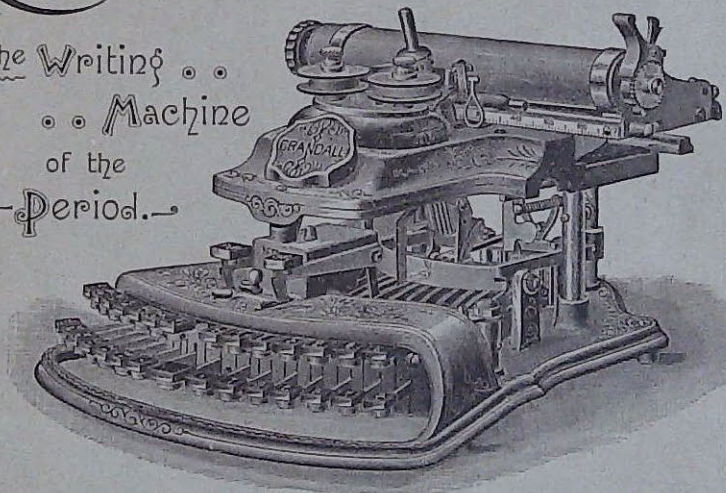


DIRECTIONS.

THE MODEL
GRANDALL TYPE-WRITER.

The Writing . . .
. . . Machine
of the
Period.



The Grandall Machine Co., Groton, N. Y., U. S. A.

MANUFACTURERS.

New York Office, 353 Broadway. Chicago Office, 54 LaSalle St.

The Crandall Type-Writer.

DIRECTIONS.

FOR the benefit of all operators, especially those who would become expert in the use of the Type-Writer, we strongly urge the importance of the directions being perused carefully as an aid in acquiring a thorough knowledge of its construction and the use for which the different parts are designed.

Machines are firmly bolted to office case and packed in box convenient for transportation. In packing we securely tie such parts as might become displaced by rough handling, that the machine may reach its destination in good order ready for actual work.

In unpacking, see that all cords are cut and removed. Also that the washer is removed from the top of the type-cylinder spindle before attempting to write. Also that the cap nut upon the ribbon spool carrying the larger portion of the ribbon is loosened, the spool free to revolve and the cap nut of the other ribbon spool is firmly turned down upon the spool.



KEY BOARD AND SHIFTS.

From the twenty-eight keys of the key-board eighty-four characters are obtained. The space key is the large blank key in the centre, and the F&P (for figures and punctuations) and the Caps (for capitals) shift levers are over the centre of the key-board, at the left and right respectively.

When in normal position the type-cylinder will only make the letters of the lower case, (small letters.) When the capital shift is depressed, the type-cylinder is raised to the capital field, and while the cylinder is held at that height (either by the caps lever engaging in the catch or being held in position by the finger,) capital letters only are made. When the F&P shift is depressed the cylinder is raised still further to the F&P field, and in that position makes the figures and characters which are shown on the keys underneath the letters.

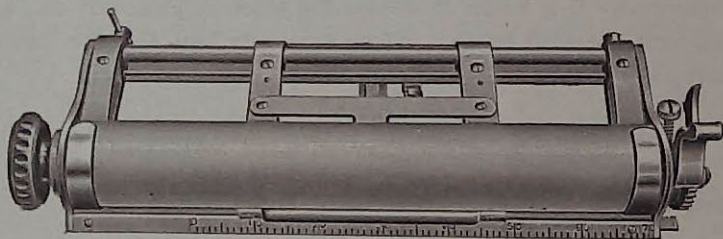
When the shift-lock, which is located between the Caps and F&P levers, is thrown back toward the machine, the catch will engage with either the caps or F&P levers when they are depressed, requiring the catch key to be touched to return the cylinder to its normal position for making small letters. With the lock brought forward the operator can depress the caps or F&P key, and while holding it make the desired capital or character, when the cylinder will return to its normal position by simply releasing the key. However, when making capitals or figures continuously it is better to release the catch and allow it to engage with the shift levers. Some operators find this the more convenient method in general writing.

It will be observed that the period and comma are common to the three fields of the machine, and are always ready for use, whether printing capitals, lower case letters or figures.

If, by accident, two levers become wedged in the twirler at the rear of the machine, press down the lower one and the other will resume its position. The return spring attached to the return spring lever should always have a moderate tension, and if at any time the machine does not respond rapidly as desired in rapid writing, give it more tension by turning the nut on the arm to which the return spring is attached.

Do not endeavor to write rapidly at first, but try to write evenly and correctly. The speed will come naturally after a little practice.

In operating the machine much depends upon the proper manipulation of the keys. The touch should be in the nature of a quick depression rather than a blow, following the key to the end of the stroke.



CARRIAGE.

Insert the paper by slipping it under the rubber platen from the back and turning the platen knob at the left end of the carriage, feeding the paper up far enough to see that the top of the sheet is parallel with the rubber platen.

The paper may be adjusted up or down by lifting the line space pawl, at the right end of the carriage, out of the line space ratchet wheel and turning the knob at the left end.

When desiring to write upon a date line, adjust the paper in such a manner that the pointer at the right when carried to the paper will meet the desired line.

SETTING THE CARRIAGE.

If it is desired to set the carriage along quickly for the beginning of a date line or signature, first put up the left hand to stay the motion of the carriage that it may not go too rapidly to the left, then pull towards you the return spring lever, to which is attached the wire spring, and which projects downward from the right side of the machine underneath the top-plate, and hold it firmly towards you until the carriage is in the desired position. Then return the lever to its natural position and release the carriage.

To return the carriage after the end of a line has been reached, push upon the knob at the left end, moving the carriage to the right as far as it will go.

LINE SPACING.

The space between the lines is effected by pushing quickly the line space lever at the right end of the carriage until it

strikes firmly against the stop, then releasing suddenly, allow it to drop to its natural position.

To vary the width of the line spacing, turn the line space adjusting screw up or down, noting when feeding the paper that the line space pawl stops midway between two cogs of the line space ratchet wheel.

REMOVING THE CARRIAGE.

See that the right carriage stop arm is at the extreme right of the paper band rod. Put up the left hand to stay the motion of the carriage, then pull towards you the return spring lever, and holding it firmly, allow the carriage to move as far to the left as it will go, then return the lever to its natural position and lift the stop arm over the stop and remove the carriage from the carriage track rod.

In replacing, slide the carriage on the end of the rod from the *left*, and while lifting the right carriage stop arm over the stop, see if the feed rack is meshing in the feed gear wheel, that you may not spring it in replacing.

If in removing the carriage, the carriage feed wheel (containing the carriage spring), escapes, and the spring runs down, before replacing the carriage give the drum wheel a half or three-quarter turn to the left, and this should also be done when

the carriage does not readily respond at the right end of the line, providing directions regarding cleaning and oiling have previously been followed.

CARRIAGE MOVEMENT.

If at any time the carriage does not respond readily, and if the action is not perfectly free upon the carriage track rod, the carriage should be removed, the tube wiped out and the rod oiled. The action of the carriage may be tested at any time by following the directions under "Setting the Carriage."

MARGINS.

The margin at the left may be varied by loosening the stop arm screw and moving the stop arm to the right or left upon the paper band rod.

An uneven margin at the left may be corrected by simply moving the left carriage stop arm a very little in either direction.

ADJUSTING FOR PAPER AND ENVELOPES.

The carriage is readily adjusted for paper and envelopes by sliding the left stop arm, together with the feed roll bands to the desired position. In moving the latter depress them slightly at the rear of the platen roll. It is better to leave the right carriage stop arm stationary at the extreme right of the paper band

rod so that in removing the carriage the feed rack may not be sprung. The above directions may be followed in reference to postals or envelopes, or, if more convenient to the operator the feed bands may be left in their normal position and only the left paper band used.

SCALE, POINTER, AND CORRECTION OF ERRORS.

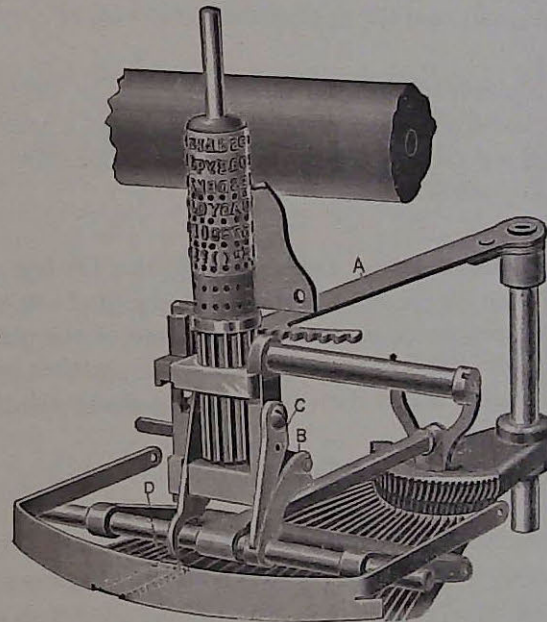
The scale is at the bottom of the carriage, in front, and numbered to the right from naught to seventy, the printing point being twelve degrees to the left of the pointer.

To place a letter in any desired position on the line, it is only necessary to move the carriage so that the space for the desired letter or figure is directly back of the type cylinder spindle. The same directions may be followed in the correction of errors. If the error is discovered after the line is passed, lift the line space pawl out of the line space ratchet wheel, and with the knob turn the platen so that the pointer when pressed forward to the paper is at the bottom of the line required.

TABULATING.

While with this machine neither scale or pointer are really necessary in tabulating, as the printing is always in sight and the type-cylinder spindle is in direct line with letter or character to be printed, for beginners and those who desire an indi-

cator which precludes the possibility of error, the curved indicator at left of type-cylinder is arranged. When not required for the purpose intended and when inserting paper it may be thrown back out of position.



Cut showing sectional view of Platen, Type-Cylinder, Cams, Strike, Strike-Hook, Lift-Ball, Twirler-Arm, &c.

The cut on page 9 represents the direct cam and cylinder action, showing the twirler-arm (A) which revolves the type-cylinder until the desired character is at the printing point while the cylinder is being carried forward to the paper by the action of the rock-shaft cam (B) against the strike cam (C).

The principle of the cam movement is the perfection of simplicity and strength, insuring a quick action, a powerful and easy stroke, a good impression, and little probability of anything getting out of order.

The cut also indicates the rock-shaft, the lift-bail showing the foot (D) which comes in contact with the lift-hook wherever lower keys are used, and also a section of the platen-roll, against which the type-cylinder strikes, together with the locking pin upon which the cylinder locks while printing.

TYPE-CYLINDER.

The cut on the following page represents the type-cylinder. It can be removed, and another, with an entire change of type, can be inserted in a few seconds. The cylinder is held in position by the strike.

To remove the cylinder, grasp it with the thumb and finger and raise it up, then twist gently around about half way to the right or left until the release of the pitman is felt, when it will slip off the cylinder spindle.

To replace the cylinder, drop it down into gear, being careful to observe that the line on the top of the rubber body of the cylinder is directly from you. Then turn it around about half way to the right or left (pressing slightly downward), until the pitman slips into position. Then let it go and it will automatically assume its position. If now it prints the wrong letter it is an indication that proper care has not been taken to keep the line on the top of the rubber body directly in front.

CLEANING THE TYPE.

It is very seldom that the type needs cleaning in the Crandall Type-Writer, but when such is the case it is simply necessary to remove the cylinder from the machine and brush the clogged letters with a common tooth brush, using a



little alcohol or benzine, and being careful to dry the type well before printing. Be sure to replace the cylinder before operating the key-board.

RIBBON MOVEMENT.

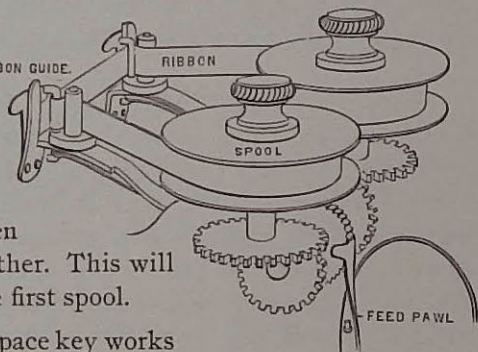
When the ribbon has been wound from one spool to the other, turn the cap nut down firmly on the empty spool and loosen the cap nut above the other. This will return the ribbon to the first spool.

If at any time the space key works unusually hard, both cap nuts have, by mistake, been turned down upon the spools.

In adjusting a new ribbon, apply it as shown in the accompanying illustration, and see that the spools work freely on the spool studs when not depressed by the cap nut.

LETTER BOOK COPYING.

When letter book copies are desired, write with the copying ribbon and then proceed exactly as in letter book copying



ing of manuscript writing. However, rather more moisture is necessary than for manuscript copies, and it is also necessary to leave the matter in the press longer.

MANIFOLDING.

A number of copies may be taken at once by the use of carbon paper, with full carbon. Place a sheet of the latter between every two sheets of the paper where thin paper is used. With semi-carbon a sheet after every sheet of paper. Write in the usual way, except to strike a little heavier blow than when making but one copy.

CLEANING AND OILING.

The machine should receive reasonable care, and when not in use should be kept in the office case—accompanying it, or in a drop-cabinet.

The working parts should be kept free from dust, and never allowed to become dry.

Oil sparingly the bearings where naturally indicated, giving particular attention to the following: The tube of the carriage and rod which carries it; the surfaces of the cam movement; the portion of the hook which passes through the pit-

man when lower keys are depressed, also the lower portion of the hook and the small roller which engages with it ; the points of the dogs which operate in the large wheel underneath the carriage feed wheel.

When the machine is in constant use the above should have attention two or three times a week.

Oil occasionally the shift levers where they come in contact with the shift lever catch and the bottom of the lift bail where it rests upon the key levers ; the return spring lever at the bottom where it meets the shaft arm and the bearings of the long screw which carries the strike.

Occasionally wipe the strike spindle which carries the cylinder, and the collar of the cylinder, with a cloth slightly oiled.

The best watchmaker's oil—such as is sent with each machine—should be used ; a small drop being all that is required at one time on most of the bearings.

Do not oil the main levers where they pass through the rubber segment in centre of machine.

Do not allow oil to come in contact with the soft rubber parts.

