

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC and MOTOROLA MOBILITY LLC,
Petitioners,

v.

MULTIFOLD INTERNATIONAL INC. PTE. LTD.,
Patent Owner.

Case IPR2025-00060
U.S. Patent No. 8,842,080

PATENT OWNER RESPONSE

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EXHIBIT LIST	
2001	Reserved
2002	Declaration of Rajeev Surati, Ph.D.
2003	CV of Rajeev Surati, Ph.D.
2004	Transcript of Deposition of Dr. Sandeep Chatterjee in IPR2025-00059
2005	Transcript of Deposition of Dr. Sandeep Chatterjee in IPR2025-00060

I. INTRODUCTION

Patent Owner Multifold International Inc. Pte. Ltd. (“Multifold” or “Patent Owner”) respectfully requests that the Board confirm the patentability of Challenged Claims 1, 2, 4-9, 12-16, and 20 of U.S. Patent 8,842,080 (“the ’080 Patent”).

The ’080 Patent is directed to, *inter alia*, an improved user interface for displaying applications on one or more displays of a handheld computing device. Applications may be displayed in one or more display conditions on one or more displays. In some claimed embodiments, an icon associated with the application is displayed that indicates the state of the application. In independent claims 1 and 12 specifically, that icon indicates that the application is in a state that corresponds to an open application state (i.e., the application is open in the one or more displays).

Unlike the ’080 Patent, the Petition relies upon art disclosing an access bar for a split screen that indicates an active screen rather than the state of an open application as claimed. Furthermore, the art does not suggest dimensions that correspond to the width of a first and second display as recited by claim 9. Multifold therefore respectfully requests that Challenged Claims 1, 2, 4-9, 12-16, and 20 be found patentable.

II. BACKGROUND

A. The '080 Patent

The '080 Patent is directed to “[m]ethods and apparatus for indicating a status of an application that is displayable on one or more displays of a handheld computing device.” Ex.1001, abstract. Fig. 5 shows an exemplary embodiment of the invention:

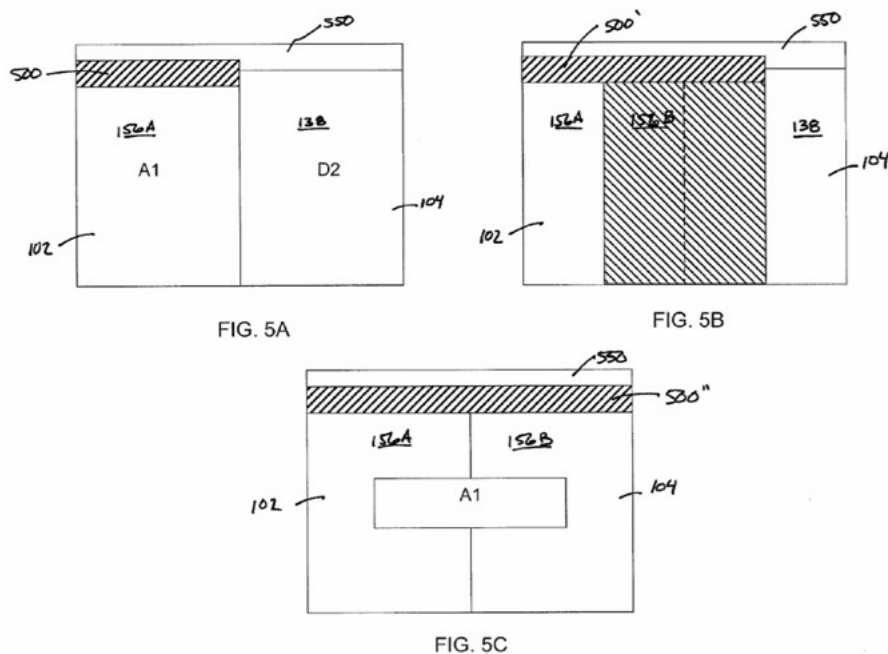


Fig. 5A shows an expandable multiscreen application 156 in state 156A covering only display 102 having an icon 500 that indicates that the application is in an open state and may be expanded. Ex.1001, 13:40-45. A user may expand application 156 to state 156B covering display 102 and partially covering display 104, and

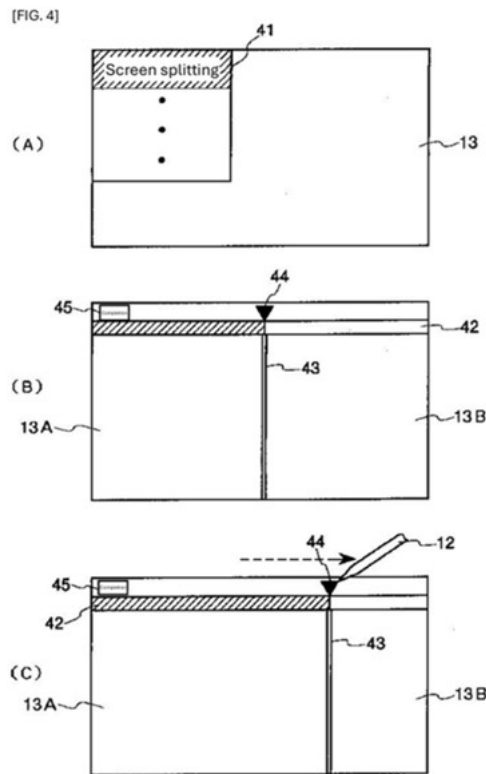
icon 500 will similarly change to icon 500' (indicating another open application state) as shown in Fig. 5B. Ex.1001, 13:66-14:13. Alternatively, the user may expand application 156 such that it covers the entirety of displays 102 and 104, and icon 500 will change to icon 500' (indicating another open application state) as shown in Fig. 5C. *Id.* In each case, icon 500 is displayed with application 156 (not display 102 or display 104) and “indicates the status and/or potential statuses of the *application*” – not the display or screen. Ex.1001, abstract.

B. Petitioners’ Cited References

The Petition asserts four grounds of invalidity relying on three references: Ground 1 challenging claims 1, 2, 12, 13, and 20 under 35 U.S.C. §102 as anticipated by Ogawa; Ground 2 challenging claims 4-9 under 35 U.S.C. §103 based on Ogawa and Yook; Ground 3 challenging claims 1, 2, 12-16, and 20 under 35 U.S.C. §103 based on Ogawa and Choi; and Ground 4 challenging claims 4-9 under 35 U.S.C. §103 based on Ogawa, Choi, and Yook.

1. Ogawa (Ex.1005)

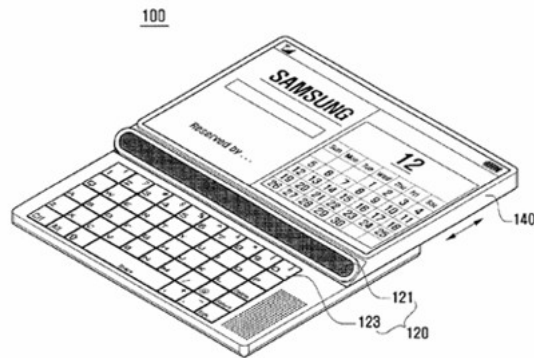
Ogawa is a Japanese patent application. As translated, Ogawa is directed to a “pen input type electronic device” with a split screen functionality. Ogawa teaches a Screen splitting menu 41 that splits its single physical display input surface 13 into left and right screen areas 13A and 13B:



Ex.1005, Fig. 4, [0017]. An access bar displayed above the split screens 13A and 13B indicates which of the two split screen areas on the single physical display is the active screen. *Id.*, [0018]. A user may use pen 12 to adjust the location of the split 43 to the left or right, thereby increasing the size of split screen 13A and decreasing the size of split screen 13B or vice versa. *Id.*, [0019].

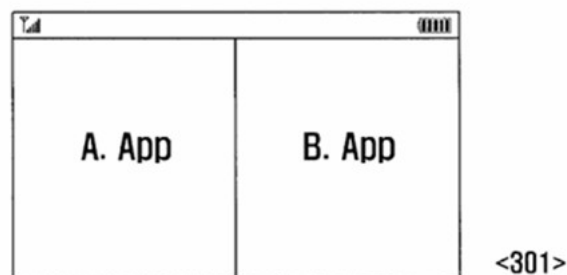
2. Yook (Ex.1007)

Yook is directed to a mobile terminal with a single physical display (touch screen 140) as shown in Fig. 1:



Ex.1005, Fig. 1. Yook further discloses that its single physical screen 140 may be divided into multiple “screen areas” as shown in, for example, Fig. 3:

FIG . 3



Ex.1005, Fig. 3.

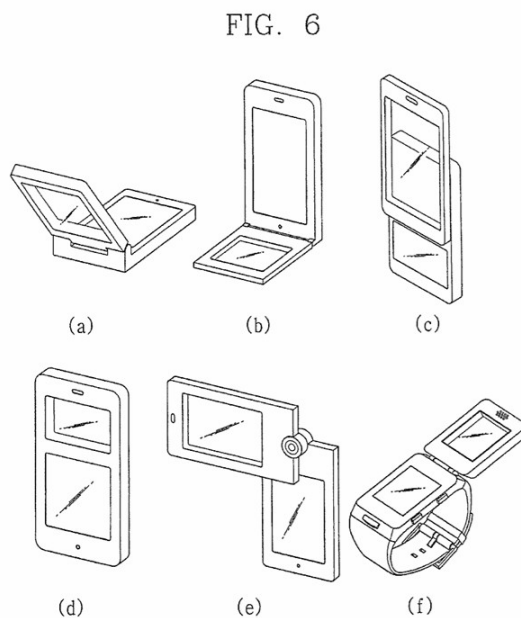
Yook’s Fig. 4 shows functions that may be performed by the divided areas. For example, Fig. 4A shows the division of physical touch screen 140 into two areas A and B. Ex.1005, [0044]. Fig. 4B shows that function A may be displayed on the entirety of physical touch screen 140, that function C may be displayed on the entirety of physical touch screen 140, or that physical touch screen 140 may be

divided into two areas, with function A displayed in one area and function C displayed in the other area. Ex.1005, [0046].

3. Choi (Ex.1006)

Choi is directed to a terminal for photography. Ex.1006, abstract. The terminal includes a camera, a display, a user input having a camera shutter key, and a controller for controlling at least one or more menu icons displayed in a standby mode to be displayed by being over lapped with a camera preview image. *Id.*

Fig. 6 shows embodiments of Choi's terminal:



Ex.1006, Fig. 6. The mobile terminal may have either a single display or a dual display. *Id.*, 13:54-60.

III. CLAIM CONSTRUCTION

Besides the term “open application state” discussed further below, Patent Owner interprets all claim terms in accordance with their plain and ordinary meaning consistent with the specification and file history of the ’135 Patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-1318 (Fed. Cir. 2005); 83 Fed. Reg. 51,340, 51,342 (Oct. 11, 2018). The patentability of the Challenged Claims does not turn on the construction of any other term and thus no other term requires express construction. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

A. “Open application state”

The Institution Decision determined that the plain and ordinary meaning of “open application state” is “that an application screen is open in the display.” Paper 8 (Inst. Dec.), 18. Patent Owner respectfully submits that the Board’s preliminary construction of “open application state” should be modified as “that the application is open and being displayed in the corresponding display condition/status.”

Patent Owner respectfully requests this modification for consistency with the remaining claim language. *First*, Patent Owner’s proposed modification clarifies that an “open application state” is a state of *the* application recited by claims 1 and 12 – not any application, and not the state of the screen itself (as described further

below). This is abundantly clear from the remaining claim language. For example, claim 1 specifies that “*the* application is in a first state,” “*the* application is in a second state,” and “*the* first and *the* second states comprise an open application state.” Similarly, claim 12 specifies that “*the* application is in one of two or more states *associated with a display status of the application with respect to the first and second displays*,” and “*the* first and the second states comprise an open application state.” The antecedents on these clauses indicate that the open application state is a state of the application recited in claims 1 and 12. If two or more applications are simultaneously displayed, the language of claims 1 and 12 requires that a single application meet all the recited elements, including that the application has two or more states that comprise an open application state.

Second, Patent Owner’s proposed modification clarifies that the open application state is the state of the application itself (i.e., in one of the corresponding display conditions/statuses), and not the state of the screen displaying the application (which could allow for different applications to be displayed, or different applications to be opened and closed). This again is required by the claim language. For example, claim 1 explicitly states that “the first state correspond[s] to the first display condition” and “the second state correspond[s] to the second display condition” and the “the first and the second states comprise an

open application state.” Thus, claim 1 requires that the “open application state” correspond to the respective display condition.

Similarly, claim 12 requires that “the application is in one of two or more states *associated with a display status of the application with respect to the first and second displays*,” and “*the* first and the second states comprise an open application state.” Thus, claim 12 requires that each “open application state” correspond to a respective display status of the application (i.e., in relation to the first and second displays), and not a status of a screen or display (which could be displaying the application (or any other application)).

Additionally, if a single application is displayed multiple times, the open application state must be the state of the application in the corresponding display condition/status, not the state of the same application displayed elsewhere on the screen.

Because the proposed modification is consistent with the claim language, Patent Owner respectfully requests that it be adopted.

IV. LEVEL OF ORDINARY SKILL

Patent Owner agrees with Petitioners that the priority date of the '080 patent is October 1, 2010. Paper 1 (Pet.), 5.

For the purposes of this response, Patent Owner applies Petitioner's definition that the "person of ordinary skill in the art at the time of the alleged invention of the '080 patent ("POSITA") would have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with two years of work experience in the field of user interface technologies, including *e.g.*, graphical user interface technologies, or a related field. More education can supplement practical experience and vice versa." *Id.*, 5-6 (citations omitted).

Patent Owner's expert Dr. Surati meets the required level of ordinary skill as of October 2010. Ex.2002, ¶45.

V. CLAIMS 1, 2, 4-9, 12-16, AND 20 ARE PATENTABLE

- A. Claims 1 and 12: Ogawa does not suggest "the icon indicates that the application is in a first state" or "the icon [indicates] that the application is in a second state" "wherein the first and the second states comprise an open application state" / "the icon indicates that the application is in one of two or more states associated with a display status of the application with respect to the first and second displays" "wherein the first and the second states comprise an open application state" (All Grounds)**

The second and sixth steps of the method of claim 1 specifies "displaying an icon [that] indicates that the application is in a first state" and "morphing the icon to indicate that the application is in a second state," "wherein the first and the second states comprise an open application state." For the reasons set forth in

Section III.A, “an open application state” means “that the application is open and being displayed in the corresponding display condition/status.” Therefore, as explained in the Preliminary Response, this claim language requires the icon to indicate that the application is open in the corresponding display condition/status (i.e., with respect to how the application is displayed in the first and second displays). Paper 7, 6-10. Claim 12, while not requiring the icon to morph, recites substantially similar limitations with respect to the icon indicating the open application state.

The Preliminary Response then explained that Ogawa neither anticipates nor suggests claim 1 (or 12) because the status bar in Ogawa alleged by Petitioners to be the claimed icon does not indicate that the *application* is open in the corresponding display condition. Paper 7, 7-10. Instead, Ogawa’s status bar indicates whether one of Ogawa’s multiple screens is active (i.e., an *active screen*). *Id.* The Preliminary Response then provided reasons explaining why an icon indicating an active screen is not an icon indicating the state of the application recited in the claims, and does not indicate that the application is open in one of the corresponding display conditions/statuses. *Id.*

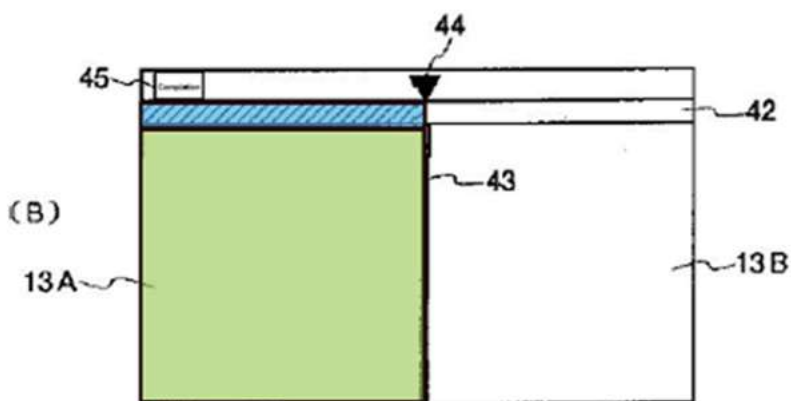
The Institution Decision found that Ogawa discloses an icon indicating an open application state by equating the icon indicating an open application state

with an icon indicating an active screen: “Petitioner sufficiently supports its argument that ‘Ogawa discloses that the program in first screen 13A in both the first state (figure 4(B)) and second state (figure 4(C)) is in an active state (‘open application state’)) because the colored shaded portion of access bar 42 corresponds to the active screen on display.’” Paper 8, 20. However, this conclusion misapprehends Patent Owner’s argument by conflating the state of the screen with the state of the application.

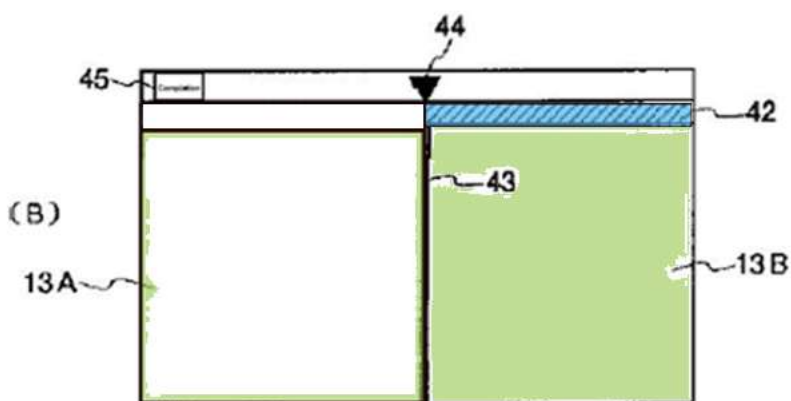
The Institution Decision is correct that “the colored shaded portion of access bar 42 corresponds to the active screen on display.” *Id.* But the colored shaded portion of access bar 42 does not indicate the open state of the claimed application, or whether the application is in one of the corresponding display conditions/statuses. Ex.2002, ¶¶66-75. Instead, the color shaded portion of access bar 42 simply corresponds to the active state and size of the screen (which may or may not be displaying the claimed application). Ex.2002, ¶¶70-75. As the Institution Decision recognized, “[t]here is no teaching in Ogawa that its active screen always contains the same open application.” Paper 8, 20. If Ogawa’s active screen can contain one open application at one point in time and a different open application at another point in time, then the colored shaded portion of access bar 42 only indicates whether the screen is active and the size of the screen—and not

whether the claimed application is open in one of the display conditions/statuses. Ex.2002, ¶¶70-75. This is because the colored shaded portion of access bar 42 is always shaded when the screen is active, regardless of whether the application in the display condition is open or closed. Ex.2002, ¶71. In other words, the color shaded portion of access bar 42 indicates the state of the screen (which could be displaying one or more applications), and not the state of the application (with respect to the first and second displays). Ex.2002, ¶72. Simply because the color bar and its associated screen can change sizes does not change that it reflects the state of the screen, and not any specific application. *Id.* As explained in Section III.A above, the term “open application state” is a state for one application that satisfies all the elements of claims 1 and 12. This example shows that Ogawa’s active screen indicator cannot indicate the open state of one application.

As another example, Petitioners’ expert Dr. Chattergee confirmed in deposition that a person of ordinary skill would understand that the same application could be active on both of Ogawa’s screens 13A and 13B. Ex.2005, 164:6-165:1 (“I don’t see it saying it’s limited to – that you cannot run the same program in 13A and 13B.”). In this example, the colored shaded portion of access bar 42 would be to the left if screen 13A was active, as annotated below:



Alternatively, if screen 13B was active, the colored shaded portion of access bar 42 would be to the right, as annotated below:



In this example, where the same application is open on 13A and 13B, the access bar 42 simply indicates which screen is active, but does not indicate the display condition/status of the application with respect to the displays. Ex.2002, ¶¶69-74. For example, whether or not a particular screen (13A or 13B) is active (and the access bar is shaded), does not change anything regarding how the application is

displayed on 13A and 13B. Ex.2002, ¶74. In other words, the left side of access bar 42 indicates whether screen 13A is active. It cannot indicate an open application state because, while the application is always open in 13A, the left side of access bar 42 is both shaded (when 13A is active) and unshaded (when 13A is inactive). *Id.* Thus, the shading of access bar 42 does not indicate an open application in 13A – the shading of access bar 42 indicates when 13A is active. *Id.*

Similarly, the right side of access bar 42 indicates whether 13B is active. It cannot indicate an open application state because, while the application is always open in 13B, the right side of access bar 42 is both shaded (when 13B is active) and unshaded (when 13B is inactive). *Id.* Thus, the shading of access bar 42 does not indicate an open application in 13B – the shading of access bar 42 indicates when 13B is active. *Id.*

Moreover, in this example where 13A and 13B contains the same application, the left and right side of access bar 42 is both shaded and unshaded depending on which of screens 13A and 13B is active, even though the application is always displayed on both 13A and 13B. Ex.2002, ¶74. Thus, Ogawa's status bar 42 has nothing to do with whether any application is open or closed, or how the application is displayed with respect to 13A and 13B – instead, Ogawa's status bar 42 merely denotes whether a screen is active or inactive. Ex.2002, ¶74. For these

reasons, access bar 42 is not associated with any application, nor does it indicate the state that any application is in.

Ogawa does not suggest an icon associated with an application that indicates an open application state of the application as claimed because the icon does not indicate the display condition/status of the application (with respect to the first and second displays). The Petition does not rely on any other reference for this element; thus, claims 1 and 12 are patentable over Ogawa, Yook, and Choi.

B. Claim 2: Ogawa and Choi do not suggest “the icon is changed in proportion to the relative position of the application with respect to the first and second display” (All Grounds)

Claim 2 depends from claim 1 and further specifies that “the icon is changed in proportion to the relative position of the application with respect to the first and second display.” According to the ’080 Patent, “the term ‘display’ is intended to connote device hardware.” Ex.1001, 4:19-20. Thus, based on the intent expressed by the specification, the icon of claim 2 is changed in proportion to the relative position of the application with respect to two different hardware displays (the first display and the second display).

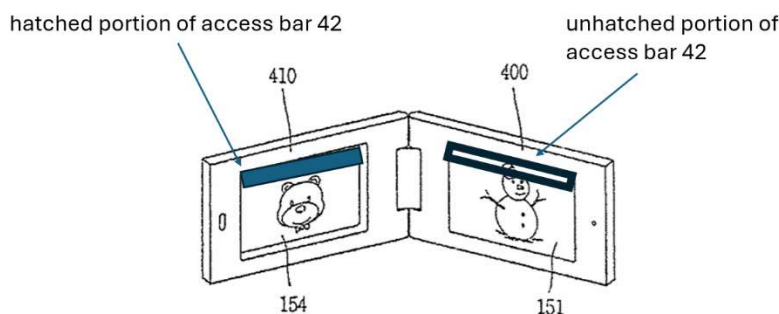
None of Petitioners’ art suggests an icon that is changed in proportion to the relative position of the application with respect to two different hardware displays. Ex.2002, ¶¶76-81. First, Ogawa cannot anticipate claim 2 because Ogawa discloses

only a single physical display 13. Ex.2002, ¶78. Because Ogawa only utilizes one physical display, Ogawa cannot suggest an icon that is changed in proportion to the relative position of the application with respect to two different hardware displays, as claimed. *Id.* Thus, Ogawa cannot anticipate claim 2.

Alternatively, Petitioners argue that if claim 2 requires two different physical displays, “the Ogawa-Choi combination discloses and/or suggests, and renders obvious, a smart phone with physically distinct first and second displays.” Paper 1 (Pet.), 75. Specifically, Petitioners propose a modification “to Ogawa where the single physical display unit in Ogawa that is logically divided to display first and second screens 13A and 13B is replaced by two physically distinct displays that respectively display the first and second screens 13A and 13B (*e.g.*, like that shown in figures 7A-7B and 39 of Choi).” *Id.*, 78-79. According to Petitioners, “the proposed modification to Ogawa would have resulted in Ogawa implementing its process of displaying the program across multiple logically divided displays such that the program would have instead been displayed across multiple physically distinct displays.” *Id.*

Petitioners’ argument however ignores most of the language in claim 2. The Petition at most argues that the proposed modification would have resulted in “multiple physically distinct displays.” The Petition does not address – and

Petitioners fail their burden to show – that the icon is changed in proportion *to the relative position of the application with respect to two different hardware displays*. Indeed, if a person of ordinary skill were to perform Petitioners’ proposed modification and (1) display Ogawa’s screen 13A from Ogawa Fig. 4 on Choi’s display 151 from Choi Fig. 7 and (2) display Ogawa’s screen 13B from Ogawa Fig. 4 on Choi’s display 154 from Choi Fig. 7, the portion of access bar 42 corresponding to screen 13A would occupy the entire top of display 151, and the portion of access bar 42 corresponding to screen 13B would occupy the entire top of display 154, as shown by the following annotation to Choi Fig. 7:



Ex.1006, Fig. 7 (annotated); Ex.2002, ¶¶79-81. Here, the icon is not changed in proportion to the relative position of the application with respect to two different hardware displays. *Id.* Instead, the icon occupies the top of one entire display, regardless of the relative position of the application with respect to the two

different hardware displays. *Id.* Thus, the person of ordinary skill would understand that Petitioners' proposed modification would not result in the icon recited by claim 2.

For these reasons, claim 2 is not anticipated by Ogawa or obvious in view of Ogawa and Choi.

VI. CONCLUSION

Multifold respectfully requests that the Board confirm the patentability of claims 1, 2, 4-9, 12-16, and 20.

Date: August 15, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Response (“POR”) consists of 3,469 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Dated: August 15, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, pursuant to 37 CFR § 42.6(e), a true and correct copy of the foregoing **PATENT OWNER RESPONSE and Exhibits 2002-2005** have been served electronically via email on counsel of record for Petitioners:

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