

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN G. STARK, RICHARD G. LUND
CECIL H. NELSON and BRYNN D. ROGERS

Appeal No. 1998-2768
Application No. 08/520,802¹

ON BRIEF

Before ABRAMS, FRANKFORT and NASE, Administrative Patent Judges

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final

¹Application for patent filed August 30, 1995. According to appellants, this application is a continuation of Application No. 08/298,591, filed August 31, 1994, now U.S. Patent 5,484,389, issued January 16, 1996, which is a continuation of Application No. 07/733,207, filed July 19, 1991, now U.S. Patent 5,368,546, issued November 29, 1994.

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rejection of claim 41, the only claim remaining in the application.

Appellants' invention relates to (a) an orthopedic restraining device which is equipped with a strain gauge so as to give a patient using the device immediate feedback respecting isometric exercises performed against the restraint device and (b) a method of optimizing the isometric exercises performed by the patient. The subject matter involved in this appeal is limited to the method. Claim 41 on appeal reads as follows:

41. A method of optimizing isometric exercises comprising:

(a) engaging first and second flexibly connected body portions of the individual in an orthopedic restraining device having at least one strain gauge;

(b) designing a target exercise routine based on the physical condition of the patient;

(c) monitoring the exercise activities of the individual from the reading of the strain gauge; and

(d) determining the deviation of the actual exercise routine from the target routine.

The sole prior art reference of record relied upon by the

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OPINION

In reaching our decision in this appeal, we have given careful consideration to appellants' specification and claim, to the applied prior art reference, and to the respective positions articulated by appellants and the examiner. As a consequence of our review, we have made the determination that the examiner's

rejection will not be sustained. Our reasons follow.

Appellants' specification is directed to the use of isometric exercise for rehabilitation of a joint injury and to a system for allowing adequate feedback to a physician so as to permit the physician to evaluate the patient's progress in regard to a target isometric exercise routine the physician has prescribed. As is noted on page 26 of the specification, the strongest advantage associated with isometric exercise is that the injured extremity can be strengthened in the absence of motion, thereby preferably resulting in less pain and less tissue damage. As further emphasized on page 26

[w]ith appropriate modifications, isometric

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exercises can be used to obtain results which begin to approximate the results generally obtained with isokeinetic exercises in certain situations when isokinetic exercises are not possible. The fact that program modifications enable one to obtain some of the benefits of isokinetic exercise from isometric exercise is of critical importance to the usefulness of the present device.

Appellants' claim 41 on appeal is specifically directed to a method of "optimizing isometric exercises." That method is said to comprise (a) engaging first and second flexibly connected body portions of an individual in an orthopedic restraining device having at least one strain gauge; (b) designing a target exercise routine based on the physical condition of the patient; and (c) monitoring the exercise activities of the individual "from the reading of the strain gauge," and then determining the deviation of the actual exercise routine from the target exercise routine. While the body of the claim does not expressly so indicate, it is clear to us from a reading of the claim as a whole, in light of the underlying disclosure, that the target exercise routine and actual exercise routine

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recited in the claim are each isometric exercise routines, that the monitored "exercise activities of the individual" are the actual isometric exercises performed by the patient against the restraint of the orthopedic restraining device, and that such activities define the "actual exercise routine" referred to in clause (d) of the claim. In contrast to the examiner's position, we do not view the recitation of isometric exercises in the preamble of appellants' claim 41 to be merely a statement of intended use, but instead we view this recitation as providing a limitation on the claimed subject matter as a whole, i.e., that the method of claim 41 is expressly limited to a method of optimizing "isometric exercise" and that the body of the claim must be read in this light, and thus as being limited to a target isometric exercise routine and actual isometric exercise activities which constitute the actual isometric exercise routine.

Like appellants, we note that while the orthopedic apparatus of Airy may be locked so as to be utilized as a

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splint, and thus could be used by a patient for isometric exercise, the Airy patent does not teach or suggest the performance of isometric exercises. Instead, the Airy patent teaches the use of trans-ducers (e.g., a potentiometer (col. 14), or a Wheatstone bridge or electric eye (col. 17)) for the measurement of motion, i.e., rotation of the lower frame section (20), about a hinge axis (24). The transducers in Airy are thus utilized to measure or monitor parameters such as the range of movement of the body joint, the speed at which the body joint is flexed and extended, and the torque being exerted by the body joint when articulating the frame (16). Nothing in the Airy patent mentions isometric exercise, or teaches or suggests the use of a strain gauge on the frame to monitor isometric exercise activity of a patient wearing and using the orthopedic apparatus.

The examiner's conclusion that the mere reference to a Wheatstone bridge in column 17 of the Airy patent is suggestive of using strain gauges in the apparatus of Airy is without merit.

Like appellants (reply brief, pages 2-5), we note that a

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conventional Wheatstone bridge does not require a strain gauge or "four strain gauges" as is urged by the examiner on page 4 of the answer. In our view, the examiner's position regarding the Airy patent is entirely based on speculation, conjecture and impermissible hindsight derived from first having viewed appellants' disclosure and claim.

As for the Robotics text pointed to by the examiner (answer, page 6), we note that this reference specifically seeks to detect the deflection of the fingers of a robotic gripper in response to an applied force, a problem not addressed or confronted by the apparatus of Airy. Thus, while there exists the possibility that a Wheatstone bridge may include a strain gauge, such knowledge alone would not, in our opinion, have led one of ordinary skill in the art to understand the Airy patent as including a strain gauge, or to any modification of the brace and exercise apparatus of Airy so as to allow the orthopedic apparatus therein to be used to monitor and permit optimization of isometric exercises done against the restraining device.

Based on the foregoing, the examiner's rejection of claim

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under 35 U.S.C. § 103 will not be sustained. It follows that the decision of the examiner is reversed.

In addition to the foregoing, we find it necessary to REMAND this application to the examiner for a decision on the record as to whether or not a rejection of claim 41 on appeal would be appropriate based on any of the patents belatedly cited by the examiner in the Advisory action mailed June 25, 1997 (Paper No. 16). The Rawcliffe patent (No. 4,944,288) and patent to Bond et al. (No. 5,078,152) would appear to have particular relevance to appellants' claimed subject matter.

REVERSED AND REMANDED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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CHARLES E. FRANKFORT)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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JEFFREY V. NASE)	

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