

THE ELECTRIC TELEGRAPH AND NEWSPAPERS.

NO one can be ignorant of the supreme necessity now of the Electric Telegraphing system to newspapers,—that is, to the reading public,—and yet in 1845 news reaching Glasgow by that means was *nil*. It is stated that the first use for newspaper purposes of what we now call the Telegraph was made by the old *Morning Chronicle*, in May of that year, when the proprietor had a message transmitted to him by the wire between Portsmouth and Nine Elms, in London,—the only telegraph line then available. Not until after the three first months of 1848 did crumbs, amounting to from 6 to 20 lines, appear in the *Herald*, regarding Government Funds, markets, and the shares of the few railway companies then in existence. Any telegraphic news which appeared before that year reached us by telegraph to Liverpool and thence by railway and coach to Glasgow, in time for our second edition of the following morning. The transition from that state of things to the present universal and various use of electricity is a marvel of the age, and yet it is not so marvellous as the immeasurable pre-existence of this impalpable power throughout the earth, the air, in man himself, and probably everywhere. More than any other known power, it raises the old and ever-present question: “Which was first, Matter or Force?”—a question which introduced the late Professor Faraday’s lectures on “The Physical Forces.”

There have been many for whom the honour is claimed of being the author of the great invention which evoked and brought into the service of man this great dormant power, turning what had often been a bad master into a good and great servant of the world. But it is not generally known that one of the earliest for whom the honour is claimed was Dr. Charles Morison, a native of Greenock, who practised in Renfrew. The late Sir David Brewster, himself one of the greatest scientific men of this century, identified Dr. Morison as the writer of a letter, dated from Renfrew,

which appeared in the *Scots Magazine*, of February, 1753, under the initials of C. M., describing a plan by which messages might be conveyed to distant points. The letter explained his method of telegraphing to other places by a series of wires and electrified balls, which were operated upon so as to spell out words by touching bits of light paper having the letters of the alphabet upon them; or by electrified bells, varying in size and sound to represent these letters. He also proposed the important plan of insulating the wires by a coating material. These proposals formed at least the "bones" of the system matured by others many years after. Not until 1774,—twenty-one years after Morison's description of his method appeared,—was the first actual experiment publicly shown, and that by Lesage, in Geneva, but not exactly on Morison's lines. Many other attempts were afterwards made in different parts of the world, not only to convey messages by electricity, but to invent an instrument which would clearly and quickly signalise letters, if not words. Cook and Wheatstone succeeded, so far, in 1837, but not until 6th May, 1845, did they find themselves able to take out the famous patent for their single-needle instrument, which made the Electric Telegraph a practicable system. It was a start in a course of immense consequence to every class of society and especially to newspapers. This telegraphing, wherever it was installed, put an utter end to the ancient Semaphore with its fantastic limbs swirling in all directions, and to other old-world methods of signalling.

SUB-MARINE CABLES.—Other countries on both sides of the Atlantic had their earnest and thoughtful men searching out Nature's secret in this matter, and at length it was demonstrated that electric power could not only be sent by means of a wire from one place on land to another at a distance, but also under water, with the dead-weight of 2,597 fathoms or nearly 3 miles of ocean above the wires in some portions of their routes. The first cable publicly proposed was that registered by Jacob Brett in London on the 16th June, 1845, as "The General Oceanic

Telegraph Co., to form a connecting mode of communication by telegraph means from the British Islands and across the Atlantic Ocean to Nova Scotia and the Canadas, the Colonies, and Continental Kingdoms." The first that was laid and came into actual public use was that from Dover to Calais in 1851; and now up to the end of 1894 there have been 106 cables laid over different parts of the globe. These, which stretch almost everywhere over the globe, do not yet completely fulfil the promise of *Puck* to "put a girdle round about the earth in 40 minutes," for while they go round the earth from Auckland (New Zealand) *westward* to San Francisco, there is still the Pacific Ocean between these places uncrossed. Newspapers, however, can endure that blank until there are mid-ocean stations by which to send more shipping news! Meantime it takes $2\frac{1}{2}$ hours to send a message so far round the globe, at a cost of 6s. 8d. a word. The greatest event in connection with practical telegraphy was the completion of the Atlantic Cable on the 5th August, 1858,—an event which linked the kindred peoples of the United Kingdom, the United States, and Canada, putting them within five minutes' reach of each other.

The first message, after some testing and adjustment at both ends, was sent on the 17th August, 1858, by the British directors to their colleagues in America. It made the announcement of a new fact in the world's history, that Europe and America were united by telegraph, appropriately accompanied by the old Christmas message: "Glory to God in the highest, and on earth peace, goodwill toward men." Including the addresses, it contained 31 words, and took 35 minutes to transmit. Thereafter congratulatory messages passed between our Queen and the President of the United States. This historical act of joining the two continents by wire initiated a great system of 15 Sub-Atlantic cables, which have become a vital factor in the commercial and social interests and in the newspaper work of the Old and New Worlds. The original company, now called the Anglo-American Telegraph Co.,

has laid 8 cables, 3 of which (except the portions fished up) lie stranded amongst the hills, valleys, and prairies below the ocean, while the remaining 5 are in full use. Of the younger companies the American Cable Co. has 2, and the Commercial Cable Co. has 3 cables. Two of these 12 living cables lie between France and America; the shortest length of the 12 from land to land is 1,846 miles, and the longest (one from France) is 2,685 miles. Detailed reference to the cables in other parts of the globe, such as those to India and the Far East, to Africa, South America, &c., would carry my paper beyond due limits; but the comprehensive statement may be added, that within 30 years 152,000 miles of submarine cables have been made in this country, and laid, largely by the Silvertown Rubber Co.

Mr. Henniker Heaton, M.P., gives the capital of the 26 operating companies which own these lines at £40,000,000; their revenue, including subsidies, at £3,204,060; their reserve and sinking funds at £3,610,000; and their dividends at from 1 to 14 $\frac{3}{4}$ per cent. Excepting about 8,600 miles they are all in British hands, and the great majority of the stations are in British territory. Some of these figures represent enormous outlay in the cost of the cable, their laying, maintenance, tear and wear, and the actual loss of cables,—such as those abandoned. These great expenses and losses no doubt account for the high charges at first made for the use of those in existence up to 1880, and thereby the small use made of them for newspaper and general purposes. The original rate of £20 for ten words across the Atlantic was so high as to be generally prohibitive, and only in very exceptional cases were long messages sent. The earliest paid messages were those from and to the Queen and President on the completion of the first Atlantic wires, already referred to, which brought the company £500 each. The most costly cable message was said to be one sent in 1867 by the American Government to its Ambassador in Paris, for which £2,000 was paid. The telegraph company probably found, as many monopolists do, that they

were losing more than they made by that high rate; and they reduced their price to £20 for 20 words. The scale was afterwards reduced to £5 for 10 words, and by-and-bye, in stages, to 30s. Mr. James Grant says that during the high rate the *New York Herald* paid £1,000 for one message regarding the prize-fight between Heenan, the Irish-American, and Tom Sayers, the Englishman. The public rate now is 1s. per word, to or from New York; and probably the greater use of the cable, the quicker transmission (of 18 words, averaging 5 letters each, per minute), and the duplex system, produce a larger revenue than was got during the high rates. The rate now for news—chiefly sent at night—is 5d. per word. In July, 1870, upon the sudden declaration of war which brought France and Germany into their great conflict, the cables from France, especially those in the English Channel, came at once into extensive use for newspapers and other purposes. The *Manchester Guardian*, it was said, had a message from its correspondent at the beleaguered city of Metz, which cost £400. Continental and submarine cables, however, are now habitually used by some of the London morning newspapers, which hire special wires for night service between London and the Continent. Five of these special wires are to Paris, and two are to Berlin; and they are mostly used for transmitting to London the letters of the correspondents in those cities; so that their respective newspapers are so far placed in a position equalising in time service that of the Paris and Berlin papers.

THE DISTRIBUTION OF NEWS OVER THE WORLD by cables involves, in most cases, the employment of several marine and land telegraph companies and transfers. The following statement, condensed from an article in the *Scientific American*, gives some idea of this, and of what may be called the successful “working against time” in the westward transmission of cablegrams:—
 “‘Early one morning, not long ago, a party of Mohammedians desecrated, in some fashion, a place of worship in Calcutta. A fight followed, and the Brahmin defenders of the temple killed six

of the Mohammedans.' This piece of news reached the offices of all the newspapers in Calcutta long before noon. At 10 o'clock a young man ran into the telegraph station with the message:— 'Press Association, London.—Mohammedans desecrated Brahmin temple here 7 morning. Fight followed. Six Mohammedans killed. All quiet now. May lead serious complications.' This brief despatch was telegraphed to Bombay, whence it was transmitted to Aden. In a few minutes later it was on its way to Suez, whence another operator immediately sent it to Malta. At this place another operator repeated the message to Lisbon. From there it had only a short stretch of sea to cover to reach Penzance, where it was telegraphed to its destination in London. Now, from the moment that the operator in Calcutta touched the key of his clicker until the message was delivered to the Press Association in London, two hours had elapsed. But although the message had been filed in Calcutta at 10 A.M. it was received in London at about 7 A.M. of the same day. It was then sent by cable to the Associated Press office in New York, and at the same time telegraphed to the offices of all the afternoon and evening papers in England and Scotland. The man in New York received the message shortly after 2 A.M. of that same day. A minute later messenger boys set out for the New York newspapers, and hand in the despatch. At the same time half a dozen telegraph operators receive copies of it, and as quickly as they can they send it over their wires. One wire runs to Chicago, where the message arrives a little after 1 o'clock. Another wire runs to Albany, another to Philadelphia and Pittsburg, another to Baltimore and Washington, and so on. And so the message flashes across the country, zig-zagging everywhere, like a bolt of lightning, so that no city may be omitted, gaining hour after hour as it strikes westward, until even before midnight it reaches all the newspapers along the Pacific slope that are members of this globe-circling institution, informing them that at 7 o'clock of the day that has not yet dawned for them six Mohammedans were killed in

Calcutta." If this use of electric power westward so greatly anticipates solar time, its application eastward will for the same reasons lose proportionately; in the former case the electric flash outruns the sunlight, and in the latter case it runs to meet it in its path. This disturbance of our ordinary ways of reckoning the time sometimes results in rather amusing paradoxes, such as that the birth of the present Emperor of Germany in Berlin was announced to the Queen 53 minutes by the clock before it occurred.

THE POST OFFICE TELEGRAPHING SERVICE has grown so immensely since 1870, when the work was taken out of private hands, that now the head office in London alone has a staff consisting of 3,919 operators, messengers, &c. On some nights when Parliament is sitting there are news messages of as many as half-a-million, and even on occasion above a million, words transmitted. These inland Press messages are charged at the rate of 1s. for 75 words or under between 9 A.M. and 6 P.M., and 1s. for 100 words or under between 6 P.M. and 7 A.M. Although the Act of Parliament says that the messages shall be *transmitted* between the hours named, the Post Office people refuse to begin the transmission of night matter at 6 P.M., and will not receive "copy" previous to that hour so as to enable them to have their preliminary work done before 6 P.M., and leave themselves free to begin the actual telegraphing—which preliminary work it seems requires extra hands in any case. This delay appears to be no economy to the Department, while it prevents the sub-editors and compositors of the newspapers getting on with their work. For such messages, when sent to several papers, there is an additional charge for duplicating of 2d. (beyond the normal 1s.) for each copy. This cheap service is taken advantage of chiefly by independent newspaper touts, who offer at their own risk paragraphs and reports of a promiscuous and accidental nature, which may have escaped the attention of appointed correspondents; but the regular correspondents also, when attached to more than one paper and sending similar news to each of them, are expected to

use the 2d. additional rate. The 1s. rates are used not only for short news paragraphs, but for long reports of great events or of important speeches extending often to hundreds of lines. As it would be impossible for reporters to prepay all their long despatches, the Post Office provides guarantee order slips,—for which and for bookkeeping $2\frac{1}{2}\%$ extra is charged on the amount of the account; these guarantees are handed in by the reporter along with his copy. For all the sums incurred in this way an account is rendered each week for immediate payment by the newspapers thus employing the wires; but as Government officials never trust newspaper people, or perhaps any people, they take good care to have an ample deposit of cash in advance from the proprietors to cover all contingencies. Mr. Fisher, Controller of the Telegraph Department in London, has recently stated that, apart from general messages, there is a vast quantity of news sent frequently on Parliamentary nights, amounting to 500,000 words, and sometimes even exceeding 1,000,000 words in one night.

Mr. Preece, the Chief Engineer to the Electric Telegraph Department of the Post Office, made a statement two or three years ago regarding Press telegraphing, to the effect that in 1871 the number of words telegraphed to newspapers was 21,701,968, and that twenty years thereafter the number reached a total of 600,409,000. The greater amount of that work would no doubt be done at night, when the small general use of the wires would leave them comparatively idle. For such use of the Government telegraph service, for three special wires, for cabling, and for use through news agencies, our expenditure has year by year gone on mounting up from £600 in 1870, until now it touches £7,000 for the year.

CODE SYSTEMS for signalling sentences by words previously agreed upon became necessary for economy under high cable tariffs, and also in some cases for secrecy. Many ingenious Code books are published, and others made up for private use, most of them containing words which were never seen before and cannot

be found in dictionaries, and which are meant for the eye only and not for the tongue. The transmission by the Atlantic cables—*as tested last year*—gave the rate for ordinary code messages at 95½ letters per minute, and for newspaper messages the speed varied from 110 to 120 letters per minute. By a new automatic signalling method, the number of letters a minute has reached 243. All this, of course, means a remarkable increase in the speed, economy, and utility of the cables since their first use in 1858. Codes take the form of figures, as well as of words, as in the case of those used by the British Government, which are explained in the following paragraph which recently appeared in the *Herald* London correspondence:—

“The cipher is one of five figures. It is changed every year in case the key may have fallen into the hands of some one outside, but though changed annually the same five figures are always retained. These figures are manipulated in what, to an outsider, would seem to be an extraordinary manner. The fact that they have been used for over 30 years for this purpose, and that they have been found quite sufficient to convey momentous news, secretly and correctly, from one end of the earth to the other, shows that by this system a few figures, with the help of an annual instruction such as ‘drop two,’ that is, drop the second figure in each group of figures in a message, or ‘add 100,’ may be made to take the place of the 7,000 or 8,000 words in common use. The process of deciphering is very tedious. A practised hand, even when it is all plain sailing, cannot do more than 300 words in an hour, and this does not include the time which he must spend in throwing it back again into cipher to test his ‘translation.’ During the past few weeks, for the sake of speed, two clerks have got the same message to decipher, and if they both brought out the same result there was no occasion to wait while it was again being turned into the code. Not infrequently the groups of figures get a little disarranged in the course of transmission. Sometimes the context will help the decipherer

out ; sometimes it won't. If the source is a long way off, and the intelligence not of great importance, a couple of clerks are put at it to try to make sense out of it. As much as six hours has been spent this way on one message. If they are not successful a repetition of the groups which have been mixed is called for, while in the case of urgent messages a repetition is requested the moment it is found that the figures are disordered. The India, Colonial, War, and Admiralty Offices have their own ciphers."

STOCK EXCHANGE TRANSACTIONS and enquiries make perhaps the most difficult telegraph work, in view of the importance of having every name and fraction correct. In the case of the *Glasgow Herald*, as in several of the leading newspapers at a distance from London, the work of telegraphing the London Share transactions, British and Foreign Funds, &c., &c., is greatly simplified, and almost absolute correctness secured, by the code devised by us after much consideration. It contains 3,411 code-signs, each of which represents a different Stock ; but such news varies so much that no code could embrace it all, so that many transactions in the Share market and all the other markets of the world, have to be cabled or telegraphed by name and description in full. Stock Exchanges themselves are very valuable customers to the Post Office for telegraphing hither and thither during the day-time. Mr. R. Belfort has recently given some lively descriptions of cable work in the *Windsor Magazine*, and there makes the following allusions to the New York Stock Exchange and telegraphing, which may partly apply to other places:—"When the Stock Exchange is agitated the short 'Stocks' pour in by hundreds, the offices in New York and London are besieged by excited brokers. Prices rise and fall with startling incoherency: the cables literally hum with frantic orders to buy, sell, cancel, and quote. Some firms exchange a hundred and fifty messages on these occasions. Very curious is this battle of the bulls and bears, waged through a copper 'string' buried beneath the waves, the two armies being three thousand miles apart. The

clerks, becoming as excited as the brokers, work with extraordinary precision and rapidity. Before five o'clock this 'Stock' work ceases." Most of these transactions are reported in the papers. The cessation of general telegraphing about that time leaves the wires free for the night messages of newspapers of each continent.

SPECIAL WIRES originated, in a way, with the old telegraph companies, which, by their Intelligence Departments at first, collected and transmitted news. This supply was relied upon almost exclusively until a new feature began upon a small scale in 1866, by a few newspapers having "Special Telegrams" to supplement the other telegraph matter. After the telegraph system of the whole country was taken over by Government, newspapers had to rely upon the Press Association and other News Agencies for the greater part of their general news and for Reuter's foreign matter, while the "Special Telegram" feature expanded so much that it led to the hiring of Special Wires from the Post Office. Scotland, in 1872, led the way in this feature of daily newspaper work,—perhaps partly because its papers could not receive by railway printed and written matter as soon as places nearer metropolitan sources. The newspapers of the United Kingdom which have now Special Wires are the following:—The Glasgow Herald has three, the Scotsman has two, the N.B. Daily Mail has two, and each of the following has one: Aberdeen Free Press, Belfast News-Letter, Bradford Observer; the Dublin papers, Express, Independent, Irish Times, and Freeman's Journal; the Dundee Advertiser, Leeds Mercury, Liverpool Courier; the Newcastle papers, Chronicle, Journal, and Leader; Plymouth Western News, and Sheffield Telegraph,—the Manchester Guardian has both a special and a duplex wire, and the Manchester Courier and the Yorkshire Post have each a duplex wire, making in all twenty-three special wires and three duplex wires. The duplex allows two messages to be sent at the same time, one in each direction.

Great storms sometimes upset the arrangements of the sub-editors in London who have the duty of feeding the Special

Wires with copy. If the effect of the storm on the wires is partial they have to select the most important and urgent news for transmission; but when it has happened that all the special wires are disabled for service, they turn to the General Post Office as a last resource, in the hope that some there may give help in the emergency. On one occasion, however, when the late Mr. James Walker was on duty, all the public and private wires between London and Scotland were, by a storm, made hopelessly unserviceable. Mr. Walker was one of the most able and experienced of the London sub-editors, and had charge of the *Herald* work since 1871, till his lamented death in June, 1892. On that stormy night his intelligence and ready capacity in dealing with difficulties, which if he could not get over he tunnelled under, was manifested, for when he found himself shut off from the use of land wire connection, he bethought himself of the possibility of getting access to Glasgow by the roundabout way of submarine wires, and on this he immediately handed in a considerable quantity of copy, which was accordingly sent from London to Glasgow *via Copenhagen*, and appeared in the *Herald* next day (as the *Journalist*, when referring to this point in Mr. Walker's life, said), to the great astonishment of other Scottish journals, which were left altogether without intelligence from the British capital.

Such all-alive attention reminds me of a contrary case which occurred some years ago. At a neighbouring branch office in London, which had a Special wire to Glasgow, it happened that the sub-editor, after supplying the operator with ample copy to keep him telegraphing for some time, left his office, but forgot the key of the door. Upon his return he endeavoured to get entry, but no knocking at the door, or other expression of his feelings, could awaken the telegraph clerk, who had fallen fast asleep over his weary work. The sub-editor was desperate, for he knew that probably much time and non-transmitted matter were lost for that night; but at length it was suggested to send a

message by the General P.O. wires to his employers in Glasgow, to start the Special wire from that end so as to rouse the deep sleeper at the London end. This roundabout method, with the extra energy put into the click, clicking of the instrument, fortunately proved effectual.

TRANSMISSION OF NEWS—APART FROM SPECIAL WIRES—is fully described by Mr. W. G. Fitzgerald, in an interesting article on “Our News Supply” in the *Strand Magazine*. The following is an extract:—“Practically the whole of the provincial work of the great London News Agencies is done through the Post Office, where there is a special department for it. Under usual conditions, the number of telegraphists on duty in the news division in London varies from 14 between 8 and 9 o’clock in the morning, to about 140 between 6 and 8 o’clock in the evening, when the bulk of the newspaper work is dealt with. There are 23 news circuits, and by an elaborate system of classification a vast number of messages are despatched with surprisingly little trouble, the rate of speed varying from 300 to 450 words per minute. At each circuit in the news division there is a Wheatstone Automatic Transmitter, through which paper ribbon, prepared by pneumatic perforating instruments, is passed by clockwork. There are 55 perforating instruments, each capable of punching 8 ribbons simultaneously. Each of these eight ribbons can be run through several automatic transmitters; and in this way, one slip passing successively through four transmitters, might supply 16 provincial newspaper offices with the same message in two minutes. On occasions of exceptional pressure, the punching staff is largely augmented by other telegraphists; and about 515 ribbons are sometimes prepared simultaneously.

“The tape machines of the Exchange Telegraph Co. have clockwork mechanism, but their type wheels are rotated by electricity, and controlled by the transmitting apparatus. They print at the rate of from 35 to 40 words per minute, and some of them print about 4,000,000 words without needing repair. Perhaps the most

astonishing thing about this system is that any number of tape machines can be operated from a single transmitter, even though these machines be scattered all over the metropolis."

THE TELEGRAPHING DEPARTMENT AND THE NEWSPAPERS.—Repeated grumbles have been heard of the "loss" sustained by the Post Office owing to the "cheap" terms for Press messages. But they are very much the mutterings of ignorance or bad memory, for the complainers overlook the bad bargain the Government officials made with the Electric Telegraph Co. and the Magnetic Telegraph Co., in buying them up at a cost of 11 millions sterling; and then the unfairness of their demand that the Press should help them to make up the deficiency by paying high terms. I well remember, when the transaction was under consideration, forming one of a deputation to meet Mr. Scudamore, the official representing the Post Office, to whom I put the question if the Newspaper Press would under the Government be as well served and upon as good terms as by the companies. His answer was: "Certainly you will, and I expect on much better terms." And upon that basis the terms were arranged. This is confirmed by the following extract from the Annual Report for 1894 of the Newspaper Society, which took up this question exhaustively, and pointed out that "it is an undeniable fact that, in the important matter of quick transmission, the newspapers are at the present day no better off than they were under the old Electric Companies. In this state of things your Committee deem it advisable—as an instance of the pledges which from time to time have been received from the Government—to place in evidence the following communication, which was addressed to the President of the Society by the then Secretary to the Post Office, shortly before the taking over of the telegraphs by the State:—

"General Post Office, London, February 20th, 1868.—Sir,—In reply to your letter of the 17th inst., I beg leave to inform you that in the event of Parliament giving its assent to the Bill about to be introduced, for transferring to the Post Office the contract

and management of the electric telegraphs throughout the United Kingdom, it is the intention of this Department to make arrangements for the transmission of intelligence for the Press which, if not identical with those at present in force, shall be at least satisfactory to the proprietors of newspapers.—I am, Sir, your obedient servant,—FRANK IVES SCUDAMORE.’”

An important element in the case is that much the greatest use of the wires by newspapers is during that portion of the 24 hours of the day when they are least occupied, or not occupied at all, by higher-priced telegrams. Manufacturers, engineers, &c., generally look upon the use of their machines in such circumstances as making “found money.” As the object of the establishing of the Post Office was the public service, and not the addition of millions to the Exchequer, it is interesting to see how the more needy but less money-making Government at Rome does. Mr. Whorlow, in the monthly statement of the Newspaper Society, gives the following from a good Italian authority :—

“The Italian Postmaster decided, in October, 1894, to join by telegraph wire with the Central Post Office each newspaper that wished to be so joined. The wire is, in each instance, a direct communication from the newspaper office to the Central Post Office of the town in which the paper is printed, and every local post office has a direct wire to the telegraph office in the Italian Parliament in Rome. Many papers applied for the concession. There is, therefore, now only one staff of reporters in the Italian Chamber, which sends direct reports to all the newspapers simultaneously. Nothing had to be paid for the instalment, and everything was provided free by the chief of the Post Office, including the telegraph instruments. The new arrangement did not cause any extra expenditure to the Government, which was already under an obligation to provide the Stefani Agency with the reports, that agency in its turn forwarding the service to the newspapers. Now, however, the telegrams go direct to the newspapers without the intervention of the Stefani Agency. The

official shorthand report is handed in to the Telegraph Office in the Chamber, and, with a single transmission, is delivered to each paper."

THE PNEUMATIC TRANSMISSION of telegraph copy from the General Post Offices to a few newspaper offices in Glasgow, Edinburgh, Manchester, and perhaps one or two other cities, is an important addition to the means of quickened delivery. The installation involves an engine and pump, and four containers or closed cylinders, into two of which compressed air is forced in order to propel the carriers, while the other two are used for exhaust purposes in order to draw the carriers. Into these (short leather tubes open at one end) is placed the "flimsy" or other paper upon which the telegraph messages are written. They run swiftly in leaden tubes within cast-metal pipes, which are laid below the street between the General Post Office and the newspaper office. The tube ends in a box placed at the side of the telegraph operator in the Post Office, by whom the flimsy is sent to the sub-editor at the other end,—whence the empty carriers are returned. This installation, which was finished in 1887, cost us fully £1,200, and requires the day and night expenses of steam power, wages of attendants, and even the supply of carriers. The result to us, where every moment is precious, is to secure delivery of the telegraph copy in about 65 seconds, instead of our being dependent upon the uncertain time of boy-messengers. The result to the Post Office is a saving of stationery and of a penny to the messengers for each delivery to the newspaper office during the day and night, which cannot amount to less than from £160 to £170 per annum; and yet such newspapers are called upon to pay to the Post Office £8 10s. per annum for signalling each despatch placed in the pneumatic tube-box, which message, as in all other cases, they are bound to deliver!

Some of my references to these subjects may be considered outside the province of Newspaper Life; but (as I said at the beginning)

kindred material cannot well be left out regarding the means of Newspaper development, which the Electric Telegraph is to the Editorial Department, and the Railway system to the Publishing Department, which follows.

A few exceptional Feats in Telegraphing for Newspapers are reserved for what I may add in connection with the *Evening Times*, as such cases are mostly associated with evening papers in the public mind.

THE PUBLISHING DEPARTMENT.

WHAT is now called the Publishing Department of a Daily newspaper embraces most of what has been already referred to under the heads of Advertisements and the Advertisement Tax, the Stamp Duty on Newspapers, and the Paper Duty and Paper. These were dealt with first, as it seemed to me better to have done with the taxes and the fettered condition of things of earlier days before referring to some of the remarkable developments which newspapers have undergone since Parliament removed these obstacles. There is consequently less to say now regarding the Publishing Department.

The whole *Herald* business in 1845 was situated in the quiet Court at 182 Trongate,—then the busiest street in Glasgow. That building, and the fine block fronting the Trongate, were built by and named after Mr. James Spreul, a City Chamberlain of Glasgow in the early part of this century. In the autumn of that year—about the close of my sixteenth year—I received a note requesting me to call at the *Herald* Office there, regarding an advertisement headed “Boy Wanted” to which I had replied. A very few minutes’ interview with Mr. Alexander Waters, the managing partner, ended in the formation of my long connection with the *Herald*. The counting-house, where my duties lay, was then on the right hand of the entrance, shown in the sketch.