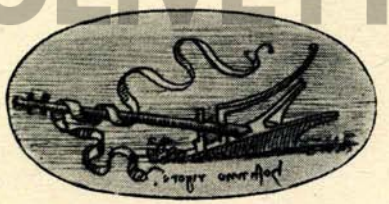
MUSEO NAZIONALE DELLA SCIENZA E DELLA TECNICA LEONARDO DA VINCI

COMMEMORATIVE EXHIBITION

OF THE INVENTION OF THE TYPE-WRITER
UNDER THE AUSPICES OF THE MINISTER OF EDUCATION

ON THE CENTENARY OF THE INVENTION-PATENT
GRANTED TO GIUSEPPE RAVIZZA - NOVEMBER 1955



MILANO
PIAZZA S. VITTORE, 21

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The Committee wishes to express its thanks to the following Corporations, Firms and Gentlemen, who contributed to the realization of the Exhibition:

EVEREST SERIO - GALLO POMI - I.B.M. - OLIVETTI - REMINGTON - UNIONE ITALIANA CIECHI - Ditta CAREMOLI - SOCIETA' VETRARIE MILANESI LUCCHINI PEREGO.

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The Exhibition was decorated by Mr. DE RIZZARDI and Mr. PINTORI.

Our Museum, pursuing its program of historical documentation of fundamental factors of progress in the fields of Science and Technics, has taken the initiative of organizing an historical Exibition of the writing Machine, seizing the occasion of the centenary of the invention-patent, granted to Giuseppe Ravizza from Novara for his « Cembalo Scrivano ».

The most primitive evidences, as well as the most recent improvements of the technic and science of mechanic writing here collected, show visitors an ample panorama of graphic activities through centuries; meaning by « graphia », in its widest sense, the written expression of man's thought: thus supplying the documentation of one of the most spiritual human activity. The cordial thanks of the Museum of Science and Technics are rendered to all those who have contributed to the Exibition in its various aspects, and to all those who have put at its disposal significative and precious relics of ancient art; particularly to those who have complacently accomplished the suggestive documentation of all manual graphic expressions, accompanied by short historic notes. The contribution of the Novara Industrial and Agricultural Chamber of Commerce has deserved special thanks for munificently documenting the invention of its fellow-citizen and for generously undertaking the illustration of his invention by various valuable publications.

From the moment the gift of intelligence was granted to man, the powerful instinctive impulse rose in him to lend his thought a stable permanent form, allowing it to be conveyed to other people: hence the manifold graphic devices to hand it down through ages by means of stylish drawings of natural objects, or of a rudimentary figuration of the implements then used by man.

In the course of time, more and more complex and perfect forms of graphic representation, by delineation with or without colour, were developed, intended and fit to represent not only concrete objects perceptible by eye-sight, but also facts apt to convey a neat expression of a thought, of abstract ideas, even of philosophical conceptions and religious tenets, up to the sublime elements of loftiest speculations. Such a magnificent scale of evolution could not have been accomplished, except by degrees and in different forms, taking advantage of peculiar « habitat » conditions, and making use of the products of different civilizations.

The smooth walls of caves keep for us ingenuous figurations, which, even in their primitiveness witness to a sense of art not unknown to some modern masters of colour and figuration; Egyptian ideograms, which Rosetta stele enabled Egyptologists to interpret, bring again to life before our eyes a world full of fascination, which might be dynamically projected on a screen, if only ideographic figures could be enticed to grow into animated cartoons; the light Chinese pencil traced characters, which seem to evade from this world brutal-

ity, to offer us the idyllic vision of a smiling civilization, all interwoven with fables and legends; Assyrian and Babylonian cuneiform characters, matching the soft clay with rigid wedge, produced cuneiform tablets, the charm of learned interpreters and investigators, a treasure for bibliophilists proud of their well furnished libraries.

The sedulous punchon engraving hard stone and leaving for goldsmiths and minters of our times paragons of skilfulness, might have supplied an archaic printing-house with a primitive model, making it possible to get from one stone thousands of copies, if only the scriber had got the idea of besmearing the solid surface with a fitting colour penetrating into the cavities, and then of placing over it a tender surface, which, pressed with a roller, would have anticipated our printer's proofs. Then we might have had the first rudiments of tabular impression tausands of years ago, long before the Chinese got it.

All this stands alive in the first part of the exhibition of figurative art, as it may be defined: wisely contributing to this vision the impressive show of art manifestations, imprinting on our eyes a panorama of ancient civilizations and making a living experience of classical images kept in Museums, and of perfect graphic devices preserved by Art Galleries.

The sovereign genius of Leonardo had been not less keen in enhancing the value of alphabet for the exact expression of scientific thought, than he had been, as usually, sharp in extolling the power of figure to represent the inner feelings of mind. Cadmus is the symbol of the inexhausted anxiety of men to associate haste in writing with the simplicity of characters to cover the manifold potentialities of a language with a few « caratteruzzi » (Galileo).

Cadmus, the Phoenician hero, the symbol of commerce, represents the alphabet, too. From Hebrew forms, reducing symbolic figures of the ideographic period to a fixed style, the transition is open to aesthetic Greek characters; and thence to the square Roman capital letters: but, once again, through the vigour of characters, or the changing aspect of signs, or the determination of graphic values to suit the most various phonetic elements of a language, either the artistic genius of a people, or its volitive temper, or even the anxious ingenuity of gifted inventors appear.

Thus the various aspects of alphabet graphia, which has found a place in our Exhibition, form a « Preface » to the panorama, exalting the « Machine Civilization ».

Gutemberg's invention was inspired indeed by the last stage of graphia: the alphabetic graphia; thence he got the inventive spark of using alphabet letters, of casting « types », of following the method of the word composition and lining matrices just as, in handwriting, alphabetic characters are drawn on a base line. Mobile characters, and typograghic press (perfected by Leonardo's genius in the well-hnown Atlantic drawing) are the two symbols of the history of mobile graphia, as a medium of spiritual communication of thought among peoples.

But it is not our task to illustrate this invention and the glorious Italians connected with it: from Aldo Manuzio who in his « corsivo » (Italic type), and the capital shape of his small volumes, betrays his longing for graphic intimacy and confident reading in a quiet Academy, to Giovanni Battista Bodoni, who by his « Typographic Handbook » and frontispiece without finery stimulates the reader to do well in art and to behave plainly in life.

The world now beset by a new system of economic and social life, strides towards typographic simplicism, after getting rid of all the chirping showy decorations of Arcadia. Commerce is booming; since French Revolution popularized the new ideas of the Encylopaedists, newspapers and magazines have been no longer used by aristocrats only, whose interests were in former times limited to announcements and libels.

In the field of such a graphia, documented also by our Exhibition by means of an accurate wise combination of drawings and typographic materials, the anxious world of thinking people has a goddess of its own, « the Press », and her servants — the linotypewriter and the cylinder-press — the writing ideal, and its dream growing true: the one of turning the impalpable ether into a gigantic chair, from which to address all peoples of all Continents.

And behold! already on the horizon, like a dawn encircled with a halo of light, another Ideal appears, the instrument lending a mechanical body even to our most intimate personal writing.

The Italians are to be credited for having created the instrument required by new times. Evolutions are often the outcome of a necessity felt more and more intensively and fascinatingly by peoples under different climates: so was it with the birth of the printing machine, made ripe by commercial life growing more and more intense, and by the increasing amount of trade.

Pietro Conti from Cilavegna, in Pavia province (1797-1856), and Giuseppe Ravizza from Novara (1811-1855) were the two forerunners of the idea: the former its theorist, the latter its practical realiser.

Unfortunately, the « Cembalo Scrivano » failed to be honoured by a commercial success: the fault of narrow-minded contemporaries, and the mark of a too artisan level of personal activity, which could not lead to the wanted perfection; or even the consequence of the impatience, which would not wait for the accurate execution to be attained, up to classical perfection, through the constructive forces of painful endurance and love.

The most honourable position in the exhibition is held by the « Cembalo Scrivano », represented by a model which has survived the injury of time, generously presented by Olivetti Co. to our Museum. It is surrounded by the documents of an invention, the difficulty of which can be especially measured from the lack of previous patterns, on which to cast a confident look for search and comparison.

Giuseppe Ravizza, a lawyer, historian, archaeologist and philanthropist, who spent his life in the quiet of his studies and the subdued rattling of his domestic laboratory, saw his lodestar — the writing made fully visible; — but this bright light waned before ha reached his goal; and it is only a posthumous glory that is bestowed to the memory of a man, whose life was distressed by the torment of a weary livelong day work, both as an inventor and an artisan.

The idea, anyhow, had been cast — like Caesar's die — and the inventor's conception had been accurately embodied, even in its smallest details, in a model bound to supply precious archetypes for a refined well equipped machine.

The industrial stage of the typewriter, which allows of its entrance into the stately building of Modern Life, opens with the « Remington ». Over its portal the names of Conti and Ravizza stand out engraved in golden letters; while a becom-

ing Dantesque warning may be heard hovering about: « Ye who enter here, disdain not — your reverent thought to turn — to your far off forerunners ».

The exhibition, in its latest phase, gives its honour to the cosmopolitan spirit of our times, by placing, by the side of precious relics of ancient art and later models of a past, rich in experience and ripened in renounciations, the most recent living present: proud of his machines, jewels of technical perfection, eagerly aspiring at being the indispensable integration of modern life.

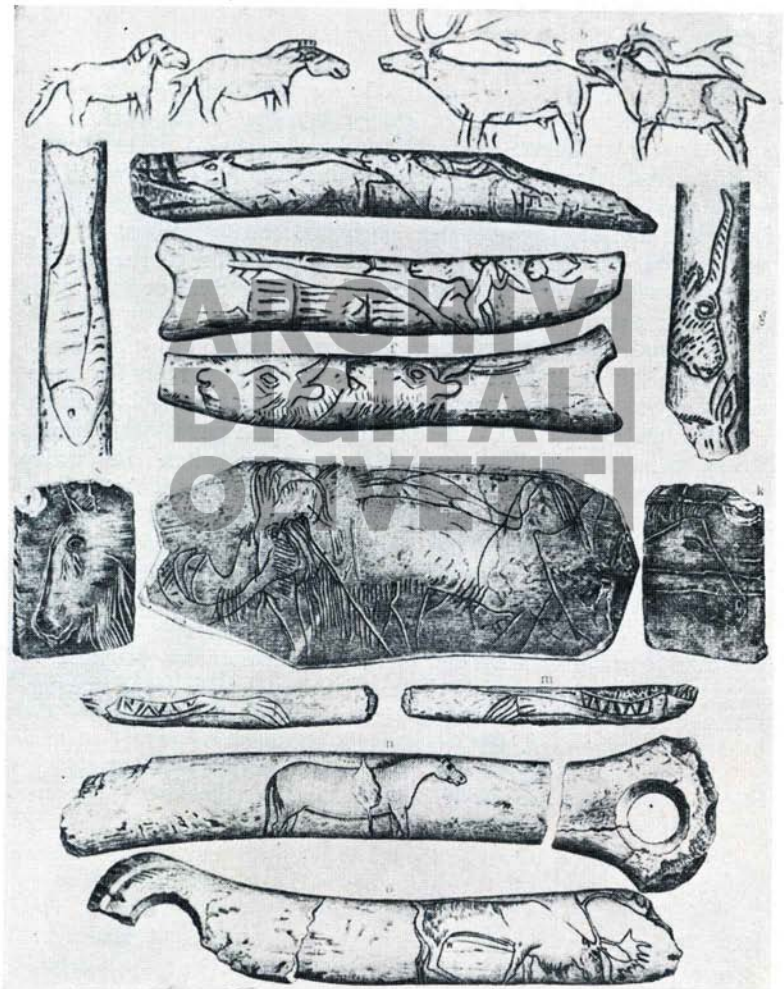
The particular occasion for this exhibition — a show in commemoration and celebration of Ravizza's « Cembalo Scrivano » — has limited its scope within the orbit of mechanographic inventions, leaving outside the marvellous calculating machines, shortening operations of high mathematical analysis, and simplifying complex statistical computations; as well as up-to-date machines supplementing linotypes, to supply the printing with more and more rapid working devices and more and more accurate compositions.

But you, welcome visitor, who are pausing in the hospitable cloister of a Museum which is unique in Italy for magnificence of residence and wealth of models, think, please, of the huge compass of time, stretching from prehistoric times, whose ages are Millenniums, to our own, when the unity of time-measure is the hundredth part of a second. And then, applying your attention to the rough page of smooth walls of caves — and thence to the sheet of paper neatly impressed by an accurate typist through a writing-machine that never knew suspense or irresolution — consider what amount of efforts and obscure sacrifices Man had to undergo to achieve his final conquest, a bright victory, crowning his purpose of presenting humanity with the realization, by his hand mastering a docile machine, of the throb in a dream made visible, by writing, through all eternity.

G. A.

PREHISTORIC TIMES

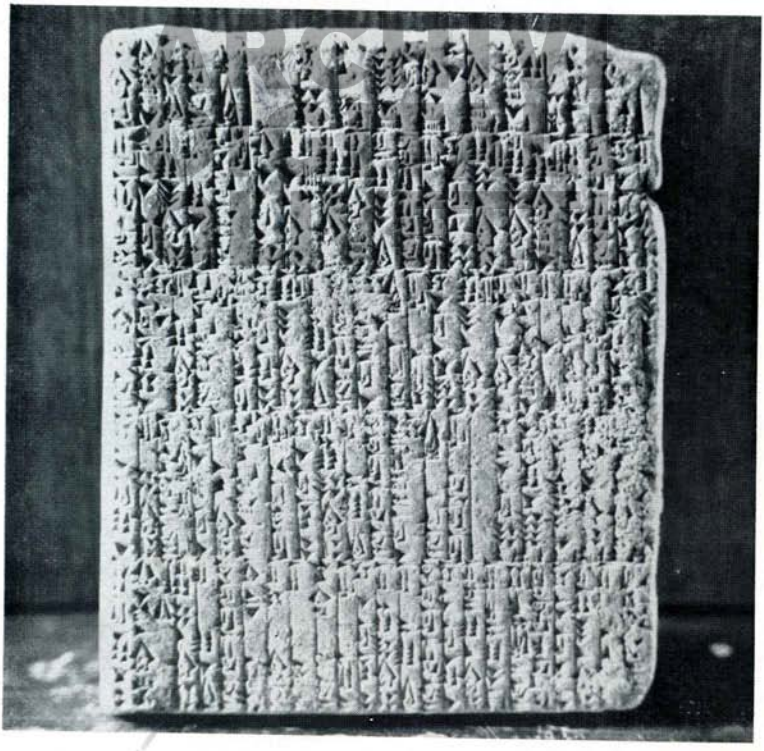
Engravings and pictographs on stone, wood, ivory and bone performed the function of messages, besides their aesthetic and religious meaning, within the narrow limits of small communities and a short span of time; but they do not convey any words, only symbolically hinting at concepts. This primordial kind of writing, made up of points, broken or curved lines or other geometrical figures, drawings of arms, animals, seldom of human figures, goes back some twenty to thirty thousand years (upper paleolitical period).



The hieratic sacerdotal writing, and the demotic writing for current use, are but simplifications of hieroglyphs, the solemn decorative ideographic figures used mainly for monumental inscriptions.

In the earliest period, those ideograms were only symbols representing actual concrete objects (sky, earth, men, animals); but in a later period, the same symbols assumed a conventional phonetic value, being then used for the transcription of the spoken language, not differently from a real true alphabet. In a further period, the Egyptian writing was swamped by the spreading of Greek characters, and then forgotten, remaining a dark inaccessible mystery: until, in 1822, Champollion, the French Egyptologist, succeeded in deciphering the famous inscription of the Rosetta stele.

Early cuniform writing also, had an ideographic value; but already in the Sumerian period, with a highly civilized people, such a primitive system of expression must have proved unsatisfactory; and peculiar groups and combinations of cuniform signs representing fixed syllables and connected sounds may have been used as a transcription of any word. No ancient writing was more widely spread or lived longer than this (lasting from about 3000 B.C. till about the Christian Era). In fact it was used by a large number of peoples, speaking different languages: i. e., besides Sumerians, by Accadian Babilonians, Assirians, Persian Elamites, Cassites, Armenians, Persians, Hittites, and many others.



From the earliest pictograms and ideograms, vaguely akin to hieroglyphs, engraved on building materials, perhaps as standard marks or trade-marks, evolution leads to an original complicated linear writing. Scholars have recognized in it two different types: the « linear A » comprising about 90 marks, and the « linear B » comprising perhaps 64 marks.

The documents of Cretan writing — most of them engravings or impressions on clay tablets, — have remained, up to this time, obscure and mysterious in spite of the many attempts to interpret them.

CHINESE WRITING

The primitive ideographic Chinese writing, in vertical lines beginning from the right side, did not undergo a real true evolution in the course of time, in spite of the wide span of a millenary civilization of this people, except for the prevalence of a more and more rigid stylishness of its signs.

Thousands of signs, indeed, are required for the Chinese writing, this not being alphabetical, and each ideogram representing only one word, except in case of omophonous words: as is the case, for instance, with the sign WAN, which is used, both, for « scorpion » and for « ten thousand ». Such homophonies, however, are only about six hundred. The need of a new simpler system of writing is deeply felt in modern China.

PRECOLUMBIAN CIVILIZATION

By the time of the discovery of America, the highest precolumbian civilization, that of the Maya people, the inhabitants of the country corresponding more or less to the present Honduras, had already fallen into decay. Many remains of their enigmatic writing are still extant in the imposing monuments of their architecture, but the manuscripts which survived the ravaging fury of the European conquerors are but few. The interpretation of the documents has revealed the marvellous knowledge that people had in the fields of mathematics and astronomy. At the time of the discovery of America, Mexico was ruled by Aztecs, whose civilization had reached a very high level. The writing of that people had already surpassed the pictographic stage and reached a highly advanced ideographic stage, perhaps closely approaching the generalization of the phonetic function of ideograms, in a way not unlike the process undergone in Egypt by hieroglyphs. Indeed, some summarily outlined signs, combined together, had been already adopted phonetically to express names of persons and places. But the European invasion and the following prevalence of the Latin alphabet stopped any further development of the native writing.

The Cananean origin of the Greek alphabet is now almost universally admitted. Through a rapid evolution, it supplemented its stock of signs with some particular vowels, attaining a degre of simplicity fully in tune with the polyphonic character of the language. Following the triumph of the Greek art and the mastering of spiritual Greek influence over the ancient world, the alphabet, too, spread to far distant countries, allowing different languages still in their infancy to grow to maturity and perfection. As instances the Etruscan writing and the Latin alphabet itself will do, borrowed especially from Greek. In a further period, and still later, the Coptic and Cyrillian characters and others as well were also borrowed from Greek, — but for some letters still retained, or revived, from earlier writings.

Etruscan inscriptions and documents can be read, though they are not yet understood: because while their graphic signs are known, the language itself is still unknown. The alphabet is, substantially, the archaic Greek one, which the Etruscans perhaps learned from Calcidic colonies of Campania: except some signs, whose origin is under discussion. The extant documents of this writing are apparently discordant, as they belong to different stages: an archaic one, an ancient one, and a more recent one, deeply influenced by Latin alphabet.

LATIN CIVILIZATION

This alphabet appears in its capital characters, in the very ancient writing on monuments and memorial stones, already fully developed, symmetrical and harmonious. Though derived from the Greek-Etruscan alphabet, leaving out those signs (aspirate mute consonants) which found no phonetic correspondence in its language, it soon took up peculiar features of its own. From the square capital letters on memorial stones, three important variations derived, of more frequent easy usage, containing, as in a germ, the numberless mediaeval and modern forms of writing: i.e., the capital rustic writing, the capital lapidary semi-italics, and the archaic semi-uncial.

In spite of the decay of the Roman Empire, the Latin alphabet prevailed in every part of Europe, especially after the barbarians' attack upon Roman civilization. The Catholic Church having in the meantime adopted Latin in its Roman Lithurgy and Bible translation, carried the language wherever the Gospel was preached. The well-known varieties of uncial and Gothic characters, as well as of italics — with the pecu-

liar features of the peoples who used them (Visigoths, Longobards, Merovingians, Anglo-Saxons, Irish etc.) — are almost always superficial deformations of the primitive Latin writing, due to peculiar aesthetic requirements of copists. After the press invention and its spreading, the area of the use of Latin alphabet grew wider and wider. To-day it is adopted for most languages, by civilized peoples.

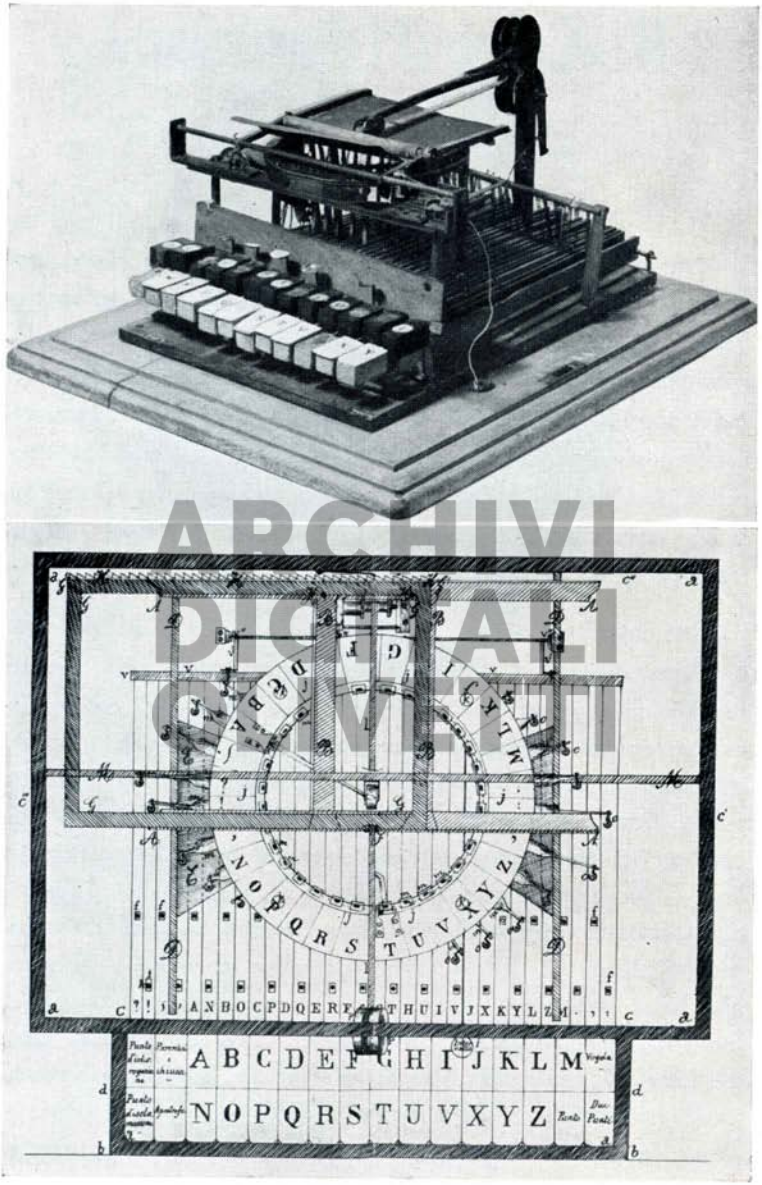
GIUSEPPE RAVIZZA

It is difficult to ascertain who, (and when) had first the intuition of a writing machine — as it is the case with many other inventions. The attemps made before the XIXth century, however clearly poiting to a need being felt, represent the prehistory of modern typewriter. Neither the Italians P. Turri (1808) or P. Conti (1823), nor the American A. Burth (1829), the Frenchmen Progin (1833) and G. Bidet (1837), the American C. Thurbero, the Brasilian de Azevedo, or the Austrian Mitterhofer, may be reckoned among its inventors. The first to formulate and find the solution to all technical problems relating to it, and to manufacture an actually writing machine, was the Italian Giuseppe Ravizza (1855).

Il «Cembalo Scrivano»

One hundred years: the life of three generations; apparently a wide stretch of time, but only one instant in the history of civilization. However slow the first steps of a fertile idea may be, the wheels of its progress will eventually turn quicker and quicker, operating miracles. The lack of interest, even peevishness, of the early initiates will be followed by a reverent homage to the memory of the leader of the idea. This is the case with Giuseppe Ravizza, the first Italian manufacturer of an actually working writing-machine.

One hundred years have just elapsed since, on the first of September 1855, this Novara lawyer, then well known for his quiet charitable activities, as a provincial counsellor and president of Novara town hospital, and for the learned contribution given to the history of his region by valuable publications, applied to the patent office in Turin, — the city of his University courses, crowned by a doctorship in law — for a patent as the inventor of a « Cembalo Scrivano (Scrivener Harpsichord), or a keyboard writing instrument ». Many a year — perhaps a score or more — Ravizza had been musing in sleepless nights upon the scheme of a machine to replace the slow handwriting: and he had been working full ten years, in the attic of his house transformed into a makeshift factory, at the making of a tiny « piano », whose keys were to form the alphabetical pentagram destined to revolutionize the writing world, nay, the world itself.



CEMBALO SCRIVANO

The first idea of « Cembalo Scrivano » may perhaps be retraced to a remote theoretical idea of Pietro Conti from Cilavegna, a little village by Novara (May 22, 1796, - May 1856); but its realization went through enormous difficulties for lack of means and experience, in a succession of defeats and victories, which is documented by Ravizza's Journal, only partially published, of the period 1856-1885. But all the central ideas of the solution of the mechanical-writing problem are found in the sixteen models, the work of the restless brain and industrious hands of the lawyer from Novara.

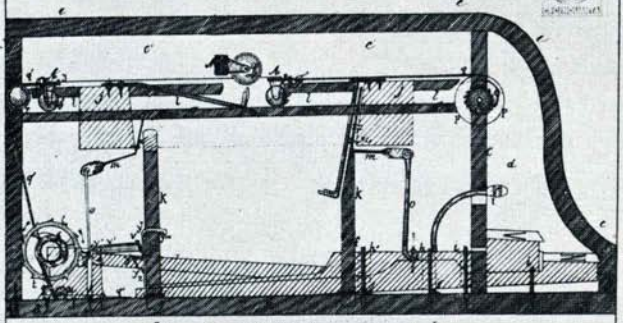
Such is the working of genial minds: they foresee the whole Problem, as well as the several arising particular problems which are going to exert the minds of their epigones in the pursuance of the perfecting of the invention, left to their searching; and while giving, themselves, presently, the solutions of the fundamental problems raised by a project, they point out to the eventual ways to reach further aims. Witness the question raised by Ravizza himself in his third patent (Leghorrn, 1883), how to make the writing visible by the typist, which was to be formulated, and then solved in a revolutionary way, only by the end of the century; witness also the research of a « rational disposition of the letters on the key-board, which, even at present, is training the efforts of some too solitary searcher ». Ravizza's « Cembalo Scrivano » got praises from some of his contemporaries; even it caused a lively press controversy between « Voce del progresso commerciale » (Turin, 1855) and « La Stampa » (Genoa): a certain Celestino Galli having taken interest in it.

Giuseppe Regaldi, a poet, declared he had personally been present at a test perfomance of the occasional typist in Turin. « La Civiltà Cattolica » (1856) and Luigi Pacinotti, the father of the great scientist (1862), took also interest in it. Various national and international exhibitions (the one held in London in 1865, among others), awarded a prize to the inventor: but medals and diplomas were like gratifying poems without prose encouragement: a laurel without the stimulating commercial support.

Disegno del stesso che ha per titolo Tavola 2ª

Cembalo scrivente, ossia macchina da scrivere a tasti

dell' avvocato Giuseppe Ravizza da Novara



Scala di centimetri 4½ per rappresentare il vero

Figure in grandezza naturale

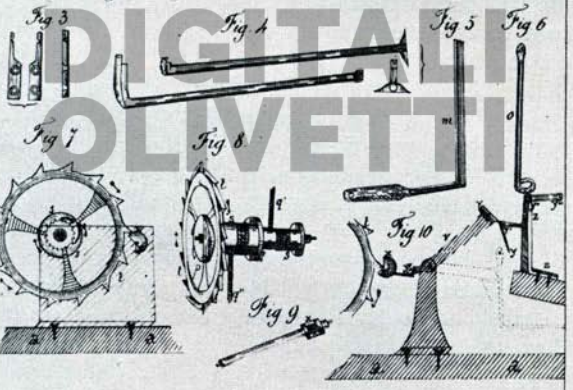
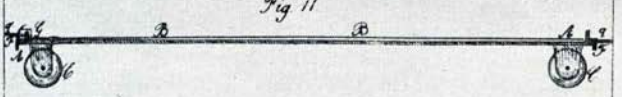


Fig 11



Giuseppe Ravizza had emigrated (in February 6th, 1877), from Novara where he had been born (in March 19th, 1811), to Leghorn: and in this town he, « the Latinist, the historian, the archeologist, the philosopher », — but his inventive activity was not mentioned in his epitaph — closed his honest laborious life in October 30th, 1885.

His foreseeing vision of a far but certain victory had been saddened by the close noisy competition of an American writing-machine, which was about invading the Continent. A Genoese merchant, Carlo Fantoni, had, indeed, made an attempt to form a Company (1882-1884) for the exploitation of Ravizza's patent, to substitute « Cembalo Scrivano » for the American Typewriter: but with a scarce success. In fact, the « Cembalo » was too noisy and slow in writing; it could not compete with ordinary writing, even less with a calligrapher, in aesthetic sympathetic appearance; and besides, the latter's writing was constantly visible along the process. Its print-like characters, besides, were not always in line and neat, nor equally blackened against the clarity of the paper; and last of all, it proved more expensive than good handwriting. However, « the die had been cast » and the Idea was ripening in countries more advanced in mechanics, more progressed in commerce, and ready to seize upon any idea, (whether hinted by a drawing, or suggested by a summary description), aiming at increasing speed in writing and clearness in reading. The right of citizenship in the kingdom of quick correspondence had already been granted to telegraph, « printing » conventional marks; mechanical numerators of the pages of registers mitigated the drudgery of hand notation on the angles of commercial books; the linotype, multiplying the potentialities of newspaper printing, to cope with the increasing demand for them, had been long familiar with the managers of American newspapers.

About the end of the nineteenth century, the invasion of foreign machines had started into our Continent, which had watched the laborious blooming of the idea of mechanical writing: the idea of placing at the disposal of the thinking brain no longer one only hand, and of supplying the trembling hand and the failing eyesight with the ability still to exhibit a clear writing, which anyone could read.

What was now required was a powerful propaganda, to conquer the general apathy, and to counteract the aversion for

a lumbering instrument. This task was performed first in 1856 by an Italian, a lawyer from Novara, Costanzo Benzi, by the publication of the first publicity pamphlet: « Cembalo Scrivano: an invention by Giuseppe Ravizza. A short illustration ». A right homage to the memory of a man about whom no biographic souvenir has reached us, to preserve a place for him in the living present, would be, indeed, a « fascimile » reproduction of that publication.

A hundred years ago, the « Cembalo Scrivano » was exalted by Benzi as an invention destined to work miracles in every branch of civil life: to assist business people needing exact figures; and travellers wanting to spare time in their long travels; to collaborate with writers in consigning to paper the flashes of Genius not seized by handwriting; and to vie with shorthand in the service of preserving for politicians the record of extemporary eloquence from parliamentary tribune. One might wish the frontispiece of the pamphlet to bear, as mark of the printing house, the « Cembalo Scrivano » of Giuseppe Ravizza, Novara, rather than the pen, book and inkpot of Messrs. « Fort and Dalmazzo di Dora Grossa in Torino ».

We are confident that this year, together with the commemoration of the centenary of the official recognition of an invention which has survived a large stretch of time, Ravizza's memory will be suitably honoured by manifold initiatives, taken — let us hope — even beyond the pale of national typewriting, by all those who still trust the value of historical sparks to illustrate the genius of peoples. It is for the present writer a reason for exultation, that the « Italian » idea of typewriting has found a practical industrial realization in the fertile region of Piedmont, cheered by Carducci (April 6th, 1897) as « a country of deeds and industries, rather than of words and charms ». It is, indeed, from « beautiful Ivrea », that, starting first at a slow pace in the remote April 4th, 1909 — the date when Olivetti model was first patented — and progressing quicker and quicker, « Olivetti » type-writer has succeded in forcing its way, and in making « the typewriter, the well-deserving, clean implement, the revealer of human thought » (as we read in a memorial tablet commemorating Ravizza, in 1931), a homely implement far and wide.

History, with its recurrent cycles, brings men worthy of honour before humanity, again and again. From the Olympus of Geniuses who impressed a push forward to the world civi-

lization, the ghosts of the forerunner of the technical idea of the typewriter, and of Conti who had the first theoretical flash vision of it, will certainly greet the Italian forerunners of the industrial Idea, which has nurtured — in its beneficial aspects — that mechanical civilization of the century, in which we intensely live. It is, in fact, to general progress that typewriting, too, is bringing its earnest, though humble, contribution, for the welfare of the weary human kind — of « umane genti affaticate » (Carducci).

GIUSEPPE ALIPRANDI

EXHIBITED TYPEWRITERS

0 — Sholes.
1 — Sholes (Remington).
2 — Remington.
3 — Hammond.
4 — Columbia.
5 — Hall.
6 — Williams.
7 — Yost.
8 — Smith Premier.
9 — Franklin.
10 — Pittsburg.
11 — Empire.
12 — Dactyle.
13 — Oliver.
14 — Grandville.
15 — Lambert.
16 — Edelmann.
17 — Underwood.
18 — Imperial.
19 — Kanzler.
20 — Mignon.
21 — Emerson.
22 — Helios.
23 — Darling.
24 — Olivetti M 1.
25 — Corona.
26 — Noiseless
27 — Olivetti M 20.
28 — Invicta.
29 — Olivetti M 40.
30 — Everest.
31 — Typewriter for the blind.

SHOLES (1867)

Original drawings after patents by Cristopher Latham Sholes, Carlos Glidden and Samuel V. Soulé (1868). The type bars are arranged along a ring and strike on a common printing arm from underneath.
The paper is carried by a rectangular frame and the writing is not visible.
The keyboard is a piano type one. This typewriter — which was the pattern to the first Remington — is very like the « Cembalo Scrivano », patented by Ravizza thirteen years before.

SHOLES & GLIDDEN (REMINGTON) 1873
(Sholes-Glidden Typewtiter)

In 1873 industrial typewriter manufacture first started at E. Remington and Sons Works, Ilion, N. Y.
This machine is based on the patents of Sholes. Hanging type-bars are arranged along a horizontal ring ad strike the roller from underneath. The writing is not visible: to read the written words the carriage assembly must be raised up.
This machine writes only upper case letters. The lever situated on the right side of the machine is for the carriage return and line spacing; it was also possible to operate it by means of a treadle.
Very interesting is the keyboard arrangement, that is practically the same adopted in modern typewriters. This arrangment was adopted with the purpose of avoiding the collision of the type bars: most frequently used letters are placed far from one another.

REMINGTON (1876)

For over 30 years the Remington typewriter, with non visible writing, was largely employed.
In the Remington type-writer model 2 (1878) we find for the first time the small letters besides the capital ones. The upper-case shift key moves the carriage forward. The model exposed is model 5 (1890), with a 42 keyboard.

HAMMOND

Produced for the first time by James B. Hammond in 1880, as a development of the Pratt typewriter (1863). Types are arranged on a wheel: depressing a key the type front rotates of an angle corresponding to the letter selected, while a steel hammer strikes the paper typing the sign.

The rotating wheel system of the Hammond machine represents an alternate solution in the typewriter construction followed by many designers. Two important characteristics of this system, compared with the type bar principle, are the visibility of the writing and the lower cost. The model exposed is model 3, with interchangeable types arranged on three rows.

WILLIAMS (1887)

Manufactured in 1892 by John Newton Williams; it is one of the first type-bar machines with visible writing. The visibility is the result of a particular arrangement of the type bars which strike the platen with an articulated action, starting from their resting position on the ink-pad. The visibility is of one line only.

YOST (1887)

Manufactured by G.W.N. YOST, who had recommended Sholes to Remington in 1873.
The writing is not visible, but for the first time we notice the typeguide that ensures a positive alignment of typing; types are inked by an ink-pad with a better result in the typed work.
Each key corresponds to a single type. The keyboard has such an extension that touch-typing is virtually impossible. The universal bail is in the centre, and it includes a universal joint.

SMITH PREMIER (1888)

Manufactured by A.T. Brown; in the first models the type-bars strike the roller from underneath and the writing is not visible. The model exposed is model 10, of 1908, with front stroke and a seven row keyboard arrangement. In the typewriter history Smith Premier is a remarkable example of individual attachment to such an unpractical characteristic as the extended keyboard.

FRANKLIN (1890)

Manufactured by P. Kidder, this typewriter was so named to honour B. « Franklin ».
It is a visible writing typewriter. The type action is very simplified, because owing to the semicircular arrangement of the keyboard, the key levers are directly connected with the type bars. There is also a ribbon vibrator, so that the ribbon, when the machine is not writing, is kept out of the writing line.

PITTSBURG (1890)

Designed by J.D. Daugherty. The first typewriter with front stroke. The writing is completely visible.
The ribbon, with a normal height of 13 mm (1/2") is supported by a horizontally hinged pivot. The shift key raises up the type-bars assembly and depresses the keyboard.

EMPIRE (1892)

Of Canadian origin, this typewriter was designed by Wellington P. Kidder, the manufacturer of the « Franklin ».
Its design is completely different from the tipe-bar machines and represents another attempt to obtain the visibility of writing.
The type bars have a ray arrangement, with a horizontal sliding movement; the key pushes the lever with a high gearing-up ratio.
In this way the type-bars instead of striking the roller by inertia, like in other typewriters, are pressed against it.
This typewriter was on the market for a very long period.

DACTYLE (1893)

A French model of the American Blickensderfer. It represents one of the first attempts of a portable typewriter with a relatively complete performance. Its popularity was due to the reduced weight and to the low cost.
A model of this typewriter with some parts in aluminium was sold in England under the name of Featherweight.

OLIVER (1894)

By Thomas Oliver. It is another example of characteristical arrangement of the type-bars in order to obtain the visibility of writing.
Types are situated on frames hinged on parallel axes. They strike with a downward movement. For writing the capital letters the roller can be moved horizontally.
This typewriter has the tabulator.

GRANDVILLE AUTOMATIC (1896)

An improved model of the Rapid typewriter (1890), of Bernard Grandville, Dayton.
The type-lever mechanism works with the pressure system: the levers are arranged on two rows. The shifting mechanism moves the lever assembly. In the keyboard there are included two keys generally unseen in preceding typewriters: they are the carriage return and line spacing key, and the carriage release key.

LAMBERT (1896)

A typewriter without keys, designed by Frank Lambert, Brooklyn: instead of the keyboard we find a disk with a series of buttons around the edge. The disk can oscillate around its axle, and actuates, in each position, a type-bearing shuttle; the typing of a sign on the paper is obtained by a slight pressure on the center key, that actuates a steel hammer. This single piece mechanism, common to all the types, makes this typewriter a very economical product.

EDELMANN 1897

A single key typewriter. The type-bearing cylinder strikes the roller with force, and it is therefore possible to obtain several carbon copies. Ink-pad system.

UNDERWOOD (1898)

The front stroke typing system designed in 1896 by Franz Xaver Wagner is at the origin of the first Underwood typewriter and represents a new important step in the typewriter history that left far behind all typewriters with no visible writing, as well as all other attempts of visible writing. The typing mechanism includes, between the key-lever and the type-bar a bell-crank that smoothens the touch of the key. The type-bar is located in a slot of the plate and it is pivoting on a single wire fulcrum that is easily removable, thus allowing the individual replacement of the typebars. The universal bail is actuated by the typebars and not by the keylevers.

IMPERIAL (1900)

Typebars strike the roller downward and are directly actuated by the corresponding keys. The depression of the shifting key moves the keyboard and the typebar assembly.

KANZLER (1901)

This typewriter offers a very curious example of the combination of two typing systems: the hammer-blow and the pressure typing. Four different keys actuating a particular lever system based on a pantograph principle, bring the types, which are arranged in groups of eight, against the roller by means of a push rod.

MIGNON (1903)

A single key typewriter produced by A.E.G., Berlin. It was the most diffused among single-key machines. Its equipment included dial and typebearing roller for several alphabets.

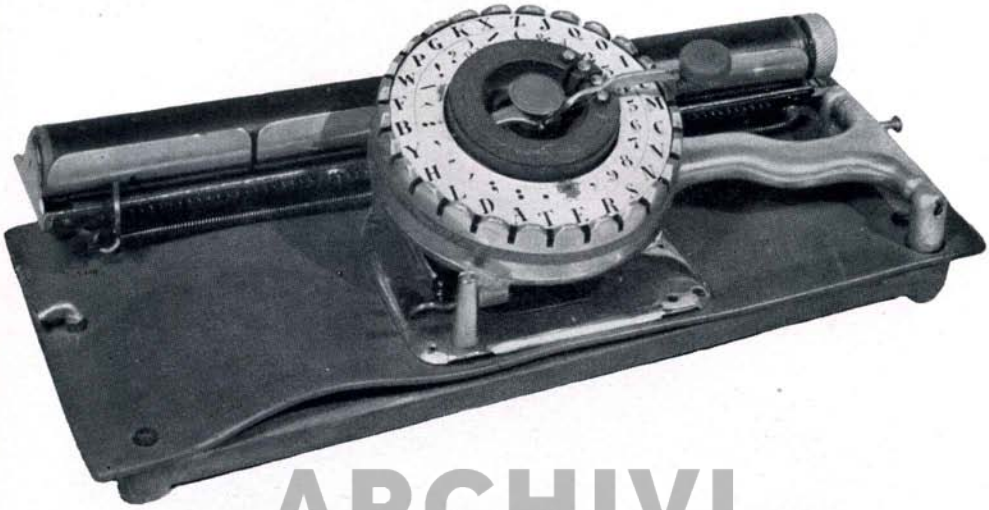
EMERSON (1907)

Another example of typelever machine with writing visibility. The typebars are supported by vertical axles parallely arranged in front of the roller. The type-bars assembly can be moved up and down, starting from the resting position.

Among the reasons for the preference obtained by the « universal » keyboard, with the keys arranged on four rows, the most important is the possibility of the simple shifting of the carriage or of the typebars assembly compared to the double or even threefold shifting necessary with keyboards with the keys arranged on two or three rows.

HELIOS (1908)

A visible writing typewriter. Two-row keyboard; each actuates four signs situated on a rotating cylinder which is brought to the height of the selected type by means of three lateral keys.



DARLING (1910)

A single-key typewriter.
The key rotates on a dial, thus positioning the disk of the types. Types are inked by an ink-pad.
It is not much more than a toy-typewriter, that disappeared very soon from the market, like many other poorly designed machines.

OLIVETTI M 1 (1911)

The first Italian typewriter designed in 1908 by Ing. Camillo Olivetti and manufactured at Ivrea. If considered in its time this typewriter reveals a very advanced design and its basic features are those of a modern standard typewriter. It was a high speed machine, thanks to the system of its lever action in which the transverse stress is eliminated, without causing a less positive and a less smooth action of all the keys. It was one of the first typewriters equipped with a decimal tabulator.

CORONA (1912)

A portable typewriter.
The carriage can be tilted forward for an easier carrying. It is a type-lever system machine, nevertheless its weight is very reduced.

NOISELESS (Remington)

In the « Noiseless » typewriter the writing system is by pressure, and not by hammerblow. This is obtained by including in the leversystem an elbow, that brings the lever to the alignment position thus limiting exactly the stroke of the typelever.
A toggle mechanism acting as a momentum accumulator and giving the necessary typing pressure, is attached to the elbow-joint. The machine exposed is Remington Noiseless model 6, of 1924.

OLIVETTI M 20

The Olivetti typewriter M 20 was a refined design of the model M 1; and Italian as well as foreign experts judged it as the most complete typewriter then on the market. The most important new features of this model were as follows:

— the guide of the carriage and of the escapement are on ballbearings
— simplification in the number and in the form of the parts of the typelever mechanism.

INVICTA (1921)

A standard typewriter designed by ing. Giuseppe Giachero, and manufactured at the Invicta Works, Torino. In Piemonte was thus born in 1921 the second Italian typewriter industry.

OLIVETTI M 40 (1931)

A standard Typewriter produced in 1931. The first typewriter with automatic marginators controlled from the carriage and with the constant stop for the indented paragraph. This typewriter was remarkable for its neat writing and constant alignment.

EVEREST model 120 (1936)

A typewriter with 120 spaces and movable carriage; one key automatic tabulator with carriage speed checker consisting of an expanding brake; automatic marginators.

STAINSBY BRAILLE WRITER

Typewriter for the Braille alphabet for the use of blind people. The six keys correspond to the six fundamental points of the Braille alphabet. The writing in relief is not immediately legible. The complete keyboard moves from right to left along the writing line.
The paper sheet (22 x 30 cm.) can be typed on both sides with line or point spacing.
Produced by The Royal National Institute for the Blind, London.

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