

EXHIBIT 2052

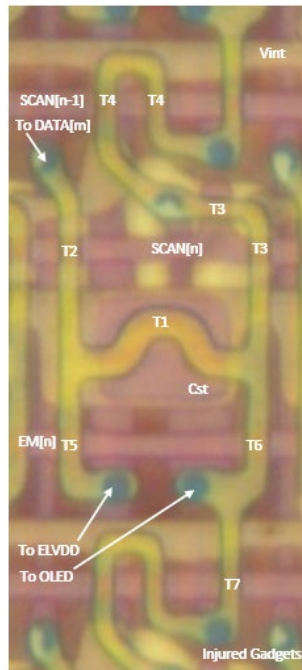
CLAIM CHART: AMOLED DISPLAY IN INJURED GADGETS PRODUCT

U.S. Pat. No. 7,414,599

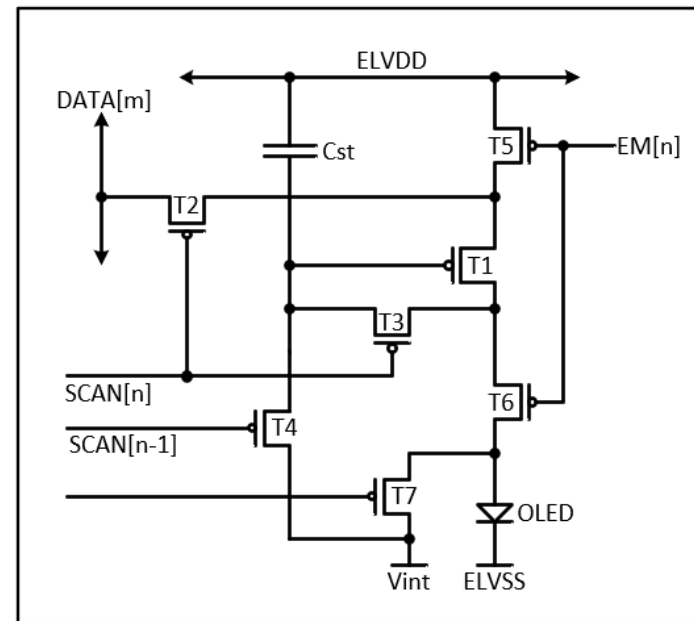
Injured Gadgets AMOLED Product

1[preamble] A pixel circuit in an organic light emitting device, comprising:

The Injured Gadgets product includes a pixel circuit in an organic light-emitting device. For example, the circuit diagram below of the Injured Gadgets Product depicts the transistors **T1–T7**, the capacitor **Cst**, and the **OLED** element.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

1[preamble] A pixel circuit in an organic light emitting device, comprising:

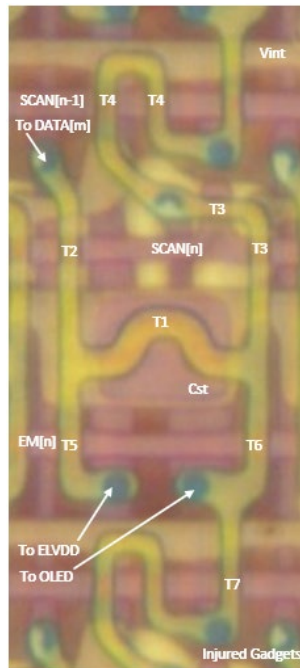
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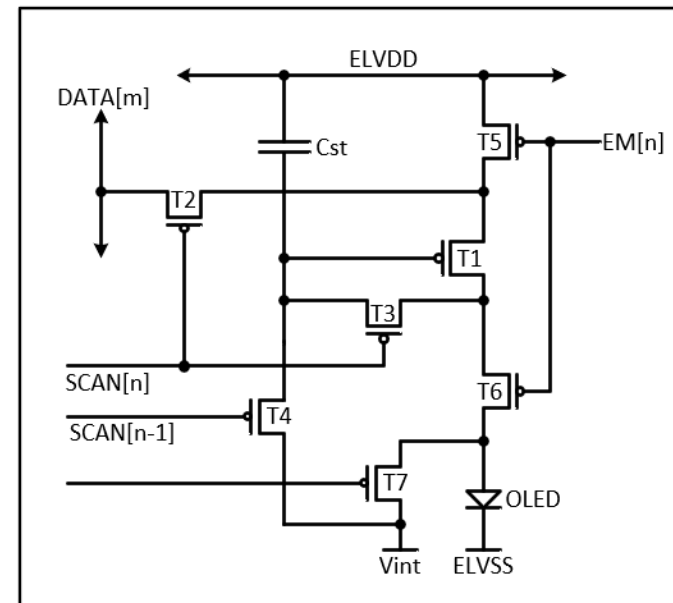
Exhibit 2030 (Injured Gadgets Teardown Photo) at 1, 4

1[a] a first transistor for delivering a data signal voltage in response to a current scan line signal;

The pixel circuit of the Injured Gadgets product has a first transistor for delivering a data signal voltage in response to a current scan line signal. As shown in the circuit diagram below, the first transistor **T2** is coupled to a data line **DATA[m]** for delivering a data signal voltage. The gate of first transistor **T2** is coupled to a scan line **SCAN[n]** that delivers a current scan line signal to the gate of first transistor **T2**. In response to the current scan line signal being active (low), first transistor **T2** delivers a data signal voltage from data line **DATA[m]**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



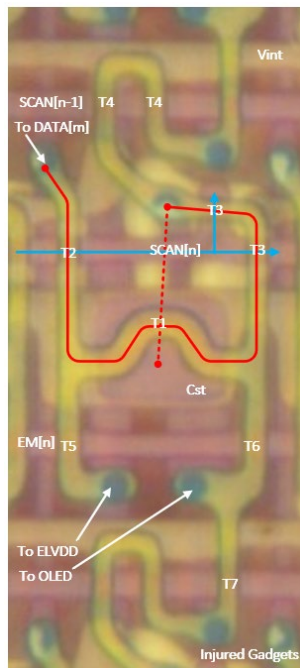
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

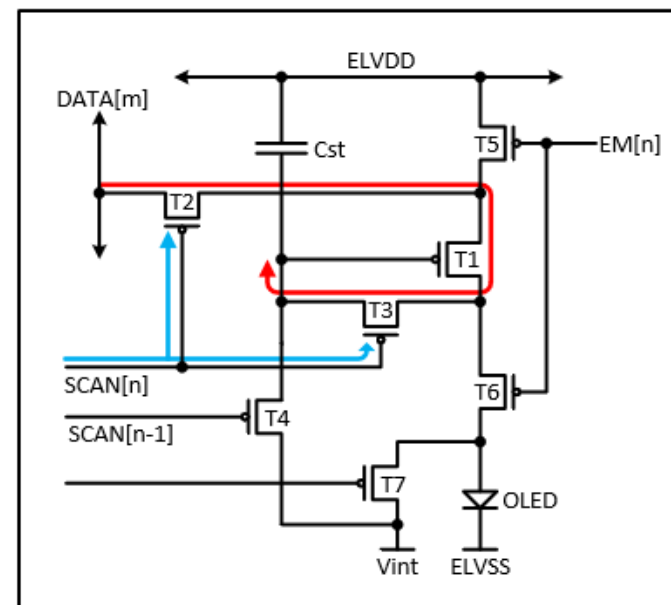
Injured Gadgets AMOLED Product

1[a] a first transistor for delivering a data signal voltage in response to a current scan line signal;
(cont'd)

As further shown in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]**. The annotated circuit diagram below depicts an exemplary voltage path from data line **DATA[m]** through transistors **T2-T1-T3** to the gate of transistor **T1**.



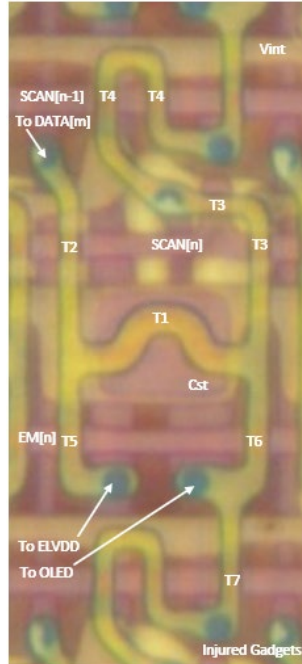
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



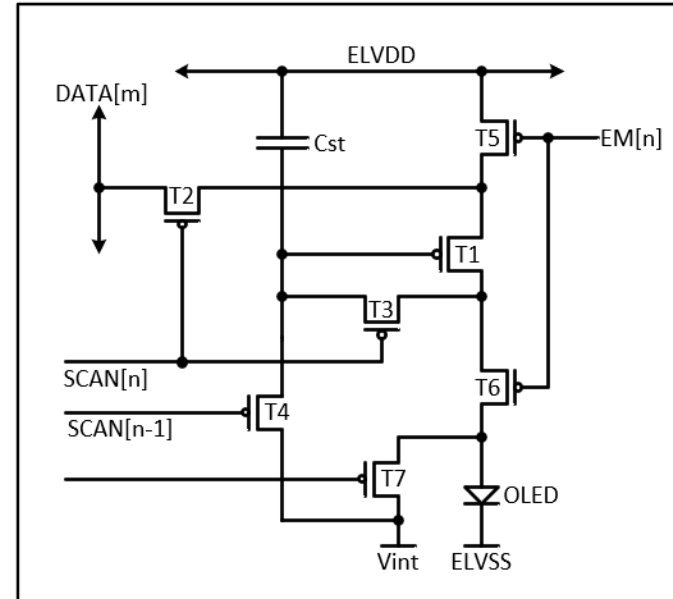
Injured Gadgets Product Equivalent Circuit

1[b] a second transistor for generating a driving current depending on the data signal voltage delivered through the first transistor;

The pixel circuit of the Injured Gadgets product has a second transistor for generating a driving current depending on the data signal voltage delivered through the first transistor. As shown in the circuit diagram below, the second transistor **T1** is coupled to a power supply voltage **ELVDD**. As described for claim element **1[a]** above, the first transistor **T2** delivers a data signal voltage in response to an active (low) current scan line signal that is delivered on scan line **SCAN[n]**. The data signal voltage is stored on the capacitor **Cst**. The second transistor **T1** will generate a driving current dependent upon the voltage stored on the capacitor **Cst**, and the current will be sourced from **ELVDD**.



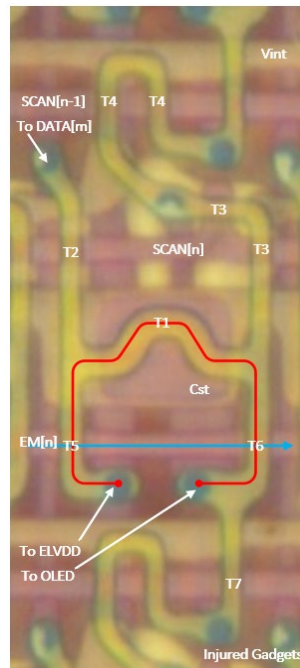
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



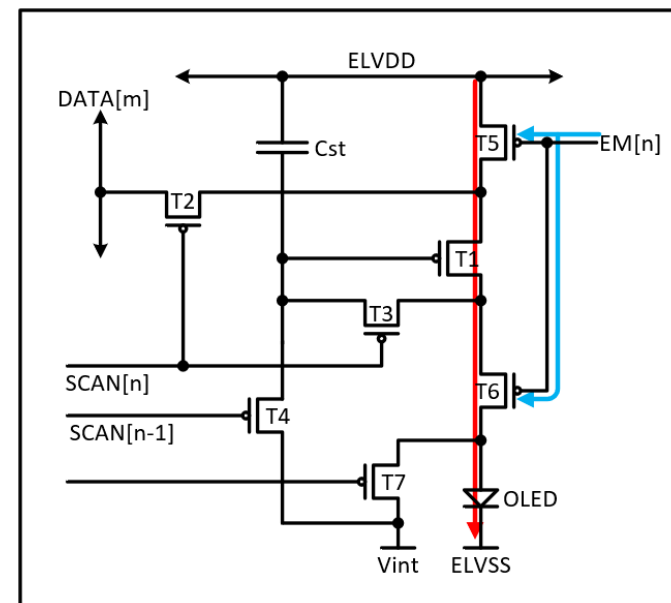
Injured Gadgets Product Equivalent Circuit

1[b] a second transistor for generating a driving current depending on the data signal voltage delivered through the first transistor;
(*cont'd*)

For example, as shown in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, transistors **T5** and **T6** turn on, and a driving current (red line) flows from **ELVDD** through second transistor **T1** to the **OLED**. The amount of current that flows through second transistor **T1** to the **OLED** is dependent upon the voltage that was stored on the capacitor **Cst**, which is based on the data signal voltage delivered previously through first transistor **T2** (see claim element **1[f]**, below).



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



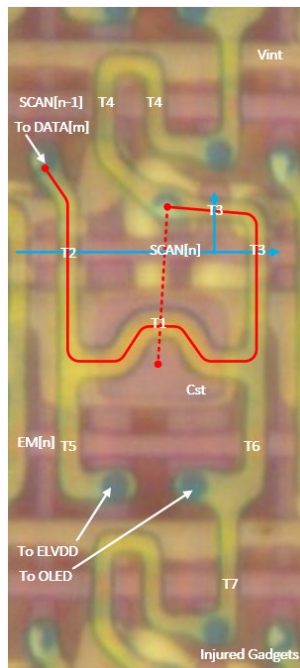
Injured Gadgets Product Equivalent Circuit

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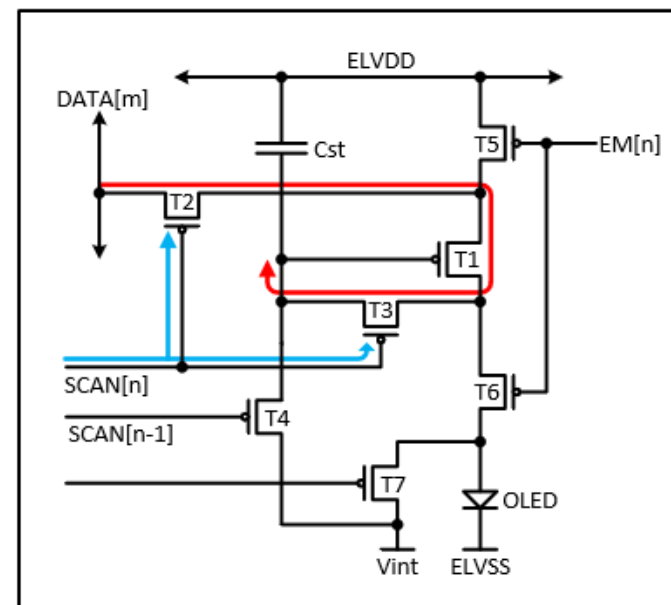
Injured Gadgets AMOLED Product

1[c] a third transistor for detecting and self-compensating threshold voltage deviation in the second transistor;
(cont'd)

As shown in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, transistors **T2** and **T3** turn on and a data signal voltage (red line) on data line **DATA[m]** flows through transistors **T2-T1-T3** and is stored on the capacitor **Cst**. This arrangement allows for the detection and self-compensation of the threshold voltage deviation in second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown Photo)



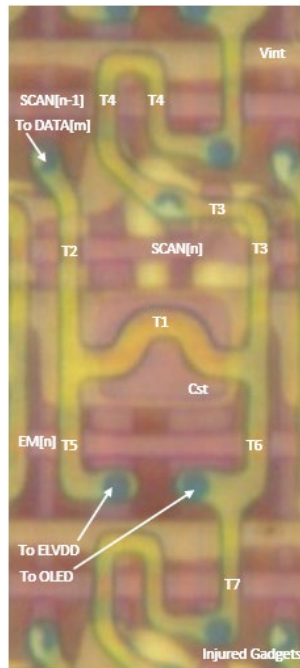
Injured Gadgets Product Equivalent Circuit

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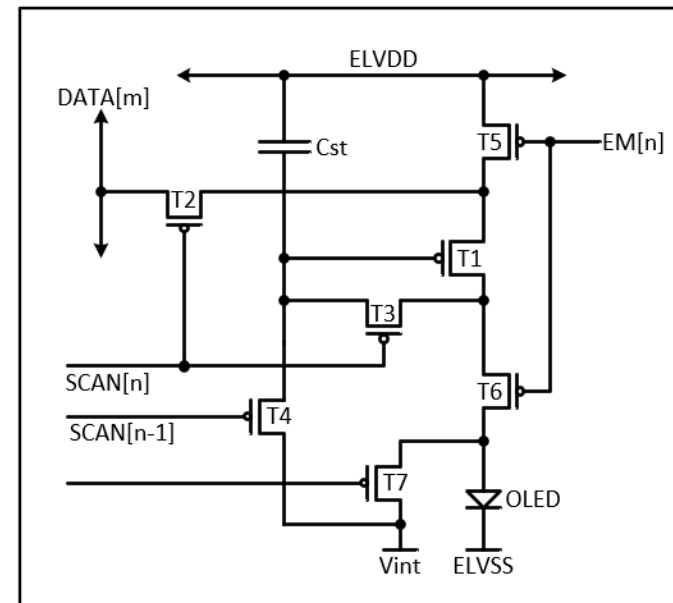
Injured Gadgets AMOLED Product

1[d] a fifth transistor for providing a power supply voltage for the second transistor in response to a current light-emitting signal;

The pixel circuit of the Injured Gadgets product has a fifth transistor for providing a power supply voltage for the second transistor in response to a current light-emitting signal. As shown in the circuit diagram below, the fifth transistor **T5** is coupled to a power supply voltage **ELVDD** and second transistor **T1**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fifth transistor **T5** delivers a power supply voltage from **ELVDD** to second transistor **T1**.



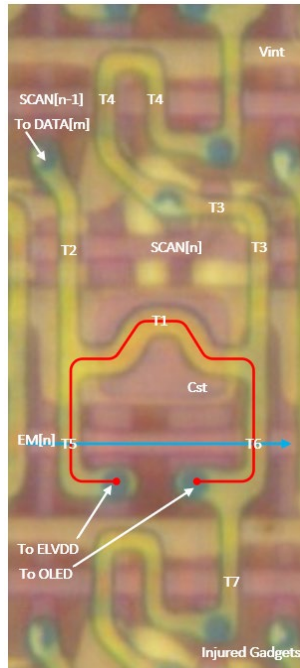
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



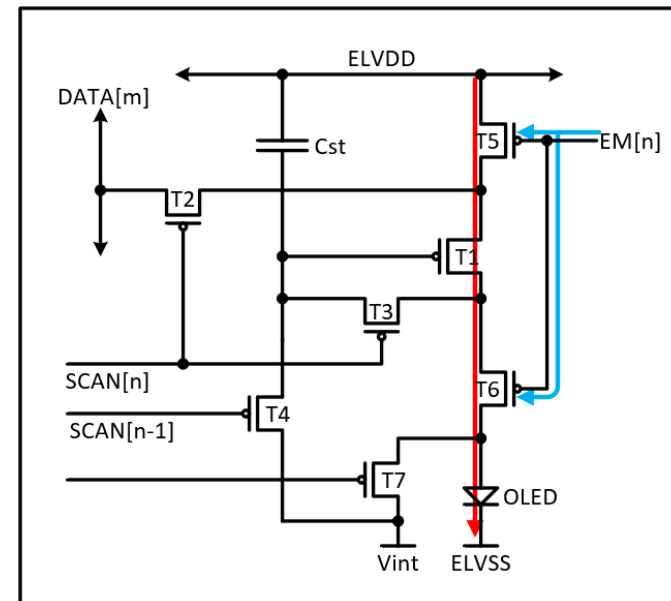
Injured Gadgets Product Equivalent Circuit

1[d] a fifth transistor for providing a power supply voltage for the second transistor in response to a current light-emitting signal; (cont'd)

For example, as shown in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, fifth transistor **T5** turns on and provides a power supply voltage **ELVDD** (red line) to second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown Photo)



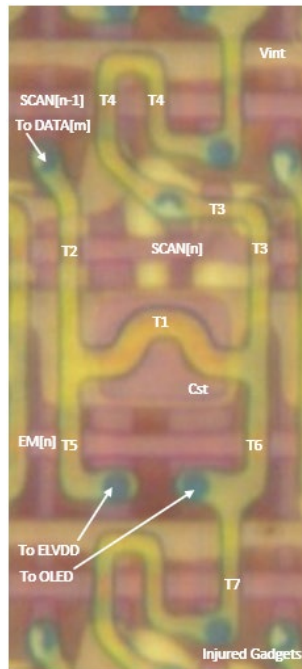
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

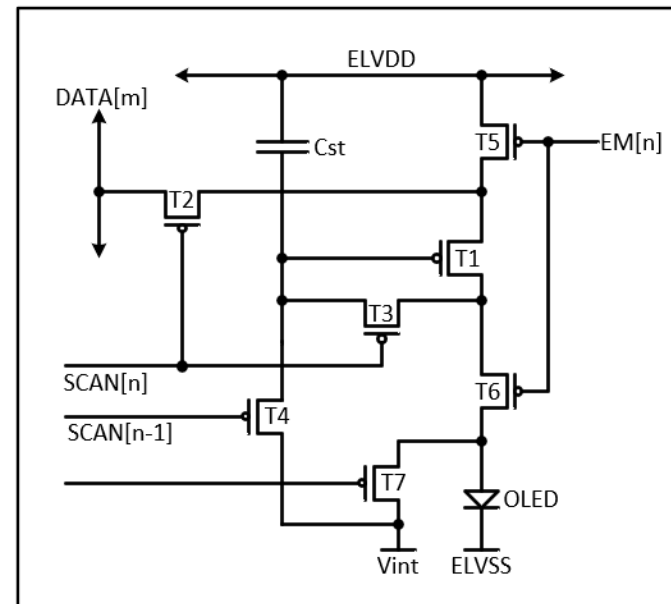
1[e] a sixth transistor which is coupled in series between the second transistor and an electroluminescent element and for providing the driving current for the electroluminescent element through the second transistor in response to the current light-emitting signal; and

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a sixth transistor that is coupled in series between the second transistor and an electroluminescent element and for providing the driving current for the electroluminescent element through the second transistor in response to the current light-emitting signal. As shown in the circuit diagram below, the sixth transistor **T6** is coupled to the second transistor **T1** and to an electroluminescent element (**OLED**). As shown in the circuit diagram below, sixth transistor **T6** is in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, sixth transistor **T6** turns on and provides driving current that flows through second transistor **T1** to the **OLED**.



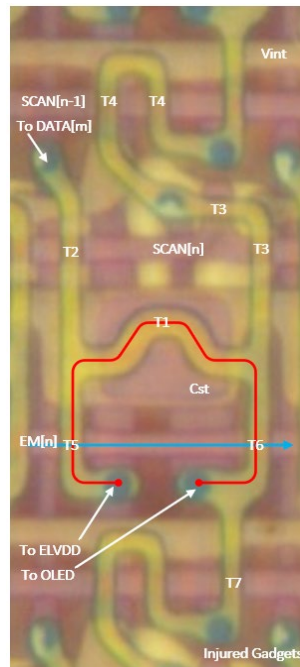
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



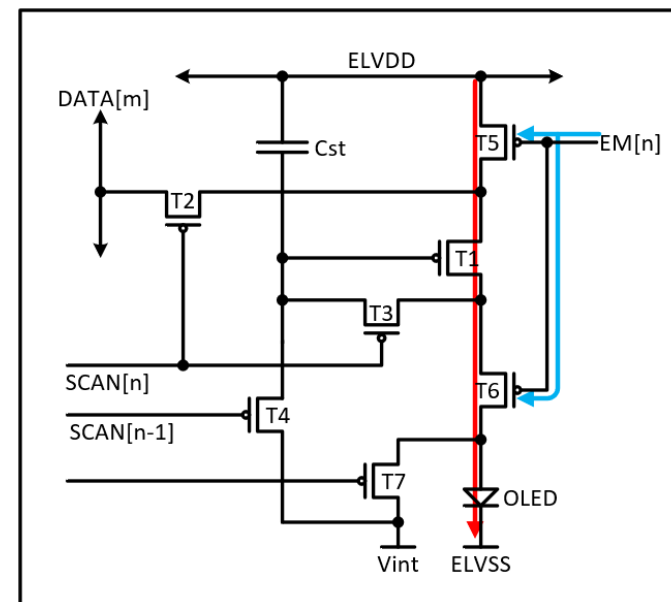
Injured Gadgets Product Equivalent Circuit

1[e] a sixth transistor which is coupled in series between the second transistor and an electroluminescent element and for providing the driving current for the electroluminescent element through the second transistor in response to the current light-emitting signal; and (cont'd)

As shown in the annotated circuit diagram below, sixth transistor **T6** is coupled in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, sixth transistor **T6** turns on, and the driving current flows (red line) from second transistor **T1** through sixth transistor **T6** to the **OLED**.



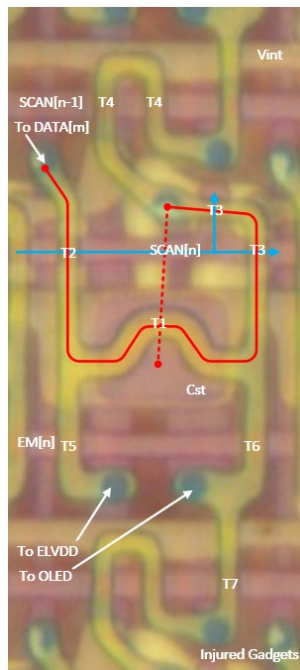
Annotated Exhibit 2030 at 5
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Photo)



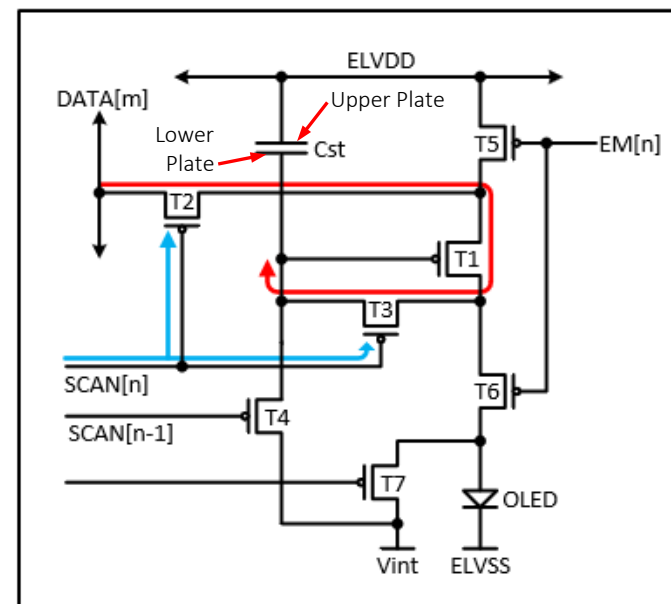
Injured Gadgets Product Equivalent Circuit

1[f] a capacitor for storing the data signal voltage delivered to the second transistor,

The pixel circuit of the Injured Gadgets product has a capacitor for storing the data signal voltage delivered to the second transistor. As shown in the annotated circuit diagram below, the capacitor **Cst** has an upper plate and a lower plate. The capacitor **Cst** stores the data signal voltage delivered to the second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) on data line **DATA[m]** to second transistor **T1** and to capacitor **Cst** (see *also* claim elements **1[a]**, **1[b]** above).



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Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
1[g] wherein the electroluminescent element emits light corresponding to the driving current generated through the second transistor.	In the pixel circuit of the Injured Gadgets product, the electroluminescent element emits light corresponding to the driving current generated through the second transistor. As shown in the circuit diagram below, the driving current flows from a power supply voltage ELVDD through fifth transistor T5, through second transistor T1, and through sixth transistor T6 to the OLED. The amount of light emitted from the OLED corresponds to the driving current generated by second transistor T1 and delivered through the sixth transistor T6. Injured Gadgets Product Equivalent Circuit Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo)

U.S. Pat. No. 7,414,599

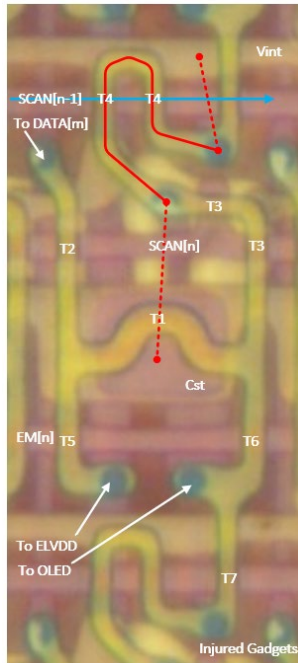
2. The pixel circuit in the organic light emitting device of claim 1, further comprising:

a fourth initialization transistor for discharging the data signal voltage stored in the capacitor in response to a scan signal just before the current scan signal.

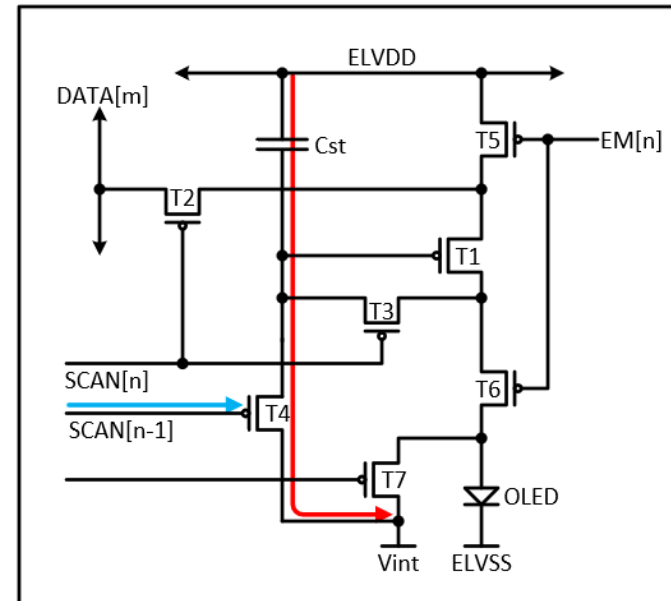
Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a fourth initialization transistor for discharging the data signal voltage stored in the capacitor in response to a scan signal just before the current scan signal.

As shown in the annotated circuit diagram below, the fourth transistor **T4** is coupled between an initialization voltage line **Vint** and the capacitor **Cst**. The fourth transistor **T4** turns on in response to an active (low) scan signal (blue line) on scan line **GI[N]** that is a scan signal just before the current scan signal on scan line **GW[N]**. The data signal voltage stored in the capacitor **Cst** is discharged (red line) through fourth transistor **T4** to initialization voltage line **Vint**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

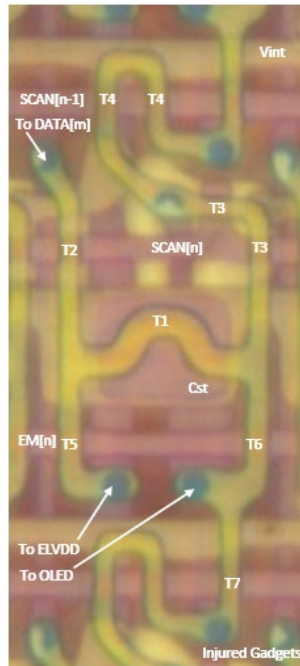
4. The pixel circuit in the organic light emitting device of claim 1, wherein the second transistor is composed of a PMOS transistor including a gate coupled to one terminal of the capacitor, a source coupled to the first transistor, and a drain coupled to the electroluminescent element.

Injured Gadgets AMOLED Product

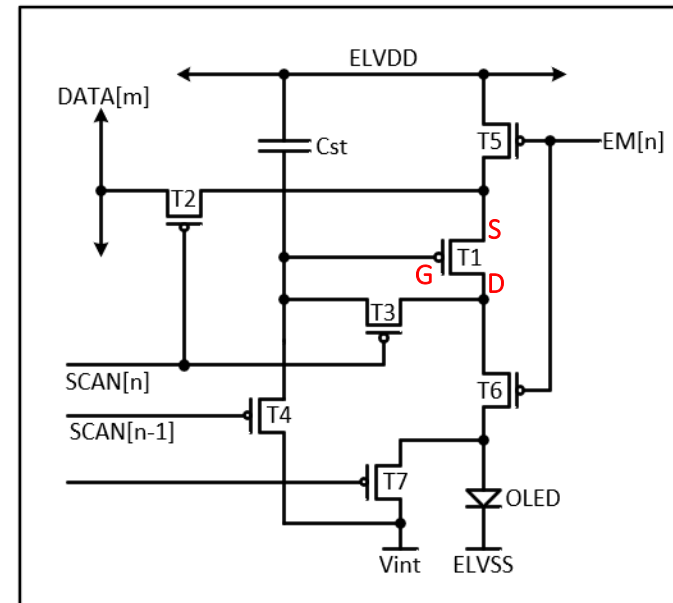
The pixel circuit of the Injured Gadgets product has a second transistor composed of a PMOS transistor, including a gate coupled to one terminal of the capacitor, a source coupled to the first transistor, and a drain coupled to the electroluminescent element.

As shown in the circuit diagram below, the circuit symbol for the second transistor **T1** indicates that it is a PMOS transistor.

As shown in the circuit diagram below, the second transistor **T1** includes a gate coupled to one terminal of the capacitor **Cst**, a source coupled to the first transistor **T2**, and a drain coupled to the electroluminescent element through sixth transistor **T6**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)

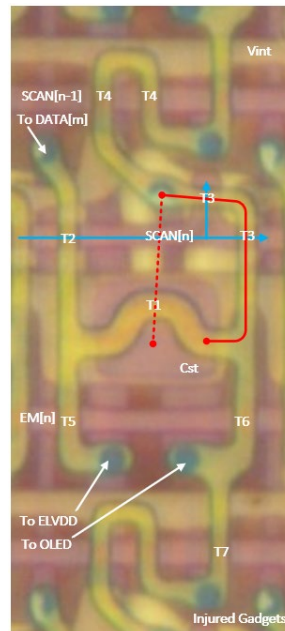


Injured Gadgets Product Equivalent Circuit

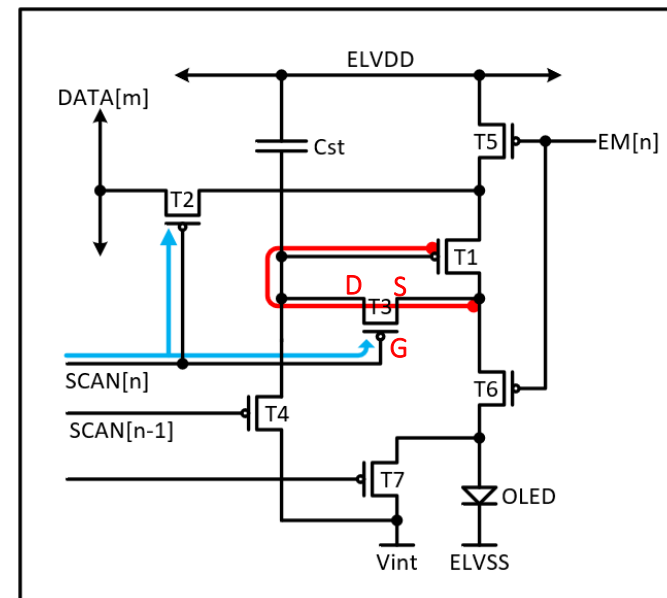
5. The pixel circuit in the organic light emitting device of claim 4, wherein the third transistor is composed of a PMOS transistor including a gate to which the current scan signal is applied, and a drain and a source which are coupled to the gate and the drain of the second transistor, respectively, so that the third transistor connects the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor.

The pixel circuit of the Injured Gadgets product has a third transistor composed of a PMOS transistor, including a gate, to which the current scan signal is applied, and a drain and a source that are coupled to the gate and the drain of the second transistor, respectively, so that the third transistor connects the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor.

As shown in the annotated circuit diagram below, the circuit symbol for the third transistor **T3** indicates that it is a PMOS transistor. As shown in the annotated circuit diagram below, the third transistor **T3** includes a gate to which the current scan signal delivered on scan line **SCAN[n]** is applied, a drain coupled to the gate of the second transistor **T1**, and source coupled to the drain of second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, third transistor **T3** connects the drain and gate of second transistor **T1** together (red line) in the form of a diode to self-compensate a threshold voltage of second transistor **T1**.



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Injured Gadgets Product Equivalent Circuit

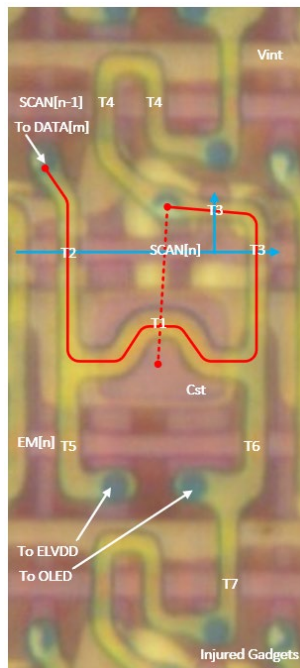
U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

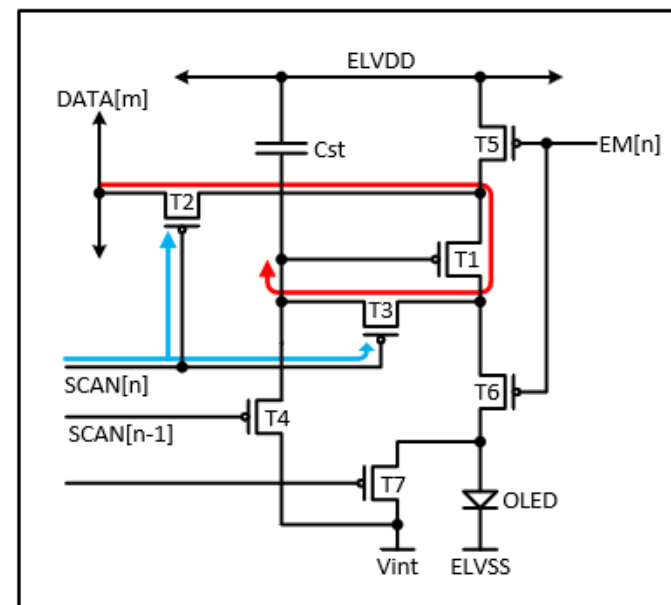
6. The pixel circuit in the organic light emitting device of claim 1, further comprising:
a voltage source for providing the data signal voltage through the first transistor for the second transistor.

In the pixel circuit of the Injured Gadgets product, a voltage source for providing the data signal voltage through the first transistor for the second transistor is shown.

As shown in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, the first transistor **T2** turns on and provides the data signal voltage (red line) from the data line **DATA[m]** to the second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



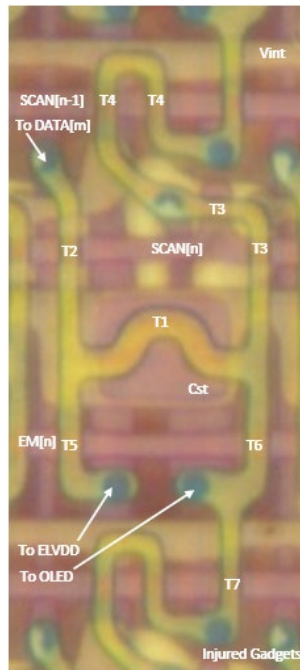
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

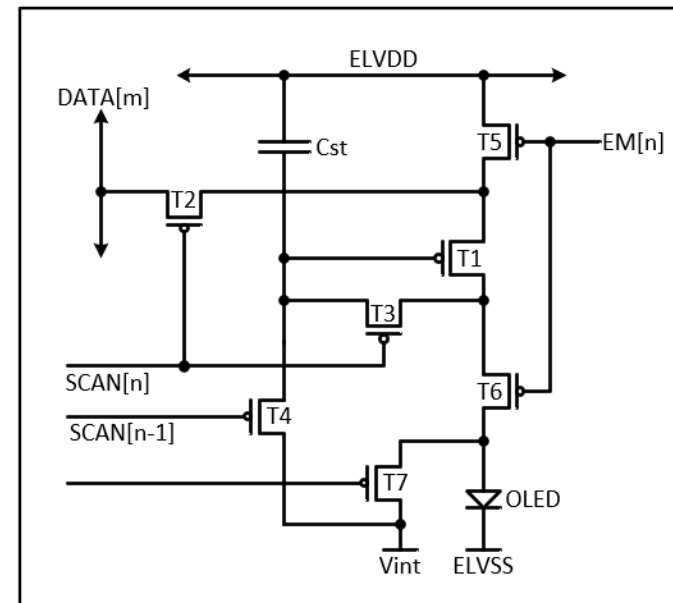
Injured Gadgets AMOLED Product

7[preamble] A pixel circuit in an organic light emitting device, comprising:

The Injured Gadgets product includes a pixel circuit in an organic light-emitting device. For example, the circuit diagram below of the Injured Gadgets Product depicts the transistors **T1–T7**, the capacitor **Cst**, and the **OLED** element.



Annotated Exhibit 2030 at 5
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Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

7[preamble] A pixel circuit in an organic light emitting device, comprising:

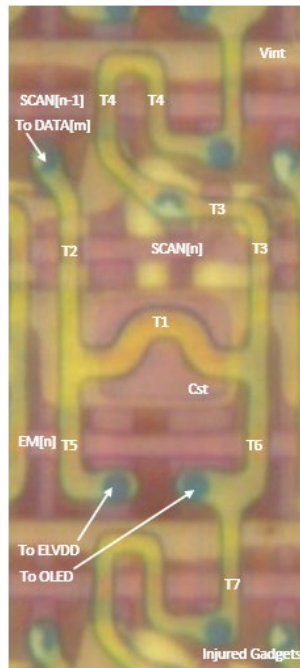
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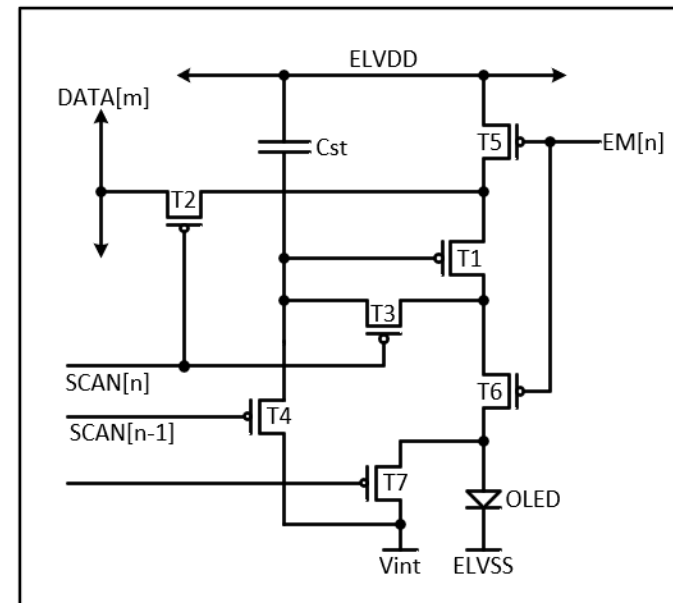
Exhibit 2030 (Injured Gadgets Teardown Photo) at 1, 4

7[a] a first transistor for delivering a data signal voltage in response to a current scan line signal;

The pixel circuit of the Injured Gadgets product has a first transistor for delivering a data signal voltage in response to a current scan line signal. As shown in the circuit diagram below, the first transistor **T2** is coupled to a data line **DATA[m]** for delivering a data signal voltage. The gate of first transistor **T2** is coupled to a scan line **SCAN[n]** that delivers a current scan line signal to the gate of first transistor **T2**. In response to an active (low) current scan line signal delivered on scan line **SCAN[n]**, first transistor **T2** delivers a data signal voltage from data line **DATA[m]**.



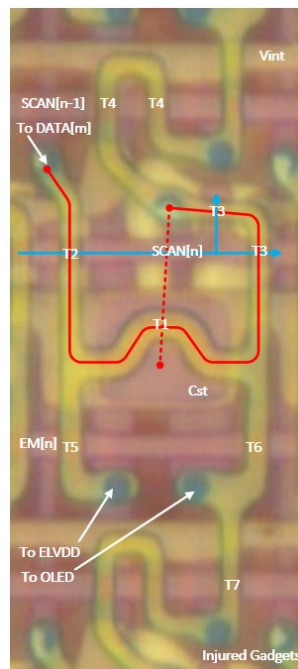
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Photo)



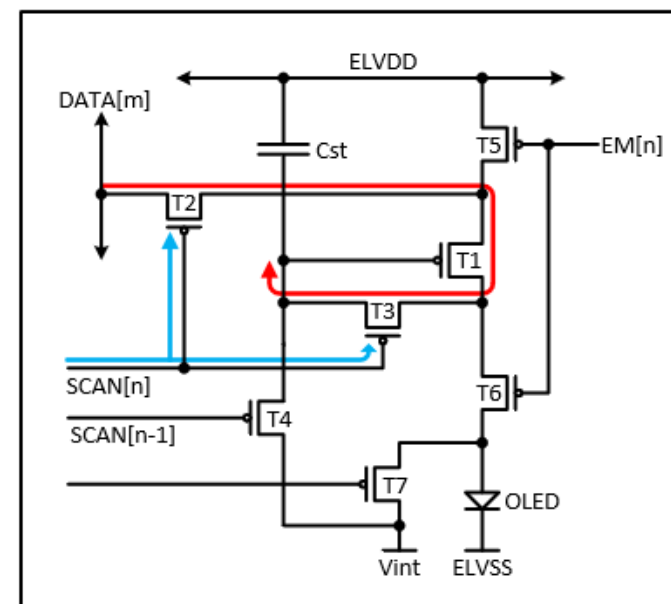
Injured Gadgets Product Equivalent Circuit

7[a] a first transistor for delivering a data signal voltage in response to a current scan line signal;
(*cont'd*)

As reflected in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]**. The annotated circuit diagram below depicts an exemplary voltage path from data line **DATA[m]** through transistors **T2-T1-T3** to the gate of transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



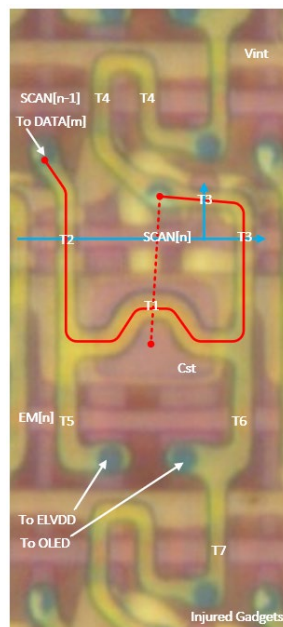
Injured Gadgets Product Equivalent Circuit

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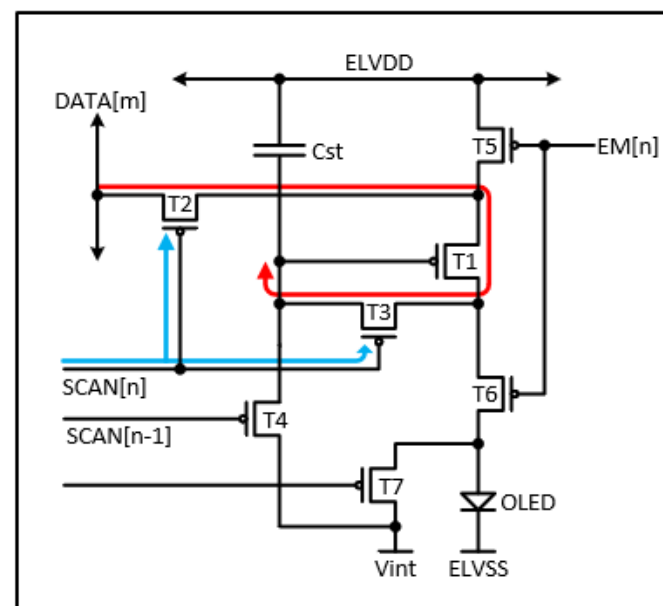
Injured Gadgets AMOLED Product

7[b] a second transistor for programming the data signal voltage and for generating a driving current in response to a programmed data signal when light is emitted;

The pixel circuit of the Injured Gadgets product has a second transistor for programming the data signal voltage and for generating a driving current in response to a programmed data signal when light is emitted. As shown in the annotated circuit diagram below, the second transistor **T1** is coupled to a power supply voltage **ELVDD**. As described for claim element **1[a]** above, the first transistor **T2** delivers a data signal voltage in response to an active (low) current scan line signal that is delivered on scan line **SCAN[n]**. The data signal voltage is stored (programmed) on the capacitor **Cst**. When light emitted, the second transistor **T1** will generate a driving current dependent upon the voltage stored on the capacitor **Cst**, and the current will be sourced from **ELVDD**.



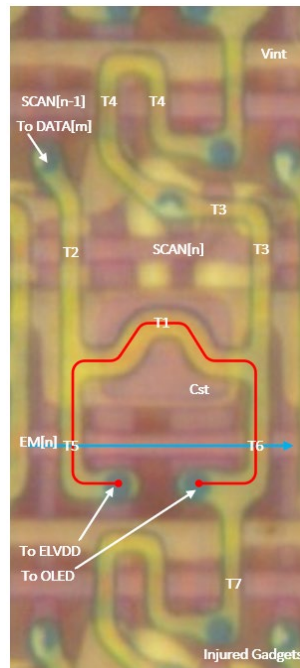
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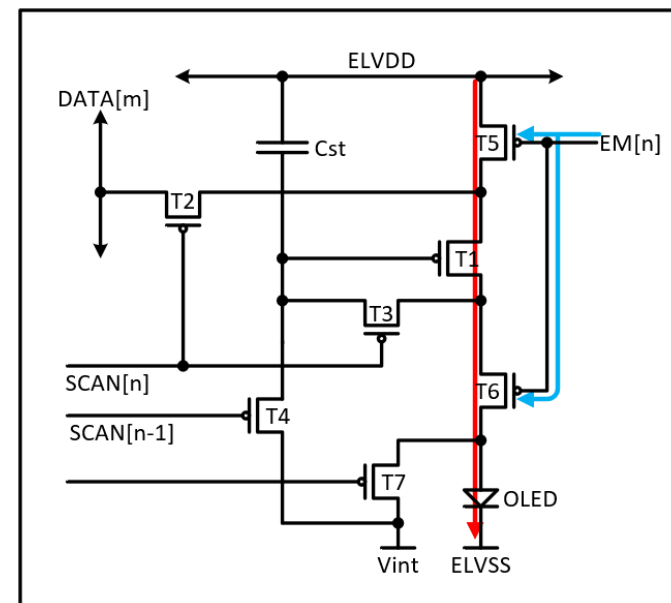
Injured Gadgets Product Equivalent Circuit

7[b] a second transistor for programming the data signal voltage and for generating a driving current in response to a programmed data signal when light is emitted;
(cont'd)

As further reflected in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, transistors **T5** and **T6** turn on, and a driving current (red line) flows from **ELVDD** through second transistor **T1** to the **OLED**. The amount of current that flows through second transistor **T1** to the **OLED** is dependent upon the voltage that was stored (programmed) on the capacitor **Cst**, which is based on the data signal voltage delivered previously through first transistor **T2** (see claim element **7[d]**, below).



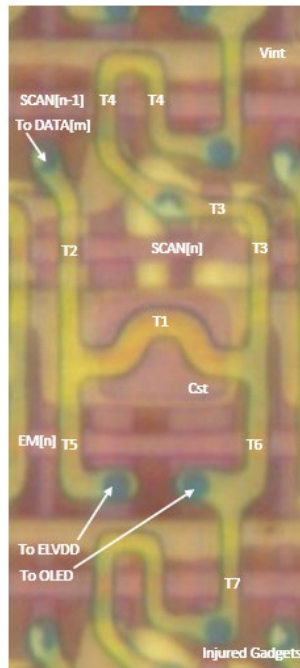
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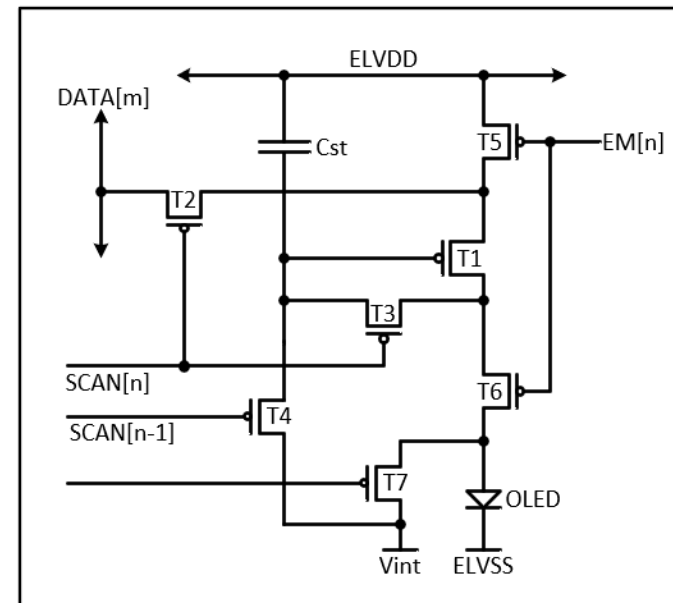
Injured Gadgets Product Equivalent Circuit

7[c] a third transistor for providing the data signal voltage for the second transistor in response to the current scan signal;

The pixel circuit of the Injured Gadgets product has a third transistor for providing the data signal voltage for the second transistor in response to the current scan signal. As shown in the circuit diagram below, a third transistor **T3** provides the data signal voltage for the second transistor **T1** in response to the current scan signal deliver on scan line **GW[N]**.



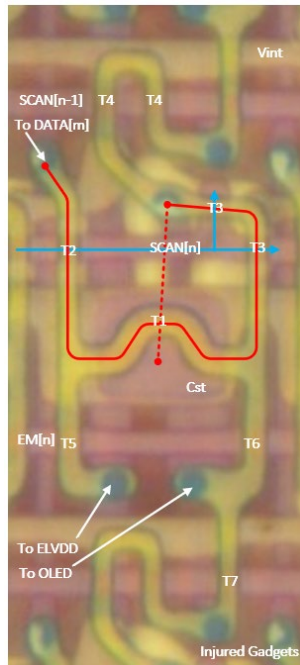
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



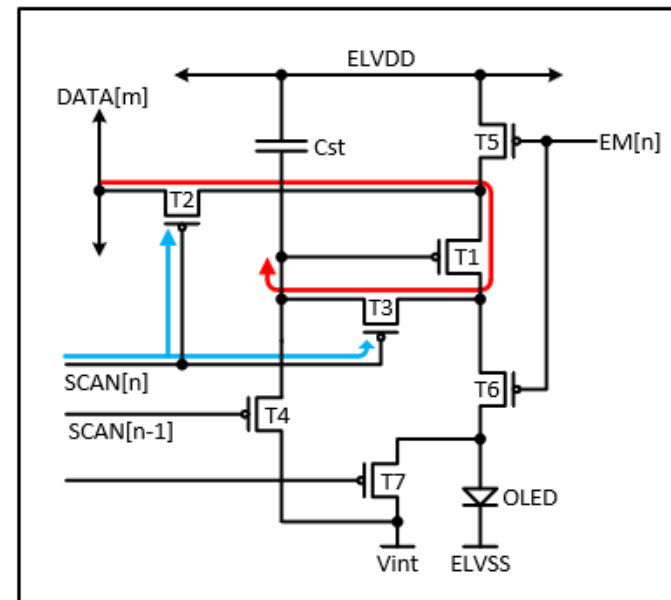
Injured Gadgets Product Equivalent Circuit

7[c] a third transistor for providing the data signal voltage for the second transistor in response to the current scan signal;
(cont'd)

As reflected in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, transistors **T2** and **T3** turn on and a data signal voltage (red line) on data line **DATA[m]** flows through transistors **T2-T1-T3** and is stored on the capacitor **Cst** and the gate of second transistor **T1**.



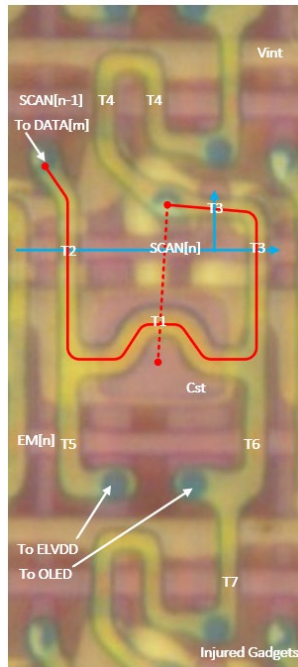
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



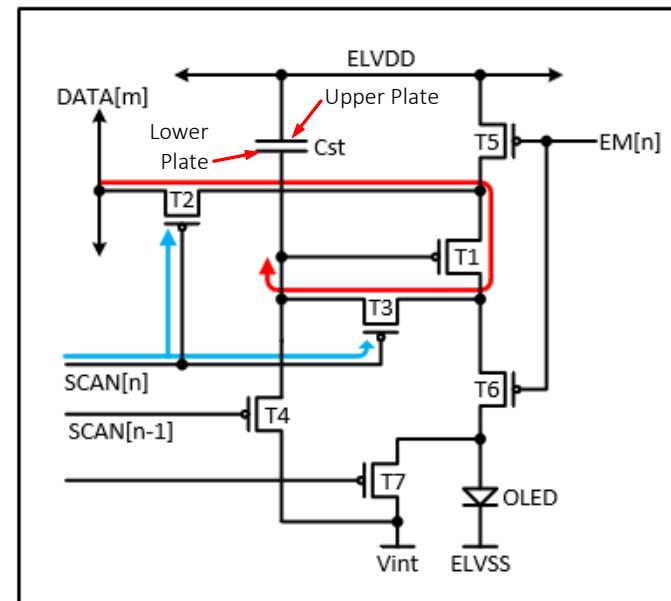
Injured Gadgets Product Equivalent Circuit

7[d] a capacitor for maintaining the data signal voltage programmed onto the second transistor;

The pixel circuit of the Injured Gadgets product has a capacitor for maintaining the data signal voltage programmed onto the second transistor. As shown in the annotated circuit diagram below, the capacitor **Cst** has an upper plate and a lower plate. The capacitor **Cst** maintains the data signal voltage delivered to and stored (programmed) on the gate of the second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **GW[N]**, first transistor **T2** delivers the data signal voltage (red line) on data line **Data** to second transistor **T1** and to capacitor **Cst** (see also claim elements **7[a]**, **7[b]** above).



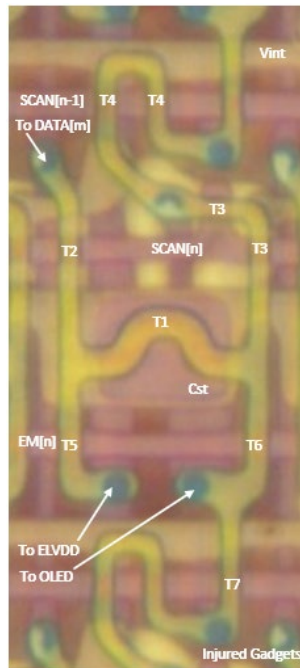
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



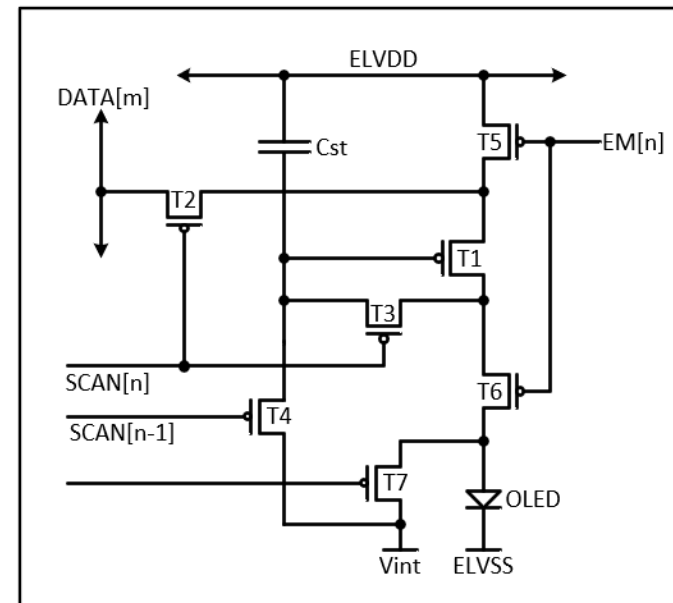
Injured Gadgets Product Equivalent Circuit

7[e] a fourth transistor for delivering a power supply voltage to the second transistor when the light is emitted;

The pixel circuit of the Injured Gadgets product has a fourth transistor for delivering a power supply voltage to the second transistor when the light is emitted. As shown in the circuit diagram below, the fourth transistor **T5** is coupled to a power supply voltage **ELVDD** and second transistor **T1**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fourth transistor **T5** delivers a power supply voltage from **ELVDD** to second transistor **T1** when the light is emitted.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



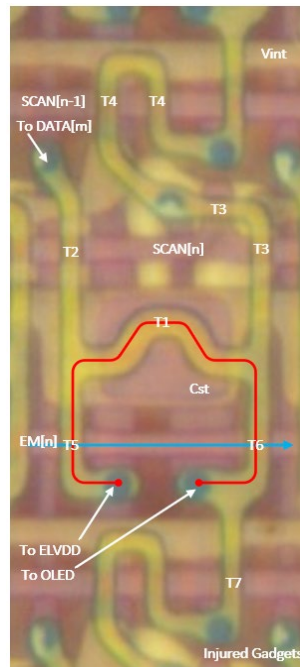
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

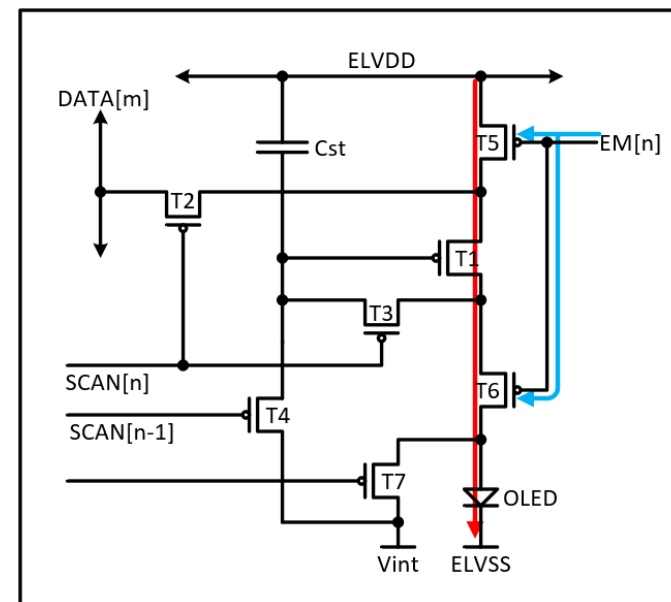
Injured Gadgets AMOLED Product

7[e] a fourth transistor for delivering a power supply voltage to the second transistor when the light is emitted;
(cont'd)

For example, as shown in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, fourth transistor **T5** turns on and provides a power supply voltage **ELVDD** (red line) to second transistor **T1** when the light is emitted.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



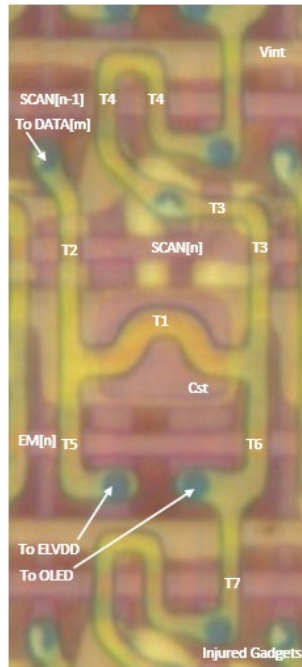
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

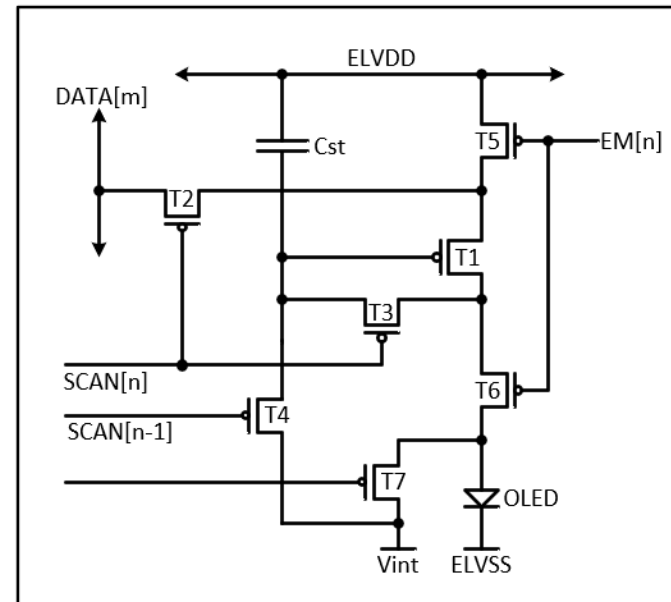
7[f] a fifth transistor for delivering the driving current, provided from the second transistor, in response to the data signal voltage when the light is emitted; and

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a fifth transistor for delivering the driving current, provided from the second transistor, in response to the data signal voltage when the light is emitted. As shown in the circuit diagram below, the fourth transistor **T6** is coupled to the second transistor **T1** and to an electroluminescent element (**OLED**). As shown in the circuit diagram below, fourth transistor **T6** is in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fourth transistor **T6** turns on and delivers driving current that flows through second transistor **T1** to the **OLED** when the light is emitted.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



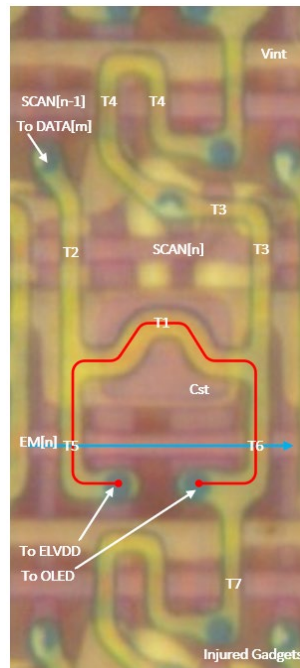
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

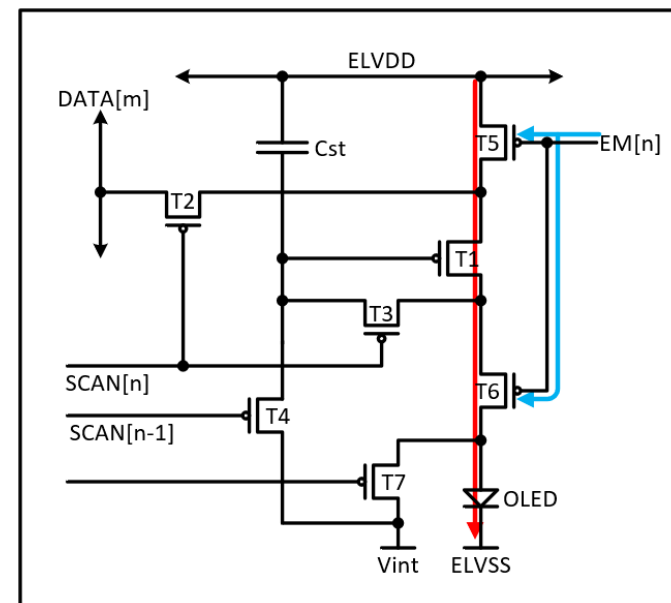
Injured Gadgets AMOLED Product

7[f] a fifth transistor for delivering the driving current, provided from the second transistor, in response to the data signal voltage when the light is emitted; and
(cont'd)

As is further shown in the annotated circuit diagram below, fifth transistor **T6** is coupled in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, fifth transistor **T6** turns on, and the driving current flows (red line) from second transistor **T1** through fifth transistor **T6** to the **OLED** when the light is emitted.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown Photo)



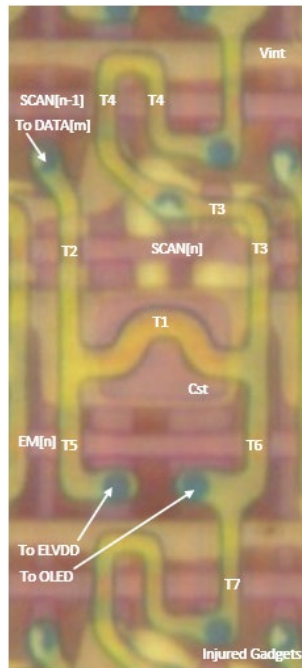
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

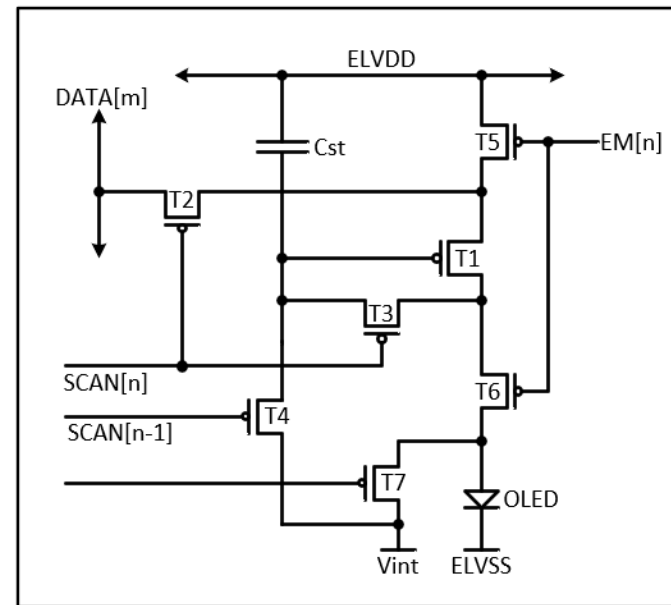
Injured Gadgets AMOLED Product

7[g] an electroluminescent element for emitting light corresponding to the driving current delivered through the fifth transistor,

The pixel circuit of the Injured Gadgets product has an electroluminescent element for emitting light corresponding to the driving current delivered through the fifth transistor. As shown in the circuit diagram below, the driving current flows from a power supply voltage **ELVDD** through fourth transistor **T5**, through second transistor **T1**, and through fifth transistor **T6** to the **OLED**. The amount of light emitted from the **OLED** corresponds to the driving current generated by second transistor **T1** and delivered through the fifth transistor **T6**.



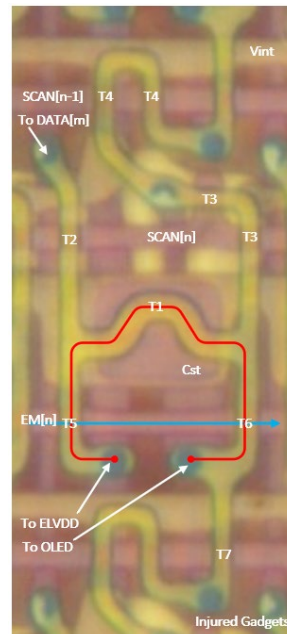
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



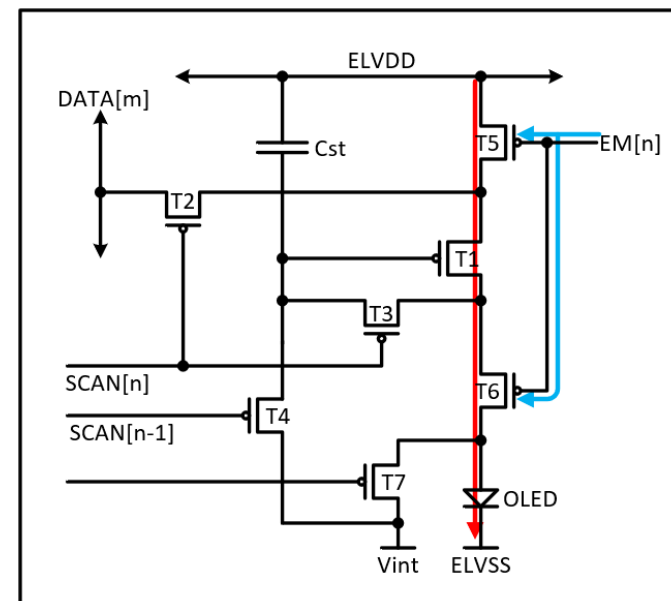
Injured Gadgets Product Equivalent Circuit

7[g] an electroluminescent element for emitting light corresponding to the driving current delivered through the fifth transistor, (cont'd)

As is reflected in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, transistors **T5** and **T6** turn on, and current (red line) can flow from **ELVDD** through transistors **T5-T1-T6** to the **OLED**. The voltage stored by capacitor **Cst** (see also claim element **7[d]**, above) is applied to the gate of second transistor **T1**, and this applied voltage determines the amount of driving current that flows through second transistor **T1** to the **OLED**, which in turn determines the amount of light emitted by the **OLED**.



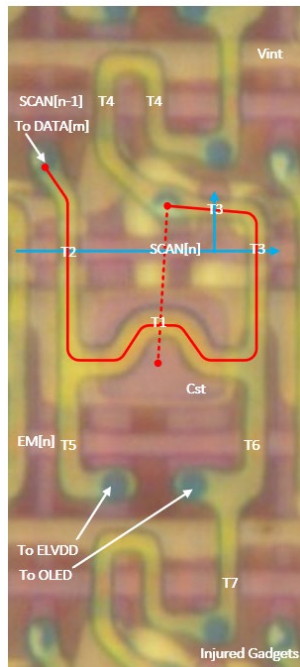
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



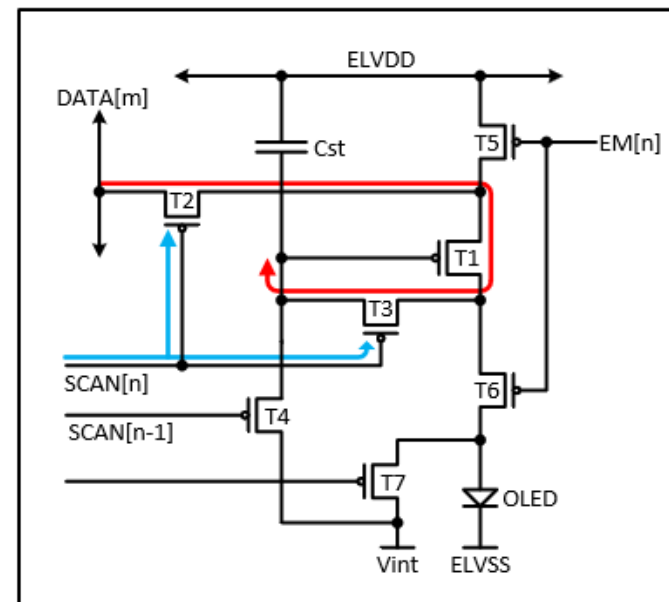
Injured Gadgets Product Equivalent Circuit

7[h] wherein the third transistor connects the second transistor in the form of a diode in response to the current scan signal so that the second transistor detects and compensates its threshold voltage deviation in itself.

In the pixel circuit of the Injured Gadgets product, the third transistor connects the second transistor in the form of a diode in response to the current scan signal so that the second transistor detects and compensates its threshold voltage deviation in itself. For example, as shown in the annotated circuit diagram below, in response to a current scan signal (blue line) delivered on scan line **SCAN[n]** being active (low), the first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]** to the gate of the second transistor **T1** through the third transistor **T3**. The third transistor **T3** is connected between the drain and gate of second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, third transistor **T3** connects the drain and gate of second transistor **T1** together (red line), connecting second transistor **T1** in the form of a diode, so that the second transistor **T1** detects and compensates its threshold voltage deviation in itself.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

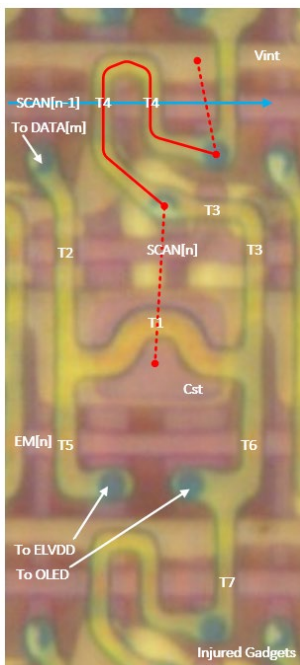
Injured Gadgets AMOLED Product

8. The pixel circuit in the organic light emitting device of claim 7, further comprising:

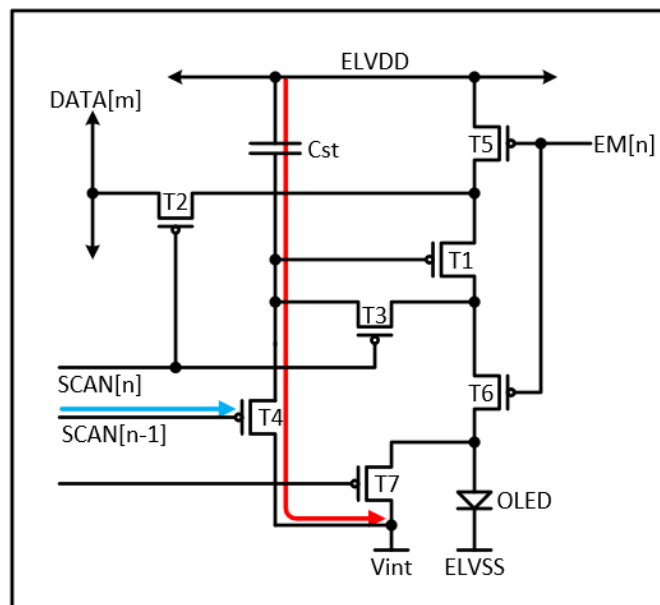
a sixth initialization transistor for discharging the data signal voltage stored in the capacitor in response to a scan signal just before the current scan signal upon initialization.

The pixel circuit of the Injured Gadgets product has a sixth initialization transistor for discharging the data signal voltage stored in the capacitor in response to a scan signal just before the current scan signal upon initialization.

As shown in the annotated circuit diagram below, the sixth transistor **T4** is coupled between an initialization voltage line **Vint** and the capacitor **Cst**. The sixth transistor **T4** turns on in response to an active (low) scan signal (blue line) on scan line **GI[N]** that is a scan signal just before the current scan signal on scan line **GW[N]**. The data signal voltage stored in the capacitor **Cst** is discharged (red line) through sixth transistor **T4** to initialization voltage line **Vint**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
9. The pixel circuit in the organic light emitting device of claim 7, wherein the first transistor is composed of a PMOS transistor including a gate to which the current scan line signal is applied, a source to which the data signal voltage is applied, and a drain coupled to the second transistor.	The pixel circuit of the Injured Gadgets product has a first transistor composed of a PMOS transistor, including a gate to which the current scan line signal is applied, a source to which the data signal voltage is applied, and a drain coupled to the second transistor. As shown in the annotated circuit diagram below, the circuit symbol for the first transistor T2 indicates that it is a PMOS transistor. As shown in the annotated circuit diagram below, the first transistor T2 includes a gate to which the current scan line signal from scan line SCAN[n] is applied, a source to which the data signal voltage from data line DATA[m] is applied, and a drain coupled to the second transistor T1. Injured Gadgets Product Equivalent Circuit Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo)

U.S. Pat. No. 7,414,599

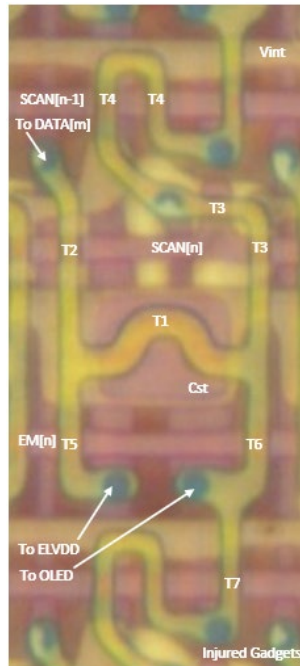
10. The pixel circuit in the organic light emitting device of claim 7, wherein the second transistor is composed of a PMOS transistor including a gate coupled to one terminal of the capacitor, a source coupled to the first transistor, and a drain coupled to the electroluminescent element.

Injured Gadgets AMOLED Product

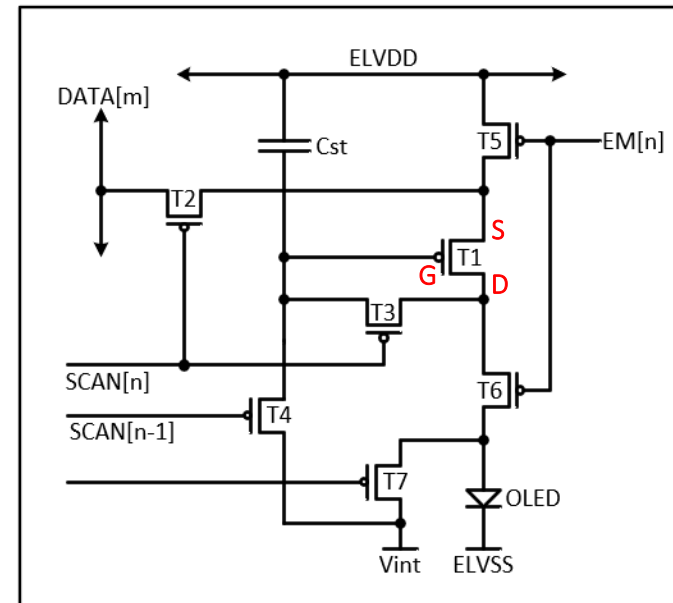
The pixel circuit of the Injured Gadgets product has a second transistor composed of a PMOS transistor, including a gate coupled to one terminal of the capacitor, a source coupled to the first transistor, and a drain coupled to the electroluminescent element.

As shown in the circuit diagram below, the circuit symbol for the second transistor **T1** indicates that it is a PMOS transistor.

As shown in the circuit diagram below, the second transistor **T1** includes a gate coupled to one terminal of the capacitor **Cst**, a source coupled to the first transistor **T2**, and a drain coupled to the electroluminescent element through fifth transistor **T6**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
11. The pixel circuit in the organic light emitting device of claim 10, wherein the third transistor is composed of a PMOS transistor including a gate to which the current scan signal is applied, and a drain and a source which are coupled to the gate and the drain of the second transistor, respectively, so that the third transistor connects the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor.	The pixel circuit of the Injured Gadgets product has a third transistor composed of a PMOS transistor, including a gate, to which the current scan signal is applied, and a drain and a source that are coupled to the gate and the drain of the second transistor, respectively, so that the third transistor connects the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor. As shown in the annotated circuit diagram below, the circuit symbol for the third transistor T3 indicates that it is a PMOS transistor. As shown in the annotated circuit diagram below, the third transistor T3 includes a gate to which the current scan signal delivered on scan line SCAN[n] is applied, a drain coupled to the gate of the second transistor T1, and source coupled to the drain of second transistor T1. In response to an active (low) current scan line signal (blue line) delivered on scan line SCAN[n], third transistor T3 connects the drain and gate of second transistor T1 together (red line), connecting second transistor T1 in the form of a diode to self-compensate a threshold voltage of second transistor T1. Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo) Injured Gadgets Product Equivalent Circuit

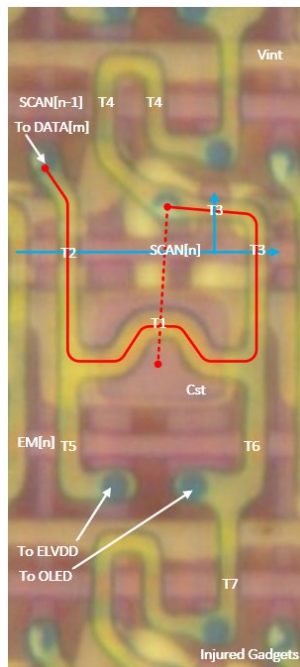
U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

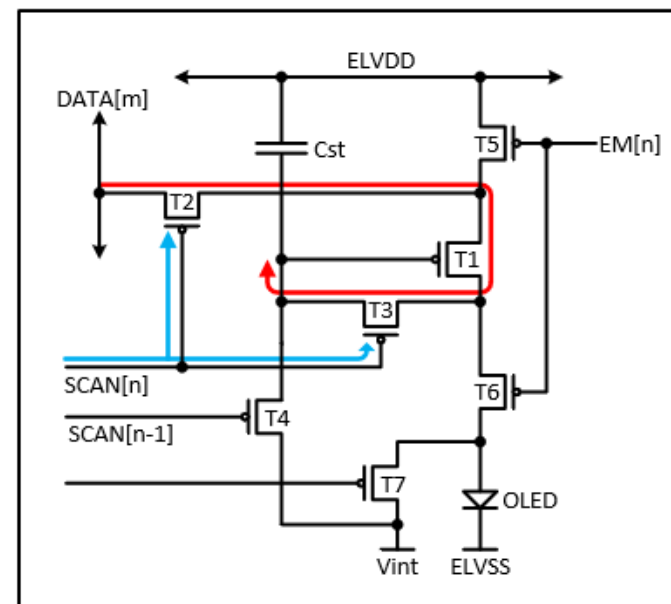
12. The pixel circuit in the organic light emitting device of claim 7, further comprising:
a voltage source for providing the data signal voltage through the first transistor for the second transistor.

In the pixel circuit of the Injured Gadgets product, a voltage source for providing the data signal voltage through the first transistor for the second transistor is shown.

As shown in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **GW[N]**, the first transistor **T2** turns on and provides the data signal voltage (red line) from the data line **Data** to the second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
13[a] The pixel circuit in the organic light emitting device of claim 7, wherein the fourth transistor is composed of a PMOS transistor including a gate to which the current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the second transistor; and	The pixel circuit of the Injured Gadgets product has a fourth transistor composed of a PMOS transistor, including a gate to which the current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the second transistor. As shown in the annotated circuit diagram below, the circuit symbol for the fourth transistor T5 indicates that it is a PMOS transistor. As shown in the annotated circuit diagram below, the fourth transistor T5 includes a gate to which the current light-emitting signal is applied via emission line EM[n], a source coupled to the power supply voltage ELVDD, and a drain coupled to the second transistor T1. Injured Gadgets Product Equivalent Circuit Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo)

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
13[b] the fifth transistor is composed of a PMOS transistor including a gate to which the current light-emitting signal is applied, a source coupled to the second transistor, and a drain coupled to the electroluminescent element.	The pixel circuit of the Injured Gadgets product has a fifth transistor composed of a PMOS transistor, including a gate to which the current light-emitting signal is applied, a source coupled to the second transistor, and a drain coupled to the electroluminescent element. As shown in the annotated circuit diagram below, the circuit symbol for the fifth transistor T6 indicates that it is a PMOS transistor. As shown in the annotated circuit diagram below, the fifth transistor T6 includes a gate to which the current light-emitting signal is applied via emission line EM[n], a source coupled to the drain of T1, and a drain coupled to the electroluminescent element (OLED). Injured Gadgets Product Equivalent Circuit

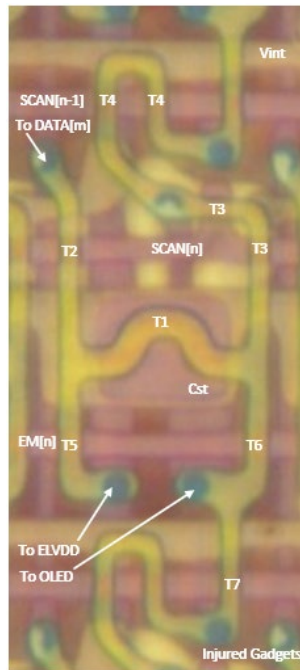
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)

U.S. Pat. No. 7,414,599

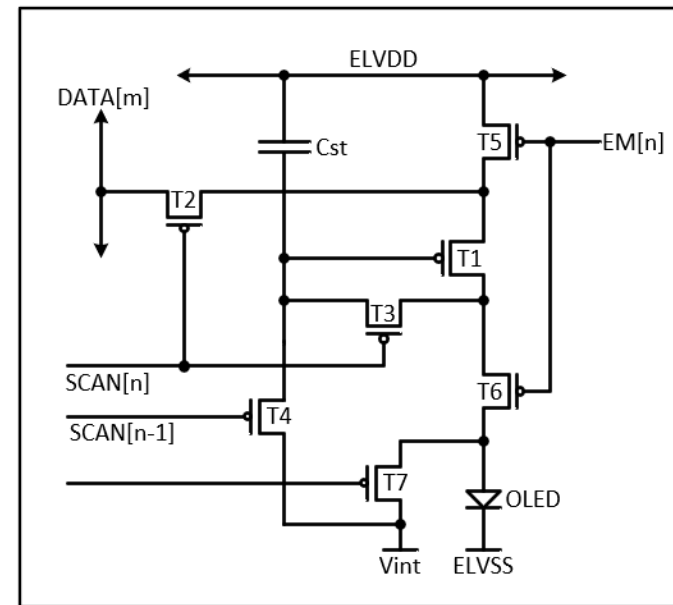
Injured Gadgets AMOLED Product

14[preamble] A pixel circuit in an organic light emitting device, comprising:

The Injured Gadgets product includes a pixel circuit in an organic light-emitting device. For example, the circuit diagram below of the Injured Gadgets Product depicts the transistors **T1–T7**, the capacitor **Cst**, and the **OLED** element.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

14[preamble] A pixel circuit in an organic light emitting device, comprising:

(cont'd)



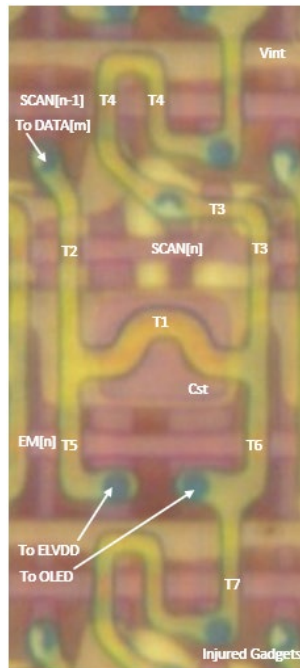
Exhibit 2030 (Injured Gadgets Teardown Photo) at 1, 4

U.S. Pat. No. 7,414,599

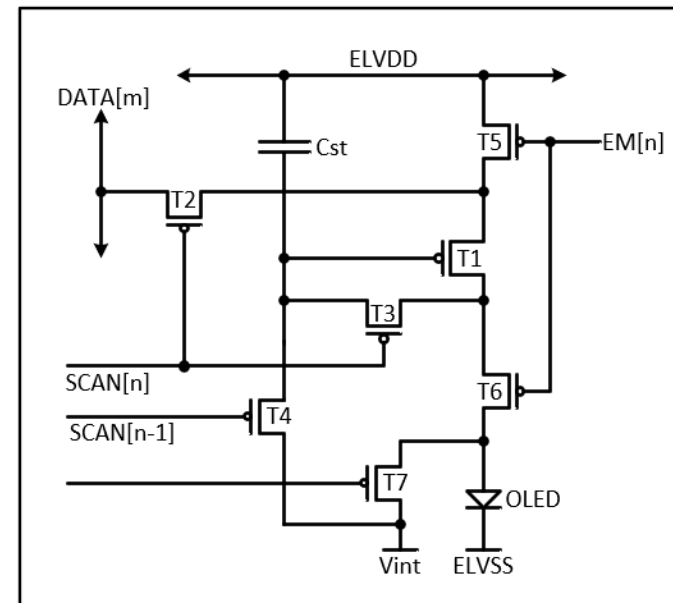
Injured Gadgets AMOLED Product

14[a] an electroluminescent element for emitting light in response to an applied driving current;

The pixel circuit of the Injured Gadgets product has an electroluminescent element for emitting light in response to an applied driving current. As shown in the circuit diagram below, the driving current flows from a power supply voltage **ELVDD** through a transistors **T5**, **T1**, and **T6**, respectively, to the electroluminescent element (**OLED**) to emit light. The light emitted by the **OLED** corresponds to the driving current generated through the second transistor **T1**.



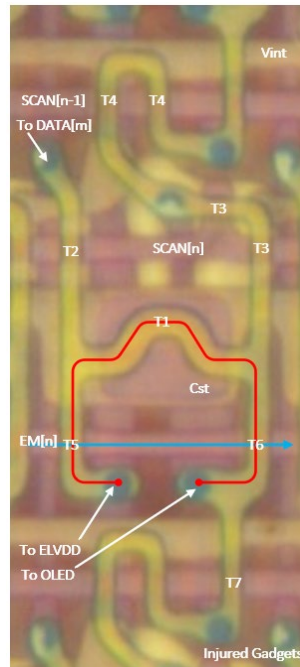
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



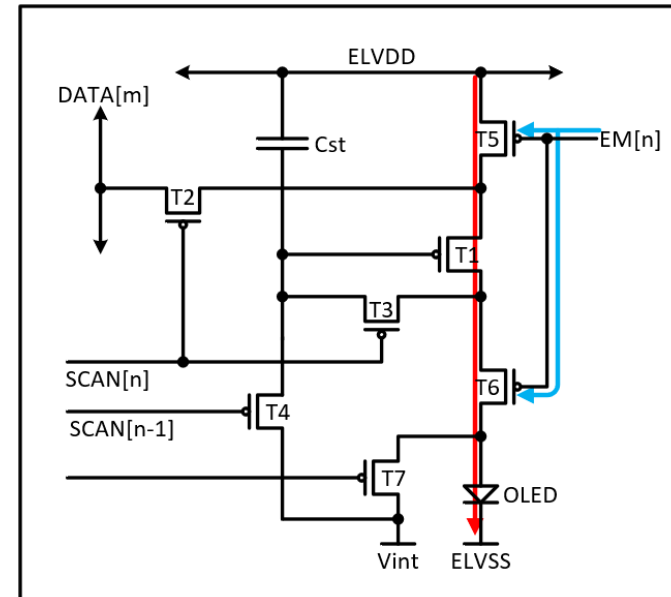
Injured Gadgets Product Equivalent Circuit

14[a] an electroluminescent element for emitting light in response to an applied driving current;
(*cont'd*)

As reflected in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, transistors **T5** and **T6** turn on and current (red line) flows from **ELVDD** through transistor **T1** to the **OLED**. The voltage stored by the capacitor **Cst** (see *also* claim element **14[e]**, below) is applied to the gate of transistor **T1**. As shown in the annotated circuit diagram below, the driving current flows from a power supply voltage **ELVDD** through transistor **T5**, through transistor **T1**, and through transistor **T6** to the **OLED**. The amount of light emitted from the **OLED** corresponds to the driving current generated by transistor **T1**.



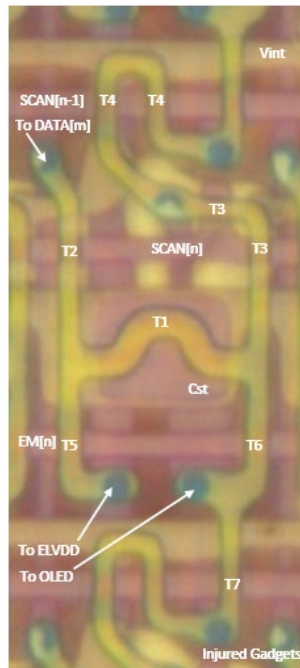
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



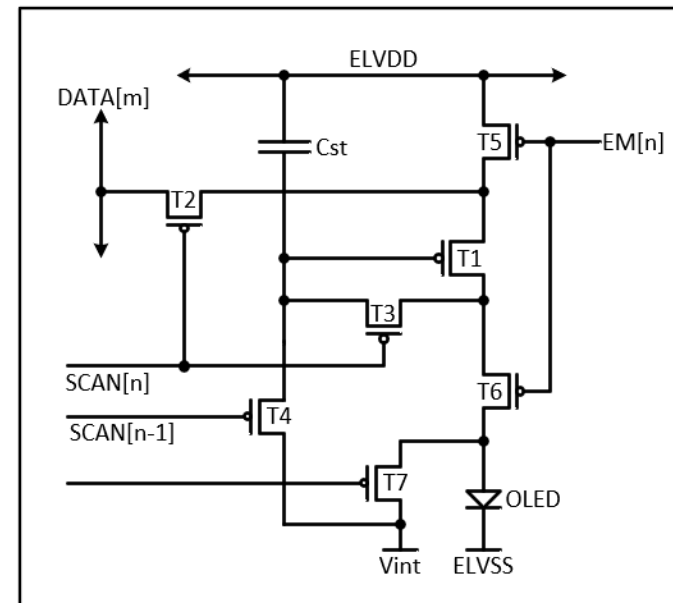
Injured Gadgets Product Equivalent Circuit

14[b] a first transistor for delivering a data signal voltage in response to a current scan line signal;

The pixel circuit of the Injured Gadgets product has a first transistor for delivering a data signal voltage in response to a current scan line signal. As shown in the circuit diagram below, the first transistor **T2** is coupled to a data line **DATA[m]** for delivering a data signal voltage. The gate of first transistor **T2** is coupled to a scan line **SCAN[n]** that delivers a current scan line signal to the gate of first transistor **T2**. In response to the current scan line signal being active (low), first transistor **T2** delivers a data signal voltage from data line **DATA[m]**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



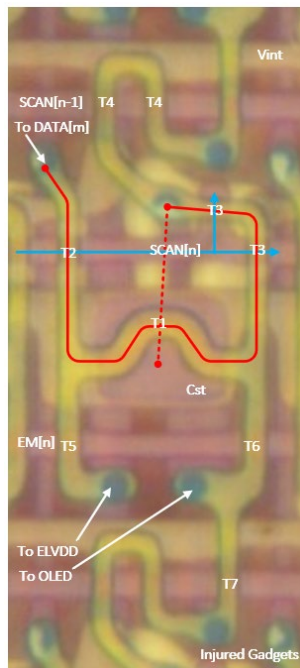
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

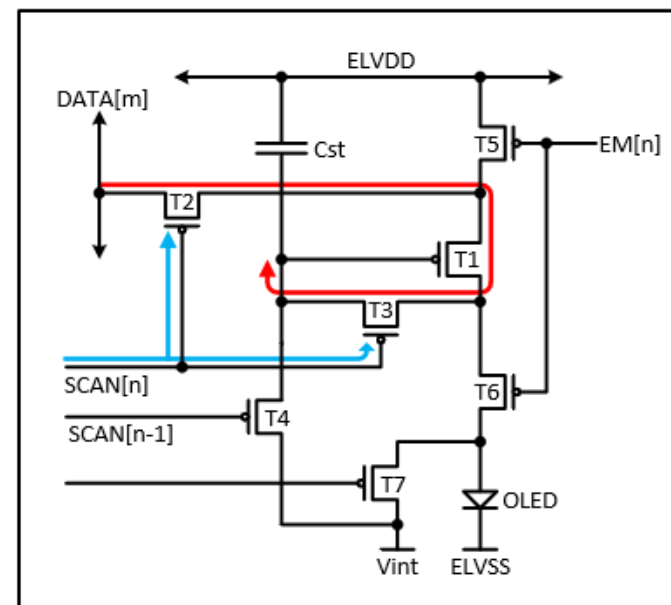
Injured Gadgets AMOLED Product

14[b] a first transistor for delivering a data signal voltage in response to a current scan line signal;
(cont'd)

As further shown in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]**. The annotated circuit diagram below depicts an exemplary voltage path from data line **DATA[m]** through transistors **T2-T1-T3** to the gate of transistor **T1**.



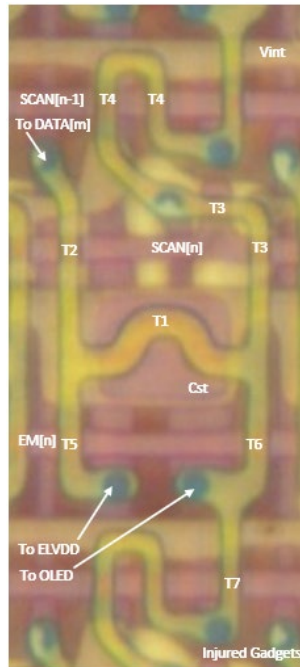
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



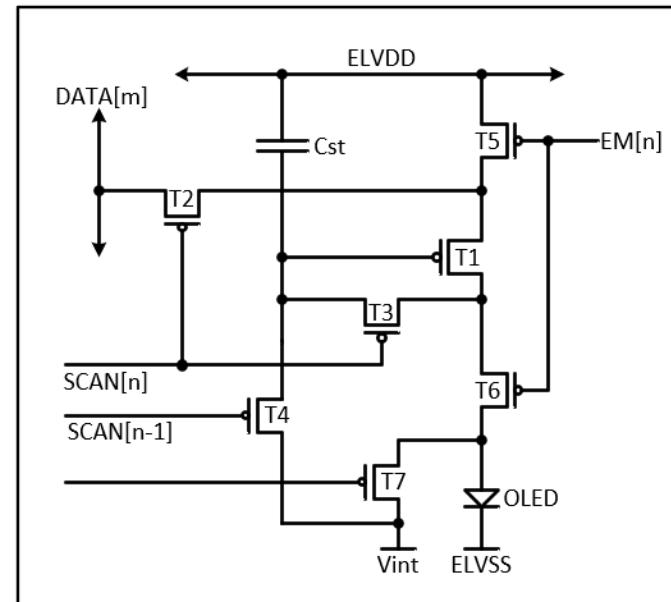
Injured Gadgets Product Equivalent Circuit

14[c] a second transistor for generating a driving current to drive the electroluminescent element in response to the data signal voltage;

The pixel circuit of the Injured Gadgets product has a second transistor for generating a driving current to drive the electroluminescent element in response to the data signal voltage. As shown in the circuit diagram below, the second transistor **T1** is coupled to a power supply voltage **ELVDD**. As described for claim element **1[a]** above, the first transistor **T2** delivers a data signal voltage in response to an active (low) current scan line signal that is delivered on scan line **SCAN[n]**. The data signal voltage is stored on the capacitor **Cst**. The second transistor **T1** will generate a driving current in response to the voltage stored on the capacitor **Cst**, and the current will be sourced from **ELVDD**.



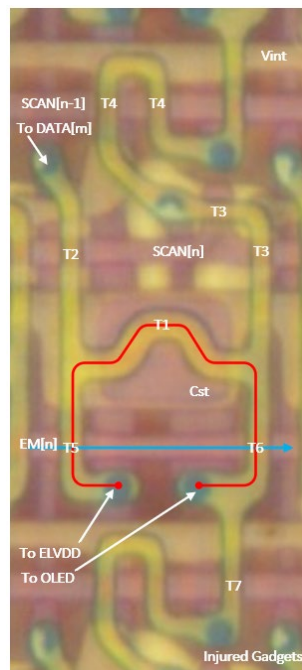
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



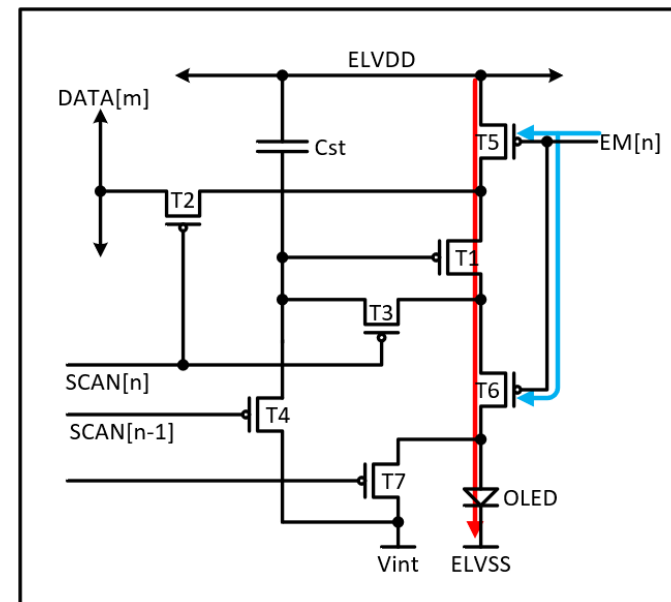
Injured Gadgets Product Equivalent Circuit

14[c] a second transistor for generating a driving current to drive the electroluminescent element in response to the data signal voltage;
(*cont'd*)

For example, as shown in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, transistors **T5** and **T6** turn on, and a driving current (red line) flows from **ELVDD** through second transistor **T1** to the **OLED**. The amount of current that flows through second transistor **T1** to the **OLED** is dependent upon the voltage that was stored on the capacitor **Cst**, which is based on the data signal voltage delivered previously through first transistor **T2** (see *also* claim element **14[b]**, above).



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)

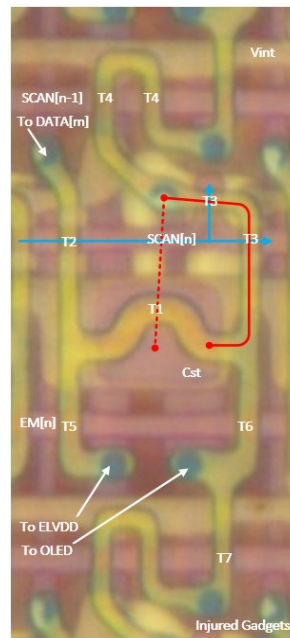


Injured Gadgets Product Equivalent Circuit

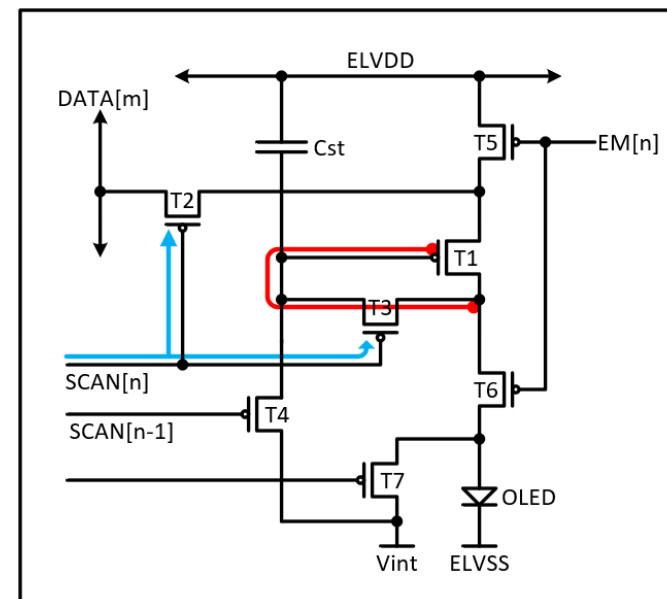
14[d] a third transistor for connecting the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor;

The pixel circuit of the Injured Gadgets product has a third transistor for connecting the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor. As shown in the annotated circuit diagram below, a third transistor **T3** connects the gate and drain of the second transistor **T1**, connecting the second transistor **T1** in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor **T1**.

Third transistor **T3** is connected between the gate and the drain of second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **GW[N]**, third transistor **T3** connects the drain and gate of second transistor **T1** together (red line), connecting second transistor **T1** in the form of a diode to self-compensate a threshold voltage of second transistor **T1**.



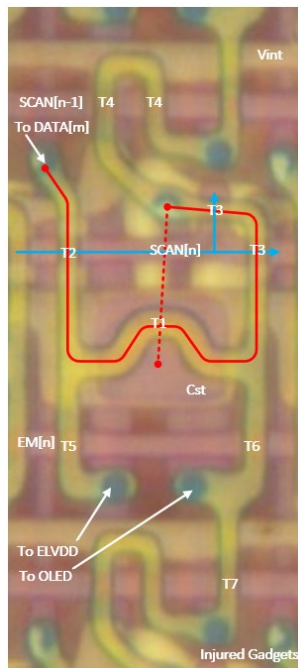
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



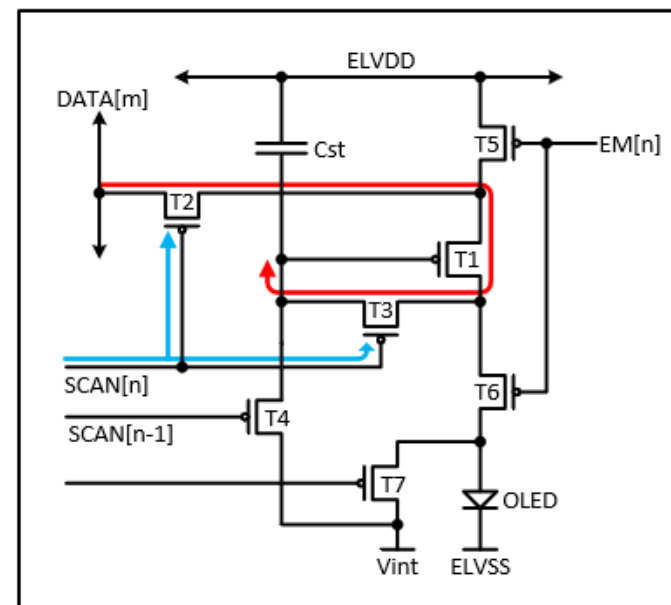
Injured Gadgets Product Equivalent Circuit

14[d] a third transistor for connecting the second transistor in the form of a diode in response to the current scan signal to self-compensate a threshold voltage of the second transistor;
(cont'd)

As reflected in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, transistors **T2** and **T3** turn on and a data signal voltage (red line) on data line **DATA[m]** flows through transistors **T2-T1-T3** and is stored on the capacitor **Cst**. This arrangement allows for the detection and self-compensation of the threshold voltage deviation in second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



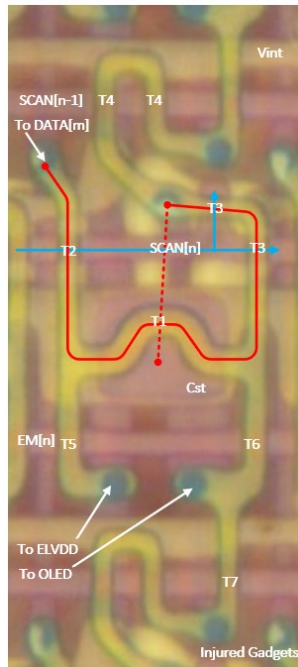
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

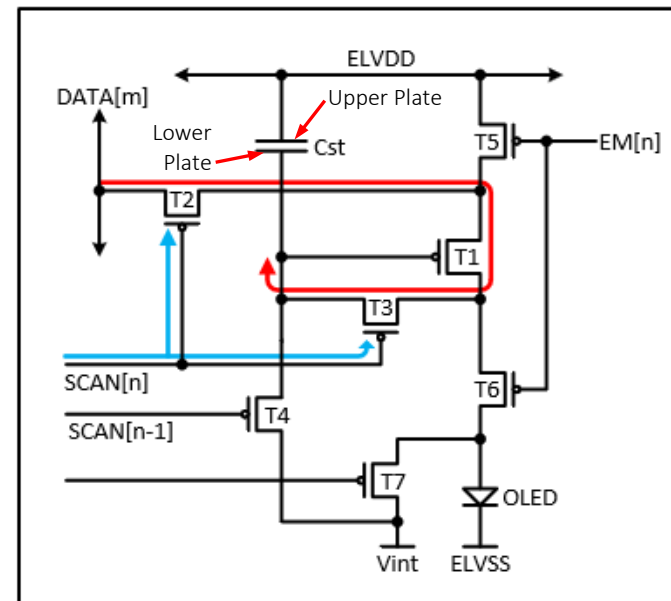
Injured Gadgets AMOLED Product

14[e] a capacitor for storing the data signal voltage delivered to the second transistor;

The pixel circuit of the Injured Gadgets product has a capacitor for storing the data signal voltage delivered to the second transistor. As shown in the annotated circuit diagram below, the capacitor **Cst** has an upper plate and a lower plate. The capacitor **Cst** stores the data signal voltage delivered to the second transistor **T1**. In response to an active (low) current scan line signal (blue line) delivered on scan line **GW[N]**, first transistor **T2** delivers the data signal voltage (red line) on data line **Data** to second transistor **T1** and to capacitor **Cst** (see *a/so* claim elements **14[b]**, **14[c]**, above).



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



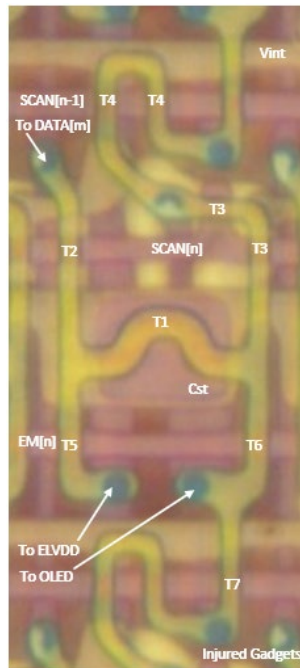
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

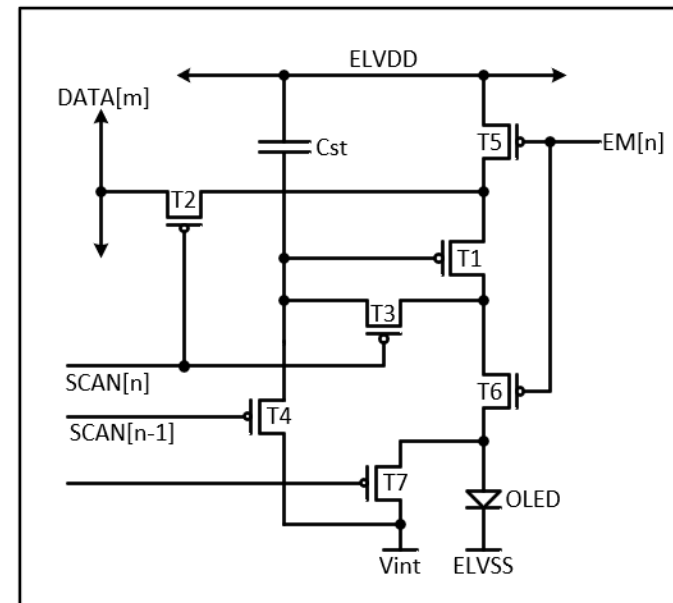
14[f] a fourth transistor for delivering a power supply voltage to the second transistor in response to a current light-emitting signal; and

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a fourth transistor for delivering a power supply voltage to the second transistor in response to a current light-emitting signal. As shown in the circuit diagram below, the fourth transistor **T5** is coupled to a power supply voltage **ELVDD** and second transistor **T1**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fourth transistor **T5** delivers a power supply voltage from **ELVDD** to second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



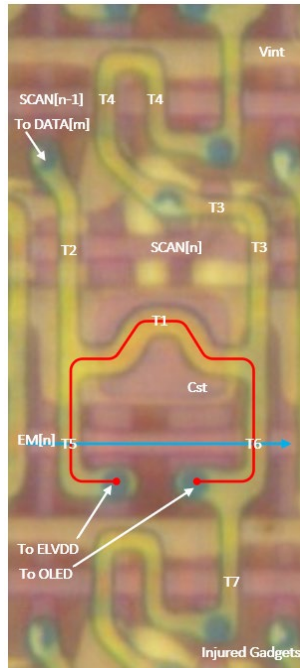
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

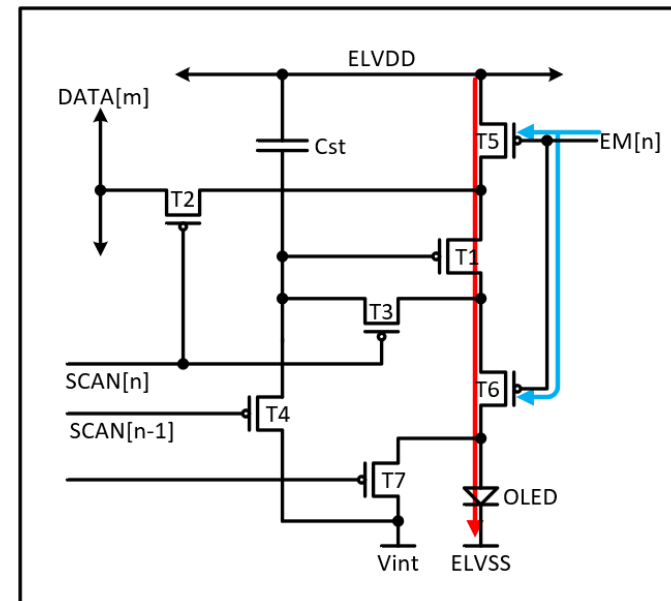
14[f] a fourth transistor for delivering a power supply voltage to the second transistor in response to a current light-emitting signal; and
(cont'd)

Injured Gadgets AMOLED Product

As reflected in the annotated circuit diagram below, in response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, fourth transistor **T5** turns on and provides a power supply voltage **ELVDD** (red line) to second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



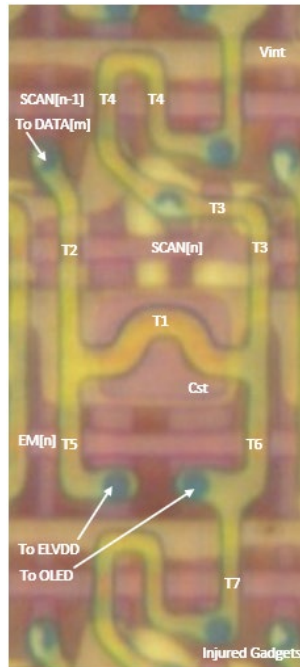
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

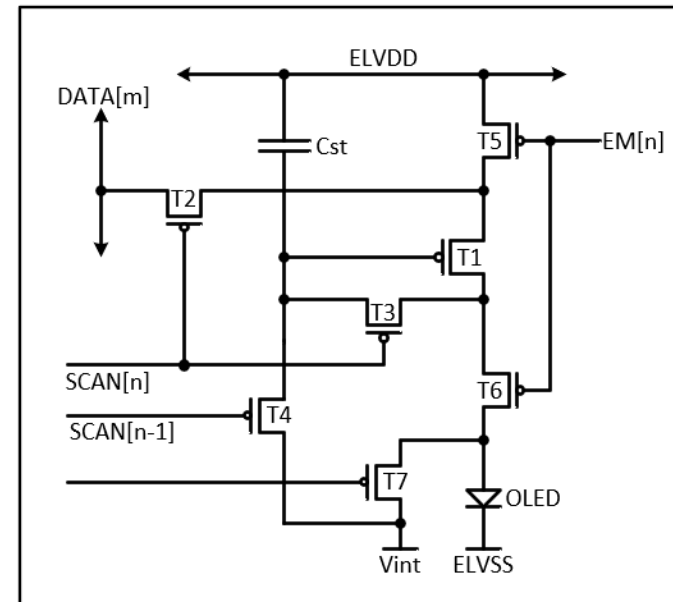
Injured Gadgets AMOLED Product

14[g] a fifth transistor for providing the driving current, provided from the second transistor, for the electroluminescent element in response to the current light-emitting signal.

The pixel circuit of the Injured Gadgets product has a fifth transistor for providing the driving current, provided from the second transistor, for the electroluminescent element in response to the current light-emitting signal. As shown in the circuit diagram below, the fifth transistor **T6** is coupled to the second transistor **T1** and to an electroluminescent element (**OLED**). As shown in the circuit diagram below, **fifth transistor T6** is in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fifth transistor **T6** turns on and provides driving current that flows through second transistor **T1** to the **OLED**.



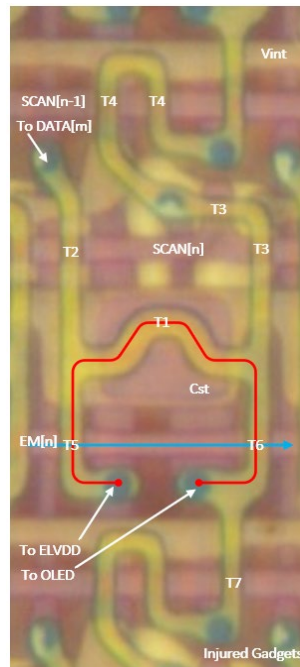
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



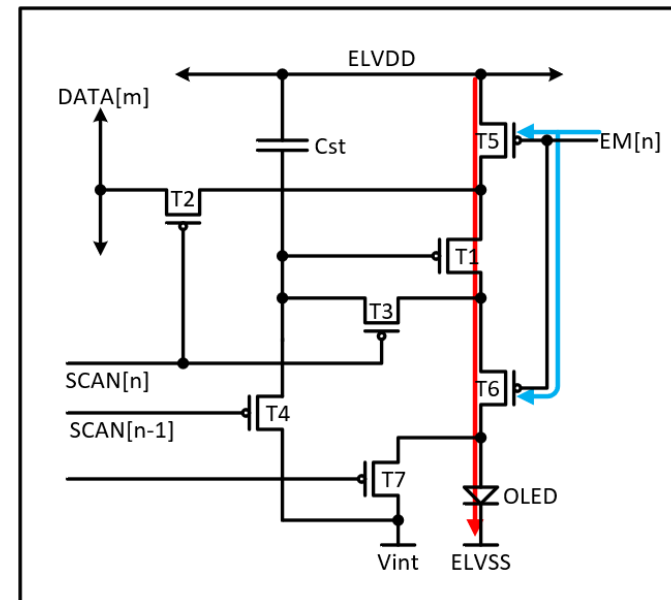
Injured Gadgets Product Equivalent Circuit

14[g] a fifth transistor for providing the driving current, provided from the second transistor, for the electroluminescent element in response to the current light-emitting signal.
(cont'd)

As shown in the annotated circuit diagram below, fifth transistor **T6** is coupled in series between second transistor **T1** and the **OLED**. In response to an active (low) current light-emitting signal (blue line) delivered on emission line **EM[n]**, fifth transistor **T6** turns on, and the driving current flows (red line) from second transistor **T1** through fifth transistor **T6** to the **OLED**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

15[preamble] A pixel circuit in an organic light emitting device, comprising:

(cont'd)



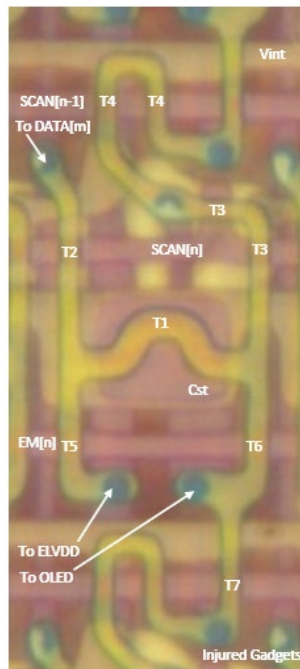
Exhibit 2030 (Injured Gadgets Teardown Photo) at 1, 4

U.S. Pat. No. 7,414,599

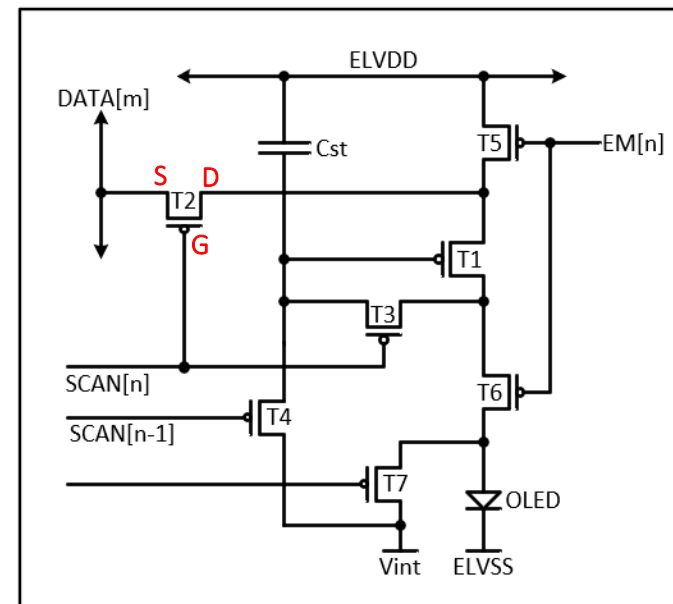
Injured Gadgets AMOLED Product

15[a] a first transistor including a gate to which a current scan signal is applied, and a source to which a data signal voltage is applied;

The pixel circuit of the Injured Gadgets product has a first transistor including a gate to which a current scan signal is applied, and a source to which a data signal voltage is applied. As shown in the circuit diagram below, the first transistor **T2** is coupled to a data line **DATA[m]** for delivering a data signal voltage. The gate of first transistor **T2** is coupled to a scan line **SCAN[n]** that delivers a current scan line signal to the gate of first transistor **T2**. A data signal voltage from data line **Data** is applied to the source of first transistor **T2**.



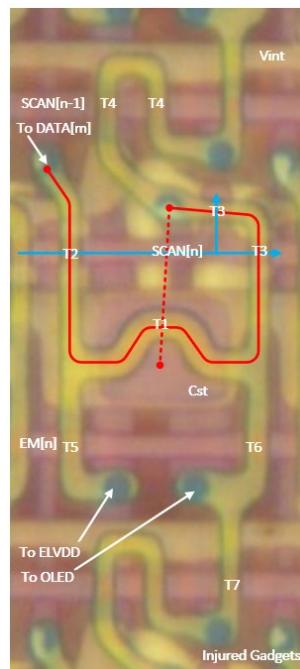
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



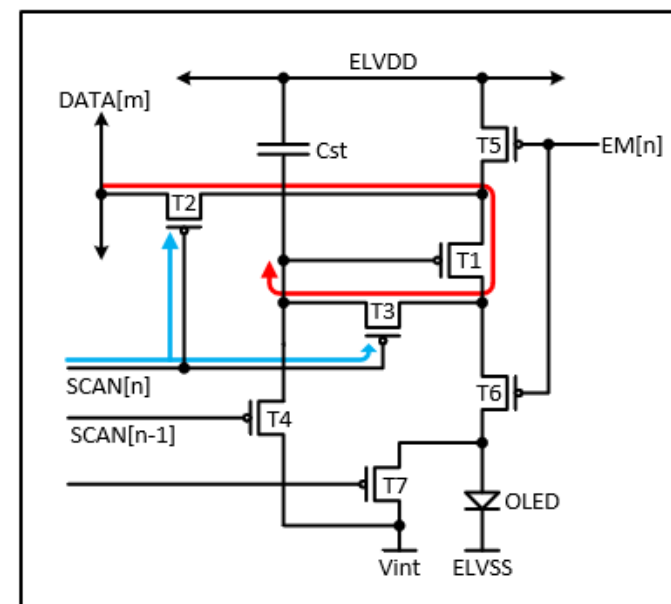
Injured Gadgets Product Equivalent Circuit

15[a] a first transistor including a gate to which a current scan signal is applied, and a source to which a data signal voltage is applied;
(cont'd)

As reflected in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]**. The annotated circuit diagram below depicts an exemplary voltage path from data line **DATA[m]** through transistors **T2-T1-T3** to the gate of transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



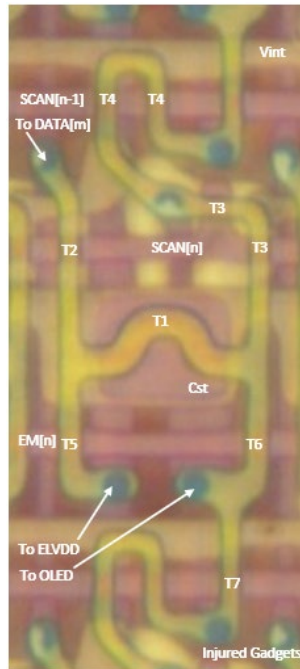
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

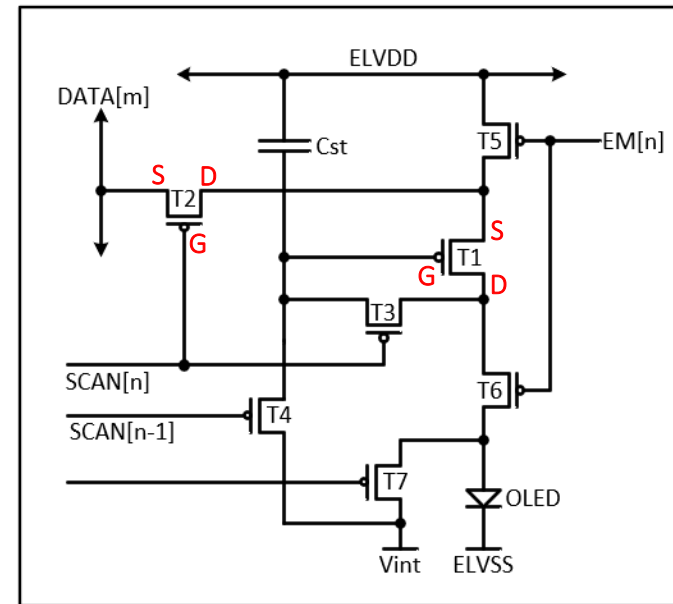
Injured Gadgets AMOLED Product

15[b] a second transistor whose source is coupled to a drain of the first transistor;

The pixel circuit of the Injured Gadgets product has a second transistor whose source is coupled to a drain of the first transistor. As shown in the annotated circuit diagram below, the source of the second transistor **T1** is coupled to the drain of the first transistor **T2**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



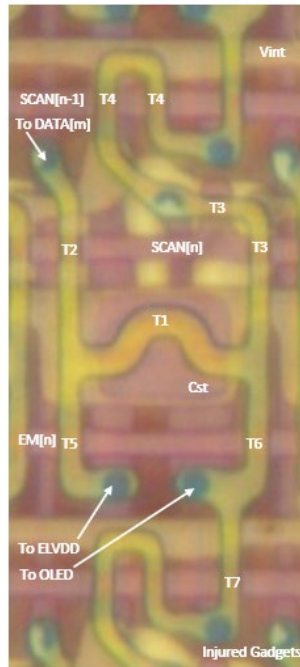
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

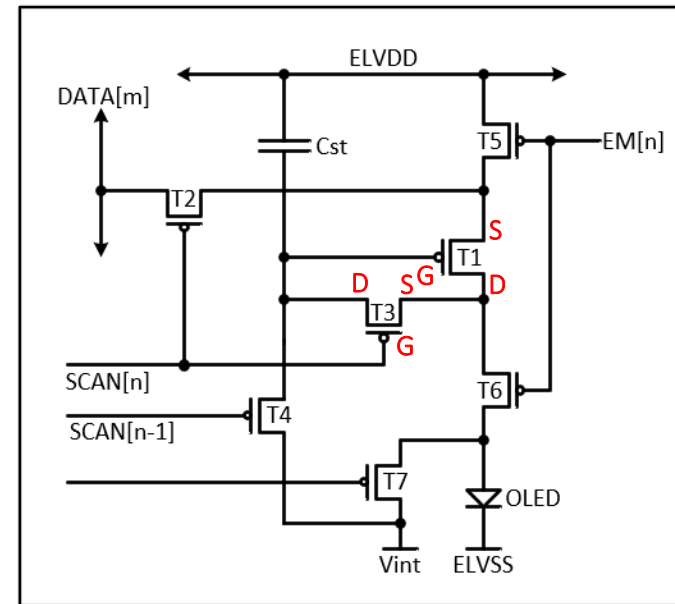
15[c] a third transistor whose drain and source are connected between a gate and a drain of the second transistor;

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a third transistor whose drain and source are connected between a gate and a drain of the second transistor. As shown in the annotated circuit diagram below, a third transistor **T3** has its drain and source connected between gate and drain of the second transistor **T1**, respectively.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



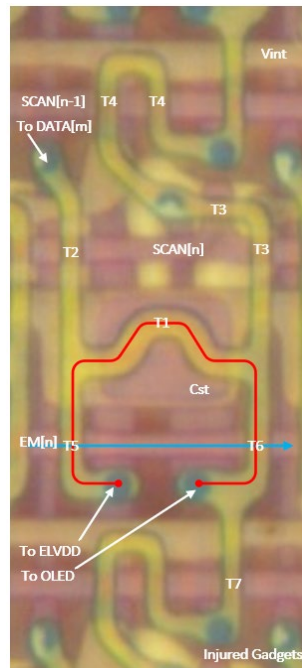
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

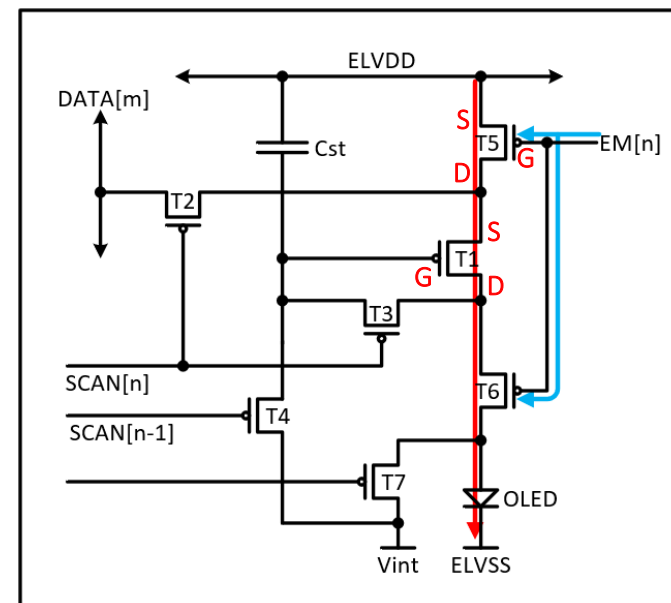
15[d] a fourth transistor including a gate to which a current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the source of the second transistor;

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a fourth transistor including a gate to which a current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the source of the second transistor. As shown in the annotated circuit diagram below, a fourth transistor **T5** has a source coupled to **ELVDD** and a drain coupled to the source of transistor **T1**. In response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fourth transistor **T5** delivers a power supply voltage from **ELVDD** to second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



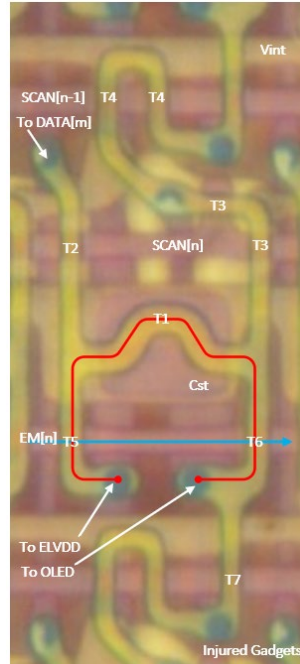
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

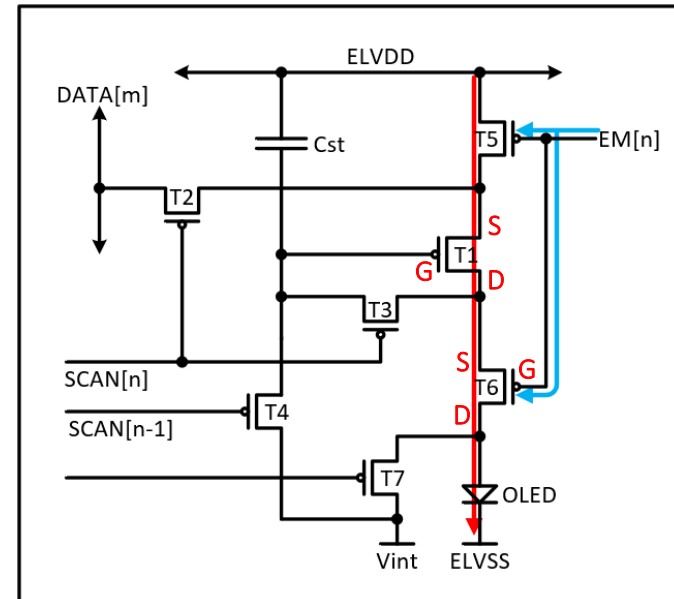
15[e] a fifth transistor including a gate to which the current light-emitting signal is applied, a source coupled to the drain of the second transistor, and a drain coupled to one terminal of an electroluminescent element;

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a fifth transistor including a gate to which the current light-emitting signal is applied, a source coupled to the drain of the second transistor, and a drain coupled to one terminal of an electroluminescent element. In the annotated circuit diagram below, a fifth transistor **T6** has a source coupled to a drain of second transistor **T1**, and a drain coupled to one terminal of an electroluminescent element (**OLED**). As further shown in the annotated circuit diagram, in response to an active (low) current light-emitting signal delivered on emission line **EM[n]**, fifth transistor **T6** turns on and delivers driving current that flows through second transistor **T1** to the **OLED**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
15[f] the electroluminescent element having the one terminal coupled to the drain of the fifth transistor and the other terminal grounded; and	The pixel circuit of the Injured Gadgets product has an electroluminescent element with one terminal coupled to the drain of the fifth transistor and the other terminal grounded. As shown in the annotated circuit diagram below, the pixel circuit of the Injured Gadgets product has an electroluminescent element (OLED) with a first terminal, the anode, coupled to the drain of the fifth transistor T6. The other terminal of the OLED, the cathode, is grounded to facilitate the flow of current from T6 through the anode of the OLED to the cathode in the light-emission phase. Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo) Injured Gadgets Product Equivalent Circuit

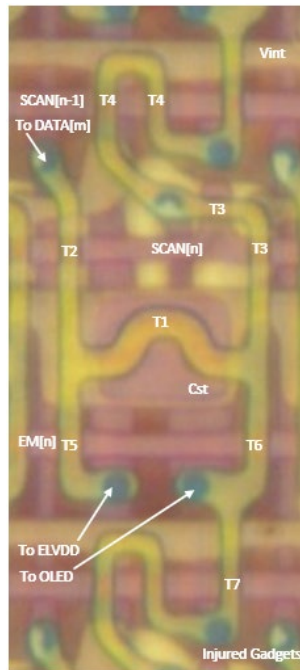
U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
16. The pixel circuit in the organic light emitting device of claim 15, further comprising: a sixth transistor including a gate to which a scan signal just before the current scan signal is applied; a source coupled to the one terminal of the capacitor; and a drain to which an initialization voltage is applied.	The pixel circuit of the Injured Gadgets product further comprises a sixth transistor including a gate to which a scan signal just before the current scan signal is applied, a source coupled to the one terminal of the capacitor, and a drain to which an initialization voltage is applied. As shown in the annotated circuit diagram below, the sixth transistor T4 is coupled between an initialization voltage line Vint and the capacitor Cst. A scan signal (blue line) on scan line GI[N] that is a scan signal just before the current scan signal on scan line GW[N] is applied to the gate of sixth transistor T4. The source of sixth transistor T4 is coupled the one terminal of capacitor Cst. An initialization voltage (red line) is applied to the drain of sixth transistor T4 through the initialization voltage line Vint. Injured Gadgets Product Equivalent Circuit Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo)

U.S. Pat. No. 7,414,599

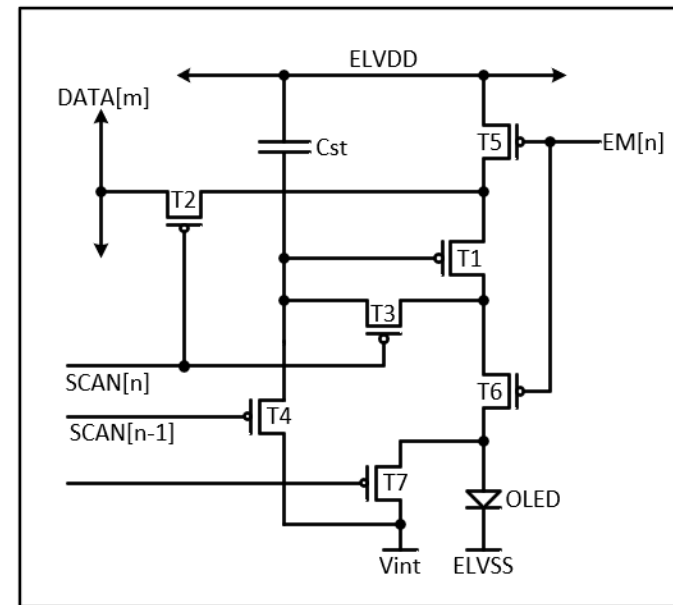
Injured Gadgets AMOLED Product

17[preamble] A pixel circuit in an organic light emitting device having a plurality of data lines, a plurality of scan lines, a plurality of power lines, and a plurality of pixels each connected to one associated data line, scan line and power line of the plurality of data lines, scan lines and power lines, each pixel comprising:

The Injured Gadgets product includes a pixel circuit in an organic light-emitting device. For example, the circuit diagram below of the Injured Gadgets Product depicts the transistors **T1–T7**, the capacitor **Cst**, and the **OLED** element.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

17[preamble] A pixel circuit in an organic light emitting device having a plurality of data lines, a plurality of scan lines, a plurality of power lines, and a plurality of pixels each connected to one associated data line, scan line and power line of the plurality of data lines, scan lines and power lines, each pixel comprising:
(cont'd)



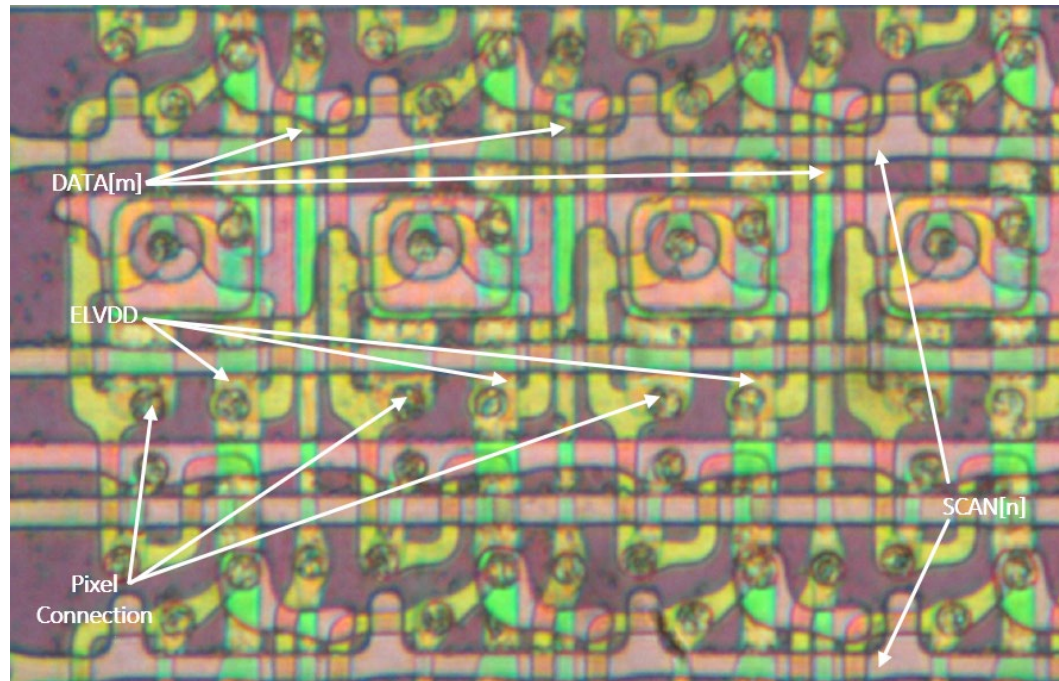
Exhibit 2030 (Injured Gadgets Teardown Photo) at 1, 4

U.S. Pat. No. 7,414,599

Injured Gadgets AMOLED Product

17[preamble] A pixel circuit in an organic light emitting device having a plurality of data lines, a plurality of scan lines, a plurality of power lines, and a plurality of pixels each connected to one associated data line, scan line and power line of the plurality of data lines, scan lines and power lines, each pixel comprising:
(cont'd)

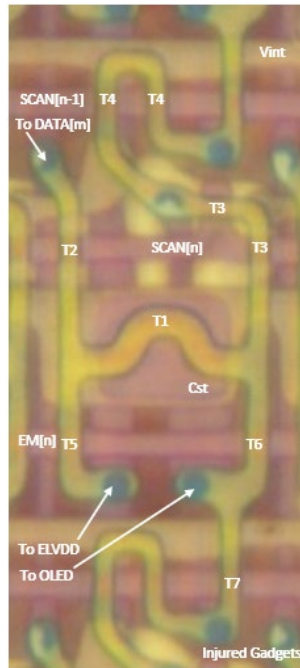
The Injured Gadgets product includes a plurality of pixel circuits. *See generally* claims 1–16 above. The plurality of pixel circuits is found in the scan area identified below, wherein each pixel circuit is connected to an associated one of a plurality of data lines, an associated one of a plurality of scan lines, an associated one of a plurality of power lines, and an associated one of a plurality of power lines.



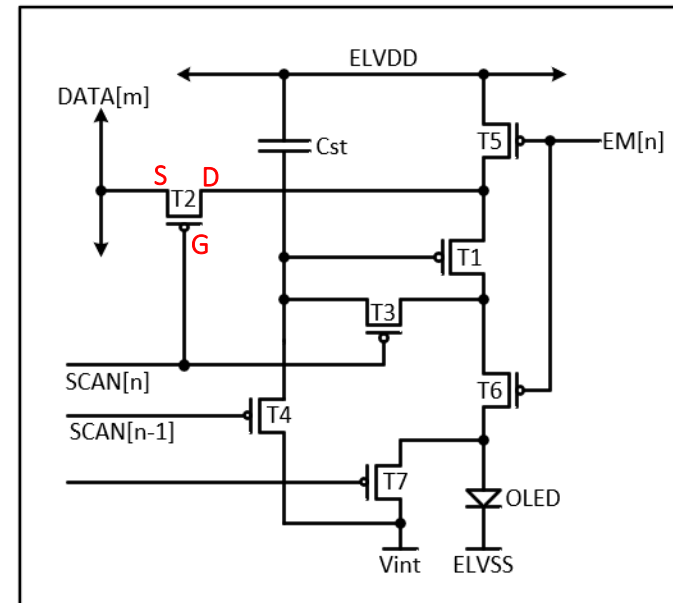
Annotated Exhibit 2030 at 6 (Injured Gadgets Teardown Photo)

17[a] a first transistor including a gate to which a current scan signal to be applied to the associated scan line is applied, and a source to which a data signal voltage from the data line is applied;

The pixel circuit of the Injured Gadgets product has a first transistor including a gate to which a current scan signal to be applied to the associated scan line is applied, and a source to which a data signal voltage from the data line is applied. As shown in the annotated circuit diagram below, a current scan signal from the scan line **GW[N]** is applied to the gate of the first transistor **T2**, and a data signal voltage from data line **Data** is applied to the source of the first transistor **T2**.



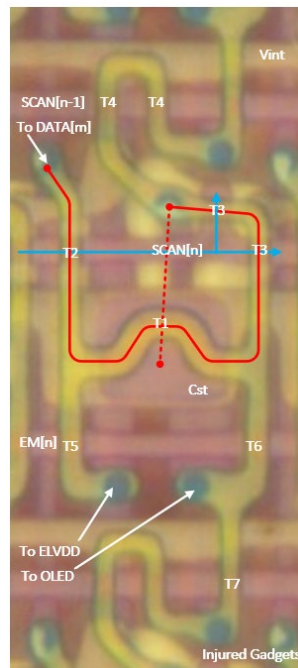
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



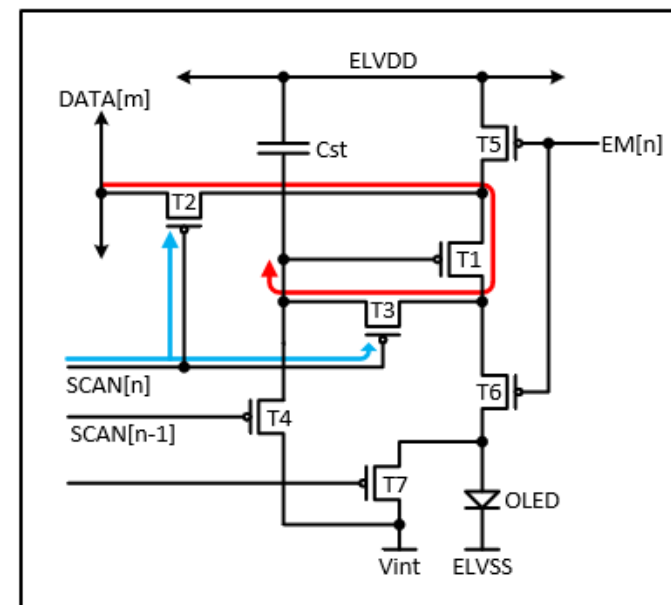
Injured Gadgets Product Equivalent Circuit

17[a] a first transistor including a gate to which a current scan signal to be applied to the associated scan line is applied, and a source to which a data signal voltage from the data line is applied;
(cont'd)

As reflected in the annotated circuit diagram below, in response to an active (low) current scan line signal (blue line) delivered on scan line **SCAN[n]**, first transistor **T2** delivers the data signal voltage (red line) present on data line **DATA[m]**. The annotated circuit diagram below depicts an exemplary voltage path from data line **DATA[m]** through transistors **T2-T1-T3** to the gate of transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



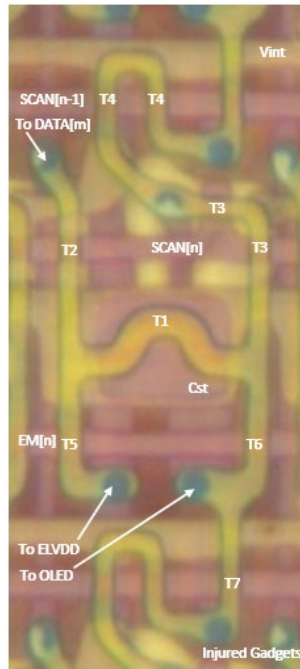
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

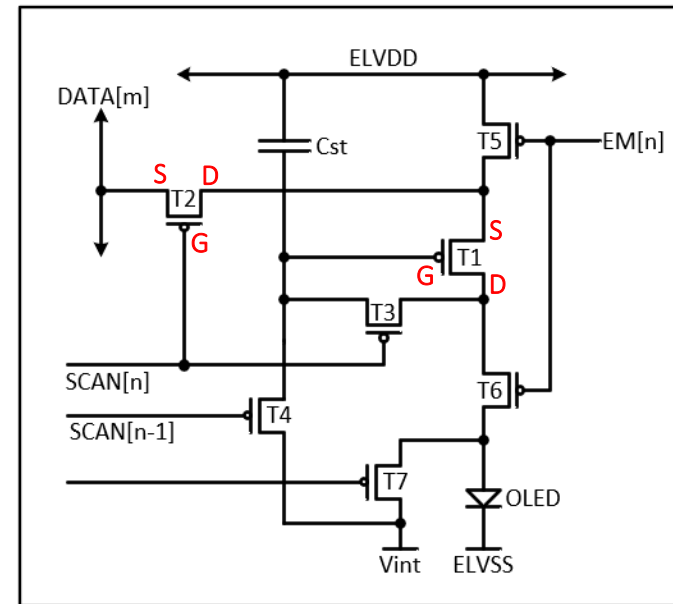
Injured Gadgets AMOLED Product

17[b] a second transistor whose source is coupled to a drain of the first transistor;

The pixel circuit of the Injured Gadgets product has a second transistor whose source is coupled to a drain of the first transistor. As shown in the annotated circuit diagram below, the source of the second transistor **T1** is coupled to the drain of the first transistor **T2**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



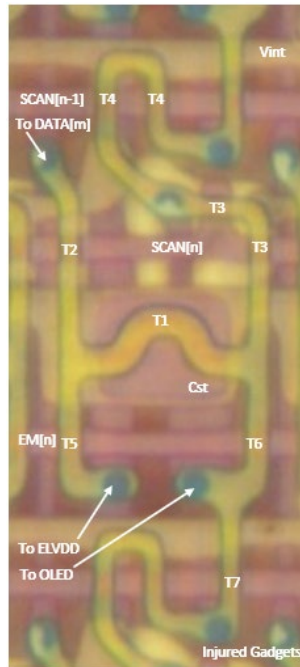
Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599

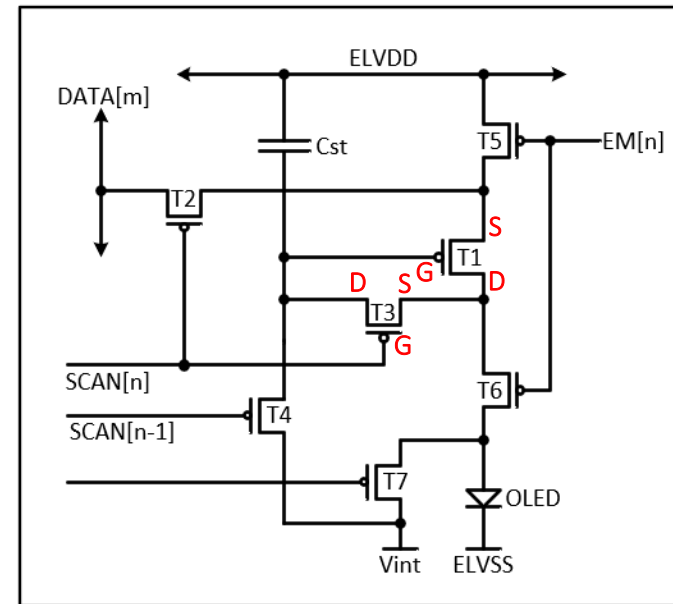
17[c] a third transistor whose drain and source are connected between a gate and a drain of the second transistor, respectively. As shown in the annotated circuit diagram below, a third transistor **T3** has its drain and source connected between the gate and drain of the second transistor **T1**, respectively.

Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a third transistor whose drain and source are connected between a gate and a drain of the second transistor, respectively. As shown in the annotated circuit diagram below, a third transistor **T3** has its drain and source connected between the gate and drain of the second transistor **T1**, respectively.



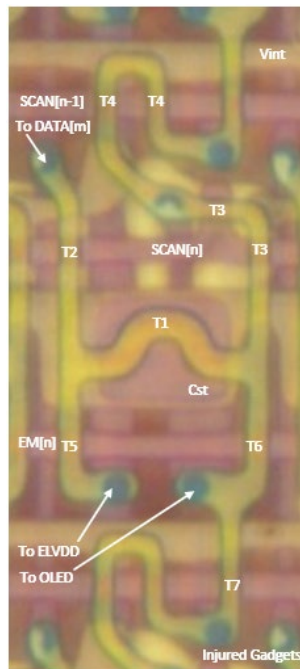
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



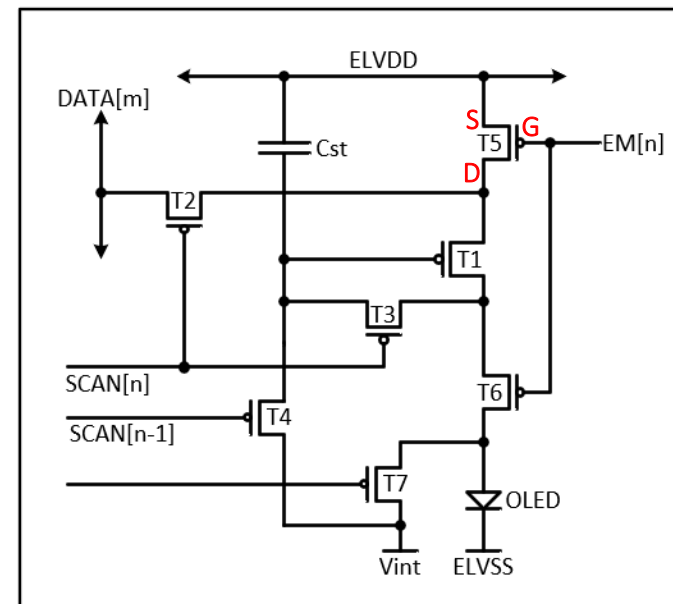
Injured Gadgets Product Equivalent Circuit

17[d] a fourth emitting transistor including a gate to which a current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the source of the second transistor;

The pixel circuit of the Injured Gadgets product has a fourth transistor including a gate to which a current light-emitting signal is applied, a source to which a power supply voltage is applied, and a drain coupled to the source of the second transistor. As shown in the annotated circuit diagram below, a current light-emitting signal on emission line **EM[n]** is applied to the gate of fourth transistor **T5**, a power supply voltage from **ELVDD** is applied to the source of fourth transistor **T5**, and the drain of fourth transistor **T5** is coupled to the source of second transistor **T1**.



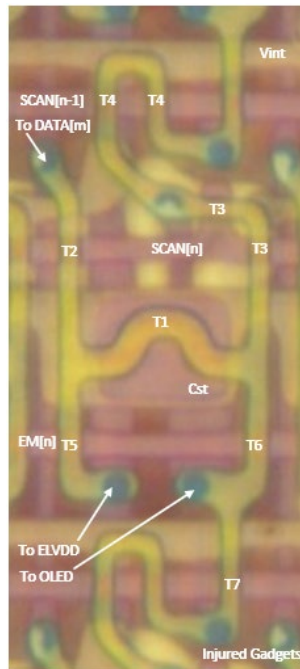
Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



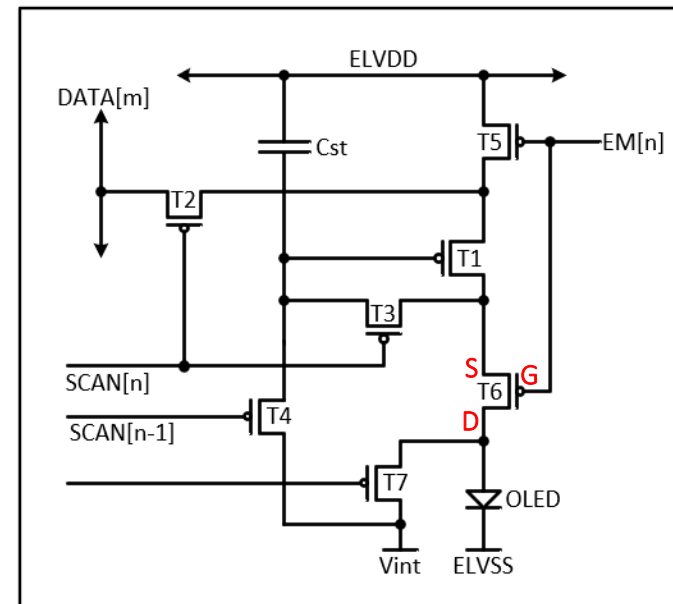
Injured Gadgets Product Equivalent Circuit

17[e] a fifth transistor including a gate to which the current light-emitting signal is applied, and a source coupled to the drain of the second transistor;

The pixel circuit of the Injured Gadgets product has a fifth transistor including a gate to which the current light-emitting signal is applied, and a source coupled to the drain of the second transistor. As shown in the annotated circuit diagram below, a fifth transistor **T6** has a gate to which the current light-emitting signal on emission line **EM[n]** is applied, and a source coupled to a drain of second transistor **T1**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

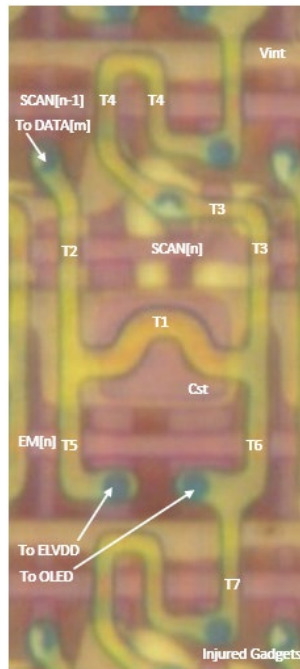
U.S. Pat. No. 7,414,599

17[f] an electroluminescent element including one terminal coupled to the drain of the fifth transistor and the other terminal grounded; and

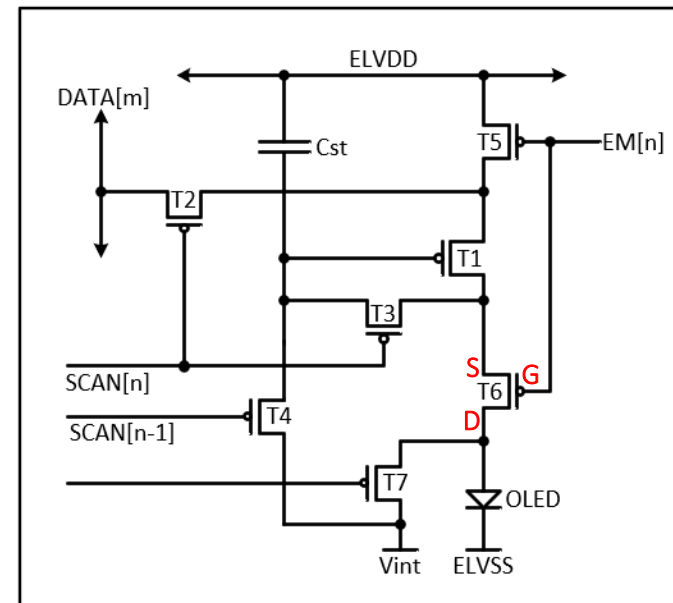
Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has an electroluminescent element with one terminal coupled to the drain of the fifth transistor and the other terminal grounded.

As shown in the annotated circuit diagram below, the pixel circuit of the XT4 Display has an electroluminescent element (**OLED**) with a first terminal, the anode, coupled to the drain of the fifth transistor **T6**. The other terminal of the **OLED**, the cathode, is grounded to facilitate the flow of current from fifth transistor **T6** through the anode of the **OLED** to the cathode in the light-emission phase.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

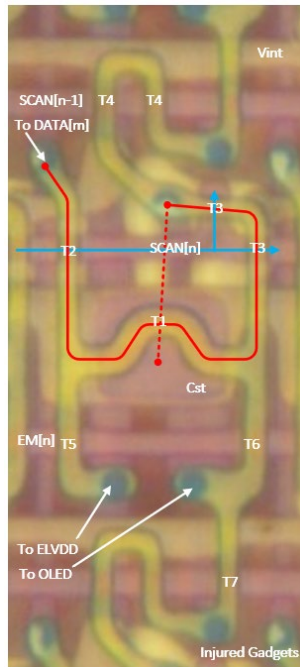
U.S. Pat. No. 7,414,599

17[g] a capacitor including one terminal coupled to the gate of the second transistor, and the other terminal to which the power supply voltage from the power line is applied.

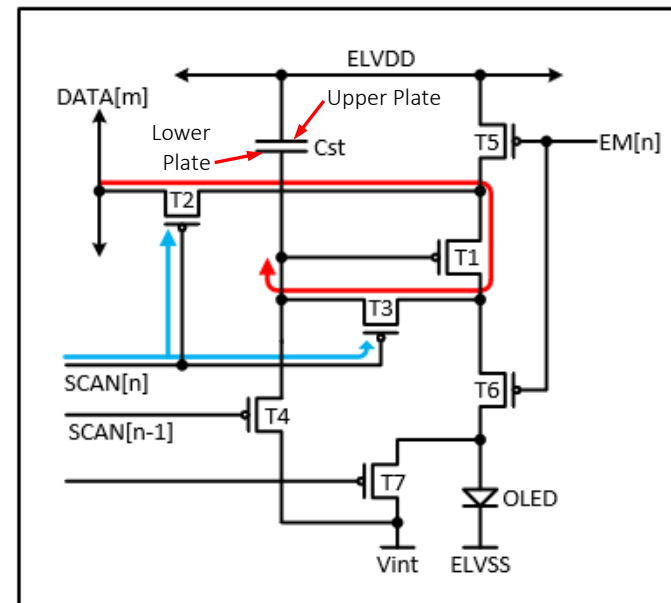
Injured Gadgets AMOLED Product

The pixel circuit of the Injured Gadgets product has a capacitor in which one terminal of the capacitor is coupled to the gate of the second transistor and a power supply voltage is applied to the other terminal of the capacitor from the power line.

As shown in the annotated circuit diagram below, the lower plate (terminal) of the capacitor **Cst**, is coupled to the gate of the second transistor **T1**, and the power supply voltage **ELVDD** from the power line is applied to the upper plate (terminal) of **Cst**.



Annotated Exhibit 2030 at 5
(Injured Gadgets Teardown
Photo)



Injured Gadgets Product Equivalent Circuit

U.S. Pat. No. 7,414,599	Injured Gadgets AMOLED Product
18. The pixel circuit in the organic light emitting device of claim 17, further comprising: a sixth transistor including a gate to which a scan signal to be applied to a scan line just before the associated scan line is applied, a source coupled to the one terminal of the capacitor, and a drain to which an initialization voltage is applied.	The pixel circuit of the Injured Gadgets product has a sixth transistor, including a gate to which a scan signal to be applied to a scan line just before the associated scan line is applied, a source coupled to the one terminal of the capacitor, and a drain to which an initialization voltage is applied. As shown in the annotated circuit diagram below, the sixth transistor T4 is coupled between an initialization voltage line Vint and the capacitor Cst. A scan signal (blue line) on scan line GI[N] that is a scan signal just before the current scan signal on scan line GW[N] is applied to the gate of sixth transistor T4. The source of sixth transistor T4 is coupled the one terminal of capacitor Cst. An initialization voltage (red line) is applied to the drain of sixth transistor T4 through the initialization voltage line Vint. Injured Gadgets Product Equivalent Circuit Annotated Exhibit 2030 at 5 (Injured Gadgets Teardown Photo)