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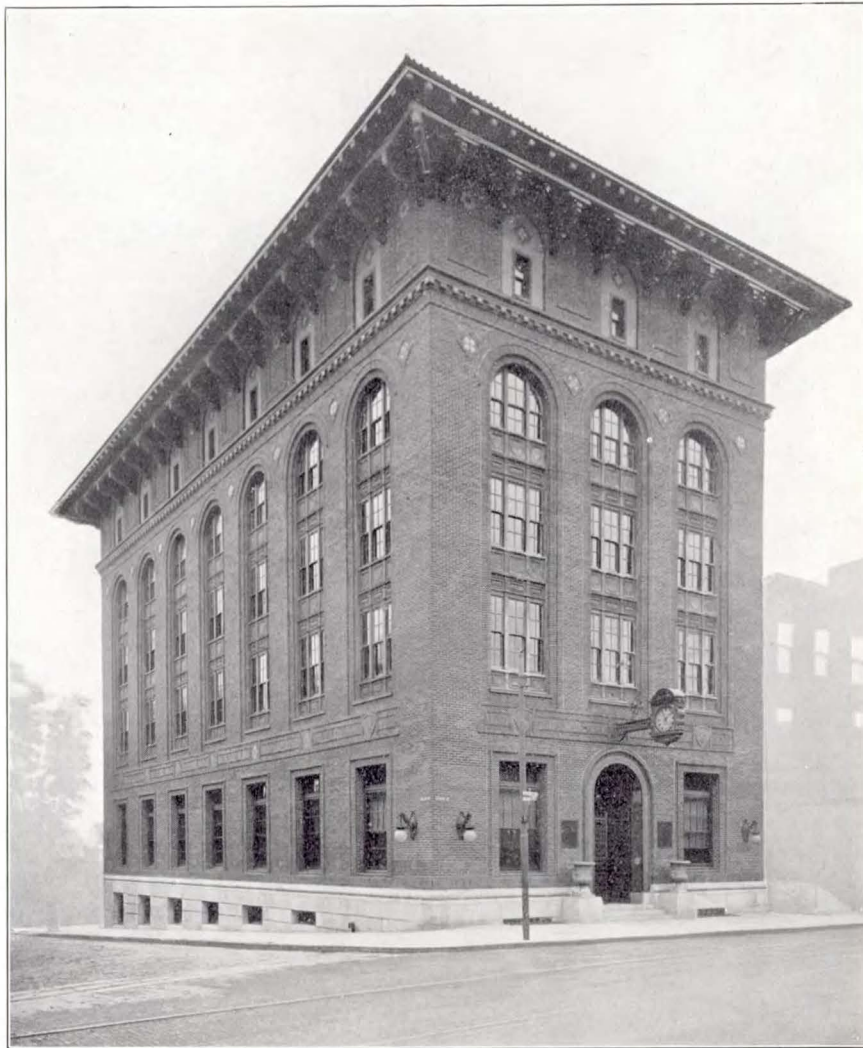
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For the SCHEDULE OF COURSES AND CLASSES for the current year, PROSPECTUS OF THE MECHANICS COURSE, and any further information, address :

The School of Industrial Arts, Trenton, N. J.

The School of Industrial Arts

Trenton, New Jersey



THE SCHOOL OF INDUSTRIAL ARTS, TRENTON, NEW JERSEY.

Presented to the Board of Trustees of Schools for Industrial Education of the City of Trenton
by the Hon. Henry C. Kelsey.

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The School of Industrial Arts

Trenton, New Jersey

The School of Industrial Arts of the City of Trenton was established (1898) in pursuance of "An Act providing for the Establishment of Schools for Industrial Education," approved by the Senate and General Assembly of the State of New Jersey, March 24, 1881.

The Act provides for "the establishment and support of schools for the training and education of pupils in industrial pursuits (including agriculture), so as to enable them to perfect themselves in the several branches of industry which require technical instruction."

The School is supported by the State of New Jersey and the City of Trenton, and is in charge of a "Board of Trustees of Schools for Industrial Education of the City of Trenton," appointed by the Governor of the State.

The School offers courses in fine art, industrial art or fine art applied to the industries, in several of the art-crafts and in dressmaking and millinery. It offers, in evening classes, to men and boys employed during the day, vocational courses for the machine, building, electrical and pottery trades, and, in day classes, courses for boys who wish to fit themselves to be mechanics. In co-operation with the State Normal School at Trenton it offers courses for the training of teachers of industrial art for the public schools, and, in addition, it conducts classes for children on Saturday mornings.



Diplomas

Diplomas are awarded upon the completion of the following courses: Fine Art Course, Art Teachers Course, Mechanics Course, Domestic Art Course, Chemistry Course, Architectural Course, Evening Mechanics Course, Evening Fine Art Course.



Special Courses.

Students are at liberty, after satisfactorily completing the work of the class in freehand drawing, to specialize in drawing, painting, designing or modeling.

Most of the craft classes may be entered without previous art training.

Students may enter the elementary classes at any time during the year, and advanced classes providing they can demonstrate their ability to undertake the work.



Fine Art Course

This course offers an all-round training in the various branches of art study for students who wish to become teachers in the public schools, and for students who wish to make art a profession that fits them to enter advanced classes in the professional art schools at home and abroad.



Instruction is given in *Freehand Drawing*, including drawing from casts of architectural ornament—Greek, Gothic, Renaissance, etc.; study of geometric solids to learn the principles of perspective; study of still-life, furniture and interiors to learn to apply perspective; and study of human and animal forms from casts.

Students making a special study of designing, and those engaged in professions requiring a knowledge of ornament, are given the opportunity in this class to make a thorough study of the various styles.

In *Light and Shade* students learn to represent still-life, casts of ornament, etc., by means of values of charcoal or water color monochrome.

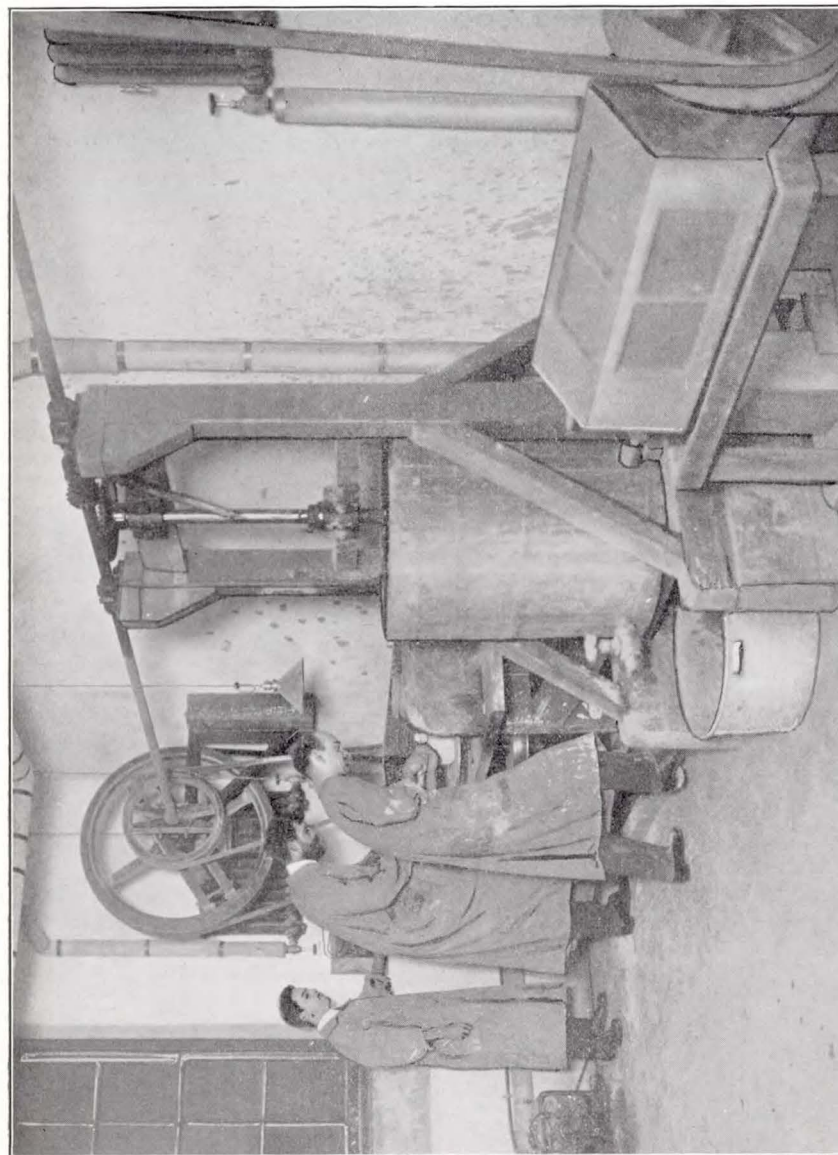
In the *Antique Classes* students first draw casts of details of the face and figure and later draw from masks, busts and the entire figure. Students who wish to enter the life class must prove their ability to draw in these classes.

In the *Painting Classes* students begin the study of color and work from groups of still-life, fruit and flowers, in oil or water color. The school owns an interesting collection of still-life and students devote much time to the composition of the groups painted. During the Spring, if the weather permits, the students work from nature, studying landscape composition and the methods of work of the landscape painter.

Advanced work in painting includes a study of the *Head* and *Costumed Figure* for the study of portraiture and for the use of the figure in illustration.

An evening *Life Class* is conducted offering work similar to that of the advanced painting class with the addition of the opportunity to study from the nude figure. The school believes that there is no training so necessary, not only for the art student, but for the architect, designer and modeler, as drawing from life.

Through the kindness of Charles Scribner's Sons, the School has on exhibition a large collection of original draw-

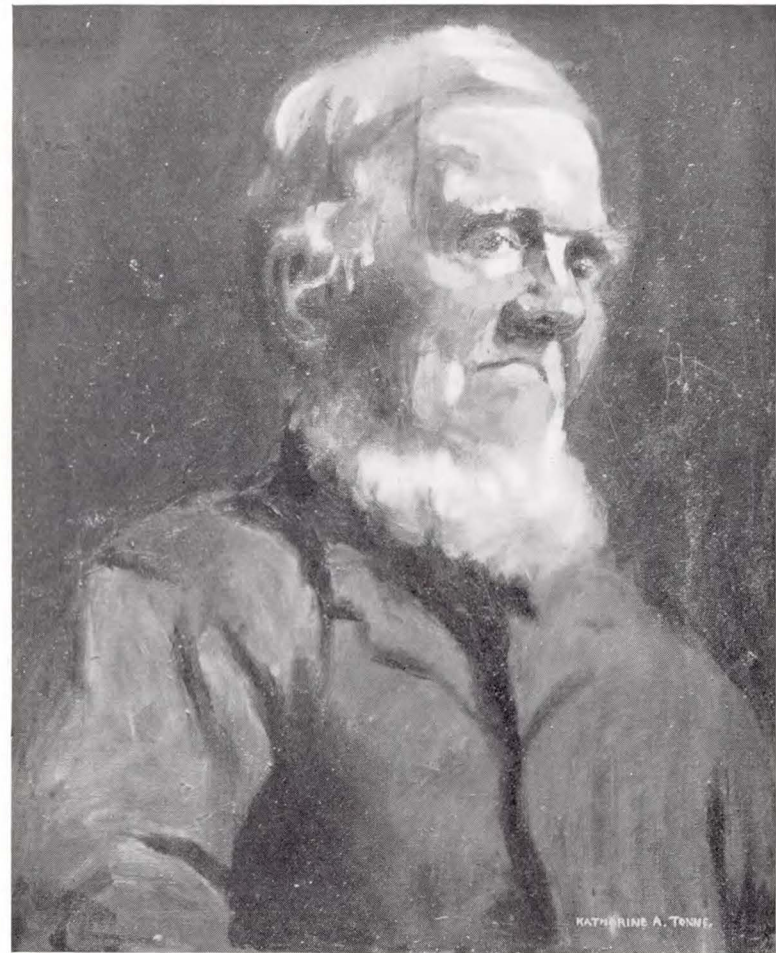


ings for illustrations that have appeared in Scribner's Magazine. The attempt is made to keep the work of the class up to the standard of execution set by these drawings. It is impossible for any school to graduate a portrait painter, an illustrator or a cartoonist, for artists are "born and not made," but every endeavor is made to give the students not only sound training in drawing, painting and composition, but a knowledge of the many special requirements of the reproductive processes without which the young artist is at a great disadvantage when he attempts to make his knowledge serve a practical end.

In the class in *Designing* the grammar of ornament is studied—the methods of laying-out and developing patterns, the construction of borders, etc. There are certain principles underlying all design for every purpose, and it is the object of this class to start the student in the work with a thorough knowledge of these principles and with the ability to carry them out. Instruction in historic ornament, the theory of color, lettering and illumination is given in this class.

In the advanced class the principles of design are applied to special problems, as wall paper, tile, metalwork, jewelry, pottery, etc. Students prepare designs in these classes and execute them in the craft classes.

The *Modeling* class includes two distinct lines of work, either of which may be selected. Ornament—After copying from casts a progressive series of simple ornamental forms beginning with a simple leaf and including rosettes, scrolls, etc., the student works from photographs and working drawings of ornament until he is able to design and execute original ornament. This work is especially valuable to pottery modelers. Sculpture—In this division of the class the student copies casts of details of the human face, masks, busts and the entire figure from the Antique, in relief and in the round. The anatomy of the figure receives much attention from the



first. Advanced students work from life. Instruction is given in casting from plaster and glue moulds and in the various methods of finishing plaster casts.

In the class in *Commercial Illustration* students are given instruction in drawing for the reproductive processes in art, including the use of the air-brush. All exercises are extremely practical and the exacting demands of publishers of advertising matter, trade catalogs especially, are kept constantly before the students. Students should be sufficiently far advanced to work in the Life Class to secure the greatest benefit from this class. Instruction is also given in lettering, show-card writing and sign painting.

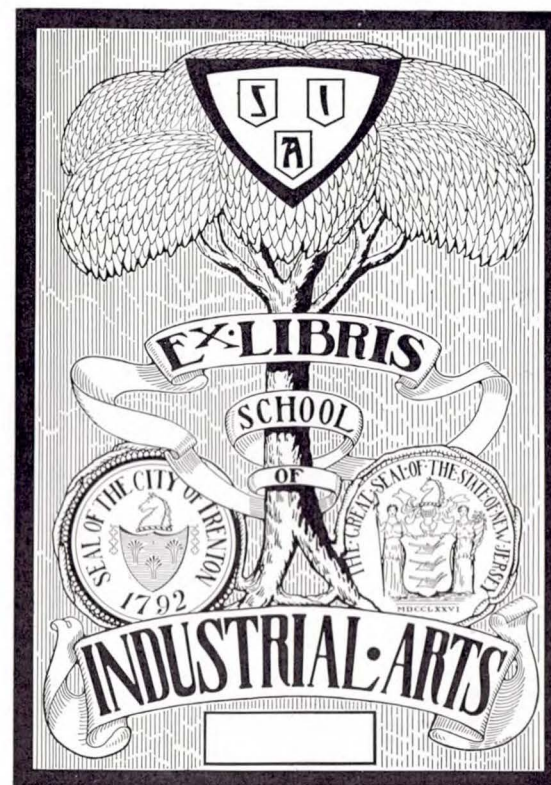
The Fine Art Course also includes *Figure Composition*—the study of the figure as a means of decoration in architectural ornament, mural painting, jewelry, pottery, etc.; *Artistic Anatomy*—the study of the construction of the figure, the function of the bones and muscles, and the action of the figure; *Mechanical Perspective*—especially valuable to students of illustration and interior decoration; and the *History of Art*—illustrated lectures with assigned reading.

The work of this course covers four years, five afternoons and five evenings per week. Fee twenty dollars per year.



The Art Teachers Course

This course, offered in co-operation with the State Normal School at Trenton, prepares teachers of industrial art for the public schools.



Courses relating to the science of education and the art of teaching are taken in the Normal School, and courses in drawing, painting, designing and modeling in the School of Industrial Arts.

The work of the course includes the entire fine art course offered by the School of Industrial Arts and the following subjects offered by the Normal School: History of education, 1; science of education, 1; drawing, 1; psychology, 1 and 2; school law; plane geometry, 1, (if not already taken in the High School) and one unit in methods—preferably English.

By working in two schools of the character of the School of Industrial Arts and the State Normal School it is possible to secure the broad training that the drawing teacher or art supervisor must have in order to hope for success. The work of this course covers four years, five afternoons and five evenings per week. The work at the Normal School can be completed in morning classes during one year. Fee twenty dollars per year.



The Mechanics Course

The object of this course, offered in day classes only, is to train boys (graduates of the eighth grade of the public schools or its equivalent) to enter the industries with sufficient knowledge and skill to undertake their work with intelligence and to fit them to advance themselves to positions of responsibility and leadership.

The course covers three years and includes mechanical drawing, machine, architectural, sheet metal, etc.; freehand



drawing, lettering and that part of the subject directly useful to mechanics; mathematics, arithmetic, algebra and geometry as applied in mechanics, and plane trigonometry including field work in surveying; physics, the physical laws upon which the industries are based including a study of electricity; shop work, training in the handling of wood and metal tools and exercises illustrating the laws of mechanics; English, letter writing, preparation of specifications, contracts, etc.; history, industrial rather than political, including the evolution of the metal, clay and other industries, together with a study of the history of trade and commerce; civics, the study of the organization of the Nation, the State and the City, and the duties of the citizen.

The first year of work, to begin September 22, 1913, will be devoted to mathematics, mechanical and freehand drawing, modeling, history, civics and English; the second, to begin September 21, 1914, to mathematics, mechanical drawing, wood-working and English; the third, to begin September 20, 1915, to applied mathematics, physics, and metal-working.

Fee twenty dollars per year. This includes drawing outfits and books which become the property of the student.



The Chemistry Course

This course is planned to relate directly to the clay and other industries and is open to those who have not previously studied chemistry and others who wish to review the subject.

The course is planned to teach the student the fundamentals of the science. While being broad in scope, special stress is laid upon the basic laws, principles, and reactions



which are necessary for a good foundation in the subject. The course includes lectures, experiments, recitations, and individual laboratory work. The course is so planned that the students gain sufficient knowledge of the meaning of chemical laws, formulae, principles of chemical calculations, the common elements and compounds, to intelligently pursue further fields of chemical investigation.

Following the class in *General Chemistry* the study of *Qualitative Analysis* is taken up. This class furnishes instruction and practice in dealing with the facts and principles involved in methods of finding the composition of substances—that is, the methods of qualitative analysis. The student is taught how to detect and identify the different constituents of compounds. He deals with metals, acids, etc., which enter into the composition of the materials which are required by the manufacturer and the practical man, and learns how to detect the presence of injurious materials. He is taught to analyse such substances as ores, commercial metals and alloys. He is taught the use of the blowpipe in testing rocks, minerals and other substances. Special attention is given to the needs and aims of the individual student.

In *Quantitative Analysis* the student carries the work of analysis forward another step. He is taught how to use the delicate chemical balance and other kinds of apparatus designed by the chemist to make accurate measurements. Quantitative analysis consists in the practice of principles and methods which are necessary to find out the exact amount of each constituent in the materials under examination. In this course such substances as clays, lime, cement, steel, pig iron, alloys, coal, commercial fertilizers, soils, air, coal gas, furnace gas, etc., etc., are examined and the exact amounts of their constituents are determined.

In *Applied Chemistry* the student makes a special application of his knowledge gained in the preceding courses in the careful study of one or more of the manufacturing industries.



He may base his choice upon his line of interest and pursue such investigations as will best prepare him to make advances in his present or proposed occupation.

The work of this course covers four years, two evenings per week. Fee five dollars per year.

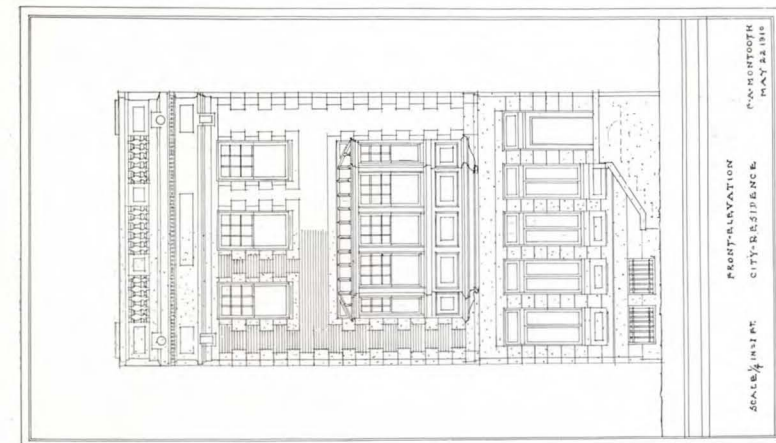
For those especially interested in the clay industries a class in *Ceramics* is offered (Fee five dollars per year) the object of which is to instruct men engaged in the clay industries in the theory and practice of ceramics to the end that they may become more proficient in their daily work and fit themselves to become foremen, superintendents and managers. Much of the instruction is given in the form of lectures by the instructor and by others who have made a special study of some phase of the industry. Samples of clay and other ceramic materials are tested. Body and glaze materials, moulds, fuels, machinery, etc., are studied. The Transactions of the American Ceramic Society, Seger's Collected Writings and Bourry are used for reference.



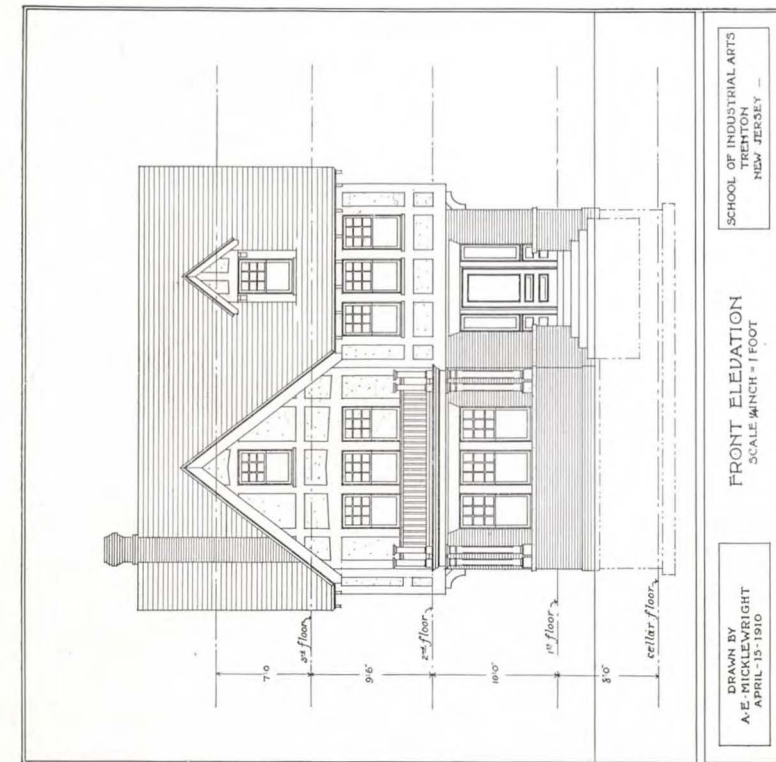
The Architectural Course

This course is planned to give carpenters, masons and others interested in the building trades, a thorough training in the branches of mechanical drawing that bear directly upon the building trades and sufficient knowledge of elementary mathematics to fit them to prepare estimates and specifications. It also offers students who intend to become architects valuable training in drawing and designing.

Building Construction as applied to frame and brick buildings is treated from the practical standpoint. The work of



FRONT ELEVATION
CITY RESIDENCE
SCALE 1/4" = 1' - 0"
PENNSYLVANIA
MAY 24 1910



SCHOOL OF INDUSTRIAL ARTS
TRENTON
NEW JERSEY

FRONT ELEVATION
SCALE 1/4" = 1' - 0"

DRAWN BY
A. E. MICKLEWRIGHT
APRIL - 15 - 1910

this class includes the drawing of cellar, floor and framing plans and details of construction, with instruction in the method of laying out work. Much use is made of blue-prints. The class room is equipped with a carpenter's bench and tools and practical demonstrations are made to supplement the work in drawing.

In the class in *Architectural Drawing* the study of plans and elevations is continued and large or full size details of construction are drawn. The study of the orders of architecture forms part of the work of this class.

In *Architectural Design* each student selects a problem, as a store front, residence, etc., and executes a complete set of plans, elevations and details.

The work of this course covers three years. First year three evenings per week, fee three dollars per year; second year four evenings per week, fee four dollars per year; third year two evenings per week, fee two dollars per year.

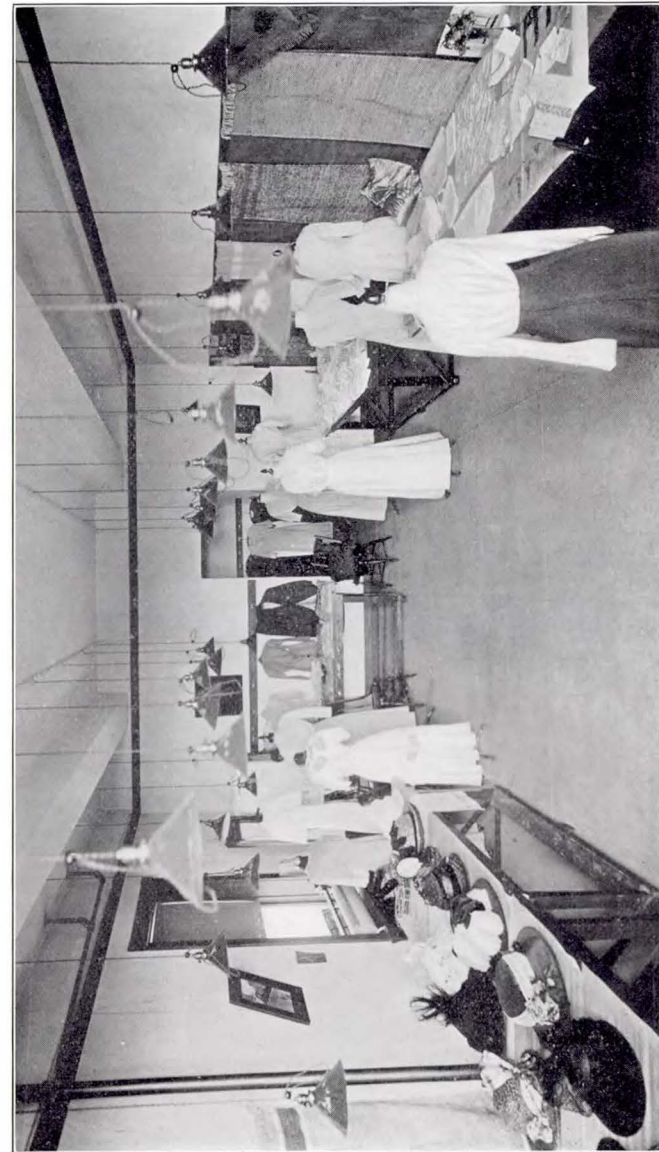


The Domestic Art Course

This course includes dressmaking, millinery and costume designing for those who wish to apply their knowledge in their own homes. It also prepares students to become dress-makers or milliners.

Dressmaking includes hand and machine sewing, pattern drafting, use of drafted and published patterns, cutting, fitting and finishing.

Millinery includes making, covering and trimming wire and buckram frames, remodeling ready-made frames and use of old materials.



Costume Designing includes the study of the principles of design and color, with practice in drawing the figure.

The work of this course covers three years three afternoons per week, fee twelve dollars per year, or three evenings per week, fee three dollars per year.



Evening Fine Art Course

This course is planned primarily for students who are, or who wish to become, designers for the clay industries, but is open to anyone.

The course includes the work in freehand drawing, drawing from casts, designing, modeling and commercial illustration described above.

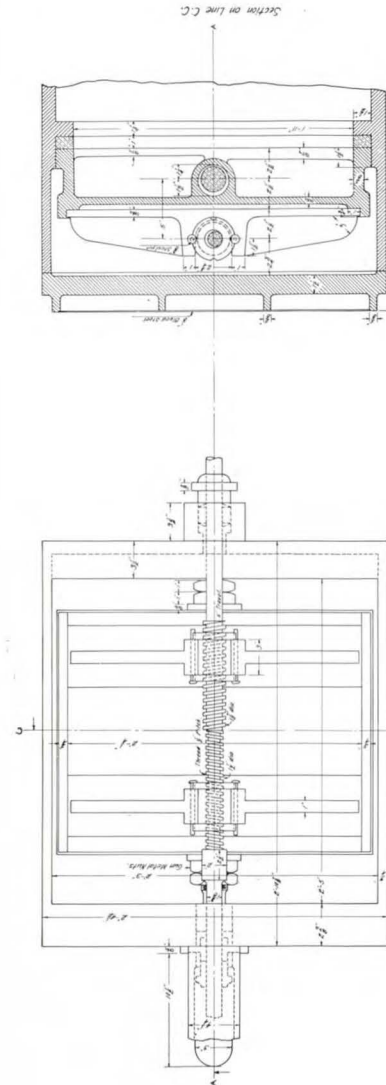
The work of this course covers four years, five evenings per week. Fee five dollars per year.



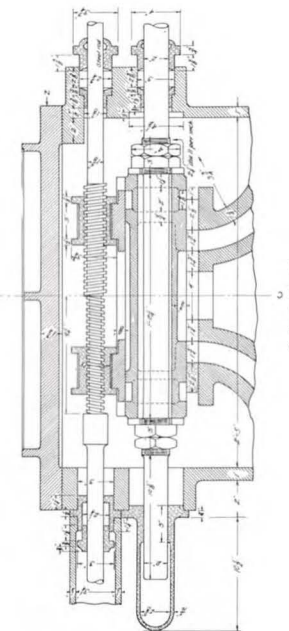
The Evening Mechanics Course

This course offers vocational training, in evening classes, for men and boys employed during the day.

The work includes *Mechanical Drawing*—a class arranged to give the student a thorough training in the elementary principles of mechanical drawing, the simple rules of construction that must be known by every draftsman, and the methods



EXPANSION SLIDE VALVE
FOR
COMPOUND VERTICAL ENGINE.
Scale 3"=1'-0" M. Leasing
School of Industrial Arts
Mar. 2, 1911
Walter A. L.



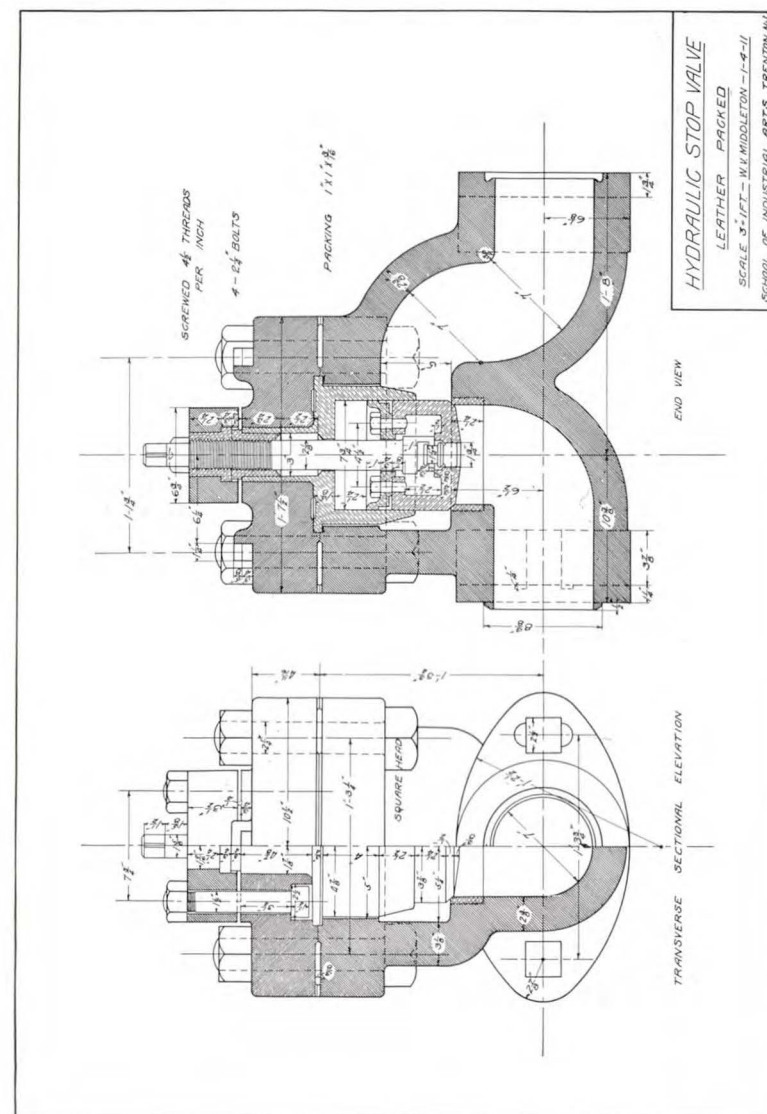
of representation practiced in the best drafting rooms. The student follows a carefully planned course embracing the use of the instruments, lettering, the principles of projections, intersections, and development of surfaces and especially their application to practical problems.

When, in the judgment of the instructors, the student's progress warrants it, this course is extended and enriched with special reference to his daily vocation.

The work in *Advanced Mechanical Drawing* aims to teach the proper method of making the necessary dimensioned drawings and tracings for use in practice. The work is either of general character, or special, as the needs of the student may require. Considerable attention is paid to the motions and forms of the various mechanisms occurring in ordinary industrial machinery. The programme of study contains valuable features relating not only to mechanical drawing but to the subjects of mechanism and elementary machine design.

The work in *Mathematics* is a very important part of the course. To perform his work intelligently the artisan must have, at least, a knowledge of elementary mathematics. In the elementary class a very thorough training is given in arithmetic that applies to shop work and the building trades. The advanced class offers algebra, geometry and trigonometry. Sufficient mathematics and mechanics are included in the course to equip a student for a career in the ordinary drafting room.

The class in *Machine Design* includes both drawing and mathematics. The materials used for construction purposes in the mechanic arts are studied with reference to their proper uses and their behavior under different conditions and various kinds of stress. In this way a study is made of the strength of beams, columns, shafting, ropes and chains. The student receives a good elementary course in machine design, covering fastenings, axles and shafts, bearings, gearings, belting and flange connections. Students may specialize in this class.



Instruction in *English Composition* is also offered students in this course. The object is to train men to make reports of work, handle correspondence and prepare intelligent and readable reports of investigations which foremen, superintendents and managers are frequently called upon to make. Much attention is given to spelling, punctuation and penmanship.

The work of this course covers four years, three evenings per week. Fee three dollars per year.

A *Special Course in Mechanical Drawing* is offered by the school (Fee two dollars per year) planned to meet the needs of pattern makers, sheet metal workers, electricians, machinists and others who wish a general knowledge of mechanical drawing, but who do not wish to follow the entire Evening Mechanics Course. This class does not prepare students to enter the advanced classes in mechanical drawing.



Craft Classes

The work of the *Pottery* class is planned for students who wish to study pottery making as a craft. The equipment includes motor driven throwing and turning wheels, clay mixer, slip screen, ball mill, pottery kiln, etc. Instruction includes every process from the raw clay to the finished ware—glazed and decorated—including throwing, turning, making moulds, casting, pressing, firing, underglaze painting, making glazes, glazing, enameling, etc. Instruction is also given in making concrete garden pottery. Fee afternoons twelve, evenings three dollars per year.

In the class in *Ceramic Design*, including *China* and *Pottery Painting*, the student first designs forms, suitable for pot-



tery or porcelain, and ornament for each problem. These designs are then painted and fired in the school's kiln. Instruction in designing for silverware is also offered in this class. Fee three dollars per year.

The class in *Bookbinding* prepares students to bind books according to the highest standards of hand work. It includes forwarding, or construction; gold and blind tooling and decoration in mosaic; also the mending and repairing of books.

The work of this class also includes elementary book-making, portfolio work, box making, etc. Fee afternoons eight, evenings two dollars per year.

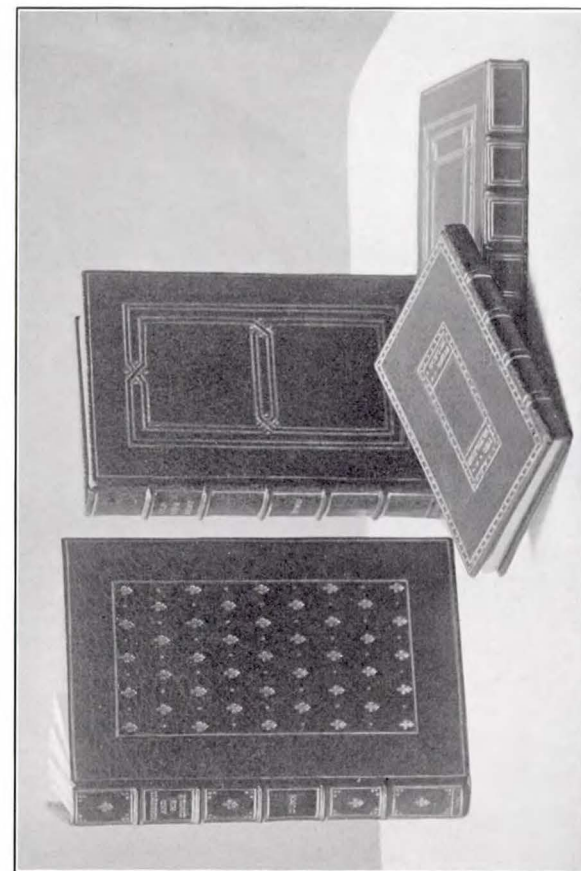
The class in *Art Metalworking* and *Jewelry* offers the opportunity for craft work in copper, brass, silver and German silver. Elementary work in flat or repouse, raised or bowl forms, etching, piercing, hard and soft soldering, is followed by advanced work in enameling, stone setting and craft jewelry working, including fobs, buckles, stick-pins, pendants, etc. Fee two dollars per year.



Additional Classes

The school conducts two additional classes of great value to the industries of the city.

In the class in *Applied or Industrial Physics* (fee two dollars per year) the principles underlying mechanics and the physical laws upon which the industries are based are taught. The work of this class is especially interesting and helpful to plumbers, steamfitters, potters, kilnmen, firemen, engineers, architects, builders, machinists, electricians, chauffeurs and boat builders.

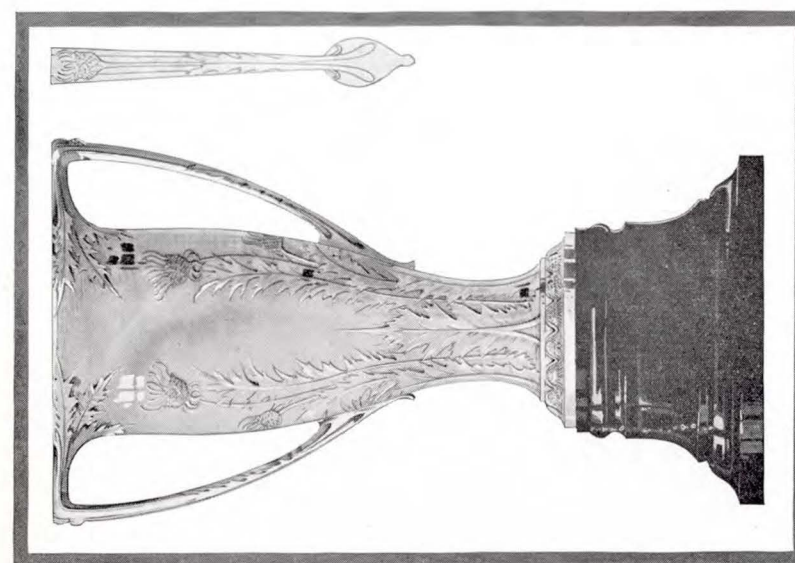
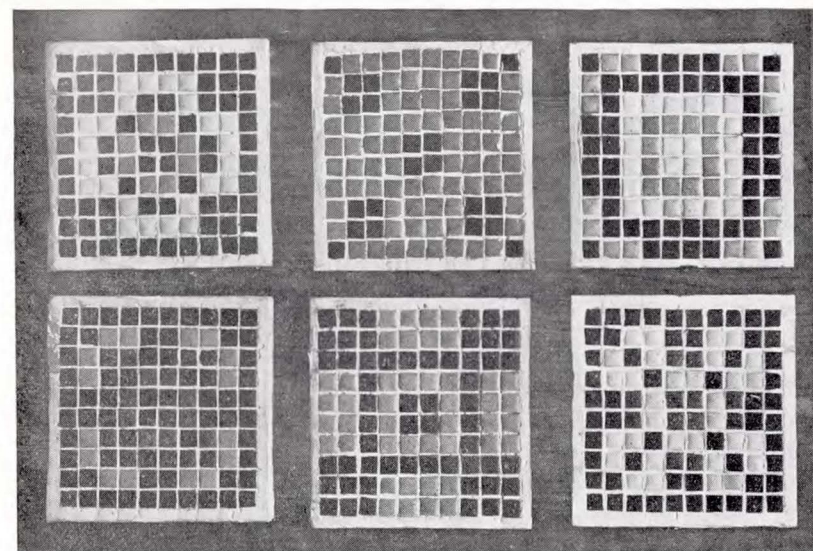


In the class in *Applied Electricity* (fee two dollars per year) work in the general theory of electricity, and its application to the electric generator and motor is given. Special attention is given to wiring diagrams for houses and factories together with the general subject of light distribution, and kind of light for various purposes. Laboratories have been fitted up for experimental work to be performed in connection with the class work. The student receives practical experience in the measurement of resistance, electro-motive-force, and current by galvanometer methods. A number of tests are made on generators and motors showing their characteristics and efficiencies. The use of volt meters, ammeters, and Watt meters is demonstrated by actual tests. A photometer is installed to measure the candle power of incandescent lamps and is used to supplement the class work on lighting. Problems are given the students bearing directly on the list of experiments performed, so that the laboratory work brings into use the mathematics required for this grade of work. To profit by the instruction given in this class a knowledge of elementary mathematics and mechanical drawing is necessary.



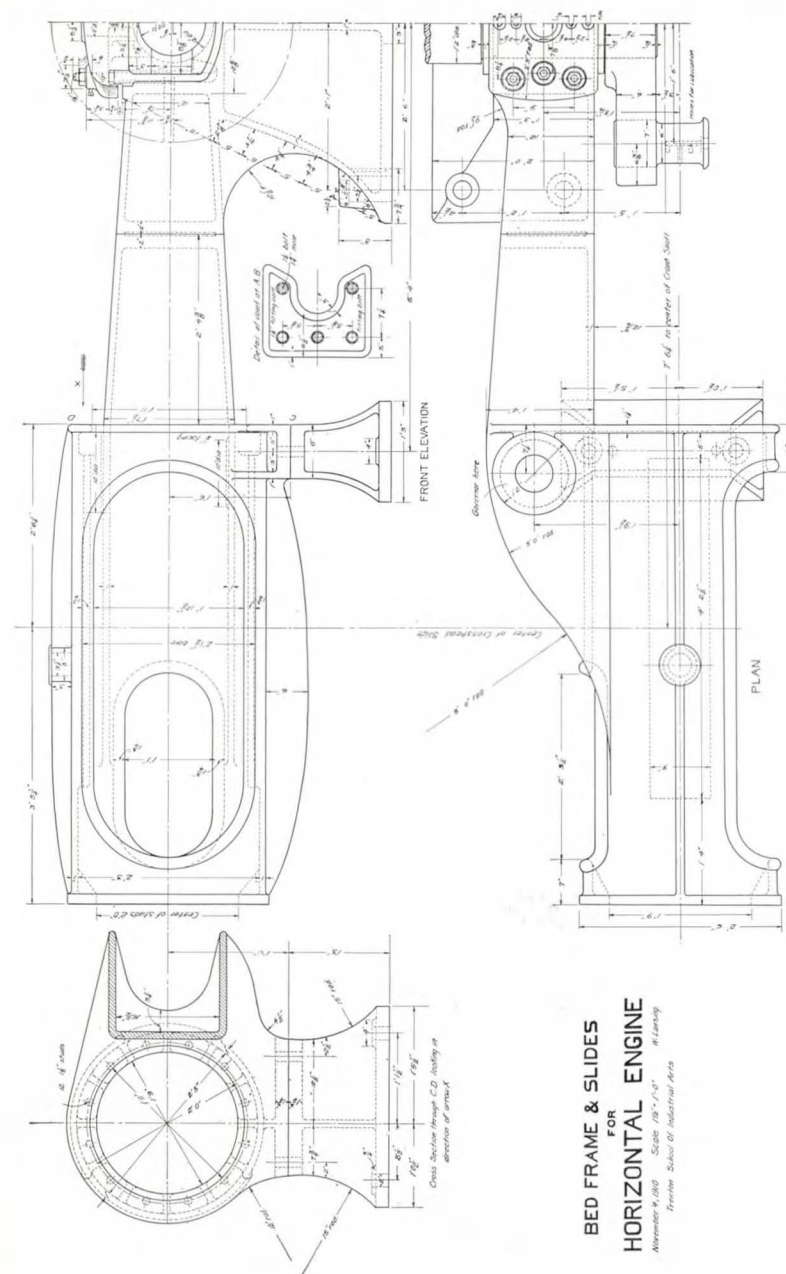
Classes for Children

On Saturday mornings two classes for children are in session. The elementary class is planned to supplement the work of the children in the public schools, and the advanced class is for children who wish to prepare themselves to later enter the afternoon or evening classes of the School of Industrial Arts. The fee for either class is two dollars per year.

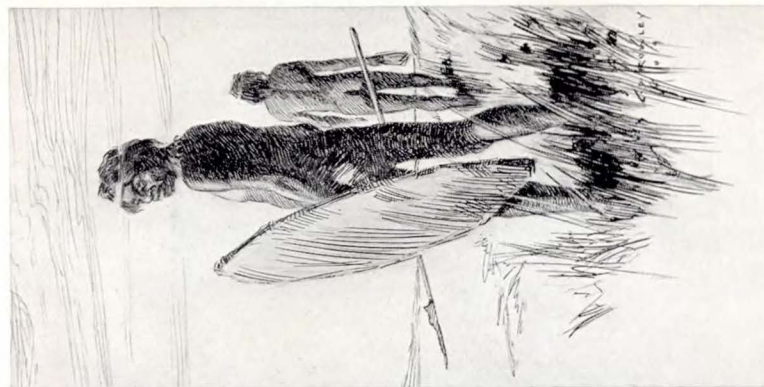
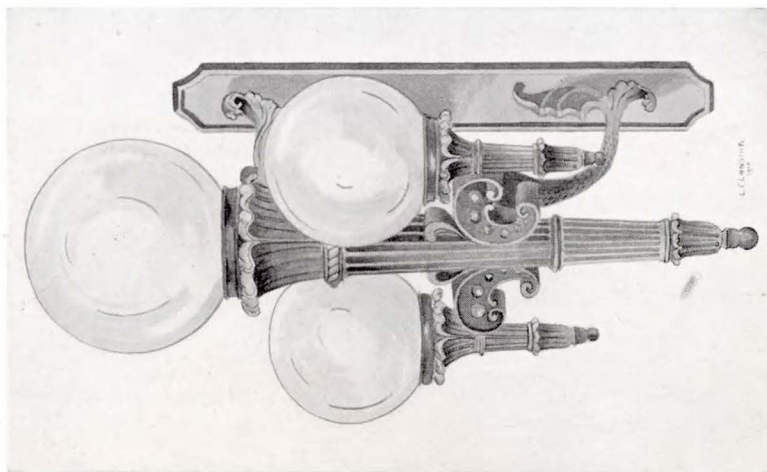
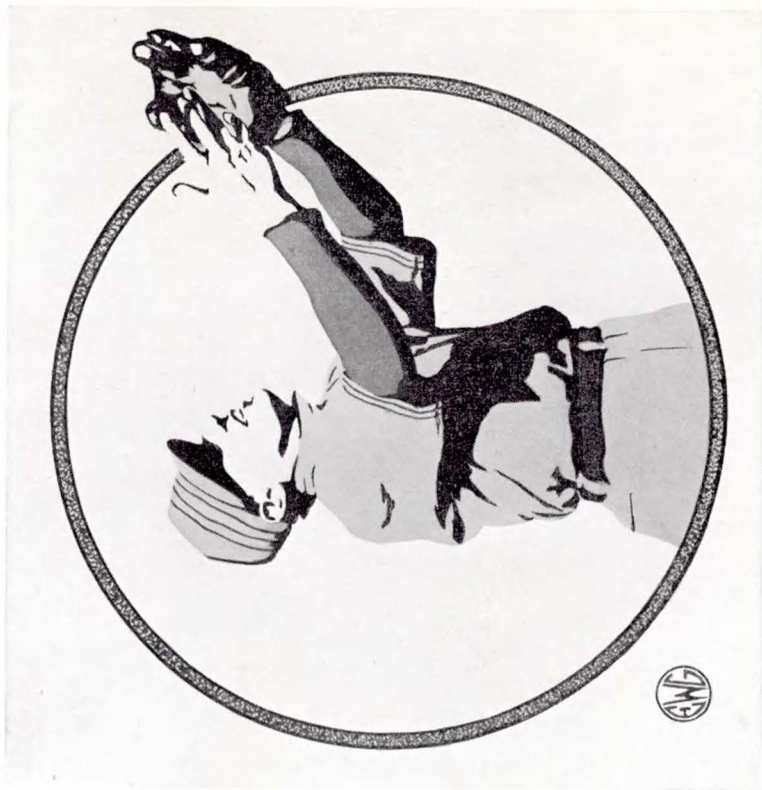


Fees

The fees stated above apply to residents of Trenton. Other residents of New Jersey pay double, and non-residents of the State treble the above amounts.



BED FRAME & SLIDES
FOR
HORIZONTAL ENGINE
November 4, 1910 Scale 1/8" = 1'-0"
Trenton School of Industrial Arts





The Smith Press, No. 107
E. Hanover St., Trenton

No money is expended to so good advantage, or has so far-reaching influence, as money spent for education.



Form of Bequest

I give and bequeath to the Board of Trustees of Schools for Industrial Education of the City of Trenton, a corporation created under the laws of the State of New Jersey, for its corporate purposes, the sum of \$_____



Form of Devise of Real Estate

I give and devise to the Board of Trustees of Schools for Industrial Education of the City of Trenton, a corporation created under the laws of New Jersey, for its corporate purposes, all that (here describe property)