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(2) is not binding precedent of the Board.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. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALLAN C. MORGAN

Appeal No. 1996-1158
Application No. 08/077,599[1]

ON BRIEF

Before GARRIS, PAK and LIEBERMAN, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's refusal to allow claims 6 through 13, 22, 33, 34 and 36. Subsequent to the final Office action, claims 13, 22, 33 and 36 were amended and claims 26-32 were canceled in the Amendment dated May 30, 1995, Paper No. 16. Claims 12, 24, 25

[1] Application for patent filed June 15, 1993.

and 35 stand allowable over the prior art of record, but are objected to for depending upon a rejected claim.

According to appellant (Brief, page 5), "rejected claims 6 through 11, 13, 22, 33, 34 and 36 stand [or fall] together in the first group." Therefore, for purposes of this appeal, we will limit our discussion to the broadest independent claim on appeal, claim 33, in accordance with 37 CFR § 1.192(c)(5)(1993). Claim 33 reads as follows:

33. A process for producing carbon black comprising:

(a) forming a combustion gas stream by reacting a fuel with a first oxidant;

(b) reacting a first carbon black yielding feedstock with the combustion gas stream to form a reaction stream containing a first carbon black;

(c) reacting the reaction stream of step (b), downstream, with a second oxidant and a second carbon black yielding feedstock to produce additional carbon black;

(d) carrying out the process of steps (a), (b) and (c) so that the amount of fuel utilized per pound of carbon black produced by the process of steps (a), (b) and (c) is less than the fuel utilized per pound of carbon black to form the first carbon black produced by the process of steps (a) and (b);

(e) cooling, separating and recovering the carbon black formed by the process of steps (a) through (d).

The prior art references of record relied upon by the

examiner are:

Kraus et al. (Kraus)	4,071,496	Jan. 31, 1978
Cheng	4,327,069	Apr. 27, 1982
Surovikin et al. (Surovikin)	4,372,936	Feb. 08, 1983

The appealed claims stand rejected as follows:

(1) Claims 6 through 11, 22, 33, 34 and 36 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Cheng and Kraus; and

(2) Claims 6 through 11, 13, 22, 33, 34 and 36 under 35 U.S.C.
§ 103 as unpatentable over the combined disclosures of Cheng, Kraus and Surovikin.

We affirm.

In rejecting all of the claims on appeal under 35 U.S.C. § 103, the examiner has relied principally on the Cheng reference. The Kraus reference has been relied on for the comparative purpose, see Answer, page 3, while the Surovikin reference has been relied on to establish obviousness of the subject matter of claim 13, see Answer, page 4.

We find that the Cheng reference relied upon by the examiner teaches a process for producing carbon black comprising steps corresponding to the claimed steps (a), (b), (c) and (e). See column 1, line 57 to column 2, line 33, column 5 and the Figure. Specifically, the Cheng reference states at column 1, line 57 to column 2, line 33, that:

In accordance with a first embodiment of this invention therefore, a process for producing carbon black of low tint residue is provided. In this process, a first flow of hot combustion gases formed by the combustion of a first fuel stream and a first oxygen containing stream is established in a first carbon black forming zone. Into this first carbon black forming zone and into admixture with the first hot combustion gases a first stream of hydrocarbon feedstock is introduced. Thereby, a first carbon black forming mixture is generated in which at least a portion fo [sic, of] the first stream of hydrocarbon feedstock is converted to carbon black. This first carbon black forming mixture is passed from the first carbon black forming zone under carbon black formation conditions into a second carbon black forming zone of the furnace used. **This second carbon black forming zone is in an open connection and fluid communication with the first carbon black forming zone.** A second flow of hot combustion gases formed by the combustion of a second fuel stream and a second oxygen containing stream is established in the second carbon black forming zone. A second stream of hydrocarbon feedstock is introduced into the second carbon black forming zone of the

> furnace and into admixture with the second flow of hot combustion gases established therein as well as with the first carbon black forming mixture coming from the first carbon black forming zone of the furnace. The operating parameters in the first and second carbon black forming zones are such that in one of the carbon black forming zones which is a high structure zone there is formed a high structure carbon black, whereas in the other of the carbon black forming zones which is a low structure zone there is formed a low structure carbon black. In the second carbon black forming zone of the furnace a second carbon black forming mixture is generated which is passed from this second carbon black forming zone under carbon black forming conditions into a quench zone. In this quench zone the second carbon black forming mixture (which contains the mass from the first carbon black forming zone) is contacted with a quench fluid to produce a carbon black containing smoke at a temperature of below carbon black formation conditions. Finally, the carbon black of low tint residue is separated from the smoke as the product of the process. Emphasis added.

The Cheng reference does not mention the claimed fuel saving recited in step (d), which reads as follows:

> carrying out the process of steps (a), (b) and (c) so that the amount of fuel utilized per pound of carbon black produced by the process of steps (a), (b) and (c) is less than the fuel utilized per pound of carbon black to form the first carbon black produced by the process of steps (a) and (b). . .

The dispositive question is, therefore, whether the amount of fuel utilized per pound of carbon black produced by the process steps (a), (b) and (c) described in the Cheng reference is inherently less than the fuel utilized per pound of carbon black produced by the process steps (a) and (b) described in the Cheng reference. We answer this question in the affirmative.

As indicated ***supra***, the Cheng reference describes, ***inter alia***, process steps identical to the claimed process steps (a), (b) and (c). These process steps, according to appellant at pages 4 and 5 of the specification, would necessarily result in the fuel saving recited in step (d). Specifically, appellant states (specification, pages 4 and 5) that:

> I have discovered that it is possible to reduce the amount of fuel utilized to produce carbon black by reacting the reaction stream of a prior carbon black forming process with an oxidant to generate a stream of combustion products that will react with carbon black yielding feedstock to produce carbon black. The generation of this stream of combustion products may be accomplished by introducing any suitable oxidant, which may by any oxygen containing material such as air, oxygen, mixtures of air and oxygen, or other like materials into the reaction stream. The resulting stream of combustion products is reacted with additional carbon black yielding feedstock to produce carbon black. As a result, the amount of fuel utilized for producing carbon black is reduced.

Also, we note that appellant has not disputed the examiner's finding that "the effluent from [the first reaction zone] of Cheng's process is still hot when it reaches the [second reaction zone]. . . the claimed energy saving occurs in Cheng. . . since no fuel is needed for [preheating]. . ."

Given the above findings of fact, it is reasonable to shift the burden to appellant to prove that the amount of fuel utilized per pound of carbon black produced by Cheng's process steps corresponding to the claimed steps (a), (b), and (c) is not necessarily less than the fuel utilized per pound of carbon black produced by Cheng's process steps corresponding to the claimed steps (a) and (b). **See In re Best**, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977). The fairness of shifting of the burden is further evidenced by the U.S. Patent and Trademark Office's inability to carry out Cheng's process and compare its resulting fuel/carbon black ratios at different carbon black forming zones. ***Id.***

Appellant argues that Cheng does not save fuel as required by the claimed step (d). See Brief, pages 8 and 9. In support of his position, appellant states that Cheng employs in its example conventional amounts of fuel in "both carbon black forming **zones**" (emphasis ours). See Brief, page 9. The amounts of fuel employed, however, do not necessarily determine the resulting fuel/carbon black ratios (which are said to reflect fuel savings) at both carbon black forming

zones in the process of Cheng inasmuch as the ratios in question also are dependent on the amount of carbon black produced. On this record, appellant simply has not pointed to any objective evidence to demonstrate that the fuel/carbon black ratios (fuel saving) resulting in Cheng's process do not necessarily result in the broadly recited fuel/carbon black ratios recited in the claimed step (d). See Brief in its entirety.

In view of the foregoing, we affirm the examiner's decision rejecting all of the claims on appeal under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

BRADLEY R. GARRIS Administrative Patent Judge	)	
CHUNG K. PAK	)	BOARD OF PATENT APPEALS

Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
PAUL LIEBERMAN	)	
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