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. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LAWRENCE J. NOVAK,
PETER J. ROHRBACHER and RUDOLPH KIST III

Appeal No. 2000-2014
Application No. 08/713,672

HEARD: MARCH 22, 2001

Before FRANKFORT, BAHR and LAZARUS, Administrative Patent Judges.

BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-8, 10-20 and 22-24. Claims 9, 21, 25 and 26 stand withdrawn from further consideration under 37 CFR § 1.142(b) as being directed to a non-elected invention.

## BACKGROUND

The appellants' invention relates to a thermal processing unit for processing a plastisol-containing article comprising a radiant heat transfer section followed by a separate convection heat transfer section. The radiant heat transfer section raises the temperature of the article relatively rapidly to an approach temperature which is lower than a target temperature and the convection heat transfer section raises the temperature of the article at a slower rate of increase to the target temperature. The target temperature is a temperature which must be reached, but which should not be exceeded, for appropriate processing of the article. As explained on pages 11 and 12 of appellants' specification, appellants' arrangement takes advantage of the benefits of both radiant and convection heat transfer units. For example, this arrangement permits the temperature of the article to be rapidly raised to a temperature close to the target temperature while availing the process of the more precise control of a convection heat transfer section so as to reduce the probability of exceeding the target temperature. The

claims on appeal are reproduced in an appendix to appellants' brief.

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

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| Heikkilä | 4,936,025 | Jun. 26, 1990 |
| Karlsson | 4,942,674 | Jul. 24, 1990 |
| LePisto et al. (LePisto) | 5,009,016 | Apr. 23, 1991 |

The following three rejections are before us for review.[1]

(1) Claims 1-8, 10-20 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over LePisto.

(2) Claims 1-8, 10-20 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heikkilä.

(3) Claims 1-8, 10-20 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlsson.

Reference is made to the brief (Paper No. 19) and the answer (Paper No. 20) for the respective positions of the

[1] The examiner has withdrawn the other three prior art rejections set forth in the final rejection on the basis that the patents relied upon therein are cumulative of LePisto, Heikkilä and Karlsson (answer, page 4).

appellants and the examiner with regard to the merits of these rejections.

OPINION

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

As noted by both the examiner and appellants, the teachings of LePisto, Heikkilä and Karlsson are substantially similar. All three references disclose an apparatus for drying a moving web, the apparatus comprising an infrared radiant dryer followed by an airborne web dryer and including a conveyor for conveying the web through the two dryers. In the apparatus of each of these references, cooling air used to cool the radiation elements in the radiant dryer is circulated to the airborne dryer and directed onto the web therein to help further dry the web which has already passed through and been dried by the radiant dryer. In addition to the cooling air from the radiant dryer, which cooling air has been heated

by passage over the radiation elements, additional air, heated by a burner or other heating element, may be circulated in the airborne dryer (col. 6, lines 43-57 of Heikkilä; col. 9, lines 30-57 of LePisto; col. 4, line 59 to col. 5, line 2 of Karlsson). All three references are silent as to the rate of increase of web temperature, if any, effected by either of the dryers.

Turning now to the claims, we note that each of independent claims 1, 5, 10 and 14 recites a radiant heat transfer section for raising the temperature of an article at a first rate followed by a separate convection heat transfer section for raising the temperature of the article at a second rate which is lower than the first rate and a conveyor means which transports the article from the radiant heat transfer section to the convection heat transfer section. Stated somewhat differently, we understand these claims to require, inter alia, a radiant heat transfer section for (capable of) raising the temperature of an article and a convection heat transfer section for (capable of) further raising the

temperature of the article which has already had its temperature raised by the radiant heat transfer section.

Having carefully reviewed the teachings of each of LePisto, Heikkilä and Karlsson, we find nothing therein which would indicate or suggest that the airborne unit of any of these applied references is capable of raising the temperature of the web beyond the temperature to which it was raised in the radiant dryer, as required by each of the independent claims. Indeed, there is no indication that the air which is directed to the web for drying in the airborne unit is at a higher temperature than is the web after passing through the radiant dryer.

The examiner points out that, as admitted by appellants, temperature controls for achieving the temperature rates recited by appellants are conventional in the heating art and concludes from this that it would have been obvious to use conventional temperature control means to adjust the temperatures in the radiant and convection (airborne) sections of any of the applied references to any desired temperature (answer, page 4).

As stated by our reviewing court in In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000):

> Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant [citations omitted].

Moreover, the mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. See In re Mills, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

We must not lose sight of the fact that the purpose of the radiant and airborne dryers of LePisto, Heikkilä and Karlsson is to dry a web passing therethrough. The process of drying (removal of moisture) in an airborne unit does not require a temperature difference between the web and the air passed over the web or an increase in the web temperature.

Consequently, one of ordinary skill in the art would not have inferred from the teachings of the applied references a need or desire to raise the temperature of the web in the airborne dryer to a temperature above that of the web upon exiting the radiant dryer. Accordingly, it is not apparent to us why one skilled in the art at the time of appellants' invention would have been motivated to modify the apparatus of LePisto, Heikkilä or Karlsson so as to arrive at the claimed invention.

For the foregoing reasons, we cannot sustain any of the examiner's rejections of independent claims 1, 5, 10 and 14 or, it follows, of claims 2-4, 6-8, 11-13, 15-20 and 22-24 which depend therefrom.

## CONCLUSION

To summarize, the decision of the examiner to reject claims 1-8, 10-20 and 22-24 under 35 U.S.C. § 103 is reversed.

REVERSED

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| CHARLES E. FRANKFORT<br>Administrative Patent Judge | ) | |
| JENNIFER D. BAHR<br>Administrative Patent Judge | ) | BOARD OF PATENT APPEALS AND INTERFERENCES |
| RICHARD B. LAZARUS<br>Administrative Patent Judge | ) | |

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