NATIONAL CABLE RY. CO. *v.* SIOUX CITY CABLE RY. CO. *ET AL.*

Circuit Court, N. D. Iowa, W. D. June 2, 1890.

1. PATENTS FOR INVENTIONS—NOVELTY—CABLE RAILWAYS—CONDUIT TUBES.

Claim 1 of letters patent 179,016, to A. S. Hallidie, for a device used in operating cable railways, was for the combination of a diagonal tube, interposed between the main tubes containing the cable, with a longitudinal slot therein connecting with the slot on the cable-bearing tubes, so that when a cable-car passed from one track to another the grip device could pass through it from the tube on one track to that on the other. *Held,* that the claim was not novel, since before the patent was issued cars were passed from one track to another by means of a track diagonally between them, and all that was necessary in the case of cable-cars was to construct under such track, and diagonally between the two cable-bearing tubes, a similar tube to conduct the grip.

2. SAME—PIVOTED SWITCH RAIL AND SPRING.

The third claim in the patent was for a pivoted switch rail and spring, so arranged as to obviate the objection of the opening made at the meeting of the slot in the branch tube with that in the main tubes. The rail was pivoted on one end, and worked freely at the other, so that the grip, in passing from the branch tube, would press it aside, the spring pressing it back into place, thus leaving the slot in the main tube unobstructed. *Held,* that the combination was novel and patentable, though there was used before a switch rail on railroad tracks pivoted at one end

and free at the other, kept against the rail by a spring, so that the flange on the wheels of cars passing in one direction on the tracks would press it from the rail, and pass through, while cars in coming from the other direction would cross on it to the other track.

3. SAME—CONDUIT—ENDLESS CABLE.

The first claim of letters patent No. 195,505, September 26, 1877, to A. S. Hallidie, which is for a combination of pulleys and a single tube, so arranged that an endlees cable can be run through it, making two cables running in different directions, is not patentable for want of novelty, since before the patent was issued a combination was known by which the same result was reached by the use of two separate, tubes.

In Equity. Bill to restrain infringement of letters patent.

The drawing to which reference is made in the opinion is as follows:

A. S. Hallidie.

Endless Traction Railway.

No. 179,016.

Patented June 20, 1876.

Fig. 1.

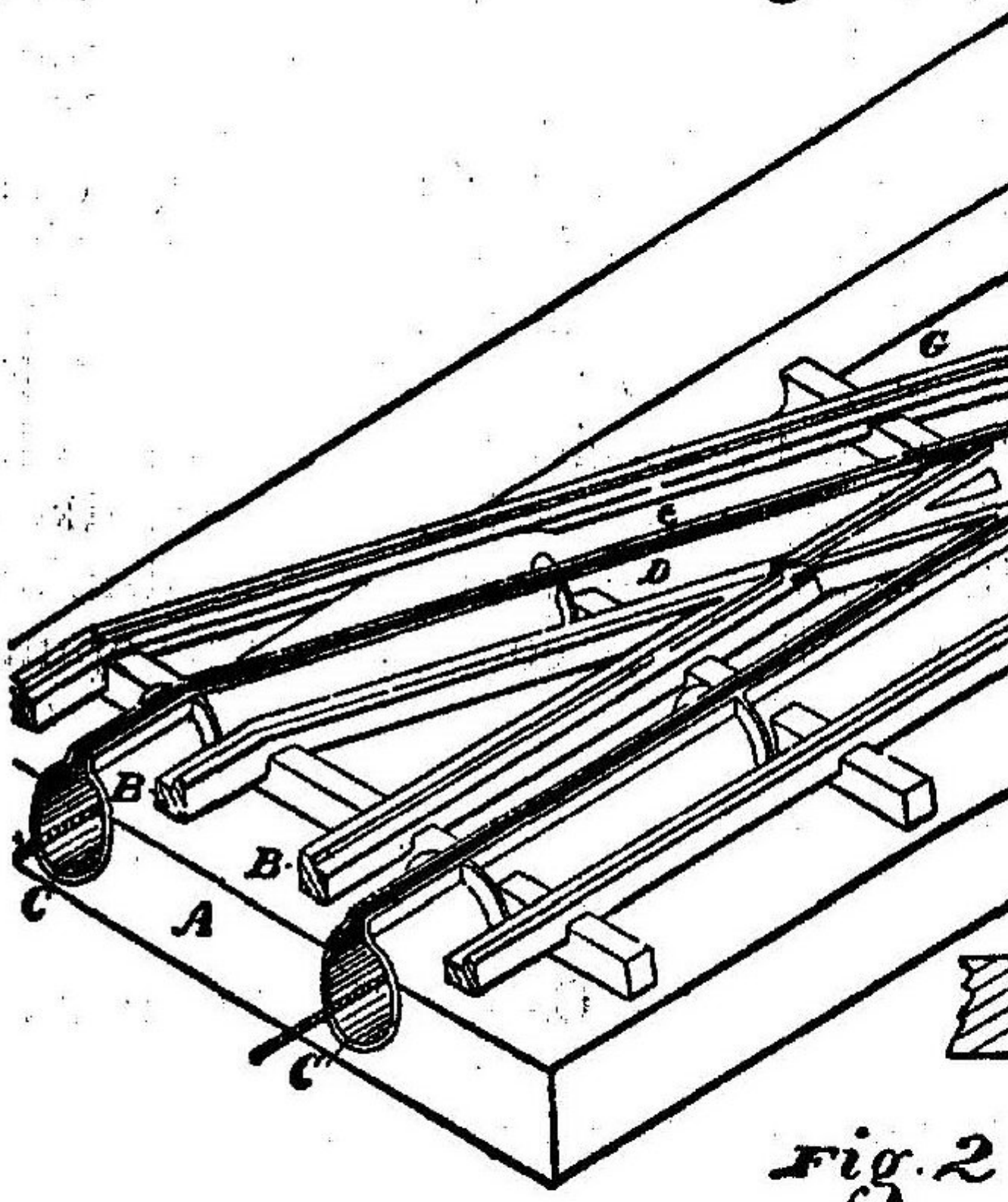

Fig. 2

Coburn & Thacher, for complainants.

Offield & Towle and *C. L. Wright*, for defendants.

SHIRAS, J. The complainant corporation is the owner of letters patent Nos. 179,016 and 195,505, issued to A. S. Hallidie, for improvements

in the mechanism used in connection with cable railways, and claims that the defendant company, in its line of railway operated at Sioux City, Iowa, is using certain features of such patented improvements, thereby infringing upon the rights of complainant. The first and third claims of patent No. 179,016 describe the devices included in this patent which, it is charged, are infringed by the defendant company. The defenses relied on are substantially that in view of the state of the art no invention is shown in putting together the combinations described in these claims, and that defendant does not infringe the same even if the claims are sustainable. Claim 1 of this patent is for the combination of a diagonal tube interposed between the tubes containing the cable or rope, with a longitudinal slot therein connecting with the slot on the rope-bearing tubes. At the date of this patent it was well known that a connection between one line of railway tracks and another could be made by using a diagonal track between the same. There is hardly a street railway or a steam railway in the country that did not show such mode of passing from one track to another. In a patent issued to William Eppelsheimer, dated August 24, 1875, No. 166,975, such use of a diagonal track in connection with a cable railway is shown, combined, it is true, with a turntable, but the diagonal track serves the purpose of passing the cable-car from one track to another. When it was sought to pass a cable-car from one track to another, it was not only necessary to construct a diagonal track for the wheels to pass along, but also a diagonal tube for the passage of the grip device; but this necessity was self-apparent. The mode for doing so, as shown in the Hallidie patent, was simply to place under the diagonal track the same opening or tube that was found in the main tracks, with the same longitudinal slot therein. This certainly did not demand the exercise of any invention, or the devising of any new mechanism, nor any novel combination of the respective parts. The well-known method of passing a car from one track to another, by means of a diagonal intersecting track, was simply applied to a cable track, and there was no display of invention in the application of the method or in the mechanism used there for, as described in the first claim.

The third claim in the patent is for the pivoted switch rail, L, and spring, Z. At the points of junction between the slot in the diagonal tube and the slot in the main rope-carrying tube the open space would be enlarged, or, to use the language of the patentee in his specifications:

"At the point where the slot in the main tube connects with the slot in the branch tube it is evident that an opening of objectionable size would be made by the meeting of the two slots. To obviate this difficulty, or, rather, objection, I employ a pivoted V-shaped switch rail, L, at the meeting angle, which is pressed by a spring, Z, so as to force its point against the side of the slot in the main tube, and across the end of the tube in the branch slot, thus closing the end of the branch slot, except from pressure applied in one direction, while it leaves the slot in the main tube unobstructed."

The novelty of this combination is attacked on the ground that substantially it appears in patent No. 1,759, issued to N. Eaton in 1840; and patent No. 44,376, issued in 1864 to Allison and Halliwell. In the

Eaton patent, issued for an "improvement in the connection of railroad switches," is shown a rail pivoted at one end, the free end being kept pressed against the main rail by a spring pressing against it. When going, in one direction the; flange of the wheel, overcoming the pressure of the spring will separate the safety rail from the main rail and pass through the opening thus created, but as soon as the wheel passes beyond the end of the, movable rail the pressure of the spring will carry the safety rail against the main rail. In the Eaton combination the wheel acts upon the free end of the pivoted rail, the same as the shank of the grip in the Hallidie combination acts upon the pivoted switch rail, L. In the Allison and Halliwell patent, which had reference to atmospheric railways, is found a shifting tongue piece or guide in the tube for the purpose of aiding in shifting the direction of the piston when the car is crossing from one track to another. These, devices, and especially that shown in the Eaton patent, show that a pivoted switch rail, combined with a spring to hold it in place, had been known long before the, date of the Hallidie patent. Yet it is not clear that the mode of the use there of was such as to preclude a claim for invention in so combining a pivoted switch rail and spring in connection with the tubes of a cable-car system as to obviate the difficulty caused by the large opening formed by the junction of the slot in the diagonal tube with that in the main tube. In view of the Eaton patent, Hallidie cannot successfully claim that he was the inventor of a pivoted switch rail, nor of a spring pressing against such rail to keep it in place, and to return it to place after, the passage of a par over the same. If, however, he has perfected a combination of these devices with the slotted tubes of the cable-car system in such form as to overcome the difficulty presented by the large opening caused by the intersection of the slot in the diagonal tube with that in the main tube, I think there is sufficient novelty and utility in the combination to sustain a patent there for. It is urged that the device used by defendant is not an infringement, because the spring used therein is not located in the position shown in the drawings attached to the patent. The patentee does not, however, in his claim, locate the position of the spring, and in his specification he states that "to obviate this difficulty, or, rather, objection, I employ a pivoted, V-shaped switch rail, L, at the meeting angle, which is pressed by a spring, Z, so as to force its point against the side of the slot," etc. The mere location of the spring is thus left open to be determined by the exigencies pf each particular situation, and the mere fact that in the drawing the spring is shown in a particular location does not confine the claim in the patent to than particular mode of applying the spring to the rail, Although the invention covered by this claim is clearly narrow in its limits, I think the claim is sustainable, and that it appears that the defendant company is using the device described in the claim, and that the allegation of infringement in this particular must be sustained.

It is further charged the bill that the defendant infringes the first claim in patent No. 196,505, issued to Hallidie on September 26, 1877, said, claim reading as follows:

"The combination, with the underground slotted tube or tunnel, A, with its double line of pulleys, *d, e,* rope, D, and end pulleys, *g,* of the tube or siding, I, pulley, K, and horizontal pulley, *l, l,* substantially as and for the purpose described."

At the date of this patent the use of a single track, with proper sidings for the passing of cars going in opposite directions, thereby saving the expense of a double track, was not a novelty in street railways. The fact that the endless cable, used in connection with the cable-car system, could be carried around a pulley or drum at the ends of the track, and returned back underneath the same track, was known. One form of this construction is shown in the patent issued to William Eppelsheimer, August 24, 1875, in which the cable passes both ways under one track, but through two tubes or conduits. Analyzing claim 1 of the patent sued on, we find the combination includes an underground slotted tube or tunnel, having a double line of pulleys therein for carrying the cable. Did it require invention to substitute for two smaller tubes placed alongside of each other, and each having a line of pulleys therein for carrying the cable, a single, larger tube, with two rows of pulleys? That this change is a valuable improvement will not be questioned, but there are many valuable improvements on preexisting structures that are not inventions within the meaning of the patent law. It is well known that in the building of a given structure improvements will almost always be suggested through the practical knowledge of the skilled mechanics employed in its construction. It is through these improvements that nearly all the original inventions are perfected and rendered of practical use, and, when the improvement is of such a nature that it would readily suggest itself to persons of skill in the development of the particular structure to which it is applied, it cannot be classed as an invention simply because of its practical value. It seems to me that the substitution of one larger tube for two smaller ones, for the purpose of carrying the cable when moving in opposite directions, cannot be said to involve any exercise of the inventive faculty.

Of the other elements named in the claim, to-wit, the rope, D, the end pulleys, *g,* of the tube or siding, I, pulley, K, and horizontal pulleys, *l, l,* it cannot be said that Hallidie was the inventor of any one of them. In the argument of counsel, stress was laid upon the arrangement of the pulley, K, and horizontal pulleys, *l, l,* in the siding, I, but nothing novel is shown therein. When the cable passes from the main track into the side track, its line of direction and pressure is changed, and the pulleys supporting the cable are also changed so as to conform to this change of bearing in the cable; but this presents no new solution of the problem always present when there is a change made from a vertical to a horizontal pressure in a rope or cable passing over supporting pulleys. The patentee himself, in his specifications, expressly negatives any claim to novelty in this element of the combination by the statement that—

"I am aware that bearing pulleys have been used in tubes for sustaining, the rope at the points where the line of direction bas been changed vertically; and such I do not claim as my invention."

The siding, I, so far as it is merely a side track to receive one car while the other passes on the main track, is certainly not a novelty. So far as it is a separate tube, connecting with the main tube, and intended to carry the rope when it is deflected from a straight line in order to carry the car onto the side track, can it be said that it required invention to supply two tubes in place of one, when it is shown that the original method of running cable-cars was to use two tubes for the passage of the cable in opposite directions? It is first claimed that it required invention to combine the pre-existing double tubes into one tube for the purpose of carrying therein the cable when moving in opposite, parallel directions, and then, when it became desirable to change the direction of part of the cable that it required invention to separate the single tube into two tubes, which, in effect, was only resolving the single double-cable tube into its original elements of two tubes with a single cable. Failing to find in any of the several elements named in claim 1 of the patent declared on any novelty in the form or use there of a character sufficient to constitute invention, It follows that to sustain this claim it must appear that the combination there of works out a result of sufficient novelty and utility to confer upon it the requisite character of invention, as distinguished from mechanical improvement. Granting that the combination described is operative, the immediate result is that by its use an endless cable can be operated under one track, in a single tube, instead of using two tubes, as shown in the Eppelsheimer patent No. 166,975. Thus we are brought back to the question whether it required the exercise of the inventive faculty to conceive of the plan of merging the two tubes into one, and it would seem that this transformation did not demand anything more than the exercise of such mechanical skill as would belong to one acquainted with the previous state of the art. But if it be held that the combination, as a whole, does possess sufficient novelty to sustain the claim as a patentable invention, it is entirely clear that it cannot be broadly construed upon the question of infringement. None of the elements therein combined are new, nor was the ultimate purpose of running cars in opposite directions, upon a single track, with side switches, a novelty. Unless, there fore, the defendant uses the combination as presented in the patent, it cannot be said that the charge of infringement is sustained. The claim in question includes the end pulleys, *g,* as elements in the combination. In the specifications the location and uses of these pulleys are thus described:

"At each end of the tube, I mount a single horizontal pulley, *g,* one of which is a driving pulley, and this pulley is connected with the engine which furnishes the power."

In the drawings attached to the patent the pulley, *g,* is located at the end of the tube, in close proximity thereto, and of such relative size to the tube that the cable coming along one side of the tube will pass directly around the pulley, and at once return into the tube, being supported upon, the vertical pulleys, *d* and *e,* shown in the end of the tube. As it

appears in the drawings the pulley, *g,* is smaller in diameter than the rope-bearing tube, and it is clear that it was the intent of the patentee

to have it so constructed, for if it was made larger than the rope-bearing tube the cable, in leaving the tube, would be deflected from a straight line, thus tending to draw it away from the pulleys, *d* and *e,* and to bring it into contact with the sides of the tube. Reading the claim in the light thrown there on by the specifications and the drawings, it is entirely clear that it was intended by the patentee that the pulleys, *g,* should be so located with reference to the end of the tube, and should be of such a relative size thereto, that the cable passing along the line of pulleys represented by *d* should pass directly there from to the pulley, *g,* and from it return into the tube upon the line of pulleys represented by *e.* According to the plan shown in the drawings and specifications this cannot be done except by having the pulley, *g,* located at the end of the tube, and of a size not exceeding the diameter of the tube. In the system in use at Sioux City, at the one end of the line, the pulley, *g,* is not found. The cable passes around a pulley or wheel much larger than the tube and is not returned therefrom into the same tube, but passes into another tube, which is ultimately united with the main track by means of a loop. This is the construction of the line at the point most distant from the power house, and it cannot be held that the pulley, *g,* of the Hallidie combination is used at that end of the line. The evidence fails to show the construction of the line at the end nearest the powerhouse, and hence complainant has failed to show that the pulleys, *g,* forming an essential element in the Hallidie combination, are found; in defendant's structure, or, in other words, it is not shown that the combination described in claim 1 of the letters patent sued on is in fact used: by defendant. The identity or great similarity of many of the elements found in defendant's structure with those shown in the claim is not sufficient, in a case of this character, to establish the charge of infringement of the combination. It must be held, there fore, that in this particular the complainant has failed to sustain the allegations of the bill. In view of the tact that the charge of infringement of complainant's rights is sustained in only the one particular, and of the further fact that the complainant permitted the defendant company to construct its line without hindrance or notice of its purpose to assert its claims under the patents sued on, and as the use by the defendant of the device sustained in the foregoing opinion is only upon its own line, and does not interfere with complainant's rights in any other way, there does not seem to be need for the issuance of an injunction at the present time. It is a case that the parties should settle upon a money basis. If the parties cannot agree as to the sum to be paid for the future use of the device held to be infringed, it will be open to complainants to move for an injunction against such future use, and the cause will be continued for that purpose; but for the present no injunction will be ordered, in the belief that the parties will be able to reach a settlement obviating the need of an injunction.