

Suggestions and Illustrations for Operating The LIGHTNING PORTABLE ADDING MACHINE



SIMPLICITY A course of instruction is not necessary for operating The Lightning Portable Adding Machine. It is remarkably simple. A novice can put it to practical use immediately.

**DIAL
ARRANGE-
MENT**

The first two dials, on the right end of the machine, are used for cents—the first one for units, the second for tens. The three middle dials, **right to left**, are for dollars, tens of dollars, and hundreds of dollars—in that order. The last two dials (the sixth and seventh, on the left end of the machine) are for thousands and tens of thousands. In short, the number is placed on the machine in the same order as when writing it on paper.

Above each dial is an “answer” window, through which one figure shows. These figures denote your total, or answer, when **adding or multiplying**.

**HOW TO
“CLEAR”
TO ZERO**

The machine is “clear” and ready for business when each of the answer window figures is zero. To Clear the Machine simply place the stylus in the triangle and turn the dial **counter-clockwise** until it comes to the stop. Repeat this on each dial where a figure (other than zero) shows above. Each dial will then show zero through its “answer” window.

Caution—Always use the stylus when operating.—Do not use a pencil. Also, do not oil. The Lightning is properly lubricated before leaving factory.

**HOW TO
ADD**

67
40
2.55
62.10

65.72

Clear the machine to zero—as instructed above. The first number to register is 67 cents. Place the stylus in the hole opposite figure 6 in the second dial from the right (the “tens” dial). Turn the dial firmly **clockwise** until it comes to a stop, holding the stylus in an upright, vertical position. The 6 will be instantly registered in the “answer” window. Now register the 7 in the same manner in the first right hand dial (the “units” dial). You will now see the 67 cents registered on the machine through the “answer” windows.

The next item is 40 cents. Register this the same as you did the 67 cents by placing the stylus opposite figure 4 in the tens dial and turning firmly clockwise. This completes the operation for the 40 cents as it is **never necessary to register a zero when adding**. You will now see the total of the amounts \$1.07 showing through the “answer” windows without pushing any keys or pulling any levers. The machine carried the total automatically into the dollars column (third “answer” window).

Register the \$2.55 in the same manner taking care to start this figure in the dollars column (the third dial from the right). Your total will be \$3.62. Register the \$62.10 starting in the fourth dial or tens-of-dollars column. Your total, \$65.72, will show through the "answer" windows.

Turn the dials back to zero (as just instructed) and you are ready for the next column of figures.

KEEPS
PLACE
ON WORK

Here is another feature which users of **The Lightning Adding Machine** praise. Probably the worst objection to a person adding up a long column of figures mentally is the fact that he is almost sure to be interrupted before finishing the column. This necessitates starting anew. On the other hand, the **Lightning "Portable"** is especially designed so that it may be placed right on the column of figures. It keeps your place and guards against interruptions. Taking the addition problem again to illustrate this point, while registering the 67 cents, the machine should be resting directly under this number. To add the 40 cents move the machine down the sheet until just under the 40 and register the number. Now move it down until just under the 255 and register this number. Now, suppose you are interrupted—the phone rings, or another of hundreds of interruptions occurs. The machine rests under the last figure you have registered. You can answer the phone, or transact the momentary business, and then resume your work where you left off. Furthermore, you have in front of you the total as far as you have gone.

GUARDS
AGAINST
INTER-
RUPTIONS

SUBTRAC-
TION

The Lightning Adding Machine is one of the few machines, regardless of price, upon which you can subtract without learning the "complementary" system. **It subtracts as easily as it adds**, thus even enabling you, at will, to reverse-check long columns of addition, eliminating all doubt. . . . The "answer" windows are not used at all in subtraction. Forget them. The red "triangle" on each dial serves as the indicator.

HOW TO
SUBTRACT

$$\begin{array}{r} 674.30 \\ -428.87 \\ \hline 245.43 \end{array}$$

Using the accompanying problem in subtraction as an example: Beginning with the fifth dial from the right, **PLACE THE STYLUS IN THE TRIANGLE**, and turn the dial so that the "triangle" is opposite the figure 6. Now with the fourth dial, turn the dial so the "triangle" is opposite the figure 7. Turn the third dial so the "triangle" is opposite the figure 4. Turn the second dial so the "triangle" is opposite the figure 3. Turn the first dial so the "triangle" is opposite the zero. (Since this is **SUBTRACTION**, zeros must also be embraced by the "triangles.") Now to be absolutely sure you have registered the number correctly, read off the number you have registered. Beginning with the fifth dial, the numbers opposite the triangles should be 674.30. (The figures in the answer windows will show 325.69 but ignore them.)

We wish to subtract 428.87 from the 674.30 we have registered on the machine. To make the subtraction, register 428.87 **same as in adding**. For example, begin with the fifth dial, and place the stylus in the opening opposite the white 4. Turn the dial clockwise until it comes to a stop. Now with the fourth dial, place the stylus opposite the figure 2

and turn the dial clockwise until it comes to a stop. With the third, second and first dial register 8, 8 and 7, respectively, in the same way.

The result (or answer) is now indicated by the figures opposite the "triangles" (beginning with the fifth dial). In the fifth dial, the triangle is opposite the figure 2. In the fourth dial, the triangle is opposite the figure 4. In the third, second and first dials, the triangles are opposite the figures 5, 4 and 3, respectively. Therefore, our result is 245.43.

$$\begin{array}{r} 245.43 \\ - 86.44 \\ \hline 158.99 \end{array}$$

Suppose now, we should desire to subtract further. For example, we wish to deduct 86.44 from the 245.43 we now have on the machine. Simply register the 86.44, beginning, of course, with the fourth dial, same as addition, as directed above, by placing the stylus opposite the figure 8 in the fourth dial, and turning clockwise to the stop—then opposite the figure 6 in the third dial and turning clockwise to the stop—then opposite the figure 4 in the second and 4 in the first, turning forward likewise to the stop. Our balance, \$158.99, is shown by figures opposite the "triangles," beginning with the fifth dial.

In the same way we can verify a long column of additions by "subtracting" the individual figures from the Answer Window total which we first transfer to the "triangles." Our "triangles" will finally register "zero." (Note: When subtracting from a number having zero, be sure the red triangles are on zero and not on nine.)

HOW TO
BALANCE
A LEDGER
ACCOUNT

| JOHN SMITH | |
|------------|--------|
| Dr. | Cr. |
| 64.20 | 23.44 |
| 34.45 | 35.66 |
| 23.36 | 11.84 |
| 87.47 | 34.20 |
| 61.70 | |
| <hr/> | |
| 271.18 | |
| Bal. | 166.04 |

Through the unique Lightning method of subtraction, an invaluable feature for accountants and bookkeepers is brought out. Taking the accompanying illustration of an ordinary ledger account, the bookkeeper, to balance this account mentally, must add up the debits, then add up the credits, then subtract the total credits from the total debits—three operations. Likewise, on many other makes of adding machines, regardless of price, you must add up the debits, make a notation of the total, then clear the machine and add up the credits, making a notation of this total, then clear the machine again and subtract the total credits from the total debits, giving the balance—three distinct operations. The **Lightning Adding Machine** will accomplish this easier by subtraction of the credit items from the debit total.

Be sure the machine is clear. Following the directions for adding, register the debit items on the machine. You will show a total of 271.18. Beginning with the fifth dial, which shows 2 in the "answer" window, PLACE THE STYLUS IN THE TRIANGLE, and turn the dial so the triangle is opposite figure 2. On the fourth dial, which shows 7 in the "answer" window, turn the dial so the triangle is opposite figure 7. Likewise on the third, second and first dials, transpose the figures 1, 1 and 8, respectively. Now by reading the figures opposite the triangles in the five dials, we have 271.18. To subtract the credits, register the four credit items, as directed in the instructions for subtraction. The balance of the account, 166.04, will be indicated by the figures opposite the triangles.

BANK
ACCOUNT

This method is very useful in balancing the bank account. Simply register the previous balance and subsequent deposits, and subtract the various checks.

HOW TO MULTIPLY

| |
|-------|
| 496 |
| 78 |
| 48 |
| 72 |
| 32 |
| 42 |
| 63 |
| 28 |
| 38688 |

Using the accompanying example, multiply 496 by 78. In our method of multiplication, we take it for granted that every user of **The Lightning Adding Machine** knows the multiplication tables. This is all that is necessary. The machine does the carrying and adding. We know 8 times 6 is 48. After being sure the machine is clear register 48 in the first two dials in the usual way, so that 48 shows through the "answer" windows. We know 8 times 9 is 72. Register this on the second and third dials (768 will now show in the "answer" windows). We know 8 times 4 is 32. Register this on the third and fourth dials (3968 now shows in the "answer" windows). Now take the 7 for the multiplier. 7 times 6 is 42. Register 42 on the **Second and Third** dials. 7 times 9 is 63. Register 63 on the **Third and Fourth** dials. 7 times 4 is 28. Register 28 on the **Fourth and Fifth** dials. The result will show in the "answer" windows 38688.

HOW TO DIVIDE

576 ÷ 24

Just as multiplication is a short form of addition, so division is a short form of subtraction. The remarkable subtraction feature of **The Lightning Adding Machine** thus makes division extremely simple. Take the example $576 \div 24$. Register the dividend opposite the "triangles," same as in subtraction, on the three right hand dials, all the other dials being clear. Now subtract 24 from the first figures from which it can be subtracted on the left (in this case 57) as many times as possible. You will find 24 can be subtracted 2 times, then 09 will be in the place of the 57—leaving 096 on the machine. Use the extreme left dial as a counter and register the 2. Now subtract 24 from the last two right hand dials as many times as possible. It can be subtracted 4 times, when 096 will become 000. Register the 4 on the sixth dial, next to the 2, and you have the answer—24.



TO TABULATE TWO ITEMS AT THE SAME TIME

Although the dials of this machine are connected so as to carry automatically from one column to another, the various dials can be used separately for tabulating two or more items at the same time. For example, we desire to tabulate baled hay which is being loaded. We want to tabulate not only the total weight of the hay, but also the number of bales.

| Bales | Lbs. |
|-------|------|
| 1 | 110 |
| 2 | 225 |
| 2 | 210 |
| 1 | 95 |
| 2 | 220 |
| 2 | 215 |
| 10 | 1075 |

For tabulating the number of bales we will use the first two **Left** hand dials. As one bale is loaded, weighing 110 lbs., we register the 1 in the second dial from the left end of the machine and register the 110 in the first three dials on the right end of the machine. As two bales are loaded, we register 2 in the "bales" dial, and 225 in the "pounds" dial, and so on. When the load is complete, we not only have the total number of bales, but also the total number of pounds.

PARTIAL CLEARANCE

If we should desire to clear the number of pounds off the machine, but want to keep the number of bales on the machine, the pounds can be cleared to zero in the usual way, without affecting the number of bales.

Please weigh carefully all the unusual features of **The Lightning Portable Adding Machine**—its remarkable utility, handiness, durability and price, as we will be genuinely grateful if you can offer your voluntary commendation of the little machine.

THE LIGHTNING ADDING MACHINE COMPANY,
543 So. Spring Street, Los Angeles 13, California