G7 Special work

CHEATHAM
ELECTRIC SWITCHING DEVICE COMPANY
INCORPORATED

LOUISVILLE KENTUCKY
U. S. A.

MANUFACTURERS OF THE
"Cheatham Switch"

THE ONLY SUCCESSFUL SWITCH-THROWING DEVICE

THOUSANDS IN USE

"Cheatham Switch"

A Word to Managers
Thousands in Use

CHEATHAM

ELECTRIC SWITCHING DEVICE

COMPANY

INCORPORATED

LOUISVILLE, KENTUCKY, U. S. A.

AUTOMATIC
AND
SEMI-AUTOMATIC
SWITCH POINT THROWING DEVICES

Manufacturers of

Full Automatic Electric Switch Point Throwing Devices.
Semi-Automatic Curb Controlled Devices.
Semi-Automatic Tower Controlled Devices
Electrically operated Derails for protection of steep grades.
Semi-automatic Derails for Railroad Crossings.
Full automatic Interlocking Plants for protection of
Railroad crossings.
Electrically operated Split Switch Throwing Devices

And the

"Cheatham Switch"

(U. S. Trade Mark Reg.)

THOUSANDS OF "CHEATHAM SWITCHES" IN USE
THROUGHOUT THE UNITED STATES AND FOREIGN COUNTRIES

Cable Address: "CESCO", *Louisville*

1926

"Cheatham Switch"

A Word to Managers
Thousands in Use

A WORD TO MANAGERS

CHEATHAM Switches have been used in the United States for many years. By co-operation between our engineering department and the engineers of the railways using our devices, we have eliminated practically every objectionable feature and reduced the maintenance to a minimum. Hundreds of cities now receive uninterrupted service from our switching device, the only successful one ever manufactured and sold in quantities.

Cheatham Switching Devices never tire of work. They operate under such congested conditions as exist at Market Street Ferry in San Francisco, or at the Public Square in Cleveland. They operate in the tropical heat of Brazil or in the frigid winters of Canada. They are operated by the largest interurban cars on trains and by the smallest safety cars or one man cars.

No alteration of cars or special work is necessary to operate "Cheatham Switches." They are controlled by a Contactor placed on the trolley wire slightly more than a car length from the switchpoint. The small relay box is located on a near pole, and the cast iron Ground Box is placed between the rails. In the ground box is a water-tight cast-iron cylinder containing two solenoid magnets. Inside the solenoids a plunger operates, which is connected to the switch point thru a simple link and lever mechanism. Cabled wires connect the contactor, relay box, and track switch operating solenoids.

The Circuit Changer and protective apparatus in the pole box is operated by "power" on or "power off" thru the car controller, when a car passes under the contactor. This gives a method of selecting one or the other of the solenoid magnets enclosed in the track cylinder, which in turn operates the switch for straight or curve track. The operation is simple, effective, and reliable.

The usual operation is "power off" for the straight track and "power on" for the curve. Two points on the controller is usually sufficient to operate for the "power on" position.

List your property among the hundreds of progressive railways now using "Cheatham Switches."

Cheatham Electric Switching Device Co.

INCORPORATED

Louisville, Kentucky

DEVICES PATENTED IN UNITED STATES

April 6, 1909 December 6, 1910 December 2, 1913 April 4, 1922 October 6, 1925
January 18, 1910 August 6, 1912 September 14, 1917 January 13, 1925 March 3, 1925
December 29, 1925 April 6, 1926 Other Patents Pending
Patented in Great Britain, France, Canada, Mexico and other Foreign Countries.

WHY AUTOMATIC SWITCHES SHOULD BE USED

1. Considerable savings of wages can be effected where your company now employs switchmen to throw the switch at congested points on your line.
2. It allows much quicker movement of cars over congested locations than where cars wait for a switchmen to throw the switch.
3. It allows motormen to remain on cars, at points where no switchmen are employed, rather than leave the car to throw switch manually.
4. For "Safety Cars" it saves time for the motormen at exactly the time when it is most needed, namely, while passengers are boarding or leaving cars.
5. For "far side" stops or where switches are not located near the car stop, it eliminates an unnecessary stop.
6. It has a general moral benefit upon the motormen due to added convenience and realization that the company is trying to assist them in every way possible.

WHY "CHEATHAM SWITCH" HAS PROVEN ITSELF BEST

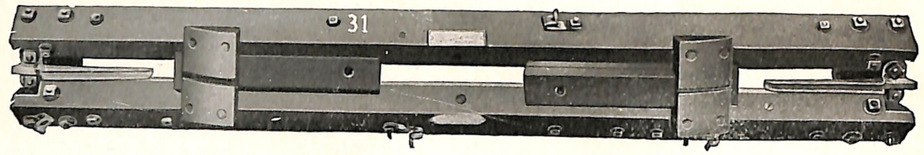
1. No car attachments or alterations are necessary.
2. No motors, relays, or gears are placed in the ground. No stuffing boxes are necessary.
3. The device is simple, rugged, compact, and wear on all parts has been minimized by the use of case hardened steel bushings.
4. The device has passed the experimental stage and what few changes are made from year to year are not radical, and are readily interchangeable with existing apparatus.
5. The first cost of installation is small, and maintenance is remarkably low.
6. It operates in Canadian winters or Brazilian summers without detrimental effect from snow, ice, rain or heat.
7. The track box covering is not bolted down and all parts, including the cylinder, are easily accessible for inspection or maintenance, regardless of weather conditions.
8. For congested locations or where multiple trolley trains operate, our locking device can be furnished, which eliminates the possibility of a second trolley operating a switch before the entire car train is past the switching point.
9. For narrow-gauge track or for installations where special work prevents the use of our standard equipment we have a specially designed "side opening" box which lies parallel to the track.

HOW CHEATHAM ELECTRIC SWITCHING DEVICE OPERATES

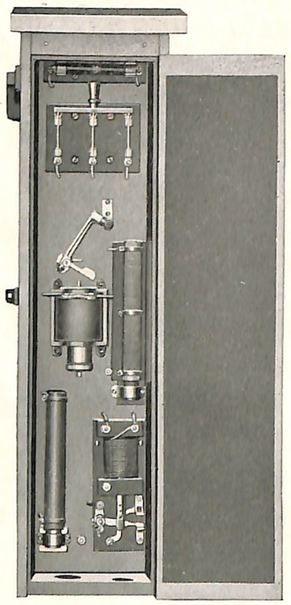
The switch tongue is directly connected through a lever to a plunger operating between two solenoid magnets, enclosed in a water-tight cylinder. When one of the solenoid magnets is energized the switch is held or thrown for the straight track. When the other solenoid magnet is energized the switch is held or thrown for the curve track. One or other of these solenoid magnets will receive a momentary impulse of current when the car passes under a trolley contactor mounted on the trolley wire about 50 feet back of switch point. The motorman selects his direction either by coasting under the contactor or by the application of power thru his controller as he passes under the trolley contactor. (Two points is usually sufficient for the "power on" position). The usual rule is to coast for the straight track and to apply power for the curve track, but this rule can be reversed if so desired.

SWITCH POINT THROWING DEVICE COMPLETE

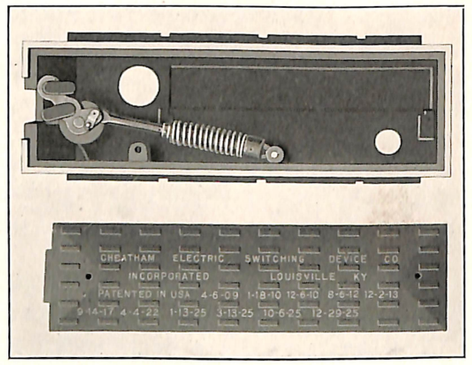
WITH TYPE CM CIRCUIT CHANGER AND NARROW END OPENING GROUND BOX



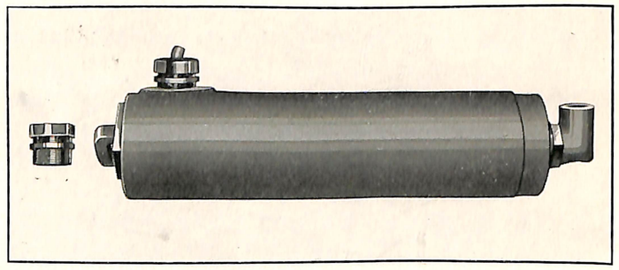
Overhead Trolley Contactor No. 31.
Can be furnished with Cam Tip Saddles P-6196 and Cam Tip Ears P-6647
Advise whether 3-0 or 4-0 Style is wanted when ordering any contactor requiring Ears and Saddles.



Type CM Circuit Changer Complete



Ground Box No. 25. Cover No. 25B.



Watertight Cylinder Complete With D-5552 Cylinder Outlet
Fig. 1

The equipment shown in Fig. 1 is considered far superior to any of our earlier types of electric switch point throwing devices. The Type CM Circuit Changer as shown in the figure has proven through many years of service and operation to be one of the most practical and reliable controls of its type. The equipment consists of the following parts, which is required for each switch point.

One Ground Box with cover, lever, holding spring and two connecting links, one link for connecting lever to cylinder plunger and one for connecting lever to lug of switch point.

One Cylinder complete with Magnets, Plunger, etc.

One Circuit Changer—(Type CM).

One Trolley Contactor—(No. 31).

NOTE:—For Heavy Type Switch Points, we recommend our Heavy Type Cylinder be ordered. It has an effective pull of over 405 pounds. For Light Type Switch Points, our light type cylinder which has an effective pull of 270 pounds, may be used.

Either type of cylinder may be used in the Ground Box, as length over all of cylinder is same, difference being in size of Magnets, Plunger, etc.

Our Standard end opening Ground Box, is furnished unless specifically stated that it is to be used where special work would prohibit it's use. (See pages 5 and 6, Figures 2 and 3.)

The switching device is furnished complete f. o. b. cars Louisville, Ky. The 1-inch underground conduit, overhead cable, and No. 12 two conductor underground cable is not furnished, unless ordered as extras. However, we recommend and carry in stock specially wound three conductor overhead cable and No. 12 two conductor cable, incased in lead for underground use, which we can furnish from stock. This lead cable makes a water-tight installation and is being used very extensively by our patrons. Device ready for shipment will weigh about 700 pounds.

SIDE OPENING GROUND BOXES

(Standard Narrow Type)

Ground boxes with special side openings suitable to lie parallel to the track, can be furnished when desired. This box is used where the construction of the special work, and narrow gauge track prohibits the use of the standard end opening boxes.

Ordinarily right hand turnouts require our left hand side opening ground box. Left hand turnouts, our right hand side opening ground boxes. Special work governs the use of this box which is 41¼ inches long, 13 inches wide, and 8¼ inches deep.

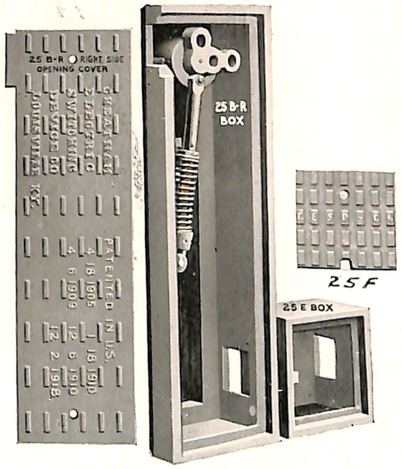


Fig. 2

Fig. 2 represents a right hand side opening ground box, which is required for a left hand turn out. For a left hand side opening ground box, the openings and spring lugs are changed to the opposite side. This style of box is required for a right hand turnout.

The small box No. 25-E with cover to fit is the same for either type of side opening boxes, and is used to house the connection between the cylinder and the conduit.

Contents of the side opening and standard cylinders are the same. This applies to both the light and the heavy type cylinders.

When ordering right hand side opening boxes with cover, designate by number as follows:

25R—Box without cover.
25B-R—Cover for box.
25E—Small box.
25F—Cover for small box.

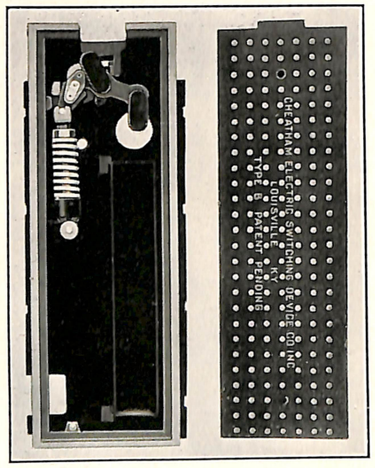
When left hand side opening boxes are required, designate by numbers as follows:

25L—Box without cover.
25B-L—Cover for box.
25E—Small box.
25F—Cover for small box.

This type of ground box uses the same control and cylinder as shown in Fig. 1.

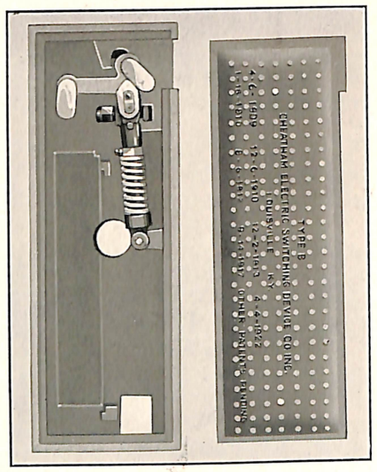
TYPE B GROUND BOX

WITH NEW AND IMPROVED HEAVY PRESSURE HOLDING SPRING



Box P-6147. Cover P-6146
End Opening Type B Ground Box

Fig. 3.



Box P-6226L. Cover P-6146L
Side Opening Type B Ground Box

Fig. 4

The type "B" ground box (as shown in Fig. 3) is designed to include several improvements which new operation conditions require. This type ground box is especially suited for use at points where track work is heavy and car movements frequent. The box and cover have the same general appearance as previous designs and can be used at points where old style boxes are used. The equipment has been strengthened at points where wear or strain is excessive, thereby insuring longer life with less maintenance. The exterior surface of the box is cleated and has only a slight rise to minimize the interference with street traffic.

Among the new features used in this box is a bushing for lever bearing pin which is made of heavy hardened steel and clamped between two strong jaws drawn together by a large bronze bolt and nut. This construction permits a quick and easy renewal of bushing.

In conjunction with ***the improved heavy pressure holding spring*** and operating lever, is a lost motion device or toggle which insures a firm holding pressure in extreme positions and eliminates the possibility of switch tongue stopping in mid position. A nut is provided on the spring plunger to adjust the pressure of the holding spring as conditions may require.

The type "B" ground box can be furnished with special side openings, suitable to lie parallel to the track where the construction of the special work and narrow-gauge track, prohibits the use of the end opening type. This type ground box is shown in Fig. 4.

Ordinarily right hand turnouts require our left hand side opening ground box. Left hand turnouts require our right hand side opening ground box. Special work governs the use of this box which is 42½″ long, 14½″ wide, 8¼″ deep.

When ordering this type of ground box, specify P-6226L left hand side opening ground box, with P-6146L cover. Specify P-6226R right hand side opening ground box, with P-6146R cover.

This type ground box does not require the use of an extra small box to house the connection between the cylinder and the conduit.

The type cylinder used with either the end opening or side opening type B ground box is the same as that used with the standard end opening ground box. (See Fig. 1.)

This type ground box uses the same control and cylinders as shown in Fig. 1.

TYPE CM CIRCUIT CHANGER

The type CM Circuit Changer is an improved relay control for operating Cheatham Electric Track Switching Devicees. It is quite similar to the type C Circuit Changer in operation, and is so designed that it may replace the type C Circuit Changer it its existing box, or it may be used with new or existing Cheatham Track Switching Devices.

The control equipment ***embodies several design modifications*** among which is the improved current selective relay. This relay is very compact in design, and is provided with an accurately calibrated plunger so that it can be easily adjusted for a definite pick-up. A time element relay is provided as a protection for the track magnets when a car stands under the trolley contactor. An adjustable safety resistor is placed in the switch circuit, and is provided with taps as means for varying the power of the track switching device. A fuse and a disconnecting switch are mounted at the top of the board where incoming wires from the pole top may be easily connected. At the bottom of the board are placed terminals for the track magnet connections, and the ground connection.

The equipment is compact in design and is so arranged that maximum accessibility is obtained. The parts are mounted on a relay board, making the control apparatus a very neat unit that may be easily installed or removed. All wiring of the control is completely protected on the back of the board.

SWITCH OPERATING TROLLEY CONTACTOR

The standard switch operating contactor is used with any of our type Circuit Changers and can be mounted under a span wire, or located between spans by bridle construction of span wires between the nearest two poles on each side of the street. The contactor should be located on the trolley wire as follows: the distance from the center of the contactor to the point of the track switch tongue should be equal to the horizontal distance between the forward bumper and the trolley wheel of the longest car on the line, plus 8 feet. This distance is sufficient to enable the motorman of the longest car to see the operation of the switch, and at the same time, reduces the necessary spacing of cars to a practical minimum. The contactor is marked "entering end" and "leaving end." Be sure these instructions are properly regarded.

LOCKING DEVICE

The locking device is designed to be used with any of our electric switch throwing devices, to open the track magnet circuit after the first car operates the switch, so that no following car can operate the track switch, until the preceding car has passed the track switch entirely. A second contactor is passed at this point, which automatically restores the circuit changer to operating conditions. The installation of this additional device is advocated for congested locations, and for locations where multiple trolley trains pass under the switch operating contactor with more than one trolley on the wire. It prevents splitting of switches by faulty car operation.

SPECIAL USES

A number of special uses and methods of operating Cheatham Electric Switch Point Throwing Devices have been developed by the Cheatham Electric Switching Device Company from time to time, among which are pedal controls, draw bridge controls, tower controls, curb controls, derail controls, automatic interlocking plants, and automatic Split Switching Devices. Our engineering department is ready and willing at all times to co-operate with railways in furnishing equipment to suit their exact conditions. We greatly appreciate inquiries regarding equipment for any special problem that railways might encounter.

A SERIOUS QUESTION IN TWO-MAN CAR OPERATION
A VITAL QUESTION IN ONE-MAN CAR OPERATION

THOUSANDS IN USE IN HUNDREDS OF CITIES.

CITIES

CHICAGO
BOSTON
PHILADELPHIA
PITTSBURGH
ST. LOUIS
LOS ANGELES
SAN FRANCISCO
CLEVELAND
DETROIT
CINCINNATI
BALTIMORE
MILWAUKEE
KANSAS CITY
SEATTLE
PORTLAND
DENVER
BUFFALO
AKRON
NEW ORLEANS

CITIES

ATLANTA
TOLEDO
LOUISVILLE
ALBANY
DALLAS
SAN ANTONIO
SAN DIEGO
GRAND RAPIDS
OMAHA
PROVIDENCE
HONOLULU
RIO DE JANEIRO
WINNIPEG, CAN.
OTTAWA, CAN.
MONTREAL, CAN.
TORONTO, CAN.
THREE RIVERS, CAN.
MEXICO CITY

TIME LOST—FARES MISSED.

DOES AWAY WITH SWITCHMAN, SPEEDS UP SCHEDULES, INCREASES PUBLIC SATISFACTION.

HUNDREDS OF OTHERS CAN BE FURNISHED ON REQUEST.

Cheatham Electric Switching Device Co.

INCORPORATED

LOUISVILLE, KENTUCKY, U. S. A.

"*Cheatham Switch*"
(U. S. TRADE MARK REG.)

Electrically Operated
Derailing Devices
For Hills and Steam Road Crossings
(*Not Interlocked*)

Electrically Operated
Switch Point Throwing Device
Automatic and Semi-Automatic
Interlocking Plants