using the Dobson balls to hold it in place, and the cork packing to make a tight joint. The cam of this patent is but a reproduction of the Dobson cam, so far as I can see from the drawings, except that the cam face may be a little more inclined,—a little more 'cammy,' if I may coin a word to describe the difference. But the question of too much cam, or whether any cam is necessary, depends largely upon the shape given the balls. If the arch of the ball is high, it is obvious that when it is placed in an inclined position, as it must be to lock the lid closely, the ball itself will furnish cam enough, so that a straight button might only be required to press home the lid. If the ball arch is low, then some cam shape should be given the button to secure the requisite amount of pressure to the lid.

"With all due respect to the patent office, I must say that it seems to me all these patents in suit, as well as others in this record, were very improvidently issued. They may cover improvements in this class of churns, but all improvements do not involve or imply invention. These patents are void for want of novelty, and the suit is dimissed for want of equity."

Banning & Banning & Payson, for appellants. L. L. Morrison, for appellee.

Before GRESHAM and WOODS, Circuit Judges, and BUNN, District Judge.

PER CURIAM. The decree appealed from is affirmed upon the grounds stated in the opinion of the court below.

HOLLOWAY v. DOW et al.

(Circuit Court, D. Indiana. March 13, 1893.)

No. 8,497.

- 1. PATENTS FOR INVENTIONS-INFRINGEMENT-OFFSETTING LOG CARRIAGES. In letters patent No. 279,537, granted June 19, 1883, to Carter & Seeley, for an offsetting log carriage for sawmills, whose object was to prevent the cut surface of the log from coming in contact with the saw during the backward motion of the carriage, claims 1 and 2 were for a carrying frame, slightly narrower than the trucks on which it was mounted, and adapted to slide transversely on their axles, with a draft beam, to which was attached the mechanism for moving the carriage longitudinally towards the saw in the operation of cutting, such beam being adapted to have a slight longitudinal movement in relation to the carriage, and being so connected by links with the carrying frame that this motion would produce the transverse motion of the carrying frame on the axles. *Held*, that these claims are not infringed by a carriage in which the transverse motion is produced by the action of spiral cam plates carried by a swinging arm actuated by the rotation of the axles of the trucks.
- 8. SAME-ANTICIPATION.

Claim 3 of this patent was as follows: "In a sawmill, the combination with a saw, a fixed track by the side of the saw, and a series of trucks, or their equivalent, adapted to move along said track, and occupying a fixed position transversely thereon, of a frame adapted to support a log mounted on said trucks, and adapted to have a transverse movement thereon." *Held*, that this was not anticipated by the Fox patent No. 271, reissue of No. 10,888 of 1854, or No. 60,648 of 1866, to Stearns, in both of which the offset was of the whole carriage by means of the leverage of grooved wheels, mounted obliquely, against the rails, neither being capable of such lateral motion except when the carriage was in motion longitudinally, especially as both machines were uncertain in their operation, and never came into general use. 4

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8. SAME-CONSTRUCTION OF CLAIM-INFRINGEMENT.

This claim is complete in itself, and covers a combination adapted to operate in offsetting and insetting whenever power is properly applied to give it motion; and hence it is infringed by a similar combination of frame and trucks, to which the power is applied, not by the draft beam of the first two claims, but by a swinging arm, operated by the rotation of the axles.

In Equity. Suit by Lewis W. Holloway against Thomas Dow and William P. Brown for infringement of a patent. Decree for complainant.

V. H. Lockwood, for complainant. Coburn & Thacher, for defendants.

BAKER, District Judge. The bill in this case is filed by the complainant to obtain relief for an alleged infringement of letters patent No. 279,537, granted to James F. Carter and Thomas Seeley, June 19, 1883, to which the complainant deraigns title by deed of assignment bearing date May 1, 1889. The invention relates to an offsetting log carriage in sawmills. The defenses are want of novelty, incomplete combination, and noninfringement. The nature and object of the invention are set forth in the specifications as follows:

"Our invention relates to an improvement in the log carriage of a sawmill, and its object is to prevent the cut surface of the log from coming in contact with the side of the saw during the backward movement of the carriage. This object we attain by causing the carriage, with the log upon it, to have a slight transverse movement, as hereinafter fully explained. *A rectangular frame, a, adapted to receive and carry on its upper surface any ordinary style of head blocks, has on its under surface suitable bearings, which rest on the axles, b, b, of the trucks, c, c. The flanges of the truck fit nicely between the rails of the carriage way in the usual manner. The space between the trucks forming each pair is longer than the width of the carriage frame, a, and said frame is free to slide in the direction of its width upon the axles connecting said trucks. A beam, d, extends lengthwise beneath frame, a, having slots, e, through which the axles, b, pass, and notches, f, f, on the upper surface, through which the cross timbers of frame, a, pass. To the beam, d, the feed mechanism is connected for moving the carriage in the direction of its length towards and from the saw. Any suitable mechan-ism may be used for this purpose. We have here shown the ordinary rack and pinion, h, i. Beam, d, is not rigidly secured to the carriage frame, as is the case with the usual rack beam, but it rests on the axles, b, between the collars, j, j, a pair of which are rigidly secured to each of the said axles, the faces of the collars resting against suitable friction plates on the sides of beam, d, the effect being to prevent all lateral motion of the beam on the axle, Frame, a, is connected at intervals with beam, d, by links, l, l, of which there may be two or more, each of which is pivoted at one end to the frame and at the other end to the beam."

The specifications then proceed to describe, by reference to the accompanying drawings, the operation of their invention. The claims, so far as material to this controversy, are the following:

"(1) In a sawmill, a log carriage, consisting of a series of trucks; a frame mounted on said trucks, and adapted to move transversely thereon, and to support a log; a draft beam, adapted to move longitudinally in relation to said frame at each forward and backward movement thereof; and means for connecting said draft beam with the trucks and with the frame, whereby the frame is moved transversely by the longitudinal movement of the draft beam, substantially as shown and described. (2) The combination, with a

log carriage in a sawmill, of a draft beam mounted therewith, and adapted to have a limited longitudinal movement in relation thereto at each forward and backward movement thereof, substantially as and for the purpose specified. (3) In a sawmill, the combination, with a saw, a fixed track by the side thereof, and a series of trucks, or their equivalent, adapted to move along said track, and occupying a fixed position transversely thereon, of a frame adapted to support a log mounted on said trucks, or their equivalent, and adapted to have a transverse movement thereon, substantially as and for the purpose set forth."

These claims cover two distinct features of the log carriage described. The third covers a frame adapted to support a log mounted on a series of trucks, or their equivalent, having axles slightly longer than the width of the frame, adapted to move along a track by the side of the saw, and occupying a fixed position transversely on the track, the frame being adapted to have a transverse movement on the trucks without the movement of the carriage. The second covers the mechanism to effect the transverse movement of the frame of the carriage, and the first embraces these two features in combination.

The defendants admit the validity of the first and second claims, but insist that they do not infringe them, because the transverse movement of the frame on their log carriage is not effected by applving the feed which moves the carriage directly to an independent longitudinal, reciprocating, offsetting beam, which these claims call for. In the complainant's device the longitudinal movement of the draft beam is converted into transverse power for the offsetting and insetting the frame by means of two or more links pivoted at one end to the frame and at the other end to the draft beam, which is adapted to move longitudinally in relation to the frame at each forward and backward movement thereof, whereby the frame is moved transversely by the longitudinal movement of the draft beam. In the defendants' mechanism the transverse movement of the frame is effected by a swinging arm, mounted loosely on the axles between two friction clutch collars fastened on the latter, so that ordinarily this friction clutch will turn the arm with the axle. At the upper end of this arm there is a pair of cam plates of spiral form, and a fixed pin depending from the frame passes in between these two cams. The turning of the cam arm by the revolution of the axle through the friction clutches moves the cams along the fixed pins on the frame, and this movement slides the frame transversely on the axles until the turning of the cam arm is stopped. Stops are fixed on the carriage frame on each side of the axles, and the upper end of the cam arm strikes one or the other of these stops, and thereby its further rotation with the axle is arrested, while the rotation of the axle continues, the friction clutches between the arm and the axle permitting this movement. The range of this swinging movement of the cam arm is about a quarter turn, so that the arm is free to move with the axle in both directions about a quarter of a circle. In the defendants' carriage the lateral movement of the frame is effected by the revolution of the axles and truck wheels while moving along the track. There is no possible way of shifting the frame unless the axles and truck wheels revolve. The defendants' offsetting device can operate only with the movement of the carriage along the tracks.

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due to the revolution of the wheels in one direction or the other. It has no feed or draft bar, and the draft or feed mechanism is connected directly to the carriage frame, and not to that which shifts the frame transversely. It seems to me that the offsetting mechanism in the two carriages does not operate upon the same principle, and is substantially dissimilar. While each accomplishes substantially the same result, the mechanism to effect it is so unlike that the one cannot be said to be the equivalent of the other. The defendants' device does not produce the same result as the plaintiff's by the same principle or mode of operation. The defendants do not deny their use of the mechanism described in the third claim of complainant's patent. They seek, however, to escape liability upon several grounds going to the validity and construction of the claim.

They earnestly contend that the third claim is void in view of the prior state of the art, and that it was anticipated by the prior patents of Fox and Stearns. They also insist that it is void, because it fails to describe a complete operative mechanism. And they further contend, if the third claim is valid, it must have read into it the identical means of offsetting the frame shown and described in the patent, and hence that this claim, thus construed, covers the same combination described in claim 1, and is not infringed, for the same reason that claim 1 is not infringed. The patent, with each of its claims, is prima facie valid. It is a solemn grant, issued by competent authority under the sanction of law. It is a muniment of title. He who would overcome it must do so by clear and convincing evidence. The court, in Coffin v. Ogden, 18 Wall. 120, on page 124, says:

"The invention or discovery relied upon as a defense must have been complete, and capable of producing the same result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him."

"The grant of the letters patent is prima facie evidence that the patentee is the first inventor of the device described in the letters patent, and of its novelty. Smith v. Vulcanite Co., 93 U. S. 486; Lehnbeuter v. Holthaus, 105 U. S. 94. Not only is the burden of proof to make good this defense upon the party setting it up, but it has been held that every reasonable doubt should be resolved against him." Cantrell v. Wallick, 117 U. S. 689, 6 Sup. Ct. Rep. 970.

It is thoroughly settled that practically useless and inoperative devices do not anticipate or invalidate a subsequent patent for a successful device. A prior device, which will not satisfactorily perform the work of the patented device, is not a substantial anticipation of the patent.

While a number of patents were in evidence and called to the attention of the court to show the prior state of the art, only two were claimed to anticipate the complainant's invention. These are the Fox patent, No. 271, reissue of No. 10,888 of 1854, and the Stearns patent, No. 60,648 of 1866.

The Fox device was the first offsetting log carriage. It consists of a frame mounted on stub-axled wheels, which on one side of the carriage run on an inverted V-shaped rail and on the other side on a flat rail. Its construction and principle of operation are described in the patent as follows: "The journals of the wheels, B, are set in the box, C, (shown in Fig. 5 and Fig. 6,) and as they move forward they move up the inclined plane, f, and set the carriage up for the cut, while on the return for gigging back the journals run into the opposite extremity of the boxes, and, pressing against the inclined plane, f, move the carriage sufficiently from the saw to admit of the carriage running rapidly back without interfering with the saw."

In this device the axles are stubs mounted in boxes no longer than the axles, so that in a state of rest the frame is incapable of transverse movement. The offset of this carriage is necessarily dependent upon the movement of the wheels, which causes a leverage of the wheels on the track rails. Fox did not conceive the idea embodied in the complainant's third claim, namely, of a frame so adjusted on trucks mounted on long axles as to be adapted to have a free transverse movement thereon, independently of the movement or leverage of the wheels. The Fox device necessarily required great power to effect the offset, and in the friction of the parts probably as much power was lost and wasted as was utilized. The evidence shows that it never went into practical use. While the demand for some suitable offsetting device was constant and pressing, the Fox device was wholly unfit and inadequate to meet it.

The Stearns patent was the next offsetting log carriage. It had the frame mounted on stub axles, and the inside rail was inverted V-shaped and the outside one was flat, as in the Fox patent. Its construction and operation are described in the patent as follows:

"The carriage wheels, a, a, on the outside flat track, b, are hung differently from the wheels, a, a, on the inside of track, b. The wheels, a, a, are hung on axles, c, c, placed a little out of right angles with the slide frame of the carriage, so that they are set with an inclination slightly oblique with the wheels of the right track, as shown in Fig. 3. The wheels, a, a, are run on the inside track, and are hung at right angles with the frame on axles, c, c, but the axles are shorter than the inside of the boxes in which they run, as shown in Fig. 4, allowing the wheels to shift a little from side to side. It will be observed, also, that the journals of the axle, c, c, on the wheels, a, a, on the outside flat track, fill the boxes at their end, and have no side play. By this arrangement of the wheels of the carriage it will be seen that the front and rear wheels, a, a, on the V-track can shift a little out of line with each other, while the movement is still in parallel lines, allowing the oblique wheels, a, a, on the flat track to incline the carriage inwards towards the saw when the motion is reversed for gigging, by which the log is offset from the saw, and is relieved of friction."

It will be seen that in this device the offset is caused by allowing the wheels to shift a trifle from side to side. The front and rear wheels on the saw side of the carriage can shift a trifle out of line with each other, while their movement is still in parallel lines. Each wheel on the same side can shift differently, and every wheel in the carriage is independent of every other. In a state of rest, it is incapable of lateral movement. In the Stearns device, as well as in the Fox, the offset cannot be effected independently of the revolution of the wheels, which causes a leverage on the rails. The objections to this device are as serious as those to the Fox device. The evidence in the record shows that its defects were so great that it was used very little, if at all. It wholly failed to meet the growing demand for an effective and reliable offsetting mechanism. All the remaining patents, with a single exception, which were issued after the Stearns patent in 1866, and that to complainant's assignors in

1883, exhibit frames mounted rigidly on wheels set at a slight angle to their line of movement, causing the carriage to press towards the saw when the log is being fed, and to press from the saw when gigging back. The exception was where the carriage was so constructed that the outer wheels were made to gig back on a lower track, and thus throw the surface of the log from the saw. None of these patents anticipate the combination or device described in complainant's patent, and claimed in the claim under consideration.

All the devices prior to complainant's, with the exception above noted, effected the offset by the leverage of the grooved wheels All carriages offsetting by the leverage of the against the rails. wheels caused severe pressure against the rail, which was destructive of both rail and wheel. These devices were uncertain in movement and operation. They were incapable of making a positive, quick, and uniform offset. The Fox device was also practically useless, because the weight on the stub axles would cause them to wear a seat below and at their ends in a short time. For these and other reasons none of these prior inventions were useful or practically operative, and none of them were introduced into general use. The combination covered by the third claim of complainant's patent has proved its novelty and utility by its general use in log carriages constructed during recent years. It is true that the invention involved in this claim is simple, but it is sufficient to say that the manner of combining the elements in the claim is undoubtedly novel and useful, and turned failure into success. "Under such circumstances, the courts have not been reluctant to sustain a patent of a man who has taken the final step which has turned failure into success. In the law of patents it is the last step that wins." Washburn & Moen Manuf'g Co. v. Beat 'Em All Barbed Wire Co., 12 Sup. Ct. Rep. 443; Loom Co. v. Higgins, 105 U. S. 580.

It is insisted that the combination covered by the third claim is incomplete. It is a general rule of patent law that a subcombination, or any combination adapted to operate and produce a useful result when power is properly applied, can be secured by a separate claim or a separate patent. The power or mode of applying it is never stated unless it is peculiar. Walker on Patent Law (section 117) says:

"In cases when the description sets forth an entire machine, the applicant may lawfully make a claim coextensive with the description, if the machine as a whole possess novelty. But such a claim ought seldom to be the only one in a patent, because, for reasons stated in the chapter on infringement, it can, in most cases, be readily evaded. The proper practice is to fix upon the new parts or new subcombinations which the described machine contains, and to make a separate claim for each of these combinations. Indeed, the applicant may, if he will, apply for and receive a separate patent for each of those parts and combinations. In either way the rights of the inventor may be secured, because it is a rule of infringement that a patent is infringed whenever any one of its claims is violated. To secure a particular part of a machine, a claim must specify that part; and to secure a particular combination of the parts of a machine, a claim must specify all of those parts, and the description must explain their joint mode of operation, and must state their joint function. And a combination may be claimed separately, though it cannot do useful work separately from the residue of the machine or apparatus of which it forms a part."

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This claim covers a distinct group of elements, adapted to operate if power is properly applied, either through the mechanism described in complainant's patent, or through any other mechanism adapted to convert longitudinal motion into transverse power. The following cases more or less directly support this view of the claim: Machine Co. v. Murphy, 97 U. S. 120; Hyndman v. Roots, Id. 224; Bates v. Coe, 98 U. S. 31; Imhaeuser v. Buerk, 101 U. S. 647; Wicke v. Ostrum, 103 U. S. 468; Topliff v. Topliff, 12 Sup. Ct. Rep. 825; Loom Co. v. Higgins, 105 U. S. 580; Fuller v. Yentzer, 94 U. S. 299; Robertson v. Blake, Id. 728. The combination covered by this claim is complete in itself, and is adapted to operate in offsetting and insetting whenever power is properly applied to give it motion. It is new and useful, and a distinct advance over all former devices. As such it is entitled to the favorable consideration of the court. National Cash Reg. Co. v. American Cash Reg. Co., 53 Fed. Rep. 367; Brush Electric Co. v. Electric Imp. Co., 52 Fed. Rep. 965. The defendants' mechanism substantially embodies the combination of elements embraced in the complainant's third claim. It is true that they employ improved mechanism for communicating a transverse movement to the frame of the carriage; still an improver cannot use the improved machine. Decree for complainant.

LALANCE & GROSJEAN MANUF'G CO. v. HABERMAN MANUF'G CO.

(Circuit Court, S. D. New York. February 10, 1893.)

PATENTS FOR INVENTIONS—INFRINGEMENT—METAL SPINNING MACHINERY. Letters patent No. 286,115, granted October 2, 1883, to Jules Chaumont for machinery for sheet-metal spinning, was for a device in which a rotating mold chuck was mounted within the vessel to be spun eccentrically on a rod holding the vessel against the head stock, which had a rim for holding such vessel, and a spinning roller mounted on a slide outside, and movable by hand screws to press the metal of the rotating blank inwardly to and along the rotating mold chuck in forming vessels with contracted mouths. *Held* that, as all the elements are old, and only the combination novel, the patent is not infringed by a device in which the rotating mold chuck is mounted separately outside the vessel, having a spinning roller within movable by hand screws to press the metal of the rotating blank outwardly against the rotating mold chuck in forming vessels with bulged sides.

In Equity. Suit by the Lalance & Grosjean Manufacturing Company against the Haberman Manufacturing Company for the infringement of a patent. Bill dismissed.

Arthur v. Briesen, for orator. Robert N. Kenyon, for defendant.

WHEELER, District Judge. This suit is brought upon letters patent No. 286,115, dated October 2, 1883, and granted to Jules Chaumont, assignor to the orator, with four claims for machinery for sheet-metal spinning. The specification, referring to a prior application, states:

"I have shown and described a sheet-metal vessel, formed without seam by spinning, having a greater diameter at its base than at its mouth; and my