

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DANIEL RAY DOWNING

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Appeal 2008-4308  
Application 10/924,535  
Technology Center 1700

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Decided: July 30, 2008

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Before ADRIENE LEPIANE HANLON, TERRY J. OWENS, and  
THOMAS A. WALTZ, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of claims 1-6, 12, and 13. Claims 7-10 have been withdrawn from consideration, and claim 11 has been cancelled. We have jurisdiction under 35 U.S.C. § 6(b). We REVERSE.

The Examiner finally rejected claims 1-6, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Hautau.<sup>1</sup> Final 2-4.<sup>2</sup>

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<sup>1</sup> US Patent 3,201,962 issued to Hautau on August 24, 1965.

<sup>2</sup> Final Office Action mailed February 16, 2007.

B. ISSUE

The sole issue on appeal is whether the Appellant has shown that the Examiner reversibly erred in rejecting claims 1-6, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Hautau.

C. FINDINGS OF FACT

The following findings of fact are believed to be supported by a preponderance of the evidence. Additional findings of fact as necessary appear in the Analysis portion of the opinion.

1. Appellant's invention

The Appellant's invention relates to calender systems having a fine gauge adjustment. Spec. 1, para. [001].

The calender system comprises first and second rollers each having a first and second end mounted in opposed end supports. The end supports each have an inlet and an outlet in fluid communication with one or more internal passages, wherein a heat transfer medium may be circulated through the internal passages. Spec. 1, para. [003].

The distance between the rollers is adjusted by circulating a heat transfer medium such as water through the internal passages. Spec. 2-3, para. [007].

The heat transfer medium may be heated to increase the distance between the rollers or cooled to decrease the distance between the rollers. Spec. 3, para. [008].

2. Claimed subject matter

Claim 1, the only independent claim on appeal, reads as follows:

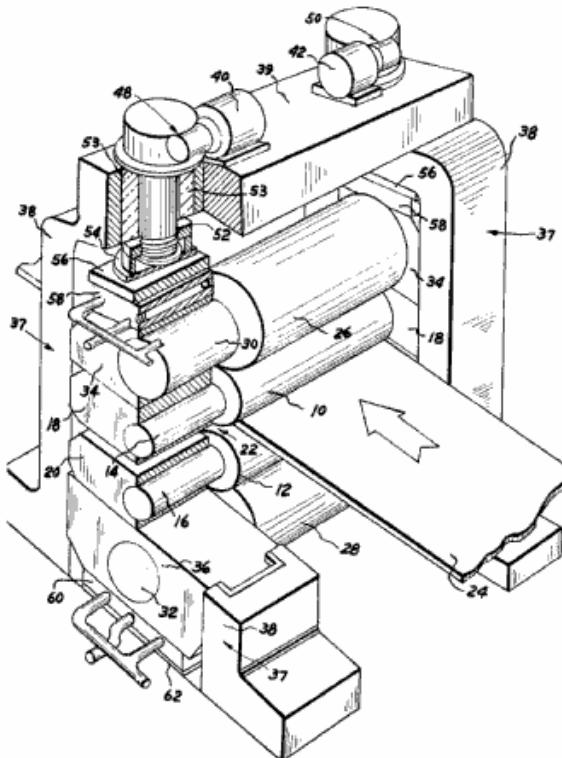
A calender system for processing a product to produce a desired gauge thickness, the calender system having a gauge adjustment, the calender system comprising: a frame having

two opposed end supports, a first and second roller each having a first and second end mounted in rotatable supports, wherein each of said rotatable supports is positionally fixed to one of said end supports, said end supports each having an inlet and an outlet in fluid communication with one or more internal passages, wherein a portion of the one or more internal passages is located between the centers of the rollers, wherein a heat transfer medium may be circulated through said one or more internal passages.

App. Br. 8,<sup>3</sup> Claims Appendix.

### 3. Hautau

Hautau discloses an apparatus for thermally controlling the roll spacing in a rolling mill. Hautau 1:7-10. Hautau Figure 1 illustrates an embodiment of the invention. Hautau Figure 1 is reproduced below:



Hautau Figure 1 depicts a rolling mill.

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<sup>3</sup> Amended Brief on Appeal dated October 15, 2007.

Two cylindrical rolls **10** and **12** having ends **14** and **16** are journaled in bearings **18** and **20**, respectively. The rolls **10** and **12** are adjacent one another and define a rectangular gap or space **22** through which a metal sheet or strip **24** is passed. Hautau 2:63-68.

Bearings **18** and **20** are supported between vertical members **38** in frame **37** "so as to be free for vertical movement." Hautau 3:3-7.

Expansible blocks **58** are interposed between and permanently affixed to bearings **34** of upper back-up roll **26** and distributing pads **56**. Similar expansible blocks **60** are situated between bearings **36** of lower back-up roll **28** and a support pad. Blocks **58** and **60** are fitted with channels **62** through which a fluent circulates. Hautau 3:13-20.

In operation, motors **40** and **42** are activated to rotate screws **52** until roll gap **22** closely matches the thickness of the incoming metal sheet **24**. Hautau 4:7-9.

The metal sheet **24** is passed through roll gap **22** and thickness gage **86**. Any departures from the desired thickness of metal sheet **24** cause the flow of fluent at a new temperature through blocks **58** and **60** causing a corresponding expansion or contraction of the blocks. This, in turn, causes a change in the spacing of working rolls **10** and **12**. Expansion of blocks **58** and **60** reduces roll gap **22**, and contraction of blocks **58** and **60** increases the roll gap. Hautau 4:15-24.

#### D. ANALYSIS

The Examiner found that Hautau discloses a calender system having a fine gauge adjustment. The Examiner found that the apparatus comprises a frame **37**, opposed expansible end supports **58** and **62** (sic, **60**), and first and second rollers **10** and **12** having ends mounted in rotatable end supports **18**

and **20**, respectively. The Examiner found that expandible supports **58** and **60** each have an inlet and an outlet connected to internal passageways through which a heat transfer fluid circulates. Ans. 4.<sup>4</sup>

The Examiner found that Hautau does not teach that one or more of the internal passageways are located between the centers of the first and second rollers. However, relying on *In re Japikse*, 181 F.2d 1019 (CCPA 1950), the Examiner explained that it is obvious to switch the location of parts if the operation of the device would not be modified. Thus, the Examiner concluded that it would have been obvious to one of ordinary skill in the art to move one or more of the internal passageways in Hautau to a location between the centers of the rollers by switching the location of support **58** or **60**. Ans. 5.

The Appellant argues that the teachings of Hautau do not render the subject matter of claim 1 obvious for two reasons. First, the Appellant argues that it would not have been obvious to position end supports **58** or **60** between rollers **10** and **12** in view of the teachings of Hautau. Second, the Appellant argues that supports or bearings **18** and **20** are not “positionally fixed” to end supports **58** or **60** as required by claim 1.

As for moving supports **58** or **60** between the centers of rollers **10** and **12**, the Appellant argues:

Hautau teaches locating the expandible blocks [**58** and **60**] outside the rollers, wherein one of the blocks is attached to the screw. As the blocks expand, the rollers slide in the support frame and the gap between the rollers is narrowed. The two expandible blocks 58, 62 [sic, 60] work together to narrow the gap. If one of the blocks is moved between the rollers, they will work against each other. The block located in its original

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<sup>4</sup> Examiner’s Answer mailed December 21, 2007.

location will expand to narrow the gap, while the block located between the rollers would expand to widen the gap. See Col. 4, lines 14-24 wherein Hautau describes how the blocks expand and contract together to decrease or increase the gap. If one of the blocks is moved to between the rollers, then they will cancel each other, as Hautau teaches the same fluent travels through both blocks 58, 60. Thus, the Examiner's proposed amendment of Hautau would make Hautau's apparatus inoperable for its intended purpose and otherwise destroy the intent of his claimed invention.

Reply Br. 6-7.<sup>5</sup>

Hautau discloses that blocks **58** and **60** are fitted with channels **62** through which a fluent circulates. According to Hautau, all four of blocks **58** and **60** are connected to a single hydraulic and electrical system. Hautau 3:18-21. Thus, the same fluent at the same temperature is circulated through blocks **58** and **60**.

Based on the teachings of Hautau, we agree with the Appellant that blocks **58** and **60** would work against each other in the modification proposed by the Examiner, i.e., one block would work to expand the gap while the other block would work to narrow the gap. Furthermore, we find that relocating blocks **58** or **60** between rollers **10** and **12** would limit the distance that the gap could be narrowed. Thus, we find that the modification proposed by the Examiner would render the Hautau apparatus unsuitable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (rejection under §103 reversed where proposed modification would have rendered prior art inoperable for its intended purpose).

Next, claim 1 recites "a first and second roller each having a first and second end mounted in rotatable supports, wherein each of said rotatable

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<sup>5</sup> Reply Brief dated February 20, 2008.

supports is positionally fixed to one of said end supports.” The Appellant argues:

As the rotatable support must rotate, the term positionally fixed means that the support is connected or attached to the end support such that it can rotate but not otherwise move relative thereto the end support.

Reply Br. 4.

The Appellant argues that Hautau’s roller supports **18** and **20** are not “positionally fixed” to end supports **58** and **60**. Rather, referring to column 3, lines 5-7 and claim 1 of Hautau, the Appellant argues that bearings or supports **18** and **20** are supported between vertical frame members **38** “so as to be free for vertical movement.” App. Br. 6.

The Examiner finds that supports **18** and **20** are in a fixed, i.e., non-moving, position relative to the end supports during operation of the Hautau apparatus. In the alternative, the Examiner concludes that it would have been “merely a matter of obvious engineering choice” to construct the supports as a unitary structure with the end supports. Ans. 5, 7-8.

During operation of the Hautau apparatus, bearings **18** and **20** move in a vertical direction in response to the expansion and contraction of blocks **58** and **60**. *See* Hautau 4:7-24. Indeed, as pointed out by the Appellant, Hautau expressly discloses that supports or bearings **18** and **20** are supported between vertical members **38** “so as to be free for vertical movement.” Hautau 3:5-7. Thus, we find that supports or bearings **18** and **20** are not “positionally fixed” to vertical members **38**. Moreover, it does not appear that bearings **18** and **20** are even rotatable as required by claim 1.

As for the Examiner’s conclusion that it would have been obvious to construct supports **18** and **20** as a unitary structure with end supports or

Appeal 2008-4308  
Application 10/924,535

blocks **58** or **60**, we find that such a modification would render the Hautau apparatus unsuitable for its intended purpose. *Gordon*, 733 F.2d at 902.

The Appellant has shown that the Examiner reversibly erred in rejecting claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Hautau.

Claims 2-6, 12, and 13 depend from claim 1. Therefore, the Appellant has likewise shown that the Examiner reversibly erred in rejecting claims 2-6, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Hautau. *See* 37 C.F.R. § 1.75(c) (2007).

#### E. DECISION

The rejection of claims 1-6, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Hautau is reversed.

REVERSED

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