

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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RUDDY C BUSSJAGER, JAMES M MCKALLIP and LESTER N. MILLER

Appeal No. 1999-1083
Application No. 08/759,394

ON BRIEF

Before CALVERT, ABRAMS, and STAAB, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

ON REQUEST FOR REHEARING

DENIED.

BACKGROUND

By decision of November 30, 2000, this panel of the Board reversed the examiner's rejection of claims 1-3, 8 and 11, entered a new rejection under 37 CFR § 1.196(b) rejecting claims 1 and 8, and remanded the case to the examiner for the purpose of considering whether the new rejection might apply to the remaining claims in the application.¹ In the new rejection under 37 CFR § 1.196(b), the Board rejected independent apparatus claim 1 and independent method claim 8 on the basis that it would have been obvious to one of ordinary skill in the art to modify the air conditioning system of Des Champs by replacing heat transfer unit 7 with the refrigerant sub-cooler assembly shown in Figure 2 of Bussjager. In their request for rehearing, the appellants argue that to do so would result in the operation of Des Champs' other heat exchanger being "substantially impaired," and thus such a modification would not have been obvious. The appellants also urge that even if the modification were made, it would not result in the applicants' invention.

OPINION

We shall stand by the explanation we offered in our decision on the merits, and the conclusion we expressed there, and shall confine our comments here to the specific matters raised by the appellants in the request for rehearing. In this regard, and

¹Remand to the examiner necessarily would be held in abeyance pending a request for rehearing of the Board's decision by the appellants under 37 CFR § 197.

considering for purposes of this explanation that the objective is to cool a space, in a first heat exchanger 4 in the Des Champs system the incoming air from the outside is cooled and dehumidified by a heat exchange relationship with the air exhausting from the space to be cooled, which at this point is cooler than the incoming air. This provides pre-cooling for refrigerant coil 5, which subsequently functions as the primary means for lowering the temperature and the humidity of the incoming airstream. Then, to achieve the precise conditions desired in the space to be cooled, the temperature of the incoming air is raised by heat exchange with the warmer exhaust air in second heat exchanger 7.

Bussjager discloses two air conditioning systems. In the first (Figure 1), described as the prior art, raising of the temperature of the incoming air downstream of the refrigerant coil is accomplished in the same fashion as in Des Champs, that is, by heat exchange with the warmer exhaust air, except that the details of the heat exchanger are disclosed. The invention set forth in the Bussjager patent is illustrated in Figure 2. It differs from the prior art embodiment in that rather than increase the temperature of the incoming air by heating it with the exhaust air, it does so by extracting heat in subcooler 44 by means of the refrigerant, which then is circulated back through the primary cooler, in essence, having been pre-cooled. The effect on the incoming air is the same in both embodiments. Bussjager considers the invention to be an improvement over the prior art (column 5, lines 47-52), which in our view would have provided the necessary suggestion for one of

ordinary skill in the art to have substituted it for an air-to-air heat exchange system, such as is present in Bussjager's first embodiment and in heat exchanger 7 of Des Champs.

With this as prelude, while we admit that the temperature differential between the warm incoming air and the cooler exhaust air in Des Champs' heat exchanger 4 if the proposed modification were made might be less because the exhaust air had not previously given up some of its heat, it is our view that one of ordinary skill in the art would have recognized this to be a trade-off for achieving the improvements provided by the Bussjager invention, such as better and more efficient cooling by the refrigerant coil and the elimination of one heat exchanger pass for the exhaust air. In this regard, the appellants have provided no evidence that the effect of Des Champs' heat exchanger 4 would be impaired at all if the proposed modification were made, much less that it would be "substantially" impaired, nor have they offered evidence that impairment of heat exchanger 4 would have operated as a disincentive to one of ordinary skill in the art to make the modification. It therefore is our view that the references are properly combinable.

We also stand by our position that the modified Des Champs air conditioning system meets the terms of the appellants' claims 1 and 8. In this regard, Des Champs discloses an air conditioning system which must have, although not shown, an outdoor coil, a compressor and an expansion device, along with an indoor coil (5). A heat recovery

device (4) has a cooling portion and a heating portion operatively interconnected. A blower (9) takes air from the air conditioned space, passes it through the heat recovery device, and discharges it outside. A blower (2) brings in outside air and passes it through heat recovery device and then through the indoor coil for further conditioning. Finally, the air passes through a subcooler downstream of the indoor coil (44, from Bussjager), prior to entering the space to be air conditioned.

CONCLUSION

We have reviewed our decision of November 30, 2000, in the light of the points raised in the appellants' request for rehearing. However, we have not been persuaded thereby that the decision should be altered. The request for rehearing therefore is denied.

IAN A. CALVERT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
NEAL E. ABRAMS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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LAWRENCE J. STAAB)	
Administrative Patent Judge)	

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APPEAL NO. 1999-1083 - JUDGE ABRAMS
APPLICATION NO. 08/759,394

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APJ CALVERT

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DECISION: **DENIED**

Prepared By:

DRAFT TYPED: 19 Jun 02

FINAL TYPED: