PATENT ABSTRACTS OF JAPAN

(13)

(11)Publication number : 2006-227409
(43)Date of publication of application : 31.08.2006

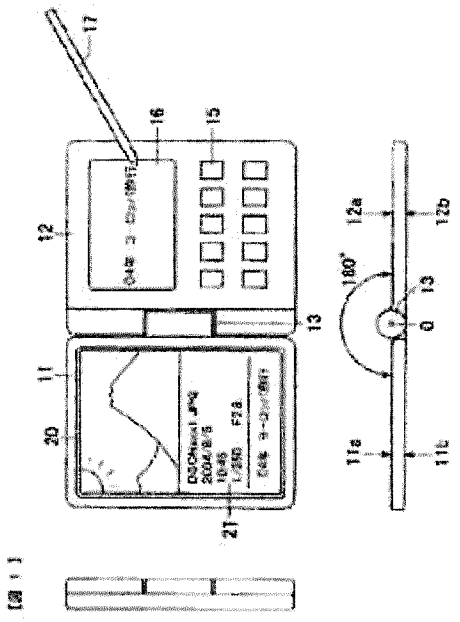
(51)Int.Cl. *G09G 5/00 (2006.01)*
G06F 3/048 (2006.01)
G06F 1/16 (2006.01)

(21)Application number : 2005-042626
(22)Date of filing : 18.02.2005

(71)Applicant : NIKON CORP
(72)Inventor : FUJINAWA NOBUHIRO

(54) DISPLAY DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain display forms appropriate for the case an observer operates a display device while viewing display contents and a case the observer places the display device and observes the display contents, respectively.
SOLUTION: The image display device automatically switches the display mode to a book mode when it is regarded to be in a standby state or in an operation state by the decision based on the detection signal from an acceleration sensor 19 and automatically switches the mode to a frame mode 1 when it is regarded to be in a placed state. In the book mode, a reproduced image is displayed on a liquid crystal display element 20 as a vertically long screen and Exif information incidental to the image data is displayed in a margin region 21. In the frame mode 1, the display of the Exif information is omitted and the reproduced image is highlighted on a large scale at a full size as large as the screen of the liquid crystal display element 20 as a horizontally long screen.



Espacenet

Bibliographic data: JP2006243137 (A) — 2006-09-14

PHOTO STAND

Inventor(s): FUJINAWA NOBUHIRO ± (FUJINAWA NOBUHIRO)

Applicant(s): NIKON CORP ± (NIKON CORP)

Classification: **- international:** ***A47G1/14; G09F9/00***
- cooperative:

Application number: JP20050055776 20050301 Global Dossier

Priority number(s): JP20050055776 20050301

Abstract of JP2006243137 (A)

PROBLEM TO BE SOLVED: To reduce the power consumption of a photo stand provided with a display monitor for displaying an image reproduced from image data and a photo holder for holding a printed photo. ;SOLUTION: In the photo stand, judgement as follows is carried out using detection signals from an opening/closing angle detecting sensor 13c: when the photo stand is being held by hand or in operation and is so regarded as a liquid crystal display element 20 rather than a printed photo 23 (Fig. 3) can be viewed, the photo stand is automatically switched over into a book mode; when the photo stand is in a placed state and is so regarded as the liquid crystal display element 20 rather than the printed photo 23 (Fig. 3) can be viewed, the photo stand is automatically switched over into a frame mode 1; when the photo stand is in a placed state and is so regarded as the printed photo 23 (Fig. 3) rather than the liquid crystal display element 20 can be viewed, the photo stand is automatically switched over into a frame mode 2. In the frame mode 2: a back light 20a is turned off; photographing with a camera 25 is stopped; and the electric power to be supplied to each block, except the opening/closing angle detecting sensor 13c, is turned off. ;COPYRIGHT: (C)2006,JPO&NCIPI

(19)日本国特許庁(JP)　(12)公開特許公報(A)　(11)特許出願公開番号
特開2006-243137
(P2006-243137A)
(43)公開日　平成18年9月14日(2006.9.14)

(51)Int.Cl.			F I			テーマコード（参考）
G09F	9/00	(2006.01)	G09F	9/00	312	3B111
A47G	1/14	(2006.01)	A47G	1/14	E	5G435

審査請求 未請求　請求項の数 5　OL　（全 14 頁）

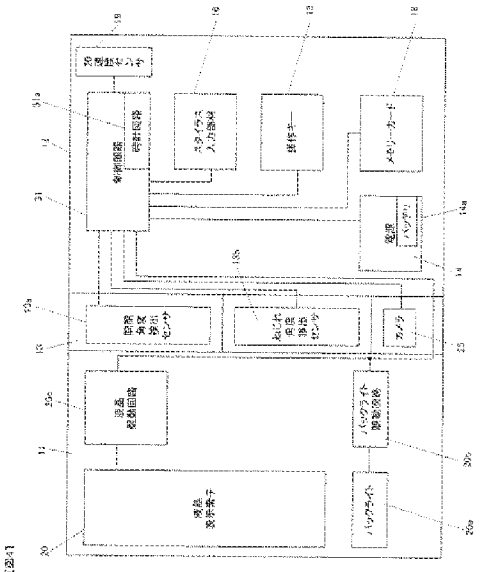
(21)出願番号　特願2005-55776(P2005-55776)
(22)出願日　平成17年3月1日(2005.3.1)

(71)出願人　000004112
株式会社ニコン
東京都千代田区丸の内３丁目２番３号
(74)代理人　100084412
弁理士　永井　冬紀
(72)発明者　藤縄　展宏
東京都千代田区丸の内３丁目２番３号　株式会社ニコン内

Ｆターム(参考)　3B111 BB06　BC02　BD05
5G435 BB12　CC09　EE02　EE16　EE50

(54)【発明の名称】フォトスタンド

(57)【要約】
【課題】画像データによる再生画像を表示する表示モニタとプリント写真を保持する写真保持部とを備えるフォトスタンドの消費電力を削減する。
【解決手段】開閉角度検出センサ１３ｃからの検出信号を用いて判定を行うことにより、フォトスタンドが手持ち状態もしくは操作中であって、プリント写真２３（図３）より液晶表示素子２０が観察される状態とみなした場合は自動的にブックモードへ切替え、フォトスタンドが載置状態であって、プリント写真２３（図３）より液晶表示素子２０が観察される状態とみなした場合は自動的にフレームモード１に切替え、フォトスタンドが載置状態であって、液晶表示素子２０よりプリント写真２３（図３）が観察される状態とみなした場合は自動的にフレームモード２に切替える。フレームモード２では、液晶表示をオフ、バックライト２０ａを消灯、カメラ２５の撮影を停止させるとともに、開閉角度検出センサ１３ｃを除く各ブロックへ供給する電力をオフさせる。
【選択図】図４



HP Inc. - Exhibit 1005 - Page 2380

【特許請求の範囲】
【請求項1】
画像データによる再生画像を表示する表示モニタと、
プリント写真を保持する写真保持部と、
前記プリント写真でなく前記表示モニタによる表示画像が観察される状態か否かを判定するとともに、その判定結果に応じて前記再生画像の表示をオン／オフするように前記表示モニタへ指示する表示制御手段とを備えることを特徴とするフォトスタンド。
【請求項2】
請求項１に記載のフォトスタンドにおいて、
フォトスタンドが載置される状態において載置面と接触するベース部、および前記表示モニタと前記写真保持部とが配設される表示部を回動自在に支持するヒンジ部材と、
前記ヒンジ部材の回動によって変化する前記ベース部および前記表示部間の相対角度を検出する角度検出手段とをさらに備え、
前記表示制御手段は、前記角度検出手段から出力される検出信号に基づいて前記表示画像が観察される状態を判定することを特徴とするフォトスタンド。
【請求項3】
請求項１に記載のフォトスタンドにおいて、
載置部材に載置される向きを検出する載置方向検出手段をさらに備え、
前記表示制御手段は、前記載置方向検出手段から出力される検出信号に基づいて前記表示画像が観察される状態を判定することを特徴とするフォトスタンド。
【請求項4】
請求項１または２に記載のフォトスタンドにおいて、
前記表示制御手段は、前記表示画像が観察される状態を否定判定した場合に前記表示モニタへ表示オフを指示することを特徴とするフォトスタンド。
【請求項5】
請求項４に記載のフォトスタンドにおいて、
フォトスタンドの揺動を検出する揺動検出手段をさらに備え、
前記表示制御手段は、前記揺動検出手段から揺動検出信号が出力された場合には前記表示オフを指示しないことを特徴とするフォトスタンド。

【発明の詳細な説明】
【技術分野】
【0001】
本発明は、電子画像およびプリント写真鑑賞のためのフォトスタンドに関する。
【背景技術】
【0002】
電子画像データによる再生画像を表示する電子式フォトフレームが知られている（特許文献１参照）。
【0003】
【特許文献1】特開２００４－２９５０３３号公報
【発明の開示】
【発明が解決しようとする課題】
【0004】
特許文献１の電子式フォトフレームは、記憶媒体が装着されたとき、この記憶媒体に画像データが記録されていれば再生表示を継続する。特許文献１には、このようなフォトフレームを省電力化する技術についての開示はない。
【課題を解決するための手段】
【0005】
本発明によるフォトスタンドは、画像データによる再生画像を表示する表示モニタと、プリント写真を保持する写真保持部と、プリント写真でなく表示モニタによる表示画像が観察される状態か否かを判定するとともに、その判定結果に応じて再生画像の表示をオン

HP Inc. - Exhibit 1005 - Page 2381

／オフするように表示モニタへ指示する表示制御手段とを備えることを特徴とする。
請求項１に記載のフォトスタンドはさらに、フォトスタンドが載置される状態において載置面と接触するベース部、および表示モニタと写真保持部とが配設される表示部を回動自在に支持するヒンジ部材と、ヒンジ部材の回動によって変化するベース部および表示部間の相対角度を検出する角度検出手段とを備えてもよく、この場合の表示制御手段は、角度検出手段から出力される検出信号に基づいて表示画像が観察される状態を判定することもできる。
請求項１に記載のフォトスタンドはさらに、載置部材に載置される向きを検出する載置方向検出手段をさらに備えてもよく、この場合の表示制御手段は、載置方向検出手段から出力される検出信号に基づいて表示画像が観察される状態を判定することもできる。
請求項１または２に記載のフォトスタンドにおいて、表示制御手段は、表示画像が観察される状態を否定判定した場合に表示モニタへ表示オフを指示するとよい。
請求項４に記載のフォトスタンドにおいて、フォトスタンドの揺動を検出する揺動検出手段をさらに備えてもよく、表示制御手段は、揺動検出手段から揺動検出信号が出力された場合には表示オフを指示しないようにしてもよい。
【発明の効果】
【0006】
本発明によれば、フォトスタンドに画像データによる再生画像を表示する表示モニタとプリント写真を保持する写真保持部とを備え、プリント写真ではなく表示モニタによる表示画像が観察される状態か否かを判定した結果に応じて再生画像の表示をオン／オフするようにしたので、表示画像が観察されないにもかかわらず表示が継続される場合に比べて消費電力を削減できる。
【発明を実施するための最良の形態】
【0007】
以下、図面を参照して本発明を実施するための最良の形態について説明する。
（第一の実施形態）
図１は、本発明の第一の実施形態による鑑賞装置であるフォトスタンドを説明する三面図である。図１において、フォトスタンドは、液晶表示素子２０を有する表示部１１と、操作キー１５およびスタイラス入力部材１６を有する操作部（ベース部）１２とがヒンジ１３によって一体化される。ヒンジ１３は、回動軸Ｏを中心軸として回動自在に構成され、表示部１１および操作部１２間の相対角を任意の角度で支持する。操作部（ベース部）１２の重量は、表示部１１の重量より重いように構成されていることが望ましい。
【0008】
フォトスタンドの使用形態について説明する。
（ブックモード）
図１のフォトスタンドは、ブックモードにおける使用形態を例示したものである。ブックモードにおけるフォトスタンドは、たとえば、表示部１１の液晶表示素子２０側の面（以下表示面と呼ぶ）１１ａと、操作部１２の操作キー１５やスタイラス入力部材１６側の面（以下操作面と呼ぶ）１２ａとが使用者（とくに目）の方向を向くように、ヒンジ１３が折り畳み状態（開閉角０とする）から約１８０度開かれた状態で、使用者によって手持ちされる。
【0009】
使用者は、表示部１１の液晶表示素子２０に表示される画像や当該画像に関する情報を見ながら、操作キー１５を押下操作したり、スタイラスペン１７を用いてスタイラス入力部材１６へ書き込み入力したりする。液晶表示素子２０に表示させる画像は、操作キー１５やスタイラス入力部材１６からの操作信号によって後述する制御回路３１に指示される。
【0010】
ブックモードでは、液晶表示素子２０が縦長画面として観察される。フォトスタンドは、縦長画面としての液晶表示素子２０に通常の横長画像を再生表示させる。この場合、再

生表示画像の長辺（水平方向）を液晶表示素子２０の短辺に対応させて表示し、再生表示画像の短辺方向（垂直方向）の余白領域（図１において符号２１）に、当該再生画像データに付加されている情報（Exif情報）をテキスト表示する。図１の例では、Exif情報として、画像データファイル名「DSCNxxx1.JPG」、撮影日「2004/8/5」、撮影時刻「10:45」、撮影条件としてのシャッタースピード、絞り値「1/250 F2.8」が、再生画像の下部領域２１に表示されている。Exif情報として表示する項目は、操作キー１５からの操作によって適宜変更可能に構成されている。

【0011】

スタイラスペン１７によってスタイラス入力部材１６から書き込み入力された情報「04年 ヨーロッパ旅行」は、Exif情報とともに画像データファイル内に記録可能に構成されている。したがって、画像データファイル内に付加記録された書き込み入力情報は、次回の再生表示時に他のExif情報とともに自動的に領域２１内に表示させることができる。

【0012】

（フレームモード１）

図２は、フォトスタンドのフレームモード１における使用形態を例示する図である。ヒンジ１３が折り畳み状態から約２９０度開かれ、操作部１２の操作面１２ａを下側にして、机上などの平面に載置されている。表示部１１と操作部１２との挟角は約７０度である。使用者は、表示部１１の液晶表示素子２０に表示される画像を鑑賞する。

【0013】

液晶表示素子２０に表示される画像は、たとえば、後述するメモリカード１８（図４）に記憶されている複数の画像ファイルに対応する画像データによる再生画像であり、これらを順次スライドショー表示したものである。また、複数の再生画像を順次スライドショー表示する代わりに、メモリカード１８に記憶されている所定の画像（たとえば、操作キー１５からの操作信号によってあらかじめ指定されている画像）を再生表示するように構成してもよい。

【0014】

フォトスタンドは、横長画面としての液晶表示素子２０に通常の横長画像を再生表示させる。この場合、再生表示画像の長辺（水平方向）を液晶表示素子２０の長辺に対応させて表示する。Exif情報のテキスト表示を省略し、再生表示画像の表示サイズをブックモードにおいて液晶表示素子２０に表示される再生表示画像の表示サイズより大きくする。

【0015】

（フレームモード２）

図３は、フォトスタンドのフレームモード２（フォトフレーム）における使用形態を例示する図である。ヒンジ１３が折り畳み状態から約８０度開かれ、操作部１２の裏面１２ｂを下側にして、机上などの平面に載置されている。表示部１１と操作部１２との挟角は約８０度である。表示部１１の裏面１１ｂには着脱可能な透明カバー２２が設けられており、表示部１１および透明カバー２２間にプリント写真２３が挟持される。使用者は、挟持されているプリント写真２３を鑑賞する。挟持されているプリント写真２３は、開閉角０度の折り畳み状態でも鑑賞可能であり、外観の装飾部としての機能も有する。

【0016】

図４は、フォトスタンドの構成を説明するブロック図である。図４において、表示部１１側には液晶表示素子２０と、液晶駆動回路２０ｃと、バックライト２０ａと、バックライト駆動回路２０ｂとが含まれる。液晶駆動回路２０ｃは、後述する制御回路３１から出力される表示データに応じて液晶パネル駆動信号を生成し、生成した駆動信号で液晶表示素子２０を駆動する。具体的には、液晶表示素子２０の液晶層（不図示）に対して表示データに応じた電圧を画素ごとに印加する。電圧が印加された液晶層は液晶分子の配列が変わり、当該液晶層の光の透過率が変化する。

【0017】

バックライト駆動回路２０ｂは、制御回路３１から出力される点灯指示に応じてバックライト２０ａを指示された輝度で点灯させる。点灯したバックライト２０ａは、液晶表示

素子２０を照明する。バックライト２０ａによる照明光が液晶表示素子２０の液晶層を透過して変調されることにより、表示データによる再生像が表示される。

【0018】

操作部１２側には、制御回路３１と、加速度センサ１９と、スタイラス入力部材１６と、操作キー１５と、バッテリ１４ａを有する電源１４と、カメラ２５とが含まれ、挿抜可能に構成されるメモリカード１８が装着されている。制御回路３１は、制御プログラムに基づいて、フォトスタンドを構成する各部から入力される信号を用いて所定の演算を行うなどして、フォトスタンドの各部に対する制御信号を送出することにより、カメラ動作、画像表示動作をそれぞれ制御する。なお、制御プログラムは制御回路３１内の不図示の不揮発性メモリに格納されている。

【0019】

時計回路３１ａは制御回路３１に内蔵されており、クロック信号（不図示）を分周して時刻情報を生成する。

【0020】

スタイラス入力部材１６は、使用者による入力操作に応じた入力信号を制御回路３１へ出力する。操作キー１５は、使用者による操作に応じた操作信号を制御回路３１へ出力する。メモリカード１８はフラッシュメモリなどの不揮発性メモリによって構成され、制御回路３１の指令によりデータの書き込み、保存および読み出しが可能である。電源１４は、ＤＣ／ＤＣ変換回路などで構成され、バッテリ１４ａの電圧をフォトスタンド内の各部で必要な直流電圧に変換し、変換後の電圧を各ブロックへ供給する。

【0021】

カメラ２５はイメージセンサおよびイメージセンサ上に被写体像を結像する撮影レンズを含む。カメラ２５は、制御回路３１の撮影指示によって被写体像を撮像し、画像データに所定の信号処理を施した上で当該画像データを制御回路３１へ送出する。イメージセンサとしては、ＣＣＤやＣＭＯＳ撮像素子などが用いられる。カメラ２５は、フレームモード１の使用形態において、表示部１１の表示面１１ａと対向する主要被写体を撮影するように構成されている。

【0022】

ヒンジ１３には開閉角度検出センサ１３ａおよびねじれ角度検出センサ１３ｂが内蔵されている。開閉角度検出センサ１３ａは、回動軸Ｏを中心に回動したヒンジ１３の開閉角の大きさに応じた検出信号を制御回路３１へ出力する。ねじれ角度検出センサ１３ｂについては後述する。

【0023】

以上のフォトスタンドにおいて、表示部１１の液晶表示素子２０にメモリカード１８に記録されている画像データによる再生画像を表示させるには、制御回路３１がメモリカード１８から画像データを読み出し、読み出した画像データを用いて液晶表示素子２０の表示画素数に応じた表示データを生成し、生成した表示データを液晶駆動回路２０ｃへ送出するとともに、バックライト駆動回路２０ｂへ点灯指示を送る。

【0024】

制御回路３１で行われる省電力のための表示制御処理について、図５に示すフローチャートを参照して説明する。制御回路３１は、フォトスタンドにバッテリ１４ａが装填されると図５による処理を繰り返す。

【0025】

図５のステップＳ１１において、制御回路３１は、ヒンジ１３の開閉角が０～９０度の範囲内か否かを判定する。制御回路３１は、開閉角度検出センサ１３ｃからの検出信号が開閉角０～９０度の範囲に対応する場合にステップＳ１１を肯定判定してステップＳ１４へ進み、開閉角度検出センサ１３ｃからの検出信号が開閉角９０度を超える場合にはステップＳ１１を否定判定し、ステップＳ１２へ進む。ステップＳ１４へ進む場合は、フォトスタンドが載置され、液晶表示素子２０に表示される画像ではなくプリント写真２３が観察される状態とみなす。

HP Inc. - Exhibit 1005 - Page 2384

【0026】
ステップＳ１２において、制御回路３１は、ヒンジ１３の開閉角が９１～２７０度の範囲内か否かを判定する。制御回路３１は、開閉角度検出センサ１３ｃからの検出信号が開閉角９１～２７０度の範囲に対応する場合にステップＳ１２を肯定判定してステップＳ１５へ進み、開閉角度検出センサ１３ｃからの検出信号が開閉角２７０度を超える場合にはステップＳ１２を否定判定し、ステップＳ１３へ進む。ステップＳ１５へ進む場合は、フォトスタンドが手持ち状態もしくは使用者による操作中で、プリント写真２３ではなく液晶表示素子２０に表示される画像が観察される状態とみなす。
【0027】
ステップＳ１３において、制御回路３１は、ヒンジ１３の開閉角が２７１～３６０度未満の範囲内と判断してステップＳ１６へ進む。この場合は、フォトスタンドが載置され、プリント写真２３ではなく液晶表示素子２０に表示される画像が観察される状態とみなす。
【0028】
ステップＳ１４において、制御回路３１は、フレームモード２（フォトフレーム）への切替えを行ってステップＳ１１へ戻る。フレームモード２への切替え処理では、液晶駆動回路２０ｃへ液晶表示素子２０の表示オフを指示し、バックライト駆動回路２０ｂへバックライト２０ａの消灯を指示し、カメラ２５に対する撮影停止を指示するとともに、開閉角度検出センサ１３ｃ、および制御回路３１を除く各ブロックへの電力供給をオフするように電源１４へ指示する。なお、既にフレームモード２に切替えられている場合は、フレームモード２を維持してステップＳ１１へ戻る。
【0029】
ステップＳ１５において、制御回路３１は、ブックモードへの切替えを行ってステップＳ１１へ戻る。ブックモードへの切替え処理では、カメラ２５に対する撮影停止を指示し、カメラ２５に対する電力供給をオフ、カメラ２５を除く表示部１１内の各ブロックに対する電力供給をオンするように電源１４へ指示し、図１に示されるような液晶表示素子２０の表示態様として下記ａ１～ｆ１の内容を液晶駆動回路２０ｃおよびバックライト駆動回路２０ｂに指示する。階調特性、彩度特性、および輪郭強調特性の変更に必要な画像処理は、制御回路３１によって行われる。なお、既にブックモードに切替えられている場合には、ブックモードを維持してステップＳ１１へ戻る。
【0030】
ａ１．縦長画面としての液晶表示素子２０に通常の横長画像を再生表示させる。
ｂ１．再生表示画像の短辺方向の余白領域２１（図１）に、当該再生画像データに付加されているExif情報をテキスト表示する。
ｃ１．表示輝度（明るさ）を標準設定値にする。
ｄ１．階調特性（コントラストおよびγ特性を含む）を標準設定値にする。
ｅ１．彩度特性を標準設定値にする。
ｆ１．輪郭強調特性を標準設定値にする。
【0031】
ステップＳ１６において、制御回路３１は、フレームモード１への切替えを行ってステップＳ１７へ進む。フレームモード１への切替え処理では、表示部１１内の各ブロックに対する電力供給をオンするように電源１４へ指示し、カメラ２５に対する撮影開始を指示し、図２に示されるような液晶表示素子２０の表示態様として下記ａ２～ｆ２の内容を液晶駆動回路２０ｃおよびバックライト駆動回路２０ｂに指示する。なお、既にフレームモード１に切替えられている場合には、フレームモード１を維持してステップＳ１７へ進む。
【0032】
ａ２．横長画面としての液晶表示素子２０に通常の横長画像を再生表示させる。
ｂ２．Exif情報の表示を省略する。
ｃ２．表示輝度（明るさ）を標準設定値より高める（明るくする）。

ｄ２．階調特性の設定値を、画像を派手に表示するように標準設定値から変更する。
ｅ２．彩度特性の設定値を、画像をあざやかに表示するように標準設定値から変更する。
ｆ２．輪郭強調特性を標準設定値より強くする。
【0033】
ステップＳ１７において、制御回路３１は、カメラ２５によって得られるＡＦ（オートフォーカス）情報が所定距離より遠方に対応するか否かを判定する。制御回路３１は、カメラ２５から送信された画像データを用いて周知のＡＦ演算処理（たとえば、山登りＡＦ）を行うことにより、最至近の被写体までの距離を算出する。算出した距離が、たとえば、１ｍより遠い場合にステップＳ１７を肯定判定してステップＳ１８へ進む。制御回路３１は、算出した距離が１ｍ以下の場合にはステップＳ１７を否定判定し、ステップＳ１１へ戻る。なお、上記の測距手段は、三角測量の原理を用いた測距手段、レーザあるいは音波等を用いた測距手段、位相差方式の測距手段などであってもよい。
【0034】
ステップＳ１８において、制御回路３１は、液晶駆動回路２０ｃへさらに強調を指示してステップＳ１１へ戻る。さらなる強調の指示が既に行われている場合には、当該強調を維持してステップＳ１１に戻ればよい。さらなる強調指示では、液晶表示素子２０の表示態様として以下の内容が液晶駆動回路２０ｃに指示される。
ｄ３．階調特性を通常のフレームモード１における設定値よりもさらに派手にする。
ｅ３．彩度特性を通常のフレームモード１における設定値よりもさらにあざやかにする。
ｆ３．輪郭強調特性を通常のフレームモード１における設定値よりもさらに強くする。
【0035】
以上説明した第一の実施形態によれば、次の作用効果が得られる。
（１）開閉角度検出センサ１３ｃからの検出信号を用いて判定を行うことにより、フォトスタンドが手持ち状態もしくは操作中であって、プリント写真２３ではなく液晶表示素子２０が観察される状態とみなした場合は自動的にブックモードへ切替え（ステップＳ１５）、フォトスタンドが載置状態であって、プリント写真２３ではなく液晶表示素子２０が観察される状態とみなした場合は自動的にフレームモード１に切替え（ステップＳ１６）、フォトスタンドが載置状態であって、液晶表示素子２０ではなくプリント写真２３が観察される状態とみなした場合は自動的にフレームモード２に切替える（ステップＳ１４）ようにしたので、使用者による切替え操作を不要にできる。
（２）プリント写真２３が鑑賞されるフレームモード２では、液晶表示をオフ、バックライト２０ａを消灯、カメラ２５の撮影を停止させるとともに、開閉角度検出センサ１３ｃおよび制御回路３１を除く各ブロックへ供給する電力をオフさせるので、消費電力を大きく削減することができる。
【0036】
（３）ブックモードでは、カメラ２５に対する撮影停止を指示し、カメラ２５に対する電力供給をオフ、カメラ２５を除く表示部１１内の各ブロックに対する電力供給をオンするようにしたので、カメラ２５による電力消費を抑えることができる。
【0037】
（４）ブックモードでは、縦長画面としての液晶表示素子２０に再生画像を表示するとともに、余白領域２１に当該画像データに付随するExif情報を表示するようにしたので、使用者は、撮影日や撮影条件などの確認が容易に行える上に、スタイラス入力部材１６を用いてExif情報に情報を付加することも容易である。
【0038】
（５）ブックモードでは、液晶表示素子２０の表示特性について上記ｃ１～ｆ１の内容にしたので、メモリカード１８に記憶されている画像データによる再生画像が、表示特性を変えないでそのまま表示される。これにより使用者は、画像データが有する細かいグラデーションや解像感を観察できる。
【0039】
（６）フレームモード１では、画像データに付随するExif情報の表示を省略し、横長画面

としての液晶表示素子２０の画面いっぱいに再生画像を大きくフルサイズ表示したので、使用者は、フォトスタンドから離れた位置から表示画像を観察できる。

【0040】

（７）フレームモード１では、液晶表示素子２０の表示特性について上記ｃ２～ｆ２の内容にしたので、メモリカード１８に記憶されている画像データによる再生画像が、表示特性を変えて強調表示される。これにより使用者は、離れた位置からでも再生画像を鑑賞できる。なお、強調する内容は、上記ｃ２～ｆ２のうち少なくとも１つでもよい。

【0041】

（８）フレームモード１において、最至近の被写体までの距離を算出し、算出した距離が１ｍより遠い場合には再生画像の表示特性をさらに強調するようにしたので、使用者は、より離れた位置からでも再生画像を鑑賞できる。なお、強調する内容は、上記ｄ３～ｆ３のうち少なくとも１つでもよい。

【0042】

上記（８）において表示特性を強調する距離は１ｍに限らず、たとえば、液晶表示素子２０の大きさに応じて適宜変更してよい。たとえば、１５インチの場合は１ｍ、２０インチの場合は３ｍとする。なお、ＡＦ情報に応じた表示特性の強調処理を省略してもよく、この場合にはカメラ２５を省略できる。

【0043】

ヒンジ１３を回動軸Ｏと直交する軸Ｒ（図２）の回りにも回転可能なフリーアングルヒンジとして構成してもよい。この場合には、ねじれ角度検出センサ１３ｂが、回動軸Ｒを中心に回動する表示部１１の回動角の大きさに応じた検出信号を制御回路３１へ出力する。制御回路３１は、図２の状態（フレームモード１）から表示部１１が回動され、回動角が略１８０度（たとえば、１５０度～２１０度）になると、フレームモード１からフレームモード２へ切り替える。

【0044】

反対に、制御回路３１は、図３の状態（フレームモード２）から表示部１１が回動され、回動角が略１８０度（たとえば、１５０度～２１０度）になると、フレームモード２からフレームモード１へ切り替える。

【0045】

フレームモード１において表示輝度（明るさ）を標準設定値より高める上記ｃ２の構成は、バッテリ１４ａの残量に応じて行うようにしてもよい。バッテリ１４ａの残量が低下した場合には表示輝度を明るくしないことにより、バックライト２０ａで消費される電力を抑えてバッテリ１４ａの放電時間を延ばすことができる。

【0046】

ヒンジ１３による開閉角に応じて表示制御を切替えるようにしたが、判定角度は上記説明の通りでなくてもよく、適宜設定してよい。

【0047】

また、ヒンジ１３による開閉角が９１～２７０度の範囲内の場合にフォトスタンドが手持ち状態もしくは使用者による操作中とみなすようにしたが、加速度センサ（図４参照）などでフォトスタンドの揺動を検出し、揺動が検出される場合に当該フォトスタンドが手持ち状態もしくは使用者による操作中とみなしてもよい。手持ち状態もしくは使用者による操作中とみなした場合には、ブックモードへの切替えを行う。

【0048】

（第二の実施形態）

第二の実施形態による鑑賞装置であるフォトスタンドの使用形態について説明する。なお、第一の実施形態と共通する部分については説明を省略する。

（フレームモード１）

図６は、フレームモード１において使用されるフォトスタンド本体３０を説明する斜視図である。図６において、フォトスタンド本体３０は、液晶表示素子２０と操作キー１５とを有する面（以下表示面と呼ぶ）３０ａが使用者から観察されるように、載置台４０上

に載置される。フォトスタンド本体３０には、フォトスタンド本体３０が表示面３０ａを手前にして載置台４０上に載置されたことを検出するスイッチ３５が配設されている。使用者は、液晶表示素子２０に表示される画像を鑑賞する。なお、載置台４０の凹部４０ａは、フォトスタンド本体３０が表示面３０ａの裏面である写真保持面３０ｂを手前にして載置台４０上に載置された場合に、スイッチ３５の作動を防止するために設けられている。

【0049】

液晶表示素子２０に表示される画像は、たとえば、メモリカード１８（図８）に記憶されている複数の画像ファイルに対応する画像データによる再生画像であり、これらを順次スライドショー表示したものである。また、複数の再生画像を順次スライドショー表示する代わりに、メモリカード１８に記憶されている所定の画像（たとえば、操作キー１５からの操作信号によってあらかじめ指定されている画像）を再生表示するように構成してもよい。

【0050】

（フレームモード２）

図７は、フレームモード２において使用されるフォトスタンド本体３０を説明する斜視図である。図７において、フォトスタンド本体３０は、写真保持面３０ｂが使用者から観察されるように、載置台４０上に載置される。写真保持面３０ｂには着脱可能な透明カバー２２が設けられており、透明カバー２２とフォトスタンド本体３０の筐体との間にプリント写真２３が挟持される。使用者は、挟持されているプリント写真２３を鑑賞する。

【0051】

（フレームモード３）

フレームモード３は、フォトスタンド本体３０が手持ちされるモードである。使用者は、液晶表示素子２０に表示される画像を間近に鑑賞する。なお、操作キー１５から再生画像を指定する操作はこのモードで行われる。

【0052】

図８は、フォトスタンド本体３０の構成を説明するブロック図である。図８において、図４の構成と同一部材には同一符号を記して説明を省略する。

【0053】

加速度センサ１９はフォトスタンド本体３０の揺動を検出し、検出信号を制御回路３１へ出力する。制御回路３１は、検出信号に変化があれば揺動状態にあると判断し、検出信号に変化がなければ載置状態にあると判断する。

【0054】

検出スイッチ３５は、押圧力が加えられるとオン信号を発し、押圧力が加えられない場合にはオフ信号を発する。検出スイッチ３５から出力される信号は、フォトスタンド本体３０が載置台４０上に載置された向きを検出するための信号として制御回路３１へ入力される。制御回路３１は、オン信号が入力された場合に表示面３０ａが観察される向きにあると判断し、オフ信号が入力された場合には写真保持面３０ｂが観察される向きにあると判断する。

【0055】

以上のフォトスタンド本体３０において、液晶表示素子２０にメモリカード１８に記録されている画像データによる再生画像を表示させるには、制御回路３１がメモリカード１８から画像データを読み出し、読み出した画像データを用いて液晶表示素子２０の表示画素数に応じた表示データを生成し、生成した表示データを液晶駆動回路２０ｃへ送出するとともに、バックライト駆動回路２０ｂへ点灯指示を送る。

【0056】

制御回路３１で行われる省電力のための表示制御処理について、図９に示すフローチャートを参照して説明する。制御回路３１は、フォトスタンド本体３０にバッテリ１４ａが装填されると図９による処理を繰り返す。

【0057】

図９のステップＳ５１において、制御回路３１は、検出スイッチ３５がオンか否かを判定する。制御回路３１は、検出スイッチ３５からオン信号が入力された場合にステップＳ５１を肯定判定してステップＳ５２へ進み、オフ信号が入力された場合にはステップＳ５１を否定判定してステップＳ５３へ進む。ステップＳ５２へ進む場合は、フォトスタンド本体３０の表示面３０ａが観察される向きに載置されている状態とみなす場合であり、ステップＳ５３へ進む場合は、表示面３０ａが観察される向きと異なる（上下逆さも含む）、もしくはフォトスタンド本体３０が載置状態にないとみなす場合である。

【0058】

ステップＳ５２において、制御回路３１は、フレームモード１への切替えを行ってステップＳ５１へ戻る。フレームモード１への切替え処理では、フォトスタンド本体３０内の各ブロックに対する電力供給をオンするように電源１４へ指示し、液晶表示素子２０の表示態様として上記ａ２～ｆ２の内容を液晶駆動回路２０ｃおよびバックライト駆動回路２０ｂに指示する。なお、既にフレームモード１に切替えられている場合には、フレームモード１を維持してステップＳ５１へ戻る。

【0059】

ステップＳ５３において、制御回路３１は、加速度センサ１９からの検出信号が所定時間（たとえば、５分間）継続して変化しないか否かを判定する。制御回路３１は、入力信号に変化がなかった場合にステップＳ５３を肯定判定してステップＳ５５へ進み、入力信号に変化があった場合にはステップＳ５３を否定判定し、ステップＳ５４へ進む。ステップＳ５４へ進む場合はフォトスタンド本体３０が手持ち状態とみなす場合であり、ステップＳ３へ進む場合はフォトスタンド本体３０が載置状態とみなす場合である。

【0060】

ステップＳ５４において、制御回路３１は、フレームモード３への切替えを行ってステップＳ５１へ戻る。フレームモード３への切替え処理では、フォトスタンド本体３０内の各ブロックに対する電力供給をオンするように電源１４へ指示し、液晶表示素子２０の表示態様として上記ａ２、ｂ２、およびｃ１～ｆ１の内容を液晶駆動回路２０ｃおよびバックライト駆動回路２０ｂに指示する。なお、既にフレームモード３に切替えられている場合には、フレームモード３を維持してステップＳ５１へ戻る。

【0061】

ステップＳ５５において、制御回路３１は、フレームモード２への切替えを行ってステップＳ５１へ戻る。フレームモード２への切替え処理では、液晶駆動回路２０ｃへ液晶表示素子２０の表示オフを指示し、バックライト駆動回路２０ｂへバックライト２０ａの消灯を指示するとともに、制御回路３１、検出スイッチ３５および加速度センサ１９を除く各ブロックへの電力供給をオフするように電源１４へ指示する。なお、既にフレームモード２に切替えられている場合は、フレームモード２を維持してステップＳ５１へ戻る。

【0062】

以上説明した第二の実施形態によれば、次の作用効果が得られる。

（１）検出スイッチ３５からの信号を用いて判定を行うことにより、液晶表示素子２０が観察される向きにフォトスタンド本体３０が載置されている（プリント写真２３は観察されない）とみなした場合は自動的にフレームモード１に切替え（ステップＳ５２）、液晶表示素子２０が観察される向きと異なる向きにフォトスタンド本体３０が載置されている（プリント写真２３が観察される）とみなした場合は自動的にフレームモード２に切替え（ステップＳ５５）、液晶表示素子２０が手持ち状態とみなした場合（プリント写真２３ではなく液晶表示素子２０が観察される）は自動的にフレームモード３へ切替える（ステップＳ５４）ようにしたので、使用者による切替え操作を不要にできる。

【0063】

（２）プリント写真２３が鑑賞されるフレームモード２では、制御回路３１、検出スイッチ３５および加速度センサ１９を除くフォトスタンド本体３０内の各ブロックへの電力供給をオフするようにしたので、消費電力を大きく削減することができる。

【0064】

（３）フレームモード３では、液晶表示素子２０の表示特性について上記ａ２、ｂ２、およびｃ１～ｆ１の内容にしたので、メモリカード１８に記憶されている画像データによる再生画像が、表示特性を変えないでそのまま表示される。これにより使用者は、画像データが有する細かいグラデーションや解像感を観察できる。

【0065】

（４）フレームモード１では、液晶表示素子２０の表示特性について上記ａ２～ｆ２の内容にしたので、メモリカード１８に記憶されている画像データによる再生画像が、表示特性を変えて強調表示される。これにより使用者は、離れた位置からでも再生画像を鑑賞できる。なお、強調する内容は、上記ｃ２～ｆ２のうち少なくとも１つでもよい。

【0066】

フォトスタンド本体３０が載置台４０上に載置された向きを検出するために検出スイッチ３５を設けたが、検出スイッチ３５の代わりに姿勢センサを設け、姿勢センサの検出信号に基づいて載置された向きを判定するように構成してもよい。姿勢センサに代えて光センサを用いてもよい。

【0067】

以上の説明では、液晶表示素子として透過型の液晶パネルを例示したが、透過型液晶パネルの代わりに反射型液晶や半透過型液晶を用いて構成してもよい。また、有機ＥＬ素子などの他のタイプのディスプレイデバイスを用いて構成することもできる。

【0068】

特許請求の範囲における各構成要素と、発明を実施するための最良の形態における各構成要素との対応について説明する。表示モニタは、たとえば、液晶表示素子２０およびバックライト２０ａによって構成される。写真保持部は、たとえば、透明カバー２２によって構成される。表示制御手段は、たとえば、制御回路３１によって構成される。角度検出手段は、たとえば、開閉角度検出センサ１３ａ（ねじれ角度検出センサ１３ｂ）によって構成される。載置方向検出手段は、たとえば、検出スイッチ３５によって構成される。揺動検出手段は、たとえば、加速度センサ１９によって構成される。なお、以上の説明はあくまで一例であり、発明を解釈する上で、上記の実施形態の構成要素と本発明の構成要素との対応関係に何ら限定されるものではない。

【図面の簡単な説明】

【0069】

【図1】本発明の第一の実施形態によるフォトスタンドを説明する三面図である。

【図2】フォトスタンドのフレームモード１における使用形態を例示する図である。

【図3】フォトスタンドのフレームモード２における使用形態を例示する図である。

【図4】フォトスタンドの構成を説明するブロック図である。

【図5】制御回路で行われる表示制御処理について説明するフローチャートである。

【図6】第二の実施形態によるフォトスタンドを説明する斜視図である。

【図7】第二の実施形態によるフォトスタンドを説明する斜視図である。

【図8】フォトスタンド本体の構成を説明するブロック図である。

【図9】制御回路で行われる表示制御処理について説明するフローチャートである。

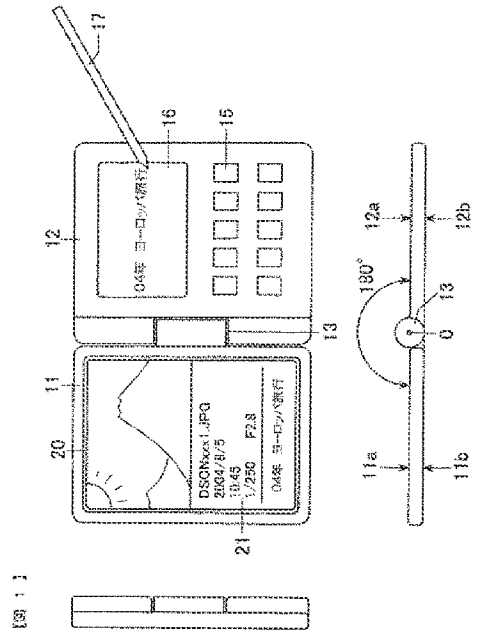
【符号の説明】

【0070】

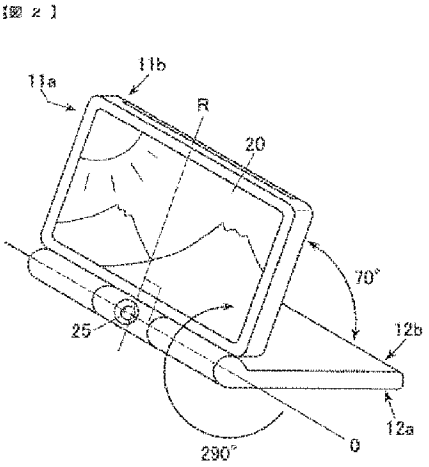
１１…表示部
１１ａ…表示面
１１ｂ…裏面
１２…操作部
１２ａ…操作面
１２ｂ…裏面
１３…ヒンジ
１３ａ…開閉角度検出センサ
１３ｂ…ねじれ角度検出センサ

１４…電源
１４ａ…バッテリ
１５…操作キー
１６…スタイラス入力部材
１８…メモリカード
１９…加速度センサ
２０…液晶表示素子
２０ａ…バックライト
２０ｂ…バックライト駆動回路
２０ｃ…液晶駆動回路
２２…透明カバー
２３…プリント写真
２５…カメラ
３０…フォトスタンド本体
３１…制御回路
３５…検出スイッチ
Ｏ，Ｒ…回動軸

【図1】

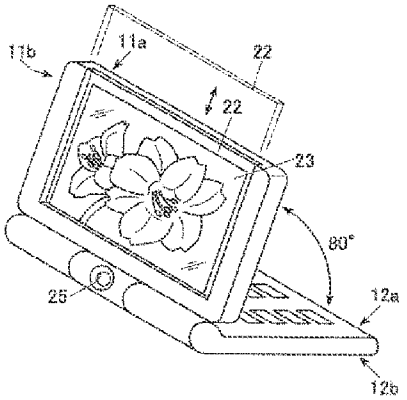


【図2】

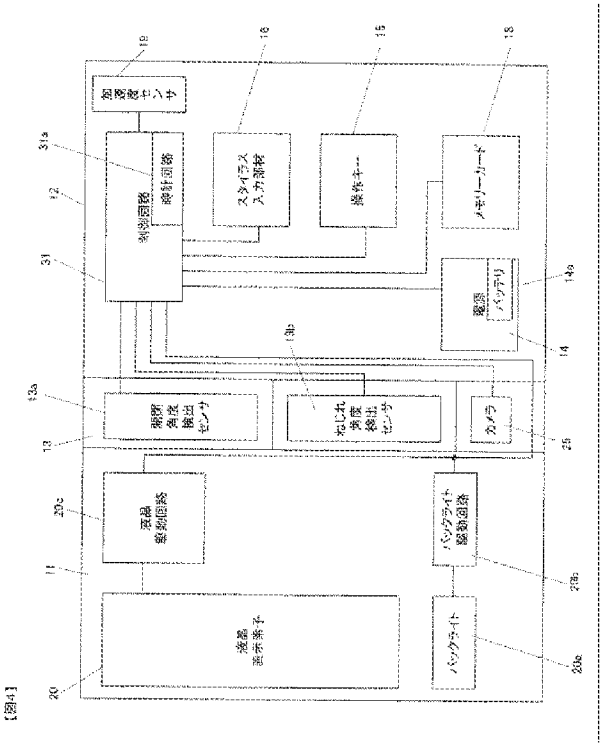


【図3】

【図３】

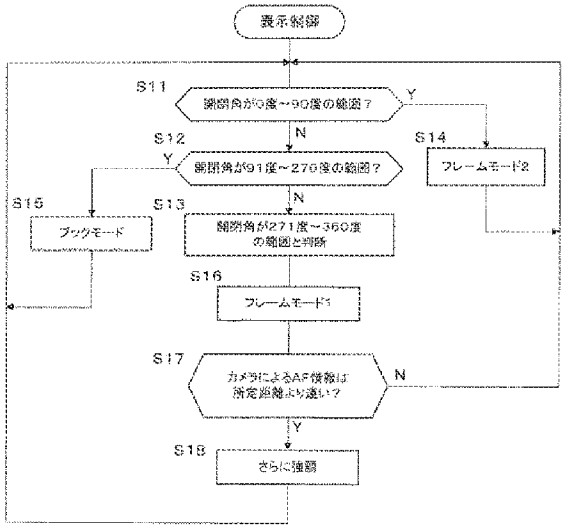


【図4】



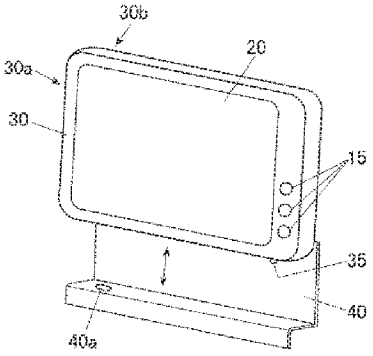
【図5】

【図５】



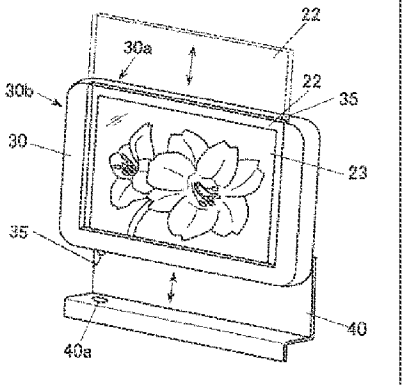
【図6】

【図６】



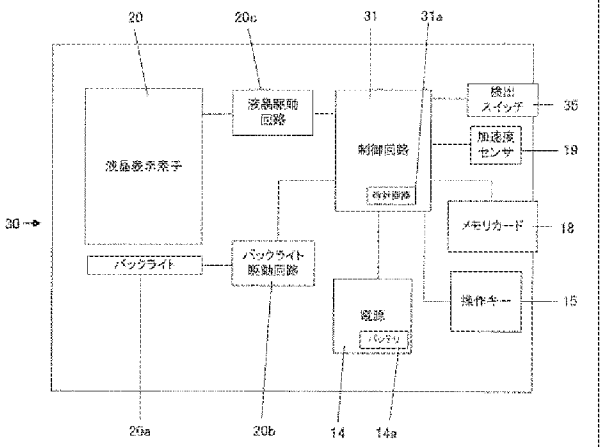
【図7】

【図７】



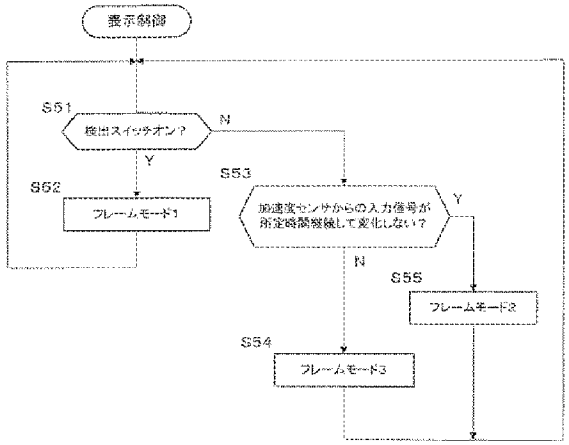
【図8】

【図8】



【図9】

【図9】



(19) **KOREAN INTELLECTUAL PROPERTY OFFICE**

KOREAN PATENT ABSTRACTS

(11)Publication number: **1020000036647 A**

(43)Date of publication of application: **05.07.2000**

(21)Application number: **1020000015117**

(22)Date of filing: **24.03.2000**

(30)Priority: **..**

(51)Int. Cl **G06F 17/30**

(71)Applicant: **ITCEN COMMUNICATION CO., LTD.**

(72)Inventor: **YOO, U YEONG**

(54) **SEARCH METHOD USING IMAGE INFORMATION**

(57) Abstract:

PURPOSE: A search method using image information is provided for a convenient search technique by enabling users to instinctively find necessary information among searched results of search engines displayed in image. CONSTITUTION: A search method using image information is consisted of the three steps. A first step is for a user to connect to a site of search engine so as to search information. A second step is for the user to input query. A third step is for the search engine to display relevant image information after finding search results related to the query. A home page or a web page of a web site displayed as a search result, and specific icon, banner, or banner or icon using motion picture can be the image information. The home page is displayed as a small size icon made of itself and so, users can instinctively know whether the home page contains the needed information or not by seeing the icon. The site of a search engine should build an image database about information to be displayed as search result in advance, and shows image information, sometimes with text information, in case that there is a search request.

COPYRIGHT 2000 KIPO

Legal Status

(19) 대한민국특허청(KR)
(12) 공개특허공보(A)

(51) Int. Cl.[7]
G06F 17/30

(11) 공개번호 특2000-0036647
(43) 공개일자 2000년07월05일

(21) 출원번호 10-2000-0015117
(22) 출원일자 2000년03월24일

(71) 출원인 주식회사 메지정보기술 유우영
서울특별시 용산구 한강로2가 83-4
(72) 발명자 유우영
서울특별시성북구길음동1070-7
(74) 대리인 고영회, 황용범

심사청구 : 있음

(54) 이미지 정보를 이용한 검색방법

요약

본 발명은 인터넷상에서 검색엔진을 이용하여 원하는 정보를 검색한 경우, 검색결과를 단순한 텍스트가 아닌 이미지 정보를 디스플레이 함으로써 시각적 효과에 의해 보다 효율적인 검색이 가능한 이미지 검색 시스템에 관한 것이다.

본 발명의 이미지 정보를 이용한 검색방법은 인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고, 상기 사용자가 검색하고자 하는 검색어를 입력하고, 검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하고, 출력된 이미지 정보 중의 어느 하나를 클릭하여 해당 웹페이지로 접속하는 단계로 구성된다. 상기 이미지 정보는 해당 웹사이트의 홈페이지나 특정의 웹페이지가 될 수도 있고, 특정한 아이콘이나 배너 또는 동영상을 이용한 배너나 아이콘이 될 수도 있다.

본 발명의 이미지 정보를 이용한 검색방법을 이용할 경우, 단순한 텍스트가 아닌 이미지 정보를 출력함으로써 시각적 효과에 의해 검색결과를 보다 신속하고 직관적으로 파악할 수 있어 검색이 용이한 장점이 있다.

대표도

도1

명세서

도면의 간단한 설명

도1은 본 발명의 이미지 정보를 이용한 검색방법에 의해 출력된 검색결과의 일 예이다.

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 이미지 검색 시스템이다. 보다 구체적으로, 인터넷상에서 검색엔진을 이용하여 원하는 정보를 검색한 경우, 검색결과를 단순한 텍스트가 아닌 이미지 정보를 디스플레이 함으로써 시각적 효과에 의해 보다 효율적인 검색이 가능한 이미지 검색 시스템에 관한 것이다.

인터넷상에서 원하는 정보를 찾기 위해 통상적으로 검색엔진을 이용한다. 사용자가 특정의 검색엔진 사이트에 접속한 후 찾고자 하는 정보와 관련된 키워드를 입력하면 검색엔진에서 키워드와 관련된 정보를 찾아서 화면상에 출력하게 된다. 그러나, 종래의 검색엔진은 검색결과를 단순히 텍스트로만 출력하고 있으며, 출력결과도 상기 검색엔진에 등록된 문장이나, 웹페이지의 타이틀과 같은 정보만을 출력할 뿐이다.

그러나, 최근에는 인터넷의 이용자가 폭발적으로 증가하고 인터넷상의 정보 또한 폭발적으로 증가하면서 검색엔진을 이용하여 자료를 검색한다는 것도 그다지 용이하지 않게 되었다. 즉, 내가 원하는 정보만을 검색할 수 있어야 하나, 너무 많은 검색결과가 출력됨으로써 정작 내가 원하는 정보를 찾기가 쉽지 않다. 또한, 텍스트로 출력된 검색결과만을 보고서 내가 원하는 정보인지를 알기 어려운 경우가 많으며 일일이 모든 검색결과를 조회해 볼 수밖에 없고 원하는 정보를 찾는데 많은 시간과 노력을 필요로 하게

HP Inc. - Exhibit 1005 - Page 2396

된다.

발명이 이루고자하는 기술적 과제

본 발명의 목적은 검색엔진의 검색결과를 이미지 정보로 출력함으로써 사용자가 검색결과 중에서 자신이 원하는 정보를 직관적으로 찾을 수 있어 검색이 용이한 검색방법을 제공하는 것이다.

발명의 구성 및 작용

본 발명의 이미지 정보를 이용한 검색방법은 인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고, 상기 사용자가 검색하고자 하는 검색어를 입력하고, 검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하는 단계로 구성된다. 상기 이미지 정보는 해당 웹사이트의 홈페이지나 특정의 웹페이지가 될 수도 있고, 특정한 아이콘이나 배너 또는 동영상을 이용한 배너나 아이콘이 될 수도 있다.

인터넷상에서 정보를 검색하고자 하는 사용자는 인터넷을 통해 특정 검색엔진 사이트에 접속한다. 상기 검색엔진 사이트에서 자신이 찾고자 하는 정보와 관련된 검색어를 입력하여 관련 정보를 출력할 것을 요청한다. 검색엔진 사이트에서는 입력된 검색어와 관련된 정보를 검색하여 다시 사용자에게 전송하여 사용자의 단말기로 출력하며, 이러한 일련의 검색엔진을 이용한 검색과정은 통상적으로 사용하는 것이다. 다만, 본 발명에서는 검색결과를 단순한 텍스트가 아닌 이미지 정보로 출력한다는 점에서 차이가 있다. 검색엔진 사이트에서는 검색결과로써 출력되기 위한 정보에 대한 이미지 데이터베이스를 사전에 구축해 놓으며, 해당 정보에 대한 검색요청이 있을 경우 상기 이미지 정보를 출력한다. 출력시 이미지와 함께 텍스트 정보를 출력할 수도 있다.

상기 이미지 정보는 해당 웹사이트의 홈페이지 화면이 될 수도 있고, 특정 아이콘이나 배너가 될 수도 있다. 웹사이트 홈페이지의 경우 사용자들이 상기 웹사이트 홈페이지만을 보더라도 그 웹사이트에서 어떠한 정보를 제공하고 있는지, 그 웹사이트가 사용자가 찾는 정보를 갖고 있는지 등에 대해서 직관적으로 알 수 있기 때문에 웹사이트 홈페이지 화면을 작은 크기로 아이콘화하여 디스플레이하는 것이다.

인터넷 웹사이트상에는 광고용으로 많은 아이콘이나 배너들이 링크되어 있다. 이러한 아이콘이나 배너들은 해당 아이콘이나 배너가 전달하고자 하는 내용을 그래픽으로 또는 동영상으로 함축적으로 표현하고 있어 사용자가 상기 아이콘이나 배너만을 보더라도 전달하고자 하는 내용을 직관적으로 파악할 수 있다. 따라서, 검색결과로써 이러한 아이콘이나 배너를 출력할 경우 사용자가 상기 아이콘이나 배너로부터 출력결과에 대한 내용을 직관적으로 파악할 수 있어 정보의 검색이 한결 용이해진다.

도 1은 본 발명의 이미지 정보를 이용한 검색방법에 의해 출력된 검색결과의 예이다. 검색결과는 이미지 정보와 텍스트가 함께 디스플레이되고 있으며, 이미지 정보는 검색결과에 해당하는 웹사이트의 홈페이지를 축소하여 디스플레이하고 있다. 이미지 정보와 함께 간단한 텍스트를 같이 부가함으로써 이미지 정보만으로 전달하기 어려운 정보를 함께 전달하며, 해당 웹사이트의 운영자나 소유자에 대한 정보와 해당 웹사이트에서 제공하는 정보 대한 간략한 요약정보가 디스플레이된다.

사용자는 검색결과중에서 자신이 원하는 정보가 있을 경우 그 이미지 정보나 텍스트 정보를 클릭하면 해당하는 웹사이트로 접속된다.

발명의 효과

본 발명의 이미지 정보를 이용한 검색방법을 이용할 경우, 단순한 텍스트가 아닌 이미지 정보를 출력함으로써 시각적 효과에 의해 검색결과를 보다 신속하고 직관적으로 파악할 수 있어 검색이 용이한 장점이 있다.

(57) 청구의 범위

청구항 1

인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고;

상기 사용자가 검색하고자 하는 검색어를 입력하고;

검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하고; 그리고,

사용자는 출력된 이미지 정보중의 어느 하나를 클릭하여 해당 웹페이지로 접속하는 단계;

로 구성되는 것을 특징으로 하는 이미지 정보를 이용한 검색방법.

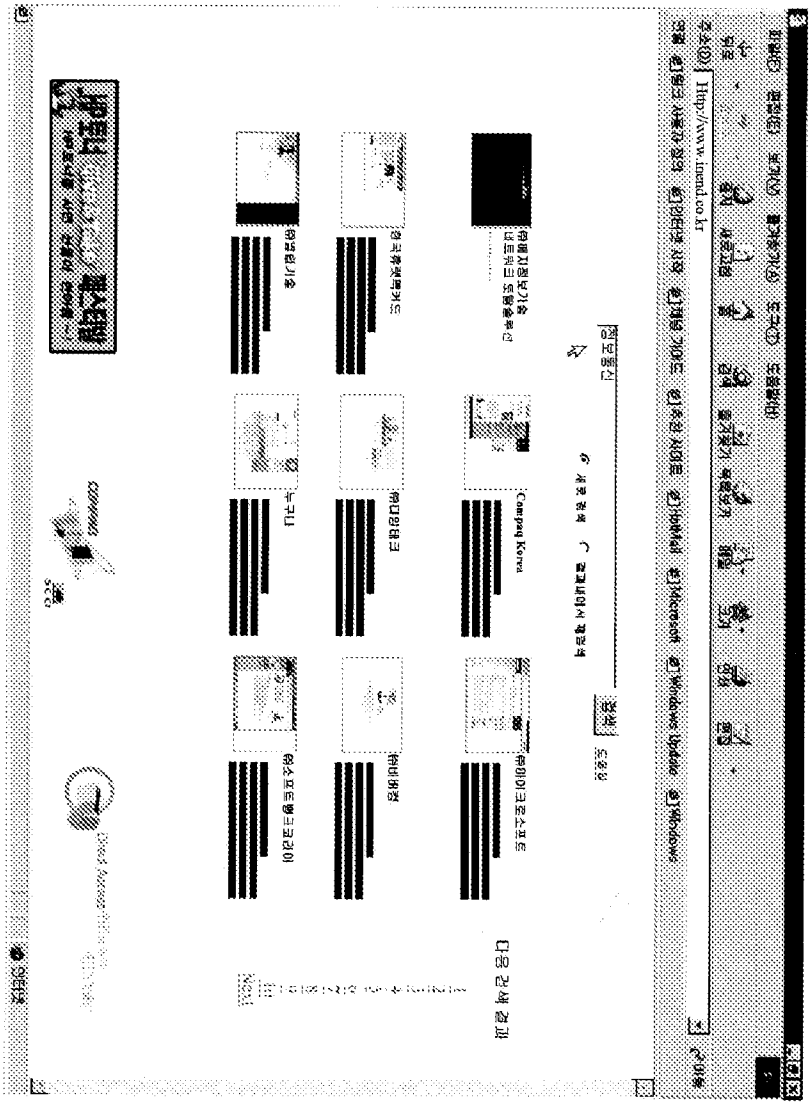
청구항 2

제1항에서, 상기 이미지 정보는 웹사이트의 홈페이지 화면, 특정 웹페이지 또는 그래픽 또는 동영상을 이용한 아이콘 또는 배너 중의 어느 하나인 것을 특징으로 하는 이미지 정보를 이용한 검색방법.

도면

HP Inc. - Exhibit 1005 - Page 2397

도면1



HP Inc. - Exhibit 1005 - Page 2398

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 1/16, H05K 7/12

A1

(11) International Publication Number: WO 95/24007

(43) International Publication Date: 8 September 1995 (08.09.95)

(21) International Application Number: PCT/US95/02468

(22) International Filing Date: 28 February 1995 (28.02.95)

(30) Priority Data:
08/204,540 2 March 1994 (02.03.94) US

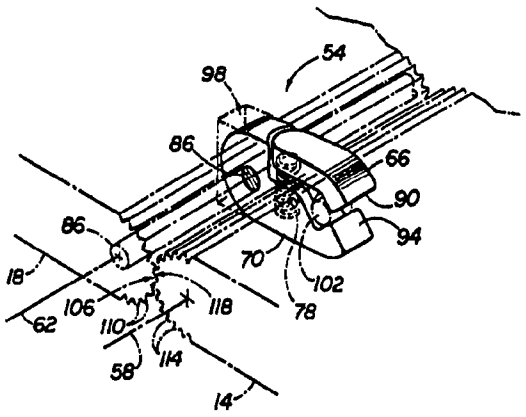
(71)(72) Applicant and Inventor: LANE, Jeffrey, P. [US/US]; 395 Otter Creek Court, Atlanta, GA 30328 (US).

(74) Agents: PRATT, John, S. et al.; Kilpatrick & Cody, Suite 2800, 1100 Peachtree Street, Atlanta, GA 30309-4530 (US).

(81) Designated States: AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MW, MX, NO, NZ, PL, RO, RU, SI, SK, TJ, TT, UA, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: MODULAR, RECONFIGURABLE DEVICES



(57) Abstract

A modular, reconfigurable system designed to permit coupling and decoupling of devices or components (14, 18) of varying types, including portable computers or other electrical devices, is disclosed. The system also is adapted to rotate about two adjacent, parallel axes (58, 62) permitting components to be positioned throughout approximately 0-360 degrees. The components (14, 18) are coupled by a connector (54).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	**GB**	United Kingdom	**MR**	Mauritania
AU	Australia	**GE**	Georgia	**MW**	Malawi
BB	Barbados	**GN**	Guinea	**NE**	Niger
BE	Belgium	**GR**	Greece	**NL**	Netherlands
BF	Burkina Faso	**HU**	Hungary	**NO**	Norway
BG	Bulgaria	**IE**	Ireland	**NZ**	New Zealand
BJ	Benin	**IT**	Italy	**PL**	Poland
BR	Brazil	**JP**	Japan	**PT**	Portugal
BY	Belarus	**KE**	Kenya	**RO**	Romania
CA	Canada	**KG**	Kyrgystan	**RU**	Russian Federation
CF	Central African Republic	**KP**	Democratic People's Republic of Korea	**SD**	Sudan
CG	Congo			**SE**	Sweden
CH	Switzerland	**KR**	Republic of Korea	**SI**	Slovenia
CI	Côte d'Ivoire	**KZ**	Kazakhstan	**SK**	Slovakia
CM	Cameroon	**LI**	Liechtenstein	**SN**	Senegal
CN	China	**LK**	Sri Lanka	**TD**	Chad
CS	Czechoslovakia	**LU**	Luxembourg	**TG**	Togo
CZ	Czech Republic	**LV**	Latvia	**TJ**	Tajikistan
DE	Germany	**MC**	Monaco	**TT**	Trinidad and Tobago
DK	Denmark	**MD**	Republic of Moldova	**UA**	Ukraine
ES	Spain	**MG**	Madagascar	**US**	United States of America
FI	Finland	**ML**	Mali	**UZ**	Uzbekistan
FR	France	**MN**	Mongolia	**VN**	Viet Nam
GA	Gabon				

MODULAR, RECONFIGURABLE DEVICES

FIELD OF THE INVENTION

This invention relates to modular devices and more particularly to reconfigurable portable computers and other electronic or similar apparatus.

BACKGROUND OF THE INVENTION

Technological advances in the computing, electronics, and telecommunications industries have created devices useful to an ever-expanding number of users in a wider variety of operating situations. Increased memory capacities, processing speeds, and telecommunications capabilities of "portable" computers, for example, have combined with decreased size and weight to contribute to greater use of these devices. The advent of multi-media apparatus and component commonality has also augmented the usefulness of many electronic devices, as has rapid improvement in quality and capability of individual components. These rapid improvements to components of an overall device have contributed to consumers desiring periodically to upgrade their systems merely by purchasing the improved components. Consumers also appear eager for access to reconfigurable components to meet the requirements of the varied locations and situations in which the components operate. Many existing electronic systems have components which can neither be decoupled nor reconfigured, however, and thus fail to address these and other consumer needs.

U.S. Patent No. 5,103,376 to Blonder (incorporated herein in its entirety by this reference), for example, provides a laptop computer having keyboard and display portions whose

HP Inc. - Exhibit 1005 - Page 2401

positions relative to a user can be reversed. The computer includes a pair of dual-pivoting hinges, each capable of rotation about respective pins, to permit the reversal. According to the Blonder patent, however, the reversing portions are designed merely to facilitate information entry via both the keyboard and a graphics pen associated with the computer. As a result, neither the keyboard nor display is detachable from the remainder of the device, and their reconfigurability is severely limited.

U.S. Patent No. 5,034,858 to Kawamoto, et al., also incorporated herein in its entirety by this reference, discloses electronic equipment having a separable keyboard. The equipment also includes a display that can be both rotated about an axis and tilted into place about a perpendicular axis for use. As with that disclosed in the Blonder patent, however, the display cannot be detached from the main equipment body. Additionally, neither the Blonder nor Kawamoto patent contemplates rotation about two adjacent, parallel axes to permit reconfiguration of components throughout approximately 0-360°.

SUMMARY OF THE INVENTION

The present invention, by contrast, provides a modular, reconfigurable system designed to permit mechanical (and, if necessary, electrical) coupling and decoupling of devices or components of varying types. Because system elements can be decoupled, consumers can upgrade individual components as desired without having to purchase an entirely new system. Component redundancy can also be decreased, as a single electronic display, for example, can be coupled for use not only with computers but with appropriate audio-visual or

HP Inc. - Exhibit 1005 - Page 2402

telecommunications equipment as well. In essence, the invention permits a user to "mix and match" electronic or other devices and components as needed.

The innovative system also is adapted to rotate about at least two adjacent, parallel axes. Consequently, the present invention permits components to be repositioned about each other throughout approximately 0-360°, allowing use of a visual display not only in a standard laptop computer format but also in formats facilitating use of the display as, for example, a television or telecommunications monitor or a pen-based computing tablet.

It is therefore an object of the present invention to provide a system composed of reconfigurable modules.

It is another object of the present invention to provide a modular system permitting coupling and decoupling of devices and components, particularly electronic devices and components.

It is also an object of the present invention to provide a system having two adjacent, parallel axes of rotation to facilitate component rotation about approximately 0-360°.

Other objects, features, and advantages of the present invention will become apparent with reference to the remainder of the written portion and the drawings of this application.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an exemplary modular device incorporating the technology of the present invention shown in a nominally "open" position.

FIG. 2 is a perspective view of the device of FIG. 1 shown in a nominally "closed" position.

HP Inc. - Exhibit 1005 - Page 2403

FIG. 3 is a fragmentary perspective view of a connector of the present invention.

FIG. 4 is a cross-sectional view of the connector of FIG. 3.

FIGS. 5-9 are a series of fragmentary side cross-sectional views of the device of FIG. 1 shown in various configurations.

FIG. 10 is a perspective view of the device of FIG. 1 having a support.

FIG. 11 is an exploded perspective view of a mechanism connected to the support of FIG. 10.

FIGS. 12-13 are a series of side elevational views of the device of FIG. 10 shown in various configurations.

FIG. 14 is a perspective view of an alternate coupling mechanism forming part of the present invention.

FIG. 15 is a perspective view of an alternate exemplary modular device incorporating the technology of the present invention shown in a nominally "open" position.

FIG. 16 is a perspective view of the device of FIG. 15 shown in a nominally "closed" position.

FIG. 17 is a perspective view of the device of FIG. 15 illustrating a coupling mechanism.

FIG. 18 is a perspective view of the device of FIG. 15 illustrating an alternate coupling mechanism.

FIGS. 19-28 are a series of side elevational views of an exemplary modular device incorporating the technology of the present invention shown in various configurations.

FIG. 29 is an elevational view of a position indicator that can be incorporated in the modular devices of the present invention.

HP Inc. - Exhibit 1005 - Page 2404

DETAILED DESCRIPTION

FIGS. 1-2 illustrate generally an exemplary modular device 10 consistent with the present invention. As shown in FIG. 1, device 10 may be a portable computer comprising first module 14 (e.g. a keyboard) and second module 18 (e.g. a display). Also appearing in FIG. 1 are disk 22, a magnetic storage device which may be loaded into port 26, and compact disc 30 (which may be loaded into another port not shown in FIG. 1). An electronic mouse or other pointer 32 adapted to convert manual pressure to electronic signals capable of moving a cursor about the visual display 35 provided by second module 18 may also be included, as may video camera 34. FIG. 1 illustrates device 10 in a nominally "open" position permitting access both to visual display 35 and keys 36, while FIG. 2 shows device 10 in a nominally "closed" position. Torque-generating device 37, such as a spring, is designed to retain second module 18 in a selected position relative to first module 14 when device 10 is in use.

Also shown in FIG. 1 (and FIG. 29) as part of second module 18 is position-indicating mechanism 38. Mechanism 38 includes a moveable conductor 42 (such as liquid mercury) in a spherical cavity 46 having contacts 50 spaced about its periphery. Conductor 42 responds via gravitational forces to spatial reorientation of mechanism 38 by moving relative to contacts 50 (to contact at least one contact 50 to close its respective circuit). Including mechanism 38 as a component of either first or second modules 14 or 18 would thus permit it to indicate the spatial orientation of that module. Doing so would also allow mechanism 38 to assist device 10 (and its associated software) in determining, for example, whether the information

HP Inc. - Exhibit 1005 - Page 2405

to appear on visual display 35 should be in "landscape" or "portrait" position as the visual display 35 is spatially configured, the direction in which to move a curser of second module 18 when a visual display, or whether to render keys 36 of first module 14 inoperable when unused.

One or more connectors 54 operate to attach first and second modules 14 and 18. As shown in FIG. 3, for example, first module 14 defines a primary axis of rotation 58, while second module 18 defines a corresponding primary axis of rotation 62 parallel to axis 58. In some embodiments of device 10, the size of connector 54 is designed to be approximately equal to the combined thicknesses of first module 14 and second module 18. As a result, in these embodiments the size of connector 54 is significantly less than the length of either first module 14 or second module 18, placing parallel axes 58 and 62 essentially adjacent each other. Connector 54 mechanically couples first module 14 and second module 18 and can provide electrical coupling of the modules as well. Alternatively, first and second modules 14 and 18 may be coupled electrically using conventional means.

FIGS. 3-4 detail connector 54 of the present invention. Connector 54 comprises (moveable) leg 66, (fixed) leg 70, pin 74, and spring 78 and defines tube 82 for permanently receiving axle 86 embedded within second module 18. Leg 66 is designed to pivot about pin 74, with its flared end 90 biased by spring 78 toward a similar flared end 94 of leg 70. As a consequence, legs 66 and 70 of connector 54, when fitted into slots 98 of first module 14, snap, or clamp, onto axle 102 of that module and thereby connect first and second modules 14 and 18. The camming action of connector 54

HP Inc. - Exhibit 1005 - Page 2406

forces axles 82 and 94 toward each other, facilitating attachment of the modules.

Edge 106 of second module 18 may also include teeth 110 which are complementary to and designed to engage corresponding teeth 114 of edge 118 of first module 14. If present, teeth 110 and 114 permit more consistent rotation of first and second modules 14 and 18. Engaging the teeth 110 and 114 also permits use of a torque-generating device 37 in only one of first and second modules 14 and 18, providing a commensurate savings in space, weight, and cost. Use of teeth 110 and 114 may also reduce stress on connectors 54, stabilizing device 10 when in use by supporting the upper of first or second modules 14 or 18 along a greater length of the lower of axes 58 or 62. Teeth 110 and 114 additionally provide a convenient hand-grip surface for carrying first and second modules 14 and 18 when device 10 is configured as in FIG. 2.

Although slots 98 are shown in FIGS. 1-3 as formed at edge 118 of first module 14, they may additionally or alternatively appear along other edges or portions of first module 14 (e.g. slots 98A of FIG. 1). If so placed, the slots would permit device 10 to be configured in other ways, including, for example, as illustrated in FIGS. 22-23. Connector 54 could, moreover, be permanently connected to axle 102 rather than axle 86 or not permanently connected to either.

FIGS. 5-9 show first and second modules 14 and 18 of device 10 in various configurations accessible using the present invention. FIG. 5 shows second module 18 in an unrotated, or nominally closed, position relative to first module 14, placing the first and second modules 14 and 18 in parallel planes respectively intersecting axes 58 and 62. This position protects visual display

HP Inc. - Exhibit 1005 - Page 2407

35 and keys 36 from damage by securing them within the interior of device 10. FIG. 6, by contrast, illustrates second module 18 rotated about axis 62 to form an obtuse angle relative to first module 14 (described above as a nominally "open" position), positions representative of those assumed by the displays and keyboards of many operating laptop computers.

FIG. 7 illustrates an alternative positioning, in which second module 18 has been rotated approximately 180° relative to first module 14 to expose visual display 35. In FIG. 8, the rotation of second module 18 exceeds 270°, useful particularly when only visual display 35 need be accessible. FIG. 9, finally, shows second module 18 rotated approximately 360° relative to first module 14 (or vice-versa), exposing visual display 35 for use as, for example, a tablet for pen-based computing. Providing an upper surface 120 for keys 36 of first module 14 essentially flush with (or not protruding beyond) its upper surface 121 reduces the likelihood of damage to keys 36 in this configuration.

FIG. 10 details support 122 that may be incorporated into device 10. Support 122 rotates away from second module 18 and is held in position by mechanism 126 either to brace second module 18 (see FIG. 12) or elevate, for instance, a keyboard used as first module 14 (see FIG. 13) to facilitate information or data entry. By positioning support 122 other than at edge 106 of second module 18, the edge 106 continues to be available for locating ports, jacks, or other useful or necessary devices. If present, knobs 128 of support 122 may be fitted into recesses 130, with key 134, spring 138, and tension-adjustment screw 142 of mechanism 126 utilized to retain them in place. As shown in FIG.

HP Inc. - Exhibit 1005 - Page 2408

11, key 134 includes radial teeth 146 that engage similar teeth 150 on knob 128, with protrusion 154 of key 134 fitting into keyway 158 for rotational stability.

FIG. 14 details an alternative connector 162, such as a ball joint, of the present invention. Unlike connector 54, connector 162 permits rotation about an axis perpendicular to axes 58 and 62. This in turn increases the versatility of device 10, allowing a wider variety of possible configurations to be assumed without having to detach first and second modules 14 and 18.

FIGS. 15-19 illustrate more of the modular, reconfigurable nature of devices made according to the present invention. Shown in FIGS. 15-19 is device 210, which may include first, second, and third modules 214, 218, and 222, respectively. First and second modules 214 and 218 may be connected as described earlier or using either of the mechanical connectors 226 and 230 shown in FIGS. 17 and 18. If mechanical connectors 226 or 230 are employed, electrical connections between first and second modules 214 and 218 may be made using conventional ribbon cable 234, for example. Third module 222 may be connected to either first module 214 or second module 218 (and switched back and forth as desired), with slots 238 along edges 242 and 246 receiving connectors 250. Although keys 254 appear on first module 214 and visual display 258 is shown on second module 218, either or both modules could be electronic tablets, videotape or compact disc players, radios, television receivers, video game players, or other entertainment, educational, or scientific instrumentation modules. Among other devices conceivable as first, second, and third modules 214, 218, and 222 are communications modules

HP Inc. - Exhibit 1005 - Page 2409

(including cellular telephones, portable facsimile, copying, scanning, and printing devices, digital dictaphones), digital still or video cameras, digital transducers and data recorders, bar-code readers, and other electronic equipment. FIG. 16 illustrates recess 260 formed when device 210 is nominally "closed," which provides an area to which a user can apply pressure when opening the device 210 manually.

FIGS. 19-28 detail various couplings of the first and second modules 14 and 18 (or 214 and 218) useful with the present invention. In the nominally closed position of FIG. 19, second module 18 is unrotated relative to first module 14, protecting visual display 35 of second module 18 from damage by securing it within the interior of device 10. FIG. 27 shows second module 18 rotated approximately 360° relative to first module 14 (or vice-versa), exposing visual display 35 for use as, for example, a tablet for pen-based computing. FIG. 21 illustrates an alternative positioning, in which second module 18 has been rotated approximately 180° relative to first module 14 to expose visual display 35. Other alternative positionings involving rotation of second module 18 about axis 62 are detailed in FIG. 20 (in which second module 18 is rotated more than 90° to provide a standard "desktop" orientation) and in FIGS. 25 and 28 (in which second module 18 is rotated more than 270°, when only the visual display 35 need be accessible).

FIG. 22, 23, and 24 detail additional alternative positionings of first module 14 and second module 18. Detaching connector 54 from first module 14 and reattaching it about a secondary axis 262 of that module (if first module 14 is adapted for such axis to be present) permits

HP Inc. - Exhibit 1005 - Page 2410

device 10 to be configured as shown in FIG. 22, while thereafter detaching connector 54 from second module 18 and reattaching it about secondary axis 266 (again if that module is adapted to permit attachment about the axis) reconfigures device 10 as illustrated in FIG. 23. Similarly, reattaching connector 54 about secondary axis 266 of second module 18 while retaining its connection about axis 58 of first module 14 configures device 10 according to FIG. 24. FIG. 26, finally, illustrates the detachable mechanical connection between first module 14 and second module 18, permitting visual display 35 to be visible and device 10 to operate with merely an electrical connector 270 between the first and second modules 14 and 18.

The foregoing is provided for purposes of illustrating, explaining, and describing embodiments of the present invention. Modifications and adaptations to these embodiments will be apparent to those skilled in the art and may be made without departing from the scope or spirit of the invention.

HP Inc. - Exhibit 1005 - Page 2411

I claim:

1. A modular, reconfigurable system comprising:
   a. a first electronic module defining a first axis of rotation;
   b. a second electronic module defining a second axis of rotation parallel to the first axis of rotation;
   c. means for connecting the first and second electronic modules; and
   d. means for retaining the second electronic module in a selected position relative to the first electronic module.

2. A system according to claim 1 in which the connecting means intersects the first and second axes of rotation and permits rotation of the second electronic module approximately 0-360° about the first electronic module.

3. A system according to claim 1 further comprising means for hindering the first electronic module from rotating about the first axis of rotation.

4. A system according to claim 1 further comprising means for hindering the second electronic module from rotating about the second axis of rotation.

5. A system according to claim 1 in which the connecting means comprises means for detachably connecting the first and second electronic modules.

HP Inc. - Exhibit 1005 - Page 2412

6. A system according to claim 1 in which the first electronic module defines a secondary axis of rotation.

7. A system according to claim 6 in which the connecting means intersects the secondary axis of rotation.

8. A system according to claim 1 in which:
   a. the first electronic module comprises a curved surface radial to the first axis of rotation, which curved surface includes a plurality of first teeth; and
   b. the second electronic module comprises a curved surface radial to the second axis of rotation, which curved surface includes a plurality of second teeth complementary to and engaging the first teeth.

9. A system according to claim 1 in which the second electronic module comprises an integral position indicator, which position indicator comprises:
   a. a fluid conductor;
   b. a housing for the conductor, which housing:
      i. is adapted to permit the conductor to move responsive to reorientation of the second electronic module; and
      ii. comprises a plurality of electrical contacts, each adapted to contact the fluid conductor as a function of the orientation of the second electronic module.

HP Inc. - Exhibit 1005 - Page 2413

10. A system according to claim 1 further comprising means, connected to the second electronic module, for supporting the first electronic module.

11. A system according to claim 10 in which the supporting means comprises:
    a. an extension adapted to rotate about the second axis of rotation; and
    b. means for retaining the extension in a selected position.

12. A system according to claim 1 in which the first electronic module:
    a. defines a surface; and
    b. comprises a keyboard having a plurality of keys, each key having:
        i. an upper surface not protruding beyond the surface of the first electronic module; and
        ii. a recessed portion for accommodating a fingertip of a user.

13. A system according to claim 12 in which the first electronic module further comprises an electronic cursor-moving device comprising:
    a. an upper surface flush with the surface of the first electronic module, for receiving pressure from the fingertip of the user; and
    b. means for translating the fingertip pressure into motion of an electronic cursor.

HP Inc. - Exhibit 1005 - Page 2414

14. A system according to claim 1 further comprising means for selectively hindering the first electronic module from rotating about the first axis of rotation and in which the connecting means:
    a. intersects the first and second axes of rotation; and
    b. comprises means for detachably connecting the first and second electronic modules.

15. A system according to claim 14 in which the first electronic module defines a secondary axis of rotation and the connecting means intersects the secondary axis of rotation.

16. A system according to claim 14 further comprising means, connected to the first electronic module, for supporting the first electronic module, which supporting means comprises:
    a. an extension adapted to rotate about the first axis of rotation; and
    b. means for retaining the extension in a selected position.

17. A system according to claim 1 in which (1) the second electronic module defines a third axis of rotation perpendicular to the first and second axes of rotation and (2) the connecting means permits rotation of the second electronic module about the third axis of rotation.

18. A system according to claim 1 in which the connecting means comprises:

HP Inc. - Exhibit 1005 - Page 2415

a. a fixed leg connected to the second electronic module and having a length and a recess;
b. a spring positioned within the recess;
c. a pin spanning at least a portion of the length of the fixed leg; and
d. a moveable leg contacted by the spring and adapted to pivot about the pin.

19. A system according to claim 11 in which the extension-retaining means comprises a key positioned within the second electronic module and having a surface adapted to engage the extension.

20. A system according to claim 1 in which the first electronic module comprises a generally curved surface radial to the first axis of rotation, which generally curved surface comprises a recess.

21. A modular system comprising:
a. a keyboard;
b. a visual display mechanically and electrically connected to the keyboard; and
c. a telephone mechanically connected to at least one of the keyboard and visual display.

22. A modular, reconfigurable system comprising:
a. a first module defining:
i. a first primary axis of rotation;
ii. a secondary axis of rotation; and
iii. a curved surface radial to the first primary axis of rotation,

HP Inc. - Exhibit 1005 - Page 2416

which curved surface includes a plurality of first teeth;

b. a second module defining:
   i. a second primary axis of rotation parallel to the first primary axis of rotation; and
   ii. a curved surface radial to the second primary axis of rotation, which curved surface includes a plurality of second teeth complementary to and engaging the first teeth;

c. means, intersecting at least two of the first and second primary axes of rotation and the secondary axis of rotation, for detachably connecting the first and second modules;

d. torque-generating means for retaining the second module in a selected position relative to the first module;

e. means for selectively hindering the first module from rotating about the first primary axis of rotation; and

f. means, connected to the first module, for supporting the first module, which means comprises:
   i. an extension adapted to rotate about the first primary axis of rotation; and
   ii. means for retaining the extension in a selected position.

HP Inc. - Exhibit 1005 - Page 2417.

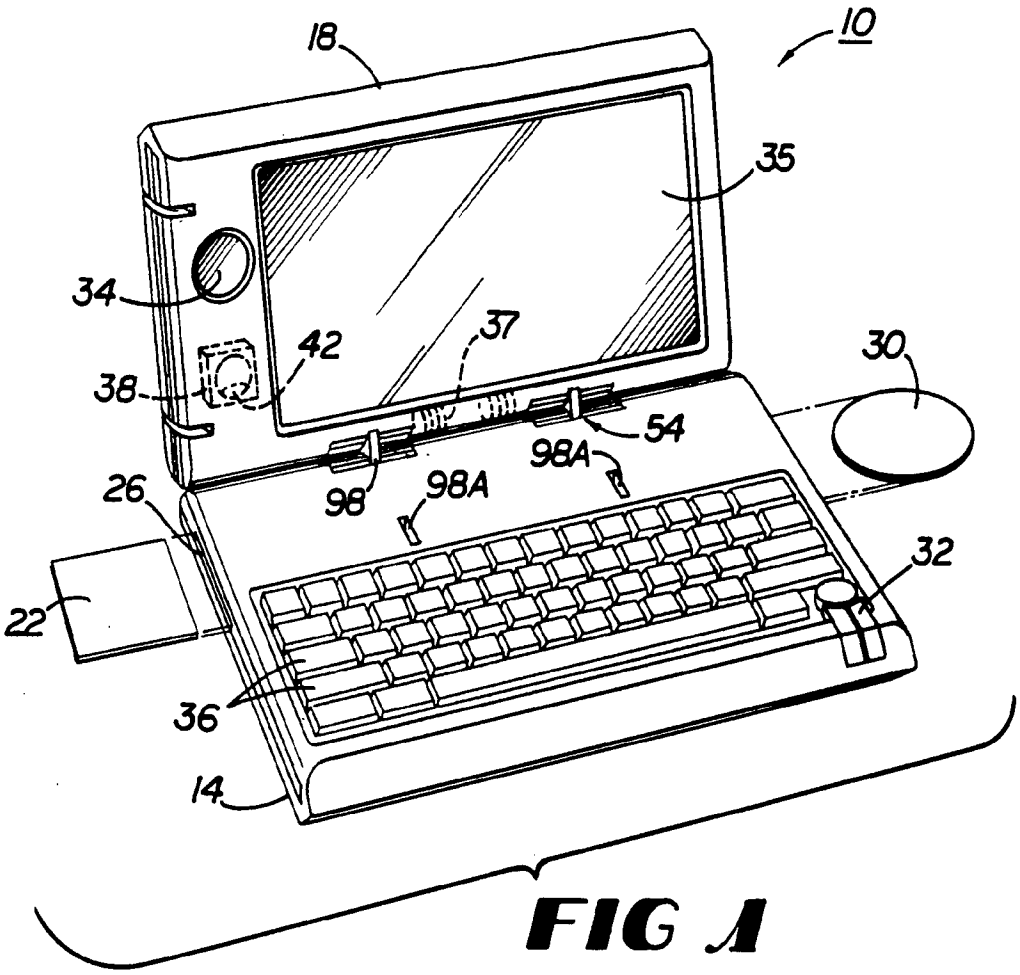


FIG 1

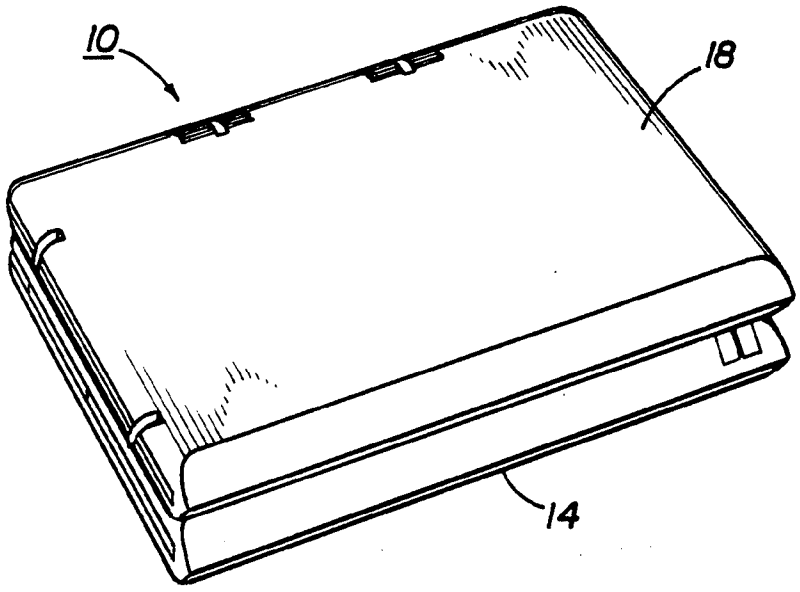


FIG 2

Inc. - Exhibit 1005 - Page 2418

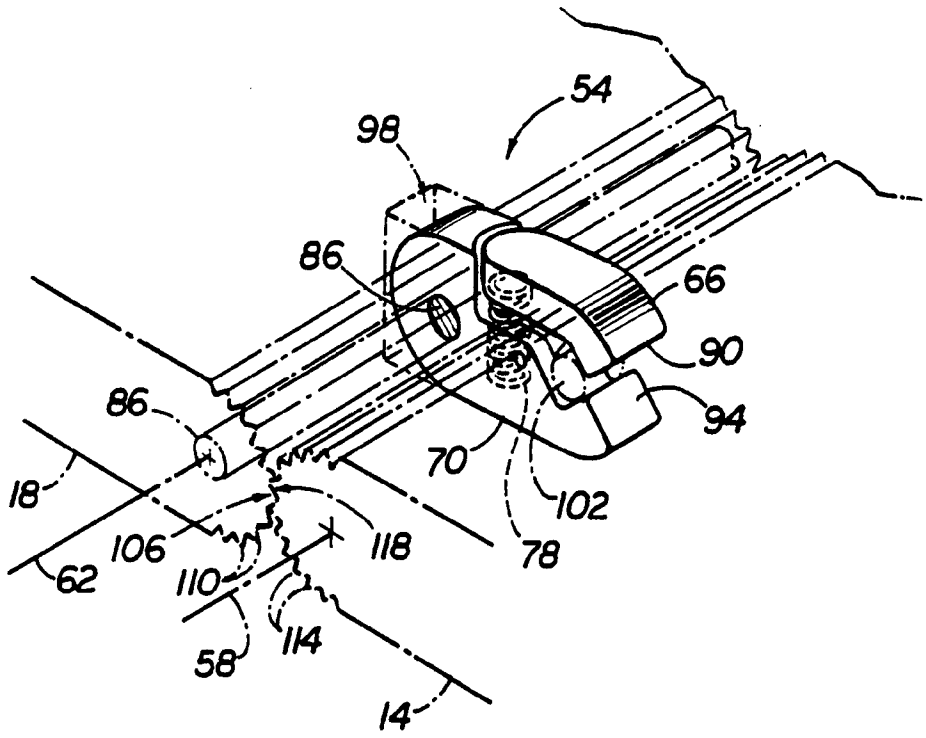


FIG 3

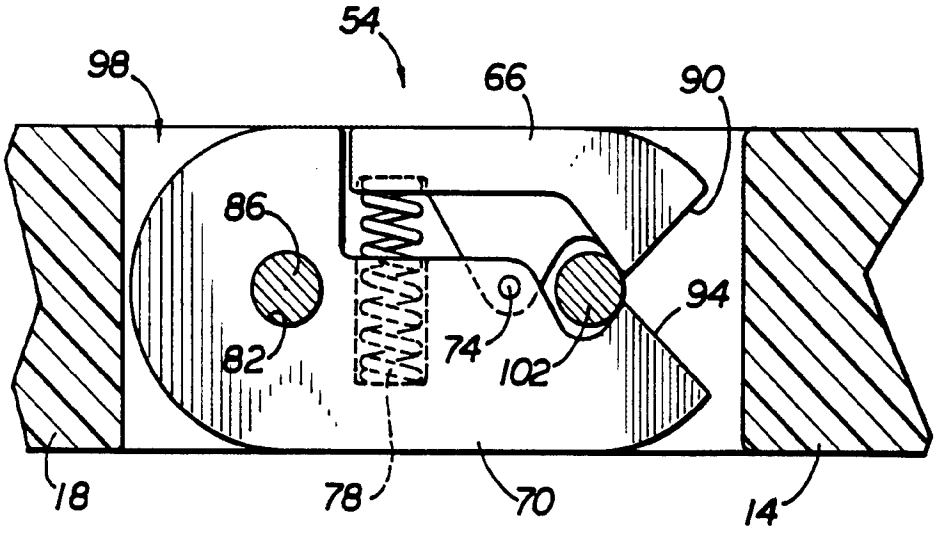


FIG 4

HP Inc. - Exhibit 1005 - Page 2419

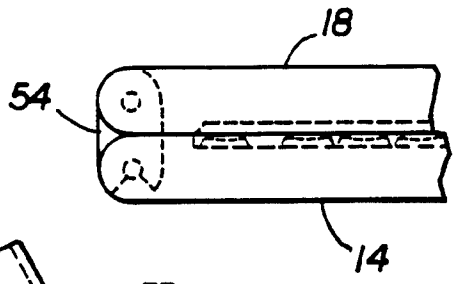


FIG 5

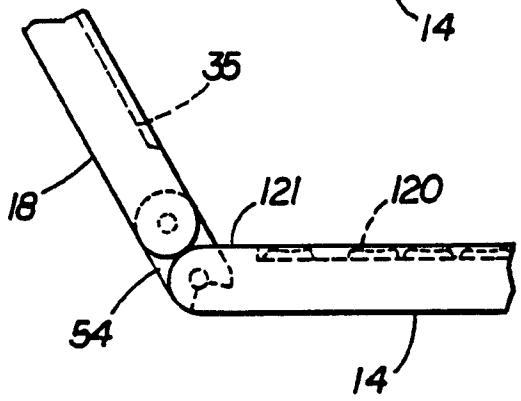


FIG 6

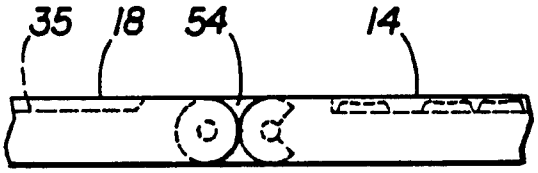


FIG 7

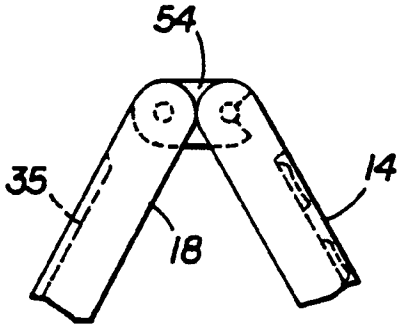


FIG 8

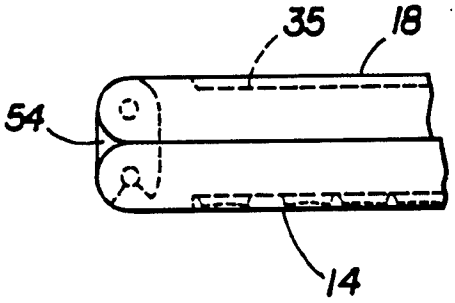
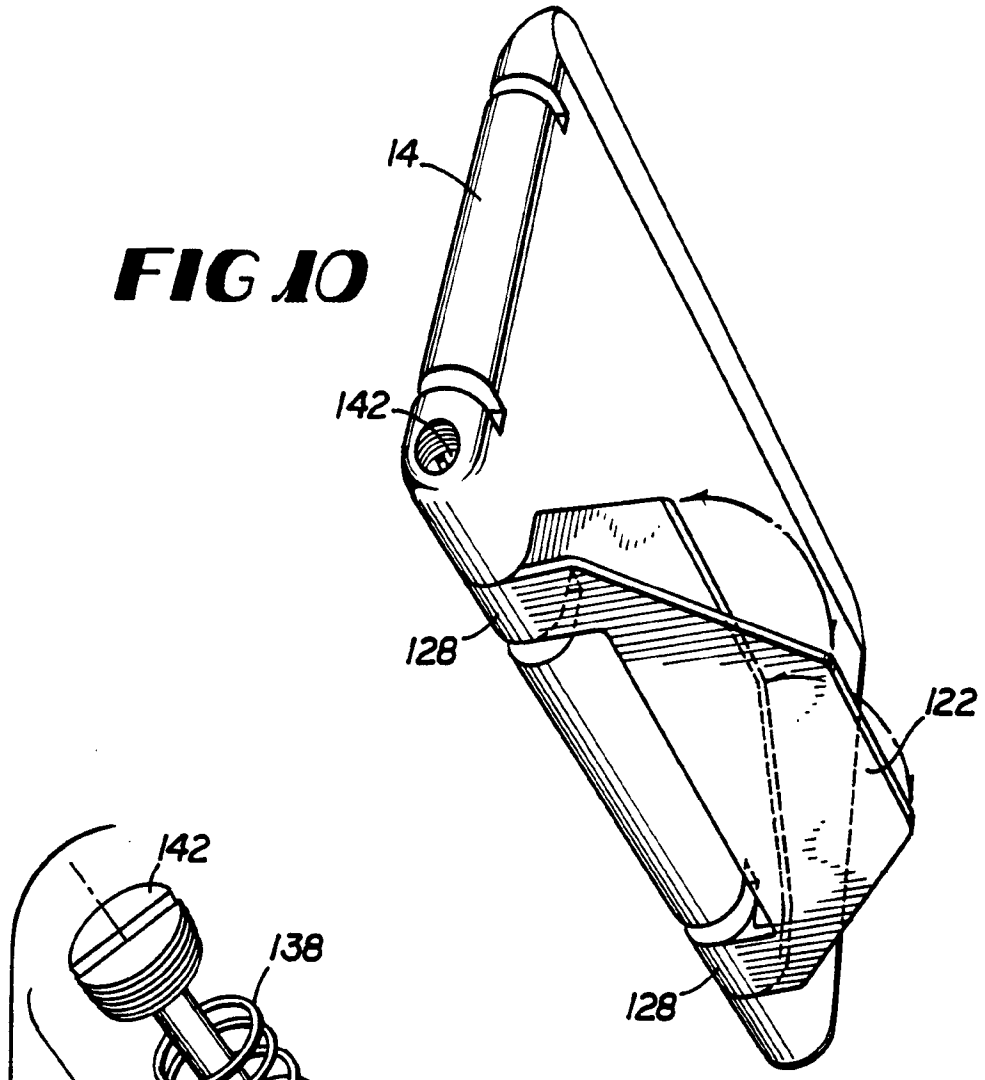


FIG 9

HP Inc. - Exhibit 1005 - Page 2420

FIG 10



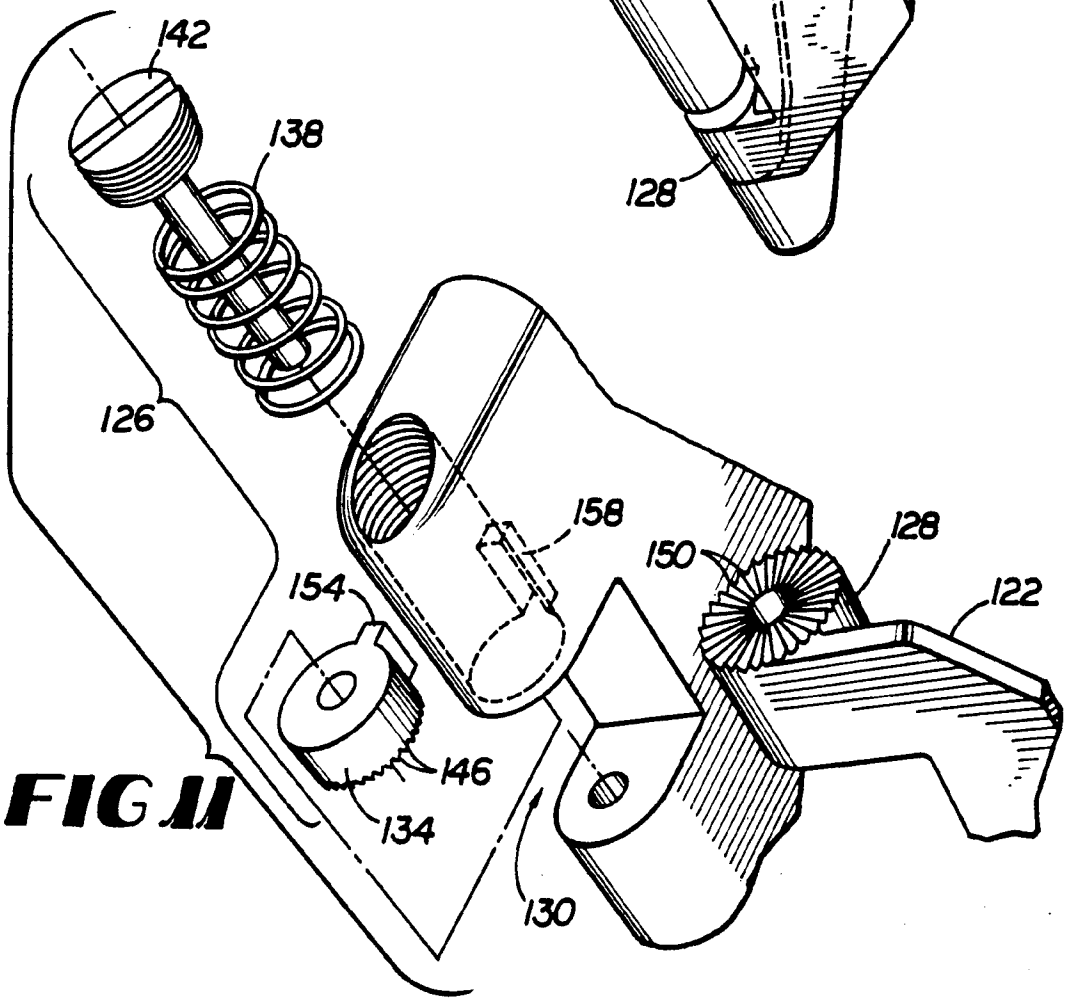


FIG 11

HP Inc. - Exhibit 1005 - Page 2421

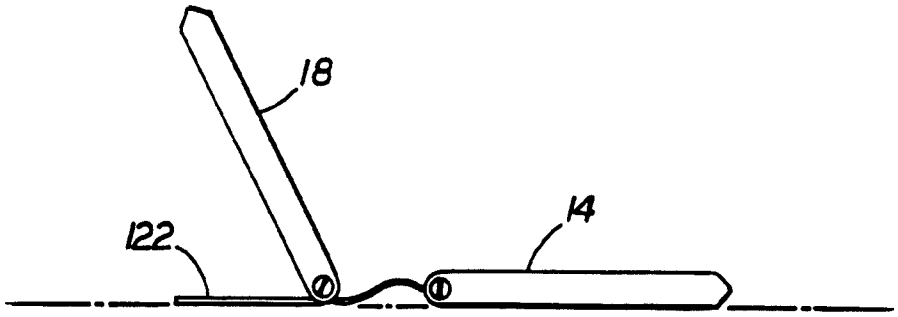


FIG 12

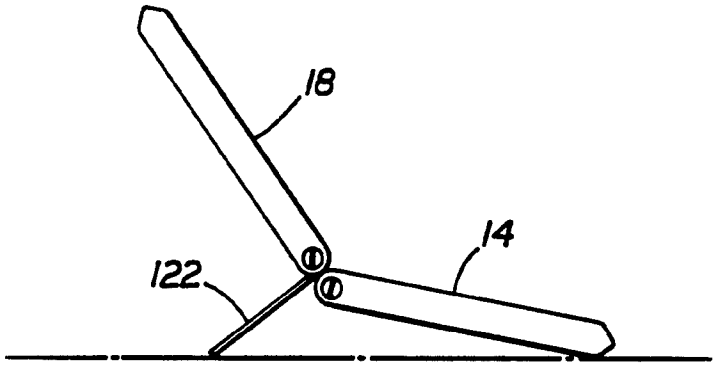


FIG 13

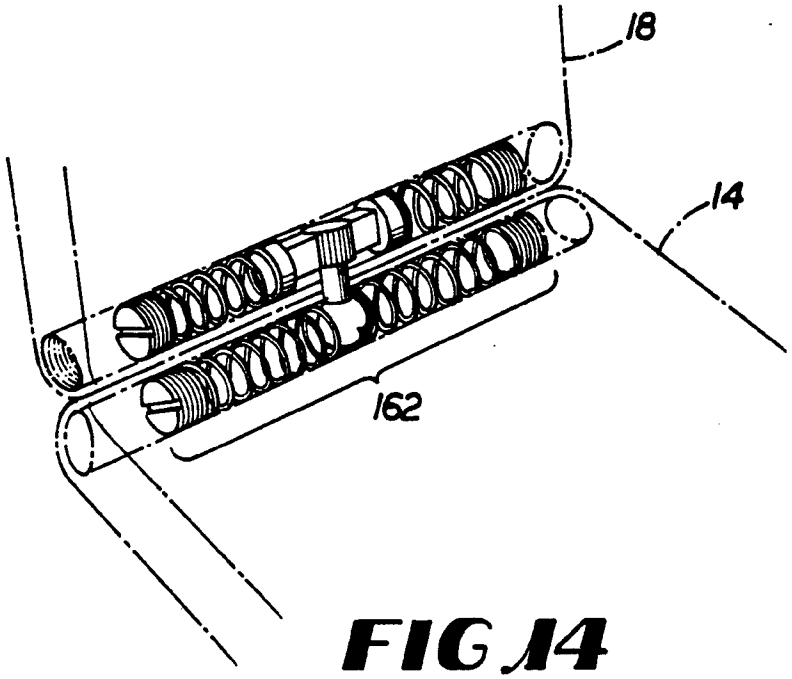


FIG 14

HP Inc. - Exhibit 1005 - Page 2422.

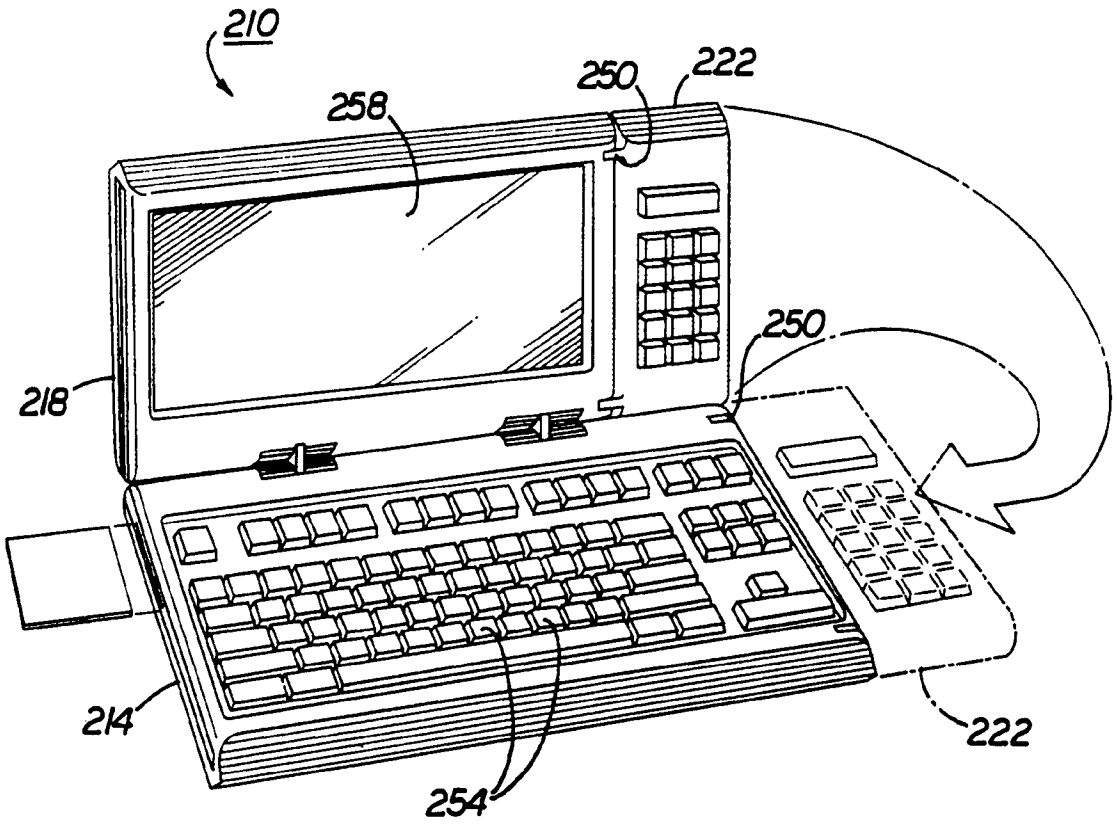


FIG 15

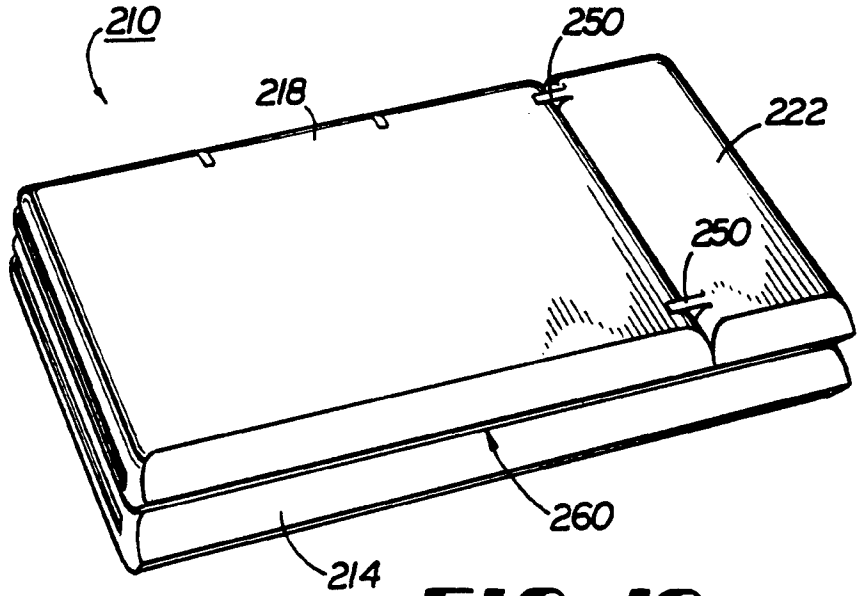


FIG 16

HP Inc. - Exhibit 1005 - Page 2423

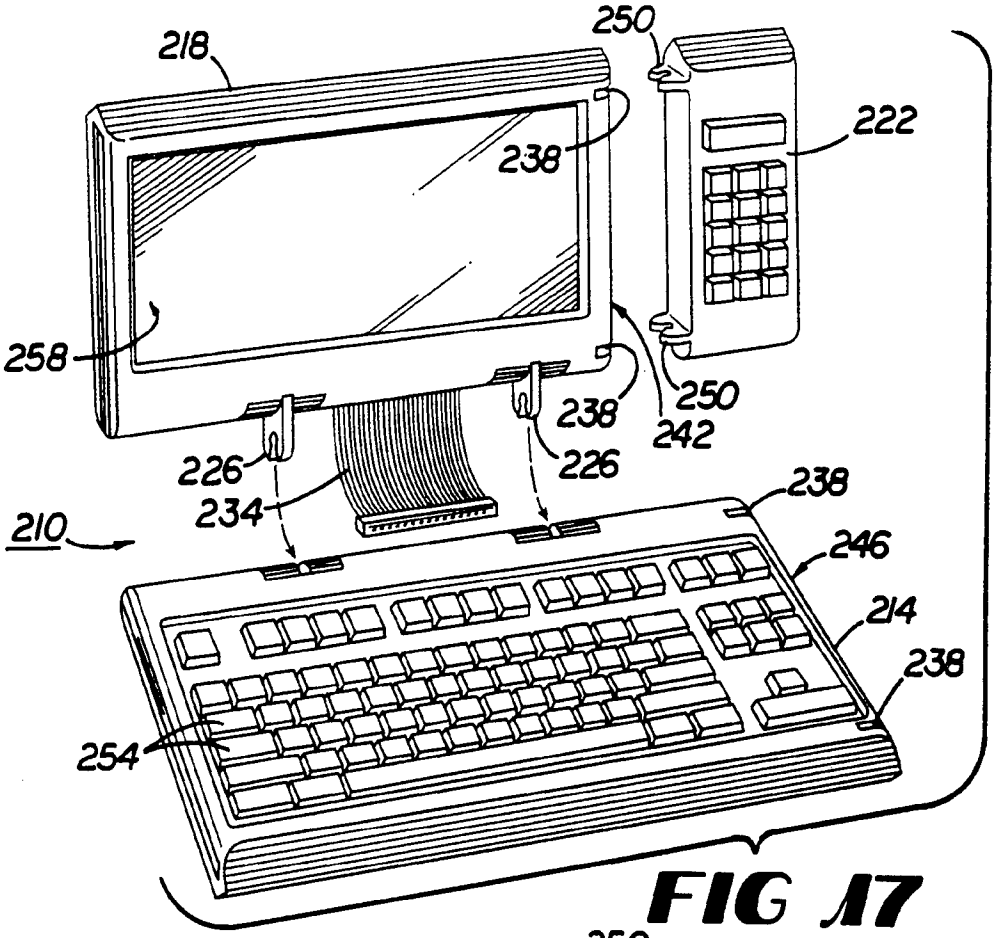


FIG 17

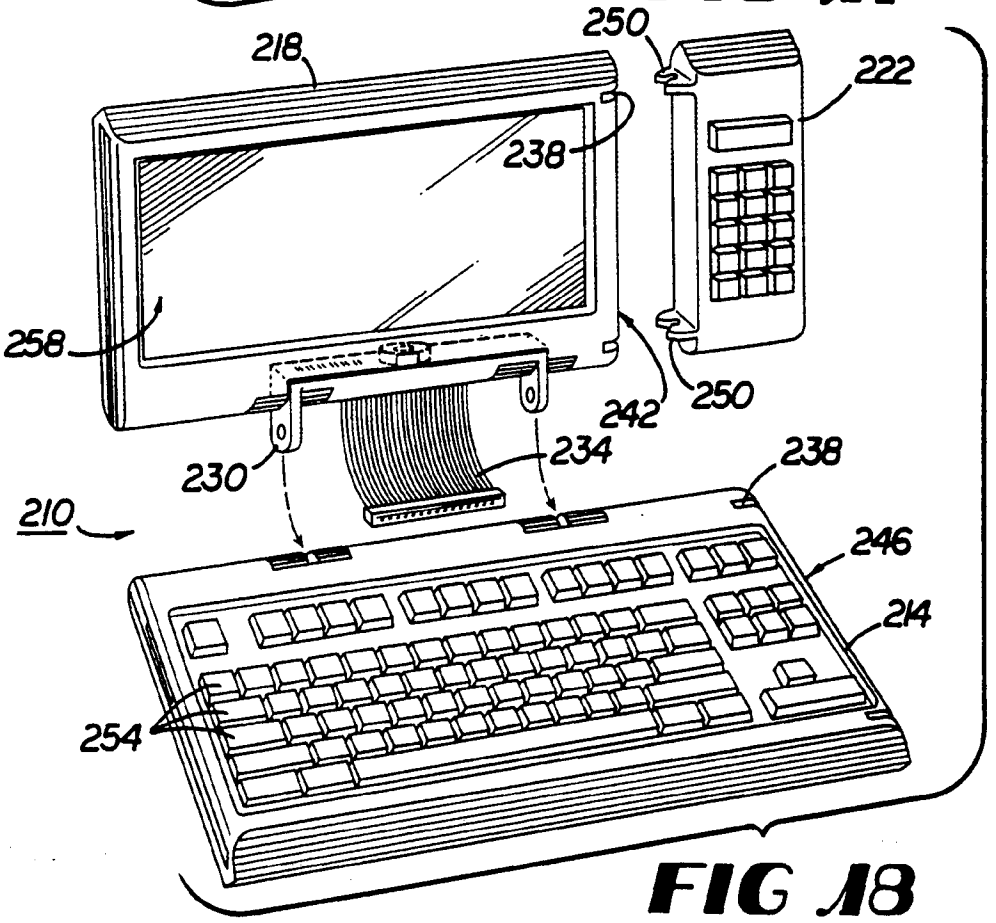


FIG 18

HP Inc. - Exhibit 1005 - Page 2424

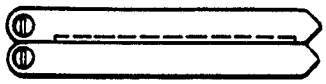


FIG 19

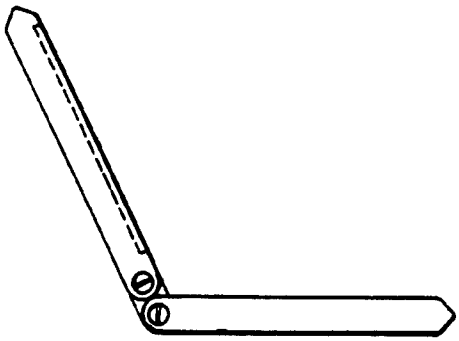


FIG 20



FIG 21

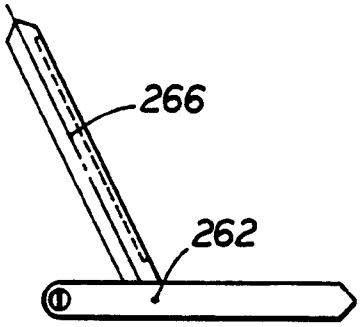


FIG 22

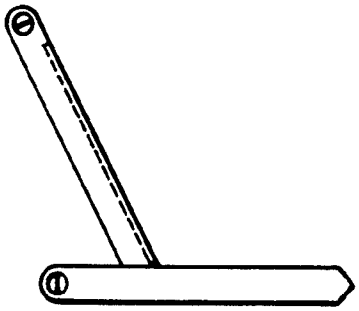


FIG 23

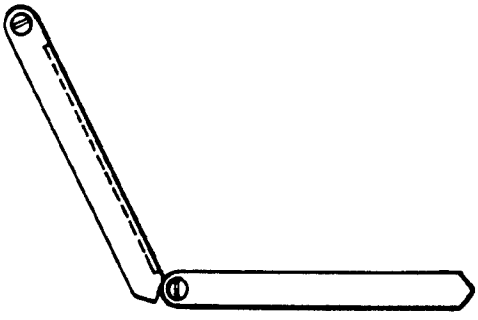


FIG 24

HP Inc. - Exhibit 1005 - Page 2425

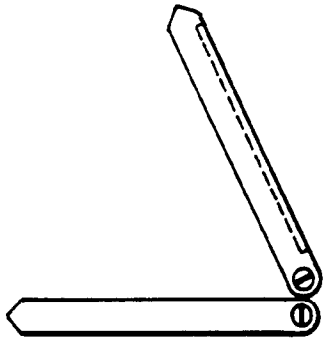


FIG 25

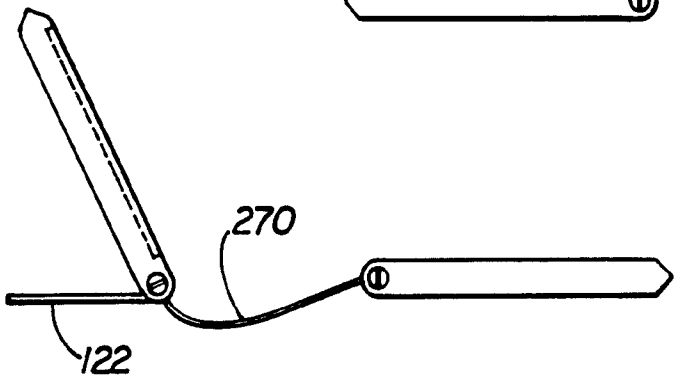


FIG 26

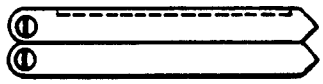


FIG 27

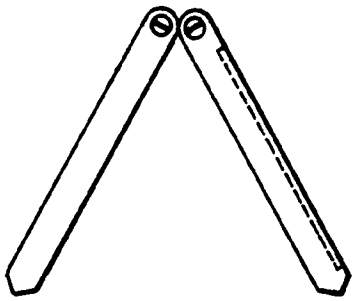


FIG 28

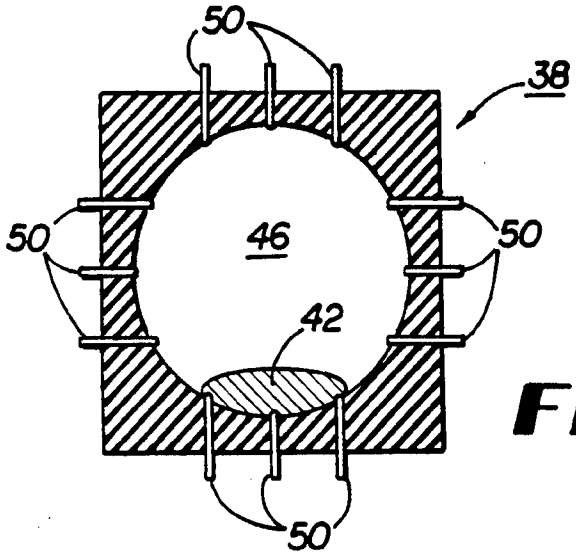


FIG 29

HP Inc. - Exhibit 1005 - Page 2426

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/02468

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G06F 1/16; H05K 7/12
US CL :361/683

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 361/680-683; 364/708.1; 439/928

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US, A, 5,268,817 (MIYAGAWA ET AL) 07 December 1993, Figures 8A-11B and column 6, line 66- column 9, line 59.	1-5, 14 --- 6, 7, 15, 16
Y	US, A, 5,034,858 (KAWAMOTO ET AL) 23 JULY 1991, Figures 9-15 and column 4, line 1- column 5, line 23.	6, 7, 15
Y	US, A, 5,235,495 (BLAIR ET AL) 10 August 1993, see the entire document.	16

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
06 JUNE 1995

Date of mailing of the international search report
10 JUL 1995

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231
Facsimile No. (703) 305-3230

Authorized officer
MICHAEL W. PHILLIPS
Telephone No. (703) 308-3191

Form PCT/ISA/210 (second sheet)(July 1992)★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/02468

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-7, 14-16, and 22

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/02468

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s)1-7, 14-16, and 22, drawn to a system having the special technical feature of a means for detachably connecting modules.
Group II, claim 8, drawn to a system having the special technical feature of teeth.
Group III, claim 9, drawn to a system having the special technical feature of a position indicator.
Group IV, claims 10, 11, and 19, drawn to a system having the special technical feature of means for supporting.
Group V, claims 12 and 13, drawn to a system having the special technical feature of a keys with a recessed portion for accommodating a fingertip.
Group VI, claim 17, drawn to a system having the special technical feature of a third axis of rotation.
Group VII, claim 18, drawn to a system having the special technical feature of a fixed leg.
Group VIII, claim 20, drawn to a system having the special technical feature of a recess.
Group IX, claim 21, drawn to a system having the special technical feature of a telephone.
The inventions listed as Groups I-IX do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: a special technical feature is a technical feature which defines a contribution over the prior art. The technical features in claims 1-4 are not special technical feature because they do not define a contribution over the prior art as shown by Figures 8A-11B of U. S. Patent No. 5,268,817 to Miyagawa et al., issued 07 December 1993. These Figures show two modules connected, retained, and hindered from rotation as claimed in claims 1-4 (and also claim 6). Thus claim 5 is the first claim with a special technical feature, i.e. a means for detachably connecting modules.

Groups II-IX do not include the special technical feature of a means for detachably connecting modules. Thus unity of invention is lacking.

23 March 2022 (23-03-2022)

GOWLING WLG (CANADA) LLP
CIPO@gowlingwlg.com

Application No.	:	**3,028,799**
Owner	:	LITL, LLC
Title	:	**SYSTEM AND METHOD FOR STREAMLINING USER INTERACTION WITH ELECTRONIC CONTENT**
Classification	:	G06F 3/0481 (2022.01)
Your File No.	:	**L80006429CA1**
Examiner	:	Wei Wang

YOU ARE HEREBY NOTIFIED OF A REQUISITION BY THE EXAMINER IN ACCORDANCE WITH SUBSECTION 86(2) OF THE *PATENT RULES*. IN ORDER TO AVOID ABANDONMENT UNDER PARAGRAPH 73(1)(*a*) OF THE *PATENT ACT*, A WRITTEN REPLY MUST BE RECEIVED WITHIN **FOUR (4)** MONTHS AFTER THE ABOVE DATE.

This application has been examined taking into account the applicant's correspondence received in this office on 19 August 2021 (19-08-2021).

The number of claims in this application is 65.

Response to applicant's arguments:

Argument 1:

> As discussed previously, some aspects of the present application provide computer systems with improved user interfaces. In some embodiments, a computer system may display a user interface that includes visual representations of content that a user may access by engaging the visual representations. In one example, the system may be configured to display an operating system home screen with a plurality of cards that a user can select to access the web and/or launch or switch to an application executed on the system (see the PCT application, e.g., p. 58 lines 12-23; p. 73 line 18 to p. 74 line 2; p. 76 lines 11-24; p. 78 lines 12-28). In some embodiments, the computer system display visual representations in a focused state. For example, "focus may be resolved on a computer system by analyzing content intended to be displayed before its display on the computer system," and/or "focus may be responsive to actions taken on the display," such as through user input (e.g., hovering with a mouse) (see, e.g., p. 79 lines 23-25) systems configured in this manner provide an improved user experience with visual representations having increased functionality and that may present content in a more immersive way.
>
> In some aspects described in the present application, the user interface behavior is built into the operating system to provide an integrated and streamlined presentation format (please see the PCT application, e.g., p. 54, line 31 through p. 55, line 15).
>
> In amended claim 1, the "first view of the first application" is "of an operating system

executed on the computer system" and further incorporates aspects of former dependent claim 2 namely "displaying, in a home screen of the operating system executed on the computer system, the first visual representation and the focus visual representation". Former dependent claim 2 has been deleted and the remaining dependent claims have been renumbered accordingly.
...

In response, the examiner notes that the "first view of the first application" is "of an operating system executed on the computer system" has no support. Applicant pointed to PCT application, e.g., p. 54, line 31 through p. 55, line 15 for support of that "the user interface behavior is built into the operating system". Examiner has carefully examine the passage quoted, but is unable to locate a support for this feature.

Even if it is supported, it would have been obvious in view of D1's plug-in implementation solution as disclose in D1 (par. 0053, line 3, "browse plug-in").

The remaining new feature "displaying, in a home screen of the operating system executed on the computer system, the first visual representation and the focus visual representation" is within the scope of D1's disclosure. Although D1 is not specific as to the claimed "home screen", D1's browser can certainly be displayed in the home screen. This only involves using known technology (home screen) for its known purposes (displaying).

Argument 2:

Independent claim 1 is rejected for supposedly lacking novelty over D1. While Applicant does not necessarily agree with the rejection, the claim has been amended to advance prosecution. D1 does not describe at least "executing a mapping from at least one of the first visual representation and the focus visual representation to a first view of the first application of an operating system executed on the computer system including the digital content in response to execution of at least one of the first and focus visual representations, wherein execution of the one at least one of the first and focus visual representations includes clicking on the at least one of the first and focus visual representations; and displaying, in a home screen of the operating system executed on the computer system, the first visual representation and the focus visual representation," as recited in amended claim 1.

The Office Action cites the hyperlinks shown in FIG. 1 of D1 as the "first visual representation of digital content" recited in claim 1 and the quick view shown in FIG. 2 of D1 as the "focus visual representation of the first visual representation in a focused state" recited in claim 1. However, the hyperlinks and browser program in FIG. 1 of D1 are not "first application of an operating system executed on the computer system" as recited in amended claim 1. Rather, D1 describes a web browser that might be executed as an application on an operating system, and the hyperlinks shown in FIG. 1 are associated with web pages accessible using the web browser. However, the web browser is not part of the operating system. In contrast, the inventors of the present application recognized that the recited user interface behavior relating to displaying digital content is provided by an operating system of a computer system in a streamlined presentation format. For at least these reasons, amended claim 1 inventively distinguishes over D1.

In response, regarding the comment that [However, the hyperlinks and browser program in FIG. 1 of D1 are not "first application of an operating system executed on the computer system" as recited in amended claim 1], examiner notes that this comment is not correct. The browser program is of course an "application of an operation system". Regarding the comment that

"However, the web browser is not part of the operating system ...", examiner notes that there is no support for this feature. Even if it is supported, it would have been obvious in view of the plug in method of D1.

The examiner has identified the following defects in the application:

Document re-applied:

D1:* US20080022229A1 Bhumkar et al. 24 January 2008 (24-01-2008)

*document cited by the USPTO

Support:

Claims 1, 40 and 41 are not fully supported by the description and do not comply with section 60 of the *Patent Rules*. The feature "application of an operating system" has no support. Applicant appears to equate this feature to that "the user interface behavior is built into the operating system". Examiner notes that they are not equal. If the feature is "built into the operating system", the claim should say so instead of saying "application of an operating system". But please note that neither of these two expressions has support.

Obviousness:

The claims on file do not comply with section 28.3 of the *Patent Act*. These claims are directed to subject-matter that would have been obvious at the claim date to a person skilled in the art or science to which it pertains having regard to D1 in view of the common general knowledge. Excluding the feature that is not supported, the claims contain the newly added feature of "displaying, in a home screen of the operating system executed on the computer system, the first visual representation and the focus visual representation". D1 discloses the display of the first visual representation and the focus visual representation, but not "in a home screen". However, this feature would have been obvious because it only involves using known technology (home screen) for its known purposes (displaying).

Closing Remarks:

In view of the foregoing defects, the applicant is requisitioned, under subsection 86(2) of the *Patent Rules*, to amend the application in order to comply with the *Patent Act* and the *Patent Rules* or to provide arguments as to why the application does comply.

Under section 102 of the *Patent Rules*, any amendment made in response to this requisition must be accompanied by a statement explaining the purpose of the amendment and identifying the differences between the new page and the replaced page.

Wei Wang
Patent Examiner
819-6398340

As per CIPO Client Service Standards, a response to a telephone enquiry or voice mail should be provided by the end of the next business day. In the event that attempts to reach the examiner are unsuccessful, the examiner's Section Head, Claude Mathieu, can be reached at 819-6398215.

For general inquiries: 1-866-997-1936 or for more options see http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/wr00006.html.

CIPO values your feedback and invites you to complete a short and anonymous ongoing survey on patent examination products and services. You can access the survey at the following link: https://www.surveymonkey.com/r/PPE_EPBdB.

3028799C_wew.docm

The Examination Search Report is provided for reference only and is not part of any requisition made by the examiner in accordance with the *Patent Act* or *Rules*. The applicant is not required to respond to the information contained in the Examination Search Report.

Examination Search Report

Box I: General Information

Application No.	3,028,799	Search Report Date	2022-03-18
Title	SYSTEM AND METHOD FOR STREAMLINING USER INTERACTION WITH ELECTRONIC CONTENT		
Examiner	Wei Wang	Search Conducted?	No
No search was conducted for the following reasons :			
- Search deferred - see report for reasoning (lack of unity, excluded subject matter etc.)			N/A
- Relied on previous search results (CIPO and/or by Foreign Office)			Yes

Box II: Family Prosecution

Family Member	File Wrapper Reviewed	Status of Prosecution
US20090322790	2022-03-18	Abandoned
WO2009146070	2020-04-01	Completed

Box IV: Search History

No Search Conducted

Version 9

Exhibit 1032

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LITL LLC, Plaintiff, v. LENOVO (UNITED STATES), INC. and LENOVO (BEIJING) LTD. Defendants.	Civil Action No. 1:20-cv-00689-RGA **JURY TRIAL DEMANDED**

FIRST AMENDED COMPLAINT

Pursuant to Federal Rule of Civil Procedure 15(A)(1), Plaintiff LiTL LLC ("Plaintiff" or "LiTL") files this First Amended Complaint, which amends LiTL's complaint for patent infringement (D.I. 1, the "Original Complaint") against Defendants Lenovo (United States), Inc. and Lenovo (Beijing) Ltd. (collectively, "Defendants" or "Lenovo").

INTRODUCTION

1. This is a civil action for patent infringement under the laws of the United States, 35 U.S.C. § 1, *et seq*.

2. Defendants have infringed and continue to infringe, have induced and continue to induce the infringement of one or more claims of U.S. Patent Nos. 8,289,688 ("the '688 patent"); 8,624,844 ("the '844 patent"); 10,289,154 ("the '154 patent"); 9,880,715 ("the '715 patent"); 8,612,888 ("the '888 patent"); and 8,577,957 ("the '957 patent") (collectively, the "Asserted Patents") at least by making, using, selling, offering for sale, and importing into the United States computing devices that infringe one or more claims of each of the Asserted Patents.

3. LiTL is the legal owner by assignment of the entire right, title and interest in and to the Asserted Patents, which were duly and legally issued by the United States Patent and Trademark Office ("USPTO"). LiTL seeks monetary damages and injunctive relief to address ongoing infringement of its valuable patent portfolio.

THE PARTIES

4. Plaintiff LiTL LLC is a Delaware company, having its principal place of business at 501 Boylston Street, Boston, Massachusetts 02116.

5. Defendant Lenovo (United States) Inc. ("Lenovo US") is a corporation organized under the laws of the State of Delaware, with its principal place of business at 1009 Think Place, Building One, Morrisville, North Carolina 27560. Lenovo US is a wholly-owned, indirect subsidiary of Lenovo Group, the ultimate parent corporation.

6. Defendant Lenovo (Beijing) Ltd. ("Lenovo Beijing") is a company organized under the laws of the People's Republic of China, with its principal place of business at No. 6 Chuang Ye Road, Shangdi Information Industry Base, Haidan District, Beijing, China. Lenovo Beijing is a wholly-owned subsidiary of Lenovo Group.

JURISDICTION AND VENUE

7. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over Lenovo US for at least each of the following reasons. First, Lenovo US appeared in this Court and responded to LiTL's Original Complaint without contesting personal jurisdiction in this Court. (D.I. 10.) Second, Lenovo US is incorporated in this District, and so Lenovo US is at home in this District. Third, Lenovo US

has sold one or more of the Accused Products (defined below) in this District, giving rise to LiTL's claims in this action.

9. This Court has personal jurisdiction over Lenovo Beijing under either Federal Rule of Civil Procedure 4(k)(1) and the Del. Code. Ann. Tit. 3, § 3104 (the "Delaware Long Arm Statute") or under Federal Rule of Civil Procedure 4(k)(2).

10. Lenovo Beijing is the registrant of the https://www.lenovo.com domain (the "Lenovo.com Domain"). On information and belief, Lenovo Beijing registered the Lenovo.com Domain in 2002 and Lenovo Beijing renewed and/or updated its registration of the Lenovo.com Domain in 2020. Lenovo Beijing registered the Lenovo.com Domain with MarkMonitor, Inc. ("MarkMonitor").

11. MarkMonitor is an Accredited Registrar with the Internet Corporation for Assigned Names and Numbers ("ICANN"). https://www.icann.org/registrar-reports/accreditation-qualified-list.html As an Accredited Registrar, MarkMonitor is bound by the terms of the 2013 Registrar Accreditation Agreement ("RAA"). https://www.icann.org/resources/pages/approved-with-specs-2013-09-17-en

12. Under Section 3.7.10 of the RAA, MarkMonitor was required to provide Lenovo Beijing a copy of the Registrants' Benefits and Responsibilities Specification. On information and belief, MarkMonitor provided Lenovo Beijing with a copy of the Registrants' Benefits and Responsibilities Specification.

13. The Registrants' Benefits and Responsibilities Specification states, "You will assume sole responsibility for the registration and use of your domain name." On information and belief, Lenovo Beijing understood when registered and renewing/updating its registration of

the Lenovo.com Domain that it "assume[d] sole responsibility for the registration and use of" the Lenovo.com Domain.

14. MarkMonitor was required, under Section 3.7.7 of the RAA, to require all Registered Name Holdings, including Lenovo Beijing, to enter into a registration agreement with at least the provisions set forth in Subsections 3.7.7.1 through 3.7.7.12 of the RAA. On information and belief, Lenovo Beijing, as a Registered Name Holder, entered into a registration agreement that included provisions equivalent to Subsections 3.7.7.1 through 3.7.7.12 of the RAA.

15. Section 3.7.7.3 states, "[a] Registered Name Holder licensing use of a Registered Name according to this provision shall accept liability for harm caused by wrongful use of the Registered Name, unless it discloses the current contact information provided by the licensee and the identity of the licensee within seven (7) days to a party providing the Registered Name Holder reasonable evidence of actionable harm." If Lenovo US is a licensee of the Lenovo.com Domain in the United States, then Lenovo Beijing was required to "accept liability for harm caused by wrongful use of" of the Lenovo.com Domain, unless it "discloses the current contact information provided by [Lenovo US] and the identity of [Lenovo US] within seven (7) days to a party providing [Lenovo Beijing] reasonable evidence of actionable harm." LiTL provided evidence of actionable harm from sales of the Accused Products through the Lenovo.com Domain in its Original Complaint, and Lenovo Beijing did not provide Lenovo US's identity and contact information to LiTL within 7 days.

16. On information and belief, as the registrant of the Lenovo.com Domain, Lenovo Beijing is solely responsible for what website the Lenovo.com Domain points to in various locations around the world. Lenovo Beijing intends to serve Delaware and the United States

with the Lenovo.com Domain by providing a specific website for those locations that appears when accessing the Lenovo.com Domain from those locations. Lenovo Beijing intends for people in Delaware and the United States to access and use the website that Lenovo.com Domain points to as a place to get information about the Accused Products and to shop for and buy the Accused Products. Both before and after the filing of the Original Complaint, LiTL's counsel was able to access the Accused Products from Lenovo Beijing's Lenovo.com Domain from Delaware. The website for the United States, which includes https://www.lenovo.com/us/en/, may differ in some respects from the website that appears automatically in other countries, but it is still on the Lenovo.com Domain.

17. The Lenovo.com Domain is accessible in Delaware and in the United States. People in Delaware and in the United States have accessed Lenovo.com Domain. The Lenovo.com Domain makes information about each of the Accused Products available to people in the United States and in Delaware, including customer support and warranty status information that is dynamically presented to be specific to a customer's products. People in the United States and Delaware have access to information about each of the Accused Products from the Lenovo.com Domain. Much of the information cited below by LiTL as evidence that Lenovo US and Lenovo Beijing directly or indirectly infringes the Asserted Patents is accessible from the Lenovo.com Domain. People in the United States and in Delaware have accessed that information.

18. All, or nearly all, of the Accused Products are for sale on Lenovo.com Domain, including to people in Delaware and the United States. On information and belief, people in the United States have purchased all of the Accused Products from the Lenovo.com Domain. On information and belief, people in Delaware have purchased all of the Accused Products from the

Lenovo.com Domain. People in the United States have purchased one or more of the Accused Products from the Lenovo.com Domain. People in Delaware have purchased one or more of the Accused Products from Lenovo.com Domain. Nothing on the Lenovo.com Domain indicates that Lenovo Beijing intended to exclude Delaware customers from purchasing the Accused Products from the Lenovo.com Domain.

19. Lenovo Beijing developed and designed one or more of the Accused Products. For example, Lenovo Beijing developed and designed the Yoga A940 All in One Desktop computer ("Yoga A940).

20. On information and belief, the team at Lenovo that developed and designed one or more of the Accused Products included employees of Lenovo Beijing working with and sharing information with other Lenovo employees in the United States. https://news.lenovo.com/labor-of-love-innovation-and-inspiration-behind-lenovos-next-generation-of-yoga/.

21. Lenovo Beijing has developed and designed products. D.I. 28 (Sun Declaration), ¶ 6. Some of the products developed or designed by Lenovo Beijing have been used, offered for sale, or sold in the United States.

22. Lenovo Beijing developed and designed one or more of the Accused Products for use in the United States and Delaware, and to comply with regulations or other legal requirements applicable in those locations. For example, Lenovo Beijing developed and designed one or more of the Accused Products to comply with U.S. Federal Communication Commission ("FCC") requirements and to meet the U.S. Environmental Protection Agency's Energy Star requirements.

23. Lenovo Beijing was involved with developing or designing the Yoga A940.

24. On information and belief, Lenovo Beijing has employed Yang Liu as a "Compliance Engineer" since at least 2015. Yang Liu's job responsibilities include submitting to the U.S. Federal Communication Commission ("FCC") applications for equipment authorization.

25. Yang Liu submitted to the FCC an equipment authorization application for the Yoga A940. That application included a letter dated November 23, 2018, signed by Yang Liu, requesting the FCC to keep confidential certain materials in Lenovo Beijing's application for equipment authorization for the Yoga A940, which authorization is required prior to marketing or importing the Yoga A940 in the United States. Lenovo Beijing's letter to the FCC asserted that the public disclosure of documents containing proprietary information about the Yoga A940 "might be harmful to our company and would give competitor an unfair advantage in the market."

26. Lenovo Beijing intended for one or more of the Accused Products to be imported into, sold, and used in Delaware or in the United States. Lenovo Beijing submitted documents relating to the Yoga A940 to the United States Federal Communication Commission ("FCC"). These documents are dated September 4, 2018 and list "Lenovo (Beijing) limited" as the applicant for certification of conformity under FCC regulations to permit importation and marketing of the Yoga A940. Lenovo Beijing regularly submits to the FCC applications for equipment authorization. Since 2011, Lenovo Beijing has submitted at least 107 applications for equipment authorization to the FCC so that its equipment could be imported into the United States and marketed there.

27. According to Lenovo's 2019/20 Annual Report, Lenovo Beijing's "Principal activities" are "Manufacturing and distribution of IT products and provision of IT services."

https://doc.irasia.com/listco/hk/lenovo/annual/2020/ar2020.pdf On information and belief, the statement in the 2019 Annual Report that Lenovo Beijing that refers to Lenovo Beijing's "Principal activities" as "Manufacturing and distribution of IT products and provision of IT services" was not false.

28. On information and belief, Lenovo Beijing is involved with the manufacture of one or more of the Accused Products. On information and belief, Lenovo Beijing has some or significant control over the manufacture of the one or more of the Accused Products. On information and belief, Lenovo Beijing has quality control over the manufacture of the one or more of the Accused Products. On information and belief, if Lenovo Beijing does not manufacture an Accused Product, a company related to and subject to control and/or influence by Lenovo Beijing, whether direct or indirect, manufactures the Accused Product.

29. On information and belief, Lenovo Beijing is involved with the distribution of one or more of the Accused Products, including importation into the United States and Delaware. On information and belief, Lenovo Beijing has some or significant control over the distribution of the one or more of the Accused Products. On information and belief, if Lenovo Beijing does not distribute an Accused Product, a company related to and subject to control and/or influence by Lenovo Beijing, whether direct or indirect, distributes the Accused Product.

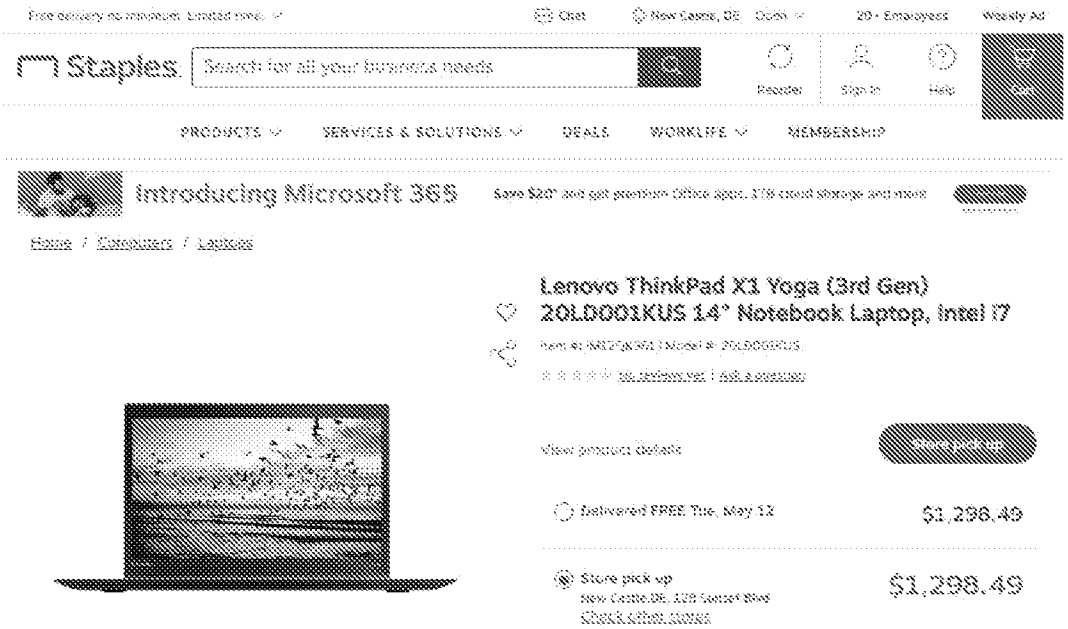
30. Lenovo has established distribution channels for the importation into the United States of the Accused Products and for the distribution within the United States, including to Delaware, of one or more of the Accused Products. Those established distribution channels are used for sales made through Lenovo Beijing's Lenovo.com Domain. On information and belief, Lenovo Beijing uses those established distribution channels for the importation into the United

States of one or more of the Accused Products and for the distribution within the United States, including to Delaware, of one or more of the Accused Products.

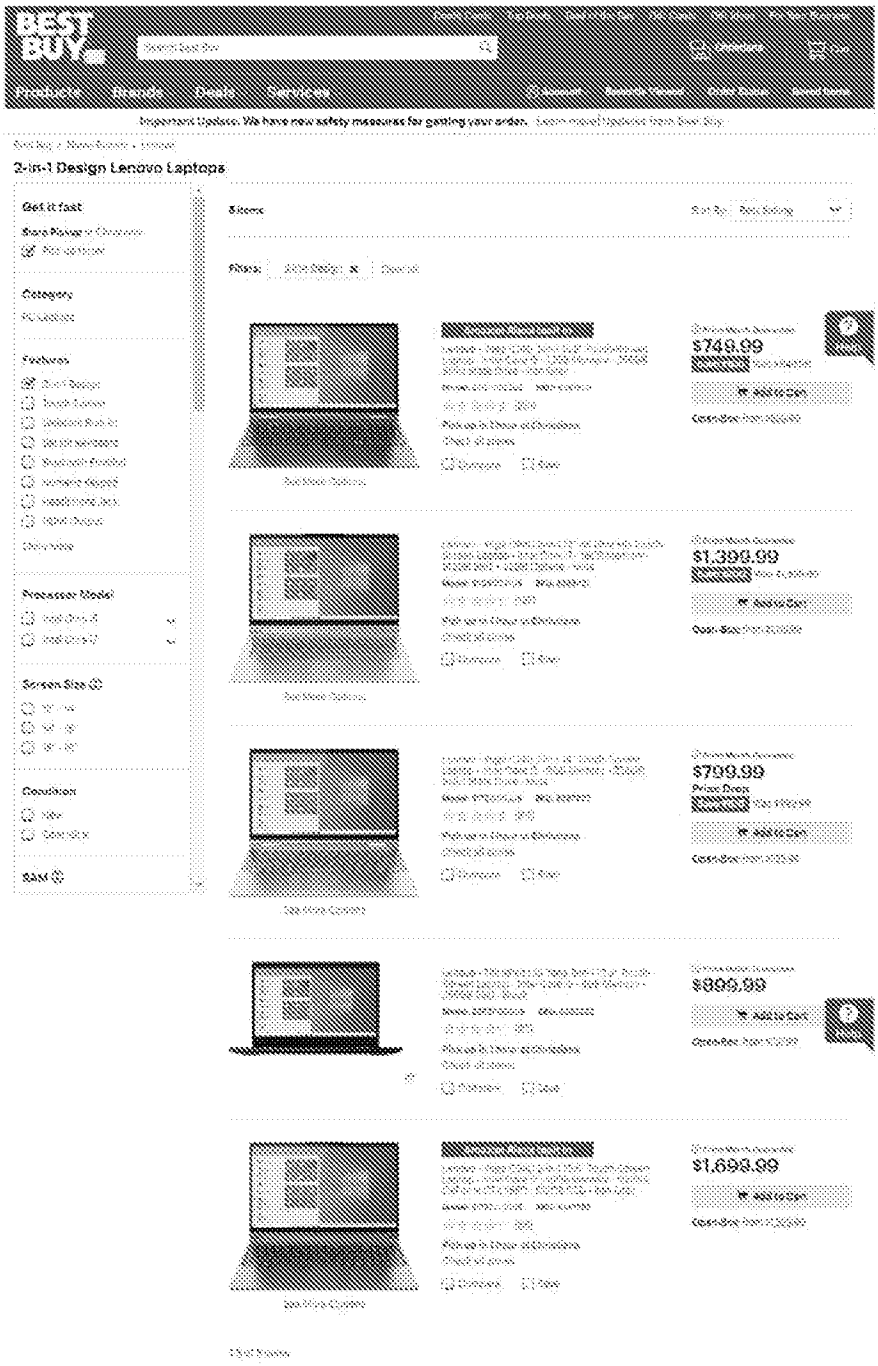
31. For example, a customer accessed the Lenovo.com Domain while in Delaware, used the Lenovo.com Domain to purchase a Yoga A940, and had the computer delivered to Wilmington, Delaware on November 30, 2020.

32. As further examples of the distribution channels that Lenovo has established, information accessible through Lenovo.com Domain states that, in addition to being available for purchase on www.lenovo.com, one or more of the Accused Products are available for purchase from retailers including Best Buy, Costco, Office Depot, Staples, and Walmart, each of which has locations in Delaware. https://www.lenovo.com/us/en/landingpage/reseller-locator/

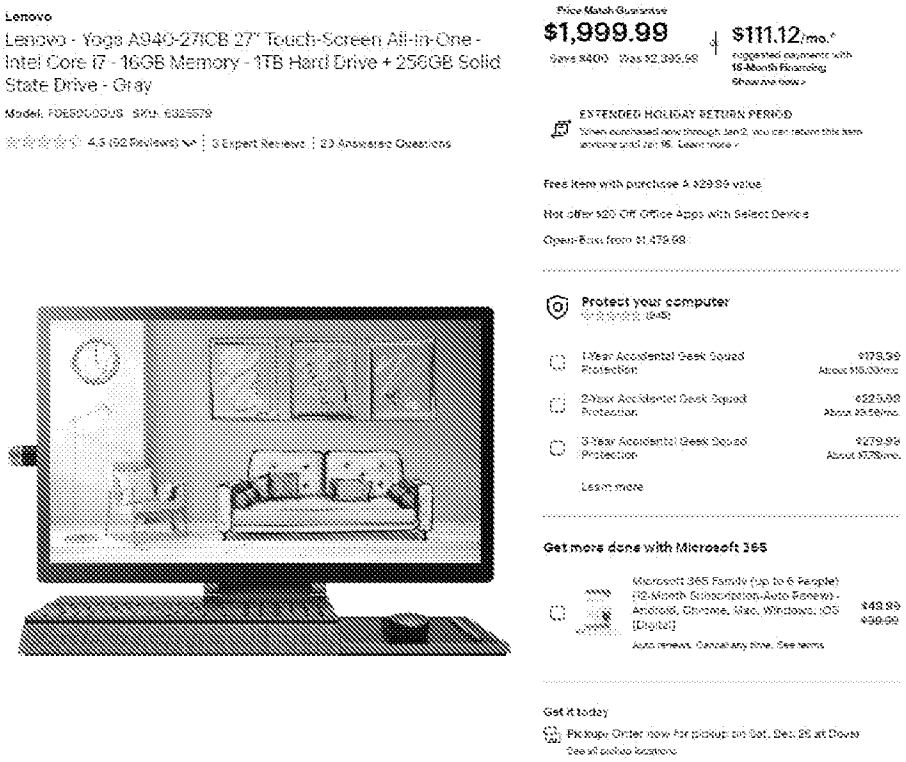
33. For example, Staples offers for sale the 3rd Generation ThinkPad X1 Yoga, an Accused Product, which can be picked up in a Staples store located in New Castle, Delaware, as depicted in the screenshot of Staples' website below.

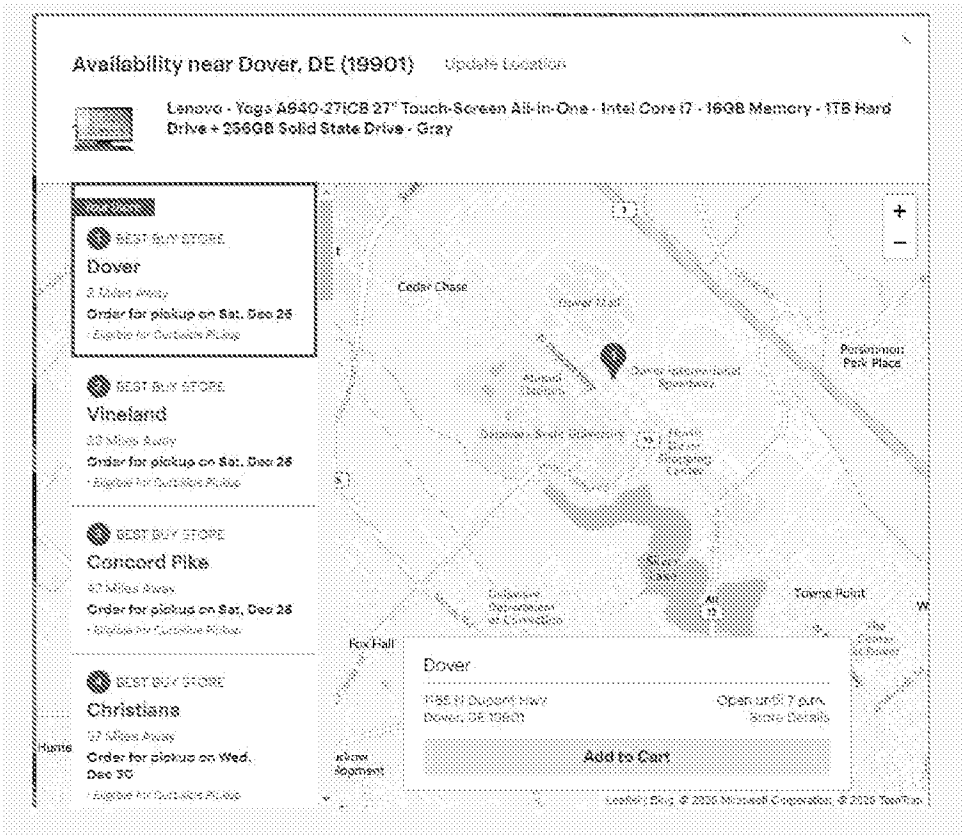


34. For example, a Best Buy located at Christiana Fashion Center in Newark, Delaware offers for sale the following Accused Devices: Yoga C740 (15 inch); Yoga C940 (14 inch); Yoga C740 (14 inch); ThinkPad L13 Yoga (13 inch); Yoga C940 (15 inch), as depicted in the screenshot of Best Buy's website below.



35. Best Buy stores located at 1165 N. Dupont Highway, Dover, DE 19901 and 2700 Fashion Center Blvd, Newark, DE 19702 offer the accused Lenovo Yoga A940 for sale and provide the option of curbside pickup at these Delaware locations:



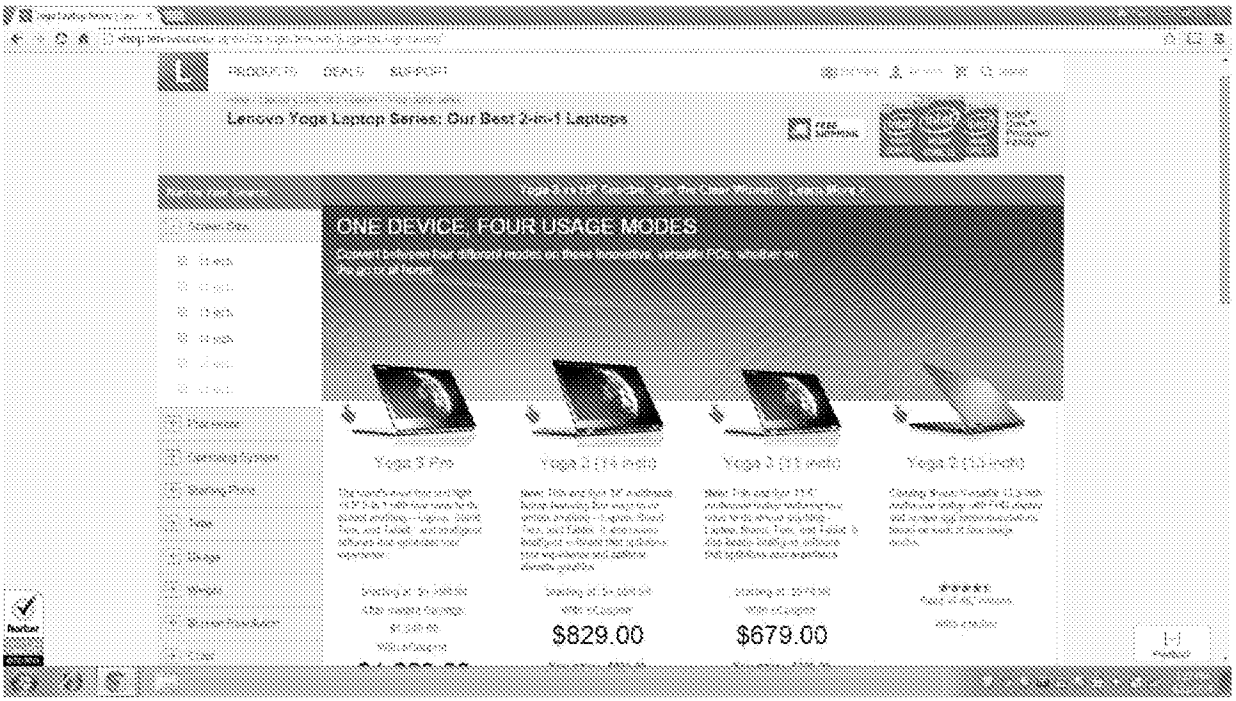


36. Lenovo Beijing owns numerous trademark registrations that Lenovo Beijing uses in connection with sales and offers for sale of the Accused Products within the United States.

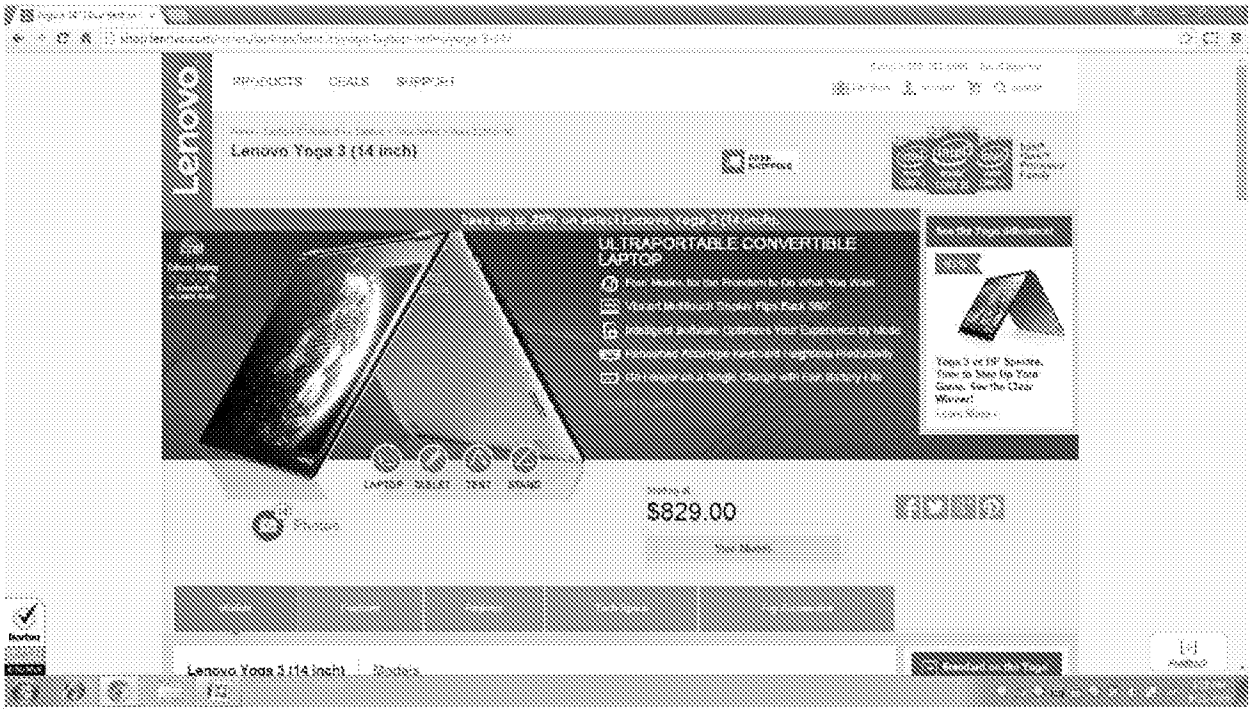
37. Lenovo Beijing owns U.S. Registration No. 4,822,390 to the mark YOGA for goods that include "computers" and "portable computers." When prosecuting the application that matured into the YOGA registration, the applicant Lenovo Beijing filed a Statement of Use on August 21, 2015, which included the statement: "The mark was first used by the applicant, or the applicant's related company, licensee, or predecessor in interest at least as early as 10/00/2012, and first used in commerce at least as early as 10/00/2012, and is now in use in such commerce. The applicant is submitting one specimen for the class showing the mark as used in commerce on or in connection with any item in the class, consisting of a(n) screen-shots of Applicant's website showing sale of the products." Lenovo Beijing submitted to the Trademark Office the two screenshots reproduced below.

https://tsdr.uspto.gov/documentviewer?caseId=sn85585622&docId=SOU20150824165248#docIndex=4&page=1

38. The first screenshot submitted by Lenovo Beijing shows the website https://www.lenovo.com/us/en/pc-nfe/?s_tnt=133500%3A1%3A0&adobe_mc_sdid=SDID%3D0DE8A22765823A5D-54865DF655F16C62%7CMCORGID%3DF6171253512D2B8C0A490D45%40AdobeOrg%7CTS%3D1609357172&adobe_mc_ref=https%3A%2F%2Fwww.lenovo.com%2Fus%2Fen%2F, which touts the four usage modes of the Yoga 3 Pro, Yoga 3 (14 inch), Yoga 3 (11 inch) and Yoga 2 (13 inch), each of which are included in the Accused Products defined below:

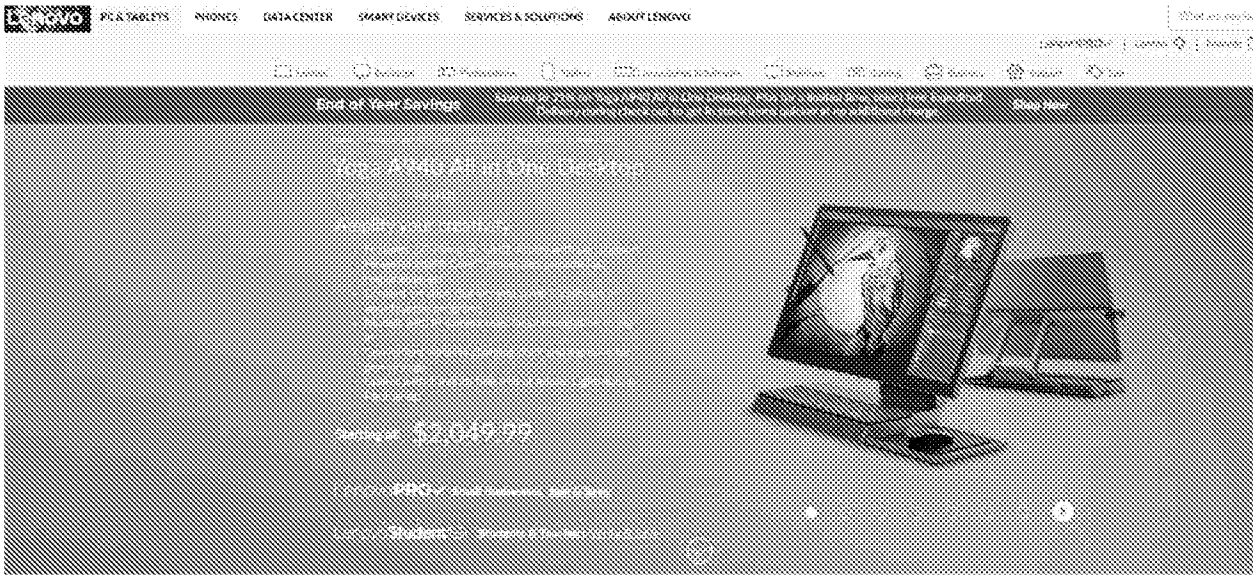


39. The second screenshot submitted by Lenovo Beijing shows the website https://www.lenovo.com/us/en/pc-nfe/?s_tnt=133500%3A1%3A0&adobe_mc_sdid=SDID%3D0E717C6A62B94068-219E7A964456AC62%7CMCORGID%3DF6171253512D2B8C0A490D45%40AdobeOrg%7CTS%3D1609357248&adobe_mc_ref=https%3A%2F%2Fwww.lenovo.com%2Fus%2Fen%2F, which offers to sell the Yoga 3 (14 inch) for $829.00 and includes "Free Shipping." The website touts "Four Modes for the Freedom to Do What You Want" and lists "Laptop," "Tablet," "Tent" and "Stand" beneath an image of the Lenovo Yoga 3 operating in tent mode:

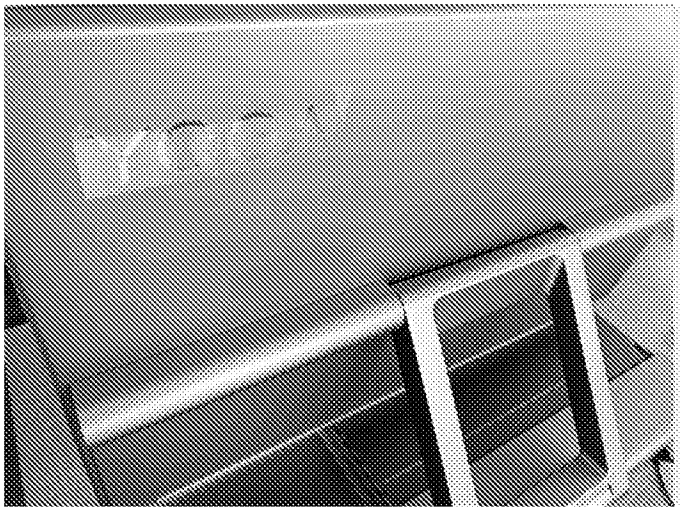


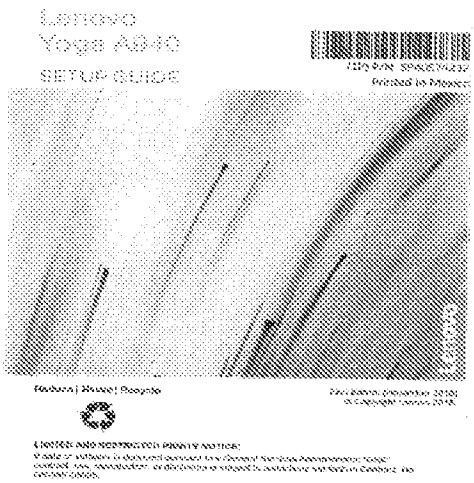
40. The Statement of Use submitted by Lenovo Beijing included a declaration that stated that "the applicant is the owner of the mark sought to be registered; the mark is in use in commerce; for a trademark or service mark application, the applicant is using the mark in commerce on or in connection with all the goods/services in the application or notice of allowance."

41. Lenovo Beijing uses the YOGA mark in its advertising of the Yoga A940 on the Lenovo.com Domain:



42. Lenovo Beijing uses its YOGA trademark on the back of the screen on the A940 in addition to materials that come with the Yoga A940, such as the setup guide seen below:

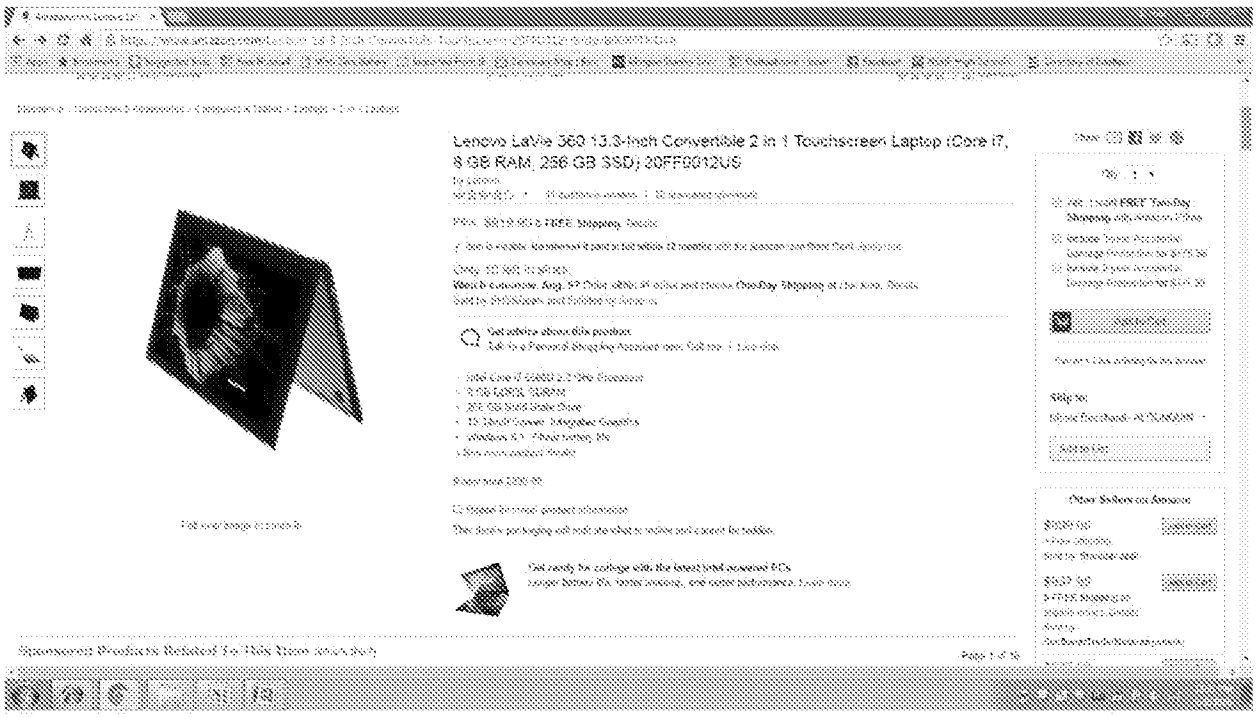




43. Lenovo Beijing's Lenovo.com Domain began touting the Yoga A940 using the YOGA and LENOVO marks in January 2019. https://news.lenovo.com/pressroom/press-releases/lenovo-yoga-smartest-consumer-computers-yet/; https://news.lenovo.com/lenovo-unboxed-yoga-a940-all-in-one-pc/

44. The Accused Products represent a significant portion of the personal computers that use the YOGA trademark that are advertised as available for sales from the Lenovo.com Domain. Lenovo Beijing's ownership of the YOGA mark in the United States illustrates its intent to use the mark in commerce in the United States.

45. On March 4, 2015, Lenovo Beijing submitted an application for U.S. Serial No. 86553493 to the mark LENOVO LAVIE for goods that include "laptop computers." On August 9, 2016, applicant Lenovo Beijing submitted a Statement of Use, which included the statement: "The mark was first used by the applicant, or the applicant's related company, licensee, or predecessor in interest at least as early as 05/00/2015, and first used in commerce at least as early as 05/00/2015, and is now in use in such commerce. The applicant is submitting one specimen for the class showing the mark as used in commerce on or in connection with any item in the class, consisting of a(n) screen shot of websites showing product for sale." Lenovo Beijing submitted to the Trademark Office a screenshot of the website www.amazon.com/Lenovo-13-3-Inch-Convertible-Touchscreen-20FF0012US/dp/B00X0THDY4, which offers to sell for $919.00 the Lenovo LaVie 360, which is included in the Accused Products defined below. The website includes an image of the Lenovo LaVie 360 operating in tent mode, and identifies Lenovo as the seller:



http://tsdr.uspto.gov/documentviewer?caseId=sn86553493&docId=SOU20160810165541#docIndex=4&page=1

46. The Statement of Use submitted by Lenovo Beijing in connection with the LENOVO LAVIE mark included a declaration stating that "the applicant is the owner of the mark sought to be registered; the mark is in use in commerce; for a trademark or service mark application, the applicant is using the mark in commerce on or in connection with all the goods/services in the application or notice of allowance."

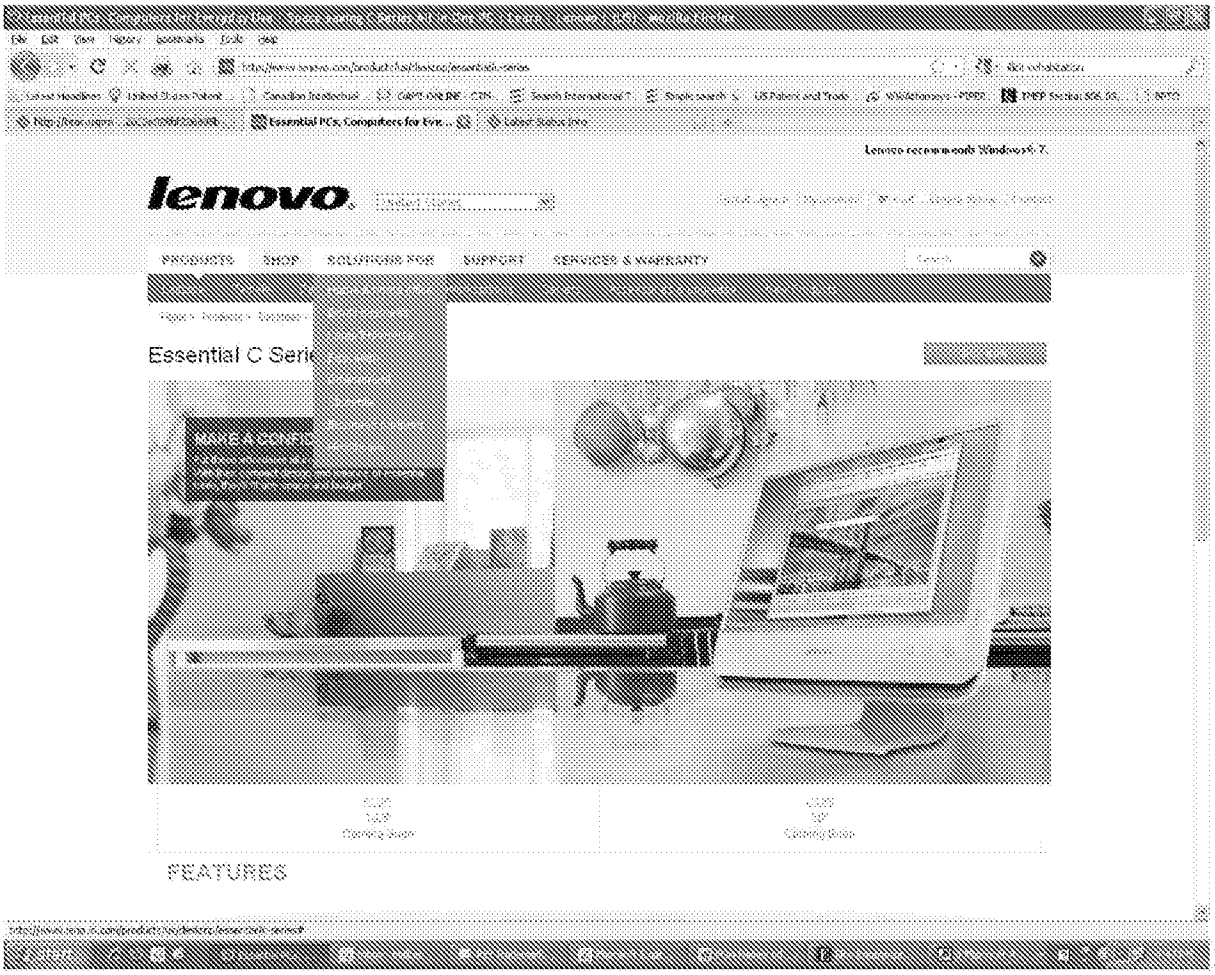
47. Lenovo Beijing owns U.S. Registration No. 3,149,377 to the mark LENOVO for goods that include "computers" and "notebook computers" and for services that include "installation, maintenance and repair of computer hardware."

48. On October 13, 2011, Lenovo Beijing submitted a Declaration of Use that included the following declaration: "The mark is in use in commerce on or in connection with the goods and/or services identified above, as evidenced by the attached specimen(s) showing the

mark as used in commerce."

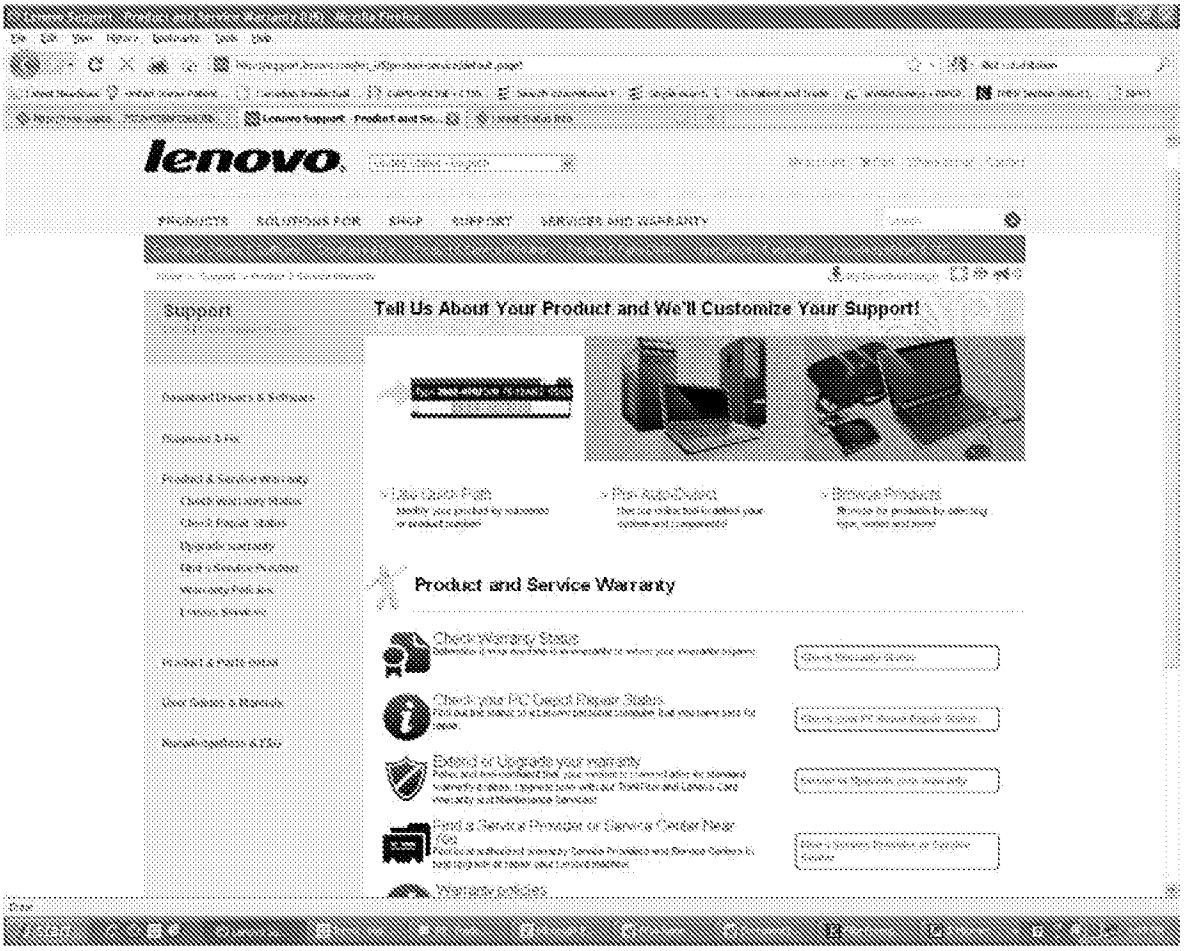
http://tsdr.uspto.gov/documentviewer?caseId=sn78217242&docId=81520111014155540#docIndex=6&page=1

49. Lenovo Beijing submitted a specimen on October 13, 2011 that included a screenshot of the Lenovo.com Domain, www.lenovo.com/products/us/desktop/essential/c-series, which advertised products to be offered for sale in the United States:

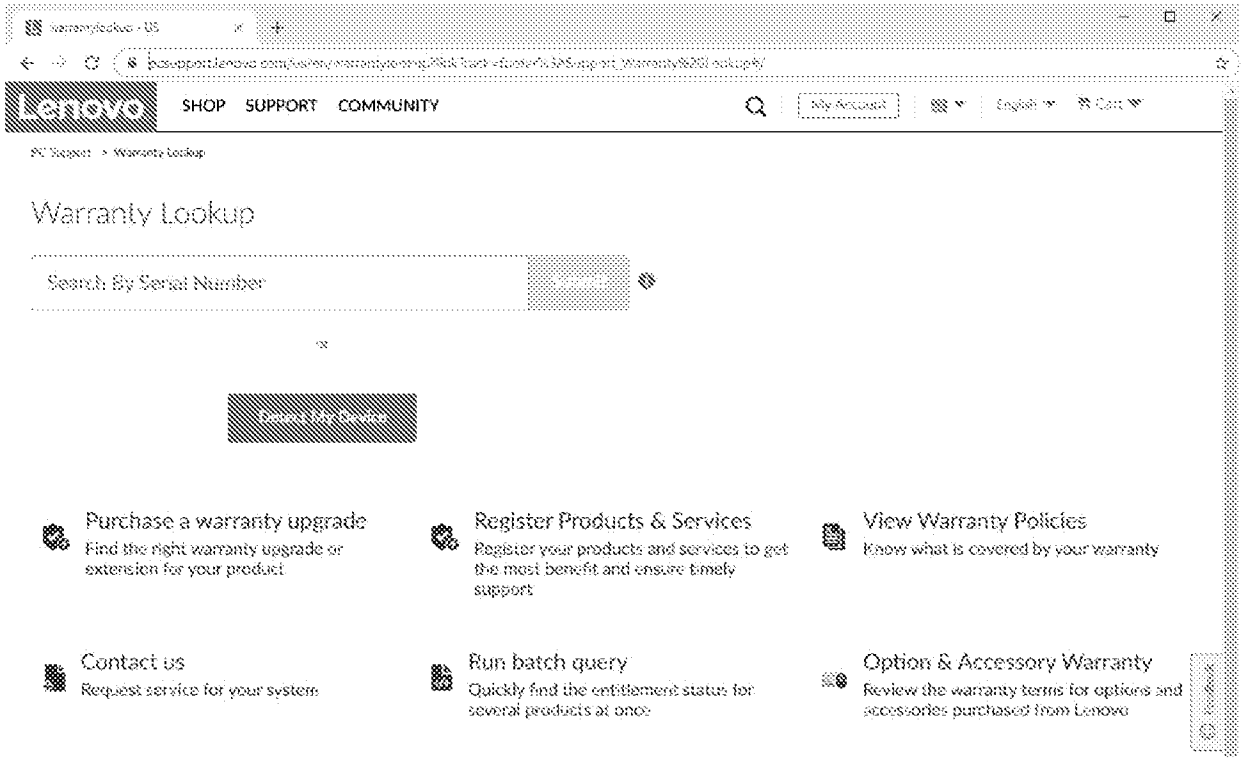


50. The specimen that Lenovo Beijing submitted on October 13, 2011 also included screenshots of the Lenovo.com Domain, www.lenovo.com/en_US/product-service/default.page?,

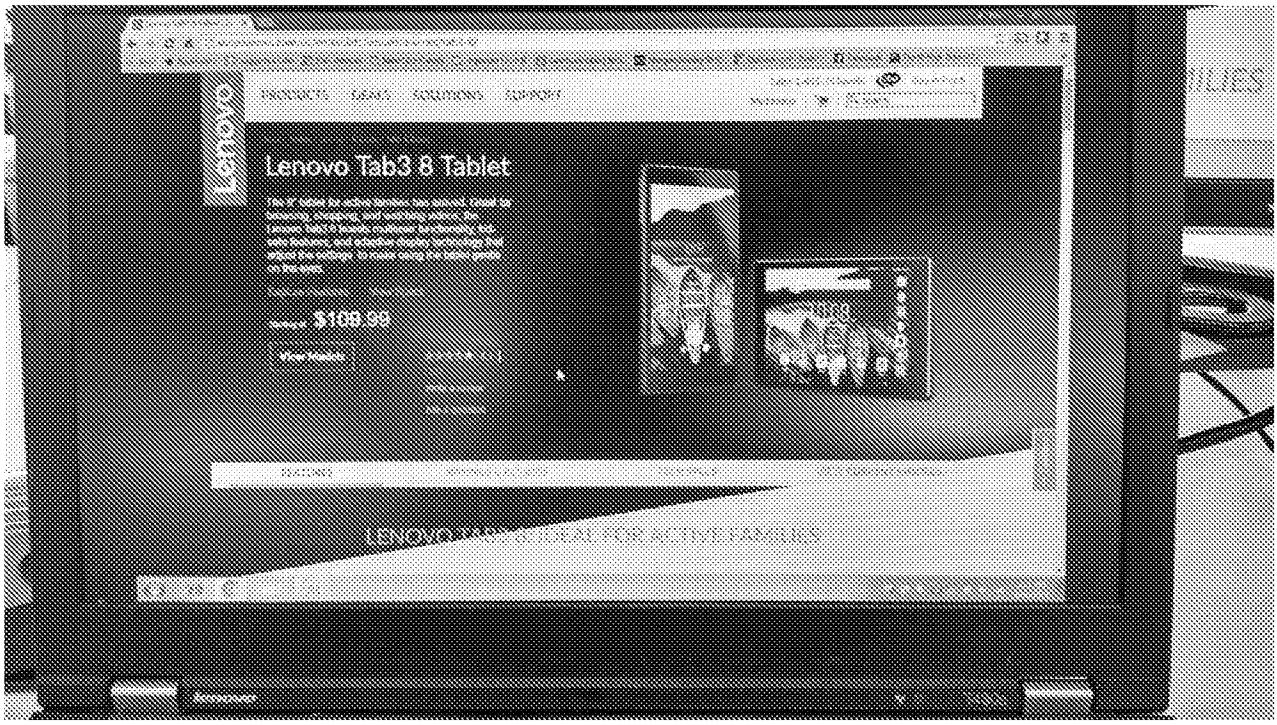
which allowed customers in the United States to check the status of their product and service warranty, upgrade their warranty, or access their warranty policies:



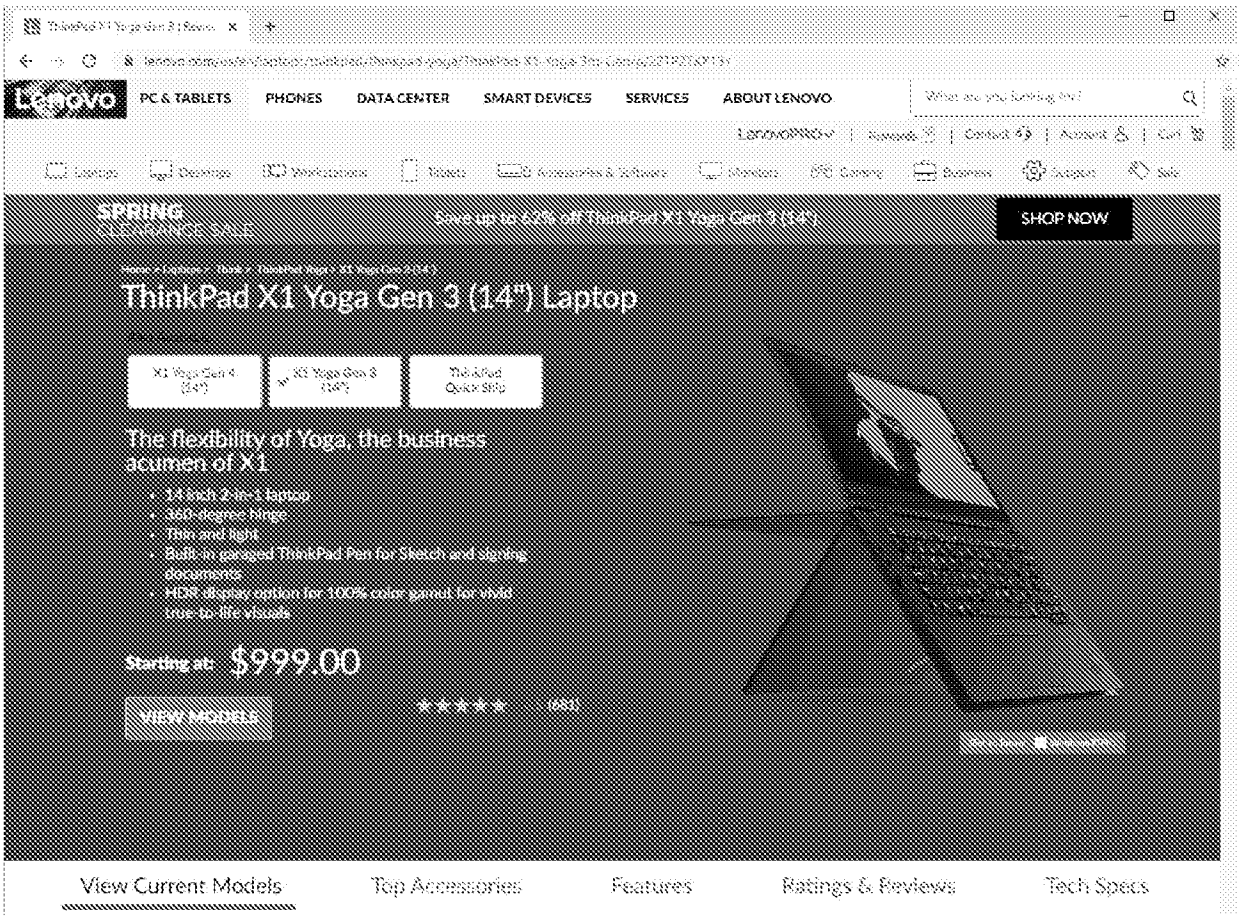
51. Lenovo Beijing continues to use the LENOVO mark on the Lenovo.com Domain, which allows customers in the United States who have purchased the Accused Products to lookup their warranty, purchase a warranty upgrade, or view their warranty policies.



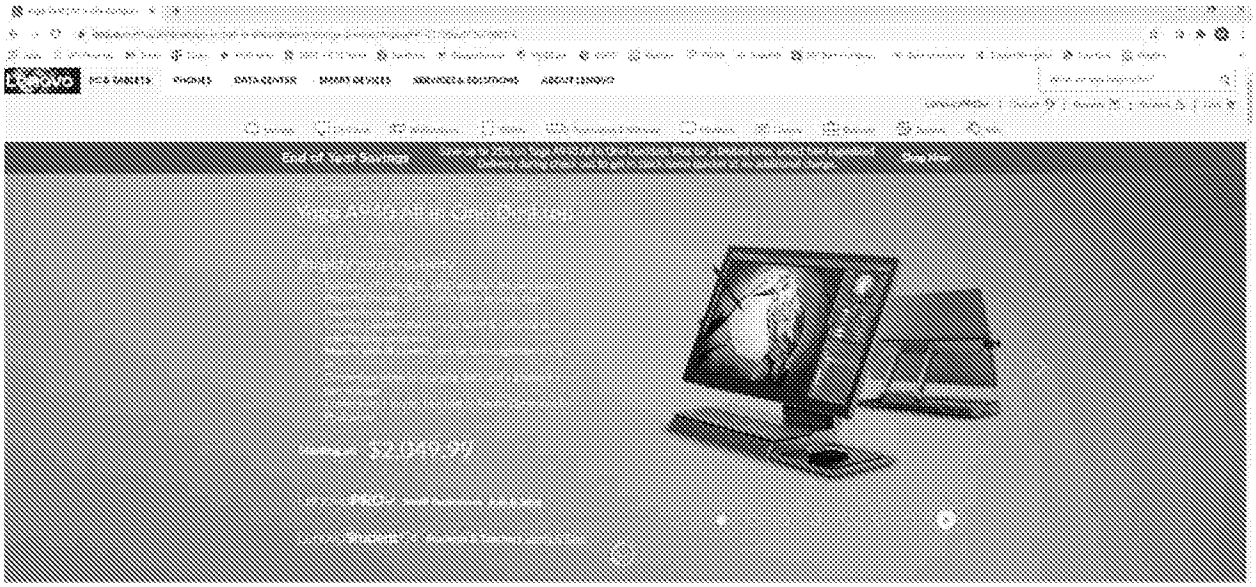
52. On August 31, 2016, Lenovo Beijing submitted a Declaration of Use that included a specimen in which the use of the LENOVO mark on Lenovo Beijing's Lenovo.com Domain is visible, and is used in connection with an offer to sell a product within the United States.



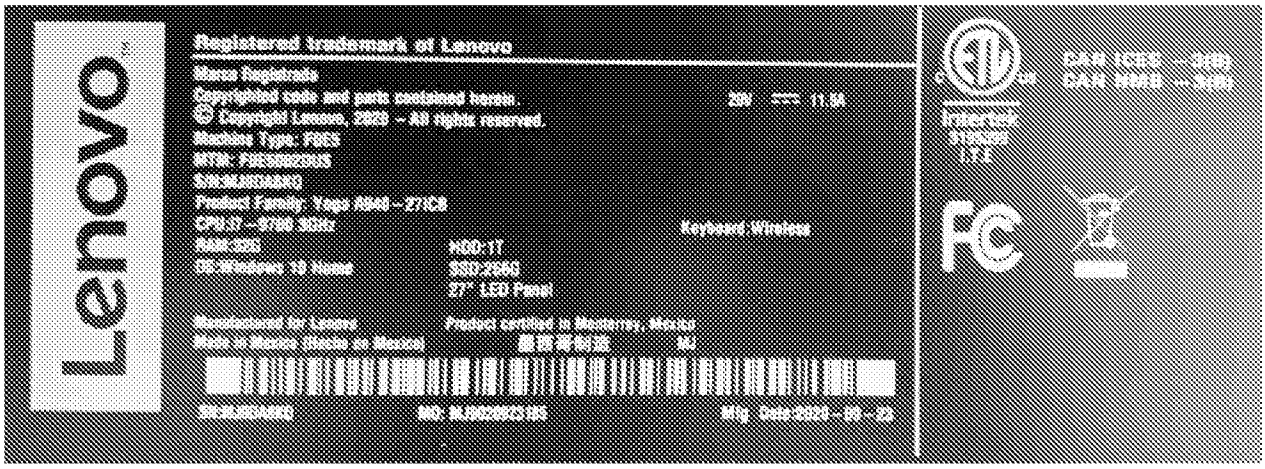
53. Lenovo Beijing continues to use the LENOVO mark on the Lenovo.com Domain in connection with offers to sell products within the United States, including each of the Accused Products (defined below). For example, Lenovo Beijing displays the LENOVO mark on the Lenovo.com Domain in connection with its offer to sell to customers within the United States, including customers within Delaware, the 3rd Generation ThinkPad X1 Yoga, which is included in the Accused Products.



54. Lenovo Beijing also displays the LENOVO mark on the Lenovo.com Domain in connection with its offer to sell to customers within the United States, including customers within Delaware, the Lenovo A940 All in One Desktop, which is one of the Accused Products:



55. A Yoga A940, which is one of the Accused Products, was purchased in Delaware from the Lenovo.com Domain. The underside of the device bears Lenovo Beijing's LENOVO mark:



56. A 3rd Generation ThinkPad X1 Yoga, which is one of the Accused Products, was purchased in the United States from Lenovo Beijing's Lenovo.com Domain. The underside of the device bears Lenovo Beijing's LENOVO mark.



57. The Accused Products are a significant source of revenue for Lenovo. In May 2019, the president of Lenovo's North America Intelligent Devices Group, Matthew Zielinksi, stated: "We took back the lead as the No. 1 PC company in the world. We hit a global market share of 24.6 percent [for the fourth quarter of 2018, according to IDC], which is 16 percent growth. ... Through calendar Q4 of last year, we were the fastest-growing PC manufacturer in the largest five. Our shipments jumped 29 percent year to year, and in calendar Q4 we outgrew the market by 26 points—just some astounding growth numbers there. That is North America alone. Not only was it 26 percent year-on-year growth, but we were just way faster by a country mile relative to the competition. ... We're absolutely on fire, and I'm extraordinarily bullish on our plans for next year." https://www.cnn.com/slide-shows/mobility/lenovo-s-matthew-zielinski-intelligent-devices-group-is-absolutely-on-fire. Lenovo's 2019 Annual Report states that the PC and Smart Device (PCSD) Business, which is part of Lenovo's Intelligent Devices Group, had "a record revenue of US $38,475 million for the fiscal year, representing approximately 75 percent of the Group's total revenue." (2019 Annual Report, p. 18). The 2019 Annual Report stated that market share gain and revenue growth "were mainly driven by Asia Pacific (AP) and North America (NA)." (*Id.*) The Accused Products fall within Lenovo's PCSD Business. Given that Lenovo accounts for nearly a quarter of global market share for personal computers, given Lenovo's "astounding growth" in North America, given that the PCSD Business that supplies the Accused Products had over $38 billion in revenues in 2019, and given the large number of

devices in the Accused Products (defined below), upon information and belief customers in United States, including in Delaware, have purchased the Accused Products from Lenovo Beijing's website in the past six years.

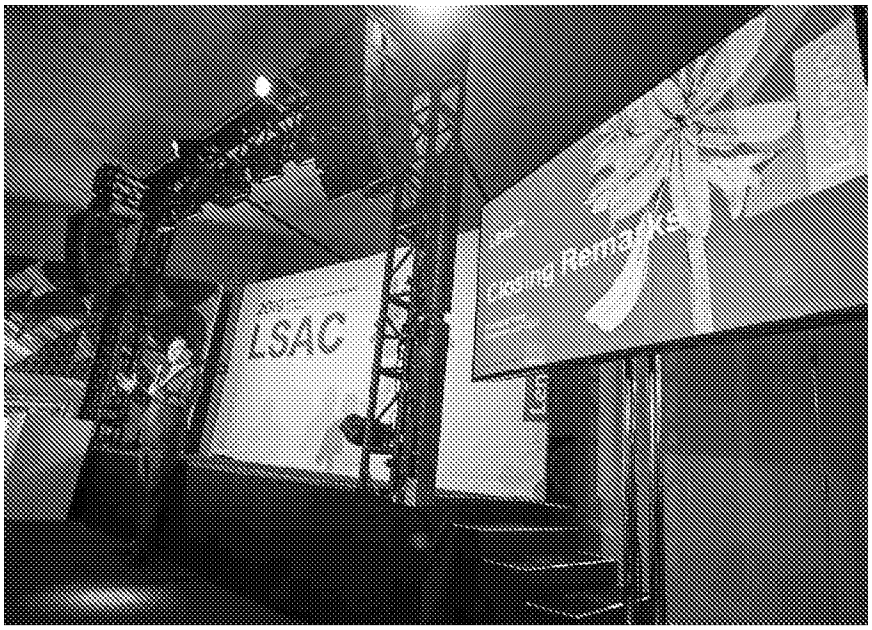
58. Lenovo Beijing plays a significant role in realizing the revenue for one or more of the Accused Products. For example, Lenovo Beijing's development and design of one or more of the Accused Products, its role with the manufacture and distribution of one or more of the Accused Products, its role getting authorization to import and sell one or more of the Accused Products in the United States and Delaware, its control over the trademarks used with the Accused Products, and its control over the Lenovo.com Domain are all important to generating the revenue associated with those Accused Products.

59. On information and belief, people in Delaware and in the United States who buy products from the Lenovo.com Domain understand that they are entering into a sales agreement with Lenovo Beijing. The Sales Agreement available on the Lenovo.com Domain generically refers to "Lenovo." https://www.lenovo.com/us/en/legal/sales-agreement/. A person in Delaware or the United States who used a WHOIS database to check who the "Lenovo" providing the Sales Agreement would learn that Lenovo Beijing owns the Lenovo.com Domain. https://who.is/whois/lenovo.com. Nothing on the Lenovo.com Domain indicates that the Sales Agreement between "Lenovo" and customers in Delaware and the United States is actually an agreement with Lenovo US. Consequently, on information and belief, people in Delaware and the United States understand that the Sales Agreement on the Lenovo.com Domain is with Lenovo Beijing.

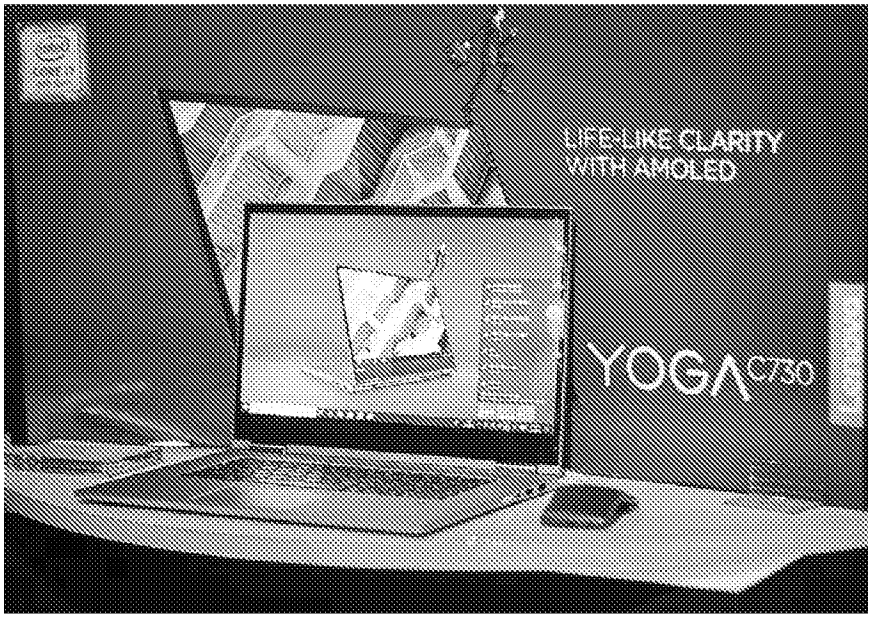
60. Lenovo Beijing's purposeful contact with the United States and with Delaware is evidenced by the following Lenovo Beijing conduct: involvement in the development and design

of one or more of the Accused Products for use in the United States and Delaware; involvement in the manufacture and distribution of one or more of the Accused Products with the intent that one or more of the Accused Products would be used in the United States and Delaware; involvement in securing compliance with the FCC requirements for marketing, importing, selling and using one or more of the Accused Products in the United States and Delaware; ownership of and control over the trademarks used with the Accused Products; and ownership of, responsibility for and control over the Lenovo.com Domain. But for these purposeful contacts by Lenovo Beijing, one or more of the Accused Products would not have been imported, offered for sale, sold, and used within the United States and Delaware, and therefore LiTL's infringement claims arise from these contacts.

61. Lenovo has promoted one or more of the Accused Products at one or more conventions, conferences, or trade shows in the United States. https://www.lenovo.com/us/en/events/ces/products. On information and belief, Lenovo Beijing and one or more of its employees has assisted Lenovo with preparation for such conventions or has attended such conventions on Lenovo's behalf. On information and belief, at such events, Lenovo Beijing employees spoke with consumers in the United States, and offered to sell or sold one or more of the Accused Products to consumers in the United States, or assisted other in doing so. On information and belief, such consumers may have been from Delaware or received such purchased Accused Products in Delaware. For example, Yuanqing Yang, the CEO of Lenovo Group and the leader of Lenovo Beijing spoke at CES 2019 in Las Vegas, where many of the Accused Products were promoted:



https://www.flickr.com/photos/lenovophotolibrary/46182094565/in/album-72157689698831183/



https://www.flickr.com/photos/lenovophotolibrary/40130936643/in/album-72157689698831183/

62. The Yoga A940 was showcased and used on or around January 9, 2019, as evidenced by the below photo from an album entitled "Lenovo at CES 2019" in Lenovo's official Flickr account, which states that the photo was "taken on January 9, 2019."



https://www.flickr.com/photos/lenovophotolibrary/32153906207/in/album-72157689698831183/

63. Lenovo US and Lenovo Beijing are part of a coordinated operation for making, importing, offering to sell, selling, and/or using the Accused Products in the United States and Delaware. On information and belief, Lenovo US and Lenovo Beijing share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and Accused Product lines and products involving related technologies. For example, Lenovo Group's CEO, Mr. Yang Yuanqing, "formulates and recommends the strategy of the Group"—defined to includes Lenovo US and Lenovo Beijing—and then "executes the strategy agreed by the Board." https://doc.irasia.com/listco/hk/lenovo/annual/2020/ar2020.pdf. "The Group is controlled through the Board who is responsible for steering the success of the Group by overseeing the overall strategy and directing and supervising its affairs in a responsible and effective manner." Lenovo US and Lenovo Beijing are both parties of a coordinated operation that introduces the Accused Products into the stream of commerce with the knowledge, expectation, and intent that they will be sold and used in Delaware and the United States.

64. The Court exercising personal jurisdiction over Lenovo Beijing is reasonable and consistent with the constitutional requirement of "fair play and substantial justice." As a resident of Delaware, LiTL's interest in litigating in Delaware is high. Delaware's interest in providing a forum for its residents to protect its rights is high, as is its interest in discouraging injuries in Delaware. Further, Delaware has a substantial interest in cooperating with other states to provide a forum for efficiently litigating LiTL's cause of action.

65. The discovery burden on Lenovo Beijing is not significant. Lenovo Beijing asserts that discovery is limited in China, which if true, would mitigate the burden on Lenovo Beijing.

66. For the foregoing reasons, Lenovo Beijing is subject to the personal jurisdiction of this Court under Federal Rule of Civil Procedure 4(k)(1) and the Delaware Long Arm Statute. Alternatively, if Lenovo Beijing is not subject to the personal jurisdiction of the courts of Delaware, then it is subject to the personal jurisdiction of this Court under Federal Rule of Civil Procedure 4(k)(2) because it has minimum contacts with the United States.

67. On information and belief, jurisdictional discovery about the following types of conduct by Lenovo Beijing would reveal additional reasons that Lenovo Beijing is subject to the personal jurisdiction of this Court:

- registering and exercising control over the Lenovo.com Domain and the use of the Lenovo.com Domain by Lenovo US;
- developing and designing of any of the Accused Products to comply with United States regulations required to import, offer to sell, sell, and use those Accused Products in the United States, including Lenovo Beijing's development and design of the Yoga A940;

- applying and securing approval from United States regulatory agencies to import, sell, and use one or more of the Accused Products in the United States;
- involvement with and control over the manufacture of the Accused Products;
- use of the established distribution networks for the Accused Products that Lenovo Beijing created, controls, or uses;
- involvement with importation and sales of Accused Products in the United States and Delaware;
- the extent of Lenovo Beijing's knowledge of and investigation of the Asserted Patents;
- registering trademarks in the United States and control over the use of those trademarks by Lenovo US;
- the importance of the Accused Products to Lenovo Beijing;
- involvement in realizing the revenue associated with the Accused Products;
- participation in conventions and conferences in the United States;
- the relationship between Lenovo Beijing and Lenovo US regarding the design, development, manufacture, distribution, importation into the United States, and sale in the United States and Delaware of the Accused Products; and
- the burdens on Lenovo Beijing associated with litigating in Delaware.

These topics of jurisdictional discovery are exemplary, and LiTL reserves to the right to seek other forms of jurisdictional discovery.

68. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). Lenovo US is incorporated in this District. Upon information and belief, Defendants have transacted business in this District and have committed acts of direct and indirect infringement in this

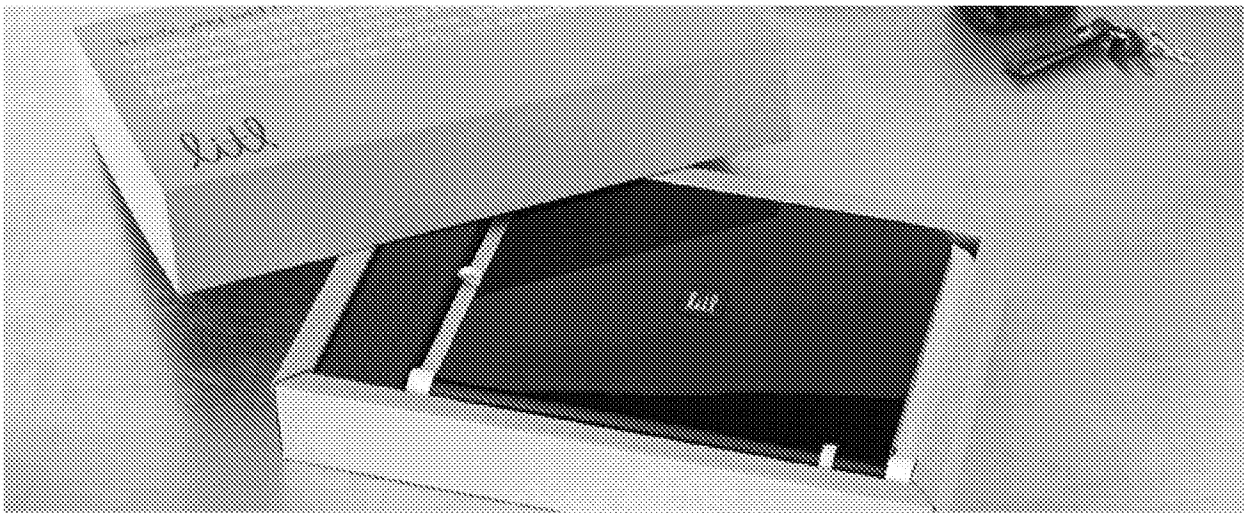
District by, among other things, making, using, offering to sell, selling, and/or importing products that infringe the Asserted Patents. Lenovo Beijing does not reside in the United States and venue lies in any judicial district pursuant to 28 U.S.C. § 1391(c)(3).

FACTUAL BACKGROUND

LiTL's Patented Technologies

69. In 2007, John Chuang had a vision for a new type of computer. He recognized that traditional computers are designed to meet the needs of everyone from a six year old to the largest employers on earth. Mr. Chuang set out to build a computer for the home that offered a simplified operating environment. Mr. Chuang founded LiTL and assembled a team of hardware and software engineers and user interface designers to achieve his vision.

70. LiTL developed a webbook, a portable computing device, which launched in 2009. LiTL focused on how a family typically uses the Internet in the home, and optimized the webbook's user interface for consuming Internet content.





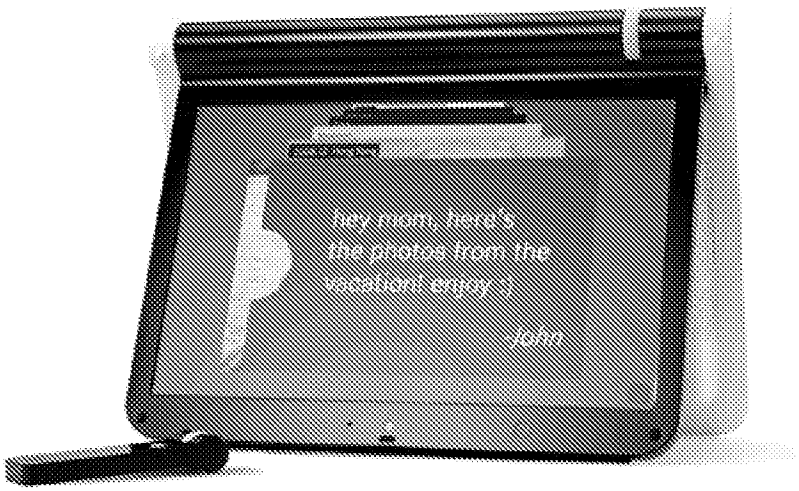
http://web.archive.org/web/20091204052449/http://www.litl.com/essays/hardware.htm

71. The webbook provided multiple display modes. In laptop mode, users access a keyboard and touchpad to browse the Internet and access apps that can be arranged as a set of cards.



http://web.archive.org/web/20091204052449/http://www.litl.com/essays/hardware.htm

72. Rotating the webbook display into "easel mode" allows users to easily consume content from the Internet via a streamlined, intuitive interface.



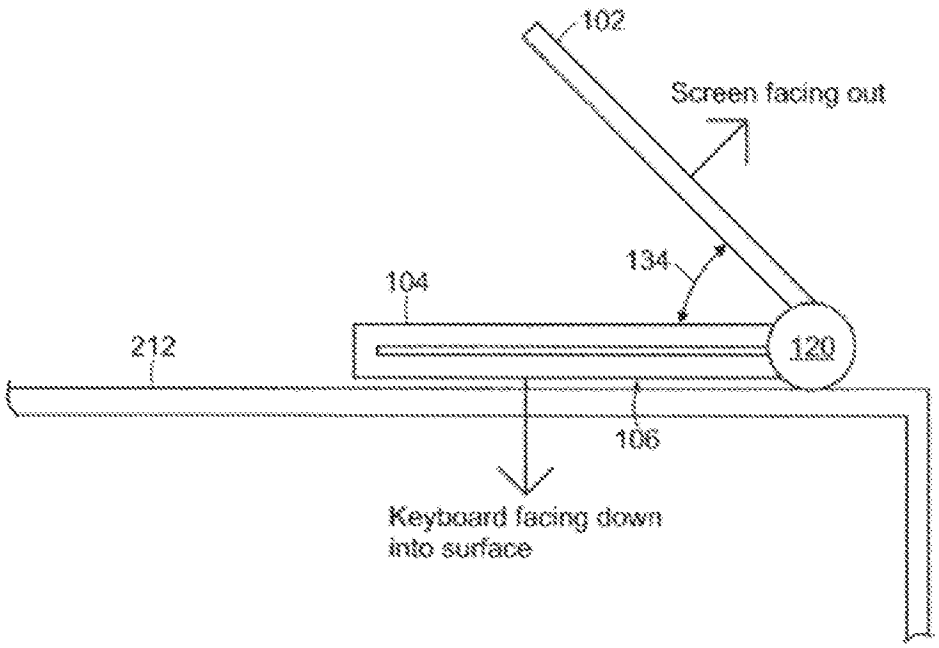
http://web.archive.org/web/20091201114605/http://www.litl.com/easy-to-use/intuitive-interface.htm

73. In easel mode the webbook's keyboard faces away from the user, and content is enlarged on the display for easier viewing from further away.



http://web.archive.org/web/20130420102239/http://litl.com/webbook/meet-webbook/more-fun.htm

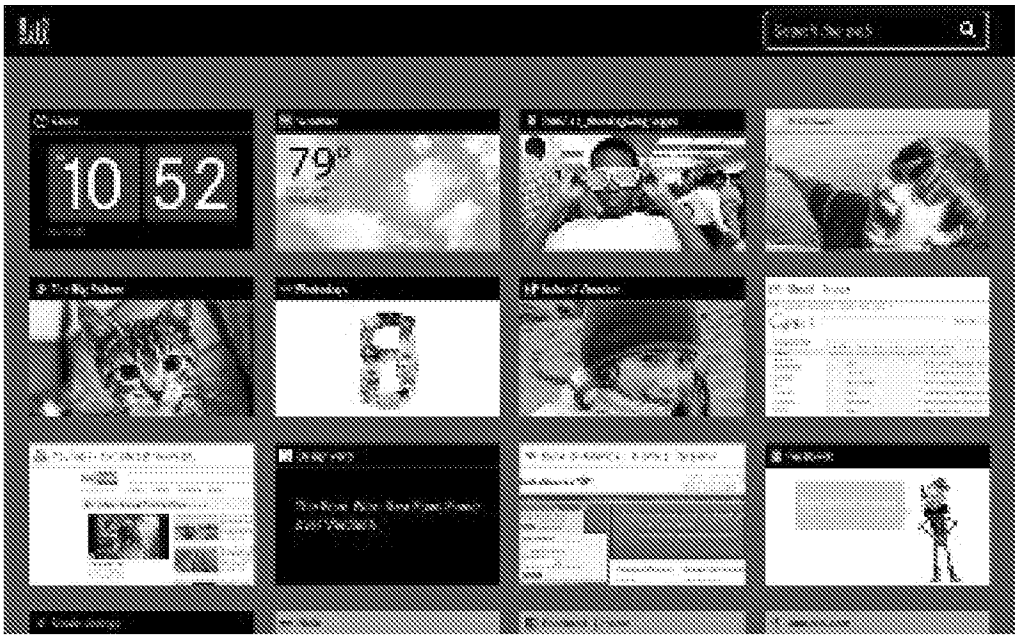
74. The webbook can also be configured in "frame mode," in which the keyboard faces down into the surface on which the webbook rests.



'688 patent, Figure 26.

75. The webbook delivers content from a user's favorite websites via "channels" to provide an experience that resembles watching television.





http://web.archive.org/web/20091204052453/http://www.litl.com/essays/software.htm

76. LiTL's continuing investment in innovation has produced a portfolio that includes over 20 patents in the United States and other countries across the globe.

LiTL's Asserted Patents

77. This complaint focuses on six LiTL patents directed to various aspects of computing devices that can be used in multiple display modes.

78. LiTL is the current owner by assignment of the entire right, title and interest in and to the '688 patent titled "Portable computer with multiple display configurations." LiTL filed U.S. Pat. App. No. 12/170,939 on July 10, 2008, which published as U.S. Pub. No. 2009/0244832 ("'832 Publication"), and the application issued as the '688 patent on October 16, 2012. The patent is generally directed to portable computers configurable between a plurality of display modes. A copy of the '688 patent is attached as Exhibit A.

79. LiTL is the current owner by assignment of the entire right, title and interest in and to the '844 patent titled "Portable computer with multiple display configurations." LiTL filed U.S. Pat. App. No. 12/170,951 on July 10, 2008, which published as U.S. Pub. No.

2009/0244012 ("'012 Published Application"), and the application issued as the '844 patent on January 7, 2014. The patent is generally directed to portable computers configurable between a plurality of display modes. A copy of the '844 patent is attached as Exhibit B.

80. LiTL is the current owner by assignment of the entire right, title and interest in and to the '154 patent titled "Portable computer with multiple display configurations." The '154 patent was duly and legally issued on May 14, 2019. The patent is generally directed to portable computers configurable between a plurality of display modes. A copy of the '154 patent is attached as Exhibit C.

81. LiTL is the current owner by assignment of the entire right, title and interest in and to the '715 patent titled "System and method for streamlining user interaction with electronic content." The '715 patent was duly and legally issued on January 30, 2018. The patent is generally directed to a user interface configured to display a plurality of views of computer content. A copy of the '715 patent is attached as Exhibit D.

82. LiTL is the current owner by assignment of the entire right, title and interest in and to the '888 patent titled "Method and apparatus for managing digital media content." The '888 patent was duly and legally issued on December 17, 2013. The patent relates generally to accessing and managing digital media libraries on streamlined computing devices with a plurality of selectable I/O profiles. A copy of the '888 patent is attached as Exhibit E.

83. LiTL is the current owner by assignment of the entire right, title and interest in and to the '957 patent titled "System and method for streamlining user interaction with electronic content." The '957 patent was duly and legally issued on November 5, 2013. The patent is generally directed to streamlined computer devices configured to perform a remote access operation. A copy of the '957 patent is attached as Exhibit F.

84. LiTL complied with its obligations under 35 U.S.C. § 287.

85. The Asserted Patents were well-known to personal computing companies because the Asserted Patents and their published applications are frequently cited during prosecution of patent applications owned by personal computing companies.

86. The Asserted Patents belong to a family whose members have been cited over 900 times in the prosecution of third-party patent applications.

87. The '688 patent and its corresponding published application have been cited at least 284 times in patents or publications assigned to major players in the personal computing space, as depicted below. Lenovo Group and its subsidiaries are fifth in the list of assignees whose patents and patent applications have cited the '688 patent and its published application

Ultimate Parent of Assignee	**Citations to '688 Patent**	**Citations to Published App.**	**Total Citations**
Microsoft Corp.	35	54	89
Apple Inc.	13	16	29
Intel Corp.	19	7	26
Google Inc.	10	2	12
Lenovo Group Ltd.	6	3	9
Hewlett Packard Co.	6	2	8
Dell Inc.	4	2	6
Other (excluding LiTL)	32	73	105
Total	125	159	284

88. The '844 patent and its corresponding published application have been cited at least 112 times in patents or publications assigned to major players in the personal computing space. Lenovo Group and its subsidiaries are third in the list of assignees whose patents and patent applications have cited the '844 patent and its published application.

Ultimate Parent of Assignee	Citations to '844 Patent	Citations to Published App.	Total Citations
Microsoft Corp.	16	1	17
Apple Inc.	0	12	12
Lenovo Group Ltd.	1	8	9
Google Inc.	3	5	8
Intel Corp.	2	2	4
Dell Inc.	2	1	3
Other (excluding LiTL)	24	35	59
Total	48	64	112

89. The '154, '715, '888 and '957 patents are descendants of the '688 and '844 patents.

90. According to a 2015 article by Lenovo Beijing employee Fred Gao, from the "Patent Management" department: "Lenovo's IP strategy is an integral part of the innovation cycle and product design process. R&D teams work closely with the company's IP lawyers from product conception through to manufacture and commercialization to develop effective IP strategies for new products. … Lenovo's Yoga Laptop, which combines its unique 360-degree rotating screen with standard tablet and laptop functionality, boasts around 100 patent and design rights." https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html

91. Given the close working relationship between Lenovo Beijing's R&D teams and the company's IP lawyers, and the numerous patents directed to Lenovo Yoga laptops, several of which cite the '688 and '844 patents and corresponding published applications, on information and belief Lenovo Beijing was aware of each of the Asserted Patents before the filing of the Original Complaint and knew that the Yoga laptop's 2-in-1 design infringes the Asserted Patents.

Lenovo's Incorporation of LiTL's Patented Technologies into Its Computing Devices

92. The allegations provided below are exemplary and without prejudice to LiTL's infringement contentions. In providing these allegations, LiTL does not convey or imply any particular claim constructions or the precise scope of the claims. LiTL's claim construction

contentions regarding the meaning and scope of the claim terms will be provided under the Court's scheduling order and local rules.

93. The infringing products include, but are not limited to, IdeaPad Yoga 13; IdeaPad Yoga 11S; Flex 2 (14 inch); Flex 2 (15 inch); Flex 3 (11 inch); Flex 3 (14 inch); Flex 3 (15 inch); Flex 4 (11 inch); Flex 4 (14 inch); Flex 4 (15 inch); Flex 5 (14 inch); Flex 5 (15 inch); Flex 6 (11 inch); Flex 6 (14 inch); Flex 10; Flex 14; Flex 14D; Flex 15; Flex 15D; Edge 15; Edge 2; Yoga 2 (11 inch); Yoga 2 (13 inch); Yoga 2 Pro; Yoga 3 (11 inch); Yoga 3 (14 inch); Yoga 3 Pro; Yoga 260; Yoga 300; Yoga 460; Yoga 500 (14 inch); Yoga 500 (15 inch); Yoga 510 (14 inch); Yoga 510 (15 inch); Yoga 520; Yoga 530; Yoga 700 (11 inch); Yoga 700 (14 inch); Yoga 710 (11 inch); Yoga 710 (14 inch); Yoga 710 (15 inch); Yoga 720 (12 inch); Yoga 720 (13 inch); Yoga 720 (15 inch); Yoga 730 (13 inch); Yoga 730 (15 inch); Yoga 900; Yoga 900S; Yoga 910; Yoga 920; Yoga Book with Windows; Yoga C630; Yoga C640; Yoga S730; Yoga C740 (14 inch); Yoga C740 (15 inch); Yoga S740 (14 inch); Yoga S740 (15 inch); Yoga C930; Yoga Book C930; Yoga C940 (14 inch); Yoga C940 (15 inch); Yoga Slim 7; Yoga P40; LaVie 360; 1st Generation ThinkPad Yoga 11e; 2nd Generation ThinkPad Yoga 11e; 3rd Generation ThinkPad Yoga 11e; 4th Generation ThinkPad Yoga 11e; 5th Generation ThinkPad Yoga 11e; ThinkPad Yoga 12; ThinkPad Yoga 14; ThinkPad Yoga 15; ThinkPad L380 Yoga; ThinkPad L390 Yoga; 1st Generation ThinkPad X1 Yoga; 2nd Generation ThinkPad X1 Yoga; 3rd Generation ThinkPad X1 Yoga; 4th Generation ThinkPad X1 Yoga; 5th Generation ThinkPad X1 Yoga; ThinkPad Yoga X380; ThinkPad Yoga X390; ThinkPad L13 Yoga; Lenovo 300e Windows; Lenovo 300e Winbook; Lenovo N23 Winbook (collectively "Accused Portable Products"); and Lenovo Yoga A940 (together with the Accused Portable Products, the "Accused Products"). The Accused Products are non-limiting examples that were identified based on publicly available information,

and LiTL reserves the right to identify additional infringing activities, products and services, including, for example, on the basis of information obtained during discovery.

94. The Accused Portable Products are convertible devices, which are capable of being used in multiple modes, including laptop mode, tent mode, and stand mode. From 2012 through the present, the Lenovo.com Domain has hosted press releases touting the multi-mode capabilities of the following Accused Portable Products. Lenovo intends that those press releases influence buyers in the United States and Delaware.

- IdeaPad Yoga 13 (October 9, 2012): https://news.lenovo.com/pressroom/press-releases/lenovo-premiers-yoga-and-debuts-family-of-convertible-devices-designed-for-windows-8/
- Yoga 11S (May 16, 2013): https://news.lenovo.com/pressroom/press-releases/lenovo-launches-yoga-11s-convertible/
- Yoga 2 Pro, ThinkPad Yoga, Flex 14, Flex 15 (September 5, 2013): https://news.lenovo.com/pressroom/press-releases/lenovo-expands-multimode-family-with-new-yoga-convertibles-and-flex-dual-mode-devices/
- Yoga 2, Flex 14D, Flex 15D (January 6, 2014): https://news.lenovo.com/pressroom/press-releases/lenovo-adds-more-convertibles-and-detachable-devices-to-multimode-computing-roster/
- Flex 2 (April 16, 2014): https://news.lenovo.com/pressroom/press-releases/lenovo-flexes-multimode-muscle-with-new-dual-mode-laptops/
- Edge 15 (September 4, 2014): https://news.lenovo.com/pressroom/press-releases/new-lenovo-devices-transform-to-fit-the-board-room-game-room-and-beyond/

- Yoga 3 Pro (October 9, 2014): https://news.lenovo.com/pressroom/press-releases/new-lenovo-ultra-slim-yoga-3-pro-adapts-to-users/
- Flex 3 (January 5, 2015): https://news.lenovo.com/pressroom/press-releases/lenovo-brings-consumers-new-choices-for-mobile-and-home-computing/
- LaVie 360 (January 5, 2015): https://news.lenovo.com/pressroom/press-releases/lenovo-and-necp-introduce-two-lighter-than-air-lavie-z-ultraportables/
- ThinkPad Yoga, Yoga 3 (January 5, 2015): https://news.lenovo.com/pressroom/press-releases/lenovo-yoga-family-takes-flexibility-and-interactivity-even-further-with-new-technologies/
- ThinkPad Yoga 11e (January 21, 2015): https://news.lenovo.com/pressroom/press-releases/lenovo-gets-back-to-school-with-new-thinkpad-11e-laptops-series/
- Yoga 260, Yoga 460 (September 2, 2015): https://news.lenovo.com/pressroom/press-releases/new-thinkpad-yoga-and-thinkcentre-tiny-transform-business-computing/
- Yoga 900 (October 19, 2015): https://news.lenovo.com/pressroom/press-releases/new-lenovo-yoga-windows-10-pcs-primed-for-portability/
- Yoga 700 (October 29, 2015): https://news.lenovo.com/pressroom/press-releases/new-lenovo-yoga-700-offers-more-options-for-performance-and-portability/
- Yoga P40 (December 1, 2015): https://news.lenovo.com/pressroom/press-releases/creativity-without-limits-performance-without-compromise-lenovo-unveils-the-thinkpad-p40-yoga/
- ThinkPad X1 Yoga (January 3, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-unveils-pioneering-modular-thinkpad-x1-tablet/

- Yoga 900S (January 4, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-launches-yoga-900s-as-worlds-thinnest-convertible-laptop/
- Yoga 510, Yoga 710, Flex 4 (February 21, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-launches-new-travel-ready-windows-10-tablet-and-yoga-laptops/
- Lenovo N23 (May 10, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-launches-new-n23-and-n42-laptops-designed-for-k-12-institutions/
- Yoga 910 (August 31, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-pushes-the-portability-envelope-with-latest-yoga-laptop-and-tablet/
- Yoga Book (August 31, 2016): https://news.lenovo.com/pressroom/press-releases/lenovo-reveals-the-yoga-book-the-2-in-1-tablet-for-productivity-and-creativity/
- Yoga 520, Yoga 720 (February 27, 2017): https://news.lenovo.com/pressroom/press-releases/lenovo-sets-stage-for-new-mobility-with-smart-connected-devices-services/
- Yoga 920 (August 31, 2017): https://news.lenovo.com/pressroom/press-releases/lenovo-connects-consumers-with-powerful-reality-of-todays-new-smart-devices/
- Yoga 530, Yoga 730 (February 26, 2018): https://news.lenovo.com/pressroom/press-releases/lenovo-sees-intelligence-transforming-everything-at-mwc-2018-from-devices-to-data-center/
- Yoga C930 (August 30, 2018): https://news.lenovo.com/pressroom/press-releases/raising-the-bar-lenovo-design-vp-on-the-new-yoga-c930/

- Yoga C730 and Yoga A940 (January 8, 2019): https://news.lenovo.com/pressroom/press-releases/lenovo-yoga-smartest-consumer-computers-yet/
- Lenovo 100e Windows, Lenovo 300e Windows (January 22, 2019): https://news.lenovo.com/pressroom/press-releases/lenovo-laptops-amplify-learning-experiences-through-digital-innovation/
- ThinkPad X390 Yoga (February 25, 2019): https://news.lenovo.com/pressroom/press-releases/intelligent-mobile-computing-showcased-by-latest-thinkpad-laptops-mwc/
- https://news.lenovo.com/pressroom/press-releases/smarter-lenovo-thinkpad-laptops-engineered-for-future-workforce/
- Yoga C740, Yoga S740, Yoga C940 (September 5, 2019): https://news.lenovo.com/pressroom/press-releases/lenovo-launches-new-devices-offering-smarter-technology-for-all-ifa-tech-life/
- Yoga Slim 7 (January 6, 2020): https://news.lenovo.com/pressroom/press-releases/lenovo-breaks-barriers-with-new-consumer-technology-unveiled-at-ces-2020-2/
- ThinkPad X13 Yoga, ThinkPad L13 Yoga (February 24, 2020): https://news.lenovo.com/pressroom/press-releases/updated-thinkpad-laptop-portfolio-empowers-choice-and-business-freedom/

95. Convertible devices like the Accused Portable Products have played a significant role in the profitability of Lenovo entities. For example:

- According to a 2013 article, Lenovo's leadership recognized that convertible devices that use the Windows 8 operating system "are helping the company break into the

high-end segment for the North American market." https://www.cio.com/article/2388774/windows-8-convertibles-help-lenovo-break-into-high-end-pc-market.html

- In a 2013 interview with McKinsey, Lenovo's leadership explained the impact that the Yoga had on Lenovo's fortunes in the United States: "Yoga, our ultrabook that functions both as a laptop and tablet, is a good example. Before we launched it, we had never addressed the high-priced laptop market in the US. Now, since launching Yoga, we have a more than 40 percent market share in the $900-and-above price band in the US retail market. That's from this one product with just two models, a 13-inch and an 11-inch. It's been a huge, huge success. And it's not only helped us to grow our volume and market share but also to build our brand. It has repositioned us as a brand known for innovation." http://sites.utexas.edu/chinaecon/files/2015/06/McKinsey_Interview-Lenovo-CEO-Yang.pdf
- In a 2013 interview with the Economic Times, Lenovo's leadership stated: "Yoga is a hybrid laptop that is also a tablet with touch capability. That's the future of notebook." https://economictimes.indiatimes.com/opinion/interviews/lenovos-protect-and-attack-strategy-helped-it-expand-globally-yang-yuanqing-chairman-and-ceo-lenovo-group/articleshow/18281695.cms
- In a 2013 interview with the Wall Street Journal, Lenovo's leadership stated that "high-end products, like the IdeaPad Yoga" had "helped raise average selling prices." https://blogs.wsj.com/digits/2013/08/15/qalenovo-ceo-on-smartphones-and-blackberry/

96. Lenovo entities make, use, sell, offer for sale and import the 3rd Generation ThinkPad X1 Yoga with a Windows 10 operating system and the device's features are described on Lenovo's website in various places, including but not limited to:

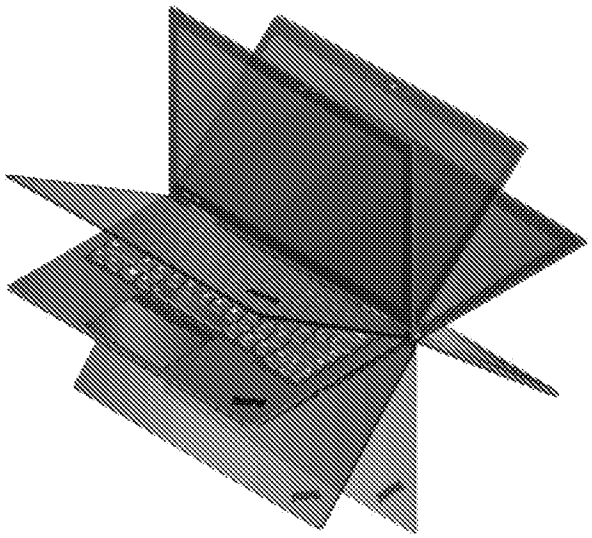
- https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/ThinkPad-X1-Yoga-3rd-Gen/p/22TP2TXX13Y ("ThinkPad Webpage")
- https://www.lenovo.com//us/en/laptops/thinkpad/thinkpad-yoga/ThinkPad-X1-Yoga-3rd-Gen/p/22TP2TXX13Y/gallery/image ("ThinkPad Photos")
- https://www.lenovo.com//us/en/laptops/thinkpad/thinkpad-yoga/ThinkPad-X1-Yoga-3rd-Gen/p/22TP2TXX13Y/gallery/video ("ThinkPad Video")
- https://psref.lenovo.com/syspool/Sys/PDF/Think_Tablets/ThinkPad_X1_Tablet_3rd_Gen/ThinkPad_X1_Tablet_3rd_Gen_Spec.PDF ("ThinkPad Specifications")
- https://pcsupport.lenovo.com/us/en/products/accessory/pens-and-supplies/thinkpad-pen-pro-for-l380-yoga/solutions/VID500081 ("ThinkPad Yoga Modes")
- https://download.lenovo.com/pccbbs/mobiles_pdf/tp_x1_carbon-yoga_hmm_v3_en.pdf ("ThinkPad Hardware Maintenance Manual")
- https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-x-series-laptops/thinkpad-x1-yoga-3rd-gen-type-20ld-20le-20lf-20lg/manuals/um500370 ("ThinkPad HTML User Guide")
- https://download.lenovo.com/pccbbs/mobiles_pdf/x1yoga_x1carbon_ug_en.pdf ("ThinkPad User Guide")

97. The user guide for the 3rd Generation ThinkPad X1 Yoga describes four operating modes.

Get to know YOGA modes (for X1 Yoga only)

Your computer display can be rotated to any angle up to 360 degrees.

Attention: Do not rotate the computer display with too much force, or apply too much force to the upper-right or upper-left corner of the computer display. Otherwise, the computer display or hinges might get damaged.



Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

See ThinkPad User Guide, p. 28.

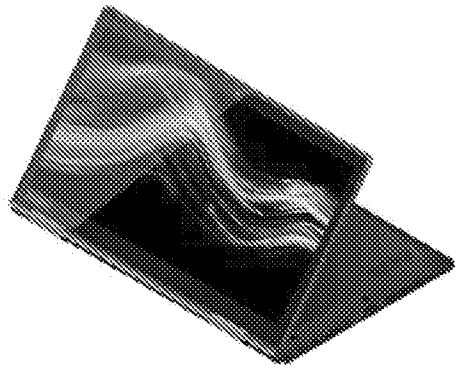
98. The keyboard is automatically disabled in three of the four operating modes.

Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

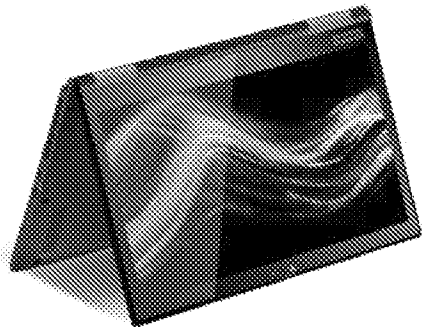
Note: The keyboard and the pointing devices are automatically disabled in the stand mode, tent mode, and tablet mode. Use the touch screen to control your computer instead.



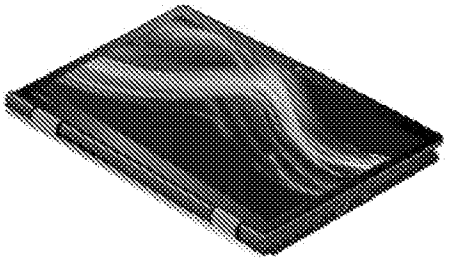
Notebook mode



Stand mode



Tent mode



Tablet mode

See ThinkPad User Guide, pp. 28-29.

99. On information and belief, the Accused Portable Products identified in the table below were and continue to be made, sold, and offered for sale with Windows 10 pre-installed and are capable of operating in the four operating modes described in the preceding paragraph:

Flex 3 (11 inch)	https://www.lenovo.com/us/en/laptops/lenovo/flex-series/flex-3-11/
Flex 3 (14 inch)	https://www.lenovo.com/us/en/laptops/lenovo/flex-series/flex-3-14/
Flex 3 (15 inch)	https://www.lenovo.com/us/en/consumer-notebook/ideapad/ideapad-flex-series/Lenovo-Flex-3-1580/p/88LG8FX0647
Flex 4 (11 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/IdeaPad-Flex-4-11-inch/p/88IP8FX0737
Flex 4 (14 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-ideapad-FLEX-4-1470/p/88IP8FX0685

Flex 4 (15 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-ideapad-FLEX-4-1570/p/88IP8FX0686
Flex 5 (14 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Flex-5-14/p/88IP8FX0831
Flex 5 (15 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/flex-5-1570
Flex 6 (11 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-FLEX-6-11IGM/p/88IP8FX0889
Flex 6 (14 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-ideapad-FLEX-6-14IKB/p/88IP8FX0980
Flex 14	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-IdeaPad-FLEX-14IWL/p/88IP8FX1271
Flex 15	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-flex-series/Lenovo-IdeaPad-FLEX-15IWL/p/88IP8FX1272
Edge 2	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/lenovo-edge-series-laptops/edge-2-1580
Yoga 3 (14 inch)	https://www.lenovo.com/us/en/laptops/lenovo/yoga-laptop-series/yoga-3-14/
Yoga 260	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/Yoga-260/p/22TP2TXY260
Yoga 300	https://www.lenovo.com/us/en/consumer-notebook/lenovo-yoga/essential/Yoga-300-11/p/88YG3000595
Yoga 460	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/Yoga-460/p/22TP2TSS460
Yoga 500 (14 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-500-14isk
Yoga 500 (15 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-500-15isk
Yoga 510 (14 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-510-14ikb
Yoga 510 (15 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-510-15ikb
Yoga 520	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-520-14ikb
Yoga 530	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-530-14ikb

Yoga 700 (11 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Lenovo-YOGA-700-11ISK/p/88YG7000616
Yoga 700 (14 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/yoga-700-14/
Yoga 710 (11 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-710-11/p/88YG7000723
Yoga 710 (14 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Lenovo-YOGA-710-14IKB/p/88YG7000771
Yoga 710 (15 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Lenovo-YOGA-710-15IKB/p/88YG7000772
Yoga 720 (12 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-720-12/p/88YG7000919
Yoga 720 (13 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-720-13/p/88YG7000827
Yoga 720 (15 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-720-15/p/88YG7000828
Yoga 730 (13 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-730-13-/p/88YG7000964
Yoga 730 (15 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Yoga-730-15/p/88YG7000965
Yoga 900	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Yoga-900-13/p/88YG9000571
Yoga 900S	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Lenovo-YOGA-900S/p/88YG90S0572
Yoga 910	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Yoga-910/p/88YG9000786
Yoga 920	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Yoga-920-13/p/88YG9000859
Yoga Book with Windows	https://www.lenovo.com/us/en/tablets/windows-tablets/yoga-book-windows-series/Yoga-Book-with-Windows/p/ZZITZTWYB2L
Yoga C630	https://www.lenovo.com/us/en/laptops/yoga/yoga-c-series/Yoga-C630-13Q50/p/88YGC601090
Yoga C640	https://www.lenovo.com/us/en/laptops/yoga/yoga-c-series/Yoga-C640/p/88YGC601300
Yoga S730	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-700-series/Yoga-S730/p/88YGS701077

Yoga C740 (14 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Lenovo-Yoga-C740-14/p/88YGC701292
Yoga C740 (15 inch)	https://www.lenovo.com/us/en/laptops/yoga/700-series/Lenovo-Yoga-C740-15/p/88YGC701293
Yoga S740 (14 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-s740-14iil
Yoga S740 (15 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-700-series/Lenovo-IdeaPad-S740-15IRH/p/88IPS701212
Yoga C930	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Yoga-C930-13IKB/p/88YGC900982
Yoga Book C930	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Yoga-Book-C930/p/ZZIWZWBYB1J
Yoga C940 (14 inch)	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Lenovo-Yoga-C940-14IIL/p/88YGC901221
Yoga C940 (15 inch)	https://www.lenovo.com/us/en/laptops/yoga/yoga-900-series/Lenovo-Yoga-C940-15IRH/p/88YGC901298
Yoga S940	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-900-series/Lenovo-IdeaPad-S940-14IWL/p/88IPS901238
Yoga Slim 7 (14 inch)	https://www.lenovo.com/us/en/coming-soon/IdeaPad-Slim-7-14ARE05/p/88IPS701400
Yoga Slim 7 (15 inch)	https://www.lenovo.com/us/en/laptops/ideapad/ideapad-700-series/IdeaPad-Slim-7-15IIL05/p/88IPS701406
Yoga P40	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-p/ThinkPad-P40-Yoga/p/22TP2WPWP40
LaVie 360	https://www.lenovo.com/us/en/laptops/lenovo/lavie/lavie-360/
3rd Generation ThinkPad Yoga 11e	https://www.lenovo.com/us/en/laptops/thinkpad/11e-and-chromebooks/20GA-MT/p/22TP2TX152E20GA
4th Generation ThinkPad Yoga 11e	https://www.lenovo.com/us/en/laptops/thinkpad/11e-and-chromebooks/ThinkPad-Yoga-11e-4th-Gen/p/22TP2TX153E20HU
5th Generation ThinkPad Yoga 11e	https://www.lenovo.com/us/en/outletus/laptops/thinkpad/thinkpad-11e-laptops-and-chromebooks/ThinkPad-Yoga-11e-5th-Gen/p/22TP2TX154E20LM
6th Generation ThinkPad Yoga 11e	https://www.lenovo.com/us/en/coming-soon/11e-Yoga-G6/p/22ED11E11N6
ThinkPad Yoga 14	https://www.lenovo.com/us/en/laptops/thinkpad/yoga-series/yoga-14/
ThinkPad Yoga 15	https://www.lenovo.com/us/en/laptops/thinkpad/yoga-series/yoga-15/

ThinkPad L380 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/ThinkPad-L380-Yoga/p/22TP2TBL38020M7
ThinkPad L390 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-l/ThinkPad-L390-Yoga/p/WMD00000384
1st Generation ThinkPad X1 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-x/ThinkPad-X1-Yoga-1st-Gen/p/22TP2TXX11Y
2nd Generation ThinkPad X1 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/Thinkpad-X1-Yoga-2nd-Gen/p/22TP2TXX12Y
3rd Generation ThinkPad X1 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-yoga/ThinkPad-X1-Yoga-3rd-Gen/p/22TP2TXX13Y
4th Generation ThinkPad X1 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-x/X1-Yoga-Gen-4/p/22TP2TXX14Y
5th Generation ThinkPad X1 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-x/X1-Yoga-Gen-5/p/22TP2X1X1Y5
ThinkPad Yoga X380	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-x/ThinkPad-X380-Yoga/p/22TP2TXX380
ThinkPad Yoga X390	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-x/ThinkPad-X390-Yoga/p/22TP2TX390Y
ThinkPad L13 Yoga	https://www.lenovo.com/us/en/laptops/thinkpad/thinkpad-l/ThinkPad-L13-Yoga/p/22TPL13L3Y1
Lenovo 300e Windows	https://www.lenovo.com/us/en/laptops/lenovo/student-laptops/Lenovo-300e-2nd-Gen/p/88EL10S9992
Lenovo 300e Winbook	https://www.lenovo.com/us/en/laptops/lenovo/student-laptops/300e/p/88EL10S1024
Lenovo N23 Winbook	https://www.lenovo.com/us/en/laptops/lenovo/lenovo-n-series/N23/p/88EL10S0756

100. According to the Lenovo.com Domain, the Accused Portable Products identified in the table below have been tested for compatibility with Windows 10.

https://support.lenovo.com/us/en/solutions/ht103535.

IdeaPad Yoga 13	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-13-notebook-ideapad
IdeaPad Yoga 11S	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-11s-notebook-ideapad

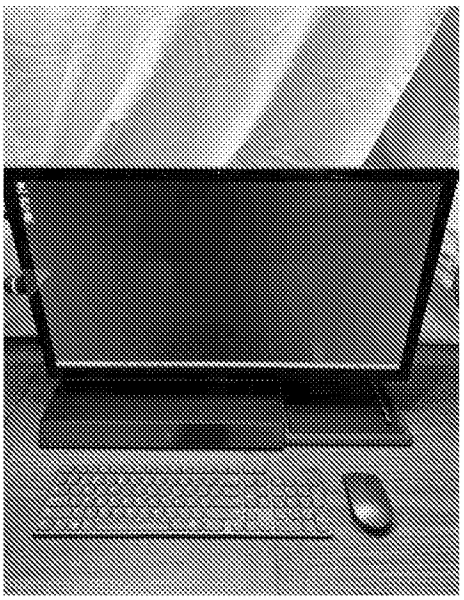
Flex 2 (14 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/flex-2-14-notebook-lenovo
Flex 2 (15 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/flex-2-15-notebook-lenovo
Flex 10	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/flex-10-notebook-lenovo
Flex 14D	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/ideapad-flex-14d-notebook
Flex 15D	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/flex-series/ideapad-flex-15d-notebook
Edge 15	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/lenovo-edge-series-laptops/edge-15-laptop-lenovo
Yoga 2 (11 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-2-11-notebook-lenovo
Yoga 2 (13 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-2-13-notebook-lenovo
Yoga 2 Pro	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-2-pro-lenovo
Yoga 3 (11 inch)	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-3-1170
Yoga 3 Pro	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/yoga-series/yoga-3-pro-1370-laptop-lenovo
1st Generation ThinkPad Yoga 11e	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-yoga-series-laptops/thinkpad-yoga-11e
2nd Generation ThinkPad Yoga 11e	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-yoga-series-laptops/thinkpad-yoga-11e-20e5-20e7
ThinkPad Yoga 12	https://pcsupport.lenovo.com/us/en/products/laptops-and-netbooks/thinkpad-yoga-series-laptops/thinkpad-yoga-12

101. To the extent that Lenovo entities made, used, sold, offered to sell or imported any of the Accused Portable Products with a Windows operating system other than Windows 10, purchasers of such products were offered the ability to upgrade to Windows 10 for free until July 29, 2016. https://support.lenovo.com/us/en/solutions/ht103748 and https://www.lenovo.com/us/en/windows-10/

102. On information and belief, the 3rd Generation ThinkPad X1 Yoga is representative of the Accused Portable Products with respect to the limitations recited in the claims of the Asserted Patents.

103. The Yoga A940 is an all-in-one personal computer with a customized user interface, an Intel i9 processor with 32 gigabytes of memory, and a 27-inch, 4K touchscreen. The rotating 4K display of the Yoga A940 can be placed in different computer system configurations using a rotating hinge. *See* https://www.lenovo.com/us/en/desktops-and-all-in-ones/ideacentre/yoga-a-series/Yoga-A940-27ICB/p/FFYGF900316 ("the A940 Webpage").

104. When the display is in an upright configuration the wireless keyboard is designed to be operable to receive input from an operator of the computer.



105. When the rotating display is folded down into a drafting configuration, the wireless keyboard is designed to be inoperable to receive input and is stowed under the display.



https://www.youtube.com/watch?v=SlVSiK0LrtA, at 15:21.



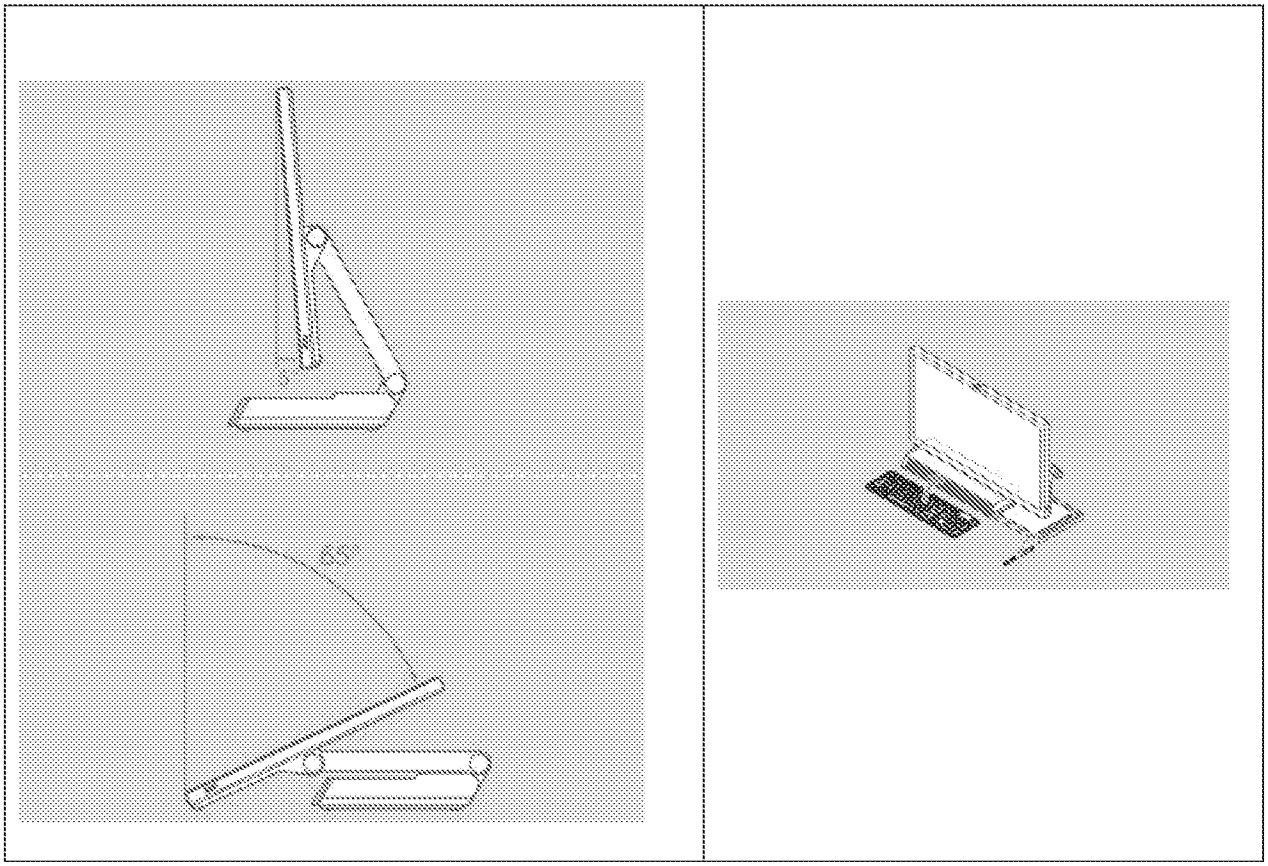
https://www.flickr.com/photos/lenovophotolibrary/32153906207/in/album-72157689698831183/

106. The functionality of the Yoga A940's configurable display with touchscreen has been touted on the Lenovo.com Domain since the product's launch.

https://news.lenovo.com/pressroom/press-releases/lenovo-yoga-smartest-consumer-computers-

yet/; https://news.lenovo.com/lenovo-unboxed-yoga-a940-all-in-one-pc/; see also https://www.youtube.com/watch?v=3O66VahPxRk.

107. The setup guide for Lenovo's Yoga A940 depicts the ability of the rotating display to be configured into different positions and the platform for the keyboard to be used when the display is rotated down into a drafting configuration:





See Lenovo's official Flickr page (https://www.flickr.com/photos/lenovophotolibrary/32153906207/in/album-72157689698831183/).

108. The Yoga A940 was and continues to be made, sold, and offered for sale with Windows 10 Pro pre-installed and is capable of operating in the configurations described above.

109. As detailed below, each element of at least one claim of each of the Asserted Patents is literally present in the Accused Products, or is literally practiced by Lenovo personnel, agents or customers who use the Accused Products. To the extent that any element is not literally present or practiced, each such element is present or practiced under the doctrine of equivalents.

110. Lenovo has made extensive use of LiTL's patented technologies, including the technology described and claimed in the Asserted Patents. LiTL is committed to defending its proprietary and patented technology. LiTL requests that this Court award it damages sufficient to compensate for Lenovo's infringement of the Asserted Patents, find this case exceptional and

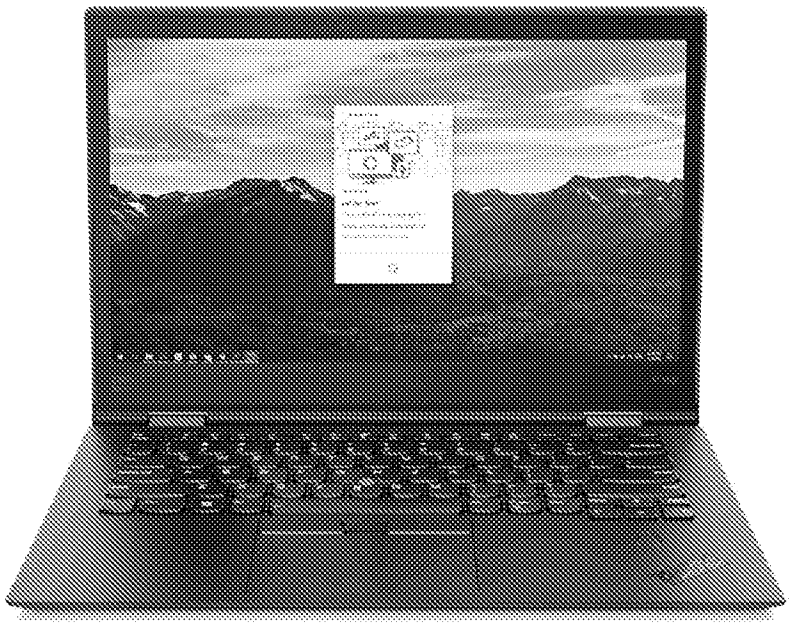
award LiTL its attorneys' fees and costs, and grant an injunction against Lenovo to prevent ongoing infringement of the Asserted Patents.

COUNT I

(Infringement of U.S. Patent No. 8,289,688)

111. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

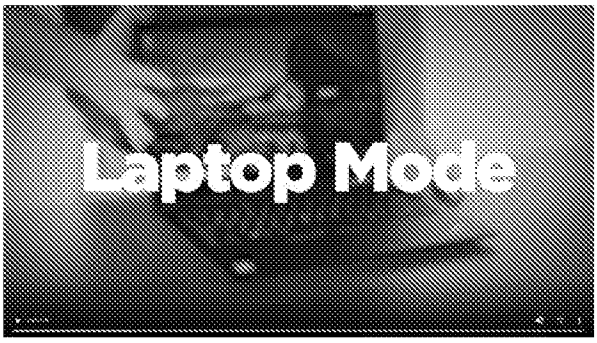
112. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) are portable computers that include a base unit comprising an integrated keyboard and a single display unit including a single display screen configured to display content. For example:



See, e.g., ThinkPad Photos.

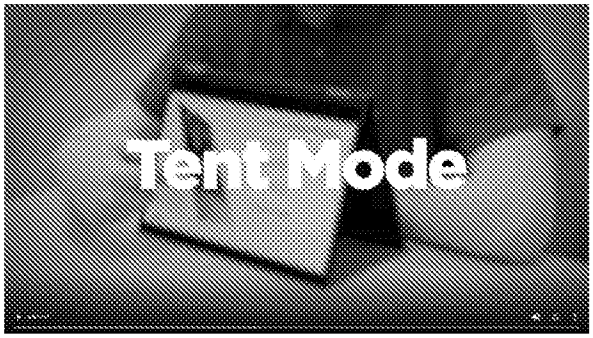
113. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include an orientation sensor which detects a physical orientation of the single display unit relative to the base unit and a display orientation module which orients the content displayed on the single display screen responsive to the physical orientation detected by the orientation sensor

between at least a first content display orientation and a second content display orientation, the second content display orientation being 180 degrees relative to the first content display orientation. For example:





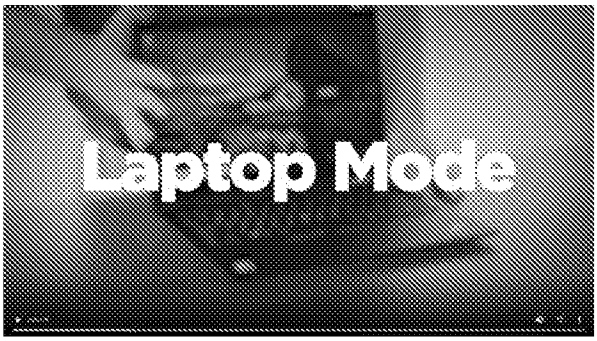
See, e.g., ThinkPad Yoga Modes at 0:14-0:23.





See, e.g., ThinkPad Yoga Modes at 0:32-0:36.

114. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display orientation module that is configured to detect a change between a laptop mode, an easel mode, and a frame mode based on the detected physical orientation of the single display unit relative to the base unit. For example:

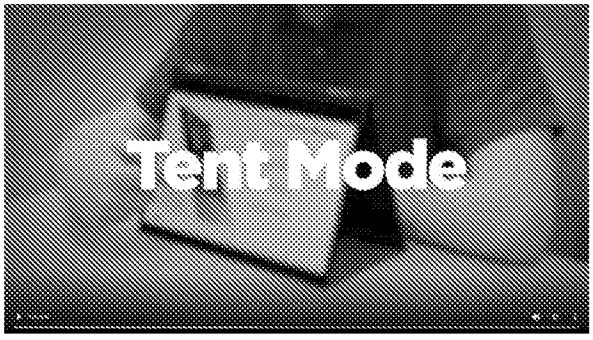




See, e.g., ThinkPad Yoga Modes at 0:14-0:23.

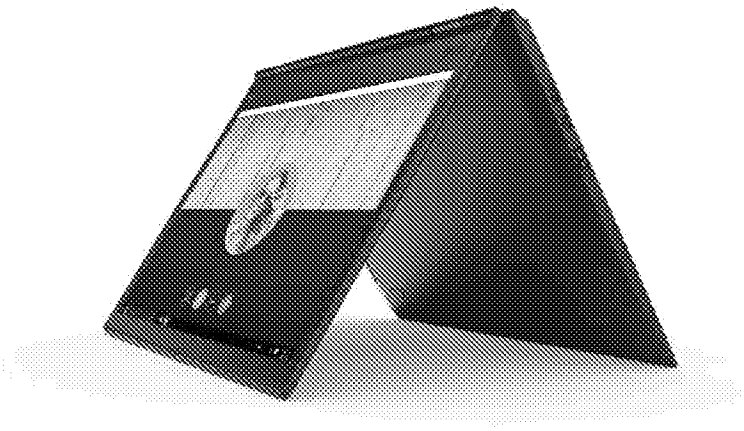


See, e.g., ThinkPad Photos, image with caption: "Lenovo ThinkPad X1 Yoga (3rd Gen) in laptop mode."

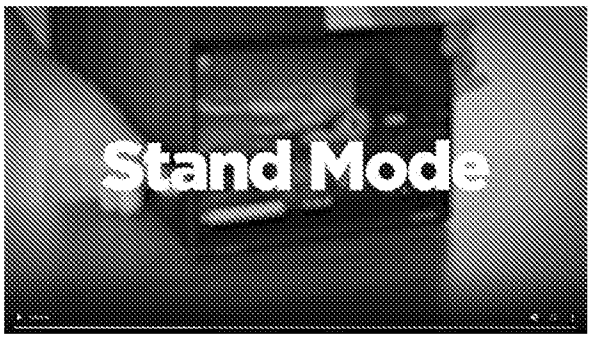


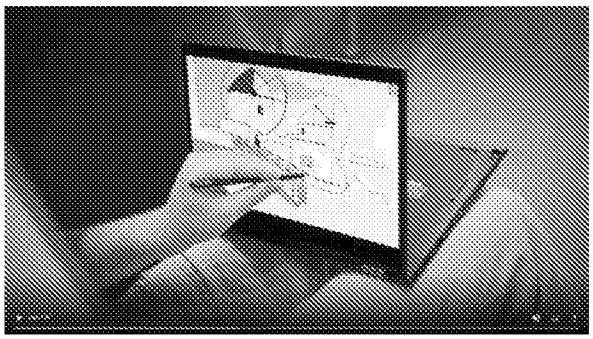


See, e.g., ThinkPad Yoga Modes at 0:32-0:36.



See, e.g., ThinkPad Photos, image with caption: "Lenovo ThinkPad X1 Yoga (3rd Gen) in tent mode with Skype for Business."





See, e.g., ThinkPad Yoga Modes at 0:24-0:31.



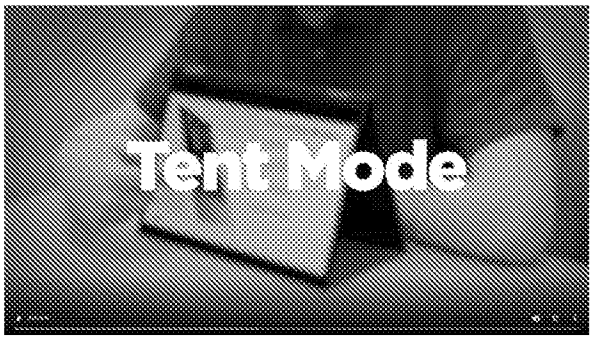
See, e.g., ThinkPad Photos, image with caption: "Lenovo ThinkPad X1 Yoga (3rd Gen) in stand mode with home design app." *See, e.g.*, ThinkPad Video at 0:36-0:43.

115. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display orientation module further configured to trigger a display inversion from one of the first and second content display orientations to the other of the first and second content display orientations responsive to the orientation sensor detecting the change between the laptop mode and the easel mode. For example:





See, e.g., ThinkPad Yoga Modes at 0:14-0:23.

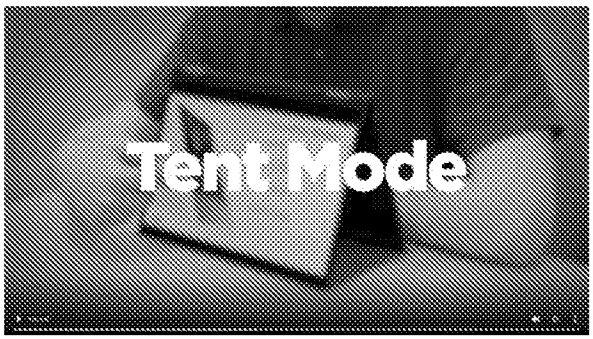




See, e.g., ThinkPad Yoga Modes at 0:32-0:36.

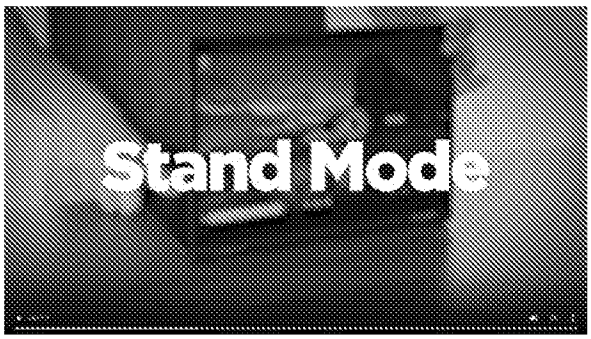
116. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display orientation module further configured to trigger a display inversion from one of the first and second content display orientations to the other of the first and second content

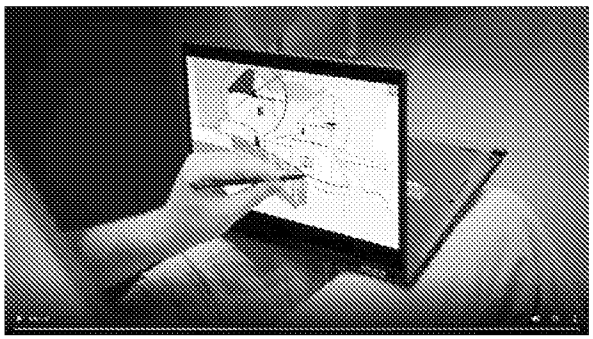
display orientations responsive to the orientation sensor detecting the change between the easel mode and the frame mode. For example:





See, e.g., ThinkPad Yoga Modes at 0:32-0:36.





See, e.g., ThinkPad Yoga Modes at 0:24-0:31.

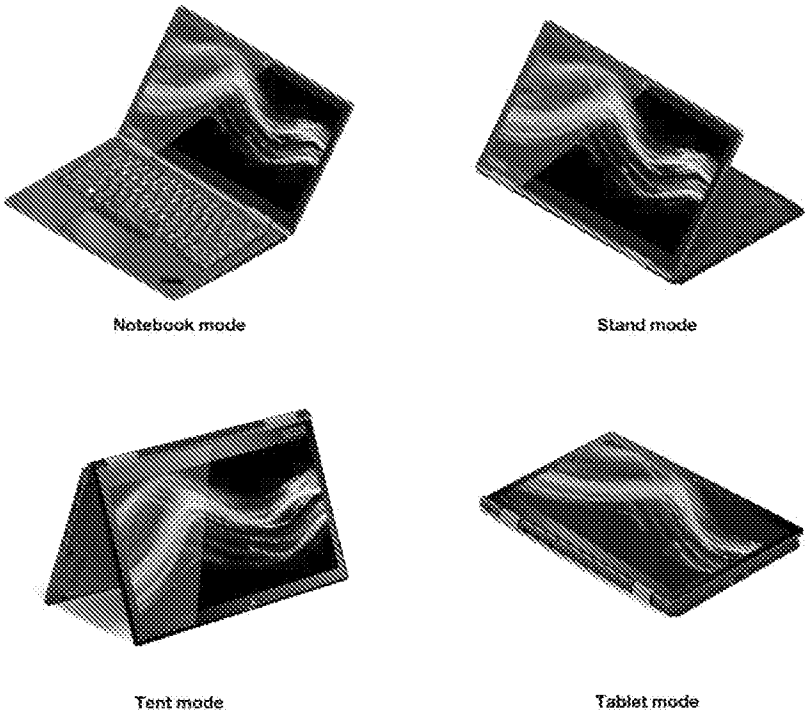
Lenovo US

117. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more claims of the '688 patent, including at least claim 19, including by importing, using, selling, and offering for sale in the United States certain computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

118. Since at least the filing of the Original Complaint, Lenovo US knew of the '688 patent.

119. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Portable Products infringe at least claim 19 of the '688 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

120. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 19 of the '688 patent by continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Portable Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Portable Products and on the website https://www.lenovo.com/us/en manuals, product documentation, and advertising materials that induce customers or other users to infringe at least claim 19 of the '688 patent by encouraging the use of the Accused Portable Products. For example, the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

121. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 19 of the '688 patent has been willful. Lenovo US's offers for sale, sales, and use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '688 patent constitutes willful infringement. Lenovo US is a large corporation with substantial resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its ongoing offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action to avoid infringement evidences its willful infringement.

122. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

123. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '688 patent.

124. Lenovo US's infringement of the '688 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

125. Lenovo Beijing has had knowledge of the '688 patent since before the filing of the Original Complaint.

126. On March 13, 2013, Lenovo Beijing filed U.S. Patent Application No. 14/209,145 ("the Lenovo '145 application"). In a list of references cited by the examiner dated September 15, 2016, a USPTO examiner identified to Lenovo Beijing the '688 patent.

127. On November 13, 2013, Lenovo Beijing filed U.S. Patent Application No. 14/079,046 ("the Lenovo '046 application"), which disclosed an electronic device that provides "a triangle supporting state of the electronic device, in which the notebook computer does not need the user to support the notebook with hands." U.S. Pub. No. 2014/0132486, ¶ [006]. In the "triangle supporting state" an LCD display is rotated into the shape of an inverted "V" like LiTL's easel mode, as depicted below in Figures 1, 2 and 3 of U.S. Pub. No. 2014/0132486.

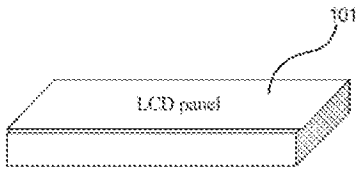


Fig. 1

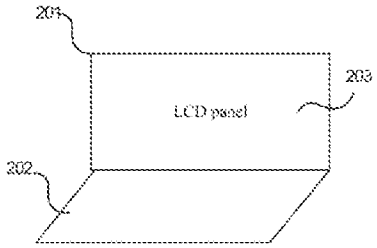


Fig. 2



Fig. 3

128. In office actions dated January 27, 2015, May 21, 2015, December 11, 2015, and April 18, 2016, a USPTO examiner rejected pending claims 4 and 14 of the Lenovo '046 application as obvious in view of, among other references, U.S. Patent Application Publication

No. 2009/0244832 ("the '832 Publication"), which issued as the '688 patent and contains the same specification. In a response dated March 23, 2015, Lenovo Beijing admitted that "Behar [the '832 Publication] teaches a portable computer that has a laptop mode and an easel mode in which the base of the computer and its display component stand vertically forming an inverted 'V' and the base of the computer comprises a keyboard (Fig. 1 and Fig. 4)."

129. On February 14, 2014, Lenovo Beijing filed U.S. Patent Application No. 14/181,072 ("the Lenovo '072 Application"). In an office action dated October 21, 2016, a USPTO examiner issued a non-final rejection of pending claim 17 of the Lenovo '072 Application as obvious in view of, among other references, the '832 Publication, which issued as the '688 patent and contains the same specification. On March 31, 2017, the examiner issued a notice of references cited, and identified to Lenovo Beijing the '688 patent.

130. On September 30, 2016, Lenovo Beijing filed U.S. Patent Application No. 29/579,625 ("the Lenovo '625 Application") directed to an ornamental design for a tablet computer. Figures 7 and 8 depict front and back perspectives of the tablet computer with the stand in a first position. Figures 9 and 10 depict the tablet computer in a horizontal orientation.

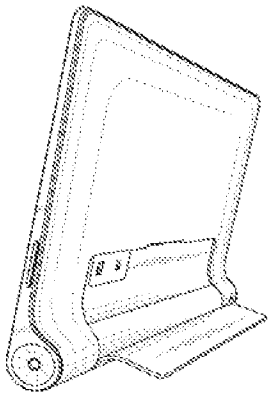


Fig. 7

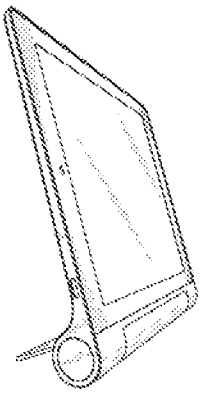


Fig. 8

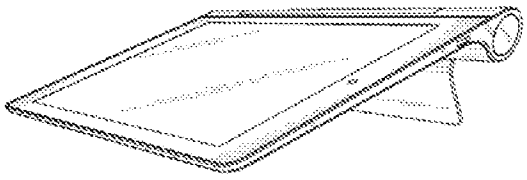


Fig. 9

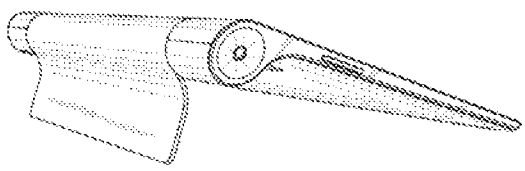


Fig. 10

131. On March 20, 2017, Lenovo Beijing identified the '688 patent in an information disclosure statement submitted to the USPTO in connection with the Lenovo '625 Application.

132. On September 30, 2016, Lenovo Beijing filed U.S. Patent Application No. 29/579,629 ("the Lenovo '629 Application") directed to an ornamental design for a tablet computer. On May 22, 2017, Lenovo Beijing identified the '688 patent in an information disclosure statement submitted to the USPTO in connection with the Lenovo '629 Application.

133. On August 8, 2017, the USPTO issued U.S. Patent No. 9,727,091 ("the Lenovo '091 Patent") to Lenovo Beijing. The '688 patent is cited on the face of the Lenovo '091 Patent.

134. Lenovo Beijing's R&D teams work closely with intellectual property (IP) lawyers from product conception through manufacture and commercialization to develop effective IP strategies for new products, such as the Yoga-branded laptops.
https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html

135. Since at least 2016 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '688 patent based on at least the following:

- the USPTO's repeated rejections of claims in Lenovo Beijing patent applications based on the '688 patent or its published application;
- Lenovo Beijing's disclosure of the '688 patent in information disclosure statements;
- Lenovo Beijing's admission, when prosecuting a patent application directed to an electronic device having multiple configurations, including LiTL's easel mode configuration, that the specification of the '688 patent discloses "a portable computer that has a laptop mode and an easel mode in which the base of the computer and its

display component stand vertically forming an inverted 'V' and the base of the computer comprises a keyboard";

- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products; and
- the frequency with which the '688 patent, and related patents and patent application publications, has been cited by the USPTO during prosecution of patent applications owned by major players in the personal computing space, including Lenovo Beijing and other Lenovo subsidiaries.

136. The repeated citation of the '688 patent and its published application during prosecution of Lenovo Beijing's patent applications, including applications directed to 2-in-1 laptops having multiple viewing modes, and the importance of one or more of the Accused Portable Products to Lenovo's revenue and reputation in the United States provided Lenovo Beijing since at least 2016 with knowledge of the '688 patent and knowledge that use of the Accused Portable Products infringes the '688 patent.

137. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property," and "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an

innovation-friendly business environment." https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow."

138. On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2016 Lenovo Beijing knew that use of the Accused Portable Products infringes the '688 patent.

139. On information and belief, citation of the '688 patent and its application during the USPTO prosecution of Lenovo Beijing patents caused Lenovo Beijing to investigate, become aware of, and consider the '688 patent, related patents, and the rest of LiTL's patent portfolio. Beyond Lenovo Beijing's actual knowledge of the '688 patent, these citations during Lenovo Beijing's USPTO prosecution gave Lenovo Beijing the subjective belief that the '688 patent existed, and failure to learn of the existence of the '688 patent would have required Lenovo Beijing to deliberately avoid reviewing or understanding the prosecution documents. On information and belief, Lenovo Beijing would not have done so in a matter so important to the Accused Portable Products and the revenue and reputation derived therefrom.

140. In addition, Lenovo Beijing has known that the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '688 patent since at least 2016, or at least since the time that it received notice of the Original Complaint, or at least since September 29, 2020.

141. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Portable Products bearing Lenovo Beijing's marks into the United States and Delaware since the filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 19 of the '688 patent.

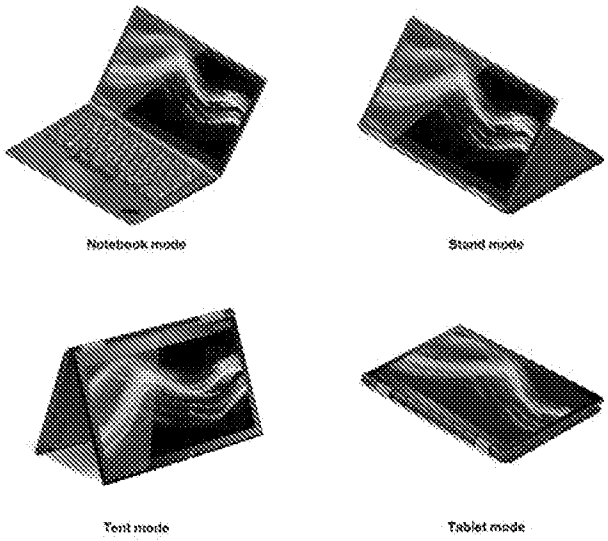
142. Lenovo Beijing has known or should have known since it first became aware of the '688 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Portable Products are infringing the '688 patent.

143. Lenovo Beijing is responsible for content displayed on the Lenovo.com Domain, including the press releases identified in Paragraph 90 above, which encourage users of the Accused Portable Products in the United States and Delaware to infringe at least claim 19 of the '688 patent by using the Accused Portable Products. Since at least 2016, Lenovo Beijing has encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Portable Products. Lenovo Beijing's conduct since 2016 demonstrates an intent to induce customers to directly infringe at least claim 19 of the '688 patent. Lenovo Beijing's conduct since at least 2016 also demonstrates an intent to induce Lenovo US to infringe the '688 patent by selling, offering for sale, and using the Accused Portable Products.

144. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of one or more claims of the '688 patent, literally and/or equivalently, at least by inducing end users, repair and service technicians, Lenovo employees and contractors, and others to use the Accused Portable Products in an infringing manner. Lenovo Beijing makes available the Lenovo.com Domain to disseminate manuals, product

documentation and other advertising material that encourages customers to infringe the asserted claims by using the Accused Portable Products.

145. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

146. Lenovo Beijing has had knowledge of the '688 patent and its infringement of the '688 patent since it first became aware of the '688 patent in 2016, and at least by the filing of the Original Complaint. Lenovo Beijing has induced infringement of the '688 patent with specific intent to induce infringement of that patent.

147. Lenovo Beijing's willful infringement is evidenced by the following: Lenovo Beijing's intellectual property lawyers' detailed knowledge of LiTL's patents, as demonstrated by Lenovo Beijing's admissions during prosecution of Lenovo Beijing's patent applications; the close working relationship between Lenovo Beijing's IP and research and design departments;

the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 19 of the '688 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial action to avoid infringement. Lenovo Beijing's infringement of the '688 patent has been willful since it first became aware of the '688 patent in 2016, or at least since the filing of the Original Complaint, or at least since September 29, 2020. Lenovo Beijing's ongoing infringement of the '688 patent continues to be willful. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Portable Products with the intent that the Accused Portable Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Products in Lenovo's established distribution channels with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail above, and knowing that doing so infringes the '688 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '688 patent.

148. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

149. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '688 patent.

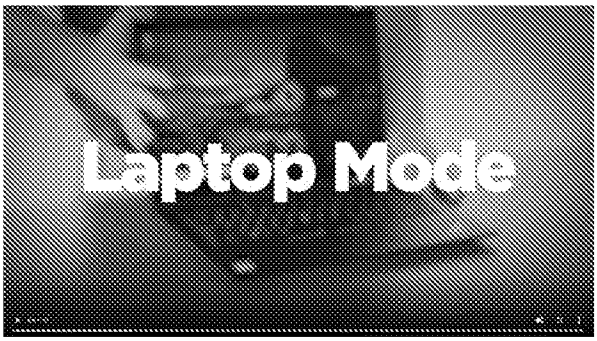
150. Lenovo Beijing's infringement of the '688 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

COUNT II

(Infringement of U.S. Patent No. 8,624,844)

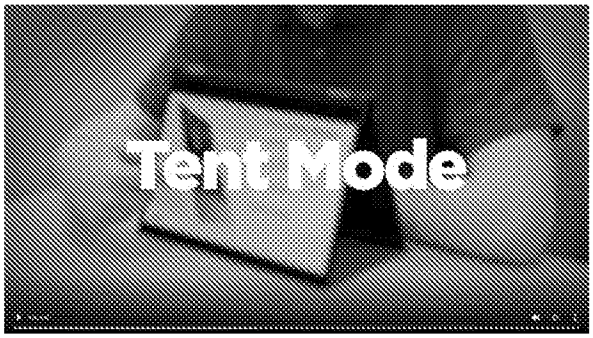
151. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

152. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) are portable computers that are configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes permit an operator to interact with a single display screen in each of the plurality of display modes. For example:





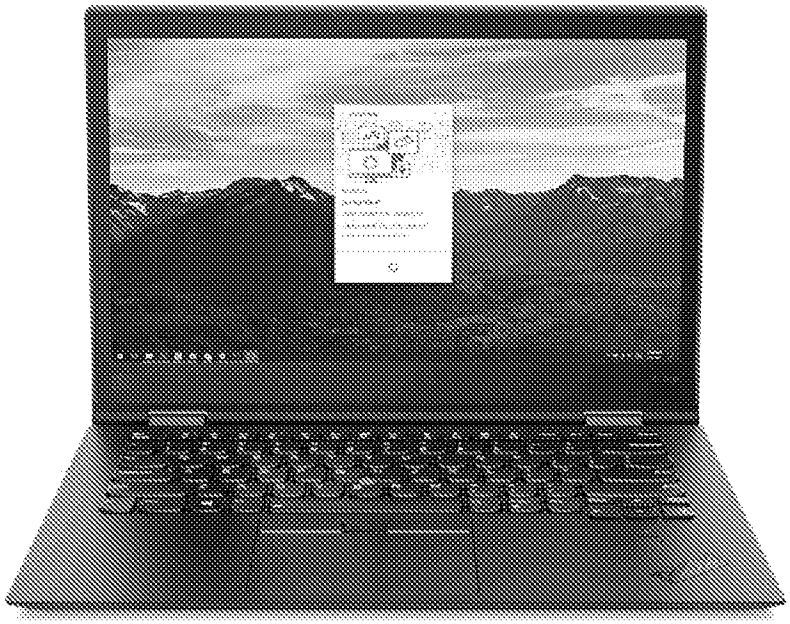
See, e.g., ThinkPad Yoga Modes at 0:14-0:23.





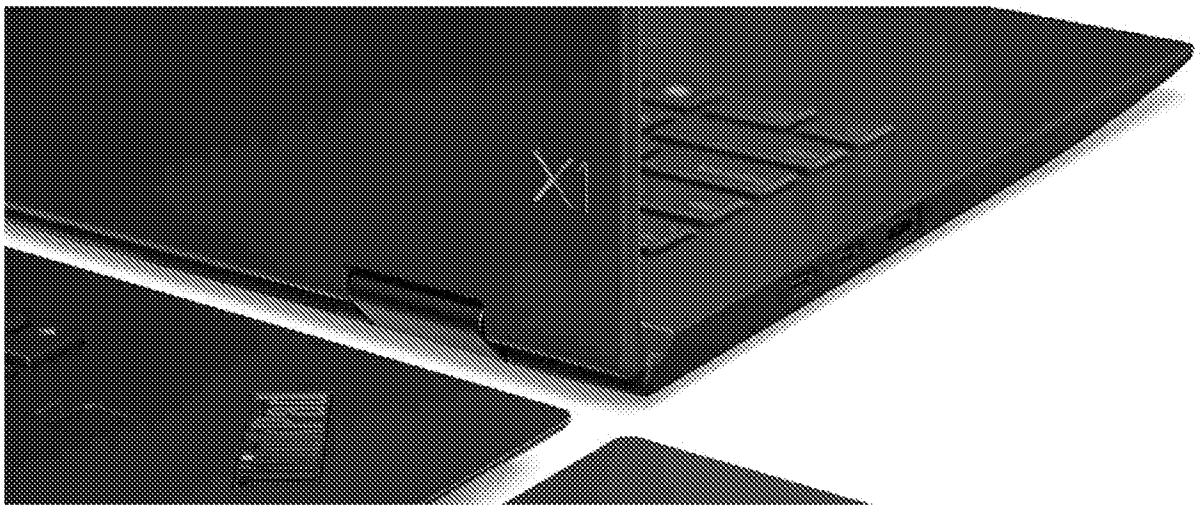
See, e.g., ThinkPad Yoga Modes at 0:32-0:36.

153. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) are portable computers that include a base including a keyboard, a main display component rotatably coupled to the base and including the single display screen which displays content. For example:



See, e.g., ThinkPad Photos.

154. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a hinge assembly disposed at least partially within the base. For example:

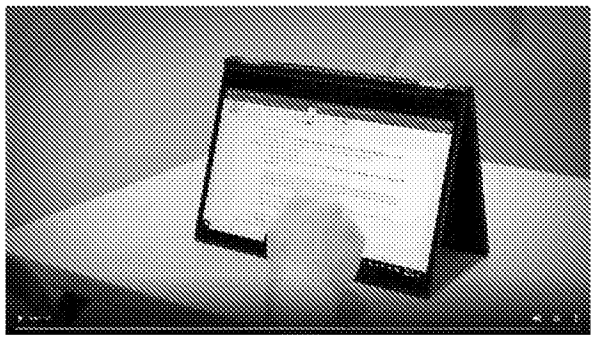


See, e.g., ThinkPad Photos.

155. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a main display component that defines an axis of rotation about which both the base and the main display component are rotatable to transition the portable computer between at least the laptop mode and the easel mode, wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes. For example:



See, e.g., ThinkPad Yoga Modes at 0:14-0:23.



See, e.g., ThinkPad Yoga Modes at 0:42-0:47.

156. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a laptop mode that is configured to display to a user on the main display component a first content mode having a first content display orientation with the main display component oriented towards the user and the keyboard oriented to receive input from the user. For example:



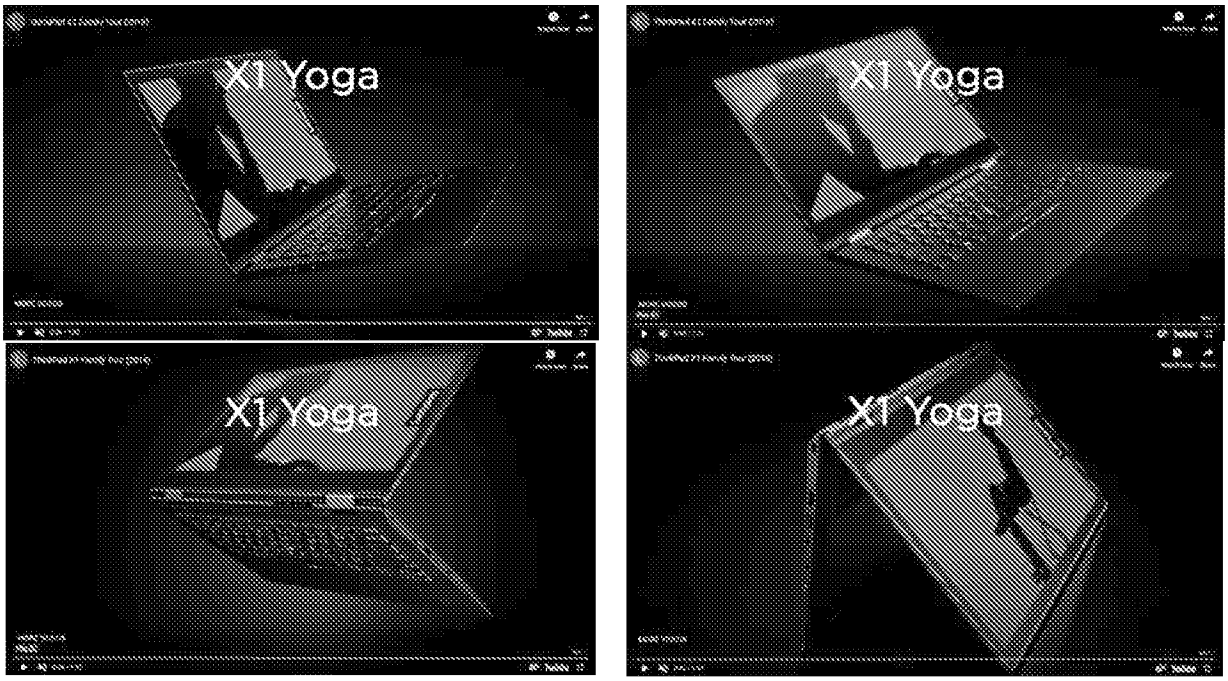
See, e.g., ThinkPad Yoga Modes at 0:14-0:23.

157. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include an easel mode that is configured to display to the user on the main display component a second content mode having a second content display orientation with the main display component oriented towards the user and the keyboard oriented away from the user. For example:



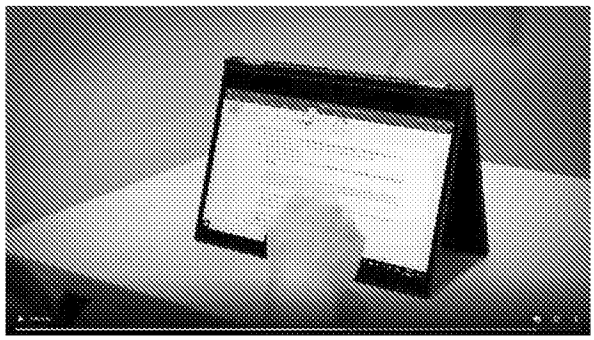
See, e.g., ThinkPad Yoga Modes at 0:42-0:47.

158. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include first and second content display orientations that are 180 degrees relative to each other. For example:



See, e.g., ThinkPad Yoga Video at 0:38-0:42.

159. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include portable computers that are operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard. For example:



See, e.g., ThinkPad Yoga Modes at 0:42-0:47.

160. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a navigation control accessible in each of the plurality of display modes and configured to permit a user to manipulate at least one of operating parameters of the portable computer and

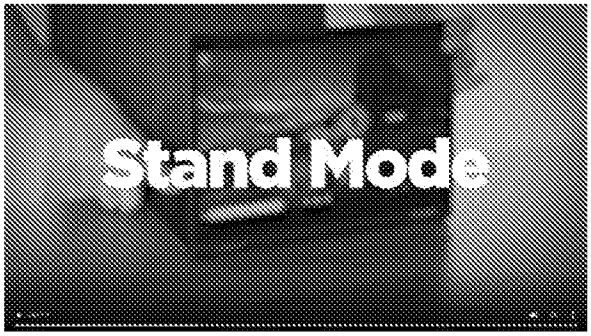
the content displayed on the single display screen. For example, the 3rd Generation ThinkPad X1 Yoga includes a touchscreen that is accessible in any mode.

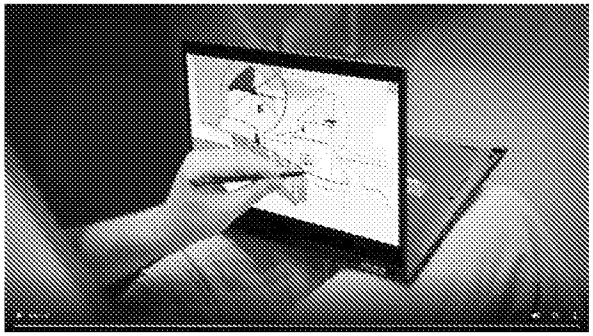
Display Type ⊗

14.0" FHD (1920 x 1080) IPS anti-reflective, anti-smudge, touchscreen, 300 nits

See, e.g., ThinkPad Webpage.

161. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a plurality of modes that includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface.





See, e.g., ThinkPad Yoga Modes at 0:24-0:31.

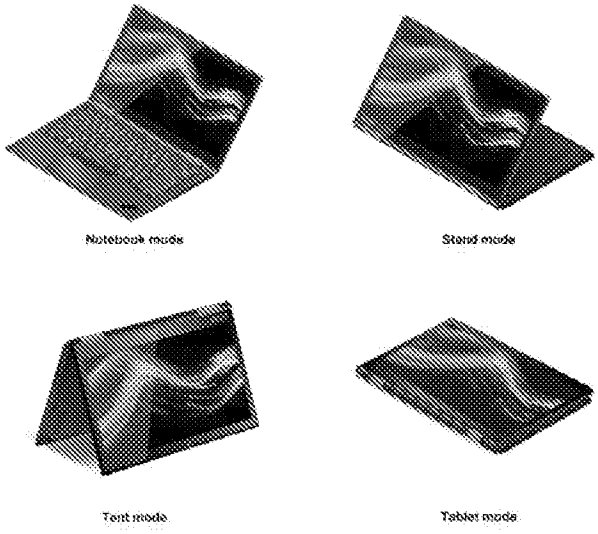
Lenovo US

162. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more claims of the '844 patent, including at least claim 10, including by importing, using, selling, and offering for sale in the United States certain computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

163. Since at least the filing of the Original Complaint, Lenovo US knew of the '844 patent.

164. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Portable Products infringe at least claim 10 of the '844 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

165. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 10 of the '844 patent by continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Portable Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Portable Products and on the website https://www.lenovo.com/us/en manuals, product documentation, and advertising materials that induce customers or other users to infringe at least claim 10 of the '844 patent by encouraging the use of the Accused Portable Products. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

166. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 10 of the '844 patent has been willful. Lenovo US's offers for sale, sales, and use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '844 patent constitutes willful infringement. Lenovo US is a large corporation with substantial resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its ongoing offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action to avoid infringement evidences its willful infringement.

167. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

168. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '844 patent.

169. Lenovo US's infringement of the '844 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

170. Lenovo Beijing has had knowledge of the '844 patent since before the filing of the Original Complaint.

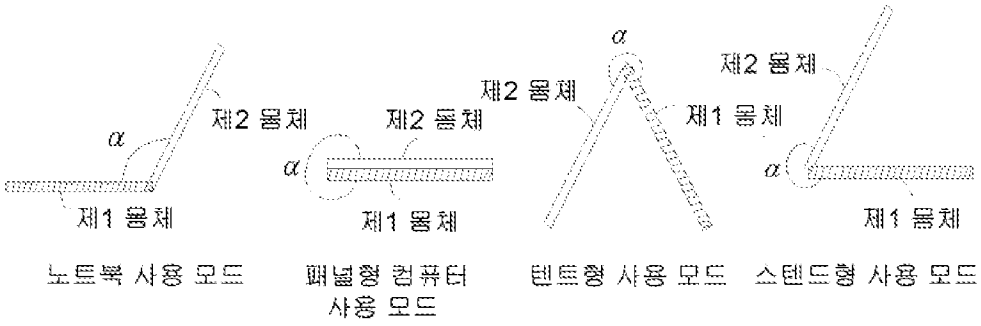
171. On January 7, 2014, the '844 patent issued from U.S. Patent Application No. 12/170,951, which had earlier published on October 1, 2009 as U.S. Patent Application Publication No. 2009/0244012 ("the LiTL '012 publication").

172. Since at least 2012 Lenovo Beijing has had knowledge of the LiTL '012 publication.

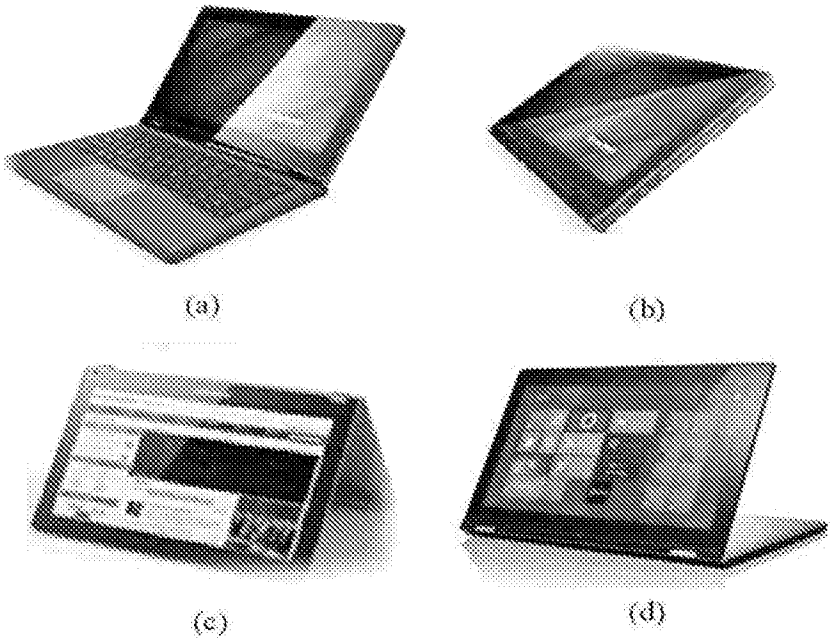
173. On October 22, 2012, the Chinese Intellectual Property Office issued a search report to Lenovo Beijing identifying the LiTL '012 publication in connection with Lenovo's Chinese Patent Application No. 2010102585153. The Chinese Intellectual Property Office issued three office actions dated November 26, 2012, August 1, 2013 and February 24, 2014, which rejected Lenovo Beijing's pending claims based on the disclosures in the LiTL '012 publication. In particular, the first office action stated that the LiTL '012 publication disclosed that: "Laptop computers can be configured between modes, includes an off mode, a laptop mode (corresponding to a first state), an easel mode (corresponding to a second state different from the first state), a flattened mode, and a frame mode."

174. In an examination report dated February 14, 2014, the Korean Intellectual Property Office rejected several claims in Lenovo Beijing's Korean Patent Application No. 10-2013-0025594 ("the Lenovo '594 Korean application") in view of the LiTL '012 publication. Figure 2 of the Lenovo '594 Korean application depicts four usage modes of a notebook computer that embodies the subject matter disclosed therein:

도면 도2



175. Figure 18 of the Lenovo '594 Korean application depicts a notebook computer that embodies the subject matter disclosed therein:



176. The Lenovo '594 Korean application is a foreign counterpart to Lenovo Beijing's U.S. Patent Application No. 13/793,836 ("the Lenovo '836 application"). When prosecuting the Lenovo '836 application, Lenovo Beijing filed an information disclosure statement dated January 28, 2015, in which it identified to the USPTO the LiTL '012 publication and the Korean Intellectual Property Office examination report dated February 14, 2014.

177. The Lenovo '836 application, paragraph 59, describes Figure 2, which "is an exemplary view of four usage modes in an electrical device provided in the embodiments of the present disclosure." Figure 2 of the Lenovo '836 application is depicted below:

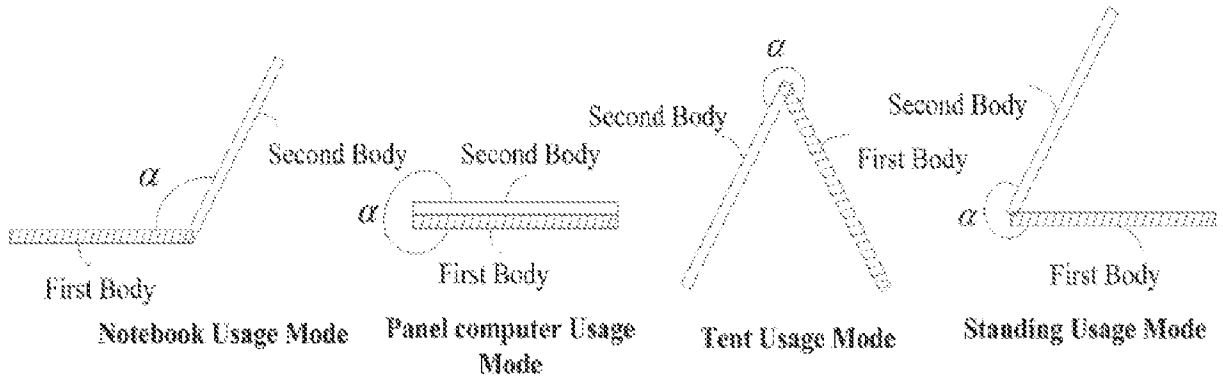


Fig. 2

178. The '836 application, paragraph 75, describes Figures 18a to 18d, which "illustrate the four usage modes in the notebook computer according to the embodiment of the present disclosure." Figures 18a to 18d of the Lenovo '836 application are depicted below:

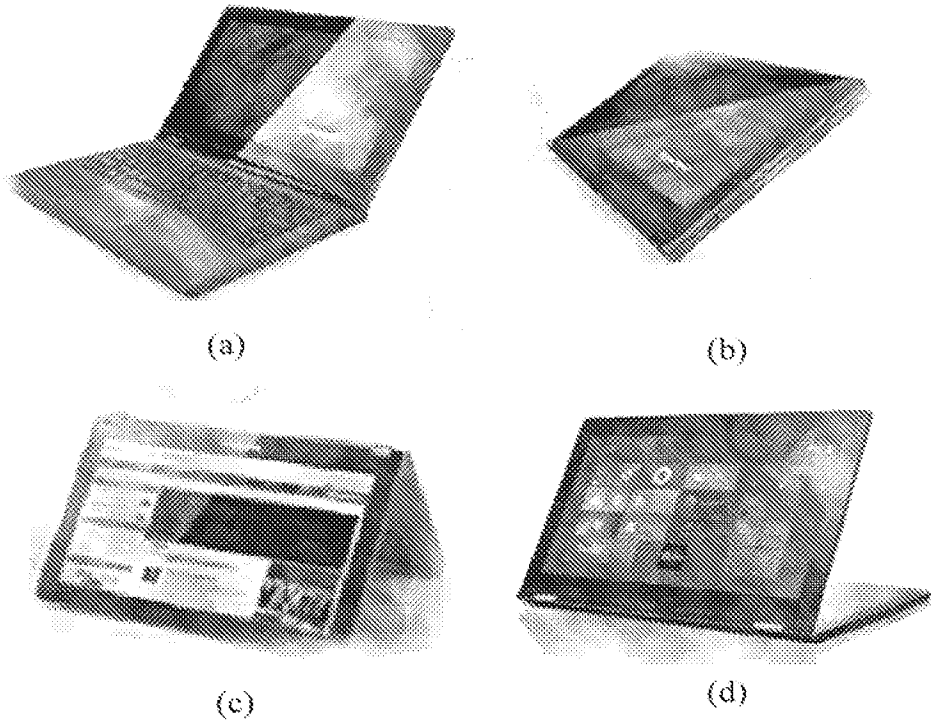


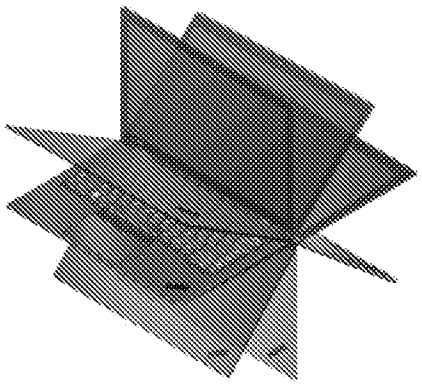
Fig.18

179. The notebook computer depicted in Figure 18 of the Lenovo '836 application and of Figure 18 of its Korean counterpart, the Lenovo '594 Korean application, appears to be one of Lenovo's Yoga notebooks. The four modes disclosed in the Lenovo '836 application and in the Lenovo '594 Korean application are the same four operating modes of the Accused Products. For example, Lenovo depicted the four modes in product literature for the 3rd Generation ThinkPad X1 Yoga.

Get to know YOGA modes (for X1 Yoga only)

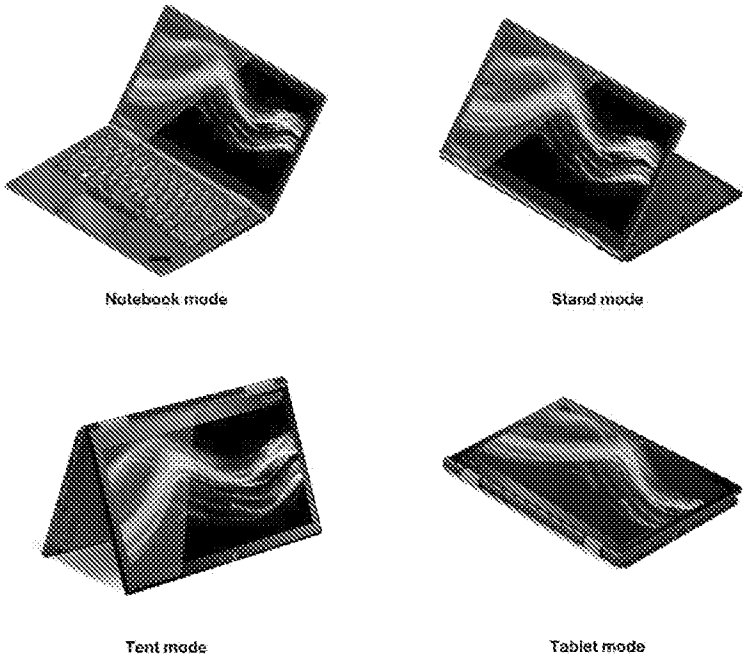
Your computer display can be rotated to any angle up to 360 degrees.

Attention: Do not rotate the computer display with too much force, or apply too much force to the upper-right or upper-left corner of the computer display. Otherwise, the computer display or hinges might get damaged.



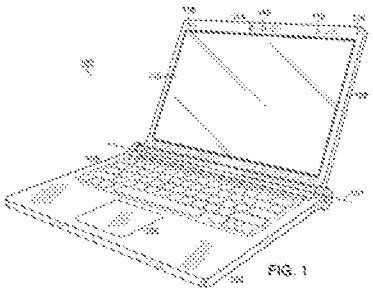
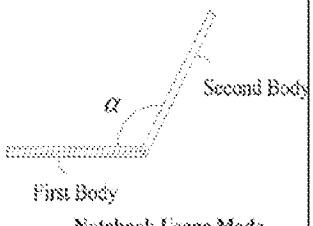
Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

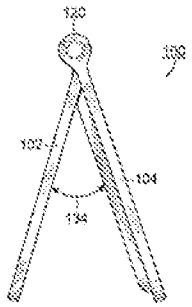
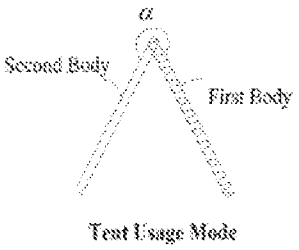
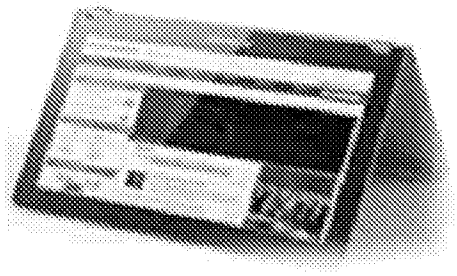
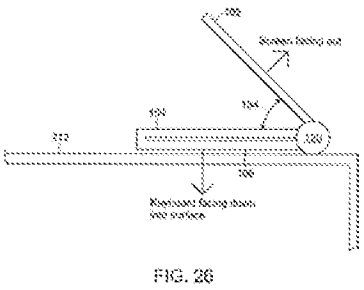
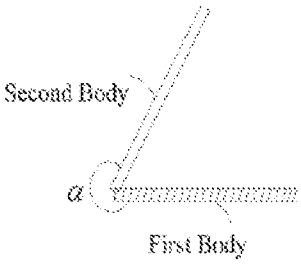
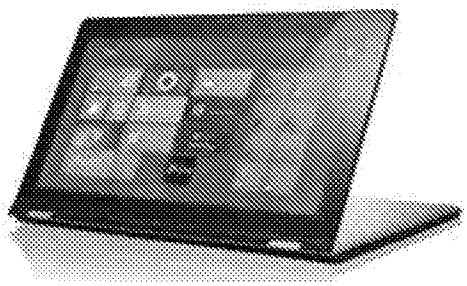
See ThinkPad User Guide, p. 28.



See ThinkPad User Guide, pp. 28-29.

180. The three modes disclosed in Figures 1, 5 and 26 of the LiTL '012 publication and claimed as the "laptop mode," "easel mode" and "frame mode" in claim 10 of the '844 patent match the "notebook usage mode," "tent usage mode" and "standing usage mode" of the Lenovo '836 application and also the Lenovo '594 Korean application, whose claims were rejected over the LiTL '012 publication:

		
LiTL '012 publication, Fig. 1 Laptop Mode	Lenovo '836 application, Fig. 2	Lenovo '594 Korean application, Fig. 18(a)

 FIG. 5		
LiTL '012 publication, Fig. 5 Easel Mode	Lenovo '836 application, Fig. 2	Lenovo '594 Korean application, Fig. 18
 FIG. 26		
LiTL '012 publication, Fig. 26 Frame Mode	Lenovo '836 application, Fig. 2	Lenovo '594 Korean application, Fig. 18

181. Lenovo has extensive experience with intellectual property. Lenovo Beijing has been the owner of over 2,500 patent applications and over 2,200 patents. Over the past decade, Lenovo US has been involved in over 200 patent litigations in the United States, and has been a party in over 50 *inter partes* review proceedings before the U.S. Patent Trial and Appeals Board. The Lenovo 2019 Annual Report identifies intellectual property (IP) risk as one of the "key risks that the Group considers to be of great significance to the Group as it stands today." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page22. For example, the report recognizes that Lenovo could suffer "reputational harm if found to infringe a third party's valid patents." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page 27. To manage and mitigate its IP risk, Lenovo plans to: "Monitor, develop and execute IP litigation defense

strategy" and "License IP as appropriate and monitor its continued validity and value to the Group."

182. Consistent with Lenovo Beijing's sophistication with IP matters, on information and belief, Lenovo Beijing was aware by 2016 of the family of LiTL patents and applications to which the '844 patent belongs.

183. LiTL's U.S. Patent No. 9,003,315 ("the '315 patent") states that "application No. 12/170,951, filed on Jul. 10, 2008, [is] now Pat. No. 8,624,844." Lenovo Beijing knew of the '315 patent by at least 2016, when it was cited to Lenovo Beijing by the USPTO during prosecution of Lenovo Beijing's U.S. Patent Application No. 14/209,145. During prosecution of that application, Lenovo Beijing received an office action dated September 15, 2016 that cited LiTL's U.S. Patent No. 9,003,315 ("the '315 patent"). By at least September 15, 2016, Lenovo Beijing knew or should have known that the LiTL U.S. Pat. Application No. 12/170,951, which published as the LiTL '012 publication, had issued as the '844 patent on January 7, 2014.

184. Since at least 2016 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact, that the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '844 patent based on at least the following:

- The frequency with which the '844 patent, and related patents and patent application publications (including the LiTL '012 publication), has been cited by the USPTO during prosecution of patent applications owned by major players in the personal computing space, including Lenovo Beijing and other Lenovo subsidiaries;
- the Lenovo Beijing patent applications that were rejected over or cited to the LiTL '012 publication were also directed to subject matter embodied by the Accused

Products, including the usage modes such as the laptop mode, tent/easel mode, and stand/frame mode, which are recited in claim 10 of the '844 patent;

- Lenovo Beijing's disclosure of the LiTL '012 publication in information disclosure statements;
- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products; and
- Lenovo Beijing knew or should have known, or was willfully blind to the fact, that the LiTL '012 publication had issued as the '844 patent.

185. The repeated citation of the LiTL '012 publication during the prosecution of Lenovo Beijing patents, including applications directed to 2-in-1 laptops having multiple viewing modes, and the importance of one or more of the Accused Portable Products to Lenovo's revenue and reputation in the United States provided Lenovo Beijing since at least 2016 with knowledge of the '844 patent and knowledge that use of the Accused Portable Products infringes the '844 patent.

186. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property," and "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an

innovation-friendly business environment." See https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow."

187. On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2016 Lenovo Beijing knew that use of the Accused Portable Products infringes the '844 patent.

188. On information and belief, citation of the '844 patent's published application during the USPTO and foreign prosecution of Lenovo Beijing patents caused Lenovo Beijing to investigate, become aware of, and consider the '844 patent, related patents, and the rest of LiTL's patent portfolio. Beyond Lenovo Beijing's actual knowledge of the '844 patent, these citations during Lenovo Beijing's USPTO and foreign prosecution gave Lenovo Beijing the subjective belief that the '844 patent existed, and failure to learn of the existence of the '844 patent would have required Lenovo Beijing to deliberately avoid reviewing or understanding the prosecution documents. On information and belief, Lenovo Beijing would not have done so in a matter so important to the Accused Portable Products and the revenue and reputation derived therefrom.

189. In addition, Lenovo Beijing has known that the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '844 patent since at least

2016, or since at least the time that it received notice of the Original Complaint, or since at least September 29, 2020.

190. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Portable Products bearing Lenovo Beijing's marks into the United States and Delaware since the filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 10 of the '844 patent.

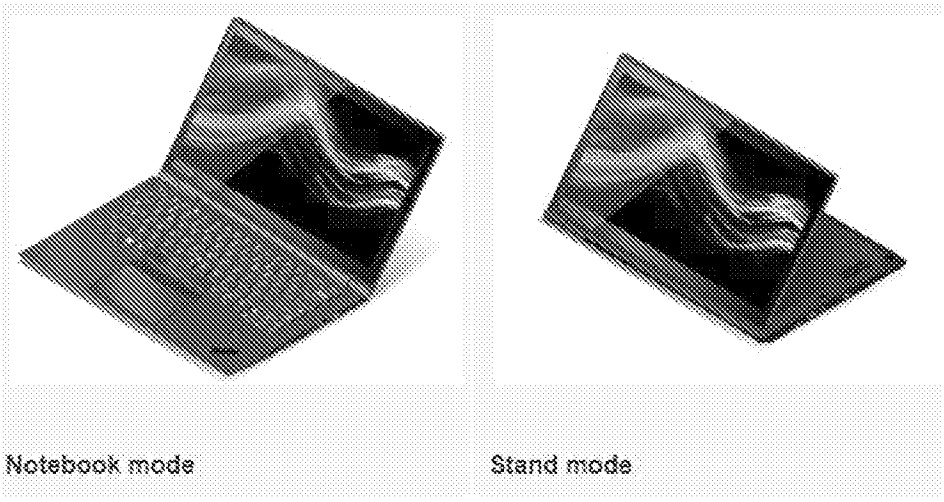
191. Lenovo Beijing has known or should have known since it first became aware of the '844 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Portable Products are infringing the '844 patent.

192. Lenovo Beijing is responsible for content displayed on the Lenovo.com Domain, including the press releases identified in Paragraph 90 above, which encourage users of the Accused Portable Products in the United States and Delaware to infringe at least claim 10 of the '844 patent by using the Accused Portable Products. Since at least 2016, Lenovo Beijing has encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Portable Products. Lenovo Beijing's conduct since at least 2016 demonstrates an intent to induce customers to directly infringe at least claim 10 of the '844 patent. Lenovo Beijing's conduct since at least 2016 also demonstrates an intent to induce Lenovo US to infringe the '844 patent by selling, offering for sale, and using the Accused Portable Products.

193. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of one or more claims of the '844 patent, literally and/or equivalently, at least by inducing end users, repair and services technicians, Lenovo employees

and contractors, and others to use the Accused Portable Products in an infringing manner. Lenovo Beijing makes available the Lenovo.com Domain to disseminate manuals, product documentation and other advertising material that encourages customers to infringe the asserted claims by using the Accused Portable Products.

194. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

195. Lenovo Beijing has had knowledge of the '844 patent and its infringement of the '844 patent since it first became aware of the '844 patent in 2016, and by at least the time it received notice of the Original Complaint. Lenovo Beijing has induced infringement of the '844 patent with specific intent to induce infringement of that patent.

196. Lenovo Beijing's willful infringement is evidenced by the following: Lenovo Beijing's intellectual property lawyers disclosed the LiTL '012 publication during the course of prosecution of Lenovo Beijing's patents before the USPTO, and with full knowledge of repeated citation to it as prior art by foreign patent prosecution bodies; the close working relationship between Lenovo Beijing's IP and research and design departments; the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 10 of the '844 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial action to avoid infringement. Lenovo Beijing's infringement of the '844 patent has been willful since it first became aware of the '844 patent in 2016, or at least since the time it received notice of the Original Complaint, or at least since September 29, 2020. Lenovo Beijing's ongoing infringement of the '844 patent continues to be willful. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Portable Products with the intent that the Accused Portable Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Portable Products in Lenovo's established distribution channels with the intent that the Accused Portable Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail

above, and knowing that doing so would infringe the '844 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '844 patent.

197. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

198. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '844 patent.

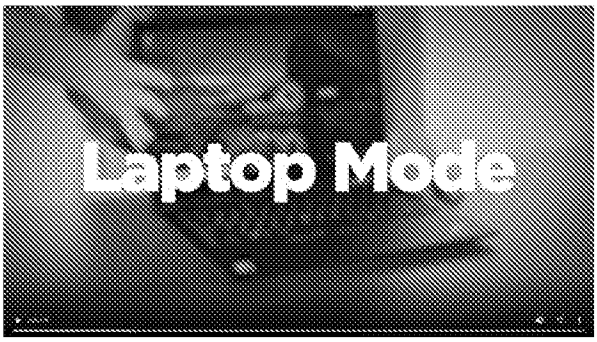
199. Lenovo Beijing's infringement of the '844 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

COUNT III

(Infringement of U.S. Patent No. 10,289,154)

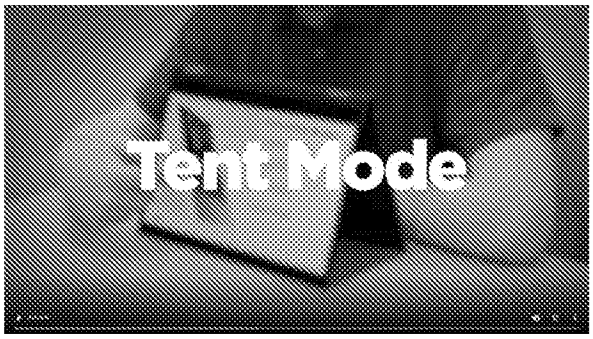
200. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

201. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) are portable computers that are configurable between a plurality of display modes comprising a first mode, a second mode, and a third mode. For example:



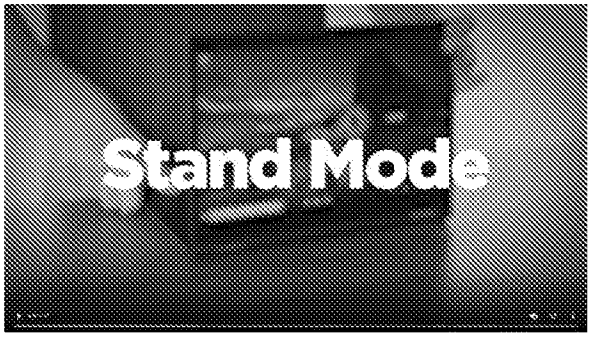


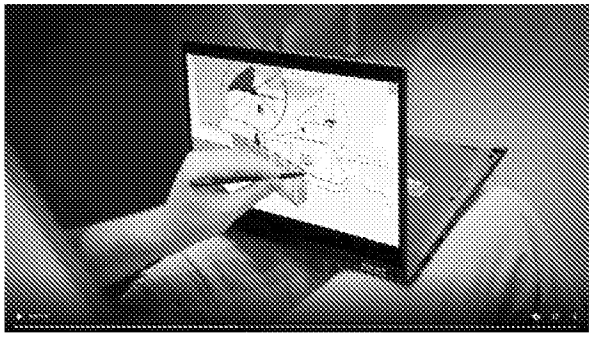
See, e.g., ThinkPad Yoga Modes at 0:14-0:23.





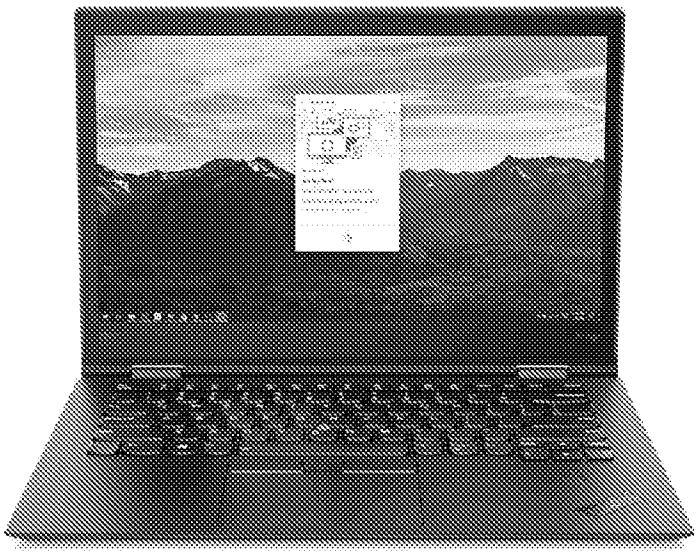
See, e.g., ThinkPad Yoga Modes at 0:32-0:36.





See, e.g., ThinkPad Yoga Modes at 0:24-0:31.

202. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display component comprising a surface and a display screen disposed in the surface of the display component. For example:



See, e.g., ThinkPad Photos.

203. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a camera disposed in the surface of the display component. For example:



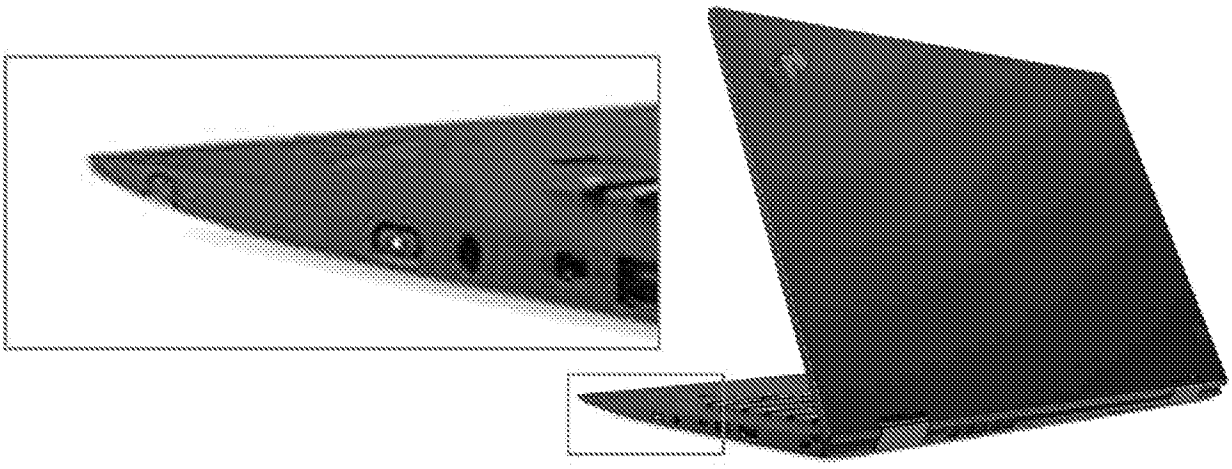
See, e.g., ThinkPad Yoga Video at 0:50.

204. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a base comprising a first surface and a second surface, a keyboard disposed in the first surface of the base, and a touchpad disposed in the first surface of the base.



See, e.g., ThinkPad Photos.

205. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a power button disposed in the second surface of the base. For example:



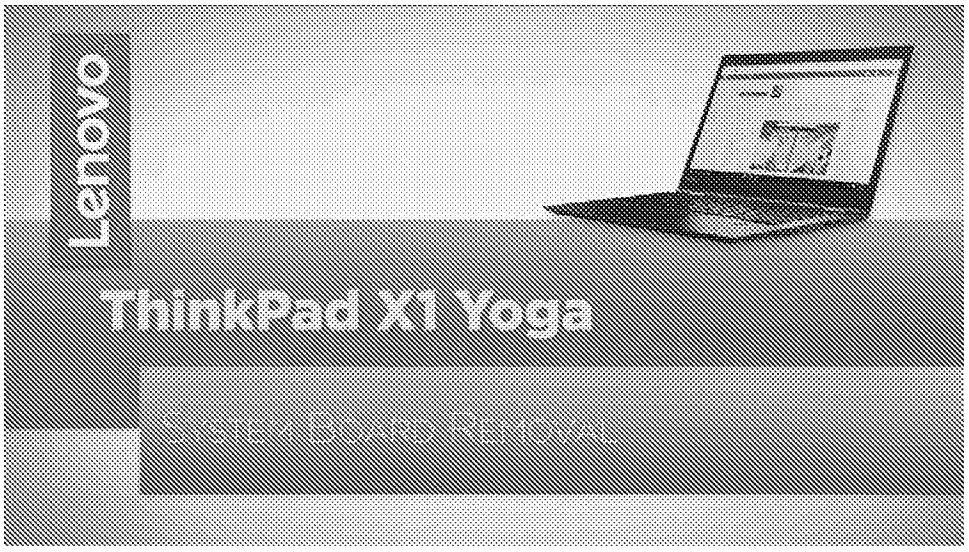
See, e.g., ThinkPad Photos.

206. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a central processing unit disposed in the base. For example:

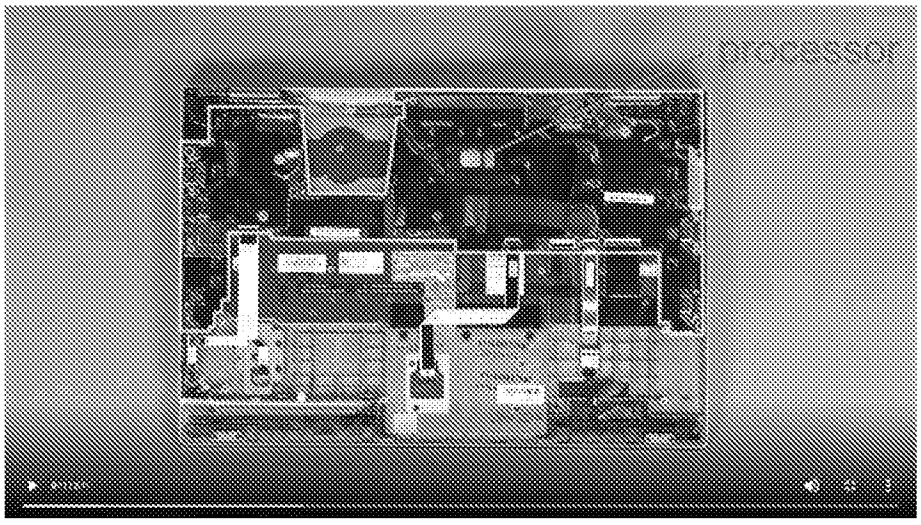
Processor

8th Generation Intel® Core™ i5-8250U Processor (1.60 GHz, up to 3.40 GHz with Turbo Boost, 4 Cores, 8 Threads, 6 MB Cache)

See, e.g., ThinkPad Webpage.

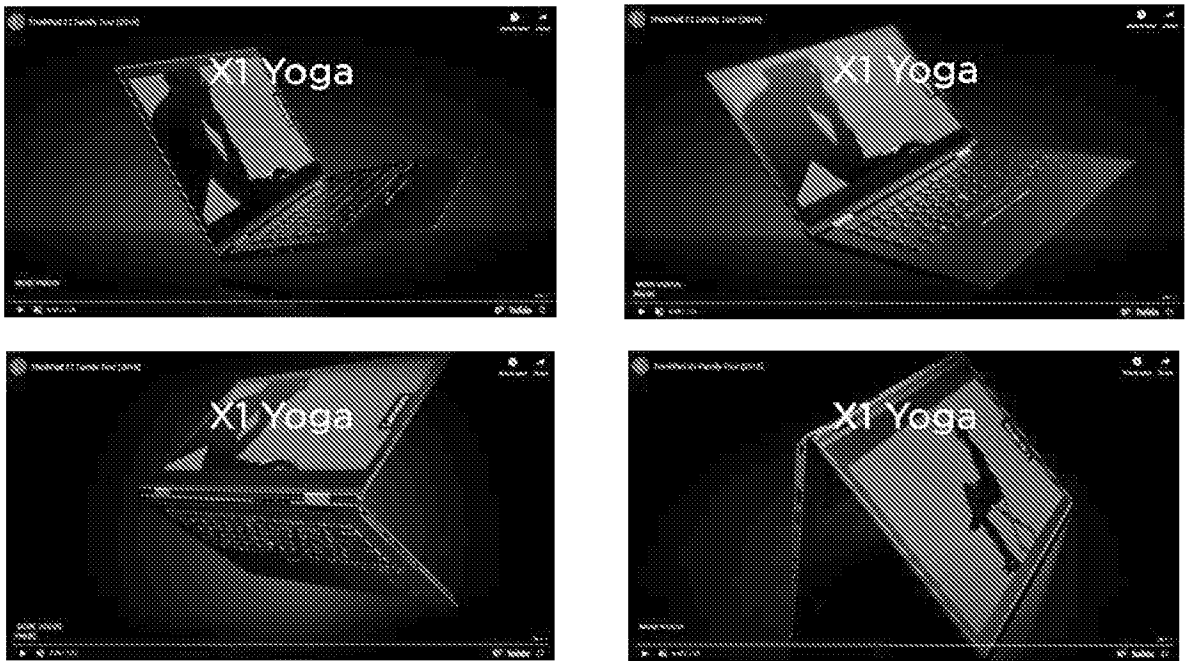


See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4.

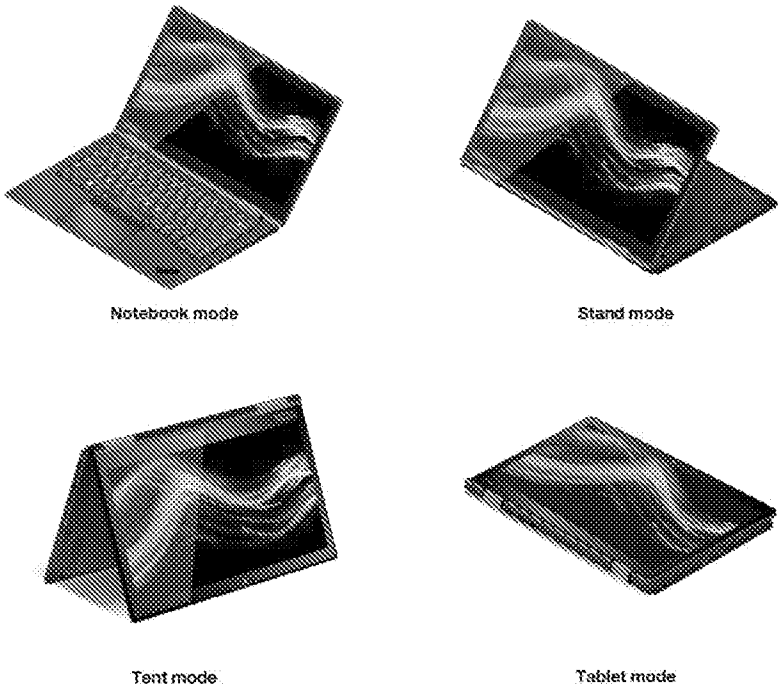


See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4 at 0:11 (annotations added).

207. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a hinge assembly that rotatably couples the base to the display component, the hinge assembly being configured to permit the display component to rotate relative to the base up to at least 270 degrees from a closed position where the surface of the display component faces the first surface of the base. For example:

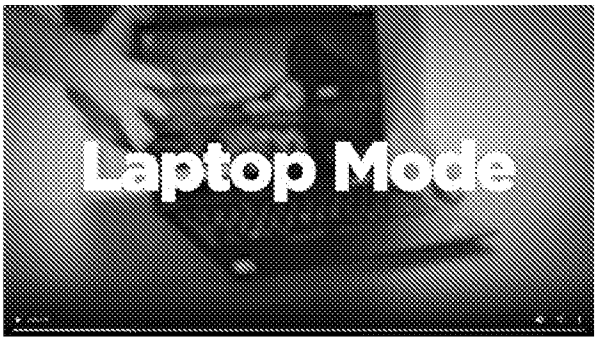


See, e.g., ThinkPad Yoga Video at 0:38-0:42.



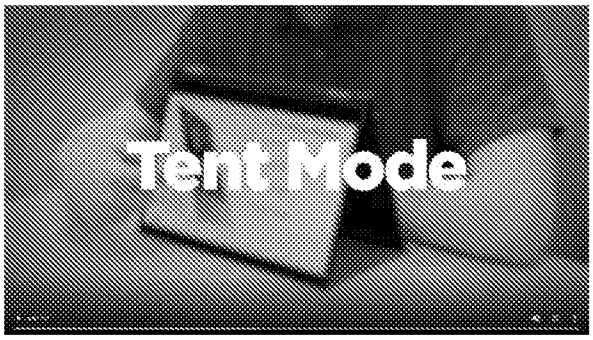
See ThinkPad User Guide, p. 29.

208. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include an orientation sensor configured to generate orientation information indicative of an orientation of at least part of the portable computer and a display manager configured to detect a current display mode from among the plurality of display modes based at least in part on the orientation information, display content in a first orientation when the current display mode is the first mode or the third mode, display content in a second orientation that is rotated 180 degrees relative to the first orientation when the current display mode is the second mode, and enlarge at least some computer content displayed on the display screen when the current display mode transitions from the first mode to the second mode.



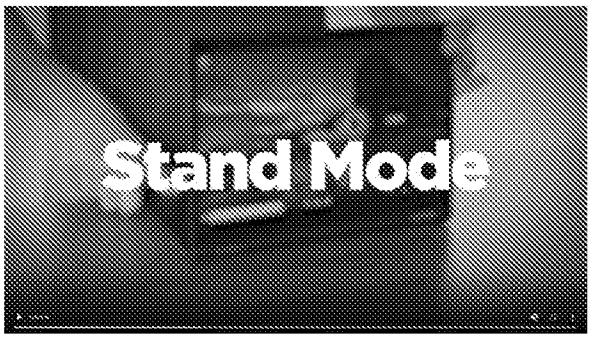


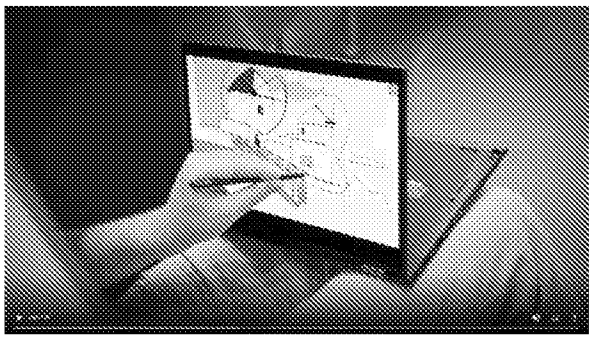
See, e.g., ThinkPad Yoga Modes at 0:14-0:23.





See, e.g., ThinkPad Yoga Modes at 0:32-0:36.





See, e.g., ThinkPad Yoga Modes at 0:24-0:31.

Lenovo US

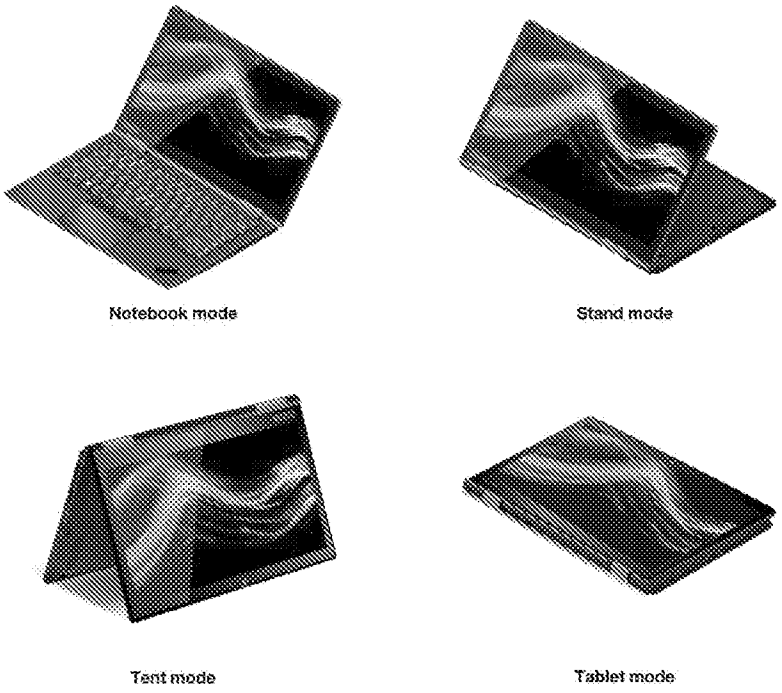
209. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more of the claims of the '154 patent, including at least claim 11, including by importing, using, selling, and offering for sale in the United States certain computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

210. Since at least the filing of the Original Complaint Lenovo US knew of the '154 patent.

211. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Portable Products infringe at least claim 11 of the '154 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

212. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 11 of the '154 patent by continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Portable Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Portable Products and on the website https://www.lenovo.com/us/en/pc-nfe/?s_tnt=133500%3A1%3A0&adobe_mc_sdid=SDID%3D16149CC949FC05AE-4D0E38E96242D744%7CMCORGID%3DF6171253512D2B8C0A490D45%40AdobeOrg%7CTS%3D1609296681&adobe_mc_ref=https%3A%2F%2Fwww.lenovo.com%2Fus%2Fen manuals, product documentation, and advertising materials that induce customers or other users to infringe at least claim 11 of the '154 patent by encouraging the use of the Accused Portable Products.

213. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad User Guide, p. 29.

214. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 11 of the '154 patent has been willful. Lenovo US's offers for sale, sales, or use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '154 patent constitutes willful infringement. Lenovo US is a large corporation with substantial resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its ongoing offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action to avoid infringement evidences its willful infringement.

215. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

216. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '154 patent.

217. Lenovo US's infringement of the '154 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

218. On information and belief, Lenovo Beijing has had knowledge of the '154 patent since before the filing of the Original Complaint.

219. Lenovo has extensive experience with intellectual property. Lenovo Beijing has been the owner of over 2,500 patent applications and over 2,200 patents. Over the past decade, Lenovo US has been involved in over 200 patent litigations in the United States, and has been a party in over 50 *inter partes* review proceedings before the U.S. Patent Trial and Appeals Board. The Lenovo 2019 Annual Report identifies intellectual property (IP) risk as one of the "key risks that the Group considers to be of great significance to the Group as it stands today." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page22. For example, the report recognizes that Lenovo could suffer "reputational harm if found to infringe a third party's valid patents." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page 27. To manage and mitigate its IP risk, Lenovo plans to: "Monitor, develop and execute IP litigation defense strategy" and "License IP as appropriate and monitor its continued validity and value to the Group." Lenovo Beijing's R&D teams work closely with IP lawyers from product conception through manufacture and commercialization to develop effective IP strategies for new products, such as the Yoga-branded laptops.
https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html.

220. Consistent with Lenovo Beijing's sophistication with IP matters and the fact that the Asserted Patents belong to a patent family that has been frequently cited in patent

applications of major players in the personal computing space, on information and belief, Lenovo Beijing was aware by 2016 of the family of LiTL patents and applications to which the '154 patent belongs.

221. Since at least 2019 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '154 patent based on at least the following:

- Lenovo Beijing's sophistication and substantial resources with respect to intellectual property matters;
- Lenovo Beijing's knowledge of the patent family to which the '154 patent belongs;
- Lenovo Beijing's knowledge since at least 2016 of the '688 and '844 patents, which are ancestors to the '154 patent, and citation to these patents and their corresponding publications in Lenovo Beijing patent applications since at least 2016; and
- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products.

222. On information and belief, Lenovo Beijing has known, should have known, or has been willfully blind to the existence of the '154 patent, since at least 2019. As a descendant of the '688 and '844 patents (and their corresponding published patent applications), which have been frequently cited during prosecution of patent applications owned by major players in the

personal computing space, including the Lenovo Group and its subsidiaries, Lenovo Beijing knew or was willfully blind to the existence of the '154 patent.

223. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property." He also noted that "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an innovation-friendly business environment." *See* https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow."

224. On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2019 Lenovo Beijing knew that use of the Accused Portable Products infringes the '154 patent.

225. On information and belief, citation of the '688 and '844 patents and/or their corresponding published applications during the USPTO prosecution of Lenovo Beijing patents

caused Lenovo Beijing to investigate, become aware of, and consider descendant patents, including the '154 patent, and the rest of LiTL's patent portfolio.

226. Since at least 2019 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '154 patent since the patent is a descendant of LiTL's frequently cited ancestor patents (and related published applications), which Lenovo Beijing cited during the prosecution of multiple patents.

227. In addition, Lenovo Beijing has known that the Accused Portable Products sold on its website and bearings its marks infringe one or more of the claims of the '154 patent since at least the time that it received notice of the Original Complaint, or since at least September 29, 2020.

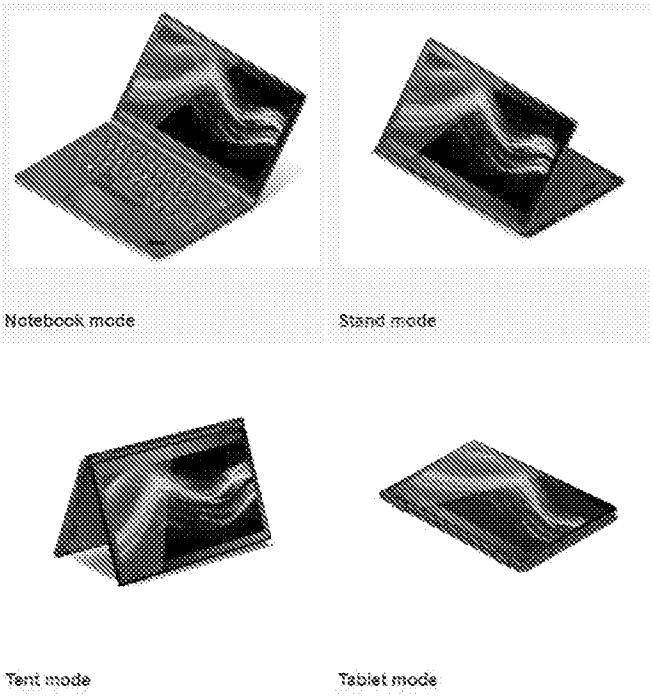
228. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Products bearing Lenovo Beijing's marks into the United States and Delaware since the filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 11 of the '154 patent.

229. Lenovo Beijing has known or should have known since it first became aware of the '154 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Portable Products are infringing the '154 patent.

230. Lenovo Beijing is responsible for what is posted on the Lenovo.com Domain, including its press releases identified in Paragraph 90 above, which encourage users of the Accused Products in the United States and Delaware to infringe at least claim 11 of the '154 patent by using the Accused Portable Products. Since at least 2019, Lenovo Beijing has

encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Portable Products. Lenovo Beijing's conduct since 2019 demonstrates an intent to induce customers to directly infringe at least claim 11 of the '154 patent. Lenovo Beijing's conduct since 2019 also demonstrates an intent to induce Lenovo US to infringe the '154 patent by selling, offering for sale, and using the Accused Portable Products.

231. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of one or more claims of the '154 patent, literally and/or equivalently, at least by inducing end users, repair and service technicians, Lenovo employees and contractors, and others to use the Accused Portable Products in an infringing manner. Lenovo Beijing makes available the Lenovo.com Domain to disseminate manuals, product documentation and other advertising material that encourages customers to infringe the asserted claims by using the Accused Portable Products. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

232. Lenovo Beijing has had knowledge of the '154 patent and its infringement of the '154 patent since it first became aware of the '154 patent in 2019, and since at least the time it received notice of the Original Complaint or at least by September 29, 2020. Lenovo Beijing has induced infringement of the '154 patent with specific intent to induce infringement of that patent.

233. Lenovo Beijing's infringement of the '154 patent has been willful since it first became aware of the '154 patent in 2019, or since at least the time it received notice of the Original Complaint, and its ongoing infringement of the '154 patent continues to be willful. Lenovo Beijing's willful infringement is evidenced by the following: the close working relationship between Lenovo Beijing's IP and research and design departments; the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 11 of the '154 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial

action to avoid infringement. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Portable Products with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Products in Lenovo's established distribution channels with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail above, and knowing that doing so would infringe the '154 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '154 patent.

234. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

235. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '154 patent.

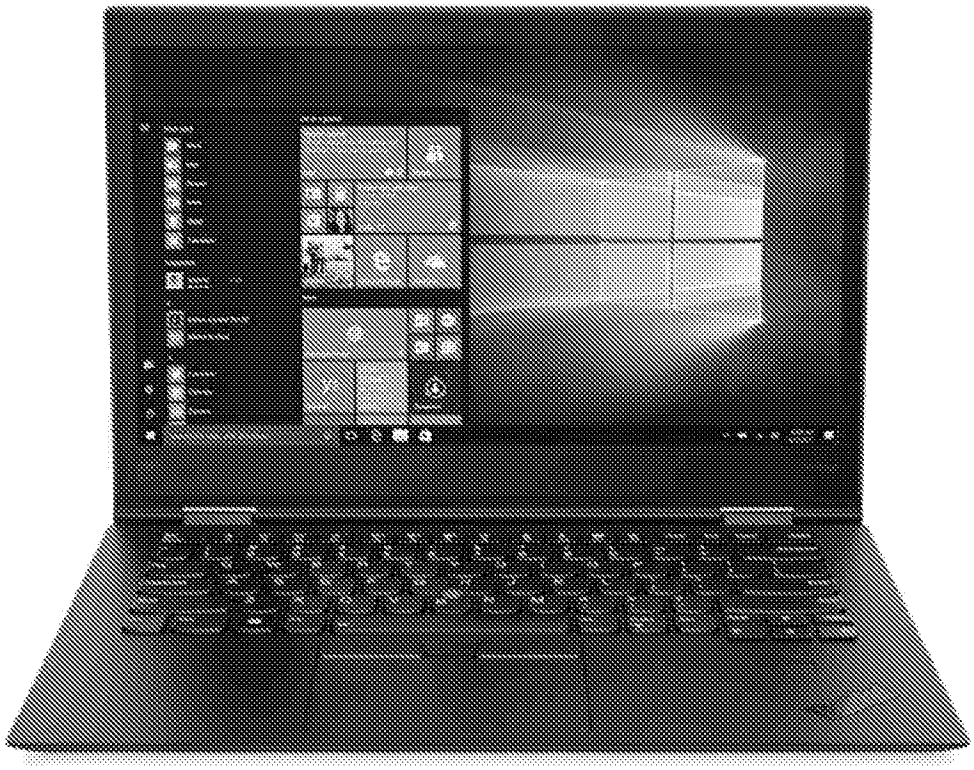
236. Lenovo Beijing's infringement of the '154 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

COUNT IV

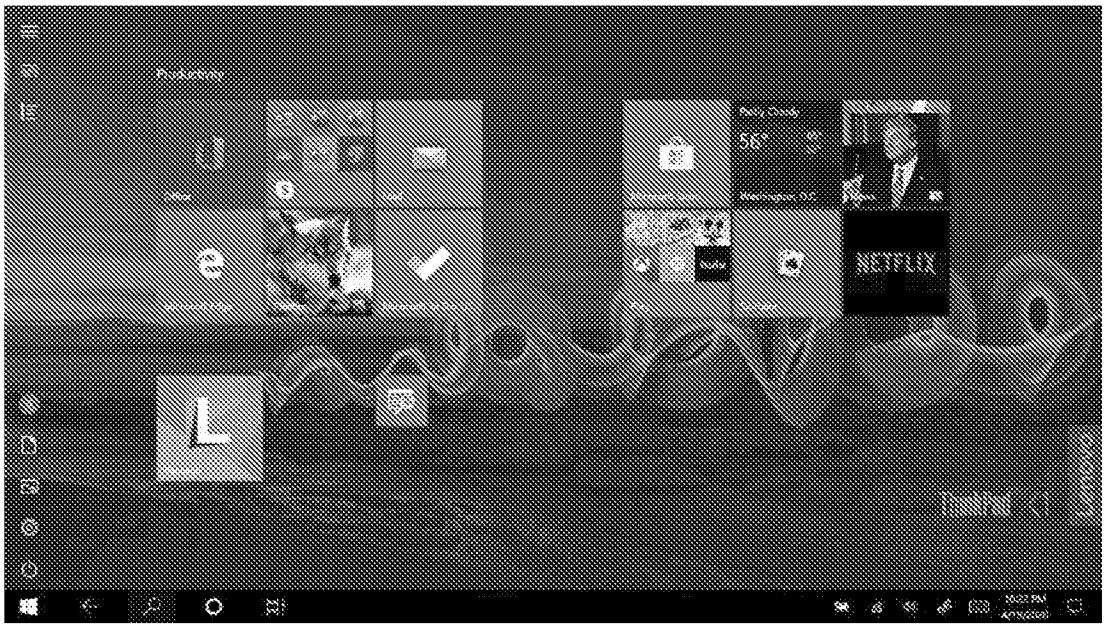
(Infringement of U.S. Patent No. 9,880,715)

237. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

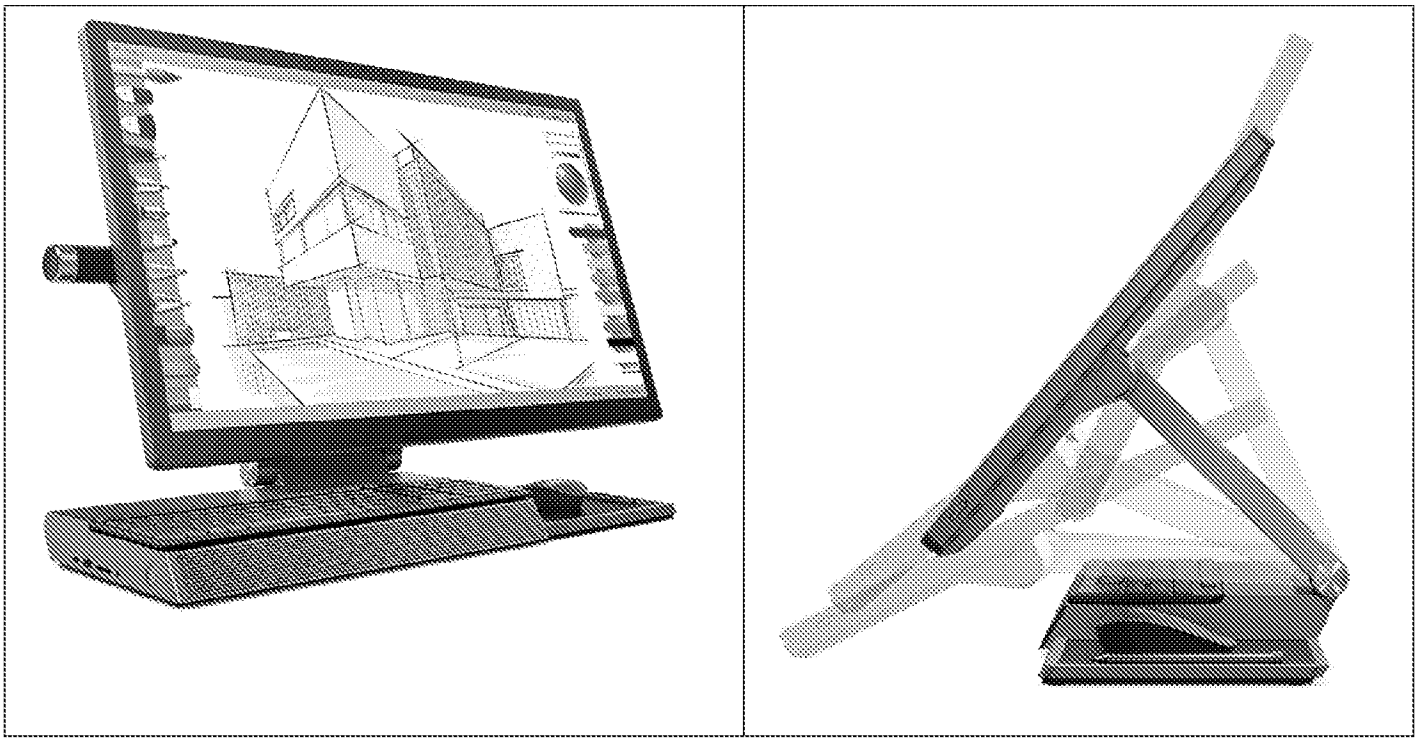
238. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, the Yoga A940) include a customized user interface to display computer content on a display component of a computer system including a keyboard. For example:



See, e.g., ThinkPad Photos, caption: Lenovo ThinkPad X1 Yoga (3rd Gen) front view with Windows 10 Pro.



Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in tablet mode.

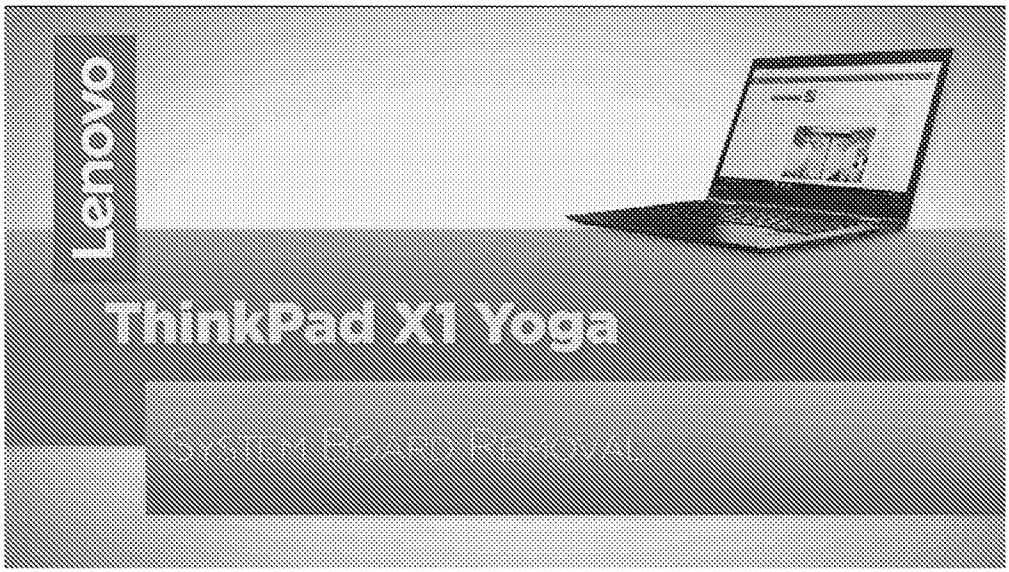


https://www.lenovo.com/us/en/desktops-and-all-in-ones/ideacentre/yoga-a-series/Yoga-A940-27ICB/p/FFYGF900316.

239. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a user interface comprising: at least one processor operatively connected to a memory of the computer system. For example:

3rd Generation ThinkPad X1 Yoga	YOGA A940
Processor 8th Generation Intel® Core™ i5-8250U Processor (1.60 GHz, up to 3.40 GHz with Turbo Boost, 4 Cores, 8 Threads, 6 MB Cache)	**Processor** 9th Generation Intel® Core™ i7-9700 Processor with vPro™ (3.00GHz, up to 4.70 GHz with Turbo boost, 8 Cores, 12MB Cache)
Operating System Windows 10 Pro 64	**Operating System** Windows 10 Home 64
Display Type 14.0" FHD (1920 x 1080) IPS anti-reflective, anti-smudge, touchscreen, 300 nits	**Display Type** 27" 4K UHD (3840 x 2160) IPS, multi-touch
Memory 8 GB LPDDR3 2133MHz (Soldered)	**Memory** 32 GB DDR4 2666MHz (2 x 16 GB)
Hard Drive 512 GB PCIe SSD	**Hard Drive** 1TB 5400 RPM + 256GB SSD PCIe

See, e.g., ThinkPad Webpage, A940 Webpage.



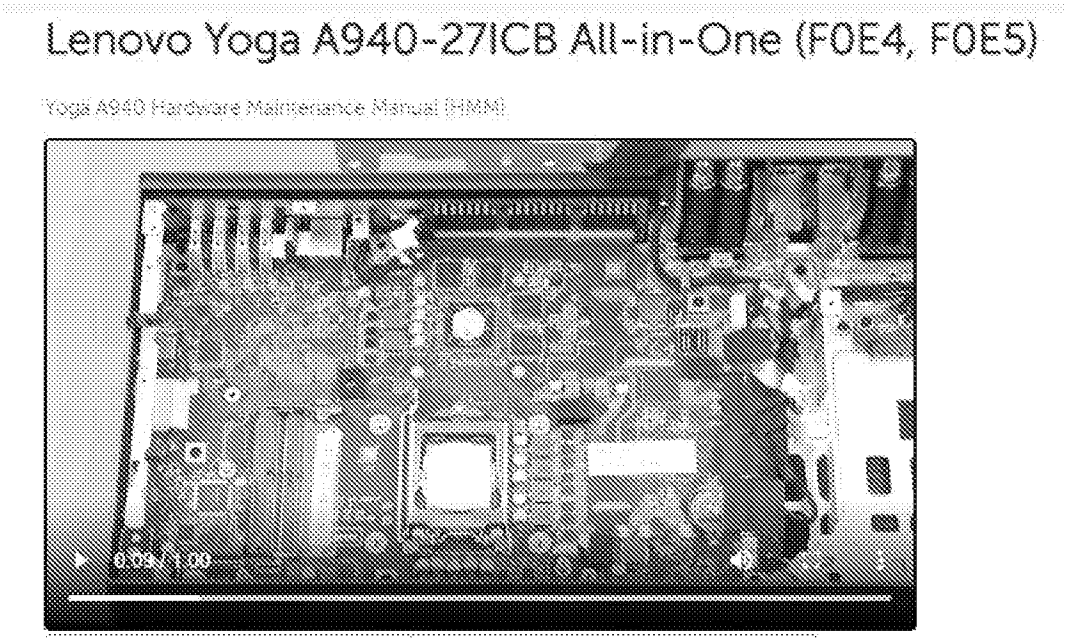
See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4.



See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4 at 0:11 (annotations added).

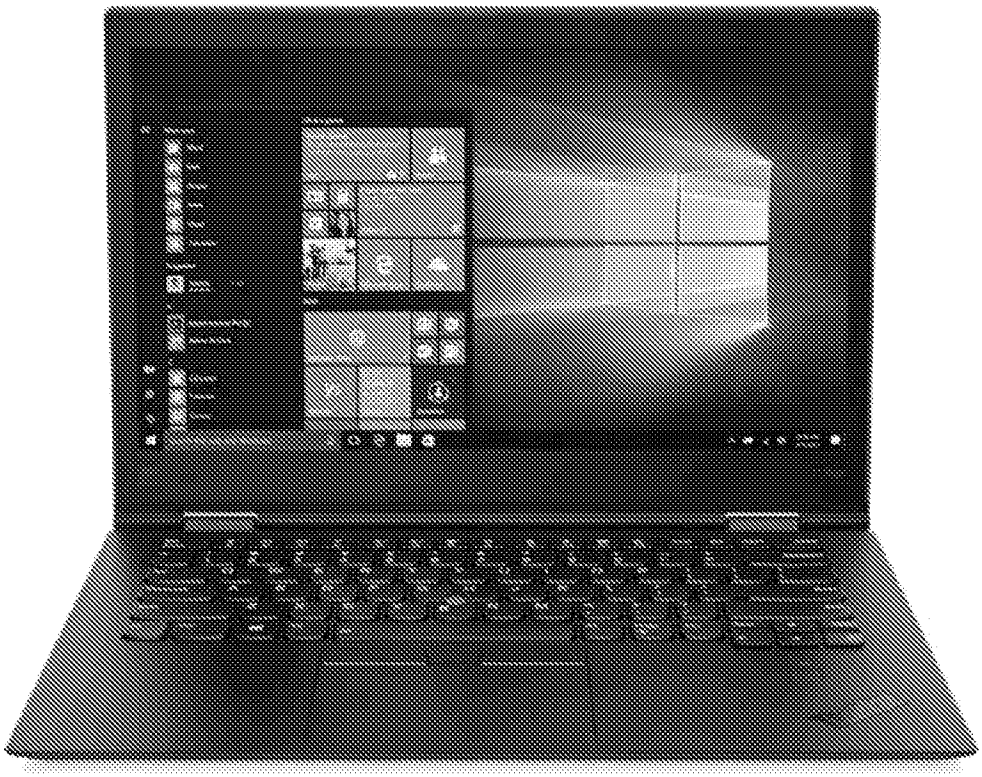


See, e.g., https://support.lenovo.com/us/en/solutions/ht508724-removal-and-replacement-videos-lenovo-yoga-a940-27icb-all-in-one-f0e4-f0e5

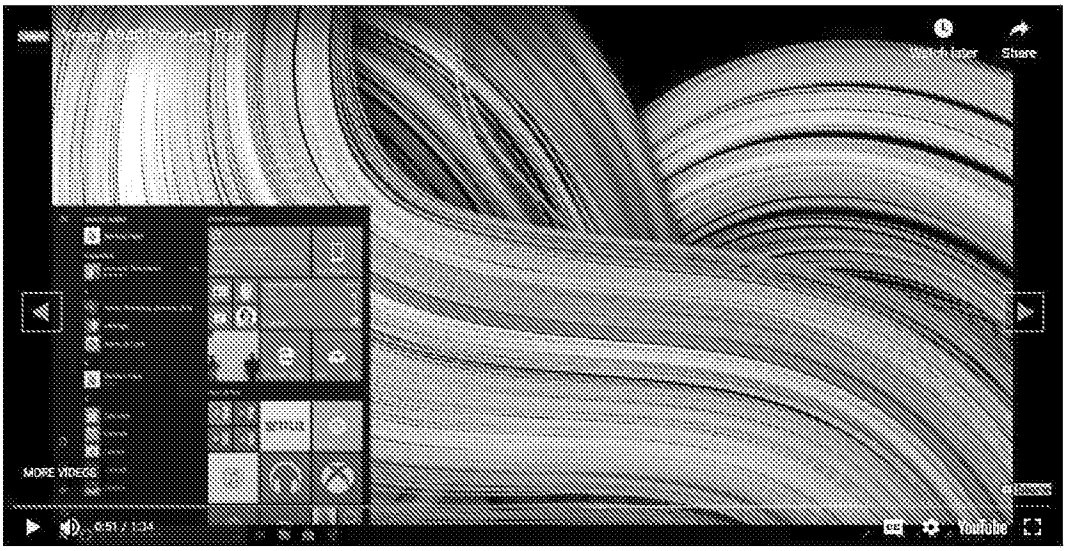


See, e.g., https://support.lenovo.com/us/en/solutions/ht508724-removal-and-replacement-videos-lenovo-yoga-a940-27icb-all-in-one-f0e4-f0e5.

240. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a graphical user interface, executing on the at least one processor, configured to display the computer content on the display component of the computer system. For example:

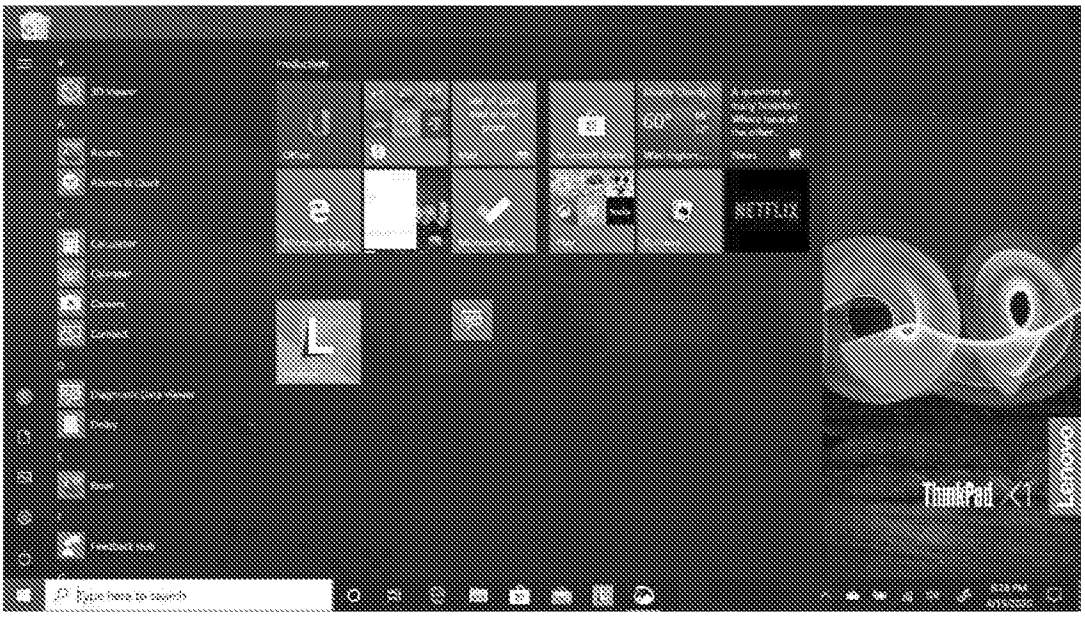


See, e.g., ThinkPad Photos, caption: Lenovo ThinkPad X1 Yoga (3rd Gen) front view with Windows 10 Pro.

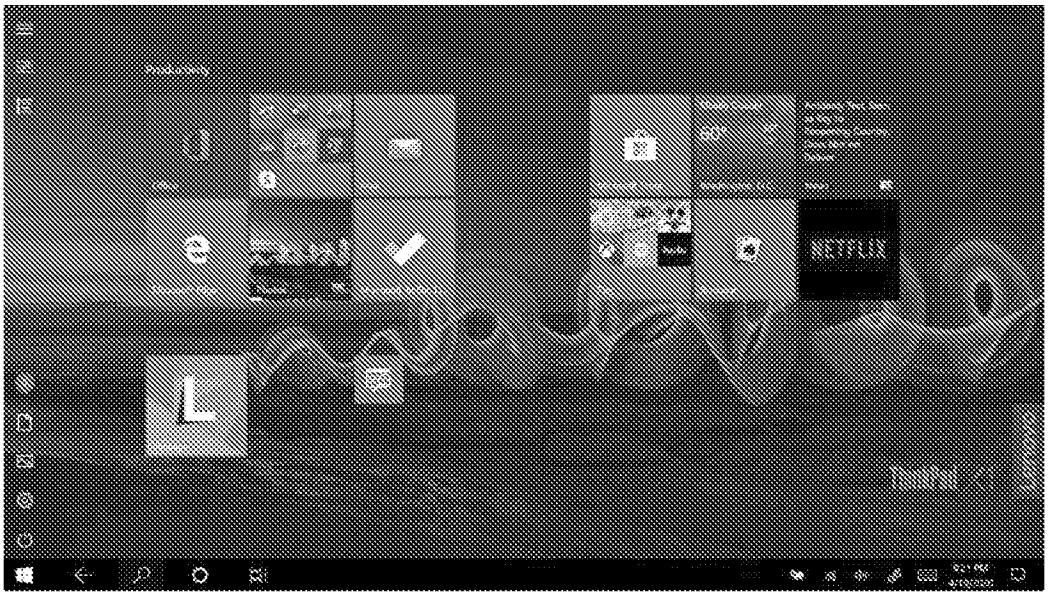


See, e.g., https://www.youtube.com/watch?v=3O66VahPxRk.

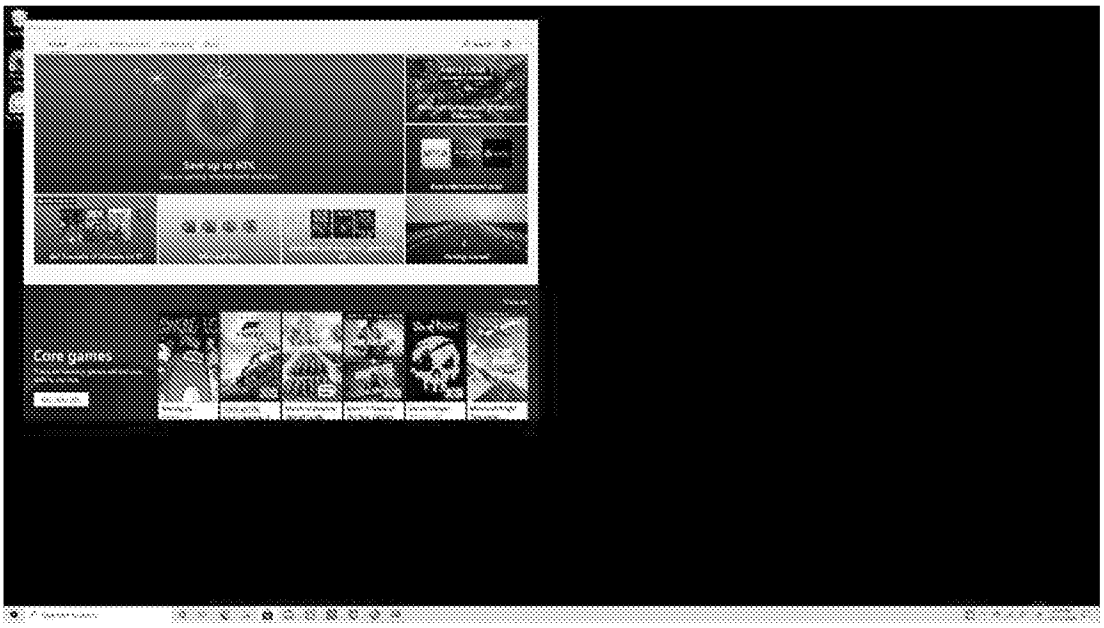
241. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a graphical user interface configured to: display a plurality of views of a plurality of visual representations of computer content. For example, the 3rd Generation ThinkPad X1 Yoga is configured to display a home screen in laptop mode and a home screen in tablet mode:



Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in laptop mode.



Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in tablet mode.



Screenshot from Yoga A940, upright position, home screen in normal mode.

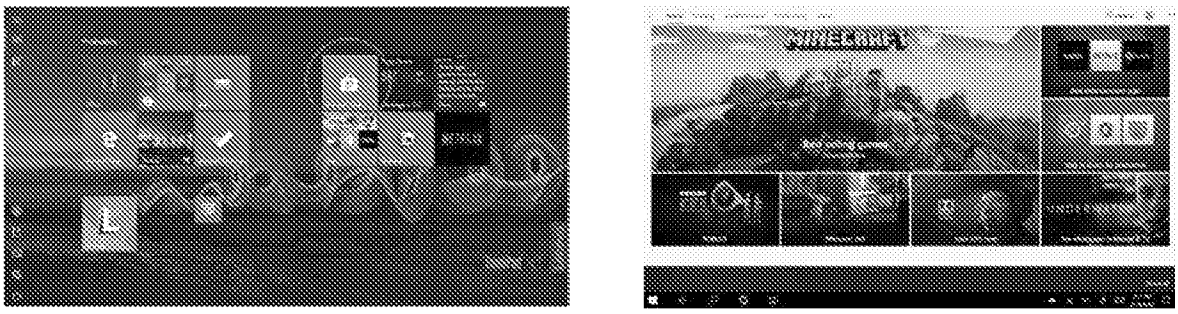


Screenshot from Yoga A940, drafting position, home screen in tablet mode.

242. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include computer content that includes at least one of selectable digital content, selectable computer operations and passive digital content. For example, the Microsoft Store app can be selected from the task bar in laptop mode and in tablet mode:



Screenshots from 3rd Generation ThinkPad X1 Yoga, Microsoft Store selected in laptop mode.



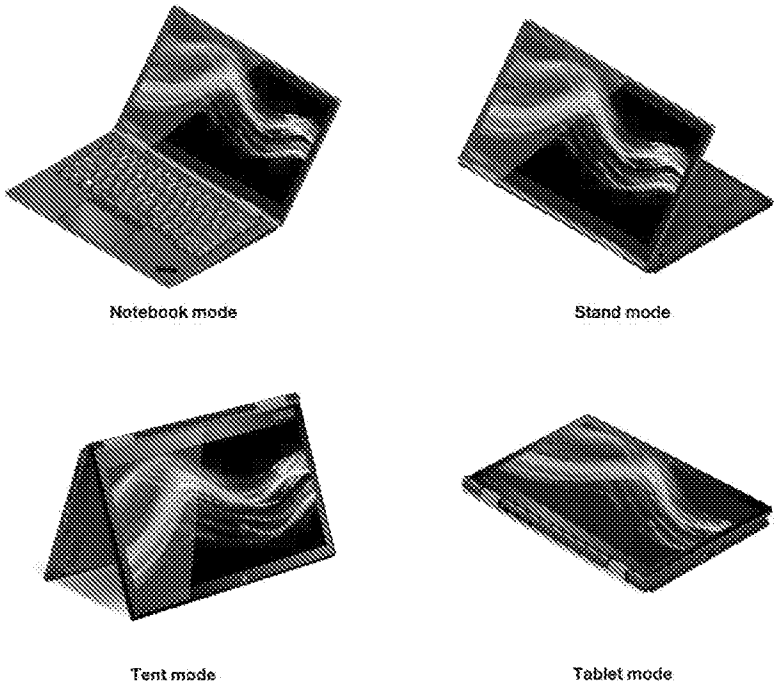
Screenshots from 3rd Generation ThinkPad X1 Yoga, Microsoft Store selected in tablet mode.

243. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include an execution component, executing on the at least one processor, configured to: detect a current computer system configuration from at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system; select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views.

244. For example, the keyboard in the 3rd Generation ThinkPad XI Yoga is operable in notebook mode and inoperable in tent mode:

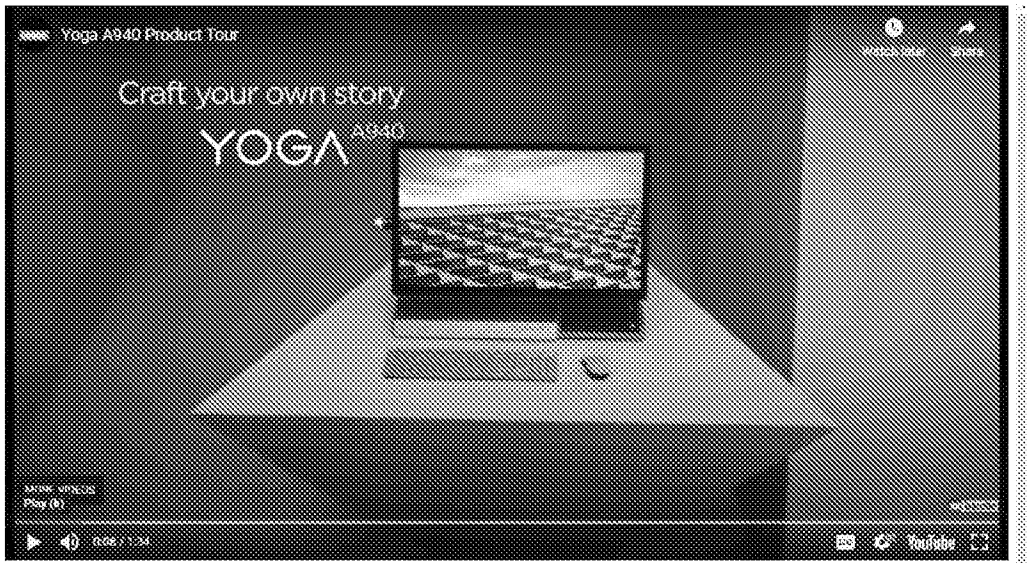
Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

Note: The keyboard and the pointing devices are automatically disabled in the stand mode, tent mode, and tablet mode. Use the touch screen to control your computer instead.

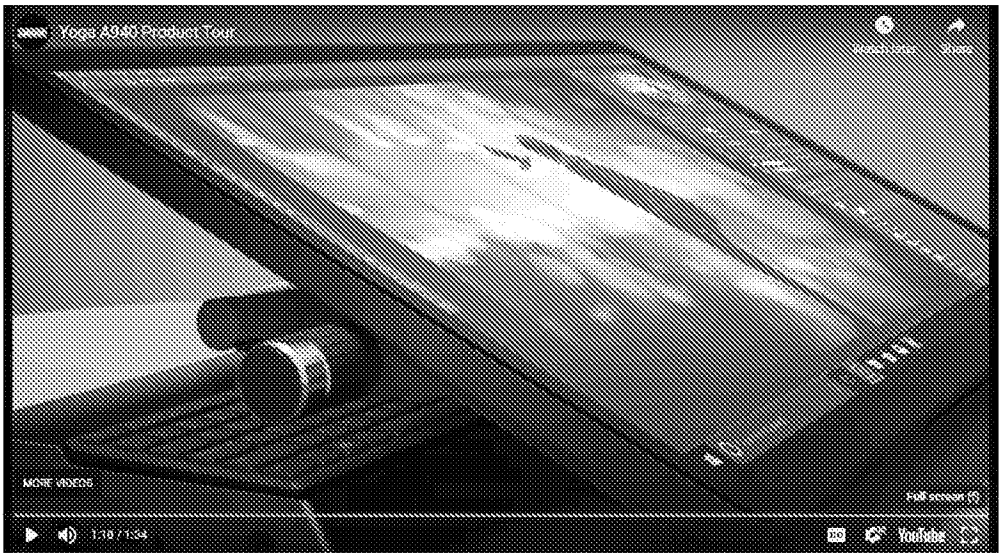


See ThinkPad User Guide, pp. 28-29.

245. For example, in a first computer system configuration in which the display is oriented in an upright position the keyboard in the Yoga A940 is operable to receive input from an operator, and the normal mode can be selected in Microsoft Windows 10. In a second computer system configuration in which the display is lowered into drafting mode, the keyboard is inoperable to receive input from an operator, and the tablet mode can be selected in Microsoft Windows 10:



See https://www.youtube.com/watch?v=3O66VahPxRk at 0:06.



See https://www.youtube.com/watch?v=3O66VahPxRk at 1:18.

Lenovo US

246. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more of the claims of the '715 patent, including at least claim 1, including by importing, using, selling, and offering for sale in the United States certain

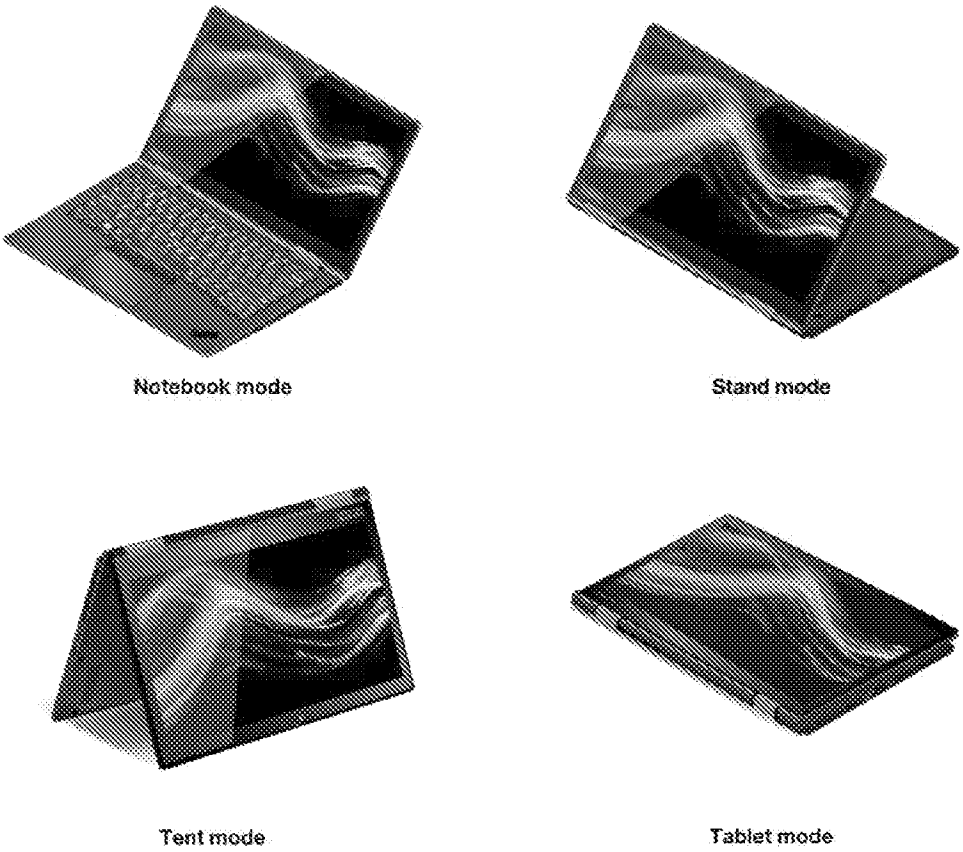
computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

247. Since at least the filing of the Original Complaint Lenovo US knew of the '715 patent.

248. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Portable Products infringe at least claim 1 of the '715 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

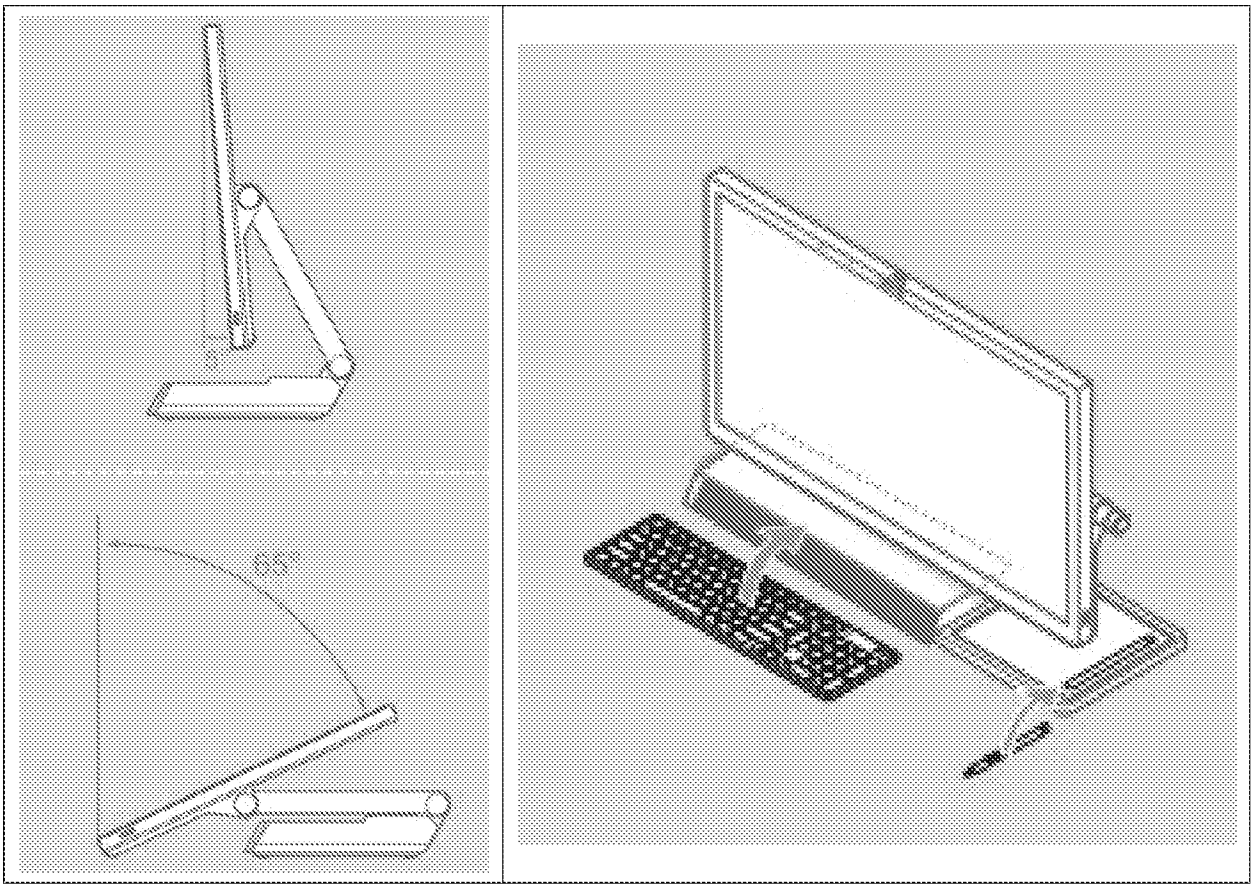
249. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 1 of the '715 patent by continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Portable Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Portable Products and on the website https://www.lenovo.com/us/en manuals, product documentation, and advertising materials that induce customers or other users to infringe at least claim 1 of the '715 patent by encouraging the use of the Accused Portable Products.

250. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":



See ThinkPad User Guide, p. 29.

251. For example, the Yoga A940 Setup guide instructs users that the Yoga A940 can be configured into the following computer system configurations:



252. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 1 of the '715 patent has been willful. Lenovo US's offers for sale, sales, or use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '715 patent constitutes willful infringement. Lenovo US is a large corporation with a plethora of resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its ongoing offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action to avoid infringement evidences its willful infringement.

253. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

254. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '715 patent.

255. Lenovo US's infringement of the '715 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

256. On information and belief, Lenovo Beijing has had knowledge of the '715 patent since before the filing of the Original complaint.

257. Lenovo Beijing has extensive experience with intellectual property. Lenovo Beijing has been the owner of over 2,500 patent applications and over 2,200 patents. Over the past decade, Lenovo US has been involved in over 200 patent litigations in the United States, and has been a party in over 50 *inter partes* review proceedings before the U.S. Patent Trial and Appeals Board. The Lenovo 2019 Annual Report identifies intellectual property (IP) risk as one of the "key risks that the Group considers to be of great significance to the Group as it stands today." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page22. For example, the report recognizes that Lenovo could suffer "reputational harm if found to infringe a third party's valid patents." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page 27. To manage and mitigate its IP risk, Lenovo plans to: "Monitor, develop and execute IP litigation defense strategy" and "License IP as appropriate and monitor its continued validity and value to the Group." Lenovo Beijing's R&D teams work closely with IP lawyers from product conception through manufacture and commercialization to develop effective IP strategies for new products, such as the Yoga-branded laptops.
https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html.

258. Consistent with Lenovo Beijing's sophistication with IP matters and the fact that the Asserted Patents belong to a patent family that has been frequently cited in patent

applications of major players in the personal computing space, on information and belief, Lenovo Beijing was aware by 2016 of the family of LiTL patents and applications to which the '715 patent belongs.

259. Since at least 2017, Lenovo Beijing has been aware of the published application, U.S. 2009/303676 ("the LiTL '676 publication"), which issued as U.S. Patent No. 9,003,315 ("the '315 patent"), and from which the '715 patent is a continuation.. On September 8, 2016, the USPTO issued an office action rejecting claims in Lenovo Beijing's U.S. Patent Application No. 13/971,229 as obvious over, inter alia, the LiTL '676 publication. On August 18, 2017, the USPTO issued an office action rejecting claims in Lenovo Beijing's U.S. Patent Application No. 14/079,046 as obvious over, inter alia, the LiTL '676 publication. On September 15, 2016, the USPTO an office action dated September 15, 2016 citing the '315 patent in Lenovo Beijing's U.S. Patent Application No. 14/209,145.

260. Since at least 2018 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Products sold on its website and bearing its marks infringe one or more claims of the '715 patent based on at least the following:

- Lenovo Beijing's sophistication and substantial resources with respect to intellectual property matters;
- Lenovo Beijing's knowledge of and citation to the LiTL '676 publication, which is the parent to the '715 patent, during prosecution of three of Lenovo Beijing's U.S. patent applications as early as 2016;
- Lenovo Beijing's knowledge of the patent family to which the '715 patent belongs;

- Lenovo Beijing's knowledge since at least 2016 of the '688 and '844 patents, which are ancestors to the '715 patent, and citation to these patents and their corresponding publications in Lenovo Beijing patent applications since at least 2016; and
- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products.

261. On information and belief, Lenovo Beijing has known, should have known, or has been willfully blind to the existence of the '715 Patent, since at least 2018. As a descendant of the '688 and '844 patents (and their corresponding published patent applications), which have been frequently cited during prosecution of patent applications owned by major players in the personal computing space, including the Lenovo Group and its subsidiaries, Lenovo Beijing knew or was willfully blind to the existence of the '715 patent.

262. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property." He also noted that "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an innovation-friendly business environment." *See* https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-

continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow."

263. On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2018 Lenovo Beijing knew that use of the Accused Portable Products infringes the '715 patent.

264. On information and belief, citation of the '688 and '844 patents and their corresponding published applications during the USPTO prosecution of Lenovo Beijing patents caused Lenovo Beijing to investigate, become aware of, and consider descendant patents, including the '715 patent, and the rest of LiTL's patent portfolio.

265. Since at least 2018 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Products sold on its website and bearing its marks infringe one or more claims of the '715 patent since the patent is a descendant of LiTL's frequently cited ancestor patents (and related published applications), which Lenovo Beijing cited during the prosecution of multiple patents.

266. In addition, Lenovo Beijing has known that the Accused Products sold on its website and bearing its marks infringe one or more of the claims of the '715 patent since at least the time that it received notice of the Original Complaint, or since at least September 29, 2020.

267. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Products bearing Lenovo Beijing's marks into the United States and Delaware since the

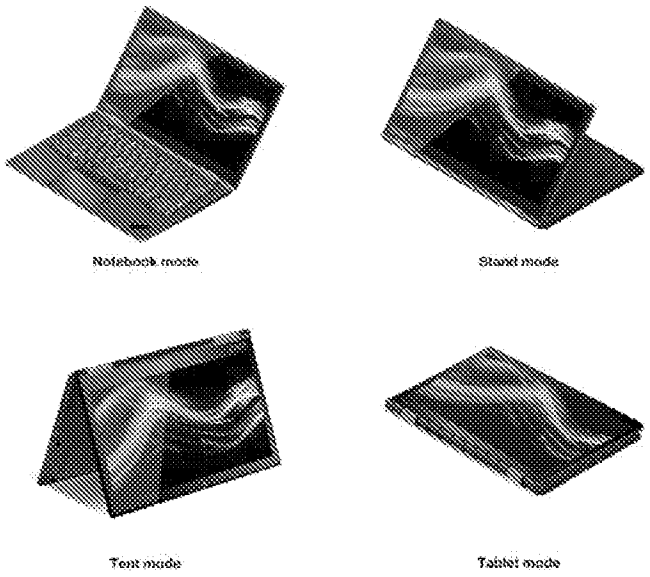
filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 1 of the '715 patent.

268. Lenovo Beijing has known or should have known since it first became aware of the '715 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Portable Products are infringing the '715 patent.

269. Lenovo Beijing is responsible for what is posted on the Lenovo.com Domain, including its press releases identified in Paragraph 90 above, which encourage users of the Accused Products in the United States and Delaware to infringe at least claim 1 of the '715 patent by using the Accused Portable Products. Since at least 2018, Lenovo Beijing has encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Products. Lenovo Beijing's conduct since 2018 demonstrates an intent to induce customers to directly infringe at least claim 1 of the '715 patent. Lenovo Beijing's conduct since 2018 also demonstrates an intent to induce Lenovo US to infringe the '715 patent by selling, offering for sale, and using the Accused Portable Products.

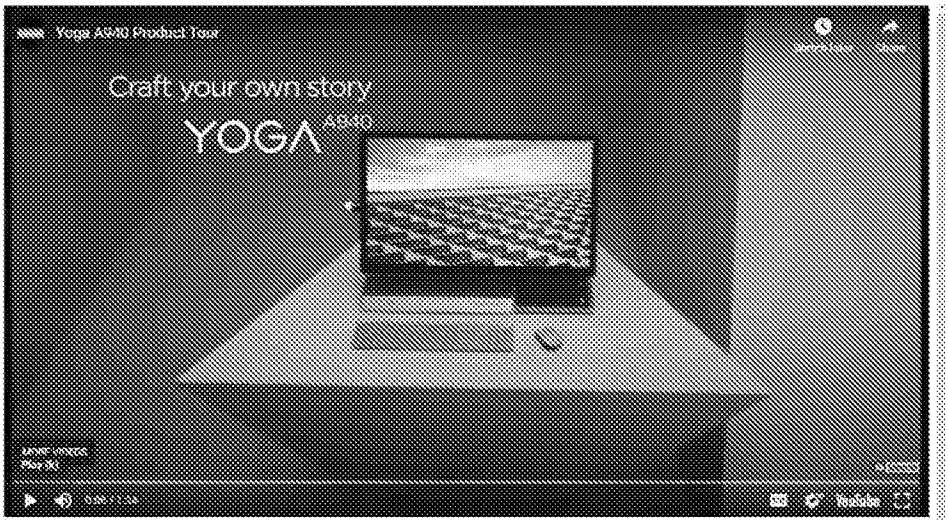
270. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of the '715 patent, literally and/or equivalently, at least by inducing end users, repair and service technicians, Lenovo employees and contractors, and others to use the Accused Products in an infringing manner. Lenovo Beijing makes available the Lenovo.com Domain to disseminate manuals, product documentation and other advertising material that encourages customers to infringe the asserted claims by using the Accused Products.

271. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees," that "[b]y rotating the display to different angle, your computer features the following four operating modes," and that "[t]he keyboard and the pointing devices are automatically disabled in the stand mode, tent mode, and tablet mode":



See ThinkPad HTML User Guide, Using Your ThinkPad / Using your computer / Operating modes.

272. For example, Lenovo's promotional materials for the Yoga A940 demonstrate the intent for users to use a 25° hinge to adjust the display into different computer system configurations. *See* https://news.lenovo.com/lenovo-unboxed-yoga-a940-all-in-one-pc/ at 1:56, 14:45. In an upright position, the keyboard is operable to receive input. In a lower position, the keyboard is stowed underneath the display and is therefore inoperable to receive input.



See A940 Webpage, Yoga A940 Product Tour at 0:06.



See A940 Webpage, Yoga A940 Product Tour at 1:18.

273. Lenovo Beijing has had knowledge of the '715 patent and its infringement of the '715 patent since it first became aware of the '715 patent in 2018, and since at least the time it received notice of the Original Complaint or at least by September 29, 2020. Lenovo Beijing has induced infringement of the '715 patent with specific intent to induce infringement of that patent.

274. Lenovo Beijing's infringement of the '715 patent has been willful since it first became aware of the '715 patent in 2018, or since at least the time it received notice of the

Original Complaint, and its ongoing infringement of the '715 patent continues to be willful. Lenovo Beijing's willful infringement is evidenced by the following: the citation of the LiTL '676 publication and '315 patent (which is the parent to the '715 patent) to Lenovo Beijing during prosecution of three of its U.S. patent applications; the close working relationship between Lenovo Beijing's IP and research and design departments; the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 11 of the '154 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial action to avoid infringement. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Products with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Products in Lenovo's established distribution channels with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail above, and knowing that doing so would infringe the '715 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '715 patent.

275. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

276. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '715 patent.

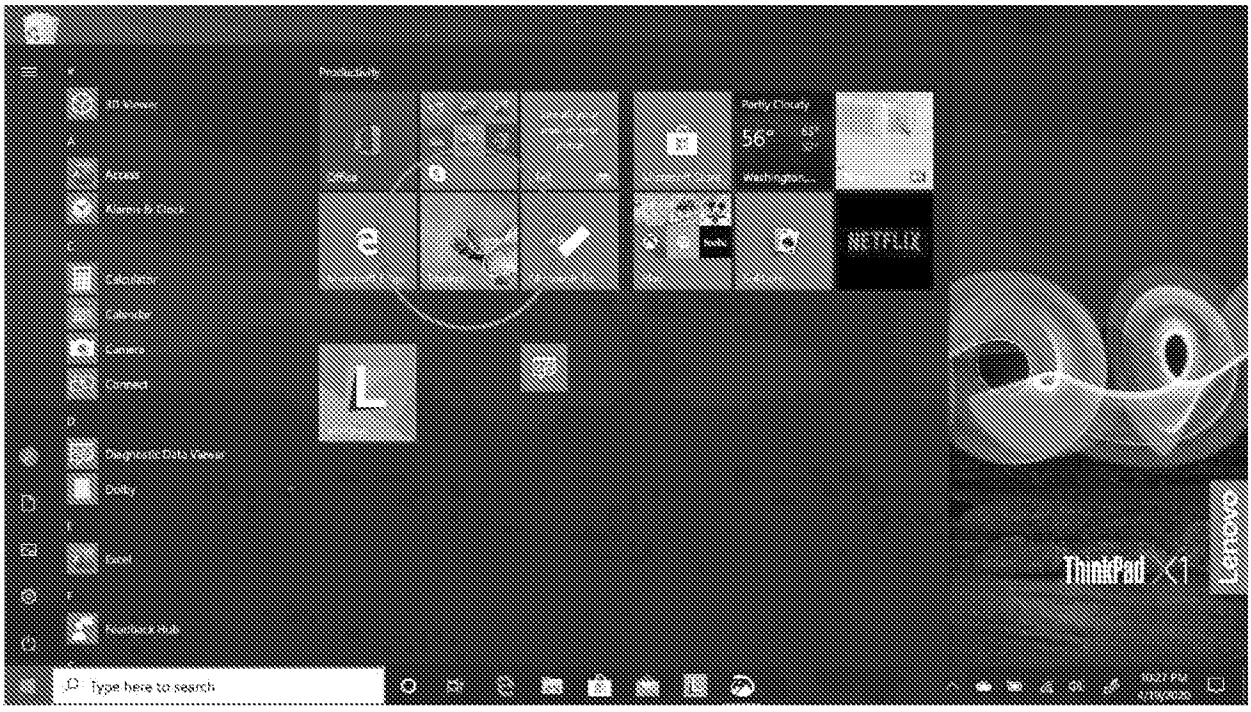
277. Lenovo Beijing's infringement of the '715 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

COUNT V

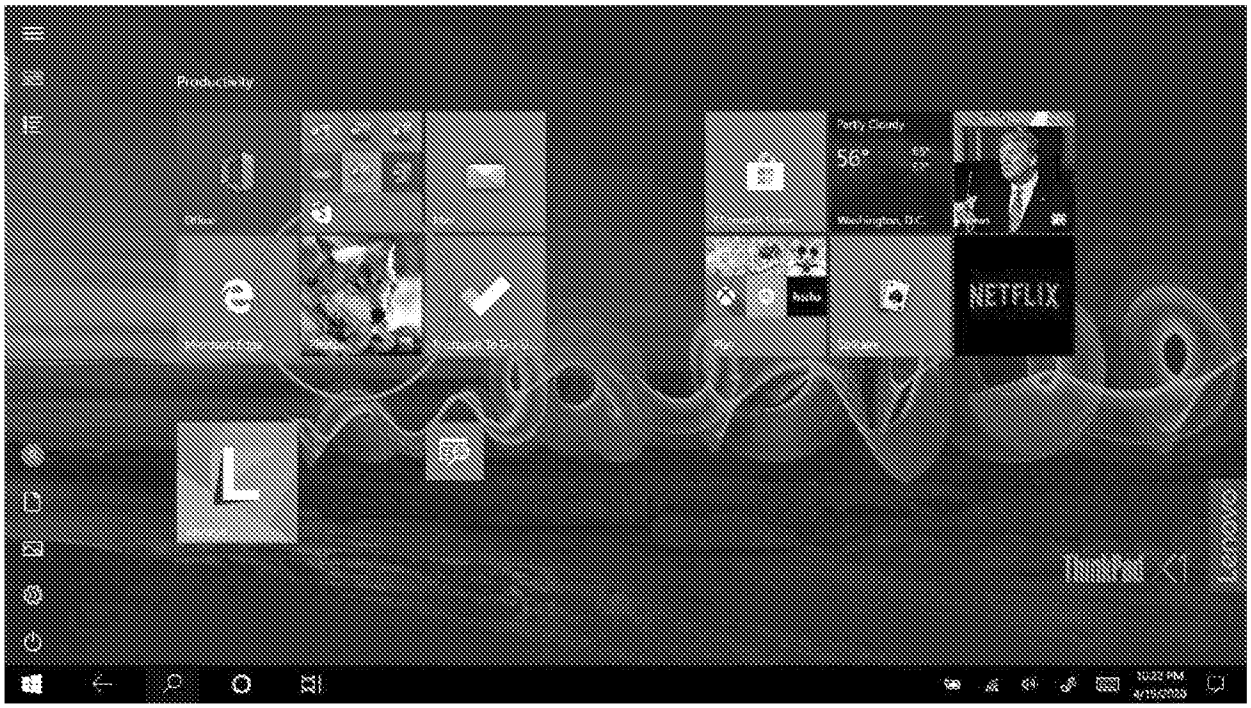
(Infringement of U.S. Patent No. 8,612,888)

278. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

279. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a system for accessing and managing digital media libraries with a plurality of selectable I/O profiles. For example, the 3rd Generation ThinkPad X1 Yoga includes the Microsoft Photos app, which can be accessed in tablet mode and in laptop mode:

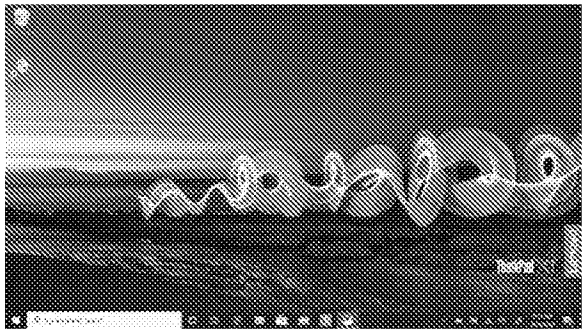


Screenshot from 3rd Generation ThinkPad X1 Yoga, Microsoft Photos (circled) in laptop mode.



Screenshot from 3rd Generation ThinkPad X1 Yoga, Microsoft Photos (circled) in tablet mode.

280. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display component configured to display a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content, wherein the plurality of views include at least one of a plurality of visual representations. For example, the 3rd Generation ThinkPad X1 Yoga includes a laptop mode and a tablet mode:



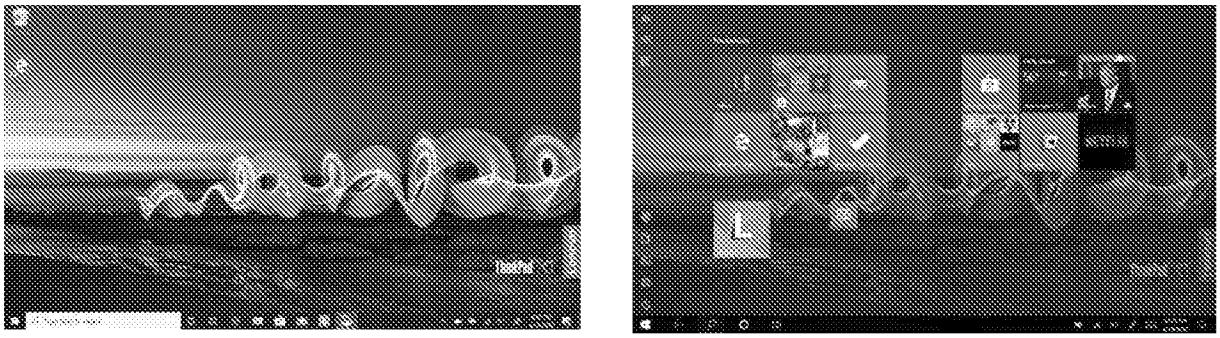
Laptop Mode



Tablet Mode

Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in laptop and tablet modes.

281. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include an execution component configured to transition the graphical user interface between the plurality of views in response to selection of an I/O profile. For example, the 3rd Generation ThinkPad X1 Yoga is configured to transition between a plurality of views in response to selection of laptop and tablet modes.

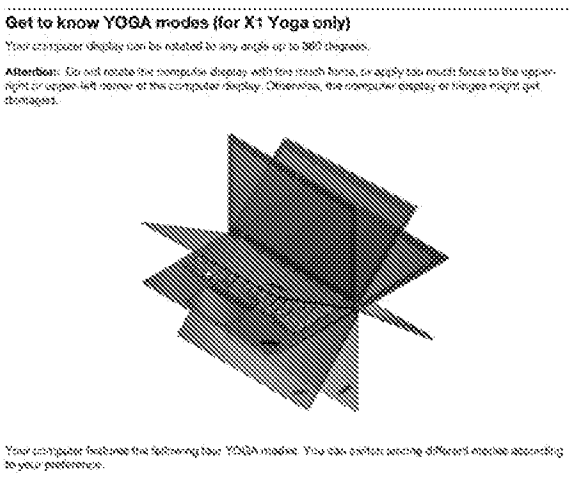


Laptop Mode **Tablet Mode**

Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in laptop and tablet modes.

282. Selecting the I/O profile within the Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) includes: responding to user rotation of a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device; responding to rotation of the display component about the longitudinal from a closed mode to a first physical orientation configures the computing device into a laptop mode having a first physical configuration of the display component and the base with one of the plurality of views as a default display; and responding to rotation of the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base with another one of the plurality of views as the default display. For example, the 3rd Generation ThinkPad X1 Yoga can display a

laptop mode when rotated from a closed mode to a notebook mode, and can further display a tablet mode when rotated from a notebook mode to a tent mode.



Get to know YOGA modes (for X1 Yoga only)

Your computer display can be rotated to any angle up to 360 degrees.

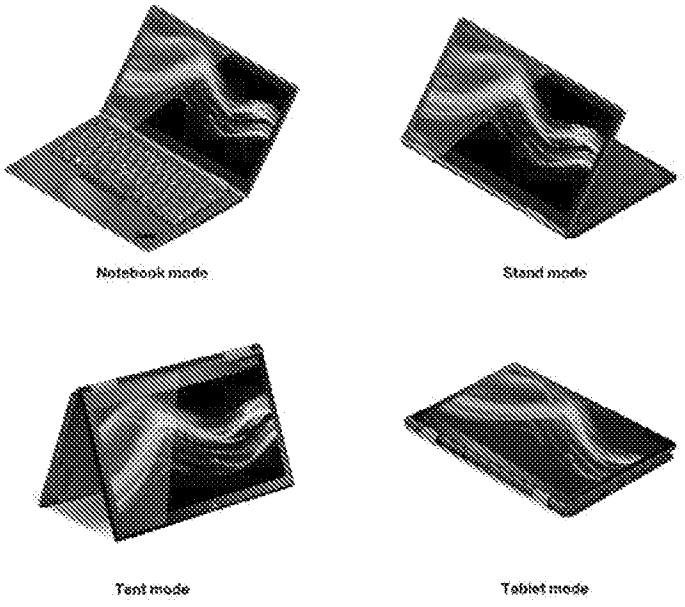
Attention: Do not rotate the computer display with too much force, or apply too much force to the upper-right or upper-left corner of the computer display. Otherwise, the computer display or hinges might get damaged.

Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

ThinkPad User Guide, p. 28.

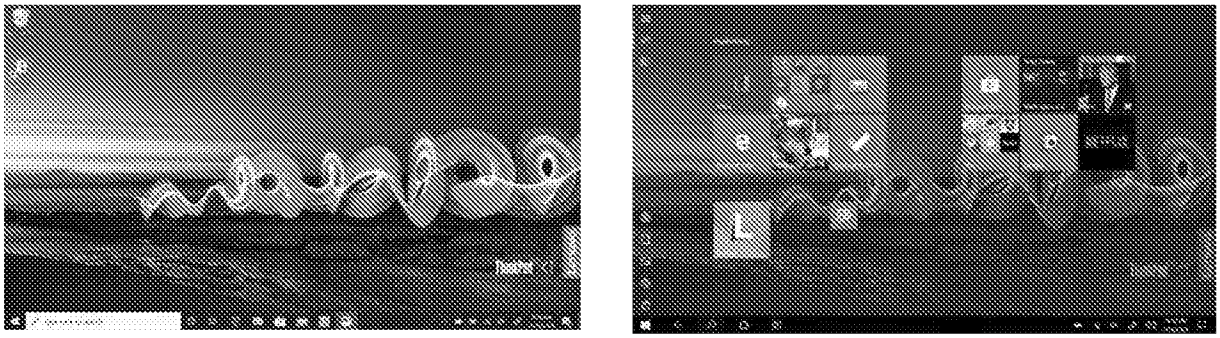
Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

Note: The keyboard and the pointing devices are automatically disabled in the stand mode, tent mode, and tablet mode. Use the touch screen to control your computer instead.



See ThinkPad User Guide, pp. 28-29.

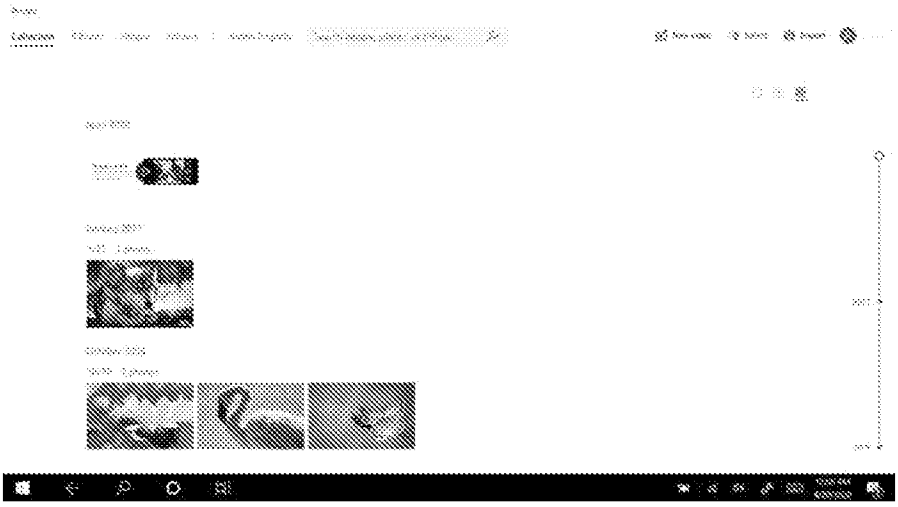
283. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a view selector component configured to transition between the plurality of views in response to activation. For example, when powered on the 3rd Generation ThinkPad X1 Yoga is configured to transition between a laptop mode and a tablet mode:



Laptop Mode **Tablet Mode**

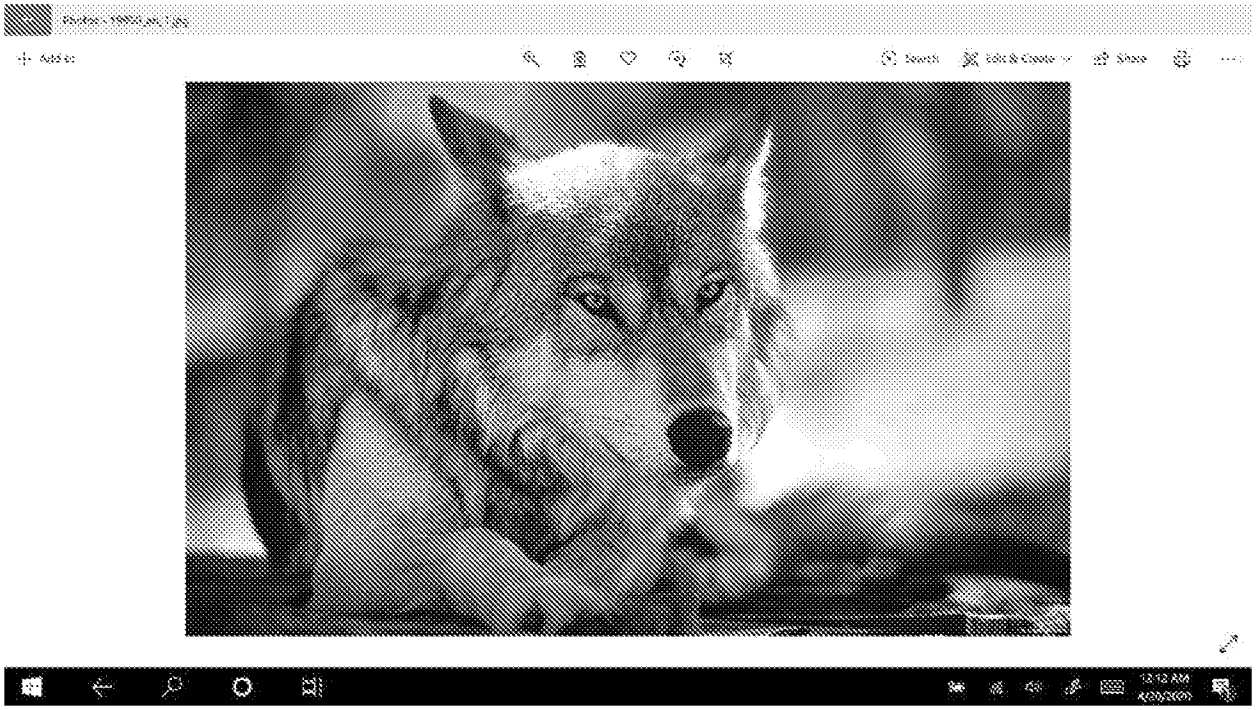
Screenshot from 3rd Generation ThinkPad X1 Yoga, home screen in laptop and tablet modes.

284. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a storage component configured to store an association between at least one of a plurality of visual representations and digital media content. For example, the 3rd Generation ThinkPad X1 Yoga includes the Microsoft Photos app, which is configured to store an association between thumbnail previews of content and digital media content:



Screenshot from 3rd Generation ThinkPad X1 Yoga, Microsoft Photos app.

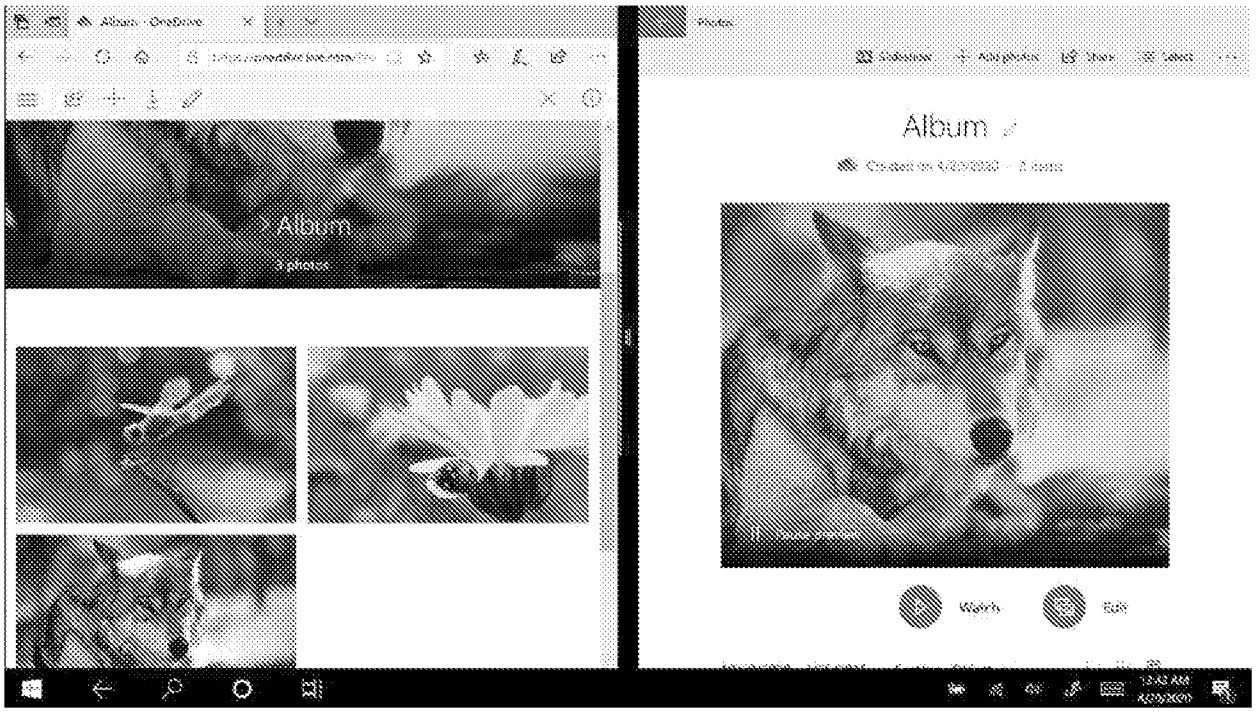
285. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include an execution component further configured to execute the association with the at least one of the plurality of visual representations with digital media content in response to selection and transition the display to a view of the digital media content in response to the act of executing the association. For example, selecting a thumbnail preview in the Microsoft Photos app transitions to a view of the digital media content:



Screenshot from 3rd Generation ThinkPad X1 Yoga, Microsoft Photos app.

286. The Accused Portable Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga) include a display component configured to display user digital media content and referenced digital media content in the view of the digital media content. For example, the 3rd Generation ThinkPad X1 Yoga includes the Microsoft Photos app, which is configured to permit users to

manage digital media content libraries (e.g., in an album located locally or in a remote location such as OneDrive):



Screenshot from 3rd Generation ThinkPad X1 Yoga, OneDrive album and Microsoft Photos app.

Lenovo US

287. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more of the claims of the '888 patent, including at least claim 27, including by importing, using, selling, and offering for sale in the United States certain computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

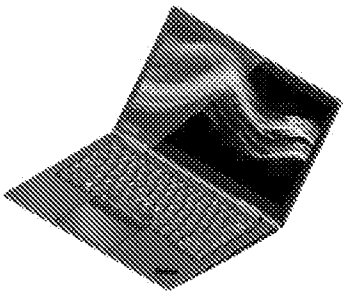
288. Since at least the filing of the Original Complaint Lenovo US knew of the '888 patent.

289. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Portable Products infringe at least claim 27 of the '888 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

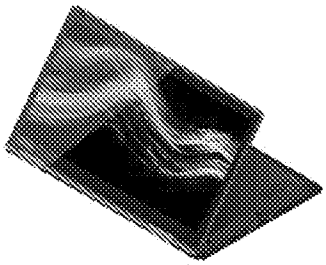
290. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 27 of the '888 patent by continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Portable Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Portable Products and on the website https://www.lenovo.com/us/en manuals, product documentation, advertising materials and pre-installed software that induce customers or other users to infringe at least claim 27 of the '888 patent by encouraging the use of the Accused Portable Products. For example, in the ThinkPad HTML User Guide Lenovo instructs users that the 3rd Generation ThinkPad X1 Yoga "can be opened to any angle within a range of up to 360 degrees" and that "[b]y rotating the display to different angle, your computer features the following four operating modes":

Your computer features the following four YOGA modes. You can switch among different modes according to your preference.

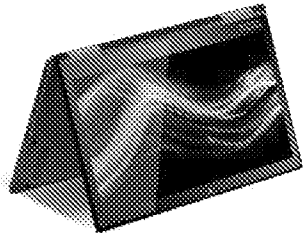
Note: The keyboard and the pointing devices are automatically disabled in the stand mode, tent mode, and tablet mode. Use the touch screen to control your computer instead.



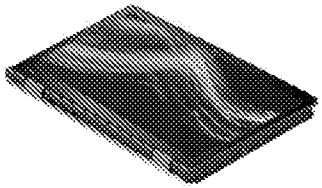
Notebook mode



Stand mode



Tent mode



Tablet mode

See ThinkPad User Guide, p. 29.

291. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 27 of the '888 patent has been willful. Lenovo US's offers for sale, sales, or use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '888 patent constitutes willful infringement. Lenovo US is a large corporation with a plethora of resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action to avoid infringement evidences its willful infringement.

292. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

293. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '888 patent.

294. Lenovo US's infringement of the '888 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

295. On information and belief, Lenovo Beijing has had knowledge of the '888 patent since before the filing of the Original Complaint.

296. Lenovo Beijing has extensive experience with intellectual property. Lenovo Beijing has been the owner of over 2,500 patent applications and over 2,200 patents. Over the past decade, Lenovo US has been involved in over 200 patent litigations in the United States, and has been a party in over 50 *inter partes* review proceedings before the U.S. Patent Trial and Appeals Board. The Lenovo 2019 Annual Report identifies intellectual property (IP) risk as one

of the "key risks that the Group considers to be of great significance to the Group as it stands today." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page22. For example, the report recognizes that Lenovo could suffer "reputational harm if found to infringe a third party's valid patents." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page 27. To manage and mitigate its IP risk, Lenovo plans to: "Monitor, develop and execute IP litigation defense strategy" and "License IP as appropriate and monitor its continued validity and value to the Group." Lenovo Beijing's R&D teams work closely with IP lawyers from product conception through manufacture and commercialization to develop effective IP strategies for new products, such as the Yoga-branded laptops. https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html.

297. Consistent with Lenovo Beijing's sophistication with IP matters and the fact that the Asserted Patents belong to a patent family that has been frequently cited in patent applications of major players in the personal computing space, on information and belief, Lenovo Beijing was aware by 2016 of the family of LiTL patents and applications to which the '888 patent belongs.

298. Since at least 2016 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '888 patent based on at least the following:

- Lenovo Beijing's sophistication and substantial resources with respect to intellectual property matters;
- Lenovo Beijing's knowledge of the patent family to which the '888 patent belongs; and

- Lenovo Beijing's knowledge since at least 2016 of the '688 and '844 patents, which are ancestors to the '888 patent, and citation to these parent patent publications in Lenovo Beijing patent applications since at least 2016; and
- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products.

299. On information and belief, Lenovo Beijing has known, should have known, or has been willfully blind to the existence of the '888 Patent, since at least 2016. As a descendant of the '688 and '844 patents (and their corresponding published patent applications), which have been frequently cited during prosecution of patent applications owned by major players in the personal computing space, including the Lenovo Group and its subsidiaries, Lenovo Beijing knew, should have known, or was willfully blind to the existence of the '888 patent.

300. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property." He also noted that "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an innovation-friendly business environment." *See* https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's

leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow."

301. On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2016 Lenovo Beijing knew that use of the Accused Portable Products infringes the '888 patent.

302. On information and belief, citation of the '688 and '844 patents and their corresponding published applications during the USPTO prosecution of Lenovo Beijing patents caused Lenovo Beijing to investigate, become aware of, and consider descendant patents, including the '888 patent, and the rest of LiTL's patent portfolio.

303. Since at least 2016 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact that, the Accused Portable Products sold on its website and bearing its marks infringe one or more claims of the '888 patent since the patent is a descendant of LiTL's frequently cited ancestor patents (and related published applications), which Lenovo Beijing cited during the prosecution of multiple patents.

304. In addition, Lenovo Beijing has known that the Accused Portable Products sold on its website and bearing its marks infringe one or more of the claims of the '888 patent since at least the time that it received notice of the Original Complaint, or since at least September 29, 2020.

305. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Products bearing Lenovo Beijing's marks into the United States and Delaware since the

filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 27 of the '888 patent.

306. Lenovo Beijing has known or should have known since it first became aware of the '888 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Products are infringing the '888 patent.

307. Lenovo Beijing is responsible for what is posted on the Lenovo.com Domain, including its press releases identified in Paragraph 90 above, which encourage users of the Accused Products in the United States and Delaware to infringe at least claim 27 of the '888 patent by using the Accused Portable Products. Since at least 2016, Lenovo Beijing has encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Portable Products. Lenovo Beijing's conduct since 2016 demonstrates an intent to induce customers to directly infringe at least claim 27 of the '888 patent. Lenovo Beijing's conduct since 2016 also demonstrates an intent to induce Lenovo US to infringe the '888 patent by selling, offering for sale, and using the Accused Portable Products.

308. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of one or more claims of the '888 patent, literally and/or equivalently, at least by inducing end users, repair and service technicians, Lenovo employees and contractors, and others to use the Accused Products in an infringing manner. For example, Lenovo instructs such users by way of manuals or product documentation to infringe the asserted claims by using the Accused Portable Products. *See, e.g.*, https://pcsupport.lenovo.com/us/en/solutions/msh500092.

309. Lenovo Beijing has had knowledge of the '888 patent and its infringement of the '888 patent since it first became aware of the '888 patent in 2016, and since at least the time it received notice of the Original Complaint or at least by September 29, 2020. Lenovo Beijing has induced infringement of the '888 patent with specific intent to induce infringement of that patent.

310. Lenovo Beijing's infringement of the '888 patent has been willful since it first became aware of the '154 patent in 2016, or since at least the time it received notice of the Original Complaint, and its ongoing infringement of the '888 patent continues to be willful. Lenovo Beijing's willful infringement is evidenced by the following: the close working relationship between Lenovo Beijing's IP and research and design departments; the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 27 of the '888 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial action to avoid infringement. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Products with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Products in Lenovo's established distribution channels with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail above, and knowing that doing so would infringe the '888 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '888 patent.

311. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

312. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '888 patent.

313. Lenovo Beijing's infringement of the '888 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

COUNT VI

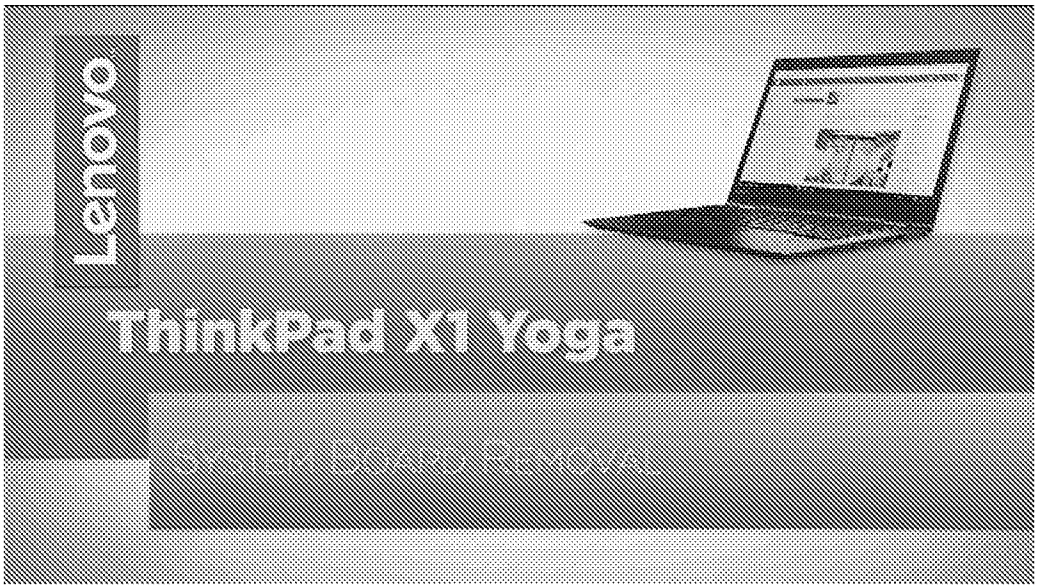
(Infringement of U.S. Patent No. 8,577,957)

314. LiTL incorporates by reference and realleges all the foregoing paragraphs of the First Amended Complaint as if fully set forth herein.

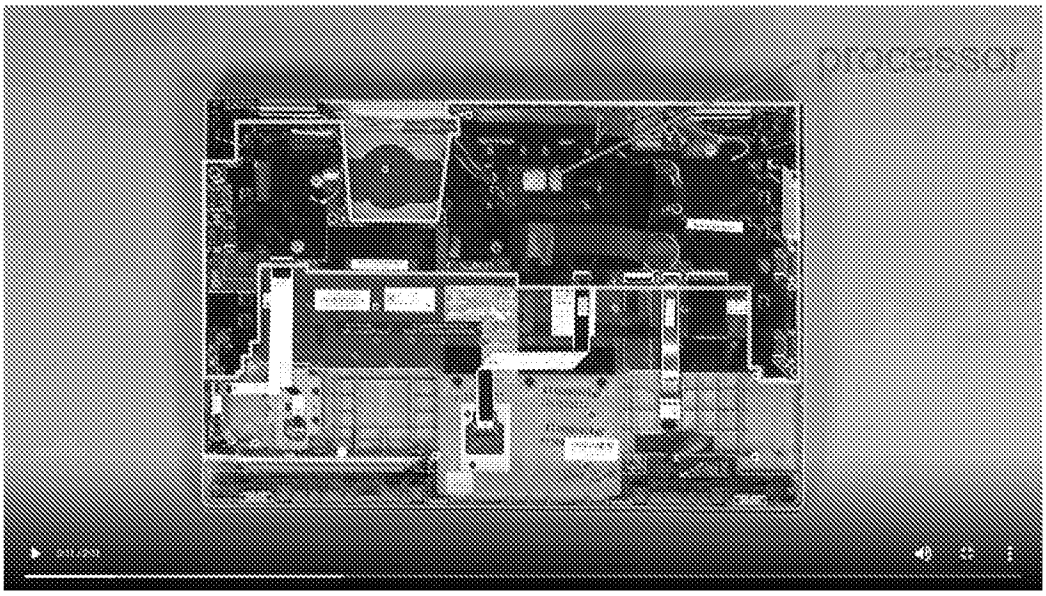
315. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a streamlined computer device, the device comprising: at least one processor operatively connected to a memory. For example:

3rd Generation ThinkPad X1 Yoga	YOGA A940
Processor ⊗ 8th Generation Intel® Core™ i5-8250U Processor (1.60 GHz, up to 3.40 GHz with Turbo Boost, 4 Cores, 8 Threads, 6 MB Cache)	**Processor** ⊗ 9th Generation Intel® Core™ i7-9700 Processor with vPro™ (3.00GHz, up to 4.70 GHz with Turbo boost, 8 Cores, 12MB Cache)
Operating System ⊗ Windows 10 Pro 64	**Operating System** ⊗ Windows 10 Home 64
Display Type ⊗ 14.0" FHD (1920 x 1080) IPS anti-reflective, anti-smudge, touchscreen, 300 nits	**Display Type** ⊗ 27" 4K UHD (3840 x 2160) IPS, multi-touch
Memory ⊗ 8 GB LPDDR3 2133MHz (Soldered)	**Memory** ⊗ 32 GB DDR4 2666MHz (2 x 16 GB)
Hard Drive ⊗ 512 GB PCIe SSD	**Hard Drive** ⊗ 1TB 5400 RPM + 256GB SSD PCIe

See, e.g., ThinkPad Webpage; A940 Webpage



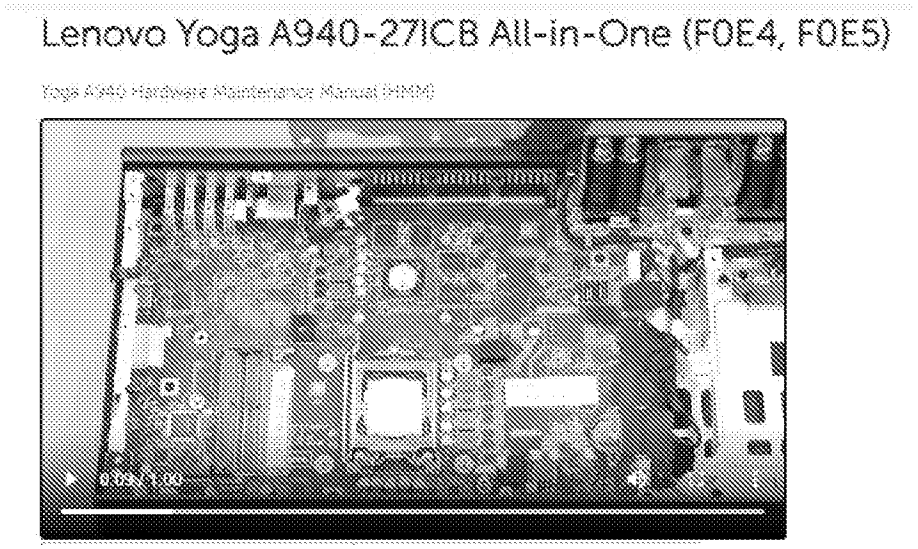
See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4.



See, e.g., https://download.lenovo.com/lts/RTPW1610/FOF/RTPW1610-X1Yoga_REM_FRU_14_SystemBoard.mp4 at 0:11 (annotations added).



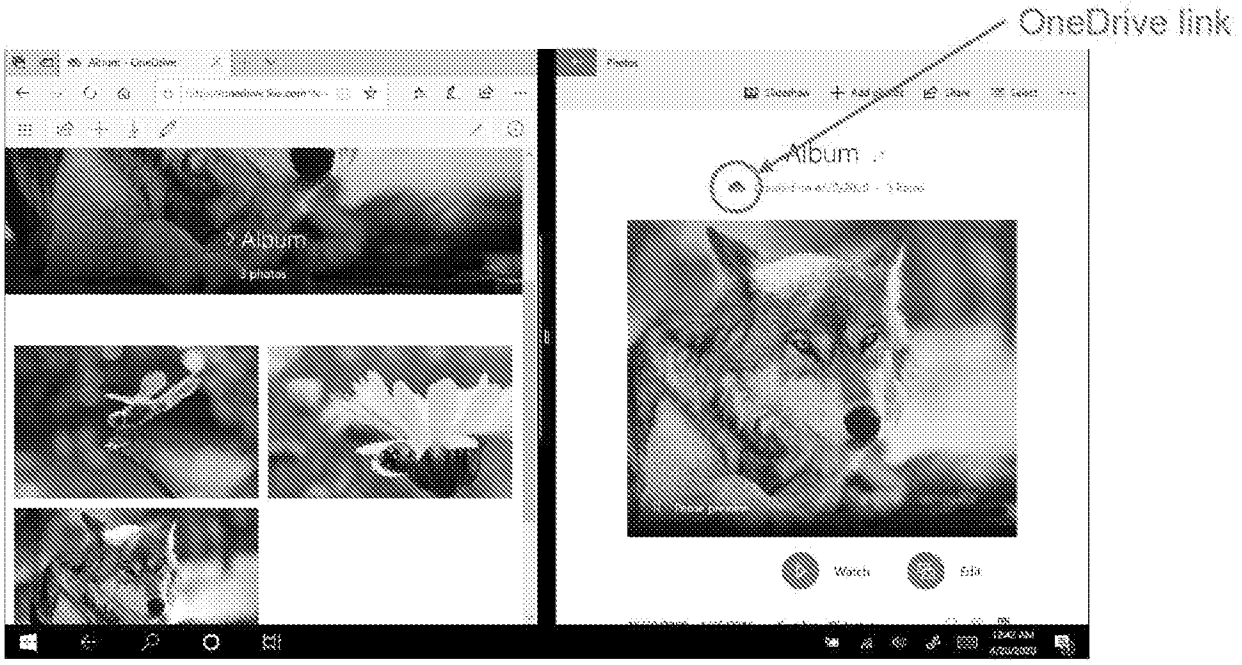
See, e.g., https://support.lenovo.com/us/en/solutions/ht508724-removal-and-replacement-videos-lenovo-yoga-a940-27icb-all-in-one-f0e4-f0e5



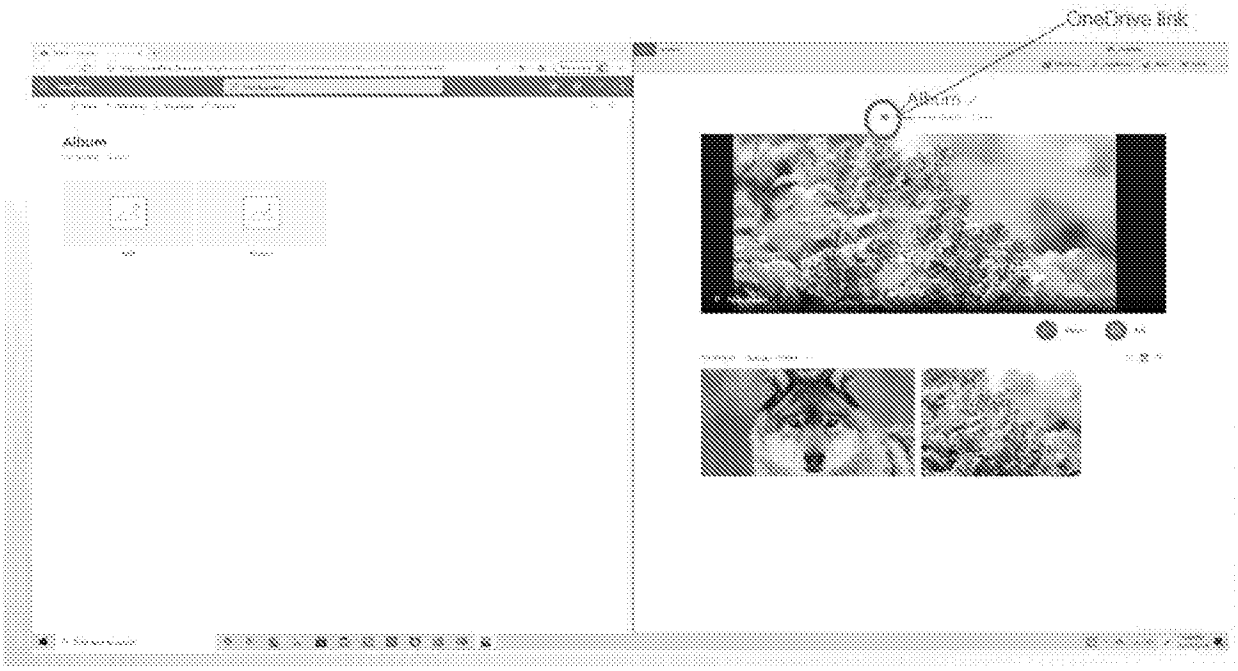
See, e.g., https://support.lenovo.com/us/en/solutions/ht508724-removal-and-replacement-videos-lenovo-yoga-a940-27icb-all-in-one-f0e4-f0e5 at 0:09 (annotations added)

316. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a processor that when executing is configured to cause the device to: receive electronic content hosted by a server system; render electronic content to a user in a graphical user

interface; receive selection through the graphical user interface, by the user, of at least one executable operation provided by the server system within the electronic content; determine that the at least one executable operation performs a local access operation, and transform the at least one executable operation into a remote access operation. For example, the 3rd Generation ThinkPad X1 Yoga and the Yoga A940 include the Microsoft Photos app, which is configured to provide access to digital media albums stored OneDrive by clicking on a OneDrive link:

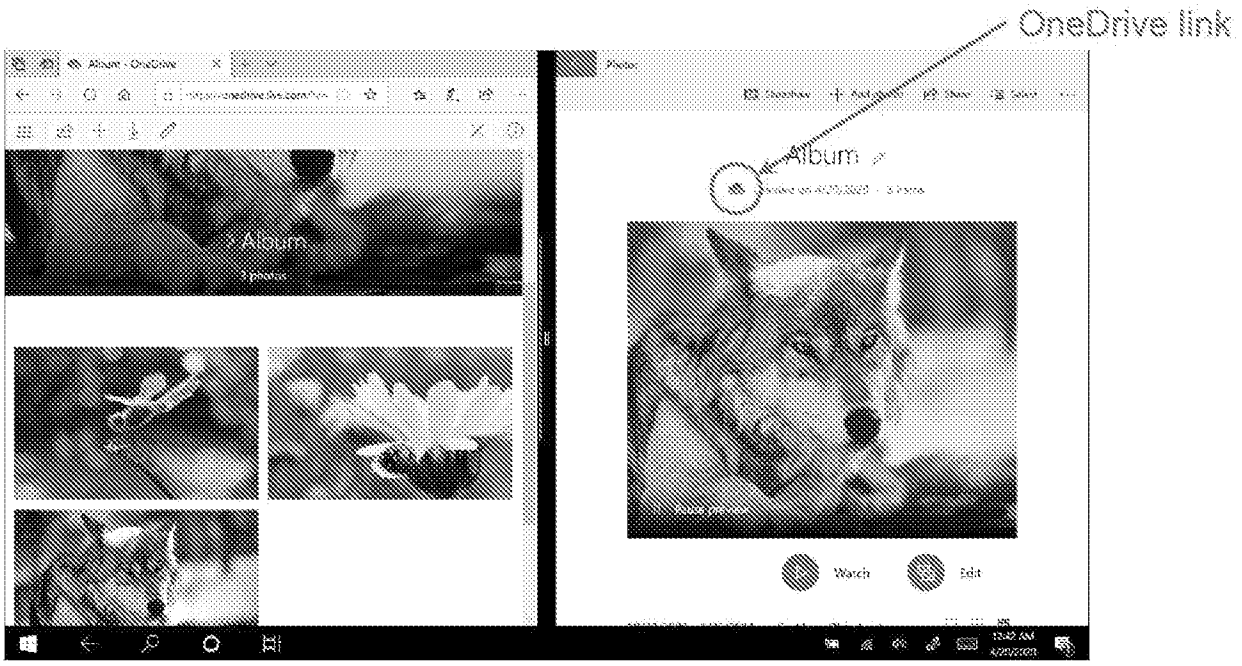


Screenshot from 3rd Generation ThinkPad X1 Yoga, OneDrive album and Microsoft Photos app.



Screenshot from Yoga A940, One Drive album and Microsoft Photos app.

317. The Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) include a transforming that includes: identifying at least one characteristic of the at least one executable operation; accessing a profile to retrieve information on at least one available remote services responsive to the at least one identified characteristics of the executable operation; selecting an available remote service from the at least one available remote service; retrieving the service access information for the selected remote service; wherein transforming is executed based on the at least one characteristic of the at least one executable operation and the service access information; and transmit the remote access operation to the server system. For example, clicking on a OneDrive album link in the Microsoft Photos app in the Accused Products (*e.g.*, the 3rd Generation ThinkPad X1 Yoga, Yoga A940) accesses OneDrive user profile information in order to access content on a user's OneDrive album:



Screenshot from 3rd Generation ThinkPad X1 Yoga, OneDrive album and Microsoft Photos app.

Lenovo US

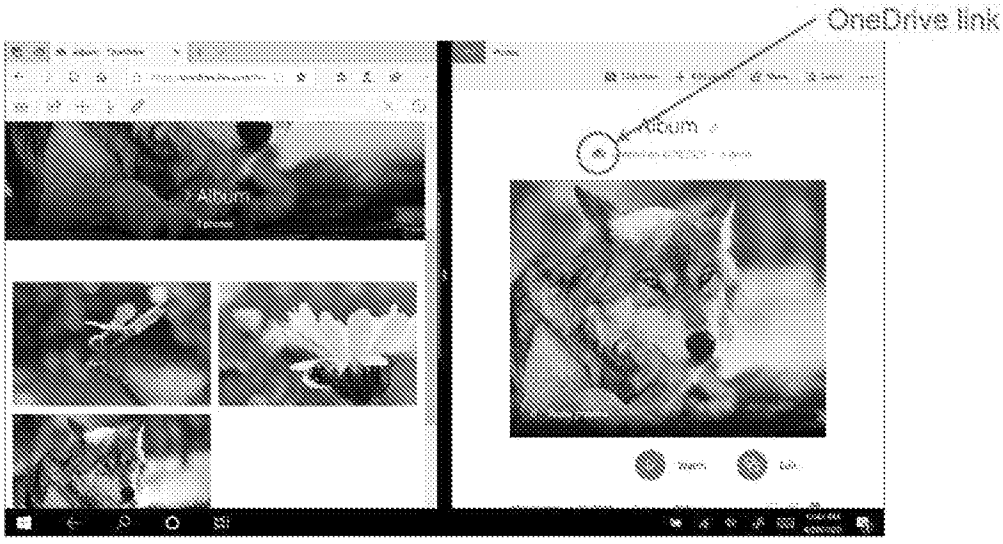
318. Lenovo US has directly infringed and continues to directly infringe, literally and/or equivalently, one or more of the claims of the '957 patent, including at least claim 19, including by importing, using, selling, and offering for sale in the United States certain computing devices with multiple display modes, including at least the Accused Products. D.I. 27 (Noble Declaration), ¶ 2.

319. Since at least the filing of the Original Complaint Lenovo US knew of the 957 patent.

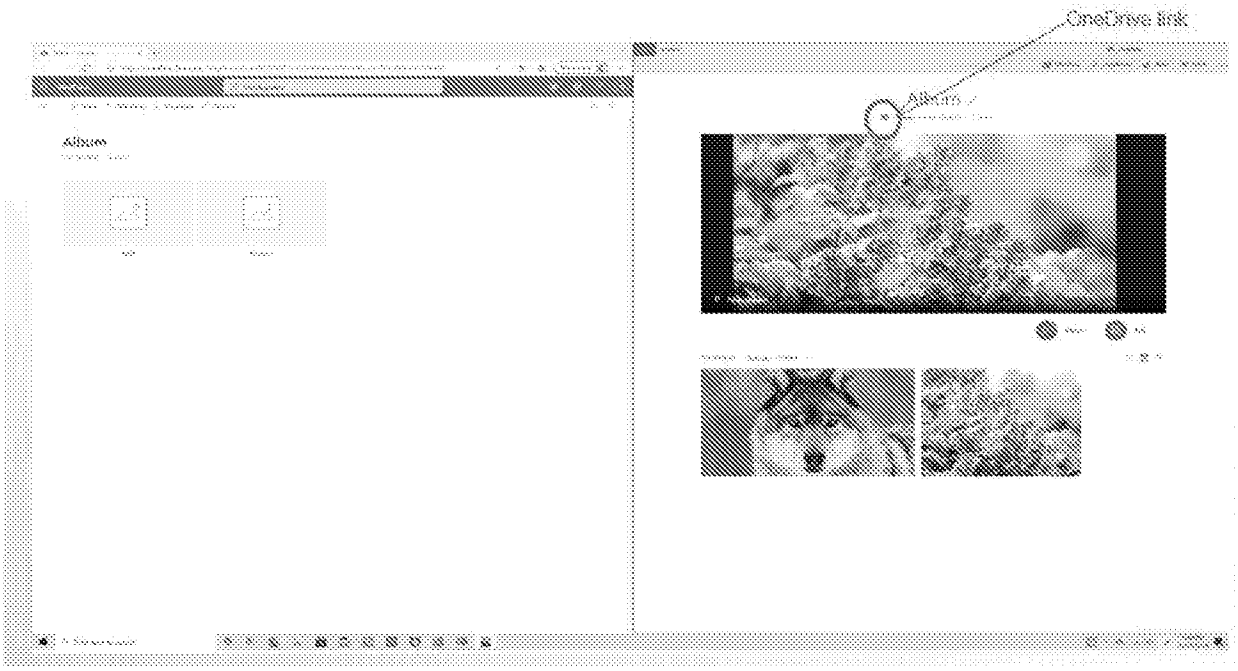
320. Since at least the filing of the Original Complaint, Lenovo US knew that the Accused Products infringe at least claim 19 of the '957 patent when used by customers or other users, when sold or offered for sale by resellers, and when imported by Lenovo entities.

321. Since at least the filing of the Original Complaint, Lenovo US has had the intent to encourage customers or other users to directly infringe at least claim 19 of the '957 patent by

continuing to advertise, offer for sale, or sell, or by encouraging resellers to offer for sale or sell the Accused Products in the United States, including in Delaware. Since at least the filing of the Original Complaint, Lenovo US has provided with the Accused Products and on the website https://www.lenovo.com/us/en manuals, product documentation, advertising materials and pre-installed software that induce customers or other users to infringe at least claim 19 of the '957 patent by encouraging the use of the Accused Products. For example, the 3rd Generation ThinkPad X1 Yoga and the Yoga A940 include the Microsoft Photos app, which is configured to provide access to digital media albums stored OneDrive by clicking on a OneDrive link:



Screenshot from 3rd Generation ThinkPad X1 Yoga, OneDrive album and Microsoft Photos app.



Screenshot from Yoga A940, One Drive album and Microsoft Photos app.

322. Since at least the filing of the Original Complaint, Lenovo US's infringement of at least claim 19 of the '957 patent has been willful. Lenovo US's offers for sale, sales, or use of the Accused Portable Products with provision of manuals and instruction to purchasers that encourage use it knows will infringe the '957 patent constitutes willful infringement. Lenovo US is a large corporation with substantial resources. Lenovo US's failure to fully investigate the allegations of infringement against it, its ongoing offers for sale, sales, and use of the Accused Portable Products, and its failure to take remedial action evidences its willful infringement.

323. The foregoing description of Lenovo US's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Portable Products that it obtains during discovery.

324. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo US's infringement of the '957 patent.

325. Lenovo US's infringement of the '957 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

Lenovo Beijing

326. Lenovo US and Lenovo Beijing have had knowledge of the '957 patent since before the filing of the Original Complaint.

327. On November 5, 2013, the '957 patent issued from U.S. Patent Application No. 12/416,503, which had earlier published on December 3, 2009 as U.S. Patent Application Publication No. 2009/0300511 ("the LiTL '511 publication").

328. Since at least 2017 Lenovo Beijing has had knowledge of the LiTL '511 publication.

329. On March 14, 2017, the Chinese Intellectual Property Office issued a search report to Lenovo Beijing identifying the LiTL '511 publication in connection with Lenovo's Chinese Patent Application No. 201500267712. Lenovo Beijing has extensive experience with intellectual property. Lenovo Beijing has been the owner of over 2,500 patent applications and over 2,200 patents. Over the past decade, Lenovo US has been involved in over 200 patent litigations in the United States, and has been a party in over 50 *inter partes* review proceedings before the U.S. Patent Trial and Appeals Board. The Lenovo 2019 Annual Report identifies intellectual property (IP) risk as one of the "key risks that the Group considers to be of great significance to the Group as it stands today." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page22. For example, the report recognizes that Lenovo could suffer "reputational harm if found to infringe a third party's valid patents." https://doc.irasia.com/listco/hk/lenovo/annual/2019/ar2019.pdf, page 27. To manage and mitigate its IP risk, Lenovo plans to: "Monitor, develop and execute IP litigation defense strategy" and "License IP as appropriate and monitor its continued validity and value to the

Group." Lenovo Beijing's R&D teams work closely with IP lawyers from product conception through manufacture and commercialization to develop effective IP strategies for new products, such as the Yoga-branded laptops.

https://www.wipo.int/wipo_magazine/en/2015/03/article_0002.html.

330. Consistent with Lenovo's sophistication with IP matters and the fact that the Asserted Patents belong to a patent family that has been frequently cited in patent applications of major players in the personal computing space, on information and belief, Lenovo Beijing was aware by 2017 of the family of LiTL patents and applications to which the '957 patent belongs.

331. Since at least 2017 Lenovo Beijing knew or should have known, or at a minimum acted with willful blindness to the fact, that its Accused Products infringe one or more claims of the '957 patent based on at least the following:

- the Chinese Intellectual Property Office's citation of the LiTL '511 publication to Lenovo Beijing during prosecution of Lenovo's own patent application;
- Lenovo Beijing's sophistication and substantial resources with respect to intellectual property matters;
- Lenovo Beijing's knowledge of the patent family to which the '957 patent belongs;
- Lenovo Beijing's knowledge since at least 2016 of the '688 and '844 patents, which are ancestors to the '957 patent, and citation to these patents and their corresponding publications in Lenovo Beijing patent applications since at least 2016; and
- the close working relationship between Lenovo Beijing's R&D teams and its IP lawyers and Lenovo Beijing's substantial patent prosecution activities directed to electronic devices having the 2-in-1 functionality of the Accused Portable Products, including the YOGA-branded laptop products.

332. On information and belief, Lenovo Beijing has known, should have known, or has been willfully blind to the existence of the '957 Patent, since at least 2017. As a descendant of the '688 and '844 patents (and their corresponding published patent applications), which have been frequently cited during prosecution of patent applications owned by major players in the personal computing space, including the Lenovo Group and its subsidiaries, Lenovo Beijing knew or was willfully blind to the existence of the '957 patent.

333. On information and belief, Lenovo Beijing is a sophisticated company regarding patents and business in the United States, and citation of patents that cover any of Lenovo's products is a significant concern to Lenovo Beijing. In a 2007 press release, Lenovo's leadership stated that "one of the most important goals of international business" is "the protection of intellectual property," and "[a]s a global corporate citizen, Lenovo is deeply committed to the protection of intellectual property. We continue to take the lead by encouraging more businesses and individual users to respect and protect intellectual property as a means of building an innovation-friendly business environment." https://news.lenovo.com/pressroom/press-releases/lenovo-joins-forces-with-microsoft-to-continue-driving-support-for-intellectual-property-rights/. In a 2018 press release, Lenovo's leadership noted that "[i]ntellectual property is a strategic asset for Lenovo" that "not only protects our investment in invention and innovation, but also positions Lenovo's businesses to flourish and grow." On information and belief, Lenovo Beijing has procedures to evaluate whether Lenovo products have freedom to operate in the United States, particularly where the products comprise a significant portion of Lenovo's revenue. On information and belief, the Accused Portable Products comprise a significant portion of Lenovo's revenue, and since at least 2017 Lenovo Beijing knew that use of the Accused Portable Products infringes the '957 patent.

334. On information and belief, citation of the LiTL '511 publication during the USPTO prosecution of Lenovo Beijing patents caused Lenovo Beijing to investigate, become aware of, and consider the '957 patent, related patents, and the rest of LiTL's patent portfolio. Beyond Lenovo Beijing's actual knowledge of the '957 patent, these citations during Lenovo Beijing's USPTO prosecution gave Lenovo Beijing the subjective belief that the '957 patent existed, and failure to learn of the existence of the '957 patent would have required Lenovo Beijing to deliberately avoid reviewing or understanding the prosecution documents. On information and belief, Lenovo Beijing would not have done so in a matter so important to the Accused Products and the revenue and reputation derived therefrom.

335. In addition, Lenovo Beijing has known that the Accused Products sold on its website and bearing its marks infringe one or more claims of the '957 patent since at least 2017, or since at least the time that it received notice of the Original Complaint, or since at least September 29, 2020.

336. Lenovo Beijing's Lenovo.com Domain continues to market and offer for sale the Accused Portable Products bearing Lenovo Beijing's marks into the United States and Delaware since the filing of the Original Complaint, which thoroughly detailed how the Accused Portable Products infringe at least claim 19 of the '957 patent.

337. Lenovo Beijing has known or should have known since it first became aware of the '957 patent, and at least by September 29, 2020, that end users, importers, distributors, retailers, repair and service technicians, Lenovo US and its employees and contractors, and other users of the Accused Products are infringing the '957 patent.

338. Lenovo Beijing is responsible for content displayed on the Lenovo.com Domain, including the press releases identified in Paragraph 90 above, which encourage users of the

Accused Portable Products in the United States and Delaware to infringe at least claim 19 of the '957 patent by using the Accused Portable Products. Since at least 2017, Lenovo Beijing has encouraged customers to use the Accused Portable Products by providing the Lenovo.com Domain to host press releases that encourage customers to use the Accused Portable Products. Lenovo Beijing's conduct since at least 2017 demonstrates an intent to induce customers to directly infringe at least claim 19 of the '957 patent. Lenovo Beijing's conduct since at least 2017 also demonstrates an intent to induce Lenovo US to infringe the '957 patent by selling, offering for sale, and using the Accused Portable Products.

339. Lenovo Beijing has actively and knowingly induced infringement, and is actively and knowingly inducing infringement of one or more claims of the '957 patent, literally and/or equivalently, at least by inducing end users, repair and service technicians, Lenovo employees and contractors, and others to use the Accused Products in an infringing manner. For example, Lenovo instructs such users by way of manuals or product documentation to infringe the asserted claims by using the Accused Products. *See, e.g.*, https://support.lenovo.com/us/en/solutions/msh500022.

340. Lenovo Beijing has had knowledge of the '957 patent and its infringement of the '957 patent since it first became aware of the '957 patent in 2017, and by at least the time it received notice of the Original Complaint. Lenovo Beijing has induced infringement of the '957 patent with specific intent to induce infringement of that patent.

341. Lenovo Beijing's infringement of the '957 patent has been willful since it first became aware of the '957 patent in 2017. Lenovo Beijing's willful infringement is evidenced by the following: the citation of the '511 publication to Lenovo Beijing during prosecution of a Chinese patent; the close working relationship between Lenovo Beijing's IP and research and

design departments; the similarities between how the Accused Portable Products operate, the functionality that Lenovo Beijing sought to claim in its patent applications, and the requirements of claim 19 of the '957 patent; Lenovo Beijing's significant size and resources; and Lenovo Beijing's failure to take remedial action to avoid infringement. Lenovo Beijing's infringement of the '957 patent has been willful since it first became aware of the '957 patent in 2017, or at least since the time it received notice of the Original Complaint, or at least since September 29, 2020. Lenovo Beijing's ongoing infringement of the '957 patent continues to be willful. Lenovo Beijing has chosen to manufacture or control manufacture of the Accused Products with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, to distribute or control distribution of the Accused Products in Lenovo's established distribution channels with the intent that the Accused Products would be imported, offered for sale, sold, and/or used in the United States, as explained in more detail above, and knowing that doing so would infringe the '957 patent, and despite receiving notice from LiTL that continuing to do so would infringe the '957 patent.

342. The foregoing description of Lenovo Beijing's infringement is based on publicly available information. LiTL reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

343. LiTL has been and is being irreparably harmed, and has incurred and will continue to incur damages, as a result of Lenovo Beijing's infringement of the '957 patent.

344. Lenovo Beijing's infringement of the '957 patent has damaged and continues to damage LiTL in an amount yet to be determined, of at least a reasonable royalty.

REQUEST FOR RELIEF

WHEREFORE, Plaintiff LiTL respectfully requests that this Court enter judgment as follows:

a. Declaring that Defendants have infringed the '688, '844, '154, '715, '888 and '957 patents;

b. Granting a permanent injunction, enjoining Defendants and their officers, agents, servants, employees, attorneys, and all other persons acting in concert or participation with them, from further infringement of the '688, '844, '154, '715, '888 and '957 patents, including but not limited to the enjoining the manufacture, sale, offer for sale, importation or use of the Accused Products and any further development of the Accused Products;

c. Awarding LiTL damages adequate to compensate it for Defendants' infringing activities, including supplemental damages for any post-verdict infringement up until entry of the final judgment with an accounting as needed, together with pre-judgment and post-judgment interest on the damages awarded;

d. Finding Defendants' infringement to be willful and awarding enhanced damages in an amount up to treble the amount of compensatory damages as justified under 35 U.S.C. § 284;

e. Finding this to be an exceptional case and awarding LiTL its attorneys' fees and costs under 35 U.S.C. § 285 as a result of Defendants' willful infringement of the asserted patents; and

f. Awarding LiTL any such other and further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

LiTL hereby demands a trial by jury on all issues so triable.

Date: December 30, 2020

YOUNG CONAWAY STARGATT & TAYLOR, LLP

/s/ Adam W. Poff

Adam W. Poff (#3990)
Robert M. Vrana (#5666)
Rodney Square
1000 North King Street
Wilmington, DE 19801
(302) 571-6600
apoff@ycst.com
rvrana@ycst.com

Counsel for LiTL LLC

OF COUNSEL:

Michael A. Albert
Eric J. Rutt
Gerald B. Hrycyszyn
Marie A. McKiernan
WOLF, GREENFIELD & SACKS, P.C.
600 Atlantic Avenue
Boston, MA 02210
617.646.8000 Phone
617.646.8646 Fax

CERTIFICATE OF SERVICE

I, Adam W. Poff, hereby certify that on December 30, 2020, I caused to be electronically filed a true and correct copy of the foregoing document with the Clerk of the Court using CM/ECF, which will send notification that such filing is available for viewing and downloading to the following counsel of record:

Jack B. Blumenfeld
Rodger D. Smith II
Cameron P. Clark
MORRIS, NICHOLS, ARSHT & TUNNELL LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
jblumenfeld@mnat.com
rsmith@mnat.com
cclark@mnat.com

I further certify that on December 30, 2020, I caused the foregoing document to be served via electronic mail upon the above-listed counsel and on the following counsel:

Lai L. Yip
SHEPPARD, MULLIN, RICHTER &
HAMPTON LLP
Four Embarcadero Center
San Francisco, CA 94111
(415) 434-9100
lyip@sheppardmullin.com
Martin R. Bader
Michael J. Hopkins
SHEPPARD, MULLIN, RICHTER &
HAMPTON LLP
12275 El Camino Real
Suite 200
San Diego, CA 92130
(858) 720-8900
mbader@sheppardmullin.com
mhopkins@sheppardmullin.com

Attorneys for Defendant
Lenovo (United States) Inc.

Date: December 30, 2020

YOUNG CONAWAY STARGATT & TAYLOR, LLP

/s/ Adam W. Poff

Adam W. Poff (#3990)
Robert M. Vrana (#5666)
Rodney Square
1000 North King Street
Wilmington, DE 19801
(302) 571-6600
apoff@ycst.com
rvrana@ycst.com

Counsel for LiTL LLC

18 August 2017 (18-08-2017)

GOWLING WLG (CANADA) LLP
2600 - 160 Elgin Street
OTTAWA Ontario
K1P 1C3

Application No.	:	**2,719,828**
PCT No.	:	**US2009038599**
Owner	:	LITL LLC
Title	:	**PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS**
Classification	:	G06F 1/16 (2006.01)
Your File No.	:	**08917409CA**
Examiner	:	Charles Mougeot

YOU ARE HEREBY NOTIFIED OF A REQUISITION BY THE EXAMINER IN ACCORDANCE WITH SUBSECTION 30(2) OF THE *PATENT RULES*. IN ORDER TO AVOID ABANDONMENT UNDER PARAGRAPH 73(1)(*a*) OF THE *PATENT ACT*, A WRITTEN REPLY MUST BE RECEIVED WITHIN THE **SIX (6)** MONTH PERIOD AFTER THE ABOVE DATE.

This application has been examined taking into account the applicant's correspondence received in this office on 7 April 2017 (07-04-2017).

The number of claims in this application is 26.

References

D1: DE 199 52 486*	May 3, 2001	Schweizer et al
D2: US 6 154 359	November 28, 2000	Kamikakai et al
D3: CN126496	March 7, 2007	Wehrenberg et al
D4: US20060017692	January 26 2006	Wehrenberg et al
D5: US 20020190947	December 19 2002	Feinstein

* Cited in IPRP

The examiner has identified the following defects in the application:

Lack of Support

Claim 1 is not fully supported by the description and does not comply with section 84 of the *Patent Rules*. The newly aggregated feature below is not supported in the originally filed description:

"wherein the display manager is further configured to enlarge the computer content displayed on the display component responsive to a transition from the laptop mode to the easel mode"

As such it must be removed.

Obviousness

The claims on file do not comply with section 28.3 of the *Patent Act*. These claims are directed to subject-matter that would have been obvious at the claim date to a person skilled in the art or science to which it pertains having regard to D1 or D2 in view of at least D3 and the common general knowledge.

The present claims disclose a computer with a screen which folds back as is now commonly known in the art. A laptop computer with a hinge which allows such a configuration was already known in the art prior to 2008 from at least D1 and D2. For example see D2 figures 8 and 9 vs fig 4 of the present application. The applicant has submitted that claims on file are differentiated from the prior art due to the negative limitation/ desired result ("wherein the operator is operable in the easel mode to enable the user to interact with the portable computer and displayed content **without interacting with the keyboard**"). D2 also discloses this negative limitation as the user can interact with the laptop when the screen is folded back without the keyboard (D2 uses pen input/touchscreen functionality), i.e. "without interacting with the keyboard".

The applicant has also amended the claims to state that a display manager varies the computer content responsive to detecting a transition between at least the laptop an easel mode. The description states that the computer may use an accelerometer to detect if the laptop is put into easel mode (pages 11 and 12) and then the display may be rotated 180 degrees so that it appears right side up. However the use of an accelerometer in a mobile device for varying the computer content displayed is already known from at least D3, wherein a laptop with an accelerometer varies the content displayed (machine translation provided below):

> "*If it detects a portable device rotation does not rotate or rotate enough, the associated gaming application software can perform some predetermined action. For example, a game application may generate a warning to the user, such as a portable device such as a vibration or the like voice alert. In addition, the scene off the road can be displayed. If a user is detected for a period of time does not respond to road conditions, the crash scenes can be displayed accordingly.*
>
> *According to certain embodiments, other motion direction may be used from the viewpoint of the user holding the portable device "look up" and "looking down." For example, in-flight game, the user can hold the portable device, as if the user is start flying objects (such as airplanes), which may be an accelerometer for detecting movement of the portable device in order to determine where the flying object orientation. For example, when the portable device is inclined upward, flying objects rise, and downward when the portable device, flying objects fall. Other directions, such as for example those directions shown in Figure 5A, or their combination may be used to fly to the object in any direction.*
>
> *Similarly, in a shooting game according to the embodiment, in addition to the above may be used to look up, looking down vertical movement outside the display surface and / or look around the movement, parallel to the portable device may be a portable device to*

detect a user is in the standing shooting position or in hiding position. For example, when the portable device is moved downwardly, the protective barriers may be displayed blocked opponents to indicate that the portable device holding the firing weapon as hiding the user after the protective barrier. When the portable device is moved upward, the protective barrier may be removed to expose the opponents to indicate that the user is in the firing position without protection. Other game configuration may also be present.

... ***When the portable device is moved, for example rotated by 90 degrees in the direction 1208, the portable device may stop at different orientations 1202, as shown in Figure 12B. Portable device attached to the accelerometer may detect such a motion, and the motion data to the other components of the portable device. In addition to relatively uniformly oriented before being displayed as described above with reference to the figures 3A and 3B, maintaining a document page orientation and movement outside,..***"

D3 is but one example of mobile device using an accelerometer to trigger functionality. More can be discussed in detail if the applicant believe this was an inventive idea in 2008, for example patents for rotating between landscape and portrait display on the original iPhone (2007) or a tablet as noted in D4 (abstract) or D5 (abstract) which enlarges (magnifies) the displayed content on the mobile device based on the orientation of the device.

Dependent claims are either disclosed by D1 or D2 or D3 or present straightforward options, all of which were well known features of mobile devices known prior to 2008 and thus cannot be considered inventive either

In view of the foregoing defects, the applicant is requisitioned, under subsection 30(2) of the *Patent Rules*, to amend the application in order to comply with the *Patent Act* and the *Patent Rules* or to provide arguments as to why the application does comply.

Under section 34 of the *Patent Rules*, any amendment made in response to this requisition must be accompanied by a statement explaining the nature thereof, and how it corrects each of the above identified defects.

Charles Mougeot
Patent Examiner
819 635 3768

As per CIPO Client Service Standards, a response to a telephone enquiry or voice mail should be provided by the end of the next business day. In the event that attempts to reach the examiner are unsuccessful, the examiner's Section Head, Carla Dinardo, can be reached at 819 639 2697.

CIPO values your feedback and invites you to complete a short and anonymous ongoing survey on patent examination products and services. You can access the survey at the following link: http://ic.sondages-surveys.ca/s/SCB-OPS/langeng.

2719828C_C.M.docm

The Examination Search Report is provided for reference only and is not part of any requisition made by the examiner in accordance with the *Patent Act* or *Rules*. The applicant is not required to respond to the information contained in the Examination Search Report.

Examination Search Report

Box I: General Information			
Application No.	2,719,828	Search Report Date	2017-08-18
Title	PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS		
Examiner	Charles Mougeot	Search Conducted?	Yes

Box II: Family Prosecution		
Family Member	File Wrapper Reviewed	Status of Prosecution
wo2009/1239131	2015-08-27	Completed
WO2009146070A1	NO	
US2009244832A1	NO	
US2009300511A1	NO	
US2010174993A1	NO	
US2009244012A1	NO	
US2009303676A1	NO	
US2009322790A1	NO	
US2013141854A1	NO	
US2014282263A1	NO	
US2015277688A1	NO	
EP2271977A1	NO	
EP2283407A1	NO	
CA2720383A1	NO	
US8289688B2	2016-10-05	Completed

Box III: Search History			
Claims Searched	all	Date of Search	2015-08-27
Type of Search Conducted (select all that apply):			
Canadian first to file search	☐	Supplemental/top up search	■
Inventor/applicant search	■	Non laid open search	☐
Comprehensive search	☐	In-house searcher	☐
Search History from Databases Consulted:			

```
##### QUESTEL-ORBIT ##########

( (BEHAR)/IN/OIN/INH/INV OR (MORENSTEIN)/IN/OIN/INH/INV OR (HIBMACRONAN)/IN/OIN/INH/INV
OR (EDAHIRO)/IN/OIN/INH/INV OR (DAY)/IN/OIN/INH/INV ) AND PD <= 2008-04-01

( (LITL)/PA/OPA/PAH/OWR/REAS ) AND ( (BEHAR)/IN/OIN/INH/INV OR (MORENSTEIN)/IN/OIN/INH/INV
OR (HIBMACRONAN)/IN/OIN/INH/INV OR (EDAHIRO)/IN/OIN/INH/INV OR (DAY)/IN/OIN/INH/INV ) AND
PD <= 2008-04-01

( (BEHAR 1D YVES)/IN/OIN/INH/INV OR (MORENSTEIN 1D JOSHUA)/IN/OIN/INH/INV OR (HIBMACRONAN
1D CHRISTOPHER)/IN/OIN/INH/INV OR (EDAHIRO 1D NAOYA)/IN/OIN/INH/INV OR (DAY 1D
MATHEW)/IN/OIN/INH/INV ) AND PD <= 2008-04-01


##### GOOGLE ##########

accelerometer laptop
```

Version 8

THE STATE INTELLECTUAL PROPERTY OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA

APPLICATION NO.:	APPLICANT:
200980117859.8	LITL, LLC
FILING DATE: March 27, 2009	DATE OF MAIL: July 18, 2013
TITLE OF INVENTION:	PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS

DECISION OF REJECTION

1. IN ACCORDANCE WITH THE PROVISION IN ARTICLE 38 OF THE CHINESE PATENT LAW AND RULE 53 OF THE IMPLEMENTATION THEREOF, THE ABOVE-CITED PATENT APPLICATION HAS BEEN REJECTED UNDER THE BASIS OF:

☐ The subject matter of the present application is not accepted on the basis of the Article 5 or 25 of the Patent Law of the People's Republic of China.

☑ This application is not in conformity with the provision of Article 22 of the Patent Law of the People's Republic of China.

☐ The description is not in conformity with the provision of the paragraph 3 or paragraph 4, Article 26 of the Patent Law of the People's Republic of China.

☐ The amendments to the present application are not in conformity with the prescription of Article 33 of Patent Law of the People's Republic of China.

☐ The present application is not in conformity with the provision of paragraph 1, Rules 13 of the Implementation of the Patent Law of the People's Republic of China.

☐ The divisional application is not in conformity with the provision of paragraph 1, Rules 43 of the Implementation of the Patent Law of the People's Republic of China.

2. ☑ THIS DECISION WAS MADE ON THE BASIS OF THE FOLLOWING FILING DOCUMENTS:

☑APPLICATION DOCUMENT FIELD ON NOVEMBER 17, 2010 *Including* **Specification paragraphs 1-87, drawings, Abstract and Abstract drawing;**

☑APPLICATION DOCUMENT FILED ON APRIL 25, 2013 *Including* **Claims 1-26;**

3. In accordance with the provisions of the Article 41 of the Chinese Patent Law, if the applicant disagrees with the Patent Office's decision to reject its application, it or he shall submit a Re-examination Request to the Patent Re-examination Board to make a reexamination, within **THREE** months from the date of receiving this Decision

EXAMINATION DEPARTMENT . NAME OF EXAMINER YANG PENG STAMP

HP Inc. - Exhibit 1005 - Page 2605

Text of the Decision of Rejection

Ⅰ Causes of this action

This Decision of Rejection relates to the patent application for invention, entitled "Portable Computer with Multiple Display Configurations", with the filing Number 2009801178598, and the filing date is March 27, 2009.

Based on the request of substantive examination, the Examiner examined this application and issued First Office Action on March 5, 2012 indicating that claims 25-26 do not possess inventiveness over D1 as stipulated in Article 22(3) of Chinese Patent Law, claims 1 and 27 do not comply with Article 26(4) of Chinese Patent Law, and claims 1, 16 and 27 do not comply with Article 33 of Chinese Patent Law.

The Applicant submitted the statement and amended claims in response to the First Office Action on July 20, 2012. In this response, the Applicant stated that claims 25-26 do possess inventiveness and other claims do comply with Article 26(4) and Article 33 of Chinese Patent Law.

The Examiner further issued the Second Office Action on December 10, 2012 indicating that claims 25-26 still do not possess inventiveness over D1 and well-known knowledge in the art, and claims 29-30 are not in conformity with Rule 51.3 of Implementing Regulations of Chinese Patent Law.

The Applicant submitted the statement and amended claims in response to the Second Office Action on April 25, 2013. In this response, the Applicant stated that claims 1-26 do possess inventiveness as stipulated in Article 22(3) of Chinese Patent Law.

Based on the aforementioned process, the Examiner believes that the case is clear and thereby makes this Final Rejection. The final rejection is issued on the basis of the following documents:

Specification paragraphs 1-87, figures and Abstract filed on November 17, 2010; and Claims 1-26 filed on April 25, 2013.

Ⅱ Reasons for rejection

1. Claim 25 does not comply with Article 22(3) of Chinese Patent Law.

Claim 25 claims a portable computer. D1 (US7061472B1) discloses a presentation device, specifically discloses a laptop computer, with specific technical features disclosed as

HP Inc. - Exhibit 1005 - Page 2606

below (see column 1, line 53 through column 6, line 2 and Figs. 1-6): the laptop computer comprising a base unit 4 (equivalent to base recited in claim 25); keyboard 1 which could be removed from the base unit 4; main display screen 2 (the specific concept of display component recited in claim 25), which is attached with hinges 3 to a base unit 4 such that it can be rotated out; hinges 3 (the specific concept of means for rotating the display component recited in claim 25) in a single direction relative to the base unit 4 to configure the laptop computer between a laptop mode (Fig. 1) and an easel mode (Fig. 4), wherein Figs. 2, 4, 6 show the easel mode of the laptop computer, the image of the main display screen 2 is rotated electronically by 180 degrees. Thus, the distinguishing technical feature between the technical solution of claim 25 and that of D1 is: the portable computer in claim 25 configurable between plurality of display modes wherein transitions between the plurality of display modes requires an operator to interact with a single main display in each of the plurality of display modes, including an integrated keyboard, the display screen oriented towards different persons, and the portable computer accepts selection of content displayed in the single main display screen oriented towards the operator without the operator interacting with the keyboard being oriented away from the operator. On the basis of the distinguishing technical feature, the technical problem seeking resolution in claim 25 is: how to obtain an easel mode for a common portable computer. The laptop computer of D1 is obviously different from a common portable computer as the keyboard thereof could be removed and there has another display screen under the keyboard. However, it is obvious that the shape of the laptop computer of D1 is similar with a common portable computer. In order to solve the technical problem of "how to obtain an easel mode for a common portable computer", person skilled in the art could readily envisage applying the connection means of D1 with a common portable computer to achieve the easel mode. Additionally, from Fig.4 of D1, one could see the keyboard is moveable, but obviously, the keyboard could be remained also, at this time, the main display oriented towards the customer, but one could rotate the computer to the operator, and this is well-known knowledge in the art. Further, a portable computer often has input devices, such as a mouse, one could select the displayed content by the mouse, rather than using the keyboard only. Whatever the keyboard is removed or not removed, this is well-known knowledge in the relevant art. Thus, it is obvious for

HP Inc. - Exhibit 1005 - Page 2607

person skilled in the art to obtain technical solution of claim 25 by combining D1 with well-known knowledge. Therefore, claim 25 does not have prominent substantive features or notable progress, and thereby does not possess inventiveness as stipulated in Article 22(3) of Chinese Patent Law.

2. Claim 26 does not comply with Article 22(3) of Chinese Patent Law.

D1 discloses hinges 3, and one skilled in the art could readily obtain a technical solution of claim 26 from Figs. 1-6 of D1, i.e., the hinges 3 comprises a part at least partially housed within the base unit 4 and configured to rotatably couple the main display screen 2 to the base unit 4. Thus, as claim 25 does not possess inventiveness, claim 26 does not possess inventiveness either.

3. The reasons (1)-(4) stated in response to the Second Office Action

(1) "The Examiner indicated that the technical problem seeking resolution is "how to obtain an easel mode for a common portable computer." However, the applicant disagrees. The applicant maintains that the technical problem seeking resolution is "how to achieve a plurality of display modes including an easel mode in a computer system where transitions between the plurality of display modes leaves the operator to interact with the same display in each of the plurality of display modes." D1 explicitly teaches away from the Applicant's technical solution."

For this reason, the Examiner believed that the technical problem motioned in the Office Action is a technical problem seeking resolution based on the distinguishing technical features between this application and D1, rather than a technical problem seeking resolution based on the whole invention. On the basis of the disclosures of D1, person skilled in the art could determine how to achieve a plurality of display modes including an easel mode and a laptop mode in a computer system. The distinguishing technical feature between D1 and this application is D1 including two display screens and a removable keyboard, which is different from this application's one display and an integrated keyboard. Thus, based on the distinguishing technical features, the person skilled in the art determines the technical problem.

(2) "If D1 is read in the manner alleged by the Examiner, the Examiner would be ignoring the technical features described in D1. In particular, the removeable

HP Inc. - Exhibit 1005 - Page 2608

keyboard (1) disclosed would be made irrelevant to the operation of the device and the relevant disclosure in D1 would be superfluous. In addition the second display of D1 (5) would also be rendered irrelevant, and the disclosure regarding the operation of D1 by the operator using the second display would be pointless. The skilled artisan in possession of D1 would not ignore the teachings of D1 regarding the use of the second display (5) by the operator of the device of D1 in its presentation mode. Nor would the skilled artisan remove such features as alleged by the Examiner."

For this reason, the Examiner believes that the laptop computer disclosed in D1 has more functions, if the keyboard is not removed, it is the same with the integrated keyboard, and a person skilled in the art could readily obtain the easel mode like in this application; if the keyboard is removed, the computer has an additional function that having a second display hide under the keyboard except for the main display. That is, the keyboard could be interacted with the second display and the main display could be shown the content to anybody. Of course, if the additional function is not used, the removable keyboard and the second display may be useless for the person skilled in the art. However, for a user of an electronic, sometimes he may use one or some functions of the electronic, rather than the whole functions to meet his requirement. For the technical solution of D1, such as just show the content to customers, or use a mouse replace use the keyboard to operate the computer, remove the keyboard and use the second display is a superfluous operation. Thus, whatever the person skilled or a common user of the computer, he can select a suited display to meet his requirement.

(3) "D1 does not contemplate the technical problems presented in a computing device having a plurality of display modes where the operator of the device interacts with the portable computer through the single main display in each of the display modes, and further where the keyboard is not accessible in all of the display modes. In particular, D1 does not contemplate interacting with content on the single main display without using the keyboard of D1. Thus, the technical problem to be solved is not the problem alleged, even if one assumes the operator of D1 does not remove the keyboard. In fact, if one assumes that the operator of

HP Inc. - Exhibit 1005 - Page 2609

D1 does not remove the keyboard, D1 explicitly described the operations that take place. Shown in Fig. 6 of D1 is the scenario the Examiner alleges. As D1 explicitly recites, the "display (2) is rotated so that the customer" [not the operator] "can observe an image that is upright" ... "the flat image screen 5 of a control monitoring unit is made to travel out by means of a drive with an electric motor ... and then can be viewed by the salesman" (the operator). (D1, Col 5, lines 11-19). The explicit disclosure of D1 contradicts the Examiner's position."

For this reason, the Examiner has following opinion: though the "laptop mode" may interact with the removable keyboard, exist a well-known condition of the keyboard is not removed, and then the computer is not in the laptop mode. On the basis of the above-mentioned well-known knowledge, using a mouse could select the content shown in the main display, i.e., other input devices interact with the main display. Though D1 explicitly recites the main display is rotated so that the customer can observe the content, not the operator, this is just a describe manner and a multi-faceted shown of the functions and applications of the computer, not a forced useful manner of the computer. Thus, whatever the person skilled or a common user of the computer, he can select a suited display to meet his requirement.

(4) "Assuming the Examiner's position correct, for the purposes of argument, D1 still would not disclose "wherein the portable computer is operable to access modes of content displayed on the single main display with the single main display screen oriented toward the operator of the portable and without the operator interacting with the keyboard being oriented away from the operator," as recited in claim 1, as amended. Further, D1 likewise would not disclose "wherein the portable is configured to accept selection of content displayed in the single main display screen oriented towards the operator without the operator interacting with the keyboard being oriented away from the operator," as recited in claim 25."

For this reason, as the Examiner says in reason (3), though the "laptop mode" may interact with the removable keyboard, exist a well-known condition of the keyboard is not removed, and then the computer is not in the laptop mode. On the

HP Inc. - Exhibit 1005 - Page 2610

basis of the above-mentioned well-known knowledge, using a mouse could select the content shown in the main display, i.e., other input devices interact with the main display. That is, if the keyboard is not removed, use a mouse could achieve the function of stated in reason (4). Compared with a common portable computer, the claimed display in claim 25 could rotate about a single axis beyond 180 degrees to achieve the easel mode. However, D1 discloses an axis to make the display could rotate about the axis to achieve the easel mode. Thus, it is obvious for the person skilled in the art to obtain the technical solution of claim 25 by combining D1 with well-known knowledge. Therefore, claim 25 does not possess inventiveness as stipulated in Article 22(3) of Chinese Patent Law. The additional technical feature of claim 26 is also disclosed by D1. Thus, claim 26 does not possess inventiveness either.

Ⅲ Decision

Based on the reasons outlined above, the present application is not in conformity with the prescription of Article 22(3) of Chinese Patent Law. Therefore, the present application is rejected under the prescription of Article 38 of Chinese Patent Law, which states that an application will be rejected if, after response statements and amendments were made, the China Patent Office still deems it in contrary to Chinese Patent Law.

According to the prescription of Article 41(1) of Chinese Patent Law, if the Applicant does not agree with this Decision of Rejection, the Applicant may, within **THREE** months from the date of receipt of the notification, submit a Request of Reexamination to Patent Reexamination Board.

Ⅳ Other illumination

Claim 1 added some technical features which are the same with the added technical features of claim 25. Based on the same reasons, these technical features cannot distinguish with D1. Thus, it is obvious for the person skilled in the art to obtain the technical solution of claim 1 by combining D1 with well-known knowledge. Therefore, claim 1 does not possess inventiveness as stipulated in Article 22(3) of Chinese Patent Law. Claims 2-24 also do not possess inventiveness either.

HP Inc. - Exhibit 1005 - Page 2611

Mailed April 16, 2013

NOTICE OF GROUNDS OF REJECTION

Patent Application No.	2011-503058
Drafting Date	April 9, 2013
Patent Office Examiner	Takahiro Inose (9560 5E00)
Attorney	FUKAMI PATENT OFFICE, p.c.
Applied Provision	Paragraph 2 of Article 29

<<<Final Notice of Grounds of Rejection>>>

The present application is recognized as rejected on the following ground. It is required that any remarks be submitted within three months from the date on which the present NOTICE was mailed.

GROUNDS

It is recognized that, because the invention described in Claim(s) of SCOPE OF CLAIMS FOR PATENT of the present application could have been invented readily by a person having ordinary knowledge in the field of the art to which the present invention pertains prior to the filing of the present application based on the invention as described in the following publication(s) distributed or the invention as made available to the public through electric telecommunication lines in Japan and/or foreign countries prior to the filing of the present application, a patent cannot be granted thereto under the provision of Paragraph 2 of Article 29 of the Patent Law.

REMARKS (See the list of the cited references.)

- Claims 1 to 30

HP Inc. - Exhibit 1005 - Page 2612

- Cited references 1 to 13

- Notes:

By amendments in the response to the first Office Action, the following underlined configuration was newly added in the invention of the present application: "wherein the hinge assembly is configured to permit rotation of the display component about a single axis to configure the portable computer between the laptop mode and the easel mode in which the display component and the base stand upright forming an inverted V shape". A discussion will be made regarding the newly added configuration as follows.

Paragraph 22 and 24 and Figs. 1 and 2(b) of cited reference 11 discloses the configuration in which joint portion 5 (the hinge assembly) is configured to permit rotation of display panel 4 (the display component) about joint portion 5 being one axis (single axis) to configure portable personal computer 1 (the portable computer) between a usage pattern of the portable computer 1 (the laptop mode), in which an angle between keyboard 3 and display panel 4 is around 100°, and an upstanding state (the easel mode), in which display panel 4 (the display component) and body 2 (the base) stand upright forming an inverted V shape.

Likewise, the same configurations are disclosed in Figs. 2, 4 and 6 of cited reference 12, Fig. 2 of cited reference 13 and the like.

Although the keyboard can be detached in the configurations of cited references 11 to 13, it is a merely apparent thing to enable to change the shape to the same shape without detaching the keyboard.

Therefore, a person skilled in the art could have readily configured that "the hinge assembly is configured to permit rotation of the display component about a single axis to configure the portable computer between the laptop mode and the easel mode in which the display component and the base stand upright forming an inverted V shape".

HP Inc. - Exhibit 1005 - Page 2613

Other items are the same as informed in the first Office Action.

LIST OF CITED REFERENCES

1. Japanese Patent Laying-Open No. 6-242853
2. Japanese Patent Laying-Open No. 6-259166
3. Japanese Patent Laying-Open No. 2005-159741
4. Japanese Patent Laying-Open No. 8-179851
5. Japanese Patent Laying-Open No. 5-197507
6. Japanese Patent Laying-Open No. 10-111658
7. Japanese Patent Laying-Open No. 6-090200
8. Japanese Patent Laying-Open No. 2005-242436
9. Japanese Patent Laying-Open No. 2004-302179
10. Japanese Patent Laying-Open No. 2001-167211
11. Japanese Patent Laying-Open No. 11-296259
12. U.S. Patent No. 7,061,472
13. Japanese Patent Laying-Open No. 2006-227409

Reason(s) that this is final Notice of Grounds of Rejection

This notice is one which notifies only the grounds of rejection which are necessitated by amendments made in response to a previous non-final Notice of Grounds of Rejection.

Record of Search for Prior Art Documents

* Searched Technical Field IPC G06F 1/00, 1/16-1/18

This record of search for prior art documents does not form any grounds of rejection.

HP Inc. - Exhibit 1005 - Page 2614

Mailed December 4, 2012

NOTICE OF GROUNDS OF REJECTION

Patent Application No.	2011-503058
Drafting Date	November 26, 2012
Patent Office Examiner	Takahiro Inose (9560 5E00)
Attorney	FUKAMI PATENT OFFICE, p.c.
Applied Provision	Paragraph 2 of Article 29

The present application is recognized as rejected on the following ground. It is required that any remarks be submitted within three months from the date on which the present NOTICE was mailed.

GROUNDS

It is recognized that, because the invention described in Claim(s) of SCOPE OF CLAIMS FOR PATENT of the present application could have been invented readily by a person having ordinary knowledge in the field of the art to which the present invention pertains prior to the filing of the present application based on the invention as described in the following publication(s) distributed or the invention as made available to the public through electric telecommunication lines in Japan and/or foreign countries prior to the filing of the present application, a patent cannot be granted thereto under the provision of Paragraph 2 of Article 29 of the Patent Law.

REMARKS (See the list of the cited references.)

Claims 1-30

Cited References 1-10

Notes:

HP Inc. - Exhibit 1005 - Page 2615

Cited Reference 1 discloses, in paragraphs 6, 7, 10, 12, and 17 as well as Figs. 1 and 5, a transportable personal computer that can assume a plurality of states including a normal use state (Fig. 1) and a 340-degree open state (Fig. 5), including: display means 105 of the computer; a main body part 101 including a keyboard 104; and a connecting mechanism (Fig. 2) configured such that display means 105 can be opened by being rotated with respect to main body part 101, wherein the connecting mechanism (Fig. 2) is configured to allow display means 105 to rotate about shafts 150 and 151 such that the computer can assume an arbitrary state between the normal use state (Fig. 1) and the 340-degree open state (Fig. 5), and in the normal use state (Fig. 1), display means 105 faces a person and a user can do input through keyboard 104, and in the 340-degree open state (Fig. 5), display means 105 faces the person and keyboard 104 is located on the rear side as viewed from the user, the transportable personal computer further including a display inversion switch 106 for inverting a direction of display on display means 105.

In addition, a configuration similar to that of Cited Reference 1 is disclosed in paragraphs 7, 13-14 and 18 as well as Fig. 8 of Cited Reference 2. Cited Reference 2 also discloses, in Fig. 9 and paragraph 19, a stationary function state (corresponding to "frame mode" in the present invention) in which a liquid crystal display screen 2 is rotated by 300 degrees and a keyboard 1 is directed toward a surface.

For your reference, Cited Reference 3 discloses, in Figs. 8, 9 and 13, a configuration of a mobile phone with a camera 10 that is opened by 300 degrees (first rotation position), although Cited Reference 3 does not disclose a personal computer.

Comparing the present invention with Cited Reference 1 or Cited Reference 2, the following differences are found:

(1) the connecting mechanism (shaft) is not configured by a single axis;

(2) detecting a degree of rotation and automatically controlling an orientation of a displayed content is not achieved;

HP Inc. - Exhibit 1005 - Page 2616

(3) a scroll wheel and a navigation button are not provided; and

(4) a foot in easel mode is not provided.

The above differences will be discussed.

As to difference 1

Cited Reference 4 discloses, in Figs. 1-2, a folding portable computer configured to pivot about a single axis.

Similarly, Cited Reference 5 discloses, in Figs. 15-16 and paragraphs 40-41, a portable computer that includes a single-axis hinge and pivots up to an angle exceeding 180 degrees.

As described above, configuring the display and the main body to be connected by the single axis and rotated is the generally well-known method, and thus, those skilled in the art would have readily arrived at this configuration.

As to difference 2

Cited Reference 4 discloses, in paragraphs 15-16 as well as Figs. 1-2 and 4, that an opening angle sensor 6 automatically controls a display direction when a lid body 4 is widely opened at an angle equal to or larger than a prescribed angle.

In addition, Cited Reference 6 discloses, in paragraphs 3-5 and 28-30 as well as Figs. 16-17, that a sensor switch 30 detects a placement state and a placement angle to change a display angle to 90 degrees.

Cited Reference 1, Cited Reference 4 and Cited Reference 6 are common in terms of the problem and motivation of changing the display angle of the display by rotating the display. Therefore, it is determined that those skilled in the art would have readily arrived at detecting the degree of rotation and automatically controlling the orientation of the displayed content as in the present invention, by applying the technique disclosed in Cited Reference 4 or Cited Reference 6 instead of display

HP Inc. - Exhibit 1005 - Page 2617

inversion switch 106 in Cited Reference 1.

As to difference 3

Cited Reference 7 discloses a function selection dial 8 in Fig. 1. Similarly, Cited Reference 8 discloses a jog dial mechanism 20 in Fig. 1. Cited Reference 9 discloses a rotation portion 4 that is a jog dial in Figs. 1-4. As described above, providing a rotating switch (scroll wheel) is extremely well known in an interface of a mobile terminal.

In addition, Cited Reference 10 discloses, in Figs. 15-16 and paragraphs 47-49, that a determination button 1505 is provided on a side surface of rotary switches 1503 and 1504. As described above, providing a push button for determination (navigation button) together with the rotating switch (scroll wheel) when input is done without using a mouse and a touch panel is the ordinary matter.

It should be noted that a configuration in which a mode of the content, volume and the like can be selected by the rotating switch (scroll wheel) would have been appropriately achieved as needed by those skilled in the art.

As to difference 4

Providing the foot on a ground portion by a protrusion made of rubber or resin is widely performed in order to prevent scratches caused by contact with the ground end of the terminal and to provide a non-slip function. Therefore, those skilled in the art would have ordinarily arrived at this configuration.

LIST OF CITED REFERENCES

1. Japanese Patent Laying-Open No. 6-242853
2. Japanese Patent Laying-Open No. 6-259166
3. Japanese Patent Laying-Open No. 2005-159741
4. Japanese Patent Laying-Open No. 8-179851

HP Inc. - Exhibit 1005 - Page 2618

5. Japanese Patent Laying-Open No. 5-197507

6. Japanese Patent Laying-Open No. 10-111658

7. Japanese Patent Laying-Open No. 6-090200

8. Japanese Patent Laying-Open No. 2005-242436

9. Japanese Patent Laying-Open No. 2004-302179

10. Japanese Patent Laying-Open No. 2001-167211

Record of Search for Prior Art Documents

* Searched Technical Field IPC G06F 1/00, 1/16-1/18

This record of search for prior art documents does not form any grounds of rejection.

HP Inc. - Exhibit 1005 - Page 2619

深見 '12.12.-4

1105815

拒絶理由通知書

特許出願の番号	特願２０１１－５０３０５８
起案日	平成２４年１１月２６日
特許庁審査官	猪瀬　隆広　　９５６０　５Ｅ００
特許出願人代理人	特許業務法人深見特許事務所　様
適用条文	第２９条第２項

この出願は、次の理由によって拒絶をすべきものです。これについて意見がありましたら、この通知書の発送の日から３か月以内に意見書を提出してください。

理　由

この出願の下記の請求項に係る発明は、その出願前に日本国内又は外国において、頒布された下記の刊行物に記載された発明又は電気通信回線を通じて公衆に利用可能となった発明に基いて、その出願前にその発明の属する技術の分野における通常の知識を有する者が容易に発明をすることができたものであるから、特許法第２９条第２項の規定により特許を受けることができない。

記　　（引用文献等については引用文献等一覧参照）

・請求項：　　１～３０
・引用文献：　１～１０
・備考：

引用文献１の６，７，１０，１２，１７段落及び図１、図５には、通常の使用状態（図１）と、３４０度開いた状態（図５）を含む複数の状態を取り得る可搬型のパーソナルコンピュータであって、コンピュータの表示手段１０５と、キーボード１０４を含む本体部１０１と、表示手段１０５を本体部１０１に回転して開き得るように構成された連結機構(図２）とを備え、連結機構(図２）は、通常の使用状態（図１）と、３４０度開いた状態（図５）との間で任意の状態を取り得るように軸１５０・１５１を中心に表示手段１０５の回転を可能にするように構成され、通常の使用状態（図１）では、表示手段１０５は、人に対面するようになっており、キーボード１０４は、利用者が入力が可能なようになっており、３４０度開いた状態（図５）では、表示手段１０５は、人に対面するようになっており、キーボード１０４は、利用者から見て裏側になっており、表示手段１０５に表示される方向を反転させる表示反転スイッチ１０６を備える可搬型のパー

ソナルコンピュータが開示されている。

また、引用文献１と同様な構成が、引用文献２の７，１３～１４，１８段落及び図８にも開示されている。ここには、図９及び１９段落には、液晶表示画面２を３００度回転させ、キーボード１を表面に向けたステーショナリー機能の状態（本願発明の「フレームモード」に相当）も開示されている。

なお、参考までに、パーソナルコンピュータではないが、引用文献３の図８，図９、図１３には、３００度（第１回転位置）まで開いたカメラ付き携帯電話１０の構成が開示されている。

本願発明と引用文献１または引用文献２を対比すると、以下の点で相違している。

（１）連結機構（軸）が単一軸により構成されていない点

（２）回転角度を検出して、表示されるコンテンツの向きを自動的に制御するものとはされていない点

（３）スクロールホイール及びナビゲーションボタンを備えていない点

（４）イーゼルモードの脚部を備えていない点

上記相違点について検討する。

・相違点１

引用文献４の図１～２には、単一軸により回動されるように構成されている折りたたみ式の携帯型コンピュータが開示されている。

同様に、引用文献５の図１５～１６及び４０～４１段落には、単一軸によるヒンジが設けられ、１８０度を越える角度にまで回動されるポータブルコンピュータが開示されている。

このように、単一軸でディスプレイと本体を結合して回転するように構成することは、一般によく知られた方法であるので、当業者が容易に想到し得ることであると推察される。

・相違点２について

引用文献４の１５～１６段落及び図１～２、図４には、所定角度以上に大きく開かれた場合に、開き角度センサ６により、表示方向を自動的に制御することが開示されている。

また、引用文献６の３～５，２８～３０段落及び図１６～１７には、載置される状態と角度をセンサースイッチ３０により検出して、表示角度を９０度に変更することが開示されている。

引用文献１も、引用文献４または引用文献６も、ディスプレイを回転させることで、その表示角度を変更するという課題及び動機付けが共通するものであるから、引用文献１の表示反転スイッチ１０６に代えて、引用文献４または引用文献

６に開示される技術を適用して、本願発明のように、回転角度を検出して、表示されるコンテンツの向きを自動的に制御するようにすることは、当業者が容易に想到し得ることであると判断される。

・相違点３について

引用文献７の図１には機能選択ダイヤル８が、同様に、引用文献８の図１にはジョグダイヤル機構２０が、引用文献９の図１～４にはジョグダイヤルである回転部４が開示されている。このように、回転式のスイッチ（スクロールホイール）を設けることは、携帯端末のインタフェースにおいてはきわめてよく知られた構成である。

また、引用文献１０の図１５～１６及び４７～４９段落には、ロータリースイッチ１５０３～１５０４の側面に、決定ボタン１５０５を設けることが開示されている。このように、マウスやタッチパネルを用いないで、入力を行わせる場合に、回転式のスイッチ（スクロールホイール）とともに、決定のための押しボタン（ナビゲーションボタン）がいずれかに配設することは、普通に行われ得ることである。

なお、回転式のスイッチ（スクロールホイール）によって、コンテンツのモードや音量等を選択可能にすることは、いずれも、当業者が必要に応じて適宜なし得ることである。

・相違点４について

接地部分に、ゴムや樹脂による突起による脚部を設けることは、端末の接地端部の接触による傷を防いだり、滑り止めを施すために、広く行われていることを考えると、当業者であれば、普通に想到し得ることであると推測される。

引　用　文　献　等　一　覧

１.特開平６－２４２８５３号公報
２.特開平６－２５９１６６号公報
３.特開２００５－１５９７４１号公報
４.特開平８－１７９８５１号公報
５.特開平５－１９７５０７号公報
６.特開平１０－１１１６５８号公報
７.特開平６－　９０２００号公報
８.特開２００５－２４２４３６号公報
９.特開２００４－３０２１７９号公報
１０.特開２００１－１６７２１１号公報

先行技術文献調査結果の記録

・調査した分野　　ＩＰＣ　Ｇ０６Ｆ　　１／００，　１／１６－　１／１８

この先行技術文献調査結果の記録は、拒絶理由を構成するものではない。

－－

この拒絶理由通知の内容に関するお問い合わせ又は面接のご希望がございましたら下記までご連絡ください。

特許審査第四部インターフェース　猪瀬　隆広
ＴＥＬ．０３（３５８１）１１０１　内線　３５１９
ＦＡＸ．０３（３５０１）０６７３

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/170,951	07/10/2008	Yves Behar	L2039-700111	2004

37462 7590 04/04/2011

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER	
ABEBE, SOSINA	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
04/04/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@LALaw.com
gengelson@LALaw.com

Office Action Summary	Application No.	Applicant(s)	
	12/170,951	BEHAR ET AL.	
	Examiner	Art Unit	
	SOSINA ABEBE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/09/2008,12/18/2009,11/03/2010,02/25/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: **(See MPEP Ch. 2141)**

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

2. **Claims 1 – 2, 6 – 9, 11, 13 - 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aarras "2006/0264243" in view of Nishiyama "EP0588210".**

Re-Claim 1, Aarras teaches a portable computer comprising: (par. [0033]; lines 1 - 6)

a base (fig. 2; item 14);

a display component (item 12) rotatably coupled to the base (item 14) such that the display component (item 12) and the base (item 14) are rotatable with respect to one another about a longitudinal axis running along an interface between the display component (item 12) and the base (item 14), the display component (item 12) including a display screen (item 30); and (par. [0039]; lines 1 - 7)

Aarras teaches a sensor 46 to sense when the first and second sections are moved relative to each other **but fails to teach** a scroll wheel disposed at least partially within the base and rotatable about the longitudinal axis, the scroll wheel configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the display screen.

However, Nishiyama discloses a scroll wheel (scroll wheel is equivalent to selector fig. 3; item 8) disposed at least partially within the base and rotatable about the longitudinal axis, the scroll wheel (item 8) configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the display screen (fig. 1; item 7). (col. 5; lines 12 – 17)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Aarras into Nishiyama provided with a display section includes a rotary selector which turns to select various functions. (Nishiyama, Abstract)

Re-claim 2, the combination of Aarras and Nishiyama as a whole further teach where the scroll wheel (fig. 3; item 8 (selector)) is configured to permit the user to adjust a volume of sound produced by the portable computer. (Nishiyama, col. 5; lines 19 - 20)

Re-Claim 6, the combination of Aarras and Nishiyama as a whole further teach wherein the scroll wheel (fig. 3; item 8 (selector)) is configured to permit the user to select a mode of content for display by the portable computer. (Nishiyama, col. 6; lines 43 – 49)

Re-Claim 7, Aarras teaches a portable computer configurable between a plurality of display modes (figures 1 & 2) including a laptop mode (fig. 2) and an easel mode (fig. 1), the portable computer comprising: (par. [0033]; lines 1 - 6)

a base (fig. 2; item 14);

a display component (item 12) rotatably coupled to the base (item 14) and including a screen (item 30) which displays content; and (par. [0039]; lines 1 - 7)

Aarras teaches a sensor 46 to sense when the first and second sections are moved relative to each other **but fails to teach** a scroll wheel accessible in each of the plurality of display modes and configured to permit a user to manipulate at least one of operating parameters of the portable computer and the content displayed on the screen.

However, Nishiyama discloses a scroll wheel (fig. 3; item 8 (selector)) accessible in each of the plurality of display modes and configured to permit a user to manipulate at least one of operating parameters of the portable computer and the content displayed on the screen (fig. 1; item 7). (col. 5; lines 12 – 17)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Aarras into Nishiyama provided with a display section includes a rotary selector which turns to select various functions. (Nishiyama, Abstract)

Re-Claim 8, the combination of Aarras and Nishiyama as a whole further teach wherein the scroll wheel (fig. 3; item 8 (selector)) is disposed at leas partially about an axis of rotation of the display component relative to the base. (par. [0039]; lines 3 – 6)

Re-Claim 9, Aarras teaches wherein the axis of rotation runs along an interface between the display component (fig. 2; item 12) and the base (item 14). (par. [0058]; lines 9 - 10)

Re-Claim 11, is rejected as applied to claim 4 above because the scope and contents of the recited limitations are substantially the same.

Re-Claim 13, Aarras teaches a portable computer comprising: (par. [0033]; lines 1 - 6)

a base (fig. 2; item 14);

a display component (item 12) including a screen (item 30) configured to display content;

a hinge assembly (item 16) configured to rotatably couple the display component (item 12) to the base (item 14) and to permit rotation of the display component (item 12) about a longitudinal axis running along an interface between the display component (item 12) and the base (item 14); and (par. [0039]; lines 1 - 7)

Aarras teaches a sensor 46 to sense when the first and second sections are moved relative to each other **but fails to teach** a scroll wheel disposed at least partially about the longitudinal axis. **However, Nishiyama discloses** a scroll wheel (fig. 3; item 8 (selector)) disposed at least partially about the longitudinal axis. (see fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Aarras into Nishiyama provided with a display section includes a rotary selector which turns to select various functions. (Nishiyama, Abstract)

Re-Claim 14, the combination of Aarras and Nishiyama as a whole further teach wherein the scroll wheel (fig. 3; item 8 (selector)) is configured to permit a user to manipulate the content displayed on the screen. (Nishiyama, col. 5; lines 50 - 56)

Re-Claim 15, is rejected as applied to claim 2 above because the scope and contents of the recited limitations are substantially the same.

Re-Claim 16, the combination of Aarras and Nishiyama as a whole further teach wherein the scroll wheel (fig. 3; item 8 (selector)) is disposed at least partially within the hinge assembly. (fig. 1; item 5)

Re-Claim 17, is rejected as applied to claim 3 above because the scope and contents of the recited limitations are substantially the same.

3. **Claims 3 – 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aarras "2006/0264243" in view of Nishiyama "EP0588210" and further in view of Orsley "US 2007/0247446".**

Re-Claim 3, Aarras teaches a sensor 46 to sense when the first and second sections are moved relative to each other **but fails to teach** a first navigation button disposed on one of the base and the display component and configured to permit the user to manipulate selected content displayed on the screen.

However, Orsley discloses a first navigation button disposed on one of the base and the display component and configured to permit the user to manipulate selected content displayed on the screen. (par. [0037] – [0040])

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Aarras into Nishiyama and Orsley to provide a navigation button for activating a function of the electronic device.

Re-Claim 4, the combination of Aarras, Nishiyama and Orsley as a whole further teach wherein the screen is configured to display at least one of a plurality of modes of content; and wherein the navigation button is configured to permit the user to select for display one of the plurality of modes of content. (Orsley, par. [0040]; lines 1 – 8)

Re-Claim 5, the combination of Aarras, Nishiyama and Orsley as a whole further teach a second navigation button; wherein the first navigation button is disposed on a major surface of the base; and wherein the second navigation button is disposed on a minor surface of the base. (Orsley, par. [025]; lines 1 – 19)

Re-Claim 10, the combination of Aarras, Nishiyama and Orsley as a whole further teach first navigation button user-accessible in each of the laptop mode (Aarras, fig. 2) and the easel mode (fig. 1), and configured to permit the user to manipulate selected content displayed on the screen. (Orsley, par. [0037] – [0040])

4. **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aarras, Nishiyama in view of Orsley "US 2007/0247446" and further in view of Gettman "US 7,467,356".**

Re-Claim 12, Aarras teaches a sensor 46 to sense when the first and second sections are moved relative to each other **but fails to tech** a second navigation button that is not user-accessible when the portable computer is in the laptop mode.

However, Gettman discloses a second navigation button that is not user-accessible when the portable computer is in the laptop mode. (col. 30; lines 27 – 29)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Aarras, Nishiyama into Orsley and Gettman, when the browser is displaying the Web View, a plurality of browser navigation buttons 1304 are displayed in a toolbar region 1301 of screen display 1300. (Gettman, col. 30; lines 15 -17)

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sosina Abebe whose telephone number is (571) 270-7929. The examiner can normally be reached on Mon-Thurs from 9:00-5:00 If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Shalwala Bipin H. can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have

questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/S. A./

Examiner, Art Unit 2629

/Bipin Shalwala/

Supervisory Patent Examiner, Art Unit 2629

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/170,951	07/10/2008	Yves Behar	L2039-700111	2004

37462 7590 06/07/2012

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER	
ABEBE, SOSINA	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
06/07/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@LALaw.com
gengelson@LALaw.com

Office Action Summary	Application No.	Applicant(s)	
	12/170,951	BEHAR ET AL.	
	Examiner	Art Unit	
	SOSINA ABEBE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2012*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-8 and 10-24* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-8 and 10-24* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/18/2012*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 22, 2012 has been entered.

Response to Arguments

This is in response to applicant's communication filed on 22 March 2012, wherein: claims 1 – 8 and 10 - 21 are currently pending. Claims 1, 7, 8, 13, 18 and 21 have been amended. Claims 22 - 24 have been added. Claim 9 has been cancelled.

Applicant's arguments filed on March 22, 2012 with respect to claims 1 – 8 and 10 - 24 have been fully considered but are moot in view of the new ground(s) of rejection.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 7, 10 -11 and 22 - 24 of Application No. 12/170,951 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13, 26, 27, 29 and 34 of copending Application No. 12/170,939.

Claim 7 of Current Application 12/170,951	Claim 13 of Application 12/170,939
A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode, the portable computer comprising: a base including a keyboard; a single display component rotatably coupled to the base and including a screen which displays content;	A portable computer configurable between a plurality of modes including a laptop mode and an easel mode, the portable computer comprising: a single display component; a base including an integrated keyboard;
a hinge assembly disposed at least	a hinge assembly configured to rotatably couple the single display component to the

partially within the base and the display component that defines an axis of rotation about which both the base and the display component are rotatable to transition the portable computer between the laptop mode and the easel mode, wherein; the laptop mode is configured to display to a user on the single display component a first content mode having a first content display orientation with the single display component oriented towards the user and the keyboard oriented to receive input from the user;	base, wherein the hinge assembly is at least partially housed within the base and the single display component, and defines a longitudinal axis running along an interface between the single display component and the base; wherein the hinge assembly is configured to permit the rotation of the single display component and the base about the longitudinal axis to configure the portable computer between a laptop mode and an easel mode;
the easel mode is configured to display to a user on the single display component a second content mode having a second content display orientation with the single display component oriented towards the user and the keyboard oriented away from the user, wherein the	wherein in the easel mode the single display component is oriented facing the operator with the keyboard oriented away from the operator; and

first and second content display orientations are 180 degrees relative to each other; and	
a scroll wheel accessible in each of the plurality of display modes and configured to permit a user to manipulate at least one of operating parameters of the portable computer and the content displayed on the screen.	at least one integrated navigation hardware control configured to control features and manipulate content displaced on the portable computer, wherein at least one of the least one integrated navigation hardware control is accessible in each of the plurality of modes including when the keyboard is inaccessible or oriented away from the user.
Claim 10, a first navigation button user-accessible in each of the laptop mode and the easel mode, and configured to permit the user to manipulate selected content displayed on the screen. Claim 11, wherein the first navigation button is configured to permit the user to select for display one of the plurality of modes of content.	Claim 26, at least one integrated navigation hardware control, wherein at least one integrated navigation hardware control accessible in at least the laptop and easel modes, and wherein the integrated navigation hardware can be operated by a user to control features and manipulate content displayed on the portable computer, including any mode wherein the keyboard is inaccessible or

	oriented away from the user.
Claim 22, wherein the plurality of modes includes a frame mode in which the single display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard is directed towards the substantially horizontal surface.	Claim 27, wherein the plurality of modes includes a frame mode in which the single display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard is directed towards the substantially horizontal surface.
Claim 23, wherein the frame mode is configured to display to a user on the single display component the first content mode having the first content display orientation.	Claim 34, wherein the act of configuring the content orientation include an act of displaying the visual display in the first content orientation of the content for the frame mode.
Claim 24, wherein the portable computer is configured to prevent the portable computer from responding to keyboard input when the portable computer is in the fame mode.	Claim 29, a protection module configured to prevent keyboard operation when the portable computer is configured in the frame mode.

Copending Application No. 12/170,939 rejected with **Nishiyama "5,436,954".**Nobuchi and Aarras as a whole fail to teach Application No. 12/170,951 claims 1, 7 and 13, a scroll wheel disposed at least partially within the base and rotatable about the longitudinal axis, the scroll wheel configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the display screen.

However, Nishiyama discloses a scroll wheel (scroll wheel is equivalent to selector 8 in fig. 1) disposed at least partially within the base and rotatable about the longitudinal axis, the scroll wheel (8) configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the display screen. (col. 4; lines 21 – 26)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display orientation of Nobuchi and the easel mode taught in figures 8 & 19 of Aarras to further include the scroll wheel of Nishiyama to allow the user easily select or view information.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: