Dalton

INSTRUCTION BOOK

DECIMAL EQUIVALENTS OF COMMON FRACTIONS

	3rds	4ths	6ths	8ths	12ths	16ths	
.0625						1	.0625
.0833					1		.0833
.125				1		2	.125
.1667			1		2		.1667
.1875						3	.1875
.25		1		2	3	4	.25
.3125						5	.3125
.3333	1		2		4		.3333
.375				3		6	.375
.4167					5		.4167
.4375						7	.4375
.5		2	3	4	6	8	.5
.5625						9	.5625
.5833					7		.5833
.625				5		10	.625
.6667	2		4		8		.6667
.6875						11	.6875
.75		3		6	9	12	.75
.8125						13	.8125
.8333			5		10		.8333
.875				7		14	.875
.9167					11		.9167
.9375						15	.9375

The Dalton "The machine that does things"

Rate %	10	12½	15	16⅔	20	22½	25	27½
	net	net	net	net	net	net	net	net
	.9000	.8750	.8500	.8333	.8000	.7750	.7500	.7250
And 2½	.8775	.8531	.8287	.8125	.7800	.7556	.7313	.7069
And 5	.8550	.8312	.8074	.7917	.7600	.7362	.7125	.6887
5 and 2½	.8336	.8105	.7873	.7719	.7410	.7178	.6947	.6715
5 and 5	.8123	.7897	.7671	.7521	.7220	.6994	.6769	.6543
5, 5 and 2½	.7919	.7699	.7479	.7333	.7039	.6820	.6599	.6380
And 7½	.8325	.8094	.7862	.7708	.7400	.7169	.6938	.6706
7½ and 2½	.8117	.7891	.7665	.7515	.7215	.6989	.6764	.6539
7½ and 5	.7909	.7689	.7469	.7323	.7030	.6810	.6591	.6371
And 10	.8100	.7875	.7650	.7500	.7200	.6975	.6750	.6525
10 and 2½	.7897	.7678	.7459	.7313	.7020	.6801	.6581	.6362
10 and 5	.7695	.7481	.7267	.7125	.6840	.6626	.6413	.6199
10, 5 and 2½	.7503	.7294	.7086	.6947	.6669	.6461	.6252	.6044
10 and 10	.7290	.7087	.6885	.6750	.6480	.6277	.6075	.5873
10, 10 and 5	.6926	.6733	.6541	.6413	.6156	.5964	.5771	.5579
10, 10 and 10	.6561	.6379	.6196	.6075	.5832	.5650	.5467	.5285

Rate %	30	32½	33⅓	35	37½	40	42½	45
	net	net	net	net	net	net	net	net
	.7000	.6750	.6667	.6500	.6250	.6000	.5750	.5500
And 2½	.6825	.6581	.6500	.6337	.6094	.5850	.5606	.5362
And 5	.6650	.6412	.6333	.6175	.5937	.5700	.5463	.5225
5 and 2½	.6484	.6252	.6173	.6021	.5789	.5558	.5326	.5094
5 and 5	.6317	.6092	.6017	.5866	.5641	.5415	.5189	.4964
5, 5 and 2½	.6160	.5940	.5866	.5720	.5500	.5280	.5060	.4840
And 7½	.6475	.6244	.6167	.6013	.5781	.5550	.5319	.5087
7½ and 2½	.6313	.6088	.6012	.5862	.5637	.5411	.5186	.4960
7½ and 5	.6151	.5931	.5858	.5712	.5492	.5272	.5052	.4833
And 10	.6300	.6075	.6000	.5850	.5625	.5400	.5175	.4950
10 and 2½	.6142	.5923	.5850	.5704	.5484	.5265	.5046	.4826
10 and 5	.5985	.5771	.5700	.5557	.5344	.5130	.4916	.4703
10, 5 and 2½	.5835	.5627	.5557	.5419	.5210	.5002	.4793	.4585
10 and 10	.5670	.5467	.5400	.5265	.5062	.4860	.4658	.4455
10, 10 and 5	.5387	.5194	.5130	.5002	.4809	.4617	.4425	.4232
10, 10 and 10	.5103	.4921	.4860	.4738	.4556	.4374	.4192	.4009

Adds,
Multiplies,
Subtracts,
Figures
Interest,
Does Cross
Footing &
Tabulating,
Verifies
Invoices,
Etc.,
Etc., Etc.

Rate %	47½	50	52½	55	57½	60	62½	65
	net	net	net	net	net	net	net	net
	.5250	.5000	.4750	.4500	.4250	.4000	.3750	.3500
And 2½	.5119	.4875	.4631	.4387	.4144	.3900	.3656	.3412
And 5	.4987	.4750	.4512	.4275	.4037	.3800	.3562	.3325
5 and 2½	.4863	.4631	.4400	.4168	.3937	.3705	.3473	.3242
5 and 5	.4738	.4512	.4287	.4061	.3836	.3610	.3384	.3159
5, 5 and 2½	.4620	.4400	.4180	.3960	.3740	.3520	.3300	.3080
And 7½	.4856	.4625	.4394	.4162	.3931	.3700	.3469	.3237
7½ and 2½	.4735	.4509	.4284	.4058	.3833	.3607	.3382	.3157
7½ and 5	.4613	.4394	.4174	.3954	.3733	.3515	.3295	.3076
And 10	.4725	.4500	.4275	.4050	.3825	.3600	.3375	.3150
10 and 2½	.4607	.4387	.4168	.3949	.3729	.3510	.3291	.3071
10 and 5	.4489	.4275	.4061	.3847	.3634	.3420	.3206	.2992
10, 5 and 2½	.4377	.4168	.3960	.3751	.3543	.3334	.3126	.2918
10 and 10	.4253	.4050	.3847	.3645	.3443	.3240	.3037	.2835
10, 10 and 5	.4040	.3847	.3655	.3463	.3270	.3078	.2886	.2693
10, 10 and 10	.3827	.3645	.3463	.3280	.3098	.2916	.2734	.2551

Rate %	66⅔	70	72½	75	77½	80	85	87½
	net	net	net	net	net	net	net	net
	.3333	.3000	.2750	.2500	.2250	.2000	.1500	.1250
And 2½	.3250	.2925	.2681	.2437	.2194	.1950	.1462	.1219
And 5	.3167	.2850	.2612	.2375	.2137	.1900	.1425	.1187
5 and 2½	.3087	.2779	.2547	.2316	.2084	.1853	.1389	.1158
5 and 5	.3008	.2707	.2482	.2256	.2031	.1805	.1354	.1128
5, 5 and 2½	.2933	.2640	.2420	.2200	.1980	.1760	.1320	.1100
And 7½	.3083	.2775	.2544	.2312	.2081	.1850	.1387	.1156
7½ and 2½	.3006	.2706	.2480	.2255	.2029	.1804	.1353	.1127
7½ and 5	.2929	.2636	.2417	.2197	.1977	.1757	.1318	.1098
And 10	.3000	.2700	.2475	.2250	.2025	.1800	.1350	.1125
10 and 2½	.2925	.2632	.2413	.2194	.1974	.1755	.1316	.1097
10 and 5	.2850	.2565	.2351	.2137	.1924	.1710	.1282	.1069
10, 5 and 2½	.2779	.2501	.2292	.2084	.1876	.1667	.1250	.1042
10 and 10	.2700	.2430	.2227	.2025	.1822	.1620	.1215	.1012
10, 10 and 5	.2565	.2308	.2116	.1924	.1731	.1539	.1154	.0962
10, 10 and 10	.2430	.2187	.2005	.1822	.1640	.1458	.1093	.0911

Visible Printing

Example: $24.00 less 60-10-10
Table shows .3240
$24.00 x .3240 equals net amount

Totals and Sub-Totals in Red

To have BEEN first proves Antiquity.
To BECOME first proves Merit.

Every Owner a Booster.

Index


10
17
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Explanation of Keys, Levers, etc.

1. **Correction key,** used to correct errors, see page 10.
2. **Repeat Key.** (To repeat an item any desired number of times, hold this key down and pull the lever.)
3. **Total key,** or taking totals and sub-totals.
4. **Eliminating key,** for printing items without adding.
5. **Designating key,** to designate desired items, also used in connection with eliminating key, to designate items eliminated. On machines made prior to 1909, the eliminating and designating keys are one.
6. **Non-print lever,** used in connection with the non-print dial, to prevent printing any desired item.
7. **Non-print dial,** used in connection with non-print lever to prevent printing. When the "2" is uppermost on the dial, the non-print lever if depressed will prevent printing of any figures that may have been listed in the two left hand printing sectors. If the "4" is uppermost, it will prevent printing on any of the four left hand sectors, and if the "9" is uppermost, it will prevent printing in all nine of the sectors. Items thus prevented from printing will be added in the machine just the same as if they were printed in the usual way.

8-8. **Paper release levers,** used to release and straighten paper. To release paper, pull No. 8 forward.

9-9. **Column space levers,** for spacing carriage to right or left for new column. To space carriage for new column, pull No. 9 forward and move carriage to desired column. This lever No. 9 if pushed backward acts as a lock and will hold the carriage in any desired position regardless of the fixed spaces.

10. **Ribbon guides** through which ribbon must pass.

11. **Non-space lever.** To prevent line spacing, push backward.

12. **Platen knob** for turning platen by hand.

13. **Ribbon cups** for holding ribbon.

14. **Operating lever.**

15. **Door** for covering opening over the splitting mechanism. Full instructions for splitting will be found on page 34.

16. **Ribbon.** To put on new ribbon, first see that the machine is **clear**; then **push down** total key and **remove** finger as if for taking a sub-total; pull the operating lever forward slowly until total key **releases** and goes back to normal position, and leave lever in this position. This will bring the **ribbon guides** above the printing sectors so that the ribbon may be easily removed. Remove the covers from the ribbon cups and take old ribbon out, using care to see that the new ribbon is put back in exactly the same manner as the old one. Before removing the ribbon from the guides, be careful to note how it is **threaded** between the **fingers** of the **guides** and thread the new ribbon in the **same manner.** A little care in taking off the old ribbon will enable the operator to put on a new ribbon without trouble or confusion.

17. **Paper roll.** In putting on new paper roll it is important to see that paper feeds from the bottom of roll.

18. **Keyboard clear signal.** Always shows whether any figures have been introduced into the machine after the last operation of the lever.

NOTE.—All the foregoing are features of the standard, fully equipped Dalton machine. The fact must not be lost sight of, however, that there are many models of the Dalton which lack some one or more of these features; and it should be understood that those parts of the instructions which relate to features not present in any given model are to be disregarded. The extra Special models, for instance, are not provided with elminating and designating keys, non-print levers, non-print dial, etc. The instructions for Subtraction, Division, Splitting the Machine etc., are likewise not literally applicable to the Extra Special and other sub-standard models.

Operating Instructions

For the Dalton Adding, Listing and Calculating Machines.

By carefully following these instructions, the operator will greatly facilitate the work and more fully appreciate the many advantages and wonderfully versatility of the **DALTON.**

See that the Machine is Clear

Before beginning to list items, it is important to see that the machine is clear. To ascertain if clear, depress the total key **without** holding it down, and pull the operating lever, making a complete stroke. If, as a result of this operation a red cipher be printed in the units column, it indicates that the machine is **clear** and ready for operation; but if figures **other** than a red cipher be printed, it indicates that it is **not** clear and that it **must be cleared** before going further.

To Clear Machine

Pull the operating lever forward to the **end** of the stroke and permit it to return to normal position; then depress the total key and **hold it down** while the operating lever is moved forward again and **until it returns to normal position.** This operation will cause to be printed the total amount that is in the machine and at the same time **lock the keyboard** so that no figures can be depressed. Pull the operating lever forward again, this time **without** holding down the total key, and a red cipher, which is the clearing sign, will print in the units column, which indicates that the machine is **clear.**

Key Touch

The key touch of the **DALTON** is **very light** and **rapid,** and a light touch, **just enough pressure to push the key down,** is all that is required to set up the number that is to be added.

Correcting Errors

If by mistake a wrong key has been depressed, thus setting up an erroneous amount and the error is noted **before pulling the lever,** the entire amount so set up can be taken out by depressing the **correction** key, using care to **push it all the way down.** This operation clears out of the keyboard all the figures of the item in which the error occurred, so that the correct amount can be set up in the usual way.

If the error is discovered after pulling the lever forward part way, it can still be corrected by placing the fingers of the left hand on the **printing sectors** and pushing them back to **normal position** and **holding them there while the lever stroke is completed.** Care must be taken in this operation to see that **all the printing sectors** are held in their **normal** position, as any forward movement of a sector will **register** an amount representing the **value** of **such movement.**

Operating Lever

The operating lever must make a complete forward and backward stroke immediately after an amount has been set up in the keyboard. This movement of the lever causes the amount so set up to be **printed** and **added** into the accumulating wheels.

Do not **grip** the lever in operating, but place the hand, with the fingers slightly curved, upon the handle and pull the same **forward** and **downward** quickly and evenly **without jerking. Jerking the lever tends to retard rather than accelerate speed.**

Addition

To list and add on the **DALTON,** depress on the keyboard the figures of the various items to be listed in the same order as though you were writing with a pencil, and pull the operating lever, making a complete stroke, after depressing all the figures in each item, thus: To list and add $125.75, depress the keys 1, 2, 5, 7, 5, in the order named and pull the operating lever; to list and add $1.50, depress the keys 1, 5, 0, and pull

0
125 75
1 50
3 45
33 45
15
130 50
90 00
50
5 00

390 30

the operating lever, paying no attention whatever to numerical order, as the machine performs this function automatically. Continue the operation of listing in this manner until all the items to be added have been listed. After the last item has been listed, pull the operating lever again, making a complete stroke, thus leaving a blank space on the sheet of paper, and then take the **grand total** by depressing the total key and **holding it down** while the operating lever makes another complete **forward** and **backward** stroke. This operation will cause the **total** to be printed in **red** and leave the **total key locket down** and the **keyboard locked** so that no further figures can be listed until the lever is pulled forward again, which causes the clearing sign to be printed and leaves the machine clear and ready for use.

After taking a grand total, it is best to **leave** the machine with the **total key down** so that simply pulling the lever will print the clear signal at the beginning of the next operation.

Sub-totals

0
12 50
4 50
50

17 50
17 00
3 50
1 50
12 75

If a sub-total is desired at any time, pull the operating lever forward after the last item has been listed, as if for the purpose of taking a grand total, then depress the total key, using care to push it **all the way down,** but **do not** hold it down while the operating lever is being pushed forward. This will print the **sub-total** to which other amounts may be added. As many sub-totals as may be desired can be had by depressing the total key and releasing it **before** pulling the lever, as above provided.

*Subtraction

52 25

Subtraction Example No. 1

0
1243 56
175 65

1067 91

To subtract on the Dalton, list the figures of the **minuend** the same as for addition; then depress the keys on the keyboard representing all the figures of the **subtrahend,** but **before** pulling the lever, depress the **eliminating** key and **hold it down** while the operating lever makes a **complete forward** and **backward** stroke. Thus the **minuend** and **subtrahend** have been listed and you are ready to make the subtraction, which is done in the following manner:

Subtraction same as above without using non-print lever.

First, depress a figure "9" on the keyboard for **each printing sector** that appears to the **left** of the **left hand figure** of the **subtrahend**, then depress a figure on the keyboard that if added to the **left hand** figure of the **subtrahend** would make **it** equal to **nine**, (indicated by the small red figures on the key-tops) and do the same with reference to **each** figure in the **subtrahend** in regular order from **left** to **right** until you reach the **last** or right hand **numeral**, to which must be added a figure that will make **it** equal to **ten**; then **hold down** the non-print lever (with dial set at 9) and make one complete stroke of the operating lever; pull the operating lever again, without holding down the non-print key, making this time a blank stroke the same as if for taking a total, then depress and **hold down** the total key as if taking a grand total and pull the operating lever. The amount printed in red as a result of this operation will be the **remainder** or the **difference** between the two amounts.

```
        0
   1243 56
E   175 65
9999824 35
   1087 91
```

EXAMPLE No. 1: From 1243.56 subtract 175.65. Depress keys 1, 2, 4, 3, 5, 6, and pull the lever the same as for addition, then depress the keys representing 175.65, but **before** pulling the operating lever, **depress** and **hold down** the eliminating key while the lever makes a complete **forward** and **backward** stroke. It will in this particular example be noted (assuming that a nine-sector machine is being used) that there are four printing sectors to the **left** of the **left hand figure** of the **subtrahend**, therefore a **nine** must be depressed on the keyboard to represent **each** of these **four** sectors. The **left hand** figure of the **subtrahend** in this example being a **one**, it will be necessary to depress an **eight** on the keyboard in order to make this figure equal to a **nine**; then a **two** to make the **seven** a **nine**, then a **four** to make the **five** a **nine**, then a **three** to make the **six** a **nine**, then **five** to make the **five**, which is the last **numeral**, equal to **ten**. After this has been done, **depress** and **hold down** the non-print lever while the operating lever is moved **forward** and **backward**, making one complete stroke; then pull the operating lever again, **without** holding down the non-print lever, making a space as if for taking a total, then depress and **hold down** the total key while the operating lever again makes a complete **forward** and **backward** stroke and the figures printed in **red** as a result of this operation will be the **difference** between the **above** figures.

The following examples in subtraction are all made without using non-print lever in order that operation may be more easily understood.

```
        0
   2143 56
E   175 65
9999824 35
   1987 91
```

```
        0
   2143 54
E     1 75
9999998 25
   2141 79
```

```
          0
     2143 54
E           1
9999999 99

     2143 53
```

If the subtrahend should **end in ciphers to the right, it** will be necessary to bear in mind that to the last or right hand **numeral** (a cipher is not a numeral) in the **subtrahend** must be added a figure that will make **it** equal to **ten,** and then a cipher depressed for each **cipher** that appears to the **right** of the last **numeral.**

```
          0
     2143 56
E    1500 00
9998500 00

      643 56
```

EXAMPLE: From 2143.56 subtract 1500. List the figures of the **minuend** the same as if for addition, then depress the figures of the **subtrahend** and hold down the eliminating key while the operating lever makes a complete forward and backward stroke. It will now be noted that there are **three** printing sectors to the **left** of the **left** hand **figure** of the **subtrahend,** so that it will be necessary to depress a figure **nine three** times, thus giving a **nine** for each **unused** sector; the first or left hand figure of the subtrahend being in this instance a **one,** it will be necessary to depress an **eight** in order to make it a **nine,** and to the **five** which follows must be added a **five** in order to make it equal to **ten,** as the **five, in this instance,** is the **last numeral** (a cipher is not a numeral); then depress four ciphers to represent each of the four right hand ciphers in the subtrahend, and **hold down the non-print** key while the operating lever is moved forward and backward one complete stroke, as above described, then make an additional blank stroke, as also described above and take a grand total in the same manner as if for addition, and the amount printed in red as a result will be the difference between the two sums.

```
          0
     2143 54
E     150 05
9999849 95

     1993 49
```

```
          0
     2143 54
E     199 01
9999800 99

     1944 53
```

The series of examples in subtraction shown on the margin hereof are all done **without** using the **non-print key,** for the purpose of enabling the operator more thoroughly to understand the process of subtraction, which is nothing more nor less than **over-addition.** It will be noted by referring to each of these examples, that if to the **subtrahend** be added the **complementary** figures printed below, the **sum** will amount to 10,000,000.00, which is just one cent **more** than the capacity of the machine, which has the effect of **clearing** or **taking** both sets of figures entirely **out** of the machine. The **non-print** lever is

made use of where the machine is used for practical subtraction in order to keep the **complementary** figures from printing and thus spoiling the appearance of the work.

Multiplication

To multiply on the **DALTON**, depress on the keyboard all the figures of the **multiplicand**; then **hold down** the **repeat** key with the left hand while with the right you pull the operating lever as many times as there are units in the **right hand** figure of the **multiplier**; then with the repeat key **still down**, depress the cipher key with the **right hand**, after which pull the operating lever as many times as there are units in the **second** figure of the **multiplier**, and so on until the last or **left hand** figure of the multiplier has been used. After making a blank stroke, take the total in the ordinary way, which in this instance will be the product.

Care should be taken when multiplying by the **last** or **left hand** digit in the multiplier to **release** the repeat key just **before** the lever starts **forward** for the **final** stroke. If this is not done, the amount will be printed **one time too many** and thus cause an **error** in the result.

Multiplication Example No. 1
214356×345

EXAMPLE No. 1: Multiply 214356 by 345. Depress the figures on the keyboard 2, 1, 4, 3, 5, 6, place the index finger of the **left hand** on the **repeat key** and **hold** it there while the operating lever is pulled **five** times, being **once** for **each unit** in the units column of the **multiplier**; with the left hand still **on** the repeat key, depress with the **right hand** the **cipher**, which has the effect of moving the figures of the **multiplicand** already in the keyboard to the next higher numerical order; then pull the lever **four** times, being **once** for each **unit** in the **second digit** of the **multiplier**; with the repeat key **still down**, strike the cipher again as before, thus raising the **multiplicand** to the next higher numerical order, then after pulling the lever **twice** and **before starting** forward the third time, **release** the repeat key so the amount will be printed **three** times in the hundreds column, being once for each unit in the third digit of the **multiplier**. After this has been done, pull the

	0
2143	56
2143	56
2143	56
2143	56
2143	56
21435	60
21435	60
21435	60
21435	60
214356	00
214356	00
214356	00
739528	20

lever one complete blank stroke and then take a grand total the same as in addition. The result of this operation will be the **product** of the above example.

If the multiplier ends with **ciphers to the right**, it will be necessary to **add** an equal number of ciphers to the **multiplicand** before pulling the operating lever. If intermediate ciphers appear between the figures of the **multiplier**, it will be necessary in passing to the next higher order to depress as many **additional** ciphers as there are **intermediate** ciphers in the multiplier.

Multiplication Example No. 2.
214356×3050

0
21435 60
21435 60
21435 60
21435 60
21435 60
2143560 00
2143560 00
2143560 00
6537858 00

EXAMPLE No. 2.: Multiply 214356 by 3050. Depress the figures on the keyboard representing the 214356 as if for ordinary addition, then with the index finger of the left hand hold down the repeat key. It will be noted in this instance that the **right hand** figure of the **multiplier** is a cipher, so it will be necessary to depress a cipher on the keyboard, thus raising the **multiplicand to the next higher** numerical order **before** pulling the lever, and then pull the lever **five times**, being once for each digit in the **second** figure of the multiplier, then depress a cipher, which carries the figures of the multiplicand into the hundreds column; now as the figure in the hundreds column in the muliplier is a cipher, the lever must **not** be pulled at this point, but the cipher key must be depressed **again** so as to bring the figures of the **multiplicand** into the thousand column; then, with the repeat key still down, pull the operating lever **twice**, releasing the repeat key just before starting forward with the operating lever a third time, being once for each digit in the left hand figure of the multiplier, then pull the operating lever a **blank stroke**, as if for addition and take a grand total and the result will be the **product** of the above figures.

Multiplication, if done in this manner, is **very rapid**: and inasmuch as each operation is listed, it leaves a **physical record** of the work which can be **audited** at a glance. The figures 214356 x345 will appear as shown in Example No. 1 on the left hand margin of the page, which enables the eye to see quickly that the multiplicand was 214356 and that it was multiplied three times in the hundreds column, four times in the tens column and five times in the units column, and that the **sum** of the amount must of necessity be the **product**.

Multiplication Beyond the Capacity of the Machine

First Method

EXAMPLE No. 1: Multiply 214356 by 6123. The multiplicand containing six, and the multiplier, four figures, it is obvious that the product may contain as many at ten figures—too many to be printed in a nine-sector machine. A simple expedient, however, permits such multiplications to be performed and the exact product secured on a nine-sector **DALTON.** Set up all the figures of the multiplicand except the last one to the right. Multiply by the right-hand figure of the multiplier by operating the lever three times with the repeat key held down, as before explained. Now instead of spacing over with the cipher-key, strike the key representing the right-hand figure that was omitted from the multiplicand. Multiply by the second figure of the multiplier and proceed from here on just as directed for regular multiplication, using the cipher-key for spacing over. When all the figures of the multiplier have been used and before printing the product, multiply (mentally) the right-hand figure of the multiplicand (6), which was omitted in the first instance, by the right hand figure of the multiplier (3). If the product contains two figures (as it does in this case), add the left-hand figure to the amount already in the machine by striking the proper key (1 in this case), take a total and then with a pen or pencil write the right-hand figure of the product just mentioned immediately to the right and as a part of the total as printed by the machine, and the total as so enlarged constitutes the complete product of the multiplication.

Extended Multiplication Example No. 1 214356x6123

```
            0
     214   35
     214   35
     214   35
    2143   56
    2143   56
   21435   60
  214356   00
  214356   00
  214356   00
  214356   00
  214356   00
  214356   00
            1
 1312501   78 8
```

Second Method

EXAMPLE No. 2: Multiply 1194743 by 214352. First, print and eliminate on the **DALTON** all the figures of the multiplicand, thus, E1194743, then likewise, all the figures of the multiplier—E214352. Now being at the right-hand figure of the

Extended Multiplication Example No. 2
1194743x214352

```
          0
E 11947 43
E  2143 52
     1 19
     1 19
    11 94
    11 94
    11 94
    11 94
    11 94
   119 47
   119 47
   119 47
  1194 74
  1194 74
  1194 74
  1194 74
 11947 43
119474 30
119474 30

256095 48
```

multiplier and count to the left until all the figures of the multiplier have been counted and continue counting, beginning at the left of the multiplicand, until the total figures thus counted, including those in the multiplier, reach nine. Place a dot over the ninth figure. (Note: If a seven-sector **DALTON**, put the dot over the **seventh** figure.) Next list in the machine preparatory for multiplication in the usual way the figures of the multiplicand to the left of and including the dotted one. Multiply the figures just listed by the right hand figure of the multiplier in the usual way; then instead of spacing over with the cipher-key, strike the key representing the figure immediately to the right of the one with the dot over it, which in this instance is a four. Now multiply by the second figure of the multiplier, after which space over by using the figure in the multiplicand to the right of the one just used. Continue in this way until all the figures of the multiplicand to the right of the one dotted have been used, after which the cipher must be used for spacing as in ordinary multiplication. See illustration in the margin.

NOTE: This process cannot be depended upon always to afford accuracy in the final figure of the product. When absolute accuracy is required, one of the other methods should be employed.

Third Method

Extended Multiplication Example No. 3
814956x324354

```
          0
 8149 56
 8149 56
 8149 56
 8149 56
81495 60
81495 60
81495 60
81495 60
81495 60
814956 00
814956 00
814956 00

2884944 24
```

EXAMPLE No. 3: Multiply 814956 by 324354. List all the figures of the multiplicand in the machine in the usual way for ordinary multiplication and multiply by the three right-hand figures of the multiplier as usual, after which take a grand total, the three right-hand figures of which will be the three right-hand figures of the grand product and the figures to the left of these will be the amount necessary to carry over into the next product. Now list the carry-over figures just referred to in the machine as in ordinary addition. Then below them list all the figures of the multiplicand as before for mutiplication and multiply by the three remaining figures of the multiplier, taking a grand total. This total, taken in connection with the three right-hand figures of the first product, is the complete product. See illustration in the margin.

Fourth Method

EXAMPLE No. 4: Multiply *73948739* by *20314231*. List all the figures of the multiplicand in the machine, using the eliminating key, thus *E73948739*. Just below list the figures of the multiplier in like manner, E20314231. Now draw a vertical line between the fourth and fifth figures, counting from the right, of both multiplicand and multiplier. This separates the multiplicand into two sections, that on the right of the vertical line being for convenience designated (a) and that portion on the left (b). Similarly, the multiplier is divided, and we will designate the portion on the right of the line (x) and the portion on the left, (y).

Now list as for ordinary multiplication the section of the multiplicand designated as (a). Multiply in the ordinary way by the figures composing the right-hand section of the multiplier and designated (x), printing a grand total. The four right-hand figures of this total constitute the four right-hand figures of the grand product.

Now list as for addition the remaining figures in the total to the left of these four figures, as they are to be carried over into the next product, as described in the **Third Method.** Below them list the figures of the left-hand section of the multiplicand designated (b) and multiply in the ordinary way by the four right-hand figures of the multiplier designated as (x). Without printing a total, list in the machine for multiplication section (a) of the multiplicand and multiply by the figures of section (y) of the multiplier. Now print a grand total, the four right-hand figures of which will constitute the second section of the grand product, and those on the left the carry-over figures into the next product, as before.

Again list into the machine the carry-over figures from the last operation and below them list for mutiplication section (b) of the multiplicand. Multiply the latter by section (y) of the multiplier. The total, together with the four right-hand figures from each of the two previous operations, will constitute the grand product, which is absolutely correct to the final figure.

	0
2884	94
8149	56
8149	56
8149	56
8149	56
81495	60
81495	60
814956	00
814956	00
814956	00
2643342	38

Extended Multiplication Example No. 4

b | a		
		0
E7394	87	39
E2031	42	31
y | x		

87	39
873	90
873	90
873	90
8739	00
8739	00
87390	00
87390	00
87390	00
87390	00
369747	09

	0
36	97
73	94
739	40
739	40
739	40

Continued on next page

Continued from page 18

7394 00
7394 00
73940 00
73940 00
73940 00
73940 00
87 39
873 90
873 90
873 90
87390 00
87390 00

490366 20

0

49 03
73 94
739 40
739 40
739 40
73940 00
73940 00

150221 17

Example No. 1 Multiplication by fractions. 235¼x34⅛

0
235 25
235 25
235 25
235 25
235 25
2352 50
2352 50
23525 00
235250 00
235250 00

Multiplication by Fractions

To multiply by fractions, reduce the fractions to a decimal and multiply as in ordinary multiplication, always remembering to point off as many decimals in the **product** as there are decimals in **both** the **multiplier** and **multiplicand.**

EXAMPLE No. 1: 235¼x34⅛: 235¼ equals 235.25 and 34⅛ equals 34.125. Put 235.25 in the keyboard in the ordinary way and multiply by 34.125. Point off five decimals to the right, so that the product is 8027.90625. This example will be found to be worked out in full on the margin of page 20.

Common fractions that cannot be made into round decimals can be handled in the same manner by running out two or three additional decimal points in both the multiplicand and the multiplier containing such fractions.

*Division

The **DALTON**, while **not** a dividing machine, is a great **aid** to division. As there is considerable mental work in the process of division, we do not deem it fair to call the **DALTON** a dividing machine. Better results will usually be obtained by using a table of decimal reciprocals such as the one published by this Company (see page 27). However, the process of mental division is greatly **facilitated,** by the use of the **DALTON** in the following manner:

Depress the figures on the keyboard representing the **divisor** and **hold down** the **eliminating** key while these figures are being listed; then depress the figures representing the dividend and list as if in ordinary addition; then depress on the keyboard the figures representing the **complement** of the **divisor,** and in order that these figures may be printed in the proper numerical order, it will be necessary to depress a sufficient number of ciphers to bring the **right-hand** figures of the **complement** under the **right-hand** figure of the fewest **number** of figures, beginning at the left of the dividend, into which the **divisor,** will be contained. With the repeat key, repeat the complement as many times as you will **mentally** ascertain that

Continued on next page

Continued from page 19

235250 00
235250 00
2352500 00
2352500 00
2352500 00
8027906 25
0
25
34 56
75 00
109 56
7 50
7 50
7 50
132 06
75
75
75
75
75
75
75
75
138 06

the **divisor** will be contained in the fewest **left-hand** figures of the **dividend,** as above noted. When this has been done, pull the lever a blank stroke as if for taking a total, and take the **sub-total.** The left-hand red figure of this sub-total will be the **first figure** of the **quotient,** and the figures to the right will be the **remainder,** as in ordinary long division, into which the next division must be made. Now put the complement into the keyboard again, but with one cipher **less** than before and **repeat** it as many times as the **divisor** will be contained in the next fewest number of figures beginning at the **left,** which must be ascertained **mentally,** pull the operating lever again for a blank stroke, take a **sub-total** as before, and the **second** red figure from the left will be the **second figure** of the **quotient,** and the remaining figures to the right will be the remainder of the dividend. Put the **complement** into the keyboard again, leave off **another cipher** and continue with the process until there are **no ciphers** to the **right** of the **complement** and a grand total after the last operation will be the **quotient** and any figures appearing to the right of **intervening** ciphers will be the **remainder.**

Division Example No. 1 3456÷25

EXAMPLE No. 1: 3456 divided by 25. First depress the numeral 25, representing the **divisor** and list the same, with the **eliminating key down;** then list the 3456 representing the **dividend** the same as if for ordinary addition. It will now be noted that the **complement** of 25 is 75 and that the **divisor** 25 will be contained in the two **left-hand figures** of the **dividend,** so that in order to get the 75 in the **proper numerical order** it is necessary after depressing the 75 to strike two ciphers. It will now be noted that 25 will be contained in the left hand figures of the **dividend,** 34, but **once,** so that the operating lever must be pulled a **single time** and the 75 with two ciphers to the right printed as if for ordinary addition; a blank stroke is then made and a **sub-total** taken. The figure "1" or the left hand figure of the sub-total in this instance is the **left-hand** figure of the **quotient,** and the figures to the right which are 956, represent the **remainder** of the **dividend.** Depress again the 75 representing the **complement** and inasmuch as the divisor 25 will be contained into the next two figures, 95, it is necessary to put in only a single cipher in order to bring the complementary

Division Example No. 2
3456÷24

```
     0
    24
 34 56
 76 00

110 56
  7 60
  7 60
  7 60
  7 60

140 96
    76
    76
    76
    76

144 00
```

figures under the 95. It will now be ascertained **mentally** that 25 will go into 95 **three** times, so that the operating lever must be pulled three times with the repeat key down, thus repeating the item three times and a blank stroke made and a **sub-total** taken as before, and in this instance the **second** left-hand figure of the sub-total is the second figure of the **quotient.** The figures 206 remaining to the right represent the **remainder** of the **dividend.** Strike the figures 75, representing the **complement,** again, without a cipher, as it will be noted now that 25 is contained only in the three remaining figures 206; so a cipher is not necessary to bring the complement into the correct numerical order, as it will automatically print in this instance, in the proper column. It will now be noted **mentally,** that 25 is contained in 206 eight times, so with the repeat key down, pull the operating lever, thus repeating eight times, and take a grand total. The figures 138 represented at the left will be the **quotient** and the 6 to the **right** of the intervening **cipher,** the **remainder.**

If this same number were to be divided by 24, the complement would be 76 and the operation carried out in exactly the same manner (see division Example No. 2), except 76 would be used in the place where 75 is used in Example No. 1.

To Figure Interest

The **DALTON,** if it could be used for no other purpose, is worth more than its purchase price in any busy bank or accounting house for figuring interest alone, which is done in the following manner:

Multiply the principal by the number of days; take a **grand total** (this will be the number of dollars on interest for one day) put the dollars back in the machine, **omitting** the **cents,** multiply this amount by the decimal representing the rate per cent, and when a total has been taken, draw a line through the five figures to the right and the remaining figures to the left will be the interest expressed in **cents.**

Decimal equivalents representing the interest on $1.00 for one day at a given rate are as follows (these equivalents are figured on the basis of 360 days to the year):

RATE	DECIMAL	RATE	DECIMAL
1%	.0000278	⅛ of 1%	.0000035
2%	.0000556	¼ of 1%	.0000069
3%	.0000833	⅜ of 1%	.0000104
4%	.0001111	½ of 1%	.0000139
5%	.0001389	⅝ of 1%	.0000174
6%	.0001667	¾ of 1%	.0000207
7%	.0001944	⅞ of 1%	.0000243
8%	.0002222	⅓ of 1%	.0000093
9%	.0002500	⅔ of 1%	.0000185
10%	.0002778		

To find the decimal equivalent for any given rate, divide the rate per cent by the number of days in one year. The quotient will be the decimal equivalent or the interest on one dollar for one day.

EXAMPLE: To find the decimal equivalent of 7½%: 0.75÷360=.000208, or if on the basis of 365 days to the year, divide by 365: .075÷365=.000205.

If the rate of interest be a fraction, add the decimal representing the fractional rate to the decimal representing the whole number. This will give the correct decimal which will then be used in the ordinary way.

EXAMPLE: To find the decimal equivalent of 4⅜%, add to .0001111, which is the decimal at 4%, .0000104, which is the decimal at ⅜%, thus giving .0001215, which is the decimal for 4⅜%.

Example: Find the interest on $123.17 for 5 mos. 6 days at 8%; 5 mos. 6 days equals 156 days.

0
123 17
123 17
123 17
123 17
123 17
123 17
1231 70
1231 70
1231 70
1231 70
1231 70
12317 00

19214 52

0
192 14
192 14
1921 40
1921 40
19214 00
19214 00
192140 00
192140 00

426935 08

Sample trial balance showing both debits and credits taken at a single time going through the ledger

0
123 45
4 50
34 50
24 35
7 65

Continued on next page.

* Trial Balance

The **DALTON** greatly facilitates making a trial balance, as by its use **both sides** of the ledger can be taken at **one time** going through, thus saving much valuable time and avoiding the liability of making many errors.

In order to make clear the great value of the **DALTON** in taking a **trial balance,** let us assume that we have before us the customer's ledger of a mercantile establishment. In this ledger 95% of the amounts will repre-

Continued from Page 22

	45	00
E	34	50
	145	00
	375	00
	43	50
	24	30
E	75	00
	43	50
	34	66
	57	00
	43	50
	100	00
	150	00
E	45	00
	43	50
	43	50
	7	65
	4	55
	43	50
	245	75
	130	50
	50	00
	150	00
		65
	67	50
	45	00
	75	45
	230	50
	2393	96
		0
	34	50
	75	00
	45	00
	154	50
		0
	2239	46

sent indebtedness **due to the merchant** and the other 5% will represent amounts **due customers** on account of discount, allowances, return goods, produce purchased, etc. The sample trial balance shown at the left hand margin of this page represents the accounts taken from a ledger of this kind. The items **undesignated** represent the indebtedness of the various customers, while the amounts **designated** by the letter "E" to the left represent the amounts due customers. The total of the upper column of figures in the sample trial balance shown represents the sum of all the debit items. The items **designated** by the letter "E" in this problem have also been eliminated. In the lower column, however, is the sum of the **designated** credit items and following that the **remainder** after deducting the sum of the credit items from the sum of the debit items, thus leaving the net amount of the debits shown on the trial balance and all at a **single time going through the ledger.**

It is necessary after the credit items have been added and a grand total taken, to put the **total** of the **debit** items back into the machine. This is done in the ordinary manner as if for addition, except that the **non-print key should be held down** with dial set at 9 while this sum is being transferred or put back into the machine, so as to keep it from being printed on the sheet. After the sum of the debits has been put back into the machine in this manner, make the subtraction in the ordinary way, and the result will be the net amount of the debit items.

*Making Statements

A great many **DALTON adding, listing** and **calculating** machines have found their way into busy mercantile establishments for making monthly **statements,** and the machine is worth its entire purchase price for making statements alone if it could be used for no other purpose. Statements are made, or greatly facilitated on the **DALTON,** by splitting the machine in the second column

Sample of monthly statement on the Dalton:

Mr. John Doe Dr. to Dalton Adding Mach. Company.

Date Jan.		Am't
		0
1	123	45
5	76	55
10	5	00
15	130	50
20	7	50
25		75
26		5
27	121	75
28	1375	65
29	3	50
30		50
Total Debit	1845	20

Credits Jan.		
		0
5	125	00
10	75	00
15	5	00
20	125	00
25	75	00
30	500	00
Total Credits	905	00
		0

Feb.	Bal.	Due
1	940	20

from the left. (Full and complete instructions for splitting the machine will be found on page 34.) When the machine is split in this manner, the **two left hand** columns are used for dates and the **seven right hand** columns for amounts; and both **dates** and **amounts** are printed at **one operation** of the lever and in the following manner:

First, the figures representing the **date** should be depressed on the keyboard, then if the amount to be printed opposite that date should consist say of **five** figures, it will be necessary to depress **two ciphers** before depressing the five figures so as to fill out the **intermediate unused sectors** and print the items in their proper column. The example shown at the left of the margin of this page is done in the following manner:

First, after having split the machine, the figure representing the date of the first item is depressed on the keyboard. It will then be noted that there are **five** figures opposite this date, so in order to fill in the two blank or unused spaces so that the figures will print in the proper numerical order, it is necessary to strike two ciphers and then strike the figures 123 45 and pull the lever, when the amount will be printed as shown on the sheet. In the item following, strike the figure 5, representing the date, and inasmuch as there are only **four** figures in this item, it is necessary to strike **three** ciphers before striking these figures in order to fill all the **unused** spaces, then strike the figures 76 55 and pull the lever as before. In the third item, strike 1, 0, representing the date, and as there are only **three** figures in this item, it will be necessary to strike **four** ciphers before striking the figures representing the item and pulling the lever as before. The same is true of each and every item on the list, and it is only necessary to bear in mind that enough of intermediate ciphers must be struck after striking the figures representing the date, to make **seven figures in all**, including the figures to be listed opposite the date. When all the items representing the debits of a given statement have been listed and a total is desired, turn the **non-**

print dial until the **figure "2" shows uppermost in front,** and then depress the **total key and non-print key at the same time** by use of middle and index finger of left hand and pull the lever. This will print the sum of the amounts, but the non-print key will prevent printing the sum of the dates.

List the credits in the same manner as the debits and print them in the same way. After both debits and credits have been listed, a subtraction can be made and the remainder printed on the statement, by depressing the figures representing the debits on the keyboard and holding down the non-print key, with dial set at 9, to prevent printing, as the lever is pulled. This will accumulate the amount of the debits in the keyboard, when a subtraction can be made in the ordinary way without again listing the credits and the remainder will be printed as shown on this page.

An item printing device equipped with fifteen logotype thereby enabling the operator to print a selection of fifteen words such as "Debit," "Credit," "Cash," "Balance," "Forward," "Freight," "Drayage," "Merchandise," the names of the months, etc. (abbreviated to not exceeding six letters), can be furnished with each **DALTON** machine at an additional price of $25.00. For further particulars see catalogue.

Cost Price	Selling Price
	0
125	1 75
1175	14 50
250	3 25
1325	17 50
2875	37 00

Voucher Number	Amount
	0
1234	9 75
1235	13 75
1236	8 75
1237	22 50
1238	34 50
1239	45 00
	134 25

* Two Totals at Once

The **DALTON** is very useful, and is being used in many mercantile houses throughout the country, for **listing cost and selling price at the same time.** This is done in the following manner:

After the machine has been split in the fourth column from the left (full instructions for splitting the machine will be found on page 34), the example shown on the left hand margin of this page will be accomplished in the following manner: Depress the keys representing the left hand figures, or cost, as if for ordinary addition. There are now five sectors left to the right for use in printing the selling price; and as it will be noted that the first item on the list consists of only three figures, it will be necessary to depress two ciphers after depressing the figures 1, 2, 5, representing the cost, and before

Bale Number	Weight
	0
125	5 75
126	5 77
127	5 65
128	5 55
129	5 60
130	5 53
	33 85

depressing the figures 1, 7, 5, representing the selling price, then pull the lever. When this has been done, the item will be found printed as shown in the example to the left. List all other items in the same way, always bearing in mind that enough ciphers must be added to the left of the item representing the selling price, or right hand column, to make five in all, including the ones to be used in listing the figures representing the selling price.

The machine when split for taking two totals at once, can be used for numbers and amounts by using the four left-hand sectors to represent the numbers and the five sectors to the right to list amounts. Illustration No. 2 on the margin (page 25) represents voucher numbers and amounts. Illustration No. 3 (on this page) represents cotton bale numbers on the left, with the weights on the right. The sum of the numbers is prevented from printing by holding down the non-print lever with the dial set at 4 at the time of taking total.

Many other practical uses can be found in many lines of business for the split device, which is furnished with all regular **DALTON** machines without extra charge.

Verifying Invoices

The **DALTON** will save its purchase price in a single year if used only for verifying and proving invoices, and it is the only machine that furnishes a physical verification or proof to be attached to the invoice, thus showing that it has **actually** been **audited.**

Items on invoices can be proven separately by multiplying in each instance the number of items by the price and taking a grand total, after which it will be necessary to add together the sum of the various items that have been proven in order to get the total amount of the invoice.

Where it is only necessary to know that the total amount of the invoice is correct, it is better to multiply the number of items by the price **without** taking a total after each multiplica-

This example shows physical verification of invoice shown on this page.

0
2 75
2 75
27 50
3 25
3 25
3 25
3 25
3 25
32 50
1 50
1 50
15 00
15 00
1 75
1 75
1 75
1 75

121 75

An audit slip same as above should be pinned to each invoice.

tion, thus permitting the amounts to **accumulate** in the machine and enabling you to take a **grand total** at the **end** or **last** multiplication, which will be the amount of the invoice. The illustration on the margin hereof is a **physical verification** of the invoice which follows, and was done by making **all** the multiplications **before** taking the total:

12	Pairs of Shoes	at	$2.75—$33.00
15	"	"	3.25— 48.75
22	"	"	1.50— 33.00
4	"	"	1.75— 7.00
			$121.75

In verifying invoices and carrying forward totals, as illustrated in this example, it is necessary to use care so that the **decimals** will accumulate in the machine in the proper numerical order. If as a result of some of the multiplications four decimals would appear in the product, it will be necessary to allow four decimal places in **each** and **every** item on the invoice. Thus, 3½ dozen at .12½ per dozen if multiplied on the machine would show a printed product of .4375, making four decimal points. If the item following this should be 4 dozen at .16 per dozen, it will be necessary to add **two** ciphers to the .16 before multiplying by four in order that the product may contain four decimals and thereby list in the proper column for addition.

Dalton Helps

We publish a book of reciprocals of numbers from 1 to 10,000 which will prove of great assistance to Dalton users who find it necessary to do considerable dividing by a constant. Numerous other tables of general utility are also included. The book will be sent post-paid on receipt of the price of one dollar.

We have also established a correspondence course in the Touch Operation of the Dalton machine and have a limited number of scholarships for free allotment amongst the users of our machine. If you would like to have your bookkeeper, clerk or stenographer become more proficient in the operation of the Dalton, write us at once and we may be able to place one of these free scholarships at your disposal for that purpose.

See the following pages for a further explanation of Touch Operation, the sensational Dalton achievement which is literally revolutionizing the figure-handling methods of modern business.

Touch Method

We have urged repeatedly throughout these instructions the **importance of learning the touch method** of operation, which is possible **only** on the **DALTON**, thus saving the operator the nerve-racking operation of having to look alternately at the item to be listed and then at the keyboard, as **must be done** on all machines **except the DALTON**. We cannot exaggarate the importance of the touch method of operation. It **increases** the speed fully 25% and **reduces** the liability to commit error by depressing a wrong key, in like proportion. It **saves** the **strain** on the **eyes** and enables the operator to turn out **more work** in a given time with **less fatigue** than if done in any other manner.

When using the touch method, the operator confines his eye and attention entirely to the items to be listed, thus avoiding mistakes of the eye, which so frequently occur on **other** machines with **large keyboard**. The operator finds, when he becomes thoroughly acquainted with the **DALTON keyboard**, that there are only **two** keys for each finger to remember, and in a short time the fingers will automatically drop on the proper keys as the numbers are read by the eyes. Not even the most skeptical has doubted our superior speed when confronted with the fact that we add and list 76 items in 50 seconds.

Full and complete instructions for quickly learning the touch method will be found in the following pages.

Front View

From the cut below you will observe the simplicity of our keyboard arrangement and that it is not necessary to move the hand in operation. The keys are lined to each finger and you will note that

The thumb	depresses the	—1 key
" fore finger	"	2—3—4 keys
" middle finger	"	0—5 "
" ring finger	"	6—7 "
" little finger	"	8—9 "

We suggest the fore finger of the left hand for totals, repeats and eliminations, and the thumb of the right hand for corrections. In no instance should the operator use one hand for pulling the lever and the other for operating the keyboard.

The cut below shows the exact position of the hand as viewed from left to right when in position for operation.

The thumb	covering	the 1	key
" fore finger	"	3	"
" middle finger	"	0	"
" ring finger	"	6	"
" little finger	"	8	"

It will be noted that the thumb rests against the total key, which acts as a guide for the hand when leaving the handle and positively places the fingers on the proper keys at each operation.

Try the figures 130, 1306, 6013, 125, 115, 560, 1350.

The best results are obtained by using a partial wrist movement in conjunction with the fingers, as in depressing the ciphers rapidly without moving the fingers from the key.

The cut below, looking from right to left, demonstrates the nearness of the operating lever to the hand, also the position of the fingers when looking from the lever side of the machine.

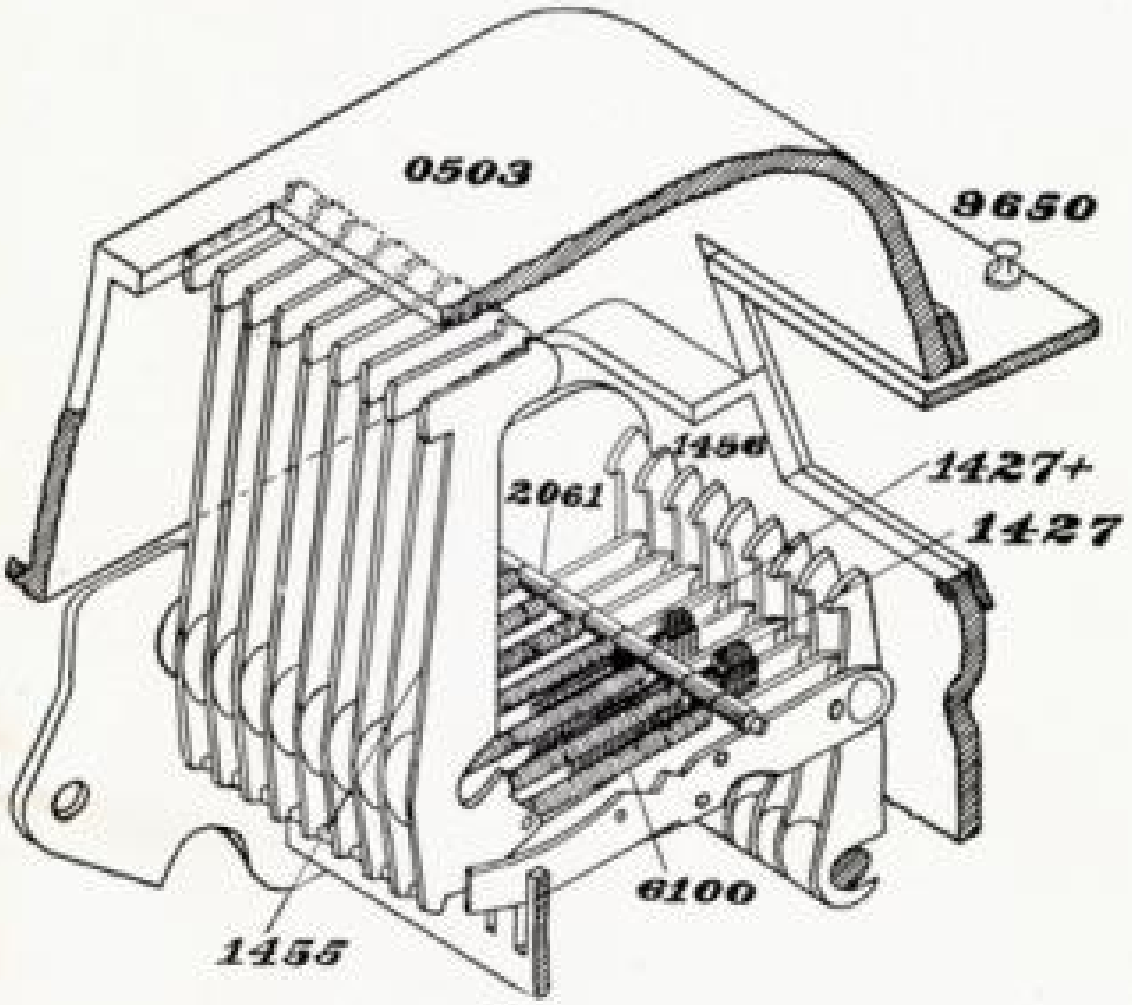
It requires practically **no mental effort** to operate the machine sucessfully by **touch method,** and the operator is on this account enabled to answer questions and carry on an ordinary conversation without in any way interfering with the operation of the machine. It requires but little time and practice to learn this method; and as it adds more than 25% to the efficiency of each operator, we earnestly urge its adoption. Send for our special free booklet on Touch Operation.

LEARN THE TOUCH METHOD. [See Page 28.]

Practice Items

Run the following lists each ten times slowly being careful to depress the keys correctly. A correct total in any of these lists three times in succession shows very rapid progression.

0	0	0	0
13	10	1 30	1 25
30	1 30	3 06	1 75
60	3 60	8 60	35
80	12	1 08	75
86	1 25	8 06	10
81	54	1 23	10 50
38	5 40	2 34	4 50
36	75	3 42	15
12	7 50	4 32	5
15	6 54	3 24	11 50
19	4 56	1 45	25
17	8 60	1 75	35
14	60	1 77	10
23	9	1 04	1 25
34	91	1 05	1 30
45	9 10	8 35	3 75
56	9 15	7 54	1 00
67	98	5 79	7 50
89	9 83	7 65	2 25
85	77	9 54	25
75	8 75		1 00
	9 87	82 58	2 35
9 75	42		45
	24		25
	23		1 15
	32		11 25
	2 45		
			65 35
	93 97		



0503 is the dust shield for the hammer section which sits on top of the machine between the ribbon cups.

9650 is the nickeled name plate that covers the opening in the dust shield. (Noté: In some machines this is located higher up.)

1455 is the printing hammer.

6100 is the spring for printing hammer.

2061 is the shaft on which hammer springs are fastened.

1456 is the detent which holds the hammers in normal position.

1427 is the date split.

1427+ is the center split.

*Instructions Showing How to Split the Dalton

First, turn name plate door 1017 to the right so as to uncover the opening in 1070. (Note—On some machines the door lifts out.)

Second, depress the figure 1 on the keyboard nine times.

Third, pull the operating lever forward very slowly until the hammers release and strike against the type, using care **not** to pull the lever forward far enough for it to return to normal position.

Fourth, by looking down the opening while the hammers are in this raised position, you will be able to see the hammer springs 6100 and the shaft 2061 upon which the springs are fastened. Immediately in front of the shaft 2061, by looking closely, you can see the two notches, 1427 and 1427+, on top of the end of the slide that controls the splitting mechanism. To split the machine, put a screw driver or other suitable instrument in the notch 1427 or 1427+ on the end of the slide, and push the slide under the shaft 2061. The movement of this slide is about one-eighth of an inch. Do not press down on these slides as you attempt to move them, as pressure makes them move harder.

To take the splits out, reverse the operation of the slide, that is, pull it out from the shaft about one-eighth of an inch.

OBSERVATION

Splitting the **DALTON** adding machine has no effect whatever upon its adding and listing, except that it will not print a cipher or a series of ciphers immediately to the right of the point split. For example: If the machine is split at the center and you should attempt to write 5,000.00, you would write the 5 in the proper column but no ciphers would appear to the right. The addition, however, would be correct.

The Dalton Electric Motor Drive

The Dalton electric motor drive is years in advance of anything hitherto offered to the public.

The separate unit construction as illustrated on the following page possesses numerous advantages over the old style "build-in" drives, among which are the following:

It simplifies the manufacture by reducing the number of parts.

Reduces the liability to get out of repair owing to the extraordinary simplicity of construction.

Facilitates the making of repairs by affording greater accessibility.

Reduces the cost of transportation by reducing the weight, which at the same time makes the machine more portable.

Makes it unnecessary to ship the entire equipment to the factory in the event that either machine or drive needs overhauling and adjusting.

Enables the owner, in case of accident to the motor drive, to continue the use of the machine by hand (the hand lever being always attached) while the motor is being repaired.

Enable the owner of a hand driven Dalton to convert the same into an electric drive instantly and without the aid of a mechanic.

Permits of instant change from one machine to another, thus making it unnecessary to interrupt the work of the operator in case of accident to either machine or drive.

Permits removal of machine from the motor drive to the Moody traveling desk stand, where it may be operated by hand, leaving the motor free to be used independently for driving fans, ventilators or other light machinery.

Permits of unheard of speed of operation, thus enabling Dalton operators to smash all speed records.

Makes installation so very simple that a mechanic is unnecessary. A child can do it. Just place the drive unit on the stand, set the machine on top, screw in the socket from a light wire and the machine is ready for operation.

The Automatic Cut-Off

The motor drive can also be furnished with the automatic cut-off feature, which will stop the machine automatically, without thought or attention on the part of the operator. This, in fact, constitutes a real adding machine sensation.

LEARN THE TOUCH METHOD. [See Page 38.]

The Dalton Electric Motor Drive

The Machine Unit complete, and ready for operation by hand or electricity.

THE MOTOR DRIVE UNIT

A complete power plant equipped especially for driving the Dalton, but useful for other purposes requiring power.

THE METAL STAND UNIT

Directions—Just drop the motor drive unit on the stand unit, set the machine unit on top, slip in the lamp socket and the hand-driven Dalton is an electric. A child can do it.

A UNIVERSAL INTEREST TABLE

Rate	Value	Rate	Value
1%	.00278	1/8%	.00035
2%	.00556	1/4%	.00069
3%	.00833	3/8%	.00093
4%	.01111	5/16%	.00104
5%	.01389	1/2%	.00139
6%	.01667	5/8%	.00174
7%	.01944	7/8%	.00185
8%	.02222	3/4%	.00208
9%	.025	7/8%	.00243

RULE.—To find the interest, multiply together the principal, time (expressed in days) and value corresponding to the rate as shown by the table.

NOTE.—The values in the table are on the basis of 360 days to the year.

There is no interest table—it matters not how elaborately worked out—which can give results comparable for speed and accuracy with those obtained by the use of this simple table in connection with a nine-sector Dalton Adding Machine.

When using the Dalton machine, multiply principal by number of days; take a grand total; put the dollars back into the machine, omitting the cents; multiply this by the value corresponding to the rate as shown by the table; take a total, discarding the five figures to the right. The remaining figures of the total will be the interest expressed in cents.

For additional explanations, see other side.