

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JYRKI HUOVILA and ARI LINSURI

Appeal No. 1998-3018
Application 08/457,328

HEARD: AUGUST 16, 2000

Before, CALVERT, McQUADE and JENNIFER D. BAHR, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Jyrki Huovila et al. appeal from the final rejection of claims 1 and 3 through 19, all of the claims pending in the application.¹ We reverse.

¹ Claims 1 and 17 have been amended subsequent to final rejection.

THE INVENTION

The invention relates to the field of papermaking, and more particularly to "a stock feed system for a multi-layer headbox and a method in the operation of a multi-layer headbox" (specification, page 1). Claim 1 is illustrative and reads as follows:²

1. A combination of a multi-layer headbox including inlet headers situated vertically one above another and a stock feed system for feeding stock to the inlet headers of the multi-layer headbox, the stock feed system comprising

a single fresh stock tank for retaining stock,

a branching member,

a first flow line having first and second opposed ends, said first end of said first flow line being connected to said single fresh stock tank and said second end of said first flow line being connected to said branching member, a single flow of fresh stock being passed through said first flow line from said single fresh stock tank to said branching member and being divided in said branching member into a plurality of stock flows without storing said single flow of fresh stock between said single fresh stock tank and said branching member,

at least second and third flow lines each having first

² The phrase "said single flow of fresh stock" in claims 11 and 17 lacks a proper antecedent basis, an informality which is deserving of correction in the event of further prosecution before the examiner.

and second opposed ends and through each of which a respective one of said divided stock flows passes, said first ends of said second and third flow lines being connected to said branching member and said second ends of said second and third flow lines leading to a respective one of said inlet headers of said headbox, a respective one of said divided stock flows being passed through each of said second and third flow lines from said branching member without storing said divided stock flows between said branching member and said inlet headers,

means for independently adding chemicals and/or fillers to each of said divided stock flows during the flow of said divided stock flows through a respective one of said at least second and third flow lines after said branching member and before entry of said divided stock flows into said inlet headers such that stock in each inlet header has an independently controllable chemical and/or filler characteristic, and

diluting means for adjusting the consistency of at least one of said divided stock flows such that said at least one of said divided stock flows has a consistency independently adjustable with respect to the consistency of other of said divided stock flows, said diluting means comprising conduit means for passing a diluting-water flow into said at least one of said divided stock flows as said at least one of said divided stock flows is passing through a respective one of said at least second and third flow lines prior to entry of said at least one of said divided stock flows into the respective one of said inlet headers of said headbox.

THE PRIOR ART

The references relied upon by the examiner as evidence of obviousness are:

Schacht	2,077,015	Apr. 13, 1937
Booth	2,315,892	Apr. 6, 1943
Beck	3,598,696	Aug. 10, 1971
Schmaeng	4,021,295	May 3, 1977

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Justus	4,086,130	Apr. 25, 1978
Stotz	4,384,922	May 24, 1983

THE REJECTIONS

Claims 1, 3 through 5, 8, 9, 11 through 14 and 16 through 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Beck in view of Booth and Stotz.³

Claims 6 and 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Beck in view of Booth, Stotz and Schmaeng.

Claims 10 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Beck in view of Booth, Stotz, Justus and Schacht.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 17 and 21) and to the examiner's answer (Paper No. 19) for the respective positions of the appellants and the examiner with regard to the merits of these

³ The record indicates that the inclusion of U.S. Patent No. 5,466,340 to Begemann et al. in the statement of this rejection in the final rejection (Paper No. 11) and the omission of claims 12 through 14 and 17 through 19 from the restatement of the rejection in the answer (Paper No. 19) were inadvertent errors on the part of the examiner.

rejections.⁴

DISCUSSION

Beck, the examiner's primary reference, discloses a multi-layer headbox for a paper making machine. The headbox 10 includes a plurality of stock receiving chambers 13, 14 and 15, turbulence generators 46, 47 and 48, tube-type stock distributors 49, 50 and 51 and slice openings 20, 24 and 29, these elements being arranged as shown in Figure 1. Beck states that

[t]he stock receiving chambers 13, 14 and 15 may be supplied from a common stock delivery and control system, or from a plurality of separate stock delivery and control systems, as indicated by reference numerals 56, 57 and 58. By utilizing separate stock delivery and control systems, the stock applied to the distinct stock delivery chambers may be of different quality or character to enable the headbox to form paper sheets having specific qualities. For example, the stock receiving chambers 13 and 15 may receive a stock slurry containing fillers and clays, while the stock receiving chamber 14 receives a stock slurry which contains strength fibers and chemicals. Additionally, different colored stocks may be

⁴ The unpublished technical article appended to the main brief and discussed on page 5 thereof has not been properly authenticated and has no apparent relevance to the specific issues raised in this appeal. Accordingly, we have considered the article only to the extent that it embodies general background information relating to the field of the invention.

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supplied to different ones of the stock receiving chambers to produce a mottled or marbled effect on the sheet being formed [column 4, lines 40 through 54].

Beck does not meet the limitations in independent apparatus claim 1 requiring (1) means for independently adding chemicals and/or fillers to each of a plurality of divided stock flows and (2) diluting means for adjusting the consistency of at least one of the divided stock flows such that it has a consistency independently adjustable with respect to the consistency of other of the stock flows. Beck also fails to meet the corresponding adding and diluting process limitations in independent method claim 11 and the corresponding diluting means limitation in independent apparatus claim 17.

Booth discloses a multi-ply paper board manufacturing process that "contemplates the use of water soluble inorganic chemicals which react to form a precipitate in the stock stream of the desired ply or plies to retard or restrain the rate of water drainage therefrom" (page 1, column 1, lines 9

through 13). Conventionally, the multiple plies are separately formed on individual cylinder molds (see page 1, column 1, lines 24 through 46), with the inner or filler plies being uniformly prepared by common beating and jordaning equipment (see page 1, column 1, lines 47 through 53; and page 1, column 2, lines 15 through 21). The following passage describes Booth's departure from the customary preparation of the inner or filler plies:

it has been found that, by the addition of appropriate material, of which at least a portion is applied after the water suspension of stock has been divided for delivery to the several molds, it is possible to control the rate of drainage from the several plies and from the consolidated wet web in a more logical manner and which assures desirable results which have hitherto been unobtainable except with additional cost for mechanical equipment and cost for operation of such additional equipment.

In practice, it has been found desirable to apply two or more chemical reagents, for example, water soluble inorganic chemicals, which mutually react to form an insoluble precipitate to cause slower water drainage. One chemical may be added at or before the division of the stock referred to above, or after the division of the water suspension of stock to be delivered to the several molds has been effected. The other chemical used should be applied after the stock has been divided into the separate streams. In certain instances it is desirable to provide diverse treatments for the several plies of stock [page 1, column 2, lines 22 through 46].

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Stotz discloses an "installation for charging or loading a multi-ply headbox for a papermaking machine" (column 1, lines 7 and 8). The installation includes two stock suspension infeed systems I and II for charging the headbox 1 with stock suspensions A and B having different material properties and two water containers 2a and 2b for respectively supplying filtered water to the stock suspensions A and B.

In combining Beck, Booth and Stotz to reject claims 1, 11 and 17, the examiner has concluded that

it would have been obvious to modify Beck, with Booth and Stotz in order to provide diverse treatments for the different plies of stock, as taught by Booth, and to regulate the diluting flows into each of the stock flows, as taught by Stotz. Although Stotz does not specifically teach that each of the diluting flows are controlled independently, it would have been obvious to one of ordinary skill in the art to do so considering the teaching of Booth to independently control the chemical flows [answer, pages 4 and 5].

This proposed modification of Beck pertains to the headbox embodiment having the common stock delivery and control system. The teachings of Booth relied upon by the examiner to support the foregoing conclusion of obviousness are clearly limited to the preparation and treatment of the inner or filler plies of a paper board product. While these

teachings would have suggested providing Beck's apparatus and method with a means for and step of independently adding chemicals to the stock flow entering the middle or inner headbox chamber 14 to control the drainage characteristics of Beck's inner ply, they would not have suggested the provision of a means for or step of independently adding chemicals to the stock flows entering the outer stock receiving chambers 13 and 15 which form Beck's surface or skin plies.

Claims 1 and 11 respectively require a means for and a step of independently adding chemicals and/or fillers to "each" of a plurality of divided stock flows. Since Booth would have suggested adding chemicals only to Beck's inner or middle stock flow, the examiner's conclusion that the combined teachings of these references would have rendered obvious a method or apparatus meeting these claim limitations is unsound. Moreover, and as conceded by the examiner, Stotz does not teach a diluting means or step as recited in claims 1, 11 and 17 for independently adjusting the consistency of at least one of the divided stock flows with respect to the consistency of other of the stock flows. Notwithstanding the examiner's determination to the contrary, this shortcoming in

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Stotz finds no cure in Booth's disclosure of the addition of chemical reagents to inner or filler stock flows. For these reasons, the examiner's overall conclusion that the combined teachings of Beck, Booth and Stotz would have suggested the subject matter recited in claims 1, 11 and 17 is not well taken.

Therefore, we shall not sustain the standing 35 U.S.C. § 103 rejection of claims 1, 11 and 17, or of claims 3 through 5, 8, 9, 12 through 14, 16, 18 and 19 which depend therefrom, as being unpatentable over Beck in view of Booth and Stotz.

Inasmuch as Schmaeng, Justus and/or Schacht do not overcome the above noted deficiencies of the basic Beck-Booth-Stotz combination, we also shall not sustain the standing 35 U.S.C. § 103 rejection of dependent claims 6 and 7 as being unpatentable over Beck in view of Booth, Stotz and Schmaeng or the standing 35 U.S.C. § 103 rejection of dependent claims 10 and 15 as being unpatentable over Beck in view of Booth, Stotz, Justus and Schacht.

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SUMMARY

The decision of the examiner to reject claims 1 and 3 through 19 is reversed.

REVERSED

IAN A. CALVERT)	
Administrative Patent Judge)	
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JOHN P. McQUADE)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
JENNIFER D. BAHR)	
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