
SCHWEYER ELECTRIC AND MANU- FACTURING COMPANY (PLAIN- TIFF)	}	APPELLANT;
AND		
NEW YORK CENTRAL RAILROAD COMPANY (DEFENDANT)	}	RESPONDENT.

1935
 * April 15,
 16, 17, 18.
 * Oct. 7.

ON APPEAL FROM THE EXCHEQUER COURT OF CANADA

*Patent—Alleged infringement—Construction of claims in specification—
 Description in specification—System contemplated or embraced by
 the claims—Automatic train control apparatus.*

An appeal by the plaintiff from the judgment of Maclean J., President of the Exchequer Court of Canada, [1934] Ex. C.R. 31, dismissing its action for alleged infringement by defendant of a patent of invention of an automatic train control apparatus, was dismissed on the ground that no infringement was established. It was held that the claims sued upon, as regards the devices in the apparatus on the vehicle which respond to the "caution" and "danger" signals, when these claims are properly construed in relation to the specification as a whole, do not contemplate a system which could be effective-

*PRESENT:—Duff C.J. and Cannon, Crocket and Davis JJ. and Dysart J. *ad hoc*.

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ly worked without the use of alternating current circuits; and since defendant employed direct current circuits alone, no infringement was established. Further, the opinion was expressed that, on construction of the specification as a whole, the monopoly contemplated by the claims relied on by plaintiff would not embrace a system in which the responsive inductive device employs cumulative and not opposing fluxes; and that the defendant's system would not be practically operable if a responsive inductive device making use of opposing fluxes were substituted for the device operating with cumulative fluxes which was actually part of its system.

It is the duty of a patentee to describe in unambiguous terms his invention and the manner in which it is to be put into effect.

One cannot by reference import into a claim the description in the specification minus any part of it which describes some essential feature of it.

APPEAL by the plaintiff from the judgment of Maclean J., President of the Exchequer Court of Canada (1), dismissing its action for an injunction and damages and other relief for the alleged infringement of a patent, issued to one Schweyer and assigned to plaintiff, for improvements in automatic train control apparatus. The appeal was dismissed with costs.

O. M. Biggar K.C. and *M. B. Gordon* for the appellant.

W. F. Chipman K.C. and *V. W. Price K.C.* for the respondent.

The judgment of the Court was delivered by

DUFF C.J.—The patentee, in explaining the objects of his invention, describes it as an “Automatic Train Controlling Apparatus” and proceeds:

It is an object of the invention to provide novel inductive devices between the vehicle and track for obtaining clear, caution and danger or other signals or conditions in an efficacious manner when passing the controlling points or stations of the track.

He also says:

A still further object is the provision in such an apparatus of a novel differential induction responsive device for controlling the vehicle equipment or translating means and controlled by suitable inductive devices on the track or adjacent to the path of movement of the responsive device.

Under the head of “Vehicle Equipment,” the “translating means” is thus described:

The train part of the apparatus includes the clear electromagnet 17, which when energized maintains clear conditions, and the caution electromagnet 18 which when energized with the magnet 17 deenergized provides

caution conditions, while when both electromagnets 17 and 18 are de-energized, the equipment will be in danger condition. These electromagnets 17 and 18 therefore control the movement of the train by operating suitable mechanism such as shown in United States Patent No. 1,389,602.

For a general description of the leading essentials of the apparatus for controlling the translating devices (electromagnets 17 and 18), we turn to the outline of the apparatus as given in the patent:

Briefly outlined, the present apparatus comprises in its main and more important essentials, armatures 16 or magnetic devices on the track or roadway at the control stations or locations, a primary inductor 19 on the vehicle responsively affected whenever passing an armature, control relays or devices on the vehicle for obtaining clear, caution and danger conditions, a controller or switch device 45 on the vehicle controlled by the primary inductor 19 for changing the circuit connections of said control relays or devices whenever passing a control station and initiating a danger condition of said control relays or devices, secondary inductors 68 and 69 and relays 78 and 80 controlled thereby on the vehicle controlling said control relays or devices during such change in circuit connections, controlled inductors 2 and 3 on the track or roadway associated with said armatures for influencing said secondary inductors during such change in circuit connections to avoid the danger conditions and either maintain the existing running condition of the vehicle equipment or changing from a clear to a caution condition, and manually controlled means for restoring clear conditions of the vehicle equipment. The essential apparatus as outlined, with the necessary electrical circuits, is more simple than the complete apparatus as illustrated, such complete apparatus also including several features of safety which are not compulsory.

The patent plainly contemplates that the translating devices (electromagnets 17 and 18) are to be controlled by the combined action of two sequences of apparatus. Of the inductive devices on the vehicle, the inductor 19 is energized by direct current (generator 24), co-operating with the track armature 16, and with one set of contacts on the switch 45, as well as with certain relays, while the right and lefthand "secondary inductors" 68 and 69 are energized by alternating current (generator 76), co-operating with the track inductors 2 and 3, and with a set of contacts on switch 45 through which the "relays" 78 and 80 are controlled by these "secondary inductors." The operation of the secondary inductors 68 and 69, relays 78 and 80 and inductors 2 and 3 admittedly involve the use of alternating current circuits.

The operation of the apparatus, as the patent contemplates it, may be sketched as follows:

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The track armature 16 influences at each control station inductively the primary inductor 18 which deenergizes the relay 33; this causes the switch 45 to fall and, in consequence, the energy is transferred from the circuit operating relays 109 and 110 to another circuit which is controlled by the alternating current relays 78 and 80. The deenergizing of relay 33 produces no effect upon the translating devices (electromagnets 17 and 18) but merely establishes alternative circuits making it possible to energize or deenergize these devices by the operation of the alternating current devices 78 and 80 in accordance with traffic conditions. Under "caution," the co-operation of inductor 3 with coil 70 and coil 68, relay 78 is deenergized immediately as the car passes over inductor 3 and this momentarily opens the contact 86 and leaves closed the alternative circuit.

Under "danger," by means of inductor 2, coil 69, relay 80 is deenergized and contact 85 is opened momentarily and by this means the alternative circuits for both translating devices 17 and 18 are deenergized. The switch 45 rises to its upper position and "clear" or "caution" is maintained until the next controlling station is reached.

The control of the translating devices in the manner disclosed by the patent thus requires two sets of trackway inductors and two trains of mechanism involving in their operation the use of both direct current circuits and alternating current circuits.

The plaintiff selected certain claims as typical of the claims in suit. Of these, claims 12, 37 and 43 state explicitly that the claims are concerned with an apparatus of the character described including specified appliances and devices. Claims 66 and 91, as framed, concern a railway traffic control system in combination. It will be convenient to reproduce these claims in full:

12. An apparatus of the character described including a movably mounted differential inductive device including a core and inductively related coils thereon, an armature adjacent to the path of movement of said device with which said core is inductively cooperable for obtaining magnetic disturbance in said core when passing said armature, said coils being in direct current energized electrical circuits and creating opposing magnetic flux in said core so that the current in one coil is affected when passing the armature, and translating means controlled by the circuit of said coil.

37. An apparatus of the character described including a movably mounted differential inductive device energized by different direct current circuits, a relay in each of said circuits, and the relay in one circuit controlling the current in the other circuit, translating means controlled by said relays and means adjacent to the path of movement of said device and with which said device is inductively cooperable to affect the currents in said circuits for deenergizing one of said relays.

43. An apparatus of the character described including a movably mounted differential inductive device having direct current energized inductively related coils, one of which produces a magnetic flux weaker than and in opposition to the magnetic flux created by the other coil, a stick relay in series circuit with the coil producing the weaker magnetic flux, inductive means adjacent to the path of movement of said device with which said device is cooperable for reducing the current flowing in the first-named coil to deenergize said stick relay and translating means controlled by said stick relay.

66. In a railway traffic controlling system, the combination, a railway track, magnetic devices on the trackway at intervals, a vehicle on the track, an inductor on the vehicle aligning with said magnetic devices and passing in inductive relation therewith by the movement of the vehicle along the track, a primary circuit including a protection relay connected with said inductor and energized by direct current, a secondary circuit energized by direct current and including a detector relay controlling its own circuit and inductively coupled through said inductor with said primary circuit, said primary circuit being connected to said inductor so as to deenergize said detector relay when said inductor is in inductive relation with said magnetic device, said secondary circuit controlled by said protection relay and a translating device controlled by said detector relay.

91. In a railway traffic controlling system, in combination, a railway track, an armature on said track, a vehicle on said track, an inductor on said vehicle moved by the movement of said vehicle into inductive relation with said armature, a primary coil on said inductor energized by direct current, a secondary coil in a secondary circuit including a relay controlling its own circuit energized by direct current and inductively coupled by said inductor so that said primary coil effectively deenergizes said relay when said inductor is influenced by said armature, an electrically operated braking mechanism on said vehicle, a second relay controlling its own circuit, controlling said braking mechanism and controlled by the relay in said secondary circuit and a manually operated switch for establishing an energizing circuit for said second relay.

In construing these claims they must be read with reference to the earlier part of the specification and, so reading them, it seems to me the conclusion is inevitable—I am convinced this is not putting it too strongly—that, as regards the devices in the apparatus on the vehicle which respond to the “caution” and “danger” signals, these claims do not contemplate a system which could be effectively worked without the use of alternating current circuits. In that view, since the respondents employ direct current circuits alone, no infringement is established.

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This is sufficient to dispose of the appeal. But my opinion is, I may add, that the phrase "differential inductive responsive device" in the earlier part of the patent ought to be construed by reference to the language of that part of the specification which is under the heading "Intermittent Responsive Devices," and, so reading it, the phrase seems plainly to imply the use of opposing fluxes.

In claims 12, 37 and 43, opposing fluxes are either implied in the sense indicated, or are explicitly postulated. As regards these claims, at least, it seems to me impossible to aver that the patent has so defined the limits of the monopoly claimed as to embrace, in reasonably clear language, inductive devices with cumulative fluxes. I am inclined also to think that the two remaining typical claims (66 and 91) must be read as importing the essentials of the invention described in the specification. As regards these claims, it appears to me that this may reasonably be said. It is the duty of the patentee to describe in unambiguous terms his invention and the manner in which it is to be put into effect. He has already, in the specification, described his invention and its mode of operation. And the essential features of the invention, and the working of it, so described, as I construe the specification include the use of "differential inductive responsive devices" involving the employment of opposing fluxes. If the description can be imported into these claims by reference then the disclosure is sufficient, but I do not think you can by reference import the description minus any part of it which describes some essential feature of it. In this view, the monopoly contemplated by these claims would not embrace a system in which the responsive inductive device employs cumulative and not opposing fluxes. I think the learned President's finding of fact is well founded that the respondents' system would not be practically operable if a responsive inductive device making use of opposing fluxes were substituted for the device operating with cumulative fluxes which is actually part of their system.

I rest my decision of the appeal, however, upon the first point, viz., that the invention, as described, necessarily involves, as an essential part of it, the employment, in co-

operation, of direct current circuits and alternating current circuits.

The main contention on behalf of the appellants was that the learned trial judge had not applied his mind to the consideration of the subordinate combinations which they allege are covered by the "typical" claims. As will sufficiently appear from what I have said, in my view that contention is displaced if one accepts the view that the claims in suit, when properly construed in relation to the specification as a whole, do not define any combination not requiring the use of alternating current circuits.

The appeal should be dismissed with costs.

Appeal dismissed with costs.

Solicitors for the appellant: *Smart & Biggar.*

Solicitors for the respondent: *Saunders, Kingsmill, Mills & Price.*

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