

= Kinetoscope =

The Kinetoscope is an early motion picture exhibition device . The Kinetoscope was designed for films to be viewed by one individual at a time through a peephole viewer window at the top of the device . The Kinetoscope was not a movie projector but introduced the basic approach that would become the standard for all cinematic projection before the advent of video , by creating the illusion of movement by conveying a strip of perforated film bearing sequential images over a light source with a high @-@ speed shutter . A process using roll film first described in a patent application submitted in France and the U.S. by French inventor Louis Le Prince , the concept was copied by U.S. inventor Thomas Edison in 1889 , and subsequently developed by his employee William Kennedy Laurie Dickson between 1889 and 1892 . Dickson and his team at the Edison lab also devised the Kinetograph , an innovative motion picture camera with rapid intermittent , or stop @-@ and @-@ go , film movement , to photograph movies for in @-@ house experiments and , eventually , commercial Kinetoscope presentations .

A prototype for the Kinetoscope was shown to a convention of the National Federation of Women 's Clubs on May 20 , 1891 . The first public demonstration of the Kinetoscope was held at the Brooklyn Institute of Arts and Sciences on May 9 , 1893 . Instrumental to the birth of American movie culture , the Kinetoscope also had a major impact in Europe ; its influence abroad was magnified by Edison 's decision not to seek international patents on the device , facilitating numerous imitations of and improvements on the technology . In 1895 , Edison introduced the Kinetophone , which joined the Kinetoscope with a cylinder phonograph . Film projection , which Edison initially disdained as financially nonviable , soon superseded the Kinetoscope 's individual exhibition model . Many of the projection systems developed by Edison 's firm in later years would use the Kinetoscope name .

= = Development = =

An encounter with the work and ideas of photographic pioneer Eadweard Muybridge appears to have spurred Edison to pursue the development of a motion picture system . On February 25 , 1888 , in Orange , New Jersey , Muybridge gave a lecture that may have included a demonstration of his zoopraxiscope , a device that projected sequential images drawn around the edge of a glass disc , producing the illusion of motion . The Edison facility was very close by , and the lecture was possibly attended by both Edison and his company 's official photographer , William Dickson . Two days later , Muybridge and Edison met at Edison 's laboratory in West Orange ; Muybridge later described how he proposed a collaboration to join his device with the Edison phonograph ? a combination system that would play sound and images concurrently . No such collaboration was undertaken , but in October 1888 , Edison filed a preliminary claim , known as a caveat , with the U.S. Patent Office announcing his plans to create a device that would do " for the Eye what the phonograph does for the Ear " . It is clear that it was intended as part of a complete audiovisual system : " we may see & hear a whole Opera as perfectly as if actually present " . In March 1889 , a second caveat was filed , in which the proposed motion picture device was given a name , Kinetoscope , derived from the Greek roots kineto- ( " movement " ) and scopos ( " to view " ) .

Edison assigned Dickson , one of his most talented employees , to the job of making the Kinetoscope a reality . Edison would take full credit for the invention , but the historiographical consensus is that the title of creator can hardly go to one man :

While Edison seems to have conceived the idea and initiated the experiments , Dickson apparently performed the bulk of the experimentation , leading most modern scholars to assign Dickson with the major credit for turning the concept into a practical reality . The Edison laboratory , though , worked as a collaborative organization . Laboratory assistants were assigned to work on many projects while Edison supervised and involved himself and participated to varying degrees .

Dickson and his then lead assistant , Charles Brown , made halting progress at first . Edison 's original idea involved recording pinpoint photographs , 1 / 32 of an inch wide , directly on to a cylinder ( also referred to as a " drum " ) ; the cylinder , made of an opaque material for positive images or of glass for negatives , was coated in collodion to provide a photographic base . An audio

cylinder would provide synchronized sound , while the rotating images , hardly operatic in scale , were viewed through a microscope @-@ like tube . When tests were made with images expanded to a mere 1 / 8 of an inch in width , the coarseness of the silver bromide emulsion used on the cylinder became unacceptably apparent . Around June 1889 , the lab began working with sensitized celluloid sheets , supplied by John Carbutt , that could be wrapped around the cylinder , providing a far superior base for the recording of photographs . The first film made for the Kinetoscope , and apparently the first motion picture ever produced on photographic film in the United States , may have been shot at this time ( there is an unresolved debate over whether it was made in June 1889 or November 1890 ) ; known as Monkeyshines , No. 1 , it shows an employee of the lab in an apparently tongue @-@ in @-@ cheek display of physical dexterity . Attempts at synchronizing sound were soon left behind , while Dickson would also experiment with disc @-@ based exhibition designs .

The project would soon head off in more productive directions , largely impelled by a trip of Edison 's to Europe and the Exposition Universelle in Paris , for which he departed August 2 or 3 , 1889 . During his two months abroad , Edison visited with scientist @-@ photographer Étienne @-@ Jules Marey , who had devised a " chronophotographic gun " ? the first portable motion picture camera ? which used a strip of flexible film designed to capture sequential images at twelve frames per second . Upon his return to the United States , Edison filed another patent caveat , on November 2 , which described a Kinetoscope based not just on a flexible filmstrip , but one in which the film was perforated to allow for its engagement by sprockets , making its mechanical conveyance much more smooth and reliable . The first motion picture system to employ a perforated image band was apparently the Théâtre Optique , patented by French inventor Charles @-@ Émile Reynaud in 1888 . Reynaud 's system did not use photographic film , but images painted on gelatine frames . At the Exposition Universelle , Edison would have seen both the Théâtre Optique and the electrical tachyscope of German inventor Ottomar Anschütz . This disc @-@ based projection device is often referred to as an important conceptual source for the development of the Kinetoscope . Its crucial innovation was to take advantage of the persistence of vision theory by using an intermittent light source to momentarily " freeze " the projection of each image ; the goal was to facilitate the viewer 's retention of many minutely different stages of a photographed activity , thus producing a highly effective illusion of constant motion . By late 1890 , intermittent visibility would be integral to the Kinetoscope 's design .

The question of when the Edison lab began working on a filmstrip device is a matter of historical debate . According to Dickson , in the summer of 1889 , he began cutting the stiff celluloid sheets supplied by Carbutt into strips for use in such a prototype machine ; in August , by his description , he attended a demonstration of George Eastman 's new flexible film and was given a roll by an Eastman representative , which was immediately applied to experiments with the prototype . As described by historian Marta Braun , Eastman 's product

was sufficiently strong , thin , and pliable to permit the intermittent movement of the film strip behind [ a camera ] lens at considerable speed and under great tension without tearing ... stimulat [ ing ] the almost immediate solution of the essential problems of cinematic invention .

Some scholars ? in particular , Gordon Hendricks , in *The Edison Motion Picture Myth* ( 1961 ) ? have argued that the lab began working on a filmstrip machine much later and that Dickson and Edison misrepresented the date to establish priority for reasons of both patent protection and intellectual status . In any event , though film historian David Robinson claims that " the cylinder experiments seem to have been carried on to the bitter end " ( meaning the final months of 1890 ) , as far back as September 1889 ? while Edison was still in Europe , but corresponding regularly with Dickson ? the lab definitely placed its first order with the Eastman company for roll film . Three more orders for roll film were placed over the next five months .

Only sporadic work was done on the Kinetoscope for much of 1890 as Dickson concentrated on Edison 's unsuccessful venture into ore milling ? between May and November , no expenses at all were billed to the lab 's Kinetoscope account . By early 1891 , however , Dickson , his new chief assistant , William Heise , and another lab employee , Charles Kayser , had succeeded in devising a functional strip @-@ based film viewing system . In the new design , whose mechanics were

housed in a wooden cabinet , a loop of horizontally configured 19 mm ( 3 / 4 inch ) film ran around a series of spindles . The film , with a single row of perforations engaged by an electrically powered sprocket wheel , was drawn continuously beneath a magnifying lens . An electric lamp shone up from beneath the film , casting its circular @-@ format images onto the lens and thence through a peephole atop the cabinet . As described by Robinson , a rapidly spinning shutter " permitted a flash of light so brief that [ each ] frame appeared to be frozen . This rapid series of apparently still frames appeared , thanks to the persistence of vision phenomenon , as a moving image . " The lab also developed a motor @-@ powered camera , the Kinetograph , capable of shooting with the new sprocketed film . To govern the intermittent movement of the film in the camera , allowing the strip to stop long enough so each frame could be fully exposed and then advancing it quickly ( in about 1 / 460 of a second ) to the next frame , the sprocket wheel that engaged the strip was driven by an escapement disc mechanism ? the first practical system for the high @-@ speed stop @-@ and @-@ go film movement that would be the foundation for the next century of cinematography .

On May 20 , 1891 , the first public demonstration of a prototype Kinetoscope was given at the laboratory for approximately 150 members of the National Federation of Women 's Clubs . The New York Sun described what the club women saw in the " small pine box " they encountered :

In the top of the box was a hole perhaps an inch in diameter . As they looked through the hole they saw the picture of a man . It was a most marvelous picture . It bowed and smiled and waved its hands and took off its hat with the most perfect naturalness and grace . Every motion was perfect ....

The man was Dickson ; the little movie , approximately three seconds long , is now referred to as Dickson Greeting . On August 24 , three detailed patent applications were filed : the first for a " Kinetographic Camera " , the second for the camera as well , and the third for an " Apparatus for Exhibiting Photographs of Moving Objects " . In the first Kinetograph application , Edison stated , " I have been able to take with a single camera and a tape @-@ film as many as forty @-@ six photographs per second ... but I do not wish to limit the scope of my invention to this high rate of speed ... since with some subjects a speed as low as thirty pictures per second or even lower is sufficient . " Indeed , according to the Library of Congress archive , based on data from a study by historian Charles Musser , Dickson Greeting and at least two other films made with the Kinetograph in 1891 were shot at 30 frames per second or even slower . The Kinetoscope application also included a plan for a stereoscopic film projection system that was apparently abandoned .

In the spring of the following year , steps began to make coin operation , via a nickel slot , part of the mechanics of the viewing system . By autumn 1892 , the design of the Kinetoscope was essentially complete . The filmstrip , based on stock manufactured first by Eastman , and then , from April 1893 onward , by New York 's Blair Camera Co . , was 35 mm ( 1 3 / 8 inches ) wide ; each vertically sequenced frame bore a rectangular image and four perforations on each side . Within a few years , this basic format would be adopted globally as the standard for motion picture film , which it remains to this day . The publication in the October 1892 Phonogram of cinematographic sequences shot in the format demonstrates that the Kinetograph had already been reconfigured to produce movies with the new film .

As for the Kinetoscope itself , there is a significant disagreement over the location of the shutter providing the crucial intermittent visibility effect . According to a report by inventor Herman Casler described as " authoritative " by Hendricks , who personally examined five of the six still @-@ extant first @-@ generation devices , " Just above the film , ... a shutter wheel having five spokes and a very small rectangular opening in the rim [ rotates ] directly over the film . An incandescent lamp ... is placed below the film ... and the light passes up through the film , shutter opening , and magnifying lens ... to the eye of the observer placed at the opening in the top of the case . " Robinson , on the other hand , says the shutter ? which he agrees has only a single slit ? is positioned lower , " between the lamp and film " . The Casler ? Hendricks description is supported by the diagrams of the Kinetoscope that accompany the 1891 patent application , in particular , diagram 2 . A side view , it does not illustrate the shutter , but it shows the impossibility of it fitting between the lamp and the film without a major redesign and indicates a space that seems suitable for it between the film and the lens . Robinson 's description , however , is supported by a photograph of a Kinetoscope interior

that appears in Hendricks 's own book .

On February 21 , 1893 , a patent was issued for the system that governed the intermittent movement of film in the Kinetograph . However , Robinson ( 1997 ) misleadingly stated " patents for the Kinetograph camera and the Kinetoscope viewer were finally issued " in early 1893 ( p . 38 ) . As explained by Braun ( 1992 ) , " except for the device used to stop and start the moving film , which was granted a patent in 1893 , all the parts of the application describing the camera were ultimately disallowed because of previous inventors ' claims " ( p . 191 ) . Also , Hendricks ( 1961 ) described the outcome of the camera patent similarly to Braun ( pp. 136 ? 137 ) . The facts in sum are : ( a ) a patent solely for the intermittent movement apparatus was issued in February 1893 ; ( b ) all the other elements of the original Kinetograph patent applications were successfully challenged ; and ( c ) a patent , number 589 @,@ 168 , for a complete Kinetograph camera , one substantially different from that described in the original applications , was issued on August 31 , 1897 .

The escapement @-@ based mechanism would be superseded within a few years by competing systems , in particular those based on the so @-@ called Geneva drive or " Maltese cross " that would become the norm for both movie cameras and projectors . The exhibition device itself ? which , despite erroneous accounts to the contrary , never employed intermittent film movement , only intermittent lighting or viewing ? was finally awarded its patent , number 493 @,@ 426 , on March 14 . The Kinetoscope was ready to be unveiled .

= = Going public = =

The premiere of the completed Kinetoscope was held not at the Chicago World 's Fair , as originally scheduled , but at the Brooklyn Institute of Arts and Sciences on May 9 , 1893 . The first film publicly shown on the system was Blacksmith Scene ( aka Blacksmiths ) ; directed by Dickson and shot by Heise , it was produced at the new Edison moviemaking studio , known as the Black Maria . Despite extensive promotion , a major display of the Kinetoscope , involving as many as twenty @-@ five machines , never took place at the Chicago exposition . Kinetoscope production had been delayed in part because of Dickson 's absence of more than eleven weeks early in the year with a nervous breakdown . Robinson argues that " [ s ] peculation that a single Kinetoscope reached the Fair seems to be conclusively dismissed by an 1894 leaflet issued for the launching of the invention in London , " which states , " the Kinetoscope was not perfected in time for the great Fair . " Hendricks , in contrast , refers to accounts in the Scientific American of July 21 and October 21 , 1893 , that constitute evidence no less " conclusive " that one Kinetoscope did make it to the fair . The weight of evidence supports Hendricks ; as fair historian Stanley Appelbaum states , " Doubt has been cast on the reports of [ the Kinetoscope 's ] actual presence at the fair , but these reports are numerous and circumstantial " ( Appelbaum does err in claiming that the device was " first shown at the Exposition " ) .

Work proceeded , though slowly , on the Kinetoscope project . On October 6 , a U.S. copyright was issued for a " publication " received by the Library of Congress consisting of " Edison Kinetoscopic Records . " It remains unclear what film was awarded this , the first motion picture copyright in North America . By the turn of the year , the Kinetoscope project would be reenergized . During the first week of January 1894 , a five @-@ second film starring an Edison technician was shot at the Black Maria ; Fred Ott 's Sneeze , as it is now widely known , was made expressly to produce a sequence of images for an article in Harper 's magazine . Never intended for exhibition , it would become one of the most famous Edison films and the first identifiable motion picture to receive a U.S. copyright . Three months later , the Kinetoscope 's epochal moment arrived .

On April 14 , 1894 , a public Kinetoscope parlor was opened by the Holland Bros. in New York City at 1155 Broadway , on the corner of 27th Street ? the first commercial motion picture house . The venue had ten machines , set up in parallel rows of five , each showing a different movie . For 25 cents a viewer could see all the films in either row ; half a dollar gave access to the entire bill . The machines were purchased from the new Kinetoscope Company , which had contracted with Edison for their production ; the firm , headed by Norman C. Raff and Frank R. Gammon , included among

its investors Andrew M. Holland , one of the entrepreneurial siblings , and Edison 's former business chief , Alfred O. Tate . The ten films that comprise the first commercial movie program , all shot at the Black Maria , were descriptively titled : Barber Shop , Bertoldi ( mouth support ) ( Ena Bertoldi , a British vaudeville contortionist ) , Bertoldi ( table contortion ) , Blacksmiths , Roosters ( some manner of cock fight ) , Highland Dance , Horse Shoeing , Sandow ( Eugen Sandow , a German strongman managed by Florenz Ziegfeld ) , Trapeze , and Wrestling . As historian Charles Musser describes , a " profound transformation of American life and performance culture " had begun .

Twenty @-@ five cents for no more than a few minutes of entertainment was hardly cheap diversion . For the same amount , one could purchase a ticket to a major vaudeville theater ; when America 's first amusement park opened in Coney Island the following year , a 25 @-@ cent entrance fee covered admission to three rides , a performing sea lion show , and a dance hall . The Kinetoscope was an immediate success , however , and by June 1 , the Hollands were also operating venues in Chicago and San Francisco . Entrepreneurs ( including Raff and Gammon , with their own International Novelty Co . ) were soon running Kinetoscope parlors and temporary exhibition venues around the United States . New firms joined the Kinetoscope Company in commissioning and marketing the machines . The Kinetoscope exhibition spaces were largely , though not uniformly , profitable . After fifty weeks in operation , the Hollands ' New York parlor had generated approximately \$ 1 @, @ 400 in monthly receipts against an estimated \$ 515 in monthly operating costs ; receipts from the Chicago venue ( located in a Masonic temple ) were substantially lower , about \$ 700 a month , though presumably operating costs were lower as well . For each machine , Edison 's business at first generally charged \$ 250 to the Kinetoscope Company and other distributors , which would use them in their own exhibition parlors or resell them to independent exhibitors ; individual films were initially priced by Edison at \$ 10 . During the Kinetoscope 's first eleven months of commercialization , the sale of viewing machines , films , and auxiliary items generated a profit of more than \$ 85 @, @ 000 for Edison 's company .

One of the new firms to enter the field was the Kinetoscope Exhibition Company ; the firm 's partners , brothers Otway and Grey Latham , Otway 's friend Enoch Rector , and their employer , Samuel J. Tilden Jr . , sought to combine the popularity of the Kinetoscope with that of prizefighting . This led to a series of significant developments in the motion picture field : The Kinetograph was then capable of shooting only a 50 @-@ foot @-@ long negative ( evidence suggests 48 feet ( 15 m ) feet was the longest length actually used ) . At 16 frames per foot , this meant a maximum running time of 20 seconds at 40 frames per second ( fps ) , the speed most frequently employed with the camera . At the rate of 30 fps that had been used as far back as 1891 , a film could run for almost 27 seconds . Hendricks identifies Sandow as having been shot at 16 fps , as does the Library of Congress in its online catalog , where its duration is listed as 40 seconds . Even at the slowest of these rates , the running time would not have been enough to accommodate a satisfactory exchange of fisticuffs ; 16 fps , as well , might have been thought to give too herky @-@ jerky a visual effect for enjoyment of the sport . The Kinetograph and Kinetoscope were modified , possibly with Rector 's assistance , so they could manage filmstrips three times longer than had previously been used .

On June 14 , a match with abbreviated rounds was staged between boxers Michael Leonard and Jack Cushing at the Black Maria . Seven @-@ hundred @-@ and @-@ fifty feet worth of images or even more were shot at the rate of 30 fps ? easily the longest motion picture to date . In August 1894 , the film premiered at the Kinetoscope Exhibition Company 's parlor at 83 Nassau Street in New York . A half @-@ dozen expanded Kinetoscope machines each showed a different round of the fight for a dime , meaning sixty cents to see the complete bout . For a planned series of follow @-@ up fights ( of which the outcome of at least the first was fixed ) , the Lathams signed famous heavyweight James J. Corbett , stipulating that his image could not be recorded by any other Kinetoscope company ? the first movie star contract .

Just three months after the commercial debut of the motion picture came the first recorded instance of motion picture censorship . The film in question showed a performance by the Spanish dancer Carmencita , a New York music hall star since the beginning of the decade . According to one description of her live act , she " communicated an intense sexuality across the footlights that led

male reporters to write long , exuberant columns about her performance " ? articles that would later be reproduced in the Edison film catalog . The Kinetoscope movie of her dance , shot at the Black Maria in mid @-@ March 1894 , was playing in the New Jersey resort town Asbury Park by summer . The town 's founder , James A. Bradley , a real estate developer and leading member of the Methodist community , had recently been elected a state senator : " The Newark Evening News of 17 July 1894 reported that [ Senator ] Bradley ... was so shocked by the glimpse of Carmencita 's ankles and lace that he complained to Mayor Ten Broeck . The showman was thereupon ordered to withdraw the offending film , which he replaced with Boxing Cats . " The following month , a San Francisco exhibitor was arrested for a Kinetoscope operation " alleged to be indecent . " The group whose disgruntlement occasioned the arrest was the Pacific Society for the Suppression of Vice , whose targets included " illicit literature , obscene pictures and books , the sale of morphine , cocaine , opium , tobacco and liquors to minors , lottery tickets , etc . , " and which proudly took credit for having " caused 70 arrests and obtained 48 convictions " in a recent two @-@ month span .

The Kinetoscope was also gaining notice on the other side of the Atlantic . In the summer of 1894 , it was demonstrated at 20 , boulevard Poissonnière in Paris ; this was one of the primary inspirations to the Lumière brothers , who would go on to develop the first commercially successful movie projection system . On October 17 , 1894 , the first Kinetoscope parlor outside the United States opened in London . Dissemination of the system proceeded rapidly in Europe , as Edison had left his patents unprotected overseas . The most likely reason was the technology 's reliance on a variety of foreign innovations and a consequent belief that patent applications would have little chance of success . An alternative view , however , used to be popular : The 1971 edition of the Encyclopædia Britannica , for instance , claims that Edison " apparently thought so little of his invention that he failed to pay the \$ 150 that would have granted him an international copyright [ sic ] . " As recently as 2004 , Andrew Rausch stated that Edison " balked at a \$ 150 fee for overseas patents " and " saw little commercial value in the Kinetoscope . " Given that Edison , as much a businessman as an inventor , spent approximately \$ 24 @,@ 000 on the system 's development and went so far as to build a facility expressly for moviemaking before his U.S. patent was awarded , Rausch 's interpretation is not widely shared by present @-@ day scholars . Whatever the cause , two Greek entrepreneurs , George Georgiades and George Tragides , took advantage of the opening . Already successfully operating a pair of London movie parlors with Edison Kinetoscopes , they commissioned English inventor and manufacturer Robert W. Paul to make copies of them . After fulfilling the Georgiades ? Tragides contract , Paul decided to go into the movie business himself , proceeding to make dozens of additional Kinetoscope reproductions . Paul 's work would result in a series of important innovations in both camera and exhibition technology . Meanwhile , plans were advancing at the Black Maria to realize Edison 's goal of a motion picture system uniting image with sound .

= = Kinetophone = =

The Kinetophone ( aka Phonokinetoscope ) was an early attempt by Edison and Dickson to create a sound @-@ film system . Reports suggest that in July 1893 , a Kinetoscope accompanied by a cylinder phonograph had been presented at the Chicago World 's Fair . The first known movie made as a test of the Kinetophone was shot at Edison 's New Jersey studio in late 1894 or early 1895 , which is now referred to as the Dickson Experimental Sound Film ; this film , along with a short film from 1913 called Nursery Favorites and a 1912 demonstration film , are the only surviving movies with live @-@ recorded sound made for the Kinetophone . In March 1895 , Edison offered the device for sale ; involving no technological innovations , it was a Kinetoscope whose modified cabinet included an accompanying cylinder phonograph . Kinetoscope owners were also offered kits with which to retrofit their equipment . The first Kinetophone exhibitions appear to have taken place in April . Though a Library of Congress educational website states , " The picture and sound were made somewhat synchronous by connecting the two with a belt , " this is incorrect . As historian David Robinson describes , " The Kinetophone ... made no attempt at synchronization . The viewer

listened through tubes to a phonograph concealed in the cabinet and performing approximately appropriate music or other sound . " Historian Douglas Gomery concurs , " [ Edison ] did not try to synchronize sound and image . " Leading production sound mixer Mark Ulano writes , " [ O ] nly 45 Kinetophones were made . They did NOT play synchronously other than the phonograph turned on when viewing and off when stopped . " Though the surviving Dickson test involves live @-@ recorded sound , certainly most , and probably all , of the films marketed for the Kinetophone were shot as silents , predominantly march or dance subjects ; exhibitors could then choose from a variety of musical cylinders offering a rhythmic match . For example , three different cylinders with orchestral performances were proposed as accompaniments for Carmencita : " Valse Santiago " , " La Paloma " , and " Alma @-@ Danza Spagnola " .

Even as Edison followed his dream of securing the Kinetoscope 's popularity by adding sound to its allure , many in the field were beginning to suspect that film projection was the next step that should be pursued . When Norman Raff communicated his customers ' interest in such a system to Edison , the great inventor summarily rejected the notion :

No , if we make this screen machine that you are asking for , it will spoil everything . We are making these peep show machines and selling a lot of them at a good profit . If we put out a screen machine there will be a use for maybe about ten of them in the whole United States . With that many screen machines you could show the pictures to everybody in the country ? and then it would be done . Let 's not kill the goose that lays the golden egg .

Under continuing pressure from Raff , Edison eventually conceded to investigate the possibility of developing a projection system . He seconded one of his lab 's technicians to the Kinetoscope Company to initiate the work , without informing Dickson . Dickson 's ultimate discovery of this move appears to have been one of the central factors leading to his break with Edison that occurred in spring 1895 .

= = Projecting Kinetoscopes = =

Over the course of 1895 , it became clear that the Kinetoscope was going to lose out on one end to projected motion pictures and , on the other , to a new " peep show " device , the cheap , flip @-@ book @-@ based Mutoscope . In its second year of commercialization , the Kinetoscope operation 's profits plummeted by more than 95 percent , to just over \$ 4 @,@ 000 . The Latham brothers and their father , Woodville , had retained the services of former Edison employee Eugene Lauste and then , in April 1895 , Dickson himself to develop a film projection system . On May 20 , in New York City , the new Eidoloscope was used for the first commercial screening of a motion picture : a boxing match between Young Grippo and Charles Barnett , four or eight minutes long . European inventors , most prominently the Lumières and Germany 's Skladanowsky brothers , were moving forward with similar systems .

By the beginning of 1896 , Edison had turned his attention to promoting a projector technology , the Phantoscope , developed by young inventors Charles Francis Jenkins and Thomas Armat . The rights to the system had been acquired by Raff and Gammon , who redubbed it the Vitascope and arranged with Edison to present himself as its creator . With Dickson having left his employ , the Kinetophone was soon mothballed and Edison suspended work on sound cinema for an extended period . Departing the Vitascope operation after little more than a year , Edison commissioned the development of his own projection systems , the Projectoscope and then multiple iterations of the Projecting Kinetoscope . In 1912 , he introduced the ambitious and expensive Home Projecting Kinetoscope , which employed a unique format of three parallel columns of sequential frames on one strip of film ? the middle column ran through the machine in the reverse direction from its neighbors . It was a commercial failure . Four years later , the Edison operation came out with its last substantial new film exhibition technology , a short @-@ lived theatrical system called the Super Kinetoscope . Much of the Edison company 's most creative work in the motion picture field from 1897 on involved the use of Kinetoscope @-@ related patents in threatened or actual lawsuits for the purpose of financially pressuring or blocking commercial rivals .

As far back as the Vitascope days , some exhibitors had screened films accompanied by

phonographs playing appropriate , though very roughly timed , sound effects ; in the style of the Kinetophone described above , rhythmically matching recordings were also made available for march and dance subjects . While Edison oversaw cursory sound @-@ cinema experiments after the success of The Great Train Robbery ( 1903 ) and other Edison Manufacturing Company productions , it was not until 1908 that he returned in earnest to the combined audiovisual concept that had first led him to enter the motion picture field . Edison patented a synchronization system connecting a projector and a phonograph , located behind the screen , via an assembly of three rigid shafts ? a vertical one descending from each device , joined by a third running horizontally the entire length of the theater , beneath the floor . Two years later , he supervised a press demonstration at the laboratory of a sound @-@ film system of either this or a later design . In 1913 , Edison finally introduced the new Kinetophone ? like all of his sound @-@ film exhibition systems since the first in the mid @-@ 1890s , it used a cylinder phonograph , now connected to a Projecting Kinetoscope via a fishing line ? type belt and a series of metal pulleys . While it met with great acclaim in the short term , poorly trained operators had trouble keeping picture in synchronization with sound and , like other sound @-@ film systems of the era , the Kinetophone had not solved the issues of insufficient amplification and unpleasant audio quality . Its drawing power as a novelty soon faded and when a fire at Edison 's West Orange complex in December 1914 destroyed all of the company 's Kinetophone image and sound masters , the system was abandoned .

= = = Kinetoscope films = = =

Edison National Historic Site : Blacksmith Scene ( 1893 ) , Sandow ( 1894 ) , Serpentine Dance ( ca . 1894 ? 95 ) , Edison at Work in His Chemistry Lab ( n.d. ) . Note that The Kiss ( 1896 ) was shot not for the Kinetoscope but for Vitascope projection .

Library of Congress : twenty @-@ five films from 1891 through 1895