

MALLORY MANUF'G CO. V. HICKOK AND
ANOTHER.¹

Circuit Court, D. Connecticut. December 18, 1885.

1. PATENTS FOR INVENTIONS—CONSTRUCTION OF CLAIM.

The claim of letters patent No. 74,392, of February 11, 1868. was for “the combination of the brim of a hat with a drooping hoop, so that the brim is caused to droop at the front and rear, and to rise at the sides, substantially as described.” The definition of the drooping hoop given *in Mallory Manuf'g Co. v. Marks*, 11 Fed. Rep. 887, S. C. 20 Blatchf. 82, adopted, and *held*, that the droop must be imparted by twisting the wire and not by bending.

2. SAME—INFRINGEMENT—BURDEN OF PROOF.

Although not free from doubt, the court concluded that defendants had made their drooping hoops by bending alone, without torsion, and the plaintiff, upon whom is the burden of proof, not having clearly established the fact of infringement, the bill was dismissed.

In Equity.

Eugene Treadwell, for plaintiff.

Wm. Edgar Simonds, for defendants.

SHIPMAN, J. This is a bill inequity, which was brought in January, 1881, to restrain the alleged infringement of letters patent No. 74,392, issued to George Mallory, February 11, 1868, for an improvement in hats made from flexible fabrics. The invention is said by the patentee, in his specification, to consist in “the combination of the brim of the hat with a drooping spring-hoop, by which I mean a spring-hoop bent or twisted in such manner as to impart a droop to the front and rear of the brim, and an elevation to the sides thereof.” The patent describes the means by which the wire can be properly twisted. The claim is as follows:

“The combination of the brim of a hat with a drooping hoop, so that the brim is caused to droop at

the front and rear, and to rise at the sides, substantially as set forth.”

The drooping hoop of the claim was defined by Judge Blatchford, in the case of *Mallory Manuf'g Co. v. Marks*, 20 Blatchf. 32, S. C. 11 Fed. Rep. 887, to be “a spring-hoop bent or twisted in such manner as to impart a droop to the front and rear of the brim, and an elevation to the sides thereof,” and, in view of the state of the art, it was also held that the word “bent” is synonymous with the word “twisted,” and that, to constitute infringement, the infringing wire must be twisted. It is also obvious that the droop must be imparted by twisting, and that if a hoop receives its droop by bending alone, there is no infringement, although the wire may be in fact twisted to some extent.

The defendants' hoops are made of round wire, by W. B. Curtiss & Co., of Danbury, upon a machine for bending and forming wire, which was the subject of letters patent No. 283,327, granted to William B. Curtiss, August 14, 1883. The question of importance in the 828 case is whether twisting was the efficient means of forming the defendants' hoops, or whether the twisting, if any existed, was an immaterial incident in the manufacture, and the “droop” was caused by bending alone.

The Curtiss invention is a very ingenious one, having for its professed object “to provide such a machine as shall bend or form wire into any desired curve or shape, with or without torsion.” An accurate description of this complicated machine would occupy much space, and it is therefore practicable to give only a general outline of the portion which serves to bend the hoops. I quote from the testimony of the inventor as follows:

“The wire is received between a pair of feed-rolls, and forced by them through the bending device. Said bending device consists of three small rolls placed in

the end of an oscillating sleeve, so that they operate upon the wire in the same manner as tire-bending or tinware arching rolls. The oscillating sleeve containing said rolls oscillates on a stud or mandrel fixed rigidly to the frame of the machine. In the outer end of such stud are placed two rolls, grooved to receive the wire, and so arranged as to grip the wire, but not so tightly as to prevent the feed-rolls from forcing the wire along. As the feed-rolls revolve, the wire is forced through the grip-rolls, and thence through the bending device, where it receives a bend downward. As the wire passes along, the bending device is oscillated around the wire so that when sufficient wire to form one-fourth of the hoop has passed through, the wire is receiving its bend at one side.”

Two of the three small rolls which the inventor styles the “bending, device” are called the “guiding-rolls,” and the third is the bending roll. The guide-rolls are so journaled that the lower roll is in advance of the upper one. This construction is used for round wire. It was not intended that these rolls, when thus arranged, should, during their rotation, grip the wire so as to cause it to be twisted. When flat wire is used, it is admitted that the relation of the guide-rolls to each other is so modified as to twist the wire. This is done by placing these rolls one directly above the other, and adjustably securing them so that they will act as grip-rolls. The point of dispute is whether the machine causes twisting when it is used upon round wire.

As torsion of round wire, if it resulted from the operation of the machinery, is not apparent to the eye, various experiments were tried by the opposing experts for the purpose of determining whether the wire was permanently twisted by the oscillating mechanism. I am inclined to the opinion that, before the wire is bent, it is slightly twisted by the operation of the bending roll upon it as it is fed through the grip-

rolls, when they are tightly adjusted to each other. It seems to me that the natural effect of the mechanism would be to twist the wire somewhat as it was passing through the tightly-adjusted grip-rolls, and before it began to bend. It is conceded by the plaintiff that the chief part of the twisting is done before the bending. Mr. E. S. Renwick says that the torsional strain is applied to the wire before it is bent. Mr. Eickemyer says:

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“It is my opinion that while most of the effect produced by the rotation of the bending-roll is in that portion of the wire between the grip-rollers when tight, and the guide-rollers, that some of it is, in my opinion, produced in that portion of the wire which is already bent, and is between the bending-roller and the guide-roll.”

But, as has been said, the important question is whether the torsion is or is not the efficient cause of the droop.

I am of opinion that the twisting is immaterial for these, among other reasons: Flat wire, or concavo-convex wire, if twisted and then bent into a hoop, has a permanent droop. Bound wire, if twisted and then bent into a hoop, has no droop. If bent and then twisted, it has a droop. The twisting of the round wire, in the Curtiss machine, was done before bending.

Again, the hoops which were formed upon the Curtiss machine with loose grip rolls, where there could have been no twisting against these rolls, were well-drooped wires for hat-brims. There could have been no twisting except against the feed-rolls, and I do not think that, with loose grip-rolls, permanent twisting could have taken place. It is true that with tight grip-rolls there is a greater droop than when loose grip-rolls are used; but this result is perfectly consistent with the theory that the droop is not produced by twisting, because, if produced by bending, a greater curvature

would be produced by steadying the wire near the bending roll than would be formed if the wire was not grasped at that point, and was not thereby prevented from springing up or undulating back of the guide-rolls.

The experiment upon which the plaintiff much relies, that of taking the Curtiss round wire hoops, unclasping them, fastening them in vises, turning them in the vises, or, as it is styled, untwisting them, recurving them with a hoop, reclasping them, and finding them free from a droop, does not satisfy the mind, because the experiment leaves it in doubt whether the various steps do not take out the droop by taking out the bend, rather than by taking out the twist.

The question whether the wire is subjected in the machine to permanent torsion, which is efficient in producing the compound curve which is called the "droop," seems to me to be one upon which men's minds will naturally differ. It is a question which cannot be decided by such evidence as to leave the mind free from doubt. But the result of my examination leads me to the conclusion that round wire was bent into the desired shape by the action of the bending mechanism without torsion, and that the plaintiff, upon whom the burden rests, has not clearly established the fact of infringement. The bill is dismissed.

¹ Reported by Charles C. Linthicum, Esq., of the Chicago bar.

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