that it was not proper cross-examination, the witnesses not having been interrogated on that subject in their direct examination. The objection appears to have been well taken, and this testimony must, therefore, be excluded. The case then stands upon the patent and the averments of the answer that the only use to which the invention has been put or applied is for gambling purposes in saloons, barrooms, and other drinking places in and about the city and county of San Francisco. This averment is not new matter, but it is responsive to the allegations of the bill that "complainant was the true, original, sole, and first inventor of a certain new and useful invention, to wit, of certain new and useful improvements and combinations of mechanism in a coin-controlled apparatus; * * * that the said invention has been of great profit, convenience, and benefit to the public." The patent is prima facie evidence of the utility of the invention it describes, and a mere denial of utility in the answer to a bill for infringement is not sufficient to overcome such prima facie evidence. 3 Rob. Pat. § 1029. But in this case the verified answer not only denies that the invention is new and useful, but alleges a specific fact, which, if true, disposes of the question of utility. It charges directly that the apparatus is used for gambling purposes, and that it cannot be used for any other purpose. Clearly, this is an allegation which, under the rule, should be treated as testimony in favor of the defendants, and, in view of the fact that the complainant has introduced no testimony to support the patent, it is, in my judgment, sufficient to entitle the defendants to a decree in their favor. The same conclusion would probably be reached in looking at the claims and specifications of the patent upon the allegations of the answer treated as merely raising the issue of utility. In patent No. 514,664 the inventor sets forth the object of the machine as follows:

"In my previous machine and in this the main object is to return the coin deposited in the machine, or an equivalent thereof, in case a predetermined result be not arrived at; otherwise to retain said coin. This result may be of any suitable character, as, for example, the telling of a fortune, which may be effected by means of a prepared list of statements corresponding to the various positions of the indicating disk."

There is certainly no utility apparent in this device. Let a decree be entered for the defendants, with costs.

HEAP v. TREMONT AND SUFFOLK MILLS.

(Circuit Court of Appeals, First Circuit. August 21, 1897.)[1]

No. 205.

1. PATENTS—NOVELTY, UTILITY, AND INVENTION—INFRINGEMENT—CLOTH-NAPPING MACHINES.

The Grosselin patent, No. 377,151, for a cloth-napping machine of the kind known as "planetary machines," provided with cone pulleys, whereby the speed of the napping rolls may be changed through a different series of known variations, so that the energy with which the napping rolls scratch the cloth may be varied quickly and easily, without stopping the machine, covers a novel, useful, and patentable invention, though all the ele-

[1] Rehearing granted October 15, 1897.

ments of the combination were old; and the patent is infringed by a machine which differs from it only in having, in place of the cone pulleys, pulleys of different diameters, which are removed and replaced to vary the speed, as desired. 75 Fed. 406, reversed.

2. SAME—CONSTRUCTION OF CLAIMS.
While ordinarily a patentee is entitled to all the uses and all the advantages which his invention develops, so far as the new application does not involve additional invention, yet a function not known when the patent issues, and afterwards developed, cannot ordinarily be used to broaden the construction of a claim. Long v. Manufacturing Co., 21 C. C. A. 533, 75 Fed. 835, and Boston & R. Electric St. Ry. Co. v. Bemis Car-Box Co., 25 C. C. A. 420, 80 Fed. 287, applied.

3. SAME—FOREIGN PATENTS FOR SAME INVENTION—RECITALS.
It seems that the requirement of a reference in the application to foreign patents for the same invention is a mere regulation of the patent office, which is so far reasonable that it may bar the issuance of a patent until it is complied with; but it cannot invalidate a patent once issued, unless the recital is erroneous through a willful misrepresentation or some fraudulent purpose.

4. SAME—EXPIRATION OF PATENT PENDING APPEAL—INJUNCTION.
The patent in suit having expired pending this appeal by reason of the expiration of the French patent, No. 141,170, for the same invention, to practically the same parties, no injunction can issue, and the remedy must be confined to an accounting.

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

This was a suit in equity by Charles Heap against the Tremont and Suffolk Mills, for 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. 406), and the complainant has appealed.

Edwin H. Brown, for appellant.
William A. Macleod, for appellee.

Before PUTNAM, Circuit Judge, and WEBB and ALDRICH, District Judges.

PUTNAM, Circuit Judge. This is a bill in equity, charging infringement, which was dismissed by the circuit court. The complainant appealed, so that the words "complainant" and "appellant" mean the moving party in each court, and the words "defendant" and "respondent" mean the alleged infringer. The suit relates to claims 1, 2, and 3 of a patent issued January 31, 1888, to one Grosselin, of Sedan, in France, for improvements in machines for napping cloth; and the court below held that those claims were so limited by the English patent to William Davis, of July 24, 1823, and the German patent to Moritz Jahr, of September 1, 1878, as well as by the state of the art generally, that the respondent cannot be held to infringe.

The patent covers a lubricating device, and perhaps some other matters, not in issue; and, so far as this suit is concerned, it shows a cloth-napping machine which employs a drum having small rolls mounted in bearings upon the periphery thereof. The rolls are covered with card-clothing, and, as the drum is revolved, they are caused to have an independent rotation on their own axes. The napping is effected by the contact of the card-clothed surfaces of the rolls. Machines of the

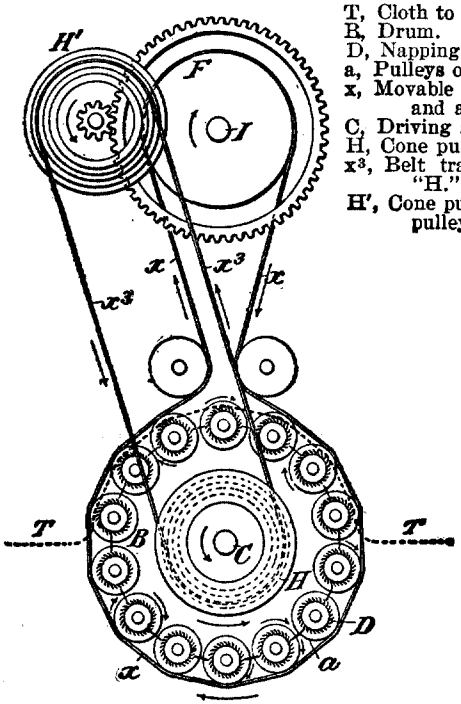
class employing such an arrangement of drum and napping rolls are termed "planetary machines," by way of distinguishing them from those which employ a large drum having the card-clothing affixed to the surface thereof. The machine is provided with cone pulleys, whereby the operator may change the speed of the napping rolls through a definite series of variations, so that the energy with which the napping rolls scratch the cloth may be varied quickly and easily, and without stopping the machine. Claims 1, 2, and 3 read as follows:

"(1) In a gig mill, the combination, with a rotary drum consisting of heads, a shaft, and a series of card or teaseling 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.

"(2) In a gig mill, the combination, with a drum composed of heads, a shaft, and the working card or teaseling rollers, D D, of a shaft, I, cones, H H', belt, X^3, pinion, f, gear, d, pulleys, F F', belts, X X', and pulleys, a a, substantially as described.

"(3) In a gig mill, the combination, with a drum composed of teaseling cards or working rollers, D D, heads, and a shaft, of pulleys, a a, at the projecting ends of said rollers, and of greater diameter than the rollers, a driving belt in operative relation to each set of pulleys, and devices, substantially as described, for driving said belts with varying speeds and in different directions, substantially as described."

Outline Drawing of the Machine in Issue.



T, Cloth to be napped.
B, Drum.
D, Napping rollers journaled in drum.
a, Pulleys on napping Rollers.
x, Movable driver passing around pulleys "a" and around a pulley "F."
C, Driving shaft of machine.
H, Cone pulley on driving shaft.
x^3, Belt transmitting motion from cone pulley "H."
H', Cone pulley driven by belt "x^3" and driving pulley "F" and movable driver "x."

A convenient representation of the device is shown in the accompanying drawing.

For a proper understanding of some questions to be discussed, claim 5 must be considered, though not directly in issue. It is as follows:

"(5) In a gig mill, the combination of a rotary drum carrying a series of independently rotating teaseling rollers, with a driving shaft provided with a convex parabolic step pulley, a driven shaft provided with a concave parabolic step pulley, a belt connecting the two pulleys, and means, substantially as described, for transmitting motion to the teaseling rollers, substantially as and for the purpose described."

The specification contains the following:

"The two regulating cones, H H', have each a parabolic generatrix, instead of a rectilinear one, as in ordinary speed cones. The driving cone, H, has a convex parabolic generatrix, as indicated by dotted lines, y y, and the cone, H', a concave parabolic generatrix, as indicated by dotted lines, y' y'. The sum of the diameters of two corresponding steps of the cones is thus always the same, so that the length of the belt does not change. This arrangement of parabolic cones is very important, because it allows of varying in a regular manner the degree of energy or efficiency of the machine by increasing or decreasing, always by the same amount, in shifting the belt from one set of corresponding steps to another. Two cones with rectilinear generatrices would give very unequal differences. The variation of speed and force with ordinary cone pulleys is in accordance with the law of a geometrical progression, and the result is that the difference between the fourth and fifth steps, for example, is not the same as between the second and third, while in my parabolic cone pulley the variation of speed and force proceeds in accordance with the law of an arithmetical progression."

This parabolic cone, however, is not functional with reference to the claims in issue here. The device covered by the invention is operative and useful without it, and it is so far from being an essential element that the device may be claimed and patented with it or without it, or in each way. That it has been patented in each way follows from the fact that the parabolic cone is expressly enumerated as an element in claim 5. Being thus enumerated, and not enumerated in the claims in issue, the ordinary rules of construction require us to hold that in this respect the claims in issue are broader than claim 5; and we need give this particular no further consideration.

The specification also contains the following statements:

"This object is obtained by employing teasels or cards arranged, as heretofore, spirally upon small rollers having their bearings in rotating drum heads, so as to revolve with said drum heads about the axis of the latter."

"The two regulating cones, H H', have each a parabolic generatrix, instead of a rectilinear one, as in ordinary speed cones."

These admit that the planetary system is old, and that speed cones are also old. Indeed, the speed cone and its equivalents are so common in the mechanic arts, and are of such common knowledge, that their application to any new use necessarily raises a doubt whether such new use can of itself involve invention, and raises also a presumption that any invention resting upon it must be narrow, and one of mere detail, as was held by the circuit court in the case at bar. The belt, X, which gives motion to the rolls, is also old; but it had never been used in connection with a speed cone, or its equivalent, for a napping machine built on the planetary system.

The German patent to Jahr is claimed to contain a suggestion of a combination of all the essential elements of the claims in issue, or their equivalents. It is too doubtful in this respect to be accepted,

under the rule which requires that such foreign anticipatory matter should be full and clear, stated in Seymour v. Osborne, 11 Wall. 516, 555, and Eames v. Andrews, 122 U. S. 40, 66, 7 Sup. Ct. 1073. Speed cones or their equivalents had also long been applied to cylinders carrying napping materials, but none of the witnesses who testify to this make any claim of their prior use in planetary machines, although one represents the respondent, and each possessed great experience in the art. The Perkins machine for dressing leather and the Daniels machine for dressing sewing thread have the elements of a planetary system, but neither contains devices for varying the speed of the rolls, although, perhaps, such devices could easily have been incorporated into them. The earlier patents of Grosselin, or his correspondents, embracing the device now in issue, or the essential parts thereof, cannot be regarded as anticipatory, and will be spoken of in another connection.

It is probably very true that, by selecting from the various prior machines in this particular art, all the elements of the device in suit could be brought together. But to hold that this fact always defeats novelty would be to shut out every combination of old elements from the protection of the patent laws. Packard v. Lacing-Stud Co., 16 C. C. A. 639, 70 Fed. 66, 68; Boston & R. Electric St. Ry. Co. v. Bemis Car-Box Co., 25 C. C. A. 420, 80 Fed. 287, 289. While, therefore, all the elements are old, the novelty of the combination is maintained. There can be no question as to its utility. Although a costly machine, the respondent corporation itself is using 41 of them, including the alleged infringing machines, as against only 36 of other construction. The prior expensive and cumbersome methods are suggested and impliedly admitted by Mr. Thomas, the respondent's superintendent, in connection with the testimony already referred to about the expedients for changing the speed of the old-style napping cylinders. He says:

"Int. With reference to changing the speed by changing the pulleys on the old napping machines, as you have stated, was that an expedient which you had to resort to frequently in the Tremont & Suffolk Mills, with the old machines, or not? Ans. Well, not very frequently. Int. Why not? Ans. From the fact that, having so large a plant and so large a number of machines, we set apart different sections or different numbers of machines for particular work, and, out of the large number of machines which were on the floor or in that department, possibly two-thirds of them were run all the time. If a new kind of goods came that needed any change in the speed, a section of machines was found that were speeded at about the right speed for that class of work; so that we were not compelled to constantly change the speed of machines, nearly as much as we should have been had we been limited in the number of machines."

Indeed, it is apparently conceded that, in the matters of economy and convenience, complainant's machine is radically useful. We have therefore remaining only the questions of patentable invention and infringement. In order to approach these understandingly, we must inquire as to the scope and importance of the change introduced by Grosselin into the art of napping cloths.

The house of lords had this device before them in December, 1895, in Marsden v. Moser, 73 Law T. (N. S.) 667, and Moser v. Marsden,

13 Rep. Pat. Cas. 24, Lord Chancellor Halsbury and Lords of Appeal Watson, Shand, and Davey sitting. The English patent was unanimously sustained. The claim made in that patent, and under consideration in the house of lords, was as follows:

"Forming raising cylinders by arranging a series of suitably covered raising rollers round a shaft at equal distances from the same, which rollers are made to receive a variable but known motion, independent of that of the so-formed raising cylinders themselves, by means of countershafts or any other suitable driving motion."

Their lordships fully considered the devices of Davis, Jahr, and Grosselin's correspondent, Haddan, the last being the same as Grosselin's earlier machine, which devices are so much pressed in this case. The lord chancellor, at page 29, merely expressed his concurrence in the opinion of Lord Watson. Lord Watson, at page 30, said:

"The improved combination does not appear to me to differ materially from its predecessors in the construction or general arrangement of any of its parts, except those which influence the motion of the individual rollers. The motive power, derived from the main shaft which turns the cylinder, is transmitted through a countershaft, which is connected with the rollers by belting, which bears upon their ends, and communicates motion to them. Between the main shaft and the countershaft, there is connecting mechanism, described as 'wheels, cones, or speed pulleys,' by means of which the revolutions of the countershaft can be easily accelerated or retarded, and can be kept steady at a suitable speed. The practical effect of that device is that, when the apparatus is at work, the revolution of the roller is independent of, or, in other words, is not regulated by, the speed at which the cylinder is revolving, and that such independent motion can be altered and steadily adjusted at any rate of velocity which will suit the character of the fabric requiring to be raised. It is shown by the proof, and it was conceded in the appellant's argument, that these results had never been attained before, and that the apparatus which the respondent claims to have invented has consequently been of great commercial utility. The invalidity of the patent was maintained on these three grounds: (1) That the improvements of the patentee do not constitute the proper subject of a patent; (2) that these improvements were anticipated by reason of their having been disclosed in earlier patents; and (3) that the claim of the patentee is bad, because it embraces matters beyond the scope of his invention, as disclosed in the specification. The first and second of these objections are, in my opinion, devoid of substance. There could hardly be more appropriate matter for a patent than the introduction of mechanism, admittedly novel, into an old combination, with the practical result of converting a comparatively defective apparatus into an efficient and useful machine. Again, the anticipation upon which the appellant chiefly relied consisted in the fact that an earlier patentee had expressed the obvious truism that the motion of the individual rollers in a raising cylinder might be either accelerated or retarded, but without indicating any method by which that object could be accomplished so as to produce a useful result."

Lord Shand said, at pages 31 and 32:

"My lords, the plaintiff, in the specification relating to his letters patent, which were obtained in 1885, has described his invention as one for 'improvements in gig mills employed in the finishing of woven fabrics.' It has been clearly proved by the evidence that the plaintiff's improvements on the machinery or apparatus which had been previously in use were substantial and beneficial. They effected a complete change in the trade of manufacturing the fabric known as 'flannelette,' and that trade, in consequence of the plaintiff's invention, became a commercial success, which it had not previously been. The combination of a cylinder with revolving rollers around its shaft, fitted with the means of teasing or carding the surface of the fabric or material to be raised, had been known in the trade for many years. In previous inventions it had been shown not only that what is called a 'planetary motion' could

be given to the rollers, which was independent (being different in degree from the motion of the cylinder), but that by means of this independent motion a definite result could be produced on the surface of the fabric to be treated. It was further a feature of Haddan's invention, in 1879, that in the same machine or apparatus a certain amount of variable motion and action on the fabric could be obtained by the application of more or less pressure to the rollers from the fixed belts which formed part of his apparatus. The action of the belts, however, depending on the degree of pressure applied, which was not regulated by any mechanical contrivance, was unsatisfactory and uncertain, and consequently the rollers did not receive what is called in the plaintiff's specification a 'variable but known motion.' The plaintiff's invention entirely overcame this serious disadvantage. By the combination adopted by him, a moving belt was used in place of the fixed belts in Haddan's invention, and by means of a countershaft driven from the cylinder, by belts passing over wheels, cones, or speed pulleys, he secured not only a variable, but a known or certain, degree of motion, which admitted of being regulated as desired, so as to vary the action of the rollers with certainty and precision, and thus to produce the effect desired on the fabric. This, it appears to me, constitutes the materiality and point of the improvements described in the plaintiff's specification; and I do not doubt that these improvements, arising from a material change in the apparatus previously employed, and producing highly beneficial results, formed good subject-matter for the plaintiff's letters patent."

Lord Davey said, at page 34:

"The second ground of objection seems to me to ignore and leave out of sight the whole point of the invention. The patentee aims at giving a 'variable, but known,' motion to the rollers. As I understand the evidence, and the case as presented to us by the appellant's counsel, previous inventors had suggested means of giving a 'known' motion to the rollers, as by a fixed cogged ring; whilst others had suggested means of giving a more or less variable motion, as by the fixed straps of Haddan, which were capable of being tightened or loosened. But the known motion was not variable, and the variable motion was not known; i. e. you could not at pleasure run your rollers at any required and known ratio of speed to the speed of the cylinder. The patentee has succeeded in effecting his object by imparting motion to the ring or strap on which the rollers bear or are made to move, and he tells you that he does this 'by means of a countershaft' in connection with a stepped or cone pulley receiving its motion from the main shaft."

The claims in the patent at issue here are more in detail than in that under consideration by the house of lords, but, in view of the state of the art, they are, for all present purposes, practically the same; and, after this forceful and lucid exposition by the house of lords of the importance and scope of this invention, there would seem to be nothing to be urged by the respondent or to be added by us. That what was accomplished by the inventor marked a long step in advance for manufacturing uses, and that, therefore, if it involved invention, it is entitled to liberal protection when the questions of equivalents and infringement are involved, seem too plain to need discussion. But, notwithstanding the expressions we have cited, and the great practical advantages derived from the introduction of the patented machine, the respondent asserts that it involves nothing but the application of well-known devices to uses in all respects of the same kind as those to which they have been before applied. It is true, as already stated, that nearly all, if not all, the elements of Grosselin's combination, were so common in the practical arts that their use anywhere must be regarded as analogous to previous uses; and especially is this true of the cone pulleys. But this does not wholly settle the matter. It raises a presumption, which, however, is not conclusive.

The rule, has, perhaps, been as well stated in C. & A. Potts & Co. v. Creager, 155 U. S. 597, 606, 15 Sup. Ct. 198, as anywhere, as follows:

"But, where the alleged novelty consists in transferring a device from one branch of industry to another, the answer depends upon a variety of considerations. In such cases we are bound to inquire into the remoteness of relationship of the two industries, what alterations were necessary to adapt the device to its new use, and what the value of such adaptation has been to the new industry. If the new use be analogous to the former one, the court will undoubtedly be disposed to construe the patent more strictly, and to require clearer proof of the exercise of the inventive faculty in adapting it to the new use, particularly if the device be one of minor importance in its new field of usefulness. On the other hand, if the transfer be to a branch of industry but remotely allied to the other, and the effect of such transfer has been to supersede other methods of doing the same work, the court will look with a less critical eye upon the means employed in making the transfer."

These statements of the rule show that it is not rigid, but that it merely lays the basis of presumptions which ordinarily are against patentability. A striking illustration of one instance where the presumptions were overcome is National Cash Register Co. v. Boston Cash Indicator & Recorder Co., 156 U. S. 502, 15 Sup. Ct. 434, in which the court said, at page 515, 156 U. S., and page 439, 15 Sup. Ct.:

"Indeed, this use of the connecting mechanism can hardly be termed analogous to such as similar mechanisms had been previously used for; but, even if it were, the results are so important, and the ingenuity displayed to bring them about is such, that we are not disposed to deny the patentees the merit of invention."

Another striking illustration is our own decision in Watson v. Stevens, 2 C. C. A. 500, 51 Fed. 757. There we said at page 761, 51 Fed., and page 504, 2 C. C. A.:

"We conclude, therefore, that in applying to cases of doubt the primary rules touching what constitutes invention, and the secondary rules touching what is a 'new and useful result,' a 'new function,' or a 'new sphere of action,' we may be influenced by the facts that the improvement in question, although desired for years, was not secured until brought out by the patentee; that the product of the improved machine or process went into general use by the manufacturers for whom it was intended, and displaced wholly or in a very large degree prior products; and that while all prior products had been unsuitable, either through lack of cheapness or adaptation, the new product answered all reasonable requirements."

In Osgood Dredge Co. v. Metropolitan Dredging Co., 21 C. C. A. 491, 75 Fed. 670, and in Manufacturing Co. v. Holtzer, 15 C. C. A. 63, 67 Fed. 907, we expressed the caution that Watson v. Stevens reaches a very limited class of cases; but the device at issue here has all the surrounding circumstances relied on in Watson v. Stevens, but to a more striking and important degree. Indeed, its great usefulness and ingenuity are especially illustrated by the cumbersome efforts of the respondent to accomplish the results of the patented device by its alleged infringing machine. The scope of the invention as stated in the patent is limited to combining in one machine a multiplication of speeds and energies. But the machine seems to have developed special functions, not shown to have been foreseen by its inventor. Among these is that referred to by Lord Shand, through which it has effected, as he says, and as the record here shows, a complete change in the manufacture of flannelettes. There is much proof in the record

pro and con about these special functions, the respondent claiming also that the work of the patented machine is not suitable for all goods, nor satisfactory to all customers. We need not, however, discuss this particular topic. While it is clear that a patentee is ordinarily entitled to all the uses and all the advantages which his invention develops so far as the new application does not involve additional invention (Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co., 10 C. C. A. 194, 61 Fed. 958; Wright & Colton Wire Cloth Co. v. Clinton Wire Cloth Co., 14 C. C. A. 646, 67 Fed. 790), yet a function not known when the patent issues, and afterwards developed, cannot ordinarily be used to broaden the construction of a claim (Long v. Manufacturing Co., 21 C. C. A. 533, 75 Fed. 835, 838, 839; Boston & R. Electric St. Ry. Co. v. Bemis Car-Box Co., 25 C. C. A. 420, 80 Fed. 287, 290, already referred to). Therefore, on the question of infringement, we must limit the scope of this patent to what appears on its face.

It is claimed that the patent is limited by the proceedings in the patent office, as shown by the file wrapper. We have fully discussed this topic in Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co., ubi supra, and need not go over it again. The position as to the patent in suit was peculiar, arising from the fact that the patentee, who resided abroad, and was ignorant of our language, was instructing his solicitor in the United States with reference to a very complicated machine; but, within the rules laid down by us in Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co., there is nothing which justifies us in holding that the inventor, either by implication of law or expressly, abandoned any part of his invention. We have therefore left only the question of infringement, to be determined in the light of the nature of the invention, which, though limited in its scope in a certain sense, yet, on account of its importance, is entitled to liberal protection.

The issue of infringement is well stated by the respondent. It says quite correctly:

"The public is entitled to use movable actuating belts for the napping rolls of a planetary napping machine, provided they do not employ, in connection therewith, speed-varying devices substantially such as are presented in the patent in suit for increasing or diminishing the rate of movement of such belts."

The alleged infringing machine is in all respects like the patentee's, except only that, in lieu of cone pulleys, the respondent has pulleys of different diameters, which it removes and replaces as it desires to vary the speed of the teaseling rolls. This, of course, is more cumbersome than the complainant's device, and involves delays which the latter does not involve. Thereupon the respondent states its defense on this issue as follows:

"The said devices [meaning the complainant's] are devices which are regularly embodied and organized into the machine, and whereby at will, by simple adjustment, the speed transmitted to the napping rolls may be varied as desired. The said devices cannot mean a mechanism designed to give one speed, and one speed only, so that it is impossible to vary the speed of the machine while in operation, and so that the speed can, in fact, be varied only by removing the mechanism, and substituting another of a different proportion to give a different speed. If taking off a driving pulley, and making the substitution

therefor of another driving pulley of a different size, be a speed-varying device, it certainly is not a speed-varying device such as is contemplated even remotely by the patentee, for he repeatedly states in his patent that his device permits the speed of rotation of the teasel rollers to be 'varied at will,'—an expression which clearly means that the operator may vary the speed of the parts in his machine, whenever he wishes to do so, by some such simple act as shifting the belt from one portion of the cone to another. The speed of the respondent's machine cannot be said to be capable of being varied at will, if the only way to accomplish a change in the speed is to stop the machine, take out one of the parts, supply another of a different size, and shorten or lengthen the connecting belt."

The respondent also says:

"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 the belt pulleys must be removed, and replaced by another one, of a different diameter, and then the belt must be shortened or lengthened to fit the changed size of pulley. There is never in respondent's machine any mechanism or any capacity whatever for changing the speed of rotation of the rolls with relation to that of the drum. It is true that portions of the machine, and in this case the major part of it, can be retained, and, by interchanging other parts, the relative movement of the machine so changed can be varied; but this is equally true of almost any machine that was ever built. It is certainly true of the old Davis patent, where the speed of the napping rolls could be varied by removing the pinions therefrom, and the internal gear, and substituting other pinions and gear of a different size. It is true, as well, of the machines of the Morgan-Brown and Jahr patents. Nearly all machines of every kind are so constructed as to enable one or more of the driving or transmitting parts thereof to be replaced by another or others of different sizes, so as to permit of variation in the speed given or translated. If devices for driving with varying speeds thus are possessed by machines universally, then a reference in a patent to means for driving with varying speeds must be meaningless as a distinctive characterization. If the removal of one belt pulley and the substitution of another is the equivalent of the speed-varying device of the patent, then that device surely is anticipated, for it is a matter of common knowledge that the speed of driving belts in machines may be varied by changing the driving pulley, and substituting therefor one of a different size, a further change being made, if necessary, in the length of the belt to accommodate the new pulley. This mode of producing variation in the speed has been practiced in connection with napping machines."

It is not true, however, that any "mode of producing variation in the speed" by the use of cone pulleys "has been practiced in connection with napping machines" prior to the complainant's device, except with the napping cylinders to which we have referred; nor is it true that either the Davis or the other earlier machines mentioned were either used or constructed to be used with devices for varying the speed, though they might have been reconstructed to be worked as complainant's machine is worked. These facts we have already sufficiently referred to on the question of patentable invention.

On this issue the complainant says:

"To say that the machines are different, because in the machine of the patent in suit the idle pulleys are supported upon the shaft, while in respondent's machine the idle pulleys are put upon the floor, is to present a difference between words, not things; for respondent's machine is just as dependent upon its entire set of pulleys for the fulfillment of its function as a variable napper for producing different naps as is the machine of the patent in suit."

There are two leading observations to be made on this issue: First, applying the rules of construction adopted by us in Reece Buttonhole Mach. Co. v. Globe Buttonhole Mach. Co., ubi supra, no verbal

criticism of the specification in this case can be availed of to deprive complainant of any part of the patentee's actual invention; and, second, it is plain that the respondent's machine was built up on the complainant's machine, and is the result of a studied effort to secure its essential advantages. The respondent has so arranged the various parts which he claims vary from the complainant's elements that the substitution of one size of pulley for another can be made by the respondent with no disturbance of any other part of the machine. By slightly varying the shaft carrying the respondent's pulley, pulleys of various dimensions might at once be attached to it, and the complainant's precise construction would be the result. We do not think the patent can be lawfully evaded, as the respondent has attempted it. The respondent's set of several pulleys of differing diameters is only complainant's cone pulley divided into sections through its axis; and the fact that the set of several pulleys differs, in that it is more cumbersome, and involves delays, is only an ordinary feature of colorable infringements, which are characterized by a mere imitative capacity, without the spirit of invention. The respondent's machine has in it the essence of Grosselin's invention, and we must hold that it infringes.

Another point of importance remains to be considered. The preamble of the complainant's patent contains a recital of several foreign patents which were taken out for the same invention. This recital is erroneous in several particulars, but the record fails to show that there was any intentional misrepresentation. So far as we can discover, the requirement of a reference to foreign patents in the preamble of an application is a mere regulation of the patent office, which is so far reasonable that it may bar the issue of a patent until it is complied with, but which cannot invalidate a patent once issued unless perhaps when the recital is erroneous through a willful misrepresentation or some fraudulent purpose. Rev. St. §§ 4887–4892. But the French patent No. 141,170, issued February 16, 1881, to Grosselin Pere et Fils, expiring 16 years from its date, is for the same invention as that now in issue. Grosselin Pere et Fils are, for all practical purposes, the same as the patentee in the case at bar. Therefore the patent in suit expired after this appeal was taken, and no injunction can now issue. The decree of the circuit court is reversed, with costs, and the case remanded to that court, with directions to enter a decree for an accounting, but to deny an injunction, on the ground that the patent expired after the appeal was taken.

NEW YORK FILTER MANUF'G CO. v. ELMIRA WATERWORKS CO. et al.

(Circuit Court, N. D. New York. September 20, 1897.)

PATENTS—INFRINGEMENT—METHOD OF FILTRATION.

The Hyatt patent, No. 293,740, for an improved method of clarifying water by introducing into it a coagulant simultaneously with its passage through the filter, thereby avoiding the use of the settling basins of the prior art, and making the process continuous, *held* infringed by a process in which cisterns or tanks were introduced, through which the water passed