

# Patent Document Report

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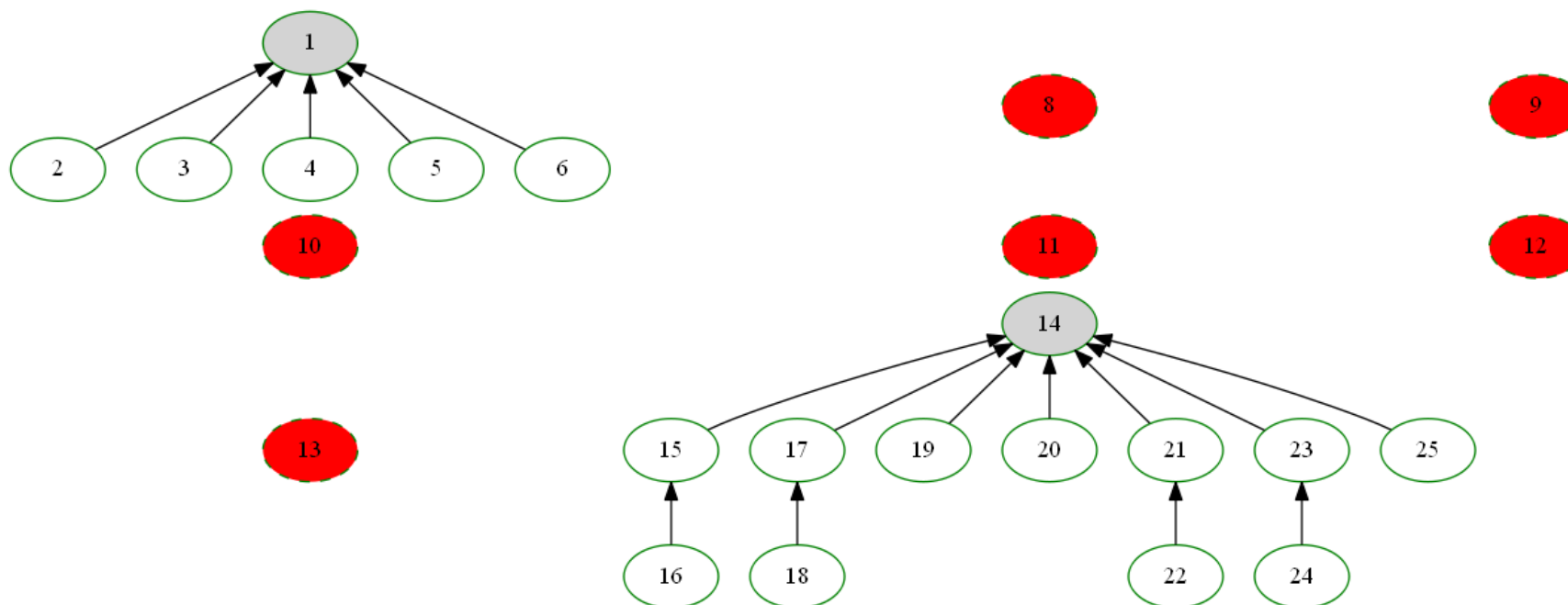
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## I. Claims (Tree and Text)

*Note: The type of each claim is indicated by its color.<sup>1</sup> Independent claims are grey inside. Claims with invalid parent numbers are dotted. If present, status indicators will be provided in brackets next to the claim numbers.<sup>2</sup>*



1. A method for forming a liquid crystal display including a thin film transistor, said method comprising the steps of:  
 depositing a first metal layer on a substrate;  
 depositing a second metal layer on said first metal layer opposite said substrate;  
 patterning said first and second metal layers to provide a gate electrode on a TFT area of said substrate and to provide a gate pad on a pad area of said substrate;  
 forming an insulating layer on said gate electrode and on said gate pad, and on said substrate;

<sup>1</sup> Claim type color legend: **Method/process**; **Apparatus/device**; **Composition**; **Article of manufacture**; **112(6)**; **Product by process**; **Jepson**

<sup>2</sup> Status indicator legend: [O]=“Original”; [PP]=“Previously Presented”; [CA]=“Currently Amended”; [N]=“New”; [X]=“Cancelled”; [W]=“Withdrawn”; [WA]=“Withdrawn and Amended”; [NE]=“Not Entered”

forming a semiconductor layer on said insulating layer opposite said gate electrode wherein said semiconductor layer includes a channel region opposite said gate electrode and first and second spaced apart source/drain regions separated by said channel region;  
forming first and second spaced apart metal source/drain electrodes on said respective first and second spaced apart semiconductor source/drain regions;  
forming a protective layer on said exposed portion of said first semiconductor layer opposite said substrate, on said first and second metal source/drain electrodes opposite said substrate, and on said insulating layer opposite said gate pad;  
forming a first contact hole in said protective layer exposing a portion of one of said source/drain electrodes;  
forming a second contact hole in said protective layer and said insulating layer exposing a portion of said gate pad wherein said second contact hole exposes only a surface portion of said gate pad opposite said substrate;  
forming a transparent conductive layer on said protective layer opposite said substrate; and  
patterning said transparent conductive layer to form a pixel electrode electrically connected to said exposed portion of said source/drain electrode and to said exposed portion of said gate pad.

**2.** A method according to claim 1 wherein said first metal layer comprises a material chosen from the group consisting of aluminum and an aluminum alloy.

**3.** A method according to claim 1 wherein said second metal layer comprises a refractory metal.

**4.** A method according to claim 1 wherein said pixel electrode covers said exposed surface portion of said gate pad and extends onto said protective layer adjacent said second contact hole.

**5.** A method according to claim 1 wherein said step of forming said semiconductor layer comprises forming a semiconductor layer portion on said insulating layer opposite said pad area of said substrate so that said semiconductor layer portion is adjacent said second contact hole.

**6.** A method according to claim 1 wherein said step of forming said metal source/drain electrodes comprises forming a metal layer portion on said insulating layer opposite said pad area of said substrate so that said metal layer portion is adjacent said second contact hole.

**14.** A method for forming a liquid crystal display, said method comprising the steps of:  
forming a first metal layer on a substrate;  
patterning said first metal layer to provide a gate electrode on a TFT area of said substrate and to provide a gate pad on a pad area of said substrate;  
forming an insulating layer on said gate electrode and on said gate pad;  
forming a patterned semiconductor layer on said insulating layer opposite said gate electrode and opposite said gate pad;  
forming a second patterned metal layer on said semiconductor layer opposite said insulating layer;  
forming a transparent conductive layer on said second patterned metal layer and on said insulating layer opposite said substrate; and

<p>patterning said transparent conductive layer, said second patterned metal layer, and said patterned semiconductor layer to provide a data line, metal source/drain electrodes, and a pixel electrode.</p>
<p><b>15.</b> A method according to claim 14 further comprising the steps of: forming a protective layer on said substrate covering said data line, said source/drain electrodes, and said pixel electrode; and patterning said protective layer to expose portions of said pixel electrode.</p>
<p><b>16.</b> A method according to claim 15 wherein said step of patterning said protective layer comprises forming a black photoresist mask, and wherein said black photoresist mask is maintained on said protective layer thereby providing a black matrix.</p>
<p><b>17.</b> A method according to claim 14 wherein said semiconductor layer includes a first amorphous silicon layer and a second doped amorphous silicon layer on said first amorphous silicon layer opposite said substrate.</p>
<p><b>18.</b> A method according to claim 17 wherein said step of patterning said semiconductor layer comprises etching a portion of said second doped amorphous silicon layer between said source/drain electrodes.</p>
<p><b>19.</b> A method according to claim 14 wherein said first metal layer comprises a material selected from the group consisting of Aluminum, an Aluminum alloy, and a refractory metal.</p>
<p><b>20.</b> A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal, and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy.</p>
<p><b>21.</b> A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal on said substrate and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said first sub-layer opposite said substrate.</p>
<p><b>22.</b> A method according to claim 21 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>
<p><b>23.</b> A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said substrate and a second sub-layer comprising a refractory metal on said first sub-layer opposite said substrate.</p>
<p><b>24.</b> A method according to claim 23 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>
<p><b>25.</b> A method according to claim 14 further comprising the step of removing a portion of said second sub-layer from said gate pad.</p>
<p><b>8.</b> A method according to claim 7 wherein said first metal layer comprises a refractory metal.</p>
<p><b>9.</b> A method according to claim 7 wherein said second metal layer comprises a material chosen from the group consisting of</p>

Aluminum and an Aluminum alloy.
<b>10.</b> A method according to claim 7 wherein said pixel electrode covers said exposed surface portion of said gate pad and said substrate adjacent said gate pad, and wherein said pixel electrode extends onto said protective layer adjacent said second contact hole.
<b>11.</b> A method according to claim 7 wherein said step of forming said semiconductor layer comprises forming a semiconductor layer portion on said insulating layer opposite said pad area of said substrate so that said semiconductor layer portion is adjacent said second contact hole.
<b>12.</b> A method according to claim 7 wherein said step of forming said metal source/drain electrodes comprises forming a metal layer portion on said insulating layer opposite said pad area of said substrate so that said metal layer portion is adjacent said second contact hole.
<b>13.</b> A method according to claim 7 wherein said step of patterning said first and second metal layers comprises providing a plurality of interconnections on said pad area of said substrate wherein said interconnections are connected to said gate pad.

## II. Claim Language Errors/Warnings

Claim	Error/Warning Message	Term At Issue	Suggested Fix
<p>1. A method for forming a liquid crystal display including a <i>thin</i> {3} film transistor, said method comprising the steps of:</p> <p>depositing a first metal layer on a substrate;</p> <p>depositing a second metal layer on said first metal layer opposite said substrate;</p> <p>patterning said first and second metal layers to provide a gate electrode on a TFT area of said substrate and to provide a gate pad on a pad area of said substrate;</p> <p>forming an insulating layer on said gate electrode and on said gate pad, and on said substrate;</p> <p>forming a semiconductor layer on said insulating layer opposite said gate electrode wherein said semiconductor layer includes a channel region opposite said gate electrode and first and second spaced apart source/drain regions separated by said channel region;</p> <p>forming first and second spaced apart metal source/drain electrodes on said respective first and second spaced apart semiconductor source/drain regions;</p> <p>forming a protective layer on said exposed portion of said first semiconductor layer opposite said substrate, on said</p>	{1} <i>Style warning:</i> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
	{2} <i>Style warning:</i> Claim includes possibly limiting expressions.	"only"	These phrases may unintentionally limit claim scope. Is the use of these terms necessary?
	{3} <i>Style warning:</i> Use of unbased comparative adjectives may render the scope of the claim indefinite.	"thin"	Rewrite/select another word to avoid ambiguity.

Claim	Error/Warning Message	Term At Issue	Suggested Fix
<p>first and second metal source/drain electrodes opposite said substrate, and on said insulating layer opposite said gate pad;</p> <p>forming a first contact <i>hole {1}</i> in said protective layer exposing a portion of one of said source/drain electrodes;</p> <p>forming a second contact hole in said protective layer and said insulating layer exposing a portion of said gate pad wherein said second contact hole exposes <i>only {2}</i> a surface portion of said gate pad opposite said substrate;</p> <p>forming a transparent conductive layer on said protective layer opposite said substrate; and</p> <p>patterning said transparent conductive layer to form a pixel electrode electrically connected to said exposed portion of said source/drain electrode and to said exposed portion of said gate pad.</p>			
<p>2. A method according to claim 1 wherein said first metal layer comprises a material chosen from the <i>group consisting of {1}</i> aluminum and an aluminum alloy.</p>	<p><i>{1} Style warning: The claim may recite a Markush group. Is it intentional?</i></p>	<p>"group consisting of"</p>	<p>If not intentional, claim scope may be severely limited. See MPEP 803.02.</p>
	<p><i>{2} Style warning: Claim includes possibly limiting expressions.</i></p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>



Claim	Error/Warning Message	Term At Issue	Suggested Fix
4. A method according to claim 1 wherein said pixel electrode covers said exposed surface portion of said gate pad and extends onto said protective layer adjacent said second contact hole.	<b>{1} Style warning:</b> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
5. A method according to claim 1 wherein said step of forming said semiconductor layer comprises forming a semiconductor layer portion on said insulating layer opposite said pad area of said substrate so that said semiconductor layer portion is adjacent said second contact hole.	<b>Style warning:</b> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
6. A method according to claim 1 wherein said step of forming said metal source/drain electrodes comprises forming a metal layer portion on said insulating layer opposite said pad area of said substrate so that said metal layer portion is adjacent said second contact hole.	<b>Style warning:</b> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
8. A method according to claim 7 wherein said first metal layer comprises a refractory metal.	<b>Error:</b> Claim number is out of sequence.		Make sure claims are numbered sequentially. See MPEP 608.01(j)
	<b>Error:</b> Claim depends from an invalid parent.		Make sure the claim references an existing parent claim that is not

Claim	Error/Warning Message	Term At Issue	Suggested Fix
			cancelled.
9. A method according to claim 7 wherein said second metal layer comprises a material chosen from the group consisting of Aluminum and an Aluminum alloy.	<b>Error: Claim depends from an invalid parent.</b>		Make sure the claim references an existing parent claim that is not cancelled.
	{1} <b>Style warning:</b> The claim may recite a Markush group. Is it intentional?	"group consisting of"	If not intentional, claim scope may be severely limited. See MPEP 803.02.
	{2} <b>Style warning:</b> Claim includes possibly limiting expressions.	"consisting"	These phrases may unintentionally limit claim scope. Is the use of these terms necessary?
10. A method according to claim 7 wherein said pixel electrode covers said exposed surface portion of said gate pad and said substrate adjacent said gate pad, and wherein said pixel electrode extends onto said protective layer adjacent said second contact hole.	<b>Error: Claim depends from an invalid parent.</b>		Make sure the claim references an existing parent claim that is not cancelled.
	{1} <b>Style warning:</b> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
11. A method according to claim 7 wherein said step of forming said semiconductor layer comprises forming a semiconductor layer portion on said insulating layer opposite said pad area of said substrate so that said semiconductor layer portion is adjacent said second contact hole.	<b>Error: Claim depends from an invalid parent.</b>		Make sure the claim references an existing parent claim that is not cancelled.
	{1} <b>Style warning:</b> The claim possibly recites an	"hole"	Claims should not recite empty spaces as claim

Claim	Error/Warning Message	Term At Issue	Suggested Fix
	empty space as a claim element.		elements.
12. A method according to claim 7 wherein said step of forming said metal source/drain electrodes comprises forming a metal layer portion on said insulating layer opposite said pad area of said substrate so that said metal layer portion is adjacent said second contact hole.	<b>Error: Claim depends from an invalid parent.</b>		Make sure the claim references an existing parent claim that is not cancelled.
	{1} <b>Style warning:</b> The claim possibly recites an empty space as a claim element.	"hole"	Claims should not recite empty spaces as claim elements.
13. A method according to claim 7 wherein said step of patterning said first and second metal layers comprises providing a plurality of interconnections on said pad area of said substrate wherein said interconnections are connected to said gate pad.	<b>Error: Claim depends from an invalid parent.</b>		Make sure the claim references an existing parent claim that is not cancelled.
19. A method according to claim 14 wherein said first metal layer comprises a material selected from the group consisting of Aluminum, an Aluminum alloy, and a refractory metal.	{1} <b>Style warning:</b> The claim may recite a Markush group. Is it intentional?	"group consisting of"	If not intentional, claim scope may be severely limited. See MPEP 803.02.
	{2} <b>Style warning:</b> Claim includes possibly limiting expressions.	"consisting"	These phrases may unintentionally limit claim scope. Is the use of these terms necessary?
20. A method according to claim 14 wherein said first	{1} <b>Style warning:</b> The	"group	If not intentional, claim

Claim	Error/Warning Message	Term At Issue	Suggested Fix
<p>metal layer includes a first sub-layer comprising a refractory metal, and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy.</p>	<p>claim may recite a Markush group. Is it intentional?</p>	<p>consisting of"</p>	<p>scope may be severely limited. See MPEP 803.02.</p>
	<p>{2} <i>Style warning:</i> Claim includes possibly limiting expressions.</p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>
<p>21. A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal on said substrate and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said first sub-layer opposite said substrate.</p>	<p>{1} <i>Style warning:</i> The claim may recite a Markush group. Is it intentional?</p>	<p>"group consisting of"</p>	<p>If not intentional, claim scope may be severely limited. See MPEP 803.02.</p>
	<p>{2} <i>Style warning:</i> Claim includes possibly limiting expressions.</p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>
<p>22. A method according to claim 21 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>	<p>{1} <i>Style warning:</i> The claim may recite a Markush group. Is it intentional?</p>	<p>"group consisting of"</p>	<p>If not intentional, claim scope may be severely limited. See MPEP 803.02.</p>
	<p>{2} <i>Style warning:</i> Claim includes possibly limiting expressions.</p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>
<p>23. A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a material</p>	<p>{1} <i>Style warning:</i> The claim may recite a Markush</p>	<p>"group consisting</p>	<p>If not intentional, claim scope may be severely</p>

Claim	Error/Warning Message	Term At Issue	Suggested Fix
<p>chosen from the group consisting of Aluminum and an Aluminum alloy on said substrate and a second sub-layer comprising a refractory metal on said first sub-layer opposite said substrate.</p>	<p>group. Is it intentional?</p>	<p>of"</p>	<p>limited. See MPEP 803.02.</p>
	<p>{2} <i>Style warning:</i> Claim includes possibly limiting expressions.</p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>
<p>24. A method according to claim 23 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>	<p>{1} <i>Style warning:</i> The claim may recite a Markush group. Is it intentional?</p>	<p>"group consisting of"</p>	<p>If not intentional, claim scope may be severely limited. See MPEP 803.02.</p>
	<p>{2} <i>Style warning:</i> Claim includes possibly limiting expressions.</p>	<p>"consisting"</p>	<p>These phrases may unintentionally limit claim scope. Is the use of these terms necessary?</p>

### III. Antecedents Errors/Warnings<sup>3</sup>

Claim	Error/Warning
<p>1. A method for forming a liquid crystal display including a thin film transistor, said method comprising the steps of:</p> <p>depositing a first metal layer on a substrate;</p> <p>depositing a second metal layer on said first metal layer opposite said substrate;</p> <p>patterning said first and second metal layers to provide a gate electrode on a TFT area of said substrate and to provide a gate pad on a pad area of said substrate;</p> <p>forming an insulating layer on said gate electrode and on said gate pad, and on said substrate;</p> <p>forming a semiconductor layer on said insulating layer opposite said gate electrode wherein said semiconductor layer includes a channel region opposite said gate electrode and first and second spaced apart source/drain regions separated by said channel region;</p> <p>forming first and second spaced apart metal source/drain electrodes on said respective first and second spaced apart semiconductor source/drain regions;</p> <p>forming a protective layer on <i>said exposed portion{1}</i> of <i>said first semiconductor layer{2}</i> opposite said substrate, on <i>said first and second metal source/drain electrode{3}{4}</i>s opposite said substrate, and on said insulating layer opposite said gate pad;</p> <p>forming a first contact hole in said protective layer exposing <i>a portion{6}</i> of one</p>	{1} <b>No antecedent:</b> "said exposed portion."
	{2} <b>No antecedent:</b> "said first semiconductor layer."
	{3} <b>Double-check:</b> "said first metal source / drain electrode." Is "first spaced apart metal source / drain electrode" in claim 1 the proper antecedent reference for this term?
	{4} <b>Double-check:</b> "said second metal source / drain electrode." Is "second spaced apart metal source / drain electrode" in claim 1 the proper antecedent reference for this term?
	{5} <b>Double-check:</b> "said source / drain electrodes." Is "first spaced apart metal source / drain electrode" in claim 1 the proper antecedent reference for this term?
	{6} <b>Ambiguous:</b> "a portion." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.
	{7} <b>Double-check:</b> "said source / drain electrode." Is "first spaced apart metal source / drain electrode" in claim 1 the proper antecedent reference for this term?

<sup>3</sup> Deleted (i.e., stricken-through) claim text, if any, is not shown.

Claim	Error/Warning
<p>of <i>said source/drain electrodes</i>{5};</p> <p>forming a second contact hole in said protective layer and said insulating layer exposing <i>a portion</i>{6} of said gate pad wherein said second contact hole exposes only a surface portion of said gate pad opposite said substrate;</p> <p>forming a transparent conductive layer on said protective layer opposite said substrate; and</p> <p>patterning said transparent conductive layer to form a pixel electrode electrically connected to said exposed portion of <i>said source/drain electrode</i>{7} and to said exposed portion of said gate pad.</p>	
<p>2. <i>A method</i> according to claim 1 wherein said first metal layer comprises a material chosen from the group consisting of aluminum and an aluminum alloy.</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>3. <i>A method</i> according to claim 1 wherein said second metal layer comprises a refractory metal.</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>4. <i>A method</i>{1} according to claim 1 wherein <i>said pixel electrode covers</i>{2} <i>said exposed surface portion</i>{3} of said gate pad and extends onto said protective layer adjacent said second contact hole.</p>	<p>{1} <i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p> <p>{2} <i>No antecedent:</i> "said pixel electrode covers."</p> <p>{3} <i>Double-check:</i> "said exposed surface portion." Is "exposes only a surface portion" in claim 1 the proper antecedent reference for this term?</p>

Claim	Error/Warning
<p>5. <i>A method</i> according to claim 1 wherein said step of forming said semiconductor layer comprises forming a semiconductor layer portion on said insulating layer opposite said pad area of said substrate so that said semiconductor layer portion is adjacent said second contact hole.</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>6. <i>A method{1}</i> according to claim 1 wherein said step of forming <i>said metal source/drain electrodes{2}</i> comprises forming a metal layer portion on said insulating layer opposite said pad area of said substrate so that said metal layer portion is adjacent said second contact hole.</p>	<p>{1} <i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p> <p>{2} <i>Double-check:</i> "said metal source / drain electrodes." Is "first spaced apart metal source / drain electrode" in claim 1 the proper antecedent reference for this term?</p>
<p>8. A method according to claim 7 wherein <i>said first metal layer</i> comprises a refractory metal.</p>	<p><i>No antecedent:</i> "said first metal layer."</p>
<p>9. A method according to claim 7 wherein <i>said second metal layer</i> comprises a material chosen from the group consisting of Aluminum and an Aluminum alloy.</p>	<p><i>No antecedent:</i> "said second metal layer."</p>
<p>10. A method according to claim 7 wherein <i>said pixel electrode covers{1} said exposed surface portion{2}</i> of <i>said gate pad{3}</i> and <i>said substrate{4}</i> adjacent said gate pad, and wherein <i>said pixel electrode{5}</i> extends onto <i>said protective layer{6}</i> adjacent <i>said second contact hole{7}</i>.</p>	<p>{1} <i>No antecedent:</i> "said pixel electrode covers."</p> <p>{2} <i>No antecedent:</i> "said exposed surface portion."</p> <p>{3} <i>No antecedent:</i> "said gate pad."</p> <p>{4} <i>No antecedent:</i> "said substrate."</p> <p>{5} <i>No antecedent:</i> "said pixel electrode."</p>



Claim	Error/Warning
	<p>{6} <b>No antecedent:</b> "said protective layer."</p> <p>{7} <b>No antecedent:</b> "said second contact hole."</p>
<p>11. A method according to claim 7 wherein said step of forming <i>said semiconductor layer{1}</i> comprises forming a semiconductor layer portion on <i>said insulating layer{2}</i> opposite <i>said pad area{3}</i> of <i>said substrate{4}</i> so that said semiconductor layer portion is adjacent <i>said second contact hole{5}</i>.</p>	<p>{1} <b>No antecedent:</b> "said semiconductor layer."</p> <p>{2} <b>No antecedent:</b> "said insulating layer."</p> <p>{3} <b>No antecedent:</b> "said pad area."</p> <p>{4} <b>No antecedent:</b> "said substrate."</p> <p>{5} <b>No antecedent:</b> "said second contact hole."</p>
<p>12. A method according to claim 7 wherein said step of forming <i>said metal source/drain electrodes{1}</i> comprises forming a metal layer portion on <i>said insulating layer{2}</i> opposite <i>said pad area{3}</i> of <i>said substrate{4}</i> so that said metal layer portion is adjacent <i>said second contact hole{5}</i>.</p>	<p>{1} <b>No antecedent:</b> "said metal source / drain electrodes."</p> <p>{2} <b>No antecedent:</b> "said insulating layer."</p> <p>{3} <b>No antecedent:</b> "said pad area."</p> <p>{4} <b>No antecedent:</b> "said substrate."</p> <p>{5} <b>No antecedent:</b> "said second contact hole."</p>
<p>13. A method according to claim 7 wherein said step of patterning <i>said first and second metal layer{1}{2}</i>s comprises providing a plurality of interconnections on <i>said pad area{3}</i> of <i>said substrate{4}</i> wherein said interconnections are connected to <i>said gate pad{5}</i>.</p>	<p>{1} <b>No antecedent:</b> "said first metal layer."</p> <p>{2} <b>No antecedent:</b> "said second metal layer."</p> <p>{3} <b>No antecedent:</b> "said pad area."</p> <p>{4} <b>No antecedent:</b> "said substrate."</p> <p>{5} <b>No antecedent:</b> "said gate pad."</p>
<p>14. A method for forming a liquid crystal display, said method comprising the steps of:</p> <p>forming a first metal layer on a substrate;</p> <p>patterning said first metal layer to provide a gate electrode on a TFT area of said substrate and to provide a gate pad on a pad area of said substrate;</p>	<p><b>Double-check:</b> "said semiconductor layer." Is "a patterned semiconductor layer" in claim 14 the proper antecedent reference for this term?</p>

Claim	Error/Warning
<p>forming an insulating layer on said gate electrode and on said gate pad;</p> <p>forming a patterned semiconductor layer on said insulating layer opposite said gate electrode and opposite said gate pad;</p> <p>forming a second patterned metal layer on <i>said semiconductor layer</i> opposite said insulating layer;</p> <p>forming a transparent conductive layer on said second patterned metal layer and on said insulating layer opposite said substrate; and</p> <p>patterning said transparent conductive layer, said second patterned metal layer, and said patterned semiconductor layer to provide a data line, metal source/drain electrodes, and a pixel electrode.</p>	
<p>15. <i>A method{1}</i> according to claim 14 further comprising the steps of:</p> <p>forming a protective layer on said substrate covering said data line, <i>said source/drain electrodes{2}</i>, and said pixel electrode; and</p> <p>patterning said protective layer to expose portions of said pixel electrode.</p>	<p>{ 1 } <b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p> <p>{ 2 } <b>Double-check:</b> "said source / drain electrodes." Is "metal source / drain electrodes" in claim 14 the proper antecedent reference for this term?</p>
<p>16. <i>A method</i> according to claim 15 wherein said step of patterning said protective layer comprises forming a black photoresist mask, and wherein said black photoresist mask is maintained on said protective layer thereby providing a black matrix.</p>	<p><b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>

Claim	Error/Warning
<p>17. <i>A method</i>{1} according to claim 14 wherein <i>said semiconductor layer</i>{2} includes a first amorphous silicon layer and a second doped amorphous silicon layer on said first amorphous silicon layer opposite said substrate.</p>	<p>{1} <b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p> <p>{2} <b>Double-check:</b> "said semiconductor layer." Is "a patterned semiconductor layer" in claim 14 the proper antecedent reference for this term?</p>
<p>18. <i>A method</i>{1} according to claim 17 wherein said step of patterning <i>said semiconductor layer</i>{2} comprises etching a portion of said second doped amorphous silicon layer between <i>said source/drain electrodes</i>{3}.</p>	<p>{1} <b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p> <p>{2} <b>Double-check:</b> "said semiconductor layer." Is "a patterned semiconductor layer" in claim 14 the proper antecedent reference for this term?</p> <p>{3} <b>Double-check:</b> "said source / drain electrodes." Is "metal source / drain electrodes" in claim 14 the proper antecedent reference for this term?</p>
<p>19. <i>A method</i> according to claim 14 wherein said first metal layer comprises a material selected from the group consisting of Aluminum, an Aluminum alloy, and a refractory metal.</p>	<p><b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>20. <i>A method</i> according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal, and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy.</p>	<p><b>Ambiguous:</b> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>21. <i>A method</i> according to claim 14 wherein said first metal layer includes a first</p>	<p><b>Ambiguous:</b> "a method." Make sure that the use of</p>

Claim	Error/Warning
<p>sub-layer comprising a refractory metal on said substrate and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said first sub-layer opposite said substrate.</p>	<p>multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>22. <i>A method</i> according to claim 21 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>23. <i>A method</i> according to claim 14 wherein said first metal layer includes a first sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said substrate and a second sub-layer comprising a refractory metal on said first sub-layer opposite said substrate.</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>24. <i>A method</i> according to claim 23 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and Tantalum (Ta).</p>	<p><i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.</p>
<p>25. <i>A method{1}</i> according to claim 14 further comprising the step of removing a portion of <i>said second sub-layer{2}</i> from said gate pad.</p>	<p>{1} <i>Ambiguous:</i> "a method." Make sure that the use of multiple instances of this term with an indefinite article does not create ambiguity.  {2} <i>No antecedent:</i> "said second sub - layer."</p>

IV. Claim Terms without Explicit Support in the Specification

Claim	Term Without Support
10. A method according to claim 7 wherein said <u>pixel electrode covers</u> said exposed surface portion of said gate pad and said substrate adjacent said gate pad, and wherein said pixel electrode extends onto said protective layer adjacent said second contact hole.	pixel electrode covers
13. A method according to claim 7 wherein said step of patterning said first and second metal layers comprises providing a plurality of <u>interconnections</u> on said pad area of said substrate wherein said interconnections are connected to said gate pad.	interconnections
4. A method according to claim 1 wherein said <u>pixel electrode covers</u> said exposed surface portion of said gate pad and extends onto said protective layer adjacent said second contact hole.	pixel electrode covers
16. A method according to claim 15 wherein said step of patterning said protective layer comprises forming a <u>black photoresist mask</u> , and wherein said black photoresist mask is maintained on said protective layer thereby providing a <u>black matrix</u> .	black photoresist mask black matrix
20. A method according to claim 14 wherein said first metal layer includes a first <u>sub-layer</u> comprising a refractory metal, and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy.	sub-layer

Claim	Term Without Support
21. A method according to claim 14 wherein said first metal layer includes a first <u>sub-layer</u> comprising a refractory metal on said substrate and a second sub-layer comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said first sub-layer opposite said substrate.	sub-layer
23. A method according to claim 14 wherein said first metal layer includes a first <u>sub-layer</u> comprising a material chosen from the group consisting of Aluminum and an Aluminum alloy on said substrate and a second sub-layer comprising a refractory metal on said first sub-layer opposite said substrate.	sub-layer
25. A method according to claim 14 further comprising the step of removing a portion of said second <u>sub-layer</u> from said gate pad.	sub-layer
22. A method according to claim 21 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and <u>Tantalum</u> (Ta).	tantalum
24. A method according to claim 23 wherein said refractory metal selected from the group consisting of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and <u>Tantalum</u> (Ta).	tantalum

## V. Inconsistent Part Names/Numbers

*Note: terms completely in red are more likely to be incorrectly named or numbered. With partially inconsistent names, mismatched sections are colored in orange.*

Part Number	Consistently Used Part Name [# of occurrences]	Inconsistently Named/Numbered Part [# of occurrences]	Citations [Page/Line # in the document]
3	source lines	data lines	Also, a <b>plurality of data lines 3</b> are provided lengthwise, and a respective data pad 4 is provided ... [Page 13, line 11.]
10	substrate	transparent line	A metal layer is forming by depositing aluminum (Al) on a <b>transparent line 10</b> , and this metal layer is patterned using a first photolithography step to ... [Page 6, line 4.]
11	gate electrode	gate line	An insulating layer 15, such as a nitride layer, is deposited on the substrate 10 including the <b>gate line 11</b> and the anodic oxide layer 13. [Page 6, line 11.]
21a	drain electrodes	source electrode	A <b>source electrode 21a</b> and a drain electrode 21b are formed on the TFT are of the ... [Page 6, line 19.]
32	first metal layer	second metal layers	2 formed on the TFT and pad areas of the substrate have a double layer structure formed by sequentially depositing first and <b>second metal layers 32</b> and 34. [Page 7, line 23.]
		aluminum alloy layer	As shown, this TFT-LCD includes a substrate 30, an <b>aluminum alloy layer 32</b> , a refractory metal capping layer 34, an insulating layer 36 ... [Page 7, line 17.]
34	second metal layer	refractory metal capping layer	As shown, this TFT-LCD includes a substrate 30, an aluminum alloy layer 32, a <b>refractory metal capping layer 34</b> , an insulating layer 36 which can be a nitride layer... [Page 7, line 18.]

Part Number	Consistently Used Part Name [# of occurrences]	Inconsistently Named/Numbered Part [# of occurrences]	Citations [Page/Line # in the document]
51	first metal layer	second metal layers	On the pad area of the substrate, the gate electrode (including the first and <b>second metal layers 51</b> and 53) and the pad electrode 61c are connected by the ... [Page 8, line 14.]
70	substrate	transparent substrate	7A, a first metal layer 72 is formed by depositing Al or an Al alloy on a <b>transparent substrate 70</b> . [Page 13, line 31.]
72	first metal layer	layers	This ITO layer is patterned using fifth photolithography and etch steps to provide a pixel electrode 86 connected to the gate pad including <b>layers 72</b> and 74 on the pad area of the substrate and connected to the drain ... [Page 14, line 33.]
74	second metal layer	layers	This ITO layer is patterned using fifth photolithography and etch steps to provide a pixel electrode 86 connected to the gate pad including <b>layers 72 and 74</b> on the pad area of the substrate and connected to the drain ... [Page 14, line 33.]
78	amorphous silicon layer	layers [2]	7C, a third metal layer is formed by depositing a metal such as chromium (Cr), molybdenum (Mo), or titanium (Ti) on the patterned semiconductor layer including <b>layers 78</b> and 80 opposite the substrate 70. [Page 14, line 7.]  Next, after forming a semiconductor layer comprising an amorphous silicon layer 78 and a doped amorphous silicon layer on the insulating layer 76, a patterned semiconductor layer including <b>layers 78</b> and 80 is formed on the TFT area of the substrate by performing a ... [Page 14, line 3.]
80	layers	doped amorphous silicon	At this time, the <b>doped amorphous silicon layer 80</b> is also etched to expose a portion of the amorphous silicon ... [Page 14, line 10.]



Part Number	Consistently Used Part Name [# of occurrences]	Inconsistently Named/Numbered Part [# of occurrences]	Citations [Page/Line # in the document]
		layer	
112	pixel electrode	gate pad	At this time, a portion of the protective layer 124 on the pixel electrode 112 is etched and the protective layer 124 and insulating layer 114 on the <b>gate pad 112</b> are partially etched so that a portion of the pad electrode is exposed... [Page 15, line 39.]

VI. **Inconsistent Part Numbers in Figures<sup>4</sup>**

**Part #s not found in the Specification (missing part names?):**

Sheet #1: 120

Sheet #3: 300, 310, 330, and 350–352

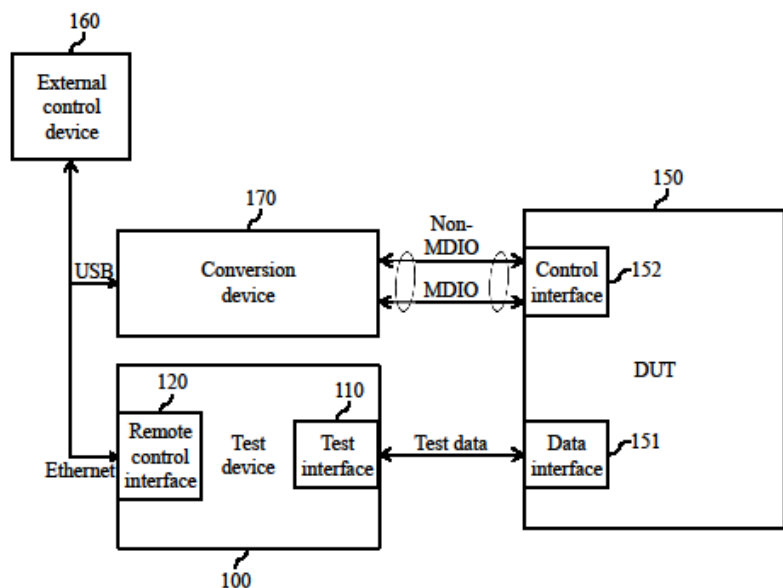
Sheet #4: 300, 310, 330, 411, 412, 431–435, and 440–442

Sheet #5: 310, 330, 350–352, 500, 520, and 560

Sheet #6: 600–605

**Part #s not found in Figures:** 6, 10, 11, 13, 15, 17, 19, 21c, 21a, 21b, 22, 23, 25, 30, 32, 34, 36, 38, 40a, 42b, 42a, 44, 46, 50, 51, 53, 55, 57, 59, 61a, 61c, 61b, 63, 67, 70, 72, 74, 76, 78, 80, 82b, 82a, 84, 86, 88, 112, 114, 124, and 125

<sup>4</sup> Reporting accuracy depends on whether part numbers can be correctly extracted from the figures. For example, some OCR'd PDFs may contain incorrect text, which will reduce the accuracy of this feature.



**FIG. 1**  
**PRIOR ART**

**Identified parts:**

1 gate lines  
110 substrate

**Parts not in the spec:** 120

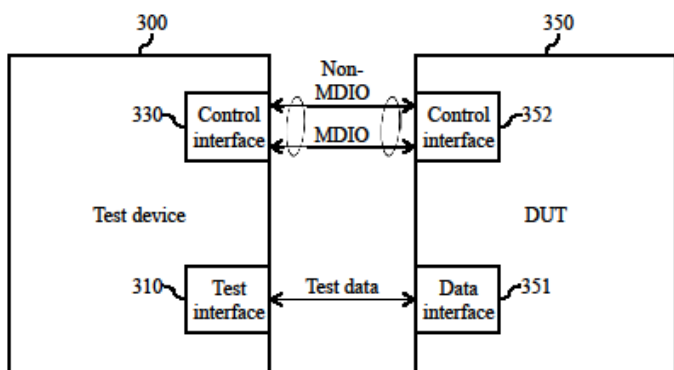
MDIO and Non-MDIO Control Signals				
Signal	Description	Direction	Type	
PRG_CNTL1	Programmable control 1	Out	Non-MDIO	
PRG_CNTL2	Programmable control 2	Out		
PRG_CNTL3	Programmable control 3	Out		
PM_SYNC	Performance monitoring sync	Out		
TX_DIS	Transmitter disable	Out		
MOD_LOPWR	Module low power	Out		
MOD_RSTn	Module reset	Out		
PRG_ALARM1	Programmable alarm 1	In		
PRG_ALARM2	Programmable alarm 2	In		
PRG_ALARM3	Programmable alarm 3	In		
MOD_ABS	Module absent	In		
RX_LOS	Receiver loss of signal	In		
GLB_ALRMn	Global alarm	In		
MDIO	MDIO serial data	Bidirectional		MDIO
MDC	MDIO clock	Out		
PRTADR0	MDIO physical port address bit 1	Out		
PRTADR1	MDIO physical port address bit 2	Out		
PRTADR2	MDIO physical port address bit 3	Out		
PRTADR3	MDIO physical port address bit 4	Out		
PRTADR4	MDIO physical port address bit 5	Out		

**FIG. 2**

FIG. 2 is a cross sectional view illustrating a thin film transistor liquid crystal display formed using five photolithography masks.

**Identified parts:**

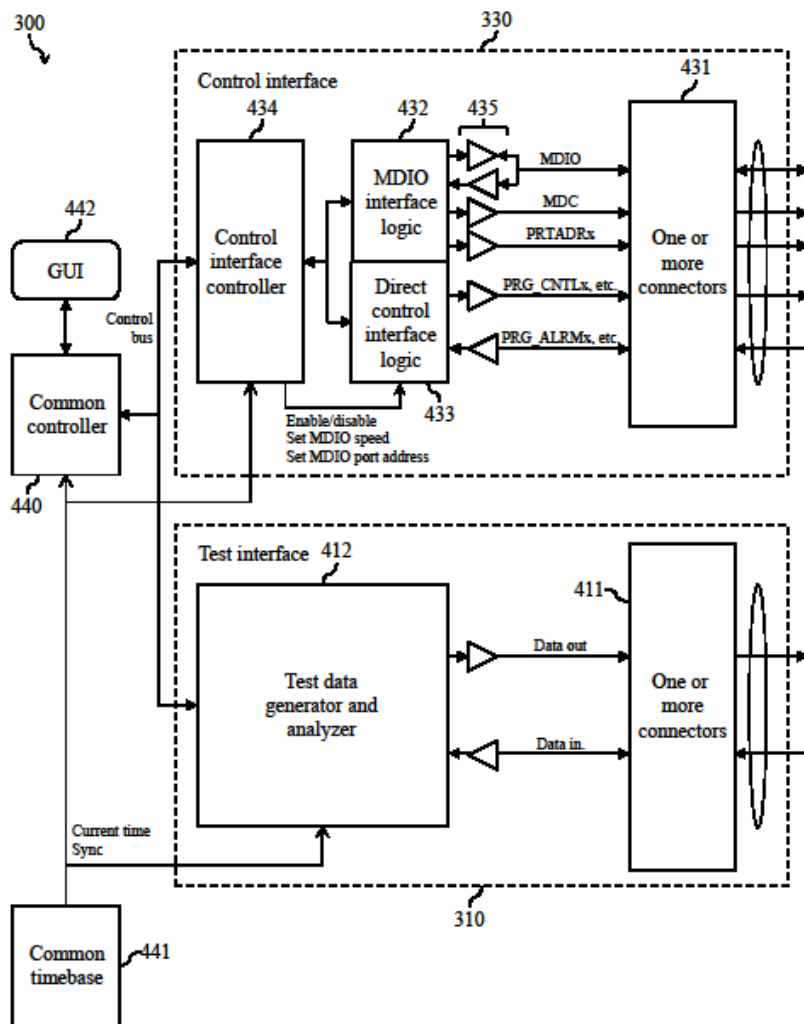
- 1 gate lines
- 2 respective gate pad
- 3 source lines
- 4 respective data pad
- 5 thin film transistor



**FIG. 3**

FIG. 3 is a cross sectional view illustrating a second TFT-LCD formed according to a method using five photolithography masks.

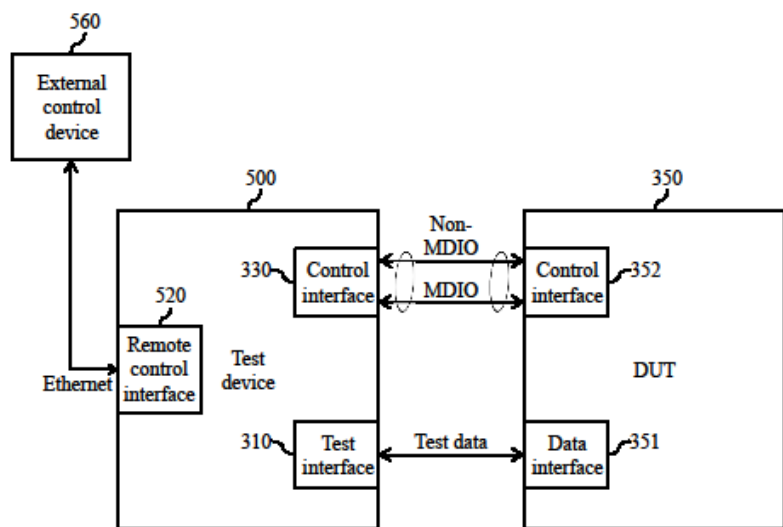
**Parts not in the spec:** 300, 310, 330, and 350–352



**FIG. 4**

FIG. 4 which illustrates a layout for the pad area used to form the LCDs of FIGS. 2 and 3.

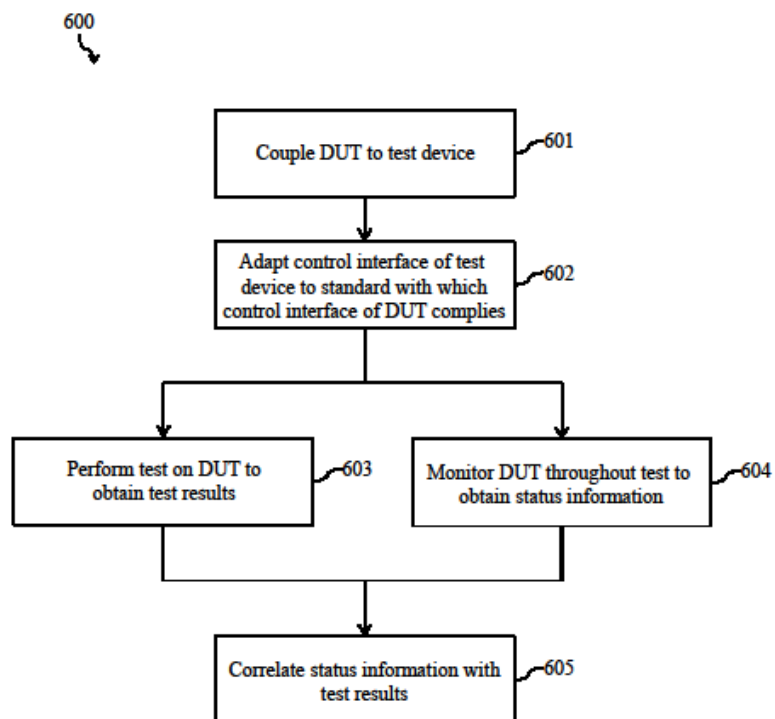
**Parts not in the spec:** 300, 310, 330, 411, 412, 431–435, and 440–442



**FIG. 5**

FIG. 5 is a plan view illustrating an LCD formed using a method according to the present invention.

**Parts not in the spec:** 310, 330, 350–352, 500, 520, and 560



**FIG. 6**

FIG. 6 is a schematic plan view illustrating a pad area for forming an LCD using a method according to a first embodiment of the present invention.

**Parts not in the spec:** 600–605



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VII. Inconsistent Acronyms

Acronym	Error Message
FT	Acronym is not defined in text.
TFT	Acronym is used before being defined.

VIII. Document Language Errors/Warnings

Error/Suggested Fix	Citations [Page/Line # in the document]
<p>Avoid using vague and relative terms. Use of vague and relative terms in the specification can potentially render patent invalid and unenforceable under 35 U.S.C. 112.</p>	<p>Because a thin film transistor (TFT) may be thinner than a <b>conventional</b> transistor, methods used to manufacture a thin film transistor may be more complicated ... [Page 5, line 29.]</p> <p>A method for manufacturing a <b>conventional</b> liquid crystal display will now be described with reference to FIGS. [Page 6, line 2.]</p> <p>In the drawings and specification, there have been disclosed <b>typical</b> preferred embodiments of the invention and, although specific terms are employed, they ... [Page 16, line 2.]</p>
<p>Document text includes potentially limiting language. Make sure that limiting terms are used correctly, to avoid the potential infringer trying to limit the scope of the patent based on the statements in the specification.</p>	<p>A first contact hole is formed in the protective layer exposing a portion of one of the source/drain electrodes, and a second contact hole is formed in the protective layer and the insulating layer exposing a portion of the gate pad wherein the second contact hole exposes <b>only</b> a surface portion of the gate pad opposite the substrate. [Page 1, line 20.]</p> <p>forming a second contact hole in said protective layer and said insulating layer exposing a portion of said gate pad wherein said second contact hole exposes <b>only</b> a surface portion of said gate pad opposite said substrate; [Page 2, line 28.]</p> <p>A first contact hole is formed in the protective layer exposing a portion of one of the source/drain electrodes, and a second contact hole is formed in the protective layer and the insulating layer exposing a portion of the gate pad wherein the second contact hole exposes <b>only</b> a surface portion of the gate pad opposite the substrate. [Page 10, line 4.]</p> <p>Accordingly, etching of the substrate is reduced, and the aluminum or aluminum alloy layer is exposed <b>only</b> at a portion C. [Page 15, line 34.]</p> <p>In the drawings and specification, there have been disclosed typical <b>preferred</b> embodiments of the invention and, although specific terms are employed, they</p>

Error/Suggested Fix	Citations [Page/Line # in the document]
	<p>are used in a generic and descriptive sense <b>only</b> and not for purposes of limitation, the scope of the invention being set ... [Page 16, line 4.]</p> <p>A method according to claim 1 wherein said first metal layer comprises a material chosen from the group <b>consisting</b> of aluminum and an aluminum alloy. [Page 2, line 37.]</p> <p>A method according to claim 7 wherein said second metal layer comprises a material chosen from the group <b>consisting</b> of Aluminum and an Aluminum alloy. [Page 3, line 9.]</p> <p>A method according to claim 14 wherein said first metal layer comprises a material selected from the group <b>consisting</b> of Aluminum, an Aluminum alloy, and a refractory metal. [Page 4, line 25.]</p> <p>A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal, and a second sub-layer comprising a material chosen from the group <b>consisting</b> of Aluminum and an Aluminum alloy. [Page 4, line 29.]</p> <p>A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a refractory metal on said substrate and a second sub-layer comprising a material chosen from the group <b>consisting</b> of Aluminum and an Aluminum alloy on said first sub-layer opposite said ... [Page 4, line 33.]</p> <p>A method according to claim 21 wherein said refractory metal selected from the group <b>consisting</b> of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and ... [Page 4, line 37.]</p> <p>A method according to claim 14 wherein said first metal layer includes a first sub-layer comprising a material chosen from the group <b>consisting</b> of Aluminum and an Aluminum alloy on said substrate and a second sub-... [Page 4, line 40.]</p>

Error/Suggested Fix	Citations [Page/Line # in the document]
	<p>A method according to claim 23 wherein said refractory metal selected from the group <b>consisting</b> of chromium (Cr), Molybdenum (Mo), Titanium (Ti), and ... [Page 4, line 45.]</p> <p>In addition, the number of photolithography steps can be reduced by simultaneously etching <b>both</b> the insulating layer 36 and the protective layer 44. [Page 7, line 38.]</p> <p>As shown, the gate electrodes formed on the TFT and pad areas of the substrate <b>each</b> have a double-layer structure formed by sequentially depositing a first metal layer ... [Page 8, line 9.]</p> <p>5, a plurality of gate lines 1 are provided laterally, and a respective gate pad 2 is provided at the end of <b>each</b> of the gate lines 1. [Page 13, line 10.]</p> <p>A thin film transistor 5 and a pixel electrode 6 are connected to <b>each</b> of the gate lines 1. [Page 13, line 11.]</p> <p>Also, a plurality of data lines 3 are provided lengthwise, and a respective data pad 4 is provided at the end of <b>each</b> of the source lines 3. [Page 13, line 12.]</p> <p>The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which <b>preferred</b> embodiments of the invention are shown. [Page 12, line 29.]</p> <p>This invention may, however, be embodied in many different forms and <b>should</b> not be construed as limited to the embodiments set forth herein; rather, ... [Page 12, line 30.]</p> <p>7B, a nitride layer is deposited on <b>the entire</b> surface of the substrate 70 where the gate electrode and pad electrode are formed... [Page 13, line 37.]</p> <p>7D, a protective layer is formed by depositing a nitride layer on <b>the entire</b> surface of the substrate including the source electrode 82a and the drain electrode 82b... [Page 14, line 13.]</p> <p>7E, an ITO layer, which is a transparent conductive layer, is formed on <b>the</b></p>

Error/Suggested Fix	Citations [Page/Line # in the document]
	<p><b>entire</b> surface of the substrate where the protective layer 84 is formed. [Page 14, line 30.]</p> <p>18A and 18B, a protective layer 124 is formed by depositing an insulating layer such as a nitride layer on <b>the entire</b> surface of the substrate 110, and then performing a fourth photolithography step on ... [Page 15, line 36.]</p> <p>According to the aforementioned first embodiment of the present invention, the number of <b>required</b> masks can be reduced and aluminum hillock growth can be reduced by forming a ... [Page 14, line 37.]</p> <p>Therefore, the step coverage of the ITO layer for the pixel electrode can be improved <b>without</b> a separate photolithography step. [Page 15, line 26.]</p>
<p>Document text includes excluding phrases. Excluding phrases in the specification may be used to limit the scope of your claims. Review, to ensure that potential infringers do not try to limit the scope of the patent based on the statements in the specification.</p>	<p>In addition, the protective layer 84 and the insulating layer 76 are patterned with a predetermined distance <math>d</math> set for <b>preventing</b> a portion where the protective layer 84 and insulating layer 76 are opened from ... [Page 14, line 24.]</p> <p>Therefore, the step coverage of the ITO layer for the pixel electrode can be improved <b>without</b> a separate photolithography step. [Page 15, line 26.]</p>
<p>Document text includes contrasting phrases. Contrasting phrases may be used to limit the scope of your claims. Review, to ensure that potential infringers do not try to limit the scope of the patent based on the statements in the specification.</p>	<p>If Al and ITO are in direct contact, <b>however</b>, the ITO may dissolve in a developing solution due to a battery effect caused ... [Page 8, line 34.]</p> <p>This invention may, <b>however</b>, be embodied in many different forms and should not be construed as limited to ... [Page 12, line 30.]</p> <p>It is <b>still</b> another object of the present invention to provide methods for forming liquid crystal displays ... [Page 9, line 20.]</p>
<p>Do not use words such as 'invention' or 'embodiment' . At least in the U.S., there exists legal precedent for using patentee's statements regarding the 'invention' to limit the claim scope during</p>	<p>FIELD OF THE <b>INVENTION</b> [Page 5, line 8.]</p> <p>The present <b>invention</b> relates to the field of microelectronics and more</p>

Error/Suggested Fix	Citations [Page/Line # in the document]
<p>litigation. Avoid any direct characterizations of 'invention' or 'preferred embodiments', if possible.</p>	<p>particularly to methods for forming liquid ... [Page 5, line 10.]</p> <p>BACKGROUND OF THE <b><u>INVENTION</u></b> [Page 5, line 13.]</p> <p>SUMMARY OF THE <b><u>INVENTION</u></b> [Page 9, line 12.]</p> <p>It is therefore an object of the present <b><u>invention</u></b> to provide improved methods for forming liquid crystal displays. [Page 9, line 14.]</p> <p>It is another object of the present <b><u>invention</u></b> to provide methods for forming liquid crystal displays having improved reliability. [Page 9, line 17.]</p> <p>It is still another object of the present <b><u>invention</u></b> to provide methods for forming liquid crystal displays using a reduced number of photolithography ... [Page 9, line 20.]</p> <p>These and other objects are provided according to the present <b><u>invention</u></b> by methods including the steps of depositing a first metal layer on a substrate ... [Page 9, line 23.]</p> <p>According to an alternate aspect of the present <b><u>invention</u></b>, a method for forming a liquid crystal display includes the steps of depositing a ... [Page 10, line 19.]</p> <p>According to another alternate aspect of the present <b><u>invention</u></b>, a method for forming a liquid crystal display includes the steps of forming a ... [Page 11, line 1.]</p> <p>The methods of the present <b><u>invention</u></b> thus allow the manufacture of liquid crystal displays with a reduced number of photolithography ... [Page 11, line 12.]</p> <p>5 is a plan view illustrating an LCD formed using a method according to the present <b><u>invention</u></b>. [Page 11, line 27.]</p>

Error/Suggested Fix	Citations [Page/Line # in the document]
	<p>6 is a schematic plan view illustrating a pad area for forming an LCD using a method according to a first <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 11, line 30.]</p> <p>7A through 7E are cross sectional views illustrating steps of a method for forming an LCD according to the first <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 11, line 33.]</p> <p>8 is a schematic plan view illustrating a method for forming an LCD according to a second <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 3.]</p> <p>9 is a cross sectional view illustrating an LCD formed using a method according to the second <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 6.]</p> <p>10 is a plan view illustrating a method for forming an LCD according to a third <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 9.]</p> <p>11A through 11E are cross sectional views illustrating steps of a method for forming an LCD according to the second <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 12.]</p> <p>12 through 14 are plan views illustrating methods for forming an LCD according to fourth, fifth, and sixth embodiments of the present <b><u>invention</u></b>. [Page 12, line 15.]</p> <p>19 is a cross sectional view illustrating a method for forming an LCD according to an eighth <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 18.]</p> <p>20 is a cross sectional view illustrating a method for forming an LCD according to a ninth <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 12, line 21.]</p> <p>21 is a cross sectional view illustrating a method for forming an LCD according to a tenth <b><u>embodiment</u></b> of the present <b><u>invention</u></b>.</p>



Error/Suggested Fix	Citations [Page/Line # in the document]
	<p>[Page 12, line 24.]</p> <p>The present <b><u>invention</u></b> will now be described more fully hereinafter with reference to the accompanying drawings, ... [Page 12, line 28.]</p> <p>This <b><u>invention</u></b> may, however, be embodied in many different forms and should not be ... [Page 12, line 30.]</p> <p>5 is a plan view illustrating an LCD manufactured according to a method of the present <b><u>invention</u></b>. [Page 13, line 9.]</p> <p>6 is a schematic plan view of a pad area, and this figure is used to explain a method for forming an LCD according to a first <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 13, line 17.]</p> <p>7A through 7E are cross sectional views illustrating steps of a method for forming an LCD according to a first <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 13, line 30.]</p> <p>According to the aforementioned first <b><u>embodiment</u></b> of the present <b><u>invention</u></b>, the number of required masks can be reduced and aluminum hillock growth can be ... [Page 14, line 36.]</p> <p>8 is a schematic plan view for illustrating an LCD formed using a method according to a second <b><u>embodiment</u></b> of the present <b><u>invention</u></b>, and FIG. [Page 15, line 9.]</p> <p>9 is a cross sectional view illustrating an LCD formed using a method according to the second <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 15, line 10.]</p> <p>10 is a schematic plan view illustrating the pad area of an LCD formed by a method according to a third <b><u>embodiment</u></b> of the present <b><u>invention</u></b>. [Page 15, line 29.]</p>

Error/Suggested Fix	Citations [Page/Line # in the document]
	<p>In the drawings and specification, there have been disclosed typical preferred embodiments of the <b><u>invention</u></b> and, although specific terms are employed, they are used in a generic ... [Page 16, line 3.]</p>