UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH DAVID KNAPP

Appeal No. 2006-1809
Application No. 09/975,386
Technology Center 3600

Heard: July 11, 2006

Before FRANKFORT, BAHR and FETTING, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the examiner's rejection of claims 1-9.

We REVERSE.

BACKGROUND

The appellant's invention relates to a blanket of fibrous building insulation comprising a fibrous insulation layer adhered by a layer of adhesive to a facing sheet, the facing sheet having a grid of perforations therethrough with spots of the adhesive being visible through the perforations and to a method of making and installing such blanket of insulation. The blanket is made by forming the perforations in the facing sheet prior to applying the adhesive and applying the adhesive such that it will bleed into the preformed perforations. The visible spots of adhesive form a cutting guide on the facing sheet so that the blanket may be cut to size in situ to correspond with spacing between studs or the like that are non-standard. A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The examiner relies upon the following as evidence of unpatentability:

Ryan	US 649,363	May 8, 1900
Broderick	US 4,709,523	Dec. 1, 1987
Ernest	US 6,444,289 B1	Sep. 3, 2002 (Aug. 31, 1999)

The following rejections are before us for review.

Claims 1, 2, 4 and 8 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ernest.

Claim 3 stands rejected under 35 U.S.C. § 103 as being unpatentable over Ernest in view of Broderick.

Claims 5-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ernest.

Claim 9 stands rejected under 35 U.S.C. § 103 as being unpatentable over Ernest in view of Ryan.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding this appeal, we make reference to the examiner's answer (mailed December 22, 2005) for the examiner's complete reasoning in support of the rejections and to the appellant's

brief (filed March 9, 2005) and reply brief (filed January 17, 2006) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art, and to the respective positions articulated by the appellant and the examiner. For the reason explained below, we cannot sustain any of the examiner's rejections.

Independent claim 1 recites a blanket of insulation comprising a fibrous insulation layer, a thin facing sheet, a thin adhesive layer, a grid of perforations through the facing sheet and *spots of adhesive visible through the perforations*. Independent claim 8 recites a method of making a blanket of fibrous insulation comprising providing a thin layer of facing material having preformed perforations therethrough, applying a thin layer of adhesive to a surface of the facing material *while maintaining the adhesive at a sufficient viscosity that it will blend into the perforations an amount sufficient to be visible from an opposite surface of the facing material*, applying a layer of fibrous insulation to the adhesive-applied surface of the facing material and allowing the adhesive to set and adhere the facing material to the insulation layer.

Ernest discloses a perforated faced insulation assembly including a porous insulation layer 18 attached to a facing layer 20. The facing layer has a pressure-balancing region with perforations formed in the facing layer. The perforations allow sufficient gas flow through the facing layer for adequately balancing the pressures acting on the facing layer within the pressure-balancing region (col. 2, ll. 6-10). Ernest teaches the following:

> The pressure-balancing regions 20c, 20d each include perforations 26 formed through the facing layer 20. Preferably, the perforations 26 are circular as best shown in FIG. 3. Alternatively, the perforations 26 may be any desired shape such as square, oval, irregular or the like. The perforations 26 are preferably formed after the facing layer 20 has been adhered to the insulation layer

18, and more preferably, after the adhesive 24 has been cured. By forming the perforations 26 after the facing layer 20 is adhered to the insulation layer 18 and after the adhesive 24 is cured, the perforations 26 are substantially void or free of the adhesive 24. Conversely, if the perforations 26 were formed in the facing layer 20 prior to curing the adhesive 24, the adhesive 24 could completely or at least partially fill the perforations 26. The importance of the perforations 26 being substantially void of the adhesive 24 is twofold. First, forced gas units benefiting from this invention may be subject to various flame spread and smoke test standards. In particular, HVAC units are required to pass United Laboratories flame spread and smoke development test standard UL 2550. In order to pass the test standard defined in UL 2550, the perforations 26 need to be substantially void of the adhesive 24. Second, if the adhesive 24 were present in the perforations 26, the intended function of the perforations 26, which is to allow sufficient gas flow through the facing layer 20, would be defeated or at least compromised. Specifically, the flow rates across the pressure-balancing regions 20c, 20d cause a relatively large drop in the static pressure acting on the outer surface 20a within the pressure-balancing regions 20c, 20d. In turn, the drop in the static pressure acting on the outer surface 20a creates a relatively high difference in the static pressures acting on the outer and inner surfaces 20a, 20b within the pressure-balancing regions 20c, 20d. The perforations 26 allow for the venting of the relatively high static pressure acting on the inner surface 20b to balance or at least adequately reduce the pressure differential between the static pressures acting on the outer and inner surfaces 20a, 20b. If the flow of air through the perforations 26 is restricted by the presence of the adhesive 24 within the perforations 26, the relatively high static pressure differential between the outer and inner surfaces 20a, 20b could cause the pressure-balancing regions 20c, 20d to balloon or be drawn away from the side panels 14a, 14b. In turn, this ballooning effect could cause the facing layer 20 and the insulation layer 18 to become separated. By allowing air to flow through the facing layer 20, the perforations 26 reduce the static pressure differential between the outer and inner surfaces 20a, 20b. As such, the facing layer 20 is less likely to balloon. In turn, the facing layer 20 and the insulation layer 18 are less likely to

> become separated. The flow rates associated with the nonpressure-balancing region 20e do not give rise to static pressure differentials that would jeopardize the retention between the facing layer 20 and the insulation layer 18. Accordingly, it is not necessary to form perforations in the non-pressure-balancing region 20e [col. 4, first full para.].

One of ordinary skill in the art would have quite clearly understood from the passage of Ernest quoted above that it is critical to Ernest's invention that the perforations 26 be kept substantially void of adhesive and, further, that the preferred means to achieve such a result is to form the facing layer perforations 26 after the facing layer 20 has been adhered to the insulation layer 18 and, more preferably, after the adhesive 24 has been cured. While Ernest does use language such as "preferably" and "substantially," Ernest provides a strong and clear teaching away from permitting the adhesive to bleed into the perforations in a manner so as to obscure the perforations. Accordingly, the examiner's determination that Ernest provides a disclosure of a blanket of insulation wherein spots of adhesive are visible through the perforations in the thin facing sheet, as recited in claim 1, or a method of making a blanket of insulation comprising steps of providing a layer of facing material having preformed perforations and applying adhesive to a surface of the facing material in such a manner or at such a viscosity that it will bleed into the perforations in an amount to be visible from an opposite surface thereof, as recited in claim 8, is unsound.

In light of the above, the rejections of claims 1 and 8, as well as claims 2 and 4 depending from claim 1, as being anticipated by Ernest, and of claims 5-7 , which depend from claim 1, as being unpatentable over Ernest, cannot be sustained.

The examiner's application of Broderick and Ryan provide no cure for the deficiency of Ernest discussed above. Accordingly, the rejections of claim 3, which depends from claim 1, as being unpatentable over Ernest in view of Broderick and claim 9, which incorporates the method of claim 8, as being unpatentable over Ernest in view of Ryan cannot be sustained.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-9 is REVERSED.

REVERSED

CHARLES E. FRANKFORT Administrative Patent Judge	)	
JENNIFER D. BAHR Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANTON W. FETTING Administrative Patent Judge	)	

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