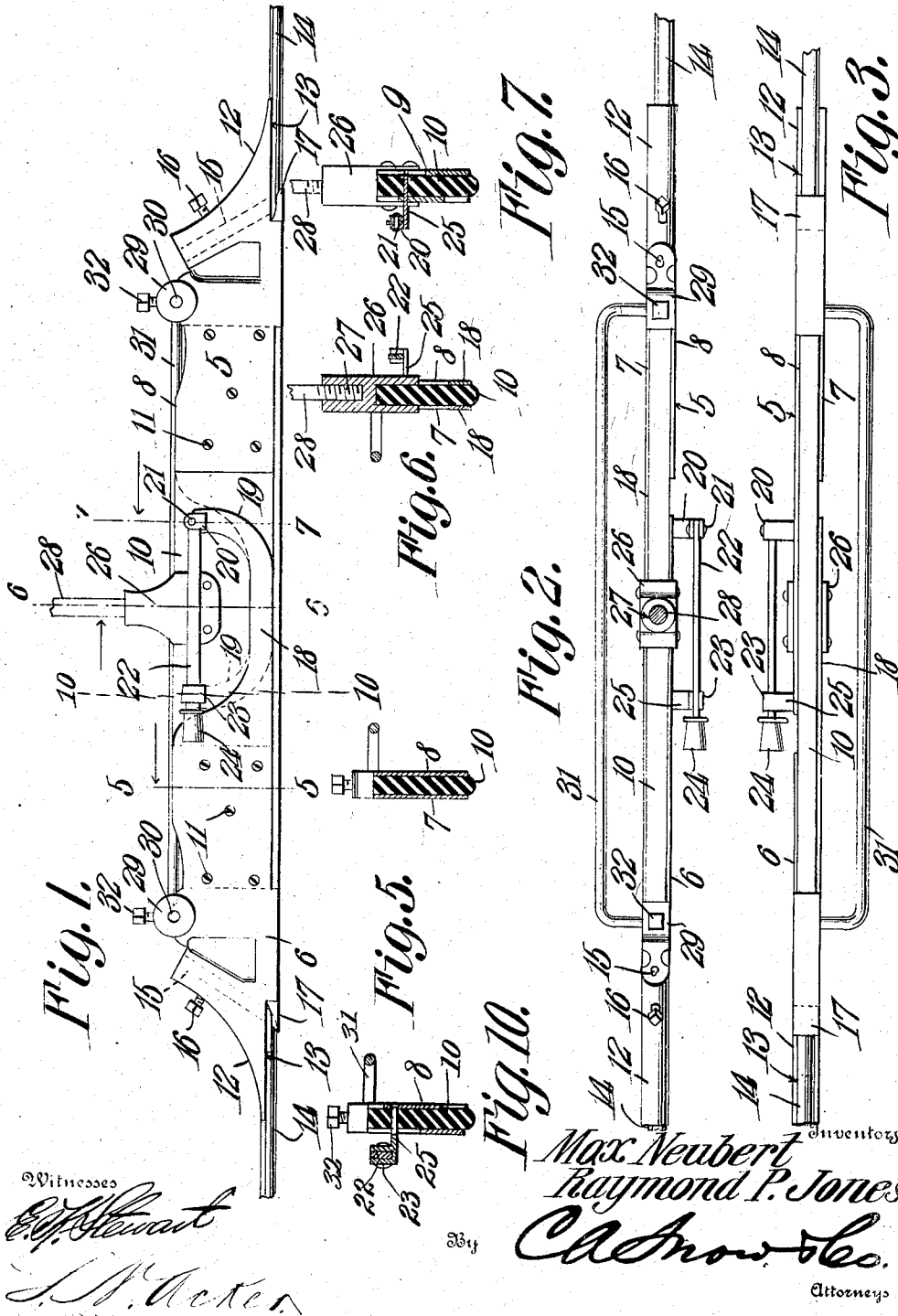


M. NEUBERT & R. P. JONES.
INSULATOR.
APPLICATION FILED FEB. 24, 1908.

930,609.

Patented Aug. 10, 1909.
2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
L. P. Vetter

Max Neubert
Raymond P. Jones
C. A. Snow & Co.
Attorneys

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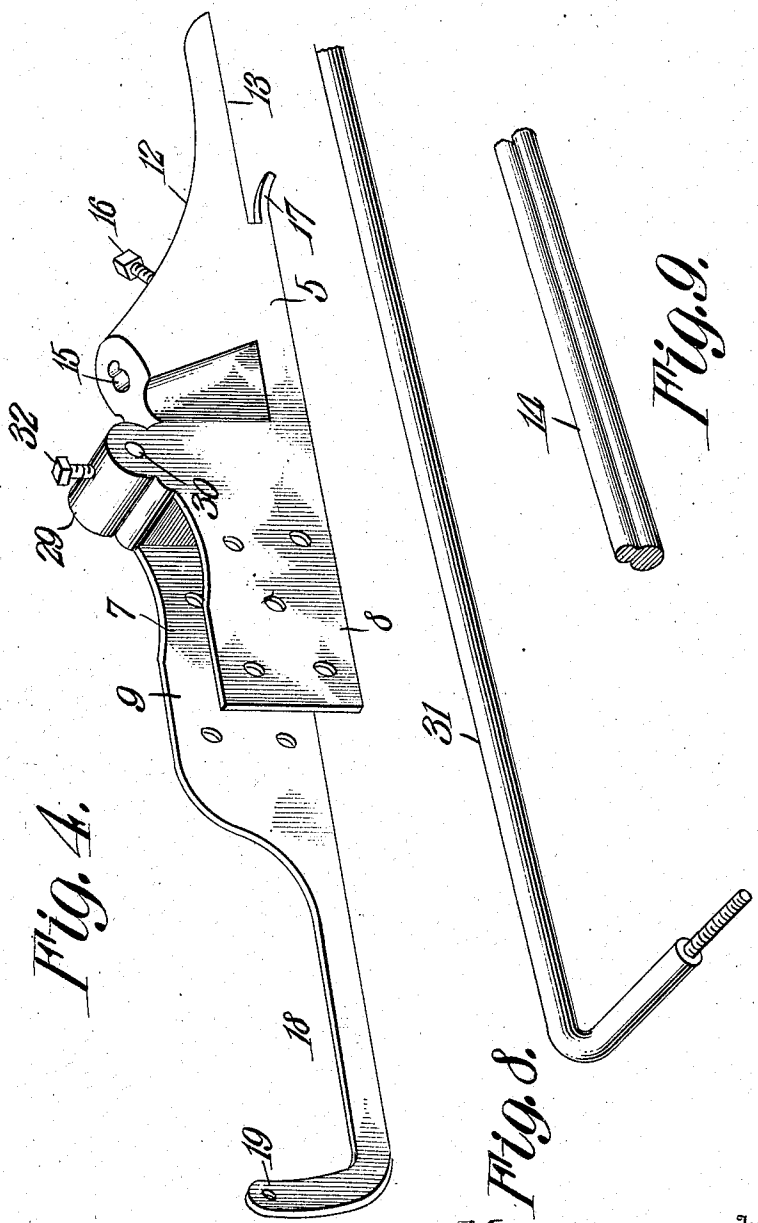


Fig. 4.

Fig. 8.

Fig. 9.

Witnesses
E. J. Harnett
L. P. Nether

Max Neubert Inventor
Raymond P. Jones
C. A. Snow & Co. By
Attorneys

UNITED STATES PATENT OFFICE.

MAX NEUBERT AND RAYMOND P. JONES, OF GLEN JEAN, WEST VIRGINIA.

INSULATOR.

No. 930,609.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed February 24, 1908. Serial No. 417,467.

To all whom it may concern:

Be it known that we, MAX NEUBERT and RAYMOND P. JONES, citizens of the United States, residing at Glen Jean, in the county of Fayette and State of West Virginia, have invented a new and useful Insulator, of which the following is a specification.

This invention relates to sectional insulators for electric trolley systems and has for its object to provide a sectional insulator, the construction of which is such that the trolley wheel will remain in contact with the terminals of the insulator during its passage over the latter so that should the motor stop at said insulator the trolley wheel will be in a position to start the motor.

A further object of the invention is to provide a section insulator the terminal contacts of which are over-lapped at the center of the insulator and connected with each other by a switch or bridge wire so that in event of any disturbance on the line the section of the conductor or line wire containing the insulator may be cut out or disconnected from the rest of the line.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a side elevation of a section insulator constructed in accordance with our invention. Fig. 2 is a top plan view of the same. Fig. 3 is a bottom plan view of the same. Fig. 4 is a perspective view of one of the end pieces or contacts detached. Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1. Fig. 6 is a similar view taken on the line 6—6 of Fig. 1. Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 1. Fig. 8 is a perspective view of a portion of the bridge wire detached. Fig. 9 is a detail perspective view of a portion of the line wire. Fig. 10 is a transverse sectional view taken on the line 10—10 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved section insulator forming the subject matter of the present invention includes spaced end pieces 5 and 6 having

parallel side walls 7 and 8 spaced apart to form an intermediate socket 9 for the reception of a strip of insulating material 10, said end pieces being secured to the strip 10 by means of screws or similar fastening devices 11.

Each end piece is provided with a longitudinal extension 12 having its lower face formed with a longitudinal groove 13 for the reception of the adjacent end of the line wire 14, there being inclined grooves 15 piercing the extensions 12 and communicating with the longitudinal grooves 13, as shown.

The line wire 14 may be of any desired cross sectional formation and in the present instance is shown in the form of a figure eight, the terminals of said line wires being extended within the grooves 15 and locked in contact with the end pieces by screws or similar clamping devices 16.

The lower longitudinal edge of each end piece at the adjacent extension 13 is formed with a lip 17 adapted to be bent upwardly in engagement with the lower surface of the line wire 14 thereby to form a bridge piece and permit the ready passage of the trolley wheel over the base of the insulator.

The arms 9 of the end pieces are provided with reduced extensions 18 which over-lap at the center of the insulating strip 10 and are provided with curved terminals 19 disposed one on each side of the insulating strip 10, as shown.

Secured to one of the terminals 19 is a clip 20 in which is pivotally mounted at the adjacent end of a switch 22, the opposite end of which is adapted to contact with a similar clip 23 mounted on the same side of the insulator as the clip 21.

The switch 22 is preferably in the form of a flat longitudinal bar the free end of which is provided with an operating handle 24 by means of which the switch may be moved to operative and inoperative positions thereby to connect the contacts or end pieces 5 and 6 with the line wire or to disconnect said end pieces from the line wire.

The clip 23 is secured in position on the insulating block 10 by means of a bolt or pin 25 which extends transversely through the insulating strip 10 for engagement with the reduced terminal 19 of the adjacent arm 9, as best shown in Fig. 10 of the drawings, so that when the switch 22 is in closed position

tion the current is free to pass from the trolley 14 through the adjacent end piece to the switch and thence through the opposite end piece or contact and off to the line.

5 The lower longitudinal edges of the side plates 8 and 9 are preferably cut away to expose the lower longitudinal edge of the insulating block or strip 10, a portion of each end piece, shown at the extreme ends of Fig. 1 being disposed flush with the base of the insulating strip 10 to permit the ready passage of the trolley wheel. It will thus be seen that when the switch is in closed position and the trolley wheel passes over 15 the insulator said trolley wheel will contact with the side plates 9 and 10 so that should the motor stop when the trolley wheel is on the insulator said trolley wheel will be in a position to start the motor.

20 By moving the switch laterally to inoperative position the end pieces or contacts 5 and 6 may be disconnected electrically so that the section of the line carrying the insulator may be cut out or disconnected from the remainder of the line should any disturbance occur on the latter.

Projecting upwardly from the upper longitudinal edge of the insulating block or strip 10 is a bracket 26 having a socket 27 30 formed therein for the reception of a rod or hanger 28 by means of which the insulator may be readily suspended from an over-head support.

Secured to or formed integral with the 35 end pieces 5 and 6 are cylindrical members 29 having openings 30 formed therein and extended transversely across the end pieces for the reception of the adjacent terminals of a bridge wire 31, said bridge wire being 40 retained within the sockets 30 by suitable clamping screws 32.

The bridge wire 31 performs the same function as the switch 22, that is to say, when the terminals of the bridge wire are 45 seated in the sockets 30 the end pieces or contacts 5 and 6 will be connected so that the current is free to flow through the end pieces in the manner before stated.

When the bridge piece is disconnected 50 from the sockets 30 however, the end pieces will be separated from each other by the insulating strip 10 so as to cut out that section of the line wire carrying the insulator.

The bridge wire 31 may be used alone or 55 in connection with a switch, it being preferable to use the two together so that in case the switch should get out of order the bridge wire 31 may be brought into service.

While there is shown a figure eight type 60 of line wire it is obvious that said line wire may be circular in cross section or of any other desired cross sectional contour in which event the longitudinal and inclined

grooves in the end pieces may be made of a corresponding shape to fit said wire. 65

It will also be understood that any other improved type of switch may be substituted for the switch shown in Fig. 1 of the drawings without departing from the spirit of the invention. 70

Having thus described the invention what is claimed is:

1. A section insulator for electric trolley systems including spaced end pieces constituting contacts each provided with a reduced extension over-lapping the reduced extension of the other end piece at approximately the center of the insulator, the ends of said reduced extensions being spaced apart, and bent upwardly in the direction of 80 the top of the insulator to produce curved terminals there being longitudinal grooves formed in the end pieces for the reception of a line wire, an insulating strip interposed between the terminals, a clip secured to one side of the insulating strip above the lower longitudinal edge thereof and connected with one of the upwardly curved terminals, a similar clip disposed on the same side of the insulator and also spaced from the lower longitudinal edge of the insulating strip, a pin connecting the second clip with the opposite curved terminal, and a switch pivotally mounted in one of the clips and adapted to engage the adjacent clip for connecting 85 said terminals in circuit with the line wire.

2. A section insulator for electric trolley systems including spaced end pieces having reduced arms over-lapping at approximately the center of the insulator, an insulating strip interposed between the end pieces, means carried by the end pieces for engagement with a line wire, the lower longitudinal edges of the end pieces being spaced from the lower longitudinal edge of the insulating strip for a portion of their length, there being lips formed on the end pieces and adapted to be bent upwardly into engagement with the line wire, transverse sockets formed in the end pieces, a single point switch secured to the insulator on one side thereof and spaced from the lower longitudinal edge of the insulating strip for connecting the over-lapped terminals of the end pieces, and an auxiliary switch disposed on the other side of the insulator and including a bridge wire adapted to detachably engage the sockets. 105 110 115

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses. 120

MAX NEUBERT.
RAYMOND P. JONES.

Witnesses:

E. C. JAMES,
G. L. HOOPER.