

In the Field of Electricity

CURRENT POWER ON RAILROADS.

SEVERAL notable strides in substituting electricity for steam power on railroads are scheduled for the coming year. Under pressure of public opinion against the locomotive smoke nuisance on the lake front of Chicago, the directors of the Illinois Central have instructed the company's engineers to prepare plans for changing the motive power on the Chicago terminal. On the Canadian Pacific the management intends placing electric locomotives on about 700 miles of the line in the western mountain ranges, particularly where many tunnels exist and where power will be generated from mountain streams. A similar change on the Cascade division of the Great Northern road in the state of Washington. It is well understood the Central Pacific will utilize the abundant water power of the Sierra Nevada when the projected straightening of the line is finished and the necessary tunnels are bored in Nevada and California. This work involves the abolition of snow sheds and greatly reduced grades, and will require two years to complete. Around New York City next year will witness a large increase in electric power on the railroad terminals. The Pennsylvania line tunnels under Manhattan Island and into Long Island will be completed, and electric power used exclusively. On the New Haven road the electric power now employed within the city limits is to be extended as far as its suburban service as far as Stamford, Conn.

The action of the Illinois Central directors is considered the first decisive step toward the banishment of steam locomotives from the railroads of the city of Chicago. There are many roads in the city which are not in as good a position to electrify as the Illinois Central and these fear the spread of the movement. Several of the roads insist that compulsory electrification would spell financial ruin at this time. It is understood that a conference of railway presidents will soon be called with a view to a thorough discussion of the question and the hope of securing uniform action with reference to electrification.

A few years ago Senator Depew predicted that in ten years the steam locomotive will be relegated to the scrap heap or the museum, and electric power take its place on all railroads. This prediction was corroborated at the time, as it is now, by the progress being made in substituting electric power for steam power. The confidence in the early retirement of belching locomotives from the cities, and the substitution of the clean and noiseless electric motors.

COPPER WELDED UPON STEEL.

Electrical transmission of energy by the overhead system, whether for street railway, telephone, electric lighting or power purposes, requires the use of wire or cable of high conductivity in order to avoid heavy losses of power that would result from an attempt to overcome the resistance to the passage of the current in metals that are poor conductors.

Copper is one of the best known conductors and possesses noncorrosive qualities that are valuable; but copper is expensive and lacks tensile strength. For economic reasons, the use of steel is a most desirable quality in a metal used for line work, while low cost is of course, of prime importance. Steel possesses both strength and cheapness, but is low in conductivity and rusts quickly when exposed to the elements. Foreseeing the value of a combination of the desirable qualities of these two metals, inventors and metallurgists have made various attempts to perfect a process of coating steel wire with copper.

Partial failures convinced a French metallurgist, J. Ferrol Monnot, that the two metals must be welded together homogeneously and he set to work on the problem. He finally achieved entirely satisfactory results by first cleaning a steel billet six inches in diameter and 26 inches long and then welding on to this at high temperature a thick coating of soft copper.

The copper is one of any desired thickness to suit it to various commercial purposes. After receiving the copper coat the billet is reheated and put through ordinary rolls such as are used in steel mills for rolling down inch or iron rods from large billets. The resultant wire, three-eighths of an inch in diameter, is then sent to the drawing mills and drawn into wire of any size down to No. 40B and S gauge, if desired.

LOCOMOTIVE CAB SIGNALS.

The following is a description of the system of cab signalling now under trial on the Great Western railway of England: The system has been in use for the drivers on the Fairfield branch (21 miles long) since Dec. 1906, when the telephone "assistants" were removed by sanction of the board of trade. The Great Western officials are now completely fitting their four main tracks between Slough and Reading with the apparatus. The requirements to which all signalling systems of this character must conform are: (1) that the signal shall be audible, and given in the cab of the engine; (2) that two indications shall be given according to the state of the line ahead—one for "all right," and another quite distinct for "danger"; (3) that in the event of failure, if the apparatus is wholly or partially electrical, the danger signal shall be given—in other words, such an apparatus should if it errs at all, err on the right side; (4) that there should be no moving parts on the track; (5) that the signal, when given, shall continue to sound until acknowledged by the driver, shutting it off. At each distant signalling post a ramp is bolted to the sleepers midway between the rails, so that a shoe on the engine may be lifted, whether the engine is running forward or backward. This ramp cannot be moved, and its function is primarily to lift a shoe placed on the engine for the purpose every time the engine passes over it. The ramp is a white metal with a rise of about two and a half inches in 30 feet, so that the blow struck by the shoe when the contact takes place is reduced to a minimum. The connection with the shoe on the engine there is an apparatus for operating either a special steam whistle or an electric bell, according to whether the signal is to indicate "danger" or "all right." This apparatus is situated in a closed circuit when the shoe is in its normal position, the electromagnets connected with the whistle or bell, when energized, sufficient power to prevent the steam whistle from opening. Supposing the signal to be at "danger" when the ramp is reached, the shoe will be lifted, when lifted, it will mechanically break the engine circuit above referred to. When the circuit is broken, the restraining force is removed and the steam whistle or bell of the self-operating type, the whistle sounds until stopped by the driver. The "all right" signal is given in the following manner, and in this case the chief value of the invention. When it is desired to give the "all right" indication, the signalman pulls over his distant signal lever. This action closes another circuit which electrifies the ramp, and when the engine shoe touches it, causes a cur-

rent to flow through the shoe and through another pair of coils having equal power with the pair before referred to, and forming, besides a circuit through an electric bell. Thus, although the lifting of the shoe should, in the ordinary way, break the local circuit on the engine, and thus cause the whistle to sound, this result is prevented by energizing the auxiliary pair

of coils direct from the engine box, and in addition the the signal box circuit passes through the bell, which continues to ring until stopped by the driver.

CONSUMPTION STATISTICS. A report that a neglected cold or cough puts the lungs in so bad a condition that consumption germs find a fertile field for fastening on one. Stop the cough just as soon as it appears with Ballard's Horehound Syrup. Soothes the torn and inflamed tissues and makes you well again. Sold by C. M. L. Drug Dept., 112 and 114 South Main St. B

DEMAND FOR HATS. Removal of Restrictions Allows Citizens to Change Headgear. Consul Jewett, in another report from Trabzon, describes the new opening in Turkey for hats. The fez was the prescribed national head covering of all Turkish subjects, and even of foreigners in the employ of Turkey. The hat was seen here only when worn by foreigners and was the badge of extraterritorial rights and foreign protection. Consequently, there was very little opportunity to sell hats and caps in this country. Now these restrictions have been removed and the people are free to cover their heads as they wish. I believe that many will abandon the fez in favor of hats and caps. There will be a large sale of these goods in Turkey, and as the fashion in hats is not established or even known in most parts of this country, and as a majority of new clients will not want to pay much for a hat, American dealers may find this a favorable opportunity to dispose of his stock.

SUNDAY EXCURSION TO OGDEN. \$1 fare via Bamberger Line, six trains going. Special return 11 p. m.

INDIA SNAKE VICTIMS. According to the "snake" statistics for 1907 the total mortality among human beings caused by snake bites fell from 22,811 in 1906 to 21,418 in 1907. So low a figure has not been reached since 1897. The decrease is noticeable mainly in Bengal and Eastern Bengal, and Assam, where the figures fell from 8,862 and 2,739 in 1906, to 8,254 and 1,909 respectively. In 1907. The most important increases occurred in Madras and Burma, where the figures rose from 1,252 and 1,116 in 1906, to 1,971 and 1,248, respectively. The decrease in Eastern Bengal and Assam is attributed to the flood having been lower. The central provinces are (1907) is the lowest returned in any one of the last seven years. The Laudes Brunton treatment of snake bites by incision and application of permanent rate of potash and the distribution of lancets continues. It is too early yet to pronounce with any certainty as to the result of the experiment, but a number of favorable reports have been received. Eight cases are reported from the United Provinces of the successful use of Dr. Calmette's anti-venom. In two of these cases the permanent potash treatment was also employed. Time of India.

Between Now and Christmas We Are Determined That Every Department Shall Double Its Sales of a Year Ago

To accomplish this means Price Concessions beyond anything heretofore attempted in the West. We are prepared to make them, to offer pre-eminently attractive inducements on the most carefully selected and worthiest merchandise ever brought to your notice. No Broken Stocks or otherwise undesirable lines to dispose of, but simply a remarking of lowest regular prices on the most extensive and varied lines of newest goods the world's best Artisans and Fashion Masters have evolved, affording a practical demonstration of our unwavering purpose to lead in low prices, as we lead in high values.

MONDAY	NEXT WEEK!	NEXT WEEK!	ESTABLISHED 1864	NEXT WEEK!	NEXT WEEK!	MONDAY
\$9.00 White Wool Blankets 11-14 size, weight 5 1/2 lbs., one pair to a customer at a pair—	\$3.00 Bath Robe Blankets With pretty fancy borders—in pattern and designs. On sale at, each—	60c Non-Shrinkable White Japanese Flannel The best flannel! Flannel made. On sale at, a yard—	T. J. Aberbach & Bro. ONE PRICE TO ALL NEVER UNDERSOLD	\$4.00 Imported German Bath Robe BLANKETS In the prettiest colorings and designs. On sale at, each—	60c Yard Wide WHITE Wool Flannel On sale at, a yd.—	Knitted Wool SHIRTS \$1.25 Values at 75c Ladies' Knitted Wool Skirts in all colors plain or with border; best \$1.25 values on sale at—
\$5.60	\$1.98	39c		\$2.40	39c	75c

MONDAY!	The Greatest Coat and Suit Selling Week of the whole Year	MONDAY.
12 1/2c Hemmed Bleached Pillow Cases Size 42x36. Limit 6 to a customer at each—	Up to \$35.00 Tailored Suits At \$24.75 One of the biggest drops in the price of ready-to-wear garments ever known at this season of the year, and this space is given over to the telling of what we are going to do rather than why we can do it. Chic, dashing tailored suits of broadcloth, herringbone weave, materials in all the popular shades. Semi-fitted and hipless coats models, worth up to \$35.00 suits, this week we offer them at \$24.75	Outing Flannel Skirts Best 75c Grade at 49c White extra fine Outing flannel skirts, in the best 75c quality, on sale Monday at—
7 1/2c		49c
MONDAY.		MONDAY!
\$3.00 Comforters Bordered and all over designs—quilted and knitted—filled with the finest which cotton all large sizes go at each—		Ladies' Union Suits Best \$1.00 Grade at 49c Ladies' pure white extra fine fleeced fine cashmere ribbed Union suits in all sizes on sale at—
\$2.18		69c
MONDAY		MONDAY
\$1.25 Per Bolt White English LONG CLOTH 12 yards in each piece, 1 bolt to a customer, at a bolt—		Golf Gloves Best 75c Grade at 49c Best grades Ladies' Golf Gloves in black, white and colors; all our 75c grades on sale Monday at—
89c		49c
MONDAY		MONDAY
\$5 and \$6 White Irish Point Curtains Dainty scroll and plain center effects, go at a pair—		Ladies' HOSE 20c Grade at 12 1/2c Ladies' fine black fleeced Cotton Hose with gray Merino Soles and toes, best 20c grade at—
\$2.48		12 1/2c
MONDAY		MONDAY
\$1.25 Hemstitched BED SHEETS The Majestic Brand—the best—24 yards long and 24 yards wide. Limit 4 to a customer, at each—		Children's HOSE Best 20c Grade at 12 1/2c Heavy fleeced footed black Cotton Hose with double knees, heels and toes; all sizes; best 20c quality, on sale at—
77c		12 1/2c
MONDAY!		MONDAY!
\$4 and \$5 Floenced Bed SETS Printed Organza sets and White Battenberg Net sets. Spread and bolster cover to match. One to a customer, at a set—		\$1.17
\$2.88		\$1.10
MONDAY.		MONDAY
\$1.50 German Linen Breakfast CLOTHS Silver bleached with drawn-work border all around. 8-4 sizes, new designs. Limit 1 to a customer, at each—		\$2.00 House Suits Flannelette two-piece house suits, black or navy blue with white dots, all nicely made, worth fully \$2.00 as long as they last—
89c		\$1.10

Reduced Prices In FINE DRESS GOODS AND SILKS.

Our Reduced Prices for this week mean a saving of several dollars on each Dress. Why pay the difference that would buy Linings and Trimmings?

Read quotations and profit:

2,000 Yards of New Fancy Silk in the very latest weaves and colors, suitable for street and evening wear, values up to \$2.00. SPECIAL FOR MONDAY AND WEEK, AT PER YD. **\$1.19**

1,000 yards of China Silk in all the latest popular colors; this is a soft, desirable material, suitable for lining and children's dresses, the washable kind, the 50c and 65c quality. SPECIAL FOR MONDAY AND WEEK, AT PER YARD **39c**

500 yards of 36 inch black Taffeta Silk. This is an extra fine quality, a rich durable fabric for general wear, the \$1.50 grade, SPECIAL FOR MONDAY AND WEEK, AT PER YD. **\$1.19**

A Very Extraordinary Sale of White Silk Embroidered Skirting Flannels.

If you are not impressed by the difference between Regular Prices and Our Cut Prices, you never will be impressed by Advertised Values. And do not forget that our Cut Prices are attached to the finest Flannels made—this giving the combination of Prices and Quality that truly makes sterling offerings.

Such an Opportunity will not come again. Profit While You May.

All 75c and 85c Hemstitched and Scalloped Silk Embroidered White Skirting Flannels, go in this Sale **49c** per yard

All \$1.00 Silk Embroidered White Skirting Flannels—Scalloped and Hemstitched—go in this Sale **59c** per yard

All \$1.10 Silk Embroidered White Skirting Flannels, in cut out edges, hemstitched and Scalloped Designs, go in this Sale **69c** per yard

Choice of all \$1.25 White Silk Embroidered Skirting Flannels, go in this Sale **79c** per yard

They are the Greatest SHOE BARGAINS in the City.

Such bargains are impossible at any other store. Few stores keep such good footwear, but our lines are so immense that we are enabled to make such marvelous offerings from time to time whenever we wish to move our stock. Every pair makes a friend for us, and this is our compensation, as these goods are sold way below cost.

CHILDREN'S FINE HIGH TOP LACE BOOTS: sizes 5 to 8, values \$2.00, at per pair **\$1.55**

BOYS' EXTRA GOOD WEARING SHOES, leather lined and heavy soles, sizes 12 1/2 to 5 1/2, at **\$1.95**

Boys' Calf Skin Shoes, sizes 2 1/2 to 5 1/2, at **\$1.35**

LADIES' CLOTH RUBBERS, value \$1.00, at **65c**

LADIES' STORM RUBBERS **65c**

MEN'S RUBBERS, first quality, **95c**

One Buckle Overshoe for everybody, value up to \$1.75, at, per pair— **95c**

Ten-button Overgaiters for ladies, in black only, at, per pair— **49c**

Boy's Clothing and Gent's Furnishing Bargains.

Are you interested in cut prices in these lines?

If so, here's a bargain list that will never miss your attention. We wish to swell sales this week in this department and with this purpose in view quote values that will impress buyers in this line.

\$4.00 Suits and Overcoats \$2.29
Boys' double-breasted suits, made of heavy wool chevrons—genuine winter suits, sizes 7 to 16. Boys' overcoats made of navy blue and oxford grey melton and mixed colored chevrons, neatly finished with velvet collar, silk embroidered emblem on sleeve, good buttons, etc.; sizes 3 to 9 years; \$4.00 values, on sale at **\$2.29**

\$6.00 Suits and Overcoats \$3.48
Boys' high grade suits in Russian, Eton, Knickerbocker and regular double-breasted styles in serge, chevrons, tweeds and worsted. Boys' overcoats made of navy blue and oxford grey melton, also mixed colors in chevrons and tweeds. \$6.00 values in suits and overcoats, sizes up to 16; on sale at **\$3.48**

Bargains for Men wool socks
25c wool socks in black, natural and tan at **17c**
35c extra heavy wool socks, grey and blue, at **21c**
50c pure wool worsted socks, black and natural grey, at **35c**

Handkerchiefs by the Dozen
White linen handkerchiefs with hemstitched borders, regular \$1.50 per dozen, on sale at, only **79c** per dozen—
White all-linen handkerchiefs, neatly hemstitched borders, regular \$2.00 per dozen, on sale at, per dozen **\$1.25** only—
White pure Irish linen handkerchiefs with 1/4 or 1/2-inch hemstitched borders, regular \$3.00 per dozen, on sale at, per dozen, only **\$1.75**
Extra fine quality pure Irish linen handkerchiefs with 1/4 or 1/2-inch hemstitched borders, regular \$4.00 per dozen, on sale at, per dozen, only **\$2.40**

Christmas Rapidly Nearing. Doll's You'll Want that Doll

BUY IT THIS WEEK AT A GREAT SAVING.

A sale that positively offers the greatest Doll bargains Salt Lake has ever known starts Monday. Don't delay! Make your purchase now and save from one-third to one-half on your Doll buying.

Aside from the greatly below value prices throughout the entire line are these two the greatest sale lots in Salt Lake's history.

At 89c each
Choice of large kid body Dolls and a great variety of prettily dressed Dolls in sizes and styles worth up to \$1.50 each. The sale price— **89c**

At \$2.49
Large size Kestner jointed Dolls, finest kid body Dolls and a most beautiful line of elegantly dressed Dolls worth up to \$5.00 each—the sale price— **\$2.49**

SATIN PIN CUSHIONS.
All Shades, Colors and Sizes. Ready for Trimming.
AT GREATEST PRICE REDUCTIONS.

OBLONG PIN CUSHIONS.
4x8-inch size, value 35c, on sale **17c**
4x12-inch size, value 45c, on sale **23c**
4x15-inch size, value 50c, on sale **27c**
4x18-inch size, value 60c, on sale **30c**

SQUARE PIN CUSHIONS.
5x5-inch size, value 20c, on sale **10c**
6x6-inch size, value 45c, on sale **15c**
8x8-inch size, value 55c, on sale **25c**

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\$2.80 Worth for \$1.50
The Delineator 12 numbers retailing at 15c each, \$1.80
Butterick Fashions 4 issues, at 25c each, **\$1.00**
Containing four certificates worth 60 cents in Butterick Patterns **\$2.80**
All for **\$1.50**