

Twenty-fifth Volume—From January, 1932, to December, 1932

General Index

[Illustrated articles are indicated thus*. Editorials are indicated thus†]

A

Accidents:

- A. C. L. 18
- Boulder Causes Derailment. 280
- C. & O. at Richmond, Va. 303
- C. & O. at Upper Sandusky, Ohio. 290
- C. & N. W. 35
- Collision at Automatic Interlocking 130
- Collision on B. & O. 206
- Collision on Clinchfield Railroad 162
- Collision on C. V., Fitchville Jct., Conn. 323
- Collision on L. & N. 362
- Decrease in Grade Crossing 127
- Defective Switch Causes: 229
- Detector Bar Fails. 188
- Improper Forestalling. 101
- N. Y. C. at Clay Banks, Ohio. 323
- Reduced in Canada. 128
- Report on Grade Crossings. 324
- Signal Failure Alleged. 67

Action †251

Air Heaters:

- General Electric Company *61

Akron, Canton & Youngstown:

- Automatic Plant with Derails. *71

Allied Research Laboratories:

- Solder Developed for Aluminum. 62

All-Relay Interlocking:

- C. R. I. & P. *19

Alternating-Current Floating System:

- Ten Years' Experience on Big Four *129

A-C. Primary System:

- Nickel Plate's Experience with. *137

Alternating Current, Rectified:

- Operation 26

A-C. Track Circuits:

- Constant-Current *112

Alton:

- Automatic Interlocking at Grade Crossings *329

Aluminum:

- Alloys 64
- Solder for 62

Aluminum Company of America:

- Alcoa Aluminum and Its Alloys 64

Aluminum Paint:

- Reducing Summer Temperatures. *225
- A Menace †369

American Railway Association:

- Golden Rule of Safety Section 291
- Report of Committee on A. T. C. *217
- Report of Safety Section. 324
- Safety Program for December. 880
- Safety Section June Circular. 199
- Safety Section Observe Motorists at Crossings. 291
- Safety Section Program for October 323
- Signal Section Annual Convention. †153
- Signal Section Manual. 379
- Signal Section Meets in Chicago. *147
- Standards for Crossing Signals 16

American Railway Engineering Association:

- Removing Second Track. 114

American Standards Association:

- Manhole Frames and Covers 64

Approach Lighting:

- Advantages of. *285
- Series Track Relay for. *25

Argentine:

- Highway Crossing Signals. *285

Atchison, Topeka & Santa Fe:

- Centralized Traffic Control *18

Atlantic Coast Line:

- Derailment 18

Automatic and Remote Control:

- Junction Interlocking. *103

Automatic Headway Recorders:

- Brooklyn & Queens Transit Corp. *331

Automatic Interlocking 209, †340

- An Early 282
- At Complex Grade Crossings on Alton *329
- Circuits at Grade Crossings. *342
- Principle 1153
- Signals at 219
- B. & O. C. T. at Chicago Heights, Ill. *281
- New Specifications for 314

Automatic Signals:

- Grand Trunk Western Installs *333
- On S. P. 229

Automatic Train Control:

- Cab Signals in Lieu of 271
- C. R. I. & P. Petition. 351
- D. & H. Petition. 351

- Interchangeability Test of Composite Equipment *217
- I. C. C. Ordered Reopening for U. P. 199
- N. P. Hearing. 127
- N. P. Permitted to Remove. 270
- Reports on 274

B

Baltimore & Ohio:

- Blizzard Obstructs View of Signals 206
- Centralized Traffic Control. *36, *95

Baltimore & Ohio Chicago Terminal R. R.:

- Four Automatic Plants Stops Theft of Coal *231

Base-Plates, Fiber:

- Prevent Slipping *91

Batteries:

- Economy. 226
- Installation and Maintenance of Lead-Type Storage 275
- Measuring Output of Storage *315
- Storage 23

Battery Elements:

- Rack for *28

Battery Housing 317

Battery Racks:

- Arrangement *283

Bees:

- In Signal Head. 259

Bells:

- Ice on Highway Crossing Signals. 198

Besemer & Lake Erie:

- Flashing-Light Crossing Signals. *43

Biddle, James G. Co.:

- "Meg" Ground Tester. *29
- New Rheostats. *228

Bonds:

- Stranded Plug-Type *145

Bonds, Welded:

- Erie *135

Bootlegs, Parkway:

- Rail Connections *87

Boot-Straps:

- Lifting Yourself by Your Own †368

Boston & Albany:

- Remote Control with C. T. C. Equipment *293
- West Pittsfield Installation *294

Boston & Maine:

- Installs C. T. C. *173
- Interlocking at Boston *235
- Oppressive Whistling 351

Brakes:

- Ling 124

Broken-Rail Protection:

- In Connection with Cross-Bonding. *221

Brooklyn & Queens Transit Corp.:

- Automatic Headway Recorders. *331

Brotherhood of Railroad Signalmen of America:

- Meets in Chicago 273

Buenos Aires Great Southern:

- Electro-Pneumatic Interlocking. *309

Buffer:

- Polishing *220

Bureau of Safety, I. C. C.:

- Annual Report 7

C

- B. & M. Installs. *173
- C. R. I. & P. Extends. *321
- Coded or Direct-Wire. 81
- D. & R. G. W. 141
- Economic and Operating Aspects. *41
- Line Construction. *31
- Maintenance of *181
- Maintenance on Wabash. *131
- New Haven *71
- Remote Control on B. & A. *291
- Studies 151
- Switches 121
- Tools for Maintenance. 81
- Track Capacity. 191

Central Vermont:

- Collision Near Fitchville Jct., Conn. 321

Chesapeake & Ohio:

- Accomplishes Two Desirable Results †181
- Collision at Upper Sandusky, Ohio. 291
- Construction 201
- Head-End Collision at Richmond. 301

Chicago & Alton:

- Feasibility of Automatic Interlocking *321

Chicago & North Western:

- Collision in Signal Territory 31
- Interlocking *33
- Maintenance of Car Retarders *338

Chicago, Burlington & Quincy:

- Car Retarders at Galesburg, Ill. *241
- Extensive New Electric Interlocking *161
- Modern Interlocking Plants *351

Chicago Great Western:

- Highway Signals and All-Relay Interlocking *201
- Interlocking *33
- Two Birds with One Stone. †181

Chicago, Indianapolis & Louisville:

- Derailment 181

Chicago, Milwaukee, St. Paul & Pacific:

- Organized for Relief 352

Chicago, Rock Island & Pacific:

- Extends Centralized Control *325
- Improves Lightening Protection *182
- Interlocking, All Relay *191
- Petition to I. C. C. 323
- Train Control Petition 351

Chicago Union Station Co.:

- Track Changes Account Building Post Office *277

Chipman Chemical Engineering Co.:

- Name changed to Chipman Chemical Co. 64

Circuit Breaker:

- Type-AB De-ion *163

Circuits:

- See Track Circuits
- Grounded 375
- Highway Crossing *349
- Primary Track in Electrified Zone. *304
- Shunting Track †313
- Switch-Box *347
- Testing OS Track 284

Circuits, Control:

- Breaking Through Interlocking Relays †281

Clamps:

- Center-Bearing *91
- Under-Cutting Commutators *197
- Universal Strain *227

Cleveland, Cincinnati, Chicago & St. Louis:

- A Gifted Smeller 379
- A-C. Floating System. *129
- Centralized Control for Remote Interlocking *75

Collisions:

- See Accidents

Combined Maintenance †368

Commutators:

- Clamp for Under-Cutting *197
- Mounting on *224

Condenser:

- In Receiver Circuit. 314

Construction, Signaling:

- Statistics 1931 *1

Continental Diamond Fibre Company:

- Catalogue 380

Control Circuits:

- Breaking Through Interlocking Relays †281

Controller for Drawbridge:

- Heavy-Duty *62

Conventions:

- Signal Section, A. R. A. *147

Copper-Oxide Rectifiers:

- G-R-S *92

Cores:
 Comparative Efficiencies of..... 77
 G. F. Cotter Supply Co.:
 To Represent Western Railroad Supply Co. 261
 Cotton:
 Barge Line Withdraws Low Rates... 94
 Crank:
 Switch-Machine 60
 Creosoted Pine Poles:
 Consumption 229
 Crossings:
 Light-Traffic Protection *54
 Cutout:
 Crossing-Signal *90

D

Dampness 158
 Delaware & Hudson:
 Train-Control Petition..... 351
 Delaware, Lackawanna & Western:
 Dog Fight Causes Train Delay..... 292
 Denver & Rio Grande Western:
 Automatic Interlocking..... *47
 Completes Signaling of Main Line... *141
 Derailments:
 See Accidents
 Derails:
 Automatic Plant with..... *71
 Testing Switches and..... *376
 Detector Bar:
 Falls 188
 In 1932 †153
 Disconnect Switch:
 Fused *227

E

Earth-Boring Machine:
 Mounted on Tractor..... *125
 Economy Measures..... †250
 Eight Avenue Subway:
 Signaling and Interlocking..... *296
 Electrical Connections:
 Testing *27
 Electric Arc Cutting & Welding Co.:
 Railroad Materials Corp. Representative 64
 Electric Interlocking:
 Burlington Installs Extensive..... *169
 I. C. *8
 Electric Locks:
 On Spring Switches..... 286
 Spring Switches..... *17
 Electric Service Supplies Company:
 Trade Publications..... 324
 Electric Storage Battery Co.:
 New Building at Cleveland..... 64
 Electrographic Brush:
 National Carbon Company, Inc..... 166
 Employees Clubs:
 Organizations of Railroads..... 291
 End Posts:
 Replacing *376
 Erie:
 Either-Direction Signaling..... *68
 Highway Crossing Signals..... †189
 Welded Bonds *135
 Esterline-Angus Company:
 Trade Publications..... 324
 Explosives:
 Signaling Helped Transportation..... 127

F

Fairmont Railway Motors, Inc.:
 Motor-Car Speedometer..... *61
 Fansteel Products Co., Inc.:
 Rectifiers and Related Equipment... 94
 Federal Electric Co.:
 Audible Signaling Equipment..... 64
 Fiber Base-Plates:
 Prevent Slipping..... *91
 Fibers:
 Renewing 123
 Fire Prevention 349
 Flagman Sign:
 Southern Pacific..... *328
 Fog Penetration 63
 Foot-Candle Meter:
 Pocket-Size *290
 Forestalling:
 Improper 101
 Freight Car Loading:
 Continues to Increase..... 352
 Freight Cars and Locomotives:
 New 291
 Freight Trains:
 Speed Record..... 127
 French Battery Company:
 Ray-O-Vac Electric Lanterns..... *164
 French Railway Signal Aspects:
 Paper on..... 199
 Frost:
 Drag-Type Contacts Minimize
 Trouble 156
 Frost Trouble:
 Prevention of..... *305
 Fuses:
 Letter to the Editor..... 74
 Renewable "AE"..... *61

G

Gage:
 Switch *289
 General Electric Company:
 Awards for Employees 127
 Distribution Department..... 94
 Electric Air Heaters..... *61
 General Railway Signal Company:
 Copper-Oxide Rectifiers..... *92, 94
 Purchased Railroad Supply Co..... 94
 Railway Supply Co. Sold to Western
 Railroad Supply Co..... 261
 Track-Circuit Development..... *378
 Type-SA Signaling..... 128
 G-M Laboratories, Inc.:
 Photoelectric Relay *350
 B. F. Goodrich Rubber Company:
 Two-In-One Tape..... 290
 Government Regulation:
 Of All Transportation..... 380
 Grade Crossings:
 No Longer a Railroad Question..... 199
 Record for Safety..... 351
 Grade Sign:
 Standard †81
 Grand Trunk:
 Construction 128
 Grand Trunk Western:
 Installs Automatic Signals..... *333
 Grease Cups:
 Motor Cars..... 91
 Grease Gun:
 Fitting *197
 Special Tip for..... 220
 Great Northern:
 Automatic and Remote Control..... *103
 Automatic Interlocking Protects End
 of Double Track..... *363
 Discontinues Train Control..... 42
 Train Control Decision..... †81
 Grid-Glow Flasher:
 Westinghouse Research Laboratories..... *165
 Grounded Circuits:
 Danger of False-Clear Failures..... 375
 Ground Resistance:
 Testing Methods..... *83
 Ground Tester:
 "Meg" *29

H

Handles:
 Oil or Water Can..... 198
 Heaters:
 Electric Air *61
 Height Meter:
 James R. Kearney Corp..... *126
 High Masts:
 Working on 155
 Highway Crossing Accidents:
 Decrease in 127
 Highway Crossing Protection..... †22
 Correct Distribution of Charges..... †340
 Highway Crossings:
 Bill Requiring Inspection of Railroads and 30
 Observe Motorists at 291
 Highway Crossing Signals:
 A. R. A. Standards 16
 B. & L. E. *43
 C. G. W. *201
 Colorado Adopts A. R. A. Standards 291
 Complicated Circuits 87
 Cutout circuit 90
 Erie *68
 History *55, 82
 Ice on Bells 198
 In the Argentine *234
 New York State Amend Regulations
 Sign for on S. P. *328
 Special Circuit for *349
 Union Switch & Signal Company..... *125
 Warning Device for..... *222
 Western Railroad Supply Co. Pamphlet 380
 Highway Crossing Signs:
 Standard †52
 Highway Statistics 253
 Highway Trailer Company:
 Earth-Boring Machine *125
 Home Signals:
 Location of 286
 Hose:
 Portable E. P. 315
 Houston Belt and Terminal R. R.:
 Construction 94
 Hudson and Manhattan:
 Construction 292

I

Illinois Central:
 Electric Interlocking *8
 Illuminometer:
 Weston *29
 India:
 Power Signaling in *213
 Indicator:
 Emergency 155

Institution of Railway Signal Engineers:
 Activities of 70
 French Railway Signal Aspects..... 199
 Program for Current Year..... 127
 Instruments:
 Square Case Conserve Space..... *350
 Insulated Joints:
 Maintaining 197
 Base Plate Slipping..... 91
 One-End 84
 Insulation:
 Emergency 259
 Insulators:
 Advantages of Glass..... 286
 Interchangeability Tests:
 Composite A. T. C. Equipment..... *217
 Interlockers:
 All-Relay on C. G. W. *201
 Automatic *160
 All-Relay, C. R. I. & P. *19
 Alton Demonstrates Feasibility of... *329
 An Early Automatic 282
 Automatic 209
 Automatic †340
 Automatic and Remote Control for
 Junction *103
 Automatic, C. G. W. *33
 Automatic, Collision at 130
 Automatic Plant with Derails..... *71
 Automatic Protects End of Double
 Track on G. N. *368
 B. & O. C. T. Stops Theft of Coal
 with Four Automatic Plants..... *231
 Big Four Uses C. T. C. for..... *75
 B. & M. at Boston *235
 Burlington Installs Extensive New
 Electric *169
 Burlington's Modern *359
 C. G. W. and C. & N. W. *33
 Circuits at Crossings..... *342
 Eighth Avenue Subway *296
 Electric, I. C. *8
 Electro-Pneumatic, Buenos Aires
 Terminal *309
 New Specifications for Automatic... 314
 New Type of Lead-Out at Porter,
 Ind. *311
 Nickel Plate Electric..... *107
 Non-Interlocked Switches †82
 P. & L. E. at Connellsville, Pa. *366
 Reconstruction of Chicago Union
 Station *277
 Relation of Maintenance to Performance *247
 Relays 320
 Remote Control on M. P. *207
 Signals at Automatic Plants †219
 Train Recorders in Automatic Plants 257
 U. P. at Cheyenne..... *65
 Utah Permits Installation of Automatic *47
 Interlocking Relays:
 Breaking Control Circuits Through †281
 Interstate Commerce Commission:
 Abstract of Report of Bureau of
 Safety on Train Control Cores 77
 Annual Report Bureau of Safety..... 7
 Annual Signal Statistics..... *183
 Cab Signals in Lieu of Automatic
 Train Control 271
 Elects C. R. Porter Chairman
 Government Regulation of Transportation 380
 G. N. Train Control Decision..... †81
 Monthly Reports from Carriers..... 94
 Northern Pacific A. T. C. Petition... 127
 N. P. Train-Control Hearing..... 229
 Permits G. N. to Discontinue Train
 Control 42
 Permits N. P. to Remove Train Stop
 System 270
 Reopened Petition of M. P. 323
 Reopening of A. T. C. Proceedings
 for U. P. 199
 Report on Collision at Automatic
 Interlocking 130
 Signal Failure Alleged..... 67
 U. P. Train-Control Hearing 229
 Inventory:
 Best System for Avoiding Waste... 287

J

Jack:
 Switch-Point *90
 James R. Kearney Corporation:
 Fused Disconnect Switch..... *227
 Height Meter..... *126
 Jig:
 For Offsetting Switch Plates..... *289

K

Kinks:
 Bees in Signal Head..... 259
 Brake Lining..... 124
 Center-Bearing Clamp..... *91
 Clamp for Under-Cutting Commutators *197
 Crossing-Signal Cutout..... *90
 Emergency Indicator..... 155
 Emergency Insulation..... 259
 Fire Prevention..... 349
 Grease Cups..... 91
 Grease-Gun Fitting..... *197

Handling Meters Safely..... 59
Hints on Painting..... 376
Jig For Offsetting Switch Plates..... *289
Lamp Tester..... *259
Maintaining Insulated Joints..... 197
Measuring Output of Battery..... *315
Meter Leads..... *155
Miscellaneous..... 60
Motor-Car Operation..... 155
Polishing Buffer..... *220
Portable E. P. Hose..... 315
Prevent Fiber Base-Plates from Slipping..... *91
Rack for Exhausted Battery Elements..... *28
Rail Sweeps..... 155
Relay Seal..... 289
Renewing Fibers..... 123
Replacing End Posts..... *376
Shunting Device for Motor Car..... *124
Signal Cases..... 259
Snow Plow..... *123
Some Motor-Car Ideas..... 59
Special Circuit for Highway Crossing..... *349
Special Tip for Grease Gun..... 220
Special Wrench for A. R. A. Nuts..... *27
Switch Gate..... *289
Switch-Point Jack..... *90
Telephone Set..... *259
Terminal Board Mounting..... *91
Testing Electrical Connections..... *27
Testing Switches and Derails..... *376
Throttle Retainer..... 90
Track-Battery Connections..... *60
Track Shunting..... 197
Universal Lock Rods..... *349
Using a Lamp as a Voltmeter..... *27
Water Pump..... 315
Wind-Shield..... *59
Working on High Masts..... 155

L

Lamps:
As Voltmeters..... *27
Tester..... *259
Testing..... *254
Lanterns:
Ray-O-Vac Electric..... *164
Lehigh Valley:
Construction..... 31
Reduces Operating Costs of Signaling..... *268
Letters to Editor:
An Early Automatic Interlocking..... 282
Condenser needed..... 314
Criticizes Suggestion..... 253
Crossing-Signal History..... 82
Fuses and Fuses..... 74
Rail-Motor-Car Shunting..... 219
Simultaneous Transmission..... 252
Track Circuits and Rail Motor Cars..... 341
Lifting Yourself by Your Own Boot-Straps..... *368
Lightning Arresters:
Westinghouse Electric & Mfg. Co..... *227
Lightning Protection:
Better..... *189
For Signal Power Line Transformers..... *177
Rock Island Improves..... *182
Lights:
Track-Model..... 225
Line Break:
Switch Protection..... *250
Line Construction:
Centralized Traffic Control..... *316
Lineup:
False Change of..... *86
Lock Rods:
Universal..... *349
Locks:
Electric for Spring Switches..... *17
Electric for Spring Switches..... 286
Mechanical F. P. for Spring Switches..... *321
London & North Eastern:
Construction..... 31
London-Midland-Scottish:
Speed-Signaling in England..... *357
Los Angeles & Salt Lake:
Automatic Interlocking..... *47
Louisville & Nashville:
Collision at Wald, Ala..... 362
Louisville Frog, Switch & Signal Co.:
Lamp Bulletin..... 280
Frog and Switch Business Sold to Morden Frog & Crossing Works..... 352

M

Maintenance:
Combined on M. & St. L..... *368
Maintenance and Performance:
Relation in Electric Interlocking Plant..... *247
Maintenance Forces:
Consolidated..... 356

Manhole Frames and Covers:
American Standards Association..... 64
Mechanical Locking:
Oiling..... 60
Mellon Institute of Industrial Research:
Fellowship..... 31
Meter Leads..... *155
Meters:
Handling Safely..... 59
Height..... *126
Pocket-Size Foot Candle..... *290
Mice:
Field..... 285
Miniature Signal System:
Hobby..... *102
Minneapolis & St. Louis:
Combined Maintenance..... *368
Maintenance Forces Consolidated..... 356
Missouri-Kansas-Texas:
Safety Record..... 93
Missouri Pacific:
I. C. C. Reopens Petition..... 323
Maintenance of C. T. C..... *177
Record for Grade Crossing Safety..... 351
Remote-Control Interlocking..... *207
Missouri Truck Law:
Uphold..... 292
Motor Cars:
Center Bearing Clamp..... 91
Operation..... 155
Protection..... 120
Shunting Device for..... *124
Some Ideas..... 59
Throttle Retainer..... 90
Track Circuits and..... 341
Motor-Car Speedometer:
Fairmont..... *61

N

National Carbon Company, Inc.:
Electrographitic Brush..... 166
National Committee On Industrial Rehabilitation:
Activities of..... *368
National Electric Products Corp.:
Phelps Dodge Consolidation..... 128
National Lumber & Creosoting Co.:
Trade Publication on Poles..... 32
New Devices:
"AE" Renewable Fuse..... *61
Earth-Boring Machine Mounted on Tractor..... *125
Electric Air Heaters..... *61
Electrographitic Brush..... 166
E-P Switch Movement..... *166
Fairmont Motor-Car Speedometer..... *61
Fused Disconnect Switch..... *227
G-R-S Copper-Oxide Rectifiers..... *92
Grid-Glow Flasher..... *165
Heavy-Duty Controller for Draw-bridge..... *62
Height Meter..... *126
Light-Car Shunting..... *377
Mechanical F. P. Lock for Spring Switches..... *321
"Meg" Ground Tester..... *29
New Highway-Crossing Signal..... *125
New Rheostats..... *228
New Square-Case Instruments Conserve Space..... *350
New Type Solder Developed for Aluminum..... 62
O-B Strain Clamp..... *227
Oilproof Okocord..... 290
Photoelectric Relay..... *350
Pocket-Size Foot-Candle Meter..... *290
Ray-O-Vac Electric Lanterns..... *164
Switch Circuit Controller..... *164
Track-Circuit Development..... *378
Two-In-One Tape..... 290
Two New Lightning Arresters..... *227
Type-AB De-ion Circuit Breaker..... *163
Union DP-17 Polarized Relay..... *165
Union Retained-Neutral Polarized Relay..... *163
Weston Illuminometer..... *29
New York Central:
Automatic Plant With Derails..... *71
Collision at Clay Bank, Ohio..... 323
Construction..... 31
Maintenance of South Bend Interlocking..... *247
New Type Lead-Out..... *311
Stranded Plug-Type Bonding..... *145
New York, Chicago & St. Louis:
A-C. Primary System..... *137
Construction..... 262
Electric Interlocking..... *107
Electric Lock for Spring Switch..... *17
New York, New Haven & Hartford:
Construction..... 94
First Flashing-Light Signal..... *55
Signaling and Remote Control..... *78
New York, Ontario & Western:
Construction..... 292
New York Rapid Transit Co.:
Construction..... 94
New York State:
Highway Crossing Signal Regulations..... 51
Norfolk & Western:
Defective Switch Causes Accident..... 229
Petitions I. C. C..... 379
Slide-Detector Fences..... *243

Northern Pacific:
Boulder Causes Derailment..... 280
Hearing on A. T. C. Petition..... 127
Petition to I. C. C. Postponed..... 167
Petitions to Remove Train Control..... 98
To Remove Train Stop System..... 229
Train-Control Hearing..... 229
Nuts:
Removing with Oil..... 226

O

Obsolescent Signaling..... *250
Ohio Brass Co.:
Disposed Pole-Line Hardware to Hubbard & Co..... 262
Strain Clamp..... *227
Oiling Mechanical Locking..... 60
Okonite Company:
Oilproof Okocord..... 290
Operating Statistics..... *121
OS Track Circuits:
Testing..... 28

P

Paint:
Aluminum..... *22
Painting:
Hints on..... 37
Parkway Bootlegs:
Rail Connections..... *8
Pennsylvania:
Construction..... 63, 64, 32
Freight Train Speed Record..... 121
Safety Record..... 93
Pension Plan:
Uniform..... 93
Pere Marquette:
Dwarf Signals as Automatics..... *351
Phelps Dodge Copper Products Corp.:
Consolidation..... 128
Pittsburgh & Lake Erie:
Interlocking at Connellsville, Pa..... *366
Polarized Relays:
Tool for Adjustment of..... *220
Poles:
Consumption of Creosoted Pine..... 229
Power Bills:
Cutting..... *218
Power-Factor Correction:
Resonating Transmission Line..... *121
Signal Power Transmission Lines..... *109
Power Rates:
Versus Power Factor..... 24
Power Supply:
Rectifier-Primary..... 370
Premax Products Corp.:
Railroad Materials Corp. Representative of..... 128
Primary Battery:
A-C Primary System..... 136
Rectifier-Primary Supply..... 370
Track Circuits in Electrified Zone..... *304
Pumps:
Water..... 315

Q

Quality Proves Its Worth..... *218

R

Racks:
Battery..... *283
Exhausted Battery Elements..... *23
Rail Connections:
Parkway Bootlegs at..... *87
Rail Joints:
Inspection..... 373
One-End-Insulated..... 84
Rail Motor Cars:
Track Circuits and..... 341
Railroad Materials Corporation:
Eastern Representative, W. N. Matthews Corp..... 236
Representative for Electric Arc Cutting & Welding Company..... 64
Representative of Premax Products Corp..... 128
Railroad Supply Company:
General Railway Signal Co. Purchases..... 94
Rails:
Fractures..... 347
Rail Sweeps..... 155
Railway Achievement:
Increased Efficiency..... *52
Railway Business Association:
Reorganized and Expanded..... 167
Railway Employment..... *251
Railway Mechanical Engineer:
First Hundred Years..... *241
Railway Problems:
Employees Awakening to..... *251
Employees Should Protect Their Interests..... *369
Reading:
Construction..... 63, 64, 128
Reconstruction Finance Corporation:
Loans for Two Railroad Projects..... 352
Opportunity to Reduce Unemployment Through..... *213
Two Railroads To Get Loans..... 380
Who Benefits?..... *282

Recorders:
 Automatic Headway Use in Automatic Interlocking Plants 257 *331
Rectified Alternating Current:
 Operation 26
Rectifier-Primary Battery Supply:
 Advantages and Disadvantages 370
Rectifiers and Related Equipment:
 Fansteel Products Co., Inc. 94
Rectifiers:
 G. R. S. Copper-Oxide 92, 94
Regulation and Competition:
 Commissioner Eastman Comments on 63
Relay Cases:
 Weatherproof 60
Relay Houses:
 Concrete as Compared with Steel 374
Relays:
 Breaking Control Circuits Through Interlocking 1281
 Interlocking 320
 Photoelectric 350
 Retained-Neutral 353
 Steel and Concrete Houses 374
 Tool for Adjustment of Polarized Union DP-17 Polarized 165
 Union Retained-Neutral Polarized Approach Lighting 25
Renewable Fuse:
 Associated Engineers Company 61
Repair Shops 317
Replacements and Running Repairs:
 Quality Proves Its Worth 1218
Resonating Transmission Lines:
 Power-Factor Correction 121
Retainer:
 Throttle 90
Reverting to Single Track 1281
Rheostats:
 James G. Biddle Company 228
 Richmond, Fredericksburg & Potomac Retarders 211

S

Safety Program:
 A. R. A. for December 380
Safety Records:
 M-K-T 98
Sand:
 Drifting 320
Seals:
 For Relay 289
Second Track:
 Removing 114
Shunting:
 Light Car 377
 Rail Motor Cars 1189
 Rail-Motor-Car 219
 Track 197
 Motor Car 124
Shunting Track Circuits:
 By Light-Weight Motor Cars 1318
Signal Cases:
 Pasteboard for Sweating 259
Signal Equipment:
 Federal 64
Signaling:
 D. & R. G. W. Completes Developments 141
 In India 218
 Lehigh Valley Reduces Operating Costs 268
 New Eighth Avenue Subway in New York City 296
 New Haven 78
 Obsolescent 1250
 Progress in 1931 121
 Speed in England 357
 Subway 1318
 Transportation of Explosives 127
Signaling Construction:
 Statistics 1931 1
Signal Performance:
 Record Not an Indictment 182
Signal Power Transmission Lines:
 Power Factor 25
 Power-Factor Correction 109
 Resonating 121
Signal Practice:
 German Railways 127
Signal Repair Shop:
 Canadian Pacific 138
Signals:
 See Highway Crossing
 Alining Color-Light 156
 Approach Lighting 285
 A. R. A. Standards, Crossing 16
 Automatic Interlocking Plants 1219
 Bees in Heads of Light 259
 Cab in Europe 379
 Cab in Lieu of Automatic Train Control 271
 Call-On Different From Stop-and-Proceed 1154
 Charges for Highway Crossing Protection 1340
 Colors in Europe 351
 Dwarf as Automatics on P. M. 353
 Either-Direction on Erie 68
 Failure Alleged 67
 Flashing-Light Crossing on B. & L. E. 43
 Grand Trunk Western Installs Automatic 333
 Highway Crossing History 82

Hostler Disregards 303
Location of Home 286
New York State Amends Regulations 51
Raising 256
Take-Siding 362
Signals Disobeyed 362
Signal Section, A. R. A.:
 See A. R. A. Signal Section
Signal Statistics:
 I. C. C. Annual 183
Signal System:
 Miniature 102
Signs:
 Flagman on S. P. 323
 Standard Grade 181
Simmons-Boardman Pub. Co.:
 New Officers 32
Single Track:
 Reverting to 1281
Single Track Lines:
 Capacity of 152
Slide-Detector Fences:
 N. & W. 248
Smashboards:
 Mechanisms 118
Snow Melters:
 Experience with 312
Snow Plow 123
Solder:
 Aluminum 62
 Something Must Be Done 1189
South American Railway:
 E. P. Interlocking Buenos Aires Terminal 309
Southern:
 Construction 64
Southern Pacific:
 Automatic Block Signals 229
 Flagman Sign on 328
 Specifications for Aluminum Paint 226
Specifications:
 Automatic Interlockings 314
Speedometer:
 Fairmont Motor-Car 61
Speed Signaling:
 In England 357
Sprague, Frank J.:
 Anniversary 229
Spring Switches 318
Electric Lock for 17
Electric Lock on 286
Mechanical F. P. Lock for 321
Statistics:
 Highway 253
 I. C. C. Annual Signal 183
 Operating 121
 Signaling 1
Stiles Company, T. Geo.:
 Heavy-Duty Controller for Draw-bridge 62
Storage Batteries:
 Installation and Maintenance of Lead-Type 275
 Testing 345
Strain Clamps:
 Ohio Brass Company 227
Subways:
 Signaling 1313
 Signaling and Interlocking New York City 296
Supplies:
 Delivery of 228
Surveys:
 Car-Retarder Systems 335
Switch Boxes:
 Shunting Track Circuit 347
Switch Circuit Controller:
 Union Switch & Signal Company 164
 Malicious Tampering 319
Switches:
 Centralized Traffic Control 122
 Fused Disconnect 227
 Maintaining Spring 318
 Mechanical F. P. Locks for Non-Interlocked Permits Economical Installation 182
 Testing 376
 Electric Lock on, Spring 286
Switch Gage 289
Switch Movement:
 U. S. & S. Co. Electro-Pneumatic 166
Switch Plates:
 Jig for Offsetting 289
Switch Protection:
 Track Shunt or Line Break for 1250

T

Tampering:
 Malicious 319
Tape:
 Two-In-One 290
Taxation:
 Burden is Limiting Railway Employment 1116
 Railway Employees Should Protect Their Interest 1190
Telephone Set 259
Terminal Boards:
 Mounting 91
Testing:
 OS Track Circuits 284
 Ground Resistance 83
Texas & New Orleans:
 Petitions I. C. C. to Vacate Train-Stop Order 260

Tools:
 C. T. C. Maintenance 85
Track:
 Removing Second 114
Track Battery:
 Connections 60
Track Capacity:
 Big Four 224
 C. T. C. Increases 193
Track Circuits:
 And Rail Motor Cars 341
 Constant-Current A-C Developments 112
 Polarized 378
 Primary, in Electrified Zone 56
 Shooting Trouble 304
 Shunting 56
 Shunting 1313
 Shunting OS 1189
 Testing OS 284
 Trouble Account Wet Track 256
 Voltage 157
Track Shunt:
 Switch Protection 1250
Trade Publications:
 "Alcoa Aluminum and Its Alloys" 64
 American Standards Association 64
 Copper-Oxide Rectifiers 94
 Electric Service Supplies Company 324
 Esterline-Angus Company 324
 Federal Signaling Equipment 64
 Gas Electric Sets 292
 Louisville Frog, Switch & Signal Co. 230
 Poles 32
 Transmission Line Protection 292
 Type-SA Signaling 128
Train Control:
 Accident Account Forestalling 101
 Bureau of Safety Tests on Cores 77
 G. N. Decision 181
 G. N. Permitted to Discontinue 42
 N. P. Petitions to Remove 93
 N. P. 229
 U. P. 229
Train Stops:
 Cost 115
Transformers:
 Lightning Protection for Signal Power Line 177
Transmission:
 Simultaneous 222, 252
Transmission Lines:
 Power-Factor Correction 109
 Resonating 121
Transportation:
 Proposes Government Regulation of 380
Truckers:
 "Wildcat Responsible for Transportation Chaos" 380
Truck Regulation:
 Lawyers Favor 352
Two Birds With One Stone 1189

U

Unemployment:
 Opportunity to Reduce 1318
Union Pacific:
 Automatic Train Control Orders 167
 Interlocking at Cheyenne 65
 I. C. C. Ordered Reopening of A. T. C. Proceedings 199
 I. C. C. Permits Cab Signals in Lieu of A. T. C. 271
 Train-Control Hearing 229
Union Switch & Signal Company:
 DP-17 Polarized Relay 165
 Highway-Crossing Signal 125
 Light-Car Shunting 377
 Mechanical F. P. Lock for Spring Switches 321
 New E-P Switch Movement 166
 Retained-Neutral Polarized Relay 163
 Switch Circuit Controller 164

V

Voltmeters:
 Using Lamp as 27

W

Wabash:
 Maintenance of C. T. C. 131
Ward Leonard Electric Company:
 District Office in Chicago 128
Welded Bonds:
 Erie 135
Western Railroad Supply Company:
 Highway Crossing Signal Pamphlet 380
Westinghouse Electric & Mfg. Co.:
 Gas Electric Sets 292
 Grid-Glow Flasher 165
 Lightning Arresters 227
 Square-Case Instruments 350
 To Spend \$1,260,000 for Raw Materials 351
 Transmission Line Protection 292
 Type-AB De-Ion Circuit Breaker 163
Weston Electrical Instrument Corp.:
 Illuminometer 29
 Pocket-Size Foot-Candle Meter 290
What's the Answer?:
 Aluminum Paint 225
 Approach Lighting 285

Automatic Interlockers	*160	Interlocking Relays	320	Shooting Track-Circuit Trouble	56
Battery Economy	226	Inventory System	287	Simultaneous Transmission	*222
Battery Housing	317	Lamp Testing	*254	Smashboard Mechanisms	118
Battery Racks	*283	Light-Traffic Crossing	*54	Spring Switches	318
Broken-Rail Protection	*221	Location of Home Signals	286	Storage Batteries	23
C. T. C. Line Construction	*316	Malicious Tampering	319	Switch-Box Circuits	*347
C. T. C. Studies	159	Motor-Car Protection	120	Take-Siding Signals	*58
C. T. C. Switches	122	Mounting on Concrete	*224	Testing OS Track Circuits	284
Coded or Direct-Wire C. T. C.?	85	One-End-Insulated Rail Joints	84	Testing Storage Cells	345
Crossing Problem	*342	Parkway Bootlegs at Rail Con- nections	*87	Tools for C. T. C. Maintenance	85
Crossing-Signal History	*55	Polarized Track Circuits	56	Track Capacity	192
Dampness	158	Power-Factor Correction	*121	Track Capacity	224
Delivery of Supplies	223	Rail Fractures	347	Track-Circuit Trouble	256
Drifting Sand	320	Rail Joints	373	Track-Circuit Voltage	*157
Electric Lock on Spring Switch	286	Raising Signals	256	Track-Model Lights	225
False Change of Lineup	*86	Rectified A-C. Operation	26	Train Recorders	257
Field Mice	285	Rectifier-Primary Power Supply	370	Who Benefits?	†282
Grounded Circuits	375	Relay Houses	374	Wind Shields: Motor Cars	*59
Ground-Resistance Testing Methods	*83	Repairing a Cable	375	Wrench: A. R. A. Nuts	*27
Highway-Crossing Signals	87	Repair Shop	317		
Highway Signals	*222	Series Track Relay for Approach Lighting	*25		
Insulators	286				

Index to Authors

[Illustrated articles are indicated thus*]

Abell, W.....	57	Hahn, E. H.....	257	Rudd, A. H.....	87
Alexis, A. T.....	156	Hard, Ture.....	*112	Ryan, F. J.....	*349
Ambach, E. T.....	84	Hartvig, C. E.....	56		
Anderson, B. T.....	195	Hess, E. J.....	60, *155, *289	Salzman, T. A.....	*124
Ash, P. P.....	*342	Hodgdon, C. R.....	196	Saunders, J. E.....	26
		Hoffman, W. A.....	25	Scharf, P. S.....	342
		Holmes, M. K.....	286	Schermerhorn, E. F.....	84
Bagley, F. H.....	24, *58, *348, 375	Inwood, T. G.....	256, *311, 373	Schmidt, Frank R.....	159, 284, 286
Bartley, Fred.....	197	Jacobs, H. M.....	*109, 121	Schubert, J. H.....	192
Beall, C. R.....	122	Jensen, Otto M.....	56	Schwendt, B. J.....	*54, 193, 287, 314
Bear, Joe B.....	259	Johnson, J. A.....	348	Scott, Ralph C.....	*28
Beck, Edward.....	*177	Johnson, W. C.....	119, 238	Shaver, F. E.....	*180
Beck, G. E.....	158, 159, 375	Jones, T. R.....	124, *289	Sheets, R. A.....	25, 119, 318, 320, *338
Beggs, E. W.....	*255	Jordan, A. L.....	315	Shepherd, W. E.....	*25, 256, 348, *376
Bell, Chas. W.....	85	Kearnton, T. H.....	*160	Sipperley, Lorne H.....	156
Bennet, W. R.....	*213	Kellenberger, K. E.....	*49	Smith, B. L.....	89, *312
Beyllies, A. J.....	*315	Kelloway, C. J.....	285, 317	Smith, Carl T.....	25
Bishop, Errett.....	275	Knapp, W. H.....	375	Smith, E. B.....	284
Brashares, H. E.....	118	Larson, F. C.....	*197	Smith, L. W.....	*221
Bruce, J. E.....	197	Lesley, Hugh.....	346	Smith, P. C.....	*197
		Lidgerding, W. H.....	349	Smith, T. A.....	255
Callender, J. W.....	289	Link, Harold W.....	285	Snavey, C. S.....	284
Cameron, C. H.....	*224, 347	Lord, E. L.....	*157, 317	Stahl, W. A.....	256
Cargile, C. B.....	*86, 320, 341, 343	Lucas, S. M.....	26, 371	Stalknecht, F. S.....	346, 371
Carley, J. M.....	59	Luse, Everett B.....	155, 259, 285	Stanley, George.....	120
Carpenter, L. E.....	*222	McCormick, C. B.....	284	Stanton, R. J.....	24
Charlton, R. C.....	160, 320	McGill, J. P.....	159	Stevens, T. S.....	89, *225
Chevalier, H. W.....	*222	McKeen, A. H.....	56, 318	Stewart, A. W.....	282
Cleveland, W. D.....	120	Meek, R. W.....	223, 258	Stilwell, W. H.....	120, *233
Cooper, H. W.....	224, 255, 256, 346	Miller, J. D.....	*220	Stolts, C. F.....	25, *129, 224, 317
Corcoran, J. J.....	319	Mock, J. C.....	89	Stradling, E. G.....	374
Crantford, H. B.....	372	Mollis, B. W.....	*47, 121, 141, 195	Sundt, E. V.....	74
Curran, J. W.....	*293	Moore, A. G.....	374	Sykora, John C.....	24
		Moore, R. D.....	226, 285		
Day, C. E.....	192	Morgan, H. G.....	226	Taylor, C. A.....	161, 318, 347
Day, S. M.....	372	Morrison, C. H.....	*55	Taylor, E. S.....	317
Dayton, W. L.....	88	Muller, J. P.....	225	Tegeler, F. A.....	*83, *90
DeMerritt, E. B.....	159	Norman, George K.....	*376	Testerman, Roy E.....	88
Dickie, E. E.....	57, 83	North, A. E.....	*27	Thornberry, E. H.....	85
Dower, D. W.....	86	Northman, M. T.....	123, 155, 198, 220, 376	Tillett, C. H.....	225
Dryden, G. H.....	23, 159	O'Dore, James.....	286	Turner, A. G.....	59, 90, *91, *120, *128, 198, *220
Dunham, C. A.....	88, 287	Oler, B. F.....	*221	Uhr, I. A.....	224, 286, 287
Dunn, H. C.....	375	Olsen, A. C.....	91		
		Oppelt, J. H.....	*17, *107, *137, *285	Walters, L. C.....	*121
Eck, W. J.....	56, 347	Otterbourg, M. A.....	254	Warner, W. E.....	*27
Elsworth, R. B.....	26, 88, 225	Overly, W. M.....	284, 315	Weatherby, E. P.....	320
England, W. B.....	*60, *91	Padmore, B. R.....	*304	Webster, J. A.....	*234
Esterline, J. W.....	257	Post, E. K.....	375	Werthmuller, L. S.....	119
		Rapelye, E. F. D.....	347	Wesson, E. G.....	373
Falkenstein, O.....	*71	Reames, J. D.....	284	Whitehorn, A. R.....	343
Farquhar, G. A.....	*59	Reed, H. R.....	*27	Wiegand, F. B.....	82, *87, 119, 348
Fehrenbach, A. W.....	219	Rice, A. H.....	160	Wight, S. N.....	122
Follett, W. F.....	370	Richards, D. W.....	288	Winans, E.....	56
Franklin, H. A.....	286	Rife, W. H.....	320	Wion, G. H.....	118, 226
French, Fred.....	*349	Roberts, A. A.....	*331	Woods, L. D.....	256
Fuller, D. W.....	*13, 158, 319, 374	Robinson, C.....	*222	Workman, R. B.....	120
Furman, D.....	*91	Rodger, G. A.....	195, 258, *316, 318	Wyant, Leroy.....	*87, 89, *182, 257, 286, 287
				Yarrell, A. J.....	225
Gage, P. W.....	*90			Zane, W. F.....	85
Garrity, P. A.....	23			*169, 209, *263, 283, *305, *359, 374
Gault, P. M.....	89			Zehnder, Louis R.....	86
Graves, D. R.....	254				
Grimm, C. A.....	*259				
Guigue, D.....	*57, 155, 220, 257				

Personal Mention

[Photographs are indicated thus*. Obituaries are indicated thus†]

Anderson, Walter.....	380	Edmunds, Frank W.....	†230, †324	McMaken, F. R.....	31
Andreucetti, J. A.....	64	Elliot, C. G.....	262	Nelson, G. A.....	292
Armbruster, B.....	64	Ellis, George E.....	132	Pagesy, C. H.....	168
Armstrong, T.....	380	Errickson, Earl W.....	168	Peterson, J. J.....	380
Balliet, H. S.....	*260	Feury, H. M.....	164	Pitts, R. B.....	128
Barber, Clyde.....	128	Fiske, H. C.....	128	Rice, D. S.....	64
Bartholomew, E. L.....	32	Foster, I. C.....	31	Rowan, Charles A.....	*168
Baxter, Sidney L.....	260	Gort, Godfrey.....	64, *261	Rowe, C. E.....	230
Beasley, B. F.....	31	Gray, Kline.....	128	Rowland, Grattan W.....	230
Beck, G. E.....	230	Hahn, E. H.....	230	Rutherford, J. Mack.....	*†261
Biddle, Lee O.....	94	Hanlon, M. D.....	*†260	Salisbury, Ernest L.....	230
Bigley, N. E.....	200	Hemphill, F. J.....	31	Salverson, C. A.....	82
Blackmore, George A.....	*168	Hensel, John.....	261, *262	Schmidt, H. P.....	64
Bossert, William F.....	202	Hints, J. R. C.....	64	Schreuder, J. G.....	*†200
Bousquet, E. N.....	230	Hough, V. J.....	380	Schultz, Peter.....	260
Brach, Leon S.....	261	Humphrey, A. L.....	*168	Sheets, R. A.....	64
Bradbury, David W.....	168	Inwood, T. G.....	230	Siemon, Theodore W.....	†352
Brand, William G.....	261, *262	Jones, Frank Cazenove.....	*262	Smith, Arthur H.....	*261
Buck, H. M.....	261, *262	Jones, J. D.....	167	Spindler, Carl J.....	128
Cheever, H. Durant.....	*262	Jones, W. A.....	64, 168	Stanton, H. L.....	167
Christofferson, C. A.....	*128, 167 *†200	Jones, Willington A.....	*†380	Swallow, Gerald.....	200
Clark, E.....	31	Julian, J. M.....	64	Tasker, A. E.....	230
Cole, Theodore, H.....	*261	Kelly, E. J.....	167	Thompson, F. H.....	32
Cook, William F.....	94	Kies, Curtis.....	*31	Toft, G.....	168
Cory, W. M.....	168	Killian, H. L.....	230	Underwood, Louise E.....	324
Cronk, C. D.....	230	Koch, F. C.....	82	Wagner, E. A.....	324
Dawson, W. A.....	230	Kohnen, Paul W.....	†230	Wakeman, K. F.....	230
Dinnerville, Walter.....	261, 262	Law, Stanley W.....	128, *167	Wardwell, F. N.....	64
Dolan, Leland V.....	*261, 262	Miskelly, Samuel.....	*324	Warg, E. D.....	64
Down, S. G.....	168	Morrison, H. A.....	*292	Whitcomb, L. L.....	230
Dryden, W. L.....	64, 94	McCart, J. R.....	31	Wilkerson, B. E.....	128
		McC. Dunn, N.....	168		