Claude Hamilton Verity
(1880 - 1949)

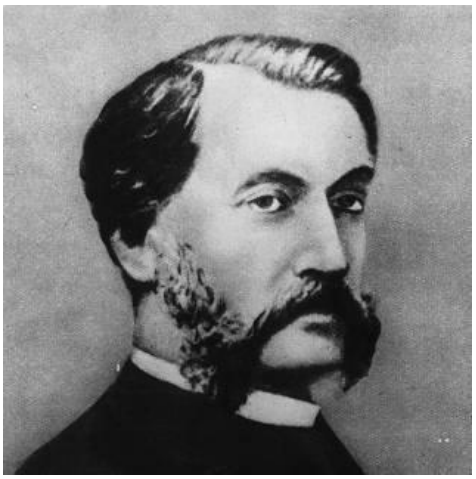
The man who brought sound to film

In 1921 a man living in Harrogate achieved something of a Holy Grail in the history of motion pictures - becoming the first man in the world to demonstrate a workable system for the synchronisation of sound with film. And this was six years before “the Jazz Singer” took the world by storm and ushered in the era of the talkies,

So who was this man and why are his achievements virtually lost to history?


Claude Verity

Claude Hamilton Verity was born in Leeds in May 1880, the youngest child of Edwin and Annie Verity. His father was the manager of a hardware manufacturing and wholesale business owned by his brother Fred. Edwin inherited the business in 1897 on the death of Fred. Their premises were in Lower Briggate close to Leeds Bridge which came to world prominence when Louis Le Prince (1841 – 1890) used it in one of the earliest, ever motion pictures.-
https://www.youtube.com/watch?v=wTlXaqG4VyE


Louis le Prince

Leeds Bridge

One cannot help wondering whether Louis le Prince's ground-breaking work in cinematography was an early inspiration to the young Claude?

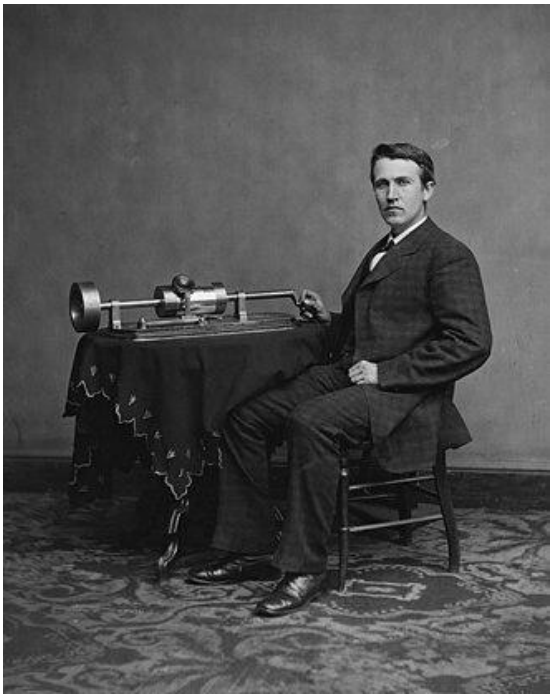
Claude's formative years were spent in Leeds. The family lived in the well-to-do suburb of Roundhay. On leaving school, Claude became an engineering draughtsman in Liverpool before returning to the city of his birth to work in the family business, inheriting it in 1909 on his father's death. In 1917 Claude married Riva Seller of Scarborough and the couple went to live in East Park Road, Harrogate, perhaps influenced by his mother's family having originated in the town. It was at the back of East Park Road that Claude carried out some of his most important work..

9 East Park Road

Whatever energy Claude may (or may not) have chosen to devote to his hardware business, it is clear where his heart really was - in inventing. This can be seen in the many patents he lodged over many years for many ideas – for improvements to stoves, for revolving doors, electric radiators and low-temperature carbonisation. He even invented an "apparatus for the inhalation of medicated vapours".

But it is for his work on the synchronising of sound and pictures that surely Claude should best be remembered. And adding sound to moving images has a complicated history going back to the genesis of both technologies.

It all started in 1877 when Thomas Alva Edison unveiled the world's first system for recording sound - the phonograph.

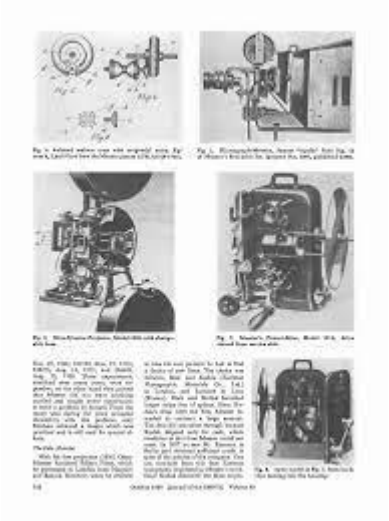


Edison and the phonograph

He followed this only a few years later with his Kinetoscope which provided visual images to accompany the sounds on the phonograph. Then William Dickson, an employee of Edison, briefly experimented with synchronizing the two machines, this creating a short-lived device known as the Kinetophone.

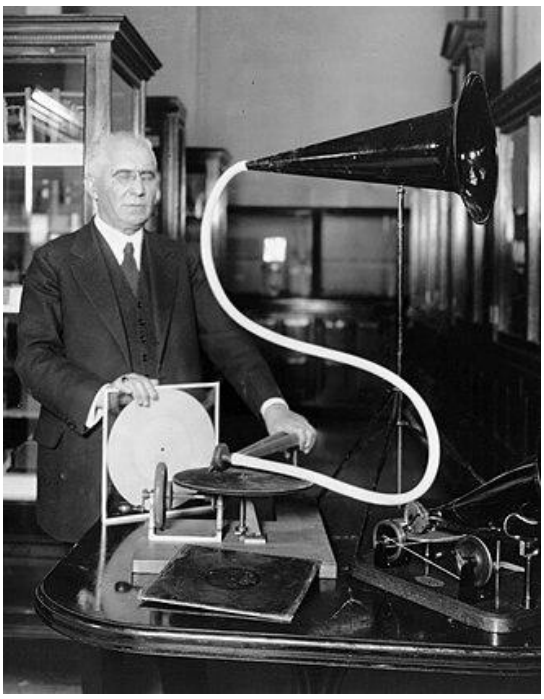
The Kinetophone (earphones lead to a phonograph in the cabinet)

By the dawn of the 20th century, Léon Gaumont's Chronophone in France and Cecil Hepworth's Vivaphone in England were employing similar technologies, each producing hundreds of synchronized shorts between 1902 and 1912 while in Germany producer-director Oskar Messter was releasing his films with recorded musical scores.



Oskar Messter

Concurrently, sound technology was also advancing. In 1890 Emile Berliner had replaced the wax cylinder of the phonograph with a flat disk with a spiral groove running from the periphery to near the centre – a device he called the Gramophone.



Emile Berliner – the Gramophone

And, in 1907, Lee de Forest much improved sound amplification. His Audion tube for the first time enabled large audiences in large assemblies to hear sound at a quality that was acceptable.

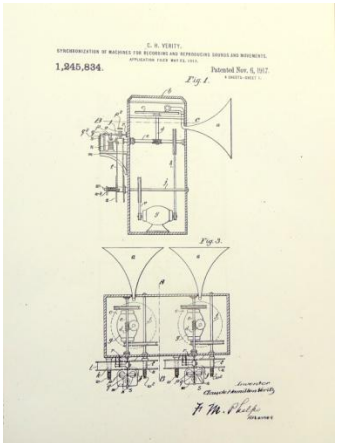
And this was the world into which Claude Verity ventured. Technologies for synchronising sound with film existed but they were expensive toys. A system in a form that was accurate, reproducible, sustainable and affordable was still some way off. Although cinema was fast developing as a popular (and profitable) medium, the emerging studios on both sides of the Atlantic were convinced that the silent film (albeit accompanied by a live pianist, organist or even orchestra) was the technology here to stay. Adding sound to moving pictures would never really catch on, would it?

It was clear that Claude disagreed, Working alone from his laboratory at the back of his Harrogate house reached by a folding external staircase designed to guarantee his privacy, he struggled for years with how best to achieve sustainable synchronisation. It was not an inexpensive hobby. He later estimated that he had spent £7000 on his experiments (equivalent to nearly £500,000 in today's money.Between 1916 and 1928, as his methods developed, he registered no less than ten patents connected with the subject, evolving an approach that was less technological than it was mechanical; a way of matching film running through a projector with corresponding sound that had been laboriously recorded onto independent disks.

To the layman, the engineering is difficult to penetrate. If in doubt about this, the following is the summary to Claude's November 1917 patent application registered in the United States:

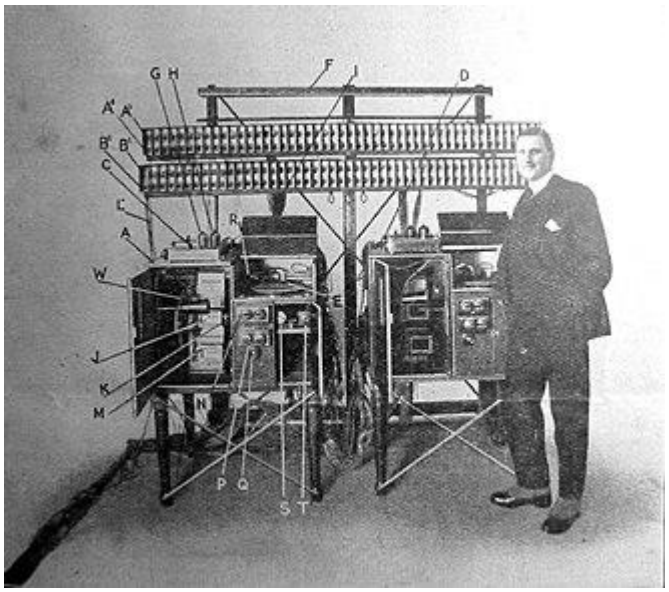
"The herein described method of preparing sound records and moving picture films to be synchronized, consisting in first marking a ribbon which is moved in accord with a sensitized film, correspondingly marking the ribbon and the developed film to indicate corresponding areas on the ribbon and film, then making a sound record which is operated in unison with the ribbon while the developed film is moved in synchronisation with the said film."

For the enthusiast, the full patent can be studied at :
https://patentimages.storage.googleapis.com/e7/c2/4f/43cb74e718cf1f/US1245834.pdf



Drawing attached to the 1917 patent

But by 1920 Claude's ideas had crystallised. He envisaged two rows of lamps capable of signalling when precise union was achieved between the film (streaming through the projector) and the accompanying sound (etched onto separate disks). Guided by the lamps, the projectionist would use delicate geared motors to adjust the film speed to maintain (or perhaps regain) precise synchronicity. The resulting invention certainly looks impressive.



The Veritiphone

The first public demonstration, thought to be the world's first successful, sustained synchronisation of sound with motion pictures, was held in The Royal Hall, Harrogate on 28th April 1921.

The occasion was clearly regarded as a success (at least by some), notwithstanding the non-arrival of special amplifiers ordered from the United States. In the words of the Harrogate Advertiser:

"The chief attraction at The Royal Hall on Thursday was the first public presentation of the Verity system of synchronisation in connection with talking pictures, the inventor being Claude Verity of East Park Road. The conditions under which the film "A Cup of Beef Tea" were taken were far from ideal… In spite of these drawbacks… the audience… took a deep interest in the full measure of success that was attained and their appreciation was shown in the spontaneous applause which broke out when the picture ended."

The Daily Mail was even more enthusiastic:

"Talking kinema films, it is claimed, have definitely advanced a stage as the result of the invention of a synchroniser by Mr. Claude H. Verity, a Harrogate engineer. With this instrument in the projector-box… an operator, by simply sliding a knob quite independently of watching the screen, can work synchronisation to 1-24th of a second. In a Harrogate building where secrecy has been maintained for nearly five years of experimenting… there was no mistaking the accuracy of voice and lip movement. If it should vary a tenth of a second it would be due to the fact that the actors were so much out in repeating for the gramophone recorder what they had done for the screen. These processes are separate and are linked up by an expert stenographer. The synchroniser does away with the necessity for stopping the action of a picture to introduce worded explanations; indeed, dialogue becomes a distinct part of the picture."

However, an extensive and well constructed article in Kinematograph Weekly is worth quoting in full. It will be seen to be distinctly more cautious in its praise and is also helpful in attempting to describe how Claude's invention (as so far developed) was intended to work, and the undoubted drawbacks:

On April 28, immediately following the matinee show at the Harrogate Royal Hall, Claude H. Verity, of Leeds, gave his first trade demonstration of talking pictures prepared under his patent No. 105,407. We had two films shown us: the first a comedy entitled, "A Cup of Beef Tea," the second, a drama entitled, "Plaything of Fate." Neither comedy nor drama included any musical or dance effects, which fact must at once stamp Mr. Verity as a more than ordinarily honest man, since loud music is proverbially easier to render passably on a gramophone or phonograph than are fine modulations of the spoken voice. What is more, while the comedy film had its fair share of action, which, of course, helped cut the accompanying phonograph records synchronised with it, the dramatic sketch had next to no action at all. Here, therefore, a double load came upon the talking machine, for upon it devolved the work of justifying its own sound reproduction and the screen picture as well. In short, whatever else we may say of Mr. Verity's attempt at Harrogate, we shall not accuse him of shirking the test he set himself.

How did the attempt turn out? In trying to judge of this we have to face two quite distinct questions. First we have to consider accuracy of synchronisation. But, after all, to achieve accuracy is not the whole aim and end of the test, but only one step toward it. The other thing we have to consider is final. It is the probable effect upon an audience of this blend of kinematograph and phonograph.

Synchronisation on the Verity system appeared to us to be fairly good, though not more than fairly good, it never got wrong enough for a rather obtuse watcher and listener to be likely to detect the error. On the other hand, it was quite often out by the difference of a second or so. Moreover, one thing we were not given—and that would be the supreme test of synchronisation—a close-up, or series of close-ups by which words could be clearly ticked off against lip movements. The whole of the speaking scenes in both playlets were filmed as long-shots. Having said this, one can readily admit that timing of speech with action never fell very far wrong, which is something.

The speech records and picture records not being made at the same time, or in the same place, on the Verity system, there was also an inevitable absence of certain minor incidental sounds which would certainly have been recorded had both records been made at once. Thus, we saw a motor rolling up to a house door, but no sound of the engine or crunch of wheels on the gravel path went with it. Yet voices of the occupants as they emerged were loud, if not exactly clear. That muffled effect in "gramophonised" human voices brings us back to a matter which really goes beyond the scope of Mr. Verity's invention. Yet, since it exercises a major influence over the whole final decision upon potential dramatic effectiveness of speaking pictures, it should be touched upon.

The Verity speech records were not bad, as gramophone speech records go, but they were not nearly distinct enough or pure-toned enough to make listening to the words either easy or pleasant. It was ear-strain all the while and guess, guess, and guess again at the drift of it all. In the dramatic playlet, where, as already said, very little action was shown to lend a key to the meaning of the spoken phrases this difficulty of following what was said was quite nerve-racking. All of that trouble would, of course, be cured by replacement of the ordinary system phonograph by some new type of sound rendering machine capable of giving clear tones and overtones. Evidently Mr. Verity is fully alive to this, for at the conclusion of his demonstration he announced he had coming to him from America, a speech recording machine in which electric waves were used to engrave the disc instead of the usual needle. Possibly this may be one of the new Lauste light-wave-operated recording machines. Whatever it is, we hope it will prove effective enough to give the needed fillip to this plucky inventor's sound-synchronising arrangement.

Reference to Mr. Verity's patent specification bears out the observed fact that speech and sound recording were not done simultaneously. The patent describes how an electrical commutator geared to the kinematograph camera is made to record picture-taking rate accurately upon a strip of paper. A similar paper strip is afterwards run through an automatic marker geared to the phonograph. For speech recording, the actors in the previously taken film stand before the recording trumpet and speak their parts, telephone receivers being attached to their ears through which a prompter can give them their cues and keep them as nearly as possible to time. The prompter really runs the synchronising in this way, and it is for his guidance the marked check-ribbons pass before his gaze as sound recording proceeds. A similar checking system by letters or numbers is used in the kinema theatre to hand-synchronise screen pictures with sound reproductions. From the description one would expect a

fair approximation to synchronisation without the achievement of absolute accuracy. As we have said, this was exactly borne out at the Harrogate show.

Undaunted, two months later Claude repeated the demonstration in London. The following was the report in the Leeds Mercury:

"The latest development in singing and talking pictures was explained at a demonstration on Saturday at the Philharmonic Hall, London. The inventor, Mr. Claude Verity, of Leeds, claimed to be able to synchronise perfectly the spoken word and the lip movements by the players shown on the screen. By Mr. Verity's system it is claimed to be possible to synchronise speeches, sounds, music, or anything that is at present being done at any of the London theatres – opera, drama, musical comedy, or revue. The inventor does not do away with the orchestra; his object is to synchronise the spoken word or song, the orchestra accompanying the gramophone while the movements are thrown on the screen. The two productions shown on Saturday, 'A Cup of Beef Tea' and 'The Playthings of Fate,' proved that the invention has great possibilities."

The extent of public interest in these "talking pictures" can be gauged from the following article in the Yorkshire Evening Post - April 1922, announcing Claude's intention to show off his invention in Leeds:

"Mr. C.H. Verity, the inventor of the apparatus which has made the synchronisation of film and gramophone a practical proposition, is the head of a Leeds firm of hardware manufacturers and merchants. He is presenting his talking and singing pictures at the Albert Hall, Leeds this week. Entertainments will be given each evening, and on three afternoons. The programme consists of the first film productions under the Verity system of synchronisation. Mr. Verity claims that the cost of these productions will be no greater than that of the majority of silent films, because it is cheaper to help out scenes and actions by words than by the multiplication of dumb show. There are interesting possibilities in the production of talking pictures in these days when the demand is all for novelty and originality in entertainment. Four performances recently given in Harrogate attracted over 5600 people."

However, as a report in the Yorkshire Evening News (also from April 1922) indicates, the road to synchronisation was never going to be easy, not at least for Verity, who was less of a research scientist than a hardware merchant:

"Mr. Claude H. Verity, the Leeds inventor, is making a bold bid to enlist the sympathies of the public in his talking and singing pictures. He claims that he has definitely and absolutely solved the problem of the synchronisation of the voice with the picture on the screen. For over three years he has been perfecting his idea, and so far it has entailed a cost of £7000, but now to quote his own words: 'With my system of synchronisation I can guarantee to keep this relation of sound and lip movement under synchronous control to within one-twenty-fourth of a second for any length of time." Next week at the Albert Hall, Leeds, the local public will have its first opportunity of judging the merit of the invention."


THE "VERITY"
TALKING AND SINGING PICTURES.
DO NOT FAIL TO SEE THIS EPOCH MAKING INVENTION.
CLAUDE H. VERITY PRESENTS HIS
TALKING AND SINGING PICTURES
AT THE ALBERT HALL,
COOKRIDGE STREET, LEEDS.
NOW SHOWING.
EACH EVENING AT 7.45. MATINEES:—
MONDAYS, WEDNESDAYS, & SATURDAYS, at 2.45.
Plan and Bookings at
Archibald Ramsden's, Park Row, Leeds.
Reserved Seats, 2/4. Other Seats, 1/10, 1/3.
(Including Tax)

With the support of such businessmen as Sir Henry Foster and Lord Ravensworth, it was Claude's plan to form a company to develop talking and singing films, and even colour photography. But the company, to be called Kinemaphones Limited, was never to materialise.

So what happened?

If the Verity system was such a success, why does Claude Hamilton Verity get so little mention in the history of world cinema?

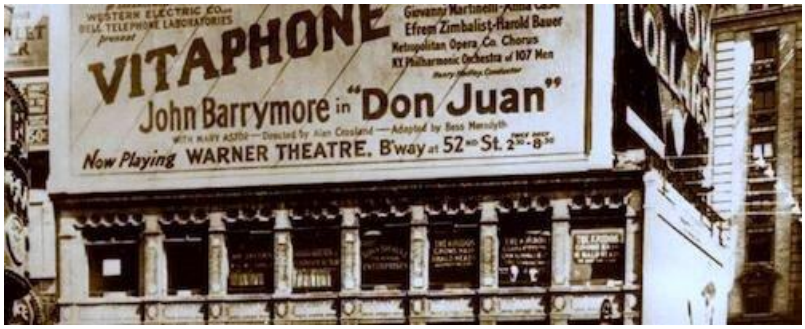
The first hint at a possible answer comes in the Yorkshire Post of 4th January 1923 which carried a small announcement that Mr. Verity had unsecured liabilities of £40,975 (equivalent to more than £3,000,000 in today's terms) and estimated net assets of £14,848. As a result, an application for Claude's bankruptcy had been filed on 28th December the previous year. Although there is significant evidence that Claude did not give up upon his invention (even visiting America for discussions during 1923), the system he had invented simply did not survive competition from the United States. Perhaps, recalling early video recorders, the Veritiphone system, as it came to be called, was something like the Betamax of its day. And just as Betamax faltered when faced with VHS, so did Veritiphone when a better financed, more compelling American system inconveniently developed.

The beginning of the end was in 1925 when Sam Warner of Warner Brothers (at the time only a small Hollywood studio) attended a demonstration of a Western Electric system for the synchronisation of sound with film. He was sufficiently impressed to commission further experiments at his own expense. These were held at the Vitagraph Studios in New York. Warner was so convinced that, in April 1926, he purchased an exclusive license for the system which, like Veritophone, employed a sound-on-disk technology. He renamed the system "Vitaphone" or "living sound".


Marvel of this Marvelous Age
WARNER BROS. VITAPHONE TALKING PICTURES
PIONEERED-PERFECTED-
Given to the World by WARNER BROS.
SEE and HEAR
Vitaphone's
Supreme Dramatic Triumph
DOLORES COSTELLO
in "NOAH'S ARK"
with GEORGE O'BRIEN
Mightiest entertainment achievement since the birth of Motion Pictures! Awe-inspiring—heart-gripping—unprecedented! See and hear "NOAH'S ARK"
Vitaphone is a scientific achievement—far-reaching in its influence on the human family. It immeasurably widens the sphere of knowledge and enjoyment. Brings the whole world of SOUND and ACTION to all people everywhere.
Through Vitaphone, the foremost entertainers of the age re-live before you—they act, talk, sing and play—like human beings in the flesh!
Remember—Warner Bros. pioneered the talking picture. Warner Bros. perfected the talking picture. Warner Bros. Vitaphone has PROVED its nation-wide success and triumph in hundreds of leading theatres from Coast to Coast.
Make no mistake. See and hear Warner Bros. Vitaphone. It will confirm your conviction that here at last is the life-like talking picture—the marvel of this marvelous age.
IF IT'S NOT A WARNER PICTURE...IT'S NOT VITAPHONE

Sam Warner

This system was first seen by the public on August 5th, 1926, at the premiere in Hollywood of Don Juan.



Don Juan was a silent feature but it had been retro-fitted, using Vitaphone, to incorporate a symphonic musical score and sound effects. There was no spoken dialogue. The feature was preceded by a variety of short subjects with live-recorded sound, nearly all featuring classical instrumentalists and opera stars. The only actual talking was in the short film that opened the programme: four minutes of introductory remarks by motion picture industry spokesman, and self-appointed moral guardian of the cinema, Will Hays.

But, despite the limitations of don Juan, that evening changed everything and the interest encouraged led directly, two years later, to "The Jazz Singer" and the immortal phrase: "*You ain't heard nothin' yet".*

And the rest, as they say, is history.

By the early 1930s Vitaphone and all other sound-on-disc systems had themselves been consigned to history. They had been overtaken by the more accurate, flexible (and cheaper) sound-on-film process and the short era of sound-on-disk was over.

And with that, the career of Claude Hamilton Verity sank into obscurity. He died in Torquay on 15th April 1949 at the age of 69 described as a "retired hardware merchant" and a player of bowls at the Lynton and Lynmouth Bowling Club. But surely Claude deserves more than just a faded footnote in the history books. He was, after all, the inventor of the world's first successful, affordable and sustainable process for synchronising sound with film.

For this he should be justly celebrated.