IN THE FIELD OF ELECTRICITY wires which were found on the island when spain evacuated the place after the war

Prospective Change from Steam to Electricity on Surburban Railroads.

NEW DEVICE FOR WIRELESS TELEGRAPH

Progress of the Government Telegraph System in Porto Rico-X-Rays in Detective Work.

The recent action of the directory of the Illinois Central railroad company recommending to shareholders an increase of capital stock of the company from \$60,000,-000 to \$55,000,000 is taken to mean the early substitution of electricity for steam as a motive power on its suburban service in The Chronicle says a part of the proceeds of the sale of the new stock will be devoted to this purpose. Officers of the road have been working for several years attempting to devise a practical electrical system for the suburban service. The overhead trolley was deemed impracticable by reason of the immense traffic and the third rall unprotected was considered dangerous. It is said that elecwith the train being obtained through a slot similar to the cable and underground governmental function. His objections to \$1.25. electric systems.

Great benefits would accrue to the Central by changing to the electric system. It Porto Rico, and that none of the inhabiwould effect, it is said, a saving of 75 per cent in operating expenses, would enable except the old force of telegraph operators, faster time and would forever do away numbering about 180. In regard to the with practically all of the smoke nuisance third plan, General Greely reports as folon the lake front of Chicago.

The transition from steam to electricity signal officer of the army the casiest and on suburban traffic is one of the great prob-lems confronting managers of steam roads in Porto Rico must necessarily be fortified and the east. These lines present with their garrisoned by troops of the regular army; crowded traffic of short-haul passengers, and, as it is a detached island, liable in time of war to certain invasion, it is of their frequent trains and their many stopring places conditions that are at once the utmost military importance that the easy for the electric motor train and very different garrisons should be in either teledifficult for the steam locometive. ready much of the profitable business that insuring the greatest possible military effiwas once enjoyed by steam railways in the clency of the defending forces. If this sugtransportation of suburban passengers has gestion is adopted, it may be added that for improbable strength and depth and conof railroads having large suburban systems necessary, as the signal corps of the army fulness. realize that they must, in effect, adopt the is now charged with the operation and York. trolley car on their lines or lose the best maintenance of these lines until action is part of this business.

Pocket Wireless Telegraph.

If in the future an electric bell concealed heard to ring and he draws from his pocket a small case, listens to it and then hurries off, it must not hastily be assumed that he is mad, says the London Tele graph. The probability will be that he has just received a message by wireless telegraphy. In wireless telegraphy there are be used for copying manuscripts concealed several Richmonds in the field. Best known beneath book covers when the ink of the is, of course, Marconi's system. But Sir manuscript contains such chemicals as red William Preece described to the British lead, ciunabar, or ultramarine. This sugassociation a system which he claims to gests the question, Can the X-ray be used be both earlier and simpler and which for the detection of forgeries? "In certain may be used for telephony as well as telegraphy. At the Cafe Chantant of the Crystal Palace recently there was an exhibition of Mr. Rosenberg's system. The chief sileged old masters and wills thought to point of difference between this and Marcent's method is in a slight but important alteration in the construction of the coherer, which arrests, as they travel Old pictures are varnished periodically to through the air, the Hertzian waves on preserve them and the signatures are often which all wireless telegraphy depends. Otherwise the apparatus is much the same. Mr. Rosenberg uses an induction coil, sup- whether the rays would have revealed plied with electricity from an accumulator them, supposing them there, unless they A Morse keyboard is fitted to enable him to make or break the current at will and the message is sent as usual by means of an escillator. It is taken at the re- microscope would probably show this still quired spot by an instrument containing the coherer, a small brass tube filled with nickel filings and a receiver, from which the message may be printed on a tape in the usual way. Mr. Resemberg further claims that he has provided a practical system which is clear of Marconi's patents and which can be made much cheaper. The apparatus used has vertical poles and he maintains that he can telegraph two miles. With poles he can send messages forty miles and is engaged in an automatic repeating device which shall enable them to opaque ink is put in the middle of the direce sent on indefinitely. But in the course of conversation he mentioned an interesting fact. When he leaves his office to lunch in a restaurant 200 yards off he takes with him the little box containing the receiving apparatus. This he sets on the table beside him and if the bell rings he knows that he is wanted at the office, even vice versa. though his clerks might not be aware where he was, and he can receive a message from them. Whether this introduces a new boon or a new terror to life cannot be hastily decided. It is not too much to suppose that before long the receiving apparatus might be improved and reduced in size, so that a man could easily carry it in his pocket, and the range of the message may be increased up to say half a dozen miles. Then the business man may carry his receiver about with him and be in touch with his office all day. Again, the system would be very useful for issuing instructions to employes and others away

from headquarters. Telegraph System in Porto Rico.

In a report sent recently to Senator which imparts to the band a velocity of Foraker of the committee on Pacific three metres per second. The duration of islands and Porto Rico, by General A. W. speech is two minutes. That is not much Greely, chief signal officer of the army, the for a phonograph, but, of course, it can be matter of the Porto Rico telephone and increased by increasing the number of roltelegraph is taken up, and it is upon this lers or the distance between them. Sevreport that the next congress will be asked eral hearing magnets can be arranged and to take action looking towards its improve- if it should be necessary to repeat a short ment. General Greely in his report gives a passage that can be done by mounting a brief outline of the history of both indus- hearing magnet on another part of the tries on the island, showing that while the wire and switching it on as required." first steps towards the installation of a telegraph line were taken in 1860, no construction was done until 1872, and it was not until two years later that San Juan was connected with the seven different departments of the island, and about 800 miles of wire were in use. It was these

How about those nerves ALT VIVIAL non-intoxicant

stops that nervous feel ing, and heads off stomach troubles, indigestion and in-

somnia. All druggists. Prep. by Val. Blatz Brewing Co., Milwaukee.

OMAHA BRANCH. 1412 Douglas St.

wires which were found on the island when

and the Spanish operators were ousted and signal corps nen put in their places.

small amount of commercial business and

have been blown down by cyclones. In speaking of the lines from a practical standpoint General Greely says that if the

military advantages of the wires are considered as offset by the pay, subsistence.

etc., of the men of the signal corps, the

normal receipts of the lines when under military control will amount to about \$12,000 annually and this will increase

large monetary burden upon the people of

tants of the island would be benefited

necessary for strictly military purposes."

whom the question was propounded.

transparent to the rays. The rays can see

nothing behind them. It would appear,

therefore, that the rays can only detect,

say, a forgery in a check, providing the

body of the check is written in transpar-

to make his alteration in opaque ink, or

Recording Telephonic Messages.

four rollers arranged in a rectangle and

the winding is so arranged that the band is

continuous and for a reproduction of the

record it is not necessary to reverse the

band and start it again, but simply to let

it run on. The cores of both the recording

and reproducing magnets are parallel to

the breadth of the band and not perpendic-

ular to its surface. They are made to

touch it. For the guidance of the wires

four brass combs are mounted near the

rollers. The whole apparatus is driven by

a one-sixteenth horse-power electromotor,

Current Notes.

The power transmission line between Snoqualmie Falls and Seattle, Wash, has been looped to make a circuit more than 150 miles long, and power has been successfully transmitted over this great distance with the commercial apparatus at hand.

fully transmitted over this great distance with the commercial apparatus at hand.

Wind power has been utilized for the electric lighting of the town of Wittkiel in Schleswig, which is situated at the entrance of a narrow fjord running in from the Baltic in a place where the wind is fairly constant. The experimental plant-for the instal ation is, as yet, little more than an experiment—jonsists of a windmil of peculiar design, a dynamo and a considerable battery of accumulators. No less than 1,000 square feet of wind surface is exposed by the windmill vanes.

A new method for hardening and increasing the life of storage battery plates has just been patented. It consists in dipping the plates alternately in acidulated water and a dilute solution of pyridin, which is a complex chemical substance derived synthetically from coal tar residues. In the pyridin solution is a small quantity of alcohol, and it is asserted that the combination of all the agencies concerned results in greatly strengthening the plate mechanically and also, by highly oxidizing the plate, in making it of considerably higher capacity than it would be without this treatment.

As much misplaced ingenuity has been shown in devising ways to beat the electric

Here is a brief description of a new

X-Rays for Detective Work.

the

General

rate the lines by

These men are now operating the lines and they do it without pay other than their regular salaries. Even at that, however, the service is too expensive owing to the

the expense of replacing wires which OTHER RECENT VOLUMES IN FICTION

Array of Holiday Literature Keeps On Growing in Volume-Rush Now About Over-Booksellers Busy

Supplying the Trade.

In his latest work, "In the Alamo," Opie Bead has touched his highest point, which within a year or two to about \$18,000, an is saying much of the author of "A Yankee amount entirely inadequate for the mainfrom the West" and "The Waters of Caney tenance and operation of the lines by a paid civilian force. In regard to the ulti- Fork." It is dignified, historically, with mate disposition of the telegraph lines, the heroism of those immortal Americans Greely says that three who fought and died in the battle of the courses are open: First, to ope. Alamo, but laid the foundation of the early United expansion of the United States territory. States postoffice in the manner done by But the strength of the book is in the Spain; second, to transfer the lines to the psychological element, wherein the author depicts the effect of the "Grand Passion" insular government, with a view to their operation and maintenance at the expense on a wholesome middle-aged man of the of Porto Rico; and, third, the operation and world. Mr. Read has again and again and maintenance as at present as military tele. many times proved his power to interest graph lines. In the first instance, General lovers of romance, but "In the Alamo" excels any other work of his in humor, for the United States every year, as it pathos and the portrayal of a dignified, alla third rail and protecting it. This is to be done by covering the rail, connection with the train below obtained and has nothing in its favor except the idea that telegraphing is a

the second plan are that it would force a Nelly Brown of "April's Sowing" brings to mind the Daisy Miller of Henry James' creation. She is a sweet young thing, all frills and fluff and furbelows, who queens t over an adoring father and mother and almost breaks John Holmes' big heart before she decides to marry him. Nelly is lows: "The third plan seems to the chief not shallow, broadly speaking, neither is she heartless or entirely superficial. She is simply the product of unlimited worship and little contradiction or restraint. When the crucial moment comes she casts aside equetry and selfishness and gives herself to her lover regardless of his poverty and not questioning his past. At the beginning phonic or telegraphic communication, thus to conclude that Miss Nelly is going to be stilly and tiresome. In Gertrude Hall's hands she develops unexpected though not gone to the trolley car and many managers the execution of this plan no legislation is tinuing all the time her charming will-McClure, Phillips & Co., New

had thereon by the congress of the United Life Publishing company has brought States. The same policy would be followed out a very neat little holiday volume of with those military lines as elsewhere, sketches, bearing the title, "Half Porabout the person of a man in the street is namely, the gradual condemnation and sale tions," which will be found very approof lines no longer necessary in the public priate as a heliday gift book. It is handinterest and the maintenance of only those somely and profusely illustrated and the sketches have to do principally with those little social or society events which are both amusing and very readable. It is just Signor Briguiti of the State archives in the kind of a book to pick up for an idle Rome has discovered that the X-rays can half hour. Life Publishing company, New

> "The Soul of the Street," by Norman Duncan, is a collection of correlated stories of the New York Syrian quarter. The stories, some of them hardly more than cases, yes," says an expert in X-rays, to sketches, are entertaining as depicting a little known phase of life in the great mehave used the rays both in connection with tropolis and it will be found a very interesting volume to pick up during an idle be forged-in both cases without material half hour. McClure, Phillips & Co., New result. In the case of the old masters I York. Price, \$1.25. tried to find if there were any signatures.

"An English Woman's Love Letters" is the record of an English woman's obliterated, or rather covered up. I found love contained in a series of nearly 100 no signatures. It is doubtful, however, letters. Over half of them were written during the heighth of her happiness. The remainder, covering the short period of her were very thickly painted. As to wills the mysterious alienation from her betrothed rays might detect if the parchment had up to the time of her death, were found been made thinner by erasure, but the and sent to him. They have been given in their entirety, save that, for the sake the North American, the Forum and va- at all interested in China. McClure, Philips & Co., New York. better. The visibility of a substance to the eye is no criterion of its visibility to the cations have been altered and a few notes Century Company, New York. -rays. The rays cannot see through glass, omitted. Aside from these they stand as which is transparent to the eye, whereas they were written. The authorship must aluminum, which is opaque to the eye, is remain unstated, that being the necessary a splinter of glass in the hand, but not a able to withstand the truth that this chronsplinter of wood. Most inks are transicle of a dead woman's undying and perfect parent to the X-rays, including printers' ink, but some are opaque. The rays can lies in the candor and lack of reservation see through a "Postoffice Directory," but with which the letters are written. Doubleif a paper with words written on it in day, Page & Co., New York. Price, \$1.50.

tory the rays will reveal those words and "Some Short Stories" is a collection of (Mrs. Van Rensselaer Cruger), Richard le Gallienne, John Strange Winter, "Q" (Quilent ink and the forger is considerate enough ler Couch), Octave Thanet, Marguerite Merington, Grant Allen and John A. Becker. Each is a masterpiece in its way and together make up a string of literary gems which are just delightful reading. Muntelegraphone for receiving and recording ro's Publishing House, New York. Paper, telephone messages: The steel band on which the records are made is wound on

> "Crittenden: A Kentucky Story of Love war with Spain. The hero, a youthful Kentuckian, goes to the war at the call of the girl he left behind him. The scenes, incidents and battle pictures make a most indown until they finish the last page. McClure, Phillips & Co., New York, Price, York, Price, 75 cents. Charles Scribner's Sons, New York.

"Sister Carrie" is the title of a volume the story of a girl who comes to the city work. to find employment, finally falling into the Century." day, Page & Co., New York. Price, \$1.50.

Episodes from the Winning of the West, have won from the critics a statement that | Price, \$1.50. he has done for the central western and southwestern territory of the republic what had before been done by the historian, Parkman, for the great northwest. The present volume is brought out as a part of Putnam's Knickerbocker Literature series, of which it forms the first volume. Other volumes in the same series, which will be ready in the near future, are:

higher capacity than it would be without this treatment.

As much misplaced ingenuity has been shown in devising ways to beat the electric meter as has been exhibited in other varieties of thievery. No fewer than half a dozen schemes for making the ordinary motor wattmeter read less than it should have been tried by dishonest customers and detected by electric light stations. A favorite method, until means were found to prevent it, was to drill a small hole in the dustproof case of the meter and introduce a small but able-bodied spider. In the course of time the insect would fill the delicate works of the meter with spiderweb. Another method was to pit a strong bar magnet under the meter on its shelf, so as to aid the retarding magnets of the meter itself and hold the instrument back. The small insect powder gun, which squirts a mixture of air and fine dust, has also been used to fill the mechanism with dust, which clogs its bearings. The more modern types of meters are practically proof against such schemes, but doubtiess some one will waste valuable ingenuity trying to alter their indications to his profit.

NEW BOOKS AND MAGAZINES COURS COURS COURS COURS COURS COURS AND MAGAZINES COURS COUR A GREAT AMERICAN NOVEL

> From its close relationship to the life and destiny of the people of every-day affairs. The Darlingtons has a kind of interest that is lacking in other fiction. .

It is Typically American

Representing the life of American industry and American enterprise. There is in it, too, the lightening touch of a well defined love element.

By a New Writer of Great Promise

ELMORE ELLIOTT PEAKE

NEW YORK TELEGRAM

"A remarkable piece of work. The Darlingtons is unusual and a decidedly promising production." BOSTON JOURNAL

"An interesting story centering about a wealthy railroad family in a typical American town." PUBLIC OPINION

"The history of a typical family of importance in a small town depicted with skill and accuracy." AUGUSTA HERALD

"In uniqueness of conception, in abundance of incident, in novelty of ideas, and in loftiness of purpose, The Darlingtons is a praiseworthy effort.

PITTSBURG INDEX

The story is full of life and action and unfailing in its interest, with a perfectly delightful American girl in the center of it."

Cloth, 12mo.

For Sale by all Booksellers.

\$1.50

McCLURE, PHILLIPS & CO.

PUBLISHERS

NEW YORK

CONTROL SOME SOME CONTROL CONT

rious English and Scottish reviews. The lips & Co., New York.

& Co., Boston.

Dr. A. Conan Doyle, who wrote "The White Company," by many regarded as the \$1.50.

by Theodore Dreiser, which may be best a Nation," by Edward Eggieston, will miss odist church of this city, but at present a described as a novel of city life. It tells the opportunity of securing his most recent "The Transic of Civilization from from a little country town; how she fails England to America in the Seventeenth No writer has ever succeeded hands of a traveling salesman, and details in depicting the great events of history or her subsequent life. While it describes un- the underlying causes with such clearness mistakably one side or phase of city life and in language so easy of comprehension and tells a story that is undoubtedly often as Edward Eggleston. In his hands dry repeated in real life in every city, it is facts become clothed with life and interest not a book to be put into the hands of that make a story far more entertaining every reader indiscriminately. Double- than any work of fiction can possibly be-In his latest, as well as his earlier work, he brings out in the clearest manner pos-The scholarly and thorough-going re- sible the transition of civilization from the scarches of Vice President-elect Roose- old world to the new and explains the deep velt, the results of which are presented in and underlying causes of American great-D. Appleton & Co., New York.

Old soldiers and all who are interested in stories of warfare will enjoy reading "A Captive of War." by Solon Hyde, hospi tal steward, Seventeenth regiment Ohio volunteer infantry. The author was in the battle of Chickennuga and was subsequently captured by Forrest's cavalry. From that time on he went through all the various ex-Abraham Lincoln." by Noah Brooks; periences incident to prison life in the

will be ready in the near future, are:
"Abraham Lincoln." by Noah Brooks;
"Astoria and Adventures of Captain Bonneville," by Washington Irving, and "The
Last of the Mohicans." by James Fennimore Cooper. The binding is plain, but
neat, and the present issue is nicely filistrated. G. P. Putnam's Sons, New
York.

Anything from the pen of Andrew
Carnegie is worth reading, so that it goes
without saying that his latest volume, "The
Goopel of Wealth and Other Timely Essays," is a book that will command the
attention of all thoughful readers.
In the introduction the author tells the interesting story of how he served his apprenticeship, and follows that with chaprest on "The Gospel of Wealth." "The Advantages of Poverty," "Popular Blusdows that with chapprenticeship, and follows that with chaprectainer of an American and the causes and
treatment of the recent political disturb,
About Trusts," "An Employer's View of
the Labor Question," "Results ofthe Labor Reversals in the Century magazine,
"Mess of the various articles in this volume
first appeared in the Century magazine,
"The Catherdal of St. Labor, and the present a view of thim and the Chines
the control of the contro

Prof. Henry Drummond visited Boston "For the Liberty of Texas," by Captain in 1893 and delivered a number of lectures Ralph Bonehill, is the first of three vol- to young men especially. The lecture lasts condition to the publication. No one is umes, each complete, to be known under were crowded, as no man probably ever had the general title of the "Mexican War Se- the faculty of drawing young men so ries." This particular book recites the strongly developed as did Prof. Drummond. devotion carries with it. The chief charm history of the struggle between the Tex- Under the title of "Stones Rolled Away" ans and the Mexicans which led directly up these lectures have been collected in book to the Mexican war and which was one of form, making a handsome little volume of the immediate causes of the conflict. It is 180 pages. Among the titles of the difa subject which has received relatively lit- ferent chapters or lectures might be mentle attention, especially in this form of lit- tioned: "The Man Who is Down," "One stories by such standard and popular au- erature, despite the fact that it contains Way to Help Boys." "Life on the Top material as romantic as any to be found Floor," "The Kingdom of God and Your in the history of our country. Dana, Estes | Part in It," etc. It would make a very suitable gift book for a young man. James Pott & Co., New York. Price, \$1.

Phillip W. Wilson has arranged "Beautibest novel of war and adventure ever writ- ful Thoughts," from Thomas Carlyle, There ten, has now written the story of a real is a selection for each day of the year war. "The Great Boer War" is its title and the whole forming a neat little volume of it will unquestionably stand for years to 300 pages and over. The writings of come as a comprehensive history of the Thomas Carlyle are too well known to and War," by John Fox, jr., is a tale of the sharp, short clash between Boer and Briton necessitate any comment at the present in South Africa. It is written with all the time and the many admirers of his works vividness and rich imagination so observ- who cannot afford the time necessary to read president, sees hot service at Santiago able in "The White Company," but, at the all the products of his fertile imaginaand returns safe to his own home and the same time, it deals with facts. The author tion will appreciate the present selection secured these facts at first hand. He served containing as it does the very pith of his several months as surgeon in South Africa work. Bound in neat and attractive style teresting story of it, and those who begin during the war and was enabled to see the book will be found well adapted for its perusal are not likely to lay the book and describe events clearly and accurately, gift purposes. James Pott & Co., New

No one who has read "The Beginners of years an active member of the First Meth-

world a splendid cathedral is being built All of the gorgeous edifices are near completion, and for each it is claimed that it

80c BUYS A \$1.50 PRESENT 80c

We will sell the leading books named below for 80c for Friday and Saturday only.

Red Pottage, Tommy and Grizel, The Conspirators, Janice Meredith, Richard Carvel, Deacon Bradbury, To Have and To Hold, A Bicycle of Cathay, When Knighthood Was in Flower. NONE TO DEALERS.

20c buys Capt. Chas. King's 11.25 25c buys Henty's 75c Books-38 titles to select from.

75c buys any one of the St. Nicho-olas Series-A Complete Brownle Book-The Heart of a Boy-or Poetic Jewels.

\$1.50 buys a \$2.50 Oxford

\$4.00 buys Remington's, Wen-50c Buys the \$1.00 edition of The First Mortgage. \$7.00 buys the \$12.00 edition of The

⁴ A big cut on all lines—an extra special price on the Elsie, Bessie, Polly Peper, Alcott's, James Whitcomb Riley's, Elia Wheeler Wilcox and Mary J. Calendars, Dairies, Card Games, Game Boards, Stationery, Purses, Card Cases, Bill Books, Navajo Blanketz, Mexican Zarapas, Indian Baskets, Indian Calendars. A big line of Christmas Periodicals.

BARKALOW BROS.

Telephone 320.

1612 Farnam St.

\$1.00 buys either of Father ful Wizard of Og or 2 vol. set Knights of the Cross, author of Quo Vadis.

OPEN EVENINGS.

York. Price, 75 cents.

Mrs. Jennie Anderson Pierson, for many years an active member of the First Methodist church of this city, but at present a resident of St. Louis, has written "Bible Homes and Families." It is composed of a series of bible pictures drawn from bible narratives and describing bible homes and characters and is a volume that will find a welcome place in the Christian home. It has been observed that most people can tell the story of a sacred character, here and there, or of unscattered incidents of bible history, but with the hible as a whole and there, or of unscattered incidents of adjective 'magnificent. The walls of the and there, or of unscattered incidents of bible history, but with the hible as a whole and the relation of one family to another they are unfamiliar. The object of the author is to increase our reverence for the home. There are thirty halftone engravings, which add to the generally attractive appearance of the volume. John W. Him & Co., Chicago, publishers.

The above books are for sale by the Megeath Stationery Co., 1308 Parnam street.

THREE HUGE CHURCHES.

Mighty Temples of Worship Going Up in New York, London and Paris.
In each of the three great capitals of the world a splendid cathedral is being built.

OUT TODAY January Number of



On All News-stands Price. 10 Cents

EVERTBODY'S MAGAZINE for January contains the second instalment of

"Joscelyn Cheshire" The Romance of the Revolution, by a new and brilliant writer. Those sending a dollar for a year's subscription will receive the December number containing the light of the story, and the twelve issues to January, 1902 JOHN WANAMAKER