HOLMES AND ANOTHER *V.* PLAINVILLE MANUF'G CO.
SAME *V.* DUNHAM HOSIERY CO.

Circuit Court, D. Connecticut. December 16, 1881.

1. LETTERS PATENT—TAKE-UPS—REISSUES—NEW MATTER—INFRINGEMENT.

Reissued letters patent granted to George H. Holmes, June 25, 1878, for an improvement in take-ups for looms, are not invalid because broader than the original. They are not infringed, however, by the machine used by the defendant, as motion is not transmitted in the two machines by the same or equivalent means.

In Equity.

Charles E. Mitchell, for plaintiffs.

Esek Cowen, for defendants.

SHIPMAN, D. J. These two cases are each founded upon reissued letters patent to George H. Holmes, dated June 25, 1878, for an improvement in "take-ups" for looms. The original patent was granted August 10, 1869. The plaintiffs are the owners of the patents. The defences are the invalidity of the reissue, because it contains "new matter" and non-infringement, if the patent is construed by the court to be restricted to the invention as originally claimed. The original patent was for an improved "take-up" in looms for 758 weaving cloth. A "take-up" is a device for taking up or rolling the completed fabric upon an intermittingly-moving roller or cloth-beam. The improvement consisted in the arrangement of mechanism for regulating the tension of the cloth. The patented mechanism is described as follows: A ratchet-wheel is so connected with the cloth-beam that a movement of the wheel necessitates a revolution of the beam. This revolution imparts tension to the fabric. Mounted on the axis of this wheel there is an oscillating pawl-carrier, upon which is pivoted a pawl which engages with the teeth of the ratchet-

wheel. Motion is imparted to the pawl and its carrier by means of a rod, one end of which is secured to the pawl-carrier. The other end rests loosely in a sliding collar. Motion is imparted to the collar by the crank which turns the "lay," or "the wooden frame beam which forces up the weft." The intermediate mechanism between the crank and the collar is the leg of the lay and a pitman.

"Upon the rod and surrounding it there is a spiral spring, one end of which bears against the reciprocating sliding collar, and the other end of which bears against an adjustable collar on the rod, which collar is termed a stop-nut in the patent. This collar or stop-nut can be adjusted longitudinally on the rod, so as to compress the spring more or less, and increase or diminish its tension as may be desired."

The operation of the mechanism is thus described in the specification of the reissue:

"It is obvious that when a reciprocating motion is given to the sliding collar, *m,* the degree of compression of the spring, and the consequent extent of motion of the pawl and the ratchet-wheel, will depend upon the resistance or tension of the fabric. Thus, if the cloth is slack, the spring will be but slightly, if at all, affected by the movement of the sliding collar, *m,* the strength of the spring being sufficient to move the pawl, and revolve the ratchet-wheel and take up the fabric, in which case the collar, *m,* will move with the rod, L, and not slide on it; but when there is sufficient tension on the cloth to overcome the power of the spring, the collar will slide on the rod and expend its blow or pressure in compressing the spring, and will not throw the pawl or move the ratchet."

In the language of the plaintiff's expert—

"The collar reciprocates positively over a given distance, while the movement of the rod, the pawl-carrier, the ratchet-wheel, and the cloth-beam will vary

from time to time, according to the tension of the fabric and the resistance which is offered thereby to the motion of the beam which takes up the fabric."

The original claim was in these words:

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"The slotted lever, J, pawl, *k,* ratchet-wheel, I, gear-wheel, G, the rod, L. spring, O, nut, *p,* and arm, *m,* the 'lay,' B, and cloth-beam, F, of the loom, when arranged with reference to each other, substantially as herein shown and described, for the purpose specified."

On May 16, 1876, letters patent were granted to Ira Tompkins and Albert Tompkins for improved take-up rollers for knitting-machines, and thereafter the plaintiffs' reissue was granted. The reissue was designed to extend the patent to machines for knitting as well as for weaving. The claims are as follows:

"(1) In a take-up device for looms, the combination of the ratchet-wheel, I, through which motion is imparted to the beam which takes up the fabric, the oscillating pawl-carrier, J, provided with pawl, *k,* the rod, L, spring, O, stopnut, *p,* and reciprocating sliding collar, *m,* and operating mechanism, whereby the positive reciprocating motion imparted to the sliding collar is made to turn the ratchet-wheel a greater or less distance, according to the tension of the fabric, substantially as described. (2) In a take-up device for looms, the combination of the stop-nut, *p,* the rod, L, spring, O, sliding collar, *m,* the crank, M, and suitable intermediate mechanism, substantially as described. Whereby the rotary motion of the crank is transferred into the compensatory reciprocating motion of the rod, L, for the purpose set forth."

A knitting-machine has nothing in common with a loom, for weaving, except that each has a roller upon which the completed fabric is rolled, and a take-up. The office of the take-up, in each machine, is to regulate the tension of the cloth. In a loom, it is necessary that the warp should be kept taut

between the yard-beam and the cloth-beam. A knitting-machine produces a fabric made by a succession of loops, and as the necessities of the manufacture do not require that the yarn or threads should be kept tightly drawn, a smaller expenditure of force is necessary than in a loom take-up. The defendants' machines are rotary. The take-up rollers, and the frame which holds the take-up, revolve with the machine. Power is communicated to the crank gearing, which actuates the take-up mechanism, by the revolution of the frame upon its spindle. The take-up mechanism proper, of the Holmes and the Tompkins devices, are the same; the differences are in the mechanism by which power is communicated. The crank of the Tompkins device "directly actuates the take-up machinery, instead of actuating the lay of the loom to move the take-up mechanism."

The plaintiffs' case is founded upon the position that the Holmes invention was not a take-up for weaving looms only, but was a take-up device for any looms which require a take-up, and that the original 760 patent, by the introduction of the "lay" of a loom as one element of the combination, unduly limited the invention. The plaintiffs also insist that while the word "loom," as defined in the dictionaries, or when used technically, does not include a knitting-machine; yet, as used in the shops and in the patent-office, it does include such machine; but that this is immaterial, for whoever uses the loom take-up and employs the same combination in a knitting-machine to take up the fabric is an infringer, and that the crank-rod of the defendant's device, by which power is communicated to the pawl-lever, is the obvious mechanical equivalent of the lay and pitman of the Holmes device.

In my opinion the case turns upon the question, what was the invention which was described, either clearly or faintly, in the original patent? It is true that the actual invention of Holmes could have been

applied to knitting-machines, and if the patentee had known the extent of his invention he could properly have made a broader claim, which would have been valid; but the point is whether it does not appear from the patent that the only invention which was the subject of the application was one applicable only to the weaving of cloth, and therefore whether a broad reissue is not faulty in that it contains an invention which was neither suggested nor applied for in the original application, but which is such an addition to the invention, as originally claimed, as to be properly the subject of a new patent.

Starting with the fact that whatever may be either the commercial or technical meaning of the word "loom," the meaning of "loom for weaving cloth" is very obvious, and with the additional fact that a knitting-machine is a structure of altogether different character from a weaving-loom, except that each machine produces cloth and needs a take-up, did the original patent indicate, suggest, or hint that the invention was anything but an adjunct to looms for weaving? The original application was strictly confined to such machines, and for a manifest reason. In cloth-weaving, whenever a thread of filling is passed between the threads of warp the lay is thrown forward and beats the thread of filling against the edge of the newly-woven cloth. The old take-ups made use of the constantly-recurring forward motion of the lay to turn the cloth-beam and to keep the yarn taut, for in a loom take-up the movement of the lay is the natural source of motion for the take-up mechanism. The inventor wanted to improve the existing device so that a better device or an improved 761 result could be had by the use of the same motive power. He was directing the attention solely to take-ups in looms, and not to take-ups in other and different pieces of mechanism, and his patent expressed plainly the subject of his thought and the result of his labor. That the invention could be

applied to other machines was a discovery made after the date of the patent.

The original patent was open to objection, because it might be claimed that the patentee had included in the combination the "lay" as a lay, and not as a means of transmitting power, and therefore if the crank should be applied to any other lever than the woof-beater there would not be an infringement. This mistake was apparent on the face of the specifications, and justifies a reissue; but that the invention was improperly restricted, by limiting it to looms for weaving, was not thus apparent. Neither the specification taken alone, nor as construed by the state of the art in regard to the subject of the original patent, revealed that the invention was broader than the patent. That came to light after the state of the art on both looms and knitting-machines had been shown. I am of opinion that the loom of the reissue is the loom for weaving cloth of the original patent.

The inventors of the device which is used by the defendants apparently adapted the Holmes take-up to the needs of a knitting-machine, but not without alteration. They did not simply apply the old method to the new use without change. The new machine has no lay, and does not require the intervention of a lever between the crank and the pawl-carrier. A loom take-up must work with power to keep the fabric taut. A knitting-machine desires that the fabric shall not be strained by over tension, and therefore demands only the exercise of gentle force in the take-up mechanism. All that is required is that motion should be communicated from the crank directly to the pawl-carrier. In view of the different character and needs of the two machines, motion is not transmitted in these two devices by the same or equivalent means.

The bill is dismissed.