

only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory and beyond a reasonable doubt. Witnesses whose memories are prodded by the eagerness of interested parties to elicit testimony favorable to themselves are not usually to be depended upon for accurate information. * * * Indeed, the frequency with which testimony is tortured, or fabricated outright, to build up the defense of a prior use of the thing patented, goes far to justify the popular impression that the inventor may be treated as the lawful prey of the infringer."

Numerous instances of prior use and other anticipatory matter, including divers process patents, are alleged in the answer. On this branch of the case there is a large volume of evidence, and among the exhibits are several specimens of paper-board claimed to anticipate the complainant's product. I shall not undertake in this opinion to go into a discussion of the facts. A careful and painstaking examination of the evidence has left me in grave doubt on the question of anticipation. I am not satisfied that the defendants have shown anticipation. A mere preponderance of evidence cannot, under the settled principles of law, avail the defendants. Nothing less than clear, satisfactory and convincing proof will suffice to negative the presumed novelty of the patented product. The complainant's paper-board is strong, cheap and attractive, and has been received by the public with marked favor and appreciation. It is the best in the market. It is in great demand, and commands a ready sale. It is in general use, and has largely supplanted the inferior product of former years. The question of anticipation or lack of novelty not being free from doubt, the success with which the complainant's product has met has weight in turning the scale in favor of the invention. The complainant is entitled to a decree for an injunction and an account.

HEAP v. GREENE et al.

(Circuit Court of Appeals, First Circuit. January 30, 1899.)

No. 214.

1. PATENTS—INFRINGEMENT—EFFECT OF AMENDING CLAIMS.

Where no question of novelty or invention was involved, the amendment of a specification, during the progress of an application through the patent office, by striking out a statement that other means of transmitting motion might be employed in the machine for which the patent was claimed, instead of the belts and pulleys described, is immaterial, and does not exclude the application of the doctrine of equivalents as to such means of transmitting motion, where the patent is entitled to a broad construction.

2. SAME—DISTINCTION BETWEEN DEVICES AND THEIR USE.

The crossing of a belt to produce a reversal of motion in parts of a machine is not a "device," within a claim covering a combination of devices for that purpose, but merely a method of using the devices described; and another machine may be an infringement, although the reversal is accomplished by a different method.

3. SAME—INFERIOR OPERATION OF INFRINGING DEVICE.

The fact that an alleged infringing device is more cumbersome, and involves more delay in its use, will not avoid infringement.

4. SAME—CLOTH-NAPPING MACHINES.

The Grosselin patent, No. 377,151, for a cloth-napping machine, is infringed by a machine which contains all its elements, or their mechanical

equivalents, and operates in the same way, except as to the method of reversing the motion of the rolls, and having the capacity for such reversal, which is accomplished by equivalent devices, but in a different manner.

Appeal from the Circuit Court of the United States for the District of Massachusetts.

This was a suit in equity by Charles Heap against Henry S. Greene and others for the alleged infringement of letters patent No. 377,151, issued January 31, 1888, to Henry Nicholas Grosselin, Fils, for a machine for napping cloth. The circuit court dismissed the bill (75 Fed. 405), and complainant appeals.

Edwin H. Brown, for appellant.

William A. Macleod (Edmund Wetmore, on brief), for appellees.

Before PUTNAM, Circuit Judge, and BROWN and LOWELL, District Judges.

BROWN, District Judge. All the questions involved in this case, except that of infringement, were disposed of by us in *Heap v. Suffolk Mills*, 27 C. C. A. 316, 82 Fed. 449. In that case three claims were in controversy, while the suit at bar relates only to claim 1 of letters patent No. 377,151, granted January 31, 1888. This claim is as follows:

"In a gig-mill, the combination, with a rotary drum consisting of heads, a shaft, and a series of card or teasing rollers journaled upon said heads, and provided with pulleys at their projecting ends, of a driving belt applied to each set of said pulleys, and devices, substantially as described, for driving said belts with varying speeds and in different directions, as described, whereby the cards are rotated simultaneously, each about its own axis and about the axis of the drum, substantially as described."

This suit will be found to turn on the following words in this claim:

"Devices, substantially as described, for driving said belts with varying speeds and in different directions, as described, whereby the cards are rotated simultaneously, each about its own axis and about the axis of the drum, substantially as described."

The function of these devices is so to drive the belts that operate the cards that as a result the cards may be rotated about their own axes in either direction, and with varying speed. The patent calls for a group of mechanical elements that shall not only drive the cards by means of the card belts, but shall drive them in either direction with variable speed. The question of infringement must be answered by inquiring whether in the defendants' machine are substantially equivalent devices. Aside from the question of the capacity of the defendants' device to rotate the cards in either direction, which we find to be the question of chief importance, the differences between the construction of defendants' machine in the case at bar and the complainant's machine relate to (1) the substitution of pinions and a gear wheel in place of the pulleys and belt which drive the napping-rollers; (2) driving the napping-rollers at one end only, instead of at both ends; (3) the use of one cone pulley instead of two. It needs no elaboration to explain that, for a device which is entitled to receive the protection given the complainant's in *Heap v. Suffolk Mills*, all

matters of this character are well within the rules as to equivalents. The defendants below rely on the following expression in complainant's specification as originally drawn, and which was stricken out, and does not appear in the patent as issued:

"Instead of the belts, X, X¹, any other suitable means of transmitting motion may be employed,—such, for example, as toothed gearing or chains or friction pulleys."

It is plain, however, that, whatever were the views of the patent office, this was mere surplusage, and its omission was of no effect. *Winans v. Denmead*, 15 How. 330, 342, 343. This case was applied by this court in *Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co.*, 10 C. C. A. 194, 61 Fed. 958, 964; and in the latter case there was a full consideration of the effect of amendments to specifications pending in the patent office, which explains sufficiently that this one was of no importance. The particulars to which we have referred relate only to the doctrine of equivalents. This doctrine is so effective that under ordinary circumstances it supersedes the usual rule of interpretation, "*Expressio unius est exclusio alterius*," as was shown in *Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co.*, *ubi supra*.

Returning to the question of reversal: In the complainant's machine, reversal of the direction in which the driving belts are driven is effected by crossing a belt. This act of crossing the belt cannot be considered as comprehended within the term "devices," used in the claim. The method of using a device is entirely distinct from the device itself, and the distinction should be kept carefully in mind. The devices are permanent, material things; and the crossing of the belt neither adds to nor diminishes the mechanical elements described in the patent, and in the claim called "devices." At most, it is required that the devices shall be such that they are normally capable of driving the belts and the cards in either direction. In the complainant's machine, power is brought from a main shaft to a counter shaft, and thence to the cards. The interposition of the counter shaft makes possible the independent rotation of the cards in either direction. It is elementary that power may be brought to a counter shaft through a belt so that the counter shaft may rotate in either direction, i. e. by a straight belt or by a cross belt. To obtain merely reversal of motion, the complainant requires only main shaft, counter shaft, and belt, without cone pulleys. These are the elements necessary for reversal, and these only. It is obvious that, with them, reversal of the counter shaft is possible. The complainant is entitled to any convenient adjustment of his belt to carry power to either side of the counter shaft. The defendants have the main shaft, counter shaft, and belt. It is true, there is substituted for a belt a rope system, wherein the rope passes over a number of intermediate pulleys before reaching the counter shaft, and that this rope system cannot be changed as readily as an ordinary belt, to bring the power to bear upon the counter shaft in the opposite direction. It is obvious, however, that the rope system is the equivalent of complainant's belt, and that the intervening pulleys introduce no substantial differences. The complainant has satisfactorily demonstrated by evidence and by experiment

that, even with the same arrangement of pulleys, the rope or belt may be so disposed as to cause the counter shaft and cards to revolve in both directions. The adjustment may require more time and effort than the easy readjustment of the complainant's belt, but this, we think, is immaterial. In *Heap v. Suffolk Mills*, 27 C. C. A. 324, 82 Fed. 459, the defendant contended that:

"The respondent's machine must be stopped, and practically reconstructed to a certain extent, before the speed of the napping-rolls can be varied; that is, one of his belt pulleys must be removed, and replaced by another one of a different diameter; then the belt must be shortened or lengthened to fit the changed size of pulley," etc.

We said, however, that the fact that the infringing device was more cumbersome, and involved delays, was only an ordinary feature of colorable infringements, which did not avail the defendants in attempting to escape infringement.

The question of similarity in the complainant's and defendants' devices cannot be tested satisfactorily by an inquiry into the uses to which, in practice, the machines are put. It appears in testimony that the complainant has, in practice, had no occasion to use the reversal feature, for the reason that the degree of energy in the napping-rolls resulting therefrom would be so great that the majority of cloths for which the machine is used would not endure it. It is apparent, therefore, that the utility of the complainant's machine is not dependent upon the immediate reversal from one direction to another, and that such delay as would result from a readjustment of the rope of the defendants' machine would be an unimportant consideration. It further appears that instantaneous reversal was not contemplated, from the fact that changes of the teeth of the cards would ordinarily be necessary in the complainant's machine upon reversal, as would be the case with the defendants' machine. The fact that the defendants are satisfied to use the machine only in those operations wherein resides its chief practical value, and are content to refrain from employing it in what must be regarded, in view of the evidence as to the practical art, as operations of an unusual or subordinate character, does not avail as a defense. We should observe the evidence of the complainant's expert, Charles E. Foster:

"The claim calls for a machine having elements with a certain capacity, but all of the capacities of the elements are not, nor can be, operated at the same time. * * * Each adjustment is intended only for a single operation upon a single material at a single time."

As in fact both complainant and defendants find the chief practical value of the machine to reside in its use without the reversal of the napping rolls, and as, when so used, the operation of the structural parts is identical, the decision of this case must turn upon a comparison of the two machines in respect to the capacity of their mechanical parts to produce a reversal of the rolls, rather than upon a consideration of the economic utility of so doing. Mr. Foster testifies as follows:

"The defendants' machine has the capacity to be used with the gear operating at different speeds and in different directions, so that, if the user desires to take advantage of this capacity for any of the purposes for which the machine is to be employed, he can do so."

This testimony accords with the conclusion at which we have arrived after a laborious examination of this case. We are therefore of the opinion that the complainant should prevail upon the issue of infringement.

As the patent has expired, as explained in our opinion in *Heap v. Suffolk Mills*, the complainant is not entitled to an injunction.

The decree of the circuit court is reversed, and the case remanded to that court, with a direction to enter a decree in favor of the complainant sustaining the validity of claim 1 of the complainant's patent, and adjudging that said claim has been infringed by the defendants, and ordering a reference to a master to take an account of profits and damages in respect to such infringement, and to take such further proceedings as shall be according to law and not inconsistent with this opinion, but to deny an injunction, on the ground of the expiration of the patent. The costs of this court are awarded the appellant.

THE TAURUS and THE KATE JONES.

(District Court, E. D. New York. December 19, 1898.)

TOWAGE—INJURY TO TOW—LIABILITY OF TUG.

Two strong tugs, having eight barges in tow, in passing through Hell Gate,—through which pass daily all vessels to and from New York by way of the East river, and which is safely navigable, by the exercise of the usual skill and care,—permitted the tows to collide with the rocks, first on one side of the channel and then on the other, by which the tows were injured, and one of them sunk. The weather was fair, and the wind light. *Held*, that the burden rested upon the tugs to give some exculpatory reason for the occurrence, in default of which they were liable for the damage.

These were libels against the steam tugs *Taurus* and *Kate Jones* by the Boston & Amboy Railroad Company, the Standard Marine Insurance Company, and the Boston Insurance Company, respectively, to recover for injuries to barges while being towed by the tugs libeled.

Cowen, Wing, Putnam & Burlingham, for claimants.

Alexander & Green and Charles M. Hough, for Boston & A. R. Co.
Carpenter & Park, for Standard Marine Ins. Co.

THOMAS, District Judge. At about 6 o'clock in the evening of December 6, 1897, with fair weather and slight wind, the tug *Kate Jones*, on the port side, in charge of a licensed Hell Gate pilot, and the more powerful tug *Taurus*, on the starboard side, in charge of an unlicensed Hell Gate pilot, were towing, by a hawser of about 40 fathoms length, through Hell Gate, eight loaded barges, varying from 117 to 137 feet in length, arranged in two tiers of four boats each, with the *Templar*, the largest barge, on the starboard side of the rear tier, and the *Brunette*, the forward, and the *Beaver*, the rear, boats on the port side. As the tow rounded Hallett's Point, about which the flood tide was sweeping to the southward and eastward, the barges dropped down, under the influence of such set of the tide, until the starboard rear barge, the *Templar*, struck on the shore at Steep