

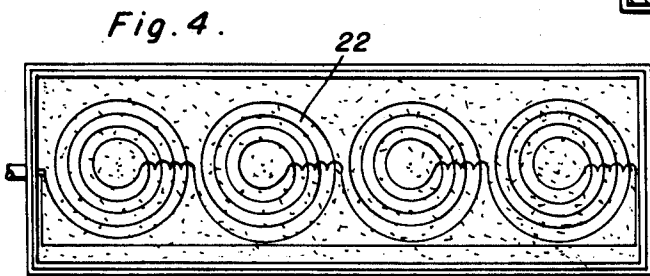
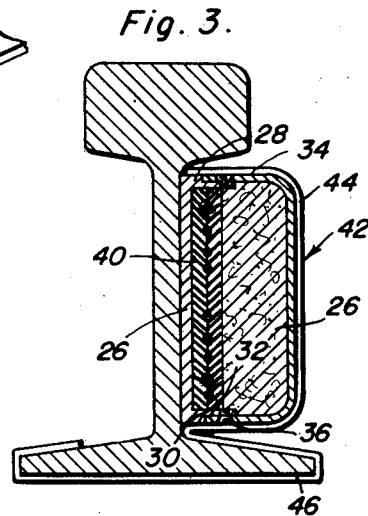
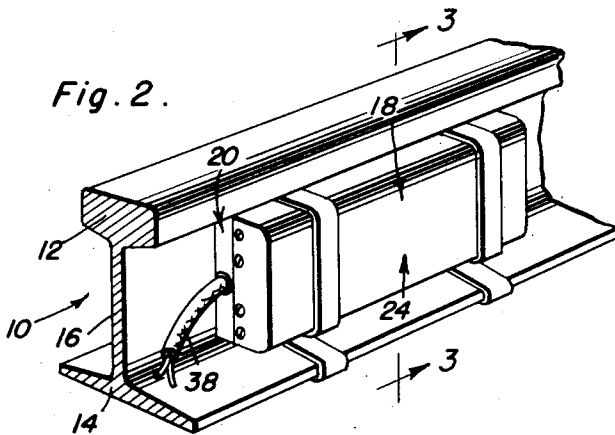
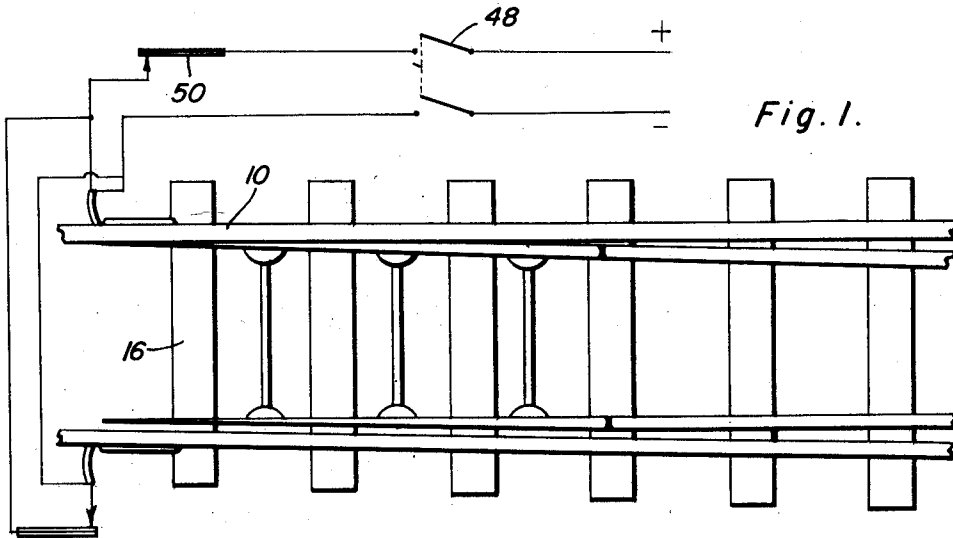
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T. A. BROOME

2,500,399

RAIL HEATER

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Tally A. Broome
INVENTOR.

BY *Charles A. O'Brien*
and Harvey B. Jacobson
Attorneys

UNITED STATES PATENT OFFICE

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RAIL HEATER

Tally A. Broome, Clovis, N. Mex., assignor of fifty per cent to Wesley Quinn, Clovis, N. Mex.

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1 Claim. (Cl. 219—19)

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This invention relates to improvements in rail construction and particularly pertains to heaters for maintaining switches in thawed condition for certain actuation thereof.

A primary object of the invention is to provide heating means for rail switches, so that they may be maintained in warm condition even under adverse weather.

Another object of the invention is to provide automatic heat so that a uniform temperature is maintained on the rail even though the weather may fluctuate.

And another object of the invention is to control the heater remotely, or at a point adjacent the rails, so that heat may be supplied when desired, or cut off completely when necessary, without removing the heater.

A further object of the invention is to provide a heater in two sections, securely held together, and watertight against wet weather or the like, whereby each section may be readily replaced, if necessary.

And a further object of the invention is to provide resilient clamping means for the heater, that will securely retain the heater in position on the rail while still capable of compensating for track conditions, thereby protecting the heater from damage.

And a further object of the invention is to provide a device that is durable, economical in manufacture, simple in construction and efficient for the intended purpose.

Other objects of the invention reside in the details of construction and in the combination of the various parts and in their mode of operation, as will hereinafter appear.

The following is a detail description of a preferred embodiment of the invention, and is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the heater of the invention in position on a portion of a railroad track, with the automatic connection therefore illustrated diagrammatically;

Figure 2 is a perspective view of the invention in position on a rail;

Figure 3 is a vertical sectional view of the heater, and is taken substantially on line 3—3 of Figure 2; and

Figure 4 is a top plan view of the heating element of the device.

Referring to the figures, a railroad track of usual I-beam construction is indicated by numeral 10 and includes a rail portion 12 and a bottom support portion 14, joined by a vertical transverse wall 16. Tracks 10 are supported on

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ties 16, as is well known. In Figure 1, is illustrated a track junction, and is a point at which the invention is to be supplied. Each winter, all of the railroad companies encounter the problem of switches freezing due to low temperatures, and therefore failing to permit trains to go into sidings, or for other reasons change tracks. Freight, and passenger traffic is thus tied up until the switches may be thawed out. The present method of thawing out such switches is to pour oil on the cross ties and burn the cross ties next to the switches, this necessitating the labor of thousands of men, which must be repeated, as the switches immediately freeze up again, after a short period. In order to avoid such delay, with the attendant costliness, the heater of the invention has been devised to be substituted for the previously used method enumerated above.

Heater 18 is secured in position, as is clearly visible in Figures 2 and 3, at a point adjacent the switch and is capable of being operated either by remote control from the centralized traffic control line which parallels all tracks, or by automatic control at a point on the rail. Heater 18 is made of two parts, namely, a bottom member 20 of cast iron or steel and contains the heating element 22 therein. The top or cover 24 is of light weight steel construction, insulated as by asbestos insulation 26 and is securely retained on bottom plate 20.

Bottom 20 consists of an elongated metal plate 26, upturned at the edges thereof in a flange portion 28, flange 28 being of reduced diameter the upper extremity thereof at 30 to provide a seating shoulder 32. Reduced portion 30 is apertured to align with a similar aperture in the sides 34 of cover 24 to receive therethrough retaining screws or bolts 36. A suitable current carrying cable 38 is in electrical connection with an automatic, remote control thermostatic unit, not shown, and with heating elements 22. It will be noted that heating elements 22 are connected in series and that there is only one wire leading into the heater. Bottom 20 is insulated by suitable material of any desired type as shown at 40.

A suitable clamp 42, of light weight spring steel is formed from a unitary blank, and includes a U-portion 44 clamping heater 18 against a rail, and a C-shaped section 46 bent to be forced around bottom section 14 of rail 10 to terminate on the other side thereof. Thus, it is readily apparent that clamp 42 will hold the heater in rigid position and at the same time will give with the weight of the track, thereby protecting

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the heater from damage, this normally occurring, if clamp 42 were bolted to the rail.

Cable 38 is controlled by a master switch 48 to actuate the device, the temperature in heater 18 being automatically regulated by thermostatic control switches 50, which may be of bi-metal construction, or any suitable means. Thus, heater 18 will maintain the switch at a uniform temperature no matter what the weather conditions may be, due to the automatic manner in which it operates.

It is now literally apparent, that an extremely efficient heating means has been provided, wherein the loss of heat is cut to an excellent minimum by means of the automatic control as well as the insulation provided therefor, and the heater may be readily taken apart in order to place the elements, or any other desired portions. Obviously, other suitable materials may be substituted for the materials used, without resorting to invention.

While a preferred embodiment of the invention has been shown and described, it is to be understood that various changes in size, shape and arrangement of parts may be made without departing from the spirit of the invention, or the scope of the appending claim.

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Having described the invention, what is claimed as new is:

- In a rail heater for heating the switch sections of rails the improvement which comprises a sectional casing including a bottom member having upright side and end walls, said bottom member being formed of heat conductive material and adapted to be positioned flush against the web of a rail, insulating means embedded in said bottom member between the raised side and end walls, heating means disposed in said bottom member, said heating means including a plurality of coils wired in series, an insulated cover member detachably mounted on the raised side and end walls of the bottom member.

TALLY A. BROOME.

REFERENCES CITED

- The following references are of record in the file of this patent:

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