

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIGHTRICKS LTD.,
Petitioner,

v.

PLOTAGRAPH, INC. and SASCHA CONNELLY,
Patent Owners

IPR2023-00152
U.S. Patent No. 10,558,342

**PATENT OWNERS PLOTAGRAPH, INC. AND SASCHA
CONNELLY'S PRELIMINARY RESPONSE
UNDER 35 U.S.C. §§311-319 AND 37 CFR §42.100 ET SEQ.**

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Patent Owners Plotagraph, Inc. and Sascha Connelly (“Patent Owners”) hereby submit this Patent Owners’ Preliminary Response to the Petition filed by Lightricks Ltd. (“Petitioner”) on November 28, 2022 in case IPR2023-00152 for review of claims 1-20 of U.S. Patent No. 10,558,342 (the ‘342 Patent). The Board should not institute *inter partes* review here.

I. Introduction

Petitioner filed a Petition for *Inter Partes* Review of U.S. Patent No. 10,558,342 (“the ‘342 Patent”) Under 35 U.S.C. §312 on November 28, 2022 (IPR2023-00152, Paper No. 1 (“Petition”)). Petitioner has not met its burden to show unpatentability of any claim of the ‘342 Patent. None of the cited references teach or suggest at least the element of shifting a set of pixels by rendering and re-rendering the pixels “in a loop” as recited in every independent claim of the ‘342 Patent. Dr. Greenspun’s supporting Declaration for Petitioner described use of the Adobe After Effects CS6 and ImageMagick programs to perform processes which allegedly can move a pixel from a starting point to an ending point and then return it to the starting point. This movement is then repeated. However, such movement of a pixel is not shifting “in a loop” as required by the claims and as described in the ‘342 Patent specification. Because the pixels in Petitioners’ cited references

are not ever shifted “in a loop” the Petitioner’s challenge fails as to every single claim.

The alleged prior art fails to teach/suggest selecting or identifying a “set of pixels” in which there are multiple pixels along a length of a pathway, including at least one leading pixel which is looped back around at least one trailing pixel. Instead, as illustrated herein below, the prior art selects only a single pixel or a small set of pixels which are shifted in the manner of a single pixel from one point to another.

Additionally, the prior art fails to teach/suggest selecting/identifying any pixels which lie along the link or pathway which extends between the starting point and the ending point as required by the claims of the ‘342 patent. The pixel or pixels which are selected/identified by the asserted prior art are located at the starting point and pixels identified by the ‘342 claims that lie along the link or pathway between the starting and ending points are not identified or shifted by the prior art. The difference is the prior art shifts only one or a few pixels from a starting point to an ending point, versus the ‘342 patent claims identifying a set of pixels for shifting in a loop along a length of a pathway.

II. Overview of the ‘342 Patent

U.S. Patent No. 10,558,342 (“the ‘342 Patent”) claims priority to Provisional application No. 62/514,703 which was filed on June 2, 2017 as well as Provisional application No. 62/368,017 filed on July 28, 2016.

A. The Specification

The specifications of the Patents-in-Suit describe how a user can use the tools of paths (or digital links) with starting and ending points and masks to automate the shifting of pixels within a digital photo. In specification of the ‘342 Patent (entitled “Automatic Pixel Shifting within a Digital Image”) the example of a photo of a house with grass in front is used to illustrate.

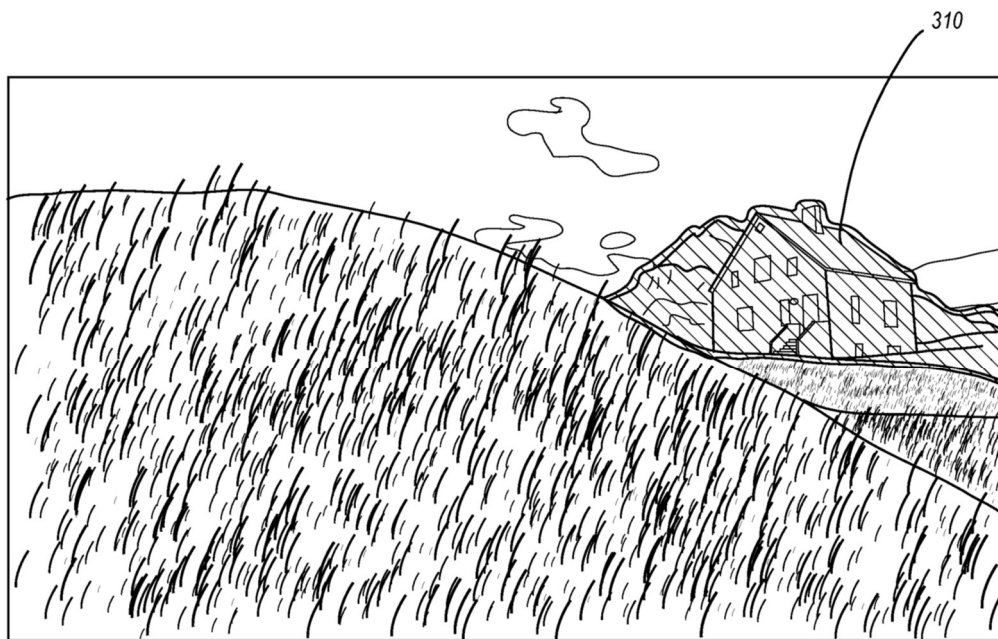


Fig. 3B

“FIG. 3B [of the ‘342 Patent] illustrates a mask 310 covering the house and the mountain behind the house, but excluding the sky and the grass in front of the house.” (‘342 Patent, col. 5, lines 15-17). “The mask prevents pixels covered by the mask from being shifted.” (Id., col. 5, lines 19-20). The mask may be created using several techniques. In one, “the software architecture 200 performs an edge detection method to identify edges that form boundaries around the [user] selected area” (Id., col. 5, lines 13-15). Alternatively, a user may use a manual mask painting option to create the mask. (Id., col. 5, lines 25-28). In another embodiment, “stabilizer points are useable for creating a fence around an area that should not be shifted.” (Id., col. 5, lines 31-33).

The patent specification then explains how digital links or paths having starting and ending points are used as tools which allow the computer to make the grass and sky in the photo appear to move.

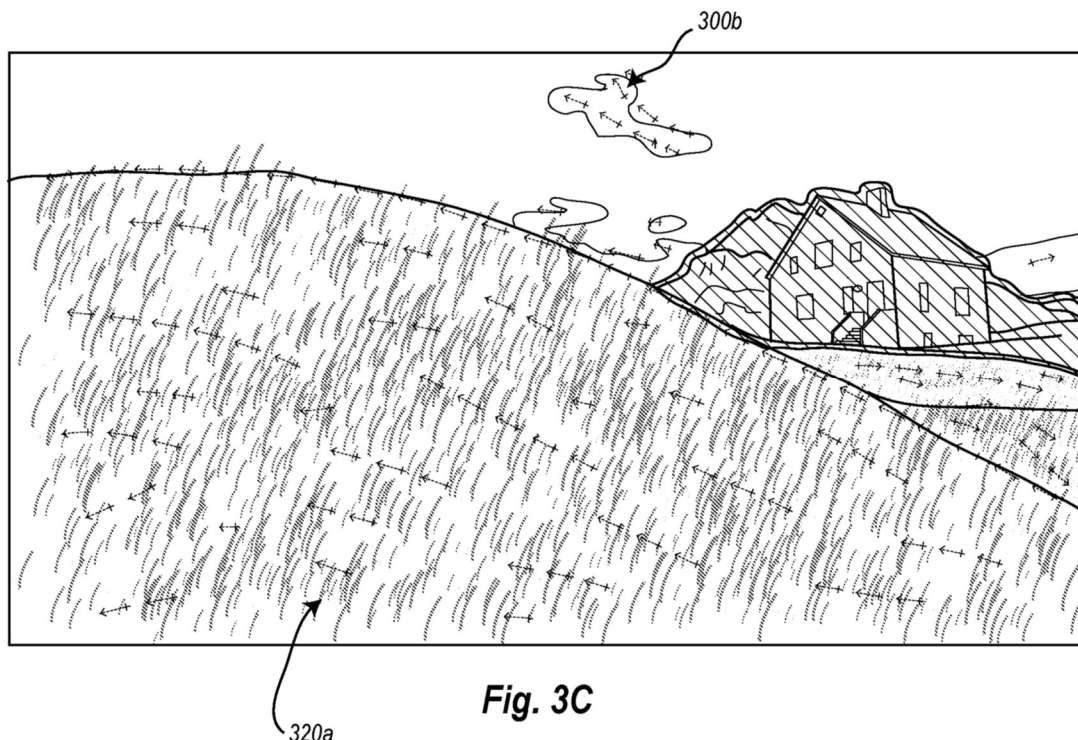


Fig. 3C

First, a starting point for shifting of pixels is selected. A user can select starting points manually and/or “direct the software architecture 200 to automatically add a portion of the points (Id., col. 5, lines 59-63). “For example, in FIG. 3C, various beginning points (also referred to herein as “starting points”) comprise the points nearest to the base of the grass and represented by crosses.” (Id., col. 6, lines 5-8). Second, an ending point is selected.

The ending point is received through a user selection of an ending portion of the user interface. . . . For example, in FIG. 3C various ending points are selected on the outer periphery of the grass and are represented by arrows.

(Id., col. 6, lines 13-19). Then, “. . . the software architecture creates a link between the starting point and first ending point.” (Id., col. 6, lines 21-22). The links in FIG. 3C are the lines which extend between the crosses and arrows in the picture. “A link comprises a direction extending from the first starting point to the first ending point” (Id., col. 6, lines 24-25).

The patent specifications then describe selecting sets of pixels and illustrate the pixel shifting process which is carried out by the computer using the digital link(s).

FIG. 5A depicts the pixels 500, 510, 520 in their original state within the digital image. Once the software architecture 200 begins shifting the set of pixels in the direction of the link (extending from the starting point to the ending point) the pixels 500, 510, 520 are moved. . . . FIG. 5C depicts pixels 500, 510, 520 another step along the shift. In FIG. 5D the pixels 500, 510, 520 are shown at yet another step in the shift, but in this step the pixels 500, 510, 520 are beginning to loop around.

(Id., col. 7, lines 27-67).

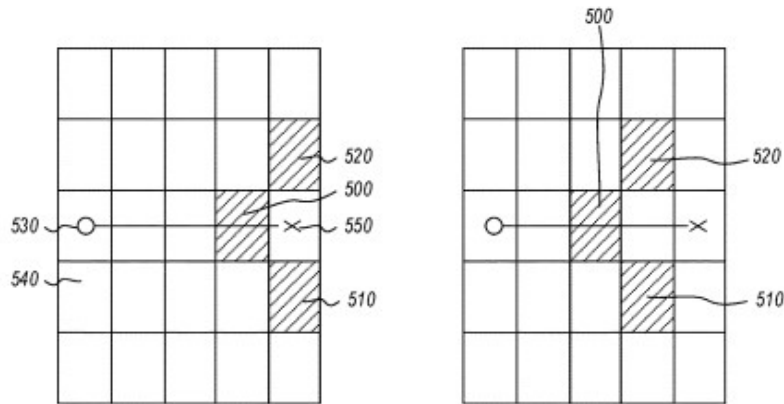


Fig. 5A

Fig. 5B

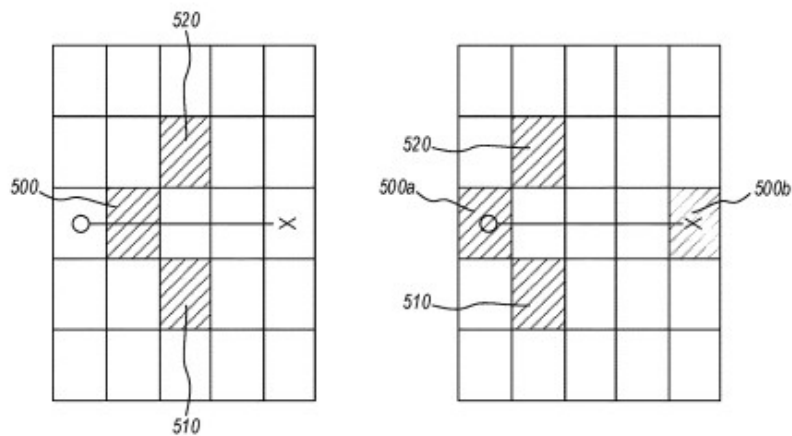


Fig. 5C

Fig. 5D

It can be seen from Figures 5A-5D that a set of three pixels, having been selected for shifting, is being shifted right to left. The specification is clear that the pixels wrap around and begin to appear at the starting point (550) as they are disappearing at the ending point (530).

For example, pixel 500a is at the left of the shift, while corresponding pixel 500b is reappearing at the right of the shift to begin the shifting loop. In various additional or alternative

embodiments, the set of pixels only begin to loop as pixels 500, 510, 520 leave the screen. For example, only pixel 500a reaches the end of the link (i.e., ending point 530), pixel 500a disappears on the next step. Upon disappearing, pixel 500b then reappears at the beginning of the link (i.e., starting point 550) to start the loop. Additionally, in at least one additional or alternative embodiment, the pixels 500, 510, 520 fade in and out at the beginning and ending of each loop. For example, upon reaching the end of the link, pixel 500a fades out of the image by slowly growing transparent, such that the disappearance of pixel 500a is not abrupt or jarring. Similarly, pixel 500b can fade in such that its appearance is not abrupt or jarring.

Id., col. 7, line 67-col. 8, line 16.

The specification also describes an alternative embodiment for shifting pixels in a loop.

For example, in at least one embodiment, the pixels immediately begin cycling as soon as the shifting begins. For example, instead of what is shown in FIGS. 5A-5D, as soon as pixel 500 is shifted to its new position depicted in FIG. 5B, pixel 500B would appear in the position depicted in FIG. 5D. As such, the pixels begin looping and blending into each other immediately.

Id., col. 8, lines 19-25.

B. Exemplary Claim

Claim 1 of the '342 Patent is reproduced here:

1. A computer system for automating a shifting of pixels within a digital image, comprising:

one or more processors; and

one or more computer-readable media having stored thereon executable instructions that when executed by the one or more processors configure the computer system to perform at least the following:

access, from memory, a digital image file, wherein the digital image file comprises information that corresponds to individual pixels within the digital image;

receive a first starting point through a user interface, wherein the first starting point is received through a user selection of a first beginning portion of the digital image;

receive a first ending point through the user interface, wherein the first ending point is received through a user selection of a first ending portion of the user interface;

create a first link between the first starting point and the first ending point, wherein the first link comprises:

a non-linear pathway extending between the first starting point and the first ending point; and

a first length extending along the non-linear pathway between the first starting point and the first ending point;

identify a first set of pixels that lie along the first link between the first starting point and the first ending point; and

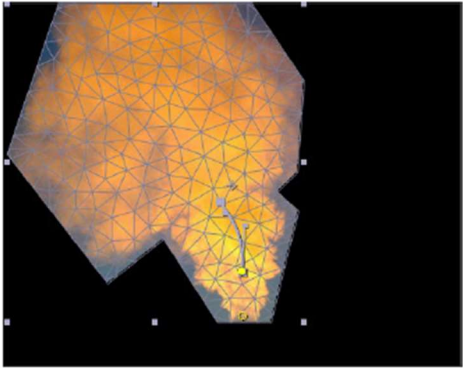
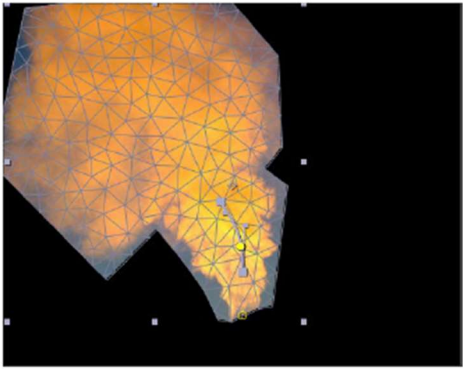
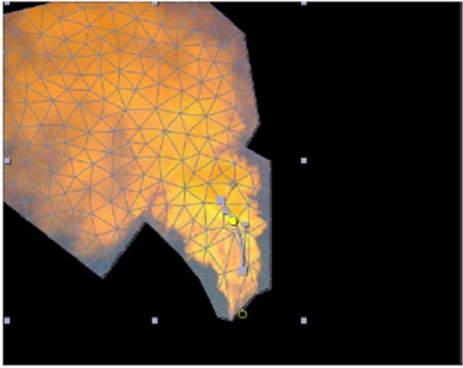
shift the first set of pixels along the first length of the non-linear pathway, wherein shifting the first set of pixels comprises rendering and re-rendering in a loop the first set of pixels being shifted.

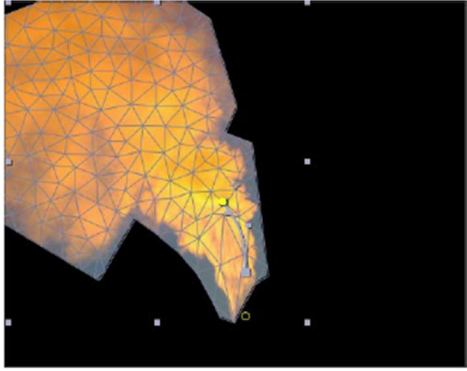
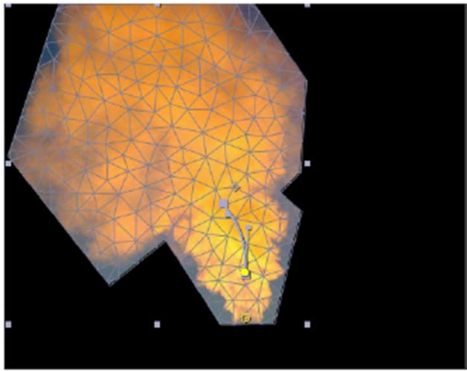
(‘342 Patent, claim 1).

III. The Cited Art

A. The AEM Reference

Ground 1 is the challenge to claims 1-20 over the “AEM” reference. “AEM” is how Petitioner refers to the User Manual for the Adobe After Effects CS6 software program (AECS6”). Petitioner relies upon the testimony of Dr. Greenspun to purportedly demonstrate the use of Adobe After Effects to shift a pixel “in a loop”. The Petition notes that: “[t]he following table includes a series of cropped screenshots of AECS6 showing the result of applying a “loopOut()” expression to the exemplary composition provided in Section VI.A.2.b.” Petition at 26. Patent Owners reproduce the first five of these cropped screenshots below for illustration:

Animation Time Point	Composition Frame
(0:00:00:00)	
(0:00:01:00)	
(0:00:02:00)	

Animation Time Point	Composition Frame
(0:00:02:23)	
(0:00:03:01)	

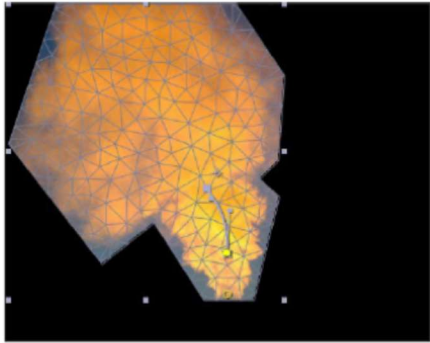
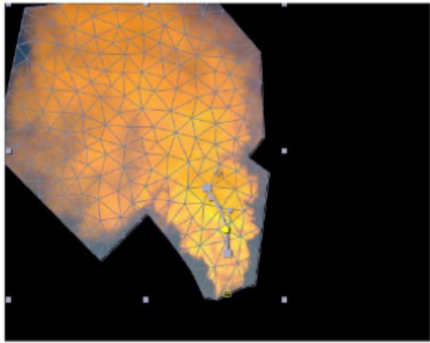
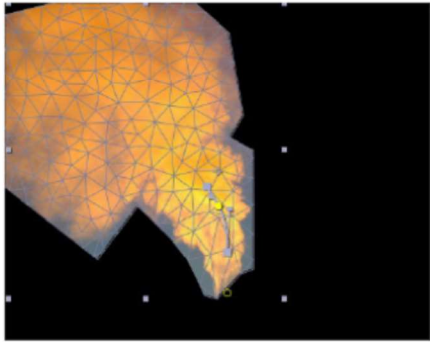
Petition at 27-28. What you are looking at is a small yellow dot (i.e., the “Deform pin”) which is at a starting point of a grey path at the beginning of a shift at Animation Time Point (00:00). The Deform pin is shifted to intermediate points along the path at Animation Time Points (01:00) and (02:00). At Animation Time Point (02:23) the Deform pin has reached the ending point of the grey path. At Animation Time Point (03:01) the Deform pin has been returned to its starting point as the keyframes are reset to the beginning (see Petition at 26).

Petitioner does discuss the movement of “multiple Deform pins in addition to the first” using the AEM reference (Petition at 39-44), but the

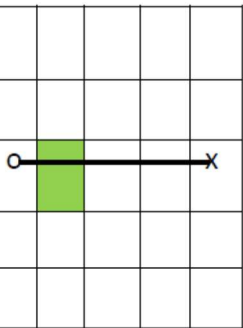
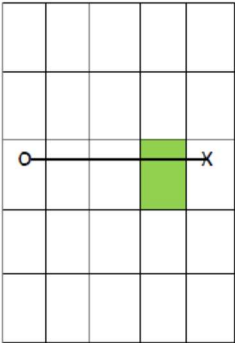
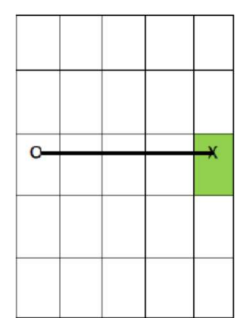
additional Deform pins are also apparently being moved from a starting point to an ending point and then, as keyframes are reset, back to their starting points. See Petition at 40 (“The user creates different ending keyframes and motion paths for these additional Deform pins in the same way as for the first Deform pin . . .”).

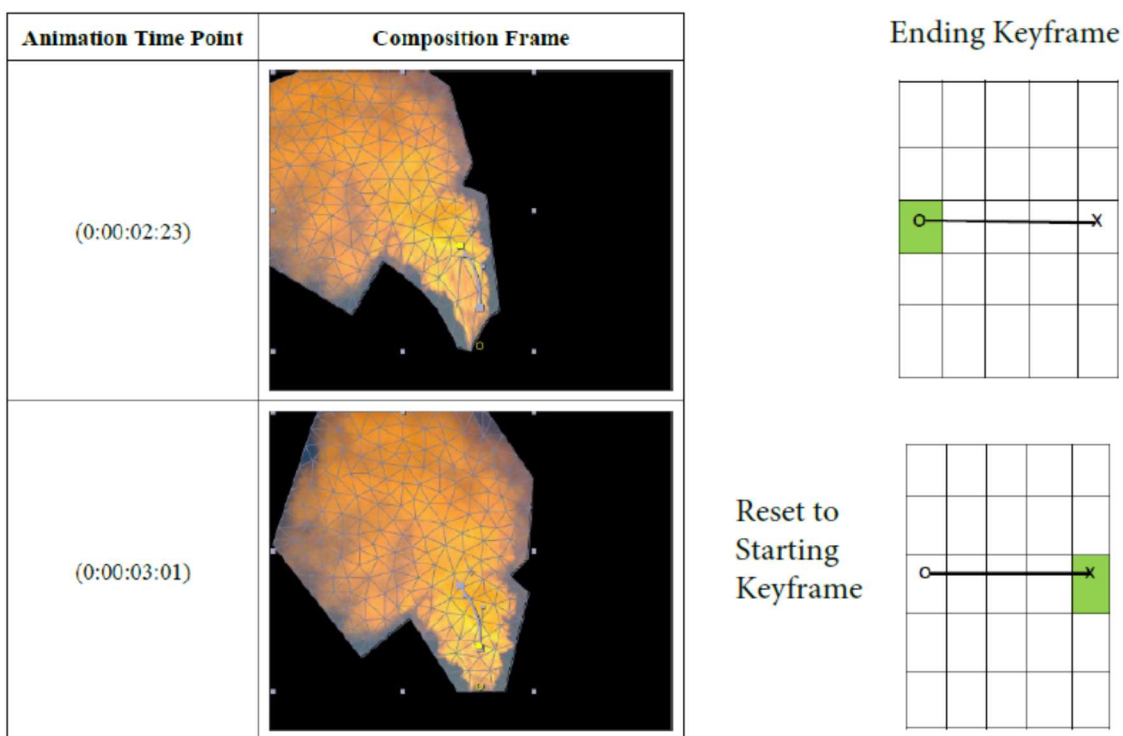
Patent Owners submit that movement of a Deform pin using the AEM reference could be modeled using the 5x5 grid featured in Figure 5 of the ‘342 Patent, and it would appear as follows with a Deform pin being represented as a single green pixel¹:

¹ Dr. Greenspun’s shifting of the Deform pin is indistinguishable from the shifting of a single pixel.

Animation Time Point	Composition Frame
(0:00:00:00)	
(0:00:01:00)	
(0:00:02:00)	

Starting Keyframe





Petitioner is moving a pixel from a starting point (represented by the “x”) to an ending point (represented by the “o”) and then returning it to the starting point.

B. The IMU Reference

Grounds 2 and 3 of the Petition allege that the instruction manual for ImageMagick Usage (Version 6)(i.e., “IMU”) “teaches how to incrementally apply IMV6’s effects to an image to produce a sequence of frames that, when played sequentially, result in an animation of the original image.” Petition at 51. Further, the Petition alleges that “. . . IMU teaches applying a ‘-loop’ operator to specify the ‘[n]umber of times the GIF animation is to cycle through the image sequence before stopping.” Petition at 53.

IMU, then, teaches precisely the same sequential process that AEM does. A number of frames are played sequentially which presumably show the movement of a pixel from a starting point to an ending point. Then the frames are replayed from the beginning. Petitioner provides no illustration for the movement of a pixel using IMU as it did with AEM. Therefore, Patent Owners submit that the 5x5 grid modeling of movement of a pixel using IMU would be the same as it would for AEM, as set forth above.

C. The Okabe Reference

The Petition cites Okabe as teaching an algorithm that is “able to generate a flow animation in the in the target image corresponding to the flow direction and speed specified by the user’s strokes, and permits ‘infinite repetition’ of such an animation.” Petition at 55. Like AEM and IMU, this is just a series of sequential frames, as illustrated by Okabe’s Figure 1:



Id. These sequential frames are animated by “infinite repetition.” The Petition does not point to any portion of Okabe as teaching shifting pixels in a loop as the ‘342 Patent claims recite.

D. The Li Reference

Ground 3 of the Petition contends that claims 2-3, 10-12, and 16-17 are obvious in view of IMU in combination with Okabe and Li. But Petitioner does not contend that Li teaches or suggests rendering and re-rendering pixels in a loop. The Petition cites Li as teaching “. . . that its ‘Lazy Snapping’ tool allows a user to easily perform ‘image cutout’ – separating and removing an image’s background, leaving only the foreground visible – by using a ‘novel image segmentation algorithm’ to detect a boundary between the foreground and background based on ‘a quick object marking step’ and ‘a simple boundary editing step’ performed by the user.” Petition at 81. Li has nothing to do with shifting pixels “in a loop”.

IV. Claim Construction

Patent Owners propose the construction of certain claim language below pursuant to the broadest reasonable interpretation (BRI) for the sole purpose of this *inter partes* proceeding. The scope of patent claims is determined giving claims their broadest reasonable construction consistent with the specification; the words of a claim are given their plain meaning unless the plain meaning is inconsistent with the patent specification as understood by a person of skill in the art at the time of the invention. “Even

under the broadest reasonable construction rubric, however, the board must always ‘consider the claims in light of the specification and teachings in the underlying patent.’” *In re: Power Integrations, Inc.*, 884 F.3d 1370, 1375 (Fed. Cir. 2018) (citing *In re CSB-Sys. Int’l, Inc.*, 832 F.3d 1335, 1341 (Fed. Cir. 2016)). The patent specification “is the single best guide to the meaning of a disputed term” in a claim. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005)(en banc).

Construction of “Set of Pixels”

Patent Owners propose that the term “set of pixels”, as in claim 1’s requirement to “identify a first set of pixels . . .”, means multiple pixels. The term “pixels” is plural which requires more than one. Further, Patent Owners submit that the set of pixels includes at least one pixel which leads, or is in front of, along the path of shifting, at least another pixel. This is implied by at least the shifting step of the claim, as will be discussed. This construction is also illustrated in Figure 5 showing a set of three pixels being shifted which includes a single leading pixel (500) and two trailing pixels (510, 520).

Construction of pixels that lie along a link/length of pathway between the starting point and the ending point

Independent claims 1, 7 and 15 each recite a requirement that the set of pixels include pixels which lie along the link/pathway which extends between the starting point and the ending point. The '342 Patent illustrates a selection of pixels (500, 510, 520) in which two of the pixels (510, 520) are at the starting point (550) and pixel 500 which lies along the link or pathway that extends between the starting point 550 and the ending point 530.

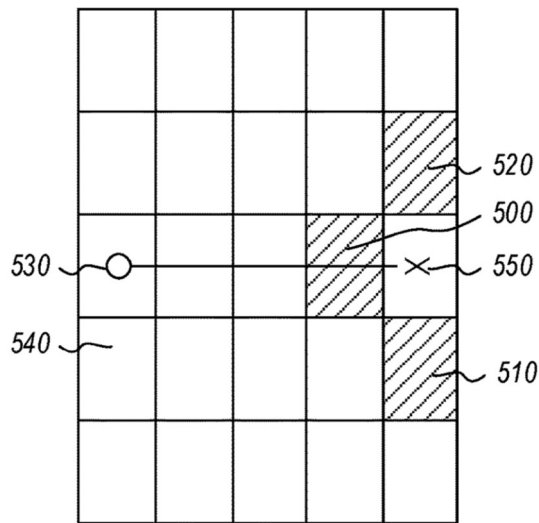


Fig. 5A

Notably, the leading pixel 500 is located ahead of the starting point and lies along the link which extends between the starting point 550 and ending point 530. Patent Owners submit that the selected/identified set of pixels must include at least one pixel which, as in the case of pixel 500, lies along the link/pathway that extends between the starting point and the ending point.

Construction of shifting a set of pixels “in a loop”

Patent Owners propose that the claim language shifting of a set of pixels by rendering and re-rendering “in a loop” be construed as meaning that a leading pixel in the selected set of pixels be rendered at the starting point of the shift and behind one or more trailing pixels which it previously was leading. The specification of the ‘342 Patent supports Patent Owners’ construction of this claim language.

1. The Primary Embodiment Describes a Leading Pixel Looping Around Behind Trailing Pixels

The ‘342 Patent specification clearly explains that, in the primary illustrated embodiment, rendering and re-rendering pixels in a loop means that, during shifting, pixels loop around and begin to appear at the starting point (550) as they are disappearing at the ending point (530). In the illustrated embodiment:

For example, pixel 500a is at the left of the shift, while corresponding pixel 500b is reappearing at the right of the shift to begin the shifting loop. In various additional or alternative embodiments, the set of pixels only begins to loop as pixels 500, 510, 520 leave the screen. For example, once pixel 500a reaches the end of the link (i.e., ending point 530), pixel 500a disappears

on the next step. Upon disappearing, pixel 500b then reappears at the beginning of the link (i.e., starting point 550) to start the loop.

‘342 Patent at col. 7, line 67-col. 8, line 9. The leading pixel in the shift “loops” around so that it follows the trailing pixels. This is illustrated by Fig. 5D (annotated below) wherein the leading pixel (500) is appearing at 500b behind the trailing pixels (510, 520). Specifically, this happens:

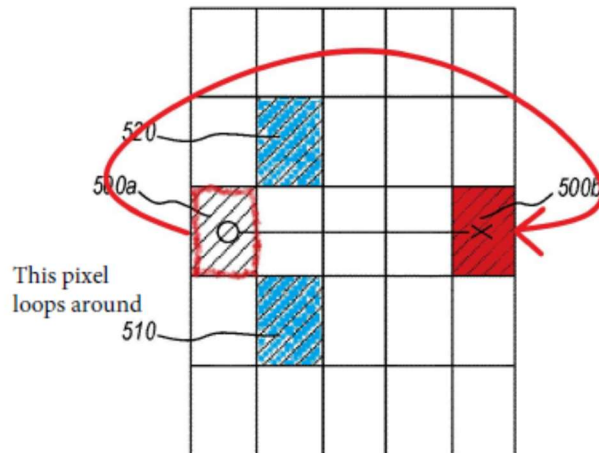


Fig. 5D

This is the “loop around” which characterizes shifting a set of pixels “in a loop.” The language of the description supports this interpretation. “In Fig. 5D the pixels 500, 510, 520 are shown at yet another step along the shift, but in this step the pixels 500, 510, 520 are beginning to loop around.” ‘342 Patent, col. 7, lines 65-67 (emphasis added). In other words, leading pixel

500 does a “loop around” in the direction opposite of the direction of shift (shift is right-to-left) to end up behind (to the right of) the trailing pixels 510, 520.

2. The Alternate Embodiment Describes a Leading Pixel Looping Around Behind Trailing Pixels

In addition to what is shown in Figs. 5A-5D, the specification describes an alternative embodiment in which the leading pixel (500) also does a “loop around” to appear behind the trailing pixels (510, 520) as soon as the shift begins:

For example, in at least one embodiment, the pixels immediately begin cycling as soon as the shifting begins. For example, instead of what is shown in FIGS. 5A-5D, as soon as pixel 500 shifted to its new position depicted in FIG. 5B, pixel 500B would appear in the position depicted in FIG. 5D. As such, the pixels begin looping and blending into each other immediately.

‘342 Patent, col. 8, lines 19-25. If illustrated, this embodiment of the loop around would appear as follows:

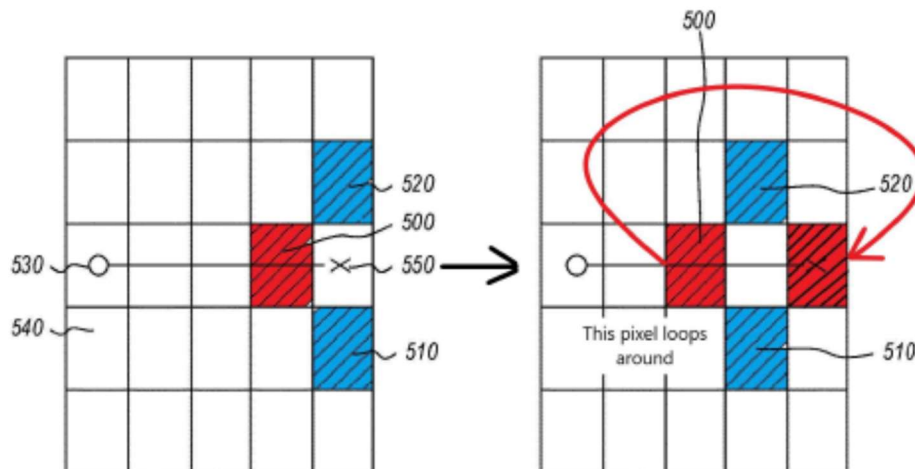
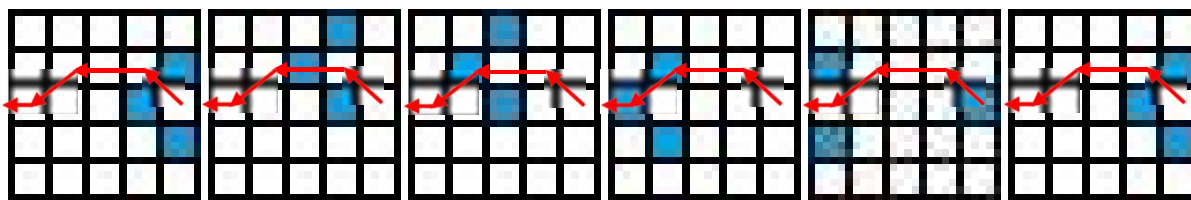


Fig. 5A

Fig. 5B

3. The Petitioner Has Previously Described Leading Pixels Looping Around Behind Trailing Pixels as Shifting in a Loop

The Petition does not explicitly propose any claim construction at all for the rendering and re-rendering “in a loop” language. But Petitioner has previously interpreted this language in the same way as Patent Owners do. Petitioner presented the following illustration of rendering and re-rendering pixels “in a loop” at the district court, noting that this illustration “tracks Fig. 5, except the path now follows a curve as the pixels shift from left to right – only to re-appear in loop fashion at their starting point . . .” Exhibit EX2001 at 7 (emphasis added). Defendant Lightricks Ltd.’s Motion to Dismiss Under Federal Rule of Civil Procedure 12(b)(6), filed 4/7/22 in *Plotagraph, Inc. v. Lightricks Ltd.*, Civil Action No. 4:21-cv-03873 (S.D. Tex. 2022).



The next to last frame (from right) shows the leading pixel having done a loop around to appear behind (to the right of) the trailing pixels. In the final frame, the formerly-trailing two pixels have also now looped around to appear behind the leading pixel once again.

Patent Owners submit that because all of the described embodiments in the specification have a leading pixel being looped around and rendered behind trailing pixels, and because the Petitioner also describes a leading pixel being looped around and rendered behind trailing pixels, this is the correct construction for a set of pixels being rendered and re-rendered “in a loop.” Conversely, if no pixel does the “loop around,” as taught by the specification, a set of pixels has not been shifted “in a loop.”

4. The Petitioner’s Implicit Proposed Construction for Shifting “in a Loop” is Clearly Incorrect

As mentioned previously, the Petition does not explicitly set forth any proposed construction for the shifting “in a loop” claim term. But Petitioner apparently is contending here that shifting a set of pixels in a loop means that a single pixel is simply moved from a starting point to an ending point and

then returned to the starting point. This is apparent from, for example, Petitioner’s discussion of the AEM reference’s teaching use of the Adobe After Effects program to shift a Deform pin:

Specifically, by applying a default “loopOut()” expression to a Deform pin, the Deform pin’s position will be reset to the starting keyframe upon reaching the ending keyframe during keyframe interpolation, and the interpolation will be looped and repeated then and thereafter until otherwise specified by the user—“rendering and re-rendering in a loop the first set of pixels being shifted.”

Petition at 26.

The problem with the Petitioner’s apparent construction of the term “in a loop” is that it is not supported at all by the specification. If Petitioner’s proposed construction for shifting pixels “in a loop” were reasonable, or even possible, Petitioner could point to the specification to show where it is described. But, in fact, the specification fails to show any pixel being moved from the starting point to the ending point and then returning to the starting point. In Figures 5A-5D none of the pixels 500, 510, 520 are moved from the starting point 550 to the ending point 530 and then returned to the starting point 550.

First, consider the case of the trailing pixels 510, 520 which begin in Fig. 5A at the starting point 550 and which are highlighted here in blue:

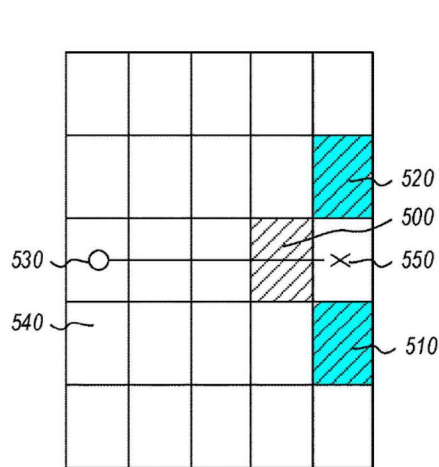


Fig. 5A

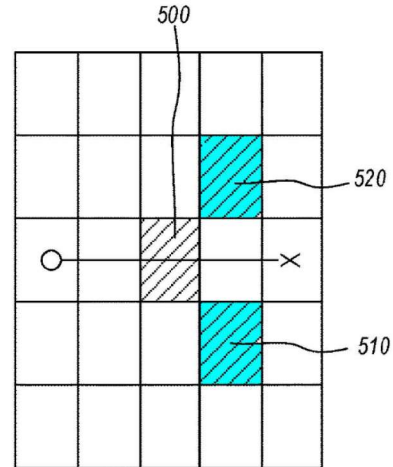


Fig. 5B

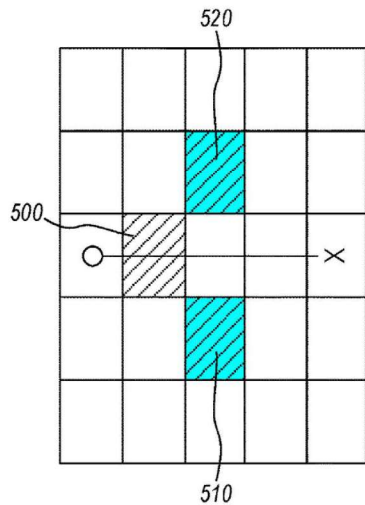


Fig. 5C

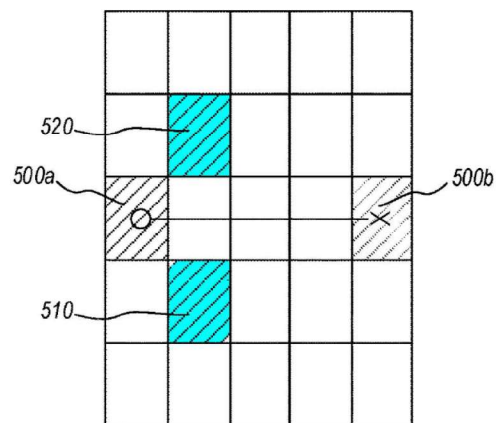


Fig. 5D

In the illustration of shifting in a loop, these pixels never return to the starting point 550 where they began. In fact, they never even reach the ending point 530. So the movement of these pixels does not support Petitioner's implicit interpretation of shifting "in a loop."

Next, consider the case of the leading pixel (500) which is highlighted in red below:

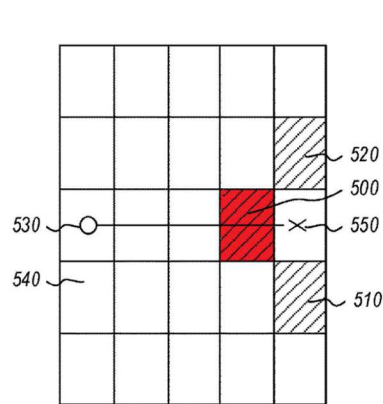


Fig. 5A

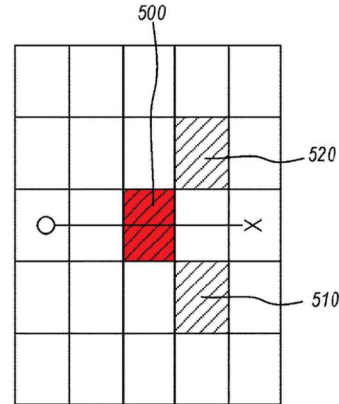


Fig. 5B

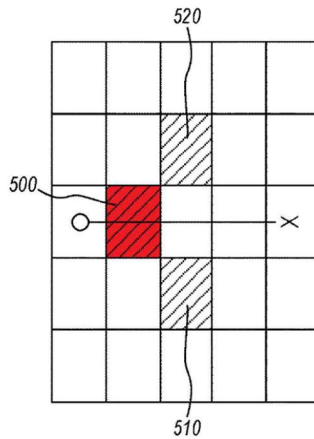


Fig. 5C

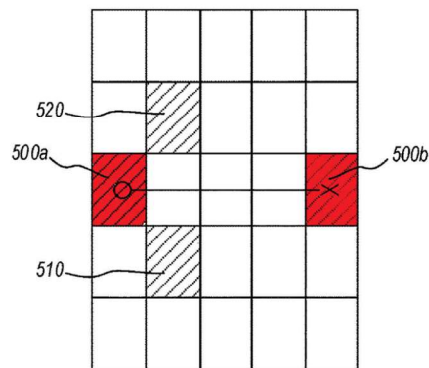


Fig. 5D

In Figure 5A (the start of the shift), pixel 500 is located one space ahead of (to the left of) the starting point 550. In Figure 5D (ending of the shift), pixel 500 has been rendered at the starting point 550, but that is one space behind (to the right of) where it started out. Pixel 500 does not return to the spot

where it started. Therefore, the movement of pixel 500 does not support Petitioner's implicit construction for shifting "in a loop" either. If Petitioner's implied construction of "in a loop" were followed, the pixel 500 would reappear where it started in Fig. 5A. But instead, it appears one space to the right of where it began, which is only possible because the pixel 500 is looped around.

Petitioner's implicit construction of the term "in a loop" is incorrect, unreasonable, and impossible because it is not supported by the specification. Patent Owners' proposed claim construction is the only construction that is supported by the specification and the only construction that is reasonable.

V. LEGAL STANDARDS

The Petitioner bears the initial burden of demonstrating a reasonable likelihood that at least one of the challenged claims is unpatentable. "[P]etitioner has the burden from the onset to show with particularity why the patent is challenges is unpatentable." *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden never shifts to the Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Petitioner has the burden of proving that the prior art it relies upon shows every element of the challenged claims. "[A] prior art reference must provide every element of the claimed invention arranged as in

the claims in order to anticipate.” *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1069 (Fed. Cir. 2017). Also, if a single element of a claim is absent from the prior art, the claim cannot be considered obvious. *See CFMT, Inc. v. YieldUp Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003)(“Obviousness requires a suggestion of all limitations in a claim.”).

VI. PETITIONER CANNOT SUPPORT ITS BURDEN OF PROVING UNPATENTABILITY OF ANY PATENT CLAIM

The references asserted by Petitioner do not teach or suggest all the elements of the independent claims of the ‘342 Patent. Petitioner does not select or identify a set of pixels which includes multiple pixels. Petitioner also does not select or identify a “set of pixels” which includes one or more pixels that lie along the first link or pathway extending between the starting point and the ending point or extending away from the starting point, as all of the claims require. Also, each of the independent claims (1, 7, 15), and thus all of the claims, recite rendering and re-rendering “in a loop” a selected set of pixels. At least this element is entirely missing from every cited reference. None of the prior art teaches or suggests the loop around.

AEM cannot anticipate or make obvious the subject matter of any claim of the '342 Patent because it fails to teach or suggest at least the following elements of the independent claims:

For claim 1, “identify a first set of pixels that lie along the first link between the first starting point and the first ending point;

Also for claim 1, “shift the first set of pixels along the first length of the non-linear pathway, wherein shifting the first set of pixels comprises rendering and re-rendering in a loop the first set of pixels being shifted”.

For claim 7, “selecting a first set of pixels extending along a length of the non-linear pathway and away from the first starting point”.

Also for claim 7, “shifting the first set of pixels along the non-linear pathway, wherein shifting the first set of pixels comprises rendering and re-rendering in a loop the first set of pixels being shifted”.

For claim 15, “identifying a first set of pixels that lie along the first length of the non-linear pathway between the first starting point and the first ending point;

Also for claim 15, “shifting the first set of pixels along the first length of the non-linear pathway, wherein shifting the first set of pixels comprises rendering and re-rendering in a loop the first set of pixels being shifted”.

None of the other references teach or suggest these elements either.

1. The prior art does not teach or suggest the step of identifying or selecting a set of pixels which are along a length of the pathway between the starting point and ending point

The AEM Reference, which is the only reference which Petitioner relies upon to illustrate these claim features, does not teach or suggest identifying or selecting a “set of pixels” that lie along the first link between the first starting point and the first ending point, as claim 1 recites, or which lie along the first length of the pathway between the first starting point and first ending point, as claims 7 and 15 recite.

The ‘342 Patent illustrates a selection of pixels (500, 510, 520) in which two of the pixels (510, 520) are at the starting point (550) and pixel 500 which lies along the link or pathway that extends between the starting point 550 and the ending point 530.

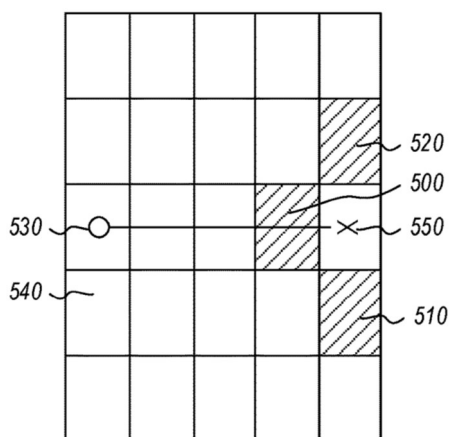
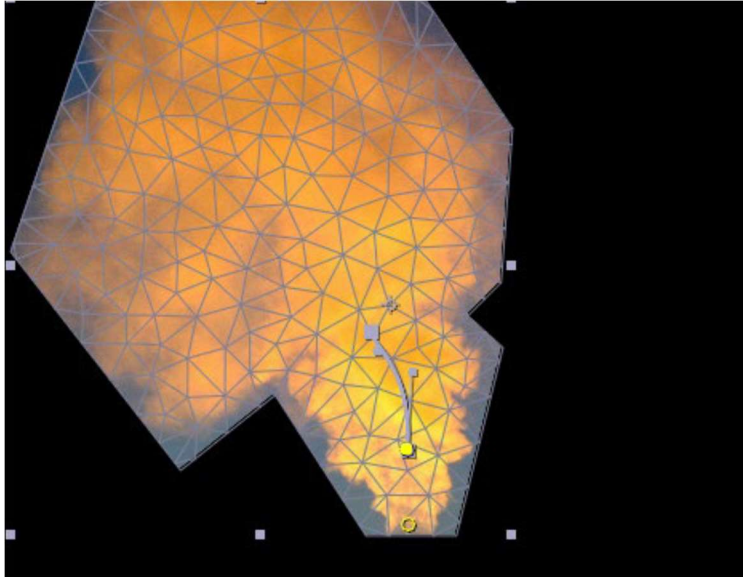


Fig. 5A

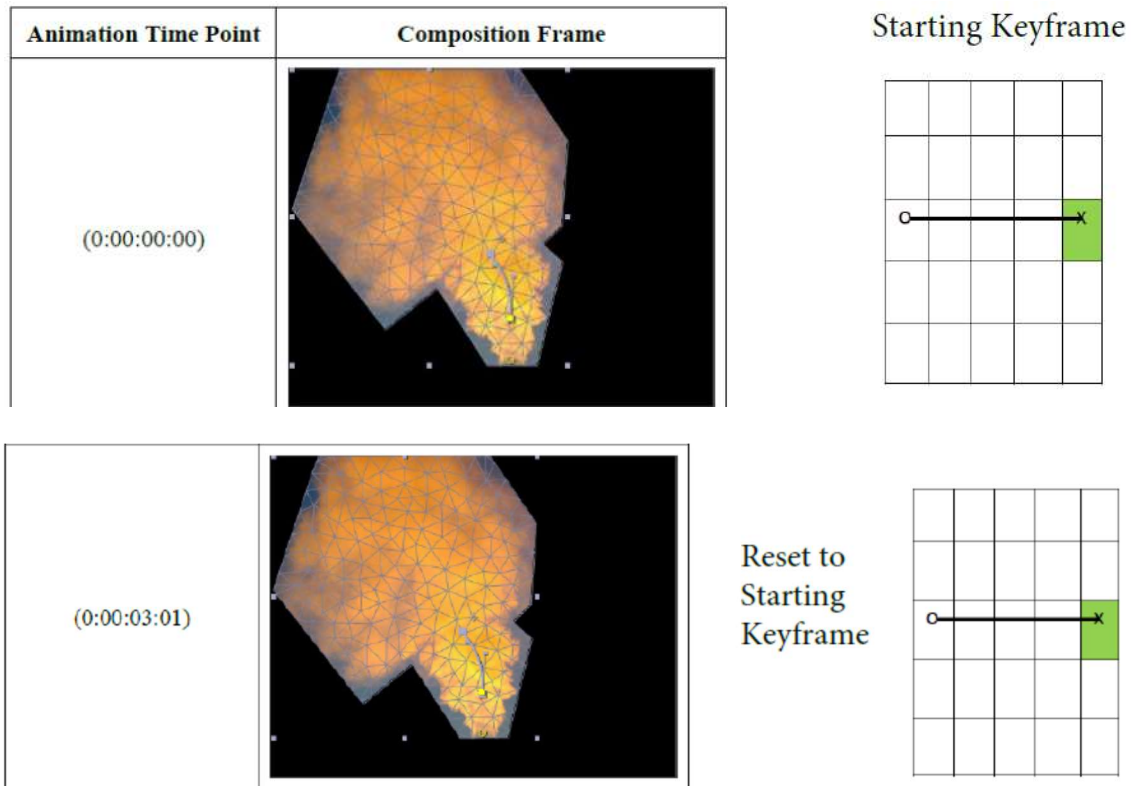
Petitioner does not select any pixels which lie along the link/pathway between the starting point and the ending point. Petitioner only selects a Deform pin.



Petition at 27. This is essentially a single pixel which is located at the starting point of the shift in the same manner that pixels 510, 520 are in Figure 5. There are no pixels which, as the claims require, extend along a length of the pathway and away from the first starting point. The Deform pin is merely the pixel which is at the first starting point. Even if the Deform pin were composed of more than just a single pixel, it is shifted in the same manner as a single pixel would be: from the starting point to the ending point and then reset to the starting point.

2. The prior art does not teach or suggest the step of shifting a set of pixels by rendering and re-rendering them “in a loop”

AEM does not teach or suggest shifting of any pixels by rendering and re-rendering in a loop because no pixel ever loops around any other pixels during shifting. Merely returning the Deform pin back to its starting point is not shifting it “in a loop”. Consider where the Deform pin starts and where it finishes:



The Deform pin starts and ends up in exactly the same position. But now consider where the leading pixel 500 starts (Fig. 5A) and where it ends up (Fig. 5D) after being shifted “in a loop” per the ‘342 Patent:

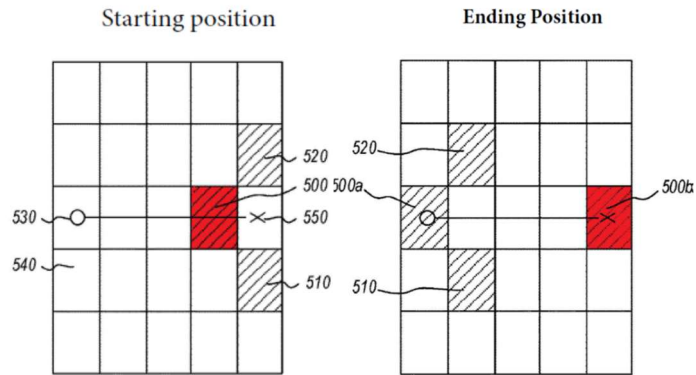


Fig. 5A

Fig. 5D

Do you see that? The pixel ends up one space behind (i.e., to the right of) where it started out. Also consider the starting and ending positions for the leading pixel 500 in the alternative embodiment described in the ‘342 Patent:

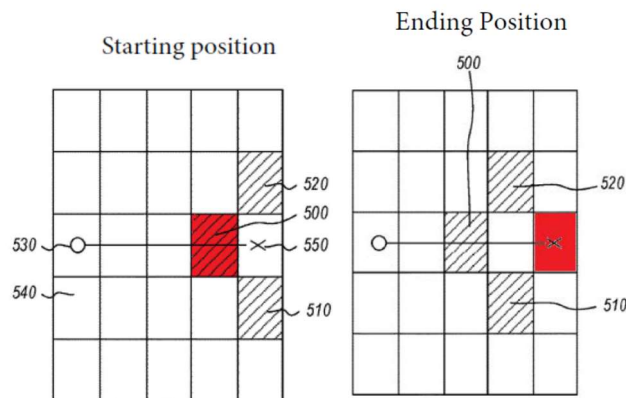


Fig. 5A

Fig. 5B

They are the same as for the first embodiment. The pixel being shifted in a loop ends up behind (to the right of) where it started out. That is why merely returning a pixel to its starting point isn’t shifting it in a loop. The pixel has

to get looped around to wind up behind where it started in order to be shifted in a loop per the '342 Patent.

CONCLUSION

The Petition fails because the cited art fails to teach or suggest a number of elements which are required by each of the challenged claims. First, a “set of pixels” having multiple pixels is not selected. The Deform pin selected using the Adobe After Effects program is essentially a single point or pixel. There are no selected or identified pixels in the set of pixels which lie ahead of it along the link or pathway which extends between the starting and ending points. There are no leading pixels or trailing pixels selected. Also, no set of pixels is being shifted “in a loop” within the meaning of the patent’s claims because no leading pixels loop around trailing pixels. This looping around of pixels is taught in multiple described embodiments for shifting “in a loop” within the '342 Patent. But Petitioner fails to show the prior art doing that.

For the reasons given in this Response, Patent Owners respectfully submit that Petitioner has not carried its burden of proving the unpatentability of any of the claims 1-20 of the '342 Patent. The Board should issue a Final Written Decision upholding the patentability of each of these claims.

Dated this 22nd day of March, 2023.

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e) the undersigned certifies that on March 22, 2023, the foregoing PATENT OWNERS PLOTAGRAPH, INC. AND SASCHA CONNELLY'S RESPONSE UNDER 35 U.S.C. §§311-319 AND 37 C.F.R. §42.100 ET SEQ. was served via electronic mail upon the following counsel of record for the Petitioner:

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CERTIFICATE OF WORD COUNT

The foregoing PATENT OWNERS PLOTAGRAPH, INC. AND SASCHA CONNELLY'S RESPONSE PURSUANT TO 37 C.F.R. §42.120 complies with the type-volume limitations of 37 C.F.R. §42.24(b)(2). Excluding the items listed in 37 C.F.R. 42.24(a)(1) as not included in the word count, and using the word count of the word-processing system used to prepare the paper (Microsoft Word), the Response contains 5426 words.

/s/ Shawn Hunter
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