1/ "SAFETY FIRST."

2/ "PATH OF ELECTRICITY" THROUGH TRAM.

3/ "AUTOMATIC CIRCUIT BREAKERS"
INSERTED BETWEEN TROLLEY & CONTROLLER, THEY OPEN AUTO WHEN TOO MUCH CURRENT APPLIED.
~~KEEP~~ OPEN BEFORE REMOVING CONTROLLER COVER

4/ "CIRCUIT SWITCHES"
SWITCH POWER ON OR OFF BY HAND, SWITCH OFF TO INSPECT OR RENEW FUSES

5/ "FUSES"
TAKE PLACE OF AUTO SWITCHES, WILL BLOW IF TOO MUCH CURRENT APPLIED PROTECT APPARATUS FROM DAMAGE OR FIRE.

6/ LIGHTNING ARRESTER PROTECTS TRAM EQUIPMENT SPARK GAP PROVIDED FOR LIGHTNING SURGE TO JUMP ACROSS AND GO DIRECT TO RAILS EARTH.

A B C D E F G H I J K L M N O P Q R S T U V W

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7/ "CHOKE COIL"

USED IN CONJUNCTION WITH ARRESTER, ACTS AS A BLOCK TO LIGHTNING SURGES

8/ "RESISTANCES"

USED IN CONJUNCTION WITH CONTROLLERS.

CURRENT APPLIED GRADUALLY TO MOTORS FROM STOP TO FULL SPEED

THEY HEAT UP WHEN CURRENT PASSES THROUGH.

LIMITED ON NOTCHES.

9/ CONTROLLERS

USED IN CONJUNCTION WITH RISIS TO REGULATE POWER APPLIED TO MOTORS BY STAGES OR NOTCHES

10/ POWER IN SERIES

CURRENT FLOWS THROUGH ONE MOTOR OR LAMP 280 VOLTS EACH.

THUS GIVES REDUCED SPEED.

11/ POWER PARALLEL

560 VOLTS EACH

B C D E F G H I J K L M N O P Q R S T U V W

12/ NOTCHES ON CONTROLLER
4 EACH.

13/ RESISTANCE NOTCHES
FIRST 3 "
SPEED OF TRAM INCREASES

14/ RUNNING NOTCHES
4TH ON EACH

15/ TIME ON RESISTANCE NOTCHES
3 OR 4 SECONDS
DURATION

16/ TIME ON RUNNING NOTCHES
SUFFICIENT TO MAINTAIN RUNNING SCHEDULES.
APPLIED UNNECESSARILY
COAST TRAM, CUT OFF
WELL IN ADVANCE OF STOPS

17/ CUTTING ON AND OFF POWER
CONTROLLER HANDLE
MOVED CLEANLY & DELIBERATELY.

OFF QUICK ACTION
REQUIRED

18) TRANSITION STAGE
CONNECTIONS BEING
CHANGED FROM S TO P
DRIVEN BY 1 MOTOR.

19) REVERSING LEVER
CHANGES DIRECTION
OF CURRENT TO MOTORS
& CHANGES DIRECTION
OF THEIR ROTATION
LOCKING KEY.

CUT MOTORS G.E.
BLADE SWITCHES

SERIES

CUT MOTOR WEST
THUMB SWITH

PARALLEL

BOOM

CONTROLLERS TRAM

TYPE G.E. 36 J.R.

RATCHET SWITCH INCORP AT BOTTOM MAIN DRUM CUTTING ON COMPLETES RELAY CIRCUIT WHICH OPERATES LINE CONTACTOR

LINE BRAKMEN

SMALL SWITCH LOCATED AT EACH END OF TRAM. IT CONTROLS POWER CIRCUIT TO RATCHET SWITCH. IT INCLUDES A FUSE TO PROTECT RELAY CIRCUIT..

SAFETY FIRST

C D E F G H I J K L M N O P Q R S T U V W

BOGIE TRAM.

LINE CONTACTOR.

IS PLACED UNDER DROP SECTION OF TRAM IS AUTOMATIC SWITCH WHICH IS OPERATED BY A RELAY CIRCUIT ~~THROUGH~~ LINE BREAKER SWITCH AND RATCHET SWITCH.

THE CONTACTOR ~~CLOSES~~ WHEN CONTROLLER IS MOVED

SHORT CIRCUIT.

WHEN CURRENT TAKES A SHORT CUT.

HEAVY CURRENT OCCURS TO PREVENT DAMAGE ~~TO THE AUTO SWITCH~~ THE AUTO CIRCUIT BRKR & FUSES ARE USED

FOR EXAMPLE

A FALLEN TROLLEY WIRE CONTACTING THE RAIL . SHORT CIRCUIT.

WOULD OPEN AUTOMATIC BREAKERS AT POWER STATION.

C D E F G H I J K L M N O P Q R S T U V W

TRAM LIGHTING.

2 CIRCUITS OF 6 LAMPS IN SMALL TRAM

3 CIR OF 6 LAMPS IN BOGIE.

GOVERNOR

DROP TO 60 VOLTS

CUT COMMUTATION AT 70 VOLTS

BRAKES

THE AIR BRAKES AIRE APPLIED BY THE BRAKE CYLINDER LOCATED AT N°2 END OF SINGLE TRUCK TRAM.

ON BOGIE TRAM BRAKE CYLINDER IS UNDER CENTRE DROP SECTION