

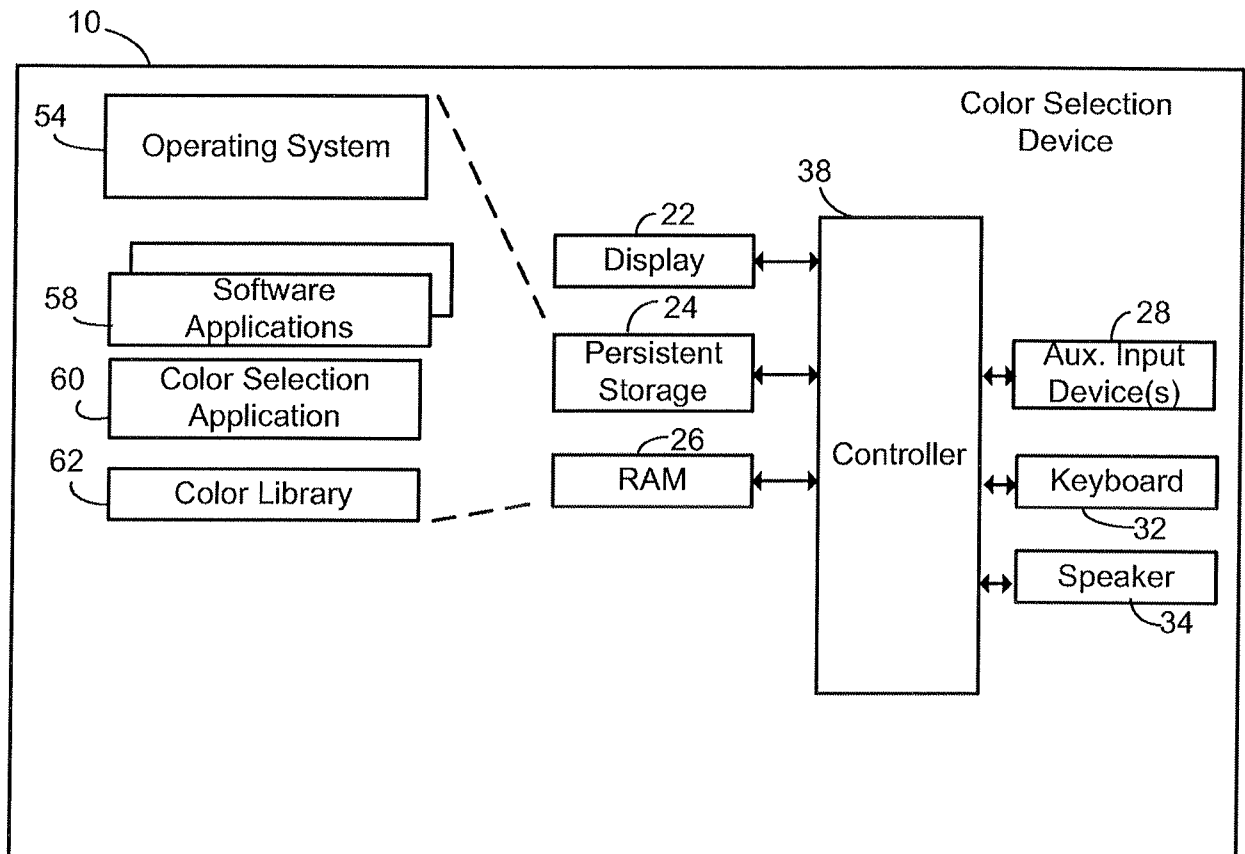


FIG. 1

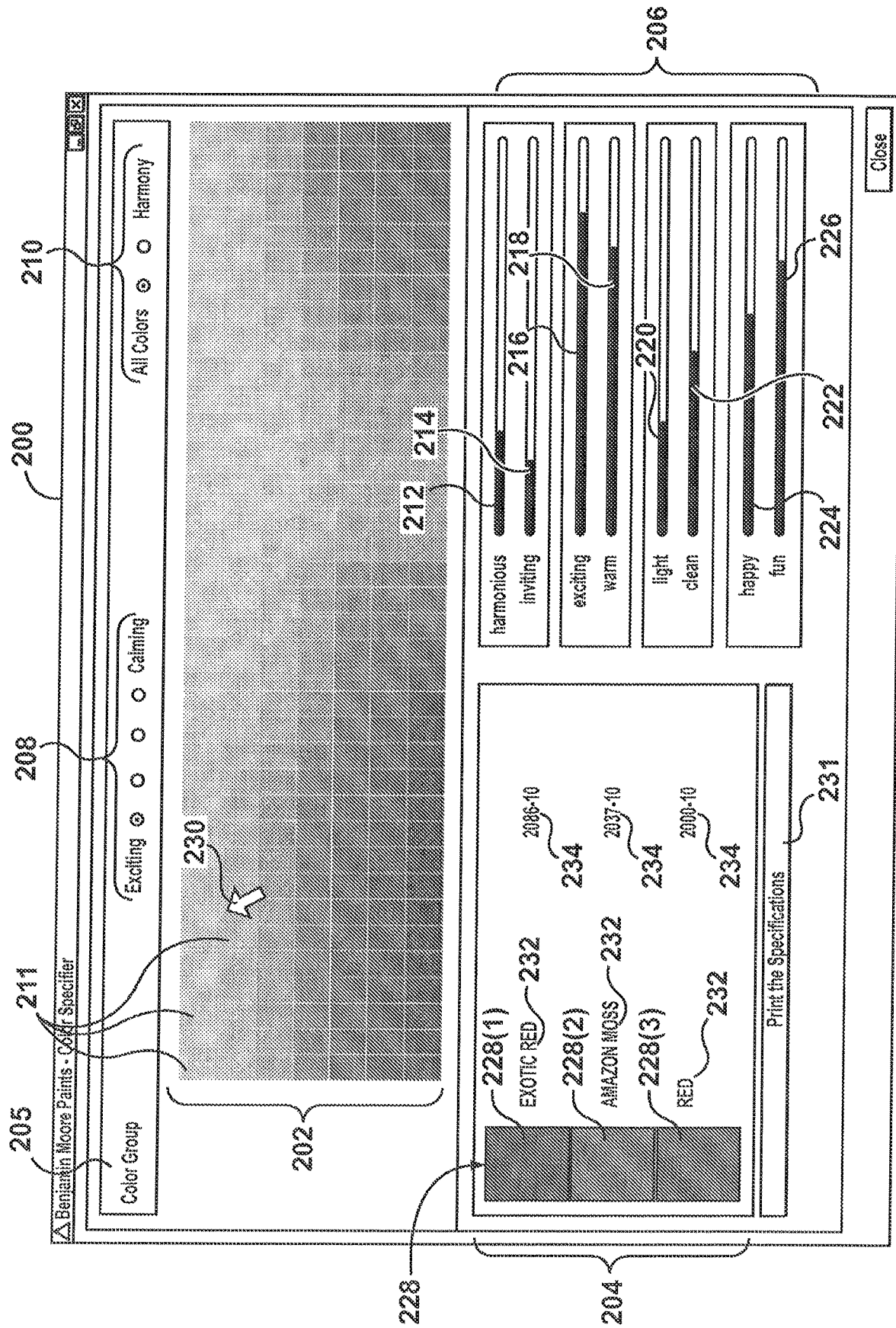


FIG. 2

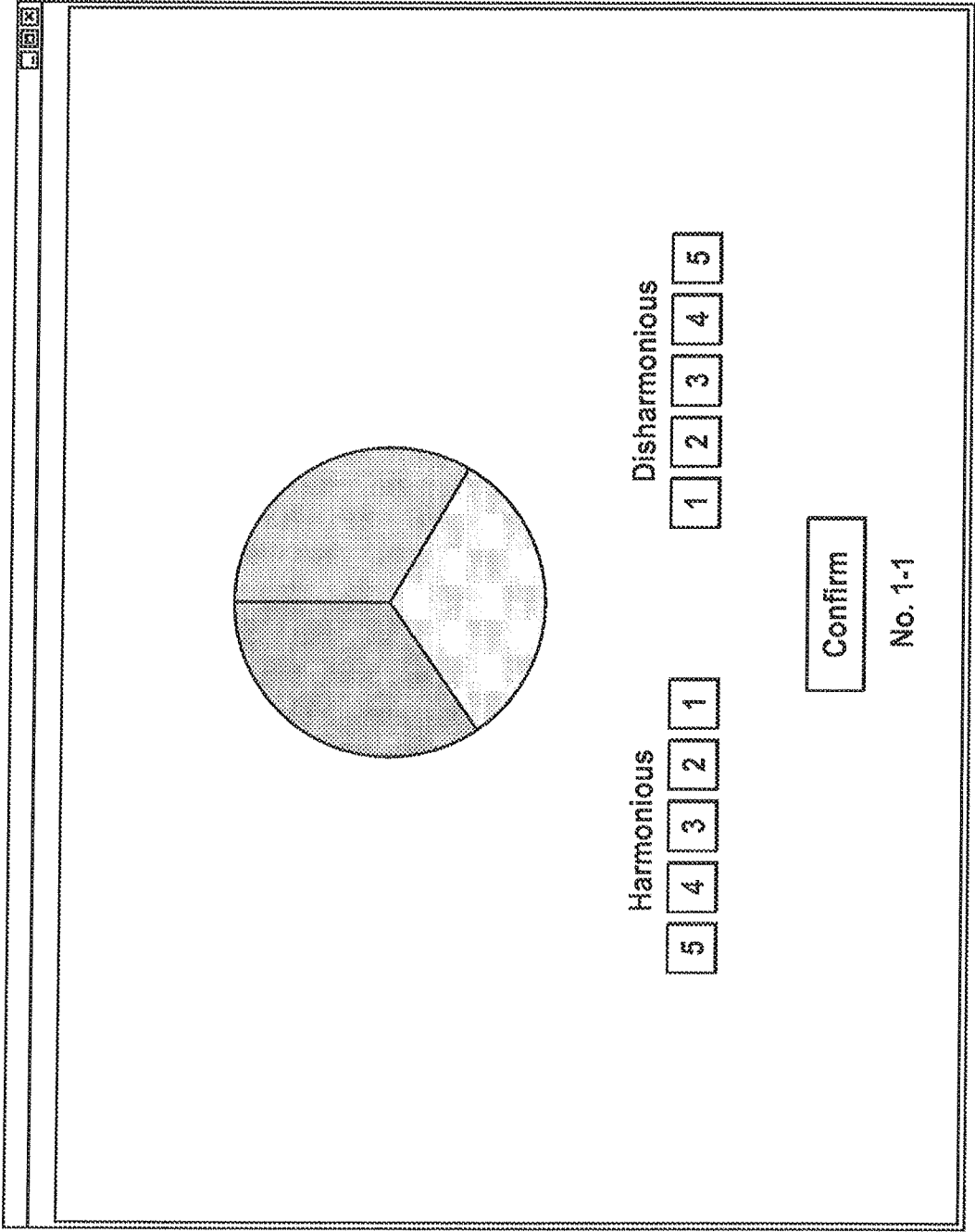


FIG. 3

Table 1 Specifications of the 35 colour samples in CIELAB system

Sample	Tone	Hue	L*	a*	b*	C*	n
1	Vivid	Red	35.0	46.4	23.2	51.8	27
2		Orange	56.7	30.6	52.1	60.4	60
3		Yellow	79.2	2.6	61.3	61.4	88
4		Green	34.1	-25.8	17.0	30.8	147
5		Cyan	34.6	-17.8	-8.9	19.9	206
6		Blue	35.8	-2.4	-33.4	33.5	266
7		Purple	35.7	36.9	-23.6	43.8	327
8	Pale	Red	79.8	21.9	10.9	24.5	26
9		Orange	79.6	13.1	22.2	25.8	59
10		Green	79.5	-19.4	12.6	23.1	147
11		Blue	80.6	-1.9	-24.3	24.4	265
12		Purple	80.3	19.5	-12.1	23.0	328
13	Dull	Red	56.9	21.8	10.6	24.2	26
14		Yellow	56.4	1.0	25.1	25.1	88
15		Cyan	57.0	-12.9	-6.3	14.3	206
16	Dark	Orange	34.0	12.1	21.3	24.5	60
17		Green	34.0	-18.6	12.3	22.3	146
18		Blue	35.0	-1.4	-24.1	24.2	267
19	Light Greyish	Yellow	79.6	0.9	12.9	13.0	86
20		Cyan	79.9	-6.8	-2.8	7.3	203
21		Purple	79.8	9.8	-6.1	11.6	328
22	Greyish	Red	56.9	11.0	5.3	12.2	26
23		Orange	56.6	6.2	11.1	12.7	61
24		Green	56.6	-10.0	6.5	11.9	147
25		Blue	57.1	-0.9	-12.3	12.4	266
26		Purple	57.1	9.4	-5.9	11.2	328
27	Dark Greyish	Red	34.1	10.5	5.3	11.7	27
28		Yellow	34.0	0.6	12.3	12.3	87
29		Cyan	34.2	-6.3	-2.9	7.0	204
30		Purple	34.6	9.2	-5.6	10.8	329
31	Achromatic	Black	2.3	-0.1	-0.4	0.4	262
32		Dark Grey	34.2	-0.2	0.2	0.3	124
33		Mid Grey	56.9	-0.1	0.3	0.3	115
34		Light Grey	80.0	3.2	-0.9	3.4	345
35		White	100.0	-0.1	0.3	0.3	106

FIG. 4

Active

5 4 3 2 1

a lot a little

Passive

1 2 3 4 5

a little a lot

Confirm

No. 1-1

FIG. 5

Active

5 4 3 2 1

a lot a little

Passive

1 2 3 4 5

a little a lot

Confirm

No. 1-1

FIG. 6

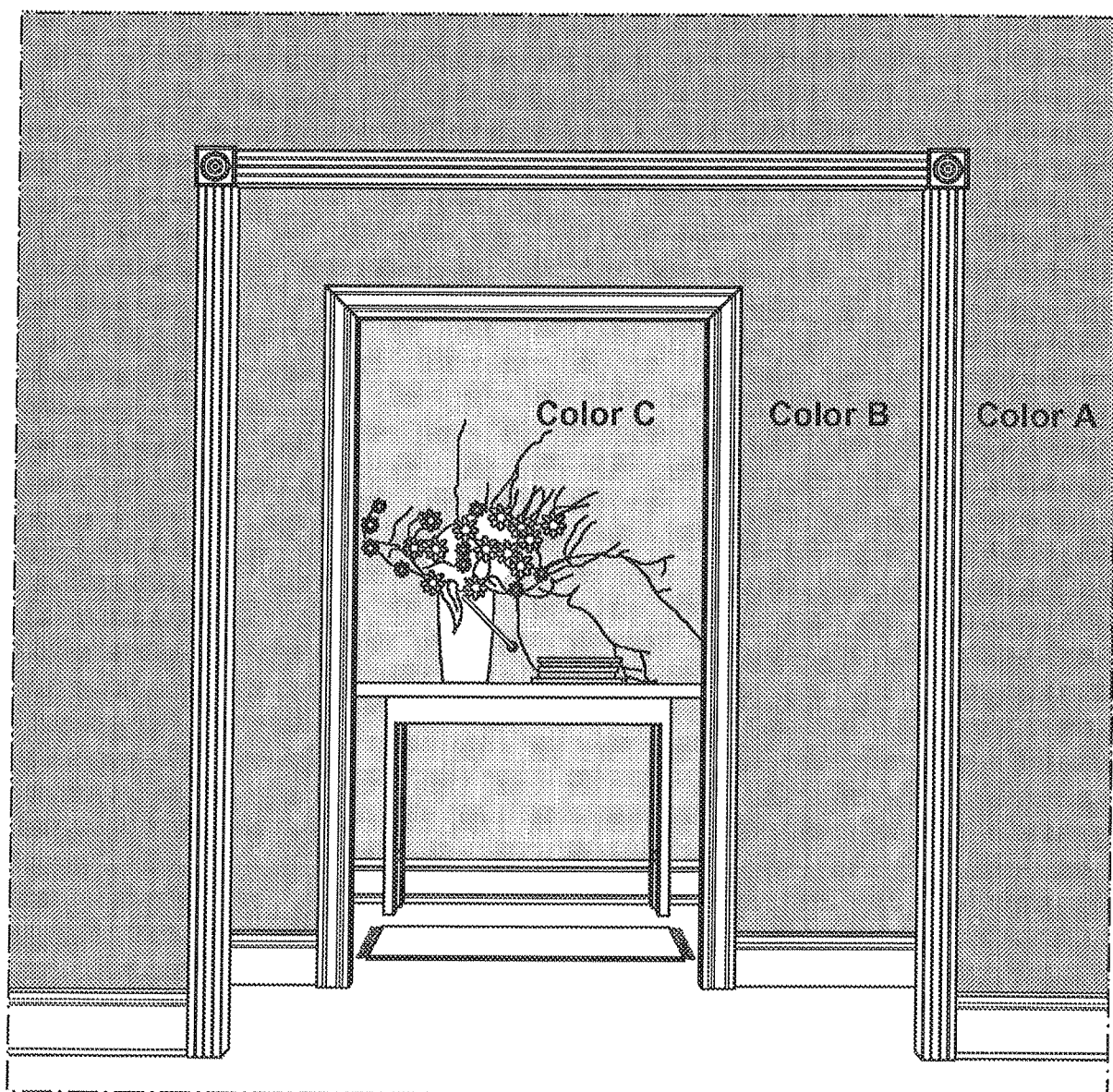


FIG. 7

Table 2: Specifications for Selected E1 Colors

62-1

Row-Column	Code	Color Name	L*	a*	b*	C* _{ab}	h _{ab}	E
1-1	15-10	Color A	43.9	56.6	36.4	67.3	32.8	2.16
2-1	15-20	Color B	47.6	56.6	30.2	64.2	28.1	2.10
3-1	15-30	Color C	52.8	55.3	21.5	59.3	21.2	1.95
4-1	15-40	Color D	66.4	44.7	7.7	45.3	9.8	1.35
5-1	15-50	Color E	78.0	30.3	2.4	30.4	4.6	0.68
6-1	15-60	Color F	86.7	18.1	1.0	18.1	3.1	0.22
7-1	15-70	Color G	91.8	9.4	1.2	9.5	7.1	0.03
1-2	16-10	Color AA	45.4	57.4	40.1	70.1	34.9	2.25
2-2	16-20	Color BB	49.0	57.1	34.9	66.9	31.4	2.17
3-2	16-30	Color CC	54.8	54.4	26.1	60.3	25.6	1.95
4-2	16-40	Color DD	68.2	42.1	12.3	43.8	16.3	1.25
5-2	16-50	Color EE	79.9	27.6	5.2	28.1	10.7	0.57
6-2	16-60	Color FF	88.1	16.0	2.9	16.2	10.1	0.17
7-2	16-70	Color GG	93.1	7.7	2.1	8.0	15.2	0.01
...								
...								
...								
1-36	97-10	Color AB	37.4	48.5	18.5	52.8	20.5	1.61
2-36	97-20	Color BBB	42.1	50.9	10.8	52.1	12.0	1.65
3-36	97-30	Color CCC	48.6	51.2	2.6	51.2	2.9	1.64
4-36	97-40	Color DDD	64.7	40.4	-5.2	40.7	352.6	1.11
5-36	97-50	Color EEE	77.6	27.2	-6.3	27.9	347.0	0.53
6-36	97-60	Color FFF	86.4	16.5	-4.1	17.0	345.9	0.16
7-36	97-70	Color GGG	92.1	8.7	-1.5	8.9	350.1	0.01
1-37	98-10	Color AC	39.1	51.7	25.9	57.8	26.6	1.79
2-37	98-20	Color BC	43.5	53.0	18.8	56.2	19.8	1.80
3-37	98-30	Color CC	49.5	52.7	9.9	53.6	10.7	1.74
4-37	98-40	Color DC	64.7	42.3	0.2	42.3	0.3	1.21
5-37	98-50	Color EC	77.4	28.4	-2.9	28.5	354.2	0.58
6-37	98-60	Color FC	86.5	17.1	-2.2	17.2	352.7	0.18
7-37	98-70	Color GC	92.2	8.7	-0.6	8.7	356.1	0.02

FIG. 8A

Table 3: Specifications for Selected E2 Colors

62-2

Row-Column	Code	Color Name	L*	a*	b*	C* _{ab}	h _{ab}	E
1-1	12-10	Color BA	90.3	8.2	2.2	8.5	14.8	-0.03
2-1	12-20	Color BBC	85.0	13.1	3.2	13.5	13.6	0.02
3-1	12-30	Color BC	78.1	17.4	1.2	17.4	4.0	0.08
4-1	12-40	Color BD	70.8	21.3	3.1	21.5	8.2	0.18
5-1	12-50	Color BE	62.2	25.3	3.0	25.5	6.7	0.31
6-1	12-60	Color BF	52.5	26.7	5.2	27.2	11.0	0.34
7-1	12-70	Color BG	40.5	27.3	11.5	29.6	22.9	0.39
1-2	13-10	Color BAA	87.9	9.1	4.6	10.2	26.7	-0.04
2-2	13-20	Color BAB	83.2	12.5	3.6	13.0	15.9	-0.03
3-2	13-30	Color BCC	76.9	17.4	5.1	18.1	16.2	0.08
4-2	13-40	Color BDD	68.5	20.4	6.8	21.5	18.3	0.13
5-2	13-50	Color BEE	62.3	24.1	6.7	25.0	15.4	0.27
6-2	13-60	Color BFF	54.5	23.8	7.5	24.9	17.5	0.21
7-2	13-70	Color BGG	42.2	24.2	9.4	25.9	21.2	0.21
		...						
		...						
		...						
1-39	88-10	Color CA	31.1	24.7	7.3	25.8	16.5	0.24
2-39	88-20	Color CB	35.6	28.2	4.5	28.5	9.1	0.40
3-39	88-30	Color CC	42.2	30.7	0.2	30.7	0.5	0.53
4-39	88-40	Color CD	60.6	26.8	-4.1	27.1	351.2	0.38
5-39	88-50	Color CE	74.8	19.4	-4.9	20.0	345.8	0.14
6-39	88-60	Color CF	84.8	12.4	-3.0	12.8	346.4	-0.01
7-39	88-70	Color CG	91.7	6.6	-0.9	6.6	352.3	-0.04

FIG. 8B

Table 4: Specifications for Selected E3 Colours

62-3

Row-Column	Code	Color Name	L*	a*	b*	C* _{ab}	h _{ab}	E
1-1	61-10	Color 1	87.0	5.7	2.7	6.3	25.3	-0.14
2-1	61-20	Color 2	82.9	7.5	2.3	7.9	17.2	-0.18
3-1	61-30	Color 3	75.5	10.8	4.0	11.5	20.5	-0.20
4-1	61-40	Color 4	66.3	13.6	4.2	14.3	17.3	-0.21
5-1	61-50	Color 5	50.4	16.7	5.5	17.6	18.3	-0.18
6-1	61-60	Color 6	42.3	17.4	4.6	18.0	14.8	-0.17
7-1	61-70	Color 7	32.7	17.8	6.9	19.1	21.3	-0.13
1-2	62-10	Great	31.0	16.5	14.1	21.7	40.4	-0.11
2-2	62-20	Better	32.6	17.0	13.5	21.7	38.5	-0.10
3-2	62-30	Best	35.8	16.9	12.1	20.8	35.7	-0.13
4-2	62-40	Wonderful	51.4	15.1	8.4	17.3	29.3	-0.24
5-2	62-50	Fantastic	67.9	11.3	5.5	12.6	25.9	-0.28
6-2	62-60	Glorious	80.5	8.0	4.4	9.1	28.5	-0.20
7-2	62-70	Stupendous	89.1	4.8	3.5	6.0	35.9	-0.11
...								
...								
...								
1-41	10-10	Color 11	23.7	5.3	-2.4	5.8	335.9	-0.69
2-41	10-20	Color 12	28.0	8.5	-6.2	10.5	324.0	-0.57
3-41	10-30	Color 13	35.1	11.6	-10.2	15.4	318.5	-0.41
4-41	10-40	Color 14	56.1	11.6	-11.0	16.0	316.6	-0.34
5-41	10-50	Color 15	72.4	8.9	-9.1	12.7	314.4	-0.27
6-41	10-60	Color 16	83.6	5.8	-5.2	7.6	318.4	-0.19
7-41	10-70	Color 17	91.2	3.2	-2.0	3.8	327.3	-0.09
1-42	13-10	Color 100	90.6	3.2	3.6	4.8	48.2	-0.10
2-42	13-20	Color 101	85.8	6.1	0.5	6.1	4.5	-0.16
3-42	13-30	Color 102	79.8	9.0	-4.3	9.9	334.5	-0.19
4-42	13-40	Color 103	74.4	12.1	-7.3	14.1	329.1	-0.15
5-42	13-50	Color 104	65.9	16.2	-7.5	17.9	335.1	-0.08
6-42	13-60	Color 105	46.4	16.8	-8.7	19.0	332.6	-0.16
7-42	13-70	Color 106	36.3	16.5	-7.5	18.1	335.6	-0.20

FIG. 8C

Table 5: Specifications for selected E4 Colours

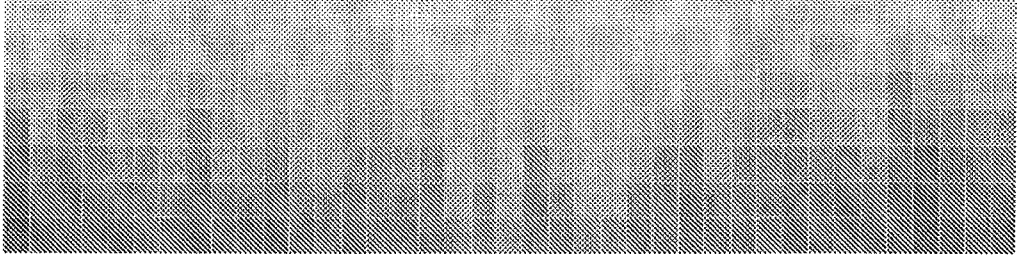
62-4

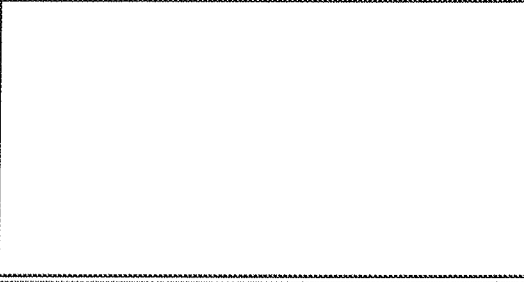
Row-Column	Code	Colour Name	L*	a*	b*	C* _{ab}	h _{ab}	E
1-1	52-10	A	24.0	4.4	5.8	7.3	52.8	-0.69
2-1	52-20	B	29.4	6.3	4.9	8.0	38.0	-0.70
3-1	52-30	C	37.7	7.7	3.5	8.5	24.6	-0.70
4-1	52-40	D	58.4	7.5	2.1	7.7	15.8	-0.58
5-1	52-50	E	74.7	5.0	0.8	5.1	8.7	-0.38
6-1	52-60	F	85.3	3.2	1.2	3.4	20.7	-0.21
7-1	52-70	G	92.0	1.7	1.7	2.4	45.9	-0.09
1-2	53-10	H	30.7	7.1	8.9	11.4	51.5	-0.61
2-2	53-20	I	34.2	7.0	8.3	10.9	49.7	-0.65
3-2	53-30	J	37.5	6.7	7.2	9.9	47.0	-0.69
4-2	53-40	K	54.1	4.9	5.3	7.2	46.9	-0.70
5-2	53-50	L	70.6	3.1	3.4	4.6	47.1	-0.49
6-2	53-60	M	82.2	2.2	3.0	3.7	54.1	-0.27
7-2	53-70	N	90.0	0.9	2.6	2.8	70.7	-0.12
...								
...								
...								
1-27	65-10	O	25.5	5.7	6.7	8.7	49.6	-0.65
2-27	65-20	P	31.6	7.1	4.3	8.3	31.2	-0.69
3-27	65-30	Q	40.5	8.0	1.9	8.2	13.6	-0.69
4-27	65-40	R	61.4	6.6	-0.4	6.6	356.3	-0.57
5-27	65-50	S	76.5	3.9	-1.4	4.2	339.9	-0.37
6-27	65-60	T	86.7	2.3	0.0	2.3	0.4	-0.19
7-27	65-70	U	92.5	1.0	1.0	1.4	44.7	-0.08

FIG. 8D

Benjamin Moore Paints - Color Specifier

Color Group Exciting ☐ ☒ ☐ ☐ Calming All Colors ☒ ☐ Harmony





Print the Specifications

harmonious

inviting

exciting

warm

light

clean

happy

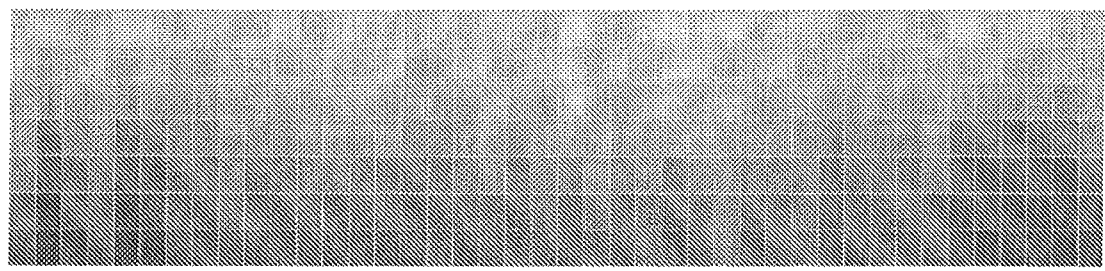
fun

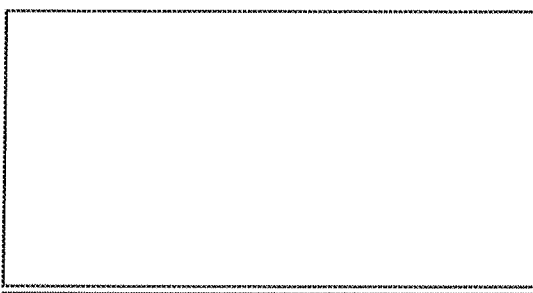
Close

FIG. 9

Benjamin Moore Paints - Color Specifier

Color Group Exciting ☐ ☐ ☒ ☐ Calming All Colors ☒ ☐ Harmony





Print the Specifications

harmonious

inviting

exciting

warm

light

clean

happy

fun

Close

FIG. 10

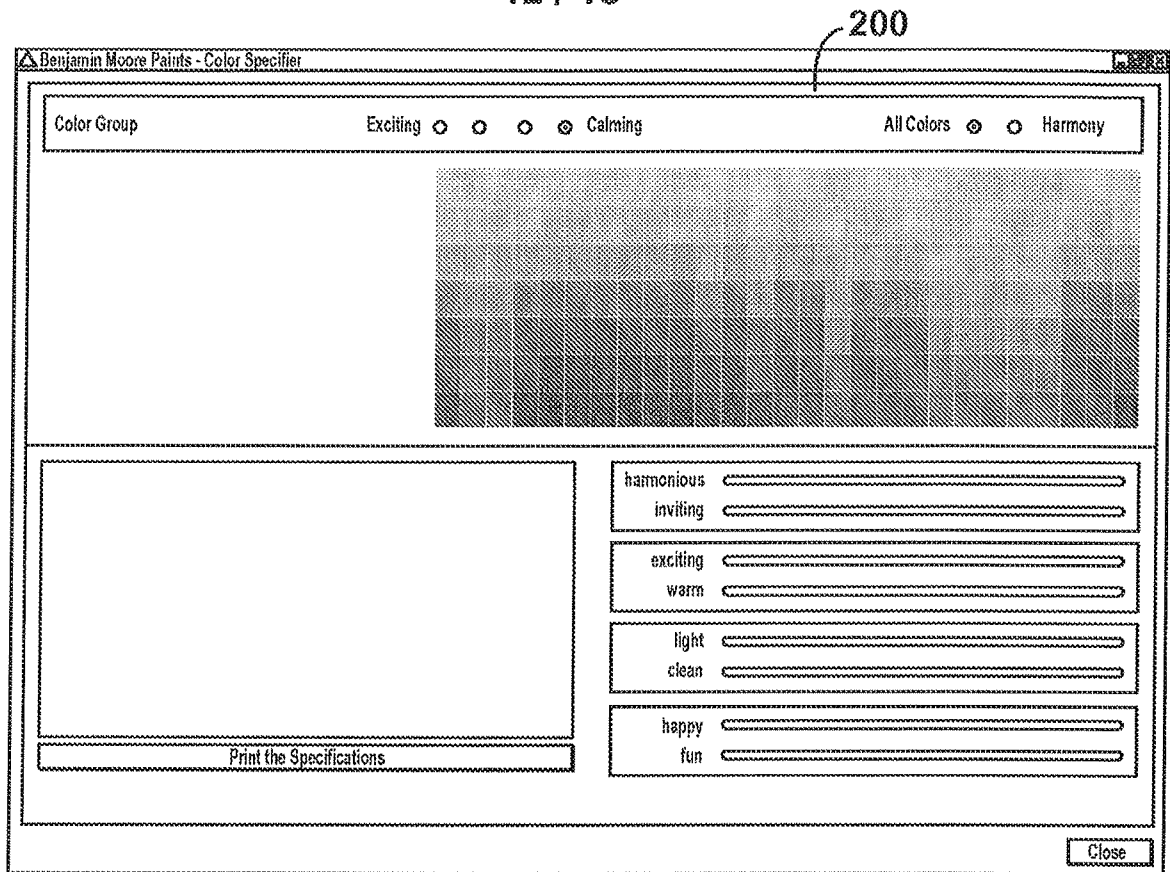


FIG. 11

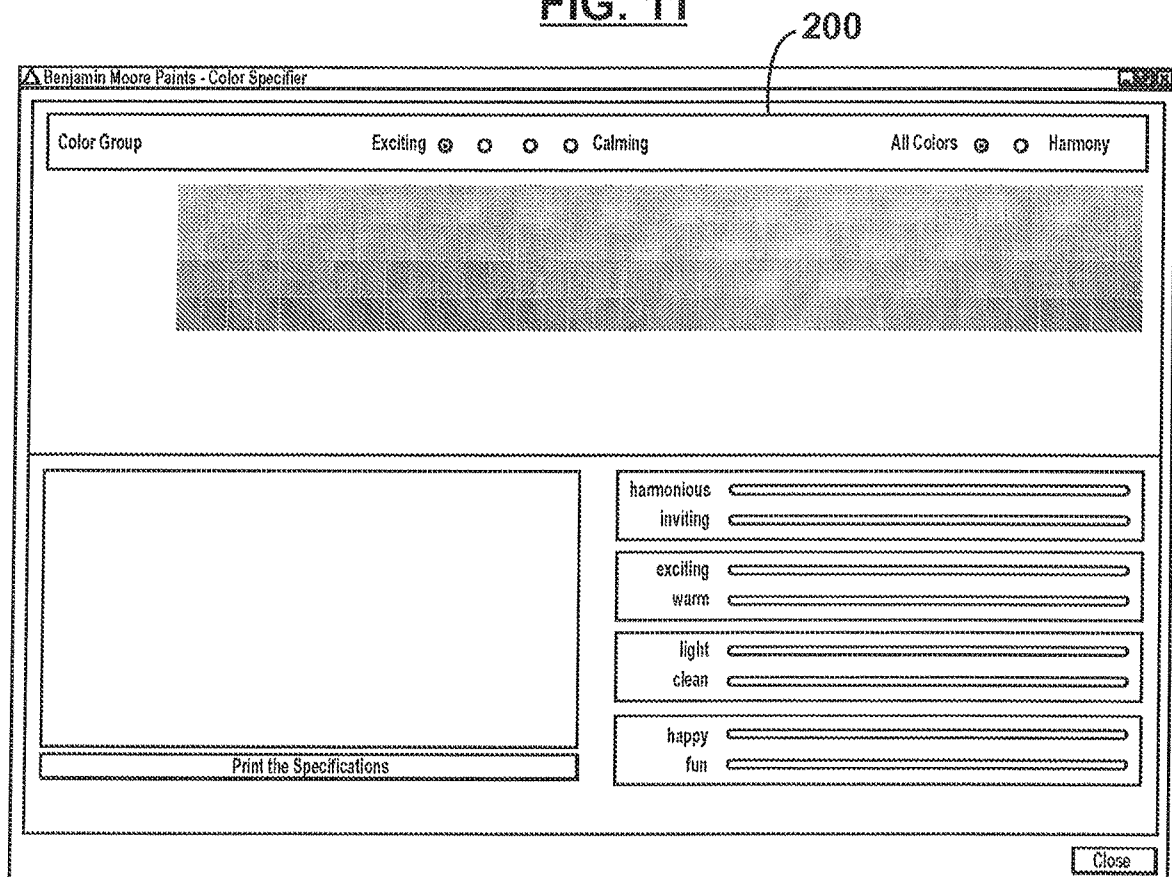


FIG. 12

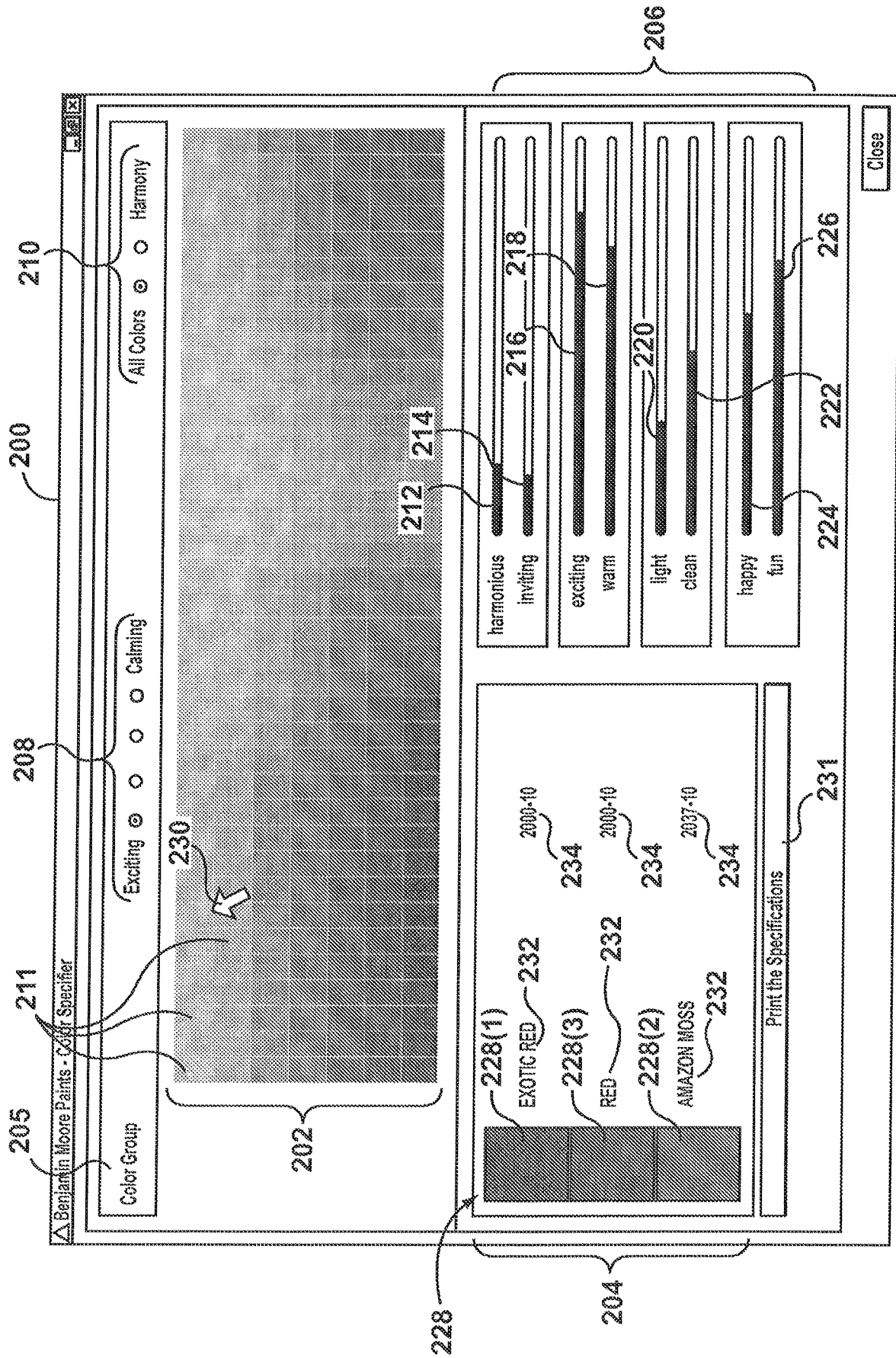


FIG. 13

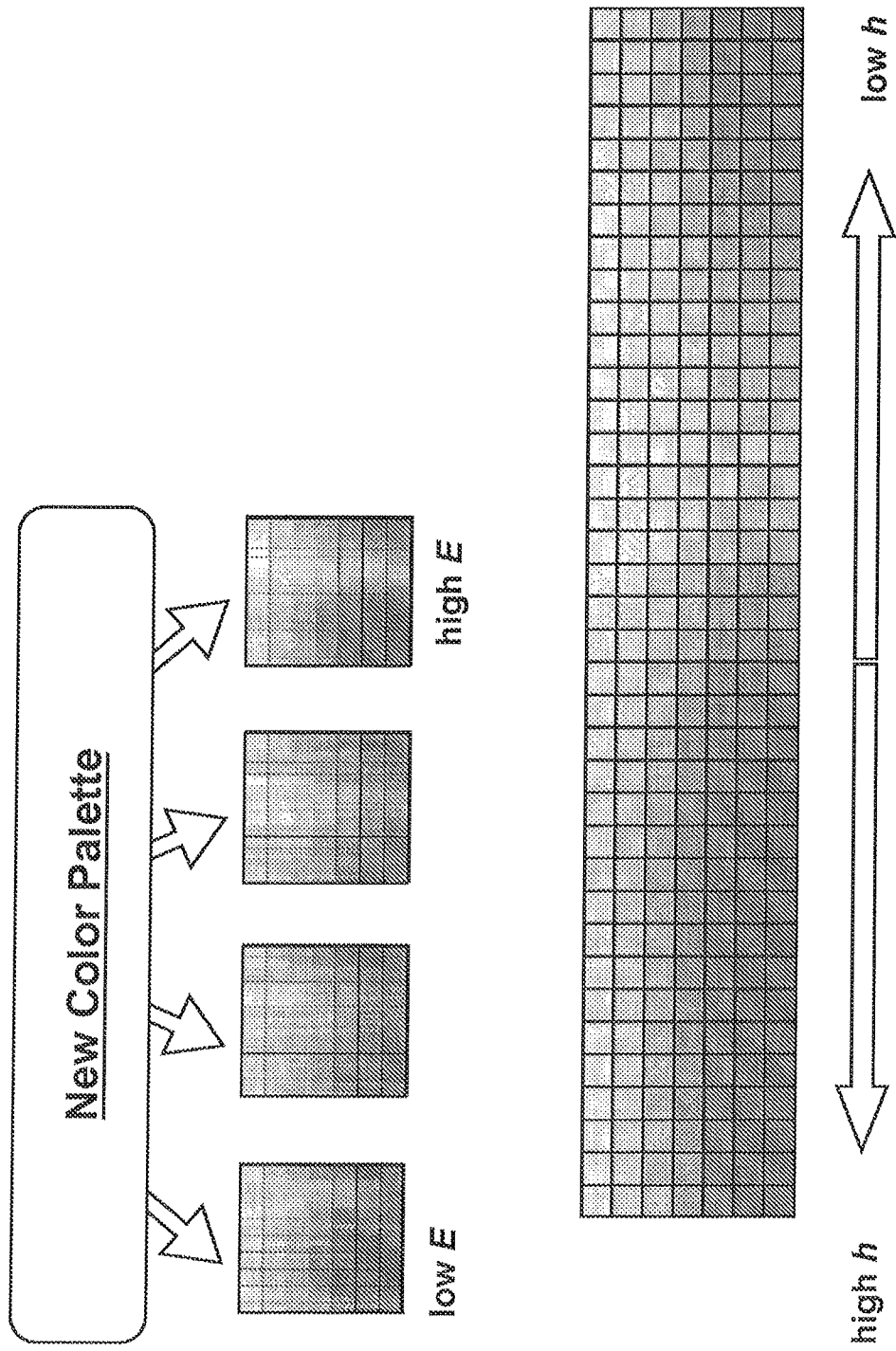


FIG. 14

1. Select input format, either XYZ or R%
2. Select light source for XYZ input
3. Select 2-colour or 3-colour combinations
4. Calculate from input of R%
 - 4.1 Transform all R% to (XYZ)D65, (XYZ)A, (XYZ)TL84, (XYZ)F2 and (XYZ)BMD.
 Predict all non D65 XYZ values to those under D65 via CAT02 chromatic adaptation transform
 - 4.2 Calculate CE and CH values
5. Calculate from input of XYZ
 - 5.1 If it is (XYZ)D65, calculate CE and CH values
 - 5.2 If it is not (XYZ)D65, use CA T02 to transform all the others to (XYZ)D65 and then calculate CE and CH values

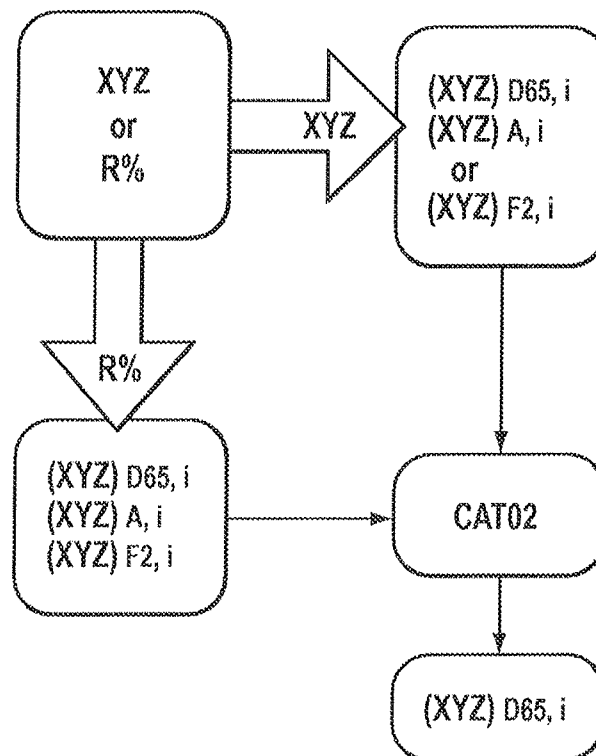


FIG. 15