

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte ROBERT A. FABRIZIO

---

Appeal No. 1998-2825  
Application No. 08/595,282

---

HEARD: JANUARY 27, 2000

---

Before STAAB, NASE, and GONZALES, Administrative Patent Judges.

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 9, which are all of the claims pending in this application.

Appeal No. 1998-2825  
Application No. 08/595,282

We AFFIRM-IN-PART.

The appellant's invention relates to a method and an apparatus for monitoring the heart rate of a person. An understanding of the invention can be derived from a reading of exemplary claims 1 and 2 which appear in the appendix to appellant's substitute brief filed August 1, 1997 (Paper No. 9).

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Brink et al. (Brink)	4,788,983	Dec. 6,
1988		
Crossing et al. (Crossing)	5,458,548	Oct. 17,
1995		
		(filed Nov. 29,
1993)		

The appealed claims stand finally rejected under 35 U.S.C. § 103(a) on the following grounds:

(1) Claims 1, 3, 5, 7 and 9, unpatentable over Crossing; and  
(2) Claims 2, 4, 6 and 8, unpatentable over Crossing in view of Brink.

Rejection (1)

Appeal No. 1998-2825  
Application No. 08/595,282

In accordance with 37 CFR § 1.192(c)(7), we have selected claim 1 as the representative claim from the appellant's grouping of claims 1, 3, 5, 7 and 9 to decide the appeal on this rejection under 35 U.S.C. § 103. See page 9 of the appellant's substitute brief.

Crossing discloses an exercise device including a microprocessor 30 programmed to determine a minimum and a maximum heart rate limit for the user based on a desired exercise level and the age of the user. The device includes a keyboard 15 and liquid crystal display 14 (Figure 8). Crossing explains the mode of operation of the device as follows:

When a user is about to commence an exercise, after turning the machihe [sic] on, the LCD transmits a message "ENTER MODE." The user then sets the mode 1, 2, 3 or 4, (or 5 for more specific parameters which may be adjusted to suit an individual's requirements) and presses an ENTER button. The next message on the LCD 14 is asking the age of the user, that is entered and again the ENTER button is depressed. The next message on the LCD will be to identify the training time and if, for example, it is ten minutes the user presses "10" and then enters that again by depressing the ENTER button. The next message on the screen is to press the START button and when that is pressed, the screen will show on the top line the training mode, age, heart rate range (which it will calculate on the abovementioned formula) and as the exercise

Appeal No. 1998-2825  
Application No. 08/595,282

commences the actual heart rate of the user. The timer in the microprocessor will then "stopwatch" by counting down from 10 to 0 whilst within the selected heart rate range. The number of impulses will record the "distance" which is a proportion thereof. If the user moves out of this range, the LCD will freeze, as mentioned above, or optionally will cause the audio beeper alarm to sound. (Col. 4, line 50 through col. 5, line 4, emphasis added)

With regard to the "abovementioned formula," Crossing teaches that:

The maximum heart rate recommended for a user can be calculated as 220 less the age, so that for example a person aged 60 should not exercise with a heart rate beyond 160, even if he is very fit. That heart rate range needs to be reduced as the perceived fitness of the user diminishes, as said, into one of five modes. These are identified as mode 1, mode 2, mode 3, mode 4 and mode 5. However, the effectiveness of exercising with the aid of this invention can be diminished if the heart rate is too low, and therefore there is a precalculated range of heart rates between minimum and maximum within which a user must control his exercise. The minimum figure is arbitrarily determined, but within a range generally accepted by health authorities. (Col. 4, lines 23-36)

The examiner determined that Crossing discloses each and

Appeal No. 1998-2825  
Application No. 08/595,282

every step of method claim 1, except for the step of "(b) electronically obtaining a target zone consisting of an upper limit and lower limit of the heart rate based solely on the person's age" (emphasis added). Instead, Crossing teaches the step of electronically obtaining a target zone consisting of an upper limit and lower limit of the heart rate based on (1) the perceived fitness of the user, identified as a "mode," and (2) the age of the user. However, the examiner stated that "one of ordinary skill in the art would interpret the Crossing invention as having the ability to have only one mode. That is, only an obvious modification would be needed; one where unnecessary steps would be avoided thus yielding simpler operability."

(Answer, page 4)

In evaluating references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). Additionally, we observe that an artisan must be presumed to know something about the art apart from what the references disclose (see In

Appeal No. 1998-2825  
Application No. 08/595,282

re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962)) and the conclusion of obviousness may be made from "common knowledge and common sense" of the person of ordinary skill in the art (see In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)). Moreover, skill is presumed on the part of those practicing in the art, not the converse. See In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

Appellant acknowledges that formulas were known in the art prior to his invention for calculating a heart rate range for an individual of average physical fitness based solely on the individual's age (see, for example, the substitute brief, page 3, lines 1-9). Crossing uses such a conventional formula to obtain a heart rate range, but varies the range to suit the perceived fitness of the individual user. In other words, Crossing provides a refining feature which allows the user to tailor the exercise session to his or her particular physical condition, rather than to the specific fitness level upon which the conventional formula is based. Thus, even in the absence of any specific teaching by Crossing that a heart rate range may be obtained with the disclosed apparatus and method

Appeal No. 1998-2825  
Application No. 08/595,282

without inputting an exercise mode representing the fitness of the user, we are satisfied that it would have been obvious to one of ordinary skill in the art at the time appellant made his invention to have eliminated the step of entering a fitness/exercise mode in the apparatus and method taught by Crossing in order to obtain a target zone or heart rate range for a user of average fitness based solely of the user's age. In this regard, we view the proposed modification of Crossing, that is, the elimination of the step of entering a fitness mode, as the elimination of a feature along with its attendant advantage. It is well settled that it is a matter of obviousness for one of ordinary skill in the art to eliminate a feature of the prior art along with its attendant advantage. In re Thompson, 545 F.2d 1290, 1294, 192 USPQ 275, 277 (CCPA 1976); In re Larson, 340 F.2d 965, 969, 144 USPQ 347, 350 (CCPA 1965); In re Keegan, 331 F.2d 315, 319, 141 USPQ 512, 515 (CCPA 1964). In addition, a person of ordinary skill in the art would have recognized that the proposed modification to Crossing would have resulted in a simpler circuit and software, thus, in a less expensive overall system. Cost and simplicity are factors that inherently motive modification or

Appeal No. 1998-2825  
Application No. 08/595,282

combination of prior art references. See Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1472, 43 USPQ2d 1481, 1489 (Fed. Cir. 1997).

The arguments advanced in the brief relative to the obviousness rejection based on Crossing alone (pages 9-12) do not convince us that the examiner erred in rejecting claim 1 under 35 U.S.C. § 103.

We are not persuaded by appellant's argument (page 10) that the present invention provides a much simpler method and apparatus which allows it to be used in portable monitors. First, there is nothing in the method of claim 1 limiting the method to only portable monitors. Thus, appellant is arguing a feature or limitation that does not appear in the claim. Second, while claim 1 may appear simple, it contains the transitional term "comprising," which is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

Appellant also argues (pages 11 and 12) that the examiner has misinterpreted Crossing as having only one mode. However,

Appeal No. 1998-2825  
Application No. 08/595,282

the examiner did not suggest that Crossing could be so interpreted. Rather, the examiner concluded that it would have been obvious to a person of ordinary skill in the art to modify the method disclosed in Crossing by eliminating the step of entering a fitness mode and, thus, providing a heart rate target zone based solely on a person's age. For the reason discussed above, we agree with the examiner.

Furthermore, Crossing explicitly teaches that the user does not have to enter an exercise time, in which case "the unit times up and not down" (col. 5, lines 44-46). Even if time is entered after age is entered, it plays no part in the calculation of the target heart zone in Crossing.

For the above reasons, the examiner's rejection of claim 1 is sustained. Appellant has grouped claims 1, 3, 5, 7 and 9 as standing or falling together. Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 3, 5, 7 and 9 fall with claim 1. Thus, it follows that the examiner's rejection of claims 3, 5, 7 and 9 under 35 U.S.C. § 103 is also sustained.

Rejection (2)

Appeal No. 1998-2825  
Application No. 08/595,282

Independent claim 2 is directed to a method for monitoring the heart rate of a person including, inter alia, the steps of:

(b) electronically obtaining a target zone consisting of an upper limit and lower limit of the heart rate based on the person's age; and  
(c) issuing a signal when the heart rate is outside the target zone, wherein at least one of the upper limit and the lower limit is selectively changeable by the person after obtaining the target zone in step (b). (Emphasis added).

Claim 4 is indirectly dependent on claim 1 and contains the same "wherein" clause as claim 2.

Independent claim 6 is directed to an apparatus<sup>1</sup> for monitoring the heart rate of a person including

means for displaying the measured heart rate, wherein the displaying means includes electronic circuitry for setting a target zone having an upper heart rate limit and a lower heart rate limit based solely upon inputted age of the person, wherein the displaying means is configured to allow selective change of the target zone after setting the target zone based upon inputted age. (Emphasis added)

Claim 8 is indirectly dependent on claim 5 and contains the same "wherein" clause emphasized above in claim 6.

---

<sup>1</sup> Claim 6 actually reads "[a]n apparatus apparatus for monitoring" This informality is worthy of correction upon return of the application to the jurisdiction of the examiner.

Appeal No. 1998-2825  
Application No. 08/595,282

The examiner acknowledges (Paper No. 2, pages 2 and 3) that Crossing does not teach or suggest either a method step or any apparatus by which the user may selectively change the upper heart rate and/or the lower heart rate limits after the limits are calculated by microprocessor 30. The examiner describes Brink as having the ability to input via a keyboard the upper and lower rate limits and takes the position that:

[t]o change [the upper limit and the lower limit] is analogous to inputting them initially. To have such a feature in the invention of Crossing would have been seen to have been desirable and obvious since such a feature allows greater flexibility and therefore applicability to a greater number of patients who do not fit into the standard heart rate ranges.

(Office action, dated 5/23/96, pg. 3)

Our review of Brink reveals that the reference discloses an apparatus which allows an entertainment device, e.g., a portable radio, to play only so long as the user's heart rate lies within a range of heart rates. EKG signals are picked up by suitably placed electrodes 32, 34, amplified, filtered, shaped and applied in one arrangement to a programmable microprocessor 208 (Fig. 3) and in another arrangement to a

Appeal No. 1998-2825  
Application No. 08/595,282

linear circuit phase lock loop and window comparator (Fig. 2). In each instance, a determination is made as to whether the user's heart rate is between a lower limit of effective exercise and an upper limit of safe exercise. When the heart rate is outside the limit, the entertainment device is rendered inoperative, thus providing an incentive to tailor the level of exertion so that the heart rate will lie within the desired range. The upper and lower heart rate limits are manually set by the user via a keypad, thumb wheels, dip switches or the like (col. 4, lines 11-16 and 25-29).

Like appellant, we find no teaching or suggestion in Brink of either (1) a displaying means including electronic circuitry for setting a target zone having an upper heart rate limit and a lower heart rate limit based upon inputted age of the person and configured to allow selective change of the target zone after setting the target zone based upon inputted age or (2) electronically obtaining a target zone consisting of an upper limit and lower limit of the heart rate based on the person's age, wherein at least one of the upper limit and the lower limit is selectively changeable by the person after obtaining the target zone. Considering the combined teachings

Appeal No. 1998-2825  
Application No. 08/595,282

of Crossing and Brink, it is our opinion that Brink, at best, would have suggested replacing Crossing's electronic circuit and software for determining the upper and lower heart rate limits based on a general fitness level and age with a simple keypad for manually setting the upper and lower limits. Like appellant, we find no disclosure in Brink which would have motivated an artisan to add to Crossing's disclosed apparatus a means for adjusting the upper and lower heart rate limits after being initially set electronically in response to the user's age.

Since all the limitations of claims 2, 4, 6 and 8 are not taught or suggested by the combined teachings of Crossing and Brink, the examiner has failed to establish a prima facie case of obviousness. Accordingly, we will not sustain the standing

§ 103 rejection of claims 2, 4, 6 and 8.

#### SUMMARY

The rejection of claims 1, 3, 5, 7 and 9 under 35 U.S.C. § 103 as being unpatentable over Crossing is affirmed.

The rejection of claims 2, 4, 6 and 8 under 35 U.S.C. §

Appeal No. 1998-2825  
Application No. 08/595,282

103 as being unpatentable over Crossing and Brink is reversed.

The decision of the examiner is affirmed-in-part.

Appeal No. 1998-2825  
Application No. 08/595,282

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

LAWRENCE J. STAAB	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	
	)	
JEFFREY V. NASE	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
	)	
JOHN F. GONZALES	)	
Administrative Patent Judge	)	

rwk

Appeal No. 1998-2825  
Application No. 08/595,282

EVENSON MCKEOWN EDWARDS & LENAHAN  
SUITE 700  
1200 G STREET NW  
WASHINGTON DC 20005