

1 John Jeffrey Eichmann (CA Bar No. 227472)
2 **EICHMANN, a professional corporation**
3 662 N. Sepulveda Blvd., Suite 300
4 Los Angeles, CA 90049
5 Telephone: (310) 237-9190
6 Fax: (310) 237-9199
7 jeichmann@eichmann.com

8 Navid Bayar (CA Bar No. 319640)
9 **Reichman Jorgensen Lehman & Feldberg LLP**
10 100 Marine Parkway, Suite 300
11 Redwood Shores, CA 94065
12 Telephone: (650) 623-1472
13 Fax: (650) 560-3501
14 nbayar@reichmanjorgensen.com

15 *Attorneys for the Plaintiff HAWKvision*

16 **UNITED STATES DISTRICT COURT**
17 **NORTHERN DISTRICT OF CALIFORNIA**

18 HAWKvision eMMERSION
19 COMPUTING LLC,

20 Plaintiff,

21 v.

22 Tangible Play, Inc.,

23 Defendant.

24 **Case No. 5:23-cv-04070**

25 **Complaint for Patent Infringement**

26 **Demand for Jury Trial**

Introduction

1
2 1. Plaintiff HAWKvision eMMERSION COMPUTING LLC (“HAWKvision”) is majority
3 owned and controlled by inventor Robert Hawkins. HAWKvision owns U.S. Patent No. 8,760,391
4 (titled “Input Cueing Emersion System and Method”) (the ’391 patent), which was originally issued to
5 sole inventor Hawkins and has a priority date of May 22, 2009. Defendant Tangible Play, Inc.
6 (“Tangible Play”) has infringed and continues to infringe the ’391 patent both directly and indirectly, in
7 violation of 35 U.S.C. § 271, by making, using, importing, offering for sale, and selling its Osmo line of
8 products and by inducing and contributing to the infringing use of those products by its customers.

Plaintiff and the Asserted Patent

9
10 2. HAWKvision is a limited liability company organized under the laws of the State of
11 Connecticut. It has a principal place of business in Coos Bay, Oregon. HAWKvision owns four U.S.
12 Patents: the asserted ’391 patent, as well as U.S. Patent Nos. 10,082,862; 10,474,225; and 10,528,156,
13 each of which name Robert Hawkins as the sole inventor. Hawkins received a scholarship in electronics
14 engineering at Brigham Young University and also has been trained in design and packaging at the
15 ArtCenter College of Design in Pasadena. He is a software engineer and a quality process engineer with
16 extensive experience in various high-tech commercial industries including in radio frequency
17 engineering, medical products, and in the defense and military field, having worked for aerospace
18 contractors and directly for NASA and the U.S. Navy. He is also an artist and has been trained in
19 classical oil painting techniques.

20 3. Hawkins conceived of the inventions disclosed and claimed in the HAWKvision patents
21 while seeking to develop an alternative, if not a replacement for, the computer mouse and the traditional
22 computer keyboard. The alternative would allow the user of a computer, particularly those who are
23 artists, to leverage the fine motor skills and dexterity of their hands and the coordination between their
24 hand movements and visual processing in a way that the mouse and keyboard simply do not allow.
25 Hawkins arrived at a set of novel and highly innovative solutions that use cameras, mirrors, or other
26 optical devices to capture the real world movements of the user’s hands, drawing instruments, or other
27 real world tools or objects being worked with in real time, process the captured images within a
28 computing device, and then display all or portions of the real world images together in real time with

1 computer generated images, even allowing the user to see a semi-transparent representation of their
 2 hands in the virtual working space displayed on the screen. This enables the user to look at the
 3 computer display and see in real time the work they are doing with their hands in the real world
 4 (whether drawing, typing on an invisible keyboard, or moving around real world tools or objects) in the
 5 virtual world, without having to look down at their actual hands or hand movements and without having
 6 to rely on the clumsy and unnuanced moves of a mouse or physical keyboard.

7 **Defendant and the Accused Product**

8 4. Tangible Play is Delaware corporation with a principal place of business in Palo Alto,
 9 California. In 2019, it was reported that Tangible Play was acquired by Think and Learn Private
 10 Limited, an Indian private limited company based in Bengaluru that does business as “BYJU’s,” for
 11 \$120 million.

12 5. Tangible Play’s Osmo product line includes a “reflector,” a “base,” a “creative board,”
 13 erasable markers (and other handheld tools, like WizPens), additional physical play pieces like sticks,
 14 rings, character pieces, tiles, and blocks, and other accessories, as well as dozens of applications for
 15 drawing, gaming, and learning for iPads and Amazon Fire tablets (collectively, the “Osmo Products”).
 16 When the reflector and base are combined with an iPad or Amazon Fire tablet and at least one of the
 17 Osmo applications is installed and activated on the tablet, this forms a device (the “Accused Osmo
 18 Device” – examples shown below) that meets all the elements of the asserted claims of the ’391 patent.



27
28 Accused Osmo Device (iPad version)



Accused Osmo Device (Fire version)

1 6. Examples of the Osmo applications include but are not limited to: Osmo Newton, Osmo
2 Masterpiece, Osmo Monster, Super Studio Disney Frozen 2, Super Studio Disney Princess, Super Studio
3 Mickey & Friends, and Super Studio Incredibles 2.

4 **Jurisdiction and Venue**

5 7. This is an action for patent infringement arising under the patent laws of the United
6 States, 35 U.S.C. §§ 271 and 281, *et seq.* The Court has original jurisdiction over this patent
7 infringement action under 28 U.S.C. §§ 1331 and 1338(a).

8 8. This Court has personal jurisdiction over Tangible Play because Tangible Play’s principal
9 place of business is in California. In addition, Tangible Play designs, uses, distributes, offers for sale,
10 and sells the accused Osmo products to consumers, and through business partners, in this District.

11 9. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b) because Tangible
12 Play regularly conducts business within this District, has a regular and established place of business in
13 this District, and has committed acts of infringement within this District.

14 **Count 1: Infringement of the ’391 patent**

15 10. HAWKvision incorporates by reference each of the foregoing paragraphs of this
16 Complaint as if fully set forth herein.

17 11. On June 24, 2014, the U.S. Patent and Trademark Office issued U.S. Patent No.
18 8,760,391 to Robert W. Hawkins. Exhibit 1. Due to Patent Term Extension, the ’391 patent has an
19 adjusted expiration date of January 31, 2033.

20 12. HAWKvision is the assignee and owner of all right, title, and interest in and to the ’391
21 patent, including the right to enforce the patent against infringers and collect damages for past and
22 ongoing infringement.

23 13. Each claim of the ’391 patent is valid, enforceable, and patent eligible under Section 101
24 of the Patent Act. The claims are directed to the technical field of using software, computers, and/or
25 peripheral devices (such as computer keyboards and mice) to draw, input text, or otherwise create,
26 modify, or interact with computer generated text and images. The ’391 patent discloses and claims
27 systems and devices that address the technical problems inherent in prior art drawing software programs
28 and associated devices—including the time and difficulty needed to learn to use them and the relatively

1 poor quality of their performance and output (such as graphics and images of lesser quality than can be
2 generated by hand). The '391 patent addressed these technical problems with a technical solution. As
3 stated above, the patent discloses and claims novel and non-obvious solutions that use cameras, mirrors,
4 or other optical devices to accurately (or successfully) capture the real world movements of the user's
5 hands, drawing instruments, or other real world tools or objects being worked with in real time, process
6 the captured images within a computing device, and then display all or portions of the real world images
7 together in real time with computer generated images, even allowing the user to see a semi-transparent
8 representation of their hands in the virtual working space displayed on the screen. The claims recite
9 components that were not routinely or conventionally used at the time of the invention in combination
10 with each other, or even individually. Tangible Play's filing of its own patents—which claim an
11 October 2012 priority date and are asserted by Tangible Play to be practiced by its Osmo product line
12 (including U.S. Patent Nos. 9,158,389 and 9,354,716)—further demonstrate the validity and eligibility
13 of the claims of the asserted '391 patent, which claim priority to May 2009.

14 14. Tangible Play has infringed and continues to infringe several claims of the '391 patent,
15 including independent claim 31. Each element of claim 31 is met by the Accused Osmo Device,
16 according to the following infringement theory, which is provided as an example and is not limiting.

17 • **[preamble] “An input cueing device, comprising”:**

18 To the extent that the preamble is determined to be limiting, the preamble is met by the Accused
19 Osmo Device (defined above), which constitutes an “input cueing device.” The Accused Osmo
20 Device is a device that receives input that constitutes and contains cues from the movements and
21 gestures of the user's hands and fingers, drawing instruments or other tools, and other real world
22 physical objects moved, positioned, or arranged by the user within the working space positioned
23 in front of the device.

24 • **[a] “an electronic controller”:**

25 The iPads and Fire tablets (various compatible versions, identified on the playosmo.com
26 website), with one or more of the Osmo applications installed and activated, constitute an
27 “electronic controller” (an electronic device that contains and is used to control the other recited
28 system components and/or their inputs or outputs).

1 • **[b] “a processing component connected to the electronic controller”:**

2 The iPads and Fire tablets that form part of the Accused Osmo Device include CPUs (or core
3 processors or systems on chip) that are part of and thus connected to the tablets and that process
4 electronic signals and data. In current models, this includes but is not limited to the A13, A14,
5 A15, M1, and M2 processors (for the iPads) and the Mediatek MT8168, Mediatek MT8169A,
6 Mediatek MT8183 (for the Fire tablets), and their components.

7 • **[c] “a display connected to the electronic controller”:**

8 The iPad and Fire tablets that form part of the Accused Osmo Device include screens, or
9 displays, that are part of and thus connected to tablets.

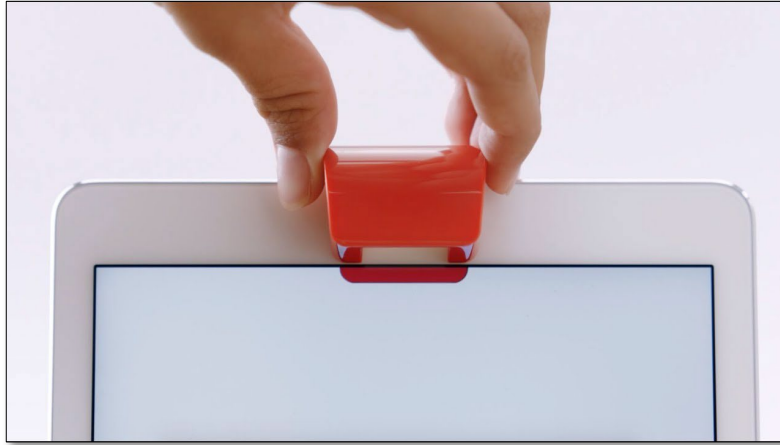
10 • **[d] “an input device with an input area, with the input device connected to the electronic
11 controller”:**

12 The Accused Osmo Device includes an “input device”: the iPad and Fire tablet front-facing
13 cameras (and their associated camera software) and the Osmo reflector (and its mirror) constitute
14 an “input device” that is “connected” physically and electronically “to the electronic controller”
15 (the iPad or Fire tablet). The camera and reflector (and its mirror) have “an input area”: the
16 working space in which the user’s hands draw, gesture, or otherwise manipulate or move
17 drawing instruments, tools, or other physical objects. A non-limiting example (depicting the use
18 of the Accused Osmo Device with the Newton application) is shown below, with the white sheet
19 of paper (or a subset thereof) representing the input area.



- 1 • [e] “a primary imaging system disposed substantially over the input area and aimed at the
2 input area”:

3 The Accused Osmo Device includes the recited “primary imaging system”: the Osmo reflector
4 (and its mirror), which is positioned above and aimed at the input area. See above and below
5 examples.



- 13 • [f] “a secondary imaging system disposed within a receiving image field of the primary
14 imaging system, wherein the secondary imaging system receives the first image from the
15 primary imaging system, captures the first image and transmits the first image and
16 transmits the first image to the combiner”:

17 The Accused Osmo Device includes the recited “secondary imaging system”: the iPad and Fire
18 tablets’ front-facing cameras (and their associated camera software) are positioned relative to the
19 Osmo reflector (and its mirror) such that the first image of the working space (comprising video
20 of the user’s hands drawing, gesturing, or otherwise manipulating or moving drawing
21 instruments, tools, or other physical objects) is reflected from the reflector into the lens of the
22 camera, which captures and transmits the image to the “combiner” (identified below).

- 23 • [g] “a combiner for receiving a first image in the form of a first image output signal from
24 the primary imaging system and a second image in the form of a second image output
25 signal from the electronic controller, and combining the first and second image signals to
26 create a combined, synchronized signal”:

27 The Accused Osmo Device includes the recited “combiner”: the Osmo application software
28 operating on a processing component receives a signal representing the first image (of the user’s
working space), derived from the reflector, and combines it (or a portion thereof) with a second
signal that represents a second image generated by the application software—such as graphics

1 and animation generated by the Osmo applications. The combined signal is synchronized in that
2 the first and second images appear together, and can interact with each other, in the same
3 timeline (including in real time).



- 14
- [h] “an X, Y and/or Z input display program or operating system loaded into a working memory of the processing component, wherein the input data program receives the post processed X, Y and/or Z data from the input device, and produces the second image; wherein the combined signal is received by the display and a combined image is depicted on the display.”:
- 15
16

17 The Accused Osmo Device includes the recited “X, Y, and/or Z input display program or
18 operating system”: The Osmo applications (which, when in use, are loaded into the working
19 memory of the CPU or core processor of the iPad or Fire tablet) are used to display input data
20 representing the horizontal, vertical, and/or depth axes of the user’s hand gestures, drawing, or
21 other movements of tools or objects in the input area. (See above). The applications receive
22 such input data after it is processed by the camera software associated with the tablet’s camera.
23 The Osmo applications also produce the second image (computer generated graphics and
24 animation). Finally, the combined signal (the signal that combines and synchronizes the first and
25 second images) is sent from the Osmo applications to the iPads or Fire tablets’ display and the
26 display then depicts the combined image represented by that signal. (See above).

27
28

1 15. Tangible Play has and continues to directly infringe Claim 31, in violation of 35 U.S.C.
2 § 271(a), by making and using the Accused Osmo Device in the course of its development, testing, and
3 marketing of the Osmo Products in the United States.

4 16. Tangible Play has and continues to indirectly infringe Claim 31, in violation of 35 U.S.C.
5 § 271(b), by inducing end users of the Accused Osmo Device to make and use the Accused Osmo
6 Device in the United States.

7 (a) Tangible Play has had knowledge of the '391 patent since at least May 11, 2023, when it
8 received a letter from HAWKvision identifying the '391 patent and its relevance to the Osmo
9 products and Osmo's later-filed patents. Prior to that date, Tangible Play either already knew of
10 the '391 patent (likely as a result of prior art searches in connection with its own patent filings,
11 or through a freedom to operate search in connection the Osmo product line) or was willfully
12 blind to its existence. In addition, Tangible Play indisputably has knowledge of the '391 patent
13 as a result of this lawsuit.

14 (b) Tangible play has developed, manufactured, marketed, offered for sale, sold, provided, and
15 supplied the Osmo reflector and base and the Osmo applications and has actively aided and
16 encouraged end users to install and combine those components with the iPads and Amazon Fire
17 tablets in a manner that results in the formation of the Accused Osmo Device and its use, and
18 Tangible Play continues to do the foregoing. Tangible Play has done this and continues to do
19 this through its creation and publication of marketing, instructional, and training documents and
20 videos available at playosmo.com and on YouTube (and instructions within the Osmo
21 applications themselves); its sale and marketing of the Osmo products through Apple, Amazon,
22 BestBuy, Target, and Walmart; its support and management of end users' infringing use of the
23 Accused Osmo Device; its provision of technical support and help, and its development and
24 provision of software updates for the Osmo applications. Tangible play knows and intends, or is
25 willfully blind to the fact, that these actions have resulted in, and continue to result in, end users
26 making and using the Accused Osmo Device in a manner that directly infringes.

27 17. Tangible Play has and continues to indirectly infringe Claim 31, in violation of 35 U.S.C.
28 §271(c), by contributing to the infringement of the end users of the Accused Osmo Device in the United

1 States.

2 (a) Tangible Play has had knowledge of the '391 patent since at least May 11, 2023, when it
3 received a letter from HAWKvision identifying the '391 patent and its relevance to the Osmo
4 products and Osmo's later-filed patents. Prior to that date, Tangible Play either already knew of
5 the '391 patent (likely as a result of prior art searches in connection with its own patent filings,
6 or through a freedom to operate search in connection the Osmo product line) or was willfully
7 blind to its existence. In addition, Tangible Play indisputably has knowledge of the '391 patent
8 as a result of this lawsuit.

9 (b) Tangible Play offers to sell, sells, and imports into the United States the Osmo reflector and
10 base and the Osmo applications, which constitute a material part of the claimed invention and are
11 not staple articles of commerce suitable for substantial non-infringing use. These components of
12 the Accused Osmo Device have no substantial non-infringing uses and are known by Tangible
13 Play to be especially made or adapted to form the Accused Osmo Device and to be used, as part
14 of that device, to directly infringe Claim 31.

15 18. Tangible Play's infringement has been willful. Despite becoming aware of or willfully
16 blinding itself to its direct and indirect infringement of the '391 patent, Tangible Play has continued to
17 engaged in its infringing activities and has made no attempts to design around the '391 patent, obtain a
18 license, or otherwise stop its infringing behavior.

19 19. HAWKvision has been damaged by Tangible Play's infringement of the '391 patent and
20 is entitled to damages under 35 U.S.C. § 284, including enhanced damages.

21
22 **PRAYER FOR RELIEF**

23 Wherefore, HAWKvision prays for the following relief:

24 A. A judgment that Tangible Play has directly and indirectly infringed the '391 patent, that
25 its infringement has been willful, and that the asserted claims of the '391 patent are valid, patent eligible,
26 and enforceable;

27 B. A judgment awarding compensatory damages under 35 U.S.C. § 284 for Tangible Play's
28 infringement, and enhanced damages due to the infringement being willful;

- 1 C. Pre- and post-judgment interest;
2 D. Costs of suit and, to the extent applicable under law, attorneys' fees; and
3 E. Any additional legal or equitable relief that the Court deems just and proper.
4

5 **DEMAND FOR JURY TRIAL**

6 HAWKvision demands trial by jury on all claims and issues triable by a jury.
7

8 Date: August 10, 2023

Respectfully submitted,

9 By: /s/ Jeff Eichmann

10 John Jeffrey Eichmann
11 CA Bar No. 227472
(admitted in N.D. Cal.)
12 **EICHMANN,**
13 **a professional corporation**
662 N. Sepulveda Blvd., Suite 300
14 Los Angeles, California 90049
310-237-9190 (tel.)
jeichmann@eichmann.com
15

16 Navid Bayar
CA Bar No. 319640
17 (admitted in N.D. Cal.)
Reichman Jorgensen Lehman
& Feldberg LLP
18 100 Marine Parkway, Suite 300
19 Redwood Shores, CA 94065
20 Telephone: (650) 623-1472
21 Fax: (650) 560-3501
nbayar@reichmanjorgensen.com

22 *Attorneys for Plaintiff HAWKvision*
23
24
25
26
27
28