

E. NOTES

Taken from a notebook that has five pages in Edison's hand, these "Notes" are numbered consecutively from 1 to 33.

[10] 10 = Wall St broker as mucker, bromine under lounge^a

[11] 11 Adams boiling ether naked flame.^a

[12] 12 Explosion blew windows out, tube soap Hydrogen^a

AD, NjWoe, Lab., N-09-06-27. ^aNote canceled with a check mark.

G. MR. EDISON'S NOTES

The following is a transcription of relevant portions of a typescript titled "Mr. Edison's notes in Book No. 2," probably prepared by William Meadowcroft in 1908 or 1909. It had been separated from the Meadowcroft files and put in a general file of anecdotes in the Edison Biographical Collection; it was relocated after the publication of Volume One. Nineteen of the first twenty-three paragraphs and one of the remaining fifteen involve events from the years covered by Volumes One and Two.

[1] On black Friday, we had a very exciting time with the indicators. The Gould and Fiske crowd had cornered gold and had run the quotations up faster than the indicator would follow. The indicator was composed of several wheels on the circumference of each wheel were the numerals and one wheel had fractions. It worked the same as an ordinary counter, one wheel made 10 revolutions and at the tenth, it advanced the adjacent wheel 1, and this in its turn having gone ten revolutions, advanced the next wheel 1, and so on. On the morning of Black Friday, the indicator was quoting 150 premium, whereas, the bids by Goulds' agents in the gold room was 165 for 5 million, or any part. We had a paper weight on the transmitter and by 1 o'clock, reached the right quotation. The excitement was prodigious. New Street, as well as Broad was jammed with excited people. I sat up on the top of the W.U. Tel. booth to watch the surging crazy crowd. One man came to the booth, grabbed a pencil and attempted to write a message to Boston. The first stroke went clear off the blank, he was so excited that he had the operator write the message for him. Amidst great excitement, Speyer, the Banker, went crazy, and it took five men to hold him and everybody lost their head. The W.U. operator came to me and said: "Shake Edison, we are O.K., we hav'nt got a cent. I felt very happy because we were poor. These occasions are very enjoyable to a poor man, but they occur rarely.

[2] A friend of mine was an operator who worked in the back office of Wm. Beldon & Company, 60 Broadway, which were headquarters for Fiske. Mr. Gould was up town in the Erie offices on the Grant Opera House. The other firm on Broad Street, Smith Gould and Martin, was the other branch. All were connected with wires. Gould seemed to be in charge Fiske being the executive. Fiske wore a velvet corduroy coat and very peculiar vest. He was very chipper and seemed to be light-hearted and happy. Sitting around the room were about a dozen fine looking men, all had the complexion of Cadavers. There was a basket of champagne. Hundreds of boys were rushing in paying in checks, all checks being payable at Beldon & Company. When Jas. Brown of Brown Bros. & Company broke the corner by selling five million gold, all payments were repudiated at Smith, Gould & Martin, but they continued to receive checks at Beldon & Company for some time, until the street got wind of the game. There was some kind of a conspiracy with Government people, which I could not make out, but I heard messages that opened my eyes to the ramifications of Wall Street. Gold fell to 132 and it took us all night to get the indicators back to that quotation. All night long the streets were full of people. Every broker's office was brilliantly lighted all night and all hands were at work. The Clearing House for gold had been swamped and was all mixed up. No one knew if they were bankrupt or not.

[3] While a newsboy on the Grant Trunk there was a grand dance of the train mens' Fraternal Organization, which I attended. The dance kept up all night. I knew that the irregular freight train would leave about two hours after the regular train and that everybody would be sleepy and so I determined to stop over and see if I could'nt get a chance to run the freight engine a few miles. I was very anxious to do this; I had been allowed to fire and could handle the small sticks of wood expertly and keep steam up, and also now and then I would be allowed to switch a freight car around to the freight shed to unload small batches of freight, but I wanted to get a chance for a long run. Sure enough, both the engineer and fireman were tired out and very sleepy from the good cheer they had taken. I got the engineer to consent to allowing the fireman to run the engine and I to do the firing, the engineer going back to sleep in the caboose. The engine was one of a number leased to the G.T. by the Chicago Burlington & Quincy R.R. It had bright brass bands all over the wood-work beautifully painted, and everything highly polished, which was the custom up to the time old Commodore Vanderbilt stopped it on his road. After running about 15 miles, the fireman could'nt keep his eyes open and he agreed to permit me to run the engine. I took charge, reducing the speed to about 12 miles an hour and brought the train of 7 cars to her destination at the Grant Trunk

Junction safely, but there was something occurred which was very much out of the ordinary. I was very much worried about the water and I knew that if it got low the boiler was likely to explode. I gathered this from hearing conversation among the engineers, so I kept constantly testing the gauge and watching it, keeping her full of water. I had'nt gone more than 20 miles before black damp mud blew out of the stack and covered every part of the engine, including myself. I was about to awaken the fireman to find out the cause of this, when it stopped. Then I approached a station where the fireman always went out to the cowcatcher, open the oil cup on the steam chest and poured oil in. I started to carry out the procedure when upon opening the oil cup, the steam rushed out with a tremendous noise, nearly knocking me off the engine. I succeeded in closing the oil cup and got back in the cab and made up my mind that she would pull thru without oil. I afterwards learned that the engineer always shut off steam when the fireman went out to oil. This point I failed to notice. My powers of observation were very much improved after this occurrence. Just before I reach the Junction another outpour of black mud occurred and the whole engine was a sight, so much so that when I pulled into the yard, everybody turned out to see it, laughing immoderately. I found out the reason of the mud was that I carried so much water, it carried over into the stack and this washed out all the accumulated soot.

[4] One afternoon about a week before Christmas, our train jumped the track near Utica. Four old Michigan Central cars with rotten sills collapsed in the ditch and all went to pieces, distributing figs, raisens, dates and candies all over the track and ditch. I started in to save all I could of this by eating it. Our family doctor had the time of his life with me in this connection.

[5] Just before the war broke out, there came to the train one afternoon in Detroit, two fine looking young men accompanied by a colored servant. They bought tickets for Port Huron, the terminal point for the train. After leaving the Junction, just outside of Detroit, I brought in the evening papers. The train was called the accommodation and there was only one passenger car. When I came opposite the two young men one said—"Boy, what you got"—"I said, "Papers"— All right He took them and threw them out of the window and turning to the colored man said—Nicodemus, pay this boy. I told him the amount and he opened a satchel and paid me. The passengers did'nt know what to make of this transaction. I returned with the illustrated papers and magazines. These were seized and thrown out of the window and I was told to get my money of Nicodemus. I then returned with all the old magazines and novels I had not been able to sell, thinking perhaps this would be too much for them. I was small and thin and the layer reached above my head and all I could

possibly carry. I had prepared a list and knew the amount in case they bit again. When I opened the door, all the passengers roared with laughter. I walked right up to the young man. One asked what I had; I said—magazines and novels—. He promptly threw them out of the window and Nicodemus settled. Then I came in with cracked hickory nuts, then pop corn balls and finally—molasses candy. All went out of the window. I felt like Alexander, the Great. I had no more chance, I had sold all I had. Finally, I put a rope to my trunk, which about the size of a carpenter's chest and started to pull this from the baggage car to the passenger car. It was almost too much for my strength, but finally I got it in front of these men. I pulled off my coat shoes and hat, laid them on the chest, then he asked what have you got boy—I said—everything sir, that I can spare that is for sale—. The passengers fairly jumped with laughter Nicodemus paid me \$27. for this last sale and threw the whole out of the door in the rear of the car. These men were from the South and I have already retained a soft spot in my heart for a Southern gentleman.

[6] When I had charge of the Gold Indicator I spent my evenings with the night operator at the French Cable office, which was at that time in Nassau Street. Bunnell was somewhat inventive and we talked on all kinds of electrical applications possible. Bunnell afterwards established a store and factory for the manufacture of telegraph apparatus in N.Y., which was successful and is still in existence, although Bennell has passed away. Bunnell was a fine operator and worked in the U.S. Military Telegraph in Tenn. When I was in the department at Memphis, Bunnell was night operator at Chattanooga Junction. When it was reported that Hood was marching³ in Nashville, about 11 o'clock one night a jew came into the office in great excitement, having heard the Hood rumor and wanted to send a message to save his goods, he being a large Salter. Bunnell told him it was impossible, that orders had been given to send no private messages. Then the jew wanted to bribe Bunnell, who steadfastly refused, for the reason, as he told the jew he might be courtmartialled and shot. Finally, when the jew got up to \$800. Bunnell swore him secrecy and sent the message. Now there was no such order, and the jew finding it out, complained to Captain Van Duzer, the chief of the telegraphs, who investigated the matter, and while he would'nt discharge Bunnell, laid him off indefinitely. Van Duzer was so lenient that if an operator was discharged, all he had to do was to wait three days and then go and sit on the stoop of Van Duzer's office all day and he would be taken back, but Van Duzer swore he never would give in in Bunnell's case. He said if Bunnell had taken the \$800. and sent the message at the regular rate, which was 25 cents, it would have been all right, as the jew should be punished, for trying to bribe a military operator, but

when Bunnell took the \$800. and then sent the message dead head, he could'nt stand it and he would never relent.

[7] One night I was walking up Broadway and went into Kohn's Museum of Anatomy, which place I have always wished I never entered. In this place were all kinds of bodies and parts thereof moulded in wax, many of them illustrating the eating away of flesh by certain malignant diseases. The place had many urns filled with tuberoses, which gave an overpowering smell. For two days I could'nt eat a thing, and to this day the smell of tuberoses will spoil my appetite.

[8] After the breaking out of the war, there was a regiment of volunteer soldiers quartered at Fort Gratiot, the reservation extending to the boundary line of our house. The barracks were at the end furtherest from the house. Sentries were stationed at various distances along the reservation; nearly every night we would hear a call, such as "Corporal of the Guard No. 1". This would be repeated from sentry to sentry, until it reached the barracks, when Corporal of the Guard No. 1, would come and see who was wanted. Myself and the little Dutch boy, after returning from the town after selling our papers, thought we would take a hand at Military affairs. So one night, when it was very dark, I shouted—"Corporal of the Guard No. 1". The second sentry, thinking it was the terminal sentry that shouted, repeated it to the third and so on. This brought the Corporal along the ½ mile only to find that he was fooled. We tried him three nights, but the third night, they were watching and caught the little Dutch boy and took him to the lock-up at the Fort and shut him up. They chased me to the house. I rushed for the cellar. In one small apartment there were two barrels of potatoes and a third one nearly empty. I poured these remnants into the other barrels, sat down and pulled the barrel over my head, bottom up. The soldiers had awakened my father and they were searching the cellar for me with candles and lanterns. The Corporal was absolutely certain I came into the cellar and could'nt see how I could have gotten out and wanted to know from my father if there was no secret hiding place. On assurance of my father that there was not, he said it was most extraordinary. I was glad when they left, as I was cramped and the potatoes were rotten that had been in the barrel and violently offensive. The next morning I was found in bed and received a good switching on the legs from my father, the first and only one I ever received from him, although my mother kept a switch behind the old Seth Thomas clock that had the bark worn off. My mother's ideas and mine differed at times, especially when I got experimenting and mussed up things. The Dutch boy was realised the next day.

[9] When I was a small boy at Milan, and about five years old I and the son of the proprietor of the largest store in the town,

whose age was about the same as mine, went down in a gully in the outskirts of the town to swim in a small creek. After playing in the water a while, the boy with me disappeared in the creek. I waited around for him to come up but as it was getting dark I concluded to wait no longer and went home. Some time in the night I was awakened and asked about the boy. It seems the whole town was out with lanterns and had heard that I was last seen with him. I told them how I had waited and waited, etc. They went to the creek and pulled out his body.

[10] While learning to telegraph I and a boy named Clancy, built a telegraph wire between our houses, about a mile apart, separated by woods. The wire was that used for suspending stove pipes, the insulators were small bottles pushed on ten-penny nails driven in the trees. It worked fine. My father had a neighbor named Jos. Symington, a highly educated Scotchman, and they would talk politics nearly every night until I returned from town, which varied from 11 P.M. to 1 A.M. I would save one paper, but many nights when I wanted to practice I would give the paper to Clancy and then my father would have to get the news over the wire or not get it at all. This generally resulted in going to bed at 3 A.M.

[11] Up to the time of taking up telegraphy, I had a chemical laboratory on the train. A freight car had been fitted up as a baggage car and one end partitioned off as a smoking department. It was only 8 feet long, had a table in the middle and two benches. There was no ventilation and everybody went into the baggage end to smoke, hence I had it all to myself. George Pullman had a small shop in Detroit, working on his sleeping car and he made me a lot of wooden apparatus for my chemicals. After I had done my train work, I would make chemical experiments. One day a bottle containing a stock of phosphorus jarred off on the floor and set it on fire. The baggage master put it out, but the phosphorus would'nt go out and he picked it up to throw it out and some got on his fingers and every time he rubbed it, it exposed a fresh surface and that got on fire. Water would'nt put it out. He got a bad burn and boxed my ears so severely that I got somewhat deaf thereafter.

[12] This deafness has been of great advantage to me in various ways. When in a telegraph office I could only hear the instrument directly on the table at which I sat, and unlike the other operators, I was not bothered by the other instruments. Again, in experimenting on the telephone, I had to improve the transmitter, so I could hear it. This made the telephone commercial, as the telephone receiver of Bell was too weak to be used as a transmitter commercially.

[14] After I became a telegraph operator I practiced for a long time to become a rapid reader of print, and got so expert that I could sense the meaning of a whole line at once. This faculty, I

believe, should be taught in schools, as it appears to be easily acquired. Then one can read two or three books in a day, whereas if each word at time is only sensed, reading is laborious.

[15] In 1873 (?) the owners of the automatic Telegraph Company commenced negotiations with Jay Gould for the purchase of the wires between N.Y. and Washington, and the patents for the system, then in successful operation. Gould at that time controlled the Atlantic & Pacific Telegraph Co. and was competing with the W.U. Co. and endeavoring to depress the W.U. stock on the Exchange. About this time I had invented the Quadruplex, an instrument for sending and receiving four messages simultaneously over a single wire in various directions. I wanted to interest the W.U. Telegraph Company with it, with a view of selling it, but was unsuccessful, until I made an arrangement with the Chief Electrician of the Company, so he could be known a joint inventor and receive a portion of the money. At that time I was very short of funds and needed it more than glory. This electrician appeared to want glory more than money, so it was an easy trade. I brought my apparatus over and was given a separate room with marble tiled floor, which by the way was a very hard kind of floor to sleep on, and started in putting the finishing touches on. After two months of very hard work, I got a detail at regular times of eight operators and we got it working nicely from one room to another over a wire, which ran to Albany and back. Under certain conditions of weather, one side of the quadruplex would work very shaky and I had not succeeded in ascertaining the cause of the trouble. On a certain day when there was a board meeting of the Company I was to make an exhibition test. The day arrived, I had picked the best operators in N.Y. and they were familiar with the apparatus. I arranged it if a storm occurred and the bad side got shaky to do the best they could and draw freely on their imagination. They were sending old messages—about 12 o'clock everything was working, but there was a storm somewhere near Albany, and the bad side got shaky. Mr. Orton, the president and Wm. Vanderbilt, and the other directors came in. I had my heart trying to climb up around my oesophagus. I was paying a sherriff five dollars a day to withhold a judgment which had been entered against me in a case which I had paid no attention to, and if the quadruplex had not worked before the president I knew I was to have trouble and might lose my machinery, but the operators were stars, they pulled me through. The N.Y. times (get it) came out next day with a full account. I was given \$5,000. which made me easy and expected the whole thing would be closed up, but Mr. Orton went on an extended tour just about the time I had paid for all the experiments on the quadruplex and exhausted the money and I was again in straits. In the meantime I had introduced the apparatus on the lines of the company where it was very successful. At that time the General

Supt. of the W.U. was Gen'l T. T. Eckert. It seems there was great friction between Eckert and Orton, and Eckert was secretly negotiating with Gould to leave the W.U. and take charge of the Atlantic & Pacific (Gould's Company). One day Eckert called me into his office and made inquiries about money affairs. I told him Mr. Orton had gone off and left me without means and I was in straits. He told me I never would get another cent, but that he knew a man who would buy it. I told him of my arrangement with the Electrician and said I could not sell it to anybody, but if I got enough for it, I would sell all my interest in any share I might get. He seemed to think his party would agree to this. I had a set of quadruplex over in my shop 10 and 12 Ward Street and he arranged to bring him over next evening to see the apparatus. So the next evening Eckert came over with Mr. Jay Gould, and introduced him to me. This was the first time I had ever seen him. I exhibited and explained the apparatus and they departed. The next day Eckert sent for me and I was taken up to Gould's house, which was near the Windsor Hotel. In the basement, he had an office it was in the evening and we went in by the servants' entrance as Eckert probably feared that he was watched. Gould started in at once and asked me how much I wanted. I said—make me an offer—then he said—I will give you \$30,000—I said I will sell any interest I may have for that money, which was somewhat more than I thought I could get. The next morning I went with Gould to Sherman & Sterlings' office and received a check for \$30,000. with a remark by Gould that I had got the Steamboat "Plymouth Rock" as he had sold her for \$30,000 and had just received the check.

[16] There was a big fight on, between Gould's Co. and the W.U. and this transaction caused more litigation. The Electrician on account of the testimony lost his glory. The Judge never decided the case, but went crazy a few months afterwards.

[20] After this Gould wanted me to help install the automatic system in the Atlantic & Pacific Co. which General Eckert had been elected president, the company having bought the Automatic Telegraph Company. I did a lot of work for this company, making automatic apparatus in my shop at Newark. About this time, I invented a District Messenger Call Box system and organized a company called the Domestic Telegraph Company and started in to install the system in N.Y. I had great difficulty in getting subscribers, having tried several canvassers, who, one after the other failed to get subscribers. When I was about to give it up, a test operator named Browne, who was on the Automatic Telegraph Company wire between N.Y. and Washington, and which passed through my Newark shop, asked permission to let him try and see if he could'nt get subscribers. I had very little faith in his ability to get any, but thought I would give him a chance as he felt certain of his ability to succeed. He started in

and the results were surprising. Within a month he had procured 200 subscribers and the Company was a success. I have never quite understood why six men should fail absolutely, while the seventh man should succeed. Perhaps hypnotism would account for it. This company was sold out to the Atlantic & Pacific Company.

[21] While engaged in putting in the Automatic System, I saw a great deal of Gould and frequently went up town to his office to give information. Gould had no sense of humor. I tried several times to get off a funny story, but he failed to see any humor in them. I was very fond of stories and had a choice lot always kept fresh and which I could throw a man into convulsions. One afternoon Gould started in to explain the great future of the Union Pacific R.R., which he then controlled. He got a map and had an immense amount of statistics. He kept at it for over four hours and got very enthusiastic. Why he should explain to me a mere inventor, with no capital or standing, I could not make out. He had a peculiar eye and I made up my mind that there was a strain of insanity somewhere. This idea was strengthened shortly afterwards, when the W.U. raised the monthly rental of the stock tickers. Gould had one in his house office, which he watched constantly. This he had removed because the price had been advanced a few dollars and to his great inconvenience. He railed over it. This struck me as abnormal. I think Gould's success was due to abnormal development. He certainly had one trait that all men must have who want to succeed. He collected every kind of information and statistics about his schemes and had all the data. His connection with men prominent in official life of which I was aware of, was surprising to me. His conscience appeared to be atrophied, but that may be due to the fact that he was contending with men that were worse. He worked incessantly until 12 or 1 o'clock at night. He took no pride in building up an enterprise, he was after money and money only. Whether the company was a success or failure, mattered not to him. After he had hammered the W.U. through his opposition Company, and had tired out Mr. Vanderbilt, the latter retired from control and Gould went in and consolidated his company and controlled the W.U. He then repudiated the contract with the Automatic Telegraph people and they never received a cent for their wires or patent, and I lost three years of very hard labor, but I never had any grudge against him, because he was so able in his line and as long as my part was successful the money with me was a secondary consideration. However, suits were brought by the stockholders and have been in the courts for 25 years, and recently the Federal Court decided them against the Gould Estate and the Estate may have to pay for the weapon he used to get control of the W.U. When Gould got the W.U. I knew that no further progress in telegraphy was possible and I went into other lines.

[22] Towards the latter part of 1875 in the Newark shop I invented a device for multiplying copies of letters, which I sold to Mr. A. B. Dick of Chicago, and in the years since it has been universally introduced throughout the world. It is called the Mimeograph. I also invented devices and introduced paraffin paper, now used universally for wrapping up candy, etc.

[23] In 1876, I moved to Menlo Park, N.J. on the P.R.R. several miles below Elizabeth. The cause of this move was due to trouble I had about rent. I had rented a small shop on the top floor of a Padlock factory and had rented it by the month. I gave notice that I would give it up at the end of the month, paid the rent, moved out and delivered the keys; shortly afterwards I was served with a paper, probably a judgment, wherein I was to pay for 9 months rent. There was some law, it seems, that made a monthly renter liable for a year. This seemed so unjust that I determined to get out of a place that permitted such injustice and I moved.

[33] While I was in Newark, I discovered a peculiar phenomenon, which was unexplainable until years after. Beard of N.Y., a prominent scientific man, called it a new force and named it "Etheric Force". The principal phenomenon was shown by breaking the circuit of a magnet when a spark was noticed passing between two carbon points in a dark box, both points being short circuited by a loop of wire and this spark could be obtained anywhere in the vicinity of a magnet, or drawn from gas pipes anywhere in the building. Whatever passed through the isolated circuit would not affect the most delicate detector of electricity. Beard published a description of the phenomenon in the journal, also in the N.Y. Tribune of . It was published in various electrical journals. The apparatus was shown at the Electrical Exhibition at Paris in . Lord Kelvin knew of the phenomenon, but could not give an explanation. (get years) years afterwards, Herz brought out a paper, using the dark box and other devices and clearly explained the whole matter, which opened up the possibility of wireless telegraphy. (Meadowcroft has Beard's article and has found our sketches, etc.)

TD (transcript), NjWOE, Meadowcroft. Because this transcription of Edison's manuscript is presented only as a reference text, typographical errors have not been reproduced or noted.