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(56) Documents Cited:
GB 2130782 A **US 5272653 A**
US 4016411 A

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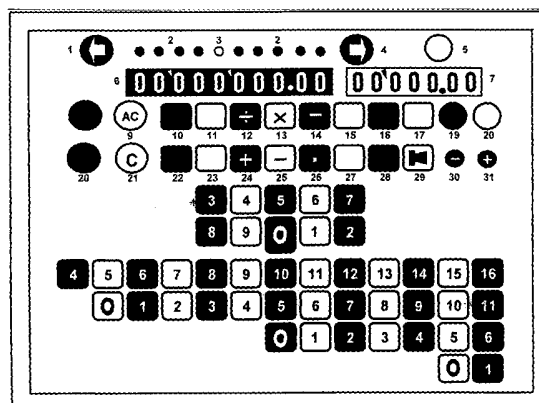
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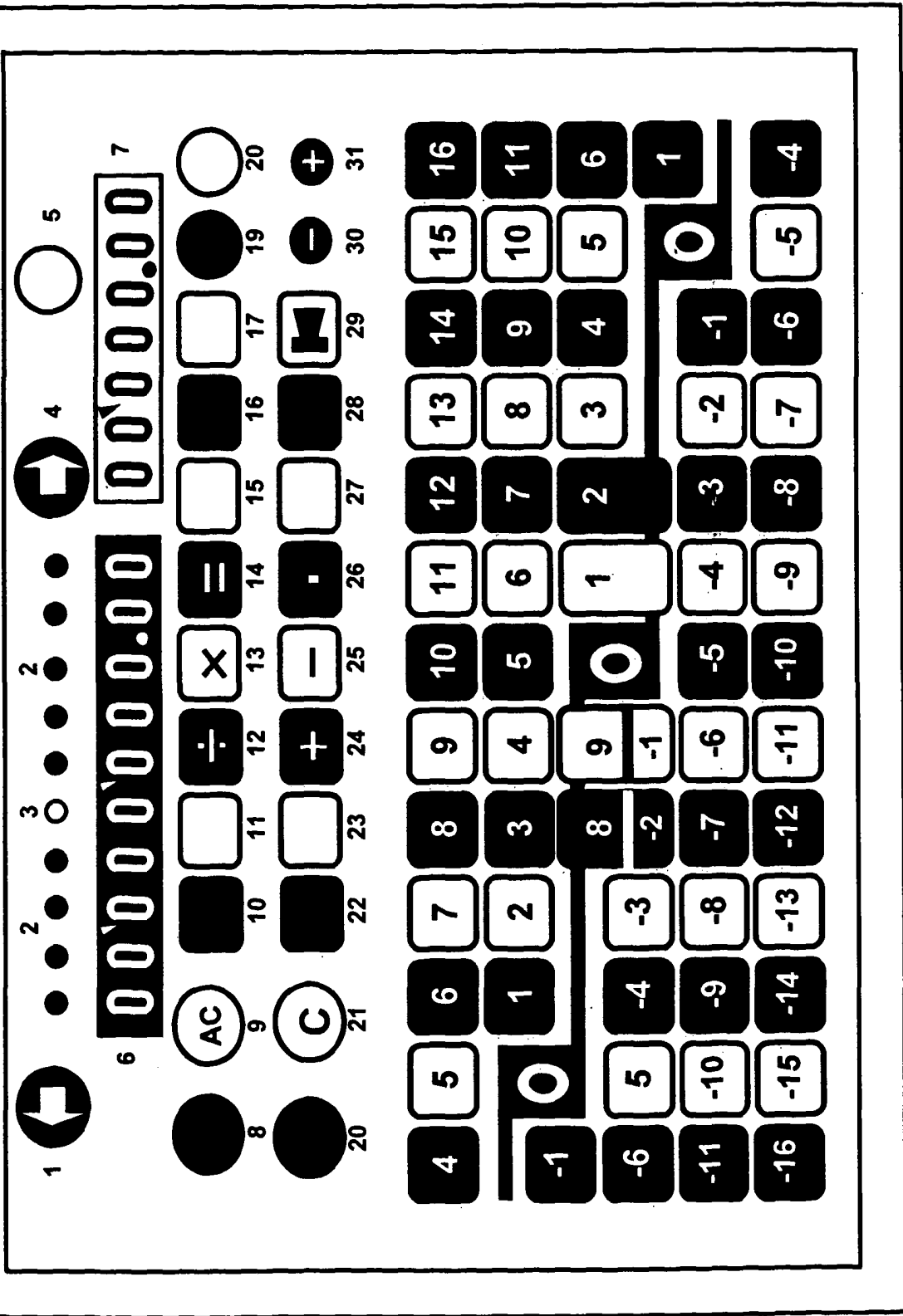
(54) Title of the Invention: **A calculator for junior and secondary children**
Abstract Title: **Calculator key layout for learning mathematics**

(57) A new calculator allowing counting vertically, to aid understanding of child learning arithmetic. Within the keyboard is the complete modern Key board with the usual ten numbers, however the numbers are not the usual 3 by 3 plus Zero configuration but two lines of five numbers one upon the other. When fully learned, the child will truly understand the basic working of Mathematics. Junior school children who are Years 8, 9 and 10, are taught to adding in columns, therefore, having a calculator that also counts in columns is a must. This system is easy to use and will make counting through Zero easy to understand.

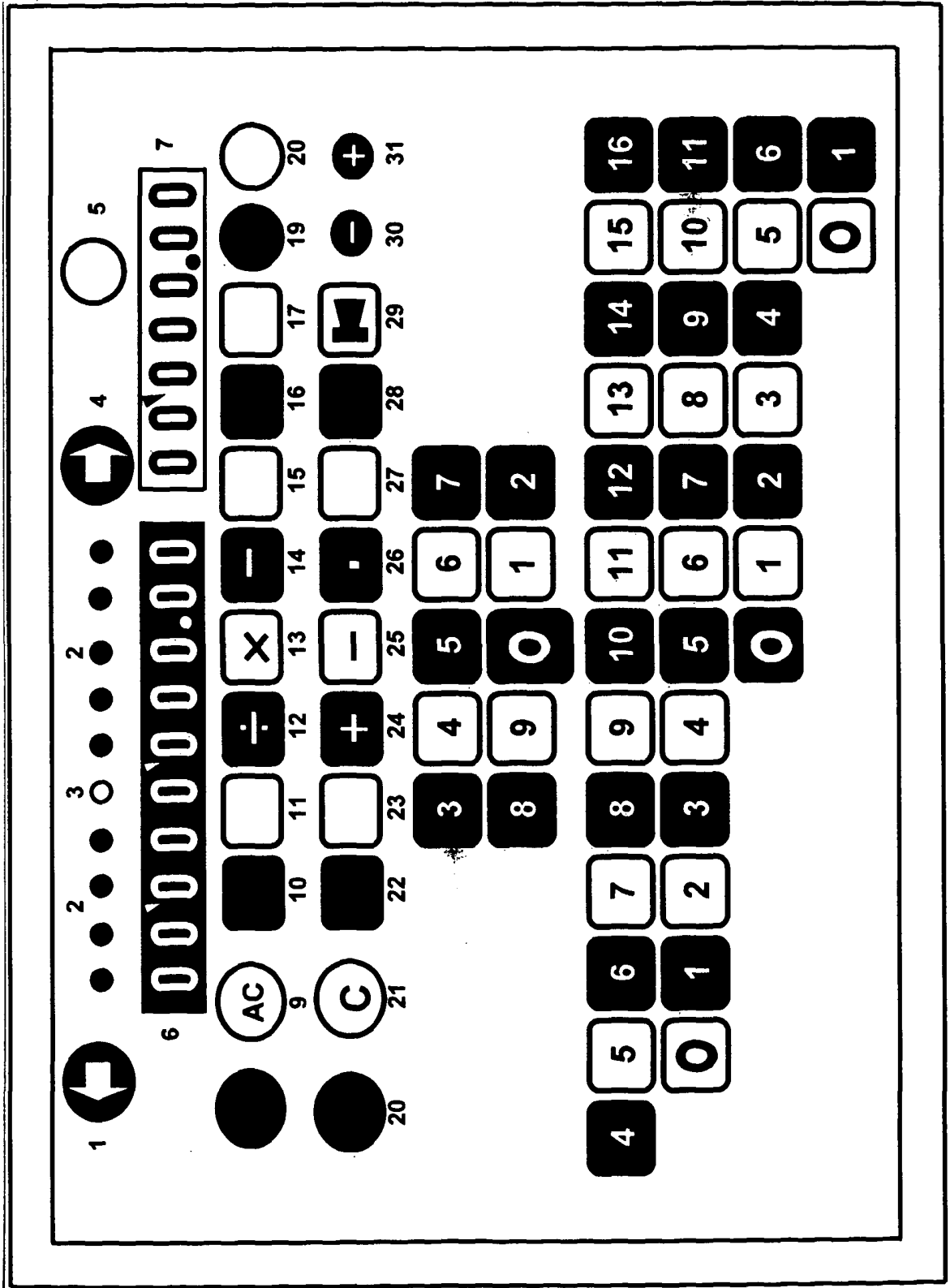


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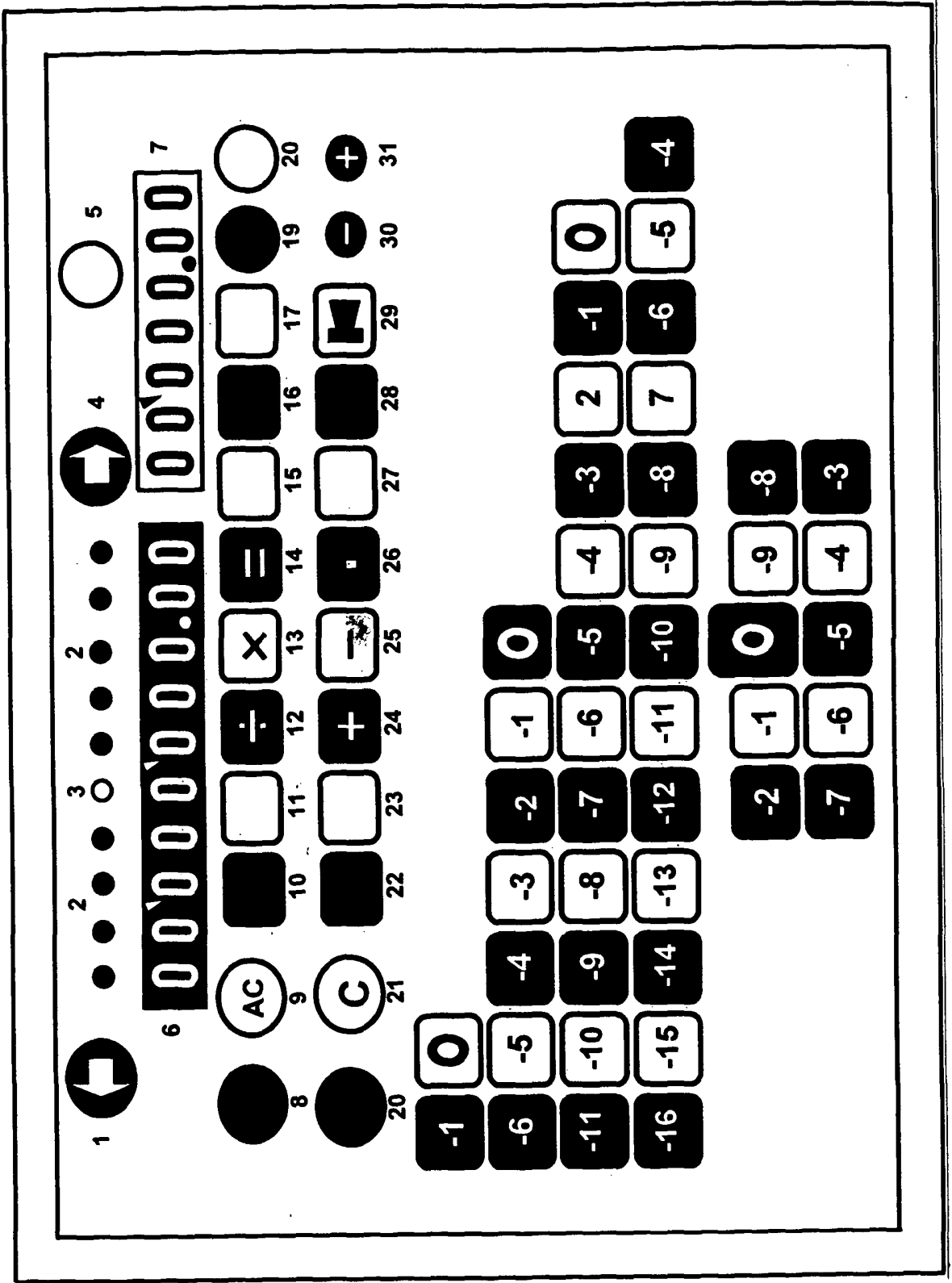
1/3.



2/3.



3/3.



A calculator for Junior and secondary children.

This calculating machine contains two calculators
 The large keyboard is for the use of children of Junior school age,
 The small Keyboard is for the use of children of secondary school age
 In fact both keyboards are perfect for the use of secondary school children.
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Junior school children who are Years 8, 9 and 10, are taught to adding in columns, therefore, having a calculator that also counts in columns is a must. This Vertical counting calculator does just that it counts in columns. This Large vertical counting Keyboard for young children enables them to Add, subtract, Multiply and Divide, by this using this new calculating machine, young children will speed up their calculation and this will be a boon not only for the confidence of the children but the pleasure of their parents too.

Children in Junior school count in columns, example at the age of ten they are able to add up Numbers in three columns example HUNDREDS TENS AND UNITS THREE LINES HIGH

Or perhaps FOUR LINES HIGH. at the very most they will count no more than TWELVE NUMBERS and so the normal calculator makes little sense in fact it makes no sense to children of that age.

Secondary school children will use both systems of calculation, however, They will start to learn to use the new vertical calculator and then with practice will be able to use the normal every day calculator with the new number pad.

The Vertical counting calculator counts in columns, therefore children will quickly understand how to use the keys, children may use all the 65 numbered keys, and with practice they may be able to pick the appropriate minus Number key below the Zero line. When the count passes through the Zero line, the speaker will sound to inform he or she that they have now passed through Zero and the child should now put their fingers on the plus keys above the Zero line and carry on counting until the final answer is arrived at.

The small number pad acts as a normal calculator but the keys are in another new configuration, not the 3x3 plus Zero as in the normal keypad But a new number Keypad where the numbers are placed in two lines one above the other example:- 34567/89012 with the Zero in the middle of the bottom of the bottom line.

Children in Junior schools can learn to add one number to another and at eleven they can count four columns of HUNDREDS TEN AND UNITS

This is to prepare the young children for when they enter Secondary Education, when these children start to use a normal calculator or perhaps the calculator with the new number keypad.

The 65 Keys of the large key board is for vertical calculation Ideal for the use of young children of eight, Nine and Ten years of age By using the vertical Keys of the calculator, they will find it easy to count in columns.

2.

1/3 This drawing shows the a complete keyboard within which are 31 plus keys for calculation in positive numbers, these are located above the black zero line, notice on the Zero line there are three Zero Keys, Below the black Zero line are 31 minus keys for calculation in negative numbers. Naturally when calculation is from a negative number through Zero and finishing above the Black Zero Line, you decide on the number a negative number and by touching the keys the young child is able to count through Zero and finish on a positive key.

2/3 This drawing shows a plus keyboard with 31 keys plus 3 Zero keys this calculator is uncomplicated and easy to use. Both calculators stand out, thus giving the children the ability to multiply and divide with ease. Therefore these two calculators are easy to read and use.

3/3 This drawing shows a minus keyboard with 31 Minus keys and 3 Zero keys This calculator is made to subtract and divide, This too is easy to for the young children to like mathematics.

- 1, Round Key. which controls the ten L.E.D.s Live L.E.D. moves to the right.
- 2, Shows nine sleeping L.E.D.s
- 3, Live L.E.D. moves Between right or left to increases or decreases the powers of ten, From Zero to one Billion places.
4. This Key moves The live L.E.D to the right.
- 5, Key which controls the two LEDs .30. Minus & 31. Plus.
When LED .9. "Glow." The machine is Calculating is in Plus
When LED .20. "Glow." The machine is Calculating is in Minus.
- 6, Black L.E.D screen. The black LED screen shows the up to date calculation from the sixty five Numbers keys below. Including Decimal Point and Individual partitioned thousands.
- 7, White LED screen. The white LED screen shows the problem to be solved by the students operators. IN most cases the numbers placed on the white screen will be locked until the conclusion of the calculation.
- 8, On Switch.
- 9, Key AC Key.
- 10, This key Zeros the numbers on the Black Screen.
- 11, Keys to lock numbers on the black screen.
- 12, Key to place the Machine in Divide Mode.
- 13, Key to Place the Machine in Multiply Mode.
- 14, Key to place the machine in Equals Mode.
- 15, Key to lock numbers on White screen.
- 16, Key to Zero the numbers on the white screen.
- 17, Key on off Switch for Speaker.
- 18, Speaker control. . By touching Key 18 or Key 19. Touch once 18. Speaker confirms alarm is set at Zero. Touch again 18. the alarm will be set as follows 0 -5 -10 -15 -20 -25 By pressing Key 19. the alarm will increase -25 -20 -15 -10 - 0 +5 +10.
At the same time LED 30 Minus coloured red & LED 31 Plus coloured Blue.

19, Key to adjust speaker alarm.. Key 19. press once. The speaker will sound to indicate Zero. Further pressing the alarm Key 19 further setting will be 0

4/5.

3.

+5 +10 +15 +20 +25 By pressing Key18. the alarm numbers will descend
+25 +20 +15 +10 +5 +0 -5 -10.

Blue Plus LED. Blue LED glows when counting in Plus.---- When through Zero,--
-- Blue LED sleeps and Red LED Glows.

Both LEDs are controlled by Key 5.

20, Key. Turns the machine Off.

21, Key The cancel Key.

22, Key Changes the machine to Horizontal counting.

23, Key. Adds numbers to the Black screen

24, Key Machine in Plus mode.

25, Key Machine in Minus mode.

26, Key Decimal onto the Black screen.

27, Key Enters numbers to the white screen.

28, Key Changes the machine to Horizontal calculation.

29, Speaker Is created to help blind people for it can relate to the blind person the totals in the Black screen and the White screen.

For sighted people. The speaker will sound an alarm to indicates the Machine is now approaching point Zero.

30, Red LED Glows when the machine is calculating below Black Zero line.

Works in conjunction 17.18.19.&29 the speaker.

31, Blue LED Glows when the machine is calculating above the Black Zero line.

. Works in conjunction 17.18.19.&29 the speaker.

32, Black Zero line. Keys above are plus Keys. Keys below the zero Line are minus Keys.

33 Shows 29 Minus Keys Below the Zero line.

34, Shows two keys with dividing line. $2/8$ $1/9$ The left hand side of the key 2&1 is used for Horizontal calculation.

35, Shows two keys with dividing line $2/8$. $1/9$ The right hand side of the key 8&9 is used for Vertical calculation.

36, Shows a square surrounded by an intermittent line This contains the five by five new Keypad with Zero the centre of the bottom line.

37, Shows 29 plus keys above the Zero line with an extra 3 Zero keys.

Many other keys can be added to the calculator example memory keys and others.

4.

Claims

1. This invention relates to drawings 1/3 2/3 3/3 which shows three boards each having two calculators a large keyboard calculator and the smaller keypad calculators both calculators work in the new vertical system of calculation.

2. The calculators are for junior and senior school children who will find using them very easy, 1/3 shows the complete double keyboard where minus and plus are on the same board the 65 keys of this keyboard are vertical and the number pad is the rectangle of 10 keys this two is a vertical number pad. t

3. 2/3 shows the plus keyboard

three large keyboards and a smaller keypad both these calculators

1. This invention shows three large keyboards within which is a smaller keypad all count in a new system of vertical counting three keyboards are ideal for junior and senior school children in giving them a good grounding in mathematics

1. The three drawing shows three children's calculators 1, a combined minus and plus calculator with 65 keys 2, a plus calculator with 36 keys and 3, a minus calculator with also 36 keys, these new calculators are for junior and senior school children who want to experience of this new form of calculation.

2. The three drawing show a new feature for within these three drawing, there is not just one calculator but two in which both count vertically.

3. 1, The combined plus and minus calculator all 65 keys are used in the calculation, the second calculator with 10 keys is the rectangle surrounded by the intermittent line both calculators count in vertically, 2. the plus calculator with 36 keys is for plus calculation 3, the minus calculator also with 36 keys is for minus calculation.

4. The control keys above the calculating keys are used to revealing the result in the both black and white screens 3, shows which

4. 2, the combined 36 keys are for counting in plus with the additional 10 keys 3, the 36 keys are

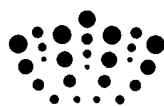
2. These three calculators have two independent calculators fixed within themselves

2. The three calculators have two calculators within the keys 1, a calculator of 65 keys inside which is a smaller calculator of ten keys shown in the rectangle within the intermittent lines.

2, a calculator of 36 plus keys inside which is a smaller calculator of ten keys shown in the rectangle within the intermittent lines.

of and a small rectangular surrounding

the keys 1. 65 keys plus ten keys surrounded by intermittent lines



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Examiner: Robert Shorthouse

Claims searched: all

Date of search: 22 June 2010

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	US4016411 A (Jardine) See abstract and figure 1
A	-	US5272653 A (Meta et al) See abstract and figure 1
A	-	GB2130782 A (Mitsuubishi) See abstract and figure 4

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

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Worldwide search of patent documents classified in the following areas of the IPC

G06F; G09B

The following online and other databases have been used in the preparation of this search report

WPI, Epodoc

International Classification:

Subclass	Subgroup	Valid From
G06F	0015/02	01/01/2006