

March, 1873. At that time witness and Mr. Keefauver went down to Drawbaugh's shop and talked through the talking-machine from the basement to the attic, and heard and understood what was said through the machines. They talked and listened at the same instrument. John F. Keefauver corroborates Mr. Martin and also states that he talked through Drawbaugh's talking-machine with Jacob M. Sadler in April, 1873, prior to the death of George B. Heck, and that about two or three years before he saw the talking-machines he had heard a good deal about them, and first heard of them at a place seven miles west of Carlisle. William W. Snyder testifies that he was at Drawbaugh's shop on Wednesday, February 5, 1873, and saw the talking-machines. He verifies the date by an entry in his diary. Jacob Barber testifies that he was a candidate for the office of county commissioner of Cumberland county in the summer of 1873, and in connection with his canvass went to Drawbaugh's shortly after the death of George B. Heck. While at Drawbaugh's shop he saw the talking-machine, and was never in the shop after July or August, 1873. Ezekiel Worley testifies that about the year 1873 he saw the talking-machines at Drawbaugh's shop. His statement is corroborated by John K. Taylor. Abraham Ditlow testifies that he knew of Drawbaugh's talking-machine in 1874, and saw it and talked through it at that time. He had forgotten the fact, but was reminded of it by Mr. Alexander Milner, of Porter county, Indiana, whom witness told about it in May or June, 1876, in Indiana. William Eppley testifies that he visited Drawbaugh's shop for the last time in May or June, 1875; that he was there several times during the two years preceding that period, and had seen talking-machines. Jonathan Fry testifies that he was at Drawbaugh's shop with Mr. Hamme and Mr. Frederick in the winter of 1875-76, and saw the talking-machines there. Jacob Evans testifies that he was at Drawbaugh's shop with his wife, his brother Andrew, and his sisters, Margaret and Sarah, about December 1, 1875, and saw and talked through the talking-machines. Henry L. Hamme testifies that he was at Drawbaugh's shop either in the last of January or the beginning of February, 1876, in company with George Frederick and Jonathan Fry, and saw and talked through the talking-machine at the time; that he heard and understood very plainly what was said through the machine even when Mr. Drawbaugh talked in a whisper. George Frederick testifies that he was at Drawbaugh's shop with Mr. Hamme and Mr. Fry in January or February, 1876, and saw the talking-machine. S. S. Rupp testifies that he was at Drawbaugh's shop with Mr. Hammacher and his scholars on February 1, 1876, and recollects that Mr. Drawbaugh at that time spoke about a machine that he had which he called a talking-machine, but the witness was interested in other things and did not pay much attention to it. George H. Bowman testifies that he saw talking-machines in Drawbaugh's shop in February, 1876, at which time somebody was talking to Mr. Drawbaugh through them.

Charles L. Drawbaugh testifies that he saw and talked through the talking-machines at Drawbaugh's shop a year or more prior to May 1, 1876, and heard and understood what was said.

The third class of witnesses are those who identify more or less positively one or more of the several exhibits as the instruments used by them, or which they saw used by others, prior to March 7, 1876. Exhibits F and B are identified by the following witnesses: Brooks saw them in 1874; Smyser, in 1872; Eberly, before December, 1870; Wagner, in the fall of 1874; Freese, in 1869 or 1870; Yetter, about Christmas, 1875; Fry, spring of 1875; Carl, in 1870; Scherick, in 1869; Balsley, between 1870 and 1874; Good, before 1872; Kahney, in 1871 or 1872; Schettel, about 1872; Nichols, in 1875; Renneker, in May, 1875; Weber, late in 1874; Stephen, before 1875; Shireman, about 1872; Hawn, about 1872; H. B. Eberly, in May, 1873; J. C. Smith, between April, 1872, and April, 1873; Sternberger, in October, 1871; Fetterow, in April, 1876; Halsinger, prior to 1876; Shoop, in 1869; H. F. Drawbaugh, in 1872; Zimmerman, in 1871; Bates, in 1874; Guistweit, in July, 1870; Hale, in fall of 1873; Stone, in June, 1871; Free, in June, 1872; J. A. Oyster, in June, 1875; Harman K. Drawbaugh, in January, 1871; J. B. Drawbaugh, in 1869; G. W. Drawbaugh, in 1870; Lenseman, in July, 1871; Fisher, in 1868 or 1869; Hubler, in fall of 1873; Updegraff, in 1874; W. H. Decker, in 1873; and a number of other witnesses saw one of these two exhibits.

The identification of Exhibits C, I, and A is made by a smaller number of witnesses. Some of them think they saw C in 1870, and others at various dates after that and as late as March, 1876.

One of the witnesses thinks he saw I in 1871, the others locate the occasions in 1873, 1874, and 1875. Some of the witnesses think they saw A as early as 1872, one of them in 1870; but most of them saw it, they think, in 1875.

Exhibits E and D resemble each other very closely in appearance, and most of the witnesses produced to identify them saw both at the same time. They locate the time as follows: Fry, laborer, in May or June, 1875; Fry, farmer, in April, 1875; Bayler, in June, 1873, (Exhibit D;) Springer, after April, 1876; Schettel, about 1875; Shoop, after February, 1877; Musser, in June, 1876, (Exhibit D;) Millard, in 1875; Holsinger, in summer of 1875; Shoop, in 1874 or 1875; Bates, between 1874 and 1877; Dellinger, in March, 1876, (Exhibit E;) Gustweit, between 1870 and 1876; Bowen, in September, 1878; Hale, in fall of 1875, (Exhibit D;) Michael Dellinger, in November, 1877, (Exhibit D;) Harman K. Drawbaugh, in January, 1875, and helped put up wire for them; J. B. Drawbaugh, prior to January 26, 1875; George W. Drawbaugh identifies all the exhibits as seen by him sometime between 1871 and 1878; Updegraff and Musser, in 1876; Smith, in 1872 or 1876, (Exhibit E;) May, in 1876, (Exhibit D;) J. H. Smith, in May, 1876, (Exhibit D;) Decker, in 1874,

(Exhibit D;) Vannasdale, in February, 1875; Evans, in fall of 1875; Mrs. Erb, in fall of 1875; S. E. Evans, in fall of 1875, (Exhibit D;)
M. E. Evans, in fall of 1875, (Exhibit D.)

Some of the witnesses who identify exhibits identify the whole series. Other witnesses besides those named identify one or more of the exhibits as seen by them at times subsequent to the date of Bell's application for his patent. Some of the witnesses who identify one or more of the instruments exhibited to them by Drawbaugh as the Exhibits F, B, or C, saw or used them in 1875 or 1876. Among these are the following to whose testimony a reference will be made: Mr. Springer testifies that he repeatedly talked and listened with Drawbaugh through the instruments, after the first of April, 1876, using Exhibits F and B as the instruments. Mr. Musser testifies that he talked through F and B in June, 1874, but the proofs show that this occasion was as late as in the summer of 1876. Mr. Moore, who is produced to show that Drawbaugh applied to him to acquire an interest in the invention, testifies that the talking-machine which Drawbaugh produced was Exhibit B. This was in May, 1875. Mr. Bayler testifies that he talked through F and B in 1873, but the proofs show that the occasion was between 1875 and 1877. Mr. Nichols locates the middle of January, 1875, as the time when he saw Exhibit B in use.

That the talking-machines referred to by the witnesses were electric instruments is clearly established. Drawbaugh testifies explicitly that they were always used with a closed circuit, and without breaking the current, some of them being battery telephones, and some magneto telephones. He always represented them as actuated by electricity to those to whom he explained or described them, and claimed his invention would supersede the telegraph. His assertions show them to have been electrical instruments. He stated to the witness Shank, "It was the greatest invention ever known; if he had the means to go on with it they could talk, or rather be a time to come as to talk, to the old country same as we can talk here." To Zacharias, that "he could run it out for miles, and parties could talk in at one end and be heard at the other end the same as persons in a room together." To Smith, that "parties between Harrisburg and Philadelphia could communicate as if they were speaking together; there would hardly be any limits;" it was an "instrument to convey the voice—to supply the place of the telegraph." To Smyser, that it would work "from here to California." To Fry, that one "can talk as far as the wire goes." To Carl, that "he could hear a man talk from that place to New Cumberland or Harrisburg, and understand distinctly what he said." To Sherwick, that it was "better and handier than the telegraph; that you could just talk through it in place of writing." To Balsley, that "by attaching two wires you can hear it away off; the telegraph is nowhere with it." To Kahney, that "he could talk the same for miles as he could for a short distance." To

Shettel, that "if he had a wire from the shop in connection with the telegraph wires at White Hill he could talk to Mechanicsburg by having a machine there or an instrument in the office; that it would be better than telegraphing, and that it would be worth a great deal of money." To Reneker, that "he thought he could make it that he could talk through to Harrisburg; he thought they would take the place of telegraphing." To Weber, that "it beats all the others of my inventions; he could carry sound, or rather talk, as far as Shiremans-town." To Hawn, that "he would be able to operate, that a man preaching in New York, that a congregation in Philadelphia would hear the same sermon." To Kahney, that "he could just as easy speak ten miles as one, or any distance he would choose to." To Rupp, who was there with Hamacher, that "it was worked by electricity; would take the place of the telegraph, and that he could make it so that he could talk to San Francisco." To Musser, that "he was going to make a machine to talk from Harrisburg to Philadelphia, and it would be cheaper and quicker way than telegraphing." To Smith, that "he believed they could talk for a hundred miles." To Fetterow, that "I could speak ten, fifteen, or twenty miles, or even to California if there was a wire extended." To Wisler, that "he could attach a wire to it and talk for ten miles—as far as he could have a circuit around." To H. F. Drawbaugh, that "he could talk across the continent." To Free, that "the talking-machine could be used to talk at a long distance—from Philadelphia to California." To Landis, that "it could be used a thousand miles; it would take the place of the telegraph." To Lenig, that "he could talk hundreds of miles through that." To Updegraff, that "instead of using the old mode of telegraphing he could talk directly through the wire; he thought he could talk as far as you could use the ordinary telegraph wire." To Draper, that "he thought it was or would be one of the greatest inventions of the age, and would take the place of telegraphing." To A. Evans, that "he could take this machine and talk clear out to Europe across the ocean." To Eicholz, that "if he could only get some one to help him once he would run it to Harrisburg and convince them, and then he would run it from Harrisburg to Philadelphia." He stated to the witness Shank, that "it works by electricity." To Smith, that "it was by electricity." To Nichols, that "the sound was conducted by electricity." To C. Eberly, that the instruments were "to convey sound by electricity." To Coudry, that "they were operated by electricity." To Shoop, that "it operated by a battery." To Shireman, that "they operated by magnetism." To Hawn, that "they would be operated on by a battery." To N. W. Kahney, that "the machine was operated by electricity—by a battery." To Zimmerman, that "it was electricity that would pass it over the wires; that it would carry the sound right along." To Hale, that "it was driven by a magnet." To H. K. Drawbaugh, that "the sound could be carried to a distance on a wire by the use of

electricity." To Lenig, that "electricity was used in connection with it." To Prof. Heiges, that "in connection with a talking-machine both magnetism and electricity were applied." To Goodyear, that "his talking-machine was also done by electricity over wires." To Woods, that "it was to be an electric machine used in place of telegraphing." To Young, that "it was an electric talking-machine which he had invented."

Thus Drawbaugh is corroborated by a cloud of witnesses whose testimony tends to substantiate his narrative. Without stopping at this point to consider the credibility and probative force of their testimony, it suffices to state that, although some of the witnesses seem to have been reckless and unscrupulous in their statements, the great body of them are undoubtedly honest witnesses. It is impossible, however, to believe that Drawbaugh can be mistaken in the substance of his testimony, and the conclusion cannot be ignored that either his testimony is true, in its essential parts, or his narrative has been manufactured to fit the exigencies of the case. In order to ascertain what effect is to be given to the corroborative proofs, it is important to determine whether Drawbaugh is an honest witness or whether he has intentionally falsified collateral facts, and is therefore to be deemed discredited. If the defense is to be believed, he had been experimenting with his talking-machine from 1866, and had successfully transmitted speech as early as 1870, if not before that time. He testifies that he had used Exhibits B and F in transmitting speech for two or three years before he made Exhibit C. According to the theory of the defendants, Exhibit C was made in 1869 or 1870. At that time he had reached a secondary stage in the development of his invention, and certainly as early as in 1872, when Exhibit C had received its latest modifications, the invention had passed out of the period of rudimental forms embodying principle merely, into a form embodying nice details of construction, and had reached a perfection not reached by Bell in his earlier patent. Drawbaugh was well aware of the merit and of the great pecuniary value of the invention. He had obtained patents for several inventions of minor value; yet, from 1870 until July, 1880, he did not apply for a patent for the telephone. It was of the first importance to explain the reason of his inaction, because it seems incredible that the inventor of the telephone should not only omit to patent it as soon as he could, but should also remain silent for years after others were winning the fame and profits of the invention. Only one explanation was possible, and that has been attempted. As stated in the answer and in his testimony, it is that he was unable to do so by reason of his poverty. The answer alleges "that for more than ten years prior to 1880 he was miserably poor, and utterly unable to patent his invention or *caveat it.*" He was asked the question: "Do you mean to have it understood from your last answer that there was any other reason for some period prior to 1870, except your poverty, whether greater or less, which prevented

you from patenting your invention or filing a *caveat* for it?" His answer was: "If I understood that right, there was no other reason that I can think of now." He proceeds to state that Exhibits F and B exhibited the principle perfectly enough to patent.

In the elaborate efforts of the defendants to substantiate the theory of Drawbaugh's inability from poverty to patent his invention, much testimony has been produced to show, and which does show, that he was always more or less in debt, often a borrower of small sums of money, was dilatory in paying his debts, and used to plead his inability when dunned, and was often sued, and judgments and executions were obtained against him; but it is clear from a few plain facts that the theory of extreme poverty is unfounded, and that Drawbaugh is dishonest in putting it forward. In 1867 and 1869, besides what he received for his wages, he received \$5,000 from the pump company for his faucet invention, besides \$1,000 in the stock of the concern. On the first day of April, 1869, he received \$1,000 from one Gardner, for the sale of a half interest in a faucet invention. He invested \$2,000 of the \$5,000 in real estate, lost \$400 of it in an apple speculation, and used the \$1,000 received from Gardner to buy a house and lot for his father. Between 1867 and 1873 he paid \$1,200 to the Drawbaugh Manufacturing Company for assessments on his stock, besides \$870 in labor; and in July, 1873, received from that company \$425 cash, in settlement of its affairs. From 1867 to April, 1872, he was the owner of real estate, for which he had paid \$2,300 in the fall of 1867, and upon which he expended in improvements, in the spring of 1868, from \$300 to \$400, and which was incumbered only by a prior lien for \$300. In the spring of 1872 he incumbered it for \$1,000, not as a principal, but as a surety. He was in receipt of \$110 annually as rent for a part of this property, occupying the rest himself until he sold it in 1876, and bought another house in the town of Mechanicsville. He was always in receipt of fair wages for his labor. From April 1, 1875, to April 1, 1876, he received nearly \$450 for wages from the axle company, irrespective of his earnings from other sources, and declined steady work at times, because he could make more by job-work. Thus it appears that, although at times it was not convenient for him to pay his debts, or he was careless or indifferent, he had not only the means of raising money during all this period, but that on many occasions he had means for investment and for speculation. The pretense that he could not raise the fees to *caveat* or patent his invention is transparently absurd. He was accustomed to prepare specifications of patents, and was a maker of models, and advertised himself as an inventor, designer, and solicitor of patents. During the time he was experimenting on his talking-machine, and before he applied for a patent, he found time and materials for experimenting with and making the Giffard injector for steam-engines, the autograph telegraph, the magneto-dial telegraph, the magneto key, the automatic

fire-alarm, and the electric clock. During this period he was a friend of Mr. Weaver, a patent solicitor, who frequently gave him advice and professional assistance in return for mechanical services rendered by Drawbaugh, and who drew specifications for him for a measuring faucet and for the magnetic clock. If he was not competent himself to make an application for the patent, it cannot be doubted that, with the assistance of Weaver, he could have made a proper application at a trifling outlay, if any, beyond the fees of the office.

Drawbaugh devoted a great deal of time between 1867 and 1878 to the invention and construction of his electric clock, and the time and money expended by him in experimenting and constructing this clock in its various forms, especially those made in 1877 and 1878, was much more than would have enabled him to patent his talking-machine. These clocks were built by him with his own tools and out of his own money, and, to build them economically, he made a gear cutting-machine which must have cost him more than it would to patent his telephone. In April, 1878, he received \$500. from the Electric Clock Company for the privilege of using his clock invention.

In order to fortify the theory of Drawbaugh's inability from poverty to patent his invention, the defendants have attempted, by testimony from him and from others, to show that he was extremely solicitous to patent it, and tried to induce others to furnish the means. Mr. Springer testifies that "his (Drawbaugh's) whole mind appeared to be on his talking-machine; he told me that many a night he didn't sleep just studying how to improve it." After May, 1872, according to the testimony of Jacob Hawn, the talking-machine superseded the clock in Drawbaugh's interest. According to Mr. Holsinger, from 1873 to 1876 "he appeared to be crazy on it; I often tried to get information from him on other subjects, and about half a minute's talk would turn him right on the talking-machine." Henry F. Drawbaugh, his brother, testifies: "Every time I was down there, from the summer of 1872 to 1879 or 1880, he was working at it and talking, and wanted me to go in with him and furnish means." Mr. Bates says he was in Drawbaugh's shop eight or ten times between the summer of 1874 and the fall of 1877, and "his general conversation was about the talking-machine; said he would like to get it patented, but had not the means, and could make a fortune out of it." Drawbaugh testifies as follows:

Question. A good many witnesses have testified that you were at various times talking of patenting your electric speaking-telephone invention: what is your recollection about that—did you intend to patent it or not? *Answer.* Yes, sir; I intended to patent it. I had spoken to a number of persons to assist me. I would state to them that I would give them an interest in the invention for them to furnish the money to have it patented. *Q.* Why did you not patent it with your own money? *A.* I didn't have any money. *Q.* At how early a time did you have the intention of patenting it? *A.* I could hardly say how early. I spoke to persons even at an early time. I spoke to

Christian Eberly; it may have been prior to 1870 I spoke to Frank Lee; I spoke to them about taking an interest. They were among the earliest. I can't remember all the persons, as I had spoken to a great many."

Lee is not a witness, having died in 1872. Christian Eberly locates the time as between 1867 and 1870. He had been a partner with Drawbaugh in a number of inventions, and was a capitalist. He was asked:

"When Mr. Drawbaugh showed you his talking-machine, state whether he proposed to you to go into partnership with him and furnish the money for that also, as you had before that time, on the other inventions?"

He answered:

"Not altogether; he intimated that he would take me in. I don't recollect as I said anything, or what I said."

The witness was often in Drawbaugh's shop subsequently, in 1871, 1872, and 1873, but mentions no other proposition. The only other persons Drawbaugh specifies as having been applied to by him are Capt. Moore, Henry Bayler, and Simon Oyster. Oyster was not called as a witness. Capt. Moore was examined as a witness for the defendants, and his testimony is significant. He was the principal of the Soldiers' Orphans' School, an institution in the vicinity of Eberly's Mills, and was the secretary and treasurer of the axle company, a concern that in part occupied Drawbaugh's shop in 1875 and 1876. He testifies that about May, 1875, Drawbaugh showed him a talking-machine; said he was unable to patent it himself, and desired witness to "go in with him and get a patent." He states that he told Drawbaugh he didn't want to go into any new inventions, but that it would be a fortune to any person bringing it out if it could be put to practical use. He identifies Exhibit B as the only machine shown him at that time by Drawbaugh. Although he and Drawbaugh maintained intimate business relations for a year after that time, the subject seems never to have been referred to again. Mr. Moore was an intelligent capitalist. It is strange that Drawbaugh should have shown him Exhibit B, one-half of the crude instrument of 1867-1869, if the perfect instruments, E and D, were in existence; and more strange that the subject was never mentioned again between them, or that no attempt was made to speak through any machine, if they had any faith in the value of the invention. Mr. Bayler, the other witness, carried on lumbering and a saw-mill from 1873 to 1877 in the vicinity of Milltown, and employed Drawbaugh frequently to repair machinery. He testifies that in June, 1873, Drawbaugh showed him the talking-machine, and he said to Drawbaugh, "Why, Dan., that is virtually a talking telegraph," and advised him to take out a patent for it, to which Drawbaugh replied: "If I had the means, I would; if you'll advance me the means to procure a patent I'll give you a half interest." The witness continues: "Generally, on him meeting me, he would urge it,—urge me to take an in-

terest by furnishing him the means to take out a patent." He also identifies Exhibits F and B as the instruments shown him by Drawbaugh. But his books show that during all the time from April, 1873, to May, 1876, he owed Drawbaugh more than the fees necessary for procuring a patent.

The defendants produce other witnesses to prove that from 1870 to 1879 Drawbaugh was showing his telephone, adverting to his poverty, and trying to induce somebody to assist him. Mr. Herr may be cited as an illustration. He testified that in 1870 or 1871 Drawbaugh wanted money to get a *caveat* to secure his invention, and told the witness if he would help him or procure any person to assist him he would give him a half interest. Without adverting further to the testimony on this subject, it is sufficient to say, in view of the fact that there never was a time from 1867 to 1880 when Drawbaugh did not have the money to *caveat* and patent his invention, or the means of borrowing it, the only legitimate effect of such testimony is to discredit the whole defense by exciting the suspicion that it is bolstered up by exaggerated and unreliable testimony. It will hereafter be shown that among the men with whom Drawbaugh maintained business and friendly relations during this period there were many of intelligence and means. Some of them may have distrusted his judgment and regarded him as a visionary; some of them may have been indifferent or timid; but it is incredible that when only a trifling sum was required for a half interest in the invention none of them could be sufficiently impressed with its merit or financial value to investigate it seriously as a speculation or an investment. He induced persons to invest in faucet inventions and in his magnetic clock; and it cannot be true that he could find no one to entertain the talking-machine, which, according to the common rumor of the neighborhood, was to supersede the telegraph, and, in the words of one of the witnesses, "make Drawbaugh the richest man in the Cumberland valley." It was very natural that a hard-headed old farmer like William Darr, on being told by Drawbaugh that he had a machine by which he could talk across the Atlantic ocean, should advise him to "try it first in talking across the Yellow Breeches creek;" but it is beyond comprehension or belief that none of the capitalists or speculators about him could be induced to seriously consider it, if it was an operative device. Where a witness falsifies a fact in respect to which he cannot be presumed liable to mistake, courts are bound, "upon principles of law, morality, and justice, to apply the maxim, *falsus in uno, falsus in omnibus.*" *The Trinidad*, 7 Wheat. 283. Drawbaugh could not be mistaken in asserting that it was his poverty which prevented him from *caveating* or patenting his invention. He was not led to the assertion inadvertently. Those with whom he is associated in the defense understood fully, and so did he, that the fact that a professional inventor and patentee did not go to the patent-office to secure an invention like the telephone for 10 years after it had been

completed and demonstrated was almost conclusive against the theory that he had made the invention, and that, unless this presumption could be parried, no court would credit his story. The theory of constraining poverty was therefore formulated in the answer, elaborately fortified by witnesses, and testified to by Drawbaugh. It is overthrown by a few plain, indisputable facts, and Drawbaugh's veracity falls with it.

The defense must rest upon the testimony of the witnesses who corroborate Drawbaugh. The case made by these witnesses is sufficiently formidable to overcome the legal presumption of the validity of the complainant's patents. It is met by the complainant with rebutting evidence, direct and circumstantial, showing the intrinsic improbability of the theory that Drawbaugh was the inventor of the telephone, and showing his conduct or declarations inconsistent with any hypothesis that he was more than an unsuccessful experimenter with the invention. Many witnesses have also been produced by the complainant to attack the credibility and reliability of the testimony of the defendants' witnesses. Of necessity the testimony of most of the defendants' witnesses can only be attacked by showing that the witnesses are mistaken as to the time when they saw Drawbaugh's talking-machine, or as to what they really saw on the occasions they refer to. The way in which the testimony of Uriah P. Nichols is met will illustrate the general tenor of such testimony. Mr. Nichols was one of the most intelligent and trustworthy of the defendants' witnesses, a farmer and machinist, who testified that on the eighteenth day of January, 1875, he visited Drawbaugh's shop on business, saw two instruments which he identified as Exhibits B and A, and he described their mode of operation as stated to him by Drawbaugh at the time. He says he listened at one instrument while a boy spoke into another 200 feet away, connected by wires, and heard the boy say: "Is it you, father, speaking?" The complainant produces nine witnesses to show that the occasion could not have been prior to February, 1878. The witness fixes the date by a purchase of lime made by him on the visit, and states that he went to Drawbaugh's to see an electric clock of which he had recently read a description in a newspaper, and soon after the visit told Mr. Maish and others about the telephone he had seen at Drawbaugh's. The complainant proves that the newspaper article was not published until February, 1878; that when the witness told Mr. Maish of the telephone at Drawbaugh's, the latter, who was then a member of congress, remembered the occasion, knew all about Bell's telephone at the time, and had used it in Washington. Mr. Maish states that, as Drawbaugh was one of his constituents, he would have been deeply impressed by the conversation if he had understood Drawbaugh claimed to be the inventor. Without attempting to particularize the rest of the testimony for the complainant upon this issue, it suffices to say that several other witnesses were introduced to show that the lime was not pur

chased by Nichols before 1876. Much testimony is given by complainant upon collateral issues of a similar character. One of these issues relates to the time when Thomas Draper ordered a hydraulic ram of Drawbaugh. Mr. Draper was an important witness for the defendants. He testified that he went with Mr. Kissinger, a tenant of his, to Drawbaugh's shop in May or the early summer of 1874, for the purpose of ordering of Drawbaugh a hydraulic ram to be used upon the farm Kissinger had leased of him in April, and that he was never at Drawbaugh's on any other occasion. He identified Exhibit C positively and Exhibit I less positively as the instruments used and through which he listened while Drawbaugh talked. The complainant proved that the hydraulic ram was not put to use until the fall of 1878, and undertook to locate the date of Draper's visit approximately by that fact. Seventy-five witnesses were introduced by the respective parties upon this collateral issue. These illustrations show how hopeless a task it would be to review the testimony satisfactorily or analyze it minutely. Five hundred witnesses have been examined by the parties upon the main question and the collateral issues, and their testimony is in a printed record of over 6,000 pages. If it were practicable to do so it would not be profitable, because a microscopic view of the controversy would be inadequate and misleading. In cases where such a chaos of oral testimony exists it is usually found that the judgment is convinced by a few leading facts and *indicia* outlined so clearly that they cannot be obscured by prevarication or the aberrations of memory. Such facts and *indicia* are found here, and they are so persuasive and cogent that the testimony of a myriad of witnesses cannot prevail against them.

The first group of facts of this nature are those which bear upon the capacity and character of Drawbaugh as an inventor, and tend to show that it is not only highly improbable but almost impossible that he could have been the author of the telephone. In the summer of 1878 he composed a biography of himself for publication in the history of Cumberland county, which presents a graphic picture of the inventor and of the man. He commences by describing himself as "born in the quiet, secluded village of Milltown, three miles from Harrisburg," and as "one of the greatest inventive geniuses of this age, who has spent the greater part of an active life conceiving and producing, as the result of the conceptions of an unusually fertile brain, a score of useful, ingenious machines and devices." "It appears," he says, "by examining a list of his inventions, that the manufacturing interests of the place in his boyhood days gave direction to his thoughts and incentive to his actions." He proceeds to enumerate a list of his inventions as follows:

"His first invention was an automatic sawing-machine; then a number of machines used in wagon-making; then a machine for boring spoke tenets; then a machine for sawing tenets; a barrel-stave jointing-machine, patented in 1851. This machine was pretty generally introduced, and its merits appre-

ciated. An automatic grinding-machine was next invented to meet a demand created by the introduction of the jointer; then followed several machines for making stave headings and shingles, all of which were patented in 1855; after which, machines for rounding, heading, crozing, dressing, and finishing outside of barrels were invented. These were again followed by device for running mill-stones; one for dressing mill-stones; a device for elevating grain in mills. He then invented and had patented four improvements in nail-plate feeding; next a tack-machine and a new design in tacks. Photography next engaged his attention. He fitted himself for action in this field by manufacturing his own camera ground, and fitted acromatic lenses for camera, prepared the necessary chemicals, and improved the process for enlarging pictures. Next electricity and electric machinery attracted his attention, and an electric-machine was produced, throwing out of consideration the galvanic battery and electric pile; then a machine for alphabetical telegraphing; then the justly-celebrated electric clock and the machinery necessary for its construction; and several kinds of telephones: one of which is operated by battery, and another by induction."

He concludes as follows:

"It will be seen from the foregoing that Mr. Drawbaugh has penetrated vast fields in search of information, and with what success we leave it to the readers to determine. We are proud to own Mr. D. as a citizen of our township, and deem him worthy of a position at the head of the list of our prominent men, and are happy to accord him that position."

This portrait, drawn by himself, depicts, without the aid of extrinsic evidence, the ignorance and vanity of the man, and the incongruous and fantastic assortment of his inventive projects. It suggests also the character of a charlatan. That he was a skillful and ingenious mechanic is undoubtedly true. Invention was his hobby and his vocation. But that he was an inventor in a large sense is disproved by the nature and results of his work. Every patent that he obtained was for some improvement on existing devices, which involved mechanical skill rather than any high degree of inventive faculty. This is shown to some extent on the face of his patents, the list of which is as follows: November 11, 1851, "for improvement in stave jointing-machines;" May 22, 1855, "for stave machines;" April 28, 1864, "for improvement in mill-stones;" May 12, 1863, "for improved machine for leveling the faces of mill-stones;" December 12, 1865, "for improvement in nail-plate feeders;" November 20, 1866, "for improvement in faucets;" November 19, 1867, "for improvement in nail-feeding device."

His own testimony, given in an interference proceeding in the patent-office in 1879, shows that none of his inventions were sufficiently meritorious to prosper vigorously. That proceeding involved a question of priority of invention between himself and one Hauck, respecting an improvement in a faucet. He had filed his application for a patent in January, 1879, and undertook to carry back the date of his invention to 1869. The scope and range of his inventive faculty became a subject of inquiry. He there testified that he had made, "he might say, fifty inventions, and had patented over a dozen."

He was cross-examined respecting certain inventions to show that they did not work satisfactorily. He was then asked: "Since 1866, what machines have you conceived and perfected that have worked satisfactorily?" He answered: "To the best of my knowledge, I think they all have. The nail-machine gave satisfaction. I had it running in the works, but the nailers drove it out. The tram and red-staff was a good machine, and adopted by a number of millers. The magnetic clock I consider a good thing, but I am not through with experiments on it yet. I believe this last faucet to be a good thing." If his nail-machine had induced the workmen to drive it out of the shop, it ought to have commended itself to the capitalist. His magnetic clock had not been patented at this time, though it had been for a time the wonder and admiration of the community in which he lived; but when it was patented in 1879 it was as a "new article of manufacture," consisting of a galvanic battery for electrical clocks, which had two old elements united, instead of being disconnected, as in former devices. The history of this clock shows clearly that it was of no practical merit; and the clock had been substantially described in Tomlinson's Encyclopedia; and he had the book before he made his alleged invention. His other electric devices he never patented; and in his testimony in the interference proceedings he did not refer to them as among his perfected and successful inventions. One of these was his magneto-electric machine for short-line telegraphing and fire-alarms, sometimes mentioned as his "magneto key." It was not a new device, and the proofs show that it was a failure.

When the speaking telephone was first introduced to the attention of the scientific public it was pronounced by one of the most eminent electricians of the day "a result of transcendent scientific interest," and "the greatest by far of all the marvels of the electric telegraph." The inventions attributed to Drawbaugh include not only the conception of the principle of the unbroken undulatory electric current, and of the delicate and complex instrumentalities essential to its efficient application in transmitting and reproducing articulate speech, but also of many other devices involving a nice adjustment of forces and requiring sensitive mechanism. These were inventions of a peculiarly scientific order, which would seem to demand a special converseance with the principles of acoustics and electricity. Besides making the cardinal discovery of the theory of the unbroken undulatory current, Drawbaugh is assumed to have perfected a brilliant and extraordinary series of original discoveries, for which, to use the words of Mr. Benjamin, "there is no parallel instance in the whole history of invention." Mr. Benjamin, referring to the microphone, which was introduced to the public in 1878 by Mr. Blake, but which is one of the instruments asserted to have been invented by Drawbaugh at an earlier date, says: "It was looked upon as a great and original discovery."

It was said by Chief Justice TANEY, (*O'Reilly v. Morse*, 15 How. 111,) speaking of the invention of the telegraph: