# 1914

# CATALOGUE AND PRICE LIST

# SECTIONI

Lightning Arresters
Resistance Units
Terminals
Connectors
Ground Tubes and Rods
Tags
Wires
Socket Wrench
Locks
Steel Stencils
Solder



#### CHICAGO LIGHTNING ARRESTERS



Chicago "Vacuum" Lightning Arrester, Style "A" Size, 65%" Long, 1" Wide, 2½" High

Style "A" and Style "B" Lightning Arresters are substantially constructed, and mounted on a heavy Porcelain Base. They are equipped with a "Static" Discharge Tube which will discharge "Static" continuously without danger of "Grounding" at a Voltage of approximately 450 Volts. The Horn Type Springs take care of any heavier Lightning Discharges and crosses with Power Circuits.

Standard R. S. A. Binding Posts are used, the upper and lower being the "Line" Posts and the middle one the "Ground" Post. A standard Connecting Clip is furnished to provide a common ground, where Arresters are banked side by side on one-inch centers, all parts of these Arresters are easily accessible and can be instantly removed for inspection.

A pair of Horn Type Springs, separated by a fireproof porous septum block so shaped that the air gap varies from  $\frac{1}{32}$ " at the bottom to nearly 1" at the top, prevents any arc which may have been caused by lightning, from being sustained by the ordinary working currents. The Septum Block prevents any possibility of fusing the springs.

The Glass Vacuum Tube for Style "A" Arrester is heavy and of ample proportions to insure long life. It is provided with ferrule ends so it may be easily and quickly inserted or removed from the spring clips. The gap between the "Carborundum" Electrodes in Low Voltage Tube, although spaced far enough apart so that an arc cannot be sustained, is equivalent to a gap of .001" in open air. The gap in the High Voltage Tube is equivalent to a gap of .005" in open air. The Low Voltage type should not be used on Voltages above 110 Volts or on circuits having a current flow of more than one-half ampere, otherwise there is danger of sustaining an arc by the working current. The High Voltage type may be used on 110 and 220 Volt Power Circuits and on 500 Volt D. C. Street Railway Signal Circuits.



#### CHICAGO LIGHTNING ARRESTERS



Chicago "Non-Air" Gap Lightning Arrester, Style "B" Size, 658" Long, 1" Wide, 2½" High

The "Non-Air-Gap" Static Discharge Tube for Style "B" Arresters is made of fireproof fibre with ferrule ends. The Tube is filled with fine granular carborundum into which a number of prongs, which are part of the ferrule ends, protrude. The "Carborundum" granules in the air-tight tube offer practically no resistance to Lightning or Static Discharges, but to the ordinary working currents they offer a resistance of approximately 150,000 Ohms.

These Arresters are equally well adapted for use on D. C. or A. C. lines, and will discharge Lightning and Static continuously without interrupting the regular service, and are highly recommended where reliable high efficiency Arresters are required. They take the place of Terminals when used in Relay Boxes, Signal Cases, etc.

Trade No.	DESCRIPTION	List Price
225	Style A Lightning Arrester complete with Low Voltage Glass Vacuum Discharge Tube for use on lines of 110 Volts or less	\$4.00
225–16	Same as above except with High Voltage Glass Vacuum Discharge Tube for use on lines of 110 Volts or higher	4.00
226	Style B Lightning Arrester complete with Fireproof "Non-Air-Gap" Discharge Tube	2.50
225-1	Low Voltage Vacuum Discharge Tube	2.00
225-17	High " " "	2.00
226-1	Fireproof Non-Air-Gap "	.70
225-9	Septum Separator for Horn Springs	. 20
225-10	Porcelain Base	.75



#### SPARK GAP LIGHTNING ARRESTERS



No. 227 Style "A" Spark Gap (Full Size)



Style "B" Spark Gap (Full Size)

These Spark Gaps are used between Binding Posts of Magnet Terminals on track or line Relays and will positively prevent "Burn-outs" of Magnet Coils by Lightning or Static Discharges. They will fit Relays of any manufacture.

Style "A" is a plain metal to metal gap having an opening of  $\frac{1}{32}$ " between points and Style "B" is equipped with a pair of clips between which a high resistance block of carborundum is held securely in place. This block does not allow current used on Relays to pass but offers practically no resistance to static lightning discharges.

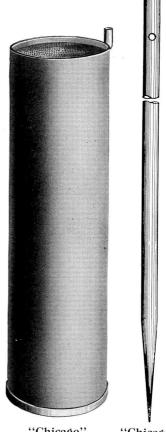
Trade No.	DESCRIPTION	List Price
227 228 228–4	Style A Plain Spark Gap as shown, each	\$0.25 .60 .25



#### CHICAGO GROUND TUBES AND RODS

"Chicago" Ground Tubes are made of perforated pure sheet copper 5" in diameter, one, two and three feet long. Tubes are provided on their upper end with a heavy copper wire lug for a No. 4 or lighter copper wire. They are filled with fine charcoal which absorbs moisture and keeps earth around the tube always in a moist condition, thus insuring a perfect and permanent ground. These Tubes are inserted into ground by using an ordinary post hole auger, making same the cheapest to install. No. 280–1 presents 227 square inches of surface, No. 280–2—415 square inches and No. 280–3—604 square inches from which it is self-evident that they provide an exceedingly good "Ground" at a low first cost.

GROUND RODS are furnished plain or galvanized, and are made of first class material, insuring sufficient stiffness to allow proper driving.



"Chicago" Copper Ground Tube

"Chicago" Ground Rod

Trade No.	DESCRIPTION	List Price
280-1 280-2	Copper Ground Tube, one foot long complete with Charcoal two feet " " " "	\$2.70
280-3	" " three " " " " "	4.50 6.30
281-1 281-2	Ground Rod "Plain" 3/8" x 6'	. 36
281–3 281–4	" " '½'' x 7'	. 60
281–11 281–22	" "Galvanized" 3/8" x 6'	.50
281–33	" " ½" x 6'	. 60 . 75
281-44	5/8" x 8"	



#### **CONNECTORS**



No. 230 1" Long



No. 231 1<sup>1</sup>/<sub>4</sub>" Long



No. 232 1½'' Long



No. 233 1¾" Long



No. 234 1¼'' Long



No. 235 2¼'' Long



No. 236 1/2" Long



No. 237 For Battery Elevators

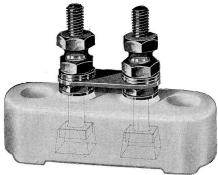
The Connectors shown above are used in Battery Chutes, Wells, and Battery Boxes, etc., where frequent connections have to be made. Connector No. 235 for Line Wire Taps.

Connector No. 237 is fastened to Vertical Strips of Battery Elevators. This Connector makes a permanent and neat job of Elevator wiring at least expense and at same time makes perfect connections and cannot "ground" battery wire.

Trade No.	DESCRIPTION	List Price
230	Double Brass Connector with Heavy Cast Brass Thumb	\$0.13
231	Insulated Brass Connector for use in Iron Battery Chutes and other places where plain connector may "ground" complete with Two (2) Machine Screws, each	.30
232	Double Brass Connector with Four (4) Machine Screws, each	.18
233	Company above but Insulated each	.40
234	Double Brass Connector with Four (4) Thumb Screws, each.	. 25
235	Line Wire Connector, used to tap Line Wires for Lightning Arresters and Multiple Connections, complete as shown (in	
	ordering specify size of line wire and size of tap wire), each	.40
236	Single Brass Connector with heavy Thumb Screws, each	.10
237	Brass Battery Elevator Connector for use on Battery Elevators, complete with Wood Screws, each	.38



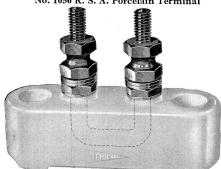
## **TERMINALS**



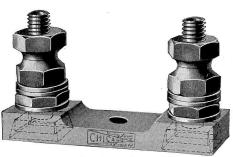
No. 1056 R. S. A. Porcelain Terminal



No. 74 (Full Size)



No. 71 Porcelain Terminal with U Bolt



No. 75 (Full Size)





No. 76 (One Half Size)



No. 73 (Full Size)



No. 77 (Full Size)

Porcelain Terminals shown are in accordance with R. S. A. Drawings and Specifications. They can be mounted on 1" centers, No. 71 does not require connecting strap as it is provided with a U Bolt Binding Post. Cast Brass and Bronze Terminals are provided with accurately fitting screws, nuts and washers.

Trade No.	DESCRIPTION					
1056 71 72	Standard 1056 R. S. A. Porcelain Terminal complete.  Same as above except with U Bolt Binding Post.  Cast Brass Terminal complete as shown, each.	\$0.30 .28				
$\frac{73}{74}$		.16				
75	Cast Bronze Terminal with Standard R. S. A. Binding Posts complete	. 30				
76 77	" " Heavy Wing Nuts (N. Y. Central) "	.32				



## RUBBER COVERED INSULATED WIRES



N. I. R. Solid Conductor Rubber Covered Wire, Finished with One Braid



N. I. R. Solid Conductor Rubber Covered Wire, Finished with Tape and Braid



N. I. R. Stranded Conductor Wire, Finished with One Braid



N. I. R. Stranded Conductor Wire, Finished with Tape and Braid



N. I. R. Flexible Conductor Wire, Finished with Tape and Braid

1-1 1-2 1-3 1-4 1-5 Same as above with Tape and Braid 1-4 1-5 Same as above with Tape and Braid 1-5 1-6 1-7 1-8 1-8 1-8 1-9 1-9 1-9 1-10 1-11 1-12 1-12 1-13 1-14 1-15 1-16 1-17 1-19 1-19 1-10 1-10 1-10 1-10 1-11 1-12 1-12 1-12	Trade No.	DESCRIPTION	List Price
Same as above with Tape and Braid   No. 6 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard   Same as above with Tape and Braid   No. 8 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 8 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard   Same as above with Tape and Braid   No. 9 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications   No. 9 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 9 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 12 B. & S. Gauge Single Braid Rubber Covered Wire, R. S. A. Specifications   No. 12 B. & S. Gauge Single Braid Rubber Covered Wire, R. S. A. Specifications   No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard   No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 14 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard   No. 6 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard   No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 6 B. & S. Sange Stranded Rubber Covered Wire, National Electric Code Standard   No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 6 B. & S. Gauge Stranded Rubber Covered Wire, National Electric Code Standard   No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 6 B. & S. Gauge Stranded Rubber Covered Wire, R. S. A. Specifications   Same as above with Tape and Braid   No. 6 B. & S. Same as above with Tape and Braid   No. 6 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric C	1-1	No. 6 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications.	
1-3		Same as above with Tape and Braid	
Same as above with Tape and Braid.   Same as above with Tape and Braid.   No. 8 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard	1-3	No. 6 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard	
Same as above with Tape and Braid	1-4	" 8" " " Single Braid Rubber Covered Wire, R.S.A. Specifications	
1-6	1-5	Same as above with Tape and Braid	
1-7 1-8 1-9 1-9 1-10 1-10 1-10 1-10 1-11 1-12 Same as above with Tape and Braid. No. 9 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 10 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 10 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard. No. 12 B. & S. Gauge Single Braid Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard. No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 14 B. & S. Gauge Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 6 B. & S. Gauge Stranded Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications. Same as above with Tape and Braid. No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, Nation	1-6	No. 8 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard	
1-9	1-7	" 9 " " " Single Braid Rubber Covered Wire, R. S. A. Specifications	
1-10 1-11 1-12 Same a sabove with Tape and Braid 1-15 No. 10 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard 1-15 No. 12 B. & S. Gauge Single Braid Rubber Covered Wire, R. S. A. Specifications. 1-16 1-17 Same as above with Tape and Braid 1-18 No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications 1-19 No. 14 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard 1-19 No. 6 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard 1-20 Same as above with Tape and Braid 1-21 No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-22 Same as above with Tape and Braid 1-23 No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-24 No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-25 Same as above with Tape and Braid 1-25 No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-26 Same as above with Tape and Braid 1-27 No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-28 No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-29 Same as above with Tape and Braid 1-29 Same as above with Tape and Braid 1-20 No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-29 Same as above with Tape and Braid 1-20 No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications 1-29 Same as above with Tape and Braid 1-30 No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 8 Fl	1-8	Same as above with Tape and Braid	
Same as above with Tape and Braid   No. 10 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard.	1-9	No. 9 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard	
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cations.  1-14 1-15     Same as above with Tape and Braid. No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard. No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 14 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard. No. 6 B. & S. Gauge Braid Stranded Rubber Covered Wire, R. S. A. Specifications. No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications. No. 6 B. & S. Gauge Stranded Rubber Covered Wire, National Electric Code Standard. No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications. No. 8 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 9 B. & S. Stranded Rubber Covered Wire, R. S. A. Specifications. No. 9 B. & S. Stranded Rubber Covered Wire, R. S. A. Specifications. No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire 1-32  No. 8 B. S. Stranded Rubber Covered, Taped and Braided Signal Wire 1-32  No. 8 B. S. Stranded Rubber Covered, Taped and Braided Signal Wire 1-32		Standard	
1-14   Same as above with Tape and Braid     1-15   No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard     1-16   No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications     1-17   Same as above with Tape and Braid     1-18   No. 14 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard     1-19   No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications     1-20   Same as above with Tape and Braid     1-21   No. 6 B. & S. Gauge Stranded Rubber Covered Wire, National Electric Code Standard     1-22   No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications     1-23   Same as above with Tape and Braid     1-24   No. 8 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-25   No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications     1-26   Same as above with Tape and Braid     1-27   No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-28   No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications     1-29   Same as above with Tape and Braid     1-30   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-31   No. 8 Flexible Conductor Rubber Covered Wire, National Electric Code Standard     1-31   No. 8 Flexible Conductor Rubber Covered Wire, National Electric Code Standard     1-31   No. 8 Flexible Conductor Rubber Covered Wire, National Electric Code Standard     1-31   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-32   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-31   No. 8 Flexible Conductor Rubber Covered Wire, National Electric Code Standard     1-32   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-33   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard     1-34   No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard	1-13	No. 12 B. & S. Gauge Single Braid Rubber Covered Wire, R. S. A. Specifi-	
No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid No. 6 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 8 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire 1-32 No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire 1-32		cations.	
Standard. No. 14 B. & S. Single Braid Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 14 B. & S. Gauge Rubber Covered Wire, National Electric Code Standard. No. 6 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 6 B. & S. Gauge Stranded Rubber Covered Wire, National Electric Code Standard No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 8 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 8 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 9 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications Same as above with Tape and Braid. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard. No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1–31 No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire		Same as above with Tape and Braid	
<ul> <li>Same as above with Tape and Braid.</li> <li>No. 8 B. &amp; S. Stranded Rubber Covered Wire, National Electric Code Standard.</li> <li>No. 9 B. &amp; S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications.</li> <li>Same as above with Tape and Braid.</li> <li>No. 9 B. &amp; S. Stranded Rubber Covered Wire, National Electric Code Standard.</li> <li>No. 9 B. &amp; S. Stranded Rubber Covered Wire, R. S. A. Specifications.</li> <li>Same as above with Tape and Braid.</li> <li>No. 10 B. &amp; S. Stranded Rubber Covered Wire, R. S. A. Specifications.</li> <li>Same as above with Tape and Braid.</li> <li>No. 10 B. &amp; S. Stranded Rubber Covered Wire, National Electric Code Standard.</li> <li>No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire</li> <li>9 """</li> </ul>	1-15	No. 12 B. & S. Gauge Rubber Covered Wire, National Electric Code	P
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<ul> <li>1-26 Same as above with Tape and Braid.</li> <li>1-27 No. 9 B. &amp; S. Stranded Rubber Covered Wire, National Electric Code Standard.</li> <li>1-28 No. 10 B. &amp; S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications.</li> <li>1-29 Same as above with Tape and Braid.</li> <li>1-30 No. 10 B. &amp; S. Stranded Rubber Covered Wire, National Electric Code Standard.</li> <li>1-31 No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire 1-32</li> </ul>	1-23	firstions	
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Standard. No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Specifications  1–29 Same as above with Tape and Braid. No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard.  No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1–31 No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1–32 "9" """		No. 9 B. & S. Stranded Rubber Covered Wire, National Electric Code	
fications.  Same as above with Tape and Braid.  No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard.  No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1-31  No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1-32	1 2,	Standard	
fications  Same as above with Tape and Braid  No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code Standard  No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire  1–32  9  ""  ""  ""  ""  ""  ""  ""  ""  ""	1-28	No. 10 B. & S. Single Braid Stranded Rubber Covered Wire, R. S. A. Speci-	
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Standard. No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire 1-32	1-30	No. 10 B. & S. Stranded Rubber Covered Wire, National Electric Code	
1–32 " 9 " " " " " " " " " " " " " " " " "		Standard	
1 02		No. 8 Flexible Conductor Rubber Covered, Taped and Braided Signal Wire	
1 22   "10 " " " " " " " " " "			
	1-33	10	
1-34 "12 " " " " " " " " " " " " " " " " " "		12	



# **WIRE**

Trade No.	DESCRIPTION					
	BARE LINE WIRE					
1-40	No 6 B & S Cauge Hard Drawn Bare Copper Line Wire	30 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				
1 - 41		******				
1-42	"10 " " " " " " " " " " " " " " " " " "					
1-43 1-44	No. 6 B. & S. Gauge, 30%, Hard Drawn, Bare, Copper Clad Steel Line					
1-45	Wire					
1-46	No. 9 B. & S. Gauge, 30%, Hard Drawn, Bare, Copper Clad Steel Line					
1-47	Wire. No. 10 B. & S. Gauge, 30%, Hard Drawn, Bare, Copper Clad Steel Line					
1-48	Wire No. 12 B. & S. Gauge, 30%, Hard Drawn, Bare, Copper Clad Steel Line					
1-49	Wire					
1-50						
1-51	10					
1-52 1-53	" 6 " " B B Colvenized Iron Line Wire					
1-54						
1-55	" 10 " " " " " " " " " " " " " " " " " "					
1-56	" 12 " " " " " " " " " "					
	WEATHER PROOF INSULATION LINE WIRE					
1-57	No. 6 B. & S. Gauge, Double Braid, Weather Proof Hard Drawn Copper					
1-58	Line Wire No. 8 B. & S. Gauge, Double Braid, Weather Proof Hard Drawn Copper Line Wire					
1-59	Line Wire No. 10 B. & S. Gauge, Double Braid, Weather Proof Hard Drawn Copper Line Wire					
1-60	Line Wire. No. 12 B. & S. Gauge, Double Braid, Weather Proof Hard Drawn Copper Line Wire					
1-61	Line Wire. No. 6 B. & S. Gauge, Triple Braid, Weather Proof Hard Drawn Copper Line Wire.					
1-62	Line Wire. No. 8 B. & S. Gauge, Triple Braid, Weather Proof Hard Drawn Copper Line Wire.					
1-63	Line Wire No. 10 B. & S. Gauge, Triple Braid, Weather Proof Hard Drawn Copper Line Wire					
1-64	Line Wire. No. 12 B. & S. Gauge, Triple Braid, Weather Proof Hard Drawn Copper Line Wire.					
1–65	Line Wire. No. 6 B. & S. Gauge, Double Braid, Weather Proof, 30% Copper Clad Steel Line Wire. No. 8 B. & S. Gauge, Double Braid, Weather Proof, 30% Copper Clad					
1–66	No. 8 B. & S. Gauge, Double Braid, Weather Proof, 30% Copper Clad Steel Line Wire					
1-67	No. 10 B. & S. Gauge, Double Braid, Weather Proof, 30% Copper Clad Steel Line Wire.					
1-68	Steel Line Wire. No. 12 B. & S. Gauge, Double Braid, Weather Proof, 30% Copper Clad Steel Line Wire. No. 6 B. W. G. Double Braid Weather Proof E. B. B. Galvanized Iron					
1-69	Line Wire					
1-70	No. 8 B. W. G. Double Braid Weather Proof E. B. B. Galvanized Iron Line Wire. No. 10 B. W. G. Double Braid Weather Proof E. B. B. Galvanized Iron					
1-71 1-72	No. 10 B. W. G. Double Braid Weather Proof E. B. B. Galvanized Iron Line Wire No. 12 B. W. G. Double Braid Weather Proof E. B. B. Galvanized Iron					
1-72	Line Wire.  No. 6 B. W. G. Double Braid Weather Proof B. B. Galvanized Iron Line					
1-73	Wire  No. 8 B. W. G. Double Braid Weather Proof B. B. Galvanized Iron Line					
1-74	Wire					
1-76	Wire No. 12 B. W. G. Double Braid Weather Proof B. B. Galvanized Iron Line					
	Wire					
702 7	9000000 (00 00 00 00 00 00 00 00 00 00 00					
703-7 703-6	No. 8 Galvanized Steel Signal Wire for Mechanical Signals					



#### **TAGS**







No. 44



No. 41



No. 42



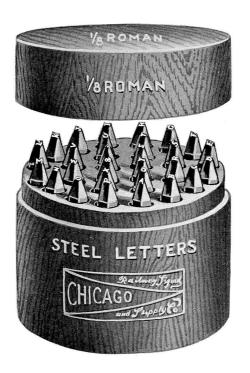
No. 43

The Tags shown above are used to tag Wires, Relays, Binding Posts, etc., also for storeroom purposes and line wires of pole lines. They are made from materials that can be stamped easily and quickly with stencils for this purpose shown elsewhere in this catalogue. They can also be furnished stamped with any lettering, symbols or numbers upon receipt of specifications.

Trade No.	DESCRIPTION	List Price Per M.
40	Standard Fibre Tag, 7%" x 1½" with 3%" Hole Brass " ½" x 1½" " 3%" "	\$4.20
40-1	" Brass " 78" x 1½" " 38" "	7.80
40-2	" Aluminum Tag 7/8" x 1 1/2" with 3/8" Hole	8.00
41	Standard Fibre Tag. 78" x 1 1/2" with 1/2" Hole	4.20
41-1	"Brass " 78" x 1½" " ½" "	7.80
41-2	"Aluminum Tag. 7%" x 1 1/2" with 1/2" Hole	8.00
42	Round Fibre Tag, Diameter $1\frac{1}{8}$ , Hole $\frac{5}{3}$ Brass " $1\frac{1}{8}$ " " $\frac{5}{3}$ "	3.50
42-1	" Brass " $1\frac{1}{8}$ " " $\frac{5}{3.2}$ "	5.50
42-2	"Aluminum Tag, Diameter 1½", Hole 5/32"	5.60
43	Standard Fibre Tag. Diameter 1½", Hole ½"	6.00
43-1	Brass " 1½" " ½"	9.50
43-2	" Aluminum Tag, Diameter 1½", Hole ½"	10.00
44	Special New York Central Fibre Tag, 1½" x 5%", Hole ½"	3.50
44-1	Special New YorkCentral Fibre Tag, 1½" x 5%", Hole ½%" " " " Brass " ½" x 5%" " ½"	5.10
44-2	" " " Aluminum Tag, 1½" x 5%", Hole ½"	5.50



## STEEL LETTERS AND FIGURES



The Steel Letters and Figures listed are furnished Hand Cut in Gothic Style or Machine Made in Roman Style. Used for stamping Tags, Tools, Binding Posts, etc. Put up in compact dust proof wooden boxes.

	Letters-	-Set of 28	Figures-	—Set of 9	Single Lett	ers or Figures
Size	Hand	Machine	Hand	Machine	Hand	Machine
	Cut	Made	Cut	Made	Cut	Made
1//	\$15.00	\$4.50	\$5.00	\$1.50	\$0.70	\$0.25
1'' 32'' 16'' 3''' 32''' 5''' 5''' 16''' 38''' 16''' 38''' 38'''	9.00	3.35	3.00	1.10	.40	. 20
3 //	9.00	3.35	3.00	1.10	.40	. 20
1/8"	9.00	3.35	3.00	1.10	.40	. 20
5 11	10.50	4.25	3.50	1.40	. 50	. 20
3 11	12.00	4.70	4.00	1.55	.60	.30
1/4"	14.00	5.60	4.70	1.85	. 70	.35
3/8"	20.00	9.55	7.35	3.10	.90	50
1/2"	28.00	16.85	9.45	5.60	1.30	.75

Sizes not listed above, take next larger size price.



# CHICAGO PORTABLE VOLT-AMMETER, DIRECT CURRENT



Leather Carrying Case One Third Actual Size



Chicago Volt-Ammeter
One Third Actual Size

This instrument meets the demand for an accurate, durable, compact and inexpensive direct current testing outfit. The case of the instrument is 6" long,  $3\frac{1}{2}$ " wide, 2" high and of pure cast aluminum and all other materials used are highest grades obtainable. Tungsten steel,  $\frac{3}{8}$ " x 1", is used for the magnets in the d'Arsonval movements, to obtain permanency and accuracy of readings. The workmanship is expert and experienced, and instrument is strictly high class.

There are two individual dead-beat movements, each with a separate scale, embodied within the one case, one for Volt readings, and the other for Ampere, Milliampere, Volt and Millivolt readings, making it possible to make simultaneous tests of current and e. m. f. This double movement simultaneous reading feature is found only in the Chicago Portable Volt-Ammeter, and eliminates the inconvenient feature found in Volt-Ammeters, having but one movement for both current and e. m. f. Instrument can be left in circuit any length of time without injury to the movements. Instruments are hand calibrated, directly and individually compared with recognized standards. The scales are hand drawn with divisions well spaced and the edgewise indicator permits accuracy in observations. Readings are warranted accurate within one-half of one per cent.

We list only a few of the combinations of readings possible to obtain in this instrument. All Voltmeter movements have a resistance of approximately 70 Ohms to the Volt. Special resistances furnished where specified. As there are two individual movements contained within the instrument, each having its own scale, practically any desired combination can be furnished upon application.

Our hand-sewed solid leather carrying cases with the shoulder strap are convenient and help protect instruments where they are used for rough outdoor work.

Trade No.	DESCRIPTION	List Price
	TWO READING	
18-1 18-2 18-3 18-4 18-5	0 to 1.5 Volts and 0 to 150 Milliamperes. 0 to 3 Volts and 0 to 300 Milliamperes. 0 to 3 Volts and 0 to 5 Amperes. 0 to 15 Volts and 0 to 75 Amperes. 0 to 150 Volts and 0 to 75 Amperes.	\$33.00 33.00 33.00 33.00 33.00
	THREE READING	
18-6 18-7 18-8 18-9	0 to 1.5 and 0 to 15 Volts and 0 to 150 Milliamperes. 0 to 3 and 0 to 30 Volts and 0 to 300 Milliamperes. 0 to 15 and 0 to 150 Volts and 0 to 15 Amperes. 0 to 30 and 0 to 150 Volts and 0 to 25 Amperes.	35.00 35.00 35.00 35.00
	FOUR READING	
18-11 18-12 18-13 18-20	0 to 1.5 and 0 to 15 Volts and 0 to 150 M. A. and 0 to 1.5 Amperes	39.00 39.00 39.00 6.00



#### **RESISTANCE UNITS**



No. 1600 Resistance Unit 6½" Long, 3" Wide, 3¼" High

No. 1600 Resistance Unit is wound with special resistance wire which is enclosed in an absolutely waterproof hard rubber shell. Unit is mounted on a slate base with R. S. A. Binding Posts. Mounted Units are used in Relay, Signal and Battery Cases. Also furnished unmounted with flexible ends for direct connections to wiring.

direct connections to Whing.

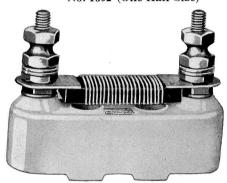
No. 1601 Variable Resistance Unit is furnished in any total resistance between .15 and 2,000 Ohm. Carrying capacity 200 Watts continuous duty or 500 Watts 20 seconds duty. Used with Storage and Primary Batteries where frequent changes in resistance are required. Also to test "Pick Up" and "Drop Away" of Relays, etc.

No. 1602 Variable Resistance Unit has a heavy porcelain base equipped with R. S. A. Binding Post and a substantial switch arm. Used for testing batteries on track circuits. Furnished in any total resistance up to 10 Ohm.

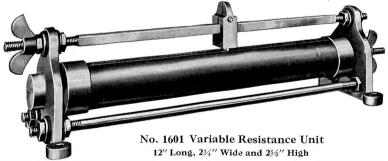
No. 1603 Resistance Unit has a porcelain base same size as R. S. A. Terminal, R. S. A. Binding Posts and is furnished in any resistance in variations of ½ Ohm up to 10 Ohms. The resistance clip is instantly interchangeable without removing base or wires. Used on Track Circuits, etc., using Caustic Soda or Storage Batteries. It is small, compact and has practically all advantages of a variable Unit.



No. 1602 (One Half Size)



No. 1603 Resistance Unit



Trade No.	DESCRIPTION	List Price
1600	Mounted Resistance Unit, 1000 Ohm or less	\$7.00
1600-10	Same as above 2500 Ohm or less	7.50
1600-11	" " " 5000 " " "	8.00
1600-12	Unmounted Resistance Unit, 1000 Ohm or less	4.80
1600-13	" " 2500 " " "	5.30
1600-14	" " 5000 " " "	5.80
1601	Variable Resistance Unit. Specify Total Resistance	9.0
1602	"" Tom Tomate of "" " " " " " " " " " " " " " " " " "	2.50
1603	Resistance Unit complete as shown	1.70
1603-1	Resistance Unit complete as shown	1.40



#### SOCKET WRENCH AND SIGNAL LOCKS



No. 259

The Socket Wrench is made of seamless steel tubing, hardened and finished with knurled handle. The Socket is deep enough to allow tightening the lowest nut on standard R. S. A. Binding Posts. The plain wrench is nickel plated, the insulated wrench is covered with hard fibre to prevent short circuits between Binding Posts or with Hands. This feature will be appreciated on A. C. work.

Trade No.	DESCRIPTION	List Price
259 259–1	Nickel Plated Socket Wrench for ½" Hexagon Nuts as shown Insulated Socket Wrench for ½" Hexagon Nuts	\$0.75 1.00



No. 256 Chicago Standard Lock Three Quarter Size



No. 257 Small Signal Lock Three Ouarter Size

Lock No. 256 has a heavy steel case, hot galvanized. The interior is made of Brass and Bronze throughout. Lock is warranted not to rust or to be affected by the weather. It is used chiefly out of doors on Signal Cases, Battery Chutes, etc. Keys are all Master Keys. Lock 257 is used indoors on Indicators, Annunciators, etc. It is entirely of Brass and Keys are all Master Keys.

Trade No.	DESCRIPTION	List Price
256 256–1	Chicago Standard Six Lever Lock as shown (no key), each	\$1.00 1.40
256-2	Standard Keys for above, each	.25
257 257–1	Small Signal Lock as shown (no keys), each	1.10



# SOLDERING SALTS, SOLDER, SOLDERING COMPOUND, TAPE, ETC.

	1		100 Table 1
Trade No.	DESCRIPTION	List Price	
285-1	Non-corrosive Soldering Salts, ½ lb.	\$0.70	CHICAGO GLDERIN SALTS
285-2	Non-corrosive Soldering Salts, 1 lb.	1.00	
285–3	Non-corrosive Soldering Salts, 5 lb.	3.50	The Section of the Se
	Special discount for quantities.		No. 285
	SOLDERING PASTE		
286-1	Non-corrosive Soldering Paste, 2½ oz.	.40	
286-2	Non-corrosive Soldering Paste, ½ lb.	.60	CHICAGO (
286-3	Non-corrosive Soldering Paste, 1 lb.	1.00	CHICAGO
	Special discount for quantities.	1.00	SOLDERING
	SOLDERANDFLUX	.93	PASTE
	This is a combined solder and non-corrosive fluid made into paste form and		
	put up in collapsible tubes. No solder or flux is required as Solderandflux combines both and is warranted to make a non-corrosive union.		No. 286
287-1	Solderandflux, small size tube, each	.60 1.20	SOLDERANDFLUX
$287-2 \\ 287-3$	" medium " " " large " "	2.50	No. 287
	SOLDER		
$288 \\ 288-1 \\ 288-2$	Bar Solder, strictly half and half, per Ib. Plain Wire Solder, per Ib Resin Core Wire Solder, ½ Ib. box,	Lowest Market Prices	No. 288
288-3	per Ib	Ma	
288-4	per Ib	rket	No. 288-1
288-5	per lb	Price	
	per lb	SS	BOX CONTAINS BOX POUND & INCH
	TAPE		MANUFACTURED FOR SOLD EXCLUSIVELY BY
289 289–1	Chicago Friction Tape, 34", per lb "Rubber "34" " "	1.30 1.75	CHICAGO CHICAGO
	Our Tapes are guaranteed high class and are packed one-half lb. per tin	6	
	box.		No. 289