

lowing the solder to assemble and run upon the cleaned and protected surfaces. There is no acid reaction and the joint is very clean. It is somewhat dearer than the ordinary solder, but there is an economy in heating and in the use of the paste, as it avoids drops of solder. Proportions varying from 20 to 100 per cent of tin are used. One variety flows easily and can be put on with a brush, while the other kind is more solid. A good application is for fixing nuts upon bolts. Some of the compound is brushed into the thread, the nut screwed on and then heated when in place. Bolts of 0.4 inch diameter thus soldered could be broken by twisting before the nut could be unscrewed. Heating again will release the nut from the bolt. Tests show the mechanical and electric resistance to be in favor of the new method. The prepared substance is known as "tinol."

A TELEPHONE NEWSPAPER.

BY W. G. FITZ-GERALD.

If the dreamy, ease-loving Lotophagi of Homer ever had a newspaper, it was surely on the lines of Budapest's "Telefon-Hirmondo," or "Caller of the News." For here we have a "newspaper" with only an abstract existence; its soul poured into the listener's ear as he sits half dozing in a big armchair by the fire on weekday or Sunday.

Far from being the fad of a moment, the "Telefon-Hirmondo" has all the attributes of a great daily journal save mere concrete type, ink, and paper. It has a staff of over two hundred people in the busy winter months, and its circulation falls only when the editor-in-chief or his "stentors" slack off a little in their ceaseless stream of eloquence, wherein are queerly mingled events fraught with the rise or fall of nations and "ads" of soap and pills!

Its inventor was the Hungarian electrician, Theodore Puskas, an ex-collaborator with Edison. Mr. Puskas died three months after the practical realization of what had been his life's dream. He saw his beloved "News Teller" cautiously installed with 43 miles of wire; now it has 1,100 miles, forming a veritable web, pulsing with the world's doings and radiating into more than 15,000 of the best homes in the Hungarian capital.

Readers of Bellamy's "Looking Backward" will remember one of his boldest conceptions was a speaking, singing, lecturing, educating, and concert-giving "newspaper." I think it will come as a surprise to most people to hear that this fantasy has been in active operation in Budapest for a long time as a proved success, placing the famous and lively city of 800,000 ahead of the world.

From eight in the morning till ten at night eight loud-voiced "stentors" with clear vibrating voices literally preach the editor-in-chief's "copy" between a pair of monstrous microphones, whose huge receivers are facing each other. The news is of all kinds—telegrams from foreign countries; theatrical critiques; parliamentary and exchange reports; political speeches; police and law court proceedings; the state of the city markets; excerpts from the local and Viennese press; weather forecasts—and advertisements.

But the "Telefon-Hirmondo" goes far beyond the routine of an ordinary newspaper, as its remarkable constitution enables it to do. At stated hours concerts, performances at the Imperial Opera or municipal theaters are heard by subscribers in their own dining rooms, or as they sit by the fire playing cards on a winter's evening. Eminent divines, lecturers, and actors preach, address, or tell stories to enormous audiences scattered all over the beautiful city.

Subscribers even hear a list of strangers' arrivals, with the correct astronomical time and an exhaustive list of amusements such as may well tempt them from their own hearth. The exact time of each news item is strictly regulated and announced to subscribers every morning. Thus each need only listen to the news that interests him, and he can always be sure of its being "on tap" at the moment predicted.

In the event of some ultra-important item coming to hand suddenly—a disaster of international moment, an outbreak of war, or the like—it is instantly shouted into the microphones by the stentors, and special alarm signals ring in every household. When I called upon the editor at the administrative offices of the "Telefon-Hirmondo," I took careful note of a typical day's programme, and here it is:

A. M.

9:00—..Exact astronomical time.

9:30—10:00..Reading of programme of Vienna and foreign news and of chief contents of the official press.

10:00—10:30..Local exchange quotations.

10:30—11:00..Chief contents of local daily press.

11:00—11:15..General news and finance.

11:15—11:30—Local, theatrical, and sporting news.

11:30—11:45..Vienna exchange news.

11:45—12:00..Parliamentary, provincial, and foreign news.

12:00 noon ..Exact astronomical time.

P. M.

12:00—12:30..Latest general news, parliamentary, court, political, and military.

12:30— 1:00..Midday exchange quotations.

1:00— 2:00..Repetition of the half-day's most interesting news.

2:00— 2:30..Foreign telegrams and latest general news.

2:30— 3:00..Parliamentary and local news.

3:00— 3:15..Latest exchange reports.

3:15— 4:00..Weather, parliamentary, legal, theatrical, fashion and sporting news.

4:00— 4:30..Latest exchange reports and general news.

4:30— 6:30..Regimental bands.

7:00— 8:15..Opera.

8:15 (or after the first act of the opera)..Exchange news from New York, Frankfurt, Paris, Berlin, London, and other business centers.

8:30— 9:30..Opera.

And once a week special lectures or concerts are given for the children. For a very different class of "reader," or rather listener, are reports of all the principal Hungarian and Austrian horse races, flashed over the wires the moment results are known.

The "Telefon-Hirmondo" has proved a real boon to this great city. For one thing it gives news of great importance far sooner than any printed daily can put it before the public. It is the delight of women and children, and is a real entertainment to the sick in their homes, to patients in hospitals, the blind, and all those who have neither time nor money to go to theater, concert, or opera.

And the most unique journal in the world is invariably "turned on" in the doctor's waiting room, in barber shops, cafés, restaurants, and dentists' parlors—wherever people resort, in fact, and sit waiting for any purpose whatever. And obviously, since the journal costs little to produce, its service is quite extraordinarily cheap. Each subscriber pays but two cents a day for receiving, as it were, orally in his own home, the news of the entire world, besides entertainment which might very well cost him several dollars a day.

No fees are charged for fitting up the receivers in a house; and should a subscriber wish the "paper" discontinued, he can ring off, as it were, after a four months' trial. Each station is provided with a receiver having two ear tubes, so that husband and wife, brother and sister, or a couple of children can listen at the same time. And the apparatus can be fixed wherever the subscriber wishes—at bed or sofa, writing desk, fireside, or study.

No more interesting experience can be imagined than a visit to the editorial offices, where the readers, lecturers, and singers are communicating their various departments into the big microphones. Piano music is played on a grand of enormous power and size, on which the telephonic appliance is fixed. For orchestral music there are special transmitters with sound funnels four feet in diameter. The staff consists of two business managers, two principal editors, six sub-editors, twelve reporters, and the eight stentors—these last with voices which the old Romans themselves might have envied in forum or assembly.

So loudly do they shout the news of the world, that a "solo" of ten minutes quite exhausts the strongest. The company owning the newspaper has its own wires, and property owners have no right to make any charge for wires fixed upon their houses. I suggested to the managing editor that his position was unique in the journalistic world.

"True," he said smilingly; "we take no side, have no editorial opinions, simply because we have no leading articles."

"How do you manage your advertising?" I asked him.

"When an advertisement is transmitted over the wires," he replied, "it is sandwiched between two particularly interesting items of news, and so commands special attention. Our advertising charges as a general rule are fifty cents for twelve seconds of the stentor's voice."

"And here," the editor went on to say, "is the copy in Magyar of a Maurus Jokai *feuilleton*, two or three chapters of which have already been given. And so interested and excited are our subscribers, that they keep ringing us up—especially the children—asking when the stentors will get busy again unraveling a complicated and thrilling situation."

"We realize the responsibility of our position, and all our editorial staff, from editors to stentors, are most careful to tone down, alter, and omit items of news which might in any way be objectionable when delivered into the home."

"I have often marveled," the editor concluded, "why a country like America with its amazing enterprise and development has not produced a 'Telefon-Hirmondo' of its own on a far vaster scale than Budapest could possibly manage. You Americans like novelty; your advertisers are enterprising above all others. Possibly before long New York and Chicago, Philadelphia, Bos-

ton, and San Francisco will each have a 'Telefon-Hirmondo' of its own, bringing enormous profits to their owners. For all kinds of expenses are eliminated from the cost of production, such as paper, ink, typesetting, and a great and expensive staff."

RESULT OF THE MOTOR BOAT RACE TO BERMUDA.

The two motor boats, the "Ailsa Craig" and the "Idaho," which left New York on the afternoon of June 8 for a long-distance race of 670 nautical miles to Bermuda, arrived at their destination on the 11th instant after a very successful trip. As was to be expected, the 75-horse-power "Ailsa Craig" beat the 25-horse-power "Idaho" by a considerable margin. The elapsed time of the two boats was 65 hours and 49 minutes and 75 hours and 2 minutes respectively. The larger and more powerful craft beat the smaller boat, therefore, by 9 hours and 13 minutes, but as she was obliged to give the "Idaho" 8 hours 56 minutes and 38 seconds time allowance, she was declared the winner by 16 minutes and 22 seconds only. Her average speed throughout the entire distance was about 10.18 knots, while the "Idaho's" average speed was 8.92 knots. Fair weather was met nearly the whole distance, and it was only during the last night of the trip that the boats encountered strong westerly winds and high seas. The "Ailsa Craig" stopped her engine only once for a few minutes, for the purpose of adjusting an igniter. Only 550 gallons of gasoline were consumed by her engine in making the run. Both boats showed themselves to be staunch and seaworthy craft. The voyage brought out one point about sea-going gasoline cruisers, namely, that the engine room should be entirely separated from the habitable part of the boat, and should have especially good means of ventilation. Doubtless another year a considerably greater number of cruisers will participate in the race.

AUTOMOBILE RACES AND RECORD RUNS.

By far the boldest and longest transcontinental automobile race thus far attempted is the 9,300-mile endurance trip from Peking, China, to Paris, France, which was started on June 10 from the former city. Five touring cars and a tri-car are the contestants. These consist of two De Dion-Bouton touring cars and a Contal tri-car representing France, a Spiker touring car representing Holland, and an Itala touring car representing Italy and driven by Prince Borghese. The contestants were given a splendid send-off by the foreign ministers and residents of Peking. They expect to average something less than 100 miles a day.

To Walter Christie belongs the honor of being the only American to compete in the French Grand Prix automobile race, which will be run on the Dieppe circuit, on July 2. Mr. Christie's well-known front-drive racer has been thoroughly rebuilt and reconstructed since the last Vanderbilt race. The final tests of it, which were made on Long Island, previous to its being shipped abroad, showed that it was capable of a speed of 90 miles an hour, which would enable it to hold its own with any of the high-power foreign racing cars. We sincerely hope that Mr. Christie will meet with better luck this time than has been his lot heretofore.

The second great international race of the year—the 310½-mile race for the Emperor's Cup—was held on the Tanus circuit near Homburg, Germany, on the 14th instant. As there were 92 entries, two 155-mile elimination races were run off on the day preceding, in order to eliminate half of the competitors. In the race itself, French, Italian, Belgian, English, Austrian, German, and Swiss cars participated. The winner was Nazzaro on an Italian Fiat racer. A Belgian Pipe car was second, and a German Opel-Darracq third. The times and average speeds of the first three cars were: (1) 5 hours, 34 minutes, 26 seconds (53.76 miles an hour); (2) 5 hours, 39 minutes, 10 seconds (54.92 miles an hour); (3) 5 hours, 39 minutes, 59 seconds (54.82 miles an hour). The best time made in the elimination races was two circuits of the course (155.25 miles) in 2:50:20, which corresponds to an average speed of 54.68 miles an hour.

A helio-chronometer designed by Messrs. Pilkington & Gibbs, Ltd., gives Greenwich mean time by a simple direct solar observation. It comprises devices for adjustment in latitude, longitude, level, and azimuth. It is self-correcting for the equation of time by means of a disk divided and engraved to show the month and day; the disk can be turned to indicate the current date. The underside of the disk is a cam formed to represent the equation of time plotted as a polar curve and touching the cam is a lever carrying the upper pierced screen through which the sun can throw a spot of light on to the center line of the lower screen, the dial being turned about the polar axis to permit this. The imaginary mean sun is therefore advanced or retarded from the apparent sun by the amount requisite to cause the instrument to indicate Greenwich mean time correct to a few seconds.