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SCIENTIFIC AMERICAN SUPPLEMENT

No. 579.

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THE BELL TELEPHONE SUITS.

On the 24th day of January the hearing of the appeals in the five telephone suits before the Supreme Court of the United States began. From the bench of judges, Justice Woods and Justice Gray were absent. The former was ill, and the latter decided not to sit in judgment on the case, because his relatives held Bell telephone stock. The five cases are appeals by the following parties from decisions of the circuit courts: 1, Amos G. Dolbear; 2, the Molecular Telephone Co.; 3, the Clay Commercial Telephone Co.; 4, the People's Telephone Co.; 5, the Overland Telephone Co. The Court assigned a period of two weeks to the hearing, which is now going on from day to day.

Much sensation was created at the outset by Mr. Lysander Hill's charges in his brief and argument, relative to alleged collusion between Bell's attorneys and the Patent Office examiner. He charged that the original copy of the patent with erasures marked upon it had been withdrawn from the Patent Office, and a clean copy substituted. This charge was met by Mr. Storrow of counsel for the Bell Co., who stated that the change of specifications as alleged had never been made; but that he himself had made some comparative memoranda upon a certified copy of the specification for use in the Dowd case, and that these personal memoranda had been printed in the record in the Dowd case, and this was assumed by Mr. Hill to be a true copy of the original Bell specification, while it really had nothing to do with it. This was generally regarded as a point scored by the Bell Company. Mr. Lysander Hill appears for the Drawbaugh Company, the People's Telephone Co.

The immense size of the records before the court, and the magnitude of the interests involved in the decision, will render this one of the memorable law trials. The Bell Company is said to have already spent a million of dollars in litigation, and the value of their franchise, as indicated by dividends and outside interests, is probably worth over one hundred millions of dollars. The court has before it twenty volumes of records, embracing 15,000 pages, besides the voluminous briefs of the different counsel.

The fact that five cases are to be jointly tried, and that such full records of testimony are produced, would seem to point to a thorough sifting of the rights of the parties and of the true scope of the claims of the Bell patent. But unfortunately this thoroughness is only apparent. All the cases are burdened by concessions and weakened by omissions. The full case against Bell, it is to be feared, will not be presented.

The Supreme Court is rigorously confined in its judgments to the case as presented by the proofs taken in the lower court. It has no right to take or call for any new proofs. Its work is really a revision of the circuit courts' judgments. In recent times there has been a pronounced tendency on the part of the Supreme Court to decide against monopolies. Its memorable reissue decisions have done much to limit the scope of patents. Formerly, it was a frequent practice to reissue a patent before beginning a suit, thereby putting its claims and specification in condition for the specific suit to be brought. The Supreme Court has, by the decisions alluded to, put a stop to this practice. Each patent that comes before it must stand on its original claims. This alone has made many patents valueless. The court has also been much more vigorous in its treatment of patents than were the old school of judges. Its reputation now is that of a destroyer rather than of a sustainer of patents. Many a patent runs the gauntlet of the circuit courts successfully, to be pronounced invalid on appeal. Within late years, it has been impossible to withstand, with the least prospect of success, the Bell Company in the circuit courts, owing to previous favorable decisions. Whatever the issue, the merits are now to be judged by a tribunal whose tendency is opposed to patents, and which is unfettered by previous decisions.

A very interesting point is the bearing of the House telephone on these suits. No such complete defense against the Bell claims has yet been produced. First in the columns of this, and later in those of other papers, it has been described and illustrated. Yet the Supreme Court can make no use of it in framing an opinion, because it is not in the circuit court records. If the judges know of it, and they probably do, their position is a peculiar one. They may be convinced that it should break the Bell patent, or at least greatly abridge the claims, yet they can take no cognizance of it in rendering their decision. It is quite within their power to allude to it in their opinion, merely as a matter of history; but for them it is not evidence.

This is greatly to be deplored. The best and most conclusive defense yet produced is excluded from consideration. The court may find itself in the position of a judge who, following the verdict of a jury which has pronounced a man guilty, condemns him to punishment, knowing him to be innocent. This hypothetical case is one often cited by moralists.

On Feb. 4 the time set for the hearing expires. The opinion and decision will then be anxiously awaited. It is earnestly to be hoped that some limitation may be placed upon the extravagant claims of the Bell Co. Meanwhile, the Government suit for the cancellation of the Bell patent is progressing in Massachusetts. In this the House telephone will probably figure as a most important reference. But the remedy, if this shall prove the only one, comes at a late day. Already two-thirds of the period of the patent has nearly expired, and in 1893 the first Bell patent will be public property.

SIR JOSEPH WHITWORTH.*

On Saturday, January 22, Sir Joseph Whitworth died in his eighty-fourth year, at Monte Carlo. He was born at Stockport, Cheshire, England, on December 21, 1803. His education was limited; his father first taught him, and afterward he entered a private school at Idle near Leeds. At the age of fourteen he entered his uncle's cotton mill, and spent four years in the shop after leaving the operative department, where a congenial occupation was found in the general machine work. At twenty-one he moved to London, entering the employ of Maudesley & Clements. The latter had been associated with Babbage in the production of his calculating machine. There it was that he formed the conception of making machine tools to use in making other machinery, and it is in this line of work that he won a great share of his distinction. In 1830 he began to attain success in the production of his celebrated proof planes. In 1833 he returned to Manchester, and placed over his shop the unpretentious sign "Joseph Whitworth, tool maker from London." In this shop he introduced his great edge-planing machine.

The gauge of screws next engaged his attention, and he collected screws from all parts of England, and constructed his standard gauge of screw threads. He had to build a perfect engine lathe for his work. Six months' consecutive work was devoted to the production of a lathe screw thirty feet long. In some sense, this has proved itself the standard lathe of the world. He also developed the slide rest in this shop. Measuring engines next engaged his thoughts; and he ultimately produced his world-famous apparatus that measured within the 1-1,000,000 of an inch. Turning his genius to everyday life, he constructed a street sweeper that is said to have converted Manchester from a dirty to one of the cleanest of cities. From 1834 to 1849, he took out fifteen patents.

In 1854, Lord Hardinge, Master-General of Ordnance, invited him to construct machinery for making guns. This led him to make his famous experiments on rifles and projectiles. After two years' work, he produced his rifle, proved in direct trial far superior to anything of the kind in England or France. In 1856, he began his work on large ordnance, producing the famous Whitworth cannon. This has met with great favor among most nations, except Great Britain, where Sir W. G. Armstrong always obtained the supremacy as regards adoption of his guns and ammunition. His guns were used by the Confederacy in the civil war of the United States, and won encomiums from the artillerists.

His last work was the production of his hydraulic steel. He hailed the advent of the Bessemer steel process with ardor, but found its defects in the blowholes in the metal. He devised a press by which he subjected the molten metal to a pressure of six tons to the square inch, thus doing away with blowholes and increasing its strength immensely. One of his presses was called the 8,000 ton press. The results were extraordinary. The shafts of many steamers were made of this metal, those of the City of Rome and the Inflexible among others. In 1877 he applied it to armor plate. In 1868 he founded thirty £100 scholarships, which, by his advice, counsel, and donations of exhibitions to competitors, he fostered personally throughout his active days. They were designed to train young men in technical work, which he recognized as one of the needs of England. His baronetcy, which expires with him, he received in 1869.

Analyzed the Ashes.

Two barns said to be filled with unthrashed wheat were recently burned in Germany. They were insured, but it was impossible to collect, because the claim was made that the contents of the barns were simply straw. When the affair got into the courts, chemical experts were called to analyze the ashes. Wheat contains a large quantity of phosphoric acid, almost ten times as much as does straw. Naturally, in the burning of these barns, wood ashes, cement, and other mineral substances were mixed with the ashes submitted to the chemists, but none of these admixtures contain phosphoric acid. The experts found that of two samples placed in their hands one contained 10·2 per cent and the other 19 per cent of the acid, thus proving conclusively that the farmers were in the right, and the insurance companies, as is generally the case according to public sentiment, in the wrong.—*Fireman's Herald.*

* For a full account of the life and work of Sir Joseph Whitworth, see SCIENTIFIC AMERICAN SUPPLEMENT, No. 248.