

of general appraisers sustaining the decision of the collector of the port of New York as to the rate of duty on said snakes.

Comstock & Brown, for importer.

Wallace Macfarlane, U. S. Atty., and Henry C. Platt, Asst. U. S. Atty.

**WHEELER**, District Judge. The importer in this case is a snake charmer, and imported 28 trained snakes, in her actual possession, and used by her in exhibitions of her skill in that profession, and which were not for sale. A duty was assessed upon them as animals. She claims they are free under paragraph 686 of the tariff act of 1890, which exempts "professional books, implements, instruments, and tools of trade, occupation or employment," under such circumstances. A suggestion is made in argument that these words do not include animate things. One definition of "instrument" is: "One who, or that which, is made a means, or caused to serve a purpose." Webst. Dict. "Instrument" 4. These snakes are clearly "instruments" within this definition. They are instruments with which she practices her profession, and are her professional instruments. As such, she seems to have been entitled to have them come with her, duty free. Decision of board reversed.

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**SCHWARZWALDER et al. v. NEW YORK FILTER CO.**

(Circuit Court of Appeals, Second Circuit. January 9, 1895.)

**1. PATENTS—EFFECT OF DISCLAIMER ON QUESTION OF NOVELTY.**

Where a disclaimer has been filed by the patentee as a result of litigation, the validity of the patent, as regards the question of novelty, is to be tested, not by its original terms and scope, but by what remains after the disclaimer, in the same manner as if the matter disclaimed had never been a part of the patent. *Dunbar v. Myers*, 94 U. S. 194, followed.

**2. SAME—OPERATION OF DISCLAIMER.**

The disclaimer of matter which is not a part of the description, but is merely a recital designed to enlarge the scope of the patent, operates merely to expunge from the claim what otherwise would, by force of the recital, be incorporated into it constructively.

**3. SAME—CONSTRUCTION OF CLAIM—PURIFYING WATER—EQUIVALENT COAGULANTS.**

In a patent for a process of purifying water, a claim which covers the use of coagulants "such as perchloride or persulphate of iron" includes the use of alum, which is a recognized equivalent.

**4. SAME—NOVELTY AND INFRINGEMENT.**

The Hyatt patent, No. 293,740, for a method of purifying water, consisting in the simultaneous application of a coagulant and a process of filtration, the coagulant being mixed with the water at the time of its introduction into the filtering apparatus, and while it is flowing continuously through the filter bed, thus dispensing with settling tanks, *held* valid, and infringed.

Appeal from the Circuit Court of the United States for the Southern District of New York.

This was a suit by the New York Filter Company against Henry Schwarzwald, August Finck, and the O. H. Jewell Filter Com-

pany for infringement of letters patent No. 293,740, for an improvement in the art of filtering water. There was a decree for complainant directing an injunction and an accounting. 61 Fed. 840. Thereafter a motion by defendants for leave to amend the answer and take new proofs was denied. 62 Fed. 582. From the decree for complainant, defendants appealed.

This is an appeal from a decree of the United States circuit court for the Southern district of New York adjudging the validity of letters patent No. 293,740, dated February 19, 1884, granted to Isaiah Smith Hyatt, and charging the defendants as infringers. The patent is for "method of purifying water." The specification is as follows:

"The invention relates to improvements in the art of filtration, and it consists in the method hereinafter described of arresting and removing the particles of foreign matter liable to pass through the filter bed with the escaping water during an uninterrupted process of filtration, or one in which a stream of water is passed through a bed of filtering material contained in a filter; the filter being a receptacle containing a bed of filtering material, and having a supply pipe for the introduction of the water and a pipe for its passage therefrom, the said supply pipe having another pipe, through which I introduce into the water, simultaneously with its passage into the filter, a substance—such as perchloride or persulphate of iron—for the purpose of sufficiently coagulating the impurities in the water to admit of their arrest by the bed during the passage of the water through the filter. In practicing the invention some form of mechanical apparatus must be employed, and, while I do not confine myself to any particular construction, I recommend the apparatus described and claimed in letters patent of the United States No. 273,542, granted to John W. Hyatt on the 6th day of March, 1883, which I have used with very satisfactory results. In the accompanying drawing I have illustrated a sectional view of such an apparatus, by means of which the invention sought to be protected hereby may be successfully practiced; but, as I have stated, other forms of filtering apparatus may be used with good results. The apparatus shown in the drawing consists of the upper and lower compartments, A, B, separated by a diaphragm, C, in which is provided the valve, D. The upper compartment is provided with a waste outlet, E, and the lower compartment with a supply pipe, F, a delivery, G, and a waste pipe, H. The delivery consists of a tube of perforated metal, I, connecting with the pipe, J. A transfer washing pipe, K, will extend from the lower part of the compartment B to a suitable point adjacent to the upper part of the compartment A. The bed of sand or other suitable filtering agent will be placed in the lower compartment. The passage of the liquid through the apparatus above described and the method of washing the filter bed will be the same as that set forth in said letters patent. The supply pipe, F, has connected with it a pipe, O, which will pass from any suitable supply of persulphate of iron or perchloride of iron or other coagulating agent, which, by preference, will be in solution. The filter bed and the persulphate or perchloride of iron or other coagulating agent will meet at the juncture of the pipes, F and O, and then pass into the filter together, with the result that the minute particles of foreign matter in the liquid will be sufficiently coagulated to permit their arrestation by the filtering agent. As I have stated, the proportions or quantities of the coagulating agent cannot be accurately defined. It is only necessary that a sufficient quantity be used to effect that degree of coagulation which will admit of the fine impurities being arrested from the water on its passage through the filter bed during a continuous process. It will be understood that in this process the coarse impurities present in the water may be arrested by the filter bed without coagulation. I may mention, as an illustration, that I have successfully purified the water of the Mississippi river at New Orleans by using about one-eighth of a pound of perchloride of iron of from 50° to 60° Baume to a thousand gallons of water. I do not confine myself to the employment of persulphate or perchloride of iron or permanganate of potassa, but make use of any other suitable agent which is capable of coagulating the impurities of the liquid, and preventing their passage through the filter bed. Neither do I limit myself to any particular pro-

portions or quantities of the coagulating agent, as they may be varied according to circumstances and the character of the liquid to be treated. Nor do I confine myself to any particular liquid, although I contemplate chiefly the purification of water in large quantities. It is obvious that by the use of the uninterrupted process hereinbefore described I entirely dispense with the employment of settling basins or reservoirs as now commonly employed."

The claim is as follows:

"The method hereinbefore described of arresting and removing the impurities from water during an uninterrupted passage of same from a supply pipe into a filtering apparatus, thence through a filter bed contained therein, and out through a delivery pipe leading therefrom, which method consists in introducing into the water, simultaneously with its passage to or into the filter, a substance which will sufficiently coagulate or separate the impurities to facilitate their arrest and removal by the filter bed, thus obviating the necessity of employing settling basins."

After a litigation upon the patent in a suit in the United States circuit court for the Northern district of Illinois, in which, in February, 1889, the bill for infringement was dismissed, and on July 27, 1889, the owner of the patent filed in the patent office a disclaimer of that part of the specification of the patent which is in the following words: "I do not confine myself to the employment of persulphate or perchloride of iron or permanganate of potassa, but make use of any other suitable agent which is capable of coagulating the impurities of the liquid and preventing their passage through the filter bed. Neither do I limit myself to any particular proportions or quantities of the coagulating agent, as they may be varied according to circumstances and the character of the liquid to be treated. Nor do I confine myself to any particular liquid, although I contemplate chiefly the purification of water in large quantities."

Lysander Hill, for appellants.

M. H. Phelps and M. B. Philipp, for appellee.

Before WALLACE and LACOMBE, Circuit Judges, and COXE, District Judge.

WALLACE, Circuit Judge (after stating the facts). In their assignment of errors the appellants insist that the decree of the court below proceeded upon a wrong construction of the patent, and that, properly construed, it should have been adjudged void for want of novelty. They also insist that, if it be capable of a sufficiently narrow construction to uphold its validity, they have not infringed it.

The patent relates to improvements in the art of filtration. These improvements, as disclosed by the description in the patent and an examination of the prior state of the art, lie within plain boundaries; but we regret to say that in finding them we have been much embarrassed by the many illusory theories of the expert witnesses for the complainant. According to the description, read in connection with the disclaimer, they consist in a method of arresting and removing the particles of foreign matter in water, during an uninterrupted process of filtration, by introducing into the water, simultaneously with its passage into the filtering apparatus, a sufficient quantity of a coagulant, such as perchloride or persulphate of iron (salts of iron), to coagulate the fine impurities present, and permit the filter bed to arrest them, coarse impurities in the water being arrested by the filter bed without coagulation. Any filtering apparatus which dispenses with settling basins, and in which

there is a bed of filtering material, may be used, although the use of a particular form is recommended. As different waters vary in the extent of their impurities, it is manifest that the proportions or quantity of the coagulating agent must vary accordingly; and the description, being addressed to those skilled in the art, conveys sufficient information that the usual preliminary test is to be made to ascertain the amount requisite for the particular waters which are to be purified. The suggestion of the small quantity which has been successfully used to purify the waters of the Mississippi river is of some value in imparting the information, but the method is not confined to the use of small quantities. The method is not exclusively applicable to the purification of natural or potable waters; and, although the patentee undoubtedly contemplated its application to the purification of waters in large volume, the description does not contain any limitation to that effect. The description implies to those skilled in the art the use of a granular filter bed, capable of being readily washed, where large volumes of water are to be treated. The method embraces the treatment of any waters, whether they are to be purified on a small scale for family use, or on a large for the use of factories or municipalities.

In the prior state of the art it was not new to use the coagulants mentioned, as well as the salts of alumina, or alum, a well-known equivalent, for the purification of water. It was a well-known fact that either alum or the salts of iron would agglomerate with the coloring matter and other finely suspended impurities in water, and the united particles or masses would precipitate, leaving the water comparatively clear. An appreciable period of time, varying, with different waters, from a few minutes to several hours, was supposed to be necessary to thus clarify the water. These coagulants had been used with other chemicals in filtration processes in the course of the chemical treatment of the water to precipitate the impurities, the other chemicals being added in the subsequent treatment before filtration. They had also been used in sedimentation processes to precipitate the impurities in reservoirs or settling basins, whence the water, if desired, could be subsequently filtered. Indeed, as appears by the file wrapper of the patent in suit, the original application of Hyatt was rejected because, as his description and claims were then expressed, the subject-matter was covered and anticipated by the well-known and commonly practiced method of clearing Mississippi river water by the addition of alum, followed by settling and decantation or filtration; and his patent was not allowed until he amended his application so as to show that he dispensed with settling basins and purified the water by an uninterrupted process of filtration.

In considering the anticipatory references in prior patents and printed publications, of which a great number have been introduced, it will not be profitable to dwell upon those which treat of the use of chemicals in filtration processes for the purpose of softening water, inasmuch as the present patent relates to a different art; nor to consider in detail those which treat of their use in sedi-

mentation processes for the purification of water, because it is the special object of the present patent to substitute the method of filtration. The sedimentation processes are only of value as they tend to throw light upon the inquiry whether the method of the patent in departing from them involves invention. The most valuable references are the English patent to Paget of October 20, 1874, and the English patent to Spence of November 28, 1881. The former describes the closest approximation in the prior art to the method in the patent in suit. The latter contains the most apposite description of the use of the coagulants of the patent in suit for purifying water by sedimentation.

Paget's patent is for improvements in the means of purifying and clarifying the refuse water of manufacturing works. It states that water containing organic or inorganic substances in an extremely minute state, and generally in suspension, cannot be clarified in large standing reservoirs, because the impurities fall very slowly, or in most cases remain in suspension; that mere filtration is also incapable, because the greater portion of the matter in suspension passes through filtering material; and that, in order to separate these matters completely, rapidly, and with certainty, and get rid of the greater portion, it is necessary to first prepare or treat the water chemically, and then subject it to filtration. The process described is a continuous one, and is carried on in a self-acting apparatus. The water is first brought into a receiver, and mingled with a definite proportion of sesquichloride of iron and chloride of aluminum, the proportions varying according to the nature and quality of the water, to be ascertained in each case by a previous trial on a small quantity of water. Here the first chemical reaction takes place, giving an insoluble precipitate. Thence the water flows into a mixer, where it takes up a determinate quantity of lime milk or lime water, and a new chemical reaction occurs, forming a voluminous precipitate which carries down with it the most minute particles in suspension. Thence it flows through a filter bed, which retains the precipitate, and from which the water issues clear and limpid.

Spence's patent is for the purification of water for domestic, manufacturing, and other purposes by the use of salts of alumina or alumina and iron. It recites that he had previously obtained a patent for a process for the purification of sewage by the use of salts of alumina, or alumina and iron, and that he has found that his process is also applicable to the purification of other impure waters. It states that his present invention consists in the application of salts of alumina, or alumina and iron, for the purification of water for domestic, manufacturing, and other purposes from all matters contained in such waters which are capable of being precipitated by salts of alumina or alumina and iron. The water to be purified is run into tanks or reservoirs, and the salts added thereto in sufficient quantities to cause all the dissolved and other impurities which are capable of being acted upon by them to be separated from the water, and fall to the bottom of the tanks or

reservoirs. The reagent is preferably in a liquid form, and may either flow into the stream of water on its passage to the tanks or reservoirs, or may be added when the tanks or reservoirs are filled with water. The precipitated matter can then be removed by pumping or in any other convenient manner. The water, having been thus deprived of all the precipitated magma, is now pure and transparent, and may be used for any desired purpose.

The patent in suit describes a departure from anything which appears to have been done or known in the prior art, so far as appears by the record. It describes a method for the purification of water by the simultaneous application of a specified coagulant and a process of filtration, the coagulant being applied to or mixed with the water to be filtered substantially at its introduction into the filtering apparatus, and while it is flowing continuously to the filter bed. By this method the coagulants perform their principal work within the filter bed itself. By this change in previous processes the patentee not only dispensed with the use of settling tanks, thus saving the time and expense required in sedimentation processes like that of Spence, but he also dispensed with the additional chemical treatment of the water and the use of the more complicated apparatus involved in processes like that of Paget. So far as appears, no one had previously discovered that the agglomerating action of the coagulants could be obtained without waiting a considerable time for precipitation, or during the passage of the water through the filtering bed. As the celerity of operation would be of comparatively little practical value in treating waters on a small scale, it is not so strange as it might otherwise seem that no instances of the mixing of alum with water in family filters at the time of filling the filter have been proved. It may be doubted, in view of what was necessarily disclaimed in order to restrict the patent within valid lines, whether Hyatt himself had any intelligent conception of the real nature of his improvements. However this may be, it is not open to fair doubt that what he described was an improvement upon prior methods, and involved invention. The subject of the purification of waters on a large scale had engaged the attention of many thoughtful minds, as is evidenced by the number of earlier patents and publications; yet the practical superiority of Hyatt's process was manifest immediately after being tested, and has been decisively recognized by many of the business competitors of the complainant, who have preferred to use it, at the risk of accountability as infringers of his patent, rather than avail themselves of other processes.

It has been urged for the appellants that the patent before the disclaimer covered broadly any continuous process of filtration of any liquid in which the treatment with any coagulants or reagents is adopted, and that the validity of the patent as regards the defense of want of novelty is to be tested by its original terms and scope. We are aware of no principle which will permit a patent to be defeated for want of novelty in respect to the subject-matter which has been eliminated from it by a disclaimer. The

office of a disclaimer is to enable the patentee to save himself from the peril of such a defense. Matters which have been properly disclaimed cease to be a part of the invention, and, as was said by the supreme court in *Dunbar v. Myers*, 94 U. S. 194:

"It follows that the construction of the patent must be the same as it would be if such matters had never been included in the description of the invention or the claims of the specification."

It is also urged for the appellants that the effect of the disclaimer was to limit the method of the patent to one in which perchloride or persulphate of iron is used as a coagulant. If these coagulants only, instead of coagulants "such as perchloride or persulphate of iron," had been mentioned in the description of the invention, there would be much force in the argument; and it might well be held that by disclaiming "the use of any other suitable agent which is capable of coagulating the impurities," all equivalents would be excluded. The literal effect of the disclaimer is to confine the claim to a method in which no other coagulants are employed except "such as salts of iron." It is to be observed, however, that the part disclaimed is not part of the descriptive matter, but a recital intended to enlarge the scope of the claim. The disclaimer consequently operates only to expunge from the claim what otherwise would, by force of the recital, be incorporated into it constructively. Obviously, it was intended to obliterate the recital from the patent, and to have no other effect. The patent, after the disclaimer, is to be read exactly as though the recital had never been inserted. Thus read, it is clear that the claim covers the use of any coagulant having similar properties to the salts of iron, which was a recognized equivalent.

As thus construed, the infringement of the claim by the defendants is established, although they use alum as the coagulant instead of the salts of iron. In some of the plants of the corporation defendant settling tanks are used between the introduction of the coagulant and the filter bed. In those plants the method of the patent is not appropriated, and there is no infringement.

The decree of the circuit court is affirmed, with costs.

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#### THE IODINE.

HUDSON v. THE IODINE.

(District Court, E. D. Pennsylvania. February 18, 1895.)

No. 79.

SALVAGE—AMOUNT OF COMPENSATION—THE ELENA G., 61 FED. 519.

This was a libel by Joshua H. Hudson, master of the tug S. A. McCaulley, against the bark Iodine, to recover for services rendered.

John F. Lewis, for libellant.

Alfred Driver and J. Warren Coulston, for respondent.