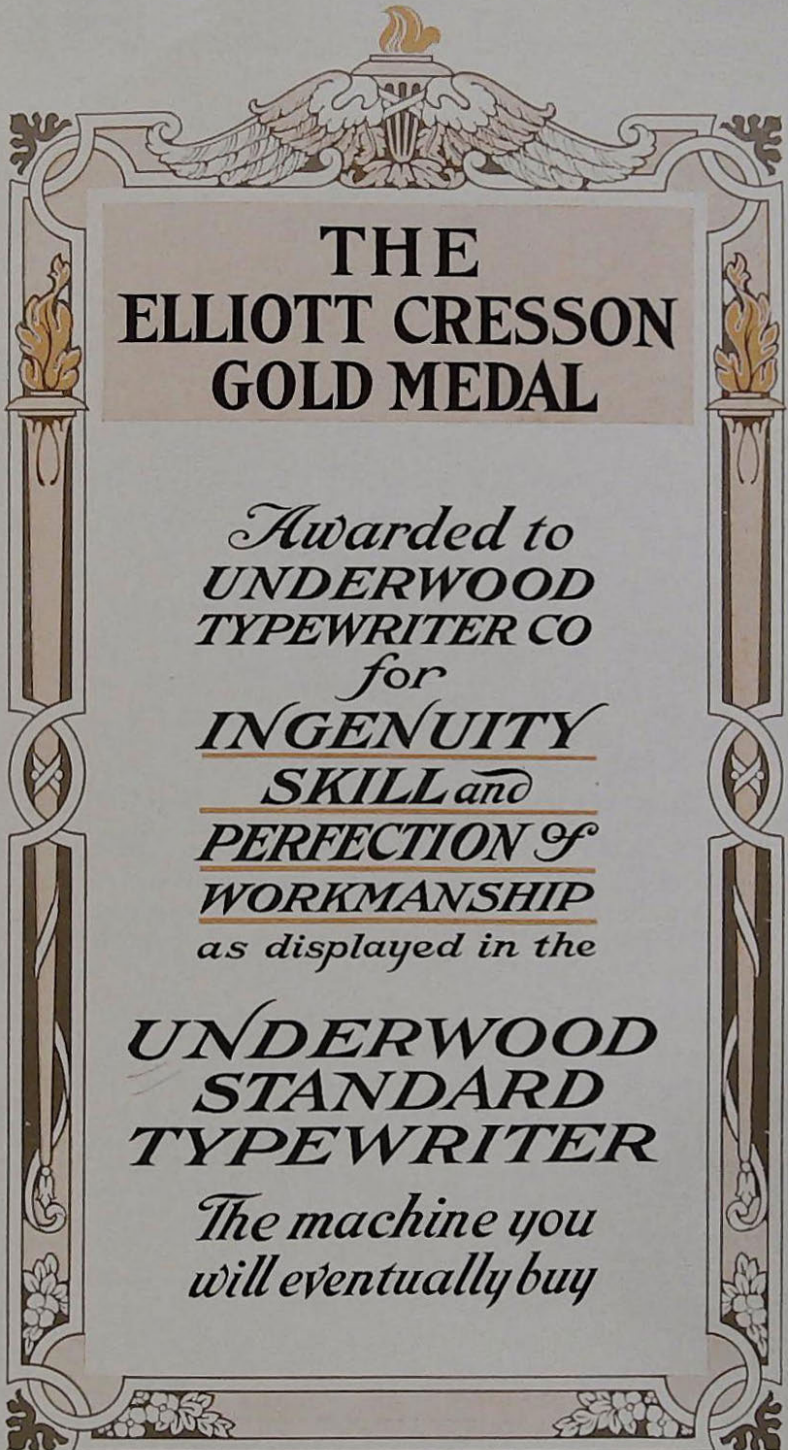


**THE HIGHEST
MECHANICAL
AWARD**



AWARDED TO
UNDERWOOD TYPEWRITER CO.
INCORPORATED
NEW YORK



**THE
ELLIOTT CRESSON
GOLD MEDAL**

Awarded to
**UNDERWOOD
TYPEWRITER CO**
for
INGENUITY
SKILL and
PERFECTION of
WORKMANSHIP
as displayed in the

**UNDERWOOD
STANDARD
TYPEWRITER**

*The machine you
will eventually buy*



THE ELLIOTT CRESSON MEDAL

THE Franklin Institute of Pennsylvania, established nearly a hundred years ago for the promotion of the mechanic arts, comprises among its membership the most expert and influential body of mechanical engineers in the world, and its awards are recognized as the highest and most important that are issued. The Franklin Institute issues a number of medals, of which the Elliott Cresson is the highest. The value of its awards will be appreciated more fully from the fact that its recognition can only be gained through the medium of merit.

The awarding of the Elliott Cresson medal is safeguarded by the publication of the Committee's report and the Institute's intentions "in three successive issues of the Journal of the Franklin Institute."

The Underwood Standard Typewriter was before the Institute for investigation for more than a year before the final granting of the Elliott Cresson medal.

Following will be found an exact reproduction of the Institute's certificate accompanying the award, the statistics with reference to priority of patents, etc., alone having been eliminated.

HALL OF THE INSTITUTE

PHILADELPHIA, February 2, 1910

No. 2473

The Franklin Institute of the State of Pennsylvania, acting through its Committee on Science and the Arts, investigating the **Underwood Typewriter** of the Underwood Typewriter Company, reports as follows:—

In the thirty-five years that have passed since the Franklin Institute was called upon to pass judgment upon the merits of the first practical typewriting machine that was then being offered for general use, as embodied in the Sholes and Glidden invention, (later the foundation of the well-known Remington Typewriter) the writing machine has become indispensable to our business life. It is but natural that so important and useful a piece of mechanism should have undergone in these years many changes in construction in response to the demand for greater efficiency and wider range of work as its use became more general. To these improvements an army of ingenious mechanics have given time and talent, out of which efforts the **marvelously complete** typewriter of to-day has developed.

During the first fifteen years of writing machine history the understroke machine attained such prominence that few looked for any radical change in the then accepted form, which had reached enormous demand, and was considered to be well-nigh ultimate perfection. There were some minds however that reasoned that the capacity of the typewriter could be greatly increased by some new arrangement of type-bar action that would cause the **printing to be made in full view** of the operator, and thus avoid the necessity of lifting the platen in order to see the writing accomplished.

Evidence of this conviction began to appear in practical form with the invention of the front stroke visible typewriter as shown in the patented efforts of Messrs. Prouty and Hynes, No. 389854, September 18, 1888. Like many others this first attempt lacked in details and completeness many essentials to qualify it as a rival of the well accepted machines of the older form. Other inventors however soon began to supply the deficiencies, and in a very short time the essentials of a complete and practical visible typewriter had been devised, and the threatened invasion of the field began to look more formidable.

Contributions of value in this new departure developed rapidly in the years following 1890, and it is in part from these inventions that the present **Underwood Typewriter** obtained its footing, which paved the way to the **high state of perfection of that machine as it exists to-day.** *** A very important device is the escapement, which controls the intermittent lateral movements of the platen, with a degree of speed and precision that is remarkable. **Perfection** in this part of a typewriter implies a device that will actuate the platen **immediately after each type impression is made**, without perceptible effort on the part of the operator, and with a **rapidity of action far beyond the requirements of the most expert operator**, at the same time the **wearing quality** of the parts that affect the release and catch movements must be such as will withstand the severe shocks given **one hundred thousand times daily for several years with undiminishing reliability.**

The committee has taken pains to thoroughly test the **Underwood Escapement** with regard to its **ultimate speed**, and for **wearing qualities** as developed in typewriters having had **eight years of hard usage.**

Expert, prize winning operators have demonstrated their ability to write for an hour at the remarkably high speed of **ten strokes per second**, and have

written for the committee, from one to two minutes, at the enormous rate of **fourteen strokes per second**, without errors.

An electrically driven automatic typewriting machine which operates in the manner of the familiar mechanical piano player has also demonstrated its ability to produce beautiful work on the **Underwood Typewriter** at a speed of **fourteen strokes**, or impressions, per second, continuously. Having thus obtained reliable results of the efficiency of the Underwood escapement up to fourteen strokes per second, **your committee felt an interest** in an effort to determine the **ultimate speed efficiency of the escapement.** To reach this result a mechanical writer was made that would enable tests of speed to be made indefinitely, and with the aid of this machine the typewriter was operated at increasing velocities up to **twenty strokes per second.** The result showed that, up to **eighteen strokes per second**, the **Underwood Typewriter responded perfectly**, under normal conditions of spring tension to platen, which rate is **already far beyond the reach of the human hand.** As to the **durability of the escapement** parts we find in typewriters which have had more than **five years** of average usage no detrimental wear, which means much for the design of the device and for the good workmanship given it.

The combination of **key-levers and type-bars** with their connecting links, and the mountings for the system, form a very important part of the typewriter details. To secure a **light, uniform touch**, with ample power for heavy manifolding work, and an absolute alignment of printed matter always, with a controlled evenness of impression can only be reached through superior design and good construction. The **extreme simplicity of the Underwood key and type-bar system** contributes much to the excellent result obtained. A key-lever, a type-bar, and a connecting link, form the complete working combination.



THE FRANKLIN INSTITUTE
OF THE STATE OF PENNSYLVANIA, FOR THE PROMOTION OF THE MECHANIC ARTS.

Acting through its Committee on Science and the Arts,
has awarded

THE ELLIOTT CRESSON GOLD MEDAL

The Underwood Typewriter Company

To

For Ingenuity, Skill, and Perfection of Workmanship

in accordance with the Committee's Report, Numbered 2473

and

dated February 2nd 1910



John Spurgeon
CHAIRMAN OF COMMITTEE ON SCIENCE AND THE ARTS

Nathan Clark

PRESIDENT

A. B. Owen

SECRETARY

Only when this combination is compared with the same parts in a large number of the most prominent typewriters now in use, which employ from eight to sixteen parts for the same service, can we fully realize what "simplicity" means, and where simplicity of design is backed up by the use of the **best materials** and by **good construction**, the effectiveness and **wearing qualities are certainly increased**. It is in this part of the typewriter that hard usage will soon produce ill effects if either the design or the workmanship is faulty. In the Underwood system the action of the type-bar to move the universal bar, which prepares the releasing dog of the escapement just before the type impression is made, is not only a sure means of releasing the escapement at the proper instant, but it is done without being felt by the operator. A **rigid abutment** situated a little below the middle of the length of the type-bar, **acts as a stop to limit the stroke of the type**, so that the impressions are very uniform, not varying perceptibly with the strength of the impact upon the key and this adds greatly to the neat appearance of the writing. Each key-lever has its **individual tension** spring located quite near the fulcrum, which once adjusted to overcome simply the weight of the key-lever, is the only adjustment necessary. This tension is so little beyond the balancing of the weight of the lever that it is not felt by the operator, and the lightness of touch is not impaired. No other spring is used in the type-bar action.

The alignment of the **Underwood Typewriter** is accomplished when the type are placed upon the type-bars, before the latter are put into the machine. When the type-bars are placed in position, they are in alignment and will never change. The **permanency of the alignment** is materially assisted by the **type-bar guide** so located that it does not interfere with the visibility of the writing while affording a perfect locking device for the type when at the print-

ing point, effectually preventing any side motion of the type-bars. The accuracy of alignment is further assisted by hanging the type-bars in a slotted segment, every slot having been cut by a specially constructed machine, so perfectly that they all converge accurately to a common centre.*****The Underwood lacks none of the desirable features that practical use has qualified as essential to the typewriter complete**. In all these parts we find the same painstaking simplicity and effective form of design.

Abundant opportunity was given the committee to examine minutely every detail of the manufacture of its writing machine at the factory, in Hartford, Conn., where, under the most able management, **the best materials obtainable** are converted by a **very superior equipment** and through **exacting workmanship** into a **writing machine of extraordinary perfection in its minutest details**.

In recognition of the very meritorious inventions embodied in the **Underwood Standard Typewriter**, and of its **exceedingly simple and efficient details of construction**, forming a **writing machine of the most advanced type**, with **unsurpassed capabilities and excellent make-up throughout**, the Institute awards the Elliott Cresson Gold Medal to the **Underwood Typewriter Company**, for the **ingenuity, skill and perfection of workmanship** displayed in the **Underwood Typewriter**.

Adopted at the stated meeting held Wednesday, February 2, 1910.

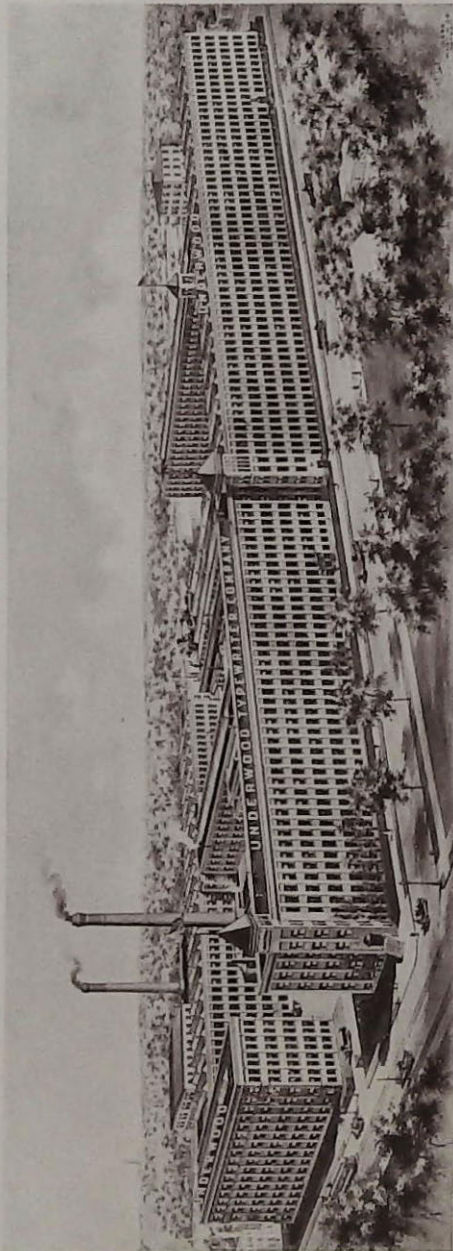
(Seal)

WALTER CLARK,
President,

R. B. OWEN,
Secretary,

Countersigned, THOS. SPENCER,
*Chairman of the Committee
on Science and the Arts.*

Works of
Underwood Typewriter Co., Inc., Hartford, Conn.



The Largest Typewriter Works in the World



Underwood Building, New York
General Offices: UNDERWOOD TYPEWRITER CO., Inc.

Underwood Branch Offices, U. S. A.

Albany, N. Y.	Grand Rapids, Mich.	Richmond, Va.
Albuquerque, N. M.	Green Bay, Wis.	Roanoke, Va.
Atlanta, Ga.	Greensboro, N. C.	Rochester, N. Y.
Augusta, Ga.	Harrisburg, Pa.	Rockford, Ill.
Aurora, Ill.	Hartford, Conn.	Rock Island, Ill.
Austin, Tex.	Houston, Tex.	Reading, Pa.
Baltimore, Md.	Indianapolis, Ind.	St. Joseph, Mo.
Bangor, Me.	Jackson, Miss.	St. Louis, Mo.
Beaumont, Tex.	Johnstown, Pa.	St. Paul, Minn.
Binghamton, N. Y.	Joplin, Mo.	Sacramento, Calif.
Birmingham, Ala.	Kansas City, Mo.	Salt Lake City, Utah
Boise, Idaho	Knoxville, Tenn.	San Antonio, Tex.
Boston, Mass.	La Crosse, Wis.	San Diego, Calif.
Bridgeport, Conn.	Lexington, Ky.	San Francisco, Calif.
Brooklyn, N. Y.	Lincoln, Neb.	San Jose, Calif.
Buffalo, N. Y.	Little Rock, Ark.	Savannah, Ga.
Butte, Mont.	Los Angeles, Calif.	Scranton, Pa.
Cedar Rapids, Iowa	Louisville, Ky.	Seattle, Wash.
Charleston, S. C.	Macon, Ga.	Shreveport, La.
Charleston, W. Va.	Madison, Wis.	Sioux City, Iowa
Cheyenne, Wyoming	Memphis, Tenn.	Sioux Falls, S. D.
Chicago, Ill.	Milwaukee, Wis.	South Bend, Ind.
Cincinnati, Ohio	Minneapolis, Minn.	Spartansburg, S. C.
Cleveland, Ohio	Mobile, Ala.	Spokane, Wash.
Colorado Springs, Colo.	Montgomery, Ala.	Springfield, Ill.
Columbus, Ohio	Nashville, Tenn.	Springfield, Mass.
Cumberland, Md.	Newark, N. J.	Springfield, Mo.
Dallas, Texas	New Haven, Conn.	Syracuse, N. Y.
Dayton, Ohio	New Orleans, La.	Tacoma, Wash.
Davenport, Iowa	Norfolk, Va.	Terre Haute, Ind.
Denver, Colo.	Oakland, Calif.	Texarkana, Tex.
Des Moines, Iowa	Ogden, Utah	Toledo, Ohio
Detroit, Mich.	Oklahoma City, Okla.	Topeka, Kansas
Duluth, Minn.	Omaha, Neb.	Trenton, N. J.
Easton, Pa.	Paducah, Ky.	Waco, Tex.
Elmira, N. Y.	Paterson, N. J.	Walla Walla, Wash.
El Paso, Texas	Peoria, Ill.	Washington, D. C.
Erie, Pa.	Philadelphia, Pa.	Waterbury, Conn.
Evansville, Ind.	Pittsburgh, Pa.	Waterloo, Iowa.
Fargo, N. D.	Pittsfield, Mass.	Wheeling, W. Va.
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Fort Wayne, Ind.	Portland, Ore.	Wilkes-Barre, Pa.
Fort Worth, Tex.	Providence, R. I.	Williamsport, Pa.
Fresno, Calif.	Pueblo, Colo.	Wilmington, Del.
Galveston, Tex.	Quincy, Ill.	Worcester, Mass.
Grand Forks, N. D.		Youngstown, Ohio

In addition to the above, the Company maintains branches in the principal cities of foreign countries.

