April 29, 1941. R. P. ROSS 2,240,226

COMBINATION CALCULATOR

Filed April 27, 1940 4 Sheets-Sheet 1

Fig. 4.

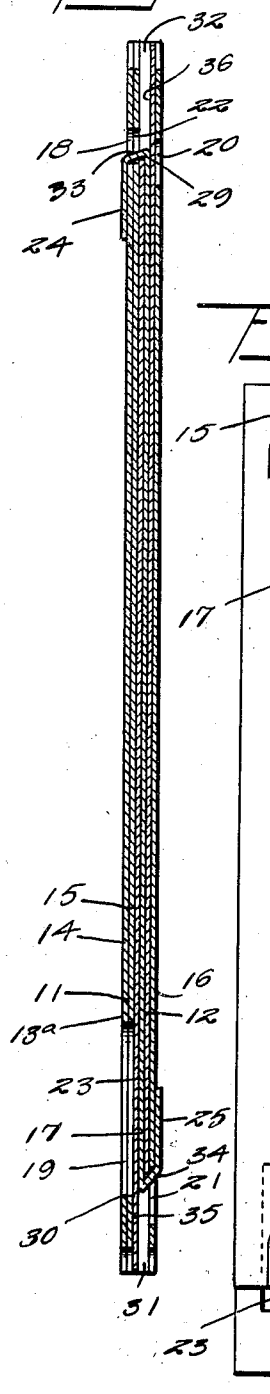


Fig. 1.

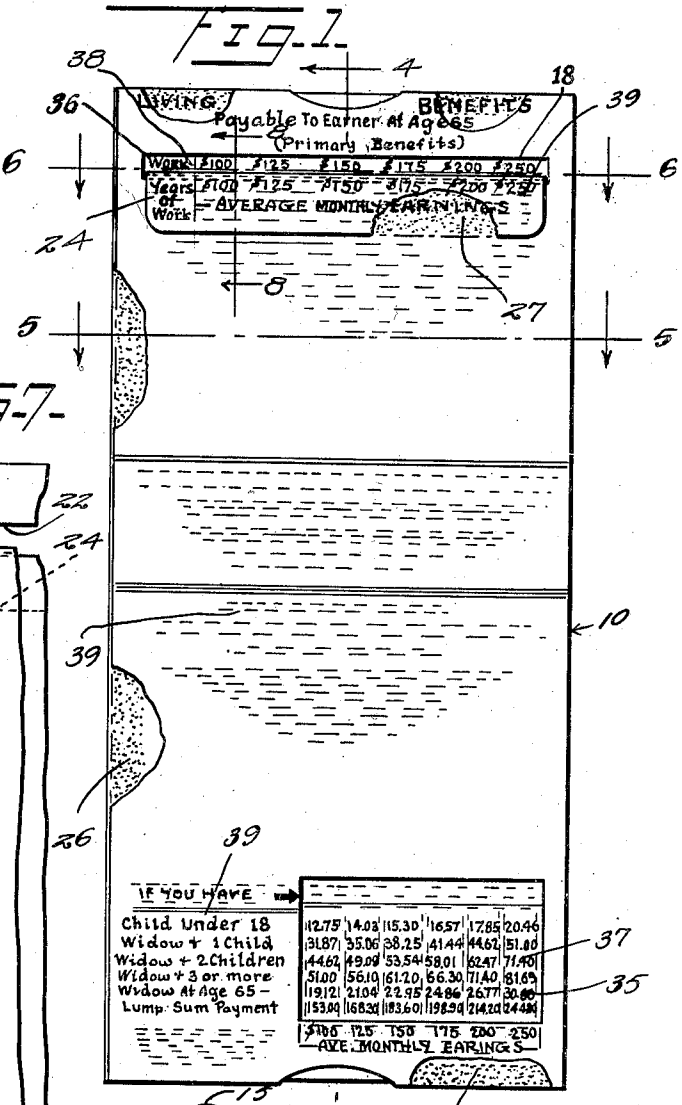


Fig. 7.

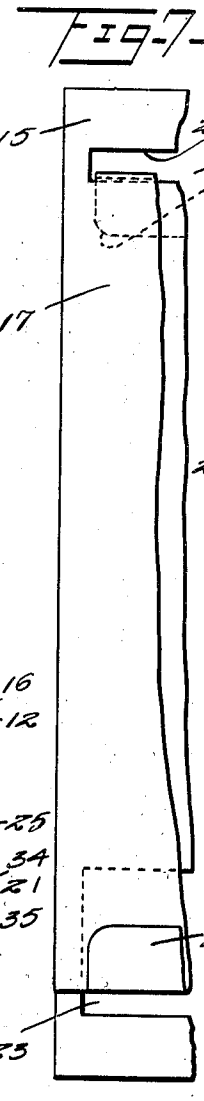
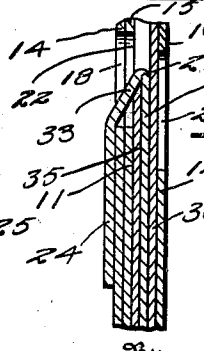


Fig. 8.



Inventor

R. P. Ross

By

Kimmel & Crowell

Attorneys

April 29, 1941. R. P. ROSS 2,240,226

COMBINATION CALCULATOR

Filed April 27, 1940 4 Sheets-Sheet 2

Fig. 3.

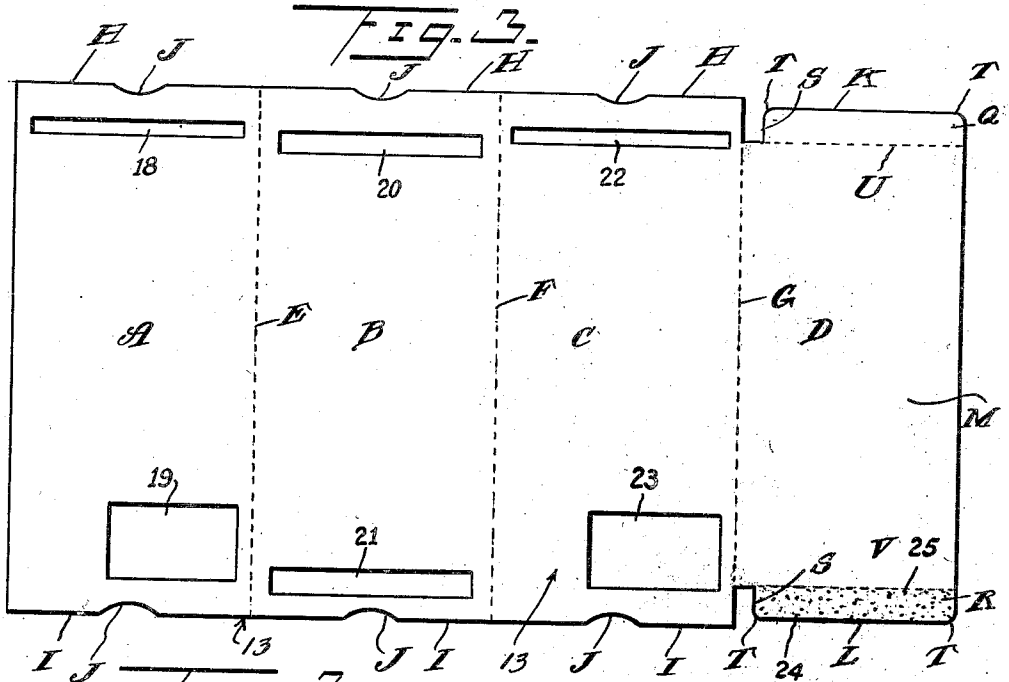


Fig. 2.

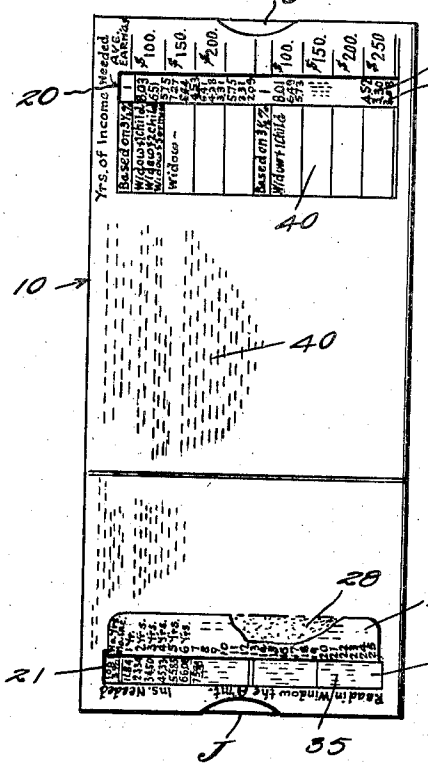


Fig. 5.

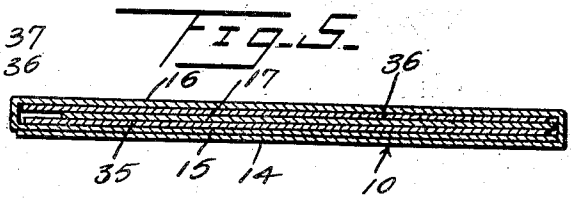
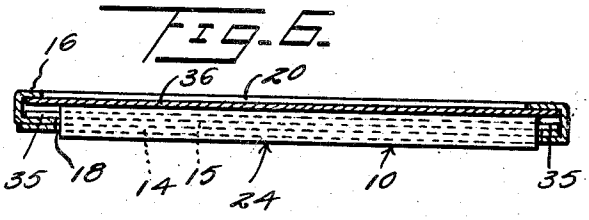


Fig. 6.



Inventor

R. P. Ross

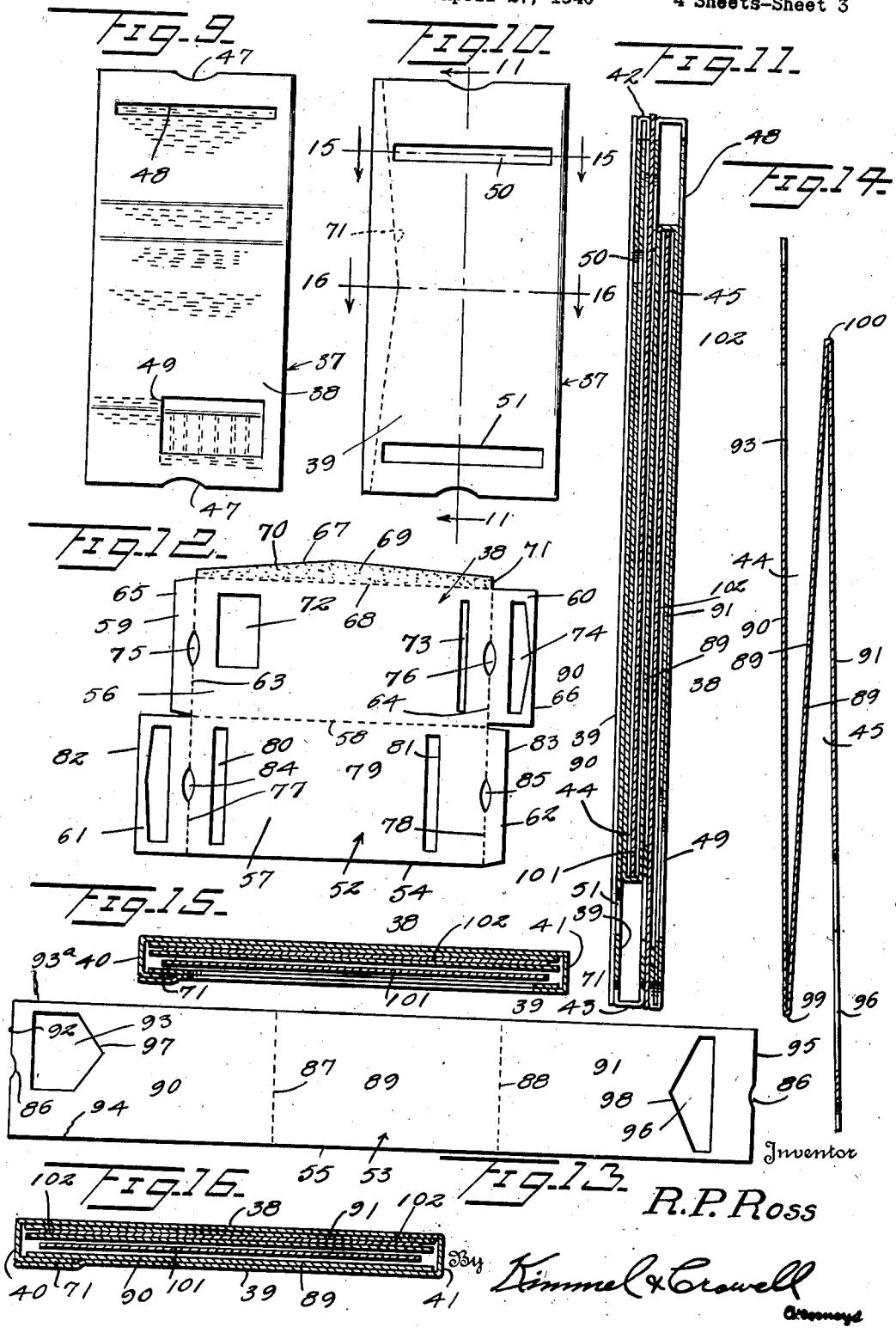
By Kimmel & Crowell

Attorneys

April 29, 1941. R. P. ROSS 2,240,226

COMBINATION CALCULATOR

Filed April 27, 1940 4 Sheets-Sheet 3



April 29, 1941. R. P. ROSS 2,240,226

COMBINATION CALCULATOR

Filed April 27, 1940 4 Sheets-Sheet 4

Fig. 17.

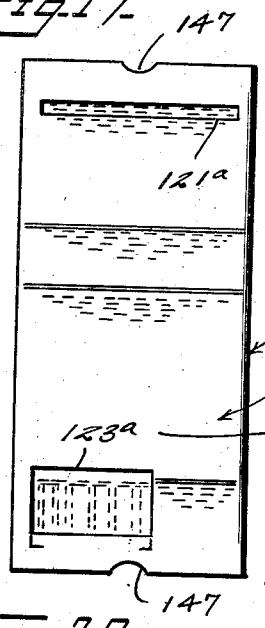


Fig. 18.

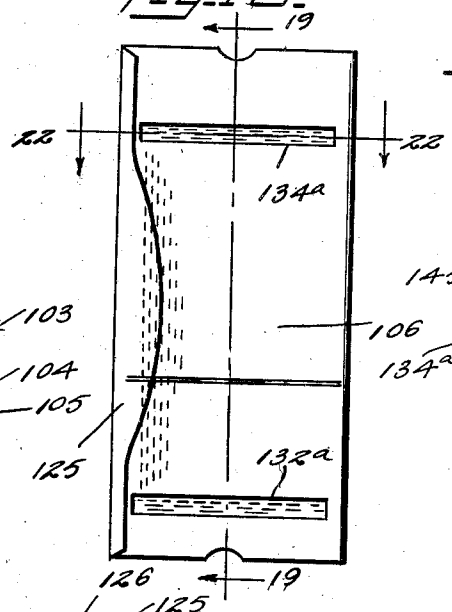


Fig. 19.

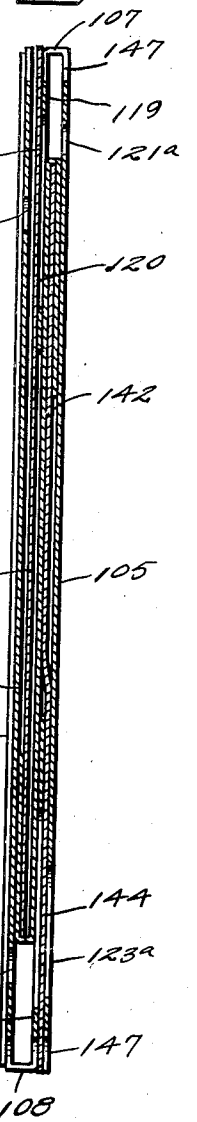


Fig. 20.

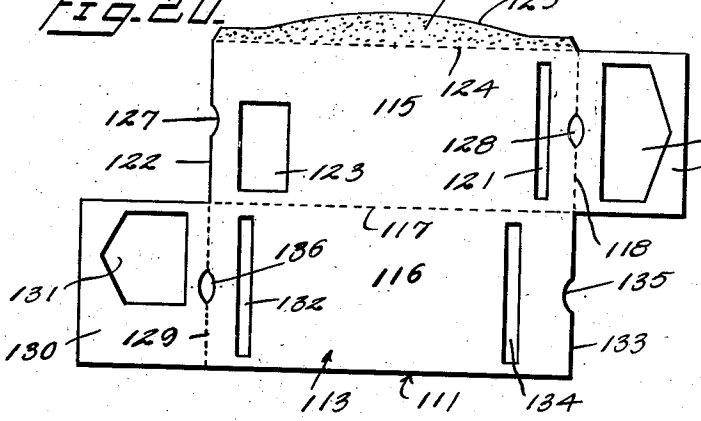


Fig. 21.

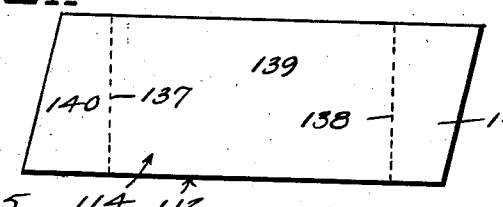
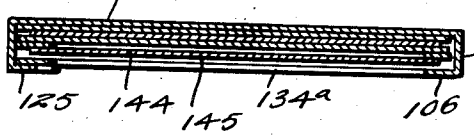


Fig. 22.



Inventor

R. P. Ross

By Kimmel & Crowell

Attorneys

Patented Apr. 29, 1941 2,240,226

UNITED STATES PATENT OFFICE

2,240,226

COMBINATION CALCULATOR

Ralph P. Ross, Dallas, Tex.

Application April 27, 1940, Serial No. 332,082

13 Claims. (Cl. 35—24)

This invention relates to a combination calculating device for use of insurance and annuity companies, more particularly by the agents or salesmen of such companies, but it is to be understood that a calculating device, in accordance with this invention is for employment in any connection for which it may be found applicable.

The invention aims to provide, in a manner as hereinafter referred to, a device for calculating premiums, rates, benefits and annuities having as elements thereof a pair of independently operable slidable members carrying normally concealed data selectably visible from either side thereof and with the operation of one member not interfering with the movement or visibility of the data on the other member.

The invention further aims to provide, in a manner as hereinafter set forth, a device of the class referred to including a housing formed of a pair of parallel compartments each for one of the slidable members aforesaid and each having its front wall formed with a pair of windows for the selective exposure of data carried by said members, and with the body of the housing including oppositely disposed anchored parts for respectively strengthening the housing and for maintaining it flat; acting as positive stops for limiting the inward movement of said members to thereby prevent one member from obstructing the windows which are correlated with the other one of said members; for independently retaining said members from movement when not operated; and to permit of holding the one end of the device naturally in one hand while operating a member with the other hand without retarding or stopping its movement by pinching action on the housing when holding the latter.

The invention further aims to provide, in a manner as hereinafter set forth, a device of the class referred to which is simple in its construction, strong, durable, compact, conveniently held and operated when desired, capable of being stored in the pocket of a garment, thoroughly efficient in the use intended thereof, the same being adapted for expeditiously calculating, readily assembling and being inexpensive to manufacture.

Embodying the aims aforesaid and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is an elevation, broken away, looking towards one side of the device,

Figure 2 is an elevation, broken away, looking towards the other side of the device,

Figure 3 is an elevation looking towards the front face of the blank from which the housing is formed,

Figure 4 is a section on line 4—4 Figure 1 upon an enlarged scale,

Figure 5 is a section on line 5—5 Figure 1 upon an enlarged scale,

Figure 6 is a section on line 6—6 Figure 1 upon an enlarged scale,

Figure 7 is a fragmentary view in rear elevation illustrating the manner in which one of the indicia carrying members is latched or locked,

Figure 8 is a section on line 8—8 Figure 1 upon an enlarged scale,

Figure 9 is an elevation looking towards one side of a modified form of combination calculator in accordance with this invention,

Figure 10 is an elevation looking towards the other side of the device shown by Figure 9,

Figure 11 is a section on line 11—11 Figure 9 upon an enlarged scale,

Figure 12 is an elevation of the foldable outer section of the device shown by Figures 9 and 10 looking towards the one face of such section with the latter extended,

Figure 13 is an elevation of the foldable inner section of the device shown by Figures 9 and 10 looking towards one face of such section with the latter extended,

Figure 14 is a lengthwise section, upon an enlarged scale, of the inner section of the device shown by Figures 9 and 10 when such section is partly folded,

Figures 15 and 16 are respectively sections on lines 15—15, 16—16 Figure 10 upon an enlarged scale,

Figure 17 is an elevation looking towards one side of still another modified form of combination calculator in accordance with this invention,

Figure 18 is an elevation looking towards the other side of the device shown by Figure 17,

Figure 19 is a section on lines 19—19 Figure 18 upon an enlarged scale,

Figure 20 is an elevation of the foldable outer section of the device shown by Figures 18 and 19 looking towards one face of said section when the latter is extended,

Figure 21 is an elevation of the foldable inner section of the device shown by Figures 17 and 18 looking towards one face of said section when the latter is extended, and

Figure 22 is a section on line 22—22 Figure 18 upon an enlarged scale.

The device includes a housing or envelope 10 formed of a pair of independent oppositely disposed parallel compartments or pockets 11, 12 closed at their inner ends. The housing 10 preferably will be constructed from a rectangular folded web 13 of cardboard stock of desired thickness, but it is to be understood that housing 10 may be set up of any other suitable material.

The compartment 11 includes a front wall 13a formed of outer and inner sections 14, 15 respectively. The compartment 12 includes a front wall 16. The housing 10 includes an internal wall 17 which is common to and provides the inner wall of the compartments 11, 12.

The web 13 includes a fold A which provides the section 14 of the wall 13a of the compartment 11, a fold B providing the front wall 16 of compartment 12, a fold C forming the section 15 of the front wall 13a of compartment 11, and a fold D which forms the internal wall 17 of the housing 10. The web 13 is provided with the bends or scores E, F, G. The bend E is arranged between the folds A, B, the band F between the folds B, C and the bend G between the folds C, D. The end edges H, I of the folds A, B, C are formed centrally with segmental cutouts J.

The fold A, in proximity to its end edge H is formed with a transversely ending elongated narrow oblong slot which provides the front section 14 of wall 13a with a window 18. The fold A, in proximity to its end edge I and the bend E is provided with a rectangular opening of less width and greater length than the slot aforesaid, which forms the said section 14 with another window 19. The fold B, in proximity to its end edge H is provided with a transversely extending oblong slot which forms the front wall 16 of compartment 12 with a window 20. The fold B, in proximity to its end edge I is formed with a transversely extending elongated oblong slot which provides the said wall 16 with another window 21. The length of the window 21 is greater than the length of the window 20. The fold C is provided with a pair of slots corresponding in form and arrangement to the slots in the fold A to thereby provide the section 15 of the wall 13a with a pair of windows 22, 23. The folds A, B and C are of the same length. The fold D is of less length than the other folds and its end edges K, L are of less length than the edges H, I of the said other folds. The end edges K, L do not align with and are inset with respect to the said end edges H, I. The fold D is formed of an elongated rectangular inner portion M, and a pair of oppositely disposed oblong end portions Q, R having straight inner edges S spaced from the fold C. The width of the portions Q, R is less than the width of the portion M. The outer corners of the portions Q, R are rounded, as at T. The fold D at the point of mergence of the portions N, O with the portions M is formed with bends or scores U, V, respectively. The end portions Q, R are bent in opposite directions on the scores U, V to form the wall 17 with a pair of oppositely disposed flaps 24, 25 for a purpose to be referred to.

The web 13 is folded in a manner to position the inner face of fold A against the outer face of fold C and when said folds A and C are so arranged they are secured together by the cementitious material 26 disposed between the inner and outer faces of the sections 14, 15 respectively of the front wall 13a of compartment 11. When the folds A, C are arranged in the manner aforesaid the windows 18, 22 are in registry and the windows 19, 23 are also in registry. Prior to the arranging of the folds A, C in a manner as aforesaid, the fold D is arranged against the inner face of the fold C and the flap 24 extended outwardly through the window 22, the fold B is then arranged against the inner face of the fold C and the flap 25 extended outwardly through the window 21. The folds A, C are then positioned as aforesaid, but before securing them together, the flap 24 is extended outwardly through the window 18.

The flap 24 is secured by the cementitious material 27 thereon to that portion of the outer face of wall 13a below and bordering the bottom wall of window 18. The flap 25 is secured by the cementitious material 28 thereon to that portion of the outer face of wall 16 above and bordering the top wall of window 21.

The flaps 24, 25 secure the walls 13a, 16 and 17 together and also act as a reinforcement for the housing.

The flap 24 forms a closed end wall for the compartment 11, as at 29. The flap 25 provides a closed end wall for the compartment 12, as at 30. The other end of the compartment 11 is open, as at 31. The other end of the compartment 12 is open, as at 32. The open end 31 of the compartment 11 is at one end and the open end 32 of the compartment 12 is at the other end of the housing.

When the flaps 24, 25 are secured to the walls 13a, 16, their inner portions adjacent the bends U, V are disposed at opposite inclinations, as at 33, 34 respectively and bear intermediate their ends respectively against the lower walls of the windows 18, 22 and against the upper wall of window 21. The portions 33, 34 of the flaps 24, 25 are disposed at an inclination with respect to the outer secured portions of said flaps. The said portions 33, 34 of the flaps correlate with the wall 17 to provide a latching means for a purpose to be referred to.

The device includes a pair of oppositely disposed indicia carrying members 35, 36 positioned in the compartments 11, 12 respectively. Each member is capable of being slidably adjusted relative to its associated compartment. Each member is in the form of a rectangular card having its front and rear faces provided with suitable indicia, as at 37, 38 respectively, for selective exposure. The indicia on one face of a card being different from the indicia on the face of the card, the indicia on the faces of one card being different from the indicia on the faces of the other card. The cards are of less length than the length of the housing. The member 35 arranged in the compartment 11 is normally held stationary within said compartment by the retaining means provided by the correlation of one end of the wall 17 with the portion 33 of the flap 24, to thereby prevent the member 35 from shifting relative to the housing when said member 35 is not operated. The member 36 arranged in the compartment 12 is normally held stationary within such compartment by the retaining means provided by the correlation of the other end of the wall 17 with the portion 34 of the flap 25 to thereby prevent the member 36 from shifting

relative to the housing when said member 36 is not operated.

The outer face of the wall 13a and the outer face of the outer secured portion of the flap 24 are provided with suitable indicia 39 for correlation with the indicia on the front face of member 35 and on the rear face of member 36. The outer face of the wall 16 and the outer face of the outer secured portion of the flap 25 are provided with suitable indicia 40 for correlation with the indicia on the front face of member 36 and on the rear face of member 35.

The selected indicia on the front face of member 35 is exposable through the registry windows 19, 23 and the selected indicia on the rear face of member 35 is exposable through the window 21. The selected indicia on the front face of member 36 is exposable through the window 22 and the selected indicia on the rear face of member 36 is exposable through the registry windows 18, 22.

The cutouts J at the ends of the folds A, B, C provide the ends of the walls 13a, 16 with means to facilitate the gripping of the members 35, 36 when said members are to be selectively operated.

On the shifting of the member 35 to an extent to expose selected indicia, the latter will be visible through the windows 19, 23 and 21. On the shifting of the member 36 to an extent to expose selected indicia the latter will be visible through the window 20 and the windows 18, 22.

The modified construction of the device shown by Figures 9 to 16 is in the form of a housing or envelope 37 having a front 38, a back 39, a pair of closed sides 40, 41, a pair of ends 42, 43, a pair of oppositely disposed compartments 44, 45, one of which opens at one end of the housing and the other at the other end of the housing, a cutout 47 centrally of each end of the housing, a pair of windows 48, 49 in the front 38 and a pair of windows 50, 51 in the back 39. The windows 48 and 49 associate with the compartment 44, the windows 50, 51 associate with the compartment 45. The housing or envelope 37 is set up from an outer foldable section 52 and an inner foldable section 53. The section 52 is formed from a web 54 of paper of the desired rigidity, length and width. The section 53 is formed from a web 55 of paper of the desired rigidity, length and width. It is to be understood that the webs 54, 55 may be formed from any suitable material.

The web 54 includes a pair of substantially rectangular portions 56, 57 with the windows disposed in staggered relation with respect to each other and separated by a score 58 disposed lengthwise of the web 54. The portion 56 has its terminal parts indicated at 59, 60. The portion 57 has its terminal parts indicated at 61, 62. The parts 59, 60 are spaced from the portion 57. The parts 61, 62 are spaced from the portion 56. The part 59 is of less length than the part 60. The part 61 is of greater length than the part 62. The parts 59, 62 are substantially of the same length. As shown, the part 60 is of less length than the part 61, but not necessarily as this depends upon the position of the windows.

The part 56 is formed with a pair of spaced parallel transverse scores 63, 64 inwardly adjacent the ends of said portion 56. The score 64 is disposed a greater distance from the nearest end of the portion 56 than the score 63 is spaced from the other end of said portion 56. The arrangement of the scores 63, 64 as stated provides for the end part 59 to be of less length than the end part 60. The end part 59 is foldable on the score 63 in a direction towards the inner face of the portion 56 and constitutes a flap indicated at 65 for a purpose to be referred to. The end part 60 is foldable on the score 64 in a direction towards the inner face of the portion 56 and it provides a flap, indicated at 66, for a purpose to be referred to. That part of the portion 56 between the scores 63, 64 is of greater width than the end parts 59, 60 and has its free edge 67 oppositely inclined from its center towards each end. The portion 56 is formed lengthwise thereof with a score 68, which aligns with a side edge of the flap 66. That part of the portion 56 arranged outwardly of the score 68 is indicated at 69 and is foldable on the score 68 to engage the inner face of the back 39. The said part 69 has arranged on its outer face cementitious material 70 and such part 68 forms a securing flap indicated at 71 for a purpose to be hereinafter referred to. It will be noted, however, that when folded the calculator may be completely enclosed in a clear tight fitting Celluloid outer jacket, in which event no cement will need to be used on the paper jacket. That part of the portion 56 arranged between the scores 63, 64, 68 and 58 provides the said front 38, and such part is formed with openings 72, 73 which constitute respectively, the windows 48, 49 in the front 38. The opening 72 is of rectangular contour, as well as the opening 73. As shown the latter is of greater length and less width than opening 72, but this will vary in different jobs. The end part 60 of the portion 56 is formed with an opening 74. The portion 56 centrally of the scores 63, 64 is formed with a pair of spaced aligned substantially elliptical-shaped openings 75, 76 for a purpose to be referred to. Preferably, the end part 59 will have oppositely inclined side edges and the end part 60 squared side edges.

The portion 57 is formed with a pair of transverse spaced parallel scores 77, 78, which extend from the score 58 to the free lengthwise edge of the said portion 57. The score 77 is disposed a greater distance from the nearest end of the portion 57 than the score 78 is disposed from the other end of said portion 57. That part of the portion 57, which is arranged between the scores 58, 77, 78 and the lengthwise free edge of the portion 57 corresponds in width to that part of the portion 56 between the scores 58, 68, 63, 64. That part 79 of the portion 57 between the scores 58, 77 and 78 provide the back 39 of the housing 37. The said part 79 is formed with a pair of spaced parallel elongated rectangular openings 80, 81 which provide respectively the windows 50, 51 in the back 39. The end part 61 is foldable inwardly on the score 77 and provides a flap indicated at 82 for a purpose to be referred to. The end part 62 is foldable inwardly in a direction towards the inner face of the portion 57 and constitutes a flap indicated at 83 for a purpose to be referred to. The portion 57 is formed with a pair of spaced parallel aligned openings 84, 85 of elliptical contour centrally of the scores 77, 78 respectively for a purpose to be referred to.

The web 55 is of elongated rectangular contour and provided at each of its ends with a semi-elliptical cutout 86. The web 55 between its transverse median and each end is formed with a transverse score and these scores are indicated at 87, 88. Both scores are on the same face of the web, but the folds are made in opposite directions. The scores are so spaced to form the web with an intermediate fold 89 and a pair of end folds 90, 91. As shown, the folds 90, 91 cor-

respond in length, but they are of greater length than the fold 89, this in turn depending upon the position of the windows. These folds, however, may be different in length. Portion 90 extends from the score 63 to the inner edge of window 73, while the portion 91 extends from score 78 to the inner edge of window 80. Therefore, the portion 90 will be positioned between the inner edges of windows 73 and 80. The fold 90 is bent on the score 87 in a direction towards one face of the web 55 and the fold 91 is bent on the score 88 in a direction towards the other face of the web 55. When the web 55 which provides the section 53 is folded, it will appear as shown by Figure 14, whereby the folds 90, 91 will extend in opposite directions beyond the ends of the fold 89. The fold 90 in proximity to its outer end edge 92 is formed with an opening 93 for a purpose to be referred to. As shown, the opening 93 is spaced a greater distance from the lengthwise edge 93a of the web than it is spaced from the other lengthwise edge 94 of the web, but this may vary. The fold 91 in proximity to its free end edge 95 is formed with an opening 96 of greater width than the opening 93 and it is spaced an equal distance from the edges 93a, 94 of the web. The inner wall or edge 97 of the opening 93 is oppositely inclined and the remaining edges of such opening 93 are straight. The inner edge 98 of the opening 96 is oppositely inclined and the remaining edges of the opening 96 are straight. The opening 93 is of greater length than the opening 96.

When the section 53 is folded and arranged within the section 52 the folds 89, 90 coact to form the outer and inner walls of the compartment 44 and the folds 91 and 89 coact to form the outer and inner walls of the compartment 45. The compartment 44 is closed at its inner end by the bend 99 between the folds 89 and 90. The compartment 45 is closed at its inner end by the bend 100 between the folds 89, 91. The compartments 44, 45 are of less length than the length of the housing 45. The bend 99 is positioned close to the inner edge of window 73. The bend 100 is positioned close to the inner edge of window 80.

The indicia carrying members of the device 37 are designated at 101, 102 and they correspond in form to the members 35, 36. The members 101, 102 are slidably mounted in the compartments 44, 45 respectively.

The side 40 is provided by a wide or double score which forms the bend between the flap 71 and the front 38. The side 41 is provided by the scored bend between the front 38 and back 39. The end 42 if formed by the scored bend between the flap 66 and the front 38 and the scored bend between the flap 83 and the back 39. The flaps 66, 83 align when folded, but are not connected together to thereby provide for the compartment 44 to be open at its outer end allowing access for slidable member 101. The end 43 is formed by the bend between the flap 65 and the front 38 and the bend between the flap 82 and the back 39. The flaps 65, 82 align when folded, but are not connected together to thereby provide for the compartment 45 to be open at its outer end allowing access for slidable member 102. The fold 89 of section 53 is common to the compartments 44, 45 and form the inner wall thereof.

The sections 52 and 53 are correlated in a manner to provide the calculator 37 as follows: The section 52 is extended and the flaps 65, 66, 82, 83 thereof are inturned relative thereto, the fold 91, of section 53, at its free end is then inserted between the flap 83 and the back 39 and the bend 100 between folds 89, 91 is then positioned between the flap 82 and back 39. The back 39 is then folded towards the front 38 with the section 53 arranged between the said front and back, then the fold 90, of the section 53, at its free end is inserted between the flap 65 and the front 38 and the bend 99 between the folds 89, 90 is inserted between the flap 66 and front 38, after which the flap 71 is secured to the inner face of back 39 and the device 37, with the members 101, 102 therewith will appear as shown by Figures 9, 10, 11, 15 and 16.

When the device 37 is assembled the window 49 in the front 38 will align with the opening 93 in the fold 90 of the section 53 to thereby expose selected indicia on the back of the member 102, the window 48 in the front 38 will expose selected indicia on the front of the member 101, the window 51 in the back 39 will expose selected indicia on the front of member 102 and the window 50 in the back 39 will align with the opening 96 in the fold of section 53 to thereby expose selected indicia on the back of member 101. The outer faces of the front 38 and back 39 will be provided with indicia for correlating with the indicia on the faces of the members 101, 102.

With reference to Figures 17 to 22, the modified form of combination calculating device shown thereby is generally indicated at 103 and comprises a housing or envelope 104 formed of a front 105, a back 106, a pair of ends 107, 108 and a pair of sides 109, 110. Each of the said ends is formed with an opening.

The housing 104 consists of an inner and an outer section 111, 112 respectively. The section 111 is formed from a web 113 of paper cardboard of the desired rigidity, length and width. The section 112 is formed from a web 114 of paper of the desired rigidity, width and length. It is to be understood, however, that the said sections may be formed of any suitable material.

The web 113 comprises a pair of folds 115, 116 disposed in staggered relation with respect to each other. The fold 115 is substantially of rectangular contour. The fold 116 is of rectangular contour. The fold 115 is of less length than the fold 116, but the major portion of the length of fold 115 is of greater width than the fold 116. The folds 115, 116 are separated by and foldable towards their inner faces on a score 117 disposed lengthwise of web 113. The fold 115 at a point between its transverse median and one end is formed with a transverse score 118 extending from one end of the score 117 to the free lengthwise edge thereof. That part of the fold 115 disposed outwardly with respect to the score 117 and one end of the fold 116 forms a flap 119 provided with an opening 120. The flap 119 is of less width than the remaining portion of fold 115. The fold 115 inwardly of and in proximity to the score 118 is formed with a transversely extending opening 121 which provides an upper window 121a in the front 105. The fold 115 in proximity to its end edge 122 is formed with an opening 123 which provides a lower window 123a in the front 105. The fold 115 is provided with a lengthwise score 124 which extends from the outer end of the score 118 to the said end edge 122 and it is disposed in proximity to the free lengthwise edge of the portion of greatest width of said fold. That part of fold 115 disposed outwardly of the score 124 forms a flap 125 having

its outer face provided with a cementitious coating 126. The end edge 122 of fold 115 is formed centrally thereof with a notch 127. The fold 115 centrally of the score 118 is provided with an opening 128 of elliptical contour, for a purpose to be referred to. The opening 121 is of greater length and of less width than the opening 123. That portion of the fold 115 between the scores 117, 124 and between the score 118 and the end edge 122 forms the front 105 of the housing 104.

The fold 116 is provided between its transverse median and one end with a score 129 extending from the other end of score 117 to the free lengthwise edge thereof. That part of the fold 116 disposed outwardly with respect to the score 129 and the end edge 122 of the fold 115 forms a flap 130 provided with an opening 131. The flap 130 corresponds in width to, but it is of greater length than flap 119. The fold 116 inwardly of and in proximity to the score 129 is formed with a transversely extending opening 132 which provides a lower window 132a in the back 106. The fold 116 in proximity to its end edge 133 is provided with a transversely extending opening 134 which forms an upper window 134a in the back 106. The end edge 133 of fold 116 is formed centrally thereof with a notch 135. The fold 116 is provided with an elliptical shaped opening 136 disposed centrally of the score 129.

The web 114 is in the form of a parallelogram and of less width than the web 113. The web 114, in proximity to each end thereof, is formed with a transverse score. The scores are indicated at 137, 138, divide the web into an inner fold 139 and a pair of outer folds 140, 141. The scores are so arranged on the web to provide for the outer folds being folded in opposite directions relative to the fold 139, and with the latter being of greater length than the folds 140, 141.

The fold 139 correlates with the inner face of the front 105 to form a compartment 142 which opens at the end 108 of the housing 104. When the fold 139 correlates with the front 105 to form the compartment 142 one face of fold 140 is secured by suitable adhesive material to the inner face of front 105 below and in proximity to the window 121a, and the bend between the folds 139, 140 forms the closed inner end of said compartment. The fold 139 correlates with the inner face of the back 106 to form a compartment 143 which opens at the end 107 of the housing 104. When the fold 139 correlates with the back 106 to form the compartment 143 one face of the fold 141 is secured by suitable cementitious material to the inner face of back 106 above and in proximity to window 132a, and the bend between the folds 139, 141 forms the closed inner end of the compartment 143.

The indicia carrying members of the device 103 are designated 144, 145 and correspond in form to the members 35, 36. The members 144, 145 are slidably mounted in the compartments 142, 143, respectively.

When the sections 111, 112 are assembled, the web 114 is folded and positioned on the inner face of the fold 116 of web 113, after which the fold 115 of web 113 is folded on the folded web 114. The folds 140, 141 of the web 114 are secured respectively to the inner faces of the folds 116, 115 of web 113. The flaps 119, 130 are then inturned to position the inner parts thereof against opposite faces of the fold 139 of web 114. When the flap 130 is inturned, the opening 131 therein will align with window 123a in front 105 to provide for exposing selected indicia on the rear face or side of member 144. The window 134a in back 106 for exposing selected indicia on the front face or side of member 144. When flap 119 is inturned, the opening 120 therein will align with the window 121a in front 105 to provide for exposing selected indicia on the rear face or side of member 145. The window 134a in back 106 is for exposing selected indicia on the front face or side of member 145.

After the section 112 has been arranged within and secured to the section 111, the flap 125 is positioned to overlap a portion of the inner face of the back 106. The flap 125 is secured to the inner face of back 106 by the cementitious material 126 whereby section 114 is maintained closed.

The flap 119, when inturned is not secured to fold 116 and it opposes in spaced relation the inner face of back 106. The flap 130 when inturned is not secured to the fold 115 and it opposes in spaced relation the inner face of front 105.

The edges of openings 128, 136, when the folds 115, 116 are folded to oppose each other and the flaps 119, 130 are folded inwardly, align the edges of the notches 127, 135 to form each end of the housing 103 with cutouts 147 to facilitate the gripping of the members 144, 145.

The housing side 109 is formed by the bend between the flap 125 and the front 105. The housing side 110 is formed by the bend between the front 105 and back 106. The housing end 107 is formed by the end edge 133 of fold 116 and the bend between flap 119 and the front 106. The housing end 108 is formed by the end edge 122 of fold 115 and the bend between the back 106 and fold 139.

The outer faces of the front 105 and the back 106 are provided with suitable indicia for correlation with the selected exposed indicia on the faces of the slidable members 144, 145.

The bends between and in connection with the folds of the web 55 and the bends between and in connection with the folds of the web 113 constitute latching means to prevent the indicia carrying members 101, 102, 144, 145 when extended into said compartments from shifting relative to the housings in which they are arranged. The indicia on the housings of the forms of the invention as shown by Figures 9, 10, 17 and 18 will correspond to that as shown by Figures 1 and 2.

What I claim is:

1. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments each including an open outer end, a closed inner end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, said internal wall at its ends having oppositely extending folded portions connected to said front walls to form the closed inner ends of said compartments and for securing said front and inner walls together, a pair of independent oppositely disposed members mounted in said compartments and each capable of sliding relative to its correlated compartment, each of said members having its front and rear faces provided with spaced parallel transversely disposed selectable rows of spaced indicia for selected exposure, the front walls of said compartments having their outer faces provided with indicia for correlation with the exposed indicia of said members, one of said front walls being formed with a window of a length for simulta-

neously exposing a series of selected rows of indicia on the front face of one of said members and a window of a length for exposing a single selected row of indicia from the rear face of the other of said members, the other of said front walls being formed with a window for exposing a single selected row of indicia of the rear face of the said one member and a window of a length for exposing a single selected row of indicia from the front face of the said other of said members, and the indicia on said front wall bordering said windows.

2. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments each including an open outer end, a closed inner end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, said internal wall at its ends having oppositely extending folded portions connected to said front walls to form the closed inner ends of said compartments and for securing said front and inner walls together, a pair of independent oppositely disposed members mounted in said compartments and each capable of sliding relative to its correlated compartment, each of said members having its front and rear faces provided with spaced parallel transversely disposed selectable rows of spaced indicia for selected exposure, the front walls of said compartments having their outer faces provided with indicia for correlation with the exposed indicia on said members, one of said front walls being formed with a window of a length for simultaneously exposing a series of selected rows of indicia on the front face of one of said members and a window of a length for exposing a single selected row of indicia from the rear face of the other of said members, the other of said front walls being formed with a window for exposing a single selected row of indicia of the rear face of the said one member and a window of a length for exposing a single selected row of indicia from the front face of the said other of said members, and the indicia on said front walls bordering said windows, and said oppositely extended folded parts of said internal wall having portions thereof coacting with such wall for retaining said members stationary within the compartments at the inner ends of the latter.

3. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments each including an open outer end, a closed inner end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, said internal wall at its ends having oppositely extending folded portions connected to said front walls to form the closed inner ends of said compartments and for securing said front and inner walls together, a pair of independent oppositely disposed members mounted in said compartments and each capable of sliding relative to its correlated compartment, each of said members having its front and rear faces provised with spaced parallel transversely disposed selectable rows of spaced indicia for selected exposure, the front walls of said compartments having their outer faces provided with indicia for correlation with the exposed indicia of said members, each of said front walls formed with a pair of windows, one for exposing indicia on the front face of one member and the other for exposing indicia on the rear face of the other member, the exposing of the indicia being simultaneous, said oppositely extending portions being in the form of flaps, one extending through one of the windows of a front wall and secured to the outer face of the latter, the other flap extending through one of the windows of the other front wall and secured to the outer face of the latter, and said flaps having the inner portions thereof correlating with said internal wall for retaining said members stationary within said compartments.

4. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments each including an open outer end, a closed inner end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, said internal wall at its ends having oppositely extending folded portions connected to said front walls to form the closed inner ends of said compartments and for securing said front and inner walls together, a pair of independent oppositely disposed members mounted in said compartments and each capable of sliding relative to its correlated compartment, each of said members having its front and rear faces provided with spaced parallel transversely disposed selectable rows of spaced indicia for selected exposure, the front walls of said compartments having their outer faces provided with indicia for correlation with the exposed indicia on said members, each of said front walls formed with a pair of windows, one for exposing indicia on the front face of one member and the other for exposing indicia on the rear face of the other member, the exposing of the indicia being simultaneously and said oppositely extending foldable portions of said internal wall having parts thereof coacting with such wall for holding said members stationary within said compartments at the inner ends of the latter, said internal wall in proximity to its ends having spaced oppositely outwardly inclined edge parts terminating at their outer ends in the inner sides of the inner ends of said portions to provide clearances for an inner corner of said members when the latter are moved to retaining position.

5. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments each including an open outer end, a closed inner end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, said internal wall at its ends having oppositely extending folded portions connected to said front walls to form the closed inner ends of said compartments and for securing said front and inner walls together, a pair of independent oppositely disposed members mounted in said compartments and each capable of sliding relative to its correlated compartment, each of said members having its front and rear faces provided with spaced parallel transversely disposed selectable rows of spaced indicia for selected exposure, the front walls of said compartments having their outer faces provided with indicia for correlation with the exposed indicia of said members, each of said front walls formed with a pair of windows, one for exposing indicia on the front face of one member and the other for exposing indicia on the rear face of the other member, said oppositely extending portions being in the form of flaps, one extending through one of the windows of a front wall and secured to the outer face of the latter, the other flap extending through one of the windows of the other front

wall and secured to the outer face of the latter, and said flaps having the inner portions thereof correlating with said internal wall for holding said members stationary within said compartments, said internal wall in proximity to its ends having spaced oppositely outwardly inclined edge parts terminating at their outer ends in the inner sides of the inner ends of said portions to provide clearances for an inner corner of said members when the latter are moved to retaining position.

6. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments, each including a closed inner end, an open outer end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, each of said front walls being formed with a pair of windows, said internal wall being formed at its ends with a pair of oppositely disposed folded portions of less width than such wall, each of said portions having a part extending through one of the windows of a front wall and secured to the outer face of the latter, a pair of independently operated oppositely disposed members mounted in said compartments and each capable of sliding relative to its associated compartment, each of said members having its front face and its rear face provided with indicia for selected exposure, one of the windows of a front wall for exposing selected indicia from the front face of one member and the other window of such wall for exposing selected indicia from the rear face of the other of said members, the front walls of said compartments and the parts of the said portions secured to such walls having their exposed faces provided with indicia bordering said windows for correlation with the selected exposed indicia on the faces of such members.

7. In a calculating device, a housing formed with a pair of oppositely disposed parallel compartments, each including a closed inner end, an open outer end and a front wall, said housing having an internal wall of less length than the housing providing an inner wall common to both compartments, each of said front walls being formed with a pair of windows, said internal wall being formed at its ends with a pair of oppositely disposed folded portions of less width than such wall, each of said portions having a part extending through one of the windows of a front wall and secured to the outer face of the latter, a pair of independently operated oppositely disposed members mounted in said compartments and each capable of sliding relative to its associated compartment, each of said members having its front face and its rear face provided with indicia for selected exposure, one of the windows of a front wall for exposing selected indicia from the front face of one member and the other window of such wall for exposing selected indicia from the rear face of the other of said members, the front walls of said compartments and the parts of the said portions secured to such walls having their exposed faces provided with indicia bordering said windows for correlation with the selected exposed indicia on the faces of such members, and said oppositely extending portions of said internal wall having oppositely extending other parts coacting with the said internal wall for retaining said members stationary within said compartments at the inner ends thereof, the said oppositely extending other parts being disposed at opposite inclinations.

8. In a calculating device a housing formed of an inner and an outer section, one of said sections including parts correlating with parts of the other one of said sections to provide said housing with a pair of oppositely extending closed inner end and open outer end compartments, one having an entrance at one end of the housing and the other having an entrance at the other end of the compartments, said compartments having their closed ends spaced inwardly of the ends of said housing, a pair of independently shiftable members each slidably mounted in one of said compartments and provided with indicia on each of its faces for selective exposure, and said sections provided with means for exposing selected indicia from the faces of a member from opposite sides of the housing.

9. In a calculating device comprising a housing formed therein with a pair of oppositely disposed parallel compartments for independently slidable card like carriers having indicia on each of their faces, said compartments having closed inner ends and open outer ends, said compartments being of less length than said housing and having their closed ends spaced inwardly from the ends of the housing, one of said compartments having its open end at one end of the housing, the other of said compartments having its open end at the other end of the housing, and said housing provided with means for exposing selected indicia from both faces of each carrier simultaneously from opposite sides of the housing.

10. In a calculating device comprising a housing having at opposite ends of its front and rear faces windows and formed therein with a pair of oppositely disposed parallel compartments for independently slidable card-like carriers having indicia on each of their faces, said compartments having closed inner ends and open outer ends, said compartments being of less length than said housing and having their closed ends spaced inwardly from the ends of the housing, and short of the windows in opposite ends and opposite face of the housing, one of said compartments having its open end at one end of the housing, the other of said compartments having its open end at the other end of the housing, said housing provided with means for exposing selected indicia from both faces of each carrier simultaneously from opposite sides of the housing, and said housing having means therein for normally retaining the carriers from sliding relative to the carriers.

11. In a calculating device, a housing provided therein with means to form a pair of oppositely disposed parallel spaced closed inner and open outer end independent compartments one having its open end at one end of the housing and the other having its open end at the other end of the housing, said compartments having their closed ends spaced inwardly from the ends, a pair of independently shiftable members each slidably mounted in one of said compartments and provided with indicia on each of its faces for selective exposure, said housing including a front and a back, said front being formed with means for exposing selected indicia from one face of each of said members and with indicia bordering said means for correlation with the said exposed indicia, and said front being formed with means for exposing selected indicia from the other face of each of said members and with indicia bordering said means of said front for correlation with said second mentioned exposed indicia, said indicia from each member visible without regard to the position or movement of the other member.

12. In a calculating device, a housing formed of an inner and outer section, said outer section being formed with spaced openings to provide said housing with windows, said outer section being provided with a pair of inwardly folded flaps disposed in offset relation and a pair of inwardly folded flaps disposed in offset relation formed with apertures aligned with certain of said windows, said inner section being connected to said outer section by said pairs of flaps and correlating with said outer section to form said housing with a pair of parallel spaced oppositely extending closed inner end and open outer end compartments one having its open end at one end of the housing and the other having its open end at the other end of the housing, the closed inner ends of said compartments being spaced inwardly from the ends of the housing and opposite windows, and a pair of independently shiftable members each slidably mounted in one of said compartments and each provided with indicia on each of its faces for selective exposure simultaneously through certain of said windows.

13. In a data viewing device, a housing and a pair of shiftable elements adapted to be carried within said housing, said housing being formed with two separated compartments therein open at opposite ends from each other and each adapted to house one of said shiftable elements, said compartments being each formed with window openings for viewing selective data on said shiftable elements, and said window openings being so arranged that either shiftable element may be viewed on both sides without regard to the specific position of the other element.

RALPH P. ROSS.