shield creator Jeff Buchanan demonstrates his safety device. The **Wood Chipper** Safety ... https://www.youtube.com/results?search_query=jeff+buchanan+wood+chipper The above video's description notes that Jeff Buchanan is the creator of Wood Chipper Safety Shield ("WCSS") and is demonstrating his safety device. He is plainly using a wood chipping machine. I'm guessing that's his own machine. He further states on his website, "The Wood Chipper Safety Shield can be installed on **any manufacturer's** wood chipper equipped with a hydraulic infeed system." Morbark Inc. is a manufacturer of wood chippers equipped with a hydraulic infeed system. The Morbark Beever M6R, M8D, M12D, M12RX, M12R, M15RX, M15R, M18RX and M18R brush chippers are all wood chippers equipped with a hydraulic infeed system. In *Agarwal v. Morbark*, Doc. 13 at ¶¶ 10-15, 17, 21, 23-25, 8:17-cv-133-CHE-AEP (M.D. Fl. Jan. 19, 2017), Morbark admitted that Morbark's Beever M6R, M8D, M12D, M12RX, M12R, M15RX, M15R, M18RX and M18R brush chippers with the ChipSafe Operator Safety Shield and related accessories ("Morbark Litigation Accused Products"): • "are wood chipping machines comprising a safety system . . . such as ChipSafe" Doc. 13 at ¶¶ 10, 15. • "include chipping blades that rotate to chip material delivered to the machine" *Id.* at ¶ 11. • "include feed rollers that grip and feed the material to the chipping blades" *Id.* at ¶ 12. • "include a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers" *Id.* at ¶ 13. • "include a motor that drives the feed rollers and the chipping blades" *Id.* at ¶ 14. Those are admissions by a manufacturer that their wood chippers—again, all equipped with hydraulic infeed system, the exact same type of wood chipper that Buchanan admits the WCSS can be installed on.

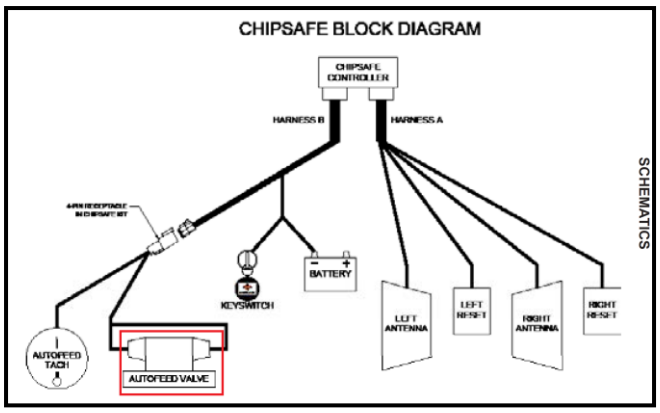
Pat. 6,418,004	
Claim Language	**Infringement Contention**
said safety system comprising: at least one passive sensor incorporated in a band worn by a user of the wood chipping machine;	The website for WCSS (hereinafter "WCSS website"), http://woodchippersafetyshield.com/, states: "Operators wear transmitters sewn directly into . . . bands worn on their wrists and on their ankles. As these transmitters enter the user-defined signal area of the Wood Chipper Safety Shield, receptor sensors in the plates send an instant signal to the chipper's feeding mechanism, shutting it down before the worker comes in contact with it. The WCSS website describes it as a "magnetic sensor system." Presumably, the "transmitter" is a source of a magnetic field and lacks a power source, rendering it passive.  While claim construction has not occurred in this case, it is trivial to demonstrate that under *Phillips* a "passive sensor" is more than the tuned circuit example of a magnetic field source. Any source of magnetic field that doesn't require a power source is capable, under the physics of electromagnetic induction, to cause the sensing coil to generate a signal when the passive sensor is in the passage. To the extent the literal scope of "passive sensor" is narrowed or issued in a way to exclude magnets, my alternative theory is under the doctrine of equivalents. Say, for example, the passive sensor is regarded as a "tuned circuit" from claim 2. A magnet has the same function (inducing a current/electromotive force in the sensing coil); in the same way (Faraday's law of induction); with the same result (sensing proximity to sensing coils). The exact nature of the transmitter used in WCSS is unknown based on the website. But based on the website's description of the overall system as a "magnetic sensor system" and based on how Mr. Buchanan designed ChipSafe, my expectation is that discovery and claim construction, respectively, will confirm that the device lacks a power supply and is therefore passive and that the device serves as a source of magnetic field, making it a "passive sensor." The meaning of "passive sensor" is a legal issue pending claim construction.

Pat. 6,418,004	
Claim Language	**Infringement Contention**
at least one sensing coil mounted on one of the walls of the chute, the sensing coil generating a signal when the passive sensor is in the passage; and	The WCSS website states, "The Wood Chipper Safety Shield consists of two heavy duty aluminum plates mounted directly to the sides of an infeed chute of a mobile wood chipper." An identical-looking set of plates exists in the ChipSafe system. In Agarwal v. Morbark, Doc. 13 at ¶ 17, 8:17-cv-133-CHE-AEP (M.D. Fl. Jan. 19, 2017), Morbark admitted that the Accused Products' ChipSafe system "includes at least one sensing coil mounted on one of the walls of the chute and/or in the access region adjacent parts of the machine capable of injuring the user, as depicted in Morbark's ChipSafe's own documents." Based on the perceived similarity between ChipSafe and WCSS, discovery is expected to confirm that WCSS also includes a sensing coil mounted on one of the walls of the chute. The WCSS website states, "As these transmitters enter the user-defined signal area of the Wood Chipper Safety Shield, receptor sensors in the plates send an instant signal to the chipper's feeding mechanism, shutting it down before the worker comes in contact with it." This furnishes support for the claim limitation "the sensing coil generating a signal when the passive sensor is in the passage."
means for stopping the chipping blades and/or the feed rollers in response to the signal.	An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. 35 U.S.C. § 112(f). "Determining the claimed function and the corresponding structure for a claim limitation written in means-plus-function format is a matter of claim construction." *Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1350 (Fed. Cir. 2003). **Function**: The phrase "means for" generally invokes 35 U.S.C. § 112, ¶ 6, and is typically followed by the recited function and claim limitations. *Greenberg v. Ethicon Endo–Surgery, Inc.*, 91 F.3d 1580, 1584 (Fed. Cir. 1996). In identifying the function of a means-plus-function claim, a claimed function may not be improperly narrowed or limited beyond the scope of the claim language. *Micro Chem. Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed.Cir.1999). *Lockheed Martin Corp. v. Space Sys./Loral, Inc.*, 324 F.3d 1308, 1319 (Fed. Cir. 2003). Conversely, neither may the function be improperly broadened by ignoring the clear limitations contained in the claim language. The function of a means-plus-function claim must be construed to include the limitations contained in the claim language. *Id.* The plain meaning of the claim language indicates that the claimed function is stopping the chipping blades and/or the feed rollers in response to the signal generated by the sensing coil from the previous claim step. **Structure:** A structure disclosed in the specification qualifies as a "corresponding structure" if the specification or the prosecution history "clearly links or associates that structure to the function recited in the claim." Noah Sys., Inc. v. Intuit Inc., 675 F.3d 1302, 1311 (Fed. Cir. 2012). 35 U.S.C. § 112(f) does not "permit incorporation of structure from the written description beyond that necessary to perform the claimed function." Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258 (Fed. Cir. 1999); see also Acromed Corp. v. Sofamor Danek Group, Inc., 253 F.3d 1371, 1382 (Fed. Cir. 2001) ("A court may not import into the claim features that are unnecessary to perform the claimed function."). Northrop Grumman Corp. v. Intel Corp., 325 F.3d 1346, 1352 (Fed. Cir. 2003).

The specification states, “The safety solenoid valve 3 is normally energised and is de-energised whenever the hands of machine operator are detected close to an area within the feed chute 10 of the chipping machine 9. When valve 3 is de-energised, it returns to the position shown in FIG. 3 and motors 6 no longer rotate and the **feed rollers 11 cease their rotation**.” '004 Pat. col. 3 ll. 31-36. "When coil 32 detects the proximity of a passive sensor coil . . . coil R3 is de-energised.” *Id.* at col. 3 ll. 58-62. The specification continues, “The invention has been described by way of example with reference to its use with a wood chipping machine 9. In that example application solenoid valve 3 in FIG. 3 is **necessary** to ensure that drive to the feed rollers 11 is discontinued.” Pat. at 4:35-36.

The **safety solenoid valve** 3 is therefore clearly linked to the claimed function and is the proper structure. The literal scope of this means-plus-function claim element therefore covers safety solenoid valve 3 and its equivalents.

That diagram of the ChipSafe system was obtained from the public domain (a request to California’s OSH). It is the only document, other than Defendant’s



website, relied upon to explain my infringement theory. That “Autofeed Valve,” as that document confirms, is actually a safety solenoid valve.

Safety Shield Reset Box
Area in which you place the wearable accessory to reset the feed wheel hydraulic valve solenoids to run position.

The “feed wheel hydraulic valve solenoids” referenced above are the exact same thing as the “autofeed valve” in the ChipSafe Block Diagram. Again, I acknowledge that this claim chart is for WCSS—not ChipSafe. But the systems look similar from the outside. Without the benefit of discovery, I’m guessing they’re similar from the inside.

Note that WCSS doesn’t *always* actually stop the feed wheel when the WCSS magnets/transmitters are in the passage. Buchanan is clear that if you move the magnets slowly, the feed wheels don’t trip. This doesn’t change the fact that the WCSS system has the structure in place to stop the feed wheels when, in fact, that structure (the hydraulic safety solenoid valve) does receive a signal.

Factual allegations relating to contributory infringement

28. In my infringement chart, I mapped WCSS against the safety system (in purple below). This portion of the claim is the material part of the claimed invention. The upper part of the claim simply recites structural elements common to a wood chipper (chipping blades, feed rollers, feed chute with a passage, and a motor driving the rollers/blades).

What is claimed is:

1. A wood chipping machine comprising a safety system, said wood chipping machine including:

chipping blades that rotate to chip material delivered to the machine;

a feed rollers that grip and feed the material to the chipping blades;

a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers; and

a motor that drives the feed rollers and the chipping blades;

said safety system comprising:

at least one passive sensor incorporated in a band worn by a user of the wood chipping machine;

at least one sensing coil mounted on one of the walls of the chute, the sensing coil generating a signal when the passive sensor is in the passage; and

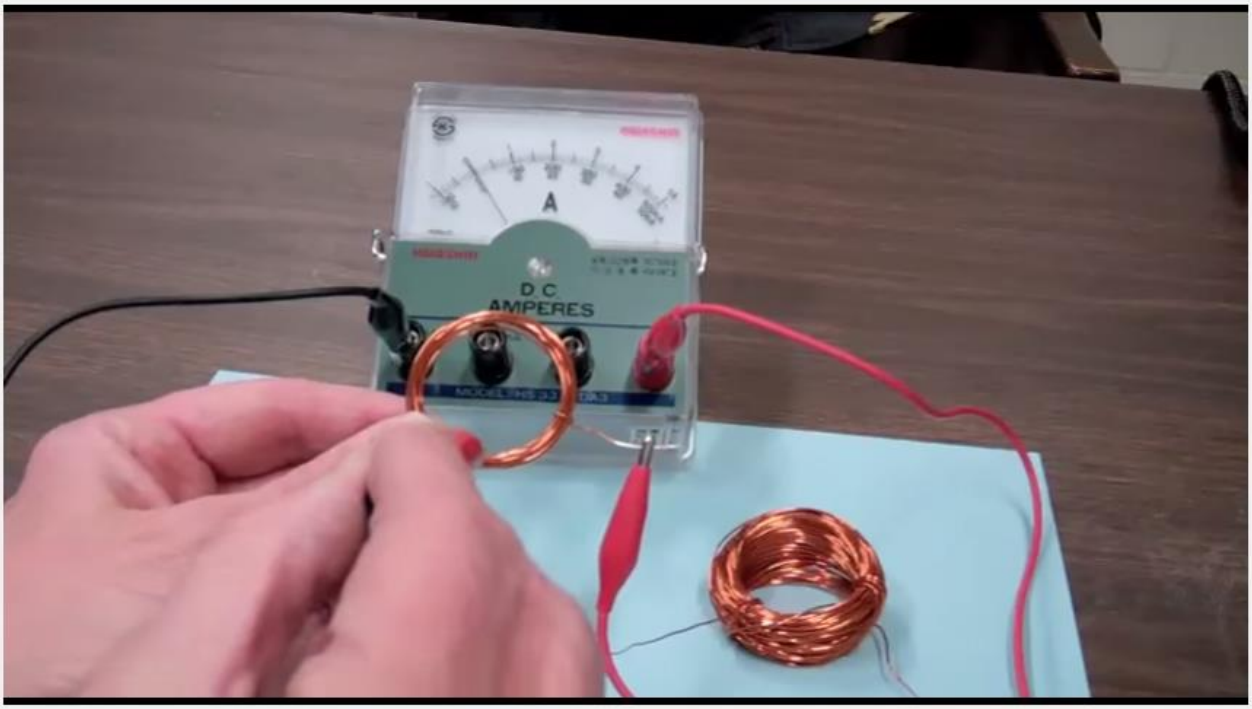
means for stopping the chipping blades and/or the feed rollers in response to the signal.

29. The WCSS is not a staple article of commerce.

Factual allegations relating to claim construction of "passive sensor"

30. A magnetic field moved near a wire made out of conducting material (like a copper wire) will generate an electric current in that wire. This is the principle of electromagnetic induction.

31. Professor Michael Melloch of the Purdue University's Electrical and Computer Engineering Department demonstrated the principle of electromagnetic induction and Faraday's law, viewable on YouTube at https://www.youtube.com/watch?v=vwIdZjjd8fo&t=142s.



Electromagnetic Induction and Faraday's Law

Michael Melloch

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Published on Feb 24, 2013

Electromagnetic induction is the generation of an electric field by a changing magnetic field. Electromagnetic induction is demonstrated using a coil, ammeter, and a bar magnet .

32. Moving a magnetic field near a coil of wire induces an electric current.

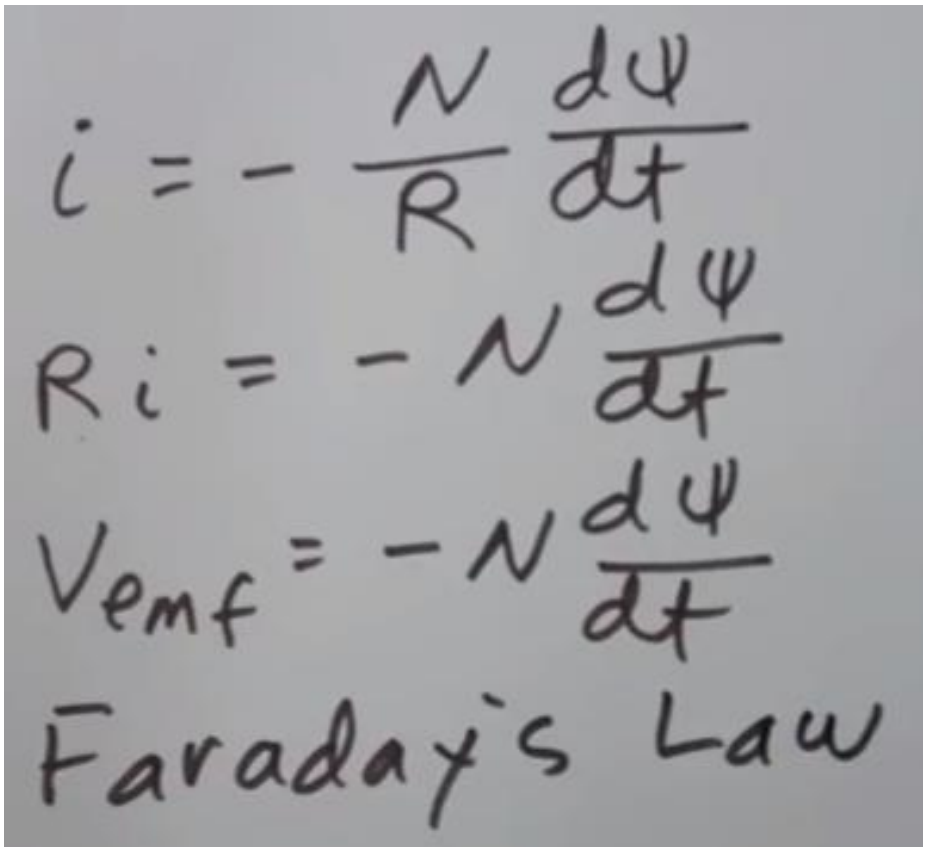
33. The induced current (i) is directly proportional, that is it increases with a corresponding increase in the number of turns (N) of the coil.

34. The induced current (i) is directly proportional to the rate of change of magnetic flux near the coil ($d\Phi/dt$).

35. The induced current (i) is inversely proportional to the total resistance of the circuit (R).

36. The relationship between current, the number of coils, the rate of change of magnetic flux near the coil, and resistance is provided by the below formulae.

37. The potential or voltage is called the electromotive force, V_{EMF}, and is equal to the product of the number of coils and the rate of change of magnetic flux near the coil.

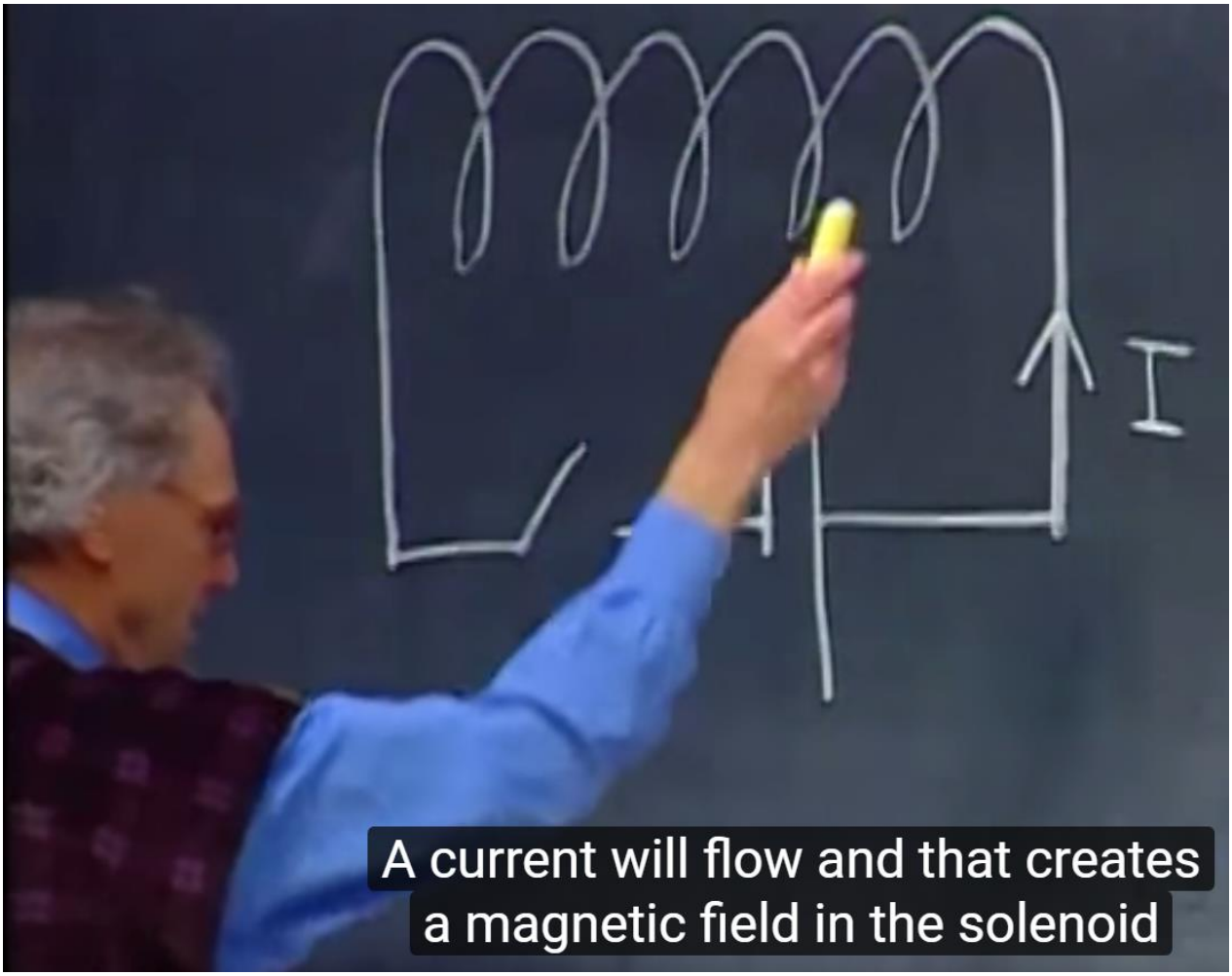


38. This is Faraday's first law of induction which states, "The induced electromotive force in any closed circuit is equal to the negative of the time rate of change of the magnetic flux enclosed by the circuit."

39. More concisely, a changing magnetic field causes a current in a nearby wire.

40. A steady magnetic field does not produce a current in a nearby wire.

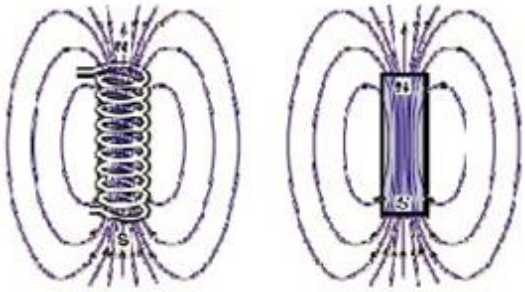
41. **College curricula**: As the below YouTube of an MIT professor explains, a current flowing through a solenoid creates a magnetic field in the solenoid. The relevant clip is on https://www.youtube.com/watch?v=nGQbA2jwkWI (Lectures by Walter Lewin) between timestamp 6:10-6:20.



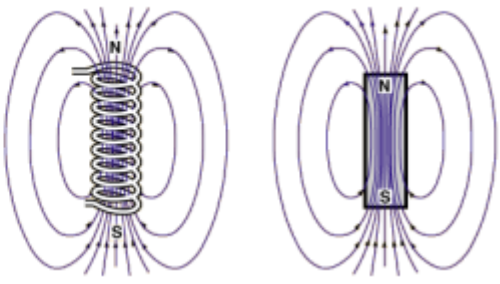
42. **High school curricula**: The State of New York's high school core curriculum, available for download on http://www.p12.nysed.gov/ciai/mst/pub/phycoresci.pdf, includes electromagnetic inductance. The below is a screenshot of performance indicator 4.1k on page 15

> 4.1k Moving electric charges produce magnetic fields. The relative motion between a conductor and a magnetic field may produce a potential difference in the conductor.

43. **Middle school curricula**: In a document created ten years ago for children, http://www.ccmr.cornell.edu/wp-content/uploads/sites/2/2015/11/Electromagnets.pdf, the teaching is clear:

> The magnetic field produced by electric current in a solenoid coil is similar to that of a bar magnet:
>
> 
>

44. **More middle school curricula**: On http://www.ccmr.cornell.edu/wp-content/uploads/sites/2/2015/11/Electromagnets.pdf, there is a document which discusses teaching standards for physics for middle school. That document depicts the following identity relationship between the magnetic field of a current-carrying solenoid coil and a bar magnet.

You can increase the magnetic field produced by electric current by coiling the wire. This is called a solenoid coil and is similar to that of a bar magnet:	

45. **Elementary school curricula**: On http://schools.bcsd.com/fremont/4th_sci_electricity_electromagnet.htm, we have an elementary school, Fremont Magnet Elementary, discussing 4th Grade science which teaches the following:

5. Magnets and Electricity

One of the interesting things about magnetism is that is that it is closely related to electricity. You know that you can make a magnet by using electricity, but did you know that you can make electricity with a magnet?

If you move a magnet through a coil of wires, it generates an electric charge in the wire. That is called a generator.

46. The inventors of the sole patent-in-suit—the '004 patent—teach one example of a passive sensor—a tuned circuit.

47. Figure 1 of the '004 patent is a depiction of the tuned circuit.

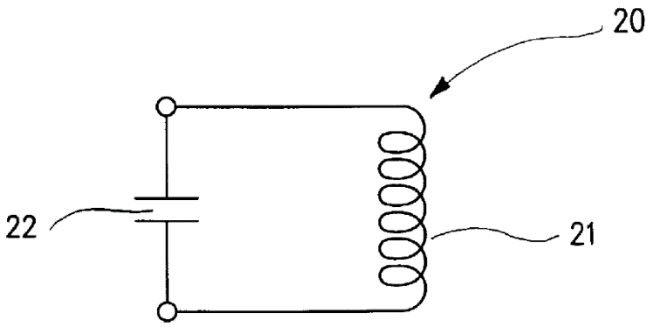


Fig. 1

48. The specification recites, "preferably, the tuned circuit consists of a coil and a capacitor connected in parallel with one another."

49. In a circuit with a coil 21 and an initially charged capacitor 20 are connected in parallel with each other as depicted in Fig. 1, it is a judicially noticeable fact (physics) that electric current will oscillate through the coil 21.

50. This 1974 US Air Force video explains, adequately, the physics of an LC circuit. It is available for viewing at https://www.youtube.com/watch?v=1uSBKUsKpYQ&t=565s

Electronics: Introduction to LC Oscillators circa 1974 US Air Force Training Film

51. The current flowing through coil 21 will generate a magnetic field around the coil.

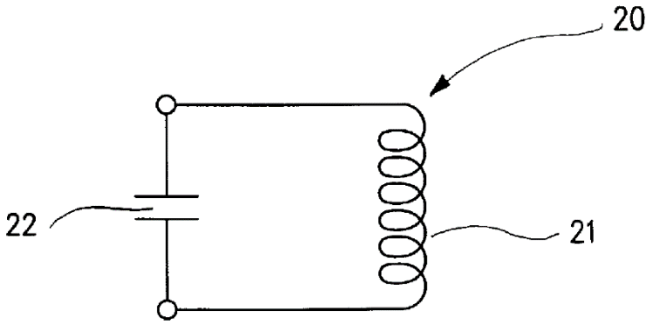


Fig. 1

52. It is a judicially noticeable fact that an electric current flowing through a coil of wire will create a magnetic field around that coil.

53. In 1820, Hans Christian Oersted discovered that an electric current flowing through a wire caused a nearby compass to deflect. This indicated that the current in the wire was generating a magnetic field.

54. A partial list of over a dozen pieces of extrinsic evidence (most survey/intro books)

confirm that a current-carrying coil such as coil 21 of Fig. 1 of the specification of the sole patent-in-suit is, for all practical purposes, a bar magnet.

Author	Title	Excerpt
Andreas Trügler	Optical Properties of Metallic Nanoparticles: Basic Principles and Simulation	We know from magentostatics that a circulating ring current of a microscopic coil yields a certain magnetic dipole moment given by the product of current and area of the coil . . . Thus, **a popular design for magentic atoms is to mimic an ordinary LC-circuit**, consisting of a plate capacitor with capacitance C and a magnet coil with inductance L. See page 177.
NYU	Electromagnetic Induction	An experiment of inducing EMF by a permanent magnet (i.e., Section 3) is repeated in Section 4 with a current carrying coil (RLC circuit) instead of the magnet. See pages 3-4. **A coil with a current has a magnetic field similar to that of a bar magnet.** See page 3, section 4. If the coil is moved with respect to another coil, the changing magnetic filed will induce an EMF. Id. There is a great deeal of similarity between moving a magnet and moving a coil with a current. The magnet also has currents, but the currents are no produced by conduction electrons but by electron orbits and spins in the magentized material from which the magnet is made. See page 4.
R Nave (GSU)	Solenoid	A long straight coil of wire can be used to generate a nearly uniform magnetic field **similar to that of a bar magnet**. See top paragraph.
Owen Bishop	Electronics: A First Course	It can be shown that, when a current flows in a wire, a magnetic filed is produced around the wire. If the wire is formed into a coil, the magnetic field resembles that of a bar
KHJ Buschow	Handbook of Magnetic Materials, Volume 18	Magnetic biscuits are employed to monitor the digestion tract. These biscuits are swallowed and their movement is monitored by external magnetic sensors. They are based on
Dean C. Karnop	System Dynamics: Modeling, Simulation, and Control of Mechatronic	Design of magnetic circuits to produce constant fields either with permanent magnets or with current carrying coils. See bottom of section 11.2 and references 4 and 5.
Purdue university lab	Faraday's effect and LC circuits	Lab assignment where students (i) use a magnet to induce and measure EMF and (ii) LC circuit to induce same. See page 1.
Robert Gardner	Electricity and Magnetism Science Fair Projects, Revised and Expanded	Once Oersted's discovery became known, scientists realized that magnets could be made by sending electronic currents through coils of wire. Andre Ampere, a French
Ranajit Ghosh, Ashit	Rudiments of Physics	The magnetic lines of force due to a current carrying solenoid will be exactly similar to those due to a bar magnet and hence it can be said that a current carrying solenoid
John M. Charap	Covariant Electrodynamics: A Concise Guide	While setting up a demonstration for a lecture, Hans Christian Orsted (1777-1851) discovered that an electric current has an effect on a compass needle. Within weeks of
Jim Breithaupt	New Understanding Physics for Advanced Level	Imagine driving a corkscrew into a cork. Its rotation is in the same direction as the field lines of a wire carrying a current in the driving direction. . . A solenoid carrying a steady

Author	Title	Excerpt
Debora M. Katz	Physics for Scientists and Engineers: Foundations and Connections, Volume 2	. . . remember that a **coil's magnetic field looks similar to that of a bar magnet. So, you can imagine the coil as a bar magnet** . . . See page 1019
Mahendra Jain (Editor)	Competition Science Vision, Jan 2003	A **current carrying solenoid or a coil or a current loop behaves like a bar magnet. . . When an electric current is passed through a solenoid, it behaves like a bar magnet**. See page 1422

55. The below screenshot from a college physics/engineering textbook confirms the resemblance between field lines of a bar magnet and a solenoid.

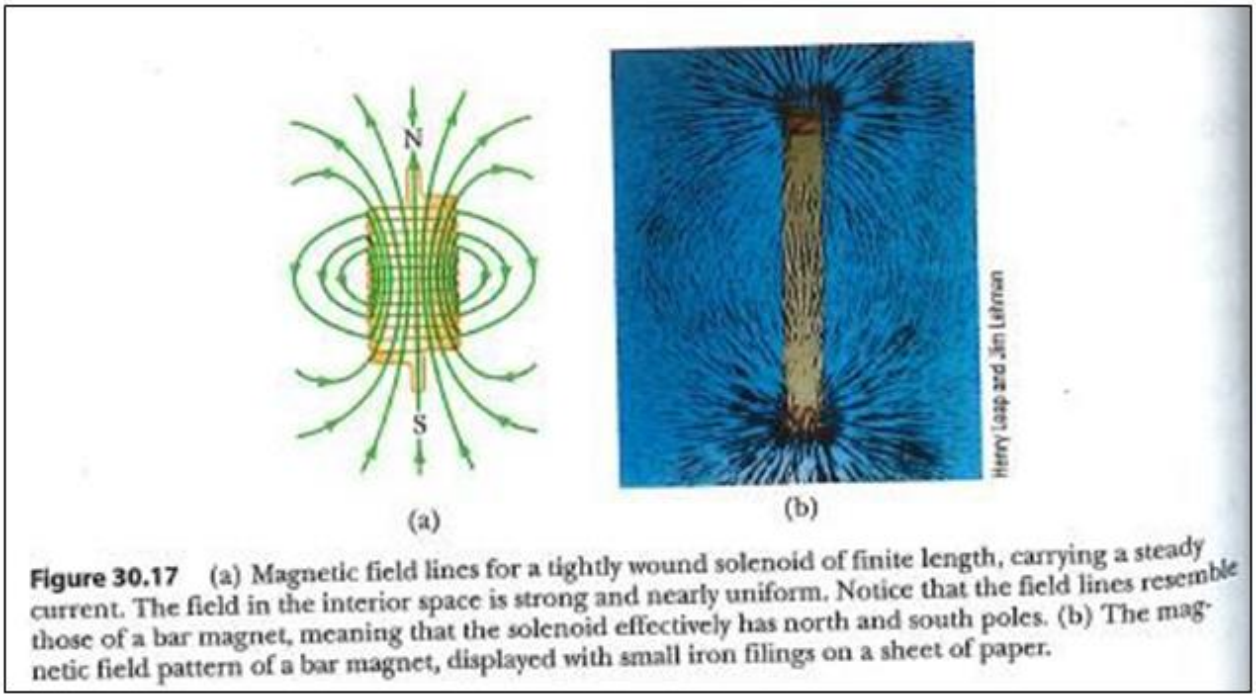


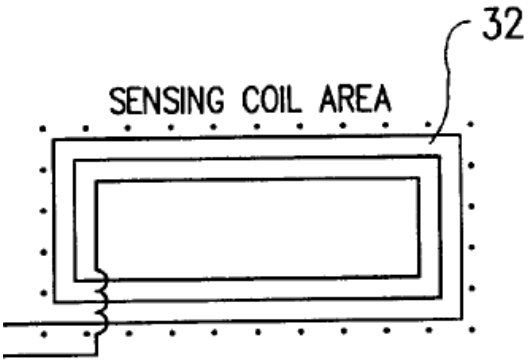
Figure 30.17 (a) Magnetic field lines for a tightly wound solenoid of finite length, carrying a steady current. The field in the interior space is strong and nearly uniform. Notice that the field lines resemble those of a bar magnet, meaning that the solenoid effectively has north and south poles. (b) The magnetic field pattern of a bar magnet, displayed with small iron filings on a sheet of paper.

Serway & Jewett, *Physics for Scientists and Engineers With Modern Physics*, 7th ed. (2008) ("field lines resemble those of a bar magnet . . . solenoid effectively has north and south poles."

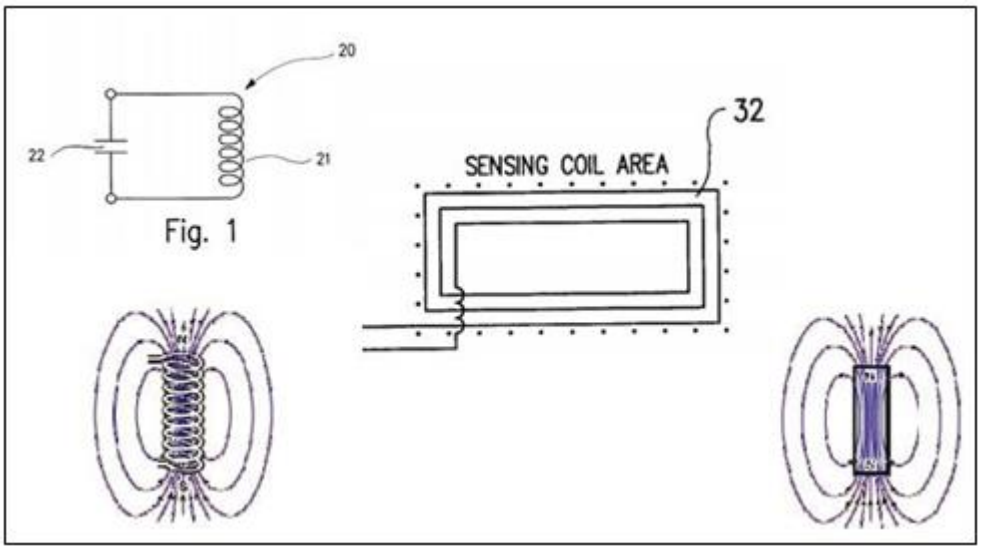
56. It is well known that in a circuit such as the one depicted in '004 Pat. Figure 1, a current flows back and forth through the coil 21, giving rise to a corresponding magnetic field around the coil.

57. The magnetic field of a current-carrying coil is similar to that of a bar magnet.

58. Moving a source of magnetic field near another coil of wire, such as the sensing coil depicted by label 32 in Fig. 4 of the patent, will induce a current in sensing coil 32.



59. It does not matter *what* the source of magnetic field is—a magnet as in the WCSS or a current-carrying solenoid of Fig. 1—its motion will induce a current in the sensing coil area pursuant to electromagnetic induction.



60. Because a current-carrying solenoid has a magnetic field, moving it will cause a changing magnetic field.

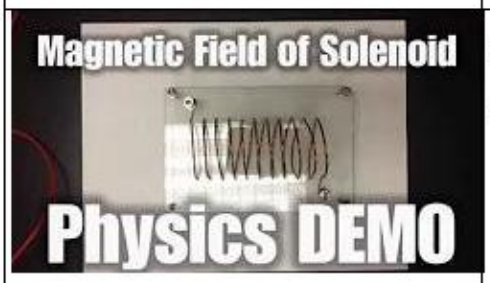
61. Moving a current-carrying solenoid in the proximity of sensing coil 32 will induce a current in the sensing coil 32.

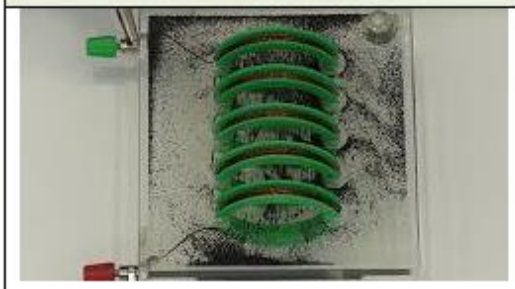
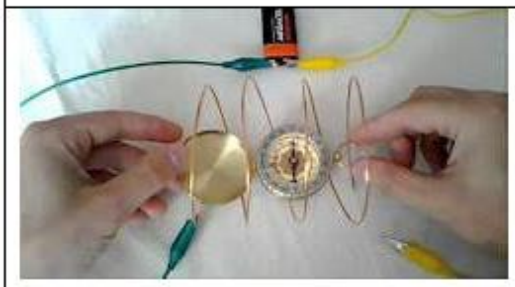
62. Because a magnet has a magnetic field, moving the magnet will cause a changing magnetic field.

63. Moving a magnet in proximity of sensing coil 32 will induce a current in the sensing coil

64. A middle school or high school student who has been subjected to the curriculum of New York is deemed capable of understanding that as an elementary physics proposition, the magnetic field from a permanent magnet and the magnetic field from a current-carrying coil as shown in Fig. 1 of the patent actuate the same electromotive force in the sensing coil which, in turn, triggers the safety response of the patented invention in a wood chipper.

65. The internet is full of videos after videos visually demonstrating the identity relationship between the magnetic field of a current-carrying coil and the magnetic field of a bar magnet.

Thumbnail	Link
	https://www.youtube.com/watch?v=V-M07N4a6-Y&t=302s
	https://www.youtube.com/watch?v=c0eBenSQ6ho
	https://www.youtube.com/watch?v=3Fd9GjUF9Wo&t=32s

Thumbnail	Link
	https://www.youtube.com/watch?v=FzPO92Jxxt8
	https://www.youtube.com/watch?v=T4VsgdRfZa4
	https://www.youtube.com/watch?v=Ri557hvwhcM

66. The '004 patent recites the sole claim-in-suit, claim 1, as an independent claim.

67. Claim 2, not at issue in this case, depends from claim 1.

68. The below is an excerpt from the claims section of the '004 patent, accurately reproducing the claim language with three highlights.

> What is claimed is:
>
> **1**. A wood chipping machine comprising a safety system, said wood chipping machine including:
>
> chipping blades that rotate to chip material delivered to the machine;
>
> a feed rollers that grip and feed the material to the chipping blades;
>
> a feed chute that guides material to the feed rollers, the feed chute having walls defining a passage, an open front end for receiving the material and an open rear end adjacent the feed rollers; and
>
> a motor that drives the feed rollers and the chipping blades;
>
> said safety system comprising:
>
> at least one passive sensor incorporated in a band worn by a user of the wood chipping machine;
>
> at least one sensing coil mounted on one of the walls of the chute, the sensing coil generating a signal when the passive sensor is in the passage; and
>
> means for stopping the chipping blades and/or the feed rollers in response to the signal.
>
> **2**. The wood chipping machine of claim **1** wherein the at least one passive sensor consists of a tuned circuit.

69. The only difference between independent claim 1 and dependent claim 2 is that "the at least one passive sensor consists of a tuned circuit."

70. The patent applicants did not make any statements whatsoever distinguishing the "passive sensor" from magnets in any stage of the patent prosecution or anywhere in the

specification.

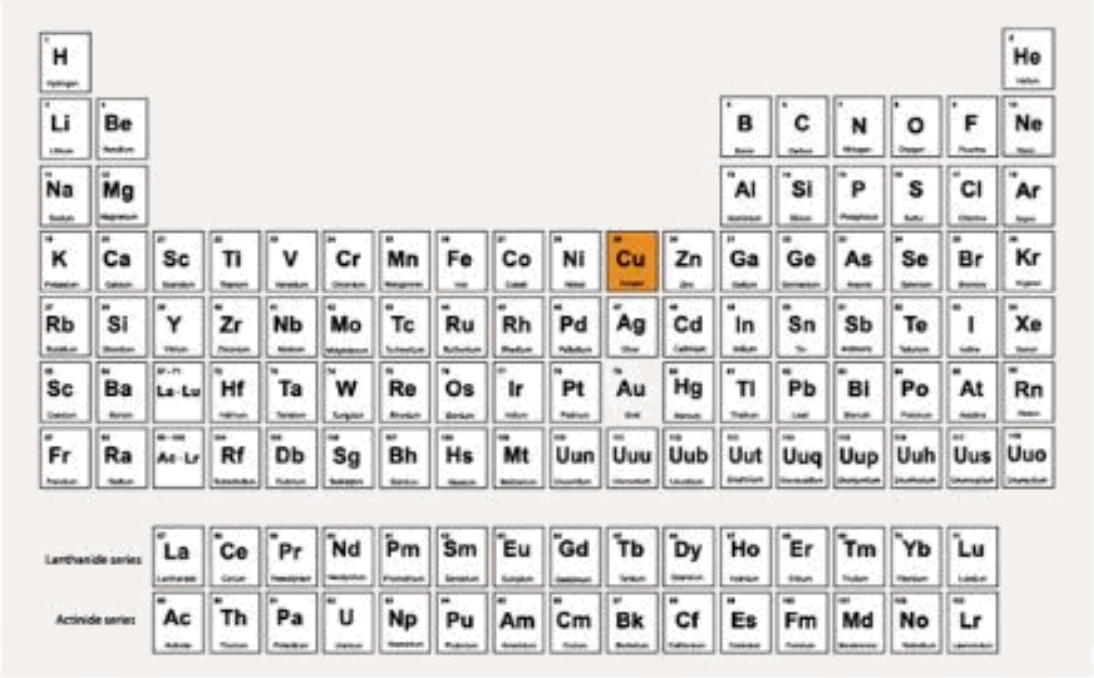
71. The patent applicants stated in the file history, "the Mooring system requires the operator to wear metal impregnated gloves instead of a passive sensor."

72. The examiner stated, "radiation emitter . . . is not a passive sensor."

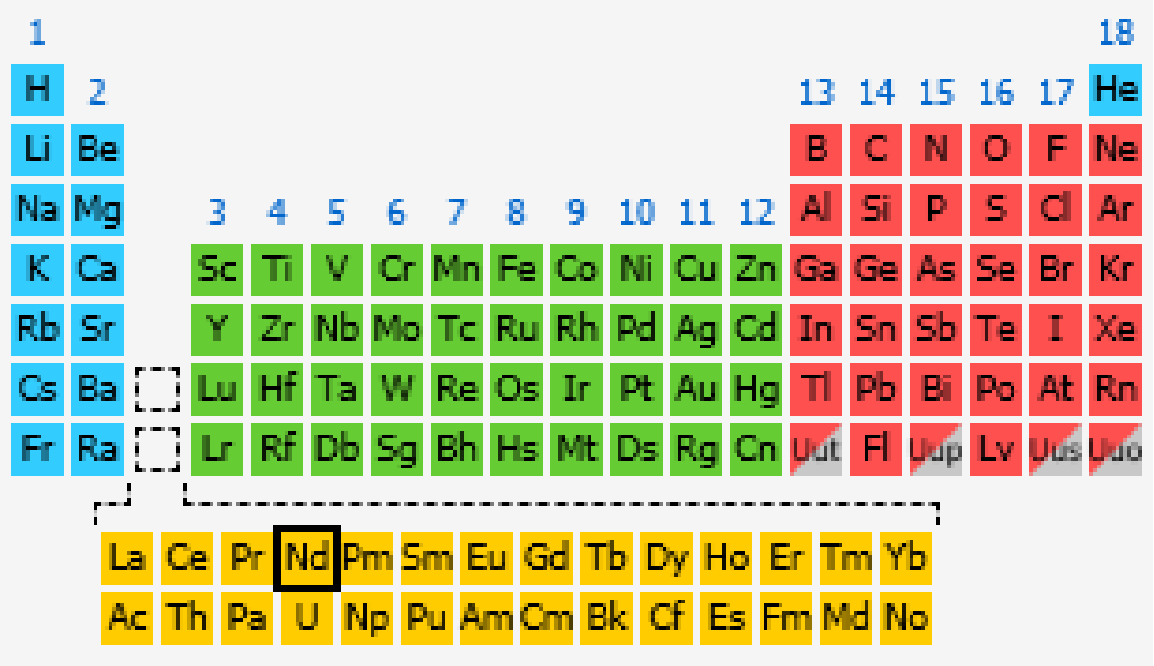
73. The patent specifications states, "Fig 1 shows **an example** of a passive sensor 20" before proceeding to discuss a "tuned circuit consisting of a coil 21 and a capacitor 22." '004 at 2:35-37.

74. The patent specification states, "A particular preferred embodiment of the invention will now be described by way of example with reference to . . . Fig 1." *Id.* at 2:13-16.

75. The tuned circuit of dependent claim 2—the sole example of the passive sensor taught in the written description—is nothing other than a hunk of metal. For example, the passive sensor coil of Fig. 1 can be a copper wire. Copper is a shown below on the periodic table.



76. The transmitter in WCSS is a rare earth magnet like Neodymium or something similar.

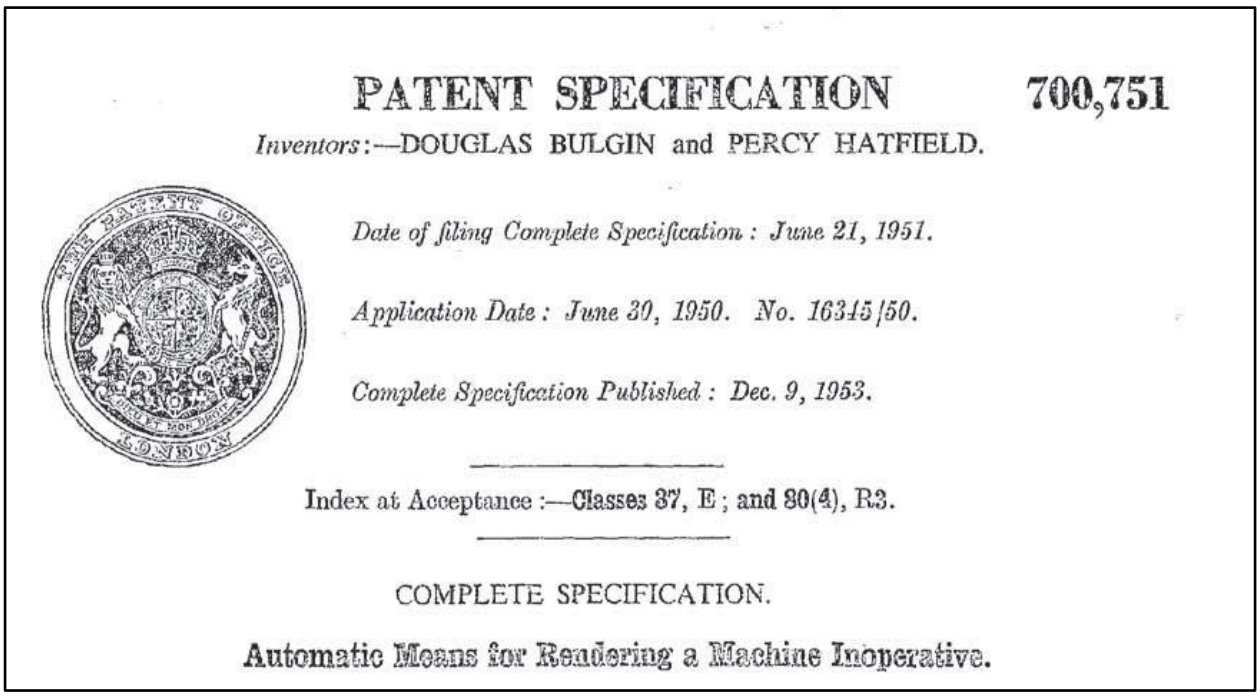


77. Defendant's own later-issued patent (Pat.) which was published in June 2, 2015, a decade and a half after the priority date of the patent-in-suit, is entitled "Wearable safety device for cutting machine" and states in its written description section, "**The magnet 654 can be any material or object that produces a magnet field**, such as permanent magnets, magnetizable materials, electromagnets, pulsating electromagnets, ferromagnetic materials, ferrimagnetic materials, and the like. Examples of permanent magnet materials are alnico, ferrite, neodymium, and the like and examples of magnetizable materials are iron, nickel, cobalt, lodestone, and the like."

78. It doesn't matter *how* one implements a source of magnetic field—running a current through a coil made out of copper (Cu) versus choosing a permanent magnet such as Neodymium (Nd). The laws of physics, specifically electromagnetic induction, specifically the fact that a moving magnetic field induces a current in a nearby wire, does not change depending on the source of the magnetic field.

Factual Allegations Relating to Non-Obviousness

79. Bulgin (GB700,751) is a 1950 patent which describes a wearable source of magnetic field to shut down a machine, but relies on a magnetic field sensor—not Faraday's law of induction.



PATENT SPECIFICATION 700,751

Inventors:—DOUGLAS BULGIN and PERCY HATFIELD.

Date of filing Complete Specification : June 21, 1951.

Application Date : June 30, 1950. No. 16345/50.

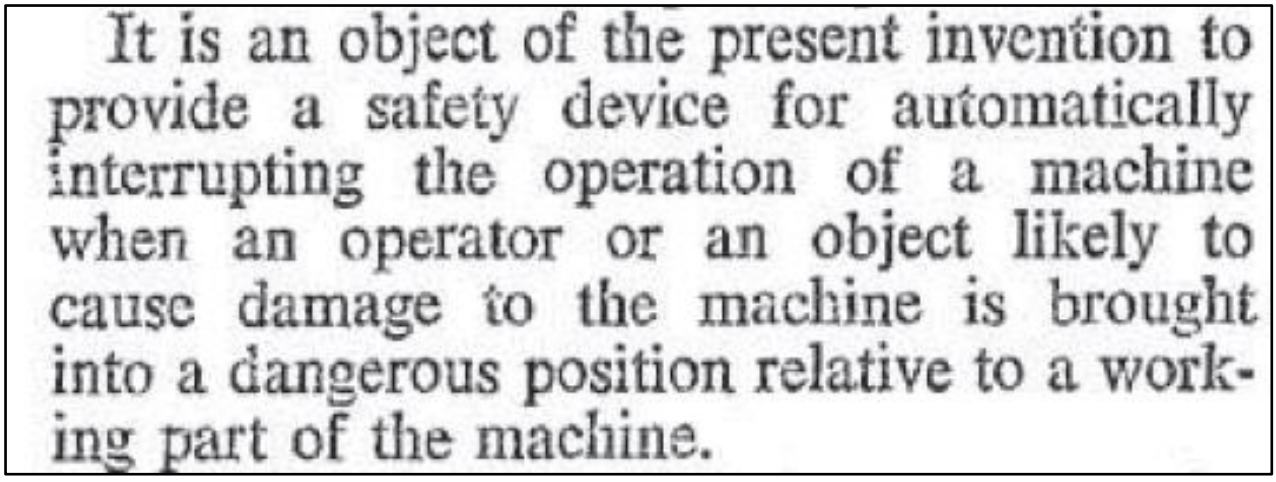
Complete Specification Published : Dec. 9, 1953.

Index at Acceptance :—Classes 37, E ; and 80(4), R3.

COMPLETE SPECIFICATION.

Automatic Means for Rendering a Machine Inoperative.

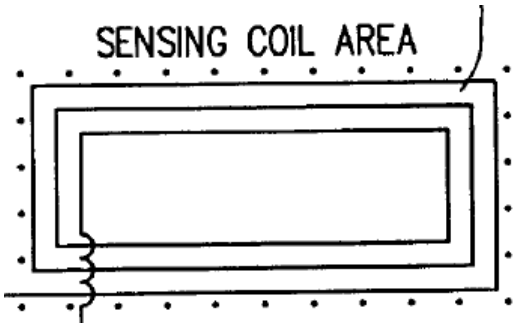
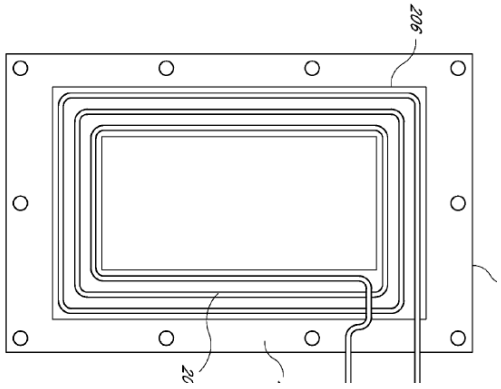
80. Like the '004 patent, the Bulgin reference from 1950 teaches the use of wearable sources of magnetic field to prevent injury to machine operators by shutting off the machine when the operator's fingers/hands/limbs get too close to the dangerous part of the machine.



It is an object of the present invention to provide a safety device for automatically interrupting the operation of a machine when an operator or an object likely to cause damage to the machine is brought into a dangerous position relative to a working part of the machine.

81. The ’004 patent teaches, depicts, and claims a sensing coil that picks up *changing* magnetic fields, not *static* magnetic fields.

82. The WCSS uses a sensing coil which is probably quite similar to what Defendant depicts in his own patent (Pat. 9,044,760 Fig. 2, rotated clockwise by 90 degrees to show the similarity), and similarly only picks up *changing* magnetic fields, not static magnetic fields.

’004 Patent Fig. 4	Defendant’s Pat. 9,044,760 (Fig. 2)
	

83. A static magnetic field is incapable, under the laws of physics, of inducing a current in a mere sensing coil.

84. By contrast to the ’004 patent and the WCSS product, the Bulgin reference teaches use of a **paramagnetic tubular core** with toroidal and coaxial two windings.

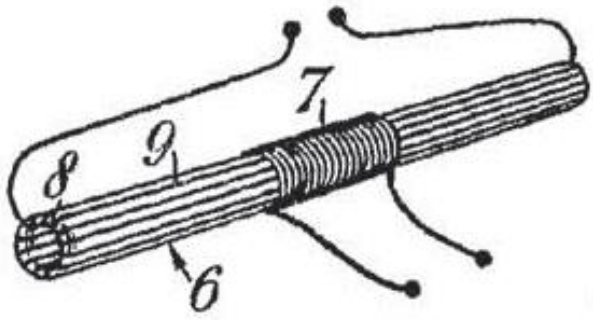


Fig.1

85. Bulgin relies on the changes in the core's permeability which changes in the presence of an external magnetic field—not Faraday's law which has *nothing to do* with the permeability of paramagnetic material. Nothing remotely similar is anywhere mentioned, taught, claimed, or referenced in the '004 patent. Not only are the engineering structures different, the underlying *physics* is fundamentally different between Bulgin's paramagnetic core with orthogonal windings on the one hand, and a coil of copper wire on the other.

86. When Defendant prosecuted the application that issued as Pat. 9,044,760, he was aware of the '004 patent from over a decade ago.

87. When Defendant prosecuted the application that issued as Pat. 9,044,760, he was aware of the sensing coil diagram of Fig. 4.

88. The specification explains, "The sensing coil may be configured as a spiral or as a number of turns of wire with a non-circular path." '004 at 1:64-65.

89. If Bulgin were combined with every single reference examined by the Patent Office (Pats. 5,667,152, Pat. 2,913,581, and Pat. 5,227,798), it would not disclose every limitation of the claims.

90. In the file history, the patent applicants distinguished Mooring (Pat. 5,667,152) in particular based on the fundamentally different nature of the presence detection technology involved.

> Also, the Mooring system requires a non-metallic window covering those portions of the wood chipper that are located in the metal detection zone of the metal sensor so that the metal sensor will only detect the presence of foreign metallic objects in the detection zone. Applicant notes that the system, according to the present application, does not require a non-metallic window.
>
> For the reasons given above, the applicant submits that the invention defined in claim 1 of the present application is a significant improvement over the safety system disclosed by the Mooring patent. Accordingly, the applicant submits that the invention defined in independent claim 1 of the present application is non-obvious in the light of the disclosure of Mooring.

91. Morbark is a major wood chipping manufacturer.

92. Milan Robinson was the vice president of Research and Development at Morbark.

93. In a deposition for a tort liability case in 2010, over a decade after the priority date of the '004 patent, Mr. Robinson testified:

> **67. PAGE 68:25 TO 69:03 (RUNNING 00:00:08.000)**
>
> 25 THE WITNESS: Yes. In my opinion, we do.
> 00069:01 BY MR. STEINBRECHER:
> 02 Q. In your opinion, Morbark designed the safest chippers
> 03 possible, is that right?
>
> **68. PAGE 69:06 TO 69:06 (RUNNING 00:00:00.000)**
>
> 06 THE WITNESS: Yes.

94. At that time, well after the patent's priority date, Morbark had not installed a passive presence sensing safety device.

95. During trial at another tort liability case from Boston, Mr. Robinson, the Vice President of R&D at Morbark, a major wood chipping machine maker, had *this* to say about the Mooring system criticized in the file history by the patent-in-suit's inventors/applicants.

> Q. Can you describe what his patent purports to describe *[sic]*?
> A. His patent would require you to install a nonmetallic section in the infeed of a chipper that would detect metal if it passed through the metal detector.
> Q. So that there's a metal detector incorporated into the infeed chute?
> A. Yes.

96. Mr. Robinson, the VP of R&D of a major manufacturer, criticized Mooring for the same reason that the applicants criticized Mooring.

> Q. But the infeed chute itself is metal, correct?
> A. That is correct.
> Q. So in order for the metal detector not to detect the chute itself, you have to have some portion of it that's not metallic?
> A. That's correct.
> Q. And do you believe that's feasible?
> A. No, I do not.

97. When pressed for more specifics, Mr. Robinson had this to say about Mooring:

> Q. Why not?
> A. Because of the amount of area and the weight and the type of controls you'd have to put on to a metal detector to even make it work, and the problem that you could encounter in the field with a metal detector, even if you got it mounted.

> Q. What is the range of cost of those metal detectors?
> A. The cost to just purchase the metal detector can run anywhere from $12,000 to $30,000.

98. Significantly, another expert Morbark, an eminently qualified authority specifically in the domain of wood chipper safety, provided testimony about the feasibility of the technology-in-suit. Consider his credentials below:

> as a mechanical engineering safety and design consultant. Currently, I am a Senior Managing Consultant at Engineering Systems Inc., a professional engineering consulting firm headquartered in Aurora, Illinois. Specializing in the tree care industry, I have participated in over 80 wood chipper accident investigations spanning over two decades, including commercial tree chippers, consumer chipper/shredders, tractor drawn brush cutters, and recyclers.

> 3. I am a licensed Professional Engineer in Illinois and Alabama. In addition, my professional affiliations include the International Society of Arboriculture, American Society of Mechanical Engineers, American Society of Safety Engineers, National Society of Professional Engineers, Illinois Society of Professional Engineers, International Society for Occupational Ergonomics & Safety, and Institute of Scrap Recycling Industries. My professional activities include serving on the American Society of Mechanical Engineers Reliability, Stress Analysis, and Failure Prevention Steering Committee and acting as chairman or co-chairman for over a dozen technical conference sessions. I have given fifty professional talks including three talks on commercial tree chippers and two talks on consumer chipper/shredders. In addition, I have authored 48 technical publications, including five publications addressing wood chippers.

4. My safety research activities include performing safety research for the National Institute of Occupational Safety and Health (NIOSH). Also, I have assisted in developing OSHA training modules. In addition, I have completed the OSHA 501 Trainer Course in Occupational Safety and Health Standards for General Industry and the OSHA 510 Standards for Construction Industry Course. Currently I am an authorized OSHA general industry outreach trainer. I have reviewed and published OSHA accident statistics regarding wood chippers. My current curriculum vitae is attached as Exhibit A.

scenarios. The following are descriptions of some wood chipper accidents that I have personally studied and/or am aware of:

(a) The operator intentionally reaches inside the infeed chute to feed short materials. In attempting to feed the short materials into the feed wheels, the operator's hand is caught and pulled with the material.

(b) The operator intentionally reaches inside the infeed chute to push bundles of material or material which is too large to feed easily. Inside the feed chute, the operator's hands get too close to the feed wheels and become caught and pulled into the chipper.

(c) In (a) and (b) above, the operators intentionally reach inside of the infeed chute, placing their hands in very close proximity to the feed wheels. Every wood chipper, including the Model 12 involved in this case, has warnings and instructions not to break the plane or reach inside of the infeed chute.

(d) Mr. Jimenez could have fainted or passed out, had a stroke or heart attack, been struck in the head by material, struck his head on the infeed chute, or suffered some other physical impairment causing him to fall onto or into material being fed into the machine. There is no evidence to indicate whether Mr. Jimenez was conscious at the time he became caught in the feed wheels.

(e) I am aware of incidents in which people have committed suicide in wood chippers.

(f) I am aware of incidents where people have been murdered using a wood chipper.

(g) Operators have been involved in the same scenarios as (a) and (b) but with their feet. They attempt to kick the material into the feed wheels. However, based on the eyewitness testimony of Mr. Stroud, we can conclude that Mr. Jimenez did not enter the chipper feet first.

99. This expert opined on May 21, 2010, **over a decade** after the patent-in-suit was filed:

> 7. It is not feasible to design a reasonably functional wood chipper in a manner to prevent incidents such as those described above in which the operator intentionally enters the infeed area of the chipper.
>
> FURTHER DECLARANT SAYETH NAUGHT.
>
> I declare under penalty of perjury of the laws of the State of California that the foregoing is true and correct based upon my own personal knowledge, and that this declaration was executed this 21st day of May, 2010, in the County of DuPage, State of Illinois.
>
> Dennis Barry Brickman
> Dennis Barry Brickman

100. ANZI Z133-2012 prescribes safety requirements for arboricultural oeprations.

101. ANZI Z133-2012 Regulation 5.3.5 states, "Chippers equipped with a mechanical infeed system **shall have** a quick-stop and reversing device on the infeed system. The activating mechanism for the quick-stop and reversing device shall be located across the top, along each side, and close to the feed end of the infeed hopper within easy reach of the worker." (emphasis added).

102. Title 8, General Industry Safety Orders, Section 3424(c) of the State of California requires, "Each disk-type tree or brush chipper equipped with a mechanical infeed system **shall have** a quick stop and reversing device on the infeed."

103. Claim 1 requires a means for **stopping** the feed rollers without any reversing mechanism, which does not comply with state and ANZI regulations for brush chipper safety technology.

104. The file history recites:

> Further, the Mooring patent does not disclose stopping the machine upon detection of a metallic object, but merely closing a gate or reversing the feed rollers of the wood chipper. From a practical point of view, we note that closing a gate may not always be effective in preventing a metal object from entering the blades of a wood chipper, for the gate may not close properly if there is a log, for example, located adjacent to the gate. Thus, a foreign metallic object, such as a metal impregnated glove fitted to an operator's hand, may still be drawn into the cutting blades if a log or other object prevents the gate from closing properly. Reversing the rotation of the rollers will likely result in the detected metallic object being flung back towards the operator. This can be quite dangerous, as the metallic object essentially would become a piece of flying shrapnel that could cause serious injury to the operator. Applicant submits that closing a gate or reversing the rollers is therefore not nearly as effective or safe as stopping the machine. Applicant notes that the safety system defined in claim 1 of the present application includes the feature of a control signal for use in stopping operation of the machine.

105. To start at Bulgin and Mooring (and the other prior art identified in the file history) and to end up at claim 1, one would have to throw away Bulgin's paramagnetic core with orthogonal windings, *replace it with a sensing coil*, dismantle Mooring's unworkable, infeasible, non-metallic section in the infeed, *replace it with a regular infeed wall*, get rid of Mooring's gate and reversing rollers, *use a safety solenoid valve to stop the feed rollers*. At the end of that journey, you would run head first into a stack of testimony by a leading wood chipper manufacturer in judicially noticeable case after judicially noticeable case, testifying till its face turned blue that such technology was simply infeasible. A decade after the patent's priority date. You would also run into an assortment of facts evidencing further indicia of non-obviousness.

106. Over a decade and a half after the priority date of the patent-in-suit, on August 20, 2015, Defendant petitioned the state of California to consider requiring presence sensing devices in wood chippers.

107. Defendant represented that without regulations requiring them, wood chipping machine manufacturers would not install such presence sensing devices on their own.

108. Defendant sent the below email to Jason Denning of the Department of Industrial Regulations in 2016—over a decade and a half after the priority date of the patent-in-suit.

Fw: RFID BASED SAFETY DEVICE FOR WOOD CHIPPERS

From:	**Jeff Buchanan <chieftreehugger@att.net>**
To:	**Denning, Jason@DIR**
CC:	**Berg, Eric@DIR**
Sent time:	**01 Feb, 2016 11:53:29 PM**
Attachments:	**InSafe_Cut.wmv**

Jason, this one is applied to brush chippers.
There are many different ways to get this done. We need manufacturers to look at getting this done. They wont do it on there own. Not much different than what I was saying about back up senors, and collision avoidance systems. When they have to they will adapt the technology to there machines.

Make it a great day!
Jeff

Jeff Buchanan Tree Service
3730 W Commonwealth Ave
Fullerton, Ca 92833
Office 714-738-4652
Fax 714-738-4688

MessageViewer Online lets you view e-mail messages in EML, MSG and winmail.dat (TNEF) formats. You can also access email file attachments.

109. Defendant criticized current safety standards for wood chippers in a petition to the Department of Industrial Regulations of California.

Jeff Buchanan
108 S. Waldo Ave
Fullerton CA 92833
714-926-4295

August 20, 2015

Good morning, my name is Jeff Buchanan and I'm here today to advocate for improved safety standards required of wood chippers. For those on the board who are unfamiliar with wood chippers, this equipment is used to reduce tree branches and logs in to wood chips. Wood chippers are designed to process material from 6 inches to 20 inches in diameter, so one can understand the inherit danger to the operator. Individuals, private companies and government agencies use wood chippers. Based on CDC statistics from 1992 to 2002, (31) individuals lost their lives. Additionally, (2042) individuals suffered injuries while operating wood chippers, of those injured (155) sustained amputations. California's FACE statistics report (73) fatalities from 1992 to 2009 while a review of the Internet indicates another 15 deaths from wood chipper activity. Current safety standards for wood chippers are extremely limited and are not designed to address the issue that is common to these statistics, the operator is subject to danger while performing associated duties.

110. Mr. Buchanan concluded his petition by stating:

your support in addressing the deficiencies of existing wood chipper safety standards. California is a leader so it is both appropriate and not unexpected to send a message to the wood chipper industry that operator safety is critical and technology is available today to achieve safety now.

111. On January 21, 2016, almost two decades after the priority date of the patent-in-suit, the state of California ruled on Mr. Buchanan's petition.

Board Member	Aye	No	Abstain	Absent
Dr. Blink	X			
Mr. Harrison	X			
Ms. Quinlan	X			
Ms. Smisko	X			
Ms. Stock	X			
Chairman Thomas	X			

112. The Occupational Safety and Health Standards Board of California ruled as follows:

CONCLUSION AND ORDER

The Occupational Safety and Health Standards Board has considered the petition of Mr. Jeff Buchanan, to make recommended changes to Article 12, [Section 3424] to require tree and brush chippers to have a passive presence sensing device that would interrupt power to the infeed rollers and stop motion before injuring an operator. Having carefully read and considered the Petition, Division Evaluation, and Board Staff Evaluation, the Petition is GRANTED to the extent that the Division identify and explore the existence of additional passive sensing device technology. If technology is identified, the Board staff will convene an advisory committee meeting to discuss the merits of passive sensing devices.

113. A commercial embodiment of claim 1 of the '004 patent has earned four industry awards.

114. During the initial rollout for the commercial embodiment of claim 1 of the '004 patent, customers were skeptical. *Pro Contractor Rentals* Magazine (Jul./Aug. 2015)

> When first introduced, he says, people wondered if they really needed such a system. "But when you dem-

115. But over time, ChipSafe sales gained momentum.

> The product is available on the company's most recent models and can be added to older units. As far as market acceptance, he notes, it was a little slower than anticipated at first. "But now we're starting to get more and more of them out, more people are aware of its value, and it's taking off and gaining momentum."

116. It took two years of research and development to come up with a roll-out version of ChipSafe.

> **PPE and ChipSafe**
>
> About 18 months ago, after about two years of testing, Morbark introduced its ChipSafe system. The

117. The chipper manufacturer industry is not idle with respect to safety innovation.

118. Indeed, an industry insider has observed that "many wood chipper manufacturers have already gone beyond the ANSI requirement of 85 inches from the ground to the pinch point and have added a control bar because they feel they have a moral obligation to make the unit safer." http://www.dir.ca.gov/OSHSB/documents/minutesJan2016.pdf (quoting Trina Panaqua of Garvey Equipment Co.). But despite this moral obligation, none of them came up with the solution described and claimed in the patent-in-suit.

119. The same industry insider, Trina Panaqua of the Garvey Equipment Company, as recently as 2016—almost two decades after the priority date of the patent-in-suit noted that passive safety devices on wood chippers are absolutely necessary and that requiring wood chippers to have passive safety devices on them will have long-lasting effects on employees in the industry and their families. *Id.* This has a clear nexus to the claimed invention which are nothing but passive safety devices.

120. An insurance company, Eydent, with an insurance program targeting tree care companies, has been quoted in industry magazines as follows, "We recognize that the ChipSafe Operator Safety device from Morbark offers operators an additional layer of protection when operating a brush chipper," said Brian Tunge, vice president of marketing at ArborMAX Insurance. "We encourage all of our client companies to be safe by providing ongoing training, proper equipment and now by exploring the benefits of having a ChipSafe device on all their brush chippers." http://www.totallandscapecare.com/green-industry-news/product-roundup-morbark-polyworx/

121. Mr. Buchanan's product was both reviewed and praised by Caltrans' Ron Frank (Engineering) and Calfire's Jeff Cranfill. CalOSHA's Eric Berg (R&D) stated it appeared to be "much more protective than existing regulations." Laura Styles from California's Department of Occupational Health Unit said "this is a potentially life saving device."

https://www.dir.ca.gov/oshsb/documents/petition_549.pdf

Factual allegations relating to mens rea.

122. Defendant was aware of the ’004 patent before 2014.

123. Defendant conducted an analysis of the scope of patent claim 1 of the ’004 patent before 2014.

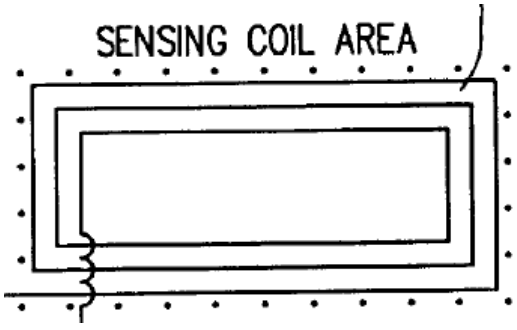
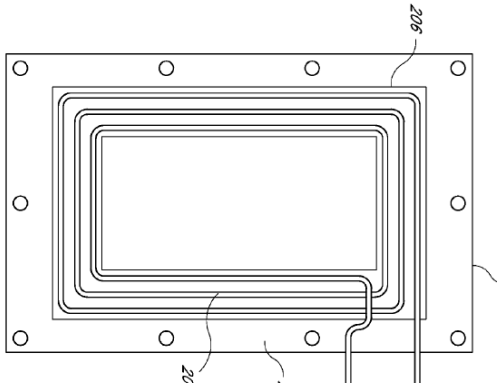
124. Defendant conducted an analysis of the validity of patent claim 1 of the ’004 patent before 2014.

125. Before 2014, Defendant conducted an infringement analysis where he compared his understanding of the scope of claim 1 to a product called ChipSafe marketed by Morbark.

126. On or before 2017, Defendant conducted an infringement analysis where he compared his understanding of the scope of claim 1 to WCSS.

127. ChipSafe is similar to WCSS.

128. Defendant prosecuted ’760 and disclosed a sensing coil that is virtually identical to the sensing coil of ’004 from over a decade and a half ago.

’004 Patent Fig. 4	Defendant’s Pat. 9,044,760 (Fig. 2)
	

First Claim for Relief for Patent Infringement

129. All preceding allegations are incorporated by reference as if set forth here in full.

130. Amit is the owner of the entire title, right, and interest in the '004 patent duly issued on July 9, 2002.

131. Mr. Buchanan is liable for direct, contributory, indirect, and willful infringement of claim 1 of the '004 patent literally and under the doctrine of equivalents.

Prayer for Equitable Relief

Wherefore Amit prays for equitable relief as follows:

1. That U.S. Pat. 6,418,004 is valid and enforceable;
2. That Mr. Buchanan infringes claim 1 of the '004 patent;
3. That Mr. Buchanan be ordered to pay ongoing royalties as a matter of equity;
4. That Mr. Buchanan be ordered to provide a future accounting as a matter of equity.

Dated: July 6, 2017

Respectfully submitted,

/s/Amit Agarwal
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