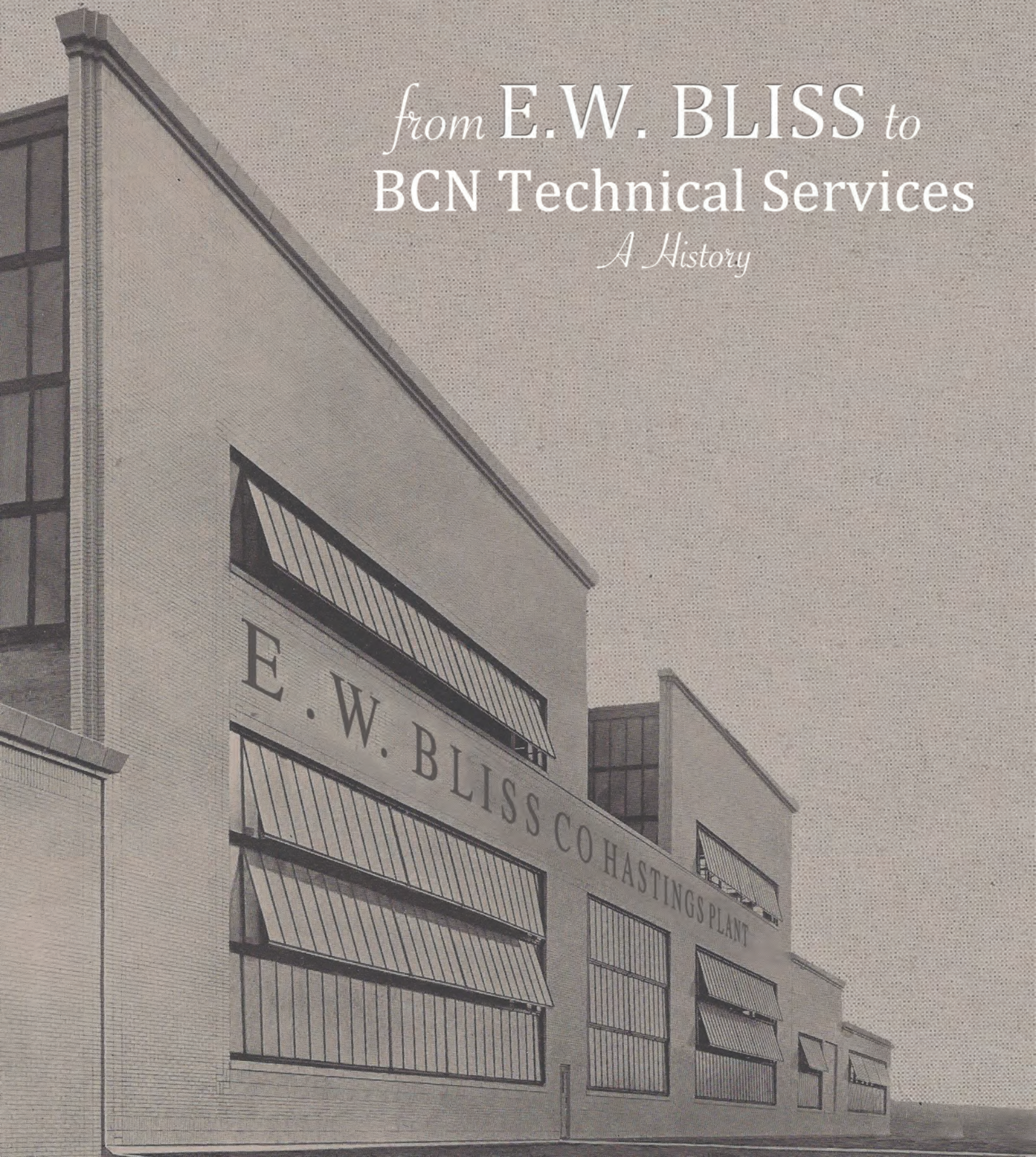
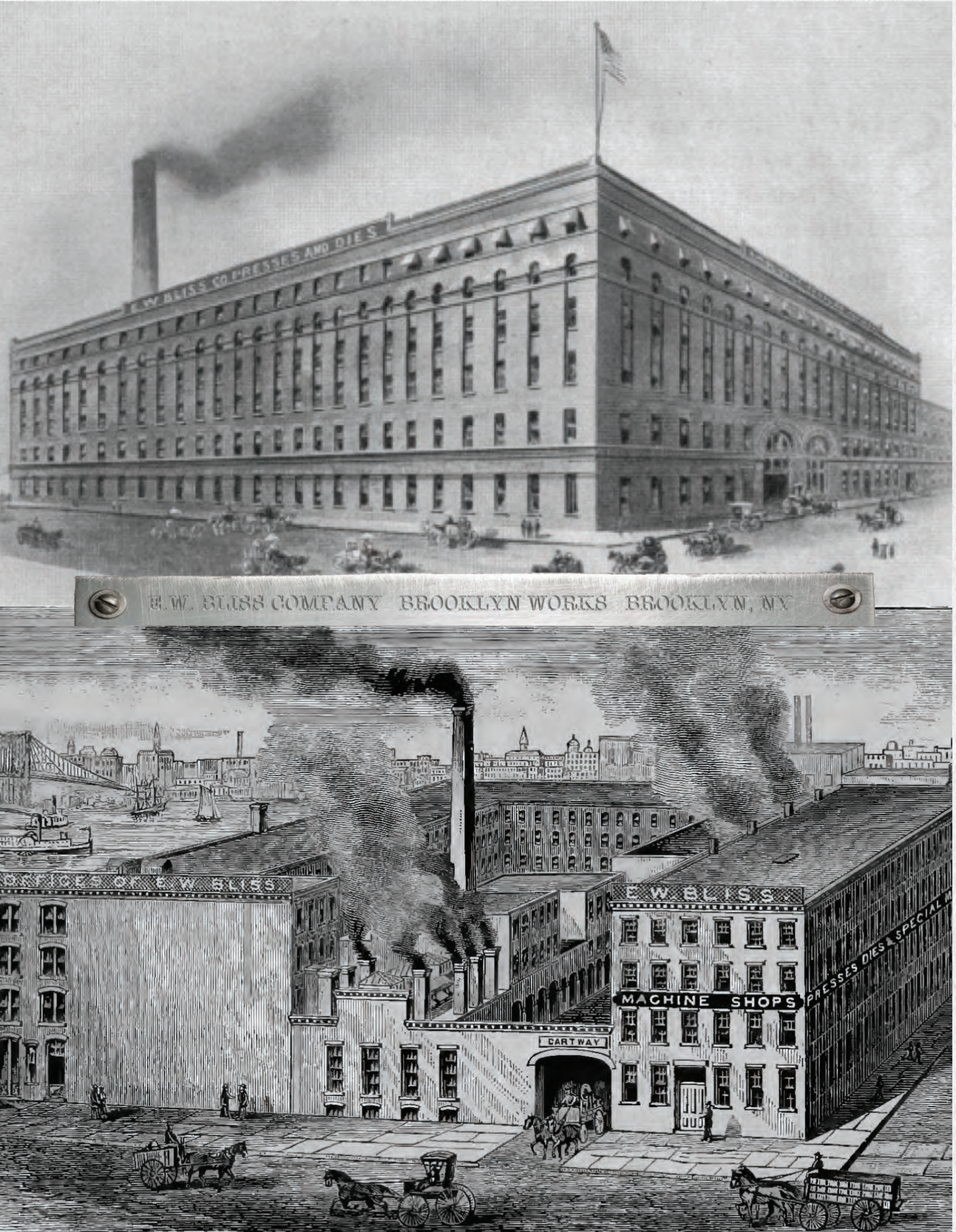
CELEBRATING OVER 100 YEARS IN HASTINGS, MI

from E.W. BLISS *to* BCN Technical Services

A History



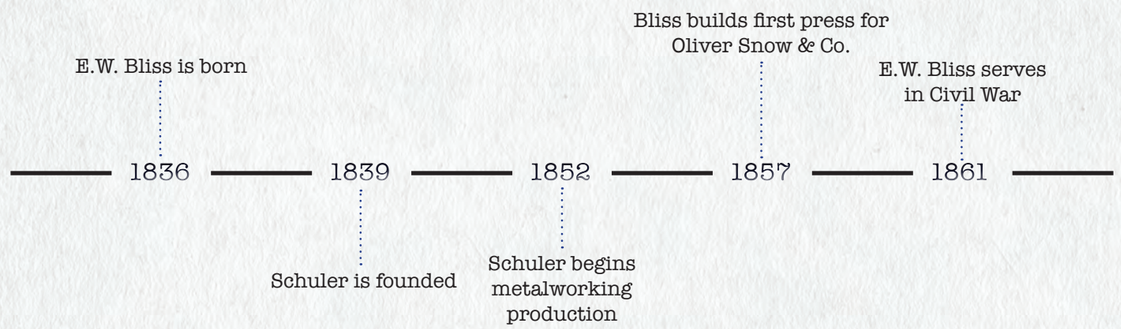


BLISS

Over the 150 years that it has been leading the world in press production, BCN Technical Services has been revised, restructured, and restored. Throughout the company's history, there has always been a tradition of innovation and excellence that began with the founder of the E. W. Bliss Company, Eliphalet Williams Bliss.

Eliphalet Williams Bliss was born in the small farming community of Fly Creek near Cooperstown, New York, in 1836 to Dr. John S. Bliss and Mrs. Ruby Ann Williams Bliss. When E.W. was just four years old, Dr. and Mrs. Bliss passed away, leaving E.W. an orphan. Mr. & Mrs. Metcalf, neighbors and friends of the Bliss's took young E.W. into their home. Before he was sixteen years old, Bliss became a machine shop apprentice at Metcalf & Livingstone. In 1857, at the age of 21, E.W. Bliss left his apprenticeship and found work with the New York Central and Hudson River Railroad as a journeyman mechanic. That same year, Bliss built his first presses on contract for Oliver Snow & Co. of West Meriden, Connecticut. Soon after, Bliss went to work as a machinist for the Charles Parker Gun Company, where he progressed quickly at the company, and he became shop foreman before the age of 23.

In 1861, E. W. Bliss answered President Lincoln's call for volunteers, distinguishing himself as a Corporal in Company I of the 3rd Connecticut Volunteers during the Civil War. After his discharge from the Army, he attracted the attention of Andrew Campbell, inventor of the Campbell County Printing Press. Bliss joined Mr. Campbell at the Campbell Printing Press Company in 1865.

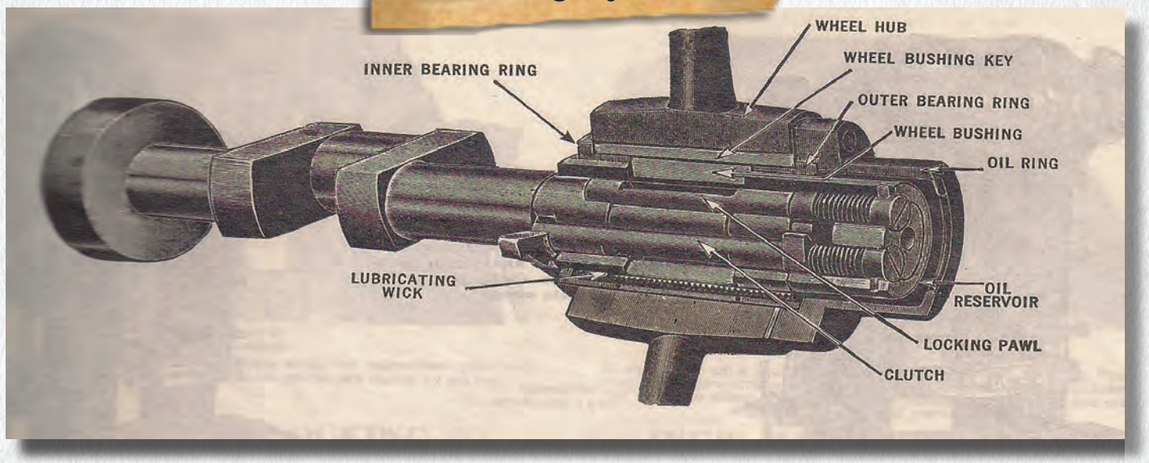


On June 19, 1865, Eliphalet Williams Bliss married Anna Elizabeth Metcalf. Anna was the daughter of Charles Metcalf, the man E.W. Bliss apprenticed with in Cooperstown, NY. Mr. Bliss often remarked that every step he took forward was because his wife gave him a push. It was really Anna Bliss's encouragements that lead to the founding of the E.W. Bliss Company, as she insisted that her husband leave his position at the Campbell Printing Press Company and go into business for himself.

Following his wife's direction, E.W. Bliss started the Mays & Bliss Company with John Mays in a small Brooklyn loft in 1867. E. W. Bliss purchased his interest in the company with capital of $1,250.00. This tiny Brooklyn company, which produced foot, hand, and power presses, grew to employ 20 workers in just three short years. On December 20, 1870, E.W. Bliss patented the Bliss Rolling Key Clutch. The Bliss Rolling Key Clutch was one of the most highly esteemed positive clutches of its time. In 1871, Mays retired and sold his interest to Bliss's cousin, J.H. Williams. The Mays & Bliss Company was then renamed to the Bliss & Williams Company.

Through E.W. Bliss's solid leadership, the Bliss & Williams Company flourished and contributed significantly to the manufacturing industry. One of Bliss & Williams's most notable orders was for tools and materials that were used in the construction of the Brooklyn Bridge. It is said that the final papers for the construction of the bridge were signed at E.W. Bliss's home, known as Owl's Head, in the Bay Ridge section of Brooklyn, NY.

Bliss Rolling Key Clutch



1863 — Esslingen Division of Müller Weingarten founded

1865 — E.W. Bliss joins the Campbell Printing Press Company

1866 — Weingarten Division of Müller Weingarten founded

1867 — Mays & Bliss Company founded

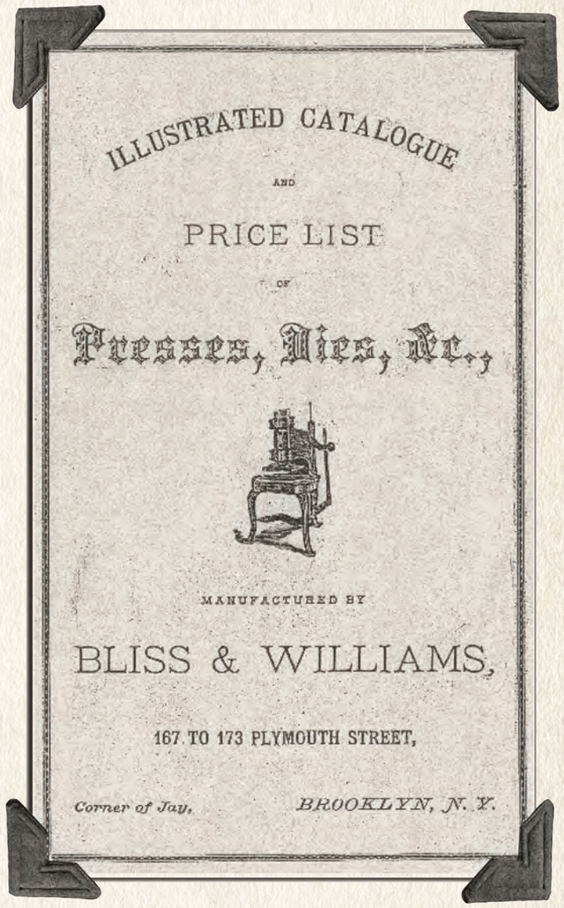
1871 — Bliss & Williams Company founded

The Bliss & Williams Company saw continued growth and innovation through the later part of the 1800's. The workforce expanded to 165 employees by 1878. The growing company introduced the first inclinable open back press with patents issued in 1879 and 1881. In addition to building these presses and other machines for working sheet metal, Bliss cradled the first Curtis Steam Turbines, early multi-color printing presses, early automobiles (under the supervision of Louis Chevrolet), and the first automatic cigarette making machines. The building of these machines, along with newspaper stuffing machines, ore separators, and profile milling machines, became industries in their own rights. However, their initial development is credited to Bliss's plants.

The Bliss & Williams Company underwent further restructuring when Bliss purchased his cousin's share of the business in 1881. Bliss continued to run the company himself until 1886, when the E.W. Bliss Company was formed with a capital of $100,000.

In 1890, the E.W. Bliss Company again expanded by purchasing the Stiles and Parker Press Company of Middletown, Connecticut. Bliss had worked with Stiles at Oliver Snow & Co. several years earlier. In 1857, Stiles had established his own business, much like Bliss, where he began manufacturing his own punch press. In 1871, after litigation over patent infringements by the Parker Brothers, Stiles had merged with the Parker Brothers Company. Stiles gained controlling interest and produced some of the most noted inventions such as the Stiles Punching Press, double action cam drawing press, and the automatic board lift drop hammer.

Although Bliss had started his own press building company with John Mays in 1867, after acquiring Stiles and Parker, he dated the origin of the E.W. Bliss Company from 1857.


ILLUSTRATED CATALOGUE

AND

PRICE LIST

OF

Presses, Dies, &c.,

MANUFACTURED BY

BLISS & WILLIAMS,

167 TO 173 PLYMOUTH STREET,

Corner of Jay, BROOKLYN, N. Y.

1878 Bliss creates inclinable open back press

1878 Schuler submits first machine patent

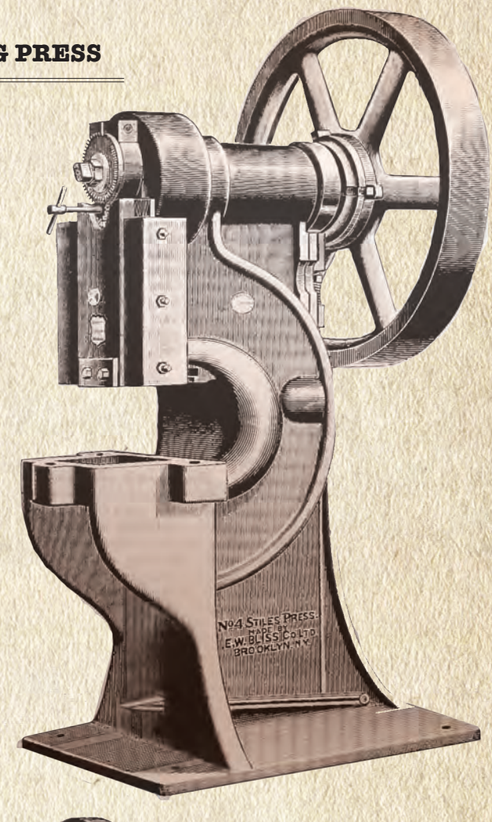
1879 Niagara Company founded

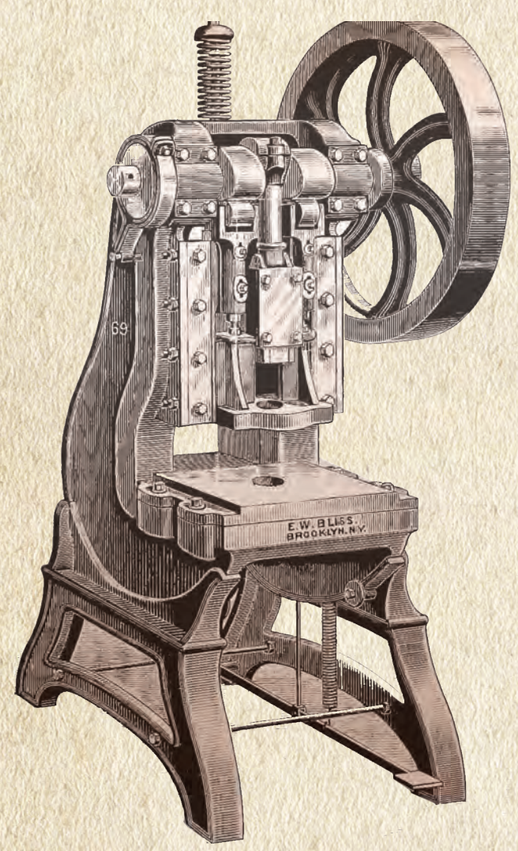
1886 The E.W. Bliss Co. is formally founded

1890 E.W. Bliss Co.purchases Stiles & Parker Press Company

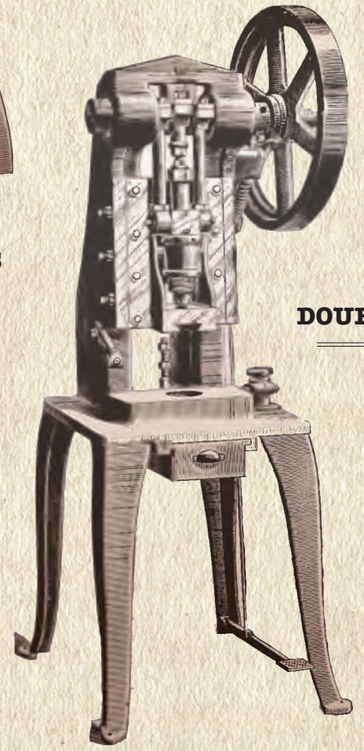
1893 Bliss repurchases stock from English Capitalists

STILES POWER PUNCHING PRESS

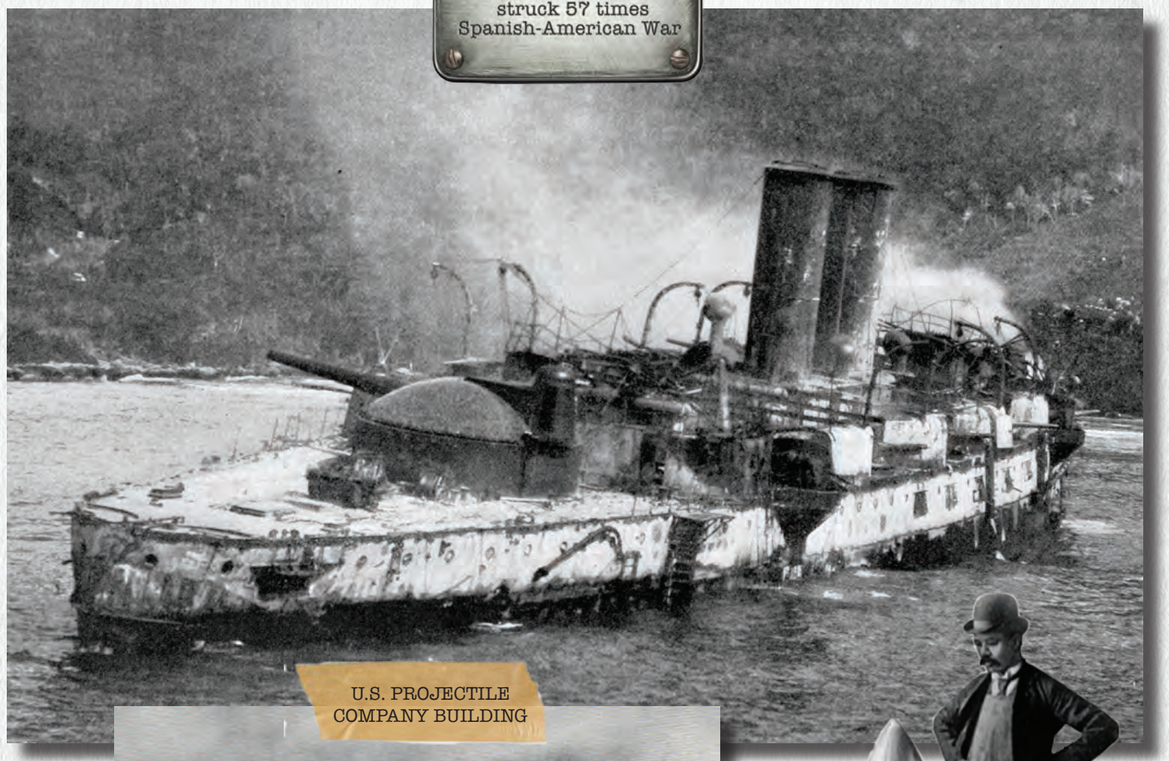




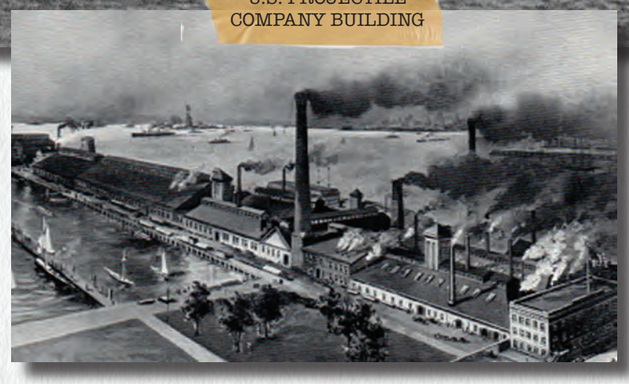
BLISS DOUBLE-ACTION PRESS



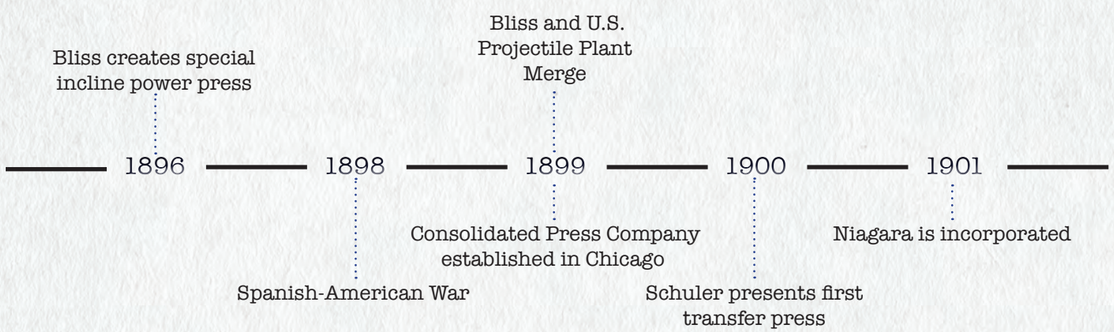
STILES PATENT DOUBLE-ACTION CRANK PRESS



The Almirante Oquendo, struck 57 times Spanish-American War

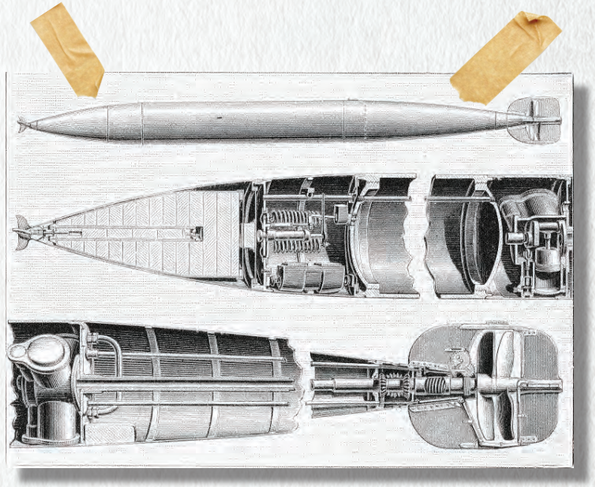


U.S. PROJECTILE COMPANY BUILDING

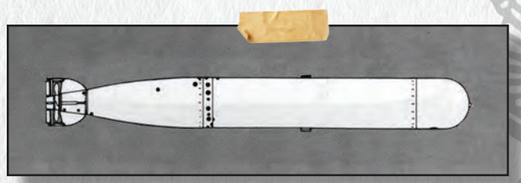


The E. W. Bliss Company became even stronger after its merger with the Stiles and Parker Press Company. As a result of this success and growth, English capitalists began to take notice. In 1890, English capitalists purchased controlling interest in the company and incorporated the E.W. Bliss Company, Limited. Mr. Bliss remained the resident manager for the American divisions, but he found having an over-seas headquarters unsatisfactory. Bliss took action and repurchased the stock from the English in 1893, and the E.W. Bliss Company once again became an American based organization.

In addition to reestablishing the E.W. Bliss Company back in America in 1893, Bliss also helped found the U.S. Projectile Company, which specialized in arms-making. In 1898, during the Spanish-American War, the U.S. Navy contracted the U.S. Projectile Company to supply Whitehead Torpedoes. After the war, the government voiced concerns about the Whitehead Torpedo's performance. In 1899, Mr. Bliss merged the U.S. Projectile Company into the E.W. Bliss Company. Frank M. Leavitt, who was in charge of installing equipment and aided in the formation of the U.S. Projectile Plant, began developing a new torpedo along different lines from the Whitehead type that Bliss produced for the Spanish–American War. The final product named the Bliss-Leavitt Torpedo was completed in 1904, delivering a range of 12,500 feet.



WHITEHEAD TORPEDO PERFECTED BY ROBERT WHITEHEAD 1866

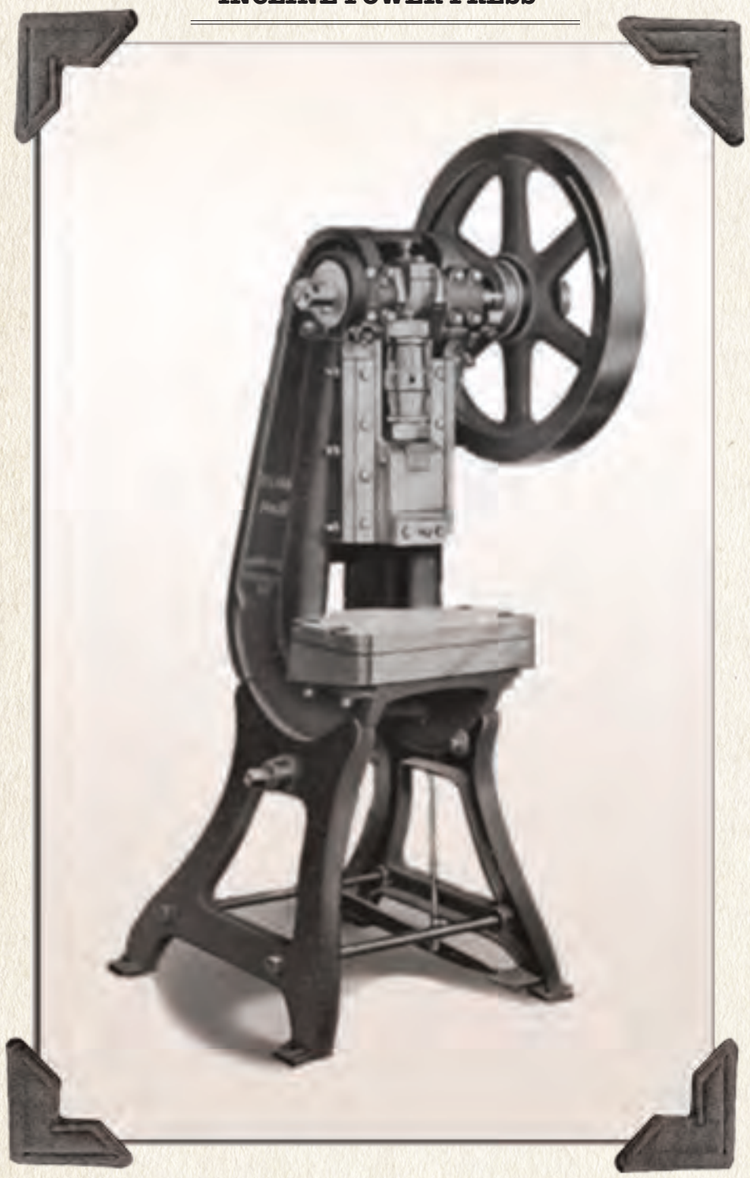


BLISS-LEAVITT TORPEDO MARK 1 PERFECTED BY FRANK LEAVITT 1904

In the late 1890's, the E.W. Bliss Company revolutionized the canning industry by developing a line of machinery that produced five-gallon cans. This innovation was spurred by the drilling of the first oil well in America in 1859, which reduced the price of oil. By 1860 – 1862 the price of oil was down to 10 cents a barrel and the use of kerosene in lamps had begun to rise considerably. Although the oil was affordable, the cost of the barrel itself was fifteen times that of the oil it contained.

Prior to Bliss's radical development, a skilled mechanic working with cutting tools and a solder could put together only a few cans per day. The demand for a cheaper container paved the way for the industry of manufacturing cans. The Bliss Company answered the call and created the Bliss Special Incline Power Press. With this new press, a skilled worker could produce over 5,000 five-gallon cans in an eight-hour period.

INCLINE POWER PRESS



SAMPLE CANS

On July 22, 1903 Eliphalet Williams Bliss died at the age of 67. His company had grown to 1,500 employees and represented a capital investment of $3,600,000. He left a blueprint for further expansion, which his son-in-law, James Warren Lane, carried out into the late 1920's.

The E.W. Bliss Company was asked to host an exhibit at the 1904 World's Fair, held to honor the centennial of Thomas Jefferson's purchase of the Louisiana Territory in St. Louis, Missouri. This was a true testament to the Bliss's great influence and movement at the turn of the century.

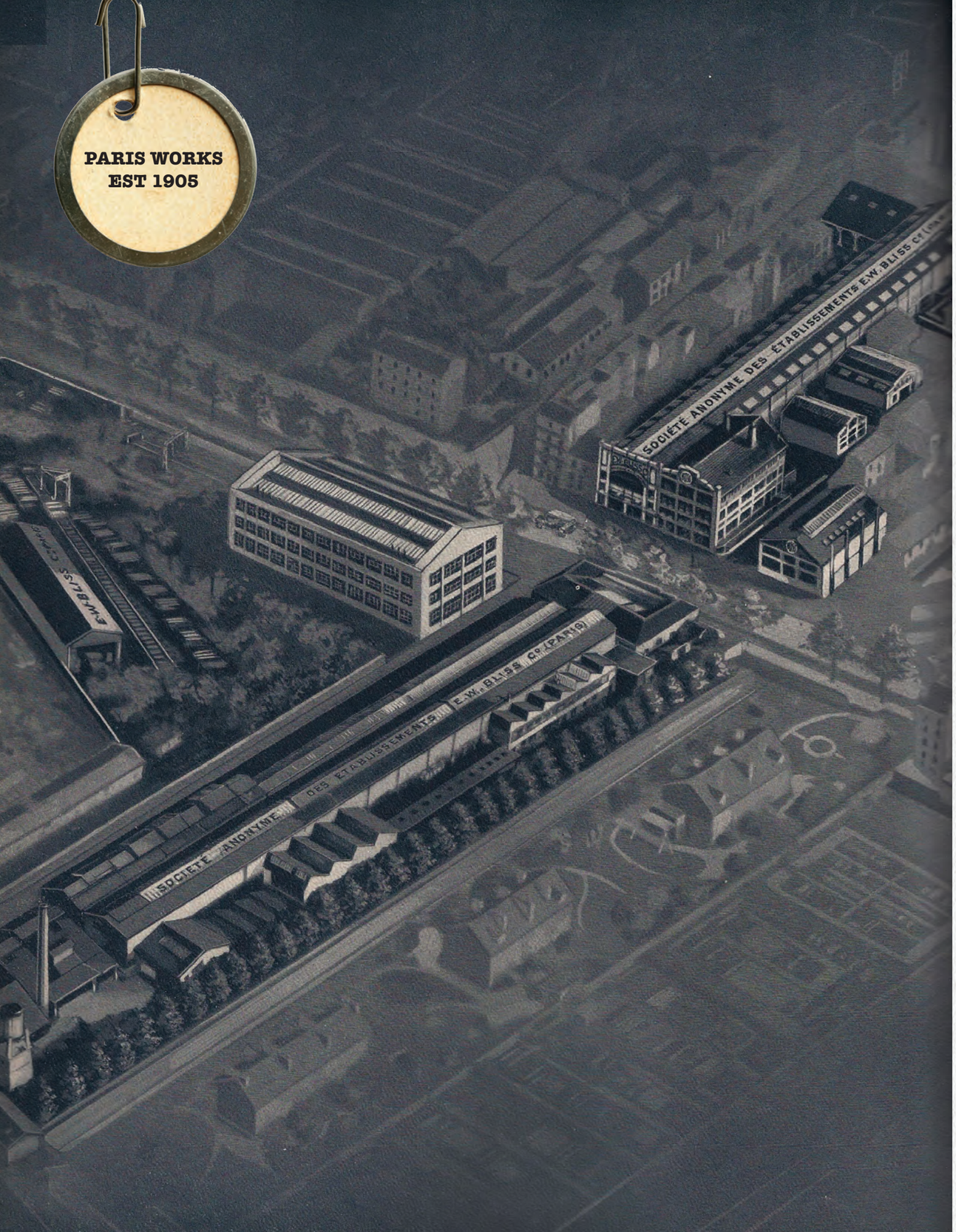
1903 — E.W. Bliss passes away

1904 — Bliss purchases Orr & Hess

1904 — World's Fair in St. Louis

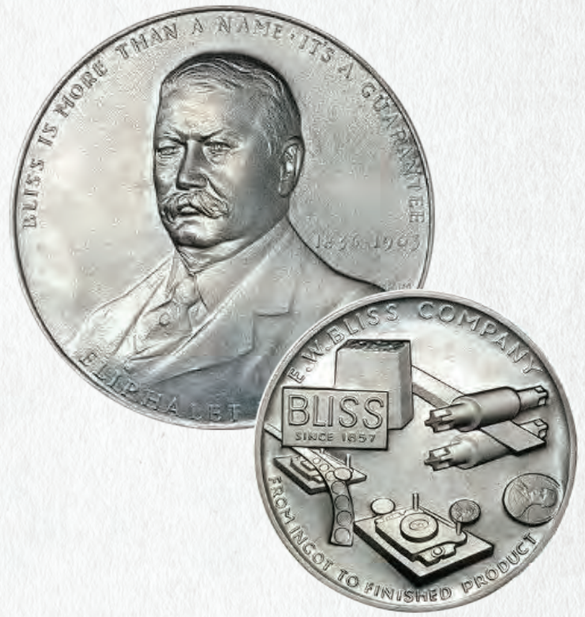
1905 — Bliss Paris Works founded

1906 — Bliss Car was built

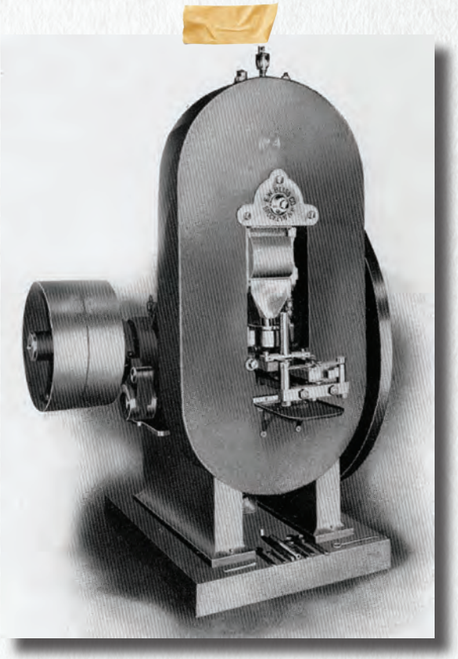


Also in 1904, The E. W. Bliss Company acquired the Orr & Hess Company, incorporating it into its main facility known as the Brooklyn Works. At that time, the Orr & Hess Company of Philadelphia was the leading manufacturer of coining machines. Orr & Hess Company Presses had been used by the United States Government at its various mints. With the Orr & Hess facilities at their disposal, Bliss was able to furnish a full working line of machinery for melting, snagging, rolling, cleaning, and adjusting coins.

The E.W. Bliss Company expanded their presence in Paris in 1905, founding the new plant known as The Societe Anonyme des Etablissements. While the plant was officially established in 1905, Bliss business in France actually began in 1900. The company's work in Paris sprang from an exhibit at the Paris Exhibition, a World's Fair held in France from April 15 to November 12, 1900. During this World's Fair, the E.W. Bliss Company was given the Grand Prix Award, which was the highest award presented to exhibitors at the Paris Exhibition.

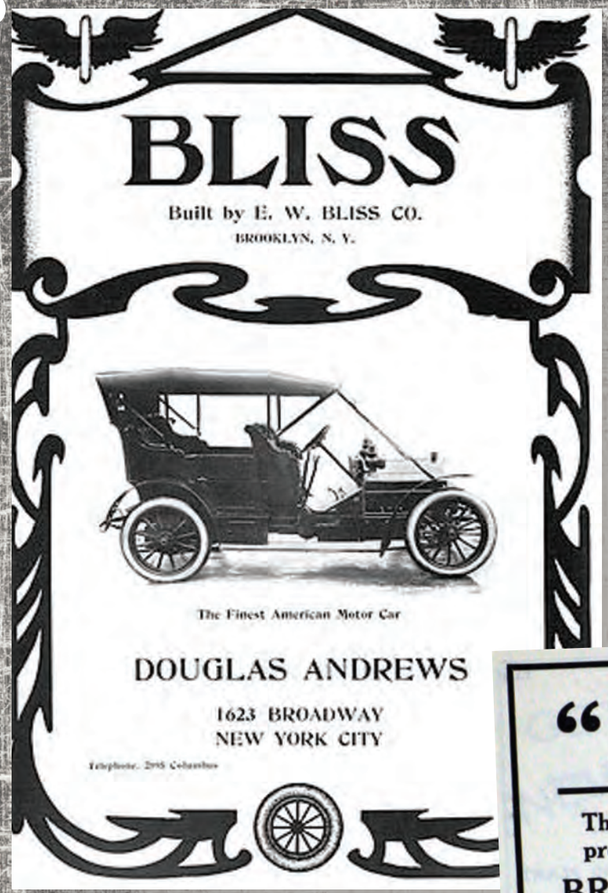


EMBOSSING PRESS



COINING PRESS

1



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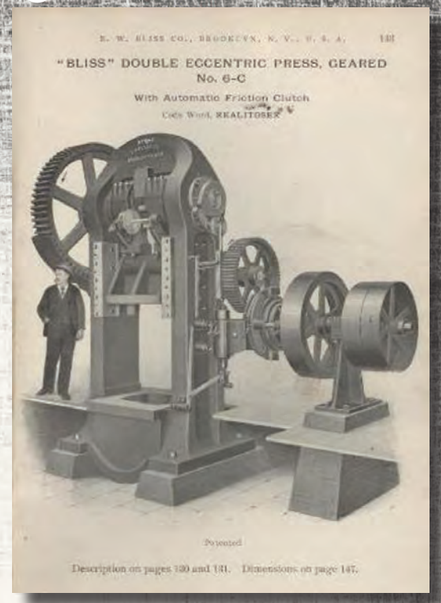
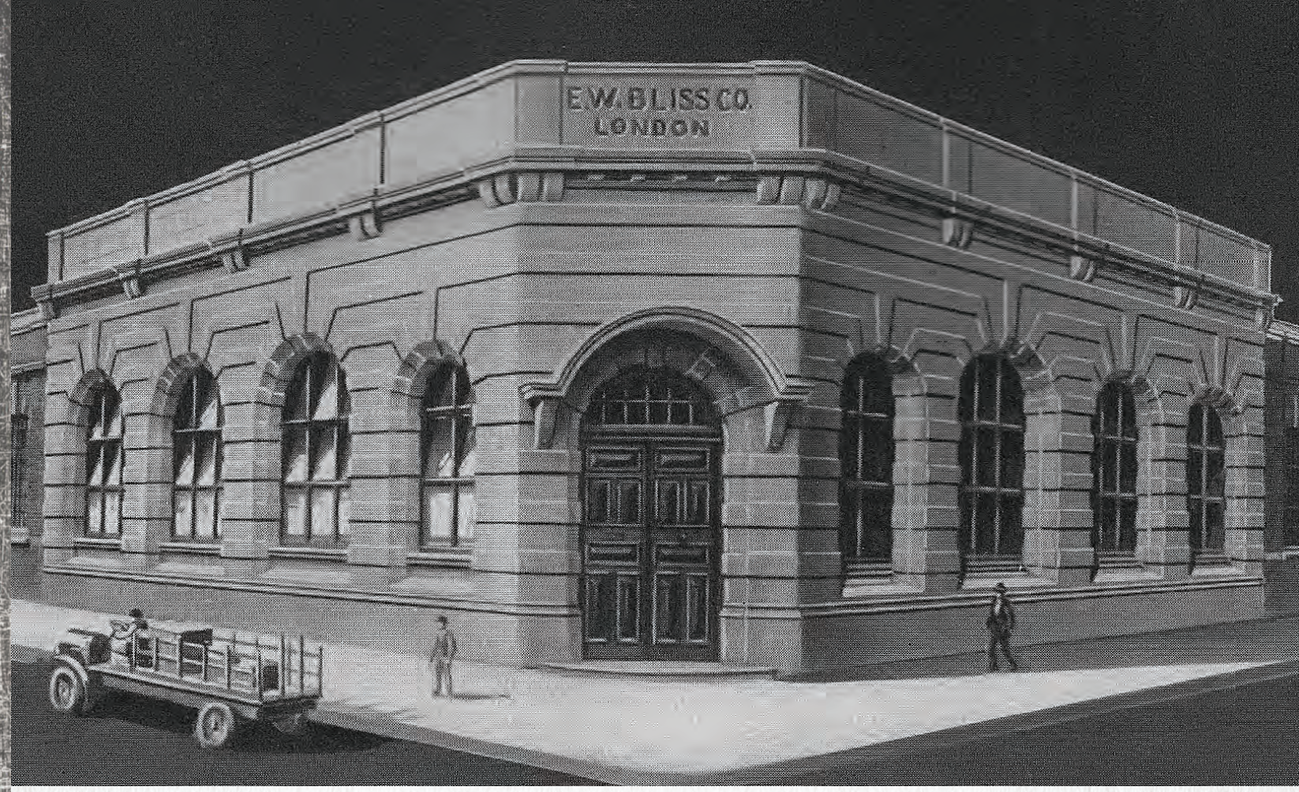


3

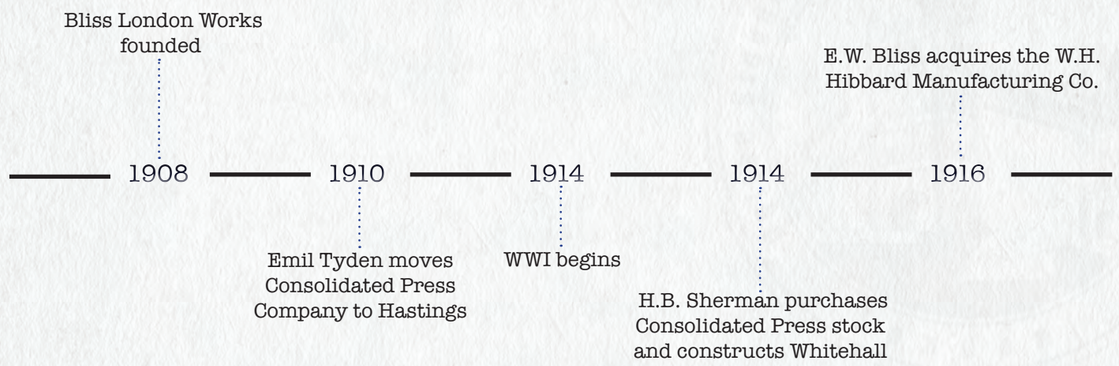
1. Bliss Automobile
2. Double Eccentric Press
3. Bliss London Newspaper Ad



In 1906, the E.W. Bliss Company was one of the 204 exhibitors at the Automobile Club of America Car Show held in New York City, which featured the "Bliss Automobile." The advent of the auto industry brought with it the largest single market the press industry has ever known. It has been the greatest of all Bliss "stamping grounds." The variety of Bliss Presses found in many large automobile plants could fill a Bliss Press Catalog of encyclopedic proportions.

The automobile may be the single greatest example of the punch press's influence on mass production.

In 1908, following the opening of the Paris plant, Bliss began production at a plant in Derby, England, which is approximately 130 miles north of London. The London plant specialized in the production of can making machinery, dies, and power presses.



The First World War placed heavy demands on the E. W. Bliss Company. Large extensions were built onto the Brooklyn plant, bringing the total floor area of the plant to approximately 18 acres. In order to accommodate wartime demands, Bliss changed its production focus to creating Bliss-Leavitt Torpedoes, depth bombs, mines, mine-sweepers, shells, and equipment for manufacturing large and small caliber cartridges. The Bliss-Leavitt Torpedo became the standard torpedo used by the United States Government during the First World War. Fifteen thousand men were employed at one Bliss plant to produce torpedoes and other munitions for the United States, as well as for Great Britain. The torpedo consisted of 3,000 separate parts, all requiring close tolerances.

Despite the demands of the First World War, the E. W. Bliss Company was not without progress. In 1916, Bliss acquired the W. H. Hibbard Manufacturing Company of Brooklyn, NY, specifically known for their production of the inclinable press.

BLISS

IN DEFENSE

E.W. Bliss Company expanded again with acquisition of the Consolidated Press Company of Hastings, MI, in 1919. The Consolidated Press Company was one of the most modern machine shops in the Midwest during the early twentieth century. The plant was built complete with an engineering department, foundry, pattern shop, machine shop, and erecting shop. The company had an excellent reputation for its line of inclinable open back presses as well as its various types of smaller and mid-sized presses.

The Consolidated Press Company was established in 1899 in Chicago, Illinois. The company remained in Chicago for 11 years before it was relocated to Hastings, MI, in 1910. A manufacturer named Emil Tyden, who held controlling interest of the company, drove the relocation. Tyden lived in Chicago until the late 1890's when he met Richard B. Messer, a businessman who encouraged him to manufacture his self-locking car seal in Hastings instead of Chicago. Tyden agreed and in 1897 he founded the International Seal and Lock Company in Hastings to manufacture his patented boxcar seals. Thirteen years after establishing the International Seal and Lock Company in the small Michigan town, Tyden made the decision to move the Consolidated Press Company shop from Chicago to Hastings as well, which allowed him to manufacture presses and dies for his seal company.

The Consolidated Press Company stock was sold to H.B. Sherman in 1914. Sherman planned to increase business and thought that a new factory was needed to support growth. He began the process of moving the company to Battle Creek, Michigan. The businessmen of Hastings immediately went to work convincing H.B. Sherman to build a new plant in their town. They successfully raised the money to build a new plant for the Consolidated Press Company. The end result was a remarkable new building called Whitehall, named after its snow-white tile and white enamel brick exterior.

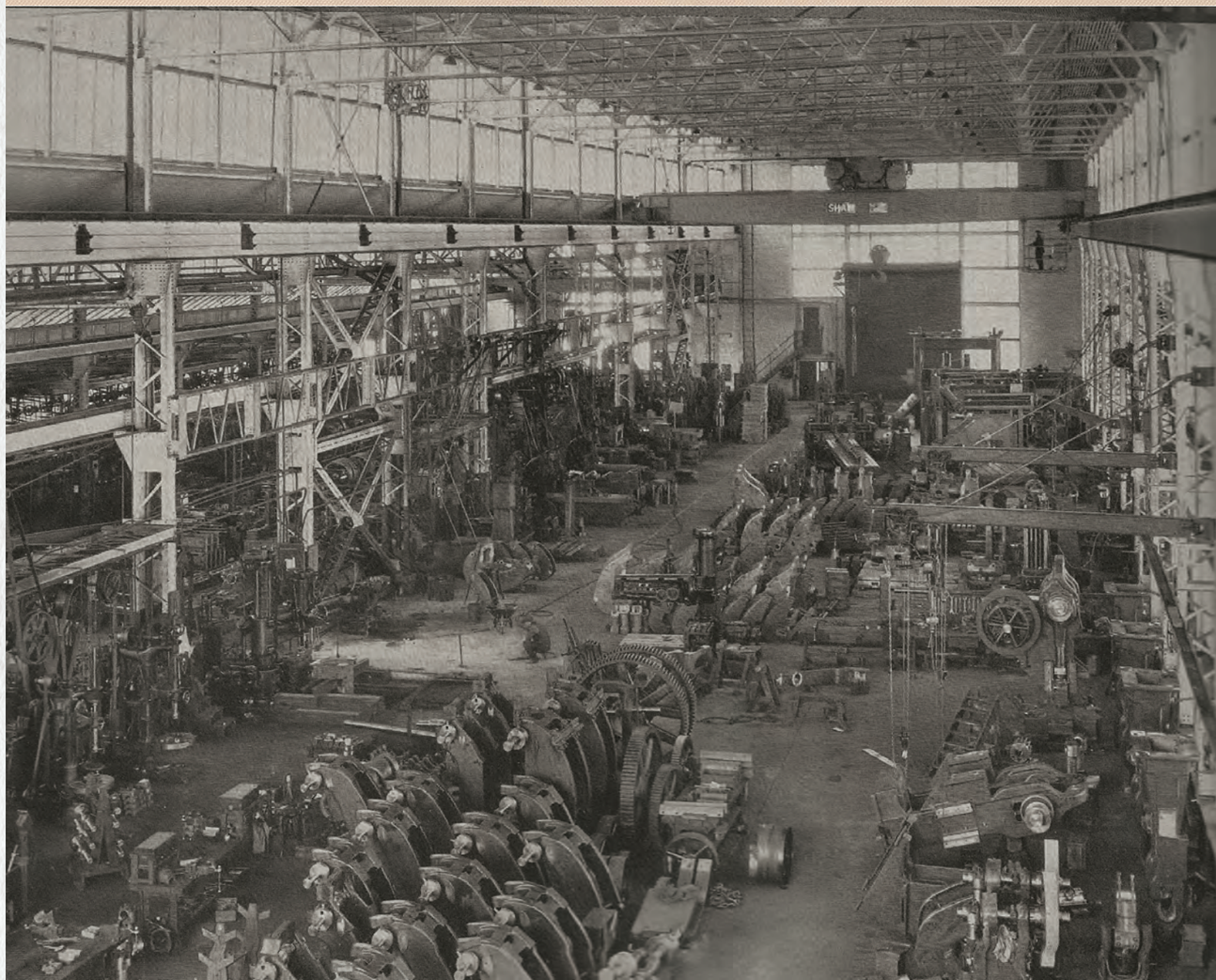
During the planning and development stages for the construction of Whitehall, H. B. Sherman was looking to create the best factory ever built. One of the most important features of Whitehall was the abundance of daylight. Daylight was key to the company because it improved accuracy for workers when reading gauges and performing tasks that required precision. The machine shop had three 300-foot long bays. The tallest of the three bays reached 50 feet in height with continuous glass walls that allowed daylight to enter the shop. Everything about Whitehall was state of the art in 1914: from the design, to the equipment, to the leadership, the company was dedicated to being the best power press company of its time. Shortly after the completion of Whitehall, Sherman sold the company to the E.W. Bliss in 1919.

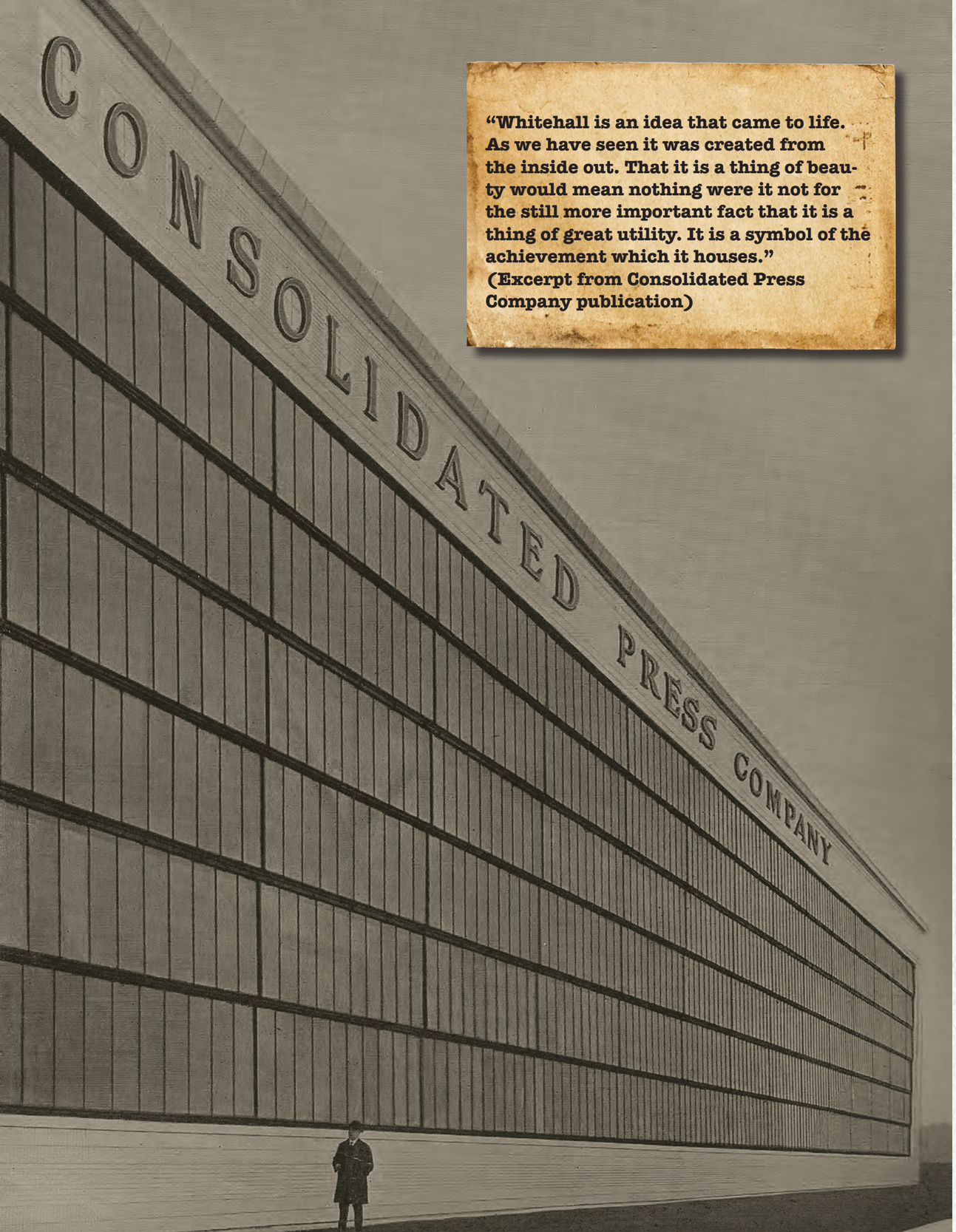
WHITEHALL

The home of

CONSOLIDATED PRESS COMPANY

Hastings, Michigan.





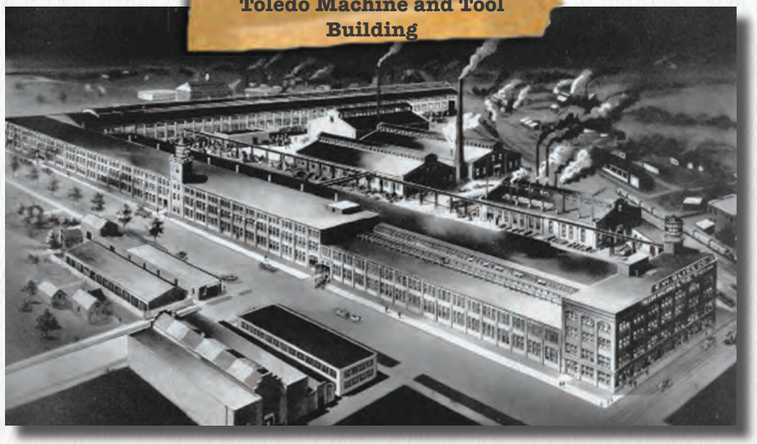
"Whitehall is an idea that came to life. As we have seen it was created from the inside out. That it is a thing of beauty would mean nothing were it not for the still more important fact that it is a thing of great utility. It is a symbol of the achievement which it houses."
(Excerpt from Consolidated Press Company publication)

Adding to the Bliss line in 1921 was the Cleveland Machine and Manufacturing Company, known for its line of large presses weighing upwards of 250,000 pounds. That same year, Bliss acquired the Buckeye Engine Company of Salem, Ohio. Bliss devoted the plant to building rolling mills and allied equipment. The purchase of the Buckeye Engine helped the company achieve the goal of Bliss's founder. Bliss's ultimate vision was to furnish everything needed for sheet metal manufacturing, from the slab to the finished article. The Salem plant eventually earned worldwide recognition for its production of hot and cold rolling mills.

Two years later, in 1923, Bliss made another step toward establishing leadership in the field of sheet metal working when it acquired the Toledo Machine and Tool Company of Toledo, Ohio. At that time, the Toledo Machine and Tool Company was second only to Bliss in industry position, boasting one of the largest and most complete machine shops and foundries in the Midwest. Toledo Machine and Tool had a considerable reputation for their construction of the straight-side single crank and double crank presses. The company was also known for its superior production of knuckle joint presses, large single and double crank toggle presses, as well as machines that weighed up to one and a half million pounds. In addition to its impressive machine shops, the Toledo branch also featured a foundry capable of making castings of almost unlimited sizes.

In 1924, Bliss further extended its scope by acquiring the Marquette Tool and Manufacturing Company of Chicago, Illinois. The Marquette Tool and Manufacturing Company introduced pneumatic die cushions. These cushions superseded the use of rubber springs and bumpers for stamping.

Toledo Machine and Tool Building



1919 — E.W. Bliss purchases Consolidated Press Company

1921 — Bliss acquires Cleveland Machine & Manufacturing Co. and Buckeye Engine Co.

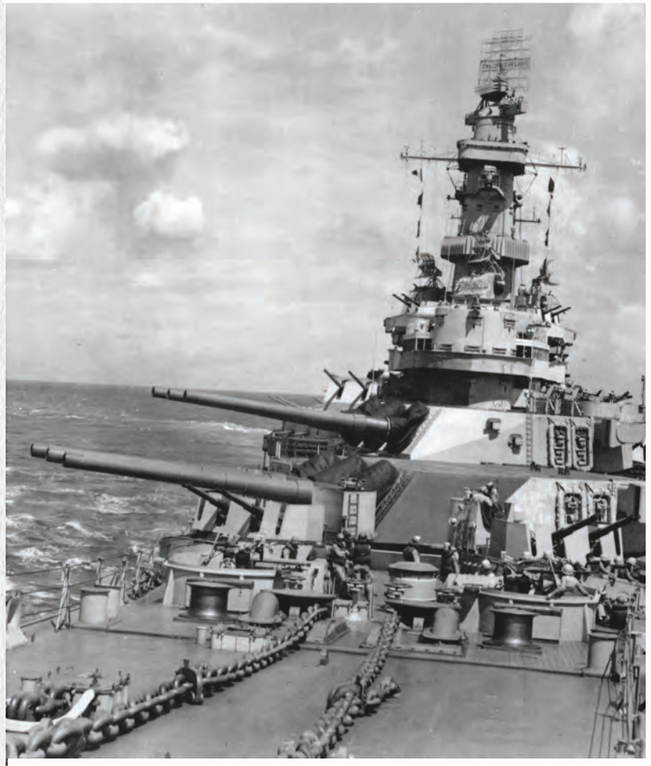
1922 — Schuler becomes a public company

1923 — Bliss acquires Toledo Machine & Tool Company

1924 — Bliss acquires the Marquette Tool & Manufacturing Company; Schuler supplies first car body press

In 1940, shortly after the beginning of the Second World War, the E.W. Bliss Company again stretched itself across borders, founding the E.W. Bliss Company of Canada, Ltd. As the corporation expanded, the E.W. Bliss Company continued to focus on wartime and press production at home, as well as abroad. During the war, the Paris Company kept a sufficient staff to produce presses in addition to war munitions. Just as production was getting organized, the German Blitz began. The fall of France resulted in the commandeering of the plant by German authorities, but under a well-organized sabotage system, no complete machine was ever shipped to the Germans. By the end of WWII, the Bliss Works in England was able to reduce wartime production enough to design and manufacture a complete line of mechanical and hydraulic presses, automatic feeds, and machinery for the making of cans and containers.

BLISS-LEAVITT MARK 8 & MARK 13 TORPEDOES



1932 — Schuler presents world's first counter blow hammer

1933 — Clearing Machine Corporation founded

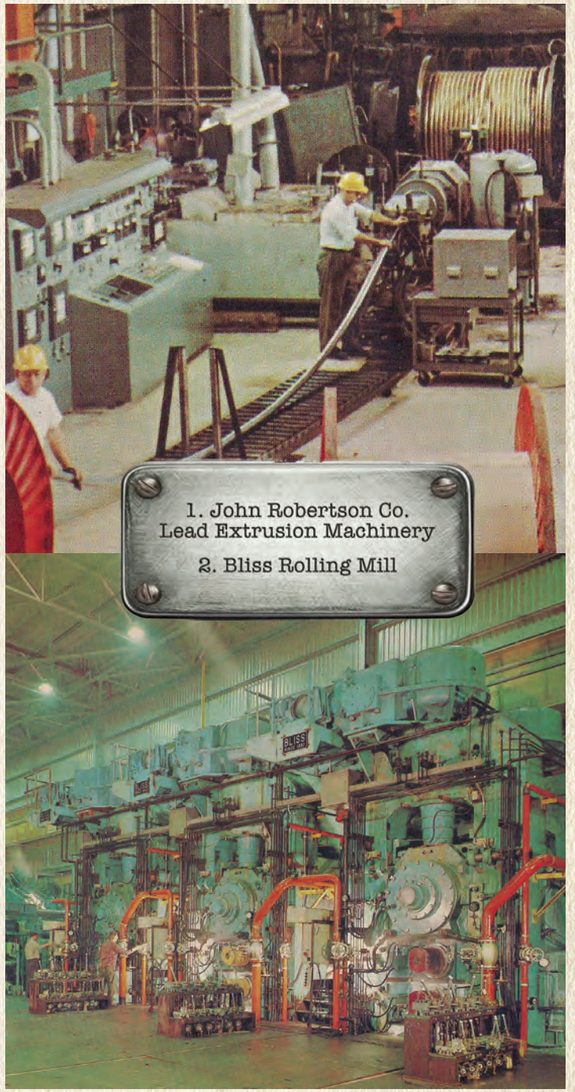
1939 — WWII begins

1940 — E.W. Bliss of Canada founded

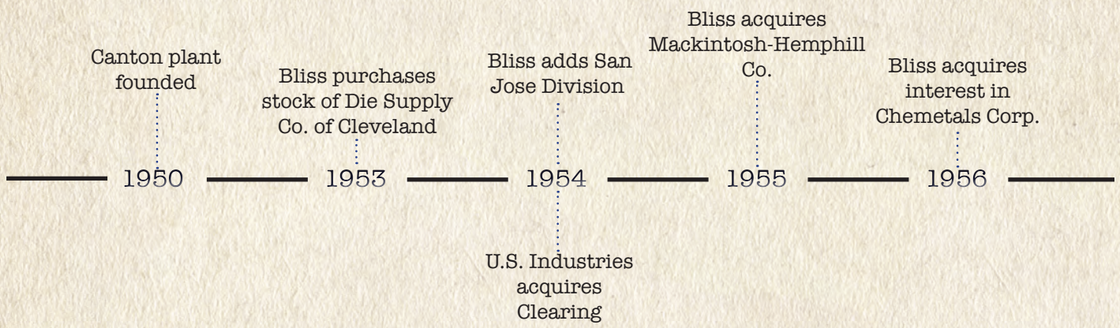
1940 — Niagara becomes major supplier of metal forming equipment to armed services during war

The 1950's brought more expansion and opportunity for the Bliss Company, beginning with the development of the Canton, Ohio, plant which boasted an impressive 675,000 square feet. The facilities in Canton, Salem, and Hastings had a combined total space of 1,400,000 square feet. Each plant manufactured products like cans, rolling mills, auxiliary equipment, as well as a variety of contract and ordnance work that included parts for nuclear-powered submarines, missile components, aircraft launching equipment, and other special metalworking machines.

In 1953, Bliss purchased the outstanding stock for the Die Supply Company of Cleveland Ohio. The company was well known for manufacturing die sets and distributing die supplies. The Bliss Company then headed west in 1954 with the addition of its San Jose, California division. By 1955, Bliss had also acquired the Mackintosh-Hemphill Company, a leading producer of mill rolls, roll turning lathes, tube straighteners, and cinders pots. The next year brought even more acquisitions including obtaining controlling interests in both the Matteson Equipment Company and the John Robertson Company of Brooklyn, NY. The Matteson Equipment Company was known for designing special continuous strip annealing lines, picking lines, and other steel mill equipment; while the John Robertson Company made lead extrusion machinery. Bliss also acquired 20 percent interest in the Chemetals Corporation in 1956.



1. John Robertson Co. Lead Extrusion Machinery
2. Bliss Rolling Mill

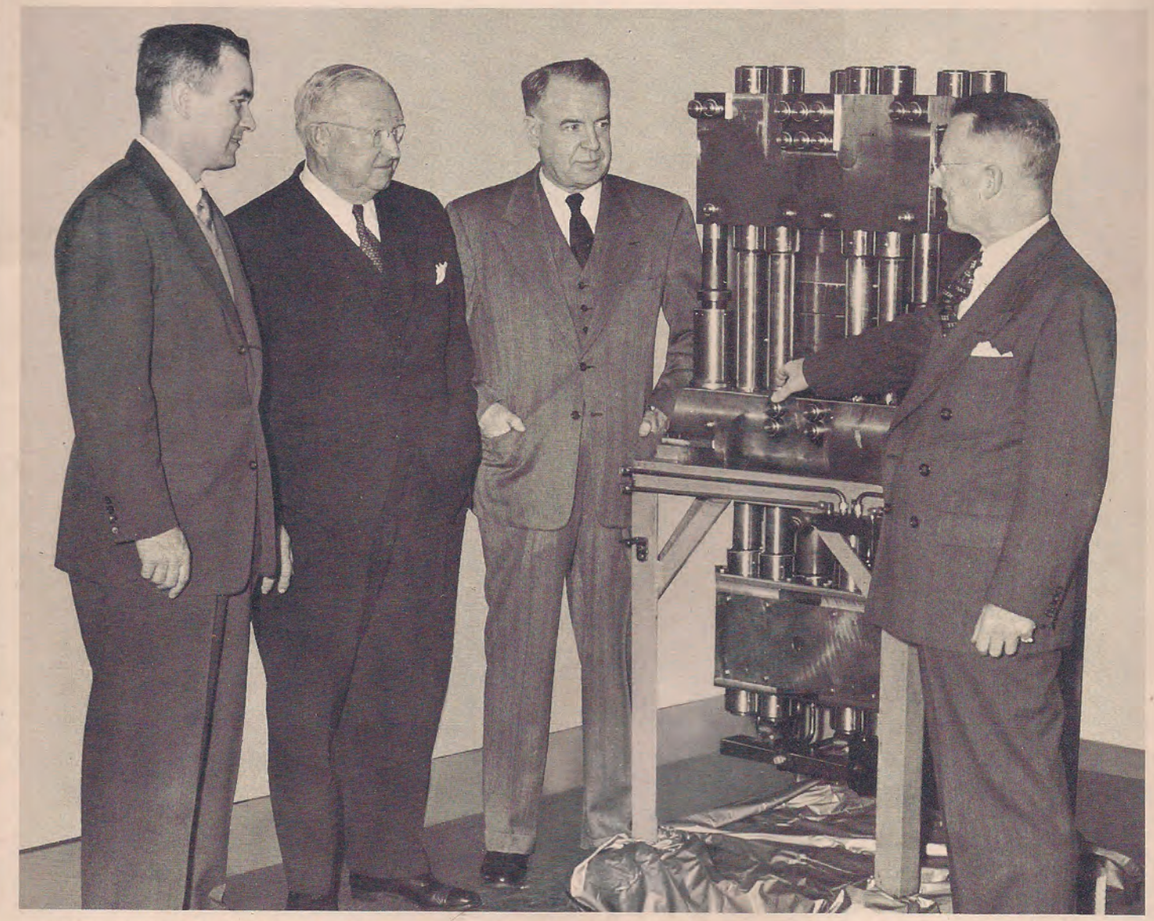


A QUARTERLY PUBLICATION OF E. W. BLISS COMPANY, CANTON, OHIO • SPRING 1953 • VOLUME ONE • NUMBER 1

BLISS trends

IN PRESSES, ROLLING MILLS, SPECIAL MACHINERY

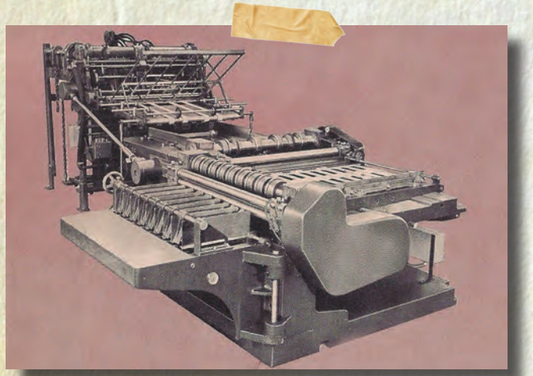
HEAVY PRESS PROGRAM HERALDS NEW ERA IN JET PLANE PRODUCTION



WORKING MODEL OF BLISS 35,000 TON PRESS is inspected by R. Y. Moss, Vice President in Charge of the Canton Division; Howard U. Herrick, President; E. A. "Tex" Irwin, Vice President in Charge of Sales and E. V. Crane, Chief of Special Engineering at Canton. Built to 1/16th scale, the model is proportional to the big press in every important detail. It will be used for laboratory analysis of stresses involved under different load conditions, including strain gauge and stress coat tests—see page 5.

BLISS trends

"At almost any instant of the day, you can see items that were cut and formed on Bliss power presses. The houses we live in; the offices, shops, and factories where we work; and the transportation that carries us to our destinations all contain product made wholly or in part by power presses. If you were to look around your own kitchen, you would see pressed metal objects produced on large and small Bliss equipment such as your stove, sink, refrigerator, cutlery, or pots and pans. Bliss' contributions extend well beyond the kitchen to vacuum cleaners, clocks, towel racks, light switches, and so much more. You would be hard-pressed, no pun intended, to look around and not find something that was produced on Bliss equipment. Bliss has had a hand in making a great many of the products we use to make our daily lives easier."
(Exerpt from Bliss Trends, Fall Issue 1955.)



HERSHEY CHOCOLATE CORPORATION

In 1956, America had a serious sweet tooth for the Hershey Chocolate Corp's world-famous Hershey Bar and Chocolate Syrup. The Bliss Automatic No. 5225 Duplex Body Blank Slitter was used to trim and slit large tinplate sheets into body blanks for the Hershey Syrup can, which helped keep America smiling.

WESTINGHOUSE

In 1957, the Westinghouse plant in Metuchen, NJ, was one of the only manufacturing plants of its time that was capable of producing 750,000 televisions of all shapes and sizes, in black and white, or in color. Each one of Westinghouse's T.V. sets contained 75 stamped metal parts made in a facility with 93% Bliss made presses.

SKIL CORPORATION

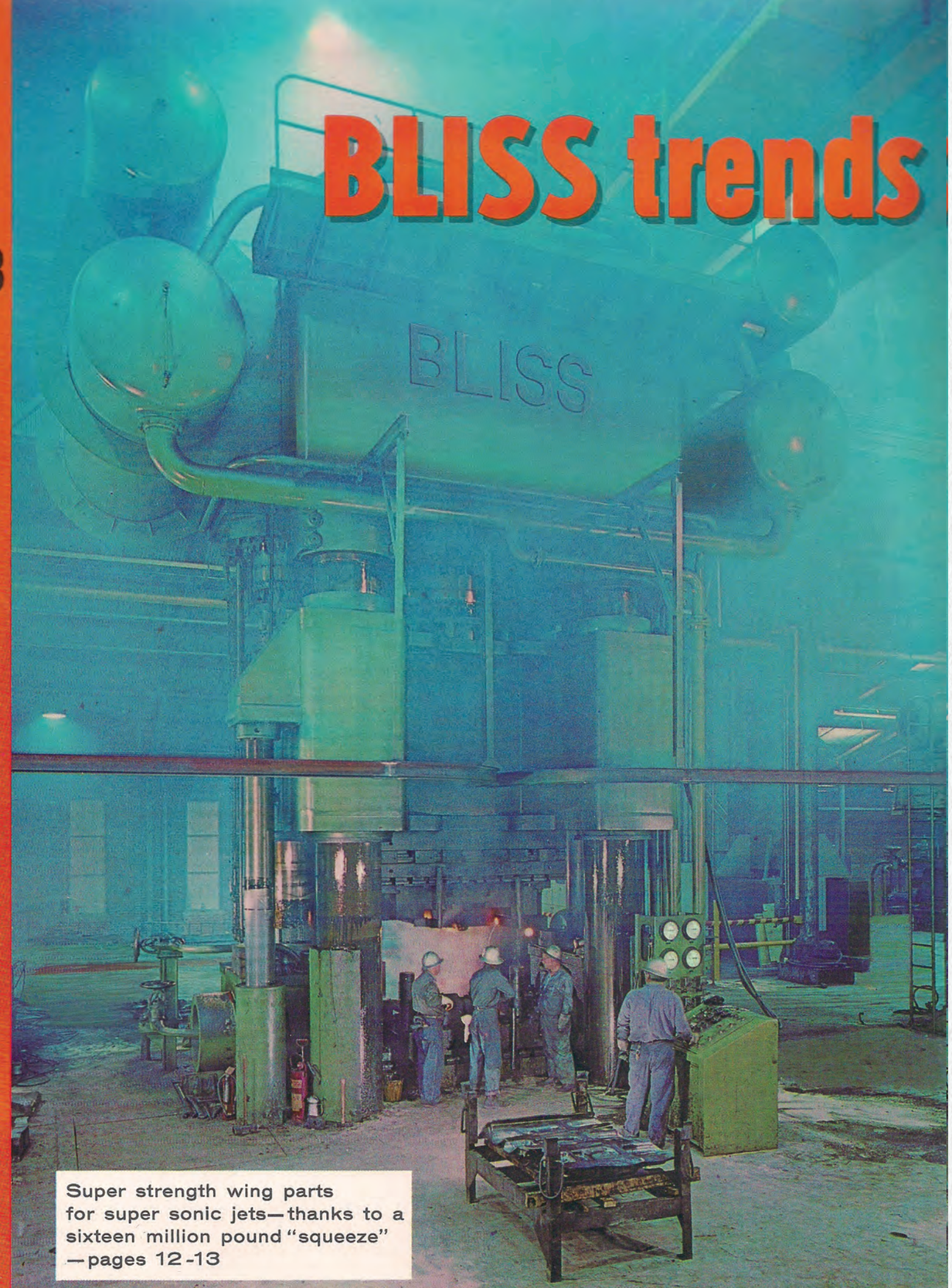
Skil Corporation expanded its power tool business during the 1950's by increasing their volume of stamped parts with Skil's line of Bliss Inclinable Presses.

J. L. CLARK MANUFACTURING CO.

The J. L. Clark Manufacturing Company's goals in 1958 were to take a product from their client's production plant to the retail shelf and to sell that product to the consumer through great packaging and creative art. In order to accomplish this, J. L. Clark plants were equipped with Bliss Single and Double Crank Inclinable Presses and Bliss can making machinery. They produced printed packaging designs and cans for products such as Scotch Tape and Johnson & Johnson Baby Powder.

23 · SUMMER ISSUE 1959 · NUMBER · A QUARTERLY PUBLICATION OF E. W. BLISS COMPANY, CANTON, OHIO ·

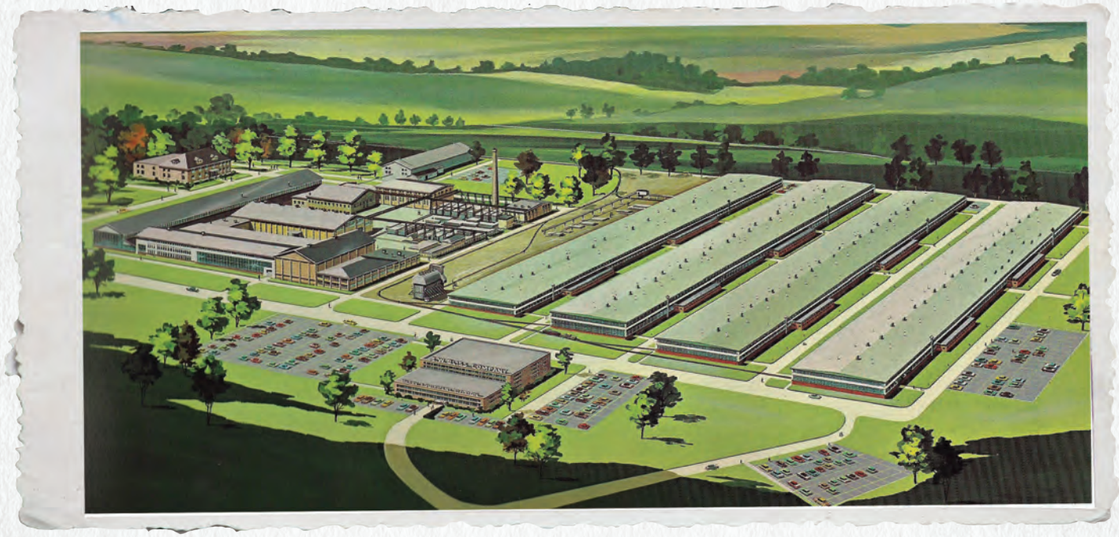
BLISS trends



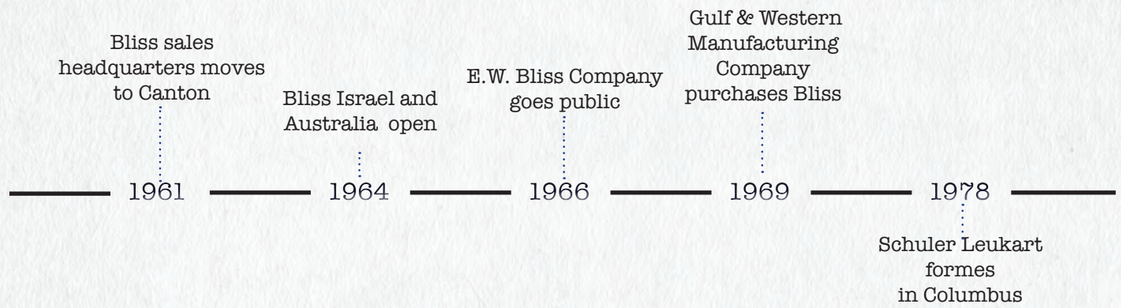
Super strength wing parts for super sonic jets—thanks to a sixteen million pound "squeeze" —pages 12-13

In 1960, E. W. Bliss Company, along with Kaiser Aluminum, assisted the Central States Can Corporation with the production of aluminum cans. With Bliss's support, the Central States Can Corp. became the first manufacturer in the United States to produce aluminum cans for processed food. The Bliss can-making machinery, used to create the aluminum cans, was primarily made at the facility in Hastings, MI.

The press sales headquarters were transferred to Canton, Ohio, in 1961 from its previous location in Hastings, MI. At that time, the Canton plant manufactured the largest presses in the Bliss Catalogs. In 1964, a $2,000,000 expansion to the Canton plant was announced. This announcement immediately followed the completion of a $1,300,000 expansion to the Hastings facility. The Hastings and Canton facility expansions included new construction on both facilities, as well as the addition of new automated machinery.



BLISS SALEM-CANTON PLANT



On July 23, 1964, Bliss opened the doors of their new plant in Israel. One and a half million dollar plans for the sixth Bliss facility overseas were laid in 1963. The company broke ground on July 11, 1963, and the Israel plant was up and running one year later. The 35,000 square foot facility, located on Avenue Bliss in Netanya, Israel, specialized in manufacturing inclinable presses in capacities from 2 1/2 tons to 200 tons.

After acquiring 50 percent interest of Welded Products, Ltd, an Australian Company, in 1964, the E.W. Bliss Company again expanded their manufacturing capabilities overseas. The Bliss-Welded Production plant, located in Milperra, New South Wales, sat on an expansive 11-acre site. The Australian facility produced heavy equipment including metalworking presses, rolling mills, shears, press brakes, and other various licensed products.

1. Bliss Israel Plant, Netanya, Israel
2. Bliss Welded Products Plant, Milperra, New Wales
3. 125 Ton Rolling Mill Housing, Cockatoo Dock, Sydney, Australia

The E. W. Bliss Company went public in 1966 and was purchased in 1969 by the Gulf & Western Manufacturing Company. Gulf & Western implemented a significant restructuring and disposed of a number of plants, only retaining the plants in Hastings, Michigan, and Salem, Ohio. The restructuring and downsizing enabled the company to more efficiently and effectively compete with Japanese and European manufacturers. During this period, many manufacturers downsized and formed joint ventures with overseas manufacturers to withstand increased competitive pressure.

The E.W. Bliss Company underwent a series of name changes between 1969 and 1975. In August 1969, Bliss's entire press manufacturing business was sold to Bonney Forge & Foundry, Inc., a subsidiary of Gulf & Western. Later, the company was transferred to the Gulf & Western Manufacturing Company, another subsidiary company under Gulf & Western. The press making business during that time was conducted as the E.W. Bliss Division, an unincorporated division of the Gulf & Western. On September 13, 1983, Gulf & Western Manufacturing incorporated the division as the E.W. Bliss Co., Inc. Then on November 14, 1983, the E.W. Bliss Company Incorporated's stock was sold to W.H.B. Co., Inc.

The press business was becoming larger and more complex. By the 1980's, Bliss was carrying $3,000,000 in parts inventory, and service on existing presses was becoming a prominent part of the division's operations. At this time, the division focused on "standard" presses.

In 1985, the Salem facility was sold to plant employees through an ESOP transaction which allowed the employees to gain ownership interest in the company by investing primarily in stock through their retirement plans. After 1985, the remaining E.W. Bliss Company continued to develop state of the art mechanical presses for all types of industrial applications. In addition to new press sales, Bliss developed the aftermarket sale of replacement parts and rebuild services into significant and profitable business lines.

Another significant change in the Bliss history was made when Kelleher & Company purchased Bliss in October of 1996. After the acquisition, Kelleher & Company created a merger between Bliss and another well known manufacturing company by the name of Clearing-Niagara, Inc. Together Bliss and Clearing-Niagara formed CNB, Inc., headquartered in Buffalo, New York.

Clearing-Niagara, Inc. represented the union of two highly respected names in the machine tool industry: Niagara Machine and Tool Works (Niagara) and the Clearing Corporation (Clearing). Niagara and Clearing were both acquired by VIG PLC in September 1992. Each company brought with it a diverse history and combined experience of over 175 years in the design and manufacture of metal forming equipment.

- 1982 — Müller and Esslingen merge
- 1983 — Schuler installs first fully automated large panel transfer press
- 1985 — Bliss's Salem plant sold to employees; Hanson PLC. purchases Clearing
- 1986 — Hitachi Zosen purchases USI Clearing
- 1988 — Müller Weingarten Corp. opens first USA facility
- 1992 — Clearing and Niagra sold to VIG
- 1994 — Schuler introduces hydroforming technology
- 1996 — Clearing-Niagara and Bliss merge forming CNB, Inc.
- 1999 — CNB files for bankruptcy
- 2001 — Bliss, Clearing, Niagara Inc. (BCN) forms

Clearing- Niagara also had a deep-rooted history. Niagara was founded in Buffalo, New York, in 1879 and later incorporated in New York State in 1901. The business, founded by George J. Munschauer and Adam E. Heinz, was originally known as Niagara Stamping and Tool. Throughout the years, the Munschauer family held the company majority stock until the business was sold to Verson International Group (VIG) in 1992.

During WWII, Niagara was a major supplier of metal forming equipment to the Army and Navy air services, as well as other aircraft builders. Other customers at the time included General Motors, General Electric, and Curtiss/Wright. In the 1940's, Niagara became a major supplier of metal stamping, forming, and handling equipment to both foreign and domestic automotive OEM's, first-tier stamping suppliers, and major appliance manufactures. Niagara also produced presses for lawn and garden equipment and golf cart manufacturers.

During the 1970's and 1980's, Niagara engineers focused on developing new standard products. New product developments during the 1990's included the Marathon Press Brake, the Rainbow Servo Press Brake, the Spirit CNC Hydraulic OBS Press, and the one-piece Frame Chief Press. As one of America's long-standing manufacturers, the name Niagara became synonymous with the design and production of high quality mechanical and hydraulic presses, press brakes, and shears.

Niagara Stamping & Tool Works, Slip Roll Former

NIAGARA

The Clearing Machine Corporation was founded by Mr. Rudolph Glasner in 1933. The company remained in family control until 1954 when U.S. Industries acquired the business, changing the name to USI Clearing. By that time, Clearing had established itself as one of the world's leading manufacturers of large metal forming presses. USI Clearing entered into licensing agreements over the next two decades to companies in Italy, Germany, Japan, Australia, and India. By 1969, Clearing Presses were in service in 17 foreign countries.

Clearing boasted the largest installed base of metal forming presses in the world, with a significant number of machines located outside of the United States. The estimated installed base of Clearing Presses totaled 70,500. Due to Clearing's reputation for quality products and innovation, the company was routinely targeted for acquisition. In 1985, Clearing was purchased by Hanson PLC., but retained the name USI Clearing. The following year, in 1986, USI Clearing was purchased by Hitachi Zosen of Japan. At that time, the company name was changed to Hitachi Zosen Clearing Inc. The company remained under Hitachi Zosen until September 1992 when it was obtained by VIG PLC and assumed the name of Clearing International, Inc.

Bliss was a part of CNB Inc. from 1996 until 1999 when CNB International filed for Chapter 11 bankruptcy. CNB then operated as a debtor in possession for the following two years. Bliss Clearing Niagara, Inc. (BCN) was formed as a new entity on May 11, 2001, by CIT Lending Services, Inc. in New York. BCN acquired license rights to all the proprietary designs and intellectual property that was formerly owned by CNB International.

In September 2006, CIT Lending Services sold most of the business assets and all intellectual property to the Müller Weingarten Group, who then ran the company under the name of BCN Technical Services, Inc. At that time, Müller Weingarten AG manufactured and marketed metal forming, forging, and die casting processing solutions to the automobile industry.

Müller Weingarten AG was formed through the joining of the two main German production divisions of Esslingen and Weingarten. The Esslingen Division began in 1863. After completing his apprenticeship, Christian Friedrich Müller set up his “Fritz Müller” engineering workshop on the Neckar River in Esslingen, a town near Stuttgart. Initially, the new company made hydraulic equipment for the production of oil from rapeseed and other materials. From this original workshop, the company developed over the years to become well known throughout the world for hydraulic presses and press lines. The company was later handed down to Christian Friedrich Müller’s son, Fritz Müller, and then again to Christian’s grandson, Dr. Erhard Müller.

The Weingarten Division of Müller Weingarten AG was founded in 1866 by Johannes Michael Schatz in Weingarten, Germany. Schatz manufactured sewing machines and machines for embroidery. Not long after, the young company expanded into the field of sheet metal forming machines, establishing a patent for guillotine shears. The company grew, and by 1900 it had 400 employees. By that time, the production program included guillotine shears, piercing presses, power presses, friction screw presses, body panel stamping presses, and dies for the automotive industry.

In 1982, the two companies, Fritz Müller Pressenfabrik in Esslingen and Maschinenfabrik Weingarten AG in Weingarten, were merged to form Müller Weingarten AG. This association, going back many years, became the basis for building hydraulic and mechanical presses, automation, die casting machines, and dies. Müller Weingarten Corporation opened its first facility in the USA in 1988 in the city of Madison Heights, near Detroit, Michigan.

One year after the formation of BCN Technical Services, Schuler AG purchased Müller Weingarten Group. On March 27, 2007, Schuler AG obtained BCN Technical Services as a subsidiary of Müller Weingarten. Schuler AG shared a similarly rich history with the E.W. Bliss Company (now part of BCN) in the press and metalworking industry.

Schuler AG was established when Louis Schuler acquired a house with a metalworking shop in Göppingen, Germany. With the help of an apprentice, he started his business in early October 1839. Later inspired by the Great Exhibition of 1851 in London, Schuler began production of metalworking machines in 1852. Schuler's workforce had grown to 70 employees by 1871. Seven years later, Louis Schuler submitted his first patent application, "Innovations in Punches, Shears and the Like for Manual Operation." The number of employees had more than doubled by 1884 to 160. As the company continued to progress, Schuler submitted his next patent application, "Hydraulic Drawing Press with Two Interlinked Pistons" in 1895. By 1900, Schuler had unveiled the world's first transfer press at the World Exhibition in Paris.

In 1922, Schuler became a public company. Just two years later, Schuler supplied its first car body press to Adam Opel AG. Then, in 1932, the world's first counterblow hammer was designed and built for the drop forging industry in Remscheid. Shuler AG had grown considerably by 1935; so much so that the factory site in Göppingen was expanded to three times its former size.

- **2003** — Schuler introduces first compact crossbar transfer press
- **2006** — BCN Technical Services forms
- **2007** — BCN Technical Services joins Schuler AG
- **2007** — Schuler launches ServoDirect Technology
- **2011** — BCN Technical Services acquires Warco, Wean United Presses, and McKay
- **2012** — Andritz Group purchases Schuler AG and BCN Technical Services

Schuler AG pioneered the automation of production processes in the fields of feeding, mechanizing, cross-cutting, splitting, and roll forming in 1964. These works were followed by the joint venture of Schuler-Leukart in 1978, which was formed in Columbus, Ohio. By 1983, Schuler installed the first fully automated large-panel transfer press with three-axis transfer at Ford's plant in Cologne, Germany. The following year, Schuler reorganized as Schuler Incorporated.

In the early 1990's, the introduction of Crossbar Technology was a huge technological leap for the mass manufacturing of car body parts. Crossbar Technology denotes the automation of large-panel transfer presses. Hydroforming Technology, where metal tubes are formed in a closed die with the aid of internal pressure, was introduced in 1994. In 2003, the world's first compact crossbar transfer press was delivered.

Schuler wrote a new chapter in the history of metal forming in 2007 with the market launch of ServoDirect Technology. This technology allowed slide motions to be individually adapted for each part according to the forming process, the dies, and the transport for each part. BCN Technical Services joined Schuler AG that same year. Two years later, Schuler launched the start-up of the world's first press line with ServoDirect Technology.

Schuler developed TwinServo Technology in 2012. The new drive concept with two decentralized ServoMotors in the press bed enabled compact designs, improved forming processes, reduced noise emissions, and provided greater energy efficiency.

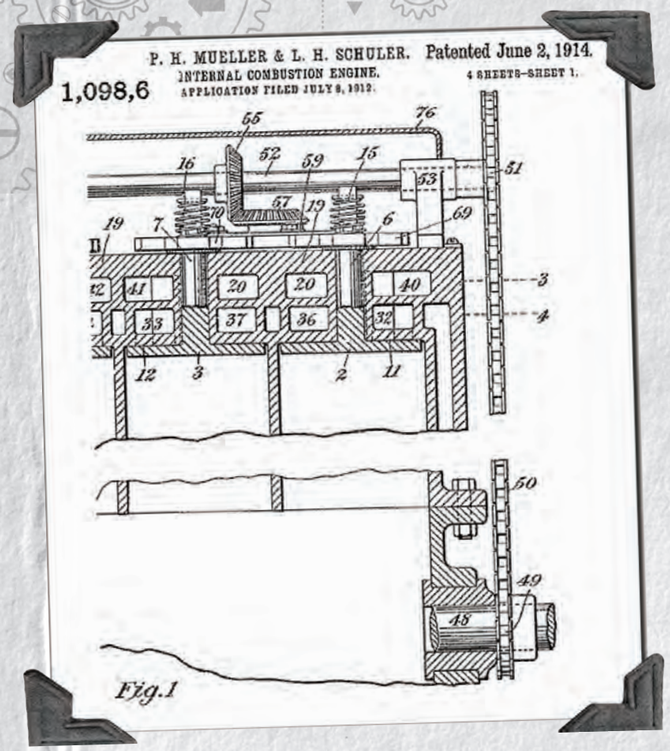
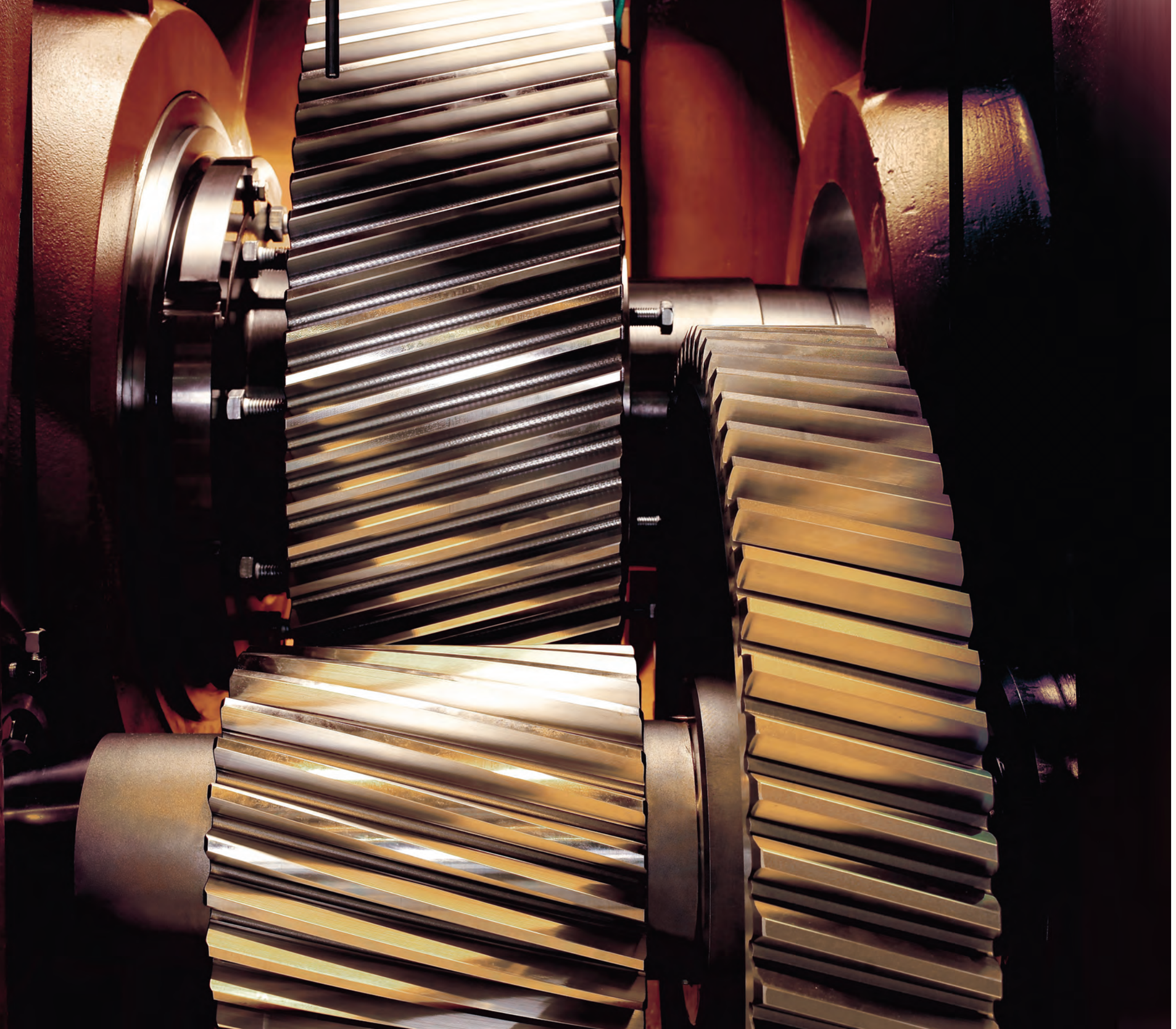

P. H. MUELLER & L. H. SCHULER. Patented June 2, 1914.
INTERNAL COMBUSTION ENGINE.
APPLICATION FILED JULY 9, 1913.
4 SHEETS-SHEET 1.
1,098,6

Fig.1

SCHULER
Member of the ANDRITZ GROUP

In 2012, the Andritz Group of Graz, Austria, purchased Schuler AG, which included BCN Technical Services as a subsidiary. Andritz AG began as an iron foundry established in 1852 by Josef Körösi, a Hungarian entrepreneur, in Andritz, Austria, just outside the city of Graz. The company quickly expanded beyond the foundry to produce cranes, pumps, water turbines, bridges, steam boilers, engines, and mining equipment. Today, the Andritz Group is a global leader across several industries. They provide equipment and services to hydropower stations, the pulp and paper industry, metalworking and steel industries, and solid/liquid separation in the municipal and industrial sectors. The Group currently has approximately 23,800 employees at their 250 production sites, service offices, and sales companies all around the world.

ANDRITZ



BLISS CLEARING NIAGARA

With the acquisitions by Schuler and Andritz, BCN Technical Services is positionedas both a domestic and world-wide leader in press manufacturing, rebuild-ing, service, and parts distribution. BCN Technical Services provides the commercial and defense industries with manufacturing solutions. BCN offers OEM parts for Bliss, Clearing, Niagara, Consolidated, Toledo, Warco, Wein, and Mackay, as well as supporting many competitive brands.

BCN also offers repair, rebuilding, renewing and retrofitting services, in addition to new machines. The company continues to supply quality parts and excellent service.

Past Preserved
Future Secured

BLISS CLEARING NIAGARA

THE STORY CONTINUES AT WWW.BCNTECHSERV.COM AND WWW. BLISSMUNITIONS.COM