

COMMISSIONER'S DECISION

Obviousness: Dyeing of Yarns

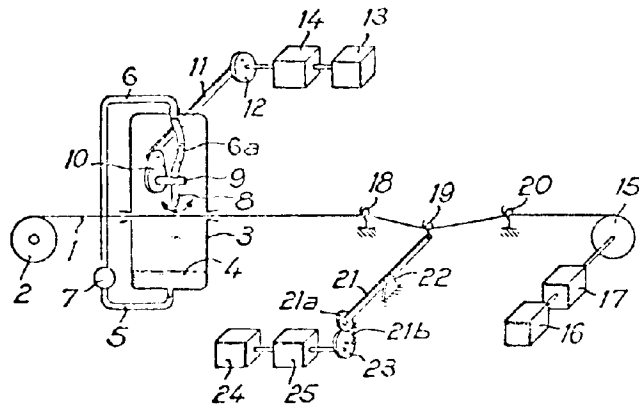
Use of variable speed means to drive the yarn through the coloring chamber containing nozzles capable of being driven at variable speeds is shown in the prior art. Two claims were refused.

Final Action: Affirmed.

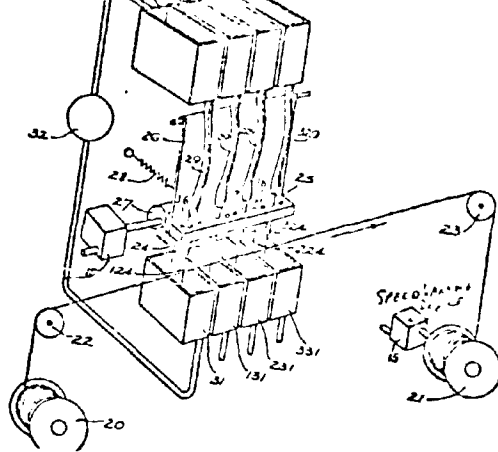
This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated February 21, 1977, on application 167273 (Class 68-3). The application was filed on March 22, 1973, in the name of Philippe D. Lapierre, and is entitled "Apparatus For The Local Treatment Of Yarn."

This application relates to apparatus for dyeing yarn in an irregular pattern. The yarn moves at varying velocity through a dyeing chamber to acquire the color which is applied by a variable frequency oscillating nozzle. Speed variators are used for the motor driven bobbin, nozzle and oscillating yarn guide to obtain the variable velocity.

Figure 1 is illustrative of that arrangement.



In the Final Action the examiner refused claim 1 as covering an obvious improvement in the light of United States patent 2,428,284, Sept. 30, 1947, Krogel. Krogel is for a strand marking apparatus for marking insulated wire provided with an absorbent fibrous sheath, such as seamless paper pulp or served cotton. The strand moves through dyeing chambers where variable-frequency oscillating nozzles apply the color, and the take-up reel is driven by a speed control device. Figure 1 of the Krogel patent is shown below.



In the Final Action the examiner stated (in part):

Claim 1 directed to an apparatus stands rejected as it fails to define any subject matter distinct in an unobvious sense from the patent to Krogel. It is maintained that the qualification of the speed regulating means as operative "while the yarn is moving" fails to distinguish the structure recited in claim 1 from the otherwise anticipating strand dyeing apparatus of this reference in an unobvious way. Furthermore the recitation of the proposed use of the device as for the treatment of "a yarn" in the preamble cannot impart patentability to this claim.

In the instant disclosure applicant sets forth an apparatus for the non-continuous dyeing of textile yarn where a yarn is moved in a straight path under one or more dye-spraying nozzles which reciprocate transversely to the path of the yarn. The drives from winding the yarn and oscillating the nozzle include motors and speed variators. Three embodiments are described wherein (A) several parallel yarns are simultaneously dyed by individual nozzles placed side by side and synchronously oscillated (Fig. 2), (B) a single yarn has its speed varied by oscillating a yarn guide movably mounted intermediate two outer fixed yarn guides (figure 1) and (C) where a succession of nozzles acting on the path of the same yarn are automatically controlled to shift the phase of reciprocation and to vary the relative phase shift of each nozzle relative to the others. The embodiment (A) is not specifically defined in any of the claims. Claims 2 and 3 are directed to the embodiment (B) above. The remaining claim, claim 1, is directed to the broad concept of a nozzle and a yarn where the speed is variable during movement.

The United States patent to Krogel shows apparatus for dyeing an absorbent white strand wherein a first drive with a speed control device (15) moves the strand continuously in a fixed axial direction through a dyeing station which has a fluid supply nozzle mounted therein and movable in a plane perpendicular to the yarn. A second drive, also with a speed control device (16) reciprocates the nozzle transversely to the yarn. Krogel teaches that the pattern of the dyeing may be varied by varying and relative speeds by means of the speed control devices 15 and 16. Although Krogel does not specify the nature of the speed control devices used, the use of a device to control the speed, "while the yarn is moving" cannot be seen to involve anything of an unobvious nature. Variable speed motors, in which this feature is inherent are common knowledge and since the selection of such a speed control device per se gives no result other than that expected, namely the facility of changing speed, it is deemed to involve merely an obvious matter of selection or elementary design.

In response to the Final Action the applicant made an amendment to claim 1 as well as submitting a new claim 8 and said (in part):

The present invention relates to the irregular treatment, for example irregular dyeing, of yarn. According to the invention, the yarn is passed in a relatively fixed axial direction through a treatment station having at least one fluid supply nozzle movable in a plane substantially perpendicular to the yarn passing therethrough. Fluid is supplied to the supply nozzle, which is reciprocated in the said plane to cause fluid from the nozzle to periodically impinge upon the moving yarn. The speed of axial movement of the yarn through the treatment station and/or the speed of reciprocation of the nozzle is varied, while the yarn is moving, to produce irregular treatment of the yarn by the fluid.

Claim 1 is directed to apparatus for carrying out the invention, and new claim 8 is directed to a method incorporating the invention.

The Examiner has rejected apparatus claim 1 in view of United States patent No. 2,428,284 (Krogel), which issued in 1947. The Krogel patent describes strand marking apparatus, and is particularly concerned with apparatus for marking insulated wire provided with an absorbent, fibrous sheath (see the opening paragraph in column 1). The strand marking apparatus described in the Krogel patent is used for marking an insulating sheath for identification by applying ink, dye or the like to create a distinctive pattern of recurrent cycles of successive short coloured and uncoloured or variously coloured sections (see the second paragraph in column 1).

The Krogel patent also states that it is an object of the invention to provide apparatus for marking a longitudinally advancing strand with a predeterminedly arranged cyclically repeated pattern of differently coloured portions in longitudinal sequence (see the third paragraph in column 1).

It will therefore be noted that applicant's invention is concerned with a completely different problem from that dealt with in the Krogel patent. Applicant is concerned with irregularly treating yarn, whereas, on the other hand, the Krogel patent is concerned with a completely opposite effect, namely the regular colouring of a strand.

Applicant's claim 1 (including the proposed amendment) calls for the provision of regulating means operative for varying selectively at least one of the speed of axial movement of the yarn through the treatment station and the speed of reciprocation of a nozzle while the yarn is moving through said treatment station during the treatment, whereby irregular treatment of the yarn by said fluid is effected.

The question before the Board is whether or not claim 1 as now amended and newly added claim 8 define a patentable advance in the art. In the Final Action the examiner only refused claim 1 as he was concerned with the scope of monopoly of the invention defined in this claim. Claims 2 to 7 were indicated to be allowable.

The applicant argues that his "invention is concerned with a completely different problem" from that dealt with in the Krogel patent. He adds that he is concerned with irregular treatment, such as irregular dyeing of yarn, as contrasted with Krogel, who provides for a "cyclically repeated pattern of differently coloured portions in longitudinal sequence."

We agree that Krogel obtains a regular cyclic repeating pattern upon the strand, as this is the form he desires to obtain. However, altering one of the speed control devices could produce an irregular pattern as desired by the applicant.

In his comments the applicant admits the "mechanical differences between applicant's apparatus and Krogel's apparatus may be small but it does not consequently follow that the applicant's apparatus is obvious in view of the Krogel apparatus....". At issue however, is the scope of claims 1 and 8, and not that of the applicant's apparatus which has been indicated allowable in the form found in claims 2 to 7 inclusive.

A major question to be resolved relates to the "speed variators" used by the applicant, and the "speed control device" shown in the Krogel patent. Krogel states in column 2 at line 46 f.f. that "by varying the relative speeds, for example by means of speed control devices 15 and 16 the patterning of the product may be almost indefinitely varied"

The applicant maintains that since Krogel normally seeks a regular colour relationship it requires a constant speed of movement through the treatment station as well as a constant nozzle reciprocation in the treatment station. On the other hand the applicant stresses that his speed of axial movement of yarn "through the treatment station and/or the speed of reciprocation of the nozzle is varied, while the yarn is moving, to produce irregular treatment of the yarn by the fluid...." Speed variation (as outlined by the applicant's disclosure in relation to his figure 1) is described on page 4 at line 14 f.f., which states: "All that is necessary for this purpose is to continuously vary, for example cyclically, the speed of the yarn passing through chamber 3 and/or the frequency of the oscillations of nozzle 8. The latter result can easily be obtained by means of a variator 14. The reduction ratio of the variator oscillates about a mean value which the operator can select...."

When comparing the description of "speed control devices 15 and 16" used in Krogel with the applicant's "speed variators" 14, 17 and 25, as outlined in the disclosure, we find that only general terminology is used. This leads us to conclude that Krogel's "speed control device" and the applicant's "speed variator" are components that are well known and readily available for imparting rotation in either a variable or continuous mode.

Let us consider new claim 1 which is as follows:

An apparatus for the irregular treatment of at least one yarn comprising a treatment station, first drive means for moving the yarn to be treated continuously in a relatively fixed axial direction through said station; at least one fluid supply nozzle movably mounted in said treatment station in a plane extending substantially perpendicular to the yarn passing therethrough; means for supplying fluid to said nozzle; second drive means for reciprocating said nozzle transversely of said axial direction of travel of said yarn; and regulating means operative for varying selectively at least one of the speed of axial movement of the yarn and the speed of reciprocation of the nozzle while said yarn is moving through said treatment station during the treatment, whereby irregular treatment of the yarn by said fluid is effected.

The applicant argues that this claim calls for the "provision of regulating means operative for varying selectively at least one of the speed of axial movement of the yarn through the treatment station and the speed of reciprocation of a nozzle while the yarn is moving through said treatment station during the treatment, whereby irregular treatment of the yarn by said fluid is effected." Considering the discussion above about the means used for varying the speed to obtain the desired result, we believe that Krogel also includes means "operative" for varying selectively at least one of the speed of axial movement or the speed of nozzle reciprocation. Consequently claim 1 defines the limits of scope of monopoly in terms which are too broad, covering Krogel's invention, and we recommend that it should be refused.

Newly submitted claim 8 specifies a method of irregularly treating at least one yarn. This claim is substantially the same as claim 1 except that it is couched in terms of method. It would appear that the apparatus of the Krogel patent to vary one of the speeds (yarn or nozzle) to "produce irregular treatment of the yarn" could be achieved without the exercise of inventive ingenuity and the reasons for refusing claim 1 apply equally to claim 8. We believe what Mr. Justice Maclean said in Niagara Wire Weaving v Johnson Wire Works Ltd. (1939) Ex. C.R. at 273, is pertinent: "Small variations from, or slight modifications of, the current standards of construction, in an old art, rarely are indicative of invention; they are usually obvious improvements resulting from experience and the changing requirements of users," and at page 276, "No step is disclosed there which could be described as invention. There is not, in my opinion, that distinction between what was known before, and that disclosed... that called for that degree of ingenuity requisite to support a patent. If those patents could be supported it would seriously impede all improvements in the practical application of common knowledge."

In the circumstances we are not satisfied that claims 1 and 8 define subject matter which can be considered as a patentable advance over the prior art. We recommend that the decision in the Final Action to refuse claim 1 be affirmed and claim 8 not allowed entry into the application.



Gordon A. Asher
Chairman
Patent Appeal Board, Canada

Having considered the prosecution of this application and the recommendations of the applicant, claims 1 and 8 as now submitted are refused. Claim 1 as now on file is also rejected. If any appeal under Section 44 is contemplated it must be taken within six months. Otherwise claims 1 and 8 must be removed within that time.



J.A. Brown
Acting Commissioner of Patents
Dated at Hull, Quebec
this 18th. day of July, 1978

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