

MESSAGE CARRIERS

Wonderful Growth in Means of Rapid Long-Distance Communication.

SIXTY YEARS OF PROGRESS

A Telephone Service from New York to London is Now Proposed—Development of the Telegraph and Telephone.

A NEWSPAPER prophet recently made prognostication that within a year we should have the long-distance telephone as another link connecting London and New York. This dream may and may not be realized, but within three months we are to have direct telegraphic communication without intermediate repeating stations, telegrams arriving at four times the speed of previous cable messages. Another step in the great development of means of rapid long-distance communication.

Sixty years ago, and there were no means at all. During the last six decades were invented and perfected the four great wonders in this line—the land telegraph, ocean telegraph, telephone, and last the wireless method of swift dispatch of messages. Sixty fruitful years, 60 revolutionary years.

Englishmen assert that prior to Morse's telegraph, two of their own countrymen had invented a practicable telegraphic apparatus, the Cooke-Wheatstone telegraph. For years Mr. Cooke, a Scotchman, worked away on his invention, encouraged by Faraday, the famous English physicist and chemist, the "king of electro-magnetisms," to go on with his experimenting; Faraday telling him "it would be a beautiful thing to carry on in this manner a conversation from distant points." Mr. Cooke, after toiling alone for years, became associated with Prof. Wheatstone, a noted man of science, and together they labored at an invention that was



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patented in June, 1837, the first galvanic electric patent in any country.

This telegraph was first made use of only for railway service, but soon messages began to be sent for the public, and the use of the telegraph spread rapidly in the United Kingdom. Dr. Hamel, of St. Petersburg, writing in 1859, says that to Cooke and Wheatstone is due the honor of having given the example in applying the electric telegraph to practical use for society at large; not only in Great Britain, but throughout the world. A writer in an English periodical thus comments on the way in which the world received the news of the invention: "Of course there were many claimants for priority of invention as soon as Cooke and Wheatstone's telegraph was announced as being at work, and, of course, America was to the fore in the scramble."

The first actual patent obtained by Morse was not until 1840, but years prior, in 1832, he had experimented with electro-magnetic telegraph recording; and though his patent was granted after the Englishmen's certainly his contributions to the science of telegraphy are of unquestioned greatness, such that the whole world yields him homage. Morse was a painter by profession; and the boy that at college was more interested in the study of art than the study of electricity became the founder of the American system of the electro-magnetic telegraph. In 1832, while returning to America from France, he became especially interested in the subject of electricity, and on the voyage devised the dot and dash alphabet. After he reached home, in a "combined studio, workshop, bed-chamber and kitchen," he labored at his models, and made his apparatus after his appointment to a professorship in the University of New York. He exhibited his working model in 1835, and the same year discovered the relay, which enabled him to reinforce the current after it had become feeble. In 1838 Morse went to Europe for the purpose of interesting foreign governments, but was not successful and returned to this country. Then followed four years of almost abject poverty, but in 1842 congress voted him \$30,000 to aid in carrying out his theories; and the work of the American telegraph was launched. On the 24th of May, 1844, a public exhibition was given, and the marvelous message flashed from Washington to Baltimore. A few figures in regard to the growth

of the telegraph may be of interest: In 1866 there were in this country 2,250 telegraph offices, operating 75,686 miles of wire; in 1867 the average cost of sending a message was one dollar; ten years later the price had fallen one-half. In 1897 there were 21,769 offices, and for that year the number of messages sent was 58,151,684, the average cost to the sender being less than 31 cents.

Oceanic telegraphy, as the student of the science well knows, has been brought to its present degree of excellence by the labor of many hands, the



Cyrus W. Field

thought of many men; but the name of one man stands out very prominently, that of Cyrus W. Field. The promoting of the first cable telegraph was marked by long years of struggle and defeat. For 13 years Mr. Field devoted his whole time to the project, in that period visiting Europe three times every year, making acquaintance with government officials, capitalists and engineers of note, whom he endeavored to interest in the scheme for binding together the two continents. In 1858 the cable was laid, but became suddenly useless after a few days' trial. The civil war interfered for years with further progress, but in 1866 the Great Eastern safely deposited a larger cable on the bed of the ocean, and the Atlantic cable became an unbounded success. The Commercial Year Book of 1899 gives the length of the world's cables of that year as 161,384 nautical miles; but with the recent development of cable building in the Pacific these figures can now be very considerably increased.

It was in 1875 the invention of Prof. Bell was made known to the world, and two years later that the first telephone exchange was established in the United States. The system has increased rapidly; now conversation can be held between points more than 1,000 miles apart; the number of exchange and toll line connections in this country now reaches almost 2,000,000,000 yearly; the total number of stations in the United States in 1902 was 1,020,640; the entire capital invested in telephone systems here was estimated at \$350,000,000. We hold a leading place among the nations not only in the development of the system, but also in the use of improved appliances. As respects development of telephone service the countries may be ranged after the United States in the following order: The German empire, Great Britain, Sweden, France, Switzerland, Austria, Russia, Norway.

In 1895 Mr. Marconi began experimenting with wireless telegraphy, manipulating his simple apparatus on his father's estate in Italy. The young inventor found strong supporters from the start, and now, eight years after his invention, the wireless telegraph is in use far and wide. There are at present 35 or more Marconi stations in different parts of the world, or, including those on ships, about 70 stations. The Italian government has used the Mar-



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coni system largely on its warships, and companies in Great Britain, Canada and the United States have been organized for exploiting and controlling the system.

The first message sent by the land telegraph was: "What God hath wrought." That first great invention seemed, of a truth, no less than a miracle; and, when we take a moment to think of it, we ourselves still look upon as wonderful these everyday conveniences about us—the telegraph, telephone, ocean cable and winged wireless message bearer.

CHRISTOPHER WEBSTER.

A Better Case.

"He didn't marry her, so she's going to sue him for damages."
"Heavens! Why, she'd have a better case for damages if he had."—Chicago Post.

LOW-WHEELED WAGONS.

Iowa Farmer Tells Why He Considers Them Better Than the Kind in General Use.

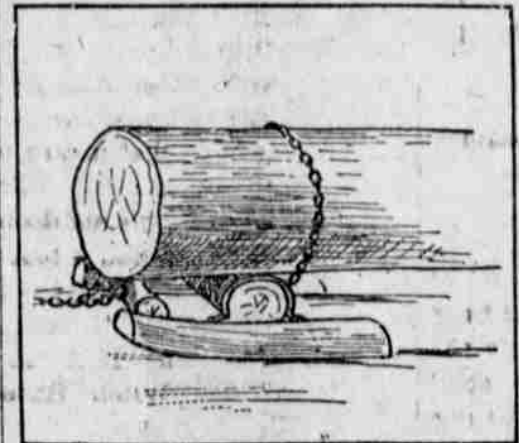
The broad-tired and low-wheeled wagon has many advantages over the high-wheeled and narrow-tired wagon. I have a wagon with 30-inch front and 36-inch rear wheels with five-inch tire. My neighbor has a low wagon with two and a half-inch tires, but he had to exchange with me in order to get in his hay from his low ground. All he could load on his was one sling full; on mine he put two slings, and it did not commence to cut through. One thing is sure; it is less work to put a load on a low wagon than on a high. In fact, I find no need for my common wagon unless I am going on the road. Just after a big rain the broad-tired wagon will slide, but for drawing all kinds of loads on the farm it is way ahead of the common high-wheeled wagon. The majority of men in this locality cut down their narrow-tired wagons and put three and four-inch tires and felloes on, but I find that mud will stick more to a wooden spoke than to a steel one. The steel wheels have no tires to come loose like the wooden wheel, so I take the steel wheel on a low wagon every time. A short time ago I read an article by a Kansas man. He says he would advise the use of wheels of the common height with two-inch tires. High wheels run easier on good roads than low wheels, I will admit; but he goes farther and says when you come to mud they all cut the same depth. I think differently and will tell why. Last spring I went after a load of 25 bushels of corn with my low wagon. The roads were soft. I went with my load, and a common one-seated buggy with two light people in it followed. The buggy cut from one to two inches deeper than my five-inch-tired wagon with that much corn and myself on it. The wagon is a heavy one; the gearing within the box weighs 775 pounds. If roads were nicely rounded 25 feet wide and everybody would use broad tires and drive promiscuously over the grade, it would be much better.—L. K. Viland, in Prairie Farmer.

ALL-AROUND LOG SHED.

It is of the Snapdragon Pattern Which Has Been Long in Use in Lumber Camps.

I have been getting out some lumber, and as there was little snow I have used the sled shown herewith. It is called a snapdragon and is such as is used in the lumber camp. It can be used with or without snow. I took two yellow birch stumps about six inches through and three feet long for runners. The two bunks were about the same size and two feet eight inches long. The forward bunk is put on with one bolt in each end, so it can have a good chance to work.

For the middle bunk I put two two-



FOR DRAWING LOGS IN WOODS.

inch holes through each runner, then took a small, round birch of the size wanted, heated it hot in a fire, and bent it in the shape needed to put over the middle bunk and the two ends down through the runner, then wedged them solidly, but so there would be plenty of play. The nose of the runners must be made so they will not catch on every rock or stump. This can be done by putting the forward bunk at the very end of the runner. The chain is put on the log with a half hitch and drawn through a hole through both bunks. Birch is the best wood, as it wears the smoothest on frozen ground.—Farm and Home.

Rings Tell a Ram's Age.

When a ram's constitution has been undermined by the rutting season, the horns cease to grow, nor do they begin again until the spring of the year when its green vegetation brings nourishing food, and this is the cause of the rings, which, therefore, indicate the number of winters old a sheep is. This was my head man's theory, and is, I believe, a correct one, for in the smaller heads which I have examined these rings coincide with the age of the sheep, as told by the teeth. Up to five years the age of a sheep can always be determined by the teeth; a yearling has but two teeth, a two-year-old four teeth, a three-year-old six teeth, and a four-year-old or over eight teeth, or a full set.—N. Y. Tribune.

There is no getting away from the fact that the Ayrshire cows are profitable milk-makers. While they are not large animals, yet they give a liberal flow of milk of a quality well suited for use in the milk form. At the same time they are a rugged, hardy race of animals.—Midland Farmer.

Separate Waists Still in Vogue



WOULD-BE prophets continue to predict the death of the separate waist. In connection with this prophecy I said to a fashionable shopkeeper but a few days ago that complete suits seemed to be in vogue, much to the disadvantage of the woman of limited means who had found in the separate waist a way of making a limited wardrobe appear to best advantage.

"The separate waist is by no means out," he replied, "nor do I imagine that it soon will be. We have never carried so large and varied a stock of these garments as we have this winter, nor have they ever been more elaborate."

And then as proof of his assertions he proceeded to display for my benefit a seemingly countless number of those in his stock. First he showed me a filmy structure of chiffon which forms the foundation on which much beautiful elaboration is built, by transparent lace insertions or incrustations, on which graduated horizontal tucks of palest mauve sole de chine, which entirely compose it, sleeve and all, are hemstitched on to the cream chiffon by large lace stitches in white linen thread. It is both a pretty and dainty conceit. The yoke is applied, and composed of bands and wee gauzings in line treatment, connected by fine lace stitchings, and here and there enriched by a mauve glace motif inserted. The cuff is also of this up-to-date lace work, and cut into a cup-like point to hold the fullness of the tucked sleeve. Barettes of fine ecru lace complete charmingly an already charming confection.

In a general way the wide, the extremely wide, tuck is in highest favor. As a rule this three or four inch tuck is diagonal, sometimes it is united to

the main edifice of the blouse. This is the treatment of the first blouse shown me.

Another horizontal treatment is of palest azure sole de chine, and practically fashioned in a double tier of widely tucked filmy frills, united by a transparent heading of pointed medallion ecru lace, the points drooping over the flounces. The yoke is again formed of transparent designs, composed of wee bands of the material and lace stitchings enriched with guipure and French dots.

Still another is decollete and also of palest blue, though this time crepe de chine is the chosen fabric. The fringed shawl bertha is its leading note, and the union of Valenciennes lace with the fringe is a singularly happy one, and likely to be lasting, I fancy. The elbow sleeves have inner ones of accordion plaited and lace edged blue chiffon.

As to the pretty little slips that came tripping out to greet me and show how entirely desirable and suitable they were for table d'hote and home occasions, they were many and alluring. Par example, a vivid accordion plaited ecru lace yoke garnished with wee bands of graduated black velvet. Ivory point d'esprit or Paris nets embellished most charmingly with d'Alencon lace, all silk openworked and motif enhanced. A sunray plaited mauve soft silk of old Nippon had a plaited, pointed, shawl-like yoke extension, inserted with a very pretty imitation Maltese lace.

A demi-toilette black crepe de chine blouse I saw had wide sloping tucks, and a smart series of mitred tabs for its frontal adornment.

I was convinced, and so may you be, that the separate waist is not a thing of the past.

The Fashionable Skirt

SKIRTS are becoming more voluminous and bouffant, until one is forced to wonder whether the fashion makers will cry Halt! before the woman of small stature is quite lost amid their ample folds. I inspected a lace evening toilette the other day, where the skirt was adorned with five graduated volants of lace, beneath each of which were further disposed a supplementary lace and two chiffon flounces. To accentuate the width yet more, numerous fussy little net frills were sewn into the lining from hem to knee, imparting an early Victorian outline to the whole.

Then the latest versions of the short jupe for morning and country wear, aided by the introduction of a stiffened lining at the hem, stand well away from the feet all around. Hitherto they have erred in the opposite direction, by looking rather "mean," on account of their marked propensity for clinging about the heels of the wearers. Some people still affect to be nervously apprehensive of the crinoline's resurrection, but these fearful ones chiefly belong, I fancy, to the not-unknown few who rather enjoy giving themselves and their friends a small fright occasionally for the sake of variety.

The triple or three-tiered skirts are being made in many cases with plain tabliers to preserve the straight-fronted aspect, which is at once abolished by the application of circular volants. A close row of cloth or silk buttons forms a nice finish for the side seams of the tablier, which are apt to look a little abrupt and hard if left quite unadorned,

while stitched tabs are often requisitioned for the same purpose on the more habilite costumes. Frocks of the princess genre are being revived for afternoon and evening wear in Paris, and Paris-



A CERISE CLOTH COSTUME. Show us One of the New Skirts.

ennes, who seem to be specially gifted with the art of wearing this exacting style of dress, have taken advantage of Mme. La Mode's encouragement of this vogue to adopt them with immense ardour.

MADE RULE AGAINST "STAYS"

Stays, like many other articles of dress, were first used in the reign of Henry II. of France. They were called stays in England because they were said to stay the obtrusive charms of women.

A curious edict was passed by Emperor Joseph II. of law-making notoriety to restrain the use and fashion of stays. In the preamble it set forth that they impaired the health and impeded the growth of the fair sex. In all orphan houses, nunneries and other places of public education they were strictly forbidden, and young ladies still persisting in the fashion were threatened with the loss of the customary indulgences and countenance which were bestowed on their class. Thus they were made a sort of immorality. The College of Physicians also was enjoined to draw up a dissertation in sup-

port of the royal edict, which was distributed gratis.

Squaring Himself.

"You told a friend of mine the other day, Mr. Spoonmore, that I had an olive complexion."

"But, gracious me, Miss Smith, I-I acquired the taste for olives years ago."—Chicago Tribune.

Proved Its Belief.

She—Do you believe in incarnation? He—I certainly do. Why, that motor-car of mine is just stubborn enough to have been somebody's wife in another world.—Yonkers Statesman.

A Great Difference.

"He's what I call a good fellow." "At home or at the club?"—Chicago Post.