

COMMISSIONER'S DECISION

DIVISIONAL STATUS: Objectionable New Matter Added

Divisional status is not satisfied as statements in the original specification made it clear that the applicant did not intend, or completely failed, to disclose the precise embodiment described in the divisional.

FINAL ACTION: Affirmed.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated August 18, 1972 on application 120,389. This application was filed in the name of The Black Clawson Company and refers to "Vertical Paper Machine". The Patent Appeal Board conducted a ~~hearing~~ on March 15, 1973, Mr. D. Watson represented the applicant.

In the prosecution terminated by the Final Action the examiner refused divisional status on the grounds that the applicant has added new matter to the disclosure and claims which was not part of the parent application as filed and reads: "The successive deflectors thus define a generally serpentine like path of travel therebetween for the combined wires and the progressively forming sheet."

In this action the examiner stated in part:

The invention concerns the making of paper between two vertically disposed endless travelling fourdrinier wires. On either side of the wires are a series of staggered deflectors which guide the wires in converging relation as well as scrape off water extruded from the paper stock through the wires. The new matter which applicant purports is inherent in the system is that the deflectors define a generally serpentine-like path of travel.

At the outset it must be pointed out that the drawings do not show nor suggest what applicant is now adding to the disclosure and claims.

On page 2, lines 22 and 23 of the parent, the disclosure reveals, "the deflectors along the outside of the forming zone function only to support the wires in converging relation and to doctor off the water". There is no suggestion of a serpentine-like path here, merely a clear disclosure of two converging wires. The word, "converging", means, "coming together from different directions, to incline and approach nearer together as the radii of a circle converge toward the center". This is exactly what Figure 3 in particular illustrates.

On page 4 lines 13 to 15 applicant further reveals, "The reaches of the wires 16 and 17 directly below the breast rolls 11 and 12 are guided so that they converge to define therebetween a forming zone 20 of generally triangular section". Figure 1 submitted in applicants response dated June 9, 1972 shows no such configuration and therefore is a different embodiment from what applicant had originally disclosed.

On page 6 lines 1 to 3 applicant goes on, "The lowermost deflectors 40 are preferably so spaced that the wires converge to their minimum relative spacing as they approach and move past the lowermost deflector 40 for the right hand wire 17". This also suggests a generally triangular shape as was disclosed above.

On page 7 lines 24 to 27 it is disclosed that, "The use of the pattern of deflectors shown in Figure 3 has produced highly satisfactory results, but other patterns can be used and it is possible to dispense with the use of deflectors if the essential conditions of the invention are otherwise satisfied". This suggests that the configuration with and without deflectors is the same and there could of course be no sinuous path with no deflectors.

On page 8 lines 1 to 3 applicant discloses that, "The supporting action of the deflectors is therefore supplemental to wire tension and if the tension is sufficiently high such support becomes unnecessary". This again clearly illustrates that the paths of the wires are converging from the breast rolls down to the point of minimum spacing such that a triangular shape results.

In claim 1 part 3 applicant claims "a plurality of generally aligned opposingly staggered deflector means spaced successively downstream from said gap defining a generally vertically aligned serpentine-like path of travel therebetween". There is of course no support for this in the parent. The drawings clearly show that a line drawn through the tips of the deflectors on one side of the wires would pass through a single plane and therefore could not define a serpentine-like path.

The applicant in his response to the Final Action, dated November 16, 1972, stated in part:

The present application and the previously co-pending applications listed therein all relate to the first commercial installation by the applicant company of one of its "Verti-Forma" paper machines, which started up in the mill of Canadian International Paper Company at Three Rivers, Quebec early in 1968. That machine incorporated the particular specific form of the invention discussed in the present application wherein the deflectors were adjusted to provide a slightly S-shaped ("serpentine") path for those reaches of the wires defining the forming zone.

The second significant fact is that the applicant Justus named as inventor in Canadian patent No. 877,961 of Beloit Corporation visited the mill in Three Rivers shortly after the Verti-Forma machine started up there, and followed that visit by filing a number of patent applications closely modeled on the paper machine of the present case. The evidence is thoroughly convincing that the "serpentine" path feature emphasized in the Justus patent was copied by him from the Black Clawson machine.

Turning now to the office action of August 18, 1972, it appears that the facts pointed out below were not previously adequately explained to the examiner, and it is believed that when they are considered, it will be clear that the present application is entitled to the status of a Division of application No. 044,262. It is thought pertinent also to call to the attention of the examiner that the U.S. examiner initially rejected the corresponding U.S. divisional application on the basis of new matter but subsequently withdrew that rejection.

It should of course be recognized that the drawings in a patent application relating to subject matter of such magnitude as the present case are necessarily somewhat diagrammatic.

Another area of apparent confusion revolves around the meaning of the term "converging" as used in the present case. The wires in fact attempt to come together from different directions as soon as they leave the surfaces of the two breast rolls, but their rate of convergence is controlled in part by the setting of the deflectors and also in major part by the presence of the stock therebetween. At some point along the forming zone, the wires actually assume a relatively parallel relation to the extent that this condition is established by the newly formed sheet therebetween. Thus in the diagrammatic Fig. 1, if there were no fiber in the stock, the wires would actually come in contact at or just above the deflector 40b, and would remain in such contact for the rest of their downward travel.

Referring now to the examiner's conclusion that there is no support for clause (3) of claim 1, it appears that we have not yet explained with adequate clarity the points discussed in connection with the quotations from the disclosure on page 2 of the previous amendment. Referring to the diagrammatic Fig. 2, the wires could actually

assume the illustrated triangular relationship only if their tensions were sufficiently high to resist the internal pressures tending to cause them to sag away from each other. In other words, the portion of wire 17 opposite the deflector 40a would tend to bow to the right because of internal hydraulic pressure. Similarly the portion of the wire 16 opposite the deflector 40b would tend to bow to the left, and this tendency would be more pronounced because of the increased effective hydraulic head and the increasing resistance to drainage due to the initial deposition of fiber on the inner surface of the wire. The same conditions would apply to the portion of wire 17 opposite the deflector 40c, and so forth to the end of the forming zone.

Necessarily, therefore, even under the narrowest possible construction of the disclosure as being limited to a configuration wherein the edges of the two sets of deflectors define planes in spaced converging relation, the conditions of operation would still cause each wire to follow a course comprising a series of reverse curves, and it is really immaterial whether that course be described as "serpentine", "S shaped", or some equivalent term. The net result will still be that the shape of the forming zone will be generally triangular, but each side will consist of a series of reverse curves. The "single plane" configuration referred to by the examiner, however, could exist only if no stock were present, because it is doubtful that the wires would resist all tendency to sag even if pure water provided the only material in the forming zone.

It is hoped that it will now be recognized that the movement of each section of wire which is "constrained only by its tension" is required to maintain the proper spacing, volume and pressure conditions in the forming zone. This movement would initially be outward as described above, and such movement can and will take place even if all deflectors for each wire arc adjusted to define two converging spaced planes.

This application refers to the making of paper between two vertically disposed endless travelling wires, and having on each side of the wires a series of staggered deflectors to guide the wires. Claim 1 reads:

In a device for forming a fibrous web from a dilute aqueous suspension of entangled co-moving fibers exiting downstream-wise from a slice as a substantially unidirectional ribbon-thin jet-stream, in combination,

(1) first and second breast rolls mounted for rotation along a horizontal plane spaced apart a distance defining a generally vertically-extending gap,

(2) means positioned above said first and second breast rolls feeding a dilute aqueous suspension of co-moving fibers downstream-wise into said gap as a high-speed substantially unidirectional jet-stream of ribbon-like thinness less than the gap thickness,

(3) a plurality of generally aligned opposingly staggered deflector means spaced successively downstream from said gap defining a generally vertically aligned serpentine-like path of travel therebetween generally concurring with the jet-stream direction,

(4) first and second opposed wire runs travelling substantially at jet-stream speed

(a) over said first and second breast rolls respectively through initially close spacing at said gap receiving the jet-stream therebetween, and (b) directly thereafter convergingly through a forming zone and into general parallelism with the fibrous moist web sandwiched therebetween, in which parallelism said wire runs are maintained as they travel downstream together, (c) over said deflector means,

(5) said deflector means each having a smooth, stationary surface presenting an edge to one of said wire runs urging said one wire run into such parallelism against an opposed region of the other said wire runs free from contact with restraining means to drive water through and away from the other said wire runs.

The issue is whether the subject matter now described and claimed was adequately disclosed in the parent application as filed. Basically, the matter added to the disclosure reads: "The successive deflectors thus define a generally serpentine-like path of travel therebetween for the combined wires and the progressively forming sheet;" and part 3 of claim 1 reads: "a plurality of generally aligned opposingly staggered deflector means spaced successively downstream from said gap defining a generally vertically aligned serpentine-like path of travel therebetween."

First, to outline the subject matter of the parent disclosure as filed, the first paragraph on page 4 reads:

The results desired by the invention are also aided by the provision of a relatively small number of supporting deflectors for the wire reaches which define the forming zone, and also by the arrangement of these deflectors in staggered relation with each other such that no deflector is directly opposed at the same level by a deflector for the other wire, so that the other wire is constrained in that area only by the tension thereon and can move as required to maintain desired pressure conditions between the two wires in the space occupying the same level as the deflector.

And on page 7 starting at line 11:

In addition, with each deflector 40 generally centered on the space between opposed deflectors for the other wire, as one wire passes the edge of any of the deflectors, it will be drawn tightly against the deflector, but the other wire will be constrained only by its tension and therefore can move as may be required to maintain the proper spacing and volume between the wires. (underlining added)

More specifically on page 2 starting at line 15 of the parent as filed the disclosure states that: "Another significant feature of the invention lies in the fact that the deflectors along the outside of the forming zone function only to support the wires in converging relation and to doctor off the water which is forced through while offering minimum tendency to educt water through the wire." (underlining added)

And in addition lines 1 to 4 on page 6 state that: "The lowermost pair of opposed deflectors 40 are preferably so spaced that the wires converge to their minimum relative spacing as they approach and move past the lowermost deflector 40 for the right-hand wire 17;" and at the bottom of page 7 through to page 8, the disclosure states that: "The major function of the deflectors is to support the reaches of wires along the forming zone in such converging relation that the

desired pressure conditions are maintained on the stock within the zone. The supporting action of the deflectors is therefore supplemental to wire tension, and if the tension is sufficiently high, such support becomes unnecessary." (underlining added).

It therefore appears clear that the only function of the deflectors is to support the wires in converging relationship. If the deflectors were intended to form a serpentine-like path for the wires, it appears they would offer more than a "minimum tendency" to educt water, and the supporting action of the deflectors would not be supplemental, but necessary to form a serpentine-like path.

Accordingly, it appears clear that the applicant has only defined a bank of deflectors in staggered relationship with a second bank of deflectors supporting the wires in converging spaced planes only. As stated in the original disclosure, when one wire is drawn tightly against a specific deflector, the second wire at the same point will be constrained only by its tension and can move as to maintain the proper spacing and volume between the wires.

It then follows that, while there might be some slight deviation in the path of travel, it is only in consequence of the operation of the machine and the pressures of the paper stock between the wires which might be sufficient to cause the wires to deviate to a slight degree from a planar path as they pass each deflector.

The Board is therefore satisfied that the only matter disclosed was the staggered deflectors arranged in spaced converging planes and could not have been intended to define an embodiment where the successive deflectors define a generally serpentine-like path therebetween for the wires and progressively forming

sheet; this notwithstanding the fact that a slight deviation in the path might occur as a consequence of the pressure of the paper stock passing a deflector point.


It appears, therefore, that the applicant is attempting to claim an embodiment which was not in any way disclosed in the original specification, keeping in mind that all of the above quotations lead away from the concept of a serpentine-like path between the deflectors. There appears to be no indication whatsoever that the deflectors for each wire were intended to be adjusted for any purpose other than to define a path for the wires in converging spaced planes.

This is in line with the applicants argument that: "It is hoped that it will now be recognized that the movement of each section of wire which is "constrained only by its tension" is required to maintain the proper spacing, volume and pressure conditions in the forming zone. This movement would initially be outward as described above, and such movement can and will take place even if all deflectors for each wire are adjusted to define two converging spaced planes." It appears, therefore, that this is the only concept that was disclosed and described in the original specification.

The Board is therefore satisfied that the applicant could not have intended, or completely failed, to disclose the characteristics of the embodiment of the invention which he now wishes to claim, and therefore the objectionable subject matter may not be added to the disclosure; and it follows that it cannot be claimed in the manner of the present claims.

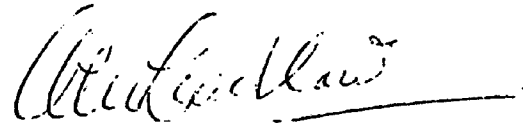
This does not, however, prevent the applicant from claiming with respect to support in the disclosure, the staggered deflectors and the resulting variation of the path of travel from the vertical in consequence of the paper stock passing a deflector point.

The Board recommends that the ground of rejection, to refuse divisional status unless the objectionable matter is removed, be upheld.


J.F. Hughes,
Assistant Chairman,
Patent Appeal Board.

I concur with the findings of the Patent Appeal Board and refuse to accept the divisional status of this application. The applicant has six months in which to remove the objectionable matter or appeal this decision in accordance with Section 44 of the Patent Act.

Decision Accordingly,


A.M. Laidlaw,
Commissioner of Patents.

Dated at Ottawa, Ontario,
this 26th day of April, 1973.

Agent for Applicant

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