The infringement is not seriously contested, and seems plain. The invention is thus shortly described by the complainant:

Prior to the invention of Osgood, dredgers or dredging machines were of two general classes only,—those which were capable of using a scoop bucket only, and those which were capable of using a clam-shell bucket only; the two forms of buckets being designed for the digging of hard and soft material, respectively. Osgood's invention consisted in taking either one of these old forms of single machines, and adapting it to use either a scoop or a clam-shell bucket; thus making a convertible dredger of it, or one having a dual capacity.

This result was accomplished in the following manner: The boom or crane in the two forms of machine formerly in use differed essentially only in that each contained means by which only one of the two forms of bucket could be attached thereto; and the patentee conceived and carried out the idea of attaching to one and the same boom both supporting and guiding devices, so that one machine could thus perform, successively and alternately, the functions which had been theretofore separately performed by two machines. This, I am forced to conclude, is simply an aggregation, and not a combination, and does not involve invention. It is true, indeed, as urged by the complainant, that there may be a true combination in which different parts perform different and separate functions. I shall not discuss the cases which establish this rule, further than to say that they all require a new result, or an old result in a new way, as a consequence of the combination. In this invention no new result is accomplished, no new method of operation is perceived, and the parts do not co-operate by contributing to a common end. The function and operation of the machine when either bucket is attached is exactly the same as it would be if the means for attaching the other bucket were not present. In short, here is no new mechanism, no new method of operation, and no new result. The bill must be dismissed, with costs of the respondent.

SAMPSON v. DONALDSON et al.

(Circuit Court of Appeals, Eighth Circuit. September 2, 1895.)

No. 620.

PATENTS—INVENTION—VALVE-RESEATING TOOL.

The Wright patent, No. 400,989, for improvements in valve-reseating tools, in which the only change from previous devices was in substituting for a disk-shaped file, with a continuous cutting surface, a file having a broken or interrupted surface, which enables it to clear itself of the filings, so as to prevent clogging or "chattering," is void for want of invention.

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

This was a suit in equity by Clara E. Sampson against William Donaldson, Lawrence S. Donaldson, and William S. White, copartners as William Donaldson & Co., for alleged infringement of a patent relating to valve-reseating tools. The circuit court dismissed the bill (62 Fed. 275), and complainant appeals.

P. H. Gunckel, for appellant.
A. C. Paul (C. G. Hawley, on the brief), for appellees.
Before CALDWELL, SANBORN, and THAYER, Circuit Judges.

SANBORN, Circuit Judge. This is an appeal from a decree dismissing a bill brought for the infringement of the first claim of letters patent No. 400,989, issued April 9, 1889, to Pliny J. Wright, assignor of one-half to Clara E. Sampson, for improvements in a valve-reseating tool. The claim that the bill alleges was infringed by the appellees is:

"(1) In a valve-reseating device, the combination, with a revoluble shaft, of a file connected to the lower end of said shaft at right angles to its axis, of a size to cover at any one time only a part of the surface to be dressed, whereby the file is rendered self-clearing, substantially as described."

In the specification the inventor says:

"My invention relates to valve seat dressing tools, and is in the nature of an improvement on the construction shown in the patent granted to myself and Samuel Rust, of date May 29, 1883, under No. 278,478. In my former patent I used a disk-shaped cutter on the end of a revoluble tool shaft, and a guide below the tool, adapted to fit the opening in the valve seat for the purpose of centering the cutter. In practice, however, I found that this construction was imperfect. I found that the guide in the valve-seat opening could not be relied on to hold the tool shaft at right angles to the valve seat, and therefore a true surface could not be produced. I found that the disk cutter would not clear itself of the filings. I also found it impracticable to get sufficient pressure on the tool without throwing it off its center. My present invention was designed to overcome these defects, and it consists of the construction hereinafter described, and particularly pointed out in the claims. * * * The cutter, F, is of a special construction. It is in shape like the frustum of an oblong pyramid. The lower surface, f', has a file finish with diagonal grooving, and its inclined surfaces, f'', are also files with diagonal grooves. This constitutes a flat and a conical file in one piece, both of which are self-clearing. The flat file face adapts the cutter to dress the horizontal valve seats, and the conical file face to the conical valve seats. In virtue of its oblong shape, and the diagonal grooving of the file surfaces, it is self-clearing. It does not clog with the filings. * * * It will be understood that, instead of making the cutter with both the flat and the inclined file surfaces, separate cutters may be used for the two classes of seats, cutters with oblong flat file surfaces for dressing flat valve seats, and oblong cutters with inclined file surfaces for the ball valve seats. The material point is that the file surfaces on the cutter be not continuous. There must be clearing spaces between them. The cutter may take any form having a broken periphery, as, for example, a star or a cross, but a continuous surface will not clear itself."

Devices for reseating valves of the general character of that described in this patent were old when the application for this patent was made. They are shown by the following letters patent: No. 170,363, dated November 23, 1875, to Charles F. Hall; No. 278,478, dated May 29, 1883, to Pliny J. Wright and Samuel Rust; No. 352,591, dated November 16, 1886, to Harvey R. Tower; No. 371,321, dated October 11, 1887, to George W. Hollingsworth; and No. 379,351, dated March 13, 1888, to Charles P. Weiss. These letters patent, and the specification of the patent in suit, which states that Wright had formerly used a disk-shaped cutter on the end of a revoluble tool shaft to reseat valves, conclusively show that there was nothing new in "the combination, with a revoluble shaft, of a

file connected to the lower end of said shaft at right angles to its axis," described in the first claim of this patent. The only novelty there could be in the combination described in that claim consisted in the shape of the file. The claim declares that the file shall be "of a size to cover at any one time only a part of the surface to be dressed, whereby the file is rendered self-clearing, substantially as described." The specification says: "The material point is that the file surfaces on the cutter be not continuous. There must be clearing spaces between them. The cutter may take any form having a broken periphery, as, for example, a star or a cross, but a continuous surface will not clear itself." Was there any patentable novelty in 1888, when the application for this patent was filed, in substituting a rotating file, with a broken periphery, for one, the surface of which was continuous, for the purpose of reseating valves? The sole function of the file, in a machine for reseating valves, is to dress down horizontal or conical valve seats and to render them true, so that the valves will exactly fit them. These valve seats are annular in form, and the work of dressing them down, which the file or cutter performs, is not dissimilar to that performed by any rotating file or cutter used to cut and remove solid substances. It was no discovery of Wright that a continuous file surface or a continuous cutting surface on a tool used for this purpose would clog it, cause it to chatter, and would delay and derange its work. Nor was the remedy for this evil—the use of a broken periphery or of a broken cutting surface—his discovery or invention. In the specification to letters patent No. 66,354, issued July 2, 1867, to H. N. Keables, for an improvement in gear cutters, we find the following description of this evil, and the device to remedy it:

"As cutters have heretofore been made, the cutting teeth, A, have followed each other in regular order, and at equal distances apart; and those who are acquainted with, or skilled in, the art of gear cutting, know that oftentimes the chips so clog up and crowd in between the cutting teeth and the sides of the cogs on the blank being cut as to injure the work, and often to such an extent as to derange the whole operation. In a large class of work it is very important to have the sides of the cogs cut with great precision and evenness, and it is a great source of annoyance and expense to have the work injured by the clogging or 'chattering' of the cutters. To remedy the foregoing and other objections to the old style of cutters is the object of my present invention, and which consists in leaving a clearing space, a, at regular and equal distances apart, and which distance I have found to produce the best results if arranged so as to occur after two teeth, as shown in Fig. 1. It might occur after three or more teeth, but I prefer two teeth. The result is that the cutter always runs smooth and easy, doing its work even and true, and never clogging up. The same principle could be applied with good effect to 'side' or 'slabbing' cutters, as they are called. With my cutter there is no chattering, and the work is unequaled, besides it requires less power to drive the cutter than it does to drive one of the same size made according to the old plan. The mode of using the cutter is the same as that in common use, the cutter being placed upon a revolving arbor, spindle, or similar device."

In the specification to letters patent No. 93,119, issued July 27, 1869, to A. J. Prescott, for an improved reamer, the inventor says:

"The nature of my invention consists in the construction of a reamer which is provided with grooved sides, and is so formed that it will not chatter while

at work. * * * Upon the bottom of the ball there are two beveled edges, one of which is notched, while the other is smooth. The notched edge, c, does the cutting, while the smooth one, d, serves to steady the reamer, and keeps it from chattering while at work, and also smooths the work, and keeps the dirt off of the seat. Two of the sides, e, are concave, so as to allow the chips, dirt, etc., to escape without being carried around with the ball as it turns."

In view of these clear descriptions of the device of a broken file surface or periphery to remedy the clogging that results from the use of a rotary cutter that has a continuous cutting surface, it is difficult to perceive how the exercise of the inventive faculty was required to break the periphery of the disk-shaped file or cutter in common use in valve-reseating tools, and to make this file in the form of a star, a cross, the frustum of an oblong pyramid, or in any other form in which the file surface would not be continuous, and in which the file would not clog or chatter, but would clear itself when in action. This was all that Wright did. It is all that he claims to have done. Given a disk-shaped file with a continuous cutting surface that clogs and chatters in action, and the plain statements and illustrations of the specifications and drawings of the patents to Keables and Prescott, which declare that the remedy for that evil is in a broken cutting surface, and the problem Wright claims to have solved becomes so simple that one who is not a mechanic could hardly fail to perceive that the evil would be remedied by cutting off the sides of the disk. This was all that Wright did. In our opinion, the conception and production of such a device, in view of the state of the art at the time of its production, to which we have referred, did not rise above the ordinary work of a mechanic skilled in the art. Because of its want of novelty, the first claim of the patent in suit cannot be sustained. Stirrat v. Manufacturing Co., 10 C. C. A. 216, 220, 61 Fed. 980; Atlantic Works v. Brady, 107 U. S. 192, 199, 2 Sup. Ct. 225; Vinton v. Hamilton, 104 U. S. 485, 491; Slawson v. Railroad Co., 107 U. S. 649, 653, 2 Sup. Ct. 663; King v. Gallun, 109 U. S. 99, 3 Sup. Ct. 85; Double-Pointed Tack Co. v. Two Rivers Manuf'g Co., 109 U. S. 117, 3 Sup. Ct. 105; Estey v. Burdett, 109 U. S. 633, 3 Sup. Ct. 531; Bussey v. Manufacturing Co., 110 U. S. 131, 4 Sup. Ct. 38; Phillips v. City of Detroit, 111 U. S. 604, 4 Sup. Ct. 580; Morris v. McMillin, 112 U. S. 244, 5 Sup. Ct. 218; Hollister v. Manufacturing Co., 113 U. S. 59, 5 Sup. Ct. 717; Ellbert v. Gaslight Co., 50 Fed. 205, 211. The decree below must accordingly be affirmed, and it is so ordered.

ROBERTS et al. v. PITTSBURGH WIRE CO. et al.

(Circuit Court, W. D. Pennsylvania. March 11, 1895.)

No. 22.

1. PATENTS—WIRE-ROD MILLS.
The Roberts patent, No. 392,365, for a mill for rolling wire rods, *held* void as to claims 1, 2, and 3 for want of novelty and invention; but *held* valid and infringed as to claim 4, which is for a combination of the rolls with an inclined mill floor and guides arranged therein for carrying the

loop of the wire by the combined force of gravity and the propelling power of the rolls; and *held*, further, that claim 6, for the combination of a plate fender with the rolls, must be restricted to the specific form of construction shown, and, being so restricted, was not infringed by defendants.

2. SAME—ISSUANCE OF PATENT—FALSE OATH—BURDEN OF PROOF.
Where it is sought to invalidate a patent on the ground of the falsity of the inventor's oath, the burden is upon the party attacking it to show the actual previous existence of the invention sought to be patented, and that the applicant knew of it at the time.

This was a bill by Henry Roberts, George T. Oliver, and Andrew J. Day against the Pittsburgh Wire Company and Thomas W. Fitch, its president, for the alleged infringement of a patent relating to wire-rod mills.

Bakewell & Bakewell and John R. Bennett, for plaintiffs.
Willis F. McCook and W. H. Van Steenbergh, for defendants.

BUFFINGTON, District Judge. This is a bill for the infringement of claims 1, 3, 4, and 6 of letters patent No. 392,365, granted November 6, 1888, to Henry J. Roberts, for a rod mill. The parties to this suit are Henry Roberts, George T. Oliver, and Andrew J. Day, assignees of said Roberts, complainants, and the Pittsburgh Wire Company and Thomas W. Fitch, president, respondents. The defenses are fraud, noninfringement, and anticipation and lack of patentable novelty. A proper understanding of the case renders necessary a brief resumé of the art of rod making.

In the class of rolls to which the patent relates, a billet, brought to rolling heat, is first passed back and forth through roughing rolls until it is lengthened to a bar, when it passes to a second set, and is still further lengthened. After this it enters a final series of rolls, placed end to end across the mill floor, and through which it is passed in a continuous course. On passing through the first rolls of this latter series, the rod is reflexed and passed through a second set, where it is again reflexed and passed through a third, and so on until the finishing set is reached. After passing through this, it is reeled, and undergoes the chemical action which fits it for wire-drawing operations. To obtain the best mechanical results in rolling, the roll grooves are of alternate oval and square section, so that the rod undergoes corresponding shape changes at alternate passes. From this fact, one side of the mill is known as the "oval," the other as the "square," side. During its passage the rod is fed from the delivery passes more rapidly than it can be taken up by the receiving ones, and therefore forms long U-shaped loops on the floors on both sides of the rolls. On the square side, the square section gives the rod such rigidity that it can be automatically guided from one set of rolls to the next by curved horizontal guide troughs, which are known as "repeaters." On the oval side, however, the rod is so flexible that it cannot be thus automatically guided; hence it is usual to employ "stickers in," or "tongsmen," who seize the end of the oval as it emerges from the roll, swing around and reflex and insert it for the next pass. This forms the loops *referred* to, which sometimes extend 100 feet out upon the floor, as

the rod has lengthened to upwards of 1,400 feet. The rolls are run at increased speed to take up the overfeed and prevent chilling, as it is necessary to complete the operation by a continuous process.

Prior to the patent in suit, the ordinary practice in this country was for "hooker boys" to take care of these loops. On the oval side their work was one of great risk, and their pay correspondingly high. As soon as the sticker in reflexed the rod, the boy seized the loop with his hook, and ran rapidly backwards with it, to prevent kinking. The rapidity of travel of such a flexible loop, its red-hot condition, and its tendency to erratic flying, made the work of these boys very dangerous, indeed. If they fell, or their feet became entangled in a loop, they were liable to be severely burned or have their legs cut off by the friction of the rapidly traveling rods. Such accidents were of frequent occurrence, and sometimes resulted fatally. The labor was essentially skilled, and, as men were not quick enough in movement, only boys could be employed. Frequent kinkings of rods resulted in making large quantities of scrap, with consequent waste. The device embodied in the patent in suit made a radical change in the process, by a method at once simple and effective. It consists of two elements. Instead of the level mill floor, an inclined one, which slopes downwardly from the rolls to the limit of loop length, is used, and with it, at right angles to the rolls, guiding troughs or channels are provided. These latter receive the primary branch of the loop formed by reflexing the rod; and the propulsive force of the delivery roll, combined with the gravity of the rod on the inclined floor, causes this primary branch to run rapidly down the floor, while the guide keeps it in a substantially straight line. It is clear a pushing force applied to a flexible oval-shaped rod will be effective only so long as the rod is kept in a straight line, and if it bends at any point, or, in the language of the mill, "breaks its back," the pushing force only serves to extend it laterally, with the probable effect of its kinking or snarling on itself. Whoever invented the device, it must be conceded its results were extremely effective in many ways. It eliminated the dangerous features of the hooker boys' work, and decreased their number. Where from five to seven skilled boys were formerly employed on the oval side alone, two workmen may now be used, and, instead of catching the loop near the rolls, as formerly, they stand or sit well down the floor, and watch to straighten out any kink, and to remove the scrap formed by kinking, or by the failure of the sticker in to catch the rod as it emerges from the rolls. The result is less danger to the men, less expense to the manufacturer in wages, and less liability for damages resulting from accidents. At the same time it has enormously increased the output. Mr. Fitch, the president of the respondent company, says that by its use in a former plant he managed the output was increased 33½ per cent. In the Carnegie mill, a correspondingly large or larger increase was shown, while the respondents show that since this device has been used in their plant they have turned out as much as 4,200 tons per month, as against 1,800, the highest product under the old system. The percentage of scrap in their plant was reduced from 2.5 per cent. to 1.42. They have given

the data by which they figure a saving of some $43,000 a year in their plant from this device, while Mr. Fitch estimated that the device in connection with the Braddock mill, which he was then managing, was worth from $15,000 to $20,000 a year. These data, however, are qualified by the fact that improved methods of rolling, increase of power, capacity of reels, and other factors enter into these estimates; but this far we may safely go: that this device enabled manufacturers to successfully handle the increased output resulting from these other improvements. Now, four, five, and even six rods go through the rolling process simultaneously where formerly there were only one or two. Several loops travel down the same channel at once, overlapping each other, but without any consequent tangling or interference. The device went into rapid and very general use in many rod mills in the United States.

An additional feature of the device was the guard or fender plate, which consisted of an ⌐ shaped appliance placed on the oval side near the rolls and in the pathway of the secondary branch of the loop. Its object was to prevent the rear end of the rod from flying up and about, as it entered the rolls, and striking the sticker in.

Infringement of the first, third, fourth, and sixth claims of the patent granted upon this device is alleged. These claims are as follows:

(1) "In a wire-rod mill, the combination, with the main mill floor, having an inclined surface which extends in a plane transversely to the rolls, substantially as described, of a series of rolls arranged on different lines of feed, whereby the propelling force of the rolls and the gravity of the loop are utilized to cause the loop to travel freely over the floor, substantially as and for the purposes specified."

(3) "In a rod mill, the combination, with two sets of rolls arranged on different lines of feed and the mill floor, of an open sunken guide trough or channel arranged on the delivery side of the primary rolls, and leading therefrom, for the purpose of guiding the primary branch of the loop, substantially as and for the purpose specified.

(4) "In a wire-rod mill, the combination, with the main mill floor, having an inclined surface extending in a plane transversely to the rolls, substantially as described, of a series of rolls arranged on different lines of feed, whereby the propelling force of the rolls and the gravity of the loop are utilized to cause the loop to travel freely over the floor, and a guide extending along the said inclined main floor transversely to the delivery side of the primary rolls, and adapted to guide the primary branch of the loop, substantially as and for the purposes specified."

(6) "In a rod mill, the combination, with the rolls, of a plate fender in the line of the feed, substantially as shown and described."

These claims, for the purpose of our present consideration, may be said to be—First, the broad claim of an inclined floor of a certain functional capacity, in combination, as embodied in the first claim; second, a like claim of a sunken channel of a certain functional capacity, in combination, as embodied in the third; third, the combination of an inclined floor and a guide of a certain functional capacity, in combination, as embodied in the fourth; and, lastly, the claim for the plate fender, in combination, as embodied in the sixth. To these claims the respondents have pleaded, as noted above, certain defenses peculiar to separate claims, and a general defense involving the validity of the entire patent. We will consider these questions seriatim.

Mr. Roberts says his invention was made in 1887, and was first used in complainants' mill in November of that year. Is he entitled to the broad generic claim, in combination, of an inclined floor of certain functional capacity as embodied in his first claim? While we are of opinion, as will hereafter be noted, that his device is one of great merit, and the fourth claim, for an inclined floor in combination with a guide, must be sustained, yet, in view of the prior state of the art, we are just as clearly of opinion that he is not entitled to the first claim allowed him by the patent authorities. The inclined plane which he therein claims has, outside the combination, but two limitations, to wit, inclination transversely to the rolls, and a functional capacity whereby the loops are caused to travel freely over it by their own gravity and the propulsive power of the rolls. Was the prior art so barren of advance in these directions as to justify this sweeping claim? We think not, and that such a claim must be denied, particularly in view of the advance shown in a German publication, noted below; the McCallip patent, No. 331,516, of December 1, 1885; and the Lenox patents, No. 351,836, of November 2, 1886, and No. 351,840, of same date.

In 1885, two years prior to the alleged date of Roberts' invention, there was printed by Arthur Felix, in the city of Leipsig, Germany, a publication entitled "Das Eisenhuttenwesen Schwedens, Von Josef Von Ehrenwerth, K. K. A. O. Bergakademie, Proffesson in Loeben." It contained a draft and description of a mill at Damnarfvet, Sweden. The plan and accompanying description clearly show an inclined floor located transversely to the rolls (part of which are set end to end), and of such inclination that, in combination with a series of bumps or caps, the loops take care of themselves without the use of hooker boys. It is contended, indeed, that the inclined plane here shown was not such an inclined floor as Roberts made, but was a comparatively short inclined step, which guided the loop to the main floor, which was horizontal. We cannot accede to this view. The description and draft do not support it. The former says:

"The cast-iron floors on both sides of these rolling mills are inclined, and between every two sets of rolls there are provided horizontal steps, rounded towards the outside. *By this arrangement, the hooker boys are entirely done away with, since the wire loop, in consequence of the inclination of the floor itself, draws or bends outwards, and hereby is perfectly conducted or guided by the steps.* But it is easy to understand that this arrangement is practically only applicable where the rolls (calibers) are arranged in one line and the pairs of standers (rolls) follow one another. It gives, besides the advantage of a saving of labor to the process of rolling, a finished aspect."

It will be noted, the inclined portions are spoken of as "floors on both sides" of the rolls, "are inclined," "horizontal steps" "are provided," and are "rounded towards the outside." To read this intelligently, these steps must be placed on the "floors on both sides," and, in the absence of any limitation, they would presumably be coextensive with the length of the floor. And that the inclination and bumps extended to the loop limit is clear from the fact that an entire, completed operation is contemplated by their united functions, and not a mere guiding of the loop to a level floor, where hooker boys would be necessary to assist. The language is explicit:

"By this arrangement, the hooker boys are entirely done away with, since the wire loop, in consequence of the inclination of the floor itself, draws or bends outwards, and hereby is perfectly conducted or guided by the steps." This construction of the written description is fortified by the accompanying drawing, wherein the bumps on both sides extend to the limit of indicated floor space. Indeed, this is admitted by the complainants' expert, who very fairly says:

"I think the construction of mill which is shown in this German publication, taken in connection with the description of the same contained in said work, would naturally have suggested to a rod-mill man, on reading the same, at the date of the said publication, the combination of rolls arranged on different lines of feed, and an inclined floor common to said rolls, for the purpose of facilitating the movements of the loops, and also for dispensing with or lightening the labor of the hooker boys."

The next step in the art, in point of time, is shown by the overfeed regulator of McCallip's patent, No. 331,516, granted December 1, 1885. This device we are satisfied was intended to take care of the overfeed of the loop on the square side of the mill only, and this, in the preferred form, by an inclined plane provided with caps or bumps. But the conception of the application of the principle of inclination to an entire floor on the square side, or to, indeed, any inclination on the oval side, does not seem to have occurred to McCallip, so far as his patent shows. In these two respects it did not go as far as the German device, where we have seen the entire floor was inclined, and that, too, on both sides of the mill. In another respect, that of "longitudinal guards along the sides, adapted to prevent the metal from bending outwardly," and which was embodied in one of his claims, is found a step by McCallip in advance of the German publication. But the whole scope of the patent shows the inclined plane was an entity in itself, quite separate and distinct from the main floor, which is evidenced by the fact that the patentee contemplated it could be inclined to the floor from the repeater as shown in the drawing, or be "upwardly inclined from the repeater, or horizontal, as desired." While in his drawings he shows an inclined plane, and in his specifications says: "This regulator floor horizontally inclined from the repeater downwardly and rearwardly, while the caps are themselves horizontal. This permits the loop of working metal to pass freely over the caps, in movement rearward from the rolls," etc.,—yet the downward slope of the plane on which the bumps are placed is not a necessary functional element of the device. Indeed, the gist, so to speak, of his contribution to the art, so far as this patent is concerned, lies in the use of the caps, a fact evidenced by the name generally accepted in the trade of "McCallip's Bumps." But, for all this, his use of an inclined plane cannot be ignored in the study of the rod-mill art. Conceding, what we think in fairness must be done, that the regulator did not and was not intended to extend the length of the mill floor, nor to be used on the oval side at all, yet it would clearly seem that, during the passage of the loop along it, McCallip made use of the conjoint principles of the gravity of the loop arising from the inclination of the regulator and of the propulsive power of the rolls to automatically

take care of the loop until the level floor was reached, where the hooker boy first began to care for it. To that extent, the hooker boy's labor, as well as his danger, was abridged. And this view would seem in keeping with the implied admissions in the patent in suit, for, after the application had been rejected on citation of this patent, this disclaimer was inserted in the specifications:

"In said patent [McCallip's] is shown the usual horizontal mill floor, on which the rod loop is received and distributed by 'hooker-boys,' and a short oval feed regulator is used, in conjunction with a repeater, simply to guide the loop to the level of the horizontal floor, where it is received and drawn away from the rolls by the hooker boys; there being in said patent no inclined mill floor or other means whereby the gravity of the loop and the force of the rolls are utilized to distribute the loop after it leaves the overfeed regulator."

The next steps in the art are disclosed in the patents to Lenox, No. 351,836 and No. 351,840, both granted November 2, 1886. They concern "continuous rolls," as distinguished from the "end to end" rolls of the Roberts device. In a continuous mill, in order to complete the rolling process in one heating, the successive rolls must be run at an increased rate of speed. In order to avoid this being excessive at the last pass, it is necessary either to make it low at the first one (which allows the rod to cool) or to reduce it at some intermediate point. This latter plan Lenox carried out in the patents in question. In the first one, he separated the primary rolls by a considerable space from the secondary ones, and speeded the first secondary lower than the last primary. The rods passed from the primary rolls through a double-guide channel, and entered the "bite" of the secondary, slower-moving rolls. At once the progress of the rods was retarded, and a surplus of metal accumulated. By the propulsive force of the delivery rolls, the rods were forced from the channels, and formed lateral loops or overfeeds. These he took care of by providing on each side of the double-guided channel a large inclined table, over which the loops spread. In the second patent, he had two trains of secondary rolls, and a switch for using them separately, in connection with a different form of guide channel, and, instead of using the inclined table on both sides of this channel, he used it on but one. Of the function of his inclined table in the first patent, he says:

"The incline of the table or platform, B, laterally, permits the gravity or weight of the rod to act in assisting its distribution over the surface, and to obviate tangling of the loops as they are drawn in by the rolls of the supplemental train."

And in the second he says:

"The end of the rod, by its force of issue from rolls B [the primary ones] is caused to run along the hollow of the guide, D, and automatically enter and pass through one of the secondary trains. * * * When the end of the rod has been taken by the rolls F [the secondary train], the speed of issue at rolls B being greater than that at which it is drawn in by said rolls, the rod is caused to bow or buckle at some place between said rolls B and F, * * * and, as the bowing of the rod increases, it extends out upon the top surface of the deflecting device, K, and falls over the edge of the overhanging head, k'. This causes the rod to be forced against the outwardly curved or inclined front surface, i, whereby the rod is directed downward and outward,

thereby causing it to run out, as the overfeed increases, in a long loop, which slides down the inclined floor, L, within the pocket, M, as indicated by dotted line, w, on Fig. 1. While the rod is thus being run out upon the floor, L, the opposite end is being taken into the guide around the fender or guard plate. The action of the deflector and inclined floor, L, is to keep the overfeed expanded in a single increasing loop, and prevent the rod from becoming crossed at any portion of the loop, while the rod, which is constantly running forward at a high rate of speed, distributes itself within the pocket, M, as the loop grows longer."

A careful examination of these patents and of the construction therein employed satisfies us that Lenox recognized and positively made use of the propulsive force exerted upon the rod at the delivery roll, and that he did not make use of the gravity of the rod alone, in connection with an inclined surface, in order to take care of the overfeed. The fact that the inclined surface was laterally placed to the rod as it ran initially should not of itself exclude it, as bearing on the present question, from all consideration in reviewing the prior art; for even this condition was modified when the rod passed over a laterally extending deflector, and was "forced" (by what but the propulsive force behind it?) against the outwardly curved or inclined front surface, i, "whereby the rod is directed downward and outward," which would make the resultant of the propulsive force almost at right angles to its prior direction, a fact which will be plainly seen in Fig. 1 of the second patent. The use of the term "deflector" of itself illustrates this change of course and the direction of the propulsive force exerted in the rod. Indeed, the propulsive force of the rolls was what Lenox was seeking to countervail. He recognized it as a fact, and, by thus turning the course of the rod in the direction of the inclined plane, he availed himself of both elements in taking care of the loop. That the relative position of the table was different from that of the Roberts device, and that continuous and not end to end rolls were employed, are facts; but the Lenox patents show that Roberts was not the first to make use of the propulsive power of the rolls and the gravity of the overfeed on an inclined table. In his application, he distinguishes his device from the first patent by the fact of this different position relatively of Lenox's inclined plane, and by the asserted fact that Lenox did not make use of the positive propelling force of the delivery roll, "but, as stated by the patentee, it depends for its efficiency only on the gravity of the overfeed." Such statement we do not find in the Lenox patent. No reference is made in Roberts' specification to the second patent, nor does it seem to have been cited in the office proceedings. As to it, the complainants' expert admits that "the formation of the lateral loop in the case of the mill there shown is assisted or effected both by the propulsive action of the rolls and the inclination of the inclined overfeed floors"; and, also, that the inclination shown therein is greater than that of the Roberts floor shown in the patent in suit. In view of the advance evidenced by the foregoing devices, and that disclosed by the evidence in the cause, we are very clear in the opinion that Roberts is not entitled to the broad, generic claim of an inclined floor, in combination, embodied in his first claim, and that it must be held invalid.

In the third claim we find, in combination, a broad claim for a guide trough. Outside the combination, the guide here claimed has but three limitations: It must be open, sunken, and be placed on the delivery side of the primary rolls. Is he entitled to such a claim, in view of what had already been done in the art? It will be noted his claim of a guide is not confined to an inclined floor, or to either of the two sides of a mill. The patents of Lenox had shown the feasibility of open channels in a continuous mill, and, in the same character of mill, McCallip, in his patent, No. 277,044, of May 8, 1883, has disclosed the use of an "open trough or gutter-shaped box" placed below the level of an accompanying overflow horizontal table. In his patent, No. 331,516, of December 1, 1885, McCallip had shown on the square side of an end to end mill a form of open channel which, while not sunken in a strict sense, because at intermediate points its bottom was flush with the plane, yet, in effect, was sunken at the points where the bumps were placed. That its purpose was to control the primary branch of the loop is explicitly set forth in his patent. He says:

"The two sides of the metal loop fit, respectively, in the two corresponding channel guides, g, and are conducted longitudinally along the same, while the curve of the loop slides along the regulator floor in rear of said cap. The two sides of the latter thus constitute guards to prevent the sides of the loop from bending towards each other, as is their predominant tendency. The flanged sides of the regulator serve as side guards to prevent any outward bending of the loop, and thus the latter is maintained straight, and has movement along the length of the regulator free from tangling."

As bearing on the guide function disclosed by this patent, the views of complainants' expert, as shown in the following questions, are pertinent, to wit:

"Q. Do you mean to say that the construction of the McCallip overfeed regulator is not such that the guide channel in it controls the movement of the primary branch of the loop perfectly as it runs down the incline, so that it can neither expand unduly nor draw in or contract unduly? A. No. In the device shown, there is no doubt that the channel will prevent the primary branch of the loop from running either out or in. Q. In that respect, it operates precisely like the guide channel of the Roberts patent in suit, does it not? A. To a certain extent it does, especially in the case where only one loop is being rolled. If more loops than one were being rolled, the action would be somewhat different, owing to the rods pulling around the sharply undercut grooves which pass around the bumps; and if the channel were made long its operation would become dangerous to persons working around it. It seems well adapted to perform the function for which it was evidently intended,—of handling one loop in its passage down the pan."

Such being the state of the art, the advance made by Roberts to an open, sunken guide trough, as disclosed in the claim in question, was not such as to entitle him, in combination, to a broad claim for a sunken channel of the claimed functional capacity, without limitation to either side of an end to end mill or to any kind of floor. Construing the claim thus, as, indeed, it must be, in view of the fourth claim, we are very clearly of opinion it must be held invalid.

We now turn to the fourth claim, which embodies the gist of the invention. In a general way, it consists, in combination, of the union of the two elements we have been discussing, to wit, of an inclined floor extending transversely to the rolls, and by which the

gravity of the loop and the propulsive force of the rolls upon it are utilized, and a guide extending along such floor. It is as follows:

"In a wire-rod mill, the combination, with the main mill floor, having an inclined surface extending in a plane transversely to the rolls, substantially as described, of a series of rolls arranged on different lines of feed, whereby the propelling force of the rolls and the gravity of the loop are utilized to cause the loop to travel freely over the floor, and a guide extending along the said inclined main floor transversely to the delivery side of the primary rolls, and adapted to guide the primary branch of the loop, substantially as and for the purposes specified."

It is contended that an inclined floor was old in the art, and that guides were also old, and that their union in this claim was a mere aggregation or double use. We cannot thus belittle this meritorious device and shear it of all patentability. We have noted above its great advantages, its labor and life saving results, its multiplied output, and its economy of operation. Its substantial value to the commercial world is evidenced by the earnest contest made by both sides in this case. The proof is clear that, singly and alone, an inclined floor on the oval side of a rod mill, where a number of rods were being simultaneously rolled, would be of little, if any, advantage over the horizontal floor of the old construction. Hooker boys would still be necessary. Their work would be as skilled, and their dangers as great, if, indeed, they would not be increased, by the inclination of the floor. On the other hand, the guide channel on a horizontal floor would not automatically take care of loops of the length necessary in the manufacture of the long rods of later years. Whence has come the valued and conceded change in rod-mill operation and results, so far as the inclined floor is concerned? It consists in the blending of the two elements we have been considering. It lies in the conjoint efficiency of two united elements which, disunited, were neither of them, in themselves, efficient. It consists in a new result, due to the conjoint and co-operative action of these two elements upon each other. The inclined plane is more than the mere plane it was before the union. By its conjunction it is modified by, and co-operates with, the guide. And, on the other hand, the guide, adapted to guiding the primary branch of the loop, is not the same guide it was, but a corresponding change in its functional work results from its new relation to an inclined floor. The presence of the guide has changed and enlarged the function of the plane, and the presence of the plane has done the same to the prior function of the guide. The two, thus united, and with changed function consequent upon and from such union, conjointly unite in producing a new result, to wit, the substantially automatic care of a number of oval loops simultaneously passing over them. Far from being a mere aggregation or double use, the device is a striking example of a genuine combination. After a full consideration of the proofs, we are of opinion that the combination therein shown was not anticipated in the prior art, and that Roberts' fourth claim should be held valid, unless his patent is to be adjudged invalid on the defense of fraud in its procurement, hereinafter considered.

The sixth claim relates to fender plates or guards, and is as follows:

"In a rod mill, the combination, with the rolls, of a feed plate arranged in the line of the feed, substantially as shown and described."

As gathered from the specification, it is an angled plate, similar to an L set on its face, with its long stem somewhat depressed, thus, ⌐‾, and placed on the floor near the rolls and between the secondary branch of the loop and the sticker in. Its purpose is to control the erratic motion of the rod, and prevent it flying laterally or upwardly and striking the sticker in. In view of the length to which this opinion extends, we refrain from giving in detail our reasons therefor, but simply note the conclusion reached. Conceding, for present purposes, the device shown involved patentable novelty, we are of opinion the claim must be restricted to the specific construction shown. Thus restricted, the claim is not infringed by the respondents' fender, which is not constructed so as to prevent the end of the rod flying upward, and it is not in form or function the construction shown by complainants' patent.

This leaves for consideration a question that involves the validity of the entire patent. Conceding, for present purposes, the element of patentability, and the infringement by respondents of the fourth claim, it is still averred by them the patent is void by reason of the fraud of Henry Roberts in procuring the same; that, in making oath in his application, Roberts falsely and fraudulently stated that he did not know or believe that the device therein shown was ever used or known prior to his invention thereof, when, in fact, he had before that time seen the same invention which he sought to have patented in use at the mill of Pearson & Knowles, at Warrington, England. This is a serious charge. Fraud is never presumed. The burden of overcoming the prima facies of the patent and of proving the falsity of the oath taken is on those attacking it; and to do this they must show the actual existence of the invention sought to be patented, and that the applicant knew of it.

To do this, the respondents have taken the testimony of Thomas Morris, the manager of the mill at Warrington, England. His testimony was given in 1893, when he was in his sixty-fifth year. He says: Roberts was brought to his home in Warrington by J. J. Thompson, a metal broker of Manchester. That the same evening, between 7 and 9 o'clock, he took him through the entire works for an hour, 10 or 15 minutes of which was spent in the rod mill. That they then and since had an inclined floor on the oval side of the mill, and that over the end was a bridge or balcony, about 6 feet above it, and facing the rolls, which were 25 to 40 feet distant. The bridge hid 12 or 14 feet of the subfloor. That Mr. Roberts stood on this bridge. When asked explicitly what conversation they had in reference to the inclined floor, he said he could not remember; that he made several comments about it being a nice arrangement. He says Roberts returned a couple of weeks later, and was in the mill from 10 minutes to half an hour; that he spent an hour and a half, all told, in the entire works, that day, which was between 7 and 9 o'clock in the evening; that he went to the square side of the mill, also, during that stay. He says every part of the mill was discussed by them, but he is unable to give any details of

the discussion. He says a person standing on the bridge would not have much difficulty in seeing the loops through the niches between the iron plates. He says, from the square side, the view of the oval would be somewhat obscured by the rolls and the stickers in, but it could be seen. When asked who was the inventor of the inclined floor, he said: "I don't know. Mr. Bleckley and I put it in. I saw it at a place I was at. I saw the idea, and told Mr. John Bleckley about it."

The testimony of James Ashton, the roller in the mill, was also taken. He did not meet Roberts, and it is not clearly shown whether Ashton's testimony refers to Roberts' first or second visit. Mr. Morris told him his name. When, does not appear. He differs from Morris in fixing the visit in the afternoon, instead of at night, and says Roberts was standing for 10 or 15 minutes on the balcony, and looking down on the loops go under it. He cannot say whether Roberts went on the square side. Says from that side he can see over the rolls. He does not state what is the incline of the floor or the mode of operating the mill.

J. J. Thompson, a metal broker of Manchester, a mutual friend of Roberts and Morris, proves that he took him to Warrington in 1885, and introduced him to Morris; that he himself remained in the house while Morris and Roberts went into the mill, some time during the evening.

J. J. Bleckley was the managing director of the company. He did not see Mr. Roberts, but says it was reported to him by Morris that Roberts had been surreptitiously introduced into the mill; a fact which is at variance with Morris' account, as the visits testified to by the latter were open and consentible ones. He says they put an inclined floor in the mill in August, 1878; that the floor is practically uncovered and open; that it is the most prominent feature of the mill; that it is impossible for any one going into the mill not to observe it; that they have no hooker boys on the oval side; that they put the inclined floor in to avoid using them. He does not give the time, but says he invented the inclined floor himself,—a different statement from Mr. Morris', who, as we have seen, claims to have seen it elsewhere and told him of it. He says they never passed more than one rod at a time. From his testimony it also seems there were no sunken guides, but movable long sections of sheet iron were used on the floor, which prevented the loop from bending outwardly. The rolls were known as "four-high" ones, and were peculiar to this mill in their construction. They were so finely adjusted that the slack was very slight, in some of the passes at least, and that from the oval to the square side was taken up by means of this adjustment, and a novel construction in the shape of a closed vertical repeater, embodied in a patent of Mr. Bleckley, was there used. He says the total dimensions of the inclined floor were 54 by 25 feet, and the inclination 1 in 12.

W. R. Poole, an iron worker in Warrington, has lived in this country since 1882. He worked in the old Warrington mill, but never in the new or "patent mill," as he terms it. He has visited the lat-

ter. Says the slope of the floor was about 1 in 10, and fenders extended its entire length. His account of it is as follows:

"Q. Wasn't the floor on the oval side of the mill, so far as one could observe in looking at it, level, and used for piling stock upon it? A. Yes, in the Pearson & Knowles mill. Q. Then where was this inclination that you speak of? A. Right underneath the floor on which they piled the stock. Q. Did you ever go underneath the top floor to see what was the character of the under floor? A. Yes. Q. When? A. I can't exactly state the time. I have been under there. Q. What business had you in going under that floor? In other words, what was the occasion? A. Curiosity prompted me. Q. What curiosity had you in that direction? A. I was interested in the mill, and wanted to see how it was working,—how it was going along. Q. And you could not see how it was working and going along unless you went underneath, could you? A. Yes, sir. Q. How could you? A. Standing at the end of it, against the rolls. Q. But unless you were up at the far end, and standing against the rolls, you could not determine as to the character of that under floor without going underneath, could you? A. No. Q. And it was for that reason you went underneath to look at it, was it? A. Yes; and I was interested in it."

As bearing on the formation of loops, he says:

"Q. Do you know what was the length of the loops? A. Well, I tell you—I told you before it depends on the ability of the man that's working on the rolls. Q. Don't you know, Mr. Poole, that the practice of that Pearson & Knowles patent mill was to so speed the rolls as to take up the rod about as fast as it was paid out, so as to avoid the formation of loops? A. Well, yes."

In answer to this, we have on part of the complainants the testimony of Mr. Garrett, who visited this mill in 1883 and twice in 1890. His credibility has been assailed on the ground that he and complainants have mutually given testimony in aid of each other in this case and other litigation involving Garrett's patents. A careful examination of the record has not satisfied us of any bias on his part, and, for reasons hereafter stated, we think the truthfulness of his story is confirmed by acts consistent with it, and which are utterly inexplicable on any other hypothesis than the truth of what he testifies to in relation to the Warrington mill. In 1883, Garrett, who was thoroughly posted in the theory and practice of rod rolling, visited the Warrington mill. He was courteously received by Mr. Morris, and was given full opportunity to examine the rod mill, which he says he did with interest, as it was considered the finest in England. His visit was from half to three-quarters of an hour, and included a talk with Ashton, the roller, and during all the time he was in company with Mr. Morris. The peculiar features, he says, were the four-high rolls and the closed vertical repeater. He says that he stood on the double floor on the oval side of the mill, a distance of about 30 feet from the rolls, and saw the loops disappear under the floor; that the distance between the floors was about 18 inches; that neither Morris nor Ashton referred in any way to the sloping floor, and as he saw large piles of rods standing on the floor near where he stood, ready for shipment, he concluded the only reason why the under floor was used was to obtain additional floor space, a method which he had before seen employed in guide mills for that purpose. He says he saw the floor on the oval side as far as it was exposed, which was for about 30 feet; that there was noth-

ing about it that excited his curiosity; that from the square side of the four-high mill it would be very difficult for any one, however anxious, to see the shape of the floor under the balcony or top floor. He says there was nothing in the mill that suggested to him the use of an inclined floor such as is shown in the Roberts device.

This testimony is and must be of weight, not from itself alone, as coming presumably from a reliable and disinterested witness, but from the irresistible conclusions which follow from Garrett's subsequent conduct. The first sight of an inclined floor of the Roberts device seems to have impressed every practical rod-mill man with its inherent worth and novelty. He needed no explanation or argument to convince him of it. Apparently, sight was demonstration. Mr. Fitch was so impressed with it the first time he saw it that he then and there determined to introduce it into his mill, although entailing radical changes and much expense. Mr. Garrett, when he saw it, at once determined to place it in the Joliet mill, which he was then building.

While such was the—we may say, instantaneous—impression caused by a sight of the alleged copy of the Warrington mill, an impression evidenced by the subsequent acts of those who saw it, what was the effect of the Warrington mill? Garrett says it made no impression upon him. He came back to America and built a level floor in the Oliver & Roberts mill, one for the Braddock Wire Company, and another for the American Wire Company at Cleveland. The conclusion is irresistible that, whatever the slope of the Warrington floor was, it suggested to the mind of a man who was keenly alive to every advance in his special line of work no advance whatever towards such a floor as Roberts afterwards made. Not for four years afterwards, during which his attention was largely drawn to the difficulties and dangers incident to the oval side of a rod mill,—emphasized as they were by the loss of his own leg,—did such a thing as an inclined floor suggest itself to him. This testimony is emphasized by Mr. Garrett's two subsequent visits to the Warrington mill in 1890, when he went there to see if any improvements had been made. He was then perfectly familiar with the Roberts floor. He says the mill was in the same condition as in 1883, except a change in the repeater; that, while he and Morris stood on the upper floor, the loops ran under, and the latter said this was what Roberts had stolen; that he looked intently, and could find no further decline in the floor exposed to view than would naturally be required to drain the rolls and carry the loop under the upper floor; that, even after Morris' remark, he could see nothing having any resemblance to the Roberts floor. That he made no reply at the time is not in itself evidence he agreed with Morris' remark. He was not called on to defend Roberts' invention, and, in addition thereto, the evidence shows that a bitter feeling between him and Roberts had existed, and he would possibly not feel inclined to defend him.

We turn next to the testimony of the patentee himself, who admits visiting the Warrington mill twice in 1885. At that time he was an experienced man in the wire business. His account is:

That he went to England, with members of his family, for his health, and spent about 60 days of his stay in Manchester, which had been his former home. There he met J. J. Thompson, who was a personal friend for many years. That they visited several places in England together, in a social way, and, among them, Warrington. That, on the occasion of his first visit to the Warrington mill, he went to the town at the request of Mr. Thompson, and did not know there was such a mill there. That, after Thompson was through the business he had gone to transact, he said he had a friend named Morris there, and they would go to dinner with him. That after dinner Thompson proposed to Morris to take witness through the mill, which he did that afternoon. That on entering the mill he was struck by the repeaters, as he had never seen or heard of a closed vertical one before. The rolls were adjusted to such a nicety that one roll took up the elongation of the other without any overlapping of the loop. That he was in the rod mill not to exceed three minutes, and went from there to the hoop mill. That he was not on the oval side that day at all, and did not see it. That he neither saw, nor did Morris suggest to him, the existence of an inclined floor in the mill. That after tea they returned to Manchester. He says Morris and Thompson were mistaken in saying the visit to the mill was in the evening. That he returned to Warrington a second time, where he was trying to negotiate an arrangement with Mr. Carson, of the White Cross Works, for the use of Roberts' galvanizing process; and from there he went to Morris' and took dinner, and told him he would like to see the repeater working again, as he was interested in it, and had not seen enough of it. That they went to the mill, made a circuit of it through the engine house, which would take them over the balcony, and went to the place where he had stood before. That he asked if they ever had any cobbles, and Morris said they had not had one for three months, and just then one happened, and Morris was much confused over it, and the mill had to be stopped. That when they got the cobble out, and were ready to start the mill, Morris took him out, and he never saw the mill again. He says he saw nothing in the mill that suggested an inclined floor. That from the nice adjustment of the rolls he could see no necessity for a loop any further than that which might form from the man's time in catching the end to insert it in the next bite of the rolls, which would be necessarily short. He says his second visit to the mill, including 5 minutes spent in the engine room, did not exceed 10 minutes.

Mr. Roberts' subsequent acts are consistent with this testimony. He returned to America and made no change in his mill. Later he became the active manager of it. And that he continued experimenting with a view to improving the methods is witnessed, in addition to his testimony, by the patent in which he tried to conduct the primary branch of the loop in a horizontal guide, by means of a rotary shaft, on a level floor. It is incomprehensible that if he had seen an inclined floor, with guides, in substance such as is shown by his patent in suit, in successful operation at Warrington, he would have suffered two years to pass without experimenting in that direction. His subsequent acts are irreconcilable with any other

hypothesis than what he and Mr. Garrett unqualifiedly testified to, namely, that they saw nothing in the Warrington mill which suggested to them the use of an inclined floor. Nor can we overlook the fact that if a floor having the functions of the Roberts one existed in the Warrington mill since 1878, unrestricted by any patent, its capabilities have not been appreciated in its own neighborhood, for the White Cross mill still uses the level floor. The subsequent acts of Roberts cannot be reconciled with the theory of fraud here contended for. His patent must not be taken from him on mere theory or conjecture, but only on clear proof of fraud, or, as is said in Kerr, Fraud & M. 385, by reason of "facts established from which it would be impossible, upon a fair and reasonable conclusion, to conclude but that there must be fraud." Such measure of proof has not been given. The mill at Warrington was of novel construction, and its four-high rolls, its closed vertical repeater, and its fine adjustment of roll speed would naturally have attracted the earnest attention of Roberts, as it did of Garrett. They were the special features which Mr. Bleckley seems to have regarded as worthy of patenting. The restricted size of the mill space and the necessity for floor room are consistent with the suggestion that the upper floor was intended to afford such space. And this suggestion is strengthened by the established fact that it was used for that purpose. The comparatively short length of the lower floor is consistent with the suggestion that the nice adjustment of the rolls made only short loops to be cared for. Nor were the guides or fenders of the mill adapted to guide the primary branch of the loop, for they in no way restrained them from bending inwardly. Nor has more than one rod at a time ever been rolled in the mill. The proof has not convinced us that the Warrington mill was in substance the device for which Roberts afterwards sought a patent. Conceding it was, the burden of affirmatively showing that Roberts knew it to be such has not been met. At most, not more than 42 feet of the floor was exposed, and Garrett says 30. It is not shown that Roberts looked through the cracks of the upper floor and saw the inclined subfloor, as Morris suggested could be done, nor that he went under it, as Poole testified he did when he was examining it, or that he stood in front of the rolls, which Poole says was the only place from which to determine its character without going below the upper floor. Granting that Roberts did stand on the upper floor, saw the inclination in front of him, and saw the loops go under the upper floor, still this, in view of the nice adjustment of the rolls, the consequent shortness of the oval loops, and the apparent necessity for floor space, do not force us to the sole conclusion that Roberts then and there saw what he afterwards embodied in his patent. Garrett says it had no such effect on him. Roberts says the same; and their subsequent actions are more convincing still that such was the case. We have given the entire testimony our most patient and painstaking study, and our conviction is firm that the burden of proof imposed in this issue upon the respondents of affirmatively establishing fraud has not been met. Such being the case, the fourth claim must be held valid.

This leaves the sole remaining question, do the respondents infringe? The proofs show they have an inclined mill floor set transversely to rolls arranged on different lines of feed. On this floor are cast-iron sunken guides extending transversely from the delivery side of the primary rolls. The floor and guides are of such functional capacity that the loops travel automatically by force of their own gravity and the propulsive power of the rolls. Infringement of the fourth claim is established. A decree to that effect may be prepared.

BOWERS v. SAN FRANCISCO BRIDGE CO.

(Circuit Court, N. D. California. August 5, 1895.)

1. PATENTS—FAILURE TO PAY FINAL FEE—SECOND APPLICATION.
   Under Rev. St. § 4897, providing that any person having an interest in an invention for which a patent was ordered to issue on the payment of the final fee, but who fails to make the payment within six months from the time at which it was allowed and notice thereof sent to the applicant, may, within two years after allowance of the original application, make an application for a patent for such invention, the same as in the case of an original application, but no person shall be held responsible in damages for use of anything for which a patent was ordered to issue under such renewed application prior to the issue of the patent, the second application is not limited to what was allowed in the first patent, but may embrace the whole invention, if this be greater than that allowed.
2. SAME—INJUNCTION.
   Injunction pending suit for infringement of patent will not be granted, notwithstanding a judgment for complainant in a suit against another person for infringement of the patent (where defendant is responsible), and evidence and patents (claimed to anticipate plaintiff's) which were not introduced in the former case, have been introduced, the effect of which was submitted to a jury, in an action at law between the parties, resulting in a disagreement of the jury.

Suit by Alphonzo B. Bowers against the San Francisco Bridge Company.

John H. Miller and John L. Boone, for complainant.
M. Delmas and R. Percy Wright, for defendant.

McKENNA, Circuit Judge (orally). This is a suit in equity for the infringement of certain letters patent, and a preliminary injunction is sought. The motion for the latter is made upon the bill and an affidavit of plaintiff and the opinion of this court in Bowers v. Von Schmidt, 63 Fed. 572, and certain testimony taken therein. It is opposed by the answer of defendant, denying the allegations of the bill, and an affidavit of the president of defendant, in reply to the affidavit of Bowers Company, and the record of proceedings in the patent office. The bill alleges that the plaintiff was the first inventor of certain dredging machines, machinery, and appliances, which are described, and that he applied, on the 9th day of December, 1876, for a patent, and, after proceedings had, a patent was ordered to be issued, on the 18th day of April, 1877, upon the payment of the final fee. It is further alleged that the claims which were allowed—