mates do not know of the invention; and if they had known it, they would have remembered it now, and acted on it then.

In the face of this, he relies on the assertion that facts and dates which large numbers of witnesses have sworn to must be true. But this is destroyed by the fact that the instruments which he and half his witnesses have sworn to as perfect talkers are proved by his own public tests to be incapable of speech, by the fact that the picture of exclusive and unremitting devotion to the telephone which they tell is shown by his own account of his other occupations to be absolutely untrue, while witness after witness, tested in detail, is found to tell a story essentially false either as to the material fact or the material date. This destroys his argument from numbers. In such a case, moreover, the reason of the rule *falsus in uno falsus in omnibus* applies. That rule does not necessarily mean that the man who falsifies once is a liar; but it means that justice will not rest on testimony a substantial part of which is proved to be false. How much more so in a case which depends on mere oral recollections against every fact of his life, and which is generated under such circumstances as surrounded the origin of this defence. No balancing of depositions is needed. The law pronounces that it cannot rest such a claim on such a record.

Mr. E. N. Dickerson for the American Bell Telephone Company.

The incongruity of the several defences shows that to this great patent there is no one ground upon which any two of the numerous counsel against us can agree, and each finds the defences offered by the other to be so vain that he washes his hands of them. Nothing more is needed to show their thoroughly artificial and hollow character.

Dolbear says that Bell invented the only way in which it is possible to transmit speech, and he ought not to have a patent for that, because in that case Dolbear cannot use it, — and he says that he cannot make a telephone talk without it. And then he says that though Bell's patent is for a method, and

not for a receiver at all, yet if Dolbear uses Bell's method by the employment of a different form of receiver for one end of his telephone, it would be hard indeed if he should not be permitted to do that. Then he says that, on the whole, Reis invented, or, at least, undertook to invent, another way of transmitting speech, and although that *way* will not transmit speech, and although he found on trial that the Reis apparatus would not transmit speech; yet, as Reis wanted to make a speaking telephone, and his only trouble was that he did not know how to, his ignorance ought not to prevent him from being reckoned the discoverer.

Dolbear personally gets into trouble, for in 1877 he held out Mr. Bell as the first inventor of any speaking telephone; then he wrote to Mr. Bell that he had modified the form, and perhaps made some invention himself, and he thought Mr. Bell ought to pay him some money. Next he wrote to Mr. Bell — for Mr. Bell did not pay him any money — that he would publish a book which would hurt Mr. Bell, adding, "I hope that there is nothing that I have said that would look to you like an immoral attempt." And next he appeared in the Dowd case as one who had sold his pretensions to that defendant, and was set up under oath as the first inventor of the whole speaking telephone. But when he got on the witness stand he had to back out of all that, and now being himself sued, he does not even set himself up in his own answer as a prior inventor.

The *Molecular* company says that Dolbear is mistaken, and that Reis invented the speaking telephone, and made first-rate speaking telephones. It is true that the Molecular experts all swear that Reis's plan for transmitting speech was entirely wrong, and that it is impossible to transmit a word by following the directions that he gave; and that it is only by changing the whole operation of the instrument, and making it work as Bell said for the first time in the world a telephone ought to be made to work, that you can get a word through it. But the Molecular counsel declines to be bound by the testimony of his own experts, and himself testifies that they must be wrong.

Then the Molecular company says: Never mind if Mr. Bell was the first to invent a competent method; we think that as matter of law his patent ought to be limited so as to give to him just enough of his invention to permit him to use the tin can and bladder instrument described in his patent, and let everybody else use all the other forms of telephone.

The Molecular company next sees that it must account for the fact that when Bell produced an instrument which they say was worthless, everybody wanted to use it; and that when Reis produced an instrument which they say was perfect, nobody wanted to use it. But, they say, the reason is that Reis offered it to the world freely, and so no one would take it; but Bell patented it, and then the community were drawn by the attraction of theft as well as the usefulness of the telephone. Finally they conclude that Bell never invented a telephone at all, and never thought he did, and never meant to, and never described one, and never intended to describe one.

The Overland and Drawbaugh combination avers that all that these gentlemen say is untrue. Reis did not invent the telephone at all, say they. Bell did invent it and described it; and they agree that a patent for the first inventor ought to be as broad as Mr. Bell says his is. But they say that Drawbaugh was the first inventor; that he both invented and perfected it. And they say that Gray was a first inventor; but Gray was a first inventor who came after Drawbaugh. At least, this is what they said up to a week ago. But now they have discovered that Mr. Bell was not so much an inventor as he was a thief and forger; that the "transcendent abilities" which they say he has, and which they recognize to be quite sufficient for the invention of the telephone, were perversely devoted by him to the perpetration of felonies.

The *Clay* company say that Varley invented the speaking telephone. And finally they say there is not, and never was, any such corporation as the American Bell Telephone Company, and that Bell never conveyed away his patents to any one.

Reis. — It used to be the law that the work of a foreigner,

all done abroad, and described in publications by himself and others, must stand on those publications as a defence to a United States patent. But the fifty Reis publications all break down; for every expert on both sides in every case has had to swear that it is impossible to transmit speech if you follow those publications. Indeed, the experts have had to admit that the publications themselves said that Reis could not transmit speech, and that, in print, he acknowledged his own failure. But now they repudiate that. They sent a roving commission abroad to prove that all that Reis printed was wrong; that all his friends printed was wrong; and that he really did have a speaking telephone, and knew how to transmit speech, but wrote his publications to conceal his success. They produce as a witness Professor Sylvanus Thompson, of England. He wrote a book on electricity in 1880, and in that he said that Bell was the first inventor of the speaking telephone, and Reis was not. Afterwards he was employed by infringers to fight the Bell patent, and then he published another edition of his work, and said that he and his friend Mr. Dolbear, who is one of the infringers, were now ready to "admit" that Bell did not invent the speaking telephone, but that Reis did.

Then the Overland and Molecular companies sent to Germany in 1883, and took six depositions to prove that Reis invented a great deal more than he ever told of. The depositions are so absurd in themselves as to be beneath criticism; but the Circuit Court naturally ruled them all out as incompetent. Finally, Professor Sylvanus Thompson says the crowning point of Reis's career is found in his appearance at a certain scientific meeting at Giessen in 1864, and that he there established himself as the inventor of the speaking telephone. So they proceeded to take testimony of eye-witnesses and ear-witnesses to establish that particular assertion.

Just at this juncture the Department of Justice stepped in to aid them, and by a treaty signed by that department, and by the Bell company, and by one of the infringing companies, it was agreed that a commission might swiftly issue and be sent abroad, at the joint expense of the department and the

infringers, and that the testimony it brought back should be put into one of the cases at the circuit, and in that way come before this court, under the sanction of the Department of Justice, and as its contribution. This was done, and those depositions are in the record.

So they proved, if mere swearing after twenty years could do it, that Reis had a first-rate speaking telephone at the Giessen exhibition in 1864, and that the particular person who experimented with him, and in whose laboratory the exhibition was held, was the celebrated Professor Buff, now dead. This unholy alliance had forgotten one circumstance. On that very day, and as a part of that exhibition, Professor Buff read a paper upon the sounds which could be produced by means of electricity; and in that paper he described the Reis instrument which he and Reis, within that hour, exhibited at that very meeting, and said that it was a circuit-breaker, and a very ingenious one, but instead of saying that speech was one of the sounds it could yield he said that "unfortunately it could only reproduce the pitch of musical sounds and not their quality." That paper was printed at the time. We put it into the case. It gives the verdict of the Giessen meeting, and is Reis's death blow.

They desired also to take the deposition of Professor Quincke, who was present at that meeting with Helmholtz and other well-known scientific gentlemen. Professor Quincke did not want to testify, but we consented that the other side might put in a certain letter recently written by him stating his recollection. Professor Quincke is dean of one of the faculties at Heidelberg, and so we introduced the honorary degree given last summer to Mr. Bell by the University of Heidelberg, on its 500th anniversary, as *the first inventor of the speaking telephone.*[1] That testimonial from the great

[1] In Virum Egregium ALEXANDRUM GR. BELL, Scotum, Qui ut Apparatu Telephonico Ingeniose Invento Societati Humanæ Magna Negotiorum Peragendorum Emolumenta Largitus est Atque in dies Crescentia ita Chronographo Perfecissime Excogitato Tam Physicen non Mediocriter Adjuvit Quam Physiologiæ Ipsique Arti Medicæ Instrumentum Rerum Sat Gravium Definiendarum Suppeditavit Jura et Privilegia Doctoris Medicinæ Honoris Causa.

German university within twenty miles of where Reis lived, did his work, and died, should put to shame the efforts of the Department of Justice to use the name of the United States to induce those Germans to swear that Bell was not the first inventor of the speaking telephone, and that their neighbor Reis was.

The Gray defence. — In 1877, the Western Union Telegraph Company determined to use Bell's telephone and test his patent. They bought up all the pretensions of all the "prior inventors" who had then been discovered. Many more have since appeared, because as fast as one "prior inventor" is spoiled, the next speculating company requires a new one. Among others they bought up Gray and Dolbear. When their agent Dowd was sued for infringing the Bell patent they defended the case, set up for him that Gray was the first inventor, and that he made his telephones under license from Gray. This was done in the name of the *American Speaking Telephone Company*, in which Gray and his partner owned a third of the stock and in which Gray was a director, while Gray was called as a witness to maintain that defence. The Dowd case, therefore, was Gray's case, defended by him and supported by his testimony. He there told his story.

Gray's own pretensions rested on a caveat which was based on a conception first made and communicated to others and put on paper by a sketch of February 11, 1876, then reduced to the form of a caveat which was sworn to and filed February 14, 1876, some hours after Bell had actually filed his application prepared long before. Gray took part in Bell's exhibition of his speaking telephone at the Centennial, June 24, 1876, and himself listened at Bell's instrument and heard the applause which greeted its performance. Some days afterwards he undertook to make an instrument as near like his own caveat as he conveniently could, and it would not talk a word. That was the first instrument he ever attempted to make for speech. He never attempted to make another until he made a Patent Office model in November, 1877, and there is no testimony that any instrument made like the Gray

caveat ever did or ever can talk. As an inventor he is, therefore, necessarily out of the case, both because he never completed the invention, and because his mere conception, the earliest date of which is February 11, 1876, was after Bell had fully described his invention in his specification which was completed, signed, and sworn to on January 20, 1876, and filed February 14, 1876.

Gray made his first appearance in the controversy on October 29, 1877, when he filed an application in the Patent Office in the interest of the Western Union Company, and in it he described a magneto telephone and swore that he was the first inventor of it. In 1879, when he testified in the Dowd case, he swore that he had never conceived of the possibility of a *magneto* telephone until he listened at Bell's magneto telephone at the Centennial, and then did not believe that it could transmit until he had examined the wires and every detail of the apparatus and found by personal trial that it did talk. At that exhibition, he did not make the slightest claim that he had ever invented the speaking telephone. In the early part of 1877 he asserted, privately and publicly, in correspondence with Mr. Bell and in lectures which were reported in the newspapers, that Mr. Bell was the first inventor of the speaking telephone, and that what he, Gray, had invented was something quite different.

Thus Gray delivered a public lecture at Steinway Hall, New York, on April 2, 1877, about his harmonic, musical, multiple telegraph. The report in the *New York Tribune* of the next day, admitted to be true, said:

"After the first part of the programme had been executed, Mr. Elisha Gray came forward and addressed the audience. He was aware that great confusion existed in the public mind as to what *this* telephone could perform; in particular it had been confounded with *the speaking telephone invented by Prof. A. Graham Bell, of Boston.* Prof. Bell, Mr. Gray said, was present in the audience."

But when the Western Union Company were trying to acquire a "prior inventor" for use in their expected litigation, he appeared, in the fall of 1877 and in 1878, asserting that he

was the sole and original inventor of the speaking telephone, and that Bell never invented it at all. And yet he is set up by counsel as an honest, simple-minded, guileless gentleman.

In the Dowd case, also, one defence was that the instruments of the Bell patent would not talk. But it turned out that while Mr. Edward Renwick, who is not an electrician, was able to make a pair that would not talk, our electricians, and afterwards Mr. Pope, the electrician of our opponents, had not the slightest difficulty in making telephones in exact conformity to the patent which talked perfectly well. That ended the defence that figure 7 of the Bell patent was not a talking telephone.

The Western Union Company had spent two years' time, with all its wealth and resources, hunting this country and Europe for a defence. But when this testimony was taken and printed, the late Mr. George Gifford advised them that the courts would always find that Bell was the inventor of the speaking telephone and that he had a good patent for it. They thereupon surrendered and submitted to a decree against them. The whole story is told by Mr. Gifford under oath, and is in the record. No judgment of a court could be more persuasive than the surrender of such a corporation, under the advice of such counsel, after such a preparation.

The defendants here were forced to meet this. They attempted to do it by asserting that the whole proceeding was a sham, and that it was the Bell Company, and not the Western Union that surrendered. To this one answer is that the record contains the whole story, told by Mr. Gifford himself under oath, and no man contradicts it; another is that the facts of the history are that the spoils of victory remained with the Bell Company and not with the Western Union Company. If the Gray pretensions had been well founded, the Western Union Company could have had a patent for the whole speaking telephone, and Bell would have nothing. The Western Union also owned the inventions of Edison, Page, and others in the nature of improvements or accessories of vast importance. Against this the Bell company had chiefly to rely on the Bell invention. The settlement between the two par-

ties was that while it was recognized, both in language and by financial result, that the Bell patent was valid and controlled the profits of the business, yet that the subsidiary inventions of Edison, Page, and others owned by the Western Union were of some value; that they should be put into the hands of the Bell company to use; and that the Western Union should have such proportion of the total proceeds as might represent the value of these subsidiary patents. It was agreed that one-fifth of the proceeds corresponded to that value, and that was what they received.

The alleged fraud on Gray, and the proceedings at the Patent Office.— The files show the following state of facts: Mr. Bell's application was filed on February 14, 1876. On February 19, Wilber, the examiner, wrote to Pollok & Bailey, Bell's solicitors, a regular official letter, signed by the Commissioner, copied into the files, stating that the first, fourth, and fifth claims related to matters described in a pending caveat; that the caveator had been notified; and that Bell's application was suspended for ninety days, as required by law. To this Messrs. Pollok & Bailey replied, by an offical letter in the files, addressed to the Commissioner, requesting him to determine whether or not the application was filed prior to the caveat. They wrote: "We have inquired the date of filing the caveat, inasmuch as we are entitled to the knowledge, and find it to be February 14, 1876, the same day on which our application was filed. If our application was filed earlier in the day than was the caveat, then there is no warrant for the action taken by the office." They requested an examination into the facts, stating that the application was filed early in the day, and was signed and sworn to on the 20th of January. Examiner Wilber, before whom this letter first came, refused the request, insisting that if the two papers were filed on the same day they were to be considered as filed at the same time, and asserting that such was the practice of the office; and he refused to dissolve the interference. Yet it is charged that he was our tool and confederate and did everything we asked.

The matter was taken to the Commissioner in person, and he filed a written decision that the exact time of the filing of

the papers must be ascertained, and the rights of the parties determined accordingly, citing legal authority for it. This court has since settled that such is the law. *Louisville* v. *Savings Bank*, 104 U. S. 469, 478. Thereupon Examiner Wilber officially decided and indorsed on the papers, that the Patent Office records showed that the application was filed in the clerk's office before the caveat, and that the application reached his room by noon of the 14th, and the caveat not until the next day. Everything that a hostile examiner could do against Mr. Bell, Wilber had done.

Turn now to the file of Gray's caveat, which is in the case. On February 19, 1876, the office sent a letter to him in the usual official form, saying that an application had been filed which appeared to interfere with his caveat; and he was invited to complete his specification as the law required. But in addition to that, Wilber wrote to Gray on the same day, another letter which is also in the files, stating the particulars in which the application conflicted with the caveat, and giving to Gray substantial copies of Mr. Bell's three most important claims, including the fifth claim for the speaking telephone. This was very wrong, for Gray had still three months in which to prepare and file his specification, and in that he could insert anything he pleased. To tell him beforehand the precise claims of Bell's application, which ought to have been kept secret, was not only a violation of the examiner's duty, but it was giving to Gray very unfair advantage, if he had been minded to make use of it. And yet they say that Wilber was our tool, working entirely in our interest. The letter turns out to be very valuable for us, for it shows that on that very day Wilber the examiner knew that Bell's specification was for a speaking telephone just as much as the caveat was. Gray personally received the notice, but chose not to proceed. He was wise, for he knew that his caveat was not written until Monday, February 14, while Bell's long specification, filed on that day, was necessarily written a good while previously. Indeed it was sworn to on January 20th.

The situation of these two men at that time offered a great contrast. Gray had for a partner Mr. Samuel S. White, of

Philadelphia, a wealthy manufacturer, devoted to patents; and Gray himself had the advantage of all the resources of the largest electrical machine shop in the country, of which he had until recently been superintendent. Mr. Bell, on the other hand, was absolutely destitute of means. Mr. Hubbard, who afterwards became his father-in-law, had agreed to help him about a multiple telegraph, but took no interest in the telephone, would advance no money about it, and objected to Bell's spending any time on it. That was not unnatural, for Mr. Bell had not constructed a practically useful speaking telephone, and Mr. Hubbard did not believe that he would make one. Thus all the attraction which wealthy surroundings could offer to a dishonest official were on the side of Gray, and the record of what Examiner Wilber did, showed that so far from aiding Mr. Bell he did everything he could to thwart him.

In 1879 came the Dowd case, which was Gray's case. Under his direction, his agent Dowd set up that Gray was the first inventor, and that Bell had "surreptitiously obtained a patent for that which Gray had first invented." That was the issue, and Gray went on the stand to support it. But that defence necessarily broke down, for Gray testified in that controversy that the first date he could assign rested on a sketch which he made on Friday, February 11, 1876, and which he turned into his caveat written on Monday, February 14, 1876. Now Mr. Bell's application showed on its face (and it was so proved) that it was completed, sent to Washington, copied in Washington by Mr. Pollok's clerk, got back to Boston, and there, in its finished condition, was signed and sworn to on January 20, 1876, and was again in Washington in the hands of Mr. Pollok to be filed, before Gray made his first sketch of February 11, 1876. When these facts were established, Mr. Gifford naturally knew that the Western Union Company and Gray could not prevail against Mr. Bell.

The question of Gray's standing against Bell again came up to trial in New Orleans in 1886, on new testimony from Mr. Gray and on testimony from Wilber, both offered by our opponents after the Department of Justice had begun its assaults

on us. The court there decided that "the fact that Bell's invention certainly dates from January 20, 1876, and that it covers a speaking telephone, renders it unnecessary to pass upon the evidence relating to the tergiversations and claims of Gray; the alleged frauds of Bell in advancing his application for a patent; the illegal conduct and conflicting statements of Examiner Wilber; and many alleged vices and irregularities, the evidence of which forms the bulk of the record, and apparently the main defence in the case. At the same time it is proper to say that in all the evidence we have found nothing that shows that Bell has done or caused to be done anything inconsistent with his right to be called an honest man, with clean hands."

The papers themselves now on file in the office, show that anything that Wilber might swear to as to the transactions between himself and Mr. Bell, if he ever should swear to anything improper, would necessarily be as foolish in law as false in fact, because Mr. Bell could not have stolen anything from Gray and put it into his patent, inasmuch as the specification, as finally issued in the patent, is exactly the specification which Bell wrote and swore to three weeks before Gray's caveat existed, — with the exception of a mere formal explanatory amendment, which the courts have always decided was pure surplusage, and which did not change by a single letter any part of the application which described or claimed the speaking telephone. Therefore a new fraud theory had to be invented to get rid of these stubborn facts. It is this new theory which was started last week for the first time in the world. The charge which it makes is competent as a matter of evidence, for it is a charge that Bell did not make the invention, but stole it, or an important part of it, from Gray. That charge is set up in the answer of the Drawbaugh and Overland companies, and they have a right to argue in support of it. The new story is that Mr. Bell honestly and originally invented and described in his application the magneto speaking telephone, Fig. 7, and out of his own head drew the fifth claim, — which that description is sufficient to sustain, — all exactly as it now stands in the patent. But the specifica-

tion also indicates that the particular transmitting member — the magneto transmitter — shown in Fig. 7, can be replaced by what is now called a variable resistance liquid transmitter, and that the apparatus thus modified will still transmit speech because as a whole it will still embody the novel principle described as the essential element in Fig. 7 and specified in the fifth claim, the only claim sued on. The charge is that this alternative form of the transmitting member was not invented by Mr. Bell; that Gray invented it and described it in his caveat of February 14, 1876; that Examiner Wilber of the Patent Office, who received the caveat on February 15, dishonestly and corruptly showed it to Bell's solicitors, and that the knowledge thus obtained was written into Bell's application after it was filed, by despoiling and altering the files by a species of forgery.

Their precise averment is that Bell's application as filed February 14, 1876, though it had Fig. 7 and the description of it, and claim 5, did not have the liquid transmitter part, nor claim 4 which specifically refers to that.

We know that on February 19 it did have them, because an official letter written on that day by the Patent Office to Mr. Bell, and another official letter written on the same day to Mr. Gray, state in terms that the application has them. Their hypothesis is that between February 15 and February 19, or thereabouts, Wilber delivered the Gray caveat, not to Mr. Bell, who was not in Washington, but to his solicitors Messrs. Pollok and Bailey; that Pollok and Bailey had to act instantly, because, say our opponents, while their tool Wilber insisted upon giving them the caveat, he would not delay that act twenty-four hours until Mr. Bell could be summoned from Boston to profit by it. So Pollok and Bailey, unable to wait for Bell, and having possession of the Gray caveat, stole Bell's application also, and cut out from it a number of sheets and forged new ones into which they wrote the liquid transmitter which they stole from Gray's caveat, and interpolated these into Bell's application, and then put those dishonest forged papers all back in the files. Nothing of this can touch Mr. Bell personally, because he was not in Washington at all in 1876 until February 26. That is the charge so far.

They say that the liquid transmitter must have got into Bell's specification by unintelligent copying, because Gray's caveat said that the liquid for a liquid transmitter must be water or some "*high* resistance" liquid, whereas Bell's patent specifies "mercury or some other liquid." Now, say our opponents, any one capable of making the invention, and, still more so accomplished an electrician as Mr. Bell, would not have written that, because he would have known that a liquid transmitter cannot work with mercury, which is a fluid of very *low* resistance. This, they say, proves that the description must have been interpolated by persons as ignorant as they say Messrs. Pollok and Bailey were; though why ignorant men, if copying, should have varied the liquid, no one explains.

But this whole argument rests upon a false basis of fact, and when the true scientific fact is known, it absolutely disproves the charge. With the particular form and arrangement described by Gray a high resistance fluid is essential, but with a different arrangement of the working parts of the liquid transmitter, mercury or some *low* resistance liquid not only can be used but makes a far better liquid transmitter than can be made with water, on Gray's plan. The tyro, stealing and copying from Gray's description and explanation, would have thought that water was the only available liquid; but Mr. Bell, being neither a tyro nor a thief, inventing the thing himself, perceived that a peculiar arrangement of parts with a low resistance fluid was the best plan. He made all his liquid transmitters in that way, — both his first, completed and successfully used on March 10, 1876, and his liquid transmitter exhibited at the Centennial in June, 1876, — employing mercury or acidulated water (low resistance liquids) in all. So it happens, not only that the liquid transmitter described in Bell's patent is very different from that of Gray, but it is so far different that nobody except an original inventor could have thought it out. It could not have been copied from Gray.

The two official letters of February 19 show that it was in the specification on that day. Bell, who was not in Wash-

ington until February 26, could not have written it in between February 15 and February 19; while the solicitors could not have done it, for it was necessarily the work of an original inventor of some brilliancy. It must therefore have been in the specification as originally written by Bell and filed February 14, before the caveat existed.

[Mr. Dickerson then explained what he insisted was a very grievous defect in the Gray plan of the liquid transmitter, but avoided by the Bell plan.]

The hypothesis of my opponents, as they state it, is based, and necessarily based, upon the theory that Wilber, the examiner, was the guilty confederate of Bell; yet it at once has to encounter the fact that instead of issuing the patent in the usual course, the first thing Wilber did was, on February 19, to suspend the application for three months, inform Gray of its contents, and invite Gray to raise an interference and contest Bell's claim. These letters are in the files, and Gray testified that he got the notice. When Bell's solicitors protested, and appealed to the Commissioner in writing, Wilber again resisted them, and only yielded when the Commissioner formally overruled him by a written opinion filed February 25.

One or two days after February 25, Mr. Bell came to Washington, and my opponents give a very circumstantial hypothesis of what they say might have happened. As soon as he arrived, his solicitors told him, so the hypothesis runs, of the forgeries they had committed in his behalf, and he went into the office to admire what they had done. But he wanted an active part in the crime. So, finding the application all fair-written in ink, he, with his pencil, interpolated by pencil interlineation a number of words. Their hypothesis and line of argument, if sound at all, show exactly what was interlined. Upon examination, however, we are startled to find that each of those supposed changes would have injured the patent so far as it could have had any effect at all. He thus, according to their theory, mutilated his specification thirty-eight times. Their supposed proof of this is as follows:

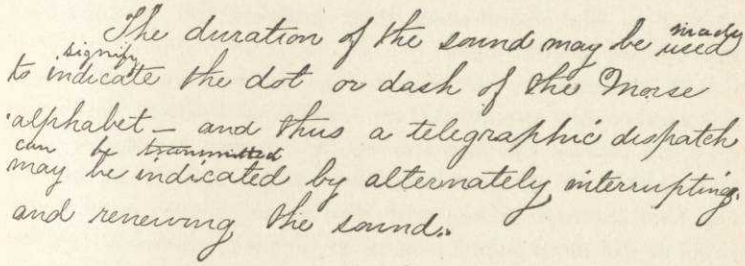
Mr. Bell completed an early draft of his specification in November, 1875. There is in the record a copy or duplicate

of that draft, made at that time to be given to Mr. George Brown, and known as the George Brown draft. This George Brown copy, the body of which is not in Mr. Bell's handwriting, shows very few emendations by him. Essentially it represents the proposed specification as it was when this early copy was made. The patent as issued differs from that copy of the early draft in thirty-eight passages. Obviously this may be because between November, 1875, when that duplicate was made, and the completion of the specification on January 20, 1876, Mr. Bell revised and improved his own copy of the draft. But the argument of my opponents is (and this is the essential basis of their hypothesis) that the actual specification filed February 14, 1876, written of course in ink, was exactly like the George Brown draft, and that the emendations were introduced by pencil cancellations and interlineations fraudulently made by Mr. Bell on that paper, in the Patent Office between February 27 and February 29, 1867.

If we could look at that very paper we could tell what was fair-written in ink, and whether there are any pencil interlineations, and if so what they are. My opponents say that there exists a fac-simile of that paper, with the fair-written ink words of the original regularly written in ink in the fac-simile, and the alleged pencil interlineations of the original written in pencil between the lines in the fac-simile. There was put in evidence and printed in the Dowd case in 1879 (finding its way thence into these cases by reprinting) a certified copy, certified April 10, 1879, and both sides agree that it is the usual habit of the Patent Office to make its copies of specifications in the manner of fac-similes. My opponents assume that that paper (on file in the Circuit Court in Boston, and now in the hands of the Chief Justice and known as the Boston exhibit) is such a fac-simile, and their argument about the interlineations is based on its present condition. Assuming their ground, that paper will test their hypothesis. If the fair-written ink words of that paper are the words of the Brown specification, and the pencil words are the new words which are in the patent but not in the Brown paper, their theory may be true, and the paper would give great support to it.

On the other hand, if the ink words of that paper are the words of the patent, then it is certain that the emendations which converted the early draft of November, 1875, into the exact language of the patent in Mr. Bell's draft, were made before his solicitor's clerk, copying from that amended draft, made the paper which actually was filed. That is, those emendations were honestly made before the application was filed, and not dishonestly afterwards.

They did not produce the Boston exhibit. They read what purports to be a printed copy of it, printed in the Dowd case, and reprinted in the other cases from the Dowd print. That contains both sets of words printed regularly in the same line thus: "may be used to signify indicate,"[1] and does not tell which of the duplicate words, "used" or "made," "signify" or "indicate," are the words in ink and which are the words interlined in pencil in that exhibit. The clerk of the Circuit Court has produced the exhibit, which is examined by this court under a stipulation made a year ago, and that shows it. Here is a fac-simile of one paragraph of that original Boston exhibit.



This tells the story. Now in every instance in that exhibit the fair-written ink words, as "used" and "indicate," "may be indicated" are the words of the patent, and the interlined words (which are in pencil) are the words of the older George Brown draft. The ink part is confessedly a copy of the ink part of the original application. The paper may have got into its present condition in consequence of some one, at some time,

[1] See p. 250, *supra*.

for some reason, interlining on that very paper (Boston exhibit) the George Brown words with a pencil; but neither it nor any paper of which it is a fac-simile (if in all parts it is a fac-simile) were produced by taking an ink copy of the George Brown draft and interlining the ultimate words of the patent. The very evidence they produce, when we look at the exhibit itself instead of the badly printed copy they rely on, destroys their whole charge.

As this charge was never made nor thought of until last week, it would be strange if the record showed how these interlineations got on to the Boston exhibit — whether they were put there by the Patent Office, as a copy of the original, or whether they were put there afterwards in pencil by some one who was comparing the application with the older George Brown draft, and got printed by mistake. It happens, however, that we know. A year ago, (February 18, 1886,) one of the counsel for the Bell company noticed this Dowd print and wrote to the counsel for the Drawbaugh company:

"The copy of the application is not printed correctly. I believe there are no errors in it which are of any importance, but there are some pencil marks on the copy that went to the printer in the Dowd case, with brackets, etc., and that got reproduced in your case."

This statement was accepted as correct, and by written stipulation the application was reprinted without those errors and the reprint put into the record. It was also agreed that this court "for greater certainty" might look at the original. On this correspondence and stipulation, those pencil marks must be taken as pencil marks accidentally made on that exhibit after it left the Patent Office.

My opponents did not refer to the Boston exhibit itself, but they found one other fact hard to encounter. The application in the Patent Office files to-day is fair-written in ink, exactly in the words of the patent, and without any trace of pencil interlineation. That record fact was fatal to the hypothesis of different ink words and pencil amendments in the original on file. They promptly met it by asserting that if their hypothesis and the official record were inconsistent, the

record must have been forged. So, to support the hypothesis of one forgery they offer the hypothesis of another. Indeed, they assert that it is easier to believe two forgeries than one. They say in their brief:

"Crime breeds crime. A foul deed perpetrated in silence and secrecy draws around a man an invisible line that separates him from his fellows. He is thenceforth set apart as the especial victim of circumstances. He is arrayed in a never-ending but unequal conflict with the terrible Nemesis of retribution. The stern necessity is laid upon him of unceasing vigilance, of daring unscrupulousness, and of reckless effrontery in the commission of further offences; for only thus can he stave off the inevitable end. Mr. Bell, notwithstanding his transcendent intellectual abilities, proves no exception to the rule. There is evidence in this record, ample, complete and demonstrative, that subsequent to the 10th day of April, 1879, a crime of the most atrocious character was committed in the Patent Office of Washington; that this was done for the sole purpose of covering up and concealing the evidence existing in that office of crime previously perpetrated there in February, 1876, as already outlined."

So, say they, when the certified copy of April 10, 1879, produced in the Dowd case in 1879, informed Bell that the paper in the Patent Office exhibited the ink words and the supposed pencil interlineations, supposed proof of his supposed guilt, Nemesis told him that all trace of those alterations must be suppressed. So they say that Mr. Bell, having seen these interlineations in the Boston exhibit in 1879, went or sent to the Patent Office and stole the whole file in order to conceal the proof of his guilt furnished by the pencil interlineations, and substituted a new, clean one, in place of it, and that that is the one there now. The one there now, they say, is the result of this second forgery and substitution.

There are fatal difficulties even on the surface of this view. If Mr. Bell's object was to conceal the interlineations of the Boston copy, nobody can explain why he voluntarily, on the witness stand, as part of his own deposition, produced that very copy and put it into the Dowd case and had it printed and published.

Yet that is what he did. And nobody could explain how he could hope to take away the much marked and interlined file of that patent, which they say was one of the best known papers in the Patent Office, examined by a great many people from curiosity, and substitute a new, different and perfectly clean one, and expect that it would escape detection. Their hypothesis does not attempt to account for these facts.

Our opponents tried to bolster up this fraud charge, and the charge that Wilber, who in fact did everything he could to hinder and stop Bell from getting a patent, was nevertheless Bell's tool, by reading a letter written by Mr. Bell a year previously about another application he had in the Patent Office. In that letter, Mr. Bell, speaking of a harmonic multiple telegraph invention as to which he was about to come in conflict with Mr. Gray, wrote to his father and mother that he was just filing his application for it, and that his lawyers were doubtful whether the examiner would even declare an interference between him and Gray, "as Gray's apparatus had been there for so long a time." On that they argue that Wilber, the examiner, was even then their tool and showed them Gray's apparatus and told them it had been there a long time. The fact, however, turns out to be that Gray's *application* had not been there forty-eight hours, but that Gray's *apparatus* had been described in a number of newspapers for several months, and had been — not on file in the Patent Office but — on public exhibition in many places, including the public hall in the Patent Office. That was the fact which Mr. Bell referred to in his letter, by the phrase "as Gray's apparatus had been there for so long a time."

They next ask the court to judge Mr. Bell by his subsequent conduct. They say that if there was no fraud perpetrated on Mr. Gray in the Patent Office in 1876, Mr. Bell might be expected to honestly state to the world the subsequent history of his experiments and inventions, and that whether he did so or not would be a good test of his honesty at the outset. Thereupon they assert that he suppressed the fact that a few days after he got his patent he made his first liquid transmitter and got speech with it, and that this was only wrung from him

years afterwards on cross-examination. I agree that his conduct is a good test, but it was exactly the contrary of what they aver. Instead of concealing the liquid transmitter, he within sixty days, in May, 1876, described it in a public lecture, printed the lecture at once, and sent a copy of it to Mr. Gray (whom he knew as an electrical inventor and his rival in harmonic telegraphy), and Mr. Gray testifies that he received it. He exhibited the instrument at the Centennial in the summer of 1876. Again, in his interference proceeding with Gray, in his preliminary statement, made in 1878 and printed in this record, he voluntarily told Gray, the Patent Office and the world that he made his first liquid transmitter in Boston on March 10, 1876, three days after his patent; and that statement has been before the community and before all the parties in all the cases for nine years.

In truth their own "Nemesis" seems to inspire the authors of this charge. They assert an infamous crime, and when every official record disproves it they reply that every record must have been forged. The Boston exhibit they rely on disproves the forgery, so they offer a misprinted copy of it, and they suppress or misstate the subsequent conduct which they say would prove or disprove the charge.

The George Brown specification. — Mr. Bell wished in 1875 to take out English patents at the same time as his American patents. He had no money, and Mr. Hubbard would not assist him in England. But the Hon. George Brown, of Toronto, a friend of his family, became interested in him, and chiefly as a matter of friendship agreed to take out English patents for him, and pay the expenses on certain terms. So he was to take all of Mr. Bell's specifications to England, which country he was about to visit. The inventions which he thus expected to patent were not the speaking telephone alone, but all Mr. Bell's electrical inventions, which were put into five long specifications, chiefly filled with the multiple telegraph. Mr. Bell was so much in need of means of subsistence that Mr. Brown agreed to allow him twenty-five dollars a month for his support for six months, while the patents were being taken out. As soon as Mr. Brown ex-

pressed his willingness to make this agreement, (September, 1875,) Mr. Bell went to work on his specifications, and his work resulted in one draft which he used for his American specification, and another draft which he gave to Mr. Brown to take abroad. The use which our opponents make of these drafts which are in the record, is this: They find — and such is the fact — that the liquid transmitter and the thirty-eight other words already referred to, are not in the George Brown specifications taken abroad. They say, *arguendo* (and this inference was never hinted at till a week ago) that the American specification as filed was probably the same as the George Brown specification; and therefore they conclude, *arguendo*, that the American specification as filed did not have a liquid transmitter in it. If that be the fact, then the liquid transmitter which is now in there must have been put in afterwards, — and, therefore, by forgery.

To begin with there are two answers which of themselves dispose of this. One is that the liquid transmitter part of the application and patent is not of importance. Figure 7 (the magneto speaking telephone) and the description of it which is in both papers, contains the whole broad invention and embodies the broad general principle. The broad fifth claim rests equally well on that instrument and description, whether the liquid transmitter be described in the application or not. The liquid transmitter is merely an alternative form in the nature of an improvement. It might be put in or left out of the patent without any legal consequences. Indeed, they argue that the description of the liquid transmitter in the patent is so vague and imperfect that the law cannot read it, and must treat the specification as if it were not there. Moreover, as an instrument, it is of a form which of itself is not of the slightest practical importance, for it is too inconvenient to be used. A second answer is that there is written proof that Mr. Bell invented the plan of producing his articulating current by variations of resistance, which is the particular subordinate principle employed in a liquid transmitter, ten months before he took his patent, and nine months before Gray began to think of the subject, for in a letter of May 4, 1875, printed

in the record, he mentions the plan of varying the resistance as an improved means of transmitting speech by electricity. So this resort to the hypothesis of theft and forgery leads to the conclusion (and to no other conclusion) that Bell stole from Gray's caveat that which is of no legal or practical value, and the essential idea of which Bell in substance had and described in writing nine months before Gray's caveat was thought of.

The history of these papers is as follows: Mr. Bell made a draft of his specification in the fall of 1875, immediately after his first negotiations with Mr. Brown, in September, and he made at least two copies of it. On December 26, 1875, at Toronto, he made his final contract in writing with Mr. Brown, and immediately went back to Boston and sent a copy of all his specifications to Mr. Brown, including one of the two drafts of the speaking telephone specifications. He kept on working on the other draft which he had retained in order to send to his patent solicitor in Washington, and, during the month of January, 1876, the idea of the variable resistance transmitter again came into his mind, but now in the form of the liquid transmitter, which he then and there wrote into the draft of his American specification. This, we say, was after the George Brown specification had gone to Canada; and that is the reason why that feature is in the American specification and not in the George Brown specification.

That the paper for Washington was revised, and that the other was left untouched after the two copies were first made, is a fact proved in the case. The two papers probably were once identical, or nearly so. But the specification filed at Washington (as shown by the present file and by the copies already referred to) differs from the Brown specification in thirty-eight passages. Most of these differences are of no legal importance, and consist in the substitution of simpler and more concise or more happy words and phrases in the American specification, showing that in its present form it was the result of studious revision bestowed upon that particular paper after the time when the two were identical, and that, for some reason, these emendations were never transferred to the George Brown paper.

But, say they, Mr. Bell met Mr. Brown in New York on the 25th of January, 1876, the day before the latter sailed, and if he then had the liquid transmitter, in his American specification, why did he not write it into the copy that Mr. Brown had? It is not difficult to understand why. Mr. Brown, as a kind and friendly act, was going to take out patents on all the electrical inventions Bell had made — contained in five long specifications, with the speaking telephone tacked on to the last end of the last of them. That particular invention had not assumed importance in Mr. Brown's eyes, because Mr. Bell had told him that his practical success with that instrument was insignificant, and Mr. Brown, a busy man and a newspaper editor, without the knowledge to appreciate the scientific perfection of the invention, did not realize that anything would ever practically come of it. The multiple telegraph, which would send many messages at one time and was in a working form, was what he wanted. Any one not a man of high science, and not capable of appreciating the scientific perfection of Mr. Bell's ideas, would have said at once that he dismissed the muttering thing, as Mr. George Brown did, and paid no attention to it. So, when they met in New York, just as Mr. Brown was sailing, Mr. Bell did not attempt to correct the papers. Probably they were at the bottom of Mr. Brown's trunk, and Mr. Bell did not see them. We know that none of the thirty-eight emendations were transferred to them. Mr. Brown took the papers with him to Europe; never patented anything; brought them all back; and when the controversy began he returned them to Mr. Bell, and Mr. Bell himself voluntarily put them in evidence as part of his own deposition. Yet they want you to believe that those papers, voluntarily offered by Mr. Bell, contained, and that Mr. Bell knew they contained, positive proof of his forgery.

I said that Mr. Bell sent the specifications to Toronto to Mr. Brown in the first two or three days of January, 1876, and did not put the liquid transmitter in his American specification until a week or ten days later. Mr. Hill's brief, p. 217, says, "the American specification was completed between

January 1 and January 10, 1876," Mr. Bell having testified that it was about January 10 when he sent his draft to his solicitor in Washington. That that was the time when he put it into his American specification is sufficiently fixed by the testimony. That the papers went into Mr. Brown's hands in the first few days of January is not specifically sworn. Mr. Bell testifies that it was between the date of his contract, December 26, 1875, and the 25th of January, the day when Mr. Brown was in New York to sail. We had no occasion to verify the precise date when the papers went, or how they went to Mr. Brown — whether handed to him in person or put into his hands through the mail, — because no conflict ever arose in the case which made the precise fact important. But whatever I do or do not know outside the record, I am at least at liberty to suggest this explanation; and it is vastly more likely that Mr. Bell, having made the contract with Mr. Brown, and knowing that Mr. Brown was immediately to sail for Europe, rushing back himself to Boston, should at once have sent him the specification which he had prepared, than that he could have gone on committing forgery after forgery, and then should himself voluntarily, and in his own deposition, put into all the cases, and lay before all his adversaries, the very papers which they say he knew proved his fraud.

All the record proof is conclusive in our favor. All the positive testimony is conclusive in our favor. The sole argument on the other side is that if we do not fortify the record proof by the inferior proof from recollection on points which no one has ever questioned, the court must assume that we forged the record.

The McDonough defence. — McDonough read of the Reis apparatus. He copied it, making a simple form of Reis circuit-breaking transmitter, with a somewhat improved receiver. Six weeks after Mr. Bell had got his patent McDonough filed an application saying that speech could be transmitted by the simple make-and-break of Reis. Then he got up a company, not to use his instruments, of course, but to use the modern microphone which others had invented, and to use him as a

"prior inventor." He has been enjoined. His case has been decided against him in the Patent Office, after a long litigation, and in the courts. He is a copyist of Reis; that is the end of his pretension.

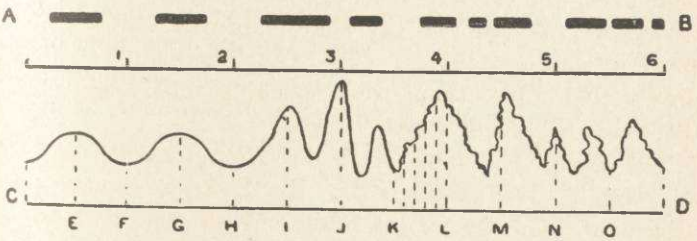
The Varley patent. — Varley made a multiple harmonic telegraph, and patented it as such, in terms, in 1870. Nobody pretends that speech can be transmitted by that apparatus however operated, or by any instrument possessing the mode of operation which Varley describes. But he used the word "undulation" once in his patent, and Mr. Bell uses the word "undulation"; and the current produced by every dynamo machine since dynamo machines were made, may in a sense have the adjective "undulatory" applied to it. That is the resemblance, and the only resemblance, between these three contrivances. You might say that it proves that all of them were dynamo machines. The Clay company says that it proves that all of them were speaking telephones. That is the whole argument about Varley.

The *Holcomb* defence, and the *House patents* as defences are specifically abandoned by Mr. Lowrey, counsel for the Molecular company, in his brief, and no one insists on them. Holcomb made a Morse telegraph relay, and patented it as such in 1865. He tries to swear it into a speaking telephone, but the Circuit Court found his story false. House made an improved Morse telegraph relay, and patented it as such in one form in 1865 and in another form May 12, 1868, and both patents are in the case. But it can no more transmit speech when performing the kind of operation his patent describes than a Morse telegraph can.

The graphic representation of electrical currents. — I wish to explain the usual symbolical representations of electric currents. Here at AB is the ordinary representation of a "broken" current, — a succession of dashes or dots, as may be, separated by spaces. That total length from A to B does not represent a line wire, or symbolize a line wire with little fragments of electricity travelling along it one after another like successive drops. The length of line occupied by these dots and dashes represents time; not space or distance. This rep-

resentation symbolizes the idea by the methods of analytical geometry.

It means, assuming that the whole distance AB represents a minute or any other unit of time, that for so much of that period of time as is represented by the length of one dash compared with the length of the whole distance, the current is flowing; not flowing over a little piece of the wire, but flowing over the whole wire for that short period of time. Then there comes a second period of time when there is no current anywhere on the line-wire, and the length of that period is represented by the length of the blank space. Then again a third period of time when there is a current over all parts of the wire, and so on.



We can go a little further than that. When we have Mr. Bell's undulatory current, which consists essentially of a current flowing continually (or without breaks unless they are so infinitely short that we consider it as flowing all the time), but varying in its strength, we can express it by a block with a level base and a curved upper edge.

CD, in the lower part of the foregoing diagram, represents such a current. The strength of the current at any one instant is represented by a line equal to the perpendicular height (the dotted line) from a particular part of the curve to the base line; at another instant the strength of the current is represented by the length of a line which extends from another part of the curve to the base line. This figure does not mean that the current is thrown into a succession of waves, ten, or twenty, or thirty, on a wire like the waves of the sea; it means, for all practical purposes, on any lines used

in telephony, that the current through the whole wire is, in all parts of it, of a certain strength at one instant, and that at another successive instant, it is either weaker or stronger, as the case may be. For example, if the lengths C E, E F, F G, &c., represent seconds of time, then the strength of the current at the end of the first second would be represented by the length of the dotted line E; at the end of the second second by the length of the dotted line F, and so on. The parts at M, N, O indicate by the frequent changes in the curve that the current changes its strength very frequently, and in a very irregular manner. This diagram, therefore, is not a picture of anything that exists, but is a symbolical statement of an idea, or of a succession of measurements of the strength of the current taken at successive instants.

Thus time, and not space or distance, is symbolized by the lengths A B or C D in both cases, and the dimensions or shape of the blocks or of the curve express either that for a certain length of time there is a current and then none, as at A B, or there is always some current, but for one length of time stronger, and afterwards weaker, as at C D.

The "Spurious Brood" of decisions. — The defendants say that all the decisions of the circuit courts in the cases are a "spurious brood," resting on an "assumed decision" of Judge Lowell in Spencer's case, based, they say, upon an unwise, if not a dishonest admission. In Spencer's case Judge Lowell said that Bell "is admitted in this case to be the original and first inventor of any *mode* of transmitting speech electrically." That was "admitted" by Professor Henry Morton, the defendants' principal expert in that case, on the witness stand. Professor Henry Morton again comes on the stand as an expert witness for the Overland and Molecular companies, and repeats what he said in Spencer's case. Every other expert witness for the defence in any of these cases agrees that no *mode* for transmitting speech is described in any publication or any patent before Bell's patent (this is what Professor Morton and Judge Lowell were talking about), and all the judges have agreed with Judge Lowell. In the Molecular case, Judge Wallace said that the additional testimony of Professors

Young and Brackett, experts for the Molecular and Overland companies, only served to confirm Judge Lowell's opinion that Reis did not invent the speaking telephone. The attack they make on the decisions is therefore disproved by every expert who has ever testified on either side in any of these cases.

Breadth of the invention and of the patent. — The whole argument in this case can be shortly illustrated. Galileo made a telescope by combining two well-known forms of lenses with each other in a certain manner, by which the eye was enabled to see at unnatural distances, just as the ear is enabled to hear at unnatural distances by Bell's telephone. His telescope was not so good as you can now buy for twenty-five cents of a street pedlar; and the lenses of which he made it could be bought in shops at his time. But what he did was to fasten these two lenses in such relation to each other that, according to the law of God he discovered, they constituted a telescope. It distorted the things that he looked at, but for the first time it brought them near. If he had taken out a patent for it, he might have made for it this claim: "What I claim is a method of and apparatus for seeing telescopically, by causing the undulations of light to be converged upon the retina, substantially as described." That paraphrase of Mr. Bell's fifth claim would be a good claim for that telescope.

Then ingenious men made vast improvements which enabled their telescopes to do what Galileo's never could have done, and they have reached the great Lick telescope in California. If my opponents could examine that telescope to-day with Galileo, what would they tell him about it? They would acknowledge that it is a telescope because it has objective and eye-piece lenses put in that relation to each other which Galileo first thought out. But Dolbear would say that Galileo's patent discloses the only method possible for seeing telescopically, and that method, strange to say, does not defy the laws of nature, but conforms to them, and therefore the patent ought to be void. At any rate, says Dolbear, the objective of the Lick telescope is made out of two pieces of glass, — one of crown and one of flint glass, — instead of one, as Galileo's was, and therefore I ought to have leave to use Galileo's dis-

covery if I will make my lens of two different kinds of glass instead of one.

Then comes the Molecular company, and they say that they are willing that Galileo should keep the bad telescope he made in his lifetime, and they will admit that he is the first inventor of that, or of any telescope, if he will only permit them and all other persons to "have access to the universal storehouse" through the door which he found and opened.

Then come the Overland and the Drawbaugh companies, and they say that Galileo never invented anything, but was only a thief and a forger. Indeed, they point to the fact that he was cast into prison; and a man who has done all that ought to have his patent taken away and be sent to the penitentiary.

And yet that great Lick telescope reveals the utmost secrets of the universe, because it follows that law of nature and that rule which Galileo laid down and embodied in the arrangement of his two bits of glass.

The Drawbaugh case. — The chief part of the appellant's argument on this is simply an assertion that the decision of the Circuit Court consists of astounding misstatements of proved facts. The first instance asserted is that Judge Wallace found that Drawbaugh wrote his own autobiography for the county history; whereas they say that Judge Wallace when he wrote that opinion had in his desk the original manuscript of that autobiography, in the handwriting of a certain Mr. Hull, now dead. It is true that he had that paper. But it is also true that Drawbaugh agreed to pay for the publication; that he agreed to furnish the autobiography; that he employed Mr. Hull to write it out for him; that the publisher of the history neither wrote it nor paid for one word of it, but received it in manuscript from Drawbaugh himself; and that very manuscript in question was produced by Drawbaugh on the cross-examination of one of our witnesses, without any attempt on his part to deny that he employed Hull to write it and that he furnished it himself to the publisher. All this is specifically testified to, and no witness denies it.

Then they charge that the circuit judge's statement as to

Drawbaugh's property was entirely wrong. They say the fact is that Drawbaugh owed vast sums of money; and they prove this by printing in a table how much he owed in 1869, and how much in 1870, and how much in 1871, and so on, making apparently a large total. The fact is that with a few unimportant changes it was the same debt that ran through all these years, and most of it was for indorsements which he never paid, and never was called upon to pay; so that the total which figures in their brief at about $14,000 represents an actual debt of about $500.

Then they attack Mr. Matthews's deposition, which Judge Wallace thought of considerable value, by asserting that Mr. Matthews wrote a letter (which was before the court) stating that no reliance ought to be placed on his recollection of the facts thus cited by the court. He made no such statement. The letter is in the record. It confirms Mr. Matthews's deposition explicitly. It repeats that he is sure from what Drawbaugh told him in 1878 that he is not the inventor of the speaking telephone. It also says, as to one little matter of detail, that he is not sure whether on that occasion Drawbaugh merely showed him the instrument lying on a bench, or took it up and placed it in his hands; and he does not want his testimony in that respect relied on if that matter is of any importance. It was not of the slightest importance, and had nothing to do with the very important matter for which he was called. Judge Wallace said that that letter only showed Mr. Matthews's scrupulous honesty, and added value to his deposition.

The Drawbaugh frauds. — There is no doubt that Drawbaugh at some time made all the exhibits put in evidence on his behalf, for he produced them himself in the case in 1881. But how long before 1881 he made them is another matter. A large number of his witnesses are specifically proved to be entirely mistaken about their dates. With nothing to fix them by except mere arbitrary association, one man thinks it was in 1875, because he sold a bushel of potatoes in that year, and so on with others. It is absolutely proved about many of them that the visits to Drawbaugh's shop when they first saw tel-

ephones were after the Bell patent instead of before. He made all these things, and had them with many other things at his shop before 1881. But whether the picture as given by the witness is in long perspective or is foreshortened, — whether they look at what they have seen through a true memory which would find them all between 1876 and 1881, or invert the opera glass and stretch out this history as far back as distortion can carry it, is the whole question. There are several of these witnesses who are specifically proved to have been debauched by Drawbaugh personally in the most infamous way; and that is enough to end his character. The Circuit Court below so found.

The great argument of the other side is: Here are fifty witnesses: suppose a pistol exploded in a man's ear: it is true that he might forget the date of the pistol explosion, and generally would, but he could not forget the explosion. Even that argument does not touch their case. An electric telephone, whenever they saw it, was not anything very startling to these witnesses. To a man of science it was. But these men had heard a string telephone in the village, and an electric telephone was no more astonishing to them. But no matter how startling it was, that is no reason why they should associate the true date with it. That they heard a pistol does not tell them when they heard it. I do not think that any man in this court room could tell me the year when he saw Donati's comet, the most startling celestial phenomenon of our generation; nor the date of the great transit of Venus, visible here within the last ten years. This man had his shop full of all sorts of contrivances which the country witnesses neither understood nor cared for, and they cannot for the life of them tell in what year they saw any of them, or give you a picture that you can rely on, with name and date of what they did see.

The evidence shows that Drawbaugh is a charlatan, surrounded by persons who have used him for dishonest purposes. The story is that in his shop, before he went to the Centennial, (for he made a visit there in the last half of October, 1876,) he had the most perfect collection of telephones that had ever

existed in the world, even up to the time this suit began in 1881, — the perfected Bell transmitter and receiver, with all Bell's latest improvements in all their minute details; the Edison carbon-powder telephone; the carbon microphone, which has made Berliner, and Edison, and Hughes famous; and, finally, the Blake transmitter, with all its marvellous delicacy of detail, — except those parts which the eye does not see and which never got into Drawbaugh's instruments. He says that in that year he went up to the Centennial to see Mr. Bell's telephone, which he had read of, and spent five days there; that he went with his friend, Mr. Leonard, his neighbor for ten years, the richest man in the village, and he saw Bell exalted to the heavens for his feeble instruments, when he himself had then all the improved and perfected forms, which all the genius of the world spent the next five years in inventing; and yet he never opened his mouth to anybody at the Centennial, not even to Mr. Leonard, his neighbor who went with him. Mr. Leonard, his neighbor and fellow-traveller, did not know that Drawbaugh had a telephone at that time. Then he came back and laid a plot to sell to Shapley, his friend and neighbor, as his own invention, the right to patent the Bain electric clock, which he had copied out of Tomlinson's Encyclopedia, twenty years old; and he never told Mr. Shapley he had invented the telephone, or that he wanted money to exploit it.

Late in 1878 he formed a partnership between himself and one Chellis, who kept a ninety-nine cent store in Harrisburg, and Moffitt, an erratic dentist. He had then a plan for another improvement in an already improved molasses spigot; and, according to their present theory, he also had all these enormous inventions right there in the same room, where they had been perfected, as every one knew, if their story is true, before 1876. What he was really doing with the telephone at that time was trying to improve the telephones that Mr. Bell had invented. That part of his history — that he was then trying to improve the telephone — got into the local newspapers, and cannot be sworn away.

These two proposing partners looked over the contrivances

he then had, in December, 1878, when Bell's telephones were in extensive use, — his improved telephones and his molasses spigot, — and they said they would rather take the molasses spigot. Why? Because, said they to him, "Bell has got a patent on the telephone, and you cannot anticipate him." And yet one of these men, Moffitt, had been Drawbaugh's bosom friend for ten years, a frequenter of his shop, had known all of his inventions, and now comes with the story that he knew Drawbaugh's telephones and talked through them years before Bell was ever heard of. The two partners talked with him a good deal about this in December, 1878, and early in 1879, and they said to him, "You cannot antedate Bell;" and Drawbaugh replied, "I don't know." They discussed the matter again — this old friend Moffitt and Chellis — and they said, "No, you cannot," and would not touch it, but took the molasses spigot. Now, in 1882, comes Chellis as the man who produced Drawbaugh to the world and sold him out for a defence to these infringers, and Moffitt as one of his chief supporting witnesses, and they say they know, and there is not a doubt about it, that he antedated Bell by ten years.

They had an interference controversy with Hauck about priority in the molasses spigot, and they went into that and had a fight in 1879. They had the same counsel they have got now, — Mr. Jacobs and Mr. Hill; and they beat Hauck and went into the business of making molasses spigots, at a great expense, when, according to the story they now tell, they had there in that room, and had had for ten years, this great invention, and everybody knew it. But they either did not know it then, or did not know it enough to put a dollar into it. Presently they thought they could make a speculation out of Drawbaugh's story. They now say that they found in 1879 that instead of working on this spigot he was spending all his time on the telephone. What was he doing? Why, if their story be true, he had made his most perfect instruments two or three years before that, and never added to them afterwards. If their story is true, his work was completed. But he was working on them then. The newspapers of the day said so. I have no doubt he was working on tele-

phones in 1879, and that it was then, and not in 1876, that he was making the Blake transmitter. But Chellis then knew that he could not speculate on Drawbaugh's "prior invention" of the telephone, for he had talked with Drawbaugh, and he had talked (all this is in Chellis's deposition) with Drawbaugh's wife, and the result he came to was that he "could not antedate Bell," and it was not worth while putting a cent into the telephone.

By and by he met Shank, and asked him, and Shank said, — Why, Dan had been at work on it many years, perhaps as far back as 1870. That was news to Chellis; he had only been getting his information from Drawbaugh himself, and Drawbaugh's wife. The result was that when they took testimony they put on the stand Shank as their first witness, and then the witnesses whom Shank had hunted up, and they swore it back; and after they got through a crowd of such men they called Drawbaugh to the stand and asked him if what these men had sworn to was not true; and the best that can be said for him is that he would not deny it.

When they got Shank, and Chellis thought there was a chance of speculation, he sent for his counsel, Mr. Hill, and they looked it up together. It would have cost them thirty dollars to make two applications — fifteen dollars for the telephone, and fifteen more for the microphone. The two years statutory limitation had run against the telephone in 1879; but it had not run against the microphone; and if there is a word of truth in Drawbaugh's story, there would not have been the slightest difficulty of proving in 1879 when he had his microphone; and there could not have been the slightest difficulty in proving that he had had telephones before Mr. Bell, for Mr. Bell's telephone was only three years old, and the microphones of Berliner and Edison about two years old, and everybody knew this. Moreover, they all knew the great fight which was raging at that very time between the Western Union and the Bell companies. They had no occasion to spend any money. All they had to do was to take their story to either the Bell company or the Western Union, and they could have got a million dollars for it just as it stood, if they

could have got either of those companies to believe it. But they knew too well to try that, for responsible companies do not buy stories until they have been sifted.

So this syndicate concluded that they would not spend thirty dollars, although the statute was running against them; and they would not offer their story to any corporation that might examine it; but they would make a partnership, and they would get Drawbaugh to give them three-fourths of his story for nothing, and then they would sell it to this People's Telephone Company, which paid them $20,000 cash and a lot of stock, without stopping to take the opinion of counsel or to spend so much as a half a day in investigating the story. All this was done. It is proved in the record by the deposition of Chellis himself.

It was a good speculation also for this company which purchased this falsehood. It at once issued five million dollars of stock on it, and with some of the money they got from selling that stock they for the first time applied for patents — on July 22, 1880. They published a proclamation, and we sued them, and they came before the Circuit Court in New York in October, 1881, with a bagful of affidavits, and we challenged them to produce them, and they said they would risk an injunction rather than produce them. They were wise, because the moment they put those affidavits before the court the affidavits and the story would have been spoiled, and no more stock could be sold on them. So they kept them back and sold stock on their "prospects."

That is the genesis and the history of this Drawbaugh speculation.

One of the frauds which illustrates their case is the water ram story. It became advantageous for them to prove, in order to fix a date, that the owner of a particular farm set up on it in 1875, for the use of a particular tenant, a water ram made by Drawbaugh. They got the owner, misled by a false association with the date of a lease, and forgetting a later lease of the farm to the same tenant, to swear that it was put in in 1875; and then they put more than thirty witnesses on the stand to swear to their own positive recollection of the

same thing. The whole story was a falsehood. Mr. Draper, the owner, came back on the stand and admitted his mistake. The bills for the pipe for the ram, and the freight bills on the railroad, and the receipts on the railroad books, all dated in 1878, and correspondence between the owner and his farm agent, written in December, 1877, complaining that the ram was not in, were found by us and produced. Drawbaugh himself made the ram and put it up, and had all the accounts and dates of it, but would not come forward himself to swear to any dates about it. Finally they had to abandon the fiction and admit that it was put in in 1878. Yet Drawbaugh, with this knowledge, and after he and his partners had seen these papers, procured these men to swear it back to 1875.

Then the Hunnings transmitter fraud was of the same character. They attempted to deceive Judge Wallace in open court, and then attempted to deceive this court in the Philadelphia tests, by smuggling the Hunnings invention inside their broken tumbler instrument F. We detected the fraud and exposed it; and if there had ever been any moral character to the case before that, this would have destroyed it.

[In closing, *Mr. Dickerson* contrasted the united recognition of the value of Mr. Bell's inventions by the scientific world of Europe, with the attacks upon him in the defence of these suits.]

Mr. Causten Browne for Dolbear.

It has suited the convenience of our opponents, in the course of their argument, to speak of the several appellants whose cases are before the court, as having contributed each an ingredient, so to speak, of a certain mixture to be used for the common behoof against the health of the Bell patent. That is a figure of speech. It is also, if they will pardon me, a fiction. So far as I am aware, no one of the appellants in this case has any right to speak for any other. I certainly know that nobody has any right to say anything for the Dolbear interest, except Mr. Maynadier and myself. The court will remember that these cases were grouped together upon