

# The WAYZGOOSE GAZETTE

A NEWSLETTER OF THE INT'L PRINTING MUSEUM, BUENA PARK, CALIFORNIA • D. JACOBSON, FOUNDER

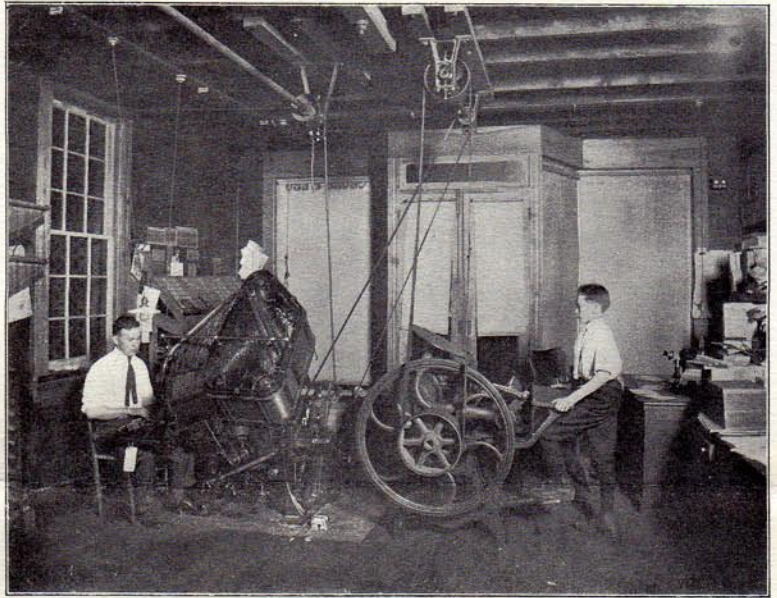
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## *The Power of the Press*

Over the centuries, printers have employed various means to power their presses. For 350 years, the only source available was human, usually requiring a good specimen with large features. Pulling the lever or "bar" on a wooden press for each impression was an arduous task; the pressman would have to use the full weight of his body leaning backwards to achieve the 200 pounds per square inch of pressure needed for printing. His work, and I do mean "his" for this was not a woman's task, was the equivalent of pushing a plow in the field. The lifespan of the printer was comparatively shorter than the other positions in the shop (although the compositor often went blind, at least they lived longer!). This unfortunate fact was in the mind of George Clymer, inventor of America's first metal press in 1813, during his marketing campaign. Referring to the ease of operation of his new press, Clymer proudly stated that the "pressman could retire later in life" (I doubt whether that interested the pressman!).

Eight years after Clymer's Columbian metal press was on the market, Daniel Treadwell from Boston invented the first successful American power press. Koenig in England had already successfully built a steam powered cylinder press in 1810, but the lack of steam engines in America made its application here difficult. Treadwell's power press was a modified hand press incorporating a toggle for the impression along with numerous cams, gears, belts and even a "throw-off lever." To power his press, Treadwell found a creative solution. A vertical shaft on the press extended through the floor to the basement, with a horizontal shaft then attached to it. A horse



*A novel source of motive power for the Junior Linotype at the Page News, Luray, VA, when the electric motor gave out on a Thursday in June, 1910.*

would be hitched to this shaft and made to walk in a circular fashion, thirty feet in diameter. A contemporary account of this successful press relates one of the minor problems Treadwell experienced:

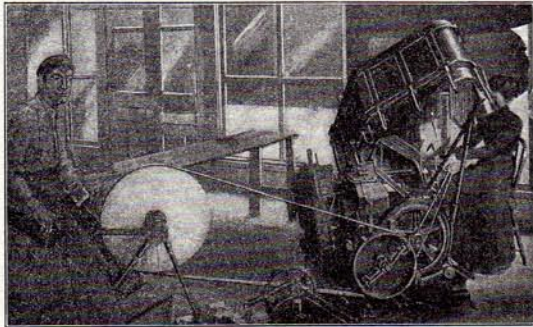
"...whenever an impression was made the horse received such a shock which nearly jerked him off his feet; and he soon became so familiar with these 'hard spots' in his path that when he approached one of these he would often come to a dead halt, from which no amount of coaxing or scolding—nothing but whipping—would induce him to stir. Therefore it soon became necessary to employ a driver with a whip to follow him around the track."

With three people employed at the press—a pressman, a feeder and a driver—speeds of up to six hundred impressions an hour could be achieved, more than doubling the speed of Clymer's press. Treadwell's press was used by numerous American publishers, including the famed Harper Brothers

publishing house in New York.

One of Harper's horses was sent out to pasture at the Harper farm after his years of service at the press. After a few days of unabandoned enjoyment in the fields, the horse soon continued its old daily routine: when it heard the morning whistle, the horse strode out to the center of the pasture to a solitary tree and began to walk around it as if it were at the press, continuing until the six o'clock whistle, stopping only for the customary lunch break at noon!

Another common source of power over the centuries has been water, though it was only applied to presses after 1815. One such press was used to print the Los Angeles Times in 1881. The large drum



"Grindstone Power" on the Kirksville Express, MO, c. 1911.

cylinder press, known as a C. Potter Jr. Press, is currently on loan from the Printing Museum to the Smithsonian for use in their Centennial Exhibition Hall. When it was employed to print the *Daily Times* by its publisher General Otis, water from the local reservoir was used for power. A long pipe channeled the water to a small wheel attached to the press.

One day, however, the flow of water reduced to a trickle and the press mysteriously stopped in mid-impression. After some investigation, the problem was found to be a misguided carp who had inadvertently become stuck in the small pipe. Though that day's edition eventually made it out to the street, the poor carp was no longer listed among the living.

In 1885, at the advent of mechanized typesetting machines, there was an article in the *Inland Printer* about the possible advances for the industry in the near future. The writer was challenging his readers to "imagine a day when our presses might even be powered by electricity rather than steam." Within two decades, such was the case. In 1905 in Columbia, Missouri, the Herald printing plant combined both a steam engine and electricity to power their shop. Their electricity was generated in the

basement by a belt coming from the steam engine and then jerry-rigged throughout the three story plant.

Operating a print shop or newspaper in the rural areas of the country usually required novel solutions for power sources, even after the turn-of-the-century when electric motors became more commonplace. The electric power plants in these more remote regions were often inconsistent and unreliable, usually at the moment the publisher is attempting to get the edition to the press!

From 1910 to about 1916, the Linotype Company regularly published stories in the *Linotype Bulletin* of novel sources of power from its patrons in the country. This was an attempt by the company to illustrate the fact that only a slight, consistent exertion was required to run a Linotype (one-quarter to one-third horsepower).

In one story, the operator of the Junior Linotype at the *Page News* in Luray, VA, showed his resourcefulness and ingenuity when the electric motor gave out just hours before the paper was to go to press. Moving a treadle powered platen press from another part of the room into position, he belted it to a countershaft on the ceiling, which in turn was belted to the Linotype.

The 16-year-old apprentice in the shop, Carroll Beach, furnished the power by pumping the treadle of the press. Mr. Orville Aylor, the operator, was then able to make the necessary corrections to the edition and get the paper to press on time. Young Carroll certainly received his necessary exercise for the day!

Another paper, when faced with the same predicament, belted a large ball-bearing grindstone to their Junior Linotype. While the "devil" pedaled away, the young woman operator set the usual day's matter for the Kirksville, MO, *Daily Express*. Similar accounts in the *Linotype Bulletin* include the use of a motorcycle, propped up and with a belt connected to the front wheel; a Model T Ford; a corn sheller; and a concrete mixer.

We have now come to a day when all of our equipment is dependent upon electricity. Gone are the horses, the water wheels, even the "grunts" who were known for their crab-like walk sideways down the alleys (caused by pulling the bar of the press for many years). But can we envision a day beyond electricity, when our presses will be powered by the sun?



Illustration of a solar-powered printing press, 1894.

## *Pages of Discovery: Franklin's Science Tour*

As Benjamin Franklin cranks the hands, a glass globe whirs over a swatch of wool—an occasional spark lights up the globe as metal probes draw the newly produced electricity down a simple conduit into Leyden jars for storage. Dr. Benjamin Franklin, America's premier inventor and scientist, brings his experiments to life on the Heritage Theatre stage in the Printing Museum's newest educational program, Pages of Discovery: Frank-lin's Science Tour.

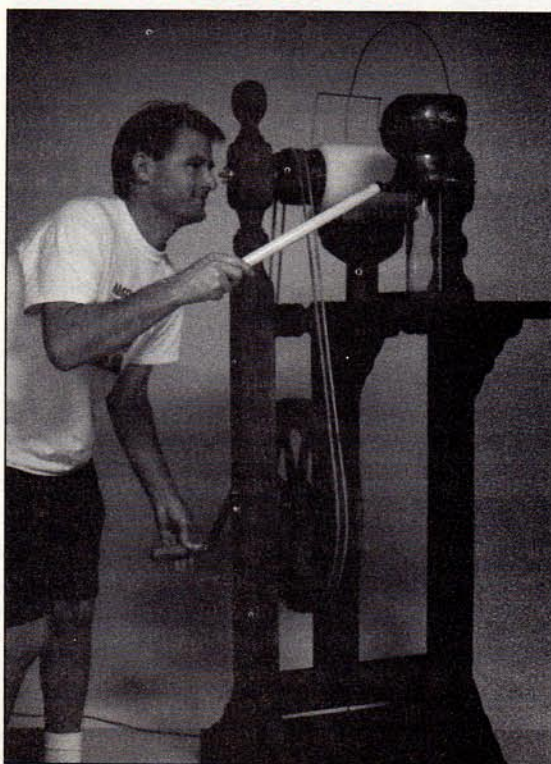
Students marvel at the sights and sounds of Franklin's original electrical generator (one of only seven in the world and rebuilt for this tour), participating with Franklin as he recreates his many experiments. Students are introduced to the world of electrical science, instructed by the foremost electrician himself. They learn about the positive and negative attributes to electricity and lightning, a fact confirmed by Franklin in his original experiments.

Following Franklin's demonstrations, the students are guided on an unique tour of the Museum's collection of antique printing machinery. Through demonstrations on the various machines, they are exposed to the wonders of the Industrial Revolution and basic physics, from cams and gears to levers and steam engines, learning how basic machines work.

Guides give a historical perspective to the mechanical principles being demonstrated on the machines, detailing the Egyptians use of a screw to pump water out of the Nile, or the wooden gears in Roman grain mills, providing the food to feed an entire empire. Students are encouraged to participate in the tour by solving problems mechanically with models at each station.

Pages of Discovery is designed to be a powerful and imaginative introduction to science and physics, with an emphasis on visual demonstrations, the historical context of science and the practical applications of principles learned to the student's lives. But above all, Dr. Franklin aims to ignite young minds with the wonders of science and discovery!

The genesis of this new educational tour came from an observation of students and young adults being unfamiliar with the basics of machinery and



physics. Since modern machines are regularly hidden within boxes, students are rarely exposed to gears, cams, levers and the like nor do they understand their functions. Since the Printing Museum has a collection of mostly pre-1900, working printing machinery, we decided to design a tour that highlighted this subject. What better way to understand cams than to see them function on an old, working printing press, or to understand screws and inclined planes than to watch a Linotype in operation?

Pages of Discovery is the fourth educational tour developed at the Printing Museum. It has helped broaden the exposure and use of this magnificent collection of antique printing machinery to the general public beyond merely a recitation of the facts related to printing history. Since beginning this tour last Spring, hundreds of kids have experienced science in a whole new way, some for the first time.

## *Kent Johnson's Recollections on the Building of the Franklin Electrostatic Generator*

In September of 1995, I was given the assignment of developing a science tour for the Printing Museum. This provided me a challenge and opportunity to expand my own horizons and knowledge. For the

past four years I have been appearing at the museum as Benjamin Franklin, performing a one-man show which I wrote for this venue. But now, as part of this new tour, I had to build a machine identical to



Franklin's own creation in 1750, one that worked.

My research began with visits to five local libraries, none of which produced any useful or detailed explanation of electrostatic generators. A phone call was made to Dr. Bernard Finn of the Smithsonian, curator of the Electrical Department. After a long discussion on the project and subject, Dr. Finn was kind enough to fax me a photo of their Franklin generator along with additional information. This photo became my most important asset, for from it and the dimensions it provided I would build the tour's "showpiece" demonstration machine.

With scrap material, I proceeded to build a prototype to help me understand the mechanics and electrical components needed for the final model. The key component, a glass ball about 10" in diameter, was the only missing piece. With calls to expert glassblowers around the country, from local craftsmen to experts at Colonial Williamsburg, I met with the same resistance: because of the size required, none would dare attempt the project, at least not economically.

One evening over dinner with my sister, I related this saga of my search for a glass globe. "Why didn't you say so earlier?" she responded. "I have one in my garage!" After a detailed search through her garage, the treasure was found. It was a large green-colored globe used by Japanese fishermen to keep their nets afloat. Often they would break away from the nets and float across the ocean and become

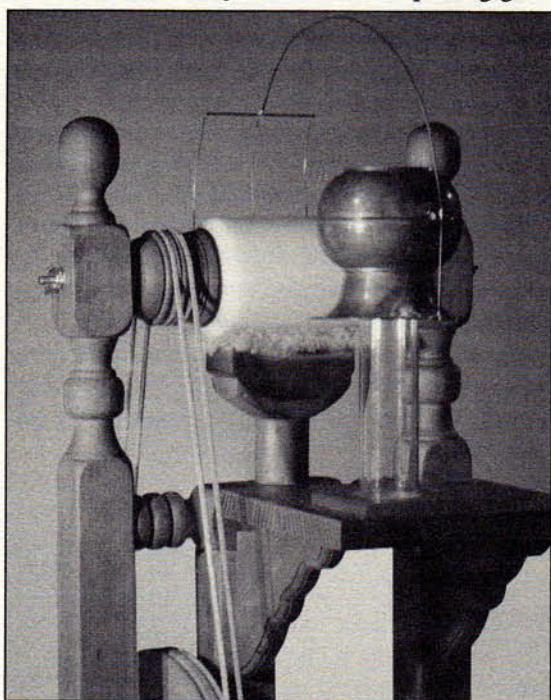
stranded on the beaches of Oahu, where she had found it. After agonizing for months in my search, I now had my choice of three in her garage!

Franklin's conductor on his machine appeared to be a steel ball about six inches in diameter. Hunts through the local thrift shops produced nothing until I found an old brass spittoon in a dusty old shop. The beautiful old spittoon seemed to be smooth enough and the shape and the quaintness of it would add to my machine which boasted of a globe that survived a 2,000 mile voyage across the ocean.

Having all the necessary parts and being at the point of assembling this device, I came across the next big obstacle—myself! I realized that I was ill-equipped to design and fashion a beautiful 18th century wooden machine. One of the many teachers who bring their students to the Printing Museum came to my rescue, Don Wolf of Buena Park Junior High School. He teaches math and science using wonderful wooden models he designed and constructed himself. He is an educator and a scientist who loves to work with wood.

During the next few months, a gorgeous machine emerged from Don's clever hands. His skill and knowledge as he worked with turning the wood on a lathe and other equipment amazed me. Don was excited to use his skills to build a machine such as this generator to teach young minds the mysteries of electricity.

As the winter of 1996 passed, the generator was assembled and ready to be tested. Expecting great



results, I encouraged those present to stand back for fear of being electrocuted. None of us wanted to challenge the wrath of this mighty machine! Don grasped the handle of the wheel and began to crank it. The Japanese glass float whirred quietly over the wool as it gained momentum. With much anticipation after months of hard work, I lifted the Leyden jar to the edge of the spittoon, expecting a large spark. But there was nothing. After repeated attempts, the dismayed crowd found the exit, leaving Don and I swearing at our beautiful machine, trying to figure out what went wrong.

Weeks were spent trying to solve the problems we faced. Distress calls were made to the various scientists we had befriended around the country. I was reminded about the need to ground the rubbing surface, to insulate the ball from the ground, the need for absolute cleanliness. Repeated applications of these suggestions and others resulted in no success. I felt my short-lived career as an electrician was nearing an end.

Arden Steinbach, retired scientist from Sudsbury, MA, made one final observation and suggestion: the surface resistivity of glass varies dramatically and that I should try UHMW instead. "Of course," I muttered, without knowing what the heck he was talking about. He explained that Ultra High Molecular Weight polyethylene is a material that gives up its electrons very easily; its electrical properties are

perfect for this generator. So much for the beautiful Japanese glass float!

Don and I found some UHMW at a local plastics shop, and after shaping it on the lathe, placed it on the wooden frame of generator. Without an audience this time, Don cranked the wheel as I lifted my knuckle to the spittoon. Nothing. Before losing hope, we remember the need to clean the surface of the globe. After a good cleaning with Windex, we tested it again. Franklin's Generator sprang to life, throwing big, beautiful sparks to my knuckle! Two fully grown men began to dance about in excitement and relief. We had made electricity and for a brief moment, I felt as though I was Ben Franklin himself!

Our Franklin Generator, which we have been told is only one of seven in the world and the only one known to work, is now a highlight of the new *Pages of Discovery: Franklin's Science Tour* at the International Printing Museum. Kids of all ages enjoy getting zapped in their discovery of electricity with Dr. Franklin. Those months of experimentation have given me a better understanding of the scientist and inventor I portray on a daily basis at the museum.

My sincere thanks for the advice and encouragement of my "colleagues 'd electricque" from around the country, but especially to Don Wolf for his time, expertise and patience. Additional note: Item for sale. One Japanese fishing net float, slightly used. Best offer considered. Ask for Ben!

## *Southern California Chapter of the American Printing History Association Meets at the Printing Museum*

With the tireless efforts of Regis Graden, local fine letterpress printer, Southern California again has a chapter of the American Printing History Association (APHA). APHA is a national organization founded in 1976 to promote and disseminate the history of printing in America.

With help from the Printing Museum's curator and others, Regis was successful in obtaining a charter for the new chapter at the beginning of 1996. Since that time, the chapter members have met for several successful meetings, including a trip to UC Riverside to enjoy the marbled paper collections of Sid Berger; Clairmont College to see their beautiful collection of incunabula; and three meetings at the International Printing Museum with presentations by Merrill Brown on the history of paper, curator Mark Barbour on the Linotype collection at the museum and on the history of R. Hoe & Company.

The International Printing Museum is the current

host facility for the chapter, though programs are frequently held in various locations of special interest. An enjoyable feature of the meetings is an informal, no-host dinner afterwards at a local restaurant where members and guests have the opportunity to enjoy good comraderie.

There is no charge for the meetings. Friends of the Int'l Printing Museum are welcome to attend, as well as any who might have interest. The meetings are usually on a Saturday afternoon around 2:00. The chapter aims to have 3 to 4 meetings per year. Future programs this year will include the miniature book collection of Mel Kavin of KaterCraft Bookbinding in Pico Rivera; and a presentation on wood engraver Paul Landacre with a viewing of many of his prints.

For more information on becoming a member of the chapter or for upcoming meeting dates and times, please call Mark Barbour at the Printing Museum (714) 523-2070.

## *Under New Donor Program, Dave Peat of Indianapolis Becomes First "Lifetime Friend of the Printing Museum"*

At the end of 1996, the Board of Directors for the International Printing Museum created a new "*Lifetime Friend*" designation for members of the Friends of the Int'l Printing Museum who contribute \$500. All *Lifetime Friends'* contributions are placed in the Printing Museum's endowment fund which has been established by the Board to provide long-term permanent support of the Museum and its activities. The contribution of \$500 under this program will represent \$50 of annual support indefinitely, and will become a gift whose value far outweighs the initial contribution.

The first Friend to be recognized as a "*Lifetime Friend of the Museum*" is Dave Peat of Indianapolis. Dave is a hobby letterpress enthusiast as well as an avid collector of 19th century printing equipment, type and type specimen books. He has also been an ardent supporter of the Printing Museum since his first visit in 1994, donating thousands of dollars worth of books on printing history and other items. His contribution of \$500 came unannounced at the end of 1996, just after the Board detailed the requirements for a *Lifetime Friends* category.

"I am honored to be the first in what I hope will be a long list of *Lifetime Friends*," Dave responded during a telephone call in January. "I believe this to be one of the finest printing museum's in the world, and we need to support it in every way possible to ensure its permanence." Dave continued to explain his enthusiasm for the Int'l Printing Museum and its programs, particularly for the way the old machines and artifacts are kept operational and made accessible to visitors.

Along with all the usual benefits of being a Friend of the Museum, *Lifetime Friends* will also receive a beautiful letterpressed Certificate of Recognition and their name will be placed on a permanent plaque on the David I. Jacobson Memorial Founders Wall.

As a *Lifetime Friend*, they will be made sustaining members of the Franklin Fellows Program of the International Printing Museum, which is the program designed to meet the \$2 million endowment goal of the Foundation. Named in honor of America's foremost founding father and the "patron saint" of printing, Franklin Fellows are contributors of \$1,000 to \$10,000 to this Endowment Development Campaign.

With additional contributions in future years, a *Lifetime Friend of the Printing Museum* can be recognized as a Franklin Fellow with \$1,000 cumu-

lative donations, a Silver Level Franklin Fellow with \$5,000, and a Gold Level Franklin Fellow with \$10,000 or more. Franklin Fellows will receive a commemorative medallion bearing the images of Benjamin Franklin, his printing press and the International Printing Museum. Permanent recognition will also be given with a personal plaque on the David I. Jacobson Memorial Founders Wall.

The development of this \$2 million endowment is considered by the Board of Directors to be critical for building long-term support for the Printing Museum and its operations. Since its inception in 1988, the operations of the museum have been generously supported mostly from its founder, David I. Jacobson of Gutenberg Expositions. In acting as the founder, Mr. Jacobson has worked to create the one of the world's largest and most significant printing museums using the Ernest Lindner Collection of Antique Printing Machinery. The Museum's dedicated staffed have transformed it into a dynamic cultural attraction, captivating visitors of all ages and facets of life.

This Museum Endowment Development Campaign will propel the International Printing Museum beyond its current founding period to become a permanently established cultural attraction. It is designed to fit the ability of anyone who is interested, even if they can only make small contributions annually as part of their charitable giving.

The opportunity exists for you to participate in making this museum permanent, and share in the excitement of developing one of the world's most unique technology museum's. Will you join us as a *Lifetime Friend* or *Franklin Donor*, even as Dave Peat has?

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### THE WAYZGOOSE GAZETTE

is issued three to four times a year for The Friends of the International Printing Museum, founded by David Jacobson in 1988 and which features the Ernest A. Lindner Collection of Antique Printing Machinery.

*Membership into the Friends is \$25 annually and goes to support the programs of the Museum.*

The term "wayzgoose" refers to a traditional annual printers' celebration, dating back to the 17th century.

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Mark Barbour, curator and editor

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