IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO

FEIT ELECTRIC COMPANY, INC., Plaintiff, v. SAVANT TECHNOLOGIES LLC d/b/a GE LIGHTING, Defendant.	Case No. 1:24-cv-00473

SUPPLEMENTAL INITIAL INFRINGEMENT CONTENTIONS
PURSUANT TO L.P.R. 3.1 AND 3.10(a)

Plaintiff Feit Electric Co., Inc. ("Plaintiff" or "Feit Electric") hereby supplements its Initial Infringement Contentions against Defendant Savant Technologies LLC d/b/a GE Lighting ("Defendant" or "Savant") with regard to U.S. Patent No. 8,604,678 ("the '678 Patent"). To date, Feit Electric has obtained limited discovery from Defendant, and certain information is not yet available to Feit Electric that may be specifically relevant to its infringement claims. Thus, Feit Electric reserves the right to further supplement or alter its disclosures herein based on additional information obtained through further investigation, discovery, claim construction, expert analysis, or any position taken by Defendant.

I. L.P.R. 3.1(a): Each claim of each patent in suit that is allegedly infringed by each opposing party, including for each claim the applicable statutory subsections of 35 U.S.C. § 271 asserted.

Feit Electric currently asserts that Defendant infringes at least claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of the '678 Patent under 35 U.S.C. § 271(a) by making, using, offering for sale, selling and/or importing the Accused Instrumentalities. In accordance with L.P.R. 3.10(a),

Feit Electric reserves all rights to further amend, supplement, and modify its list of asserted claims as it obtains additional information over the course of discovery.

II. L.P.R. 3.1(b): Separately for each asserted claim, each Accused Instrumentality that each party claiming infringement contends infringes, including the name or model number if known.

Feit Electric contends that Defendant infringes claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of the '678 Patent by making, using, offering for sale, selling and/or importing at least the following Accused Instrumentalities:

#	Brand	Model No.	Description
1	GE	LED6DBC/DL9GCQWF-3T	60W 5.5W 500 Lumen Daylight Dimmable EQ BC Candelabra Base Pearl Filament Light Bulb
2	GE	LED5DST19M/SW9GCQWF-2T	60W 5.5W 500 Lumen Soft White Dimmable EQ ST19 Pearl Filament Light Bulb
3	GE	LED5DST19M/DL9GCQWF-2T	60W 5.5W 500 Lumen Daylight Dimmable ST19 Pearl Filament Light Bulb
4	GE	LED6DBC/SW9GCQWF-3T	60W 5.5W 500 Lumen Soft White Dimmable EQ BC Candelabra Base Pearl Filament Light Bulb

In addition to the specified model numbers, the Accused Instrumentalities include any products made, used, offered for sale, sold and/or imported by Defendant that include a LED filament that contains a top layer composed of white light scattering material. In accordance with L.P.R. 3.10(a), Feit Electric further reserves all rights to amend, supplement, and modify its list of Accused Instrumentalities as it obtains additional information over the course of discovery.

III. L.P.R. 3.1(c): A chart identifying specifically where each limitation of each asserted claim is found within each Accused Instrumentality, including for each limitation that such party contends is governed by 35 U.S.C. § 112(6), the identity of the corresponding structure and function and where such structure and function is found in the Accused Instrumentality.

Feit Electric attaches Exhibits 1 through 4 and incorporates by reference these charts herein. Feit Electric contends that none of the limitations of the claims asserted herein are governed by 35 U.S.C. § 112(6).

IV. L.P.R. 3.1(d): For each claim which is alleged to have been indirectly infringed, an identification of any direct infringement and a description of the acts of the alleged indirect infringer(s) that contribute to or that are inducing direct infringement, including a description of the role of each relevant party if direct infringement is based on the joint acts of multiple parties.

Feit Electric does not currently allege indirect infringement but reserves all rights to amend, supplement, and modify these Supplemental Initial Infringement Contentions to include allegations of indirect infringement as it obtains additional information over the course of discovery.

V. L.P.R. 3.1(e): Whether each limitation of each asserted claim is alleged to be literally present or present under the doctrine of equivalents in the Accused Instrumentality.

Feit Electric asserts that Defendant literally infringes claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of the ’678 Patent. This supplemental infringement analysis is necessarily preliminary, as it is provided with limited discovery from Defendant with respect to the Accused Instrumentalities and in advance of claim construction. Feit Electric reserves all rights to further amend, supplement, and modify its infringement analysis to include allegations of infringement under the doctrine of equivalents.

VI. L.P.R. 3.1(f): For any patent that claims priority to an earlier application, the priority date to which each asserted claim allegedly is entitled.

The claims of the ’678 patent asserted herein are entitled to a priority date of at least December 27, 2010.

VII. L.P.R. 3.1(g): If a party claiming patent infringement alleges willful infringement, the basis for such allegation.

Feit Electric is asserting that Defendant's infringement has been willful at least since Defendant received a notice letter from Feit Electric dated December 12, 2023. Feit Electric's notice letter notified Defendant that the '678 Patent belonged to Feit Electric and warned of the high likelihood that their products infringed the '678 Patent. Despite that knowledge, Defendant infringed and continues to infringe the '678 Patent.

VIII. L.P.R. 3.2(a): All documents concerning any disclosure, sale or transfer, or offer to sell or transfer of the claimed invention prior to the bar date under 35 U.S.C. § 102(b) and/or the date of invention for the patent in suit.

Feit Electric is not aware of any documentation in its possession, custody, or control concerning any disclosure, sale or transfer, or offer to sell or transfer of the claimed invention prior to the bar date under 35 U.S.C. §102(b) and/or the date of invention for the patent in suit.

IX. L.P.R. 3.2(b): All documents evidencing the conception and first reduction to practice of each claimed invention, which were created on or before the date of application for the patent in suit or the priority date identified pursuant to L.P.R. 3.1(f), whichever is earlier.

Feit Electric has previously produced documents that may evidence the conception and first reduction to practice of each claimed invention. *See* BL-SV-004636 – BL-SV-004642; BL-SV-011358 – BL-SV-011386; BL-SV-011387 – BL-SV-011391. Feit Electric is not currently aware of other documentation in its possession, custody, or control concerning the conception and first reduction to practice of each claimed invention.

X. L.P.R. 3.2(c): A copy of the file history for each patent in suit (or so much thereof as is in the possession of the patentee) and any patent(s) or application(s) to which each patent in suit claims priority.

Feit Electric has previously produced a copy of the file history of the '678 Patent. *See* FEITSV00000054 - FEITSV00002569.

XI. L.P.R. 3.2(d): All documents evidencing ownership of the patent rights by the party asserting patent infringement.

Feit Electric has previously produced documents evidencing its ownership of the ’678 Patent. *See* FEITSV00000001 - FEITSV00000053; FEITSV00002614 – FEITSV00002626.

Dated: October 8, 2024

Respectfully submitted,

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Attorneys for Feit Electric Company, Inc.

CERTIFICATE OF SERVICE

I hereby certify that, on October 8, 2024, a true and correct copy of the foregoing document was served upon all counsel of record via email.

/s/ Michael S. Weinstein
Michael S. Weinstein

An Attorney for Feit Electric Company, Inc.

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Feit Electric's Supplemental Infringement Analysis

U.S. Patent No. 8,604,678 – Savant Technologies LLC d/b/a GE Lighting

Claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29.

Plaintiff Feit Electric Co., Inc. ("Plaintiff" or "Feit Electric") hereby supplements its Initial Infringement Contentions against Defendant Savant Technologies LLC d/b/a GE Lighting ("Defendant" or "Savant"). Feit Electric's Supplemental Infringement Contentions provide evidence of infringement of claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of U.S. Patent No. 8,604,678 (the "'678 Patent") by Savant. In support thereof, Feit Electric provides the following supplemental infringement claim charts.

"Accused Instrumentalities" as used herein refers to Light Emitting Diodes ("LEDs") including, but not limited to, the products listed in Section II of these Supplemental Infringement Contentions and any products made, used, offered for sale, sold and/or imported by Defendant that include a LED filament that contains a top layer composed of white light scattering material. These claim charts demonstrate Savant's infringement by comparing each element of the asserted claims to corresponding components, aspects, and/or features of the Accused Instrumentalities. These claim charts are not intended to constitute an expert report on infringement. These claim charts include information provided by way of example, and not by way of limitation.

The analysis set forth below is based on publicly available and/or publicly discernable materials regarding the Accused Instrumentalities. An analysis of Savant's (or other third parties') technical documentation may assist in fully identifying all infringing features and functionality, as well as additional infringing claims. Accordingly, Feit Electric reserves the right to further supplement this infringement analysis once such information is made available to Feit Electric. Furthermore, Feit Electric reserves the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims.

Feit Electric provides this evidence of infringement and related analysis without the benefit of claim construction or expert reports. Feit Electric further provides this evidence of infringement and related analysis with only limited initial discovery. Accordingly, Feit Electric reserves the right to further supplement, amend or otherwise modify this analysis and/or evidence based on any claim construction or expert reports or additional discovery.

Unless otherwise noted, Feit Electric contends that Savant directly infringes the '678 Patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. Savant makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority products, equipment, or services that infringe claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of the '678 patent, including without limitation, the Accused

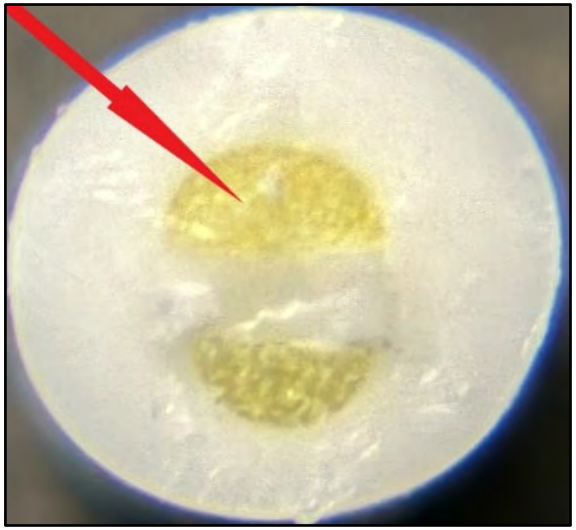
Instrumentalities. Feit Electric believes and contends that each element of each claim asserted herein is literally met by the Accused Instrumentalities.

To the extent the chart of an asserted claim relies on evidence about certain specifically identified Accused Instrumentalities, Feit Electric asserts that, on information and belief, any similarly functioning instrumentalities also infringes the charted claim. Feit Electric reserves the right to further amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by Savant. Feit Electric also reserves the right to amend this infringement analysis by citing other claims of the ’678 Patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. Feit Electric further reserves the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the Accused Instrumentalities column of each chart.

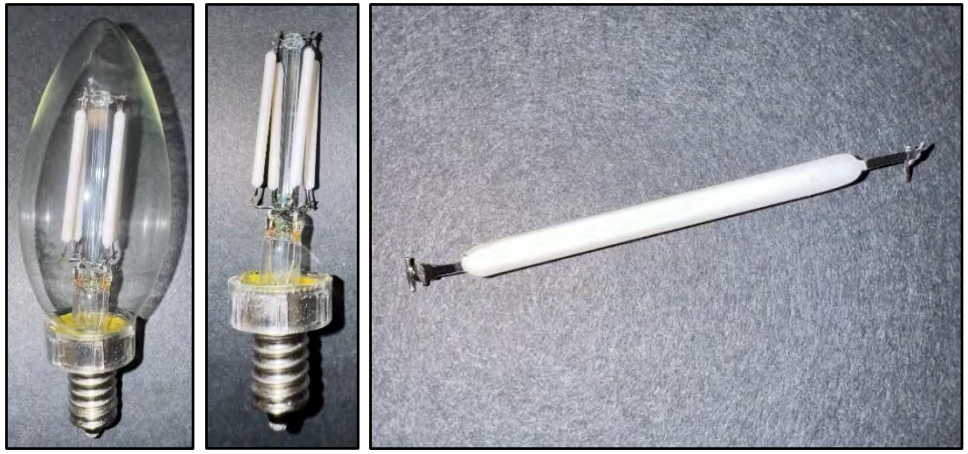
Exhibit 1

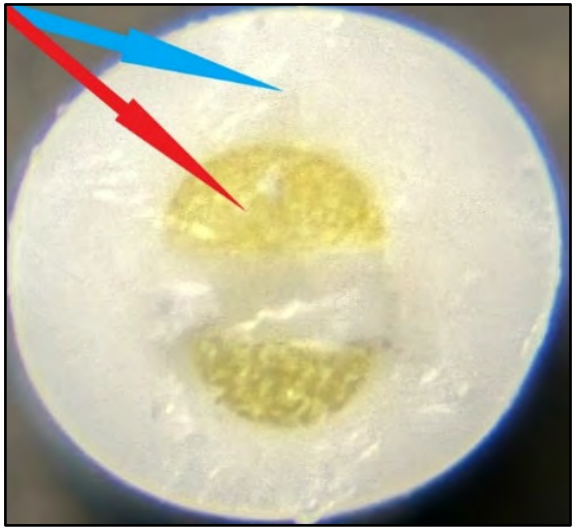
GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T

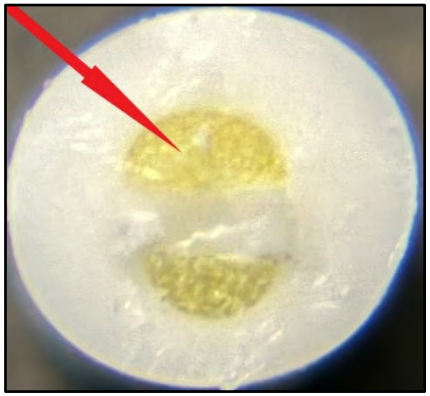
Claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of U.S. Patent No. 8,604,678

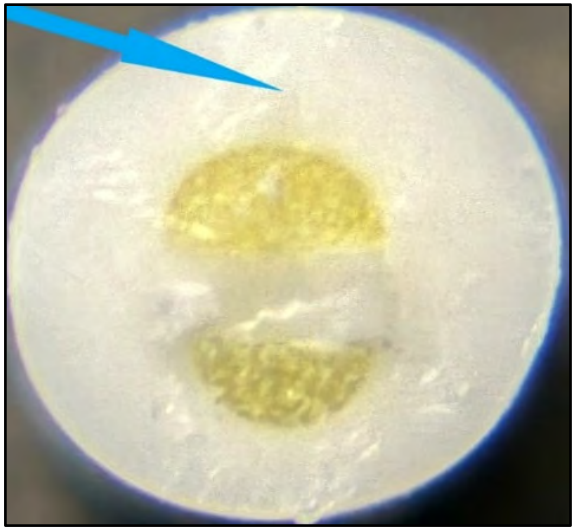
Claim 1	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
A wavelength conversion component for a light emitting device comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T, which incorporates a wavelength conversion component for an LED.
a wavelength conversion layer comprising particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

Claim 1	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

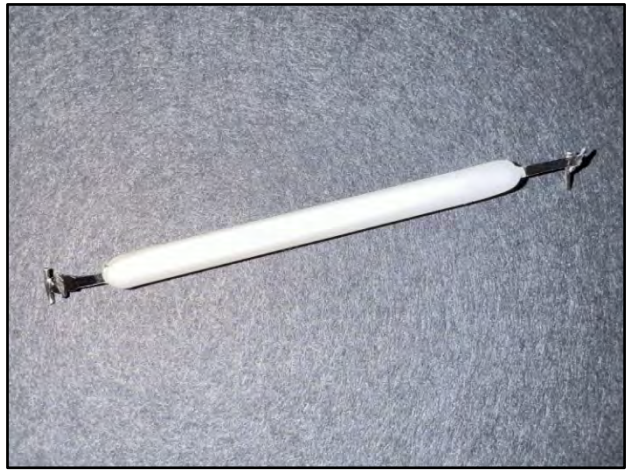
Claim 1	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of excitation light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the light emitting device is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

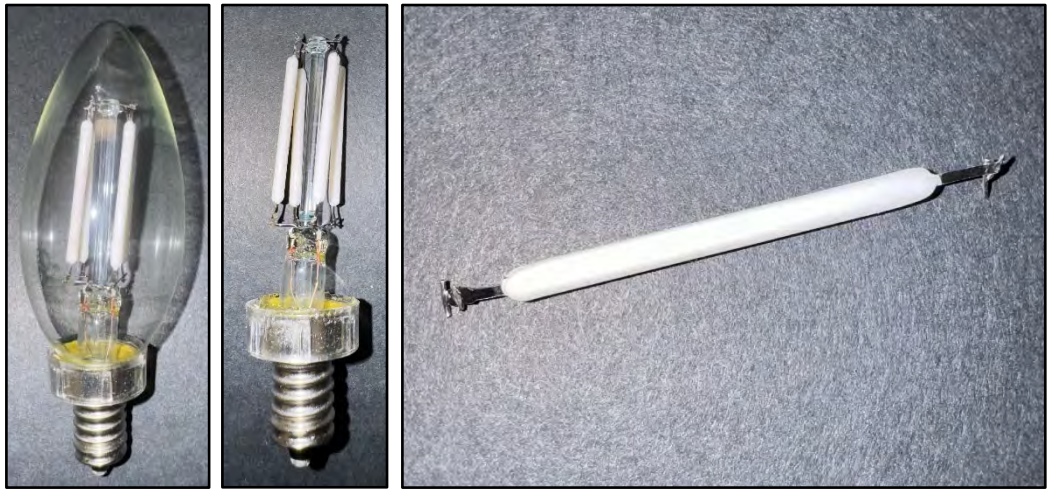
Claim 2	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The component of claim 1, wherein the wavelength conversion layer and the light diffusing layer are in direct contact with each other.	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. As shown in the image below, the yellow wavelength conversion material indicated by the red arrow and the white light diffusing material indicated by the blue arrow are in direct contact with each other. 

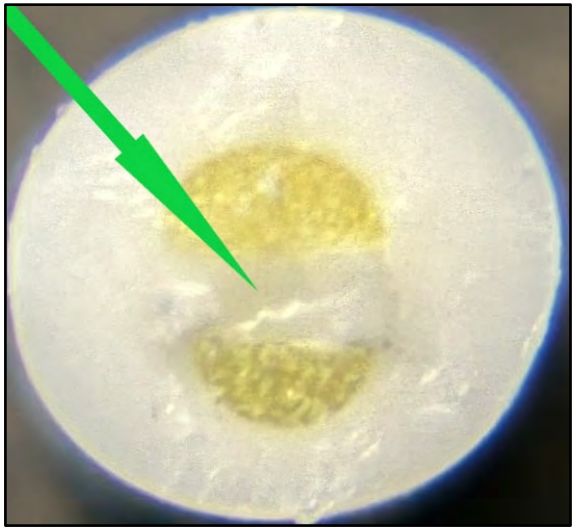
Claim 3	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The component of claim 1, wherein the wavelength conversion layer comprises a mixture of the at least one phosphor material and a light transmissive binder and the light diffusing layer comprises a mixture of the light scattering material and the light transmissive binder.	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

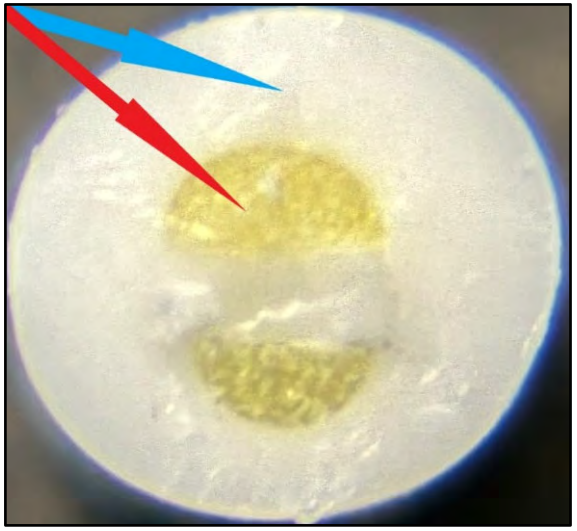
Claim 11	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The component of claim 1, wherein the light scattering material has an average particle size that is selected such that the light scattering material will scatter the excitation light relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises particles of light scattering material. On information and belief, the light scattering material has an average particle size that is selected such that the light scattering material will scatter excitation light from the radiation source relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material. 

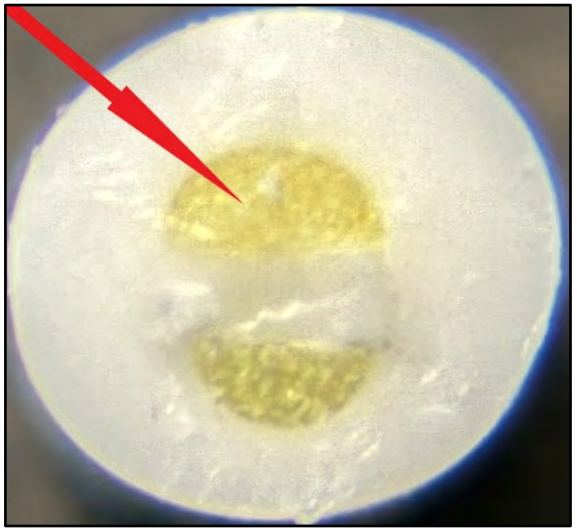
Claim 12	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The component of claim 11, wherein the light scattering material scatters the excitation light at least twice as much as light generated by the at least one photoluminescence material.	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb in the on-state. When the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm that is converted by the light scattering material to white light. On information and belief, the scattering material scatters the blue light at least twice as much as light generated by the at least one photoluminescence material to achieve the white light output. 

Claim 16	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The component of claim 1 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

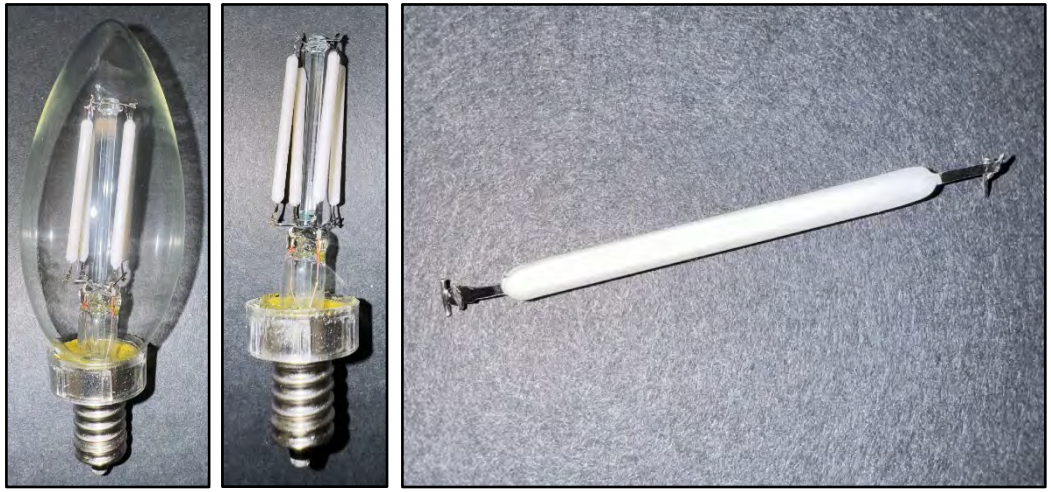
Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
A light emitting device, comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T, which is a light bulb that utilizes light emitting devices. The images below depict the light bulb and its filaments. 

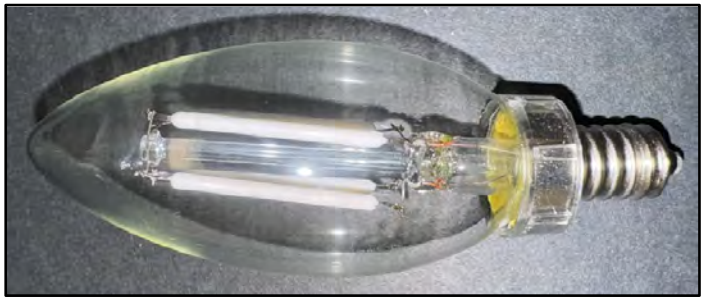
Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
at least one solid-state light emitter operable to generate excitation light; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The white central portion indicated by the green arrow in the image below comprises of a string of series-connected LEDs, which are solid-state light emitters operable to generate excitation light. On information and belief, the LEDs emit blue light greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

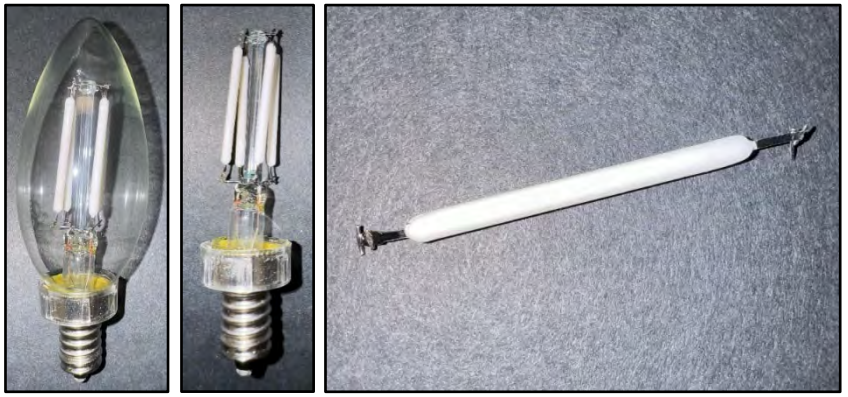
Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
a wavelength conversion component comprising:	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The yellow and white material indicated by the red and blue arrows in the image below comprise a wavelength conversion component. 

Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
a wavelength conversion layer excitable by the excitation light, wherein the wavelength conversion layer comprises particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer excitable by the excitation light comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

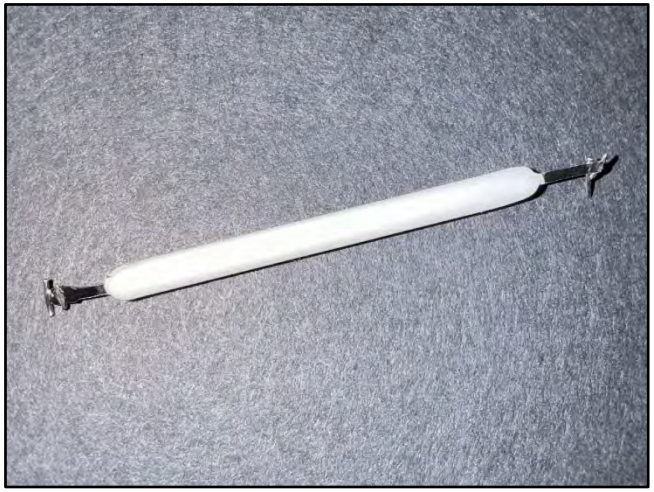
Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

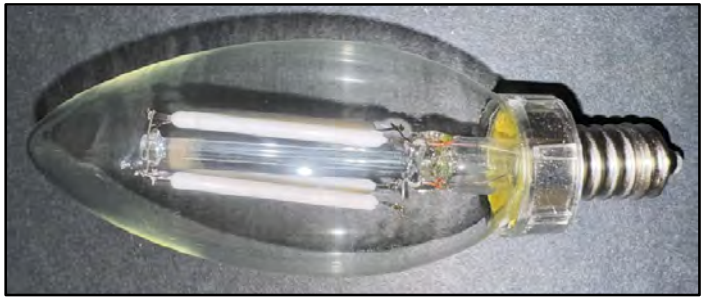
Claim 19	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
wherein the light diffusing layer improves an OFF state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the at least one solid-state light emitter is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

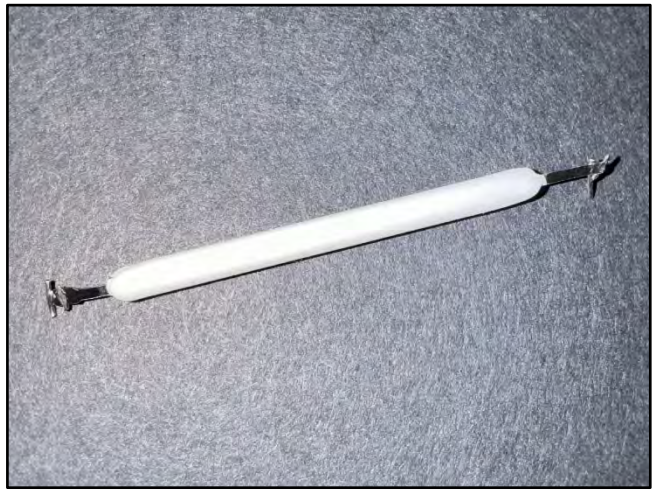
Claim 20	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The device of claim 19, wherein the light emitting device is selected from the group consisting of: downlights, light bulbs, linear lamps, lanterns, wall lamps, pendant lamps, chandeliers, recessed lights, track lights, accent lights, stage lighting, movie lighting, street lights, flood lights, beacon lights, security lights, traffic lights, headlamps, taillights, and signs.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb. 

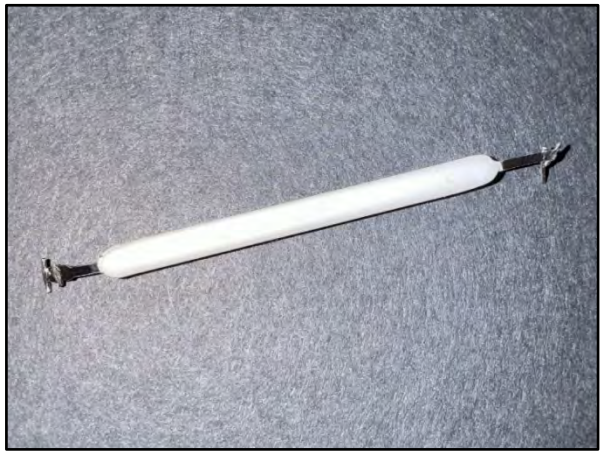
Claim 21	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The device of claim 19 in which the light scattering material within the light diffusing layer corresponds to an average particle size that improves the OFF state white appearance of the wavelength conversion component.	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 

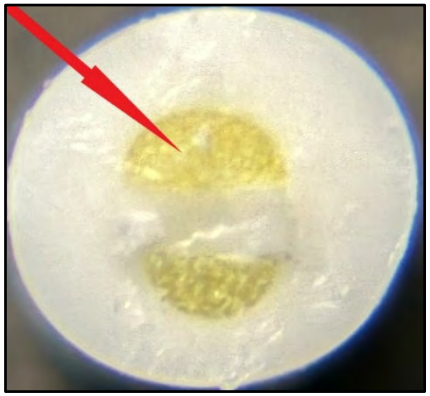
Claim 21	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
	The cross-sectional view of the LED filament demonstrates that the OFF state white appearance is a result of the white outer light diffusing layer. The white outer layer of the LED filament indicated by the blue arrow in the image below comprises a light diffusing layer composed of particles of light scattering material of an average particle size that result in the LED filament having a white appearance in the OFF state. 

Claim 25	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
The device of claim 19 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
A light bulb comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb. The images below depict the light bulb. 
a connector base configured to be inserted in a socket to form an electrical connection for the light bulb;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb. The connector base shown in the image and indicated by the black arrow is configured to be inserted in a socket to form an electrical connection for the light bulb. 

Claim 29	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb electrically connected to a lamp. As shown in the image below, the light bulb is connected through the connector base and forms an electric connection that allows the light bulb to be turned on. 
a body comprising one or more solid-state light emitters;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb and its filaments. The LED filaments are solid-state light emitters that compose the body of the light bulb.   

Claim 29	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
a wavelength conversion component having a three dimensional shape that is configured to enclose the one or more solid-state light emitters and to in part at least define a light mixing chamber,	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a three-dimensional circular shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
wherein the wavelength conversion component comprises a wavelength conversion layer comprising particles of at least one photoluminescence material and a light diffusing layer comprising particles of a light scattering material,	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

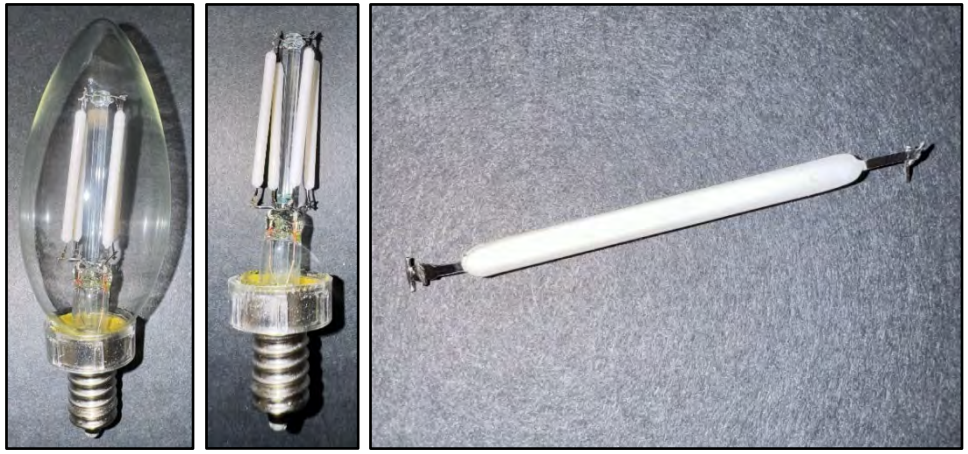
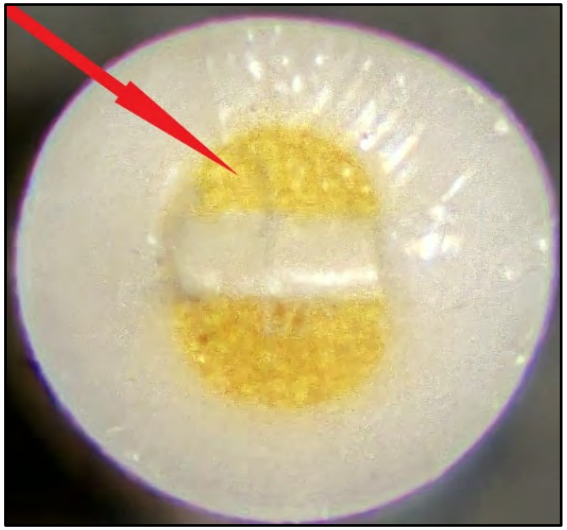
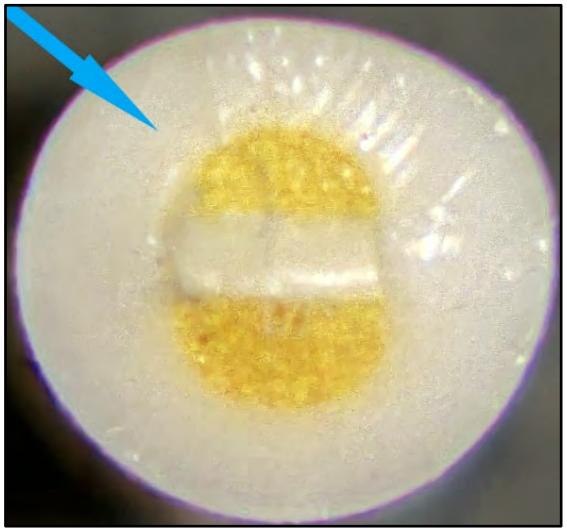
Claim 29	Infringement by Savant (LED6DBC/DL9GCQWF-3T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the one or more solid-state light emitters is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/DL9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

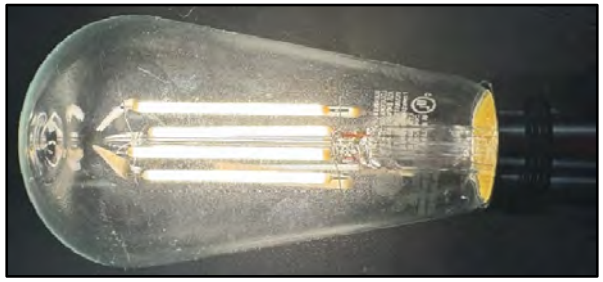
Exhibit 2

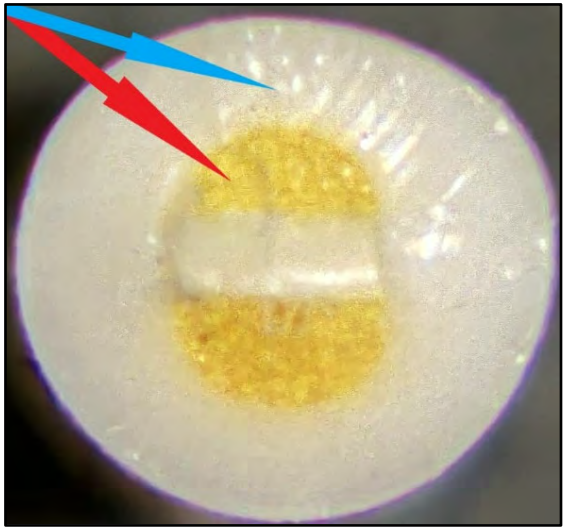
GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T

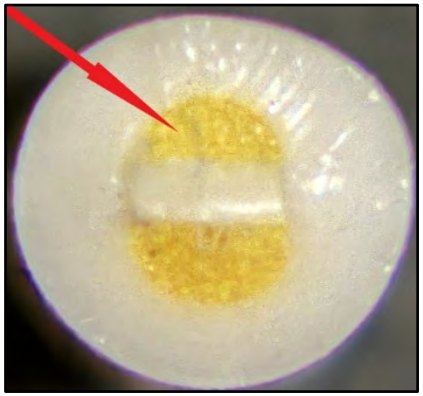
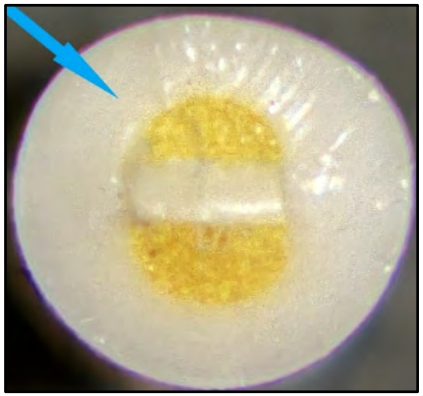
Claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of U.S. Patent No. 8,604,678

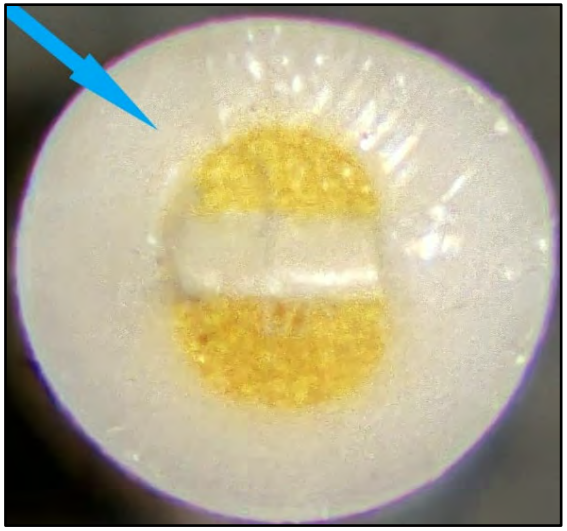
Claim 1	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
A wavelength conversion component for a light emitting device comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T, which incorporates a wavelength conversion component for an LED.
a wavelength conversion layer comprising particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

Claim 1	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

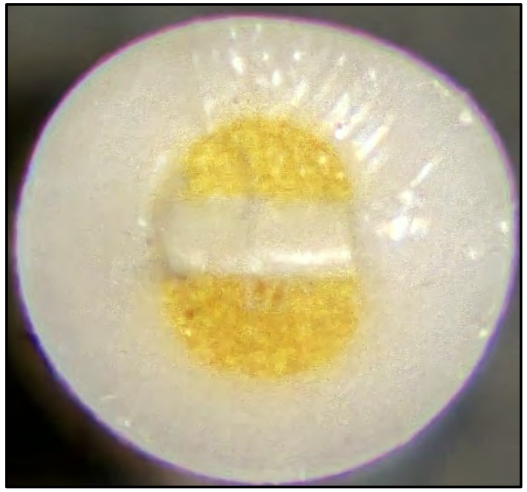
Claim 1	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of excitation light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the light emitting device is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

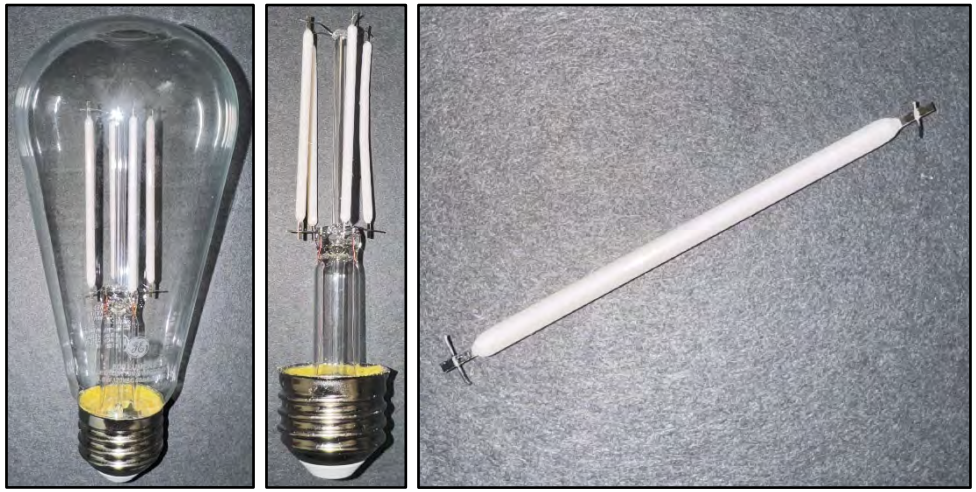
Claim 2	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The component of claim 1, wherein the wavelength conversion layer and the light diffusing layer are in direct contact with each other.	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. As shown in the image below, the yellow wavelength conversion material indicated by the red arrow and the white light diffusing material indicated by the blue arrow are in direct contact with each other. 

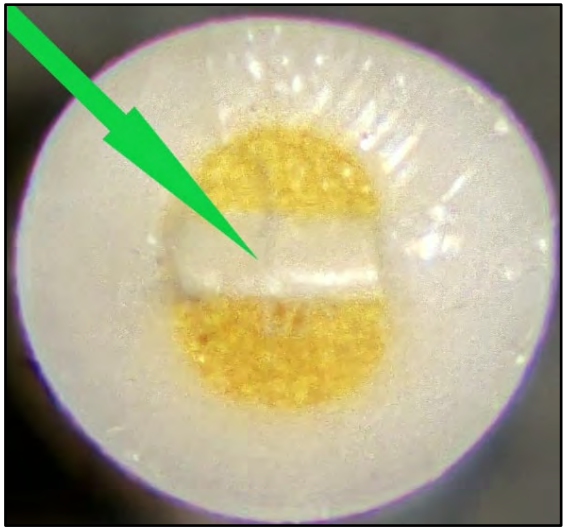
Claim 3	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The component of claim 1, wherein the wavelength conversion layer comprises a mixture of the at least one phosphor material and a light transmissive binder and the light diffusing layer comprises a mixture of the light scatter-ing material and the light transmissive binder.	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

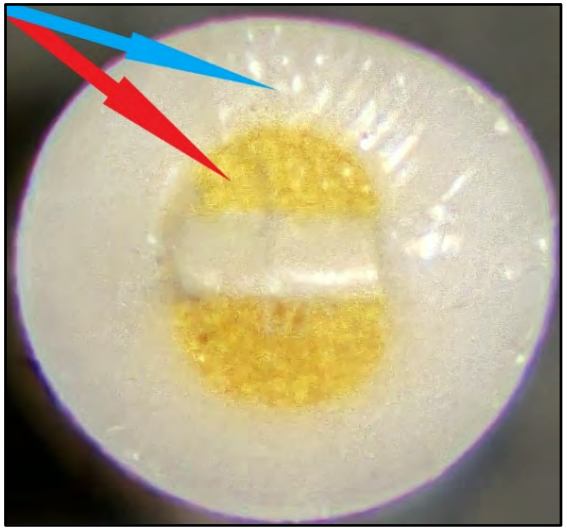
Claim 11	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The component of claim 1, wherein the light scattering material has an average particle size that is selected such that the light scattering material will scatter the excitation light relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises particles of light scattering material. On information and belief, the light scattering material has an average particle size that is selected such that the light scattering material will scatter excitation light from the radiation source relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material. 

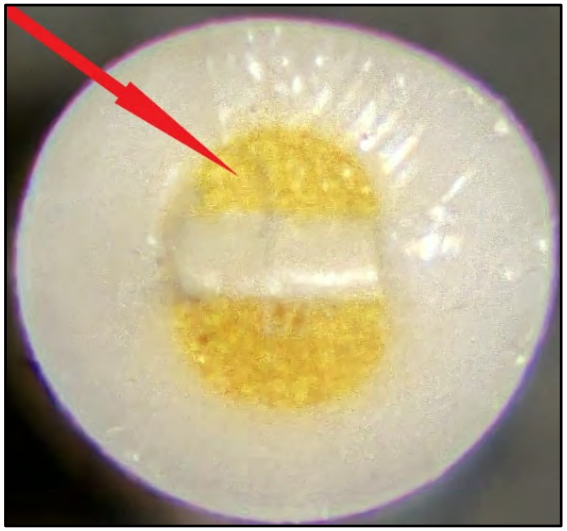
Claim 12	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The component of claim 11, wherein the light scattering material scatters the excitation light at least twice as much as light generated by the at least one photoluminescence material.	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb in the on-state. When the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm that is converted by the light scattering material to white light. On information and belief, the scattering material scatters the blue light at least twice as much as light generated by the at least one photoluminescence material to achieve the white light output. 

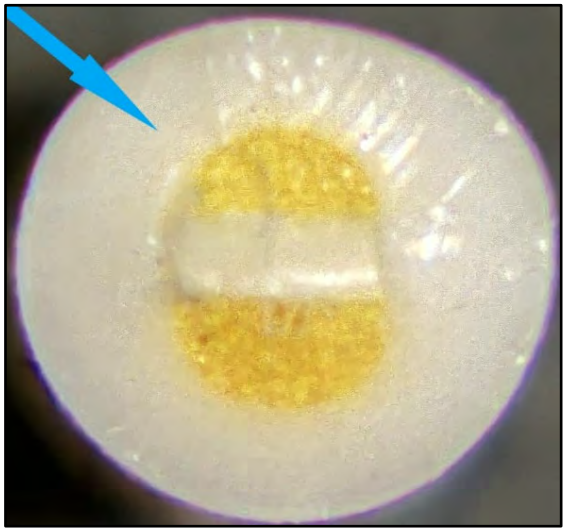
Claim 16	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The component of claim 1 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

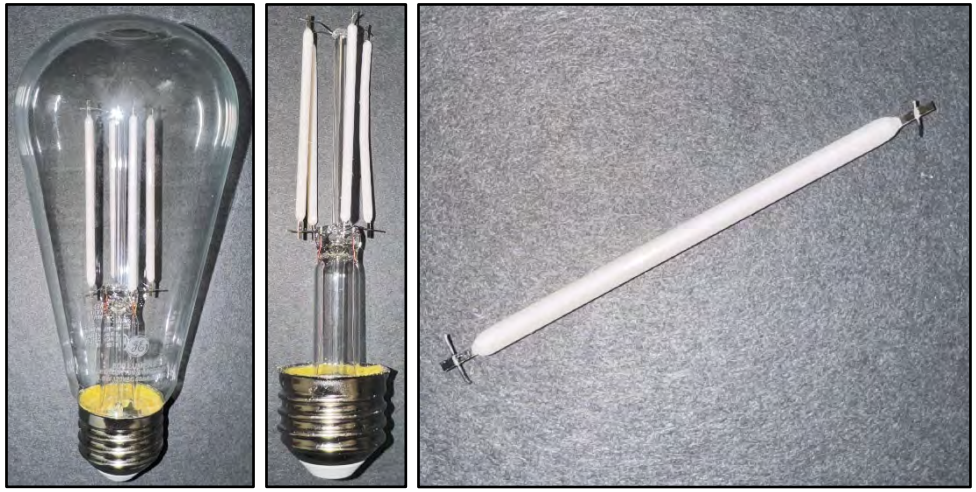
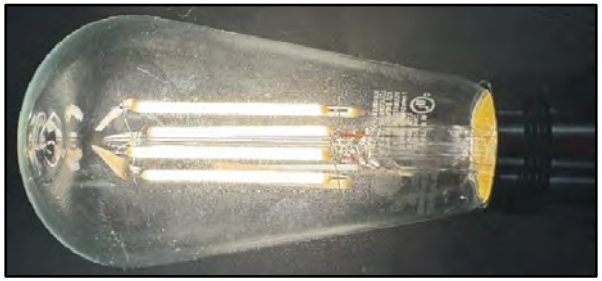
Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
A light emitting device, comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T, which is a light bulb that utilizes light emitting devices. The images below depict the light bulb and its filaments. 

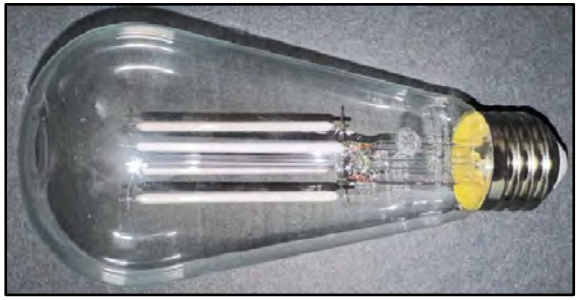
Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
at least one solid-state light emitter operable to generate excitation light; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The white central portion indicated by the green arrow in the image below comprises of a string of series-connected LEDs, which are solid-state light emitters operable to generate excitation light. On information and belief, the LEDs emit blue light greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
a wavelength conversion component comprising:	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The yellow and white material indicated by the red and blue arrows in the image below comprise a wavelength conversion component. 

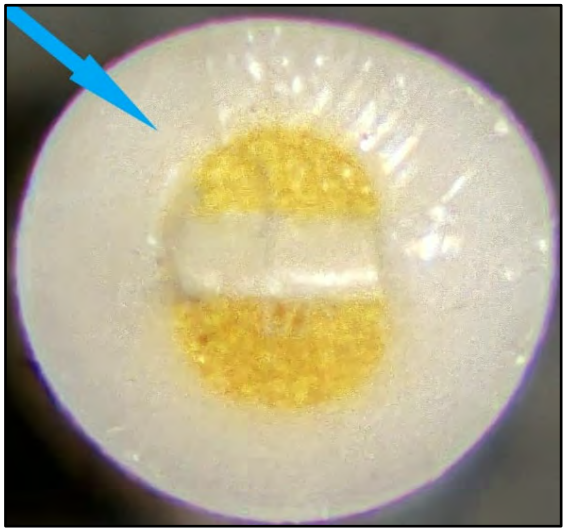
Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
a wavelength conversion layer excitable by the excitation light, wherein the wavelength conversion layer comprises particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer excitable by the excitation light comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

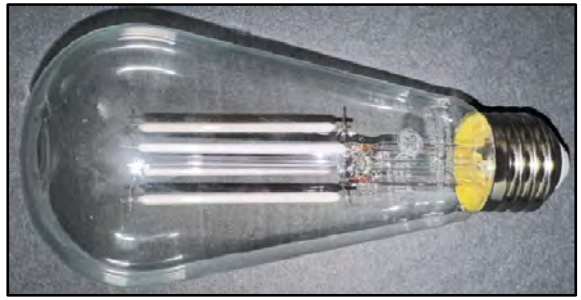
Claim 19	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
wherein the light diffusing layer improves an OFF state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the at least one solid-state light emitter is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

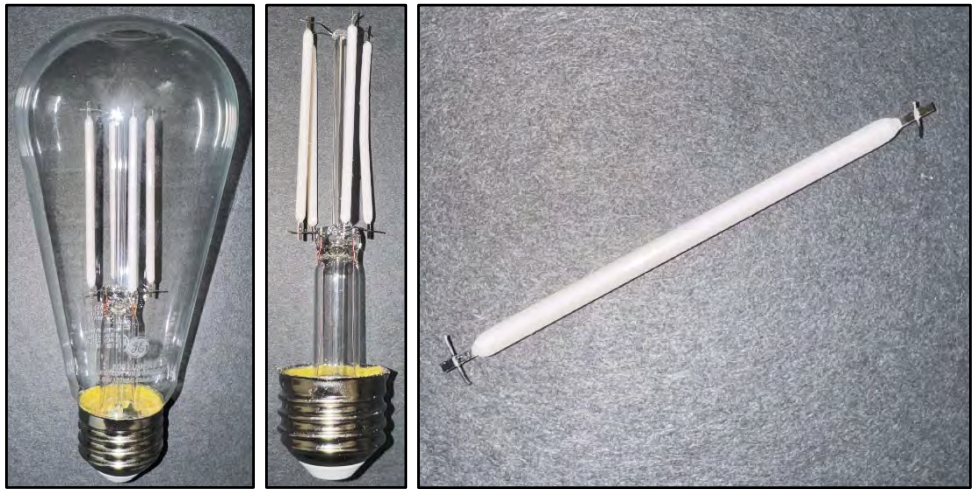
Claim 20	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The device of claim 19, wherein the light emitting device is selected from the group consisting of: downlights, light bulbs, linear lamps, lanterns, wall lamps, pendant lamps, chandeliers, recessed lights, track lights, accent lights, stage lighting, movie lighting, street lights, flood lights, beacon lights, security lights, traffic lights, headlamps, taillights, and signs.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb. 

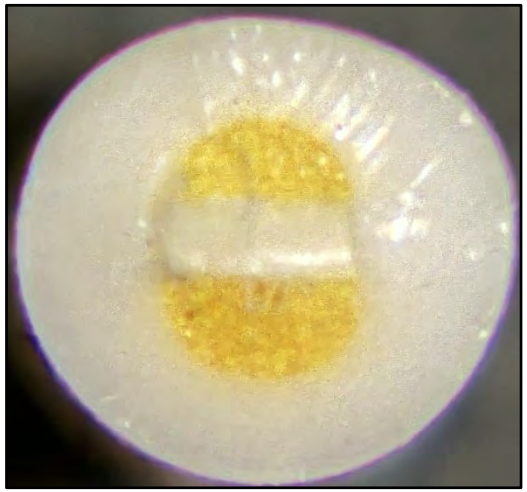
Claim 21	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The device of claim 19 in which the light scattering material within the light diffusing layer corresponds to an average particle size that improves the OFF state white appearance of the wavelength conversion component.	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 

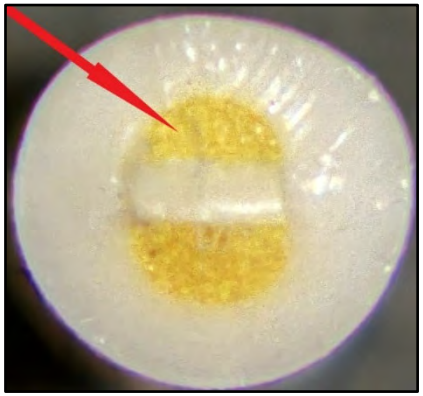
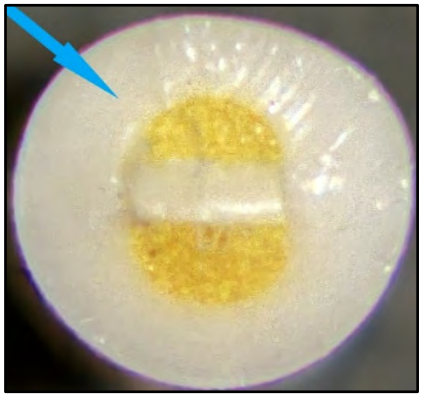
Claim 21	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
	The cross-sectional view of the LED filament demonstrates that the OFF state white appearance is a result of the white outer light diffusing layer. The white outer layer of the LED filament indicated by the blue arrow in the image below comprises a light diffusing layer composed of particles of light scattering material of an average particle size that result in the LED filament having a white appearance in the OFF state. 

Claim 25	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
The device of claim 19 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
A light bulb comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb. The images below depict the light bulb. 
a connector base configured to be inserted in a socket to form an electrical connection for the light bulb;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb. The connector base shown in the image and indicated by the black arrow is configured to be inserted in a socket to form an electrical connection for the light bulb. 

Claim 29	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb electrically connected to a lamp. As shown in the image below, the light bulb is connected through the connector base and forms an electric connection that allows the light bulb to be turned on. 
a body comprising one or more solid-state light emitters;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb and its filaments. The LED filaments are solid-state light emitters that compose the body of the light bulb. 

Claim 29	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
a wavelength conversion component having a three dimensional shape that is configured to enclose the one or more solid-state light emitters and to in part at least define a light mixing chamber,	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a three-dimensional circular shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
wherein the wavelength conversion component comprises a wavelength conversion layer comprising particles of at least one photoluminescence material and a light diffusing layer comprising particles of a light scattering material,	The images below provide a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

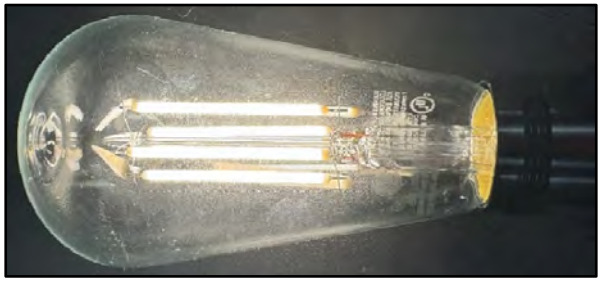
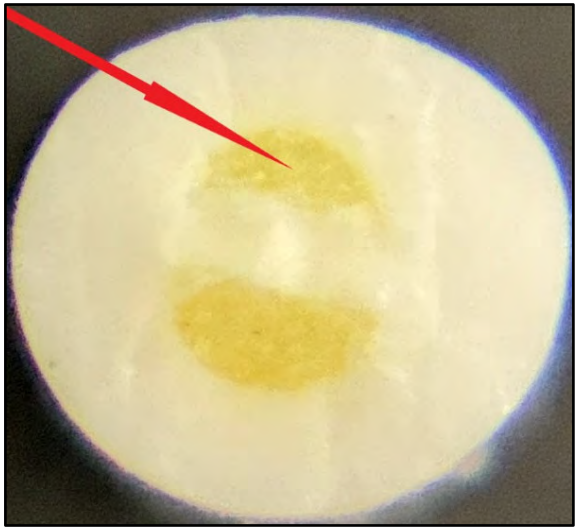
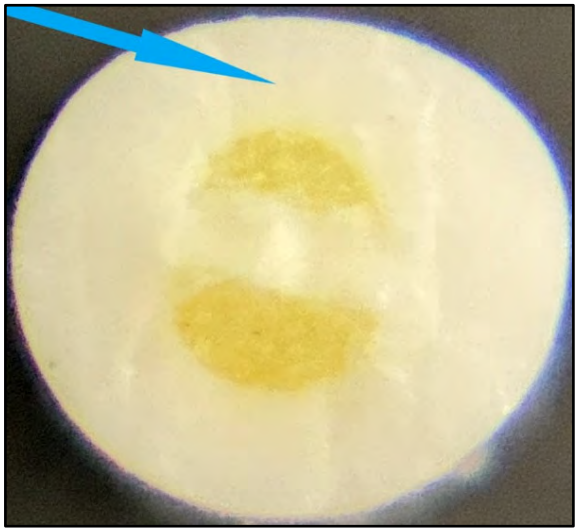
Claim 29	Infringement by Savant (LED5DST19M/SW9GCQWF-2T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the one or more solid-state light emitters is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/SW9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

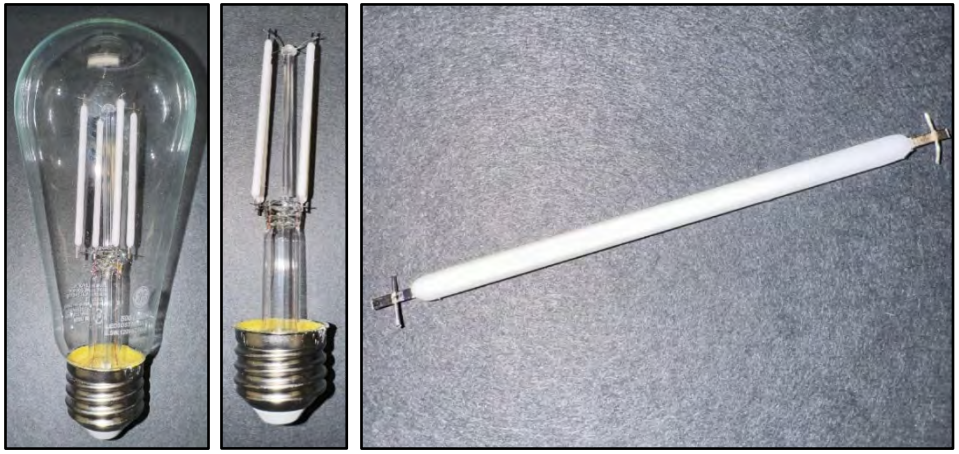
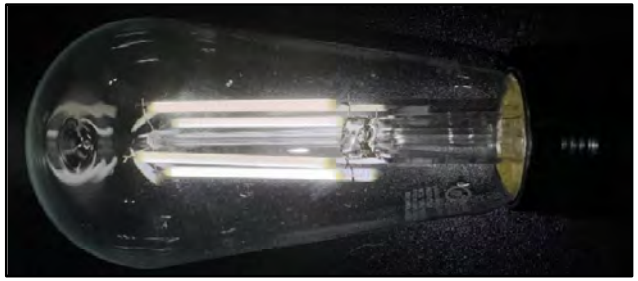
Exhibit 3

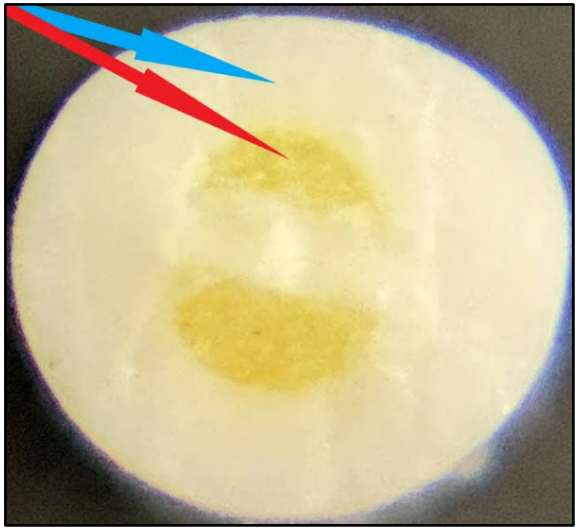
GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T

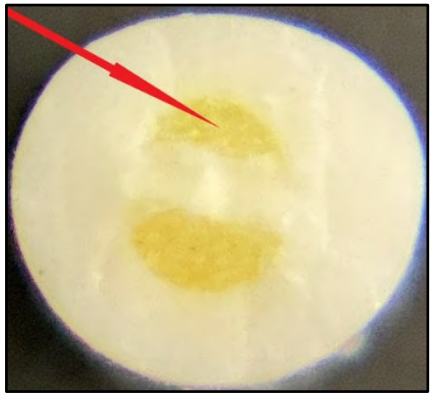
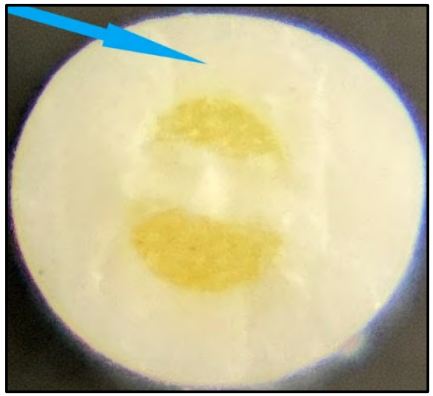
Claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of U.S. Patent No. 8,604,678

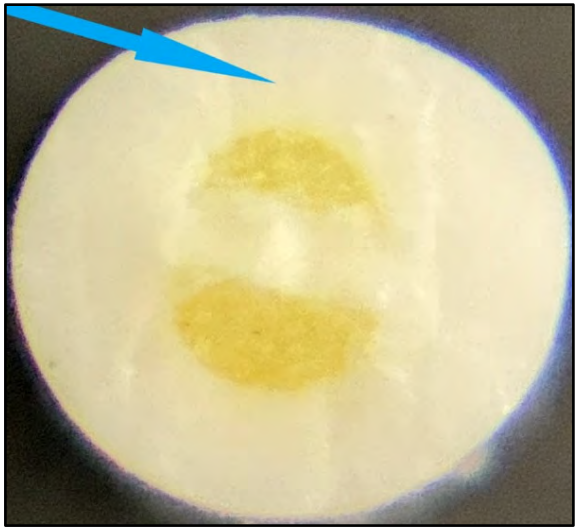
Claim 1	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
A wavelength conversion component for a light emitting device comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T, which incorporates a wavelength conversion component for an LED.
a wavelength conversion layer comprising particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

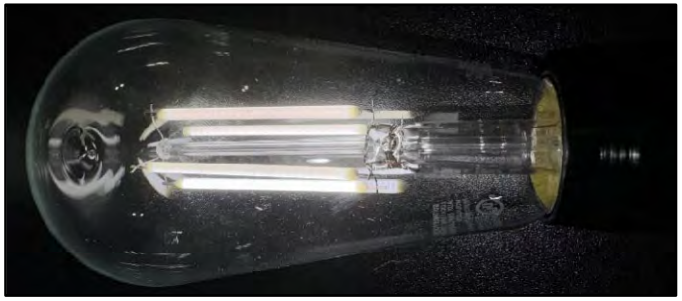
Claim 1	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

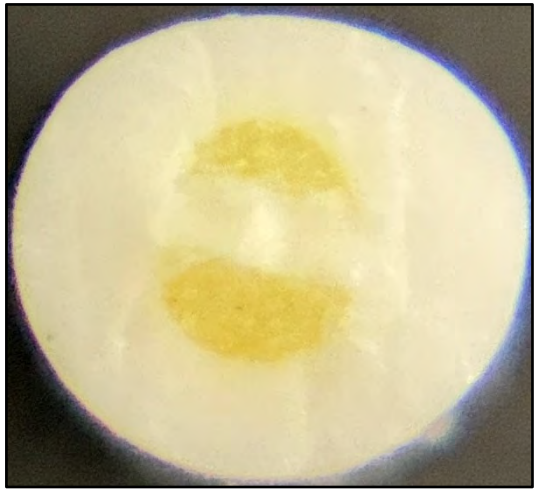
Claim 1	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of excitation light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the light emitting device is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

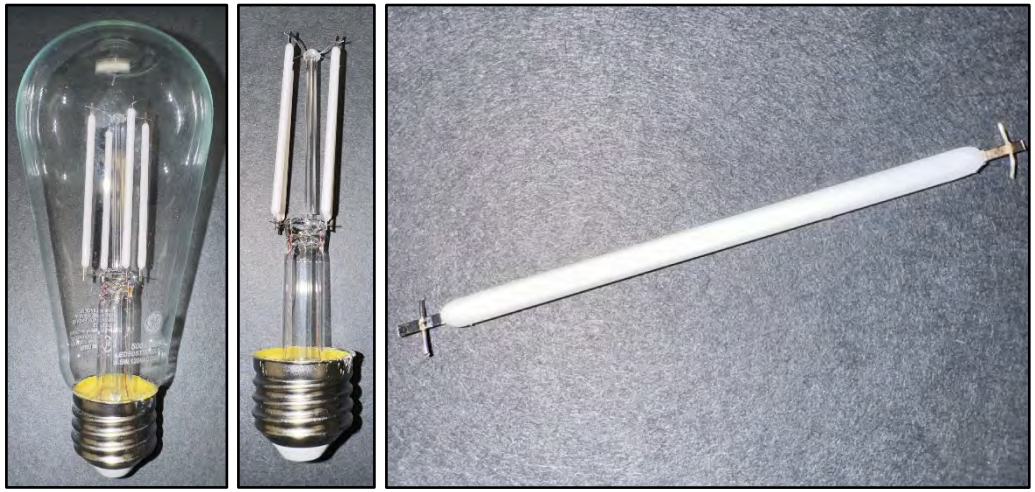
Claim 2	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The component of claim 1, wherein the wavelength conversion layer and the light diffusing layer are in direct contact with each other.	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. As shown in the image below, the yellow wavelength conversion material indicated by the red arrow and the white light diffusing material indicated by the blue arrow are in direct contact with each other. 

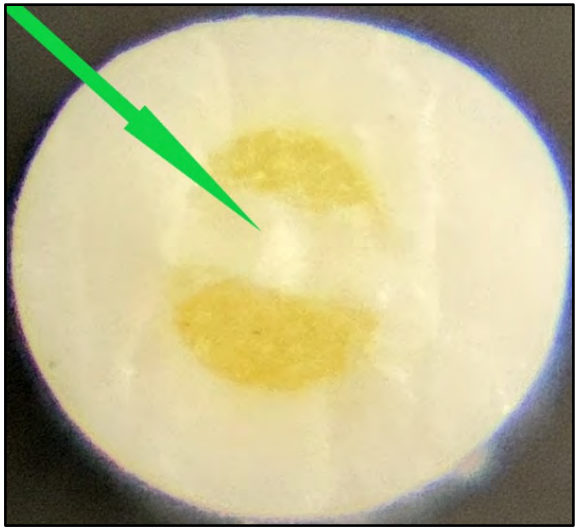
Claim 3	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The component of claim 1, wherein the wavelength conversion layer comprises a mixture of the at least one phosphor material and a light transmissive binder and the light diffusing layer comprises a mixture of the light scatter-ing material and the light transmissive binder.	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

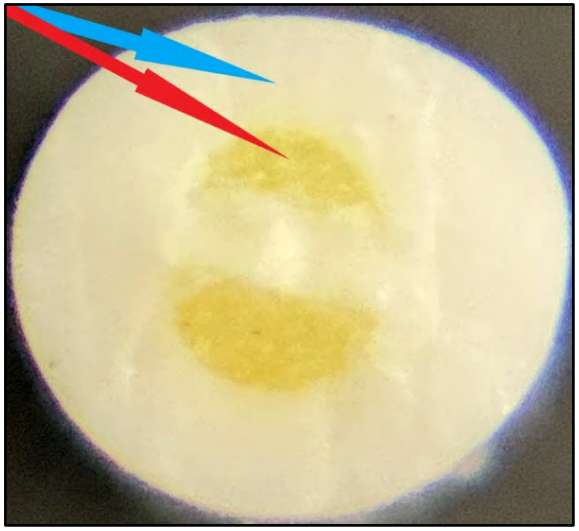
Claim 11	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The component of claim 1, wherein the light scattering material has an average particle size that is selected such that the light scattering material will scatter the excitation light relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises particles of light scattering material. On information and belief, the light scattering material has an average particle size that is selected such that the light scattering material will scatter excitation light from the radiation source relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material. 

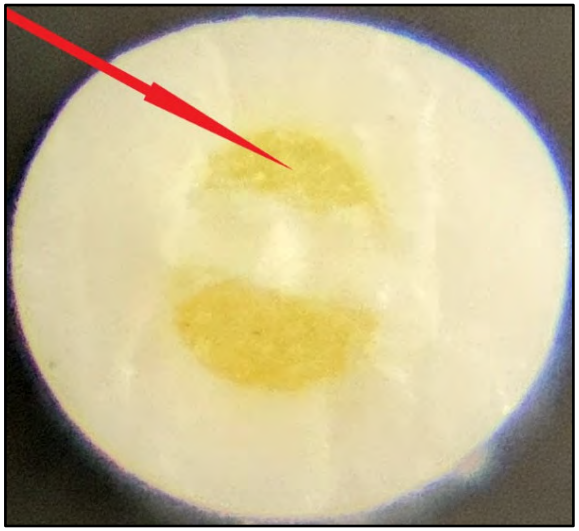
Claim 12	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The component of claim 11, wherein the light scattering material scatters the excitation light at least twice as much as light generated by the at least one photoluminescence material.	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb in the on-state. When the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm that is converted by the light scattering material to white light. On information and belief, the scattering material scatters the blue light at least twice as much as light generated by the at least one photoluminescence material to achieve the white light output. 

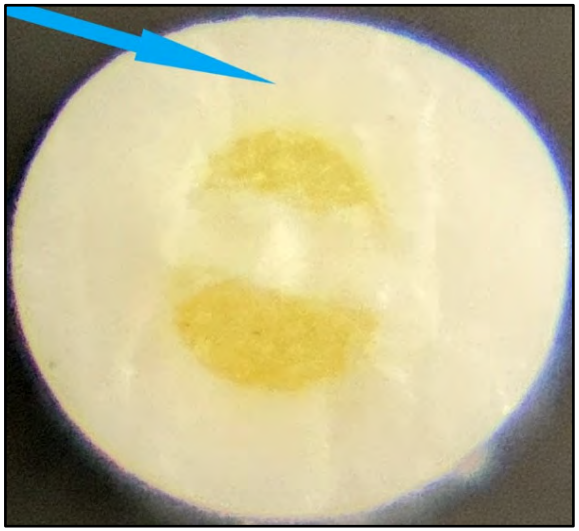
Claim 16	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The component of claim 1 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

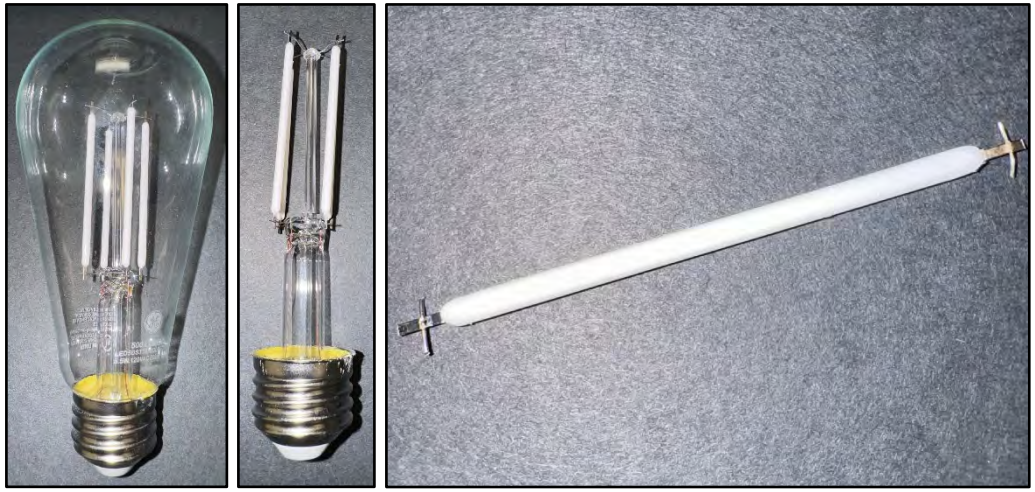
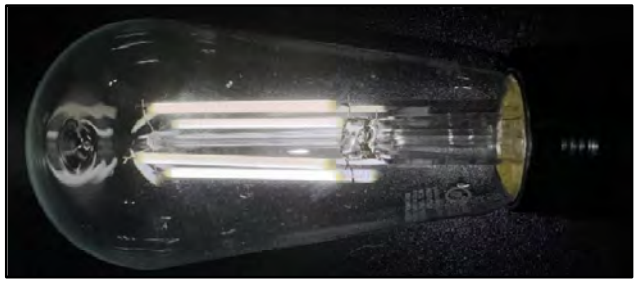
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
A light emitting device, comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T, which is a light bulb that utilizes light emitting devices. The images below depict the light bulb and its filaments. 

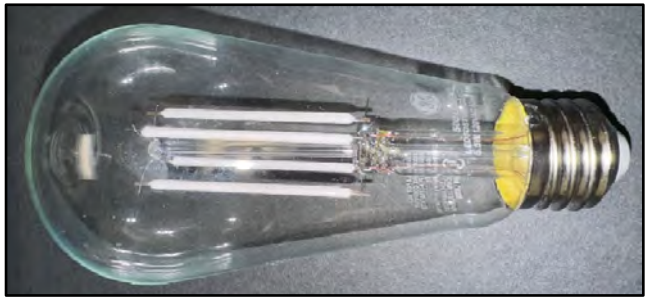
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
at least one solid-state light emitter operable to generate excitation light; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The white central portion indicated by the green arrow in the image below comprises of a string of series-connected LEDs, which are solid-state light emitters operable to generate excitation light. On information and belief, the LEDs emit blue light greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

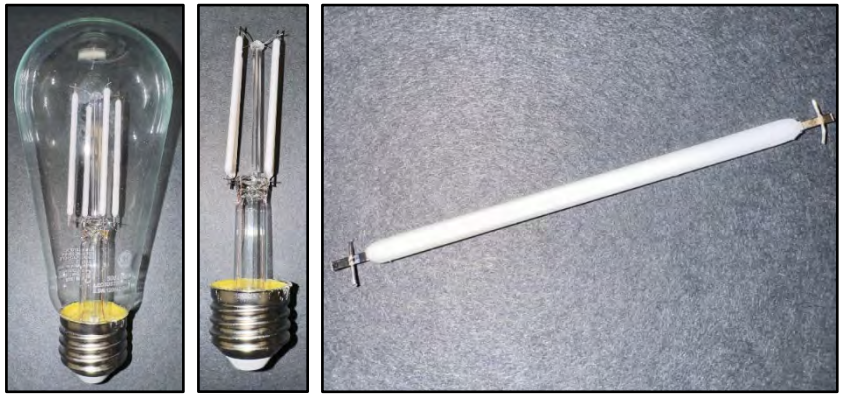
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
a wavelength conversion component comprising:	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The yellow and white material indicated by the red and blue arrows in the image below comprise a wavelength conversion component. 

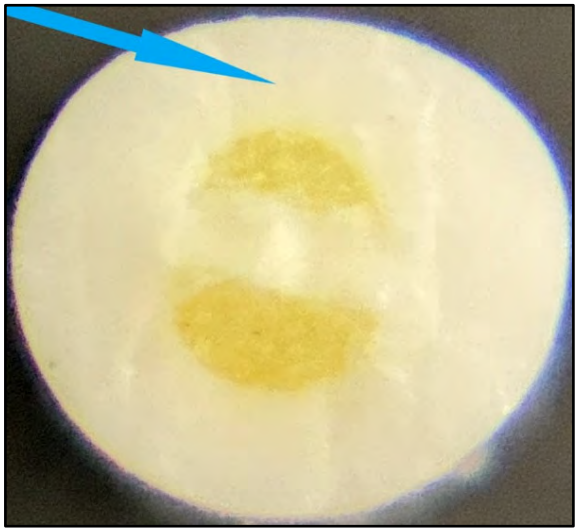
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
a wavelength conversion layer excitable by the excitation light, wherein the wavelength conversion layer comprises particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer excitable by the excitation light comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

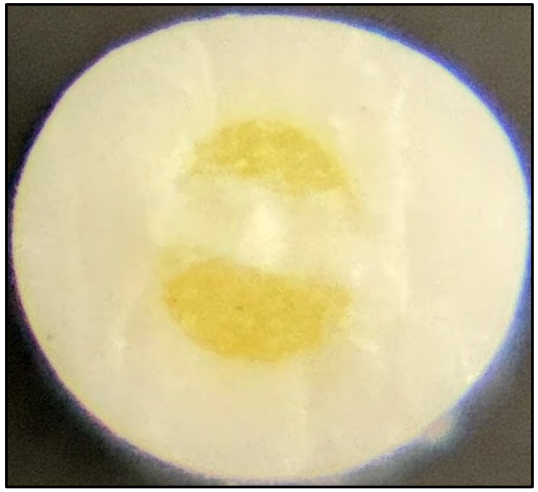
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

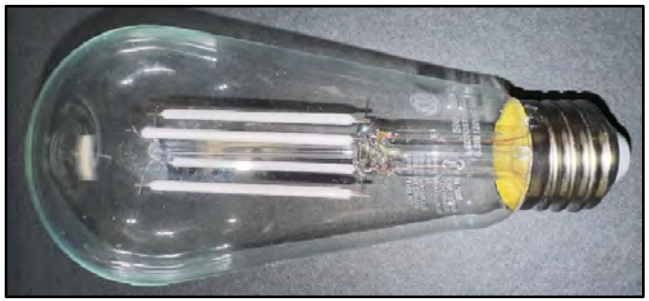
Claim 19	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
wherein the light diffusing layer improves an OFF state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the at least one solid-state light emitter is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

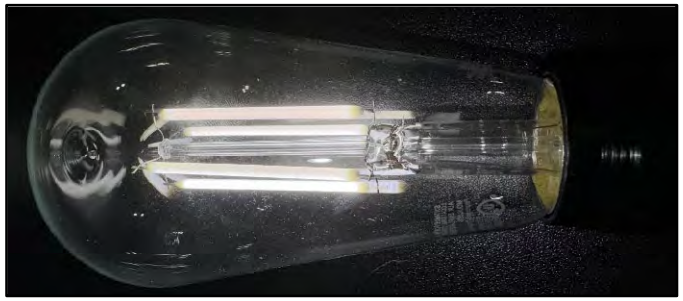
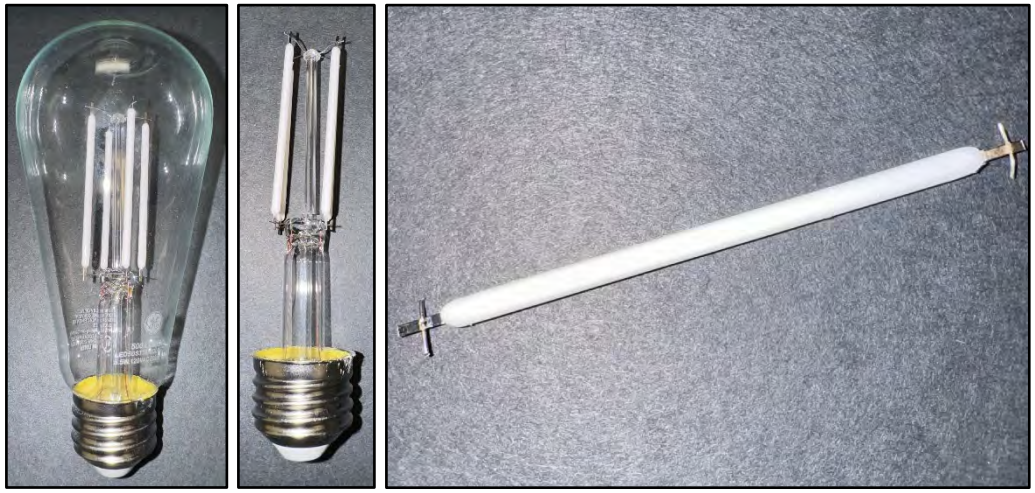
Claim 20	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The device of claim 19, wherein the light emitting device is selected from the group consisting of: downlights, light bulbs, linear lamps, lanterns, wall lamps, pendant lamps, chandeliers, recessed lights, track lights, accent lights, stage lighting, movie lighting, street lights, flood lights, beacon lights, security lights, traffic lights, headlamps, taillights, and signs.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb. 

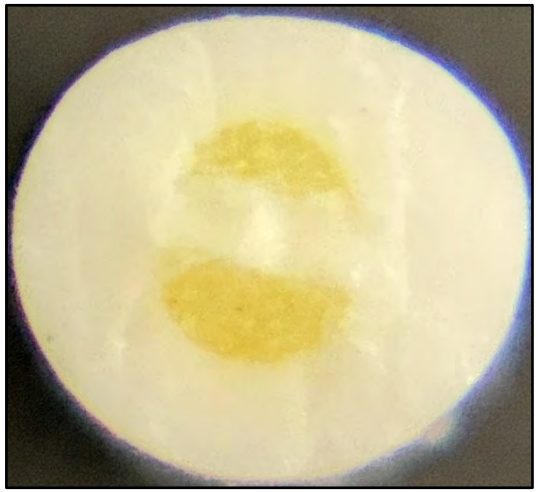
Claim 21	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The device of claim 19 in which the light scattering material within the light diffusing layer corresponds to an average particle size that improves the OFF state white appearance of the wavelength conversion component.	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 

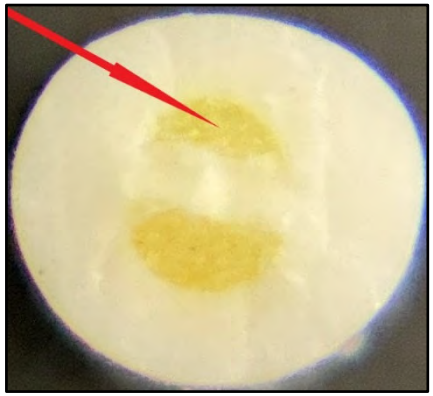
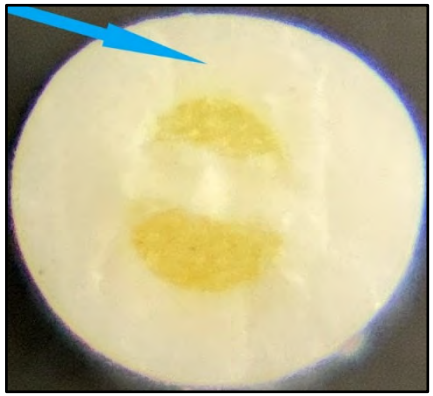
Claim 21	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
	The cross-sectional view of the LED filament demonstrates that the OFF state white appearance is a result of the white outer light diffusing layer. The white outer layer of the LED filament indicated by the blue arrow in the image below comprises a light diffusing layer composed of particles of light scattering material of an average particle size that result in the LED filament having a white appearance in the OFF state. 

Claim 25	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
The device of claim 19 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
A light bulb comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb. The images below depict the light bulb. 
a connector base configured to be inserted in a socket to form an electrical connection for the light bulb;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb. The connector base shown in the image and indicated by the black arrow is configured to be inserted in a socket to form an electrical connection for the light bulb. 

Claim 29	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb electrically connected to a lamp. As shown in the image below, the light bulb is connected through the connector base and forms an electric connection that allows the light bulb to be turned on. 
a body comprising one or more solid-state light emitters;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb and its filaments. The LED filaments are solid-state light emitters that compose the body of the light bulb. 

Claim 29	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
a wavelength conversion component having a three dimensional shape that is configured to enclose the one or more solid-state light emitters and to in part at least define a light mixing chamber,	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a three-dimensional circular shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
wherein the wavelength conversion component comprises a wavelength conversion layer comprising particles of at least one photoluminescence material and a light diffusing layer comprising particles of a light scattering material,	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

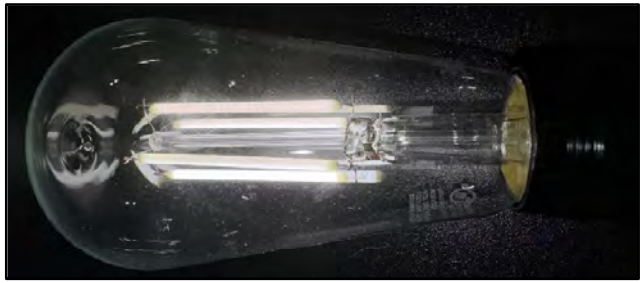
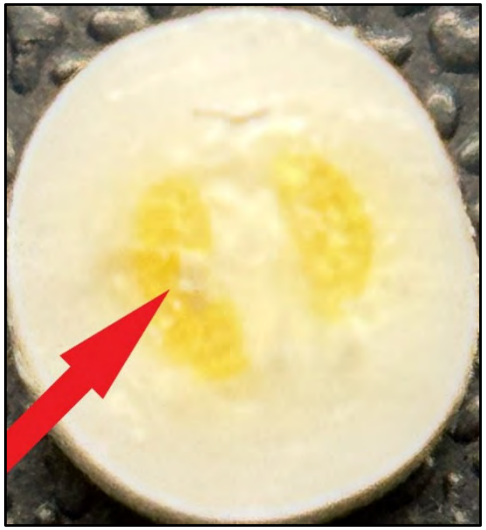
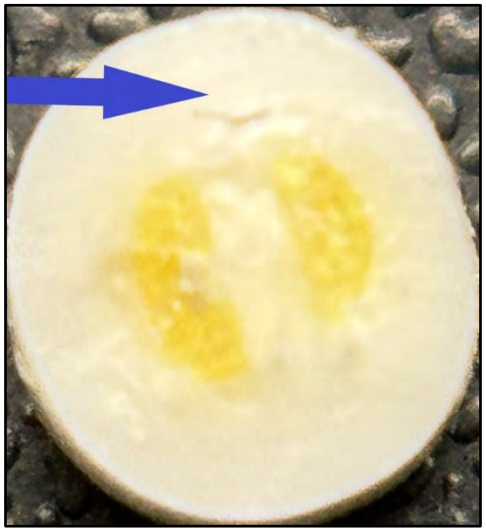
Claim 29	Infringement by Savant (LED5DST19M/DL9GCQWF-2T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments.   
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the one or more solid-state light emitters is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED5DST19M/DL9GCQWF-2T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

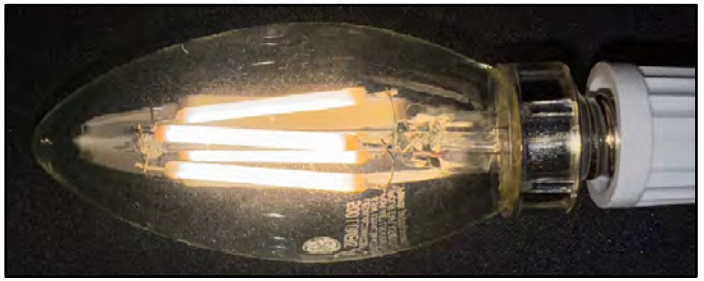
Exhibit 4

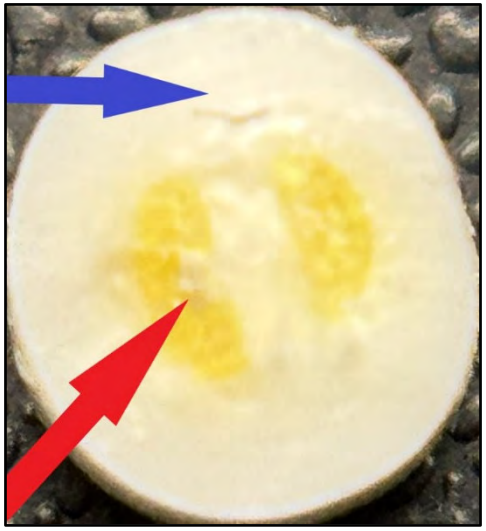
GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T

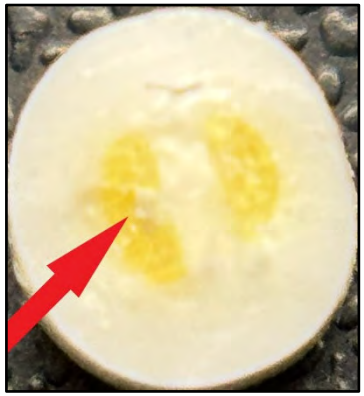
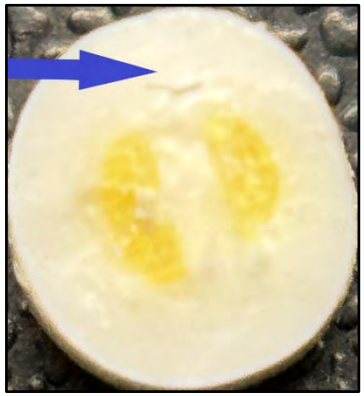
Claims 1, 2, 3, 11, 12, 16, 19, 20, 21, 25, and 29 of U.S. Patent No. 8,604,678

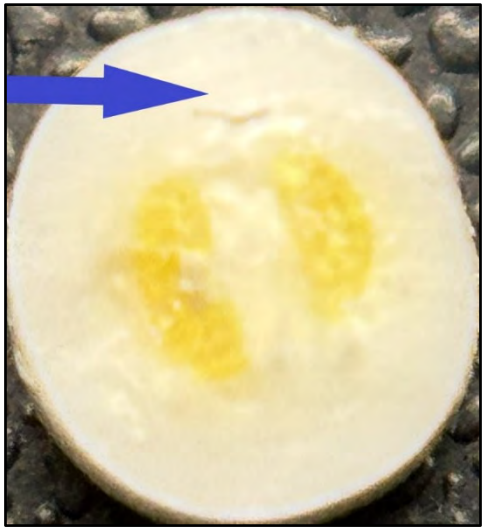
Claim 1	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
A wavelength conversion component for a light emitting device comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T, which incorporates a wavelength conversion component for an LED.
a wavelength conversion layer comprising particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

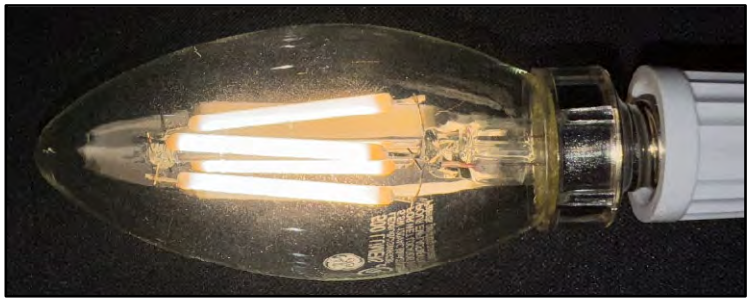
Claim 1	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

Claim 1	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of excitation light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the light emitting device is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

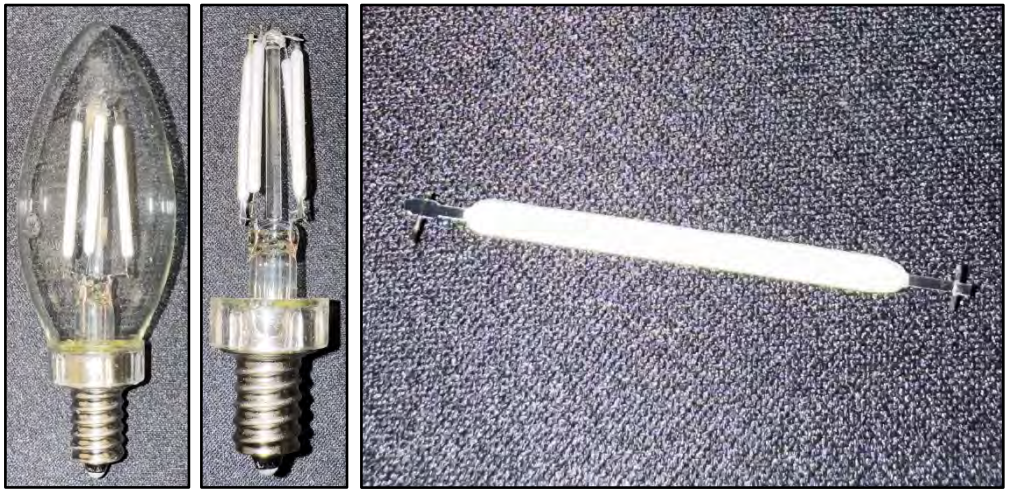
Claim 2	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The component of claim 1, wherein the wavelength conversion layer and the light diffusing layer are in direct contact with each other.	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. As shown in the image below, the yellow wavelength conversion material indicated by the red arrow and the white light diffusing material indicated by the blue arrow are in direct contact with each other. 

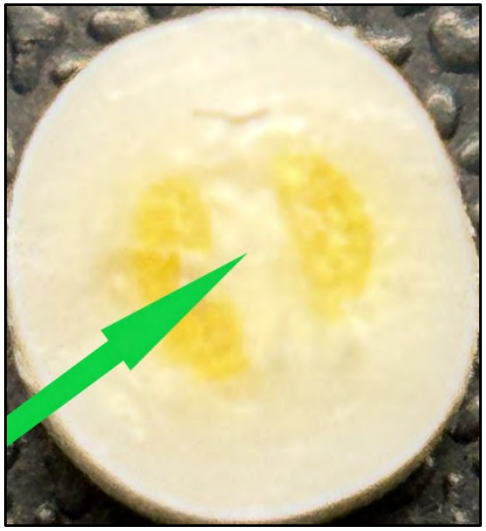
Claim 3	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The component of claim 1, wherein the wavelength conversion layer comprises a mixture of the at least one phosphor material and a light transmissive binder and the light diffusing layer comprises a mixture of the light scatter-ing material and the light transmissive binder.	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

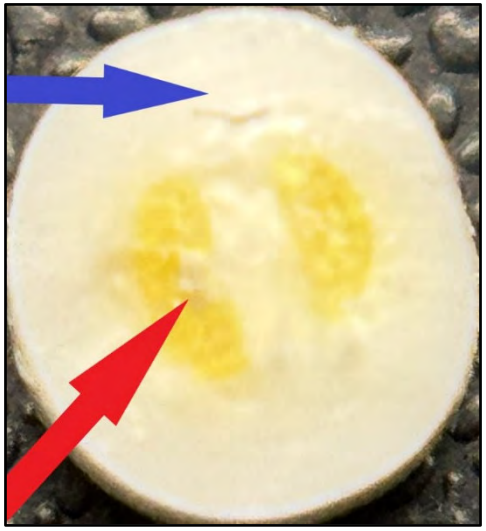
Claim 11	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The component of claim 1, wherein the light scattering material has an average particle size that is selected such that the light scattering material will scatter the excitation light relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises particles of light scattering material. On information and belief, the light scattering material has an average particle size that is selected such that the light scattering material will scatter excitation light from the radiation source relatively more than the light scattering material will scatter light generated by the at least one photoluminescence material. 

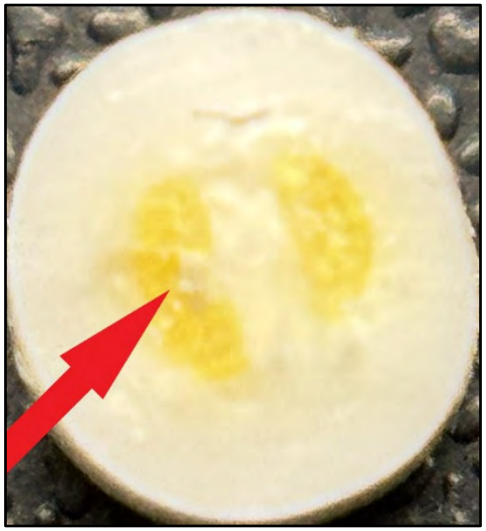
Claim 12	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The component of claim 11, wherein the light scattering material scatters the excitation light at least twice as much as light generated by the at least one photoluminescence material.	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb in the on-state. When the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm that is converted by the light scattering material to white light. On information and belief, the scattering material scatters the blue light at least twice as much as light generated by the at least one photoluminescence material to achieve the white light output. 

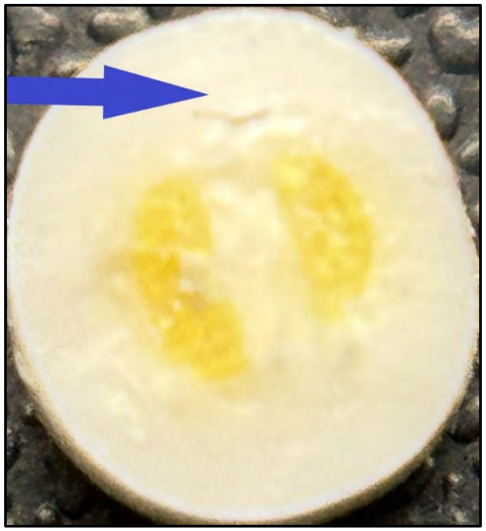
Claim 16	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The component of claim 1 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

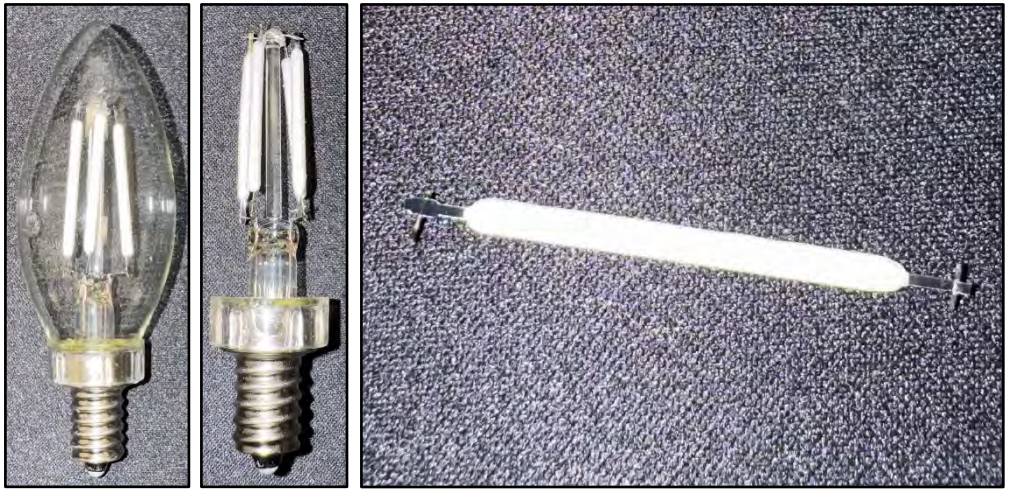
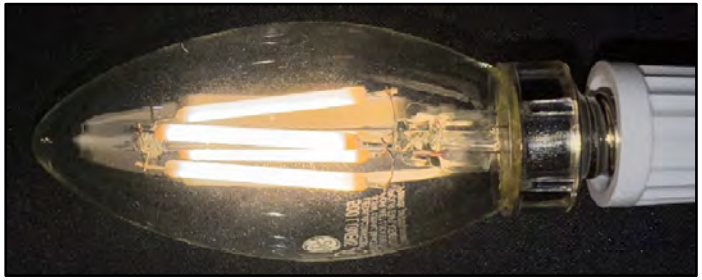
Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
A light emitting device, comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T, which is a light bulb that utilizes light emitting devices. The images below depict the light bulb and its filaments. 

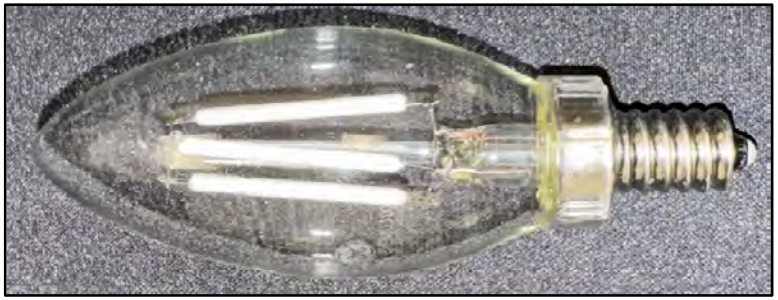
Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
at least one solid-state light emitter operable to generate excitation light; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The white central portion indicated by the green arrow in the image below comprises of a string of series-connected LEDs, which are solid-state light emitters operable to generate excitation light. On information and belief, the LEDs emit blue light greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
a wavelength conversion component comprising:	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The yellow and white material indicated by the red and blue arrows in the image below comprise a wavelength conversion component. 

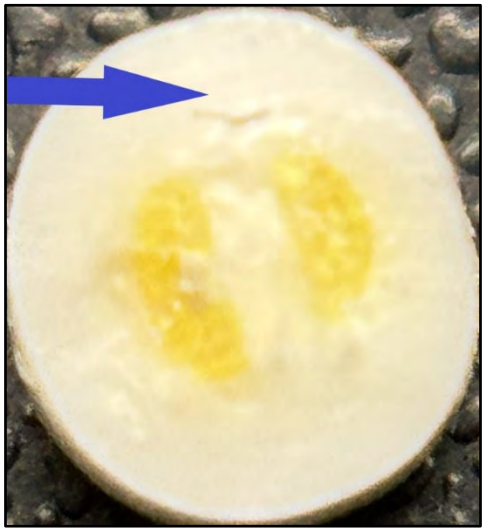
Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
a wavelength conversion layer excitable by the excitation light, wherein the wavelength conversion layer comprises particles of at least one photoluminescence material; and	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The yellow material shown in the image and indicated by the red arrow comprises a wavelength conversion layer excitable by the excitation light comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone. 

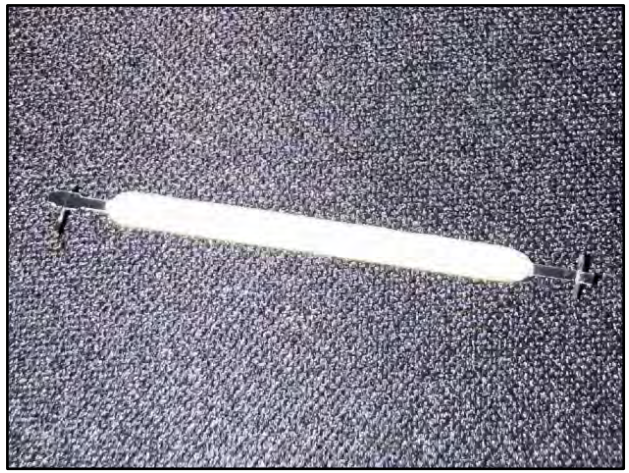
Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
a light diffusing layer comprising particles of a light scattering material,	The image below provides a cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

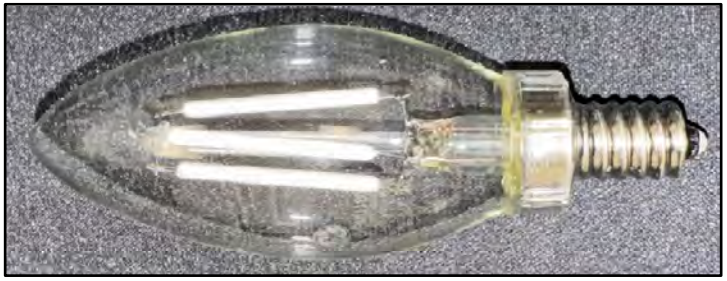
Claim 19	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
wherein the light diffusing layer improves an OFF state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the at least one solid-state light emitter is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below. 

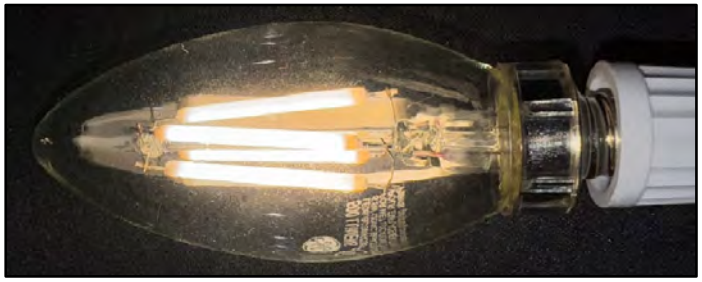
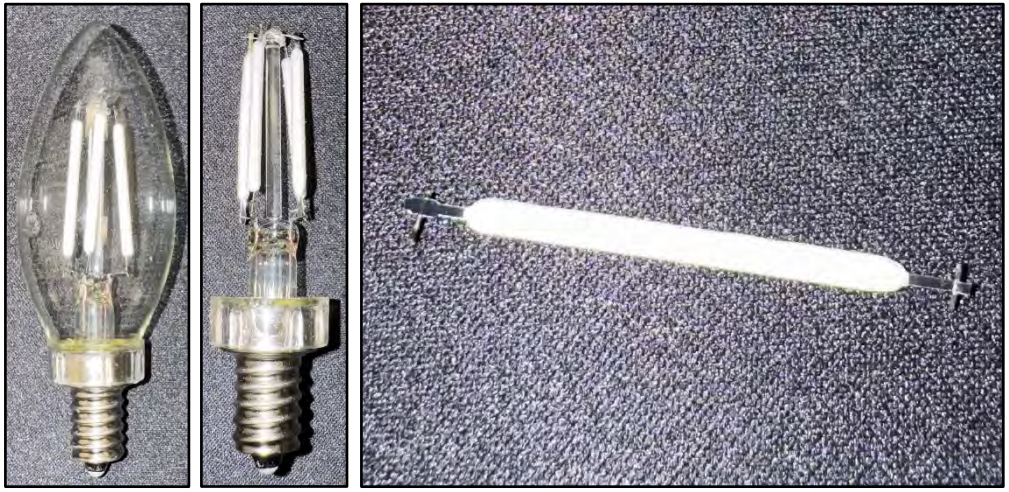
Claim 20	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The device of claim 19, wherein the light emitting device is selected from the group consisting of: downlights, light bulbs, linear lamps, lanterns, wall lamps, pendant lamps, chandeliers, recessed lights, track lights, accent lights, stage lighting, movie lighting, street lights, flood lights, beacon lights, security lights, traffic lights, headlamps, taillights, and signs.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb. 

Claim 21	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The device of claim 19 in which the light scattering material within the light diffusing layer corresponds to an average particle size that improves the OFF state white appearance of the wavelength conversion component.	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 

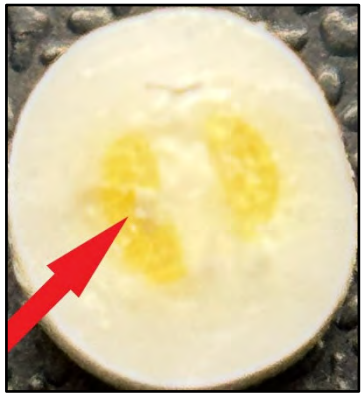
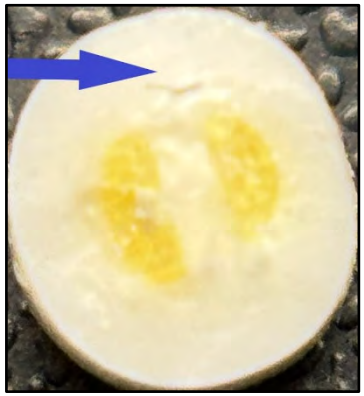
Claim 21	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
	The cross-sectional view of the LED filament demonstrates that the OFF state white appearance is a result of the white outer light diffusing layer. The white outer layer of the LED filament indicated by the blue arrow in the image below comprises a light diffusing layer composed of particles of light scattering material of an average particle size that result in the LED filament having a white appearance in the OFF state. 

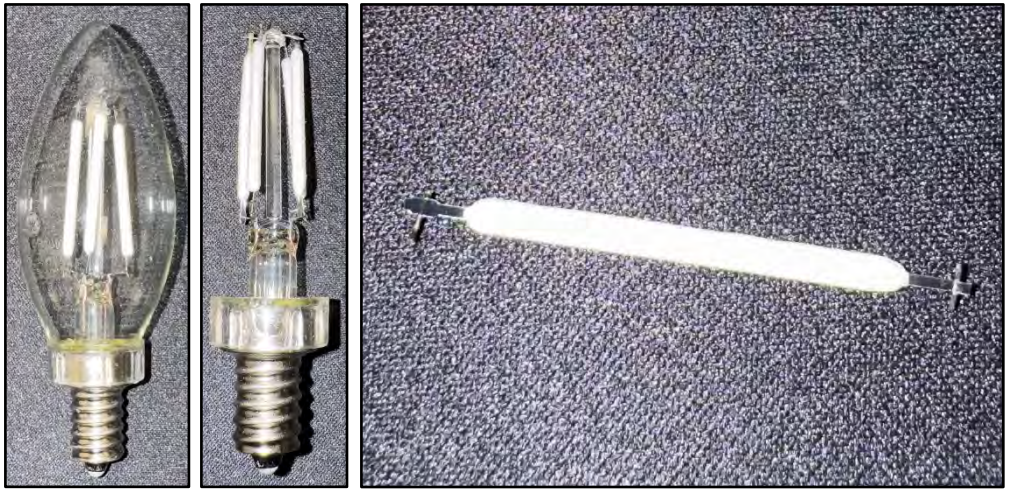
Claim 25	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
The device of claim 19 in which the wavelength conversion layer and the light diffusing layer comprises planar shapes.	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a circular planar shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
A light bulb comprising:	The preamble does not serve as a limitation/element as it is not necessary to breathe life and meaning into the claim. Nevertheless, Savant sells, offers to sell, makes, uses, and/or imports into the United States, the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb. The images below depict the light bulb. 
a connector base configured to be inserted in a socket to form an electrical connection for the light bulb;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb. The connector base shown in the image and indicated by the black arrow is configured to be inserted in a socket to form an electrical connection for the light bulb. 

Claim 29	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb electrically connected to a lamp. As shown in the image below, the light bulb is connected through the connector base and forms an electric connection that allows the light bulb to be turned on. 
a body comprising one or more solid-state light emitters;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb and its filaments. The LED filaments are solid-state light emitters that compose the body of the light bulb. 

Claim 29	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
a wavelength conversion component having a three dimensional shape that is configured to enclose the one or more solid-state light emitters and to in part at least define a light mixing chamber,	The images below depict a single LED filament and a cross-sectional view of a portion of that LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. As shown in the image below, the wavelength conversion layer and the light diffusion layer comprise a three-dimensional circular shape that extends throughout the LED to create a cylindrical filament.  

Claim 29	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
wherein the wavelength conversion component comprises a wavelength conversion layer comprising particles of at least one photoluminescence material and a light diffusing layer comprising particles of a light scattering material,	The images below provide cross-sectional view of a portion of the LED filament from the GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T. The yellow material shown in the image below and indicated by the red arrow comprises a wavelength conversion layer comprising particles of at least one photoluminescence material. On information and belief, the wavelength conversion layer comprises a phosphor that converts blue light to white light, mixed in a carrier material such as silicone.  The white material shown in the image and indicated by the blue arrow comprises a light diffusing layer comprising particles of light scattering material. On information and belief, the light diffusing layer comprises a material such as titanium dioxide mixed in a carrier material such as silicone. 

Claim 29	Infringement by Savant (LED6DBC/SW9GCQWF-3T)
wherein the light diffusing layer improves an off-state white appearance of the wavelength conversion component;	The images below depict a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb and its filaments in the off-state. The off-state appearance of the LED filament in the images is white rather than the yellow to orange appearance of the phosphor conversion material of typical LED filaments. 
wherein the wavelength conversion component is configured such that in operation a portion of light comprising blue light having a wavelength of greater than or equal to 440 nm generated by the one or more solid-state light emitters is emitted through the wavelength conversion component to contribute to a final visible emission product.	The image below depicts a GE LED Pearl Filament Model No. LED6DBC/SW9GCQWF-3T light bulb in the on-state. On information and belief, when the LED filaments are powered, the LEDs of the LED filaments emit blue light having a wavelength of greater than or equal to 440 nm, that is converted by the wavelength conversion layer to white light, and then the white light passes through and is scattered by the light diffusing layer to contribute to a final visible emission product as shown in the image below.