

Nov. 27, 1962

A. THOMAS

3,065,907

CURRENCY VALUATION COMPARATOR

Filed March 13, 1961

3 Sheets-Sheet 1

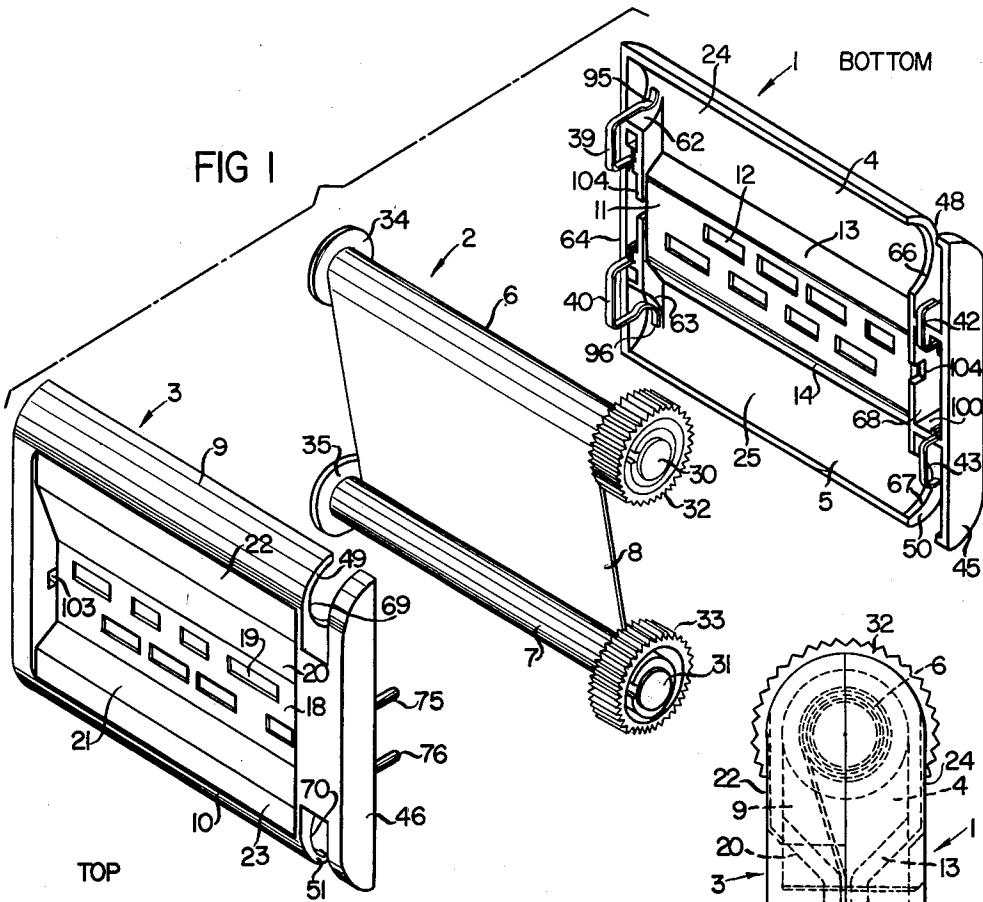
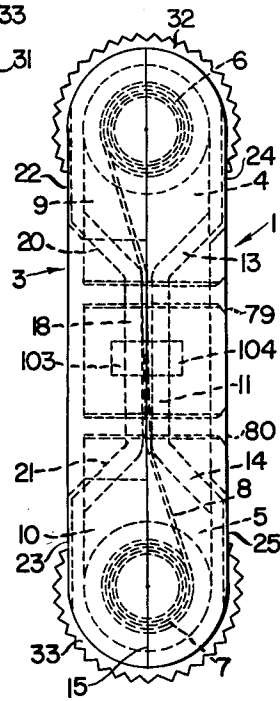


FIG 2

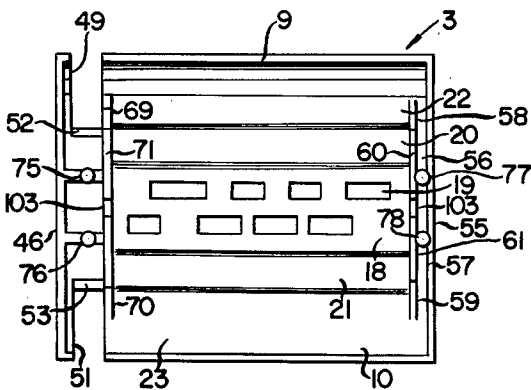


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3 Sheets-Sheet 2

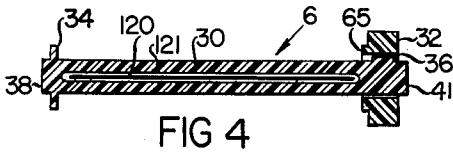


FIG 4

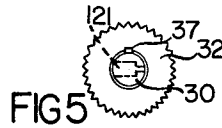


FIG 5

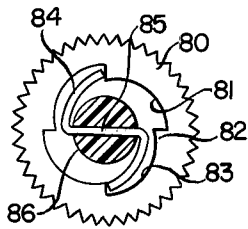


FIG 6

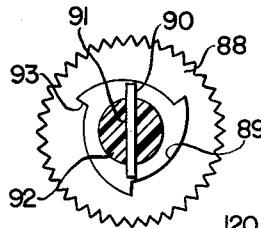


FIG 7

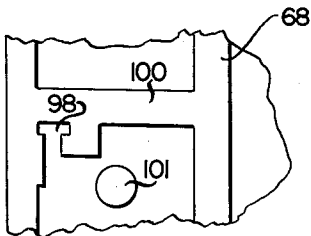


FIG 8

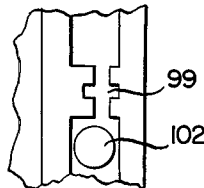


FIG 9

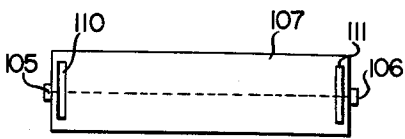


FIG 11

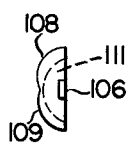


FIG 12

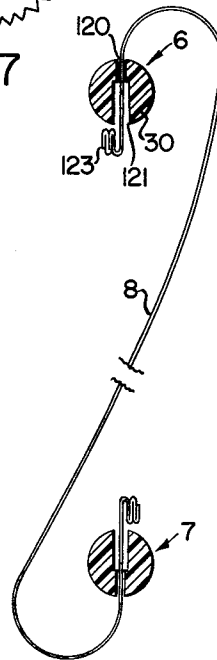


FIG 10

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CURRENCY VALUATION COMPARATOR

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3 Sheets-Sheet 3

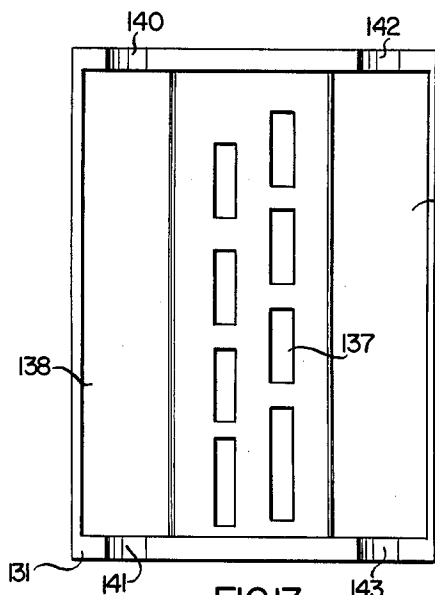


FIG 13

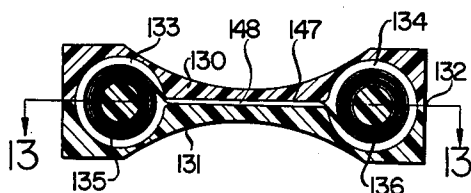


FIG 14

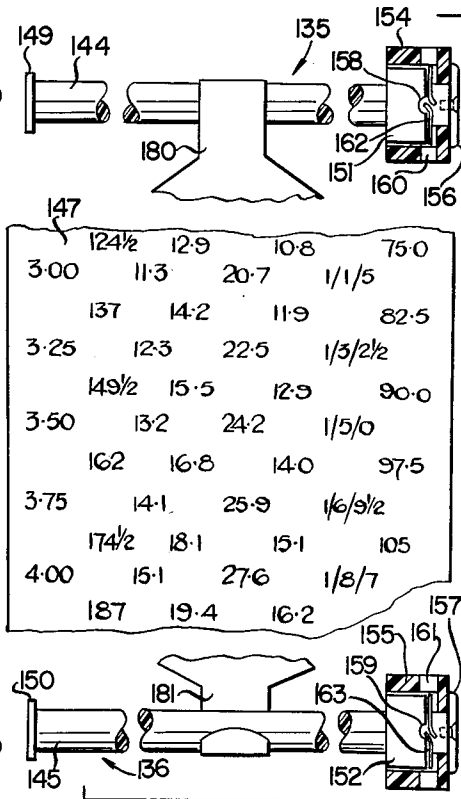


FIG 15

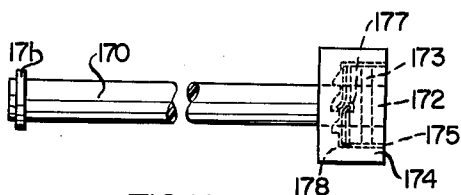


FIG 16

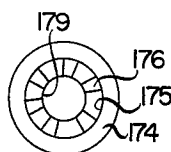


FIG 17

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3,065,907
CURRENCY VALUATION COMPARATOR
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Filed Mar. 13, 1961, Ser. No. 95,138
4 Claims. (Cl. 235—86)

This invention relates generally, as indicated, to a currency valuation comparator and more particularly to a pocket size device for ascertaining relatives or equivalents quickly and readily.

Tourists in foreign countries are often at a loss quickly and easily to compute comparative or equivalent currency valuations and many travellers pay for items in United States or other foreign currency without knowing its true value in the currency of the country in which they are making the purchase. Tourists often lose substantial amounts of money in this manner. Folding charts and other bulky and hard to carry items have sometimes been employed to chart or list the currency value equivalents of various foreign countries. However, such are not always easy to manipulate or read and proper use of such a device is time-consuming. Moreover, it is difficult to find the value of a United States dollar in terms of a foreign currency instead of vice versa.

There has been a long felt need for a very compact light-weight and easy to carry device by which a person could very quickly and readily translate the value of a United States dollar into the equivalent value of a foreign country currency. A traveller in Europe should be able quickly to ascertain the comparable value of the United States dollar in as many as ten or twelve foreign countries, e.g. Holland, Denmark, Great Britain, Sweden, Switzerland, Greece, Spain, Portugal, West Germany, Italy, Norway, France, and Austria.

It is accordingly a principal object of the present invention to provide a compact and easily carried device in which items such as currency values can easily be compared to ascertain equivalents.

It is another important object of the present invention to provide a compact device which can readily display equivalent valuations of such things as currency in a manner in which they can easily be read.

It is yet another important object of the present invention to provide a currency valuation comparator which can be cheaply and easily manufactured and which can be used over and over again.

It is a further object to provide a currency valuation comparator which will display in an easily ascertainable manner the equivalent currency values of a large number of countries which, of course, will enable American tourists, for example, to pay for something with currency of any foreign country instead of always in U.S. dollars.

It is yet another object to provide a currency valuation comparator which will provide a direct comparison between an extremely large number of specific currency values.

It is yet a further object to provide a currency valuation comparator which can very easily be manipulated quickly to ascertain many equivalent currency values.

Other objects and advantages of the present invention will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail certain illustrative embodiments of the invention, these being indicative, however,

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of but a few of the various ways in which the principles of the invention may be employed.

In said annexed drawings:

FIG. 1 is an exploded view of a preferred form of the present invention;

FIG. 2 is an enlarged end elevation of the device of FIG. 1;

FIG. 3 is a plan view of the inside of the cover of FIG. 1;

FIG. 4 is a longitudinal section of a reel that may be employed with the scroll of the present invention;

FIG. 5 is an end view of such reel as seen from the right in FIG. 4;

FIGS. 6 and 7 are end views of ratchet mechanisms that may be employed with the present invention to ensure that the reels are turned only in one direction;

FIGS. 8 and 9 are enlarged fragmentary detailed views of one cover with the spring mechanisms thereof removed for clarity of illustration;

FIG. 10 is a vertical section partially broken away showing the manner in which the valuation comparison chart is threaded through the two reels of the scroll;

FIG. 11 is a bottom plan view of a magnifying lens that may be employed with the device of FIG. 1;

FIG. 12 is an end view of the lens as seen from the left in FIG. 11;

FIG. 13 is a horizontal section of another form of comparator in accordance with the present invention taken substantially on the line 13—13 of FIG. 14 with the scroll removed;

FIG. 14 is a vertical transverse section of such form of comparator with the case and scroll assembled;

FIG. 15 is a fragmentary enlarged partially broken away view of another embodiment of scroll reel mechanism that may be employed with the present invention also illustrating on an enlarged scale the arrangement of the items to be compared upon the scroll;

FIG. 16 is a further form of scroll reel similar to that shown in FIG. 15 which may be employed with the present invention; and

FIG. 17 is a view of the thumb wheel or knob of FIG. 16 as seen from the right thereof with the arbor of the reel removed.

Referring now to the annexed drawings and more particularly to the embodiment illustrated in FIGS. 1 through 5, it will be seen that the preferred form of the present invention is comprised essentially of a bottom cover 1, a scroll 2 and a top cover 3. The bottom and top covers are preferably made from a molded plastic material and such covers are quite similar in form. The bottom cover 1 includes parallel semi-circular reel housings 4 and 5 adapted to receive the reels 6 and 7 respectively of the scroll 2. The scroll will include, of course, the chart 8 wrapped about the reels on which the items to be compared are printed. Similarly, the top cover 3 has similar semi-cylindrical top and bottom reel housings 9 and 10 parallel to each other adapted to mate with the housings 4 and 5 of the bottom cover 1 to form generally cylindrical chambers for reception of the reels 6 and 7 of the scroll 2.

The bottom cover 1 is provided with a recessed center plate or web 11 having a series of windows 12 therein which are vertically and horizontally offset. The illustrated embodiment has a total of eight windows in the plate 11 of the bottom cover. The plate 11 is joined to the respective cylindrical housing portions 4 and 5 by inclined flat surfaces 13 and 14. The interior surface of the plate 11 is almost, but not quite, flush with the parting line 15 between the bottom and top covers (see FIG. 2).

Similarly, the top cover 3 has a center depressed plate 18 with a series of horizontally and vertically offset win-

dows 19 therein with such center depressed surface 18 being interconnected with the cylindrical housing portions 9 and 10 by means of the inclined flat surfaces 20 and 21 respectively. Flat surfaces 22 and 23 interconnect the inclined surfaces with the cylindrical or curved outer portion of the housings 9 and 10 respectively. Similar flat portions 24 and 25 interconnect the inclined surfaces 13 and 14 with the cylindrical or curved outer portions of the housings 4 and 5 on the bottom cover 1. The under-surface of the plate 18 as seen in FIGS. 2 and 3 will be quite close and yet spaced from the parting line of the bottom and top covers and thus slightly spaced from the plate 11 of the bottom cover to provide a planar guideway for the scroll chart 8 moving from the reel 6 to the reel 7 and vice versa.

When the bottom and top covers are put together in the assembled positions shown in FIG. 2, the semi-cylindrical cavities 4 and 9 mate to form a compartment or chamber for housing the reel 6 and also the semi-cylindrical cavities 5 and 10 mate to form a housing or chamber for the reel 7.

In order to accommodate the reels 6 and 7 of the scroll within the chambers formed by the mating top and bottom covers, each cover is provided with side portions adapted to provide bearing surfaces for the reels as will now be described. Referring to the scroll of FIG. 1 as well as the detail views of FIGS. 4 and 5, it will be seen that the reels 6 and 7 each include arbors 30 and 31, with thumb wheels 32 and 33 having serrated peripheries being secured on one end with integral flanges 34 and 35 radially projecting at the opposite ends. Each of the reels will be identical in form and the construction thereof may more clearly be seen in FIGS. 4 and 5. A feather key or the like may be employed on the arbor 30 as shown at 36 to engage within slot 37 on the interior of the thumb wheel 32 so that rotation of the thumb wheel will rotate the arbor 30 of the reel 6. It is noted that the arbor extends beyond the flange 34 as shown at 38, such cylindrical extensions of the arbors engaging the spring mechanisms 39 and 40 secured in the bottom cover. Also, the arbor 30 extends beyond the thumb wheel 32 as shown at 41 to present a cylindrical bearing surface to engage the spring mechanisms 42 and 43 also secured in the bottom cover. The thumb wheel 32 need not be fastened securely to the arbor 30 since the thumb wheels 32 and 33 will be confined within slots formed in the mating side portions 45 and 46 of the bottom and top covers respectively. A slot 48 in the bottom cover will mate with slot 49 in the top cover to form a slot for the reception of the thumb wheel 32. Similarly slots 50 and 51 in the bottom and top covers respectively will form a slot for the reception of thumb wheel 33 when the covers are joined as shown in FIG. 2. The edges of the slots may be undercut or beveled as shown at 52 and 53 (see FIG. 3) better to accommodate the thumb wheels 30 and 31. It is noted that the slots 49 and 51 are spaced inwardly from the interior edge of the side portion 46 to allow room for the spring members 42 and 43 to bear against the projecting ends of the arbors beyond the thumb wheels 32 and 33. As seen in FIG. 3, the side portion 55 opposite the side portion 46 includes a pair of slots 56 and 57 to accommodate the bight portions of the U-shaped springs 39 and 40 secured in the bottom cover 1. The flanges 34 and 35 will be supported for rotation by frictional engagement with the arcuate surfaces 58 and 59 on the slot forming ribs 60 and 61, such arcuate surfaces being continuations of the interior arcuate or cylindrical surfaces of the portions 9 and 10 of the top cover. Thus the flanges 34 and 35 of the arbors will be held closely for rotation between such arcuate surfaces 58 and 59 and corresponding arcuate surfaces 62 and 63 in the end portion 64 of the bottom cover 1.

As seen in FIG. 4, the thumb wheels 32 and 33 are provided with shoulders 65 which are of the same diameter as the flanges 34. These shoulders on the thumb

wheels fit closely within the curved arcuate surfaces 66 and 67 in the scroll chamber end wall 68 on the bottom cover 1 and these surfaces mate with cylindrical surfaces 69 and 70 in the scroll chamber end wall 71 in the top cover 3. The springs 42 and 43 bear against the extensions 41 on the arbors outside the thumb wheels 32 and 33 just as the springs 39 and 40 bear against the extensions of the arbor beyond the flanges 34 and 35. It is noted that the arbors do not extend through the ends of the housing in this embodiment and the ends of the housing can then be completely flush to present a neat compact package. When the bottom and top covers are assembled, the only thing projecting from the housing formed thereby will be the serrated peripheries of the thumb wheels 32 and 33 as shown more clearly in FIG. 2.

Referring now to FIG. 2, it can be seen that the center depressed plates 11 and 18 in the bottom and top covers respectively present a narrow planar passage for the scroll chart 8 when passing from one reel chamber to the other. This thin narrow passage keeps the chart perfectly flat as it passes through the adjacent plates 11 and 18 correctly to expose items thereon at the windows 12 and 19. In order to assemble the top and bottom covers with the scroll therein, the top cover may be provided with four protruding pins 75, 76, 77 and 78 which fit within corresponding holes in the bottom cover 1. These pins will extend slightly beyond the surface of the bottom cover 1 and they can be swaged or finished in the beveled portions of the holes shown at 79 and 80 to present a perfectly flush surface for the cover 1. It will, of course, be understood that any means may be employed to join the bottom and top covers and it has been found that a plastic adhesive or solvent and the like employed along the parting lines 15 will hold the two covers sufficiently tightly to form a compact small package. In any event, the covers can be made so as to be readily forced apart for replacement of the scroll 2 with one having up-to-date values.

It will now be understood that in this embodiment, in order to move the chart 8 past the windows in the top and bottom cover, the thumb wheels must always be turned in the same direction. Thus if the thumb wheel 32 is turned in a clockwise direction as viewed in FIG. 1, the chart 8 will move upwardly. To get the chart 8 to move downwardly, the thumb wheel 33 must likewise be turned in a clockwise direction. This is, of course, because the chart is wrapped oppositely about the two arbors 30 and 31. If the thumb wheel should be turned in the incorrect direction, it may result in the improper unreeling of the chart from one arbor and this could damage the chart. To eliminate this possibility, ratchet or one-way clutch mechanisms as those disclosed in FIGS. 6 and 7 may be employed when securing the thumb wheels to the arbors. Thus in FIG. 6, there is disclosed a thumb wheel 80 provided with the serrated periphery and having a recess 81 therein with a series of notches 82 joined by surfaces 83 of gradually changing radius. A pawl or spring mechanism 84 is inserted through a slot 85 in the arbor 86. The curved ends of the pawl 84 are such that they will ride over the notches 82 when the thumb wheel is rotated in a clockwise direction as viewed in FIG. 6, but when such thumb wheel is rotated in a counterclockwise direction, the ends of the pawl will engage the notches 82 and cause the arbor 86 to rotate therewith. This then precludes the possibility of the scroll reels being turned in the wrong direction.

In FIG. 7, there is illustrated another form of ratchet or overrunning clutch that may be employed with the present invention and such comprises a thumb wheel 88 having a three-notch recess 89 therein with a pawl member 90 being freely transversely slidable in slot 91 in the arbor 92. The notches 93 will engage the pawl 90 only when the thumb wheel is rotated in a clockwise direction as viewed in FIG. 7 and such will ride over the notches due to the decreasing radius of the curved surfaces of the

recess 89 when the thumb wheel is rotated in a counter-clockwise direction as viewed in FIG. 7, thus not moving the arbor 92.

It has been found in devices of this nature that when one thumb wheel is rotated to pull the chart 8 from the reel 7 of the opposite arbor considerable tension is applied to the chart and when the proper item on the chart is aligned with the desired window, and the thumb wheel then released, the tension will tend to pull the chart backwardly requiring a further adjustment of the chart to realign the item and the window. Also, there is a tendency for plastic bearing surfaces to cause sticking of the device and a chatter or jumping when the parts move relative to each other. Thus the curved surfaces in the housings or covers have been made slightly larger in diameter than the bearing surfaces of the flanges on the arbors and thumb wheels in an effort to relieve this sticking. Since the tension on the chart would tend to hold the bearing surfaces tightly against one another, and increase this tendency of a plastic against plastic to stick when the shafts are rotated, the spring mechanisms 39, 40, 42 and 43 are provided. As seen more clearly in FIG. 1, each of the spring mechanisms comprises a generally U-shaped spring of proper resilient metal construction with one of the legs of the spring being straight and the other leg being curved, as shown at 95 and 96, at its distal end. The curved end portions of the springs are designed closely to conform to the arbor extensions at the opposite ends so that the springs always tend to exert a pressure to space or move the reel arbors 30 and 31 apart. When the chart is moved by means of the thumb wheels, the tension on the chart will tend to draw the two reels together against the pressure of the springs, such springs balancing the tension on the arbors created by the chart and permitting disengagement of the plastic bearing surfaces. When the item on the chart is aligned with the proper window as will hereinafter be described, the thumb wheel will be released and the springs automatically force the arbors outwardly or away from each other to act as brakes to keep the chart in its desired position precluding the tension thereon from pulling the chart a slight distance. Thus the springs act as self-acting brakes which are released when the chart is moved to preclude sticking of the plastic bearings. A chart tension is then employed to cooperate with the springs to achieve the desired smoothness of operation of the scroll within the covers.

Referring now to FIGS. 8 and 9, there is illustrated details of the bottom cover 1 showing how the bottom cover will be molded with narrow slots 98 and 99 with FIG. 8 illustrating the thumb wheel side of the cover and FIG. 9 illustrating the opposite side of the cover. These slots will receive the straight legs of the spring mechanisms. On the thumb wheel side the slot may be backed up by a transverse wall 100 extending between the inner wall and the outer wall of the side portion 45 of the bottom cover. The slot 99 may be formed by extensions on the relatively closer walls of the opposite side of the housing, both such slots 98 and 99 providing a firm rigid support for the one leg of the U-shape spring mechanisms. It is noted that FIGS. 8 and 9 also show holes 101 and 102 which may be employed to receive the pins 75 through 78 on the top cover.

The side walls adjacent the recessed face plates of the top and bottom cover are provided with notches as shown at 103 and 104 respectively at both ends of such plates and these are adapted to receive nipples 105 and 106 on the opposite ends of a clear plastic lens 107 (see FIGS. 11 and 12). The lens is provided with two parallel semi-circular portions as shown at 108 and 109 which correspond to the horizontal rows of windows 19 in the recessed plate 18 as seen on the top cover of FIG. 1. In this manner, the items viewed through such windows will be magnified in a vertical direction but not transversely. The undersurface of the lens 107 will be provided with arcuate cutout slot portions 110 and 111 which will enable

the nipples 105 and 106 more readily to be inserted in the notches 103 and 104. The cutouts 110 and 111 facilitate the inward bending of the end walls to allow the nipples readily to be inserted into the notches.

FIG. 10 illustrates the manner in which the chart 8 may be fastened to the arbors of the reels 6 and 7. The arbor of each reel is provided with a transverse longitudinally extending slot 120 which is only slightly wider than the thickness of the chart 8. Such slot is provided with an enlarged recess portion 121 so the end of the chart may be folded back and forth several times and glued or otherwise suitably fastened together as by staples with such enlarged end 123 being then positioned within the recess 121 and being considerably larger than the dimensions of the slot 120 to preclude the same from being pulled therethrough. Once the chart is secured in the arbor as shown, it can readily be wrapped thereabout. The opposite end of the chart 8 will be similarly secured in the arbor of the reel 7.

Referring now to the embodiment shown in FIGS. 13, 14 and 15, such embodiment closely resembles that of the FIG. 1 embodiment in that the casing for the scroll is comprised of a top and bottom cover 130 and 131 which mate along the planar parting line 132 to form cylindrical chambers 133 and 134 for reels 135 and 136 of the scroll therewithin. As seen in FIG. 13, the central portion of the covers are arcuately curved on the outside surface and provided with a series of horizontally and vertically offset windows 137. Each of the covers is provided with semi-cylindrical elongated cavities 138 and 139 with semi-cylindrical concentric openings 140 and 141 in the ends of the cavity 138 and openings 142 and 143 in the ends of the cavity 139. These openings are adapted closely to conform to the diameter of the arbors 144 and 145 of each of the reels 135 and 136. The windows will be provided in both the top and bottom covers so that items or numbers on both sides of the chart 147 can readily be compared by viewing the same through such windows. The central portions of the covers provide a planar thin passage 148 for the chart 147 as it moves from one reel chamber to the other. The device will preferably be made of a colored plastic material, but it will readily be understood that a transparent plastic material may be used with all but the window areas 137 blocked. Again, fastening means such as pins, screws or adhesive may be employed to hold the two halves together, but in any event, such halves may be readily separated to insert therein a more up-to-date chart. Also, access can then be obtained to the chart for repairs or the like.

Referring now to FIG. 15, it will be seen that the reels 135 and 136 are comprised of the arbors 144 and 145 with each having flanges 149 and 150 on the ends thereof which cooperate with the shoulders 151 and 152 on the opposite ends of such arbors to maintain the arbors in their proper position in the openings 140-143 through the side walls of the top and bottom covers. It will, of course, be understood that the flanges and shoulders on each of the arbors will be outside of the cover and that when the covers are firmly held together the arbors will be locked against longitudinal movement. It will also be understood that additional partitions or walls may be provided in the covers as in the FIG. 1 embodiment to enclose the flanges and shoulders within the scroll housing. Thumb wheels 154 and 155 enclose the shoulders 151 and 152 and are held on the arbor by means of retaining caps 156 and 157 which may be held by screws to the ends of the arbors. A transverse groove is provided in the outer surface of shoulders 151 and 152 as shown at 158 and 159 and similar transverse grooves are provided in the adjacent undersurface of the thumb wheels, such grooves being formed by transverse through-bores as shown at 160 and 161 respectively. A ratchet washer of spring steel or the like having its adjacent ends oppositely bent is employed

between the thumb wheel 154 and the shoulder 151 as shown at 162 and similarly a ratchet washer 163 is employed between the thumb wheel 155 and the shoulder 152. Since the thumb wheel is mounted on the arbor for relative movement therewith, it will be seen that rotation of the thumb wheels will cause the groove in the inside face thereof to engage the outturned edge of the ratchet washers then to cause rotation of the washers until the inturned edge engages the groove in the opposed shoulder. This will then cause rotation of the arbor in the proper direction. However, opposite rotation of the thumb wheel will be ineffective to rotate the arbors in that the grooves therein will ride over the bent portions of the ratchet washer.

In FIGS. 16 and 17, there is illustrated a similar type reel for a scroll mechanism wherein the arbor 170 is provided with a flange 171 at one end and a shoulder 172 at the other end. The shoulder may be integrally formed with the arbor, but preferably a transverse pin or the like 173 may be employed to hold the separable shoulder member on the arbor. The thumb wheel 174 is similar to the thumb wheels 154 and 155 and has an annular recess 175 therein facing outwardly with a series of peripheral notches 176 being provided in the outwardly directed inner face thereof. The shoulder 172 is provided with a transverse slot or notch 177 which cooperates with a ratchet washer 178 similar in form to the washers employed in the FIG. 15 embodiment. This washer has outwardly turned oppositely extending ends which engage within the notch 177 in the shoulder and also the notches 176 in the thumb wheel. Thus rotation of the thumb wheel in one direction will cause rotation of the arbor whereas rotation of the thumb wheel in the opposite direction will be ineffective to rotate the arbor. It will be understood that the aperture 179 in the center of the thumb wheel will be sufficiently larger than the diameter of the arbor 170 to permit free rotation of the thumb wheel thereabout. As in the FIGS. 13 through 15 embodiment, the flange and thumb wheel can project outwardly of the scroll housing to maintain the arbor 170 properly positioned.

As shown in FIG. 15, the scroll 147 may be fastened by means of narrow slots in the arbors for the narrow end portions 180 and 181 of the chart 147. The end of the chart can be inserted through the holes and then bent backwardly and the chart can then be wrapped securely about the arbors. It is noted that in FIG. 15, the center of the chart is shown on a somewhat larger scale than the rest of the scroll. The scroll will openly normally extend between the flange and shoulder on the opposite ends of the arbors.

Referring now to the layout of the items to be compared upon the chart shown more particularly in FIG. 15, it will be seen that the items are vertically and horizontally offset as are the windows in the scroll housing. Reading from left to right in FIG. 15, the first column may, for example, represent various values of United States currency in dollars. The second column may represent francs of Belgium and Luxembourg. The third guilders of Holland, the fourth kronors of Sweden, the fifth kroners of Denmark, the sixth francs of Switzerland, the seventh pounds, shillings and pence of the British Isles and the last drachmas of Greece. When the scroll is properly positioned in line with the windows as those, for example, shown in FIGS. 1 or 13, only every other item horizontally will register with a window. For example, if the three dollar (\$3.00) valuation of United States dollars was aligned with the top left window (FIG. 1) or top right window (FIG. 13), the other windows would register, reading from left to right in FIG. 1, in the following order:

Top Row (FIG. 1)

11.3 Holland guilders

20.7 Danish kroner
1/1/5 British pounds

Bottom Row (FIG. 1)

149½ Belgium, Luxembourg francs
15.5 Swedish kronor
12.9 Swiss francs
90.0 Greek drachmas

It will, of course, be understood that the opposite side of the chart will similarly be provided with vertically and horizontally offset items to be compared in any of the listed items. Thus, when the scroll is set as above the rear windows will expose the following, for example, in the respective rows:

179.1 Spanish pesetas
85.5 Portuguese escudos
12.5 W. German marks
1853 Italian lire
21.40 Norwegian kroner
5.45 Israelian pounds
14.69 French francs
75.9 Austrian schillings

Each printed figure on the paper strip can, for example, have .050 inch horizontal space with the maximum number of digits required for each country shown. The window width can then be .050 times the maximum number of digits for any one country plus .060 (½ space allowed at each end of the amount). The web portion between the windows in any horizontal row may be on the center line of the window in the other row. This arrangement makes for uniform overlap of the figures in any particular window when the scroll is operated and these figures pass by windows for the second group. Each window opening then overlaps the window in the adjacent row by approximately .0865 inch in every case. Since ½ of an inch space is allowed beyond the end of the printed figure, the maximum horizontal print space that will show in the other window as the roll is operated will be .054 inch, so that only one complete figure can show and it will appear only at the extreme edge of the window occupying the ½ clearance space which always exists when proper corresponding figures appear in the window.

As an example of the compactness of the device illustrated, the preferred embodiment is slightly less than 3 inches wide and only about 2¾ inches high. The maximum width of the largest window, that for the British Isles is only .460 inch. The window size may, of course, vary from that to as low as .260 inch for smaller value currency. In this manner, it can be seen that this device is substantially smaller than a cigarette package and as such, can readily be carried in a traveler's pocket, purse or the like. The unique staggering of the printed amounts on the scroll economizes scroll space and permits in such a small device the accurate comparison of as many as 16 different countries' currency values. Since the number of values that can be compared depends only on the length of the scroll, in the illustrated embodiments, as many as 105 different currency values of the American dollar can be compared with the equivalents in 15 foreign countries. A similar number of items in such foreign currencies can then likewise be compared with all of the other foreign countries as well as the American dollar. This permits the tourist to pay for items in any foreign currency including American dollars no matter what country he is in.

It can now be seen that an improved and unique scroll structure which can be applied to many uses other than currency value comparison has been provided. The unique spring structure and ratchet ensure proper operation of the scroll so that it will not become unraveled or the tension thereof will not tend to pull the scroll out of the properly set position. The pressure of the springs acts to stop unraveling of the scroll and at the same time reduces the tendency of the plastic-against-plastic bearing surfaces to stick when the shafts are rotated in use. In

this manner, no plastic shaft lubricant need be provided.

Since the housing can readily be disassembled, it can readily be seen that the chart with the currency values thereon can readily be replaced to keep the values up-to-date. With such a device, travelling should become much less expensive for many tourists.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described provided the features stated in any of the following claims or the equivalent of such be employed.

I, therefore, particularly point out and distinctly claim as my invention:

1. A compact pocket size comparator device comprising mating top and bottom molded plastic covers each having semi-cylindrical parallel opposed cavities therein forming reel-receiving chambers for a scroll and the like and having mating arcuate reel-receiving bearing surfaces at the ends thereof, opposed recessed portions in said top and bottom covers forming a centrally disposed scroll guide, a scroll including molded plastic reel arbors in the respective reel-receiving chambers, said scroll extending through said scroll guide, each said recess forming said scroll guide being formed with viewing means adapted to register with indicia on both sides of said scroll, said top and bottom covers being substantially symmetrical about a plane passing through the axes of said arbors within said reel-receiving chambers and mating in such plane, said arbors each having annular bearing surfaces which are received in the mating arcuate reel-receiving bearing surfaces at the ends of said reel-receiving chambers, said arbor bearing surfaces being slightly smaller than the bearing surfaces at the ends of said reel-

receiving chambers to afford a slight amount of play in said bearings, and spring means urging said arbors away from each other to relieve the tension caused by said scroll to prevent binding of the plastic bearing surfaces.

2. A device as set forth in claim 1 wherein said spring means comprises U-shape spring members, each having one leg fixed in one of said covers with the other leg resiliently engaging and urging said respective arbors away from each other.

3. A device as set forth in claim 1 including lens means covering said viewing means, said recesses having side walls, notches in said side walls, and means to secure said lens means in said notches and thus said recesses.

4. A device as set forth in claim 1 wherein said viewing means includes rows of windows in each cover, the windows of one row being horizontally offset from the windows of another row adapted to register with similarly offset rows of indicia on said scroll.

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