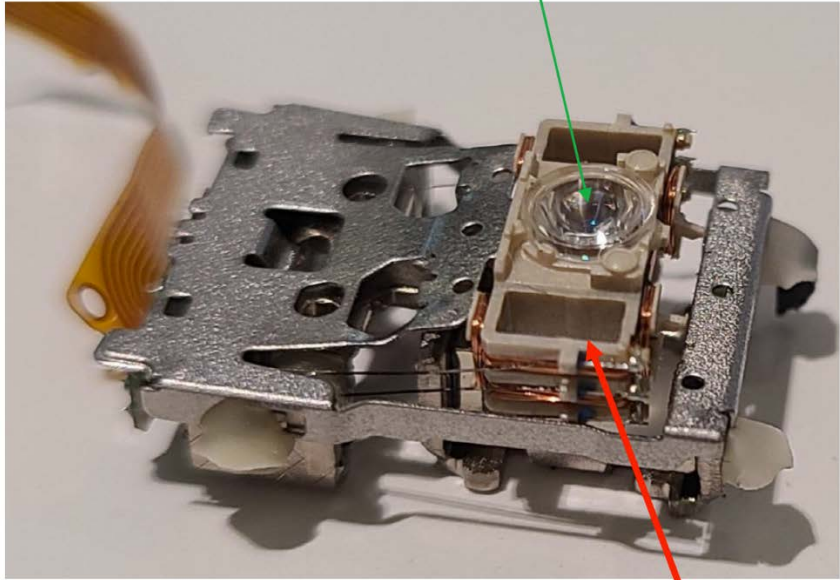
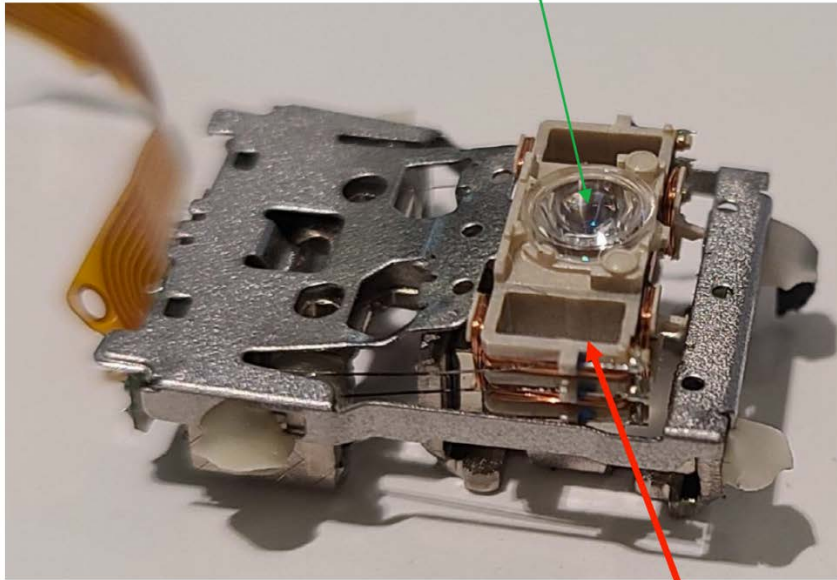


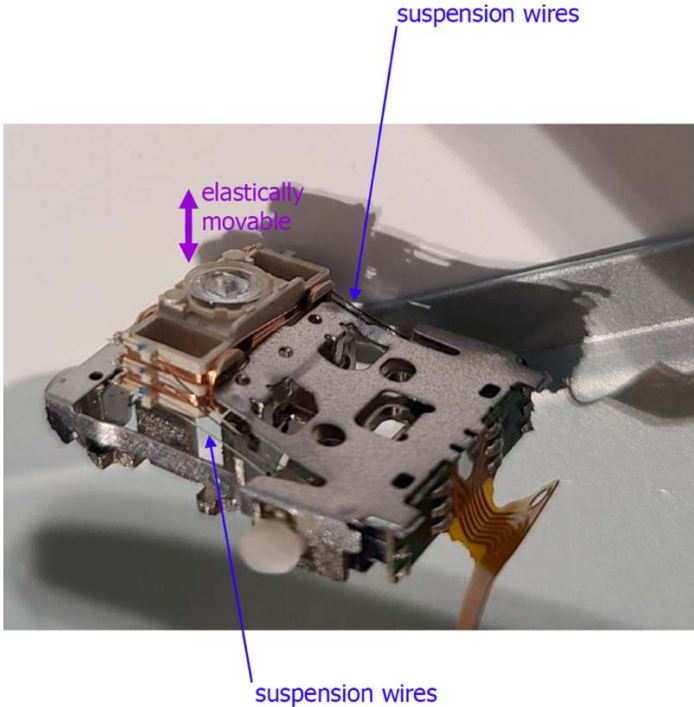
Exhibit 1
U.S. Patent No. 7,266,055
v.
Microsoft XBOX One, BOX One S, XBOX One X, XBOX Series X
(“Exemplary Product”)

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
Claim 1	
1.[pre] An optical pickup actuator for use with an objective lens on a base, comprising:	The Exemplary Product is an optical pickup actuator for use with an objective lens on a base. For example, Microsoft XBOX One, XBOX One S, XBOX One X, and XBOX Series X all include optical drives that utilize an optical pickup actuator for use with an objective lens on a base.¹ Below is an exemplary image of such a device:

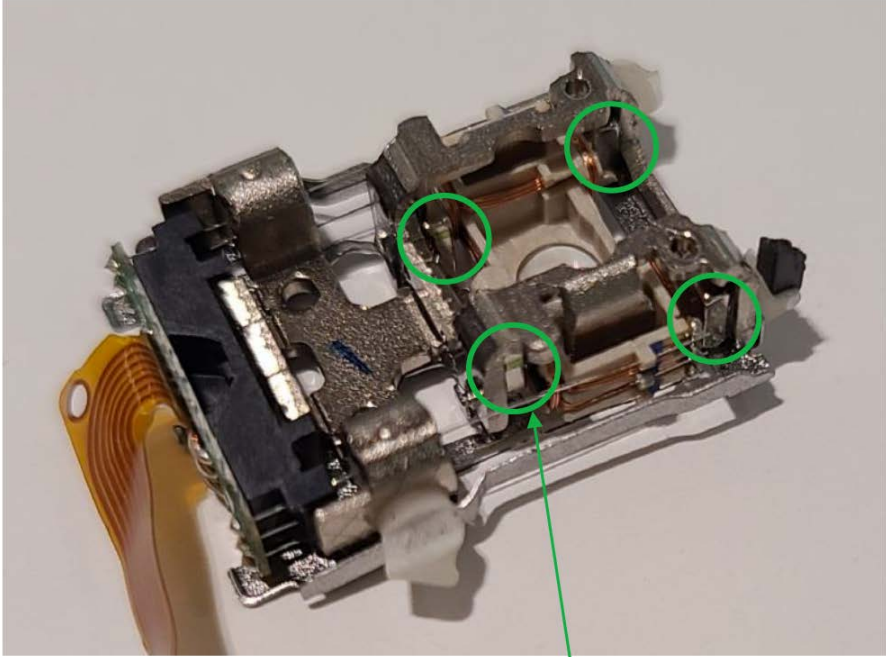
¹ The XBOX One uses a module with a model number of DG-6M1S. XBOX One S, XBOX One X, and XBOX Series X use a module with a model number of DG-5M5S. On information and belief, both versions of the module infringe for at least similar reasons.

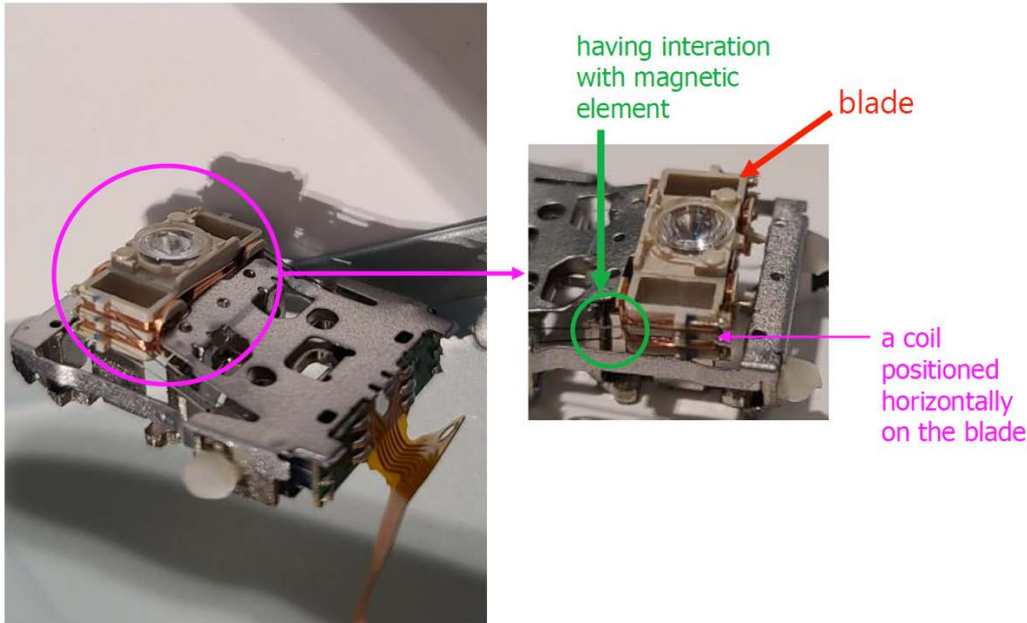
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	 objective lens blade Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[a] a blade holding the objective lens;	The Exemplary Product includes a blade holding the objective lens.

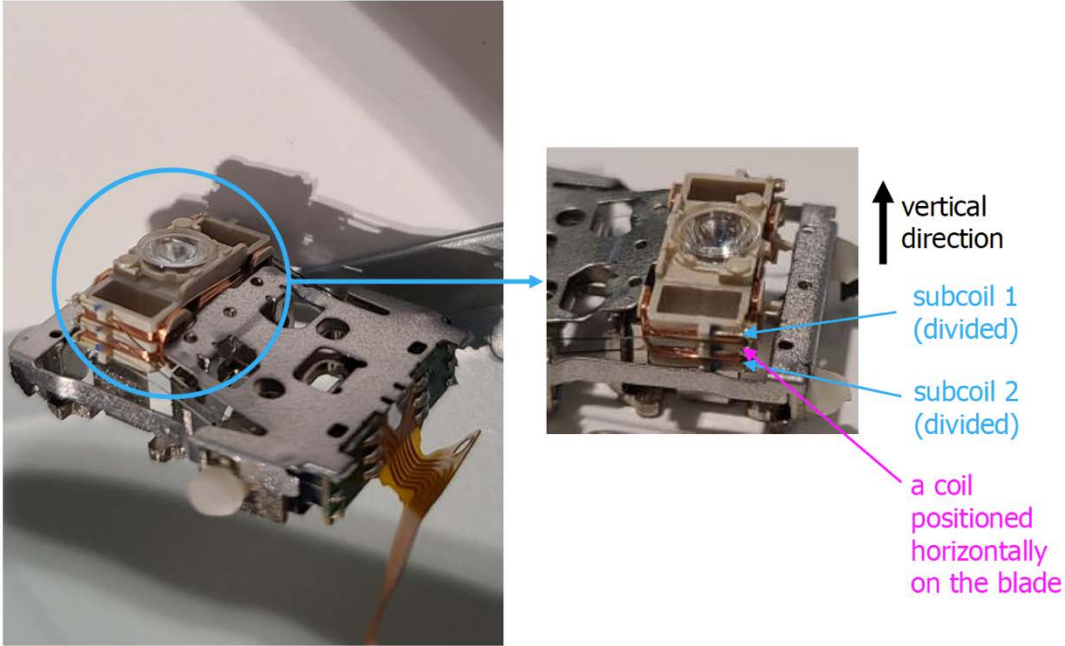
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	For example, these features are exemplified on the image below: objective lens  blade To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result.

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[b] a plurality of suspension wires supporting the blade on the base so that the blade is elastically movable;	The Exemplary Product includes a plurality of suspension wires supporting the blade on the base so that the blade is elastically movable. For example, these features are exemplified in the image below:  The image shows a close-up of a mechanical component, possibly a keyboard switch. A central blade is supported by several thin wires. A purple double-headed arrow points to the blade with the text 'elastically movable'. Two blue arrows point to the suspension wires with the text 'suspension wires'.

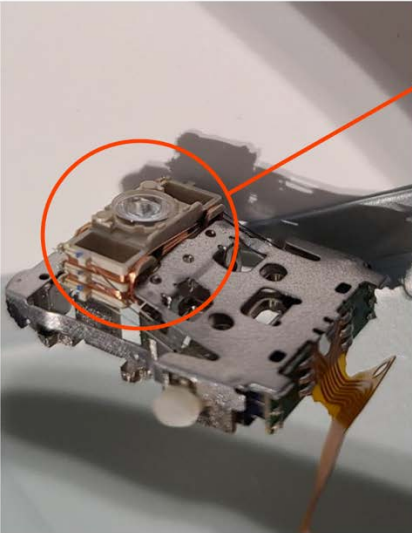
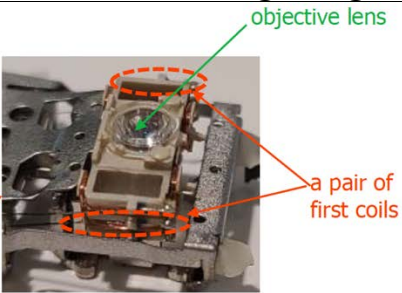
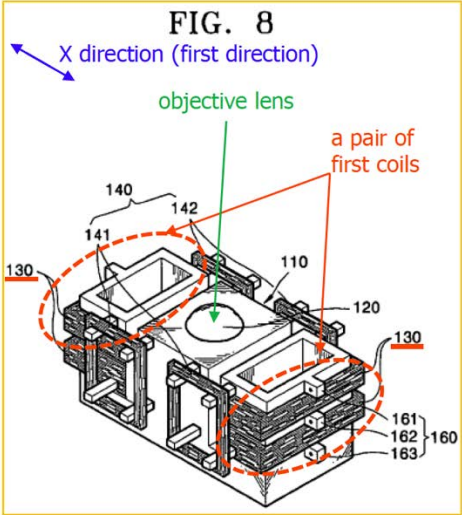
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[c] a magnetic element positioned on the base; and	The Exemplary Product includes a magnetic element positioned on the base. For example, these features are exemplified below:

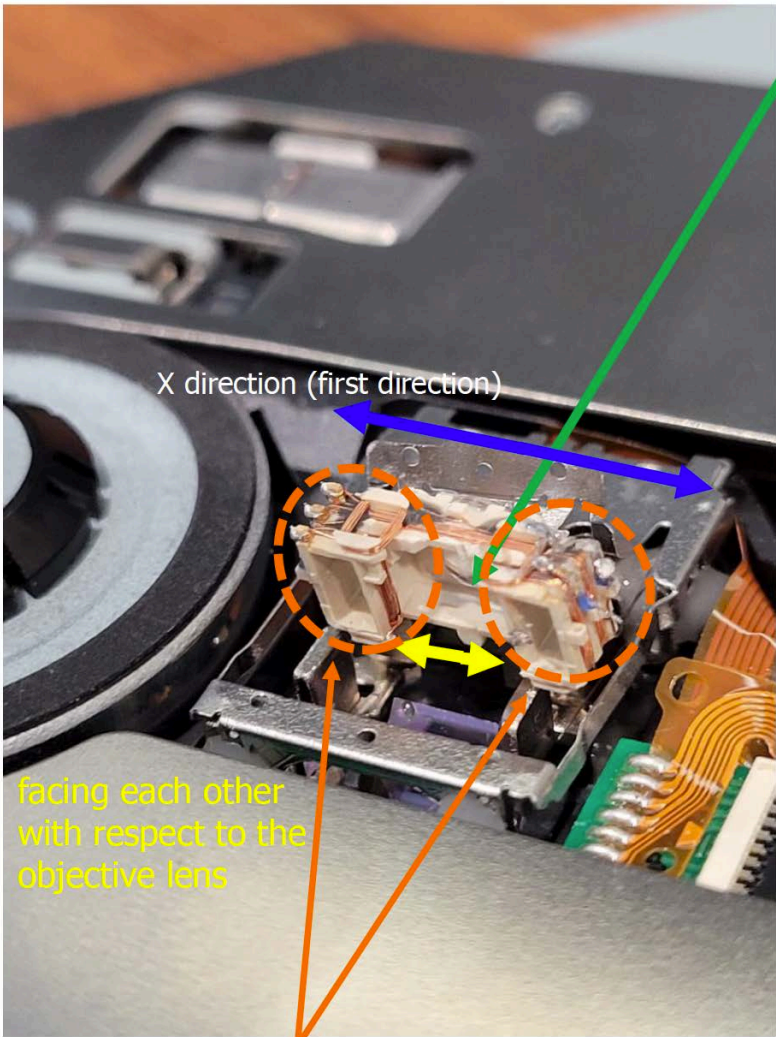
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	 magnetic element To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
[d] a coil positioned horizontally on the blade to generate an electromagnetic force in a focusing and/or tilting direction through an interaction with the magnetic element,	The Exemplary Product includes a coil positioned horizontally on the blade to generate an electromagnetic force in a focusing and/or tilting direction through an interaction with the magnetic element. For example, these features are exemplified on the image below:  To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result.

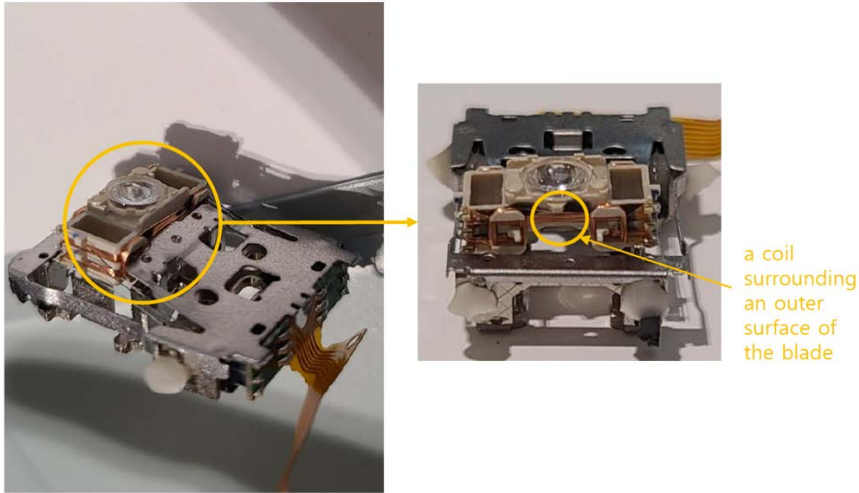
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[e] wherein the coil is divided into a plurality of subcoils, where each subcoil is separated from an adjacent subcoil in a vertical direction, and	The Exemplary Product includes a coil that is divided into a plurality of subcoils, where each subcoil is separated from an adjacent subcoil in a vertical direction. For example, these features are exemplified below.  <i>See also '055 patent at 9:45-50 (“For example, as shown in Fig. 8, a first coil 130 in (a)-type and (b)-type optical pickup actuators is exposed to two sides of a blade 110. In this case, the first coil 130 is vertically divided into a plurality of subcoils to facilitate installation of the hinges 160.”).</i>

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[f] wherein the coil comprises a pair of first coils positioned on the blade in a first direction and facing each other with respect to the objective lens.	The Exemplary Product includes a coil that comprises a pair of first coils positioned on the blade in a first direction and facing each other with respect to the objective lens. For example, these features are exemplified below:

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	  FIG. 8 

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	 objective lens X direction (first direction) positioned on the blade in a first direction facing each other with respect to the objective lens a pair of first coils

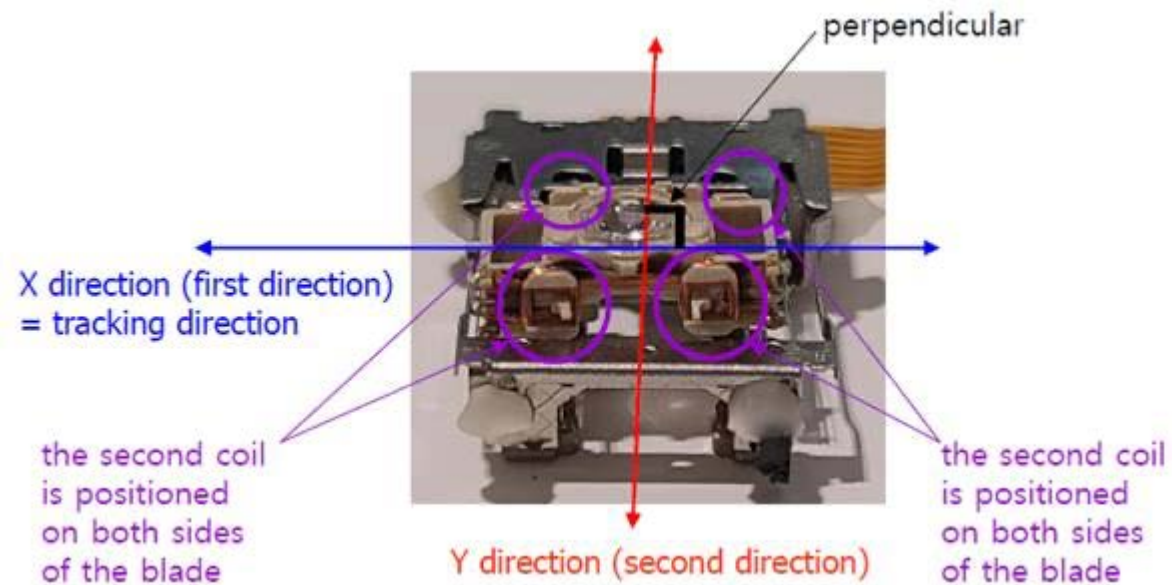
Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	<i>See also</i> '055 patent at Figs. 4, 8, 6:39-48 (“First, second and third coils 130, 140, and 150, respectively, are positioned on the blade 110. The first coil 130 is positioned horizontally on the blade 110 and includes a pair of coils 131 and 132 positioned in an X direction (first direction) symmetrically with respect to the objective lens 120. The second coil 140 is disposed on either one or two sides 113 and 114 in the Y direction (second direction) of the blade 110 (i.e., opposite the magnets 180) to generate an electromagnetic force in tracking direction a X due to interaction with the magnets 180.”). To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 2	
The optical pickup actuator according to claim 1, wherein the coil comprises a coil surrounding an outer surface of the blade.	The Exemplary Product includes a coil surrounding an outer surface of the blade. For example:

Claim Language	Selected Analysis and Evidence Regarding Exemplary Product
	 a coil surrounding an outer surface of the blade To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 3	

The optical pickup actuator according to claim 1, further comprising a second coil positioned vertically on a side of the blade in a second direction substantially perpendicular to the first direction, the second coil generating an electromagnetic force in a tracking direction through interaction with the magnetic element.

The Exemplary Product includes a second coil positioned vertically on a side of the blade in a second direction substantially perpendicular to the first direction, the second coil generating an electromagnetic force in a tracking direction through interaction with the magnetic element.

For example, this aspect of the invention is described in Figure 4 and 6:39-52. The Exemplary Device is similar to the preferred embodiment in the '055 patent:

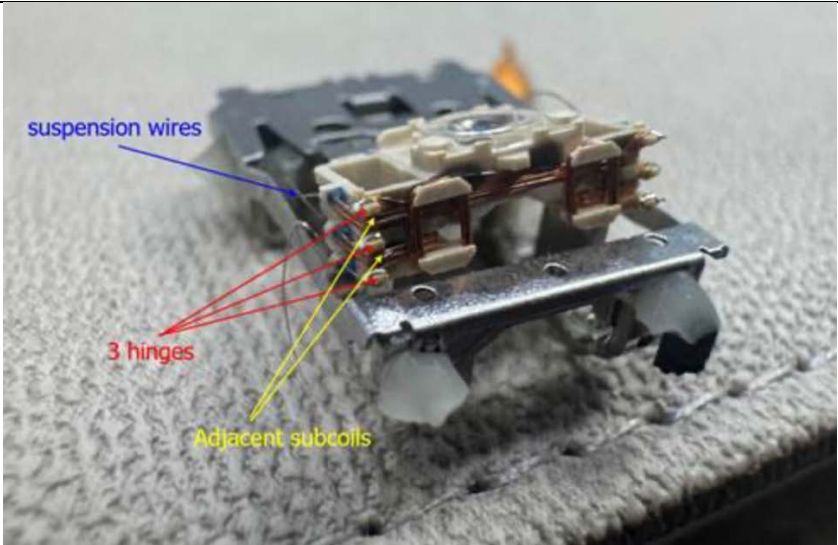


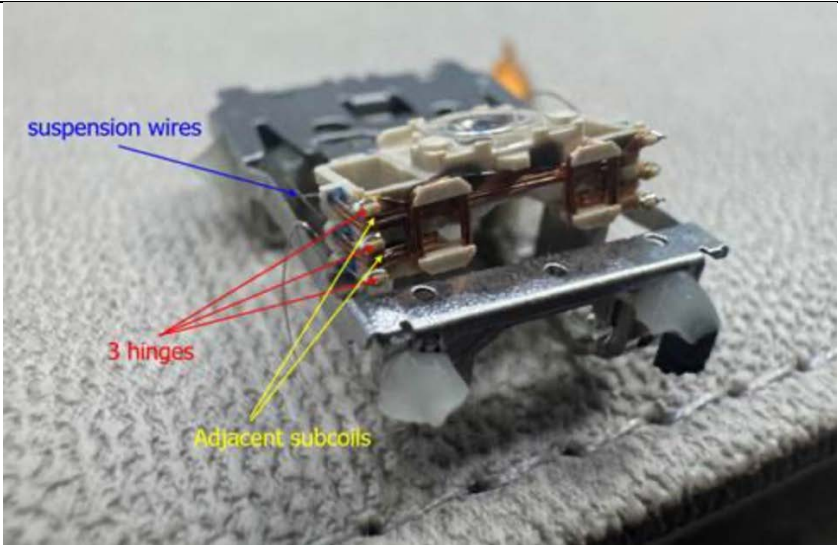
To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result.

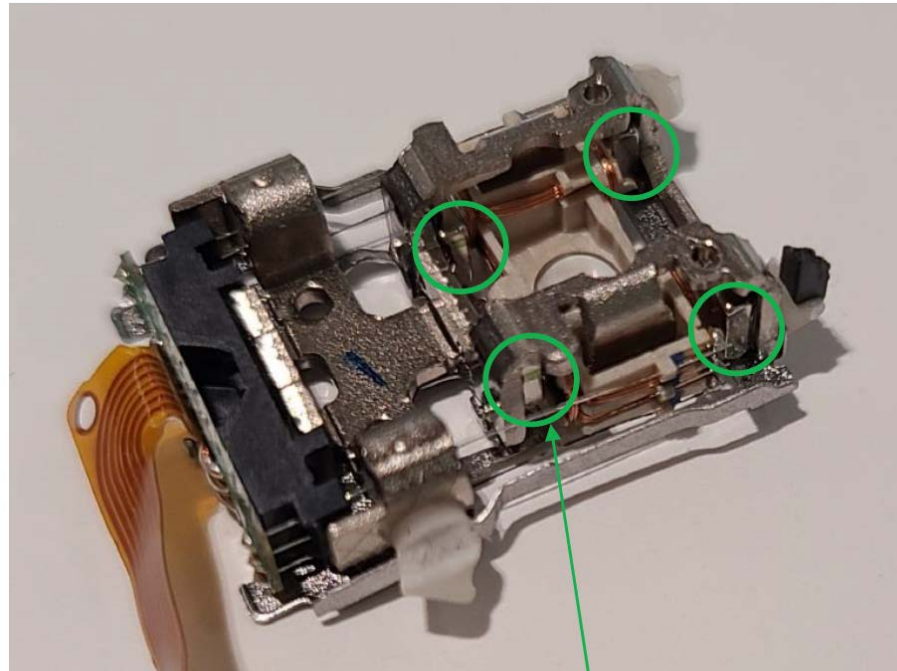
Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics

	reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 4	
The optical pickup actuator according to claim 3 , wherein the second coil is positioned on both sides of the blade.	The Exemplary Product includes a second coil is positioned on both sides of the blade. For example, <i>see</i> claim 3. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 40	
40. An optical pickup actuator for use with an objective lens on a base, comprising:	The Exemplary Product includes an optical pickup actuator for use with an objective lens on a base. For example, <i>see</i> claim 1.pre. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.

[a] a blade holding the objective lens;	The Exemplary Product includes a blade holding the objective lens. For example, <i>see</i> claim 1.a. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[b] a plurality of suspension wires movingly supporting the blade on the base;	The Exemplary Product includes a plurality of suspension wires movingly supporting the blade on the base. For example:

	 To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[c] a plurality of hinges each of coupled to an end of a suspension wire;	The Exemplary Product includes a plurality of hinges each of coupled to an end of a suspension wire. For example:

	 To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[d] a pair of unipolar magnets positioned on the base; and	The Exemplary Product includes a pair of unipolar magnets positions on the base. For example, the magnetic elements are highlighted below:



magnetic element

On information and belief, these magnetic elements are unipolar magnets. *See also* '055 patent at 6:23-38.

To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result.

Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.

[e] a plurality of coils connected to an electric circuit and interacting with the unipolar magnets to create an electromagnet force to move the blade; and	The Exemplary Product includes a plurality of coils connected to an electric circuit and interacting with the unipolar magnets to create an electromagnet force to move the blade. For example, <i>see</i> claims 1.d, 1.e, 1.f. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
[f] wherein at least one of the plurality of coils is divided into subcoils and a hinge coupled to each of the plurality of suspension wires is between an adjacent pair of subcoils.	The Exemplary Product includes a plurality of coils connected to an electric circuit and interacting with the unipolar magnets to create an electromagnet force to move the blade. For example, <i>see</i> claims 1.e, 1.f, 40.b, 40.c. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 42	

42. The optical pickup actuator according to claim 40, wherein a first hinge and a second hinge are positioned on each of a top and a bottom of one of the coils, respectively, and a third hinge is positioned between two of the subcoils.	The Exemplary Product includes a first hinge and a second hinge that are positioned on each of a top and a bottom of one of the coils, respectively, and a third hinge is positioned between two of the subcoils. For example, <i>see</i> claim 40.c. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 43	
43. The optical pickup actuator according to claim 40, wherein the coils are focus and tracking coils and the electric circuit supplies current to the coils in the same direction.	The Exemplary Product includes coils that are focus and tracking coils and the electric circuit supplies current to the coils in the same direction. On information and belief, this element is met. <i>See</i> claim 40.c. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.

Claim 44	
44. The optical pickup actuator according to claim 40, wherein the coils are focus and tracking coils, of which the focus coil also serves as a tilt coil and the electric circuit supplies current separately to each of the coils.	The Exemplary Product includes coils that are focus and tracking coils, of which the focus coil also serves as a tilt coil and the electric circuit supplies current separately to each of the coils. On information and belief, this element is met. <i>See</i> claim 40.c. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.
Claim 45	
45. The optical pickup actuator according to claim 40, wherein the coils are focus, tracking, and tilt coils and the circuit supplies current to the coils in opposite directions.	The Exemplary Product includes coils that are focus, tracking, and tilt coils and the circuit supplies current to the coils in opposite directions. On information and belief, this element is met. <i>See</i> claim 40.c. To the extent necessary, this element is also infringed under the doctrine of equivalents. This element is literally infringed, as disclosed above. If defendant identifies an aspect of the Exemplary Product that does not literally infringe, it infringes under the doctrine of equivalents because the aspect of the Exemplary Product performs a similar function, in a similar way, and achieves the same result. Investigation of both the patent and the Exemplary Product (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. TS-Optics reserves the right to update and amend its contentions, including adding additional claims and evidence, as the litigation progresses and discovery is provided by the defendant.

