

TELEGRAMS WITHOUT WIRES.

Machine That Transmits and Receives in Writing Messages from a Distance.

The zerograph is the name bestowed upon a new mechanical and electrical device by means of which messages by wireless telegraph may be sent or received and typewritten copies taken automatically. It is not a yankee notion, but the invention of an Englishman, says a scientific exchange. In appearance it resembles an ordinary typewriter, but it is of simpler construction, with a keyboard figured with the signs of the letters and numerals, which can be printed or telegraphed to any number of instruments. Each instrument, the inventor explains, is at once a receiver and a transmitter, enabling operators to converse with one another in writing, and thus obviating misunderstandings, which are apt to occur in telephonic communications. So far messages have been sent only for a short distance, but it is intended to experiment over wider spaces, and it is hoped that messages can be sent to any distance that either waves will carry. The machine is always ready for immediate use, and as there is no mechanism which requires to be wound up in order to obtain synchronism, the operator has both hands free for manipulation.

Another advantage claimed for the invention will be of especial importance in military affairs. Messages cannot be picked up. To quote the inventor's own words: "In sending a message you are sending two ether waves which allow you a choice of 56 signs, and these are given direct print either as letters or figures. Absolute secrecy is thus obtained. The only way to intercept messages would be to employ a similar instrument, which would have to be synchronized to the same degree as the transmitting instrument. Lastly, these machines will receive their messages (which are given at present at a speed of 25 words a minute) without anybody being present, and would thus be of great advantage in a signal box, as the signal man will receive clearly printed instructions should he be absent at the time the message is sent to him. Nor will the machine work only without wires. I gave a lecture in Paris before the Society of Civil Engineers of which I am a member, during which I sent messages to Brussels while telephonic communication was going on over the same wires. I have sent messages also between Berlin and Frankfurt."

The apparatus consists of a typewriter which by depressing a key sends two impulses. Each letter only requires two impulses, and the different letters are obtained by means of the time interval between these impulses. For wireless purposes these impulses operate a switch connection with the induction coil, thus making the sparks for sending the ether waves. The induction coil is connected with an aerial as well as an earth wire. To turn the apparatus into a receiving instrument it is only necessary to move a switch which is placed beneath the typewriter. This makes all the connections to the receiving apparatus, which consists of a coherer and a very sensitive relay.

ON THE PARIS 'CHANGE.

Three Million Francs Is the Cost of a Place Among the Seventy on the Bourse.

It may be said that a seat among the seventy (they call it a charge) costs about 3,000,000 francs (\$600,000) or sometimes 2,500,000, and a charge earns from 5 to 15 per cent. (net) a year, so that the annual profits are from \$30,000 to \$90,000, or more in exceptional years, writes Cleveland Moffett in "The Paris Bourse" in Century. But these are usually divided among several associates, for it rarely happens that an agent is the sole owner of his seat. More often he has paid for only half of it, or a third of it, and has three or four silent partners who own the rest and who may again have subpartners, so that you will hear of a person owning an eighth or a sixteenth of a seat, or even a thirty-second, these being simple investments that carry no rights or privileges on the bourse.

As to procuring a charge, the thing has none of the stock exchange simplicity, where the main requirement for getting a seat is to be able to pay for it. Here a candidate must be a Frenchman and at least 25 years old. He must have served four years in certain forms of business. He must be personally acceptable to the agent from whom he would purchase the seat, and often to his family, including the ladies. He must be passed upon by the seventy with formal voting, as if he were joining some select club, which he is. There must be no stain on his business record, and no slur on his personal character. A candidate was rejected recently for bad habits, and another for no fault of his own, but because his brother had been concerned in questionable transactions. With all this favorably settled, there is still needed the approval of the minister of finances and the sanction of the president. This makes it clear enough why many of the ablest dealers on the bourse have not been members of the parquet, but of the coulisse. They could not get into the parquet.

TONES AND COLORS.

Discovery of a Remarkable Phenomenon by a Scientist.

Rays of Light Which Produce Certain Colors Correspond Exactly with Certain Tones—Use in Musical Instruction.

It has been the dream of poets that some subtle, sympathetic relation exists between tones and colors; that the harmonizing of one and the artistic blending of the others appeal to the same sense of the beautiful; that sweet sounds and pleasing color effects are very much akin. It has remained for a Philadelphia professor to trace this phantasy to its source; to materialize the vague impressions of dreamers and to reduce them to a matter of science, says the New York Herald. It has long been common knowledge that our conception of both musical tones and colors is due to the effect of vibrating waves of movement, but it is something new to learn that there is a close and exact sympathetic relationship between the notes of the scale and the colors of the spectrum; that the same system of nature governs each and that discords arise in ill-matched hues from infringement of the same rules which govern the combination of sounds according to the science we call harmony.

It is amazing to learn that the seven colors of the rainbow exactly correspond with the seven notes of the gamut, and that red, being the dominant, has to the other colors the same comparative refrangibility, or "wave lines," as the dominant in any chord has to the other notes in the scale. It will blend artistically and pleasingly only with such colors as represent notes which in music may be harmoniously used with the dominant.

It is claimed by the discoverer of this phenomenon in science, and he has devoted the last 20 years to the study of relationship between tone and color, that the rays of light which produce red, at the base of the spectrum, correspond exactly with sound waves responsible for "do," the keynote at the base of the tonic scale. Orange corresponds with "re," yellow with "mi," green with "fa," blue with "sol," purple with "la" and violet with "si."

Before scientific experiments and research established these facts, argues the professor, impressionists, poets and painters felt this close union between tone and color. Artists knew that a warm splash of red, giving an impression of prominence and nearness to the eye, would dominate the whole picture. "Do," the tonic in music, is recognized as the centripetal force. Opposite in effect is the cool, limpid blue, which is in agreement with "sol," the clear, ringing " fifth" of the scale, the tone of centrifugal force, while midway and in perfect harmony is "mi," the yellow, the sweet but unobtrusive "third" of the scale. These three colors combined form a most pleasing group, while the corresponding tones form the tonic chord, the basis of all harmony.

This remarkable science, or theory, whichever it may properly be called, has been put to practical purpose in the artistic and musical training of little children, at an age when their minds are especially susceptible to impressions of sweet sounds and bright colors, when the intelligence is mainly working through the medium of their senses.

WONDERFUL RESULTS.

Even the Anticipation of the Gas Gave the Student a Regular Fit.

A good story is being told at the expense of an undergraduate at one of our 'varsities. He was attending the chemical lectures of a certain distinguished, if not popular, professor, who had announced for his next lecture certain experiments with laughing-gas. The student, who knew that persons under the influence of laughing-gas were not responsible for their words or actions, saw an opportunity of telling the professor some home-truths with impunity. On the afternoon of the lecture the professor called for a volunteer for the experiments to be made, and our undergraduate promptly came to his assistance, to the amusement of the class, which had been taken into his confidence. The bag containing the hilarious gas was duly affixed to the student's mouth, and he commenced to inhale vigorously. The effect was magical, relates London Tit-Bits. The student began to abuse the professor in terms which are unknown in Sunday schools.

The professor lent a patient ear to this testimony to his character, and then, turning to the class, said, with the suspicion of a twinkle in his eye:

"You see, gentlemen, how powerful this gas is, when even the anticipation of it produces such strange effects. I will now proceed to turn on the gas."

Trade Relations with Mexico.

The United States leads in furnishing both the machinery and the raw material for the new industrial development in Mexico. The exports, outside of metals, amounted to \$69,721,730 in gold, of which the United States took 81 per cent., while all Europe took but 15 per cent.

Makes digestion and assimilation perfect. Makes new red blood and bone. That's what Hollister's Rocky Mountain Tea will do. A tonic for the sick and weak. 35 cents, Tea or Tablets.—W. P. McMillan, Lexington, Oregon.

State of Ohio, County of Toledo, ss. Lucas County,

Frank J. Cheney makes oath that he is senior partner of the firm of F. J. Cheney & Co., doing business in the city of Toledo, county and state aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of catarrh that cannot be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY,
Sworn to before me and subscribed in my presence this 5th day of December, A. D. 1886.
[SEAL] A. W. GLEASON,
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Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials free.
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RETAIL GROCERY PRICES.
COFFEE—Mocha and Java, best 50c per pound; next grade, 45c per pound; package coffee, Lion and Arbuckle, 20c lb; Columbian coffee, 6 packages for \$1

RICE—Best head rice 10c per pound; next grade 6½ cents per pound.
SUGAR—Cane granulated, best \$6 50 per sack; do 13 pounds \$1.
SALT—Coarse 75c per 100; \$14.00 ton.

FLOUR—\$4 65@5 30 per barrel.
BACON—15@20c per pound.
HAMS—16@18c per pound.
COAL OIL—\$1 65@1 75 for 5 gallons; \$3 25 per case.

VEGETABLES.
POTATOES—New, 2½c per pound.
CABBAGE—3c per pound.
ONIONS—3½c per pound.
APPLES—Green 2½c per pound.

FRUITS.
BANANAS—40c per dozen.
LEMONS—35c per dozen.
ORANGES—40c@60c per dozen.
LIVESTOCK AND POULTRY.
Prices paid by dealer to the producer.
CHICKENS—\$3 50@4.00 per dozen.
BUTTER—ranch, 50 and 60c per roll.
EGGS—15c per doz.

BEEF CATTLE, ETC.
COWS—\$1 75 per hundred.
STEERS—2 65 per hundred.
VEAL—Dressed, 5c per pound.
SHEEP—\$3 50@4 00.
HOGS—Live, 5c; dressed, 6 cents @7c per pound.

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Morrow County, Oregon.

Morrow County is a new country, and like all other new countries, is awaiting development. Located in the Columbia river valley, and skirted on the South with a spur of the Blue mountains, within the boundaries of Morrow county is a territory 75 miles in length by 35 miles in width, and containing 1,313,280 acres of land. Formerly stockraising was the principal industry, but lately the fertility of the land is bringing agriculture to the front. Immense wheat crops are grown with little cultivation, the soil being mixed with a volcanic ash which is very rich in wheat-producing qualities. The 1904 crop will aggregate 1,400,000 bushels, much of it from virgin soil. Morrow county has thousands of head of sheep, horses and cattle. The wool production for 1904 was 2,500,000 pounds. Alfalfa and fruit growing are profitable industries, rapidly growing in importance. The county has also a great coal field, soon to be developed.

The Heppner Gazette

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