

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte PETER C. HIGHTOWER, HUNG-SUN OH and GARY B. BURWELL

Appeal No. 2002-1984
Application No. 09/438,909

ON BRIEF

Before MCQUADE, NASE and BAHR, Administrative Patent Judges.
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-40, which are all of the claims pending in this application.

We AFFIRM-IN-PART.

BACKGROUND

The appellants' invention relates to a two-position actuator having a DC solenoid element for locking a damper in an open position (specification, page 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The following rejection is before us for review.

Claims 1-40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Hanley¹.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the answer (Paper No. 14) for the examiner's complete reasoning in support of the rejection and to the brief and reply brief (Paper Nos. 13 and 15) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims², to the applied Hanley patent, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Claims 1, 2, 7, 11, 12, 19 and 20

Hanley discloses an actuator for actuating a damper or valve in an HVAC installation, the actuator comprising a drive motor 28, an output coupler 14 operatively coupled to a damper (not shown) and driven, through a motor drive pinion 26 and gear train 24, by the motor 28, a brake device including a flywheel 68 coupled to and driven

¹ U.S. Patent No. 5,986,369, issued November 16, 1999 to Mark G. Hanley et al.

² We note that "said output coupling" and "said solenoid activation element" in claim 21 and "said solenoid activation element" in claim 31 lack clear antecedent basis. Upon return of this application to the Technology Center, the examiner and appellant should take appropriate steps to remedy this informality.

by the motor 28 and a solenoid (column 5, line 36) for stopping the rotation of the flywheel to thereby stop the rotation of the motor 28 and, consequently, the motor drive pinion 26 and drive train 24 coupled thereto to thereby prevent rotation of the output coupler 14. We note, however, that the majority of Hanley's disclosure is directed to a preferred embodiment wherein a piezoelectric beam 60, instead of a solenoid, is used to engage and stop the rotation of the flywheel 68. According to Hanley, the advantage of the piezoelectric brake device over a solenoid is that it achieves substantial savings in power.

Appellants argue that the subject matter of claim 1 is not anticipated by Hanley because (1) Hanley does not disclose and, in fact, teaches away from the use of a solenoid to brake the flywheel 68 (brief, pages 10-12) and (2) Hanley discloses no association, physically or functionally, of the braking element 58 with the output coupler 14³ (brief, page 5). For the reasons explained below, we do not agree with either of these arguments.

As for appellants' argument that Hanley does not disclose the use of a solenoid to brake the flywheel 68, we note that Hanley teaches, in column 5, lines 33-38, that

it is important to note that by utilizing the above-described novel piezoelectric brake device 58 instead of the drive motor 28 or a solenoid (not shown) to stop the rotation of the flywheel 68, and thus maintain the damper in the desired position, a substantial savings in power is realized.

³ Appellants' reference to an "output coupling 24" on page 5 is apparently an inadvertent error.

While Hanley clearly prefers the piezoelectric brake device 58 disclosed therein to the use of a solenoid to stop the rotation of the flywheel 68 in order to realize a substantial power savings, the above-mentioned teaching is a disclosure of an embodiment wherein a solenoid is used to stop the rotation of the flywheel 68 in addition to an embodiment wherein a piezoelectric element (beam 60) is used to stop the rotation of the flywheel 68. A reference is not limited to its preferred embodiment, but must be evaluated for all of its teachings, including its teachings of non-preferred embodiments. In re Burckel, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979). As emphasized by the examiner on page 5 of the answer, the examiner's rejection is an anticipation rejection under 35 U.S.C. § 102 and does not propose any modification of Hanley. Rather, the examiner's position, which we find reasonable as explained above, is that Hanley teaches, albeit in a non-preferred embodiment, the use of a solenoid to stop the rotation of the flywheel 68.

As for appellants' argument that Hanley's brake device 58 locks the motor 28 and not the output coupler 14, we note that, by locking the motor 28, which drives the output coupler 14 via the motor drive pinion 26 and drive train 24, Hanley's flywheel 68, whether engaged by a solenoid or a piezoelectric beam, also effects a braking force on the output coupler 14 to prevent rotation thereof. We find nothing in claim 1 which requires that the brake be directly connected to or engaged with the output coupling or precludes the recited brake from effecting a braking force on the motor as well as the output coupling. In fact, in that appellants' brake (e.g., motor fan 18) forms part of the

gear train 28 and appears to be mounted on the output shaft of the motor 16, it, like the brake device of Hanley, is interconnected with the output coupling 36 only indirectly through the gear train 28 and also locks the motor 16 in addition to the output coupling 36 when engaged by the plunger pin 22 of the solenoid 20. Moreover, Hanley's flywheel 68 is interconnected, via the motor drive pinion 26 and drive train 24, to the output coupler 14, as called for in claim 1.

For the foregoing reasons, appellants' arguments fail to persuade us of any error on the part of the examiner in rejecting claim 1 as being anticipated by Hanley. Thus, we shall sustain the examiner's rejection of claim 1, as well as claims 2, 7, 11, 12, 19 and 20 which appellants have grouped therewith (brief, page 3).

Claims 21-30

Appellants (brief, page 8) assert that method claim 21 is not anticipated by Hanley because Hanley does not disclose a step of activating said solenoid activation element to act on a brake "to lock said output coupling into a desired position" as called for in claim 21. The basis for appellants' assertion is that Hanley's brake element acts on the drive motor to provide the necessary braking. As discussed above, while Hanley's brake device, by stopping the rotation of the flywheel 68 which is driven by the motor 28, locks the motor 28, it also locks the output coupler 14, via the motor drive pinion 26 and drive train 24, into a desired position as called for in claim 21. We thus shall sustain the examiner's rejection of claim 21, as well as claims 22-30 which appellants have grouped therewith (brief, page 3).

Claims 31-40

Appellants (brief, page 9) argue that Hanley fails to disclose a structural arrangement wherein the brake is “in communication with said damper” as called for in claim 31. The basis for this argument appears to be that Hanley’s brake applies the braking force to the motor 28. Be that as it may, Hanley’s flywheel 68, when engaged by a solenoid, as in the non-preferred embodiment, transmits braking force, via the motor drive pinion 26 and gear train 24, to the output coupler 14, which in turn is operatively coupled to a damper, and, thus, is “in communication with said damper” as called for in claim 31. This is akin to the arrangement disclosed by appellants, wherein the communication between the motor fan 18 and the damper is via a gear train.

For the foregoing reason, we are unpersuaded by appellants’ argument of any error on the part of the examiner in rejecting claim 31 as being anticipated by Hanley. We thus shall sustain the rejection of claim 31 as well as claims 32-40 which appellants have grouped therewith (brief, page 3).

Claims 3-6, 8-10 and 13-18

Claims 3 and 13, from which each of claims 4-6, 8-10 and 14-18 depends, either directly or indirectly, recite that the brake “is a component of said gear train.” The brake disclosed by Hanley comprises a flywheel 68 which is driven by the motor 28 and appears to be mounted on the motor output shaft along with the motor drive pinion 26. While the motor drive pinion 26 does appear to mesh with the gear 30 of the gear train 24 of Hanley, the flywheel 68 itself does not mesh with any of the gears of the gear train

24 and thus, in our opinion, cannot reasonably be considered to be a component of said gear train. Accordingly, we shall not sustain the rejection of these claims as being anticipated by Hanley.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-40 under 35 U.S.C. § 102(e) is affirmed as to claims 1, 2, 7, 11, 12 and 19-40 and reversed as to claims 3-6, 8-10 and 13-18.

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

JOHN P. MCQUADE)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JEFFREY V. NASE)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JENNIFER D. BAHR)	
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