ROYAL GRAND
Typewriter

DIRECTIONS FOR USING

Royal Typewriter Company
New York
INDEX OF SUBJECTS.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Locate Printing Result</td>
<td>4</td>
</tr>
<tr>
<td>To Space Between Words</td>
<td>4</td>
</tr>
<tr>
<td>To Elevate Carriage to Write Capitals</td>
<td>4</td>
</tr>
<tr>
<td>To Space Carriage Back</td>
<td>4</td>
</tr>
<tr>
<td>To Use Space Key When Tabulating</td>
<td>5</td>
</tr>
<tr>
<td>To Tabulate</td>
<td>5</td>
</tr>
<tr>
<td>To Release the Margin Stop</td>
<td>6</td>
</tr>
<tr>
<td>To Control Paper and Envelopes Above the Printing Point</td>
<td>6</td>
</tr>
<tr>
<td>To Write on Ruled Lines</td>
<td>7</td>
</tr>
<tr>
<td>To Insert Paper Correctly</td>
<td>8</td>
</tr>
<tr>
<td>To Adjust Paper in Any Position</td>
<td>8</td>
</tr>
<tr>
<td>To Get a Perfect Paper Pressure Feed</td>
<td>8</td>
</tr>
<tr>
<td>To Determine Space Between Lines</td>
<td>9</td>
</tr>
<tr>
<td>To Print Fractions or Forms Out of Line</td>
<td>10</td>
</tr>
<tr>
<td>To Use Different Widths of Paper</td>
<td>10</td>
</tr>
<tr>
<td>To Reinsert Work After Making Corrections</td>
<td>10</td>
</tr>
<tr>
<td>To Start a New Line</td>
<td>11</td>
</tr>
<tr>
<td>To Release the Carriage</td>
<td>12</td>
</tr>
<tr>
<td>To Attach or Detach the Carriage Draw Band</td>
<td>12</td>
</tr>
<tr>
<td>To Select Tabular Spacing</td>
<td>13</td>
</tr>
<tr>
<td>To Determine Right and Left Margin</td>
<td>13</td>
</tr>
<tr>
<td>To Get the Desired Touch</td>
<td>15</td>
</tr>
<tr>
<td>To Make Erasures</td>
<td>15</td>
</tr>
<tr>
<td>To Write on Library or Other Cards</td>
<td>16</td>
</tr>
<tr>
<td>To Change the Travel of the Ribbon</td>
<td>17</td>
</tr>
<tr>
<td>To Change the Ribbon</td>
<td>17</td>
</tr>
<tr>
<td>To Change Colors of Ribbon</td>
<td>18</td>
</tr>
<tr>
<td>To Make a Stencil</td>
<td>19</td>
</tr>
<tr>
<td>To Clean Type and Machine</td>
<td>19</td>
</tr>
<tr>
<td>Escapement</td>
<td>19</td>
</tr>
<tr>
<td>No Oiling Necessary</td>
<td>20</td>
</tr>
<tr>
<td>Good Advice, a Few Don'ts</td>
<td>20</td>
</tr>
<tr>
<td>To Unpack</td>
<td>20</td>
</tr>
<tr>
<td>Royal Typebar Movement</td>
<td>back cover</td>
</tr>
</tbody>
</table>
# Index of Parts

1. Paper release lever.
2. Carriage release lever.
3. Twirler, right-hand.
4. Scale.
5. Line space lever.
7. Exponent lever.
11. Paper guide, center (adjustable)
13. Paper guide handle, right-hand.
15. Margin release key.
16. Tabular rod.
17. Margin stop rod.
19. Type guide.
20. Top dust cover plate for type-bars, right side.
21. Top dust cover plate for type-bars, left side.
22. Top dust cover plate for type-bars, upturned portion.
23. Shift key, left-hand.
24. Shift key, right-hand.
25. Shift lock key.
26. Tabular key.
27. Back space key.
28. Space bar.
29. Tabular stops.
30. Margin roller, left-hand.
31. Margin roller, right-hand.
32. Twirler, left-hand.
33. Line space shield.
34. Cylinder.
35. Scale lifting lever.
36. Carriage feed rack.
37. Pressure rolls.
38. Margin stop, right-hand.
40. Center stop.
41. Line lock blade.
42. Bell.
43. Bell hammer.
44. Carriage lower ball race.
45. Carriage upper ball race.
46. Top dust cover plate for type-bars, left-side.
47. Top dust cover plate for ribbon both sides.
48. Key levers.
49. Key lever tension adjusting screw.
50. Ribbon reversing cranks.
51. Ribbon spool.
52. Ribbon vibrator.
53. Ribbon leader.
54. Ribbon guide.
55. Ribbon idler roller.
56. Hinge for ribbon ends.
57. Ribbon vibrator prongs.
58. Ribbon vibrator ears.
59. Bi-chrome shift lever.
60. Bi-chrome indicator.
61. Escapement loose dog spring.
62. Escapement plate spring.
63. Escapement plate, rigid dog.
64. Escapement plate, loose dog.
65. Wire card holder.
66. Wire card holder, left end.
67. Wire card holder, right end.
68. Wire card holder, bent top.
69. Idler roller.
70. Carriage right end band.

[Image of Royal Typewriter]
TO LOCATE PRINTING RESULT
USE SLOT IN TYPE GUIDE

The printing point is immediately behind and above the center of the Type Guide, Plate 1, Fig. 20, and is in line with the slot in the typebar guide. The guide is like a rifle sight and shows exactly where to make an insertion of an omitted character without consulting a scale.

TO SPACE BETWEEN WORDS
USE THE SPACE BAR

The Space Bar, Plate 1, Fig. 28, is the long black celluloid covered bar on the front of the Keyboard, for spacing between words, and is tensioned, so that it is easily depressed by either the thumb or finger.

TO ELEVATE THE CARRIAGE FOR WRITING CAPITALS
USE THE SHIFT KEY

The two Shift Keys shown in Plate 1, Figs. 23 and 24, are for the purpose of printing capitals and characters on upper half of key.

If only a single capital is desired, press either one of them and remove the finger after the letter has been printed.

If an entire sentence in capitals is desired, press the Shift Lock Key, Fig. 25.

This Shift Lock Key, Fig. 25, can be released by pulling it slightly forward or by depressing Shift Key, Fig. 24, preferably the latter.

TO SPACE CARRIAGE BACK
USE BACK FEED OR BACK SPACE KEY

Back Space Key, Plate 1, Fig. 27, is for the purpose of retracting the Carriage one letter space at a time. Depressing it the Cylinder, Fig. 36, moves from the left to the right, instead of right to left.

The object of the Back Space Key is to facilitate reprinting over an imperfect impression. It is also of especial advantage in tabulating work in conjunction with the Tabular Key, Fig. 26. Thus—the tabular stops, Plate 7, Fig. 30, may be set at the decimal point, for example, so that by pressing the tabular key the carriage will jump to the column occupied by the decimal point, in correct position for printing cents, but if it is desired to print in the units dollar column, the Back Space Key is depressed once, or twice, if the § sign is used. It performs precisely the same function that the space bar does, except that it causes the carriage to move in the opposite direction. Used in connection with the tabular stops it gives the operator double the facility that can be obtained by the use of the space bar alone. If the usual amounts to be written are in the hundreds of dollars, the tabular stop should be set accordingly and by the use of the Back Space Key, a column in the thousands can be readily reached or, by the use of the space bar, a column in the cents column.

Illustration:

With tabular stop set for decimal point, the printing point for the following amounts would be reached by depressing the keys indicated below.

| Tabular Key once                      | .50 |
| Tabular Key once and Back Space Key once | 1.50 |
| Tabular Key once and Back Space Key twice | 10.50 |
| Tabular Key once and Back Space Key three times | 100.50 |

With tabular stops set at hundreds dollar column:

| Tabular Key once                      | 100.00 |
| Tabular Key once and Back Space Key twice | 1,000.00 |
| Tabular Key once and Space Bar once   | 50.00 |

By thus using the Tabular Key, the Back Space Key and the Space Bar in combination, tabular work becomes very easy.

TO TABULATE
USE TABULAR KEY

In operating the Tabular Key, Plate 1, Fig. 26, care should be taken by the Operator to keep the finger on the Key and press steadily until the Carriage has completed the desired movement.

If this is not observed the required space may not be reached and the Carriage will jar in its travel. In this respect its operation differs from any other Key in the Keyboard.
The speed with which the Tabular Key allows the Carriage to move is determined by the amount of pressure applied to it. When the Tabular Key is depressed, the Tabular Stops, Fig. 30, contact with the Line Lock Blade, Plate 8, Fig. 43, on Center Stop, Fig. 42, which serves to lock the typebars and prevents the error of printing out of column. This locking of the typebars when the carriage is jumped for tabular work is an entirely new feature.

**TO RELEASE THE MARGIN STOP**

**USE THE MARGIN RELEASE KEY**

The Margin Release Key, Plate 1, Fig. 15, is located on the right-hand side on the front of the frame above the Keyboard. By pressing this Key, the Carriage will be permitted additional movement, either to the right or to the left of both of the Margin Stops and Paper Guides. It is not necessary to keep the finger on the Margin Release Key to make any number of additional spaces.

![Diagram showing the Margin Release Key and related parts](image)

**TO CONTROL PAPER AND ENVELOPES ABOVE THE PRINTING POINT**

**USE END GUIDES AND THE CENTER ADJUSTABLE HINGED GUIDE**

On a rod, Plate 3, Fig. 8, located behind the Cylinder, are three Paper guides, Figs. 9, 10, and 11. Guides 9 and 10 serve to grip and feed the paper on the right and left-hand margins.

The Center Adjustable Hinged Guide 11, is shown in position to grip envelopes, cards, etc., the forward part of which has a hinged portion, Fig. 12.

This Hinge portion, Fig. 12, should be turned back when not being used for envelopes or cards, as it will interfere with the progress of the paper; the purpose of this Center Adjustable Hinge Guide, Fig. 11, is to have the right and left-hand guides, Figs. 9 and 10, undisturbed after once being set for paper of regular width. When desiring to use Center Guide 11 to print envelopes, turn the hinged portion, Fig. 12, forward over the Cylinder.

All the Guides, 9, 10, and 11, are easily moved, yet they will stay where placed on Rod, Fig. 8. Should it be desired to write beyond the Guide Line on the right side, then the Guide, Fig. 9, can be lifted by its Handle, Fig. 13, and the writing continued to the extreme end of the Cylinder. The same is true of the left-hand side by raising Guide 10 by its Handle, Fig. 14.

In either case it is necessary to use the Margin Release Key, Plate 1, Fig. 15, to enable passing over the Line Lock, which is presumed to be set for the regular length of line. This feature of being able to write beyond the Line Lock and the Paper Guide on the left-hand side of the machine and beyond the 0 position on the Scale, as shown in Plate 4, is one of the exclusive features of the Royal.

When using the Special Card Attachment, both Guides, 9 and 10, may be moved outside of the field of the Card Attachment if desired. All the Guides, 9, 10, and 11, can be moved to any position on the Rod 8, and Guides 9 and 10 can be turned up a considerable distance toward the back of the machine, to facilitate handling manifold or other heavy work.

**TO WRITE ON RULED LINES**

**USE THE ALIGNING SCALE**

Move the Line Space Shield Lever Plates, 3 and 4, Fig. 6, to its highest position, when the top exposed Numeral on the Ratchet Shield Plate will be Zero; when in this position the Cylinder, Fig. 36, has become released and is ready to be turned any desired distance. By depressing the Scale Lifting Lever, Plate 6, Fig. 37, the Scale, Fig. 4, is caused to rise to the printing
line, and its upper edge becomes an aligning bar. By turning
the Twirlers, Figs. 3 or 33, the Cylinder can be brought to the
desired position with relation to the aligning scale. Before print-
ing the Operator should first remove the finger from the Twirler
so that the Cylinder will not change its position, and then remove
the finger from the Scale Lifting Lever, Fig. 37, so as to allow
it to drop down to its normal position, as otherwise if it were
held up in its raised or aligning position the type would strike
the Scale.

TO INSERT PAPER CORRECTLY
USE CARE IN HOLDING STRAIGHT

Grip the paper by the fingers so that it rests on the Paper
Table, Plates 1 and 3, Fig. 18, so that it will feed under the
Roller, Fig. 31, of the left-hand side Paper Guide, Fig. 10,
and adjust the right-hand side Paper Guide, Fig. 9, so that its
Roller, Fig. 32, will lay over the right-hand edge of the paper;
then turn the Twirlers, Figs. 3 or 33. Both Rollers, Figs. 31
and 32, should have a full grip on the paper.

TO ADJUST THE PAPER IN ANY POSITION
USE PAPER RELEASE LEVER

The Paper Release Lever, Plates 3 and 6, Fig. 1, is located
on the right-hand side of the machine.

This Lever is connected with the Pressure Rolls, Plate 3,
Fig. 39, which hold the paper against the Cylinder, Fig. 36, and
when pulled forward releases all of the Rolls so that the paper can
be readily adjusted to any position. This Lever when pulled
forward should stand locked, then the Operator may have the
use of both hands in handling the paper. After the paper is
straightened this Lever should always stand pushed back to
its normal position, as shown in Plate 6, to insure the paper
being properly gripped and fed.

TO GET A PERFECT PAPER PRESSURE FEED
USE FEED ROLL ADJUSTMENTS

Under the back of the Cylinder, Fig. 36, and immediately
under the Paper Table, Fig. 18, are the adjustments for the Paper
Feed Rolls, each Roll having its individual tension, which can
be lowered or raised by turning the Nuts to the right or left.

TO DETERMINE SPACE BETWEEN LINES
USE THE LINE SPACE SHIELD LEVER

This Shield, Plate 4, Fig. 35, is located on the left-hand side
of the Carriage, and the position of its Lever, Fig. 6, determines the
Line Space Feed. When the Lever is in its uppermost position, the
Shield stands at Zero (0) and the Ratchet Wheel, which is secured
to the Cylinder, Fig. 36, and controls its movement, is entirely
covered by it, so that the Cylinder cannot be turned at all by the
Line Space Lever, Fig. 5; at the same time the Ratchet is released,
which permits any desired movement of the Cylinder, Fig. 36, by
the Twirlers, Fig. 3 or 33, for writing on ruled lines; when the
Lever, Fig. 6, is lowered one notch the Shield indicates the
numeral 1, then the Cylinder can move a single line space.
When the Lever is lowered another notch, the Shield indicates
the numeral 2, which gives a double line space; when lowered
another notch it indicates the numeral 3, which gives a triple
line space.

Regardless of the 0, 1, 2 or 3 position of the Shield, the Line
Space Lever, Fig. 5, has the same movement at all times. One
of the advantages of this construction is that when the Shield
stands at Zero, the Line Space Lever does not feed the Cylinder,
and thereby avoids irregular Line Spacing, if the Operator should
forget to remove the shield from the released or zero position to
the positively determined line space feed, as indicated by the
figures 1, 2 and 3.
TO PRINT FRACTIONS OR FORMS OUT OF LINE
USE THE EXPONENT DEVICE (SOMETHING ENTIRELY NEW)

The exponent Lever, Plate 4, Fig. 7, located on left-hand side of the Carriage, is used for printing the space above the regular line.

This is effected by pressing the Lever, Fig. 7, which causes the Cylinder to move forward instead of backward, as usual.

The finger must be kept on the Lever while the printing is being done, and when the finger is removed the Lever will restore itself automatically. The results obtained are like this: 1 3/4, 3-4, $44^{86}$, c5, b3, etc.

TO USE DIFFERENT WIDTHS OF PAPER
ROYAL 10-INCH CYLINDERS

The Carriage of the Royal admits paper ten inches wide and has a normal printing line of 90 characters, and it is possible to print 100, as shown in Plate 3, Fig. 4, by pressing the Margin Release Key. By referring to Plate 4, showing an enlarged view of the left side of the Scale, it will be seen that the Paper Guide, Fig. 10, is in line with zero, as is usual in other machines, but it also shows a scaling of 10 spaces beyond zero, which is an additional range of printing outside of the left margin, not possible on any other machine.

When the paper is narrow or a narrow envelope is used the Adjustable Center Paper Guide, Fig. 11, is handiest.

When Library or stiff cards or heavy material of any kind is to be used, the Card Holder, which is a special attachment, can be with little effort affixed to the machine.

A long Carriage taking 15 inch paper with a 14 1/2 inch printing line of 145 characters can be supplied when ordered.

TO RE-INSERT WORK AFTER MAKING CORRECTIONS
USE THE ALIGNING AND INDICATING SCALE

This Scale is shown in Fig. 4, by Plates 1, 3 and 4, and serves the double purpose of indicating the usual letter space movement of the Cylinder and also as a means of aligning the work when writing on ruled lines and for accurately locating the copy when re-inserted after making corrections.

In its normal position this Scale lies one full line space below the printing line, as shown best in Plate 4, and can be raised to the line of print by pushing down the Lever Plate 6, Fig. 37, which is located on the right-hand end of the Carriage. When in either the normal or raised position it serves as an aligner of the work, but when locating a ruled line it should be raised and the fingers removed from the Twirlers, Fig. 3, before the Scale is allowed to drop, and the Scale should always be dropped before attempting to print, otherwise the type will strike it.

TO START A NEW LINE
USE THE LINE SPACE LEVER

To start a new line use Line Space Lever, Plates 3, 4 and 5, Fig. 5, which is located on the left-hand side of the Carriage. As the Cylinder, Fig. 36, is returned to start a new line by pressing the Line Space Lever, it is at the same time moved up the desired spacing, which spacing is determined by the Line Space Shield Lever, Plate 4, Fig. 6. When it is required to return the Cylinder without spacing, do not use the Line Space Lever, but instead push or pull the Carriage by the Twirlers, Fig. 3 or 33, Plates 1 and 3.
TO RELEASE THE CARRIAGE
USE THE CARRIAGE RELEASE LEVER

The Carriage Release Lever, Plate 6, Fig. 2, is conveniently located on the right-hand side of the Carriage near the Twirler, Fig. 3, by pulling it towards the Twirler with the forefinger, the Carriage Feed Rack, Fig. 38, Plate 7, to which it is attached, is lifted and the Carriage is released.

TO ATTACH OR DETACH CARRIAGE DRAW BAND
USE CARE

The Carriage draw band is a heavy black cotton tape, one end of which is secured to the Carriage spring barrel, whence it passes upward over the Idler Roller, Plate 7, Fig. 90, under the Carriage to its right-hand end, Fig. 91, to which it is hooked. In pulling on the band care should be taken that it does not become twisted or entangled in the mechanism.

TO SELECT TABULAR SPACING
USE STOPS UNDER SPRING ROD

The Tabular Stops, Fig. 30, are located on the extreme Back Rod of the machine, Plate 7, Fig. 16 (six stops on each machine).

These little Tabular Blades or Stops can readily be adjusted in the Teeth of the Rod, Fig. 16, by lifting up against the spring rod which holds them in position, and replacing them in the desired teeth.

Their Offset Legs serve to hold the Stop securely against the backside of the Rod, Fig. 16. Care should be taken to see that the Stops are properly set in the Teeth of Rod, Fig. 16.

TO DETERMINE THE RIGHT AND LEFT-HAND MARGIN
USE THE MARGIN STOPS

Behind the Paper Table, Plates 7 and 8, Fig. 18, is located a Toothed Rod, Fig. 17, on which are slidably mounted, a right
and left-hand Margin Stop, Figs. 40 and 41. These Stops are very accessible when the Paper Table, Fig. 18, which is hinged, is thrown forward.

The Left-Hand Stop, Fig. 41, determines the left-hand margin of the work.

The Right-Hand Margin Stop, Fig. 40, regulates the right-hand margin and also the sounding of the bell, Plate 8, Fig. 44, by its hammer, Fig. 45, and the operation of the line lock through the blade, Fig. 43.

Both of these Stops are limited in their movement by the Center Stop, Plates 7 and 8, Fig. 42, which is on the Center of the Frame in the back of the machine and are adjusted as follows: To determine the left-hand margin, draw the Cylinder across until you reach a point in front of the opening in the Type Guide, Fig. 20, at which it is desired to set the margin, then slide the Left-Hand Margin Stop on its Rod until it reaches the Center Stop, Fig. 42.

The Right-Hand Stop is regulated in the same manner.

It is not necessary to consult the Scale, Fig. 4, when setting these Margin Stops.

TO GET THE DESIRED TOUCH
USE THE KEYBOARD TENSION SCREWS

To adjust the Key Tensions lift the two top hinged Cover Plates, Plate 9, Fig. 51, and turn one screw under each plate, the one nearest the front of the machine. Always have Carriage in center of machine when making adjustment. When turning the screw to the left its tension is reduced, by turning to the right it is raised to its limit. The tension on one side may be higher or lower than the other, or both sides high or both low, as may be desired.

TO MAKE ERASURES
DRAW CARRIAGE TO EITHER SIDE

It is not necessary to turn the Cylinder, Fig. 36, up, when making erasures, as by doing so the paper is liable to slip, creep or become moved. By drawing the carriage to either side of the center type guide, Fig. 20, the work is very accessible for erasing, and the erased particles fall on the top dust cover plates, Fig. 21 and 48, Plate 1, where they are easily brushed out to the front of the machine. The operator will find it a convenience while erasing to rest the hands on the top cover plates, Fig. 49.
TO WRITE ON LIBRARY OR OTHER CARDS
USE THE CARD HOLDER ATTACHMENT

Place the Wire Card Holder in the little spring clips which lay immediately behind the Dust Cover plates, Plate 1, Fig. 48. The ends of the wire, Figs. 80 and 81, are easily introduced in the openings in the clips, and by pressing the wire firmly it will reach the correct position. Care should be taken that the bend in the upper end of the wire, Fig. 82, faces the front of the machine and also that the ribbon or vibrator are in front of the Wire Card Holder.

This Holder grips the upper edge of the card, making it possible to write on any portion of its surface without blurring the impression or curling the card.

TO CHANGE TRAVEL OF RIBBON
USE RIBBON REVERSE LEVER

The ribbon is reversed by the Cranks, Plates 1 and 11, Fig. 52, one on either side of the machine, by sliding either to its limit.

TO CHANGE THE RIBBON
USE ROYAL SPOOLs

It is immaterial in what position the Carriage stands when reversing, as notification is given when the end of the ribbon is reached by the white end of the leader to which the ribbon is attached and which is marked REVERSE, as will be seen by Plate 11, Fig. 57.

To put in a new ribbon wind by either crank until all the ribbon is on one spool, at which time the word REVERSE printed on the spool leader, Plate 11, Fig. 57, will be in full view; then detach the old ribbon from the leader by separating the hinge, Plate 11, Fig. 60, one part of which is on the ribbon and the other on the leader. Then attach to the hinge on the leader the hinge of the new ribbon and see that the ribbon feeds from the outside of the Spools, through the Wire Guide, Fig. 58, and over the Idler Roller, Fig. 59, thence making a quarter turn to the Vibrator, Fig. 54, as seen by Plate 11. In placing the ribbon in the Vibrator, put it behind the two prongs, Fig. 61, then draw forward and lift under the two ears, Fig. 62. It is not necessary to remove the ribbon spools or handle them for any purpose.

The Royal Grand is equipped for a two-color ribbon, of either copy or record, or both, in any desired combination of colors, or may be used with the usual one-color ribbon, in which case the ribbon should be turned over when one edge is exhausted, as each ribbon, whether one or more colors, has an upper and a lower printing surface.
TO CHANGE COLORS OF RIBBON
USE BI-CHROME INDICATOR

The Bi-chrome Indicator is located on the left side of the keyboard, Plate 12, Fig. 69, and has three notches in it to determine the position of the Bi-chrome Shift Lever, Fig. 68. When the Lever 68 is in the topmost notch marked STENCIL, the typebars strike the Cylinder 36, without printing through the ribbon, as the ribbon does not move up to the line of print, and the machine is ready to make Stencils. Before doing so it is desirable to remove all dirt, ink or lint from the type to insure the best work; after cutting a Stencil the wax which may remain in the type faces should be removed.

When the Lever 68 is in the lowest notch marked TOP, the ribbon, when the keys are operated, moves up far enough to print the color on its top half; and when the Lever 68 is in the middle notch marked BOTTOM then the ribbon moves a greater distance and the printing is done through its bottom half.

The Lever 68 is easily moved from one notch to the other by pressing it slightly to one side, as it is made of spring material to hold it securely in the notches.

Do not attempt to shift the Lever 68 while operating the keyboard.

TO MAKE STENCILS
USE BI-CHROME INDICATOR.

Read the foregoing paragraph for instructions how to shift the Lever, Fig. 68, when it is desired to make a stencil.

ESCAPEMENT

Operators should, under no circumstances, change the tension spring of the escapement loose dog, Fig. 71, or the tension of the spring of the escapement plate, Fig. 72, as the construction does not require it. In the illustration above is shown a roller on the frame, which is commonly termed "rigid dog," Fig. 73; another roller is shown on the swinging arm, commonly termed "loose dog," Fig. 74. The object of this construction is to improve the feed of the carriage with respect to speed, to reduce the load imposed on the finger in operating the keys, and to reduce the wear of the parts. The additional advantage of this escapement over others is that it requires no oiling.

It is the fastest, lightest-running, and most durable escapement ever invented.

TO CLEAN TYPE AND MACHINE
USE THE TWO BRUSHES

To get the best results out of the machine, it should be kept clean; for that purpose a small brush broom is supplied.

The Lower Carriage Ball Race Way, Plate 1, Fig. 46, should be swept out towards the ends so that the dirt will not accumulate in it (we desire to emphatically state that it is an objection to put oil in this Ball Race Way, and Operators are requested to refrain from so doing). Brush off the Keyboard and the
Top Dust Cover Plates, Fig. 48, where the erasures fall, using care to brush the dust off the machine and not into the type-bars.

The Type are best cleaned by beating them on their faces, and drawing the drawing brush forward, as by brushing backward the ink and lint gets on the body of the Typebars. The type should be cleaned daily.

**NO OILING NECESSARY**

Contrary to the usual custom of oiling typewriting machines it is to be said that the Royal requires no oiling by the Operator.

The Company will gladly at any time send its inspectors to look over the machines.

**GOOD ADVICE**

**A FEW DONT'S**

The Royal has been so constructed that to insure its correct and satisfactory operation, it is not necessary to trouble the Operators, as has been the custom, to make adjustments.

**DON'T**

- Take the machine apart,
- Take the Carriage off,
- Take out the Typebars,
- Change the Adjustments,
- Loosen up the Screws,
- Change the Carriage tension,
- Change the Escapement tension,
- Dismantle the machine for any reason.

**TELEPHONE THE COMPANY AND THEY WILL GLADLY SEND AN INSPECTOR TO TAKE CARE OF YOUR LITTLE WANTS.**

**TO UNPACK**

**USE CARE**

Remove the screws from the top of the case, carefully remove the packing, lift the machine out of the case, then cut and remove the tape which holds the Rack Release Lever up, and also the tape which holds the wooden block that separates the margin stops.

Remove muslin and packing paper and be careful that no particles of excelsior are allowed to get into the machine.

On the top of each box will be found instructions as to how to unpack.

Each box contains 1 rubber cover, 1 type brush, and 1 cleaning brush broom.
Royal Grand Typebar Movement

The above diagram illustrates the accelerating speed of the Royal Grand Typebar, as it approaches the printing point. It will be seen that in the first quarter of the downward movement of the key, the typebars travel through 30° and in the last quarter 44°. The speed at the moment of impact ensures a powerful blow and quick return of the typebar.