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Textile Machine Works Vs. Hirsch Co.

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Court : US Supreme Court

Decided On : Jan-03-1938

Appeal No. : 302 U.S. 490

Appellant : Textile Machine Works

Respondent : Hirsch Co.

Judgement :

Textile Machine Works v. Hirsch Co. - 302 U.S. 490 (1938)
U.S. Supreme Court Textile Machine Works v. Hirsch Co., 302 U.S. 490 (1938)

Textile Machine Works v. Louis Hirsch Textile Machines, Inc.

No. 62

Argued November 19, 1937

Decided January 3, 1938

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CERTIORARI TO THE CIRCUIT COURT OF APPEALS

FOR THE SECOND CIRCUIT

SYLLABUS

1. Claims 1, 3, 14 and 15 of Patent No. 1,713,628, to Schletter, May 21, 1929, for an attachment for "flat" or "straight" knitting machines, including machines of the "full-fashioned" type, *held* invalid for want of novelty. Pp. 302 U. S. 494 , 302 U. S. 497 .

Claim 14, taken as typical, defines the invention as the combination in a straight knitting machine of (a) a set of yarn guide carrier bars for operating yarn guides traveling less than the

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full width of the fabric being knitted, (b) a spindle having reversed screw threads, (c) stops operated by said spindle, (d) means for turning the spindle in either direction, (e) pattern-controlled means for determining the time of operation of the spindle, and (f) pattern-controlled means for determining the direction of rotation of the spindle.

2. The addition of a new and useful element to an old combination may be patentable, but the addition must be the result of invention, rather than the mere exercise of the skill of the calling, and not one plainly indicated by the prior art. P. 302 U. S. 497 .

3. Commercial success may be decisive where invention is in doubt. P. 302 U. S. 498 .

But, in this case, it does not appear whether the commercial success is attributable to novelty of the bare conception of the use of the attachment with full-fashioned knitting machines, rather than to the skill with which the patentee devised mechanisms for making the attachment effective, but for which he made no claim, or to the strength of the hands into which the patent came. P. 302 U. S. 499 .

87 F.2d 702 affirmed.

Certiorari, 301 U.S. 680, to review the reversal of a decree, 13 F.Supp. 476, sustaining four claims of the petitioner's patent, enjoining further infringement, and ordering an accounting.

MR. JUSTICE STONE delivered the opinion of the Court.

This case comes here on certiorari to review a decree, in a patent infringement suit, of the Court of Appeals for the Second Circuit, which reversed the District Court and held invalid claims 1, 3, 14, and 15 of the Schletter patent, No. 1,713,628 of 1929, for an attachment for flat knitting machines. 87 F.2d 702. The Circuit Court of Appeals for the Third Circuit had previously held these

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claims valid and infringed in *Alfred Hofmann, Inc. v. Textile Machine Works,* 71 F.2d 973. The patent is for an attachment for "flat" or "straight" knitting machines, including machines of the "full-fashioned" type. By use of the attachment, as the specifications state,

"yarn guides can be accurately controlled to lay a yarn over a distance less than the full length of a course being knitted, as for reinforcing or for so-called split-seam work wherein sections of fabric are connected by suture seams."

The attachment, it is stated, may be used for "fashioning designs, as clocks, upon hosiery."

Flat knitting machines are adaptable to use in the manufacture of full-fashioned garments such as stockings, underwear, or sweaters. A characteristic feature of the manufacture is that the garment, or a portion of it, is knitted in a flat web which, in the course of knitting, is shaped by variation of its width in such a way that it conforms to the contour of the body to be fitted, when its shaped edges are united in a seam. The desired variations in width are secured through control of the traverse or "throw" of the yarn guide which brings the yarn to the needles of the machine as they knit the web. They may be and usually are set up as multiple units in a single machine capable of knitting simultaneously a number of garments

of the same type.

The object of the patented attachment in providing accurate controls for yarn guides laying a yarn over a distance less than the full width of a fabric being knitted, is either to knit an additional yarn over a particular area of the main body of the fabric so as to strengthen it or form upon it an ornamental design, or to insert in it "split-seam work," which is a portion of the main fabric knitted with a separate yarn and forming a distinctive design. The attachment makes it possible to lengthen and shorten the throw of the yarn guide, and thus to form designs with reentrant angles in both reinforcement and split-seam work.

The patented device embraces a rotatable spindle having threads cut upon it, in reverse, on opposite sides of its central portion, with a nut mounted upon each of its two threaded parts and moved by its revolutions so that, when the spindle is turned in the one direction or the other, the nuts are moved by the reversely threaded screws toward or away from each other. Carried on the nuts so as to move with them are yarn carrier stops which are so adapted and located as to serve as controls to limit the travel of carrier rods which have mounted on them the yarn guides. The function of the mechanism is to control the movement of the stops which, in turn, control the distance of travel of the yarn guides. This is accomplished by the movement of the stop nuts toward or away from each other by the rotation of the threaded spindle in the appropriate direction.

Movement in conformity to a desired pattern is effected by the transmission of power from the main camshaft of the knitting machine to two ratchet wheels mounted on the end of the threaded spindle, each with an actuating pawl. The two pawls are in such relationship that, when one operates, its complementary ratchet wheel the spindle will rotate in one direction, and when the other operates its complementary ratchet wheel, the spindle will turn in the opposite direction. The operation of the ratchet wheels is controlled by means of buttons arranged on two endless belts propelled by the main camshaft. The buttons attached to one of the

belts serve to actuate a mechanism which pushes both pawls. The buttons affixed to the other belt govern a mechanism that selectively engages one or the other of the two pawls, and thus determines the direction in which the spindle, and hence the stops, are to move. By suitable spacing of the buttons on the belts, the motion, which is to be imparted to the stops through the intermediate apparatus, is controlled in such fashion as to fix in advance the length of throw,

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and hence the outline, of the design which is to be incorporated in the main fabric by reinforcement or split-seam work.

Claim 14, which may be taken as typical, defines the invention as the combination,

"In a straight knitting machine [a] a set of yarn guide carrier bars for operating yarn guides traveling less than the full width of the fabric being knitted, [b] a spindle having reversed screw threads, [c] stops operated by said spindle, [d] means for turning the spindle in either direction, [e] pattern controlled means for determining the time of operation of the spindle, and [f] pattern controlled means for determining the direction of rotation of the spindle."

As early as 1912, ten years before Schletter's original application of June, 1922, from which his patent dates, the art had devised an attachment for full-fashioned knitting machines, commercially used for reinforcing the heel portion of the stocking. One form, known as the Gotham, comprised a reversely threaded spindle, on the threads of which were mounted stops moving toward each other when the spindle rotated in one direction, and away from each other when the spindle turned in the opposite direction. The traveling stops controlled the throw of carrier bars with yarn guides which laid a reinforcing yarn at the heel of the stocking. As the reinforcement was triangular, with the point above the heel gradually widening below without reentrant angles, it was needful to rotate the spindle automatically in but one direction in order to complete the pattern. When the reinforcement had been knitted, the spindle was rotated by hand in the reverse direction, or "racked out," until the stops were restored to their initial position,

ready to knit the next stocking. A means for automatically rotating the spindle in the desired single direction was provided by a ratchet wheel mounted on the spindle, which was worked by a pawl pushed by a cam on the main shaft;

the operation of the pawl was controlled by a mechanism actuated by a "button" type of pattern belt or chain. The reinforcement could not be knitted from a single yarn carrier operating over a single area of the fabric, because the reinforced area was divided, in the completed stocking, by the seam which united the selvages of the stocking web. It was thus necessary to knit the reinforcement in two areas, using two yarn carriers, each with a throw of the desired variation in length, reaching from the selvage on either side of the stocking web inward upon the main fabric. For this purpose, the lugs on the carrier rods which, in cooperation with the stops, controlled the throw were located between the end stops of the full-fashioned machine and the stops moved by the threaded nuts on the attachment.

It will be observed that this device, while not completely anticipating that of the patent, nevertheless exhibited every element of the claim except the "pattern controlled means for determining direction of rotation of the spindle." This lack was supplied by Nusbaum, whose machine was in common use as early as 1917. As already indicated, the use of such a device in full-fashioned knitting machines to secure selvage variations was known long before the Schletter application. In order to effect this type of fashioning, the yarn carrier stops were moved and their movements controlled by stop nuts mounted on spindles with threads in reverse located at either end of the knitting machine. Two-way movement of the nuts was effected by mechanisms, under pattern belt control, suitable to rotate the spindle in either direction.

The Nusbaum machine was a modification of the existing flat knitting machine, and was designed for knitting reinforcements of variable width on sweaters which were themselves not full fashioned -- that is, not narrowed in the knitting. The modification was devised for varying the

throw of a secondary yarn carrier supplying yarn to needles knitting upon the main fabric a reinforcement or plaiting. To accomplish this, Nusbaum rebuilt an old full-fashioned machine by using the existing end nuts as a means of controlling the movements of the stops which determine the length of throw of a secondary yarn carrier, and supplying a new carrier bar for the primary yarn. Since the garment was not full-fashioned, he placed fixed stops at the ends of the machine, so that the throw of the primary thread carrier was constant. He used the old automatically reversible spindle of the full-fashioned machine as a means, wanting in the Gotham mechanism, for increasing or diminishing at will the throw of the secondary yarn carrier. Instead of the single reversibly threaded spindle of the Gotham machine, Nusbaum retained the two threaded shafts located at the ends of the principal machine, each bearing twin ratchet wheels, each of which was operated by a pawl controlled through an intermediate apparatus by buttons appropriately spaced on a pattern belt. Only a single belt was used bearing four rows of buttons, which, by reversing the motion of the spindle as desired, operated to vary the throw of the yarn carrier in conformity to the desired pattern.

It is true, as petitioner urges, that the threaded spindles were located at the ends of the Nusbaum machine, and that they were separate shafts, although capable of being operated in unison as if united in a single spindle such as that shown by the Gotham attachment. Even with the double spindle synchronously operated instead of the single spindle of the Gotham, it was substantially the device claimed by Schletter. In converting a full-fashioned knitting machine into a different type of straight knitting machine which did not fashion the main fabric, Nusbaum embodied in it a device for accurately controlling yarn guides for laying a secondary yarn less than the length of the course being knitted, which was capable

of producing designs having reentrant angles. This, according to the specifications, is one of the objects to be achieved by the patented device. The

other is the making of multiple designs and split-seam work.

As the pattern of the reinforcement or plait was to be wholly within a single area on the main fabric, and did not extend to the selvage, Nusbaum used a single yarn guide instead of the two which were required in the Gotham attachment because the reinforcements were upon detached areas of the fabric. Hence, his machine, as set up, could not do split-seam work or make double designs, which could only be knitted by employing a plurality of yarn guides with corresponding controls. But the use of the device for these different methods of knitting the secondary yarn involves but an obvious adaptation of the claimed combination to the particular work to be done. That may be accomplished by using the device exhibited by Nusbaum as well as that claimed by the patent, with the requisite number of controlled yarn guides in the case of multiple designs and with stops, both sides of which are used as carrier rod controls in the case of split-seam work. This addition of yarn guides and the varied use of the stops, even if invention, are not embraced in the claims before us.

The addition of the reversing mechanism, used by Nusbaum and previously used in the full-fashioned machine, to the elements exhibited by the Gotham, for the purpose of effecting variations in the throw of the secondary yarn carrier in precisely the manner in which the throw of the primary yarn carrier had been controlled in full-fashioned machines, was plainly not invention. The addition of a new and useful element to an old combination may be patentable, but the addition must be the result of invention, rather than the mere exercise of the skill of the calling, and not one plainly indicated by the prior art. *Electric Cable Joint Co. v. Brooklyn Edison*

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Co., 292 U. S. 69 , 292 U. S. 79 -80; *Altoona Publix Theaters, Inc. v. American Tri-Ergon Corp,* 294 U. S. 477 , 294 U. S. 486 . The art of machine design in the knitting machine field is a highly developed one. The addition to the combination of the Gotham attachment of a means for automatically reversing the rotary threaded spindle to perform the very function it had performed in the full-fashioned knitting

machine was not beyond the skill of the art, and was plainly foreshadowed, if not completely anticipated, by Nusbaum.

The claims in suit do not embrace a train of mechanism of any particular type for the transmission of control from the power shaft to the pawls, and so cannot rest on any differences between the train employed by Schletter and that of earlier devices. As the court below pointed out, if the patent is valid, it is either because of the novelty of the conception of employing the Nusbaum device in an attachment for a full-fashioned machine, which Nusbaum had not done, or because of technical difficulties in executing that conception. If there were such difficulties, which could be overcome only by invention, Schletter did not show what they were or define such an invention by the claims before us. He did show in his specifications how to provide, by familiar mechanical means, for one necessary relationship of the attachment to the principal machine; the necessity that the threaded spindle remain stationary while the fashioning stops are moving. For this, no invention is claimed, nor well could be in view of the state of the art.

Petitioner relies on the novelty of conception reinforced by an alleged commercial success. Commercial success may be decisive where invention is in doubt, but an insuperable obstacle to the invocation of that doctrine here is our inability, like that of the court below, to say

"that an art which knew how to reinforce 'full-fashioned' webs without reentrant angles, and straight-edged webs

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with such angles, required some uncommon talent merely to conceive of combining the two, for, as we have said, the patent can only stand on the bare conception."

It is significant that the courts which, in *Alfred Hofmann, Inc. v. Textile Machine Works, supra,* found invention, supported by commercial success, pointed to the novelty not of this conception, but of adding to the elements of the Gotham machine the automatic pattern controlled means for reversing the screw spindle.

But neither court made mention of the Nusbaum machine which supplied that element. Upon the record before us, we cannot say that the commercial success is attributable to novelty of the bare conception of the use of the attachment with full-fashioned knitting machines, rather than to the skill with which the patentee devised mechanisms for making the attachment effective, but for which he made no claim, or to the strength of the hands into which the patent came. *Compare Paramount Publix Corp. v. American Tri-Ergon Corp.,* 294 U. S. 464 , 294 U. S. 474 , *with Altoona Publix Theaters, Inc. v. American Tri-Ergon Corporation, supra,* 294 U. S. 487 .

Affirmed.

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