and he concedes practical superiority to the Steventon & McGrath method of supplying the troughs with water. The first claim reads:

"(1) A feed and water trough for stock-cars, combined with the pipe or conduit which supplies its water, and arranged to be turned into position for feeding the stock, and out of such position for emptying the contents of such trough, by the same pipe or conduit, essentially as herein set forth."

If this claim covers anything that is patentable, it must be found in the method or means of getting the water into the hollow shaft, and conducting it therefrom into the troughs, and, thus construed, it is not infringed. The fourth claim reads:

"(4) The combination, in a stock-car having rotatable feed and water troughs turned into and out of position by the conduits, E, by which they are supplied with water, of fixed pipes, G, G^2, connecting with said conduits, and the elevated reservoir, F, whereby the movable trough conduits form extensions or continuations of supply-pipes fixed upon the end of the car."

The fourth claim is for the combination of troughs, rotated in and out of position by the supply pipe, with fixed pipes, G, G^2, at the end of the car leading from the elevated reservoir, so that the rotatable trough-conduits form extensions of the fixed supply-pipes. If the manner of connecting the fixed pipes having unlike diameters, with the tank and the rotatable troughs, involves invention,—and in view of the prior art I do not say it does,—the defendant's car does not infringe, as these features are not found in it. Both the first and fourth claims of this patent are for troughs rocked into and out of position by the same pipe or conduit that supplies them with water, and the defendant's car contains no such pipe. On the contrary, its troughs are supplied with water through a fixed pipe, with branches running separately to the troughs. The bill is dismissed for want of equity.

POPE MANUF'G CO. OF CONNECTICUT *v.* CLARK.

(*Circuit Court, D. Maryland.* March 21, 1891.)

1. PATENTS FOR INVENTIONS—INFRINGEMENT—VELOCIPEDE PEDALS.
Claims 1 and 2 of patent No. 329,851, November 3, 1885, to Albert H. Overman for improved pedals for velocipedes, *held* to be valid and to have been infringed.
2. SAME—NOVELTY—HOLLOW WHEEL-RIMS.
Claims 8 and 9 of patent No. 301,245, July 1, 1884, to Emmit G. Latta for a hollow wheel-rim, made of a single strip of sheet-metal, *held* to be void for want of patentable novelty.

(*Syllabus by the Court.*)

In Equity. For infringement of patents relating to velocipedes or bicycles.

William A. Redding and *Edmund Wetmore,* for complainant.

Thomas R. Clendinen, for respondent.

MORRIS, J. This bill of complaint charges the defendant with infringement of claims of six different patents, relating to velocipedes and bicycles. Three of these patents were withdrawn by amendments, and one was withdrawn at the hearing, leaving for consideration in this opinion the claims of two patents, which are as follows, viz., claims 1 and 2 of patent No. 329,851, dated November 3, 1885, to Albert H. Overman; and claims 8 and 9 of patent No. 301,245, dated July 1, 1884, to Emmit G. Latta.

The Overman Patent, No. 329,851. The only defense as to claims 1 and 2 of the Overman patent No. 329,851 is the want of patentable novelty. The first and second claims of this patent are thus stated:

"(1) A pedal for velocipedes, having bars located upon opposite sides of a central working bearing, and provided with wide working faces, and arranged to turn to incline the upper or exposed faces towards each other, substantially as set forth.

"(2) A pedal for velocipedes, having rectangular bars located upon opposite sides of a central working bearing, and arranged to turn to incline their upper or exposed faces towards each other, substantially as set forth."

In his specifications the patentee very fully states the nature and scope of his invention. He says:

"Heretofore pedals for velocipedes have been provided with a single turning polygonal bar, composed of an envelope of rubber inclosing a skeleton frame bearing at each end upon the spindle of the pedal. Pedals for velocipedes have also been provided with two essentially round, and sometimes fluted, bars of solid rubber located upon opposite sides of the working bearing of the pedals, and arranged to be turned, so that when one portion has become worn another may be exposed for wear. Pedals of the construction first mentioned are objectionable in that the single bar does not prevent the boot from slipping, except through friction, which does not procure a sufficient hold for safety. In this pedal also the frame of the bar forms the active or working bearing of the pedal and is necessarily made of metal which makes the bar heavy and expensive. Pedals of the type described as having two essentially round bars located upon opposite sides of their working bearings are also objectionable, for while the bars are engaged with the sole of the boot at separated points thereupon the area of contact upon an essentially round bar is necessarily small; and the surfaces in contact being in the same horizontal plane, the boot is prevented from slipping only by friction and this being insufficient to retain it in place it often slips. With the end in view of obviating the objections above stated incident to pedals as heretofore constructed, and of producing a pedal retaining the foot in place by other means than friction alone, and of durable and cheap construction, my invention consists in a pedal having bars located upon opposite sides of a central working bearing, and provided with wide working faces, and arranged to turn to incline their upper or exposed faces towards each other. By locating bars having flat bearing surfaces upon opposite sides of the working bearing of the pedal and arranging them to swivel upon their bearings, they will turn towards each other, and incline their upper or exposed bearing surfaces to meet the sole of the boot at points of contact therewith, and retain the foot in place, not only by the friction of the broad flat bearing surfaces, but also by the inclination of the same in converging planes, as shown in Fig. 1 of the drawings, whereby ease to the foot and security against slipping are secured.

Any polygonal bar offering bearing surfaces of good width may be employed in my improved pedal. The rectangular shape herein shown is commended by its provision of four bearing surfaces and its compact form."

The essential features claimed by the inventor are that there shall be broad flat bearing surfaces on opposite sides of the central working bearing, and that the bars shall swivel or turn on their own bearings, so that their surfaces shall always meet the sole of the boot, and conform to any changes in the curvature of the sole as it presses the pedal and follows its revolutions. If the round or fluted bars had been made to turn, the turning would have made them less efficient. If the flat bars had been made rigid, they would not have conformed at all to the curvatures of the sole. The Overman device is therefore distinguishable in principle from either of the preceding types of pedals. The device has proved to be of utility, and has gone largely into use. The defense of want of patentable novelty rests upon the state of the art as shown by a large number of patents put in evidence by the defendant. Among these are No. 30,369, to Williamson, and No. 143,732, to Thompson, for improvements in stirrups for equestrians. They show bars both round and polygonal, but not with broad surfaces, and which revolve; but they do not, and are not intended to present inclined surfaces to the curve of the sole, their design being merely in case of accident to allow the foot of the rider to quickly and easily slip from the stirrup. I can see no suggestion or idea of analogous use which could be obtained from these stirrup patents.

The patent of Laubach, No. 86,235, is for a single bar, turning upon the spindle of the pedal. The patents to Price, No. 243,346, and to White, No. 269,609, show the round rubber bars confined by rods, so as not to turn, and they are of the type disclaimed by Overman in his specifications. The patent to Warner, No. 282,938, shows flat rubber bars rigidly fixed in the pedal, and designed for use in bicycles where an entire revolution of the pedal is not required. The patent to Hadley, No. 313,323, also shows flat rubber bars rigidly fastened to the pedal. The English patent to Rae, No. 979, of 1878, provides for preventing the foot from slipping, and affording some elasticity, by having the rubber bars made corrugated, or with conical shaped projections, but suggests nothing like the independently rocking bars, adjusting themselves to the curvatures of the foot. The English patent to Bown, No. 369, of 1879, shows flat bars on opposite sides of the treadle, but rigidly fixed, and with no adaptability to the foot except from the elasticity of the rubber.

Nothing has been adduced by the defendant in this case to show that the state of the art was other than is frankly set forth in the specifications of the Overman patent, and I think that it appears that Overman made a distinct step in the adaptation of pedals to the requirements of improved bicycles. The utility is not denied, and the difference, although slight, appears to be important, and one of principle, not attainable by mere mechanical improvement. That it required the exercise of invention, and is patentable, I think has been successfully maintained.

The complainant acquired the title to this Overman patent on June 10, 1886, by assignment from Albert H. Overman and the Overman Wheel Company; and by agreement of that date it was stipulated between the same parties that the Overman Wheel Company should have the right, without payment of royalty, to make, use, and sell the inventions described in that patent, and that the complainant would not make, use, or sell pedals of the form then made by the Overman Wheel Company, but that the complainant and its licensees might use the form of pedals then used by them, or any other form not substantially similar to the form then used by the Overman Wheel Company. The purpose of this agreement was to prevent the parties to the agreement from imitating the style and appearance by which the forms of the Overman patent used by each were known in the trade. It is clear that the legal title of the Overman patent is in the complainant, and that the Overman Wheel Company is only a licensee. There is no doubt that the complainant is the proper party to bring suit for infringement and injunction. *Waterman* v. *Mackenzie*, 138 U. S. 252, 11 Sup. Ct. Rep. 334. The form of the pedal sold by the defendant appears to be the form which the Overman Wheel Company have the sole right to make, use, and sell under their license, but this fact affects only the question of damages, and need not now be considered.

The Latta Rim Patent, No. 301,245. The defenses as to claims 8 and 9 of the patent to Emmit G. Latta, No. 301,245, dated July 1, 1884, on application filed July 27, 1883, are want of patentable novelty and non-infringement. The eighth and ninth claims of this patent are thus stated:

"(8) A wheel-rim consisting of a single strip of sheet-metal, bent to form a hollow rim, and having its overlapping edges arranged on the outer side of the rim, substantially as set forth.

"(9) A hollow wheel-rim, composed of a single strip of sheet-metal constructed with overlapping edges secured together, substantially as set forth."

Although the application of Latta for this patent was filed July 27, 1883, it is contended that the proof establishes that his invention was perfected and exhibited in a drawing made by him as early as December, 1882. It appears, however, that prior to December, 1882, it was well known that rims for bicycle wheels must be hollow, and that they must be made with a concave on the outer side, to receive a heavy rubber tire, so that a cross-section would show a double crescent, one within the other, united at the horns. The British patent to Salamon, No. 3,689, of 1877, in its specifications thus describes such a rim:

"This hollow felloe may be made in the following manner: Take a strip of thin sheet-iron or steel of a length equal to the periphery of the wheel intended to be made, and of a breadth somewhat in excess of twice the depth of the felloe, and by means of swages or rollers convert the strip into a V-shaped trough; then join the ends, and the hoop thus formed overlay with sheet-metal, also made trough-shaped, and with its edges turned over, to lap the edges of the hoop. By soldering or brazing the parts together a strong hollow felloe will be produced. Another mode of constructing the felloe is to provide a steel tube of suitable dimensions, and to form therewith a hoop cor-

responding in diameter to the wheel desired to be made; then, by means of compressing rollers or swages, to compress the tube to the desired hollow section by forcing inwards the outer side of the tube, and thus doubling the metal upon itself. A recess will thus be formed for the elastic tire, as before, and the operation of soldering or brazing before mentioned may thus be dispensed with."

We have here as far back as 1877 a description of the two kinds of hollow rims; one made from a steel tube, the other from sheet metal, two sheets being bent, and then soldered together. In the English patent to Smith, No. 4,687, of 1877, we have a description of a rim precisely similar to Salamon's. The patentee says:

"I form the felloe of the wheel, which receives the India rubber tire, of two metal rings, each of trough-like sections. The outer ring may be semi-circular in section, and of suitable size to receive the India rubber into its concavity. The inner ring is considerably deeper in its concavity, and the spokes of the wheel pass through its bottom, and are there secured. The two troughs are connected together by their edges, so that they form, when so connected, a tubular ring or felloe, which, by its form and structure, is very stiff and light."

The next in date is the English patent, No. 4,092, of 1879, to Hawker, Puntis & Boyce, and describes a rim made of a single piece of sheet-metal as follows:

"Our improved felloe is formed of a plate of steel, rolled so as to form a groove around its outer circumference. It possesses the great advantages that it offers the greatest possible resistance with the least and simplest arrangement of metal; and, while very rigid as a whole, it gives an elasticity and springiness to the felloe which greatly reduces the oscillations caused by uneven roads. In order to give the wheel a better 'foothold' on slippery or loose tracks, we construct the rubber with two parallel ribs or divisions, bound together at the part within the felloe."

The transverse section of the rim made from this sheet of metal is thus shown in the drawing:

In the English patent to Humber, Marriott & Cooper, No. 891, of 1881, we find this statement:

"Our invention consists of improvements in the construction of cellular wheel rims for bicycles and other vehicles, and in attaching the spokes to such rims. Cellular rims are usually constructed of one or two plates of thin metal, formed into a single cell of various sectional forms."

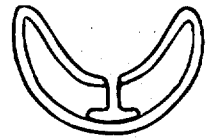
The patentees then describe their improvement, which consists in placing inside the hollow rim additional plates of metal, to act as struts or stays, to give greater rigidity to the hollow rim.

In the English patent to Challis & Challis, No. 911, of 1881, we have a description of a hollow rim rolled out of one piece of sheet metal. In the specifications it is said:

"Many plans have been devised for producing a light but strong rim for wheels. Now we produce a form which can be rolled in one piece. The rim,

when completed, is of the external form known as a U rim, but the sides are bent over so as to form a second rim inside the first one, and, after touching, are prolonged down, so as to form a midfeather between the first and second rims, and are finally bent back from each other, so as to lie upon the inside of the outer rim. The sides are brazed or soldered together where they join, and a strip can, if desired, be brazed or soldered over the joint, for extra strength and for fastening the spokes to."

The form is thus shown in the drawing:



In the English patent to Thomas Warwick, No. 4,597, of 1882, the provisional specifications for which were filed 27th September, 1882, and the final specifications for which were enrolled on 22d March, 1883, we find the rim patented to Latta, now in controversy, accurately described, and careful instructions furnished for making it out of a single strip of sheet-metal. This English patent was taken out in the United States by Warwick upon application filed June 11, 1883, and a United States patent granted to Warwick dated December 4, 1883, No. 289,733; so that Warwick's application in the United States patent-office preceded Latta's, and the grant of the patent to Warwick was prior in date to patent granted to Latta. That there was no interference declared must have been due to the fact that the rim device in Latta's specification was overlooked; possibly from being mentioned in his specification quite obscurely, in the midst of a description of other matters. But, conceding that Latta was an independent inventor, and that the proof carries the date of his invention as exhibited in a drawing back to a time prior to the date of the publication of Warwick's English patent, I have been unable to find, taking the state of the art as shown by unquestionably prior patents, that it required any invention to produce the rim claimed by Latta. There was nothing new in the shape of the rim, there was nothing new in its being made of a single strip of metal, there was nothing new in any function or advantage claimed for it. The overlapping or brazing or soldering of the two edges of a hollow tube of sheet-metal, and the strengthening that came from the two thicknesses of metal, was an idea familiar to any mechanic. The strengthening of the rim by overlapping of the joints is a feature in nearly all of the earlier rim patents.

The reason why the Warwick and Latta form did not come sooner into general use was not, I think, because it was not an obvious form, but because of the difficulties in making it without too great cost, and the doubt of its strength as made of the materials and with the tools then at hand. All the earlier patents seek to strengthen and stiffen the hollow rim by interposing folds and struts of the sheet-metal. Even now the rim most relied upon and used by the complainant itself is that made from a steel tube, and the one sold by the respondent, and claimed to be an infringe-

ment, has an increased thickness in the sheet of metal, on the inner side of the rim.

In the English patent No. 4,092, of 1879, we have everything that is shown in Latta's patent except that the two edges of the single strip of metal do not overlap, and are not brazed together. They are left free, apparently, only to obtain increased elasticity. In a manufacture such as the production of bicycles, in which there is such an enterprising determination to bring them to the highest attainable point of excellence, so that each year sees an advance in the art and in the perfection of the machines, every improvement which watchful attention can suggest is adopted, and each improvement gives value and importance to every other; but their combined success must not blind us to the fact that many of them are the result of fine mechanical adjustment, and not of patentable invention.

I hold that the first and second claims of the Overman patent No. 329,851, for rocking pedals, is valid, and has been infringed; and I hold that the eighth and ninth claims of the Latta rim patent No. 301,245 is invalid for want of patentable novelty.

It is but right to say that I have been relieved of much labor, and greatly assisted, by the thorough and able manner in which counsel have prepared this case for hearing and have presented it in argument.

THE PIETER DE CONICK.[1]

HUGHES *v.* THE PIETER DE CONICK.

(*District Court, E. D. New York.* June 2, 1891.)

PERSONAL INJURY—FALL INTO HOLD OF VESSEL—USE OF TEMPORARY LADDER.

Where libelant, a stevedore, did not make use of the fixed iron ladder belonging to a vessel in descending into her hold, but instead used a temporary wooden ladder, which broke under him, allowing him to fall into the hold, and it did not appear who placed a wooden ladder in the hatch, the ship was *held* not liable for libelant's injury.

In Admiralty. Suit to recover damages for personal injury.

H. A. McTernan, for libelant.

Wing, Shoudy & Putnam, for claimant.

BENEDICT, J. This is an action by a longshore-man to recover for personal injuries caused by falling from a ladder while going down into the hold of the steamer Pieter de Conick. The testimony shows that the libelant was employed by a regular stevedore, who had contracted to load the steamer independent of the owners or master. Access to the hold of the steamer from the deck was provided for in the construction of

[1] Reported by Edward G. Benedict, Esq., of the New York bar.