EXHIBIT 12

UNITED STATES DEPARTMENT OF COMMERCE
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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/228,460	04/15/94	BEERNINK	~~E P1017005~~

EXAMINER	
BANERJEE, A	
ART UNIT	**PAPER NUMBER**
2609	13

DATE MAILED: 07/07/94

26M2/0707

PAUL L. HICKMAN
HICKMAN & BEYER
P. O. BOX 61059
PALO ALTO, 94306

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire THREE month(s), ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☒ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☒ Claims 1-3, 5-11, 13-23 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☒ Claims 4, 12 have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-3, 5-11, 13-23 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

1. This application is a continuation of application SN # 07/985,588.

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 1-3, 5-11, 13-18 are rejected under 35 U.S.C. § 103 as being unpatentable over Liljenwall in view of Mizzi.

Addressing **claim 1**, Liljenwall teaches a gesture sensitive button that consists of: digital processor (fig 8, logic gates), a screen means coupled to said digital processor, pointer means for pointing to locations on said screen means (namely, a finger; col 1, lines 49-58), a button (the array of button segments A, B, C... which form a single button as if the segments were part of a low resolution touch screen--see arguments section) that is

responsive to at least two different button gestures. Liljenwall contains gesture recognition means (logic for decoding buttons, q.v. Liljenwall fig 3 or 4) which is operative to initiate a process within the device upon the detection of said at least two different button gestures. The process is determined by the gesture. See Liljenwall fig 8, "Enter" and "Clear Last Digit" functions where the direction of the stroke determines whether or not to "Enter" or "Clear Last Digit". Also referring to Liljenwall figure 8, the gestures are generally recognizable (numbers, letters, etc).

Regarding the newly added limitations of the digital processor being responsive without any intermediate input, the device of Liljenwall is intended to allow a user to "...enter information into information processing machines simplyu by the act of making these finger strokes across the face." (col 1, lines 62-63). Liljenwall further specifies that "...[t]he user brings a finger into contact with the fact 10, traces a path over the face while maintaining contact, then removes the finger from contact." (col 3, lines 38-41). There are no intervening gestures or the like necessary to enter the data.

Although Liljenwall does show transparent button means superimposed on a display, he does not explicitly teach that the buttons are images. Mizzi teaches the use of soft buttons, or a specific, labeled (Mizzi col 5, lines 34-36) area of the screen

whose position and outline (i.e. nature) are entirely programmed by the user (col 1, lines 61-68) and thus constitute the button image as intended by the applicant. Conventionally, buttons may be of many shapes and sizes; certain buttons (icons) are designed to indicate to the user what the function of the button is.

It would have been obvious to modify Liljenwall by substitution of a soft button (image) such as that taught by Mizzi because using soft buttons in order to maximize the display surface (Mizzi col 1, lines 36-41), or in other words, to use a size-limited display most effeciently.

Addressing **claims 2, 3, 9, 11, and 16,** the prior art shows the image of a button (the "key", Mizzi col 5, line 31), a touch sensitive screen where the pointer may be a stylus (Mizzi col 1, lines 43-51 sic passim, col 2, lines 6-8). Referring to claim 12, the purpose of a soft button is to partition an area of a screen for a particular function or purpose. It would be obvious to detect the gesture within the button (as opposed to somewhere else on the screen) because that is the purpose of partitioning an area of the screen to form a button. Referring to claim 16, Liljenwall (col 4, lines 34-42) teaches looking up in memory (using a LUT) to recognize gestures) and thus determine which recognizible gesture (if any -- note in fig 8 that not all possible gestures are allowable in all modes of operation) has been made.

Addressing **claims 5, 6, 13, 14, and 15,** the choice of a tap, "X" or a "✓" is seen as an obvious choice of design. Please note the discussion of the "X" and "✓" in the arguments section. Further note that one of the allowable gestures of Liljenwall is a "tap", or single press (fig 8, "+" sign).

Referring to **claim 8**, the button of Liljenwall is present before the gesture is detected. The interpretation (or "determining...") of the gesture occurs after the stylus (finger) is lifted. The "nature of the button" could mean how it is labeled (such as "OK" or "CANCEL") which is widely in use. Mizzi teaches that the position and outline (i.e. nature) may be entirely programmed by the user (Mizzi col 1, lines 61-68). It would be obvious that the user would program the outline of the button (or place it in a meaningful position) in order to make the system more user-friendly. Examples of buttons that reveal their nature are arrow buttons on scroll bars (in some Windows-based word processors and the like) and icons.

Addressing the newly added limitations to claim 8, from the suggestions of Mizzi that there may be buttons of various shapes and sizes (and functions) on the screen. In a regular "point and click" or "point and tap" button, to determine whether or not a button is selected, a determination is made to see whether the selection is done within the bounds of the button. Liljenwall as modified would be no exception. From the suggestions of

Liljenwall as modified, the button would not only be able to detect a "click" or a "tap", but a gesture as well.

Addressing **claims 7 and 10**, it was noted in the initial rejection that altering an image of a soft button (to make it appear "pressed", to highlight it, to darken it, et cetera) are techniques commonly used (and therefore obvious). They are used to tell the user the button has been pressed.

Referring to **claim 17**, Liljenwall shows at least one gesture (such as the change mode gesture of fig 4) where a process is initiated (changing mode) when the gesture is recognized (or substantially immediately afterwards). As to **claim 18**, Mizzi teaches that the process (operation) may be a plurality of operations as mentioned above (Mizzi col 5, lines 34-36).

4. Claims 19-23 are rejected under 35 U.S.C. § 103 as being unpatentable over Barrett (5,260,697) in view of Liljenwall and Mizzi.

With respect to claim 19, please note the preceeding discussions regarding displaying at least one button, the X and check mark gestures and executing a command based on the gesture.

Claim 19 further defines the invention by specifically reciting that the button ahs a button bounding box, the gesture has a gesture bounding box, and a "hit" is determined if the gesture box substantially overlaps the button box. Regarding the

button box, conventionally, the boundaries of the button (or an area around the button constitue a button box--to determine whether or not a click or a gesture is within the button).

Barrett teaches that within gesture recognition techniques used in buttons displayed on a screen, a "direct hit" is not the only means of detecting whether or not a gesture falls within a button. In particular, Barret suggests using the average value of a stroke as an indicator (col 22, stroke parsing algorithm B). Given the suggestion of detecting for a substantial overlap (only the average value must overlap), it would have been obvious to use another obvious functionally equivalent, such as the use of overlapping areas (i.e. the spatial correlation) in order to determine whether or not the gesture "hit" the box because both methods would suffice and without using some sort of "near hit" algorithm, it is more difficult for the user to make the gestures.

In reference to claim 20, given the suggestions of Barrett that there may be a "near miss", the particular definition of a "near miss" (i.e. 40% overlap, 45%, etc) is seen as a choice of design provided that it was a reasonable "near miss".

Referring to claims 21-23, please note the discussions of claims 13-15 regarding the X, check, and tap marks, and further the discussion of claim 7 regarding the altered image. The particular manner in which the button is altered, or the

particular function of the button is seen as a choice of design because there a multitude of possible functions, dependent upon the nature of the button.

Referring specifically to claim 22, the introduction of a menu on receipt of a particular gesture to a button is well known. One example is within MicroSoft Windows (official notice taken), where in order to close a window, one "double clicks" the "go away" button in the upper left corner (one gesture), but if the user "single clicks" (another gesture), a menu (equivalent to a choice pallette) "pops" up. Given the suggestions of the prior art of gesture sensitive buttons, and that each button may activate a different function (Liljenwall), it would have been obvious to use the gestures for various functions and special effects in order to make the device more user friendly. A similar argument holds for theX mark of claim 23.

5. The applicant's arguments have been fully considered, but they are not deemed to be persuasive.

Regarding claim 1, the applicant argues that the segments of Liljenwall are not the equivalent of a button, but rather the equivalent of a touch screen. The examiner respectfully submits that one of ordinary skill in the art would not have placed so much limitation on Liljenwall. The embodiment of Liljenwall is on the surface of a wristwatch, where the total area of the

screen is very small. In a larger embodiment, such as a pen-based computer system suggested by Mizzi, would one of ordinary skill have required the user to make his gesture occupy the entire screen? The ordinary artisian would have utilized a portion of the screen (i.e. a button) for the gesture recognition as suggested by Liljenwall.

Regarding the functions of the gestures being context sensitive, in a multi-button environment, each button (or icon) is usually associated with a different function (or application). If each button was to have more than one function associated with it, clearly, a different gesture would be associated with each function. From the suggestions of Mizzi that there may be a number of buttons on the screen at a given time, each button (or icon) may have a number of different functions. Consider the example of a gesture sensitive button on the same screen as a conventional "point-and-tap" button. One of ordinary skill in the art, to avoid confusion, would not make the conventional button sensitive to the gestures.

The applicant has argued (but not claimed) that the buttons have more functionality than those of the prior art, that they indicate the inputs they accept and the function(s) they perform, and that the combination of Liljenwall and Mizzi would merely produce a number of unlabeled, undifferentiated soft buttons. In addition, the applicant points out that Liljenwall teaches a

modal system. It was not claimed that the applicant's invention was non-modal.

Admittedly, Liljenwall does teach a modal system, however, within each mode, a number of gestures (numbers, etc) may be recognized. For example, (fig 4, q.v. col 4, lines 5-20) show a gesture that (substantially immediately) executes a proces (or changes the mode) to remap the definitions of the buttons.

One example given by Liljenwall that clearly shows his button means (which could be a button image in view of Mizzi) is gesture sensitive follows. Note figure 8 of Liljenwall and in particular, note the strokes for the "Enter" and "Clear Last Digit" functions in the calculator mode. Note that these strokes use the same segments, but in reverse order. They have two different meanings to the device of Liljenwall.

Claims 2-6 depend either directly or indirectly from claim 1, and are still rendered obvious. The "X" and "✓" symbols were deemed an obvious choice of design by the examiner in the first office action. The examiner sustains his position on this matter because there are a pseudo-infinite number of "gestures" that could be used to operate a gesture sensitive button, limited only by the resolution, stylus (or finger) contact width, and dexterity of the user. For instance, if "X" and "✓" (which incidentally are commonly used as gestures to indicate to a schoolboy whether or not he has answered a problem or question

correctly or not) could distinguish an invention as patentable, why not "O" and "ç"? Both are easy to draw. The "X" and "✓" are thus deemed obvious choices of design.

The remainder of the applicant's arguments draw basis from topics discussed previously, or are addressed in the appropriate rejections section above.

6. Any inquiry concerning this communication should be directed to Aaron Banerjee at telephone # (703) 305-4847.

ALVIN E. OBERLEY
SUPERVISORY PATENT EXAMINER
ART UNIT 269

TO SEPARATE, TEAR OFF TOP AND BOTTOM EDGES, SNAP-APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER	
NOTICE OF REFERENCES CITED		08/228,460	2609		13
		APPLICANT(S) Everest H. Beernink			

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
✓	A	5194852	3/1993	More et al	345	173	12/1986.
✓	B	5347295	9/1994	Agulnick et al	345	156	10/1990.
✓	C	5398045	3/1995	Sach et al.	345	172	8/1990.
✓	D	5398310	3/1995	Tchao et al	395	144	
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG.	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	R	
	S	
	T	
	U	

EXAMINER	DATE
LAO, LUN-TZ	11/17/95

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05 (a).)

PTO FORM 948
(REV. 7-92)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

GROUP

ATTACHMENT TO PAPER NUMBER

APPLICATION NUMBER 985588

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

THE PTO DRAFTSMEN REVIEW ALL ORIGINALLY FILED DRAWINGS REGARDLESS OF WHETHER THEY WERE DESIGNATED AS INFORMAL OR FORMAL. ADDITIONALLY, THE PATENT EXAMINER WILL ALSO REVIEW THE DRAWINGS FOR COMPLIANCE WITH THE REGULATIONS.

The drawings filed 12/3/92

A. ☒ are approved by the draftsperson.

B. ☐ are objected to by the draftsperson under 37 CFR 1.84 for the reason(s) checked below. The examiner will require submission of new, corrected drawings at the appropriate time. Corrected drawings must be submitted according to the instructions listed on the back of this Notice.

1. Paper and ink. 37 CFR 1.84(a)

☐ Sheet(s)_____Poor.

2. Size of Sheet and Margins. 37 CFR 1.84(b)

Acceptable Paper Sizes and Margins

	Paper Size		
Margin	8 1/2 by 14 inches	8 1/2 by 13 inches	DIN size A4 21 by 29.7 cm.
Top	2 inches	1 inch	2.5 cm.
Left	1/4 inch	1/4 inch	2.5 cm.
Right	1/4 inch	1/4 inch	1.5 cm.
Bottom	1/4 inch	1/4 inch	1.0 cm.

☐ Proper Size Paper Required.
All Sheets Must be Same Size.
Sheet(s) _____

☐ Proper Margins Required.
Sheet(s) _____

☐ TOP ☐ RIGHT

☐ LEFT ☐ BOTTOM

3. Character of Lines. 37 CFR 1.84(c)

☐ Lines Pale or Rough and Blurred.
Fig(s)_____

☐ Solid Black Shading Not Allowed.
Fig(s)_____

4. ☐ Photographs Not Approved.

_____

☐ Comments;

5. Hatching and Shading. 37 CFR 1.84(d)

☐ Shade Lines are Required.
Fig(s) _____

☐ Criss-Cross Hatching Not Allowed.
Fig(s) _____

☐ Double Line Hatching Not Allowed.
Fig(s) _____

☐ Parts in Section Must be Hatched.
Fig(s) _____

6. Reference Characters. 37 CFR 1.84(f)

☐ Reference Characters Poor or Incorrectly Sized.
Fig(s) _____

☐ Reference Characters Placed Incorrectly.
Fig(s) _____

7. Views. 37 CFR 1.84(i) & (j)

☐ Figures Must be Numbered Properly.

☐ Figures Must Not be Connected.
Fig(s) _____

8. ☐ Identification of Drawings. 37 CFR 1.84(1)
Extraneous Matter or Copy Machine Marks Not Allowed. Fig(s) _____

9. ☐ Changes Not Completed from Prior PTO-948 dated _____

Telephone inquires concerning this review should be directed to the Chief Draftsperson at telephone number (703) 305-8404.

AD
Reviewing Draftsperson

1/4/93
Date

Note: Any objection to the drawings made by the examiner will be communicated separately in an office action.

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