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Mirror with a Memory

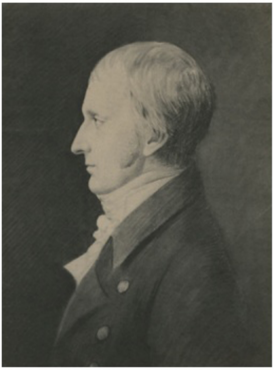
Charles R. Meade
Louis Jacques Mandé Daguerre, n.d.
National Museum of American History, Smithsonian Institution , Washington, D.C.

Next Wednesday, August 19th, has been declared as World Photography Day! It celebrates the invention of the Daguerreotype, a photographic process by two Frenchman - Louis Jacques Mandé Daguerre and Joseph Nicéphore Niépce (pronounced: nee-epps) in 1837.

On January 9, 1839, the French Academy of Science announced the Daguerreotype process to the world, and on August 19, 1839, the French government purchased the patent and permitted its use for free, except for the English who were required to pay a fee. The use of the patent was a “gift to the world”.

There were several inventors of photography the world over. Some were aware of each other, others worked in isolation. Most of the early inventors were trying to fix an image through the action of light. Each was motivated by “a need” in their own working lives besides having scientific curiosity.

Plate from La Grenouilliere (Frog Marsh) service for Catherine II of Russia - Wedgwood, 1774
Brooklyn Museum, Brooklyn, NY

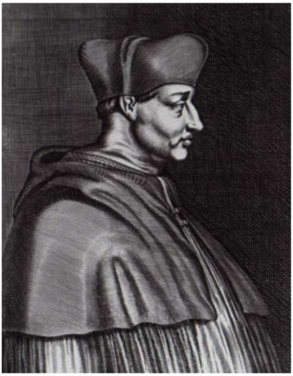


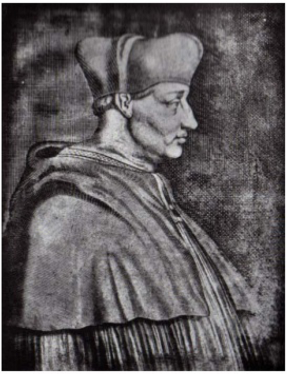
Thomas Wedgwood

In 1733 Josiah Wedgwood (famous for his pottery) wrote a letter to his partner Mr. Bentley.

" I wish you could send me a good Camera Obscura, not too cumbersome, that I could take to the workers here. The object being to ornament a service of China which has been ordered by Catherine the Great with views of the stately homes of England".

Those plates numbered over 1200! However, in 1800 his son, Thomas Wedgwood, in trying to "fix" the image from the camera Obscura failed repeatedly. In 1802, his friend and fellow scientist, Sir Humphrey Davy, wrote a paper explaining Wedgwood's experiments and sent it to the Royal Society of England entitled " *On An Account Of A Method Of Copying Paintings On Glass And Of Making Profiles By The Agency Of Light Upon Nitrate Of Silver".* Thomas Wedgwood abandoned his experiments because he found the images too faint. He died at age 34.

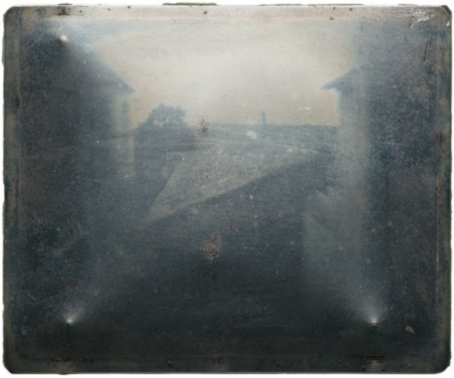




Isaac Briot (1585 - 1670)
Portrait of Georges d'Amboise, Cardinal and Archbishop of Reims, France, c. 1650
Engraving

Nicéphore Niépce (1765 - 1833)
Copy of Engraving of Cardinal d'Amboise , 1826
Heliograph

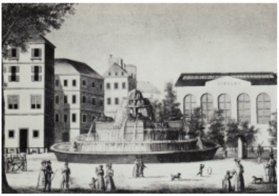
Joseph Nicéphore Niépce was a lithographer. He had been working on methods to improve the process of lithography and in transferring images directly to a stone for use in printing lithographs. He did not have the drawing skills required to copy images for printing. His son Isidore did the drawings for him until he was drafted into the Army in 1814. Niépce, unable to draw himself, began a series of experiments intending to eliminate the need for "artists' talent" by making light itself do the drawing for him.

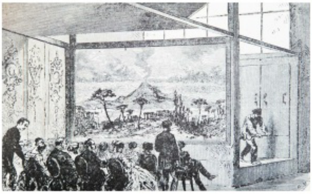


Nicéphore Niépce (1765 - 1833)
Untitled 'point de vue,' 1827
Heliograph on pewter
Gernsheim Collection, Harry Ransom Center, Austin, TX

He had success and in 1826 produced what is considered the first photograph. The exposure was 8 hours long on a pewter plate and was made through his studio window.

In 1829, Niépce was 64 years old and in need of money. He had received letters from Daguerre, a successful entrepreneur in Paris, and inventor of the highly successful Diorama. Niépce did not answer his letters at first. Daguerre had heard of Niépce's experiments and was experimenting himself trying to produce fixed images made with the camera. Louis Daguerre also was a set designer and painter. His Diorama was a showplace in Paris, which was a multi level building with elaborate painted scenes, backlit by colored glass and moving walls. It was a well attended attraction, a precursor to moving pictures.



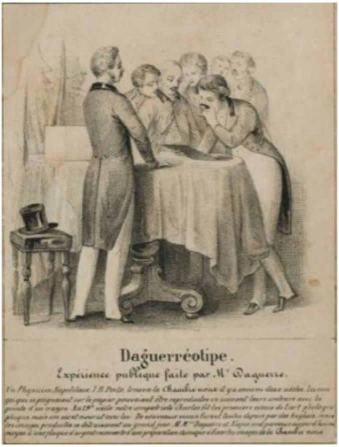


Daguerre's Diorama in Paris

Daguerre's Diorama, presentation of a view of Mount Vesuvius, around 1825

Daguerre's experiments were in part due to the painstaking efforts he put into his scenic painting. He heard of Niépce's experiments (possibly from a mutual acquaintance who was a lens maker) and as he was experimenting himself, he wrote to suggest they form a partnership. Niépce, although somewhat suspicious and reluctant to offer his process, finally relented. Daguerre suggested they keep their invention secret until they perfect it further. In a letter to Niépce, he wrote, "*There should be found a way to get a large profit out of your invention before publication, apart from the honors you will receive*".

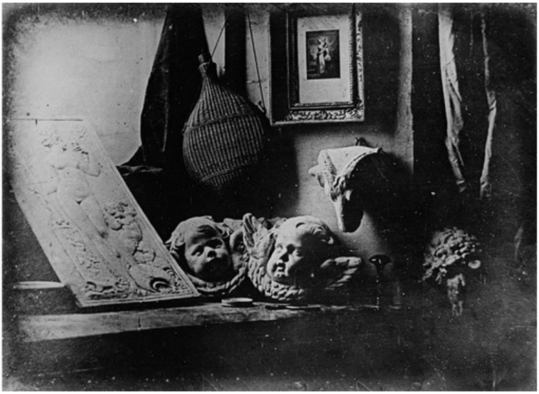
Niépce died in 1833 and his son Isidore assumed the partnership. Daguerre still worked many years on perfecting their process. Although it isn't known exactly how much of the final process was based on Niépce's early experiments, Daguerre certainly improved it, and in the end, Isidore, who was also in need of funds, signed an agreement with Daguerre, agreeing for the process to be called the Daguerreotype.


Daguerréotipe.
Expérience publique faite par Mr Daguerre.

Daguerréotype. Expérience publique faite par M. Daguerre , ca. 1840
Lithograph
George Eastman Museum, Rochester, NY

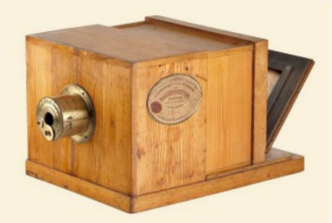
Daguerre received a visit by three noted and respected members of the French Academy of Science: Dominique Francois Arago, Alexander von Humboldt, and Jean-Batiste Biot.

Dominique Francois Arago, a noted astronomer, was particularly impressed with Daguerre's process and became his spokesperson/mentor to the Academy. Arago helped convince the French Government to purchase the invention and for Daguerre to accept a pension for life along with the "honors" he would receive. Arago wrote to Daguerre,
"You will not suffer that we shall allow foreign nations the glory of presenting to the scientific world and artistic world one of the most marvelous discoveries that honor our country". In the end, the process was purchased by the French Government. Both Louis Jacques Mandé Daguerre and Isidore Niépce received stipends for life, although Daguerre's was considerably larger.



Jacques Mandé Daguerre, (1787 - 1851)
The Artist's Studio, 1837

On June 15, 1839, the French Chamber of Deputies and King Louis Philippe passed Arago's proposal and on August 19, 1839, the invention was made public. Arago wrote,
" France has adapted this discovery and from the first has shown her pride in being able to donate it generously to the world". Arago was unaware that 5 days earlier, on August 14th, Daguerre had secured a patent in England. Daguerre envisioned making great profits from this invention. And, although he agreed with Arago's proposal to make his invention free to the world, for both financial and for competitive reasons, which existed between the French and the English, he did not want the English to use his invention for free.



Daguerreotype Camera

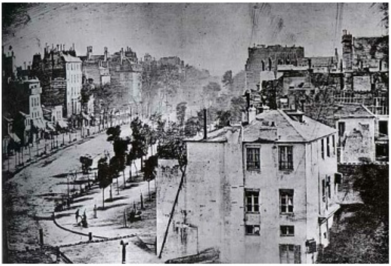
PRIX : 2 FR.

HISTORIQUE ET DESCRIPTION
DES PROCÉDÉS DU
DAGUERRÉOTYPE
et du Diorama,
PAR DAGUERRE,

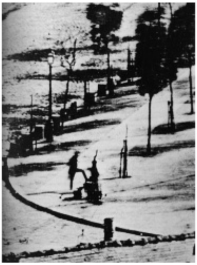
PARIS.
SUSSE FRÈRES, ÉDITEURS,
1839.

Cover of *Historique et description des procédés du daguerréotype et du diorama*

Daguerre had produced the "official" camera and instruction manual that were for sale and use throughout the world. The booklet went through 30 editions and was translated into numerous languages.



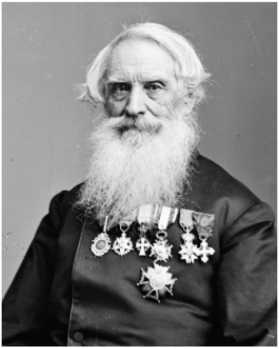
Jacques Mandé Daguerre, (1787 - 1851)
Boulevard du Temple, Paris, c. 1838



Detail

This photograph above was made from the window of Daguerre's studio. The exposure was approximately 10 minutes. The Boulevard du Temple was a very busy street, yet the streets appear empty! Imagine the curiosity, and for some, the fear of this new invention. Most people did not have the basis to understand that such a long exposure could not record moving objects, not understanding how the horse-drawn carriages and the many people on the boulevard disappeared! But, if you look closely, on the street corner you can see a blurred figure, a man who had stopped for a shoeshine, thus making him the first person to be photographed with the Daguerreotype process.

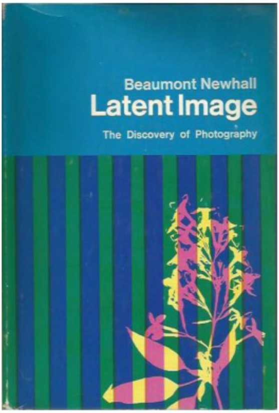
The Daguerreotype in America



Mathew Brady (1822 - 1896)
Samuel F.B. Morse, c. 1840

America first heard about Daguerre's invention from the painter, inventor Samuel F. B. Morse. He was in Paris the winter of 1838-39 presenting his invention of the electric telegraph to the French Academy of Science. In a letter written to his brother he stated, *" I am told every hour that the two great wonders of Paris just now are Daguerre's wonderful results in fixing permanently the image of the Camera Obscura and Morse's electro-magnetic telegraph".* Just before Morse left Paris he went to visit Daguerre to view his results and his apparatus. Daguerre paid a return visit to Morse's hotel and brought some of his best Daguerreotypes. Ironically, during this second meeting, Daguerre's Diorama was burning down across town.

Morse brought the invention back to America and began experiments in making portraits, which Daguerre felt wasn't possible due to the length of the exposure times. Morse along with a friend, John W. Draper, began a series of experiments to decrease the exposure time by redesigning lenses with larger apertures. Another American advancement in reducing exposure time was achieved by John Johnson and Alexander Wolcott who succeeded in reducing exposure time by redesigning the studio using a series of mirrors and glass bottles filled with blue dye, which served to filter the light, helping to shorten exposure. Another interesting fact is that Samuel Morse was the painting teacher of a young artist named Matthew Brady, who was studying with Morse during the time of his experimenting with photography, and of course, that sparked Brady's interest in becoming a photographer.


Beaumont Newhall
Latent Image
The Discovery of Photography

I've tried to capture some of the excitement of this period in the History of Photography, the overlapping events, the individual characters, and the roles they played. It reads like a great mystery. I have purposely left out the chemistry involved in each of the processes I describe so as not to make the story too technical. But, if you have more interest, and I hope you do, besides reading Beaumont Newhall's *The History of Photography,* which tells this story with much more detail, there is an even better is a book he wrote in 1967, entitled, *Latent Image*. Although it was written for a High School audience, it covers all the early history and inventions beautifully with an exciting narrative.

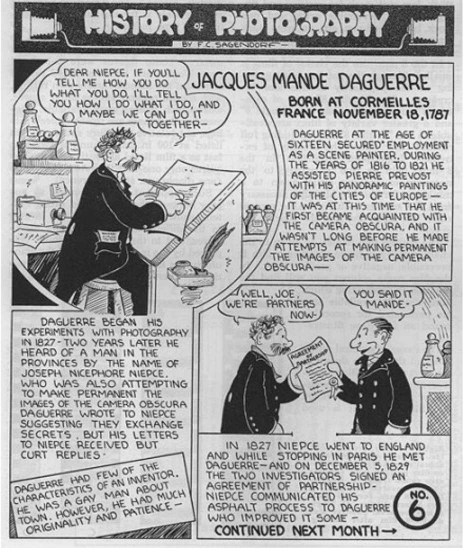
For today's videos, I offer two short videos, approximately five minutes each, on the Daguerreotype. One is from the Getty and the other form the George Eastman House. These videos will introduce you to the process, as well as reiterating the history. Although there is some overlap I feel both will give you a more solid understanding of Daguerre and the Daguerreotype. Enjoy.

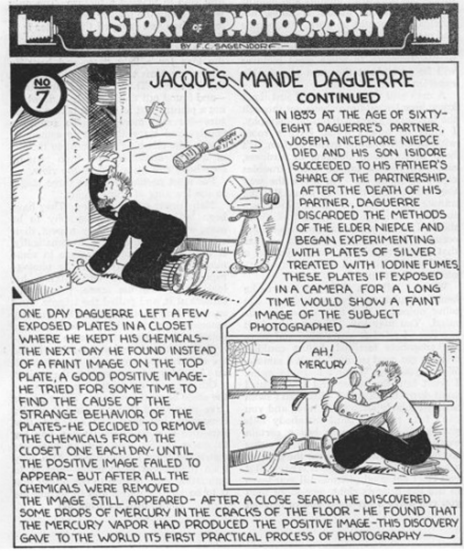
Next week I will talk about the English inventor William Henry Fox Talbot.

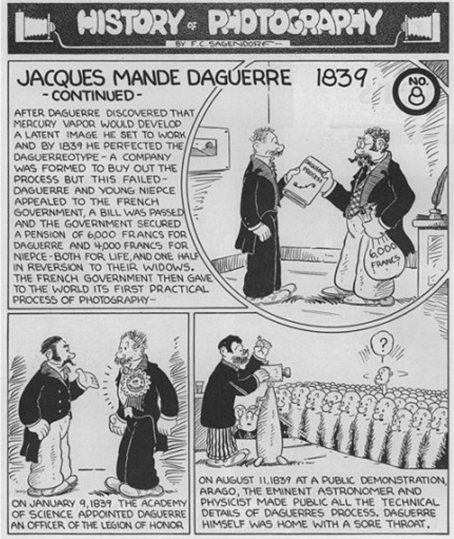
The Illustrated History of Photograph

by Bud Sagendorf

As an added feature to our weekly newsletters, we are posting copies of a History of Photography comic strip. Inspired by Beaumont Newhall's 1937 groundbreaking exhibition at the Museum of Modern Art in New York and the catalog for the exhibition which when expanded became Beaumont's *The History of Photography*. Forrest Cowles Sagendorf who was better known as Bud Sagendorf created a weekly strip in 1938 using Beaumont's text as his guide. Sagendorf was a photography enthusiast and Beaumont loved the comic strip. The weekly comics are a fun and accurate introduction to the early processes and practitioners of photography. I'm sure some of you will recognize his drawing style from his Popeye comics.


HISTORY OF PHOTOGRAPHY
BY F.C. SAGENDORF
JACQUES MANDE DAGUERRE
BORN AT CORMEILLES FRANCE NOVEMBER 18, 1787
DEAR NIEPCE, IF YOU'LL TELL ME HOW YOU DO WHAT YOU DO, I'LL TELL YOU HOW I DO WHAT I DO, AND MAYBE WE CAN DO IT TOGETHER-
DAGUERRE AT THE AGE OF SIXTEEN SECURED EMPLOYMENT AS A SCENE PAINTER. DURING THE YEARS OF 1816 TO 1821 HE ASSISTED PIERRE PREVOST WITH HIS PANORAMIC PAINTINGS OF THE CITIES OF EUROPE — IT WAS AT THIS TIME THAT HE FIRST BECAME ACQUAINTED WITH THE CAMERA OBSCURA, AND IT WASN'T LONG BEFORE HE MADE ATTEMPTS AT MAKING PERMANENT THE IMAGES OF THE CAMERA OBSCURA —
DAGUERRE BEGAN HIS EXPERIMENTS WITH PHOTOGRAPHY IN 1827 - TWO YEARS LATER HE HEARD OF A MAN IN THE PROVINCES BY THE NAME OF JOSEPH NICEPHORE NIEPCE. WHO WAS ALSO ATTEMPTING TO MAKE PERMANENT THE IMAGES OF THE CAMERA OBSCURA DAGUERRE WROTE TO NIEPCE SUGGESTING THEY EXCHANGE SECRETS. BUT HIS LETTERS TO NIEPCE RECEIVED BUT CURT REPLIES-
WELL, JOE, WE'RE PARTNERS NOW-
YOU SAID IT MANDE-
AGREEMENT OF PARTNERSHIP
DAGUERRE HAD FEW OF THE CHARACTERISTICS OF AN INVENTOR. HE WAS A GAY MAN ABOUT TOWN. HOWEVER, HE HAD MUCH ORIGINALITY AND PATIENCE —
IN 1827 NIEPCE WENT TO ENGLAND AND WHILE STOPPING IN PARIS HE MET DAGUERRE — AND ON DECEMBER 5, 1829 THE TWO INVESTIGATORS SIGNED AN AGREEMENT OF PARTNERSHIP - NIEPCE COMMUNICATED HIS ASPHALT PROCESS TO DAGUERRE WHO IMPROVED IT SOME —
NO. 6
CONTINUED NEXT MONTH →


HISTORY OF PHOTOGRAPHY
BY F.C. SAGENDORF
NO 7
JACQUES MANDE DAGUERRE
CONTINUED
IN 1833 AT THE AGE OF SIXTY-EIGHT DAGUERRE'S PARTNER, JOSEPH NICEPHORE NIEPCE DIED AND HIS SON ISIDORE SUCCEEDED TO HIS FATHER'S SHARE OF THE PARTNERSHIP. AFTER THE DEATH OF HIS PARTNER, DAGUERRE DISCARDED THE METHODS OF THE ELDER NIEPCE AND BEGAN EXPERIMENTING WITH PLATES OF SILVER TREATED WITH IODINE FUMES THESE PLATES IF EXPOSED IN A CAMERA FOR A LONG TIME WOULD SHOW A FAINT IMAGE OF THE SUBJECT PHOTOGRAPHED —
ONE DAY DAGUERRE LEFT A FEW EXPOSED PLATES IN A CLOSET WHERE HE KEPT HIS CHEMICALS - THE NEXT DAY HE FOUND INSTEAD OF A FAINT IMAGE ON THE TOP PLATE, A GOOD POSITIVE IMAGE - HE TRIED FOR SOME TIME TO FIND THE CAUSE OF THE STRANGE BEHAVIOR OF THE PLATES - HE DECIDED TO REMOVE THE CHEMICALS FROM THE CLOSET ONE EACH DAY - UNTIL THE POSITIVE IMAGE FAILED TO APPEAR - BUT AFTER ALL THE CHEMICALS WERE REMOVED THE IMAGE STILL APPEARED - AFTER A CLOSE SEARCH HE DISCOVERED SOME DROPS OF MERCURY IN THE CRACKS OF THE FLOOR - HE FOUND THAT THE MERCURY VAPOR HAD PRODUCED THE POSITIVE IMAGE - THIS DISCOVERY GAVE TO THE WORLD ITS FIRST PRACTICAL PROCESS OF PHOTOGRAPHY —
AH! MERCURY



HISTORY OF PHOTOGRAPHY

BY F.C. SAGENDORF

JACQUES MANDE DAGUERRE 1839

- CONTINUED -

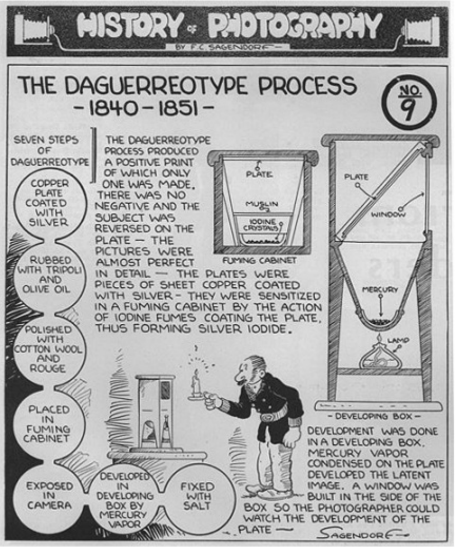
NO. 8

AFTER DAGUERRE DISCOVERED THAT MERCURY VAPOR WOULD DEVELOP A LATENT IMAGE HE SET TO WORK AND BY 1839 HE PERFECTED THE DAGUERREOTYPE - A COMPANY WAS FORMED TO BUY OUT THE PROCESS BUT THIS FAILED - DAGUERRE AND YOUNG NIEPCE APPEALED TO THE FRENCH GOVERNMENT, A BILL WAS PASSED AND THE GOVERNMENT SECURED A PENSION OF 6,000 FRANCS FOR DAGUERRE AND 4,000 FRANCS FOR NIEPCE - BOTH FOR LIFE, AND ONE HALF IN REVERSION TO THEIR WIDOWS. THE FRENCH GOVERNMENT THEN GAVE TO THE WORLD ITS FIRST PRACTICAL PROCESS OF PHOTOGRAPHY -

DAGUERRE PROCESS
6,000 FRANCS
?

ON JANUARY 9, 1839 THE ACADEMY OF SCIENCE APPOINTED DAGUERRE AN OFFICER OF THE LEGION OF HONOR

ON AUGUST 11, 1839 AT A PUBLIC DEMONSTRATION, ARAGO, THE EMINENT ASTRONOMER AND PHYSICIST MADE PUBLIC ALL THE TECHNICAL DETAILS OF DAGUERRES PROCESS. DAGUERRE HIMSELF WAS HOME WITH A SORE THROAT.



HISTORY OF PHOTOGRAPHY

BY F.C. SAGENDORF

THE DAGUERREOTYPE PROCESS

- 1840 - 1851 -

NO. 9

SEVEN STEPS OF DAGUERREOTYPE

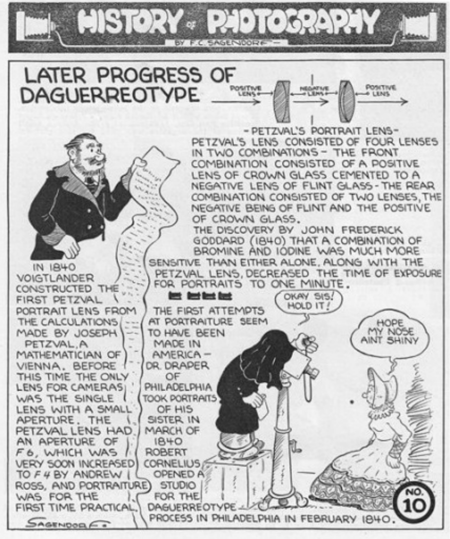
- COPPER PLATE COATED WITH SILVER
- RUBBED WITH TRIPOLI AND OLIVE OIL
- POLISHED WITH COTTON WOOL AND ROUGE
- PLACED IN FUMING CABINET
- EXPOSED IN CAMERA
- DEVELOPED IN DEVELOPING BOX BY MERCURY VAPOR
- FIXED WITH SALT

THE DAGUERREOTYPE PROCESS PRODUCED A POSITIVE PRINT OF WHICH ONLY ONE WAS MADE. THERE WAS NO NEGATIVE AND THE SUBJECT WAS REVERSED ON THE PLATE — THE PICTURES WERE ALMOST PERFECT IN DETAIL — THE PLATES WERE PIECES OF SHEET COPPER COATED WITH SILVER - THEY WERE SENSITIZED IN A FUMING CABINET BY THE ACTION OF IODINE FUMES COATING THE PLATE, THUS FORMING SILVER IODIDE.

PLATE
MUSLIN
IODINE CRYSTALS
FUMING CABINET
PLATE
WINDOW
MERCURY
LAMP
- DEVELOPING BOX -

DEVELOPMENT WAS DONE IN A DEVELOPING BOX. MERCURY VAPOR CONDENSED ON THE PLATE DEVELOPED THE LATENT IMAGE. A WINDOW WAS BUILT IN THE SIDE OF THE BOX SO THE PHOTOGRAPHER COULD WATCH THE DEVELOPMENT OF THE PLATE —

SAGENDORF



HISTORY OF PHOTOGRAPHY

BY F. C. SAGENDORF

LATER PROGRESS OF DAGUERREOTYPE

POSITIVE LENS
NEGATIVE LENS
POSITIVE LENS

- PETZVAL'S PORTRAIT LENS -

PETZVAL'S LENS CONSISTED OF FOUR LENSES IN TWO COMBINATIONS – THE FRONT COMBINATION CONSISTED OF A POSITIVE LENS OF CROWN GLASS CEMENTED TO A NEGATIVE LENS OF FLINT GLASS - THE REAR COMBINATION CONSISTED OF TWO LENSES, THE NEGATIVE BEING OF FLINT AND THE POSITIVE OF CROWN GLASS.

THE DISCOVERY BY JOHN FREDERICK GODDARD (1840) THAT A COMBINATION OF BROMINE AND IODINE WAS MUCH MORE SENSITIVE THAN EITHER ALONE, ALONG WITH THE PETZVAL LENS, DECREASED THE TIME OF EXPOSURE FOR PORTRAITS TO ONE MINUTE.

IN 1840 VOIGTLANDER CONSTRUCTED THE FIRST PETZVAL PORTRAIT LENS FROM THE CALCULATIONS MADE BY JOSEPH PETZVAL, A MATHEMATICIAN OF VIENNA. BEFORE THIS TIME THE ONLY LENS FOR CAMERAS WAS THE SINGLE LENS WITH A SMALL APERTURE. THE PETZVAL LENS HAD AN APERTURE OF F 6, WHICH WAS VERY SOON INCREASED TO F 4 BY ANDREW ROSS, AND PORTRAITURE WAS FOR THE FIRST TIME PRACTICAL.

THE FIRST ATTEMPTS AT PORTRAITURE SEEM TO HAVE BEEN MADE IN AMERICA – DR. DRAPER OF PHILADELPHIA TOOK PORTRAITS OF HIS SISTER IN MARCH OF 1840 ROBERT CORNELIUS OPENED A STUDIO FOR THE DAGUERREOTYPE PROCESS IN PHILADELPHIA IN FEBRUARY 1840.

OKAY SIS! HOLD IT!
HOPE MY NOSE AINT SHINY
SAGENDORF
NO. 10

Before I leave you today, I would be remiss if I didn't mention that this weekend is the anniversary of Woodstock. Having attended the festival myself, selecting a single performance is a difficult task. I don't recall them all for various reasons, which I will not reveal here. But try this, play it loud!

We again want to thank you for the feedback. Your emails and calls mean the world to us and continue to motivate. We have had some wonderful responses.

Many of you have also asked about accessing our previous emails. We have added a new page on our website entitled "History of Photography". All our past and future weekly mailings will be located there for viewing. Please feel free to share them and encourage interested parties to join our mailing list under "contact".

Thank you, please stay safe, healthy, productive, and involved.

Please visit our website **www.photographydealers.com** to view our current inventory.