black salts. The use of the word "or" might leave it uncertain whether or not they were mere alternative designations for the same article; but the board of general appraisers has found that "there are potash salts known, respectively, as black salts, crude potash, carbonate of potash, and caustic potash"; and there is abundant evidence to sustain this finding. Under these circumstances, we see no reason why the court should be astute to find some excuse for holding that congress did not intend to say what it has said in positive and unambiguous language. When an importation is within the description which congress has used in this paragraph as "carbonate of potash," it should be classified accordingly, whether it be crude or refined. There is no force in the suggestion that it is not to be assumed that congress would admit refined carbonate of potash free, in view of the fact that, in this very paragraph, refined sulphate of potash and refined caustic potash are expressly given free entry. The decision of the circuit court is affirmed.

SAWYER SPINDLE CO. et al. v. MORRISON CO. et al.

(Circuit Court of Appeals, Second Circuit. December 1, 1897.)

No. 70.

PATENTS—CONSTRUCTION OF CLAIMS—INFRINGEMENT—SPINDLES FOR SPINNING MACHINES.

The Atwood patent, No. 253,572, for an improved support for spindles for spinning machines, wherein the gist of the invention is the flexible attachment of the supporting tube, with relation to the rail, is limited by the language of the specifications and the claims to a supporting tube which is so mounted, and which contains in itself both bolster and step bearings; and the patent is not infringed by a spindle in which, though the supporting tube is flexibly mounted, with relation to the rail, the lower part of it has been cut off so that the end of the spindle is supported upon a flat step, which can move freely in the bottom of the oil cup.

In Error to the Circuit Court of the United States for the District of Connecticut.

This is an appeal from an order of the circuit court for the district of Connecticut which granted an injunction pendente lite against the infringement of claims 2 and 3 of letters patent No. 253,572, dated February 14, 1882, and issued to John E. Atwood, for an improved support for spindles for spinning machines.

Charles L. Burdett, for appellants.

Fredk. Fish and W. K. Richardson, for appellees.

Before WALLACE, LACOMBE, and SHIPMAN, Circuit Judges.

SHIPMAN, Circuit Judge. This patent has been three times under consideration by the circuit court for the district of Connecticut, in suits against the same infringer for three infringements; and a description of the patentable character of the improvement, of its distinctive features, and of the infringed claims, was given in the opinions of that court. Sawyer Spindle Co. v. W. G. & A. R. Morrison Co., 52 Fed. 590, 54 Fed. 693, and 57 Fed. 653. The patent has also been sustained by the circuit court and the circuit court of appeals for the

Third circuit. Sawyer Spindle Co. v. Taylor, 69 Fed. 837; Id., 22 C. C. A. 203, 75 Fed. 301. The infringing device in the first case was quite a close copy of the patented structure, and therefore the attention of the court was especially called to the patentable character of the invention, in view of the spindle support of Francis J. Rabbeth, which was patented in 1880, by letters patent No. 227,129, and upon which the Atwood support was an improvement. "The Rabbeth structure had a supporting tube rigidly connected with the rail, a bolster bearing, which was a thin tube affording a lateral bearing surface for the spindle, a yielding cushion between the bolster bearing and the supporting tube, and a step bearing within the supporting tube." This spindle is well adapted for cotton spinning, and was largely used, but was not a success in silk spinning, in which the spindles necessarily carry unequally balanced loads, must have room within which to vibrate, strength to resist strains, and must be enabled to vibrate within restrained limits. The Atwood support was a tube containing step and bolster bearings, which was flexibly mounted, with relation to the rail of the spinning machine. "The flexible attachment, with relation to the rail, of this supporting tube, is the gist of the Atwood device, and was its substantial improvement upon the rigidly held supporting tube of the Rabbeth spindle; and its cushion interposed between the supporting tube and the thin tube which constituted the bolster bearing." The Atwood spindle has had large success, and is generally adopted in silk-spinning machines. After the decision of the first suit, the infringer moved further away from the patent in the second infringement, which was known as the "Hammond Spindle," and the use of which was also enjoined, and which it is not necessary to describe. The third infringement moved still further away from the patent, and was known as the "Dady Spindle," the use of which was also sought to be enjoined in the suit which included the Hammond infringement. The specification of the Atwood patent laid stress upon the supporting tube, which contained both step and bolster bearings; and the court, in its first opinion, spoke of a tube which combined the two bearings "in one piece of metal." In the Dady spindle, the supporting tube was transversely divided into two parts. The lower part was about 13-16 of an inch in height, rested upon the bottom of the oil cup, was socketed, and received into its socket the step of the spindle, and was its step bearing. One piece of metal did not contain both bearings, but the two parts were so bound together by the spindle which revolved in the socketed step bearing that they acted as one tube, and there was no substantial independent movement of the step bearing. It was said in the third opinion that Atwood's method of construction of both bearings in one tube was vital, if it was demanded by the claims of the patent, or if the transverse severance created a substantial change in the mode of operation of the supporting tube. It became clear that the severance created no difference, and that the parts of the tube moved together laterally in all directions. The court was also satisfied that the claims did not require that the tube should be of one piece of metal, and the use of the Dady spindle was enjoined. The device which is the subject of this suit has been moved still further away from the patent. The lower

part of the supporting tube has been cut off, and the end of the spindle is supported upon a flat step, which can move freely in the bottom of the oil cup. It is urged by the complainant, and it is true, that, while the loosely moving flat step affords the only vertical bearing, a lateral bearing for the lower reduced end of the spindle exists in the single supporting tube, and that the effect or the mode of operation is not at all changed by this change in the mode of construction; but it is also true that the step bearing is that part of the structure upon which the lower end of the shaft of the spindle revolves, and that by "step bearing" the part which contains the endwise pressure is meant. The learned expert for the complainants presents his point upon this part of the case as follows:

"Of course, it is not strictly accurate, as a matter of language, to say that in defendants' spindle the supporting tube contains the step and bolster bearings for the spindle, as the step bearing, or the portion thereof that sustains the endwise pressure of the spindle, is supported in the oil cup, and not contained within, or made a part of, the supporting tube. As a mechanical matter, however, the difference is of no importance, and the mode of operation and result is precisely the same as if the end bearing of the spindle were a part of the supporting tube; that is, in defendants' structure, the same as in that of the Atwood patent, the spindle and its supporting tube may move together laterally in all directions during the self-adjustment of the spindle while carrying an equally balanced bobbin and its yarn."

The case is therefore as follows: The gist of the Atwood invention, which is the flexible attachment with relation to the rail of the supporting tube, is contained in the present Morrison spindle, in which the effect or the mode of operation of the Atwood support has not been changed. But Atwood thought that a portion of his improvement consisted in a flexibly mounted supporting tube, which contained both step and bolster bearings for the spindle. He says:

"The characteristic feature of my present invention is a supporting tube which is flexibly mounted, with relation to the spindle rail, and contains the step and bolster bearings for the spindle, so that the latter and said tube may move together laterally in all directions during the self-adjustment of the spindle, while carrying an unequally balanced bobbin and its yarn, instead of relying upon the movement of the spindle and its bearings within, and independently of, the supporting tube, as heretofore in this class of spindles."

The specification says, also:

"The supporting piece or tube, G, containing, as it does, the bolster and step bearings for the spindle, constitutes a combined bolster and step, which moves laterally with the spindle in all directions during its self-adjustment."

And furthermore, when describing the construction shown in Fig. 4:

"The supporting tube, c, c', like the one before described, contains both the upper and lower bearings for the spindle; but its lower portion is partially located within the base, H, as is clearly shown in the drawings. The upper portion, c, of said tube, contains the upper or bolster bearing; and the lower portion, c', contains the step bearing."

A part of the combination of claim 2 is "a combined bolster and step," and a part of the combination of claim 3 is "a supporting tube flexibly mounted with relation to the spindle rail, and containing step and bolster bearings." As we now understand the patent, it is difficult to examine the claims by the aid of the language of the specification, and say that the patentee did not describe, and did not intend to describe, in claims 2 and 3, as an indispensable portion of his invention,

the supporting tube, which contained in some of its parts both bolster and step bearings, and thus constituted a combined bolster and step. He seems to have tied up his patent to this method of construction, and thus to have permitted the defendants to take the vital part of his invention, without infringement of the claims of the patent. The order of injunction pendente lite is reversed, with costs.

RYNEAR CO. v. EVANS.

(Circuit Court, S. D. New York. November 12, 1897.)

1. PATENTS—INVENTION—SWAGING METAL ARTICLES.
   In view of the prior state of the art, there is no invention in applying the process of swaging or striking up metal blanks into articles of manufacture to the making of artificial tooth crowns or caps.
2. SAME.
   The Rynear patent, No. 305,238, for an artificial metal tooth-crown cap struck up from a blank by dies, is void for want of invention.

This was a suit in equity by the Rynear Company against George Evans for alleged infringement of a patent for artificial metal tooth crowns or caps. Final hearing.

James C. Chapin, for complainant.
Francis Forbes, for defendant.

COXE, District Judge. This is an equity suit for the infringement of letters patent No. 305,238, granted to Moses Rynear, September 16, 1884, for an artificial metal tooth-crown cap. The specification states that prior to the alleged invention metallic tooth crowns had been constructed by fitting a band around each root at its upper end. After being fitted to the contour of the root the band was removed and soldered, forming a ring. The top or grinding surface of the tooth was subsequently soldered to the ring. After pointing out the disadvantages of this mode of procedure the patentee states that the object he has in view is to facilitate the setting of crowns in a more expeditious and less costly way by providing dentists with "metallic caps" already formed in the shape of artificial teeth so that, having selected a cap of the proper size and shape, it can easily be fitted to the root. The alleged invention consists "in the peculiar cap as a new article of manufacture" made entirely of the same piece of metal "without seam or joint." The drawings show six figures representing the blank from which the cap is stamped, the completed cap, and the intermediate stages of stamping and drawing.

The patentee says:

"I am aware that it has been proposed to make cup-shaped sockets or hollow shells in the form of human teeth for forming artificial tooth crowns; but such crowns have been made in two pieces, as before explained, or they have been formed in one piece by cutting and bending sheet metal into shape, and completed by soldering meeting edges. Both these forms, however, possess the disadvantages already explained. I am not aware that a seamless metallic cap in the shape of a natural tooth has before been produced and used for forming an artificial tooth crown. What I claim is: As a new article of manufacture,