ARGENTUM: DOUBLE POSITIVE is an artwork by Jim Sanborn.
The texts on these cylinders relate to the history of Rochester and to the history of photography.
These two subjects are intertwined in the artwork as they are in the City of Rochester.
The text on this sign was written and designed by the artist to accompany the artwork.

ATHENS 350 BCE - This complex text by the Greek scientist/mathematician Aristotle is part of the earliest description and explanation of the camera obscura effect. That effect led eventually to the invention of the photograph. It can be read as follows: "WHEN THE SUN PASSES THROUGH QUADRILATERALS, AS FOR INSTANCE IN WICKERWORK, IT DOES NOT PRODUCE A FIGURE RECTANGULAR IN SHAPE BUT CIRCULAR! IS IT BECAUSE THE SUN’S RAYS FALL IN THE FORM OF A CONE AND THE BASE OF A CONE IS A CIRCLE, SO THAT NO MATTER WHAT OBJECT THEY FALL UPON THE RAYS OF THE SUN MUST APPEAR CIRCULAR…"

ZIBO 1088 CE - This text is drawn from the work of the Chinese philosopher Shen Kuo and is a discussion of the camera obscura effect created by the concave mirror used in China to start a fire: "THE BURNING-MIRROR REFLECTS OBJECTS SO AS TO FORM INVERTED IMAGES. THIS IS BECAUSE THERE IS A FOCAL POINT IN THE MIDDLE (I.E. BETWEEN THE OBJECT AND THE MIRROR). THE MATHEMATICIANS CALL INVESTIGATIONS ABOUT SUCH THINGS KO SHU. IT IS LIKE THE PATTERN MADE BY AN OAR MOVED BY SOMEONE ON A BOAT AGAINST A ROWLOCK (AS FULLCRUM). WE CAN SEE IT HAPPENING: IN THE FOLLOWING EXAMPLE, WHEN A BIRD FLIES IN THE AIR, ITS SHADOW MOVES ALONG THE GROUND IN THE SAME DIRECTION, BUT IF ITS IMAGE IS COLLECTED THROUGH A SMALL HOLE IN A WINDOW, THEN THE SHADOW MOVES IN THE DIRECTION OPPOSITE TO THAT OF THE BIRD. THE BIRD MOVES TO THE EAST WHILE THE SHADOW MOVES TO THE WEST, AND VICE VERSA. TAKE ANOTHER EXAMPLE. THE IMAGE OF A PAGODA, PASSING THROUGH THE HOLE OR SMALL WINDOW, IS INVERTED AFTER BEING "COLLECTED."

PARIS 1838 CE - This text by the inventor of the Daguerreotype describes the property of light to effect chemical changes in certain materials. This fact allowed the development of photographic film and the camera: "LIGHT, IN ITS STATE OF COMPOSITION AND DECOMPOSITION, ACTS CHEMICALLY UPON BODIES. IT IS ABSORBED, IT COMBINES WITH THEM, AND COMMUNICATES TO THEM NEW PROPERTIES. IT AUGMENTS THE NATURAL CONSISTENCY OF SOME OF THESE BODIES: IT SOLIDIFIES THEM EVEN, AND RENDERS THEM MORE OR LESS INSOLUBLE ACCORDING TO THE DURATION OR INTENSITY OF ITS ACTION. SUCH, IN A FEW WORDS, IS THE PRINCIPLE OF THE DISCOVERY."

COLOGNE 1250 CE - This text from the work of the German alchemist Albertus Magnus describes his discovery of silver nitrate and its photosensitive properties: "TAKE TWO POUNDS OF ROMAN VITRIL, TWO POUNDS OF SALTPIE and ONE POUND OF CALCINED ALUMEN. PULVERIZE THEM WELL, MIX THEM PERFECTLY AND PLACE THEM ON A GLASS ALEMBIC, DISTILL ACCORDING TO THE RULES, SEALING WELL THE JOINTS SO THAT THE SPIRITS WON’T RUN AWAY. BEGIN WITH A GENTLE FIRE AND THEN A LITTLE STRONGER. HEAT IT THEN STRONGLY SO MUCH AS TO MAKE THE DEVICE TURN WHITE AND THE SPIRITS DISTILL. CEASE YOUR FIRE AND LET THE OVEN COOL DOWN. PUT THE VITRIL INTO A CONTAINER AS THE LIGHT IS MORE INTENSE (SUNSET) AND SEPARATES IT FROM GOLD, CALCINES MERCURY AND THE FLOWERS OF MARS; IT TRANSMITS A BROWNISH COLOR TO SKIN WHICH IS DIFFICULT TO REMOVE."

FLORENCE 1486 CE - This text written by Leonardo da Vinci further describes the operation of the Camera Obscura, the precursor to the still camera: "I SAY THAT IF THE FRONT OF A BUILDING - OR ANY OPEN PIAZZA OR FIELD - WHICH IS ILLUMINATED BY THE SUN HAS A DWELLING OPPOSITE TO IT, AND IF, IN THE FRONT WHICH DOES NOT FACE THE SUN, YOU MAKE A SMALL ROUND HOLE, ALL THE ILLUMINATED OBJECTS WILL PROJECT THEIR IMAGES THROUGH THAT HOLE AND BE VISIBLE INSIDE THE DWELLING ON THE OPPOSITE WALL WHICH MAY BE MADE WHITE; AND THERE, IN FACT, THEY WILL BE UPSIDE DOWN, AND IF YOU MAKE SIMILAR OPENINGS IN SEVERAL PLACES IN THE SAME WALL YOU WILL HAVE THE SAME RESULT FROM EACH."

ROCHESTER 1812 CE - When Col. Nathaniel Rochester, William Fitzugh, and Major Charles Carroll purchased a property called the “Hundred Acre Tract” or “The Mill Site” on the west side of the Genesee river in 1803 for $75.00 per acre, the population of the area at that time was 15. That both Carroll and Col. Rochester began the process of establishing a village on this tract. He laid out streets and plots of land for business use and later that year, he began to offer the plots for sale and named the would-be settlement “Rochesterville” after himself: “ON ARRIVING AT THE FALLS I CALLED ON ENOS STONE AND INTRODUCED MYSELF AS BEING IN SEARCH OF A LOCATION IN THE WESTERN WILDS FOR MYSELF AND MY LITTLE FAMILY. MR. STONE REPLIED THAT MSSRS. ROCHESTER, CARROLL AND FITZUGH HAD APPOINTED HIM AS THEIR AGENT TO DISPOSE OF THE LOTS IN THE VILLAGE OF ROCHESTERVILLE, WHICH INSTEAD OF INHABITANTS, CONSISTED ONLY OF TREES.”

PARIS 1853 CE - In 1853 optician John Jacob Bausch and financier Henry Lomb established the massive optics firm Bausch and Lomb in Rochester, New York and patented and continue to produce hundreds of optical products, from camera shutters to lenses to contact lenses and eye care products. This is a partial listing of these products: UNICUMS, AUTOMATS, VICTORS, AUTOMATICS, CINEMASCOPE, CONVERTIBLE BALOPTICON, ROTARY MICROSCOPES, AERO TESSARS, PLANARS, SUPER BALTARS, ANASTIGMATIC, MACROS, PROTARS, SONNARS, RAPID RECTILINEARS, PLANOGRAPHTICS, ANIMARS, ANAMORPHICS, ANIMAR BALCOTES & ELEGEANTS, CINES, WIZARD SRS, COOKE TRIPTLETS, ZOOMS, PROJECTORS, TELESTIGMATS, TELECONVERTERS, STEREO ZOOMS, RATARS, SUPER CINEPHORS, PARABOLOID...

ROCHESTER 1864 CE - This text, discussing the importance of photography, was written by the activist, scholar, and long time resident of Rochester, NY, Frederick Douglass: “MAN IS THE ONLY PICTURE-MAKING ANIMAL IN THE WORLD. HE ALONE OF ALL THE INHABITANTS OF THE EARTH HAS THE CAPACITY AND PASSION FOR PICTURES… POETS, PROPHETS, AND REFORMERS ARE ALL PICTURE-MAKERS, AND THIS ABILITY IS THE SECRET OF THEIR POWER AND ACHIEVEMENTS: THEY SEE WHAT OUGHT TO BE BY THE REFLECTION OF WHAT IS, AND ENDEAVOR TO REMOVE THE CONTRADICTION.
MEN OF ALL CONDITIONS AND CLASSES CAN NOW SEE THEMSELVES AS OTHERS SEE THEM AND AS THEY WILL BE SEEN BY THOSE [WHO] SHALL COME AFTER THEM. WHAT WAS ONCE THE SPECIAL AND EXCLUSIVE LUXURY OF THE RICH AND GREAT - IS NOW THE PRIVILEGE OF ALL.”

DORSET 1790 CE - This text is a description of Thomas Wedgwood’s use of silver nitrate in the first attempt to produce a photographic image. While the image was in fact produced, it eventually faded away: “WHITE PAPER, OR WHITE LEATHER, MOISTENED WITH SOLUTION OF NITRATE OF SILVER, UNDERGOES NO CHANGE WHEN KEPT IN A DARK PLACE; BUT ON BEING EXPOSED TO THE DAYLIGHT, IT SPEEDELY CHANGES COLOUR, AND AFTER PASSING THROUGH DIFFERENT SHADINGS OF GREY AND BROWN, BECOMES AT LENGTH NEARLY BLACK. THE ALTERATIONS OF COLOUR TAKE PLACE MORE SPEEDELY IN PROPORTION AS THE LIGHT IS MORE INTENSE. IN THE DIRECT BEAMS OF THE SUN, TWO OR THREE MINUTES ARE SUFFICIENT TO PRODUCE THE FULL EFFECT. IN THE SHADE, SEVERAL HOURS ARE REQUIRED”

ROCHESTER 1873 CE - This detailed newspaper description of the appearance of Susan B. Anthony at her arraignment for illegally voting (because she was a woman) in Rochester, New York is all that we have of the scene of the event because no photographs were taken. In 1873 The use of photography to describe such momentous events had not yet evolved as a news gathering tool, this was soon to change: “MISS ANTHONY ENTERED THE UNITED STATES COURT ROOM AT HALF PAST 10 O’CLOCK THIS MORNING… AND TOOK HER SEAT, WITH RAISED HAND… THE LADY WAS DRESSED IN A DARK PURPLE FROCK, DARK CLOTH CloKE, RED SCARF, BLACK BOONNET, PLAID COMFORTER, AND GOLD SPECTACLES. SOME SLIGHT STREAKS OF GRAY APPEARED IN HER DARK BROWN HAIR, BUT HER FACE SHOWED NO WRINKLES…”

This Omawndawag translation from the English was performed by Jamie Jacobs, Turtle Clan, Tonawanda Seneca Nation.

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