

حياة عباقرة العلم

الكسندر غراهام بيل

مخترع الهاتف



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جفا

منشورات دار المعارف للطباعة والنشر

حياة عباقرة العلم

الكسندر غراهام بيل

مخترع الهاتف

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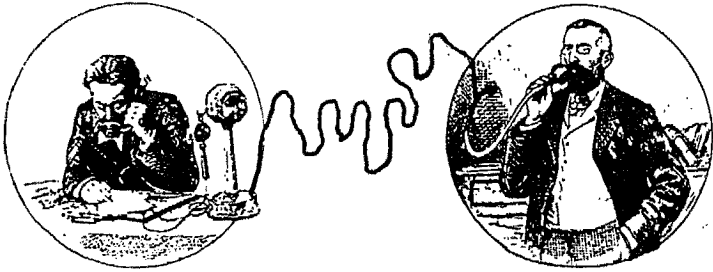


منشورات

دار المعارف للطباعة والنشر سوسة/ تونس

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أَدَّى الْعِلْمُ لِلإِنْسَانِ خَدَمَاتٍ عَظِيمَةً . وَمِنْ
 بَيْنِ الْإِخْتِرَاعَاتِ وَالْإِكْتِشَافَاتِ الَّتِي قَدَّمَهَا الْعِلْمُ
 لِلبَشَرِيَّةِ مَا كَانَ لَهُ أَكْبَرُ الْأَثْرِ فِي تَغْيِيرِ مَعَالِمِ
 حَيَاتِنَا الْمَعَاصِرَةِ .

وَمِنْ بَيْنِ تِلْكَ الْإِخْتِرَاعَاتِ إِخْتِرَاعُ
 « الْهَاتِفِ » أَوْ التَّلِيفُونِ الَّذِي أَصْبَحَ يَحْتَلُّ مَكَانَةً
 حَيَوِيَّةً فِي حَيَاتِنَا الْيَوْمِيَّةِ ، أَمَّا الرَّجُلُ الَّذِي إِخْتَرَعَ
 تِلْكَ الْآلَةَ الْخَارِقَةَ ، وَجَعَلَ مِنَ الْأَسْلَاقِ الْجَامِدَةِ
 رُسُلًا أَمِينَةً تَحْمِلُ هَمْسَاتِ الشُّفَاهِ إِلَى الْأَذَانِ

الصَّاعِيَّةِ، فَهُوَ شَخْصٌ يُدْعَى « الكسندر
غراهام بيل » .

وُلِدَ « الكسندر غراهام بيل » فِي مَدِينَةِ
« ادنبره » بِاسْكَوتلندا عَامَ 1847، حَيْثُ كَانَ
أَبُوهُ يُعَلِّمُ أَصُولَ الشَّارَاتِ الصَّوْتِيَّةِ لِتَعْلِيمِ
الْقُصِّ وَالْبُكْمِ بِتَتَبِعِ حَرَكَاتِ الشُّفَاهِ، وَقَدْ أَلَّفَ
فِي ذَلِكَ كِتَابًا بِعُنْوَانِ « الْكَلَامُ الْمَنْظُورُ » وَقَدْ سَارَ
« الكسندر » عَلَى خُطَوَاتِ أَبِيهِ، وَنَهَجَ نَهْجَهُ،
فَتَعَمَّقَ فِي دِرَاسَةِ عِلْمِ الْإِلْقَاءِ، وَمَضَى فِي
أَبْحَاثِهِ جَاهِدًا يَعْمَلُ بِحِمَاسٍ مُفْرِطٍ، بِمَا أَثَّرَ عَلَى
صِحَّتِهِ، وَبَدَأَ يَشْكُو آلامَ الْمَرَضِ .

قَرَّرَ « بيل » السَّفَرَ إِلَى الْوِلَايَاتِ الْمُتَّحِدَةِ
الْأَمْرِيكِيَّةِ لِلإِسْتِجْمَامِ وَالرَّاحَةِ، وَهَنَّاكَ عُرِضَتْ
عَلَيْهِ وَظِيْفَةُ تَعْلِيمِ النَّطْقِ فِي مَدْرَسَةِ « بُوَسْطَن »
لِلْقُصِّ .

وَلَكِنَّهُ ظَلَّ يَنْصَرِفُ فِي سَاعَاتِ فَرَاغِهِ لِبَعْضِ
تَجَارِبِهِ الْعِلْمِيَّةِ، وَلَا سِيَّامًا لِلآلَةِ الَّتِي سَمَّاهَا فِيمَا
بَعْدُ « التَّلْغَرَفَ الْمَوْسِيقِيَّ » وَالَّتِي سَيَّطَرَتْ عَلَى
أَفْكَارِهِ مُنْذُ أَنْ كَانَ فِي « ادنبره » .

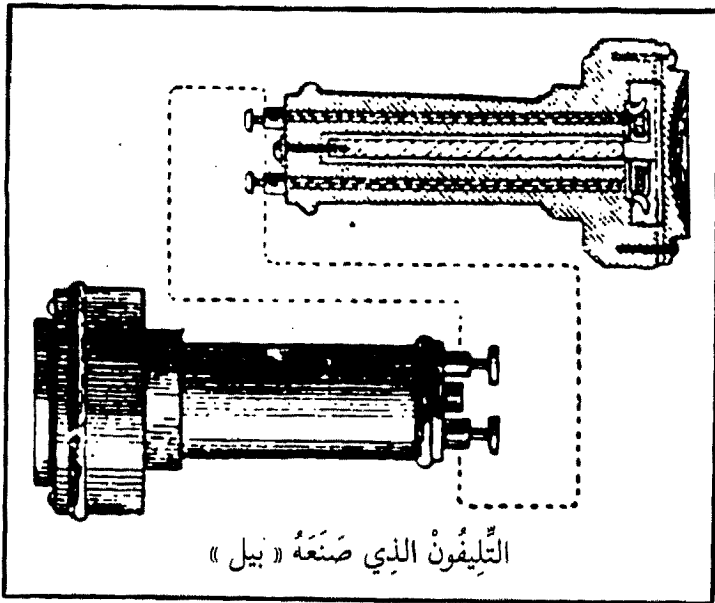
كَانَ يَتَوَقَّعُ لآلَتِهِ تِلْكَ بِأَنَّهُ يُمَكِّنُ بِوَاسِطَتِهَا
إِرْسَالَ عِدَّةِ رَسَائِلَ بَرْقِيَّةٍ فِي وَقْتٍ وَاحِدٍ عَلَى خَطِّ
بَرْقٍ وَاحِدٍ . وَلَكِنَّ فِكْرَتَهُ هَذِهِ لَاقَتْ تَعَثُّرًا فِي
إِبْرَازِهَا إِلَى حَيْزِ التَّطْبِيقِ لِمَا يَتَطَلَّبُهُ مِثْلُ هَذَا
الِاخْتِرَاعِ مِنْ تَمْوِيلٍ .

وَفِي هَذِهِ الظُّرُوفِ تَقَدَّمَ لَهُ رَجُلٌ مِنَ الْأَثْرِيَاءِ
طَالِبًا مِنْهُ أَنْ يُدَرِّبَ ابْنَتَهُ الصَّمَاءَ عَلَى التَّكَلُّمِ
بِطَرِيقَتِهِ الْخَاصَّةِ بَعْدَ أَنْ يَيْسَ مِنْ عِلاجِهَا عَنْ
طَرِيقِ الْأَطِبَّاءِ الْآخَرِينَ .

وَعِنْدَ أَوَّلِ لِقَاءِ بِالْفَتَاةِ اهْتَزَّتْ مَشَاعِرُ الْمُعَلِّمِ
الْأَخِصَّائِيِّ الشَّابِّ « بَيْلِ » الَّذِي كَانَ فِي سِنِّ
الْخَامِسَةِ وَالْعِشْرِينَ . وَكَانَتْ الْفَتَاةُ تُدْعَى
« مَيْلِ هِبَارْدِ » ذَاتَ وَجْهِ صَبِيحٍ وَقَوَامٍ جَمِيلٍ .
فَأَحْبَبَهَا وَآلَى عَلَى نَفْسِهِ أَنْ لَا يَقْتَصِرَ فَقَطُّ عَلَى
تَعْلِيمِهَا طَرِيقَةَ الْكَلَامِ ، بَلْ أَنْ يَخْتَرَعَ مِنْ أَجْلِهَا
آلَةً تَفْتَحُ أَمَامَهَا عَالَمَ الْأَصْوَاتِ وَالْأَنْغَامِ . وَكَانَ
قَدْ عَزَمَ عَلَى تَحْوِيرِ جِهَازِ « التَّلْغَرَاغِ الْمَوْسِيقِيِّ »
الَّذِي صَمَّمَهُ صُنْعَهُ ، بِحَيْثُ يُتَّاحُ لِفَتَاتِهِ تَذَوُّقُ
نِعْمَةِ السَّمْعِ .

وَعِنْدَمَا أَعْلَنَ الشَّابُّ عَنْ عَزْمِهِ إِلَى وَالِدِ
الْفَتَاةِ شَجَّعَهُ الرَّجُلُ عَلَى الْمَضِيِّ فِي تَجَارِبِهِ وَأَظْهَرَ
اسْتِعْدَادَهُ لِمُسَاعَدَتِهِ الْمَالِيَّةِ فِي سَبِيلِ إِسْعَادِ ابْنَتِهِ .

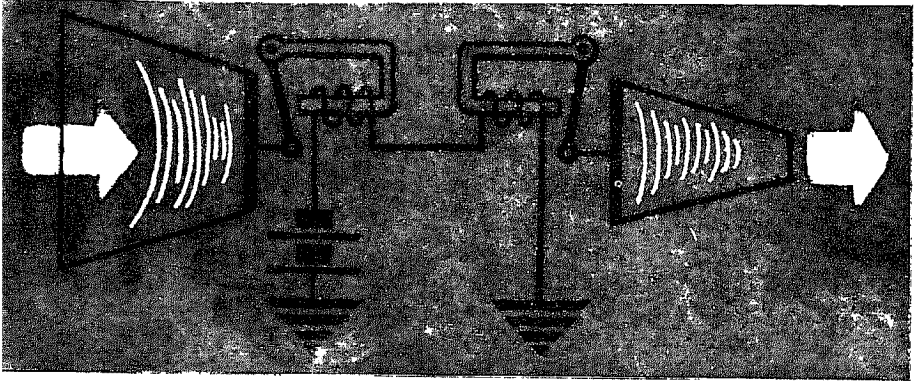
كَانَ « بيل » فِي حَاجَةٍ إِلَى تَوْسِيعِ مَدَارِكِهِ فِي
 عِلْمِ الْكَهْرَبَاءِ لِصَنْعِ آلَاتِ الْمُنْشُودَةِ، فَأَقْبَلَ عَلَى
 دِرَاسَةِ هَذَا الْعِلْمِ، وَاهْتَمَّ أَيْضًا بِالْعُلُومِ
 الطَّبِيعِيَّةِ وَخَاصَّةً الَّتِي لَهَا عِلَاقَةٌ بِالْأَصْوَاتِ، وَفِي
 سَنَةِ 1873 لَاحَظَ أَنَّ تَيَّارًا كَهْرَبَائِيًّا كَانَ يَتَوَلَّدُ
 دَاخِلَ أَسْلَاقِ الْمَحْوَلِ الْكَهْرَبَائِيِّ الَّتِي يُحِيطُ
 بِحَجَرِ الْمَغْنَطِيسِ، وَاعْتَقَدَ أَنَّهُ إِذَا وُضِعَتْ



رَقِيقَةٌ مَعْدِنِيَّةٌ عَلَى قِطْعَةٍ جِلْدٍ طَرِيَّةٍ أَمَكْنَ لِلرَّقِيقَةِ
أَنْ تَهْتَزَّ بِوَاسِطَةِ الصَّوْتِ البَشْرِيِّ ، وَإِنَّهُ إِذَا
أَمَكْنَ تَوَلِيدُ تَيَّارٍ كَهْرَبَائِيٍّ يَتَغَيَّرُ فِي تَوَاتُرِهِ كَمَا تَتَغَيَّرُ
قُوَّةُ الهَوَاءِ عِنْدَ خُرُوجِ الصَّوْتِ مِنَ الحُنْجُرَةِ ،
لَأَصْبَحَ بالإمَّكَانِ نَقْلَ المَوْجَاتِ الصَّوْتِيَّةِ بِوَاسِطَةِ
التَّيَّارِ إِلَى مُسْتَمِعٍ بَعِيدٍ عَنِ مَصْدَرِ الصَّوْتِ .

كَانَتْ هَذِهِ الفِكْرَةُ وَاضِحَةً فِي ذَهْنِهِ . كَمَا
اعْتَبَرَتْ - آنَ ذَاكَ - مَنطِقِيَّةً مِنَ النَّاحِيَةِ العِلْمِيَّةِ .
وَلَكِنَّ تَنْفِيذَهَا وَصُنْعَ الجِهَازِ النَّهَائِيِّ لِلبَّتِّ
وَالاسْتِقْبَالِ يُعَدُّ مِنَ المَشَاكِلِ الفَنِّيَّةِ العَائِقَةِ
لِاخْتِرَاعِ « بِيل » . إِذْ لَمْ يَجِدْ مَنْ يَقِفُ إِلَى جَانِبِهِ
وَيَشُدُّ إِزْرَهُ أَثْنَاءَ فِتْرَةِ التَّجَارِبِ الَّتِي طَالَتْ ،
سِوَى مُسَاعِدِهِ الوَفِيِّ « واطسن » . وَحَتَّى السَّيِّدِ
« هِبَارْد » الَّذِي أَصْبَحَ حَمَاهُ فِيمَا بَعْدُ ، أَصْبَحَ هُوَ

الآخَرِ مَنْ يَتَهَكَّمُ بِالْأَعْلَانِ. عَنْ « الْجِهَازِ الْخَيَالِيِّ
الَّذِي سَيَسْمَحُ بِنَقْلِ الْأَحَادِيثِ عِبْرَ الْقَارَاتِ وَالْبَحَارِ.
وَفِي الْيَوْمِ الْمَوْعُودِ حَدَثَتْ الْمُعْجِزَةُ. كَانَ
ذَلِكَ فِي الْيَوْمِ الثَّانِي مِنْ شَهْرِ جَوَانَ سَنَةِ
1875. كَانَ « بَيْل » يَقُومُ بِتِجَارَتِهِ الْاِعْتِيَادِيَّةِ
مَعَ مُسَاعِدِهِ « وَاطْسِن » وَكَانَ جِهَازُ الْاِرْسَالِ
التَّلْغْرَافِيِّ مَوْضُوعًا فِي غُرْفَةٍ. وَجِهَازُ الْاِسْتِقْبَالِ
فِي غُرْفَةٍ أُخْرَى. وَكَانَ عَلَى كُلِّ مِنَ الْجِهَازَيْنِ



تَصْمِيمٍ لِفِكْرَةِ جِهَازِ « بَيْل » التَّلْفُونِيِّ. يُوَضِّحُ غِشَاءَ يَهْتَزُّ أَمَامَ كَهْرَطَيْسِ
الْاِنْسَانِ. عِنْدَئِذٍ يُولَدُ تَيَّارًا كَهْرَبَائِيًّا مُتَغَيِّرًا إِلَى الْمُسْتَقْبَلِ التَّغْيِيرَاتِ فِي التَّيَّارِ الصَّوْتِيِّ
يَجْعَلُ الْغِشَاءَ فِي السَّمَاعَةِ يَتَّبِعُ نَفْسَ الْاَهْتِرَازَاتِ الَّتِي جَاءَتْ مِنَ الْمُرْسَلِ، وَبِذَلِكَ
يُعِيدُ إِصْدَارَ نَفْسِ صَوْتِ الْمُتَكَلِّمِ.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every receipt and invoice should be properly filed and indexed for easy retrieval. This is particularly crucial for businesses that deal with a large volume of transactions, as it helps in identifying discrepancies and ensuring compliance with tax regulations.

Next, the document outlines the various methods used for data collection and analysis. It mentions the use of surveys, interviews, and focus groups to gather qualitative data, while quantitative data is often obtained through statistical analysis of large datasets. The importance of choosing the right method for the specific research objectives is highlighted.

The third section focuses on the ethical considerations of research. It stresses the need for transparency in reporting results and the potential for bias. Researchers are advised to disclose any conflicts of interest and to ensure that their findings are presented in a balanced and objective manner. Additionally, the document discusses the importance of protecting the privacy and confidentiality of participants in the study.

In the final part of the document, the author discusses the challenges of conducting research in a rapidly changing environment. It notes that new technologies and data sources are constantly emerging, which can both enhance and complicate the research process. The author concludes by emphasizing the need for researchers to stay current in their field and to adapt their methods as necessary.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This includes not only sales and purchases but also expenses and income. The document provides a detailed list of items that should be tracked, such as inventory levels, accounts payable, and accounts receivable. It also outlines the procedures for recording these transactions, including the use of double-entry bookkeeping to ensure that the books balance.

The second part of the document focuses on the analysis of the financial data. It explains how to calculate key financial ratios and metrics, such as the gross profit margin, operating profit margin, and return on investment. These metrics are used to evaluate the company's performance and identify areas for improvement. The document also discusses the importance of comparing the company's performance to industry benchmarks and competitors. This helps to provide context and identify trends in the market.

The third part of the document addresses the preparation of financial statements. It provides a step-by-step guide to creating the income statement, balance sheet, and cash flow statement. It explains the relationship between these statements and how they provide a comprehensive view of the company's financial health. The document also discusses the importance of auditing the financial statements to ensure their accuracy and reliability. It provides information on the different types of audits and the role of auditors in the process.

The final part of the document discusses the use of financial data for decision-making. It explains how the information provided in the financial statements can be used to make strategic decisions about the company's future. This includes decisions about investment opportunities, capital structure, and operational efficiency. The document also discusses the importance of communicating the financial information to stakeholders, such as investors, creditors, and management. It provides tips on how to present the information in a clear and concise manner that is easy to understand.

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The final part of the document covers the preparation of financial statements. It provides a step-by-step guide to creating the income statement, balance sheet, and cash flow statement. It also discusses the importance of auditing the financial statements to ensure their accuracy and reliability. The document concludes with a summary of the key findings and recommendations for the future.

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million, and the number of people aged 75 and over from 4.5 million to 6.5 million (Office for National Statistics 2000).

There are a number of reasons why the number of people aged 65 and over is increasing:

- (1) The number of people aged 65 and over is increasing because of the increase in life expectancy.
- (2) The number of people aged 65 and over is increasing because of the increase in the number of people aged 65 and over who are living alone.

The number of people aged 65 and over who are living alone has increased from 1.5 million in 1990 to 2.5 million in 2000 (Office for National Statistics 2000).

The number of people aged 65 and over who are living alone is increasing because of the increase in the number of people aged 65 and over who are widowed.

The number of people aged 65 and over who are widowed has increased from 1.5 million in 1990 to 2.5 million in 2000 (Office for National Statistics 2000).

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This includes not only sales and purchases but also expenses and income. The text suggests that a consistent and thorough record-keeping system is essential for identifying trends and making informed decisions.

Next, the document addresses the issue of budgeting. It explains that a well-defined budget helps in controlling costs and maximizing resources. By setting clear financial goals and limits, individuals and organizations can avoid overspending and stay on track. The text provides practical advice on how to create a budget that is realistic and adaptable to changing circumstances.

The third section focuses on the importance of regular financial reviews. It states that periodic assessments of the financial situation allow for the identification of areas where adjustments are needed. This could involve revising the budget, cutting unnecessary expenses, or exploring new revenue streams. The document encourages a proactive approach to financial management rather than reacting to problems only after they have become significant.

Finally, the document touches upon the role of technology in modern finance. It highlights how digital tools and software can streamline financial processes, reduce errors, and provide real-time insights. From automated bill payments to sophisticated investment tracking, technology offers a wide range of solutions to enhance financial efficiency and accuracy.

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...the eighteenth of these is the fact that the ...

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and any other financial activity.

The second part of the document provides a detailed breakdown of the accounting cycle. It outlines the ten steps involved in the process, from identifying the accounting entity to preparing financial statements. Each step is explained in detail, with examples provided to illustrate the concepts.

The third part of the document discusses the various types of accounts used in accounting. It categorizes accounts into assets, liabilities, equity, revenue, and expense accounts. It explains how each type of account is used and how they interact with each other in the accounting process.

The fourth part of the document discusses the importance of the accounting equation. It explains that the accounting equation, which states that assets equal liabilities plus equity, is a fundamental principle of accounting. It provides examples of how the equation is used to verify the accuracy of the accounting records.

The fifth part of the document discusses the importance of the accounting cycle. It explains that the accounting cycle is a systematic process that ensures the accuracy and completeness of the accounting records. It provides a detailed description of each step in the cycle and explains how they are interconnected.

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الكسندر غراهام بيل « أثناء مُحَادَثَةِ تِلْفُونِيَّةٍ أُجْرَاهَا بَيْنَ نِيُورُوكَ وَشِيكَاغُو سَنَةِ 1892 .

بِكَامِلِهَا مَنْقُولَةً بِالْأَسْلَاكِ، وَهِيَ جَالِسَةٌ فِي
قَصْرِهَا بِلُنْدُنْ.

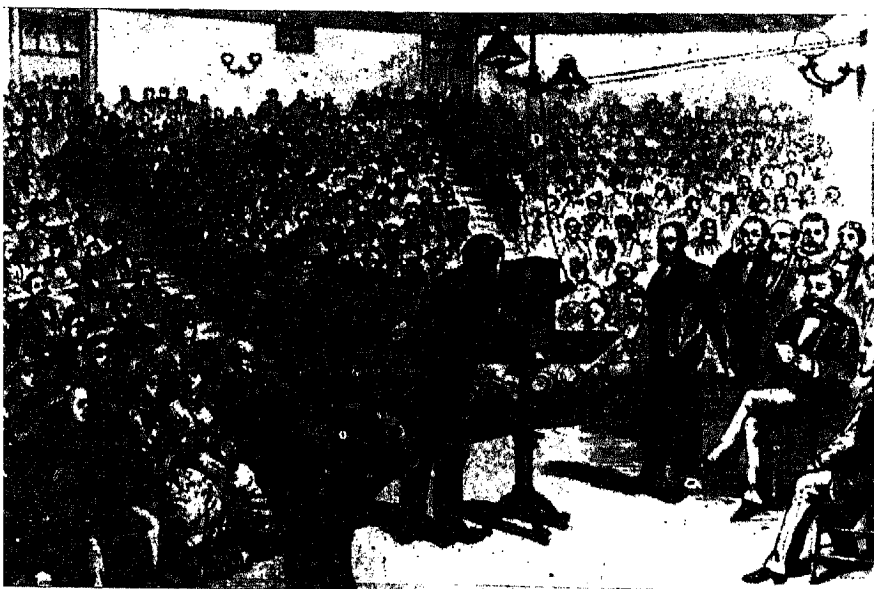
وَفِي سَنَةِ 1876 تَسَنَّى لِـ « بِيل » تَسْجِيلُ
جِهَازِهِ لَدَى دَائِرَةِ الْاِخْتِرَاعَاتِ وَالْبَرَائَاتِ، وَمَعَ
ذَلِكَ قَامَتْ شَرِكَاتٌ مُتَعَدِّدَةٌ الْجِنْسِيَّاتِ بِصُنْعِ
الْجِهَازِ دُونَ الْاِهْتِمَامِ بِحُقُوقِ الْاِمْتِيَازِ الَّتِي يَتَمَتَّعُ
بِهَا الْمَخْتَرِعُ. مِمَّا جَعَلَ « بِيل » يَقُومُ بِدَعَاوَى
قَضَائِيَّةٍ عَدِيدَةٍ رَفَعَهَا ضِدَّ هَؤُلَاءِ مُطَالِبًا بِحَقِّهِ،
وَقَدْ كَسَبَهَا جَمِيعًا، وَأَصْبَحَ « بِيل » مِنْ أَكْبَرِ
الْاِغْنِيَاءِ لِحُوزَتِهِ عَلَى اعْظَمِ اِمْتِيَازِ اِخْتِرَاعٍ فِي
زَمَانِهِ.

وَأَسَّسَ شَرِكَةَ « بِيل » التِّلِفُونِيَّةَ فِي سَنَةِ
1877 وَلَمْ تَمُضْ سَنَوَاتٌ قَلِيلَةٌ حَتَّى كَانَتْ
شَرِكَتُهُ قَدْ اتَّسَعَتْ، وَحَسَّنَتْ مِنْ أَجْهَزَتِهَا،

بِحَيْثُ اسْتَطَاعَتْ أَنْ تَرْبِطَ تَلِفُونِيًّا بَيْنَ « سَان
 فرانسيسكو » و « نيويورك » وَهَكَذَا بَدَأَتْ
 الْمَوَاصِلَاتُ السِّلْكِيَّةُ تَنْتَشِرُ اِنْتِشَارًا وَاِسْعًا فِي
 الْعَالَمِ بِأَسْرِهِ، وَتَطَوَّرَ جِهَازُ « التَّلِفُونِ » تَطَوُّرًا
 هَائِلًا. فَأَصْبَحَتْ الْمَكَالِمَاتُ وَاِضِحَّةً عِبْرَ
 الْقَارَاتِ. وَتَكُونَتِ الْمَوْسَسَاتُ لِهَذَا الْغَرَضِ،
 وَأَصْبَحَ اتِّصَالُ الْأَفْرَادِ بَعْضِهِمْ بِبَعْضٍ فِي أَيِّ
 مَكَانٍ فِي الْعَالَمِ يَحْدُثُ فِي بَضْعِ دَقَائِقٍ.

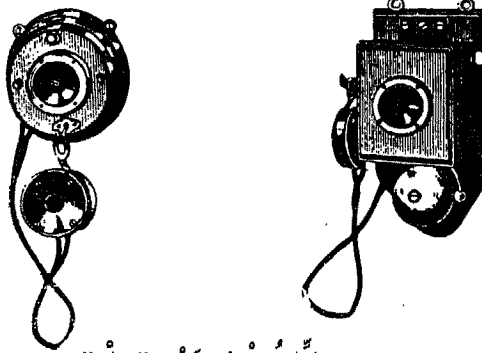
عَلَى أَنَّ نَجَاحَ اخْتِرَاعِ « بِيْل » تِجَارِيًّا وَمَا
 أَكْسَبَهُ مِنْ شُهْرَةٍ عَالَمِيَّةٍ، لَمْ يُنْسِهْ فِكْرَةَ صُنْعِ
 الْأَلَةِ الَّتِي وَعَدَ حَبِيبَتُهُ بِهَا، وَالَّتِي اِنْتِشَلَّ عَنْهَا
 بِسَبَبِ اِهْتِمَامِهِ بِجِهَازِ التَّلِفُونِ . . فَأَثَرَ الرُّجُوعِ
 إِلَى الْبَحْثِ فِي ظَاهِرَةِ الصُّمِّ، وَعَادَ يُلَقِّنُ الصُّمَّ
 طَرِيقَةَ التَّخَاطُبِ وَالتَّفَاهُمِ، الَّتِي شَرَعَ فِيهَا فِي
 بَدَايَةِ حَيَاتِهِ الْعِلْمِيَّةِ.

وَفِي سَنَةِ 1880 مَنَحَتْهُ الْحُكُومَةُ الْفَرَنْسِيَّةُ
 مَبْلَغًا مَالِيًّا مِقْدَارُهُ خَمْسُونَ أَلْفَ فَرَنْكٍ، جَزَاءً مَا
 أُتِيحَ لَهُ مِنْ فِكْرَةٍ فِي نَقْلِ الصَّوْتِ تَلِيفُونِيًّا،
 فَوَهَبَ « بِيل » الْمِنْحَةَ بِدَوْرِهِ إِلَى مُخْتَبِرِ « فُولَطَا »
 لِيُنْفِقَ مِنْهَا عَلَى الْبَحْثِ، وَاخْتِرَاعِ مَا يُفِيدُ
 الصُّمَّ.



« الكسندر غراهام بيل » يشرح خاصية جهازه التلِفونِيّ في
 قاعة محاضرات، أمام فريق من كبار المواطنين الأمريكيّين.

وَمَا يُجَدُّ ذِكْرُهُ أَنَّ « بيل » كَانَتْ لَهُ اهْتِمَامَاتٌ
 عِلْمِيَّةٌ أُخْرَى مِنْهَا إِخْتِرَاعُهُ الْمُسَمَّى بِـ « مِيزَانِ
 التَّوَصُّلِ » لِتَعْيِينِ مَوْضِعِ الْمَعَادِنِ الْمُسْتَقَرَّةِ فِي
 جِسْمِ الْإِنْسَانِ، وَكَذَلِكَ كَانَ لَهُ اهْتِمَامٌ
 بِالطَّيْرَانِ، فَاسَّسَ جَمْعِيَّةَ التَّجَارِبِ الْهَوَائِيَّةِ سَنَةَ
 1907، وَيُقَالُ إِنَّهُ بِفَضْلِ هَذِهِ الْجَمْعِيَّةِ اسْتَطَاعَ
 « جِلين كيرتين » أَنْ يُخَلِّقَ فِي طَائِرَةٍ لِأَوَّلِ مَرَّةٍ فِي
 الْهَوَاءِ بِالْوَلَايَاتِ الْمُتَّحِدَةِ عَلَى مَسَافَةِ مِيلٍ.



التِّلْفُونُ فِي عَهْدِ «بِيل»

تُوفِّي « الكَسْنَدِر غَرَاهَام بِيْل » فِي الْيَوْمِ
الثَّانِي مِنْ شَهْرِ أَوْت سَنَةِ 1922 ، وَهُوَ فِي سِنِّ
الْخَامِسَةِ وَالسَّبْعِينَ ، وَعَلَى إِثْرِ الْإِعْلَانِ عَنْ وَفَاتِهِ
تَوَقَّتِ الْمَكَالِمَاتُ التَّلِفُونِيَّةُ دَقِيقَةً وَاحِدَةً حِدَادًا عَلَيْهِ .

وَهَكَذَا انْتَهَتْ حَيَاةُ الرَّجُلِ الْعَظِيمِ الَّذِي
نَجَّحَ فِي تَسْخِيرِ الْأَسْلَاقِ الْجَامِدَةِ لِنَقْلِ
الْأَصْوَاتِ الْبَشَرِيَّةِ مِنْ مَشَارِقِ الْأَرْضِ إِلَى مَغَارِبِهَا .



”بِيْل“ يُجَرِّبُ إِحْدَى إِخْتِرَاعَاتِهِ

حياة عباقرة العلم

في العُهُودِ التي اِكْتَفَتْ فِيهَا فِئَةٌ مِنَ النَّاسِ بِاسْتِيعَابِ أَسْرَارِ الْحَيَاةِ فِي
عِبَارَاتٍ مُنَمَّقَةٍ . . عَكَفَتْ فِئَةٌ أُخْرَى مِنَ الرِّجَالِ عَلَى تَبْدِيدِ الْأَبَاطِيلِ
وَالْحُرَافَاتِ التي ظَلَّتْ تَحْجُبُ الكَثِيرَ مِنْ حَقَائِقِ المَعْرِفَةِ . .

إِنَّ لِكُلِّ وَاحِدٍ مِنْ هَؤُلَاءِ الذِّينَ عَبَرُوا بِالْإِنْسَانِيَّةِ مِنْ بُحُورِ الظُّلُمَاتِ
إِلَى مَشَارِفِ عَالَمِ المَعْرِفَةِ وَالتَّقَدُّمِ ، قِصَّةً لَا تَقِلُّ فِي تَشْوِيقِهَا عَنْ أَعْرَبِ
القِصَصِ الخَيَالِيَّةِ وَأَمْتِعِهَا .

صدر منها :

- | | |
|--------------------------|------------------------|
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| مكتشفة الأشعة | 3 (ماري كوري |
| مخترع اللاسلكي | 4 (غوغليمو ماركوني |
| مخترع الطباعة | 5 (يوحنا غوتنبرغ |
| مكتشف الجراثيم | 6 (لويس باستور |
| مخترع الدينامو | 7 (مايكل فاراداي |
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| واضع نظرية النسبية | 11 (البرت اينشتاين |
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