

[From the New York Herald.]

THE WONDERFUL TYPE-SETTING AND DISTRIBUTING MACHINE.

We can safely say that we have never examined any other invention with so much gratification and astonishment as the "Alden Type-Setting and Distributing Machine." Not only ourselves, but inventors and machinists of the highest order, in this country and from Europe, have inspected and witnessed its operation, and without a single exception, all look upon it with wondering admiration.

Our reporter was present yesterday when one of these machines was taken wholly apart, and, having a thorough scientific knowledge of all kinds of machinery, he enables us to give a clearer and fuller idea of all its parts and mode of construction than has ever yet been laid before the public.

This machine is the work and invention of a young man named Alden, who spent his life, as well as life's means, in working out the discovery. We need not say that it supercedes the uses of the compositor, and asks of him no fingers to detect and seize the several types, set them in order and array them in words in the stick. The machine does all this like a living being, and sets them afterwards in galleys, then in page, etc.; and again asks no human fingers to separate the mass and restore each type to its own sort in case. The machine can make no mistake; for its task is reduced to perfect law. An invention like this must assuredly be the most remarkable of the age and world.

You see before you a table of brass almost circular, the part nearest the operator only being flattened; and at a slight elevation you see, radiating from the center, numerous deep "alleys" of brass also, within which the types are made to stand, and these "alleys" (numbering one hundred and eighty) are the substitutes for the usual boxes or divisions in case. Into these "alleys" are placed one hundred and fifty-four different characters, and they are so arranged as to hold exactly the same proportionate number of types that the divisions in case contain. For instance, there are three "alleys" for the lower case a, while there is but one for the letter b, two for c, five for e, and so on throughout. These "alleys" are divided into six different sections, with handles attached, allowing them to be raised up instantly, in order to change their font of type to any other size.

Directly before the operator is the "key-board," eight inches wide and fourteen in length, and upon which are one hundred and fifty-four keys, with silver-plated heads, resembling those of the concertina. These keys are all plainly lettered, and the entire alphabet of each class of letter is arranged within spanning distance of the hand. They embrace the Roman upper and lower cases, small caps, italics, double letter, numerals, punctuation, signs and spaces.

In the center of the table is the "main wheel," thirty inches in diameter, revolving upon friction rollers, and upon its circumference are thirty-six "conveyors," or hands, every other one of which attends to setting up type, while every other alternate one is required to distribute old matter into the same "alleys" from which the setting "conveyors," or hands, take their type. Within the "main wheel" is another, three inches wide and twelve inches in diameter, revolving also upon friction rollers—encircling which there are nine rows of movable steel pins (the size of a shingle nail) perforating it. Encompassing this wheel is a wide "stationary rim," twenty-eight inches in diameter, and on the outside of which there are eighteen grooves of polished steel, filled nearly full with excavations. Upon the inside of this "excavated rim" there are nine steel rods connecting with the "inner or register wheel," containing nine rows of steel pins. At one end of these rods, nearest the "inner wheel," there are "levers" attached. The "main wheel" revolves around the outside of the "excavated rim," carrying with it the "conveyors." Upon one end of these "conveyors" there are nine movable polished steel "fingers," which are protected outside by sheet brass, and capable of being formed into 512 different combinations (yet it is only necessary to make a combination of 154 to cause every type to be set up). The "fingers" glide along in the grooves upon the "excavated rim" (there being, of course, two grooves for each finger to work in), and when they reach the part of the table nearest the operator all the "fingers" are thrown flush into their lower groove. From the "key-board" to the "register wheel," having the steel pins upon it, there are nine other rods attached. When the compositor touches a key, signifying the character he wants, the signal is passed out to the "register wheel," through the rods, which act as a medium, and there registers the character, by pushing out a certain combination of pins, and as the "register wheel" revolves the pins thrown out pass under and tilt the little levers attached to the nine steel rods communicating with the "excavated rim," thus changing the combination in the grooves upon the "excavated rim," equalizing the combination of pins upon the "register wheel," and when the first "conveyor" passes by it takes its signal by certain of the "fingers" upon it being thrown into the upper grooves equivalent to the combination of pins which are thrown out upon the "register wheel." When the "conveyor" reaches the "alley" containing the character desired, it is instantly stopped, and the fingers drop into the excavations upon the stationary rim, comparing with the manner in which the fingers are thrown; then the "conveyor" slides on its center while taking out its type, which is firmly held; it

then tilts, and passes on with the "main wheel," and passes the type into a deep, long "alley," directly in front of the operator, as nicely and delicately as it is possible for the natural fingers to execute. One character follows another in the same way, and in the same order in which the keys touched by the compositor's fingers may require; and when the matter set up reaches the further end of this "alley," everything is broken into page, and there justified, ready to be carried off to the press to be printed from. The "quads," thin spaces and "hyphens" are distributed close at hand.

The operator has only to read his manuscript and touch his keys. From practice his fingers involuntarily pass to the key, as they now do to the divisions in case. He can acquire a facility of touching these keys much more rapidly than the "carrying wheel" revolves; and by so doing, he accumulates signals upon the "register wheel" in advance of the delivery—even to the extent of sixty letters—at which instant a bell inside gives the alarm that the "register wheel" is full. The compositor then stops to read his copy before him, and justifies that which he has already set up in page. All the while the letters previously sent for are working in, and he is ready to proceed with fresh composition. If the operator makes a mistake by touching the wrong key, he can easily correct it by turning off all the signals upon the "register wheel," or a portion of them, as may be necessary.

The most remarkable part of this machine is the "distributing department," which is purely automatic. Both operations may be carried on together, or separately. The operator pays no attention whatever to the distribution, except to place a page of dead matter (even "pi-lot") upon the table, and the machinery of itself then takes charge of it. One line at a time becomes separated from the mass or page by a powerful "lifter," and other appliances of machinery carry the line along to the end of a deep "alley," and then the "distributing conveyors" stop, and each, taking a letter, carries it home to its proper "alley." Nor can it be possible to make a mistake by misplacing a letter; for the governing power is law itself; and that controlling power is the different combinations of nicks in the type. The type, by the way, may be cast at one-half cent less per pound than that made in the usual way, which is readily accounted for by the saving of metal. Old type, of any description, can be nicked by the thousand with a simple plane, gaged to any form, and adapt itself to this machine.

The principle of "distribution" is much the same as that of "setting," the only difference being, in setting the leading power is the touch of the keys, while in distributing nine little steel fingers feel out from the "distributing box" into the nicks of the type, forming a particular combination, which is signaled to the "conveyor" stopping for the character, and the "fingers" upon it being changed from lower to upper grooves upon the "excavated rim," comparing with the combination of fingers which have dropped into the nicks upon the type. The other end of the fingers having dropped against a "graduated stop," allows a passage way to open just the width of the type, which is passed out through to the "conveyor," which receives it naturally and follows on with the "main wheel." The "conveyors" go through the same revolution that the "setting conveyors" do in composing.

As a matter of necessity, the machinery is wonderfully nice, the agencies and dependencies very numerous, and the whole fabric seemingly a very complicated one, while, in truth, its adjustment, as finally reached by the discoverer, is the simplest thing in the world. One "alley," one "conveyor" and one key constitute almost the entire machine—all the rest is duplication. All the "keys" are alike, all the "conveyors" are alike, and the "alleys" holding the type are also all alike.

If the sorts in setting and distributing type do not run equally, or nearly so, there is always a surplus kept ahead. When there are letters in the alphabet occupying more than one "alley," the "conveyors" invariably set from and distribute into the first line first. If that "alley" becomes either full or empty the "conveyor" passes on to the next line. If the machine is distributing and not setting the types; and the "alleys" become full, the "conveyors" stop no longer at the "alley," but glide along to the "pi bag," and drop the surplus therein. When the "pi bag" is full the type is again set upon the table, and is sent to its allotted place. "Could anything be more like brain turned into brass?" We will defy any one to find the least fault with any portion of this novel affair, there being a provision made for any and every emergency throughout the entire machine. No wear whatever is made upon the type.

There are numerous points of equal beauty and utility in its adaptation of means to ends and in its general working. Nothing can be more admirable than the delicacy and fitness of all its parts, and the exquisite nicety with which the several types, not omitting the slenderest spaces, are kept in place, and made each to pass to and from its "alley" and made also to rise and lift itself into proper position. If any one thing more than another astounds us, it is that so little and such simple machinery can effect such miraculous results. The machine is almost wholly dependent upon positive instead of spring movements.

The "main wheel" has only to make six revolutions per minute to set up and distribute 64,800 characters in ten hours, which is equivalent to 30,000 ems solid matter. If the operator chooses, he can run the wheel to

eight revolutions, which is still a slow movement, thereby setting and distributing 40,000 ems solid in the same number of hours.

There is no possibility of the machine wearing out with constant use, in twenty years, and it is scarcely liable in any way to get out of repair, as it is composed entirely of iron, steel and brass. The only delicate parts of the works are covered up, and well protected from any accident likely to rise from carelessness on the part of the operator. Very little oil is used in working it—not over a thimbleful in a month's time. It is designed to be worked by steam, horse or treadle power. It is perfectly original throughout in its construction, no portion of its movements being copied from any other kind of machinery.

The inventor, being a practical printer, as well as a fine inventive and patiently meditative genius, has introduced into his system—for so his invention may be called—all the thousand little conveniences and agencies for expedition of which the art of type setting is susceptible.

He was certainly a most extraordinary person, and this invention must be a most enduring monument of his equal patience, steadfastness, devotion and large grasp of mechanical genius. But, except the fame, he will reap none of the fruits of his discovery. Timothy Alden was a native of Massachusetts. For twenty years of his life he devoted himself to the perfection of his invention, and in a firm concentration of will and brain and money he exhausted all the resources of life, and wore out life itself prematurely in the labor. The incessant strain for so long a period upon his active intellect proved too exhaustive for a physique naturally feeble, and he sank under his task of genius.

But he succeeded. He triumphed even before death; he lived just long enough to cry "Eureka!" to put the finishing stroke to his labors; to see his machine in successful and wondrous operation. Twenty years of his life, and life itself, and above forty thousand dollars in money, were expended in bringing into successful use a single one of his machines, and then his eyes closed upon the work forever.

One man feeds the "distributor," composes, justifies and reads his own matter (thus doing away, in a great measure, with proof-readers,) and is less liable to mistakes than by the usual way of composition. For instance, there are a great many more "typographical errors" made in distributing than in setting type; and it is impossible for the "fingers" of this machine to place a type into its wrong "alley." Hence its correctness.

During the last twenty years of the inventor's life he depended mainly upon his cousin, Henry W. Alden, for funds to enable him to continue on experimenting. He conceived the plan of setting and distributing type by machinery at the age of nineteen years, while an apprentice boy, standing at his case picking up type. He was then heard to say that "if his life should be spared to him, he would invent a machine that would relieve compositors of that offensive profession they were led to follow." He frequently remarked, too, that "he should never live to reap the fruits of his discovery." He died at the age of thirty-nine, just as he had gotten out his patents in this country and Europe. Upon his death bed he directed his cousin how he should proceed in the future, bequeathing his invention to him and other relatives and friends, who had aided him while engaged so many years upon his arduous task.

Henry W. Alden, after the inventor's death, proceeded to make valuable improvements upon the machine, as he had been directed to do by his cousin while on his death bed, in order to insure perfect success. After having completed three machines, he caused one of them to be put into practical use. There the work stopped for the want of additional means to go forward with manufacturing. Affairs remained in this way for a long time, until Charles C. Yeaton became interested with Alden, and through that indomitable perseverance and energy so characteristic of the man, he has been enabled to organize a stock company of \$100,000, and composed chiefly of capitalists of this city. From the hour of his advent in the concern it has been in active progress—order after order has been sent it—every hour brings some celebrity to examine the wonderful mechanism of the machine; and to this enterprising young man, cousin of the inventor, its assured success must be credited.

FACTS AND FICTION.

—The Charleston *Mercury* says, "The Yankees love the nigger." The Louisville *Journal* sharply retorts that, from the complexion of a large portion of the population of the South, it is pretty strong indication that the chivalry "love the nigger."

—The latest musical intelligence is that, since the army changed its base, the press has changed its tenor.

—"I was just minding that I have buried five hundred and ninety-eight folk since I was first made bedral o' Antrim," said an old grave-digger on his death-bed, "and I was anxious that I might be spared to make it the six hundred."

—Lieut. Johnson of the 17th Kentucky regiment, who presented his resignation on account of the President's Emancipation Proclamation, was at once placed under arrest, dismissed the service in disgrace, and his insignia of office stripped from him in presence of the whole regiment.

—A new light Abolitionist defines his position—"that all negroes shall have their rights, and ought, in justice, to be entitled to white skins and straight hair, as well as any other man."

—Manufacturers of "fine cut" tobacco have put up the price 33 per cent., and cut down the quality of the article in like proportion. This makes an increase of 66 per cent. in the price; and the fine cut now in market is made of old mattresses saturated in tobacco juice.

—A new dance—the "York and Lancaster quadrilles"—introduced at a ball given lately at Halifax by His Excellency Major General Doyle, is creating a sensation in that city. The sets were composed of 16.

—The rates of passage from San Francisco to New York, by regular steamer of the 1st inst., were: first cabin, \$267 and \$241; second cabin, \$161; steerage, \$107.

—At a shooting affray among the Chinese of Carson City, lately, one or two women were killed and others wounded.

—There were recently eleven persons confined in Sacramento on charges of murder.

—In a thanksgiving sermon at San Francisco, Dr. Wadsworth said that you could no more destroy this nation than you could crowd a young eagle back into its shell.

—Why are two t's like hops? Because they make beer better.

—Stonewall Jackson is reported to have delivered to his troops on a recent Sunday discourse upon a text from Joel, chapter 2 verse 20, as follows: "But I will remove far off from you the Northern army, and will drive him into a land barren and desolate, with his face toward the east sea, and his hinder part toward the utmost sea, and his stink shall come up, and his ill savor shall come up, because he hath done great things."

—The Halifax papers say that among the passengers who recently arrived there by the Delta, from Bermuda, were Commodore Maury and a number of gentlemen who belong to the Southern army and navy, en route for England. The *Colonist* thinks it is quite safe in hazarding the conjecture that some at least are on their way to take charge of one or more of the large Confederate war steamers about completed in England.

—Admiral Wilkes—the same who took Mason and Slidell from the Trent, lately chased two rebel steamers into Nassau, N. P., where they found shelter and protection under the British flag. But when Wilkes also sought to enter, he was refused permission.

—Five men were murdered in Nashville, Tenn., on Thursday night, 4th inst. It seems to have been a carnival of blood. One of the victims was Mr. Hollister, keeper of the saloon at the Commercial Hotel, who was knocked in the head, by a soldier, with a slung shot.

—A soldier in Tennessee writes to the *Missouri Republican* in the following doleful strain: "Oh, war, war! When will thy reign of terror cease—when will the nations learn war no more? Has the Prince of Peace forever departed, and are we lost in the vortex of revolution? My country, my country, my wife, and my childer; my home—my all—are we all to be swept away on this turbulent tide, and engulfed in national ruin?"

—Some author tells us that much is said about the tongue. True, the thing is in everybody's mouth.

—Mercurialization may loosen the teeth, long use may wear them out, but keep them clean and they will never decay. Use a quill pick, and rinse the mouth after eating. Brush and Castile soap every morning; the brush and simple water on going to bed.

—An old lady died in the streets of London recently from sheer destitution, who was the claimant under a will to an estate of no less than seventeen millions of dollars.

—Com. Porter promises the opening of the Mississippi as a Christmas present to the United States. If he keeps his promise, he will be a Santa Claus worth talking about.

—Twelve pairs of boots, containing twelve bottles of whisky, were taken from beneath the crinoline of a female smuggler at Memphis recently, just as she was passing into Dixie.

—The pork packers, en masse, of Cincinnati have bound themselves not to receive hogs that have been killed on the Sabbath day, and the proprietors of slaughtering houses have also pledged themselves not to kill on the Sabbath.

—A sub-lieutenant on board of Her Majesty's ship Resistance has been court-martialed and reprimanded for disrespect to his captain in speaking to him with his left hand in his pocket.

"Vanity Fair" quaintly remarks that the rebel Capt. Semm's was placed upon the retired list by the United States Naval Board because he was a "fast man," and therefore an inefficient officer. As the old fogies objected to his 240 gait then, what a pity it is some of them can't overtake him now on his 290.

—A French paper, the *Paris Patrie*, says, "Oh that we could speak at this distance in President Davis' ears." The editor would have Jeff's ears extend all the way across the Atlantic.