

Mr. Storrow's Argument for American Bell Telephone Co.

Mr. James J. Storrow for the American Bell Telephone Company in reply to the arguments about the Drawbaugh defence.

The story as told.—Drawbaugh's story and the recollections of his witnesses, if they are reliable, come up to this: That for eight years before the Bell patent he had electric speaking telephones at his machine shop at Eberly's Mills, three miles from Harrisburg, the capital of Pennsylvania, and with them transmitted speech so well that the common country farmers coming there could and did use them, speak into them, and understand all that was said; and that this was known to hundreds of persons, in Harrisburg and all that part of the country. If that is not true in the fullest sense, then the testimony of himself and his supporting witnesses tells a false story. Yet it is a part of his history, put into the answer, testified to by himself, agreed to by every one of his witnesses, that not one of his telephones was ever used for any useful purpose whatever. He never actually took one outside of his workshop until long after the Bell patent. He never offered a single one to a human being to use, and not a human being had ever asked for one to use, when this suit was brought in October, 1880, long after the Bell instruments had gone into extensive commercial use. He did not himself, even, apply them to any useful purpose. They were not arranged so that he could speak to his workmen from his office, nor call from his shop to his house. According to his own story, they were kept in a box, and all he ever did was to take them out from time to time and connect them to wires running from one part of his shop to another merely for the purposes of experiment, or to gratify curiosity. It is thus a part of the case which he asks the court to believe that these instruments, for eight years before the Bell patent, were known to hundreds of people, and were matters of common talk all over his county and in Harrisburg, the capital of a great state; yet it is another part of his story that this great invention, perfected, they say, in his shop and thus made known, never led to the use of a telephone by any human being; though it is also a part of their story

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that he recognized that the invention was of surpassing interest and enormous value—sure to bring fame and fortune to its makers. They say in their answer that nobody had ever transmitted speech, even up to the time their answer was filed in January, 1881, “by reason of any information derived from Drawbaugh,” and that all the telephones which had been used in the world were the result of “independent inventions by other persons,” and were not due to Drawbaugh.

It seemed to us impossible that a practical telephone, successfully operative, could have been known to that community, within three miles of Harrisburg, for eight years before the Bell patent, and left no mark. Mr. Bell's feeble instrument at the Centennial made him instantly famous all over the world. As soon as he offered his telephones to the public they went out by the thousands, and all men since have been trying to infringe his invention. Such an instrument, so easy to make when once it has been invented, so cheap, so simple, which everybody could use, so interesting in itself and of such obvious utility, could not help publishing itself if it existed. It is obvious that this must be so, and the experience of Mr. Bell shows that it was so. Judicial experience has taught the courts that there is no better test of the existence of such an invention.

To make out this story, its propounders rely upon absolutely nothing but the deposition of Drawbaugh himself and the mere bare recollections of ignorant countrymen, no one of whom had the least idea even of the mechanical structure of the instruments which they say they saw, and which none of them took any interest in. There is not a scrap of paper nor one of the events which would necessarily arise out of the existence of such instruments as he says he had, to confirm the story. Nothing but bare recollections are produced for Drawbaugh.

Advent of the Drawbaugh claim.—In July, 1880, when more than a hundred thousand Bell telephones were in use, a company of stockholders who had bought up Drawbaugh's pretensions—Marcus Marx, Simon Wolf, Moritz Loth, F. A. Klemm, Edgar Chellis, M. W. Jacobs, and Lysander Hill—filed an application in the Patent Office, and published in the newspapers a proclamation that they had a vast number of

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affidavits to support their claims, and a "cash" capital of five million dollars, and "within sixty days would drive out all the telephones in the market, save the one they held, or else compel the Gray, Bell, and Edison lines to pay the new company a munificent royalty." That was the first time the world at large had ever heard that Drawbaugh had a telephone, or that he claimed to be the inventor. The "cash" capital was a humbug—there was none. The sixty days was a humbug; for they were enjoined on their first telephone, and have put out none since. Was the rest of their story any better?

They were promptly sued (October 20, 1880), and a preliminary injunction granted. When they came into court, it appeared from their testimony that they had not used, and never proposed to use, Drawbaugh telephones. Marx, Wolf, Loth, and Klemm formed their association before they had heard of Drawbaugh, intending to use telephones of a form devised in 1879 by Klemm, one of their number, and those were the only telephones they had employed. They were early advised that they plainly infringed the Bell patents, and that they could not prosper unless they could find not only a telephone, but a "prior inventor." Whereupon a gentleman in Washington who had been counsel for Drawbaugh sent them to Harrisburg. They found that a few days before their visit, Chellis, keeper of a 99-cent store in Harrisburg, and Mr. Lysander Hill, and Mr. Jacobs, then counsel for Drawbaugh and Chellis in litigation about a molasses spigot invented by Drawbaugh and now counsel in this case, had acquired Drawbaugh's pretensions by a contract for which they paid him nothing; so the syndicate bought from them. The only contribution, therefore, the world has received from Drawbaugh consists in depositions furnished by him to help these infringers in a career of infringement they had embarked in before they heard of him.

The story told in their answer is that telephones made and used by Drawbaugh for communicating "between distant points" in and before the year 1874, are "still in existence, and capable of successful practical use." All of this is untrue. "Distant points" dwindle to fifty feet between one part

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of his workshop and another as the only use pretended, and the exhibits produced are so destitute of working parts that it is impossible to transmit any sound with any pair even alleged to have been made before 1875. To attempt to transmit any sounds whatever, therefore, with any instruments like those which he says he had before the close of 1874, "reproductions" must be made; and the essential working parts for those reproductions cannot be now constructed, nor their original character learned, except from Drawbaugh's own deposition. For not one of his witnesses knew, or had the intelligence and skill to know, how the instruments were constructed, still less the nature of the operation they performed.

Drawbaugh has taken in this case about four hundred depositions, and we have taken two hundred, scattered along through nearly four years of preparation of the case. The first testimony was taken, and his exhibits first produced, in April, 1881. Drawbaugh's own deposition was begun in December, 1881. The proofs were closed in June, 1884. The case was decided in favor of the Bell patent at the circuit, December 4, 1884. All the testimony had been stipulated into the *Overland* case, then pending, and as the proofs in that case were not closed, the Drawbaugh Company took in that case more testimony about Drawbaugh after the first decision. That was laid before Judge Wallace by consent, and argued to him in December, 1885, when he affirmed his former conclusions. Thus, the defendants not only had every opportunity to take testimony during the progress of the case, but after it had been decided, by the accident of another case pending, they were enabled to take more testimony. If proof existed, they could then have rebutted every conclusion drawn by the court. That they did not even attempt to do that, except in two particulars where they broke down in a manner which destroys the moral character of the defence, is conclusive that no fact or proof exists which can control that decision.

The Drawbaugh Company have made a show of a large number of witnesses, but the mere oral testimony alone, considering the character and standing of the witnesses, their relation to Drawbaugh and their means of knowledge, is much

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stronger against Drawbaugh than it is in his favor. But such a case as this does not turn on oral recollections. In *Atlantic Works v. Brady*, 107 U. S. 192, and many other decisions spread in our brief, the rule has been laid down from the time of Whitney's cotton gin until now, that upon a claim made late, after a patent has gone into extensive use, when its profits offer a great temptation, when the invention itself is one which, whenever made, necessarily appeals to the curiosity, to the desire, to the convenience, to the wants of every one, mere oral recollections never yet established a case. The court looks at the probative effect of the man's acts. If the invention is one which in its nature publishes itself, then, if the marks of publication are not found; if the invention is one which goes into use of itself, and marks of use are not found; if it is one calculated to affect the action of the community, and indelible marks in the community are not found, — the courts do not believe the story. If they cannot read the telephone in the events of his life, they will not accept it from his deposition. *Atlantic Works v. Brady*, 107 U. S. 192, 203; *Wood v. Cleveland Rolling Mill Co.*, 4 Fish. Pat. Cas. 560 (Swayne, J.); *The Cotton Gin case*, quoted in *Motte v. Bennett*, 2 Fish. Pat. Cas. 642; *Howe v. Underwood*, 1 Fish. Pat. Cas. 162 (Sprague, J.); *Johnson v. Root*, 2 Fish. Pat. Cas. 292 (Clifford and Sprague, JJ.); *Cahoon v. Ring*, 1 Cliff. 592; *Hayden v. Suffolk Co.*, 4 Fish. Pat. Cas. 94 (Sprague, J.); *McCormick v. Seymour*, 3 Blatchford, 213 (Nelson, J.); *Seymour v. Osborne*, 11 Wall. 516; *Aultman v. Holley*, 11 Blatchford, 317 (Woodruff, J.); *Colt v. Mass. Arms Co.*, 1 Fish. Pat. Cas. 116 (Woodbury, J.); *Perham v. Am. Buttonhole Co.*, 4 Fish. Pat. Cas. 468 (Strong and McKennan, JJ.); *Smith v. Fay*, 6 Fish. Pat. Cas. 542 (Emmons, J.); *Brown v. Guild*, 23 Wall. 181.

The rules of law go further. If the evidence which the enormous record of this defendant presents does not come up in quality as well as in quantity to what his story would afford if true, the record does not tend to prove that story, but disproves it. If the testimony taken as a whole substantially falls short of what the story, if true, would afford, it disproves the claim. Lord Mansfield said: "Evidence is to be weighed

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according to that which it is in the power of one party to produce, and of the other to contradict." Cowper, 65; approved in *Smith v. Whitman*, 6 Allen, 564. The same rule was enforced in *Clifton v. United States*, 4 How. 242; *Standard Measuring Machine Co. v. Teague*, 15 Fed. Rep. 390; *Commonwealth v. Webster*, 5 Cushing, 316: *S. C.* 52 Am. Dec. 711; *McDonough v. O'Neil*, 113 Mass. 92; *Cheney v. Gleason*, 125 Mass. 166; *Howe v. Underwood*, 1 Fish. Pat. Cas. 162.

The lines of proof which are possible, and which the story if true must furnish, contrast with the proof presented by the claimant.—There is much proof in our favor from the recollection of reliable witnesses. But the Bell Company can rest its case on Drawbaugh's history and the knowledge of his intimates as proved out of the defendants' own record, chiefly by his cross-examination, and by unassailed contemporaneous writings. Drawbaugh has not presented a single sketch, letter, memorandum or piece of paper of any kind to connect his name with the speaking telephone in any way, until the time when he was avowedly making improvements on the Bell telephone in 1878, after that instrument had got into extensive commercial use. From that time on, written and printed contemporaneous proof of what he was then doing is abundant. If he had had speaking telephones before that, it would have been equally abundant earlier. The Bell Company, however, have found considerable written and printed contemporaneous evidence directly and specifically showing what Drawbaugh was doing, and what he invented during the ten years before the Bell patent; and each one of these papers, all acknowledged by Drawbaugh to have emanated from him, are specifically inconsistent with his pretensions. Two of them are lists he published of his inventions, complete and inchoate, with no telephone among them. Against this, it is on such bare recollections as have been indicated that he relies to prove both the fact of a telephone and the date of the fact.

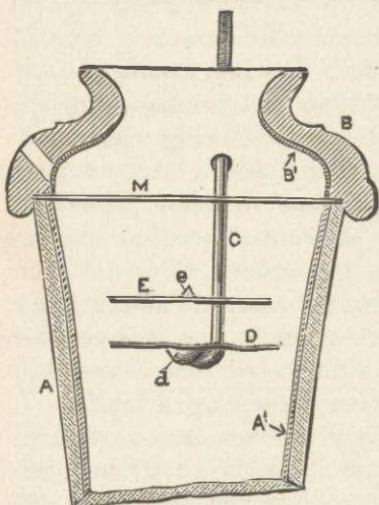
Remains of instruments.—They produce also certain remains of instruments, but all those alleged to have been made before the Bell patent are so far destroyed that, with the exception of a pair of magneto instruments, D and E, alleged

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to have been made in February and March, 1875, no sound of any kind can be transmitted by any set of them. The structure of the most essential working parts, and the capacity of all previous instruments, depend solely upon his memory. Not a single witness ever understood, or had the capacity to understand what their structure was, and, if they are to be restored, the restoration will depend upon the uncorroborated and unchecked testimony of Drawbaugh alone.

In the great sewing machine case, *Howe v. Underwood*, 1 Fish. Pat. Cas. 160, remains were produced, and from them the experts testified that they concluded that the originals must have contained certain other parts which no longer existed, and that from the indications given by the remains they could reconstruct the machines as Cuvier reconstructed an extinct animal from a few bones. Judge Sprague replied that Cuvier's conclusions were based on the rightful assumption that the extinct animal was the perfect work of a perfect creator; but to assume that about the destroyed machine was to assume, and not to prove the case.

The Drawbaugh Exhibits.—The different remains are as follows:

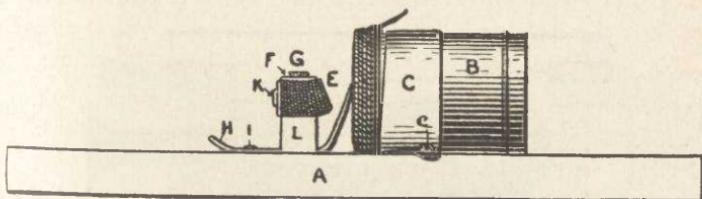
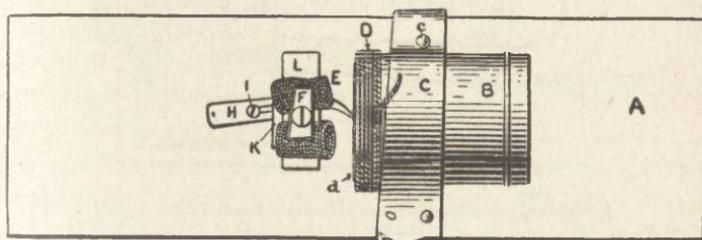


Broken Tumbler F. $\frac{1}{2}$ size.

The first one, Exhibit F, alleged to have been a carbon powder transmitter, and alleged to have been made in 1867, consists only of a broken tumbler A with a wooden mouthpiece B, and two pieces of zinc E, O, and a piece of wire, C. Drawbaugh says that he either made his instrument out of a broken tumbler or that it got broken very shortly afterwards. He attempts from memory to supply those parts which would constitute a carbon telephone transmitter, and to swear that he once had them inside this tumbler.

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The instrument B, produced as a *receiver* to go with F, and alleged to have been made in 1867-8, consists of a small tin fruit can, apparently once used as a paint pot, held by a tin strap nailed to a rough board, with the remains of an electro-magnet in front of it. No diaphragm or armature exists.



Tin-can Receiver B. $\frac{1}{4}$ size.

The next instrument, C, Drawbaugh's second form alleged to have been made in 1869-70, consists now merely of a board framework and a mouthpiece.

Drawbaugh testifies that it had a diaphragm and an armature and an electro-magnet. If made as he states, the instrument would be almost exactly, not only in substance but in mere form, a copy of the Bell telephone in commercial use during the first three months of 1877. This also was Bell's second form.

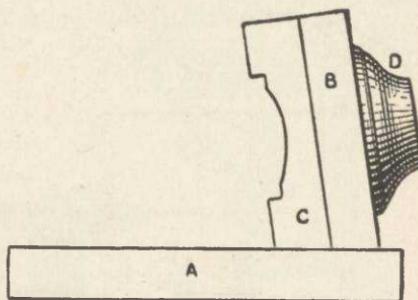


Exhibit C as it exists. $\frac{1}{4}$ size.

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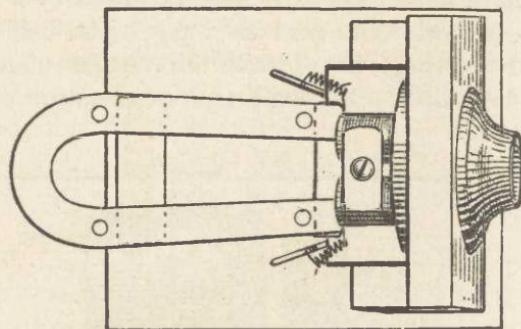
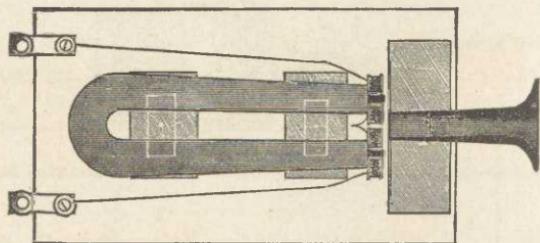
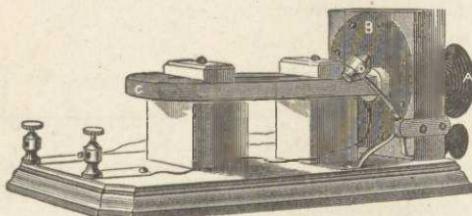


Exhibit C as Drawbaugh's Memory says it was. $\frac{1}{4}$ size.



Bell Telephone in Public Use in April, 1877. Plan. $\frac{1}{5}$ size.



Bell Telephone in Public Use in May, 1877. View.

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The next instrument now consists of a mere cylindrical wooden box, I, said to have been made in 1870-1. After this mere shell was testified to in the case by a number of witnesses, Drawbaugh added a newly made diaphragm and an electro-magnet, and swore that either these or something like them were in the original.

The next is Exhibit A, which is a rather highly organized *receiver* in working order, alleged to have been made in 1874. The case is of walnut and neatly finished. It is not a complete telephone apparatus, but only the receiving end of one. The diaphragm C is of black walnut veneering. In front of it is the thin air space and the small

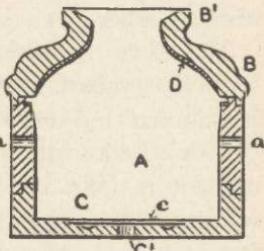
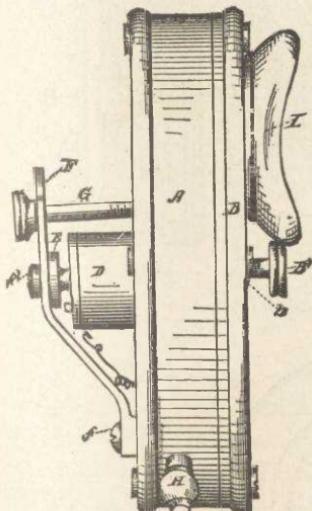


Exhibit I. $\frac{1}{4}$ size.



A, side view. $\frac{1}{2}$ size.

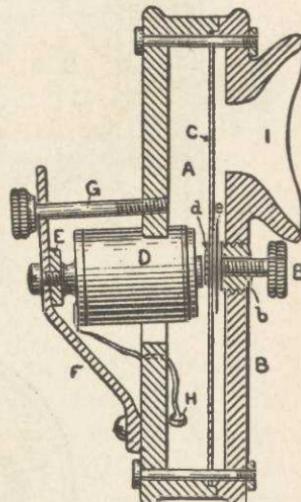


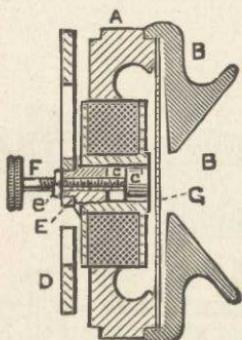
Exhibit A. $\frac{1}{2}$ size.

mouthpiece or earpiece of Bell's second patent. D is the electro-magnet with a soft iron core, adjustable by means of the screw G. His story is that he chiefly used it as a

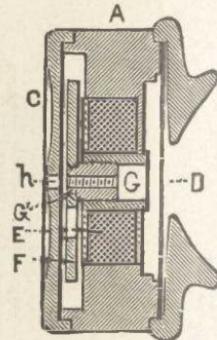
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receiver with the broken tumbler transmitter F. Only two or three witnesses, however, pretend to have seen this pair used together.

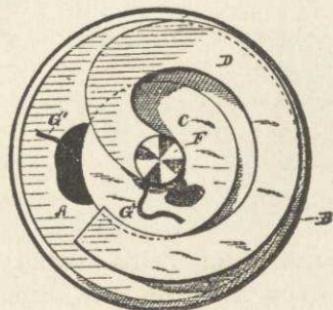
The next, a pair of magneto telephones, D and E, very highly organized, have the nice refinements of the best modern instruments;—the flaring mouthpiece; the thin air space; the short core and large coil; the adjusting screw; the permanent magnet of Mr. Bell's second patent; with all the refinements which Mr. Bell's subsequent experience added and put into the commercial instruments in 1877-8, and subsequently; these are good, practicable instruments, though their cores and magnets are so badly proportioned (and the instruments thereby so unnecessarily weak in tone) that it is difficult



Section of D.



Section of E.



Rear View of D.

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to believe that they were made by a man who understood the true purpose and function of those elements and invented their combination. They are alleged to have been made in the first quarter of 1875. The cuts are one-half size.

All these instruments were first put in evidence in 1881. Their existence before that depends upon mere memory.

These are all that are said to have been made before the Bell patent.

Drawbaugh's story continues that at about the time of the Bell patent, or immediately after, in the spring of 1876, he made a pair of very highly organized hard carbon microphones, G and O, in black walnut cases, of a peculiarly neat and graceful shape, and provided with all the refinements of detail of

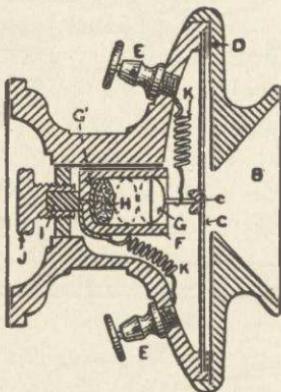


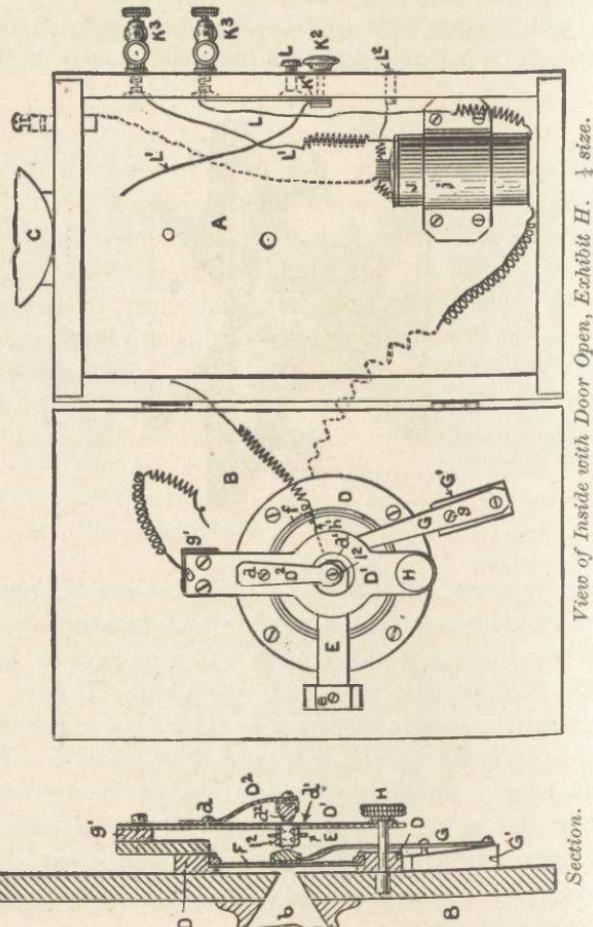
Exhibit G. $\frac{1}{2}$ size.

the best modern instruments. C is an iron diaphragm in front of which is the thin air space and mouthpiece. H is a tube of wood (a non-conductor) in which he says he had three flat balls of hard gas-carbon, of which one, H, now remains. The adjustment is by a screw, J, in the recess at the back, and this screw is faced with a soft rubber cushion, I. These instruments have, however, a radical defect in the manner of mounting the carbons, which makes them practically poor instruments. It is precisely the defect (too great rigidity in the supports, for the rubber does not practically yield) which

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appeared in Edison's early carbon telephones in the spring of 1878.

He says that he followed this pair by an instrument H, alleged to have been made in the summer and fall of 1876, which, *so far as ordinary observation goes*, appears to be an almost exact copy of the well-known and highly organized Blake transmitter in every detail of form, as well as in all its principles. This was followed by J, P, etc., none of which, according to his testimony, were as good as H. His story is that 1876 was his high water mark.



View of Inside with Door Open, Exhibit H. $\frac{1}{4}$ size.

Section.

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The later instruments, D and E, G and O, H and the subsequent ones are of admirable mechanical construction. He made them himself. They show that he was a very fastidious workman, with ample facilities, which indeed he had in his own workshop. If any of his earlier instruments are rude, it is not because he lacked skill, materials or facilities for making good ones.

His story is, that he made his broken tumbler instrument F and tin can instrument B in 1867. According to his own witnesses, these were the instruments he habitually showed to visitors for nine years afterwards, and through which they say he transmitted perfectly intelligible speech without any trouble whatever during each of these years. His own testimony is that his rude broken tumbler F was believed by him to embody this great invention. But he never made another carbon telephone, nor attempted to make another carbon telephone, nor any other variable resistance telephone until 1876, nine years later. His story further is, that from the time he first made F, "his whole heart and soul were on the telephone," and all the time he could spare from supporting his family was devoted to work on it. That story is not true.

The exhibits themselves disprove it. It is impossible that such a workman as he is, with his facilities, would have kept for years, or even for a week, a broken tumbler and a rude tin paint-pot as his sole embodiment of this wonderful invention, if they embodied it to such an extent as even to promise success. The fact of the extreme rudeness of these instruments and all others that he is said to have made down to the time of the magnetos D and E,—a period of eight years, according to the dates alleged,—when compared with his skill and facilities as a mechanic, shows that up to the time he made the better instruments, (whenever that was) he had not got beyond rude and unfruitful experiments which did not encourage him even to spend a day or two in remaking the instruments in a workmanlike shape. The remains prove more than that. They not only show that his enterprise remained in that experimental and unpromising condition (whatever be their date), but by their paucity and their rudeness they absolutely falsify

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the whole story told by himself and his witnesses, that during all those years he thought of nothing and worked at nothing but the speaking telephone. For all the instruments he attributes to that period (1867 to 1876) would not account for a week's work.

[Mr. Storrow then pointed out a number of details in these instruments which, he argued, showed that even if the working parts were what Drawbaugh described, still the structure and arrangement of the machines as a whole were so extremely bad and inconvenient that it was impossible to believe that a good mechanic like Drawbaugh would have kept a promising invention in such a shape without at once introducing the obvious modifications necessary to have fitted the instruments even for comfortable experimenting.]

Drawbaugh called fifty-one witnesses (and no more) who professed to have heard speech at his shop before the Bell patent, through the exhibits produced.

String telephones.—There is abundant proof from statements contained in questions put by Drawbaugh to one of the complainants' witnesses and the answers elicited, corroborated by pregnant circumstances, which shows explicitly that as early as 1872 or 1873 the string telephone was seen in use in the village, at least in the shop of Drawbaugh's brother, across the street from Drawbaugh's house; while several others of Drawbaugh's own witnesses distinctly and unequivocally state their recollection that the instruments they saw at Drawbaugh's shop, and styled his "talking machines," were string telephones. Judge Wallace decided in his opinion upon the first hearing that it was proved that there were string telephones in the village and at the shop at that time. Subsequently, Drawbaugh took more testimony in the Overland case, and submitted it to the court a year afterwards; but this later testimony, instead of attempting to rebut the existence of string telephones, only affirmed it. It must therefore be taken as a settled fact in the case that, at least as early as 1872, there were string telephones in the village and at his shop. It is a fact in the case that at least as early as 1869 string telephones were publicly known in this country.

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Tests of the Drawbaugh exhibits.—Drawbaugh had fifty-one witnesses who swore to speech through his instruments before Bell's patent. But, evidently doubtful about the value the court would attach to such witnesses as he produced, he undertook to prove by one expert witness, as an independent proposition, that telephones made as he swore his were made would to-day transmit speech. He so asserted in terms in the answer filed, and after the taking of testimony had begun in this case he made with his own hands, and with the assistance of his brother, at his own shop, what he said were "reproductions" of his alleged early instruments. He tested them and afterwards put them in evidence as correct reproductions. He then called a professional expert who testified that he had tested these reproductions with Drawbaugh and that they were "good, practical, operative speaking telephones," while Drawbaugh himself testifies that with the first and most imperfect of the alleged originals—the tumbler F and the tin can B—he and the neighboring farmers could without trouble transmit whole sentences, spoken, or read from a newspaper, as early as 1868, and that each subsequent set of instruments were better than the first. Believing the instruments, even as he described them, to be incapable of such results, we challenged his expert to repeat in the presence of witnesses the tests he said he had made with the "reproduced" or original instruments. Choosing their own time and place, three days were occupied in New York, in March, 1882, in testing them, the defendants selecting a skilled person to speak, and another skilled person to listen, the Bell company merely insisting that shorthand writers should take down what was said at one end, and what the listener thought he heard at the other.

It was specifically proved, and was not denied by any witness, that the instruments offered and tested by Drawbaugh as "reproductions" were much better in their details than the originals of which the remains were produced ever could have been (according to what remained), even assuming that Drawbaugh's statement was to be taken implicitly for the original structure of those alleged parts of the originals which do not exist. It was also proved that the circumstances under which

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the exhibits were tested in New York were vastly more favorable than anything that could have existed at Drawbaugh's workshop, where the instruments were said to have been used by unskilled farmers in the midst of moving machinery. The result with the alleged reproductions of the alleged early instruments (especially F and B) was, in the language of their own expert, that all they got was "a sound, and now and then a word." Sentence after sentence, of from ten to thirty words each, were spoken into the transmitter and nothing recognized. With all these aids hardly one word out of a hundred was recognized when the tumbler transmitter F and the tin can receiver B, in the "reproduced" and improved forms, were used. In fact, when words and irregular numbers were spoken into that instrument, out of the few words and numbers which the listener at B thought he recognized, more than half had not been spoken at all. Later instruments did somewhat better. But half the witnesses, including Drawbaugh, had sworn to perfectly intelligible speech through F and B, and the tests proved this pair, even in the improved form of 1882, and with the aid of improved conditions, to be absolute failures. The result of this test was, that if these instruments had existed at his shop exactly in the form in which Drawbaugh says they did, not a word could have been heard by his countrymen witnesses under the circumstances narrated by them. With the utmost allowance in their favor, the whole story told by him and his witnesses of the successful transmission of speech at his workshop during a series of years, is thus physically proved to be necessarily and absolutely false. In *Ely v. Monson Manufacturing Co.*, 4 Fish. Pat. Cas. 79, Judge Sprague, speaking of the sewing machine case, stated the result of such a test. He said: "The stubborn fact that Hunt's machine would not work, and that Howe's would, *made the oaths of the witnesses as inoperative as the machine.*"

This result agrees with the conclusions drawn from Drawbaugh's history as discovered from his own deposition. His story, as he proffers it, is of admirable speaking telephones in 1867 or 1868, and nine years subsequent devotion to them, with no thought of anything else. His witnesses, as a class,

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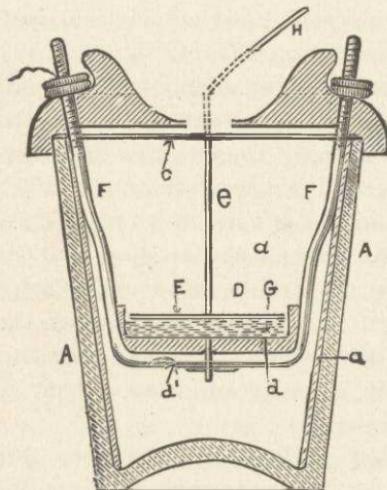
swear to that. The fact turns out to be that his present so-called "reproductions" of what he says were his instruments show that if he had them he never could have got any even seriously encouraging results. The exhibits themselves, by their rudeness and fewness, show that he never got anything with them whatever which encouraged him to remake them in better form, as so skilful a workman would have done; while the history of his life, shown by his cross-examination, discloses that the years in question were chiefly occupied with experimental work of a totally different character, such as the construction of electric clocks and a large number of other contrivances. It shows that this other experimental work, which his witnesses do not remember, but which he narrated on cross-examination and which is abundantly proved, occupied necessarily so much of his time and attention as to totally disprove his carefully sworn story of absorption in the telephone. The appearance, therefore, of the exhibits themselves, the performance of his so-called "reproductions," and the proved and admitted occupations of his life, not only disprove the existence of successful telephones at his shop, but they absolutely destroy the picture of his life and work which he and his witnesses have sworn to, and therefore show them unworthy of credit. The truth is that they have now transferred to the telephone their memory of work which was really on these other contrivances.

The opinion filed by Judge Wallace in December, 1884, insisted very much upon the total failure of these New York tests. All the Drawbaugh testimony was also part of the record in the "Overland" case, and as that case did not come up for argument until a year later, Drawbaugh employed the interval in taking more testimony to rehabilitate his story. During that time he made great efforts to construct some more so-called "reproductions," and to find out some way to make them talk. A new set of instruments were offered as new "reproductions"; the expert who had made the former tests was discarded; a new one, entirely ignorant of the case, was employed; and with these new so-called "reproductions" the new expert had not the slightest trouble at Philadelphia,

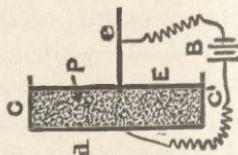
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in February, 1885, in transmitting whole newspaper paragraphs without losing a word.

No attempt whatever was made in the testimony to explain why his "reproductions" tried in New York in 1882 were total failures, and his so-called "reproductions" tried at Philadelphia in 1885 were perfect successes. Drawbaugh did not himself go on the witness stand after his first deposition in January, 1882, nor permit his former expert to: nor did he attempt to explain how it was possible that his instruments of 1867-8 could have talked as perfectly as those of 1885, and yet never led to any practical use or to a patent.



"F. Reproduced."



Illustrative Diagram.

This second test at Philadelphia was simply a piece of fraud. His original story was that the electrical part of his tumbler instrument F consisted of a cell or box, E, G, d, (sufficiently illustrated by C d C' in the illustrative diagram,) not far from the size of a half-dollar, holding carbon powder, (d in the tumbler, P in the illustrative diagram,) with a plate or plunger of metal E resting on the carbon, and connected by a rod e with the centre of a diaphragm. The theory is that as the plunger vibrates up and down under the influence of sound waves applied to the diaphragm, it will compress the

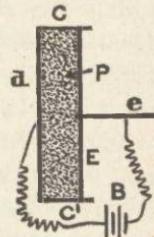
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carbon powder more or less, and thus vary the electrical current which passes through the powder. It is essential for this operation that the bottom of the plunger should touch very lightly on the top of the carbon powder, but should never part contact from it for an instant. The fatal defect of such an arrangement (whenever Drawbaugh made it) is that the up and down vibration of the plunger shakes and packs down the carbon, so that, if the touch be delicate enough at the outset, a number of vibrations less than those needed to make a single syllable (15 to 20) generally pushes away the powder, and the plunger parts contact with it at the top of the stroke, and articulation becomes impossible. This trouble was found in New York, and is practically inseparable from this contrivance, so arranged.

Some years after the Bell patent, Henry Hunnings, an English inventor, experimenting with the carbon powder telephones of Edison and others, found that if such a cell were tipped up so that it was perpendicular, as in this diagram, or at an angle say of 45 degrees, the action of gravity would make the powder, by its own weight, constantly keep against the vibrating plate or plunger, and there would be no break of contact. This effect would be aided by using powder which was granular and dry, like the sand in an hour-glass. If it becomes "packed" by accident, its proper condition is restored by tapping it. The Hunnings transmitter, so made, is one of the most powerful transmitters known. It is described in his patent No. 250,251, Nov. 29, 1881.

Drawbaugh made his tumbler talk at Philadelphia by putting the Hunnings invention inside of it.

His "reproduced F" is shown in the cut, with the cell horizontal, as it would be when the tumbler stood on its base. He testified in terms that he always so used it. That such was his chosen position for it is also shown by the fact that in the New York tests he so used it, placing it on a firm support where it could not receive the slightest jar. In the New York test the utmost care was taken to guard it from the slightest

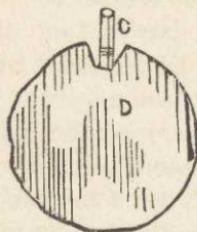


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disturbance. To walk across the room threw it so out of condition that it would not yield a word, and Drawbaugh's expert declared that this test of it was "a constant struggle for adjustment."

But in Philadelphia the new "reproduced F" was held in the hand at an angle of 45 degrees. Not the least pains was taken to hold the instrument still. It was freely moved about, and the new expert, who had never read the testimony and was himself imposed upon, ingenuously said that its condition was improved by tapping it. The powder used at Philadelphia was granular, while that described by Drawbaugh and that used at New York (prepared by Drawbaugh himself for that test) was fine and unctuous like flour. The Hunnings conditions of use were thus provided at Philadelphia. They were not present, in New York, where Drawbaugh had only his own knowledge to guide him.

The Hunnings arrangement requires obviously that the plunger E should fit tightly enough to prevent the powder from seriously shaking out when tipped up, while in the Drawbaugh form, held horizontally, no fit is needed. In the Philadelphia "reproduced F" of 1885 it did so fit. In the "reproduced F" of 1881 it did not. The original tumbler had no cell when produced, and the remains showed that the cell Drawbaugh described never could have formed part of it. But whether it did or not, the rude alleged original plates produced are so uneven and irregular in their contour that they would have let the powder escape in a few moments.



Original plates of Drawbaugh's F. $\frac{1}{2}$ size.

Our experts copied this Philadelphia tumbler, and found in repeated experiments that when held horizontal as Drawbaugh

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directed, hardly a word ever got through. When tipped as Hunnings directed, it talked well — just as it did in the Philadelphia tests. This we proved; and they took no evidence to refute it.

The success of the new tests at Philadelphia, therefore, was due to the fact that Drawbaugh stole the Hunnings invention and put it inside his tumbler. Where did he learn it?

The New York tests of the Drawbaugh instruments were made in March, 1882. The vast significance of their failure was at once recognized, and was pointed out by our experts. The defendants took testimony for two years after that, but they never attempted any more tests, nor introduced any more testimony to establish the capacity of the so-called "reproductions." The proofs were closed in June, 1884. During the oral argument before Judge Wallace in October, 1884, and after our opening argument had exposed the proved incapacity of these instruments, they offered for the first time to bring into court and publicly try new "reproductions" and to show that they would talk perfectly well. That offer was refused on the ground that it was an attempt to introduce new evidence during the hearing. Afterwards, in the "Overland" case, at Philadelphia, in February, 1885, they did produce those new so-called "reproductions" and tested them. They talked as the defendants said they would, and we discovered that they had then in effect concealed the Hunnings invention inside their tumbler. We found out how it got there. The Hunnings invention belonged to the Bell company, and they had, in 1882, carried on a long series of experiments with it. After the time when Drawbaugh closed his testimony in June, 1884, not attempting to repeat his tests with his alleged "reproductions," and before the time when he offered new "reproductions" before Judge Wallace in October, 1884, and tried them in Philadelphia in February, 1885, he had hired from the Bell company's employ one of the men who had elaborately experimented with the Hunnings invention in the Bell company's laboratory. That person was proved to have been one of those who brought the new "reproduced" instruments to the new expert to try. On this testimony, at the

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second hearing in November, 1885, Judge Wallace, as matter of fact, found that the success of the second or Philadelphia tests had been obtained by concealing the Hunnings invention inside the Drawbaugh exhibit. This disposes of the character of the instrument and of the moral character of the case.

Drawbaugh cannot complain of the original reproductions. He testified that he made them himself in the summer of 1881, and that he and his experts tried them in December, 1881, before they were put in evidence. Then he put them in evidence, as part of his own deposition, and swore to them as true reproductions in January, 1882. The tests in New York were at the end of March, 1882, three months after they were put in evidence. Liberty was given to him on the record to repair any accidental injuries that they might have suffered; and he did so before the tests. He never during the subsequent two years of testimony complained that he could have made better "reproductions," nor did he offer to present new ones and try them until after he had hired from the Bell company's laboratory their workman who was familiar with the Hunnings invention.

Ear-marks of copying. — Comparing the modern "Blake transmitter" with Drawbaugh's instrument H, alleged to have been made in the summer and fall of 1876, not only are the principles of the two identical, but the particular form and arrangements of the parts, even in immaterial matters, appear to be the same. But the most important feature in the Blake consisted in weighting a certain brass cup, carried on the end of a spring and holding a bit of carbon, bringing into play the element of a notable inertia.¹ The Drawbaugh instrument H had the same spring, with the same brass cup on the end of it,² and the same bit of carbon held in it in the same way; but while the two were thus the same, so far as the eye of an observer could notice, the fact was that *the unseen weight inside the cup, which made the soul of the invention in the "Blake," did not exist in the Drawbaugh.* It is a case of un-

¹ See the description and cut of the Blake, p. 279, *supra*.

² See cut on p. 402, *supra*.

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intelligent copying by a man who did not even know what was the soul of the invention he now pretends he made.

Another important feature of the "Blake" consists in a spring which holds the diaphragm in place, for the purpose of getting rid of screw fastenings around the edge of the diaphragm, in order to leave it more free to vibrate. Drawbaugh has the iron framework to support the diaphragm, and the spring pressing on the latter, but has clamped the diaphragm at its edge, and thus the chief purpose and function for which the spring was introduced by Blake, is excluded by Drawbaugh, and the Drawbaugh instrument is just as good without it as with it;—another feature which proves the whole instrument to be the result of unintelligent copying and piracy.

Drawbaugh's instrument H was not produced in evidence until 1881, two years and a half after the Blake instrument had gone into commercial use all over the country.

It is also a significant fact that the order alleged for Drawbaugh's exhibits is an epitome of the order in which the several inventions were published by others. Bell's first instrument was described in the papers as made of a tin can and bladder; such was Drawbaugh's B. His next was the large horse-shoe magnet instrument; such was Drawbaugh's C. Then Bell introduced the short core and coil, the metal diaphragm, and thin air spaces; Drawbaugh's D and E have these. The first public notice of a carbon battery transmitter described it as made with powder. Then Edison and Berliner used hard carbon contacts; then springs, &c., were added, until the Blake transmitter was reached. Drawbaugh's F, G, O, and H repeat this order. In short, all this psychological proof is that he copied, and the character of his deposition (p. 415, *infra*) singularly confirms this. Bare memories of dates must overcome all this to make a case for him.

Drawbaugh's own testimony is that while his tumbler F, and tin can B, were the first ones, he, within a few years after, replaced them by somewhat better instruments, C, I, and having made the better ones, the tumbler and tin can were thrown aside, their bladder diaphragms eaten off by mice and never restored; and that if he ever showed them to any one after

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that, it was as mere wrecks and curiosities, and not as working instruments. It could not have been otherwise if there be any truth in his story of progressive improvement. Now it is abundantly proved by a number of the best of his own witnesses that the tumbler and tin can were exhibited by him, in working order, and used, at his best instruments at a considerable time after the Bell patent. Such exhibition and use of them at that time, necessarily, and according to his own story, disproves the existence at that time of the far better instruments which according to his pretences then existed.

Drawbaugh's occupations and the history of his life.—We have learned this from his cross-examination, from certain papers put in on his cross-examination, and from some record evidence. The story told in his answer and in his direct testimony is, that he made the invention and embodied it in a successful working form as early as 1867, (and large numbers of his witnesses alleged that it was looked upon as a great invention which would supersede the telegraph and make him the richest man in the country if he could complete it); but that it never got into use anywhere outside of his shop. The failure to get it into use, or to have it patented, or protected by caveat, is said to be solely because of his abject poverty and his "utter want" of proper tools and facilities for making telephones for use. He recognizes that the fact that the invention never went into use or was patented is fatal, unless explained, and he makes no other attempt to reconcile the fact and the story. The answer formulated that excuse, and he and others testified in support of it. His history destroys that pretence, and his whole story falls with it.

He has been all his life a professional inventor and patentee. He says that he has made over fifty inventions and patented a dozen. He never had any trouble in getting his neighbors to advance the money for experimental and Patent Office expenses. During the very years under inquiry, between the time when he alleges he first got speech in 1865 and the date of the Bell patent in 1876, he took out a number of patents, and his neighbors and friends contributed over \$30,000 in actual money, chiefly to exploit certain of his inventions and

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to patent them, and in small part to exploit the inventions of others in his shop, under his direction.

In *O'Reilly v. Morse*, 15 How. 62, 111, this court said that no man could make an invention like the telegraph without an accurate knowledge of the scientific facts which were to be employed in it. That is still more true of the telephone. Yet Drawbaugh's story is that without education, indeed absolutely without that knowledge which is as necessary as tools and materials for the originator of these instruments, he made all the inventions embodied in the magneto telephone, in the carbon telephone, and in the microphone; that he made the discoveries of Helmholtz as to "quality" of sound, (though indeed his deposition shows that he has not the slightest knowledge on that subject,) and the discoveries of Faraday about magneto induction, as well as the invention of the speaking telephone itself. And yet when on the witness stand he is asked to state his knowledge of acoustics, all that he knows is that the pitch of a sound depends upon the number of vibrations. What constitutes "quality" or articulation, the very foundation of the speaking telephone, is something that he has not the remotest idea of. He further pretends to have made for himself, independently, some of the most striking inventions of modern times. He led his neighbors to believe that he invented Bain's electric clock, the automatic fire alarm, the Siemens and Halske magneto key, the Casali autograph telegraph, the Wheatstone alphabet telegraph, the Giffard injector, and other known things. In short, he pretends to be, and by these false pretences made his neighbors believe that he was, a genius far beyond any that the world has ever seen. All this was humbug and deception, and he knew it was.

Drawbaugh's deposition is a very extraordinary one. The invention he was to testify to is one which above all others never could have been arrived at by accident, but must have been the result of abstruse scientific reasoning and thought. Yet his deposition reads like that of a stranger. Instrument after instrument, already sworn to by others, (for he was the last witness called on their testimony in chief,) was put into his

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hand, and he was asked, generally by leading questions, when he made it. But from the beginning to the end of his deposition, which occupied thirty-two days, he never but once undertook to make any statement as to the origin or mental growth of his conception, or as to the principles involved. He was once asked how he came to employ the principle of variation of pressure in the carbon telephone, which he says was the first one he made, and he replied that he did not know whether he discovered that principle, or heard of it from some one else, or read of it. He testified: "I don't remember how I came to it; I had been experimenting in that direction; I don't remember of getting at it by accident, either—I don't remember of reading it; I don't remember of any one telling me of it; I don't suppose any one told me." He could not tell how any idea came to him, and the moment he was pushed as to the origin of anything, he resorted to the stereotyped answer of Queen Caroline's valet, "I do not remember." An inventor who had made so absorbing and thoughtful an invention could not have left out the heart of his story if he had tried to.

Laying aside the speaking telephone in dispute, it is proved that every one of these old inventions which he made his neighbors believe originated with him, was well-known and published in the books years before he pretended to have touched them. He got his chief reputation in his county by producing an electric clock, about 1872-5,—as if he were the first who had ever made one,—for the men to whom he sold the clock invention testified that they so believed. Just such clocks had been known for twenty years, and we found in his possession, and made him produce on cross-examination, an encyclopædia, published in 1852, with a full description of one, from which he had varied only in insignificant details of no importance. Upon the strength of these alleged inventions, he got his neighbors to advance their money to patent his clock, among other things. His whole life in his community was that of a charlatan and impostor, and he made all his neighbors believe that he was the first inventor of these various contrivances, as firmly as any of them pretend to believe that he was the

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first inventor of the telephone in dispute. So, when the present people, Chellis and others, asked him to let them set him up as a prior inventor of the telephone (for he never made such a claim for himself), their scheme did not startle him, for he did not realize how much more serious it was than the pretences which he had often put forward. So he became, at first a mere tool in their hands, and afterwards interested enough to work on his neighbors and talk up his case to make witnesses.

It is proved, chiefly by his own cross-examination and by some contemporaneous newspaper accounts of his work, that from 1865 to 1876 he spent more time and money on these various experimental gimcracks than would have been needed to have made a hundred telephones if he had known how to make them, or to patent them if he had had them to patent. Yet he swears that during all those years he could think of nothing but the telephone, and his compurgators all testify that they never saw him at work on anything else. The admitted facts show that that story is, on his part a fabrication, and on their part either a fabrication or the result of ignorance, stupidity, and forgetfulness, acted upon by his personal influence, village gossip, and local feeling. In *Wood v. Cleveland Rolling Mills*, 4 Fish. Pat. Cas. 550, Swayne, J., said: "The confidence of the attacking witnesses is often in proportion to the distances in time. Their imagination is wrought upon by the influences to which their minds are subjected, and beguiles their memory."

His only excuse for not patenting or making instruments is his "utter" want of tools and his "miserable poverty." This part of his story is a deliberate artifice. About 1865 he devised an alleged improvement in machinery for nail making. He had no trouble in getting partners to advance him money to experiment with it, and he took out two patents in 1865-7. His partners put in several thousand dollars. One of them was Governor Geary of Pennsylvania, and that partnership continued at least until Governor Geary died, in 1873. It is of course impossible that, with Governor Geary for a partner, this man could have had, for six years, within eight miles of

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the capital of Pennsylvania, practical speaking telephones which he was anxious to introduce to the world and to patent, and to do which he only wanted fifty dollars. Yet he does not pretend that he ever brought such an invention to Governor Geary's notice. If he had had them, the governor would have known of them, and the public history of the telephone would have then begun.

About 1865-6 he invented an improvement in molasses faucets and pumps. He had no trouble in getting his neighbors to raise over \$20,000 in cash to enable him to experiment with that invention, to patent it (November, 1866), to fit up a machine shop to manufacture the articles, and to make him their master mechanic. That machine shop, stocked with from ten to fifteen thousand dollars' worth of tools and machinery, and run by water power, has been at his disposal, free of rent, for his own work, from 1867 to the present time.

It has been proved from his own deposition that during the ten years before the Bell patent he actually received in cash at different times more than \$10,000, as his own money; yet the truth of his whole story rests on the assertion that he never could find fifty dollars to get a patent for the telephone, nor materials with which to make a few for sale. His partners in this faucet and pump company, which they afterwards (in 1869) turned into a regular corporation under the laws of Pennsylvania, with a capital of \$20,000, and called the "Drawbaugh Manufacturing Company," not only made these faucets and pumps, but they made several other things that he had invented, and when they found that their work was slack they asked him to furnish any other inventions which he had, or to make some new ones, to enable them to employ their machinery and capital. They had a number of meetings for the purpose of examining into the various things he offered them, and after finding nothing which they thought worth taking up, they employed him to make some new inventions for that purpose. This appears from the corporation records, and his own proofs. This partnership and corporation lasted six years, until July, 1873. It is a part of his story that during all this time he had practical talking machines; that

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he believed the invention to be the most important of his generation and full of profit for its maker; that all he wanted was fifty dollars to patent it. Yet it is a proved and conceded fact that during all that time he never asked his company nor a single one of his partners to invest any money in the alleged telephone. He never showed it to any one of them, and not one of his partners during all those years ever heard of such an instrument. With the exception of a possible suggestion about some kind of undefined knowledge in one of them who is dead, it is not pretended that any of them even heard of it. More than half of them have been on the witness stand and have so testified, and the fact that Drawbaugh under these circumstances did not call the others, his friends and neighbors, is conclusive against him. He does not name them when asked to specify the persons to whom he applied for aid, and he does not testify that he ever showed it to any of them. The same is essentially true of all the workmen. Out of eighteen or twenty employed there he has found one or two who say they think they saw a broken tumbler on the bench in his shop while they worked there, but never tried it; and that is all.

The fact that an invention of so startling a nature, which according to his story he described and showed freely to every one and made the chief work of his life, never was known to a single one of his partners, and, without any pretence of exception except such as is found in the memories of one or two men, was never known to any of his fellow-workmen, working in the shop where he pretends he always kept and tried it, is absolutely conclusive against his story. In the case of his partners it is not merely a question of memory. They were men of means,—the poorest of them worth about \$30,000, and the richest about \$90,000. They were old personal friends of his, with sufficient confidence in him to embark their money on his inventive skill, and to ask him for more inventions when they had exploited those he had. It is impossible that he could have had this invention without their knowing it, and it is impossible that they could have known it and the invention remained unpatented and unused.

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In 1873 to 1876 he was particularly experimenting with a telegraphic key, of a kind which he pretended was new, but which had in fact been known for a dozen years. He made two of them, costing him more labor and trouble than a dozen copies of his telephone would have cost him if he had had any to copy. He carried these telegraph keys to a telegraph office and got leave to try them, and carried one to Harrisburg and publicly exhibited it, and called in two of his personal friends—the telegraph superintendents of the Pennsylvania and the Northern Central Railroads—to see it, at a time when he says he had perfect speaking telephones and was anxious to try them on an actual line. Yet, with this opportunity, he confesses that he never exhibited his telephones nor sought to try them outside his shop, nor informed those to whom he showed his telegraph key that he had such a thing as a telephone.

The pump and faucet business of his company was bought out in the summer of 1873 by Hauck Bros. & Co., and David Hauck, an extremely clever master mechanic, carried on that business during parts of the next two years in Drawbaugh's shop, working generally in the same room with Drawbaugh. In the summer of 1879 Drawbaugh and this David Hauck got into an interference in the Patent Office, on the subject of another improvement in molasses faucets. They took testimony, Drawbaugh's financial backer (Mr. Chellis) and counsel (Mr. Jacobs) being one of his present backers and one of his present counsel. They conceived that it would be desirable to prove in that interference that Drawbaugh was a man intellectually capable of making an invention. So they asked David Hauck and his brother whether, while they worked in Drawbaugh's shop, Drawbaugh was not very friendly with them and very free in telling them about all his inventions; they replied that he was. They then asked David Hauck—these were Drawbaugh's own statements put into the form of questions by his counsel—whether Drawbaugh was not a great inventor, and David Hauck answered that according to his knowledge of Drawbaugh he was a copyist and an improver of details, but not a man who either originated anything or

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who carried any invention to successful completion. Nettled by this answer, Drawbaugh then interrogated Hauck *seriatim*,— Did not Drawbaugh invent the electric clock? &c., &c., naming a number of other things, to each of which Hauck replied that those were old inventions, and all that Drawbaugh did was to modify the details. Yet during this long examination they never once put to Hauck the question, which would have been decisive if they could have put it,— Did he not know that in 1873 and 1874 and 1875, when he worked in Drawbaugh's shop, Drawbaugh had electric speaking telephones which could be readily talked through? No speaking telephone was alluded to in the list of inventions that Drawbaugh then recited in his questions to Hauck. Yet this man worked during the three years before the Bell patent in the very room where Drawbaugh says he showed his telephones freely to every one; and Drawbaugh began by proving that he freely showed all his inventions to Hauck. This interrogation was in May, 1879.

When Drawbaugh himself testified a few weeks later, Hauck's counsel asked him in substance whether he was not a man who simply picked up and attempted to improve other men's ideas, but carried nothing to completion, and then pushed him to name everything he had ever done which resulted in any successful invention. Drawbaugh enumerated a number of things, but did not name the telephone. The same questions were put to Drawbaugh's brother, who is one of the principal witnesses on his behalf in this case; and he, in like manner, enumerating those things which he thought would conduce to his brother's glory, did not mention the telephone.

Here, then, we have Drawbaugh's solemn written statements, the year before this controversy began, as to the inventions on which he wishes his fame to rest. He made them, both in his questions to Hauck and in his own answers, and for the avowed purpose of making the best show he could. The telephone is not in his list.

There is also other contemporaneous written evidence of the same kind. In the summer of 1874, and again in the summer

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of 1876, he published an advertising card, the two sides of which are as follows:

Daniel Drawbaugh.

INVENTOR, DESIGNER

a n d

SOLICITOR: PATENTS.

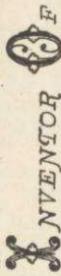
Also Models Neatly Made To Order.

Eberly's Mills,

Cumberland County, Pennsylvania.

[See Other Side.]

Dan'l Drawbaugh,



INVENTOR &
THE FOLLOWING PATENTS.

Stave, Heading & Shingle Cutter.
Barrel Machinery.

STAVE JOINTING MACHINE, Many in use.
Tram & Red-staff for leveling face of Millstone.

Rine and Driver for running Millstone.

Nail Machinery for Feeding Nail Plates.

PUMPS, ROTARY & OTHERS.
Hydraulic Ram.

THE DRAWBAUGH Rotary Measuring
Faucet, very extensively used.

CARPET RAC LOOPER... A little
device by which rags are looped quick and firm,
without Needle or Thread.

ELLECTRIC CLOCK.

MAGNETO ELECTRIC
MACHINE,

For short line Telegraphing, Fire Alarm,
and Propelling Electric Clocks. It can be
applied to any form of Electric movement.
Gives entire satisfaction USEING; NO
GALVANIC BATTERY.

That was not a list of things "patented," because half of them were not then and never have been patented. It was not a list of things that he was making for sale, because he was not making more than two or three of them for sale, and all the patents that he had taken out were sold. It was not even a list of inventions he had completed, for his clock was

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then in an inchoate state; he had one experimental working clock model; but his first finished clock was made in 1877. It was a list of the devices and inventions, complete or incomplete, on which he chose, in the summer of 1874 and the summer of 1876, to rest his claim to be an "inventor." He printed and distributed three hundred of these cards. There is no speaking telephone in that list. And yet, according to his story, he then had in his shop telephones perfectly fit for sale, and as highly refined and as perfect as those now in use, made no secret of them but publicly showed them, and believed them to be the most important invention of his time.

That card has another unpleasant effect on Drawbaugh. In the faucet interference testimony in 1879 he had qualified himself as an expert to testify upon a technical question. In order to so qualify himself he swore that he had acted as solicitor of patents for others and for himself, preparing specifications and claims for the Patent Office. In a printed bill-head, printed for him between June, 1874, and the fall of 1876, he advertised himself as follows:

"Bought of Dan. Drawbaugh, Practical Machinist. Small Machinery, Patent Office Models, Electric Machines &c. a specialty."

A man believing himself so qualified as solicitor and model maker could not have had the speaking telephone for ten years in his shop, without at least filing a caveat on it or making a few for sale. Yet the answer said that he was absolutely unable to do even that,—and he must swear that he was. So, on his direct examination in this case, he testified that he was not a patent solicitor, and that he always knew that he was quite incapable of drawing a specification, though he admitted that he had done so in some cases. Afterwards, we found this card, by which he advertised himself as such. We introduced it by the deposition of the printer, one of his personal friends and witnesses. Drawbaugh never dared to go on the witness stand again, and no attempt was made to explain it by any witness. His whole testimony on that behalf, like the testimony about his poverty, was designedly introduced to meet what he knew was the turning point of his case.

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An important part of this and other evidence — the production by him of a copy of the Patent Office rules, &c., was the proof it afforded of his familiarity with patents; — that he was familiar with the road to the Patent Office, and knew the importance of going there.

Between 1872 and 1876, two of his friends in Harrisburg were Mr. Kiefer, superintendent at Harrisburg of the telegraphs of the Pennsylvania Railroad, and Mr. Simon Cameron Wilson, then superintendent of the telegraphs of the Northern Central Railroad, and, at the time this case was tried, mayor of Harrisburg. Mr. Kiefer was also a member of a large electrical manufacturing firm — Hahl, Kiefer & Co. makers, among other things, of the signal service instruments for the Government. Drawbaugh during these years was in the habit of going to these two telegraph superintendents, obtaining small supplies of cast-off magnets, battery-plates, &c., from their condemned instruments, talking with them about his electrical experiments, and carrying to Harrisburg various electrical contrivances, such as his clock and his telegraph key, to show them. They were men who would have instantly taken his telephone and tried it if he had had any, and Mr. Kiefer testifies that he would have liked nothing better than to have patented and manufactured such things at his firm's factory. Yet during all those years Drawbaugh never showed them a telephone, and never hinted that he had ever thought of such a thing. These two gentlemen so testify in terms. Drawbaugh does not deny it. When asked to whom he applied for assistance about his telephone, he does not name them. This proof, again, does not rest on memory. If in 1873 or 1874 he had carried a speaking telephone to one of those men, the public history of the art would have begun that day, and not waited until Mr. Bell's appearance in 1876.

Another of his intimate friends was Mr. Theophilus Weaver, a patent solicitor of Harrisburg, himself an inventor. It is in evidence, and not contradicted, that Drawbaugh was in the habit of going to him from 1869 onward; that they had some business together; that some clients of Mr. Weaver's carried on business at Drawbaugh's shop, with Drawbaugh as superin-

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tendent, in 1875-6, and that Weaver had been there a number of times from 1867 to 1876. Yet Weaver testifies, without contradiction, that Drawbaugh, now pretending to be only too anxious to get his telephone patented, never spoke of the subject to Weaver, and Weaver never heard that Drawbaugh had a telephone until 1878, when Bell's telephones were in extensive commercial use and were in actual use in Harrisburg. Drawbaugh then said to Weaver, in May, 1878, that he had turned his attention somewhat to the subject a good many years back, but never got any results, and did not expect speech, but only musical tones, and had nothing to show for what he had done. These facts do not rest merely on Weaver's memory, though Drawbaugh does not contradict him. If Weaver, a patent solicitor, had known of a telephone in 1873, it would have been instantly patented.

Drawbaugh's relations in the community were such that if he had had a speaking telephone it would have been mentioned in the newspapers. He was known as an ingenious inventor of small things, and in that community attracted attention. He exhibited at the state fair in 1868 and 1869, and his exhibition (nail machinery and pumps) was mentioned in the newspapers. His witness Holsinger, at one time editor of a country newspaper, who says that in 1873-4-5-6 he was Drawbaugh's most intimate friend, next door neighbor and co-experimenter with the telephone, wrote some newspaper articles about Drawbaugh's inventions in 1875, and again in 1876. He mentioned his clock and praised it, and said that Drawbaugh was going to make one to exhibit at the Centennial; but never wrote a word about a telephone. It is proved by that article and otherwise, that Drawbaugh did contemplate exhibiting at the Centennial, but that what he proposed to do was to build an electric clock for that purpose; although he wants the court to believe that he then had in his shop speaking telephones as good as those now in use, and that he made no secret of them and was anxious to attract public attention to them.

In 1878 he was visited by a number of newspaper writers, attracted by his electric clock, which during that spring was publicly exhibited for money in Harrisburg and some other

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towns. In that spring he became spoken of as a person connected with telephones; but in this way: Several paragraphs appeared saying that he was "then" inventing *improvements* in telephones, but not one of them attributed to him the original invention. It is not possible that the local newspaper writers could have visited him and got any inkling from him that he was the originator of that wonderful instrument without spreading his story at full length instantly in the papers.

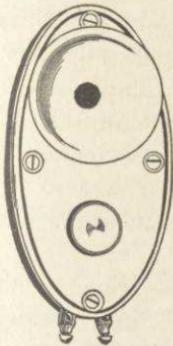
Among other visitors, *Mr. Matthews*, an editor of the *Baltimore American*, went to his shop in April, 1878, to see his clock, and while there talked to him about the telephone, which was then attracting great attention. Drawbaugh's statement to Mr. Matthews was that he had experimented somewhat upon a telephone many years before Bell or Edison, but that he never got speech and never expected to; that his aim was to send telegraph messages by variations of tone and pitch. Mr. Matthews published this in his newspaper in 1878, and sent a copy to Drawbaugh, who never repudiated it. Mr. Matthews came upon the witness stand and repeated under oath his account of the visit. The article, after describing the clock at considerable length, and in a very laudatory manner, said of Drawbaugh's attempts about a telephone: "He never expected to send articulate sounds over a magnetized wire, but he believed that an alphabet could be arranged after the manner of a musical scale, and that messages could be transmitted and understood by the variations of tone and pitch."

That such was Drawbaugh's purpose is curiously confirmed. It is proved as matter of fact in these cases that between 1860 and 1870 many persons were trying to construct telegraphs which should send ordinary telegraph messages by variations of tone and pitch, and that Drawbaugh knew of these attempts and was much interested in them. One of the most ingenious and extraordinary of these "phonic telegraphs," as they were often called, was described in the *Scientific American* in 1863. Drawbaugh got that paper, studied that description, thought a great deal of it, remembered it and some others on the witness stand, and finally produced the paper, which he had kept.

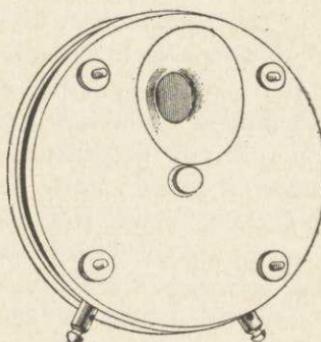
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In the same spring as Mr. Matthews' visit — 1878 — a friend of his, *Mr. Stees*, a manufacturer at Harrisburg, now dead, took him to the telephone office in Harrisburg, introduced him, and said to the telephone people there that Drawbaugh was *then* engaged in making a telephone which he thought would be better than theirs, but never hinted that Drawbaugh was the originator of that great invention. Mr. Stees for many years had a private telegraph line connecting his office with one of his machine shops. He found such difficulty in working Morse instruments that he was the first man in Harrisburg to put in the Bell telephone, in March, 1878. Drawbaugh and he were intimate friends, and they had been partners in a little invention of Drawbaugh's ten or fifteen years before. Yet Drawbaugh does not pretend that he ever showed his telephones to Stees, or asked to try them on a line, or asked any aid from Stees until after Stees had the Bell telephone in use in 1878.

Drawbaugh called again at the telephone office a few days



Phelps's Snuff Box Magneto.



Drawbaugh's Magneto A.

later (May, 1878), examined the instrument the telephone company then had in use, known as the "Phelps Snuff Box," drew from his pocket his own instrument, A, and compared the two, asked if the Phelps was patented, and on being told that it was, said that his was too much like it, — without a hint that his was, as he now claims, four years old. Certainly their resemblance is wonderful. His story is that at that time

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he had had H (the Blake transmitter) for eighteen months, — an instrument far superior to anything then known in the country. Yet he never gave a hint of it. He borrowed a magneto telephone of an ingenious but rather inferior kind from the telephone company (the Phelps "Crown"), with curled magnets, and took it to his shop to study it and learn how it was made. He kept it several weeks. Yet, if his story be true, he had had for two years almost exactly that instrument (in L and M, the magnets of which were bent), and during all that time he also, according to his story, had telephones — the Blake transmitter H, and other microphones — which were so far ahead of it that it would have been thrown away the moment such instruments appeared.

In the fall of 1878, a history of Cumberland County, where he lived, was published. He subscribed \$10 to it on condition that they would publish a biography of himself. He furnished the biography, and it was published essentially as he sent it. In it he enumerates a number of his inventions, and at the end of his enumeration, nowhere stating himself to be the originator of the telephone, he says that he has invented "several kinds" of telephones. Improvers are so spoken of; the originator never could so speak of himself. This vain-glorious autobiographist could not have failed to claim for himself what in 1878 was recognized as the greatest invention of our generation, if he had made it. This article was so printed, the book taken to him, this shown to him, and he, acquiescing in its correctness, paid his subscription.

These newspaper accounts — and there are a number of them in the first half of 1878 — speak of him repeatedly as *then* engaged in improving the telephone. That is a fact which his story must square with. Stees so informed the telephone company, in Drawbaugh's presence, in 1878. Yet, if the story of his deposition be true, he had at least a year before that completed the best telephones he ever made, and never, since the spring of 1877 down to the time when this suit began, constructed anything which was, or which according to his own account he thought was, an improvement on his alleged old ones of 1876.

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The truth is that he made his telephones after the Bell patent came out. He at first copied what he had seen described in the *Scientific American* in September, 1876, as Bell's tin can instrument. It is in proof that he exhibited this to a number of persons in the fall of 1876 as the best thing he had. In the beginning of 1878, when telephones were attracting a great deal of attention in the community, and the microphone had become known but was not perfected enough for commercial use, he, like many others, seriously went to work to try and make modifications and improvements. That was his real work on the telephone, and we believe it was then that he did it, and made his first attempt at a carbon telephone. The contemporaneous newspapers and Stees' statement prove this part of his history.

Lloyd and *Worley*, two school teachers of Harrisburg, had long known him well, but had heard nothing about telephones. At the beginning of February, 1878, they went to see his clock, and presently published a very laudatory newspaper article about it. He told them that he had made telephones (not pretending that he had made them before Bell), but that the articulation was bad, and he was trying to improve it by giving a confined shape to the sound chamber. Plainly, he was then making D and E, his first telephones with the thin air chamber and other refinements which Bell patented and put into commercial use in 1877; for Drawbaugh never made any change in the sound chamber after D and E.

The mere fact, conclusively established, that at that time he was making improvements, is absolutely inconsistent with the story of himself and his witnesses that his most improved telephones were made some years before. On the other hand, it perfectly fits in with the fact that his work before that was in experiments on other contrivances, that no telephone was known to David Hauck or any of his partners, that no telephone was found in his advertising cards of 1874 and 1876, and that no telephones were shown to the telegraph superintendents Kiefer and Wilson.

His shop was full of electrical contrivances for many years. He undoubtedly had there as early as 1872 or 1873 string tel-

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ephones. He had there in 1872 or 1873 modified telegraph instruments, such as the magneto key, and the alphabet instrument which would spell out words, and which he said were to supersede the existing telegraph instruments. His witnesses, many of them of exceptional stupidity, who undoubtedly saw electric speaking telephones at his shop in 1876-8, have mixed these things together, and, aided by their desire to help a friend, by his subtle insinuations of ideas into their heads, and by the gossip of the village grocery and cobbler's shop during the preparation of this case, have come to a condition of mind where they attribute to one time what they saw at another, in a shop full of contrivances all equally wonderful, and all equally incomprehensible to them.

Drawbaugh's witnesses and their value.—His case rests purely on oral recollections. Its whole strength lies in the fact that he has fifty-one such witnesses who testify that before the Bell patent they heard speech at his shop, through what they say they understood were electric speaking telephones.

Two questions lie at the foundation of this case. One is, what is the value of the mere oral recollections of the interested parties and their friends, of such a class, against the history of this man's life? and another is, what is the relative strength of the purely oral testimony on the two sides? for on Drawbaugh's side there is nothing else. We believe that the answer to each of these questions is against him.

When we first heard of the Drawbaugh claim and began to study the subject on the spot, we found that fair inquiry was impossible. The country people saw on one side a corporation of strangers; on the other, a neighbor whose success was a matter of local pride, and promised to bring into that little community, and into the pockets of an open-handed man, more money than the villagers had ever dreamed of. More potent than all was the intense local feeling of a narrow and rural community which made every member of it a partisan of one side and an enemy of the other. But this was not all. The Drawbaugh Company had diligently cultivated the ground, and had taken seventy-five *ex parte* affidavits, but not for use in any proceedings. They were simply anchors planted around

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to hold that community. The great case was the theme of gossip in the country grocery and cross-roads shoeshop, till the most ignorant were ashamed not to remember, and vied with each other in their stories. So we found, during the four years of taking testimony, that witnesses who remembered nothing in the first year, swore the most glibly for him in the last.

At the outset, we had to consider what classes of persons would be the crucial witnesses in such a case. The claimant had had nine partners and twenty-five workmen during the time in question. He had a number of close and intimate friends, near neighbors, men of substantial means, disposed to invest money in his inventions. He was in the habit of going to the two telegraph superintendents and other skilled and intelligent persons in Harrisburg and Mechanicsburg, and showing them his inventions. If his story be true, it is absolutely certain that to all those men the telephone would have been like a household word, and they would have been continually solicited to aid him in patenting, &c., if aid was needed,—for he was a professional inventor and patentee and says he always wanted to patent this invention. If the fact were clearly established that those men did not know of the invention, it would be certain that it did not exist. With that fact once established, the dim and strained recollections of the small farmers and farm laborers, testifying about an instrument they neither understood nor took interest in, their minds confused by the large number of contrivances they saw in his shop and the number of times they saw them, are of no value upon the question whether one particular unknown thing they saw was a speaking telephone, or at what period of their constant visits they saw it.

In this inquiry we were thoroughly successful. Indeed, the history of the case did not leave it in doubt; for most of these men were in such circumstances and of such disposition, shown by the aid they gave him about other inventions, that if they had known of a speaking telephone at his shop, the public history of the art would have begun at that instant. But the proof is even more specific. Drawbaugh's cross-examination

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and some other undisputed proofs developed the names of about seventy-five persons so situated. He was repeatedly asked whom he had applied to for aid, and what exhibitions of his instruments he had made; and no one of these men were named by him. Out of all these seventy-five men, only two or three (they were workmen employed about 1870) were called by the defendants to even pretend to any recollection about his instruments. Others were put on the stand for collateral matters, but not asked about telephones. Then we went to them, found in almost every case (including the case of the two telegraph superintendents) that Drawbaugh had applied to them before we had, and they had no recollection of any such machine until after the summer of 1876. We called a substantial number of them—enough to establish the proposition. That, under these circumstances, Drawbaugh, on whom the burden lay, and whose friends they were, did not call the others, is conclusive.

Against these stubborn facts the Drawbaugh party labored for four years, and called 400 witnesses, mostly for collateral and remote matters, but the crucial witnesses did not come. With all this scouring of the country, they could find only fifty-one persons who would pretend to fancy that they had heard speech during the ten years with anything which they could suppose to be the telephones he described—five a year—a number absurdly below what the story, if true, would have furnished. But hardly one of these was above the grade of a common farm laborer.

It is only the mere residuum of such conflicting oral testimony, if there be any residuum, which is to be set against the facts of his history, against his advertising card, against his own deposition and his questions to Hauck in the interference testimony in the summer of 1879, against the fact that all his partners and friends who would have advanced money for the telephone, if he had had one, never heard of it, against the fact that with one or possibly two exceptions no man of intelligence even pretends to have heard speech before the Bell patent. Besides that, an examination of the depositions themselves shows that they are thoroughly

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worthless, and that plainly a considerable number of them are the result of deliberate contrivance and conspiracy on Drawbaugh's part.

We begin with the fact that of these fifty-one witnesses more than half swear to thoroughly good speech through the tumbler F and tin can B. We know now from the New York tests that that is absolutely impossible. Several other witnesses swear that with a pair of magneto telephones, and several others swear that with instruments they cannot identify or describe, they heard perfectly good speech when the receiver was lying on the table, and they were several feet distant from it; or that they heard perfectly good speech without any trouble in the midst of the noise of the machinery of the shop. The best magneto telephones to-day, or the best instruments Drawbaugh pretends he had, cannot do anything of the sort. It is absolutely impossible. Moreover, the picture they give of his life for the ten years before the Bell patent—his "abject" poverty, his exclusive devotion to the telephone, that he worked on nothing else—we know is false. All this destroys an argument which rests on the assumption that what a large number of such witnesses say must be true. We know that what more than half of them swore to specifically about the telephone is false, and that their whole picture of his life gives nothing but false color. The circuit judge found that they were ignorant men who had been practised upon by Drawbaugh and first made to believe his story, and afterwards produced to swear to it. He declined to substitute their credulity for his own judgment.

Some specific instances are very instructive.

Henry Bayler, who appears on the surface to be one of the best half dozen of their witnesses, was one of the proprietors of a neighboring saw-mill and planing-mill from the spring of 1873 until the summer of 1877. He and Drawbaugh had dealings together, and Drawbaugh did repairs at the mill. Bayler says that at some time he went to Drawbaugh's shop and heard perfectly good speech through the tumbler F and tin can B. We know that is impossible. He says that it was when Drawbaugh was first repairing his saw-mill engine,

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which was fixed to be in June, 1873. His association of dates is hardly more than arbitrary ; and if the occurrence, whatever it was, was not then, there is no way of fixing it any time short of the summer of 1877, when Bayler moved away. It certainly was not during the year named nor during the next year. For the partitions in the upper story of Drawbaugh's shop, where he says his telephones were usually kept and used, were changed from time to time, and we know from Drawbaugh's own testimony and the testimony of the different partnerships which occupied that shop and paid for the changes in the partitions, just when each change took place. Bayler testifies to the situation of the rooms, and exactly in which room each instrument was placed, and where the wires ran. The partitions and rooms which he so swears to as the place where he witnessed the tests of the instrument F and B, did not exist until 1875, two years after the time when he says he saw the instruments ; they remained in that condition until 1878.

Bayler was also called to testify to Drawbaugh's extreme poverty. He puts his visit as at the end of June, 1873. He says that Drawbaugh importuned him to advance a little money to take a patent, and said that it was absolutely impossible for him to find any, and that if he could find money enough for a patent, his fortune would be made. He professes to have known that Drawbaugh was abjectly poor at that time. The truth is, as is shown by the books of the faucet company, produced by Drawbaugh, that at that time the company had just sold all its property for cash, and within two weeks from that time Drawbaugh received from that sale a dividend of \$450 in actual cash, (July 15, 1873,) and had so little pressing call for the money that he used \$300 of it to pay off the last instalment of the bottom mortgage on his own house ; for he owned a double house at that time, and had for six years, with an old incumbrance of \$300 on it. He lived in one half of this house, and rented the other half for \$110 a year to a good paying tenant.

Bayler says that Drawbaugh's poverty was such that when he made repairs at the saw-mill he always required to be paid in

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cash at once; and that when he bought lumber from the saw-mill he always insisted that it should stand on credit; and when they settled their account finally he owed the saw-mill about \$70, which they had to sue for and establish a lien for, in order to collect. Drawbaugh put Bayler on the stand to swear to that story. Yet the truth is that the saw-mill people never paid Drawbaugh a dollar of cash; that he got lumber from time to time only against his credit for work already done; that there never was a time during all these years when the saw-mill people did not owe him on settlement of account from \$30 to \$60, which he could have had by asking for it; and that at the very time alleged for this visit they owed him \$50, sufficient to take out a patent, and he never asked them for it. These facts we afterwards proved by the production of Drawbaugh's accounts in his own handwriting, and by the saw-mill people's books, and they were not disputed. Moreover, the settlement of account had involved a suit between Drawbaugh and the saw-mill people, and in that suit Drawbaugh filed his own affidavit, stating this condition of the accounts, and showing that the last lumber he took from them (\$70, in 1877) was intended to balance this account, and if it overran it, it was only about \$10 or \$15, which he was ready to pay. This affidavit, which we put into the case, was sworn to by Drawbaugh only fifteen months before he put Bayler on the stand to testify to the story which he knew was false.

Jacob Reneker says that at one time Drawbaugh was so poor that he sold to Reneker a part of his household furniture — a secretary and bedstead — to pay for provisions for his family. Drawbaugh on the witness stand repeats this story very pathetically. The fact is that at the time in question Drawbaugh was moving from one house to another: his household effects made eighteen horse-loads; he had more furniture than his family needed or than his new house could hold; among other things he had two secretaries (he had made one himself, and had afterwards bought a better one), and, in moving, he sent his old secretary and some bedsteads to his workshop as superfluities, varnished them up, and sold them to Reneker.

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Urias R. Nichols testified that he had been in the signal service and assistant keeper of a lighthouse, and appeared to be an intelligent witness. He said that he went to Drawbaugh's shop and saw the tumbler F, and tin can B, and the wooden instrument A; that Drawbaugh said the wooden instrument was about two months old, and the tumbler and can three or four years old; and they talked through them. He testified that this was in January, 1875, and he fixed the date by saying that on the day of this his only visit to Drawbaugh's shop he bought some lime at a particular lime-kiln which he specified, and that a memorandum, which he said he had at home but forgot to bring and never produced, stated that the lime was delivered January 18, 1875. On cross-examination, he said that he went to the shop particularly to see Drawbaugh's electric clock, in consequence of having read an account of it in a newspaper, which he repeated. We found the newspaper with that account in it, and instead of being January, 1875, it was February, 1878, two years after the Bell patent. We produced the man who kept the lime-kiln up to April, 1876, the time of the Bell patent, with his books, and he proved that Nichols never bought any lime of him. Nichols testified on cross-examination that during the same season as this visit to Drawbaugh's shop he stated the occurrence to Colonel Maish, a lawyer in York, and a member of Congress. Colonel Maish, called as a witness by us, remembered the statement perfectly well, and knew Drawbaugh as one of his constituents; but he also remembered that when Nichols told him of it, the telephone was not new to him, because he had talked through a Bell telephone in Washington. The telephone he talked through we proved was put up by one of Mr. Bell's agents in the fall of 1877. Nichols never came back to explain his story, and there was no attempt to reinstate it. Yet he appeared to be one of their best witnesses.

But what becomes of Drawbaugh who puts a witness on the stand to detail an interview between them and to swear that at the time of the visit the telephone A was two months old, and that the first telephone with the tumbler and tin can

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was then a few years old, when it turns out that this visit was two years after the Bell patent? Either the whole occurrence is concocted, or it is fatal to his dates.

Samuel Nichols, another witness, says that he went to Drawbaugh's shop, listened to the tumbler and tin can, and heard two words, and his "son-in-law Bruce" was with him, and also heard two or three words. He thought the visit was in 1869. It turned out that Bruce did not become his son-in-law until June, 1876, four months after the Bell patent, and did not become acquainted with his family until after Bruce's first wife had died in 1875. Nichols' son, Edward Nichols, worked in Drawbaugh's shop in 1874 and swears that he never heard anything about telephones. Drawbaugh, who saw him before we did, tried to make him think he remembered them, but in vain.

Henry B. Musser, a farmer, went to Drawbaugh's shop several times to have his mowing machine repaired, between 1874 and 1878, inclusive, but each year in June, the mowing season. He fixes the dates of each of those visits by payments entered in his farm books. He says he saw the tumbler and tin can and once talked through them, and his recollection is that this was at his first visit, in June, 1874. On the witness stand he made a diagram of the arrangement of the rooms where the tumbler and tin can were at the only visit when he tried them, and where the wires ran; the partitions he so described did not exist until 1875 and remained until April, 1878. He undertook to describe the other things that he saw at the same time when he talked through the tumbler and tin can, and he testified to seeing at that time a number of electric clocks; in fact these did not exist before the summer of 1877. He has seen the later instruments there, but not in the same year when he tried F and B. This puts the tumbler and tin can as the best instruments after the Bell patent, and refutes the previous existence of better ones.

Several witnesses got into trouble in the same way by letting the fact be known that they saw at the same time the early telephones and some remarkable clocks which Drawbaugh admits did not exist until one or two years after the Bell patent.

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Mrs. Darr testifies that she moved away from the village in 1870, and before she left she used to hear a great deal about Drawbaugh's telephones. That seemed to fix a date, but upon cross-examination she testified that at the same time, and while living there, she also heard a great deal about his electric clock, particularly about its being carried over to Harrisburg to be exhibited. That clock was not made until the fall of 1877, and was exhibited in Harrisburg in May, 1878.

Decker went there several times, and undertakes to fix one particular time, a year or two before the Bell patent, as the time when he particularly remembers hearing speech through the telephone. On direct examination he detailed the conversation between himself and Drawbaugh through the telephone; it was about the birth of the child of one of his neighbors. We called the neighbor, and his first child was born a year after the Bell patent.

George W. Drawbaugh, a nephew of Daniel, the claimant, said that he first knew of his uncle's speaking telephone at the time when he and his uncle, at his uncle's shop, were painting a certain wagon to be used by the firm of Drawbaugh Sadler, consisting of Daniel Drawbaugh, the claimant, and one Jacob Sadler, now dead. He does not exactly remember the date, but he got the lumber for the wagon from one Lee, and Lee's only charge against George Drawbaugh for lumber is in March, 1870. He then produced a witness *Ditlow*, who said that George Drawbaugh told him all about the exhibition at the time. *Ditlow* first testified as a witness for us that this was in 1877, a year after the Bell patent; but afterwards was prevailed upon by Drawbaugh to come back on the witness stand and swear that he did not well remember the date himself, but that in the spring of 1870 he went to the West to live (coming back generally for the winter), and told all this to people out there. A number of people from Indiana swore that he told it to them there in the spring of 1870, and could not have told it later because they knew him then and did not meet him afterwards. That story hung together extremely well, and seemed to fix 1870 as a date, until presently we got hold of the accounts of the firm

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of Drawbaugh & Sadler. That firm did not exist until 1871, and the wagon was not painted until 1871, so the whole labored chain of circumstances is pure delusion or fabrication.

These are only some out of a number of samples. More than a dozen out of his fifty speech-hearing witnesses were destroyed in this way. More than half are destroyed by the proved incapacity of F and B to talk. But it is not merely those specific witnesses who go by the board. There is no character left in a record of which they were the most important part. The court below found that his witnesses were mostly ignorant men whose memories were confused about what they saw or when they saw it, and whom Drawbaugh, with the aid of friendship and local feeling, had beguiled into believing untruths, and put them forward to swear to them.

The testimony furnishes some very curious proofs of this confusion of memories. We have already referred to the fact of a string telephone, in the village, at least. Other instances are more striking. *Captain Moore*, one of the most intelligent of his witnesses, carried on business at Drawbaugh's shop, with Drawbaugh for his superintendent, from March, 1875, to the fall of 1876. He never attempted to talk with any instrument, but saw some machines which he does not well remember, but thinks they were for speech. They had magnets, and were to be used without a battery; and he testified on direct examination that Drawbaugh said that they were to be used as a substitute for the fire-alarm telegraph. Now a speaking telephone could not well be so used. But Drawbaugh's magneto telegraph key, which he certainly had at that time, was intended by him for that use; he offered it for that purpose to the fire-alarm superintendent at Harrisburg, and his advertising cards of 1873-6 expressly stated its fitness for that purpose. *N. W. Kahney* testified that Drawbaugh told him that he had a Mechanicsburg man to go in with him on the telephone, and *Shopp* says that Drawbaugh was going to exhibit at the Centennial. We know from Drawbaugh that it was only his clock that any Mechanicsburg man thought of taking an interest in, and that it was only the clock that he thought of exhibiting at the Centen-

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nial. One of the most striking instruments produced was the tall H (the Blake transmitter), which most of the witnesses identify by the bell on top (only the lower edge of which is shown in the cut). We know as a matter of fact, from his own cross-examination, that he had in his shop from 1873, or thereabouts, to the present time, some alarm bells to be rung by electricity, for use in hotels. *Shettle*, one of his most conspicuous witnesses, swears that he saw in 1876 or 1877 an instrument which he recollects as H; that he recognizes it by the bell; that they did not talk through it; that Drawbaugh did not tell him it was a talking machine, but told him it was to be used for calling in hotels, and that all Drawbaugh did in showing it to the witness was to ring the bell.

We have already pointed out from Mr. Matthews' *Baltimore American* article, and Drawbaugh's preservation of the *Scientific American* article of 1863, his early attention to the "phonic telegraph." That was a plan of a machine which was to send words by sounds, and supersede the existing telegraph. With the class of men he called as witnesses, testifying in 1882-4 to ancient occurrences in a shop where they had seen telephones ever since 1876, and an abundance of electrical contrivance they did not understand before that, this was a sufficient basis for their confusion.

The absolute contrast and inconsistency between the story told by Drawbaugh and his witnesses and the actual facts of his life and his own repeated statements in writing before the controversy began, compel the conclusion reached by the Circuit Court that in its essential features, and the only feature which the law makes the turning point, to wit: on the question whether he had a practical speaking telephone before the Bell patent, the story is a fabrication,—an intentional fabrication by Drawbaugh, supported by witnesses in part dishonest, in larger part misled by him. These witnesses as a class are shown to be unreliable. Against them, or such of them as do not destroy themselves or are not destroyed by others we have the fact, established beyond controversy, and chiefly out of his own mouth, that neither his partners, nor the telegraph superintendents, nor his friend Weaver, the patent solicitor,

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nor his fellow-workman David Hauck, ever heard of the existence of such an instrument. Actual count shows on the one hand fifty-one witnesses who swear that they heard speech in the course of ten years, (mostly with F and B, proved to be incapable of speech,) and other witnesses who say they saw or heard of the instruments, but did not take interest enough to try them; and on the other hand seventy-five persons, intimate friends and intimates of his shop, who are proved, not by their own recollection alone, but by their history and conduct, and by Drawbaugh's testimony, to have had no knowledge of the existence of a telephone. These men are virtually his witnesses, for they are part of the class whom the law required him to call, and whose memory he in fact appealed to. The weight of the oral testimony, especially when judged by the rule laid down by Lord Mansfield, is on our side; but, in this conflict of testimony, the general history of the claimant, the confessed fact that this great invention never got into use by a single human being from his alleged work, coupled with his own history and his own declarations, with the proof of his habitual falsifications in the testimony, especially as to poverty, leave the case free from doubt. It would be enough that they left it in doubt, for the rule is settled that whoever attacks a long-established patent, as this man did for the first time in 1880,—a patent for an invention so startling that the moment it existed in the most rudimentary form it arrested universal attention,—and does that with the story that the invention in a perfected form in his hands never attracted attention enough to make anybody desire to use it, and who rests such a story on oral recollections of fact and of date,—must make out a case free from doubt. To raise a doubt is to resolve it against the claimant, said Judges Strong and McKennan in *Parham v. Button-Hole Machine Co.*, 4 Fish. Pat. Cas. 468, 482. To the same effect are *Wood v. Cleveland Rolling Mill Co.*, 4 Fish. Pat. Cas. 550; *Thayer v. Hart*, 20 Fed. Rep. 693; *Washburn v. Gould*, 3 Story, 122, 142; *Coffin v. Ogden*, 18 Wall. 120, 124; *Cantrell v. Wallick*, 117 U. S. 689, 696. The rule and a most substantial reason for it was well stated in *Thayer v. Hart*, 20 Fed. Rep. 693. "The evidence of prior invention is usually

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entirely within the control of the party asserting it; and so wide is the opportunity for deception, artifice or mistake, that the authorities are almost unanimous in holding that it must be established by proof, clear, positive and unequivocal."

Poverty is the only ground on which Drawbaugh attempted to reconcile the story alleged and the history proved. There is no suggestion in the record that the great gulf between his story and his life,—between the alleged existence of the invention and the proof that no marks or fruits of it are found,—can be bridged over by any lack of appreciation. On the contrary, it is a part of his story that he believed it to be of enormous importance and vast pecuniary value, and that for ten years he was so engrossed in it that he could think of nothing else. The answer says that nothing but his abject poverty prevented him from patenting it, and from manufacturing instruments for commercial use; that after he had first got good speech, he perceived that improvements would "increase its value to himself and the public," and therefore labored on it with great zeal and assiduity. He testifies that from 1867 for ten years he worked at it unceasingly, laying it aside only occasionally, and with reluctance, to earn bread for his family, whom he kept reduced (so he avers) to great poverty for this cause. The court below found that poverty was the only excuse offered, and that that excuse was false in fact.

He called forty witnesses (whose testimony to this point is collected in our brief) to swear that during the whole time he asserted the importance and the value of the invention. "He said it was the greatest invention ever known." "He said he could run it out for miles, and parties could talk the same as persons in a room together." It was "to supersede the telegraph." "My fortune lies in this." "He said it would be a fortune to him." "If I can accomplish it, it will be worth thousands to me." "Would be worth a great deal of money." "I have a talking machine that beats all the other of my inventions." "He said he could make a fortune out of it." "Would astonish the world." "If he would be able to get it accomplished, he would be a very rich man some day." "If he is successful in getting it finished, he will be the richest

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man in the valley." "It would surpass the telegraph." "When it was perfected, there would be no trouble to connect one point with another." "More wonderful and handier than the telegraph." "It will take the place of telegraphing, and be cheaper." "If he could get this accomplished, get it patented, he would be one of the richest men." "His whole heart and desire was on the telephone." They swore that they saw his shop usually lighted late at night, and always believed he was working on the talking machine, and that he habitually neglected his work to labor on the talking machine. "He appeared 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—that is about his standing—the way he felt all the time I was there (1873-6)." Unfortunately for the credit of this witness (*Holsinger*), he, during that period, wrote two newspaper articles praising Drawbaugh's inventions. He described his clock, but did not mention the telephone among them.

His other occupations, his experiments on other and foolish contrivances, show this to be an absolutely false picture, and condemn all these witnesses. But the gossip, as they give it, during all the years down to a period as late as 1877, the year after the Bell patent, is that "*if* he gets it accomplished" he will be rich. Such gossip, whenever it was, together with the fact that he had sufficient means and tools, tells the history of a man who did *not* "accomplish." We believe, however, that these witnesses have entirely confused their memories of the many other things which he did before 1876 with the telephones which he made after 1876.

The burden is on him to show the truth of his history. Nor does the law find it essential to know just what he did, in order to decide against him. It puts one single inquiry: Did he have a practically successful speaking telephone before Bell's invention? Because, if he did not have that, it is not important to know whether he had nothing, or whether he had something that fell short of that. Therefore, if his history and surrounding circumstances are inconsistent with *that*, his case is disposed of, and the law does not seek whether there was some insufficient foundation for a false claim.

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The history of the alleged maker of so startling an invention is not evidence which simply bears upon the probability of a story which may be true. It is the strongest legal proof against it or for it, as the facts may be. In *Atlantic Works v. Brady*, 107 U. S. 192, 203, this court declared that where this proof was all one way, no judicial action could be based on mere recollections to the contrary. In the sewing machine case (*Howe v. Underwood*, 1 Fish. Pat. Cas. 160, 165), Judge Sprague rehearsed the proof from recollections, and then stated the proof from the undisputed facts of the man's interest. These are two lines of positive proof, said he, so inconsistent that one or the other *must* yield, and that statement of the question answered it.

The argument of the value of a cloud of witnesses, which is the whole reliance of the other side, is all against Drawbaugh.

It is a well recognized fact that the illusions of memory are more common than the omissions of memory. That the partners and others—that these seventy-five men—would have known of and used the telephone if it had publicly existed, is certain. That such a cloud of intimates could have known of it, and forgotten it, is impossible. But that an unobservant set of men who have always seen and heard of much at his shop they did not understand or take interest in, and had seen and heard of telephones at his shop for five or six years before they testified, should now think they remember what in fact they did not then, but have seen and heard much of since, and should confuse their memories as to the subject they did see, and the time when they saw it, is consonant to daily experience, and to the observations of writers on the subject. The courts know this. “The confidence of the attacking witnesses is often in proportion to the distance in time that the one is removed from the other. Their imagination is wrought upon by the influences to which their minds are subjected, and beguiles their memory.” Swayne, J., in *Wood v. Cleveland Rolling Mill Co.*, 4 Fish. Pat. Cas. 550. Of all causes for delusion in dates, none is so potent as the contrivance which Drawbaugh has generally induced his witnesses to resort to—the arbitrary association, by mere memory, of events which

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have no necessary relation to each other; as the attempt to fix the date of a particular visit to the shop by pretending to remember that it was while the witness lived in one house rather than another, and then casting a glamor of authenticity over the whole by producing a dated deed of the house selected. See *U. S. Stamping Co. v. Jewett*, 18 Blatch. 469.

The magneto instruments D and E.—Of all the instruments alleged to have been made before the Bell patent, the tests of the so-called reproductions show that none would physically suffice to overturn the patent except the magneto instruments D and E. The defence cannot be supported, therefore, except upon proof of the date of these two instruments. From the tests made at a comparatively early period in the case it was evident that it must turn on the dates of these. The defendants took four hundred depositions. Yet, out of this vast number, and from four years scouring of the whole country, they were able to find only seven men who even pretended to have heard a word through D and E before the Bell patent. The story is that these instruments existed a whole year before the Bell patent. Their perfection and clearness, in spite of some weakness, must have been such as to satisfy the most incredulous that when they were made the problem had been solved, and that whoever had them had instruments fit for commercial use. If they were made before telephones were in use in the world, they must have produced an enormous effect on Drawbaugh, on all his family and friends, and upon all of the many hundred people who are alleged to have known of his telephone. The fact that under these circumstances his utmost research can find only seven men who pretended to have got speech through them, is of itself decisive. These seven men, however, sift down upon the first critical examination of their testimony into almost nothing. They are as follows:

Decker swears that he heard speech through them in the fall of 1874. The claim made by Drawbaugh's counsel and sought to be supported by their proofs is that they first existed in the spring of 1875. Decker is the man who talked through a telephone about his neighbor's baby several years before it was born.

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Jerry Fry was the storekeeper in the village from the spring of 1875 to the spring of 1880. At some time, which he says he fixes by mere memory as April, 1875, he heard *singing*, but no speech, through something which he thinks was D and E, and thereupon he told one of his neighbors, he says, that "it would be a very good thing if Drawbaugh gets it accomplished." Real speaking telephones like D and E never would produce that effect; nor has he any way of fixing a date.

Isaac Millard testified that he heard through them in 1874, which is before Drawbaugh pretends they were made; he afterwards was brought by leading questions to say he thought it was in 1875; but he had already sworn that in 1869 he plainly heard speech through the tumbler and tin can which we know cannot talk, and he also swore that in 1869 he heard speech over a certain out-door line which Drawbaugh himself testifies did not exist until 1878.

Fettrow, the blacksmith of the town, who hired half of Drawbaugh's house and lived under the same roof with him from 1868 to April, 1876, and has lived in the same house ever since, says that it was in 1875, according to his recollection, that Drawbaugh for the first time alluded to the subject to him. At some time, which he thinks was in 1875, he talked through something which he thinks was D and E. He has been at the shop from once a week to once a month ever since. He says that he has continually seen talking machines, but never tried to talk through one at any other time, and has no other definite recollection about them.

Holsinger is the witness who swore that Drawbaugh's whole heart and soul were on the telephone from the time he, the witness, first moved to Eberly's Mills in 1873 until he left in 1876, and that he hardly knew of Drawbaugh ever working on anything else, unless it might be his magneto telegraph key. Yet during that time Drawbaugh was absorbed in the various pieces of experimental work that have been mentioned. Holsinger was the printer who, in 1874 and again in 1786, printed the card enumerating eighteen other inventions but not the telephone; and Holsinger was the newspaper writer

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who in the fall of 1875, and again in the fall of 1876, wrote newspaper articles speaking of the clock as Drawbaugh's real work, and making no allusion to the telephone.

Harmon K. Drawbaugh is the claimant's nephew, and says that he did substantially all the work of making the instruments D and E, under his uncle's direction. Holsinger swears that with his own eyes, day after day, he saw Drawbaugh himself making them.

These six men were all the witnesses who pretended to have heard speech through D and E during the first taking of testimony for the defence. In the fourth year of the case, when they were completing their four hundred witnesses (called mostly to the most remote, trivial, and incompetent collateral matters), and after the incapacity of the instruments preceding D and E had been proved, Drawbaugh made great efforts to get some more witnesses to swear to this pair. He succeeded in getting only two, and they were such as would destroy any case for which they might be called.

John Simmons, an old inhabitant of the village, testified that he has worked in Drawbaugh's shop most of the time since 1880, and was in his employ at the time he testified; that during the taking of the testimony, and a few months before he himself testified, he stated to the complainant's representative that he knew nothing about the telephone. Afterwards, in 1884, he went on the witness stand and testified that it had suddenly come to him that he remembered all about it, and had talked through D and E, in November, 1875, but that he never mentioned that circumstance to any one until he told it to the defendants' counsel the day he testified. Yet during the whole of the time of taking testimony, and for three years preceding his deposition, he was employed by Drawbaugh as a workman in his shop, and talked with him about the case.

George May lived in Drawbaugh's village from 1874 to the day he testified in 1884. He is a farm laborer, and perhaps the stupidest among all the witnesses. He says that when testimony was first being taken in 1881-2 Drawbaugh asked him "whether I didn't mind the time he showed it to me in 1875." He had no recollection then, and was not called. But

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just at the end of the case, and after he had heard the matter talked over for four years in the little village, he suddenly remembered all about it, and testified in 1884 that Drawbaugh talked through D and E with him in March, 1875, and he knew that was the time because Drawbaugh sharpened a razor for him that year. When asked what else he saw and did on that occasion, he describes seeing the instrument H with as much certainty as D and E. Drawbaugh's own story is that the instrument H did not exist until the fall of 1876.

This testimony about D and E is the whole proof on which Drawbaugh's case must depend.

Drawbaugh himself is not among those who swear to the existence or use of those instruments before the Bell patent. After the first six enumerated witnesses had testified, Drawbaugh was called. His counsel did not dare to ask him when he made the instruments D and E, nor even if he made them before the Bell patent. They were put into his hands, and he was told, by a question objected to as leading and incompetent, that his nephew Harmon had testified that they were made in January or February, 1875, and he was asked by his own counsel, "Have you any recollection of the fact or not?" and he answered, "*I have no recollection of the time*, but I recollect of Harmon working on the machine. One of them was made before that time. What I mean is, that there was one of them made, and Harmon made, or helped to make, the other. *I cannot remember the year or the date of it.*"

Afterwards he was again asked which instruments he had made prior to the time when the Axle Company carried on business in the shop; their business began March, 1875, and ended in the fall of 1876. He says: "I won't positively say that D and E were prior to the Axle Company, but I know that at the time the Axle Company was running I had them there. It may have been prior to the starting of the Axle Company. It may be, but I do not want to be too positive."

The claimant himself, therefore, will not swear that those instruments were made before the Bell patent. The court must tell him, for he cannot tell the court. If he had had these perfect instruments eighteen months when he heard of

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Bell's invention and Centennial exhibition in the summer of 1876, as he said he did, he could not have forgotten that fact. He knows that they did not then exist, and he does not dare to run the risk of a prosecution for perjury on that specific fact. When *he* will not swear that these instruments were made before the Bell patent, the court in such a case cannot, *as matter of law*, find that they were. Certainly it will not on such meagre testimony as he has produced, and in the face of the facts of his history. But though Drawbaugh did not even know in what year they were made, he personally tried to get May to swear to so definite a date as March, 1875, and persisted until he succeeded.

The defendant's witnesses who swear to D and E—both those who say they heard speech and those who say they casually saw them but never tried them—inevitably profess to recognize them by the “curled” or snail-shaped steel magnet at the back of D (*vide p. 400, supra*). It is certain that they never saw it. This magnet in exhibit D is fastened very loosely by one end to one end of the sliding core of the electro-magnet. The rest of this curled magnet is entirely unsupported, and its mode of attachment is such that the least handling breaks it away and throws it out of place; so that as soon as the exhibit came to be used in evidence, a block of wood and a screw which are now present were put in after it had been filed, in order to preserve it from destruction. When the instrument was first made, the magnet was inclosed by a wooden cover, a duplicate of which now exists in E. Drawbaugh says that this cover became broken and lost off, and was not replaced. It is certain from the condition of the magnet and the mode of its attachment that the instrument never was used for many days without the cover, because it would have fallen to pieces. The loss of the cover, therefore, must have been, not at the very beginning of the life of the instrument, but at about the time when it ceased to be used and became superseded by later instruments. With that cover on, the curled magnet cannot be seen, and the arrangement of the adjusting screw is such that the cover, once put on, could not be taken off without breaking it to pieces or taking the instru-

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ment apart. Yet every one of the witnesses who testify to this instrument, including those who profess to have seen it before it was a month old, swear that they recognized it by "the curled magnet." It is obvious that they never could have seen that magnet, and that, as it is *now* a striking feature, their professed memory is the result of recent observation, and not of recollection.

Again, Drawbaugh's nephew, *Harmon Drawbaugh*, says that he finished and put together the metal work of these instruments. He swears that when they were first made, two sets of curled magnets were forged, and that one set was then made by Fettrow, the village blacksmith. The date when Fettrow made these magnets would therefore settle the date of the instruments. Now *Fettrow* produced at Drawbaugh's call all the accounts between himself and Drawbaugh from 1869 to April, 1876. He testified that they contained every item between himself and Drawbaugh; and in fact they did contain many items as low as ten cents for little pieces of iron and steel and forgings. Yet during the two years prior to April, 1876, there is no charge for magnets, and no charge for any piece of steel or metal whatever out of which those magnets could possibly have been made. It is certain from these accounts, therefore, that they were not made before April, 1876. All these pieces of testimony were commented upon at the first hearing before Judge Wallace, in October, 1884. The defendants afterwards took an additional volume of testimony, but made no attempt to meet these fatal pieces of proof then upon the record.

A number of witnesses called by Drawbaugh testify that the instruments which Drawbaugh showed as his best, at some time after the Bell patent, were the tumbler and tin can. *Urias Nichols*, for example, who went there at a date which we now have proved was in January, 1878, swears that the instruments he talked through were the tumbler and tin can, and he did not see D and E. So with *Samuel Nichols*. *Springer* testifies that he moved to the village in April, 1876, which was after the Bell patent, and lived there for nine months, and experimented with Drawbaugh almost every day.

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He says that for several months when he first went there they used the tumbler and tin can exclusively, and that, after that, Drawbaugh said to him that he had now got some instruments which would talk both ways, and produced D and E as novelties, and the witness had never seen them before.

Testimony about 1875 and 1876, and later.—A number of witnesses called by us, personal friends of Drawbaugh, first heard of his having any telephone in October, 1876, and were then shown by Drawbaugh the *tin can* as all he had. The testimony of one set of these witnesses, *Shapley* and his brothers-in-law, is very convincing. Mr. Shapley was a jeweller and watchmaker at Mechanicsburg, a few miles from Drawbaugh's village. Indeed, Drawbaugh lived in Mechanicsburg from April, 1876, to April, 1877, while the Bell patent became famous. Mr. Shapley is a well-to-do, intelligent man, and he and Drawbaugh had been acquainted for many years. In 1876, Shapley had two thousand dollars lying idle which he was seeking employment for, and Drawbaugh, knowing of that, went to him to absorb the money. He offered to Shapley an interest in his electric clock invention, not then patented, and Shapley made with him a written conditional contract, dated November 8, 1878, to take it if on examination he liked it, and paid him \$20 on account. In October, 1876, Shapley went to Drawbaugh's shop with his brother-in-law Landis, another watchmaker, and they examined the clock. A few weeks afterwards, Drawbaugh brought the clock to Shapley's store, set it up, arranged his earth batteries, and had it running: and Shapley paid about \$20 more for the expenses of this. Then Shapley made another electric clock like it with his own hands, in order to better test the invention. Finally, discovering that that clock, like all others of its kind, could not possibly be a good timekeeper, owing to the variations in the strength of the electric current, he gave up the bargain.

Drawbaugh's story is that his utmost endeavors were directed to getting somebody to advance money enough to patent his telephones and manufacture them. Between June and October, 1876, Mr. Bell's Centennial exhibition had attracted the attention of every one to the telephone. Draw-

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baugh had read the accounts of it, and they had been published in the local papers. If he then had, not Bell's feeble membrane diaphragm instruments of the Centennial, but the excellent magnetos D and E, and the Blake transmitter H, it is not in human nature that, coming into contact with his friend Mr. Shapley, who was ready to invest several thousand dollars in his inventions, he would not have asked him to invest it in the telephone. It is not in human nature that he should not have told Shapley that he had these wonderful instruments if he had them, and shown them to Shapley when Shapley was at his shop in October, 1876. And when he wanted to create a sensation in the town by an exhibition in Shapley's shop, in November, 1876, after the newspaper accounts of Bell had excited the whole world about the electrical transmission of speech, it is impossible to believe that he would have got Shapley to spend \$20 in carrying his clock there and setting it up, when the little magnetos which could be used without a battery or a moment's preparation would have far surpassed any possible clock in novelty and in interest. Yet it is the concurrent testimony of Mr. Shapley, of his brother-in-law Mr. Landis, and of Drawbaugh himself, that Drawbaugh never asked Shapley to invest any money in the telephone, nor pretended to them for one moment that he was the first inventor of it, nor made any reference to it beyond what Shapley testified as follows:

Mr. Shapley took the *Scientific American*, and Drawbaugh was in the habit of reading it at his shop and borrowing the papers. In September, 1876, the *Scientific American* described Bell's Centennial telephone as consisting of a tin can with a bladder across one end, carrying an iron armature, and an electro-magnet in front of that armature; and Drawbaugh testifies that about this time he read somewhere a description of Bell's instruments. In October, 1876, (the date is positively fixed,) Shapley and Landis were at Drawbaugh's shop. They both agree, and Drawbaugh does not contradict it, that he showed them the tin can instrument which corresponds to that description of Bell's apparatus, (and no other instrument,) and told them that that was an invention which was

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going to make a great stir in the world. Yet he did not hint to them that he was the originator of it; that he had had it for nine years; and that in that very room, twelve feet square, where they were, he had instruments—the magnetos D and E, the carbon microphones G, O, and the Blake transmitter H—which far surpassed anything that anybody dreamed of at that time. That was the time when he was first trying to interest Shapley in some invention,—he did not care what. And his story is that he thought the telephone the greatest thing ever made, and that he knew that \$50 for a patent would insure fame and fortune, and he was in search of a partner.

A few days afterwards Drawbaugh was at Shapley's shop, and Shapley produced a copy of the *Scientific American* with a description of the Reis telephone, (issue of March 4, 1876,) and said to Drawbaugh that that was the kind of thing that he appeared to be working on, and gave him the paper. Drawbaugh agrees to all this. He kept the paper, and produced it on his cross-examination. But Drawbaugh never suggested to Shapley to join him in a telephone; never said that he invented it nine years before. He has never offered any explanation of how his story could be reconciled with these facts.

The evidence in his own record relating to 1875 and 1876 makes an equally strong case against him. The *Axle Company*, so-called, a partnership of four persons, employed Drawbaugh as their foreman, to make at his machine shop their patented axle. Their business began in March, 1875, and was not finally terminated until November, 1876—eight months after the Bell patent. Drawbaugh called *Bear* and *Grove*, two of the four partners composing the *Axle Company*, and they, with an exhibition of great dulness and worthless memories, say that they think they probably saw telephones while they were there; Bear's chief reason for thinking so being, as he expresses it, "I have no doubt, as Mr. Drawbaugh explained to me often about his inventions, that he spoke of his talking machine." That is a good sample of the condition of mind of his neighbors who testified for him. They assume that he had them, and, ashamed to confess that they do not remember them, vie

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with each other in "recollection." Neither of these men pretend to any distinct recollection, and neither of them pretend ever to have talked through the instruments. *Kline*, the inventor of that patent axle, was at the shop a great deal, and must have known all about the telephones if they were there. The defendants drew from one of our witnesses on cross-examination the fact that while the taking of testimony was going on, *Kline* declared that he never knew of any telephone there; and in spite of that the defendants did not call him. The remaining member of the Axle Company was *Captain Moore*, a man of means, intelligence, and education; one of the three or four men of intelligence and education among all the defendants' witnesses. He says that during the time of his axle business,—which was until eight months after the Bell patent,—*Drawbaugh* spoke to him about his talking machine, and asked him to advance money to patent it, and that he (*Moore*) felt a good deal of interest in it. He was asked by *Drawbaugh*'s counsel whether during that time *Drawbaugh* did not show him the tumbler *F* and tin can *B*, and he assented, and says that they then had the bladders on. He thinks that he also casually saw *Drawbaugh* at some time working on something which he says may or may not have been talking machines, but that is all. The inquiry thus put to him by *Drawbaugh* on the witness stand and his answer amount to a statement by *Drawbaugh* as well as by himself that the tumbler and tin can with the bladders on—that is not superseded—were the only telephone instruments specifically shown him during all the time he was there, down to the fall of 1876. If that be true, it is certain that the story that *D* and *E* were made before *Captain Moore* ever went there, and had long superseded *F* and *B*, which had consequently become dismantled, is false. *Captain Moore* thinks that this exhibition of *F* and *B* was in the early summer of 1875, but he has no possible way of fixing the date. There is no trace of the enthusiasm *Drawbaugh* would have shown if his story of eight years' anticipation of Bell were true. It is impossible, if *D*, *E*, and *H* existed, that *Captain Moore* could have been asked such questions by *Drawbaugh* or could have disclosed such a history.

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Captain Moore's testimony shows that he has confused the tin can telephone B, which we have no doubt he saw in the fall of 1876, or later (after Drawbaugh had read of Bell's), with Drawbaugh's magneto key, which he undoubtedly saw in the early part of 1875 (p. 439, *supra*).

Summary.—In short, Drawbaugh's history is this. All his life he has been a professional inventor and patentee, and has made his living chiefly by selling his inventions. He was always able to find partners to join his enterprises. During the ten years before the Bell patent he himself received in actual cash \$10,000; his friends and neighbors embarked \$30,000 on his inventions, and offered to exploit other inventions if he had any to present. His story is that during all those years he had practical speaking telephones, fully realized that a fortune awaited him if he could patent them or make them for sale, and failed to do it solely from abject poverty himself and inability to obtain aid from others. Yet he spent more time and money experimenting on various gimeracks of no value than would have sufficed to make a hundred telephones and patent them a dozen times over, and not one of his partners or the intelligent men around him, or the telegraph superintendents to whom he showed his other electrical contrivances, ever heard that he had a telephone.

By the summer of 1876, if his story be true, he had then put into his own instruments nearly all the improvements which a hundred inventors have since labored to produce. Yet no one of these instruments, and no information derived from him, ever found its way to the public, ever led to any knowledge by others, ever made the slightest mark by which it can be traced. Just when he had thus (according to his story) reached high-water mark, he heard that Bell, by an instrument at the Centennial so rude and feeble that Drawbaugh's apparatus of ten years before—if his story be true—far surpassed it, had conquered the fame and fortune which he pretends was his own due, and which for ten years had been the spur that had urged him to privation and toil. Yet this did not wring from him an utterance of anguish or reclamation. He went to the Centennial with George Leonard,

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who for ten years had been his next door neighbor. But he did not carry any telephones. The subject was not mentioned to his companion, who had never heard that Drawbaugh had a telephone.

To his friend Shapley, who had a couple of thousand dollars ready to invest in some invention of Drawbaugh's, he showed in October, 1876, a tin can — just like the Bell telephone already described in the newspapers — and spoke of the importance of the invention, but did not hint that he had originated it, nor that he had perfected instruments which left it ten years behind; and, to use Shapley's money, he proposed an electric clock which he had copied out of an encyclopedia with some trivial changes, and never offered a telephone.

In 1874, and again in 1876, he printed and published a list of his inventions, and the telephone is not among them. In 1875, and again in 1876, his most intimate friend wrote about his inventions in the county newspaper, but did not mention the telephone. In the spring of 1878, several newspaper writers, attracted by large and very expensive electric clocks which his tools and resources enabled him to make, visited his shop. They spoke of him as *then* making improvements in the telephone, which, by that time, was in extensive use, and excited great attention, but to none of them did he say that he originated that great invention; yet his present story is that all those improvements had been completed eighteen months before. An autobiography published in 1878-9 substantially repeats this. To one writer only did he speak of past work, and those statements, made to so considerable a person as a friendly editor of the *Baltimore American*, and published in that year, were that he had tried to make a "telephone," but that it was for a musical telegraph, *with no expectation of speech*.

In the fall of 1878, he got partners to patent and make an improved molasses faucet he had invented eight or ten years before. He showed them his improved telephones (Mr. Blake's transmitter had just gone into commercial use within a few weeks), and their manufacture was discussed, but, after talking with him, they determined not to try it because Bell had

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the bottom patent, and they concluded that "Drawbaugh could not antedate him." Yet one of them had been his intimate friend and visitor for ten years. With the attention of these persons thus drawn to what he had done, and when he did it, came the episode of the Hauck interference testimony. All other of Drawbaugh's inventions did not go beyond improvements of detail in well-known machines. Neither the scope of his mind, nor the range of his knowledge, approached the regions of thought where this invention can be created. He was (the telephone apart) a charlatan and an impostor, for he made his neighbors believe that he was a great originator, by showing them his copies of other men's work. In this faucet testimony he raised the issue, and undertook by himself and his shopmate Hauck, to prove the scope of his genius. The testimony of both left it just where we have stated it. He named contrivance after contrivance which he had made, but he only repeated the list of his advertisements of 1874-6, and did not hint at the invention which would have established him at once. No claim to that invention was then thought of; he and the same men who now make the great claim for him could then find nothing better to spend time and money on than a molasses spigot. This was in May and June, 1879. Two months later, these same men called in their present principal counsel (Mr. Hill) to look at his Blake transmitter and his microphones, to study his story, and see whether it was worth while to file an application or do anything about it. But his and their determination was to drop the business. They did nothing.

A year later, in the summer of 1880, when the Bell patent was more than four years old and its profits held out a great temptation, Drawbaugh was first produced as a claimant, only to furnish a defence to some infringing speculators. One man who was his partner, and two who were his counsel, got three-quarters of his pretensions for nothing. Without spending or promising to spend a cent, they sold his story in a few days for \$20,000 in money and an untold amount of stock. The infringing speculators who bought the claim did not want his telephones, and never used them. But they capital-

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ized his story at five million dollars of "stock" and advertised that in a few weeks they would compel the Bell company to buy them out by paying a "magnificent royalty." Disappointed in that, and forced to fight (for the Bell Company refused to purchase and brought this suit at once), they told a story of invention and success which is falsified by every act of the claimant's life, by every piece of paper which helped to tell his history or enumerated the inventions he had made, and by every statement he has made in conversation and under oath, down to the time they bought and produced him. Their own action showed that they themselves disbelieved his story and only used him to speculate on.

They told of perfected telephones existing and well known for years in his shop,—but which never went outside its walls, never reproduced themselves, never were heard of at the Patent Office, never excited in any person the desire to have one, never imparted to any one the knowledge how to make one,—and yet the claimant was a professional inventor and patentee.

They acknowledged that such a story contradicted itself, and tried to reconcile it with his life by the plea of constraining poverty and by no other plea. But this, in its whole drift and substance and in all its important features of detail, is proved by Drawbaugh's own confession to be false. With it falls the case, the character of Drawbaugh who proffered it, and the value of the "memories" by which he sought to support it.

During all the years under inquiry he was surrounded by prominent and wealthy partners who advanced money for other inventions, but never heard of this. His partners and his friends the telegraph superintendents and others were such that if he had had the invention, they would have known of it; and if they had known of it, the public history of the telephone would have begun before Bell was heard of.

All this history consists of facts which are not capable of controversy, and does not depend upon fallible memories. Memories also are against him, for his partners and his shop-

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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