

[54] SERVICE REMINDER APPARATUS

3,634,958 1/1972 Drowns..... 40/68

[76] Inventors: Spurgeon Q. Bryant, 1139 Ninth St., Apt. G., Albany, Calif.; Samuel S. Keith, 4145 Punta Alta Dr., Los Angeles, Calif. 90008

FOREIGN PATENTS OR APPLICATIONS

1,286,556 1/1962 France..... 116/133
359,047 1/1962 Switzerland..... 116/133

[22] Filed: June 13, 1972

Primary Examiner—Louis J. Capozzi
Attorney—Robert R. Tipton

[21] Appl. No.: 262,321

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 105,438, Jan. 11, 1971, abandoned.

[52] U.S. Cl..... 116/133, 40/77.4, 235/114

[51] Int. Cl..... G09f 9/00

[58] Field of Search..... 116/130, 131, 133; 40/68, 70, 77.6; 235/114

[57] ABSTRACT

An apparatus for indicating mileage for various automotive maintenance periods is provided having numerical indicia carrying wheels arranged in rows and columns, each wheel rotatable by an operator's fingers from the rear of the apparatus and visible individually from the front. Indicia adjacent each row indicates the type of maintenance to be performed with a blank space for one row having a writing surface for special notations by an operator. A magnet is included for attaching the apparatus to the automobile — also a clip for the sun visor.

[56] References Cited

UNITED STATES PATENTS

2,787,069 4/1957 Ferguson et al. 40/70 R
3,455,273 7/1969 Willingham, Jr. 116/133

1 Claim, 8 Drawing Figures

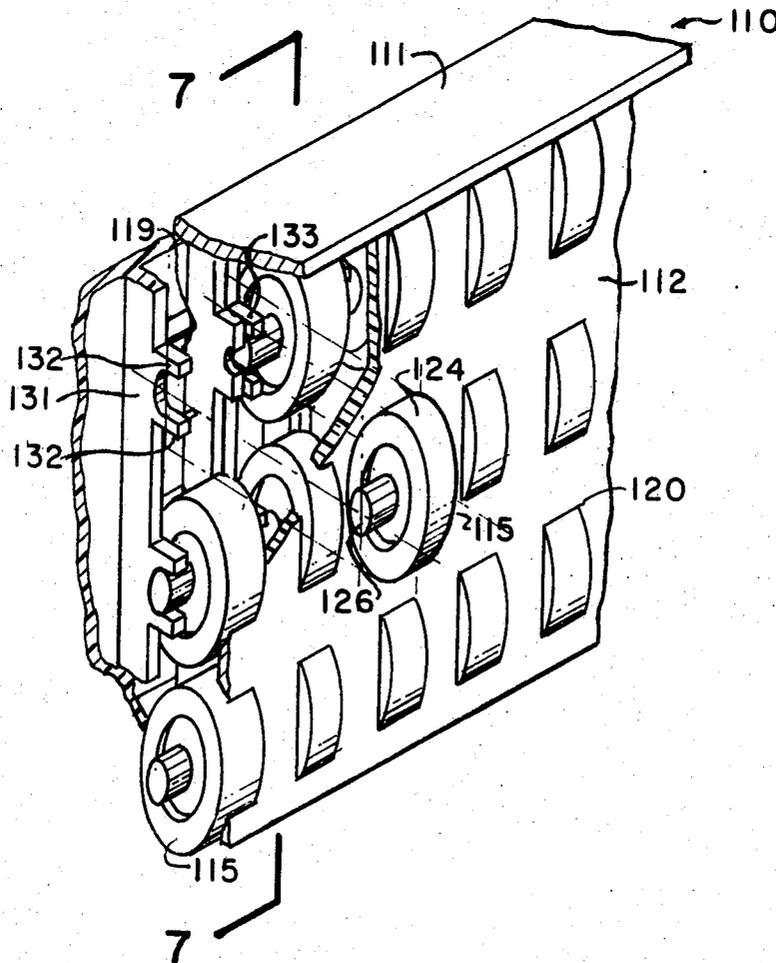


FIG. 1

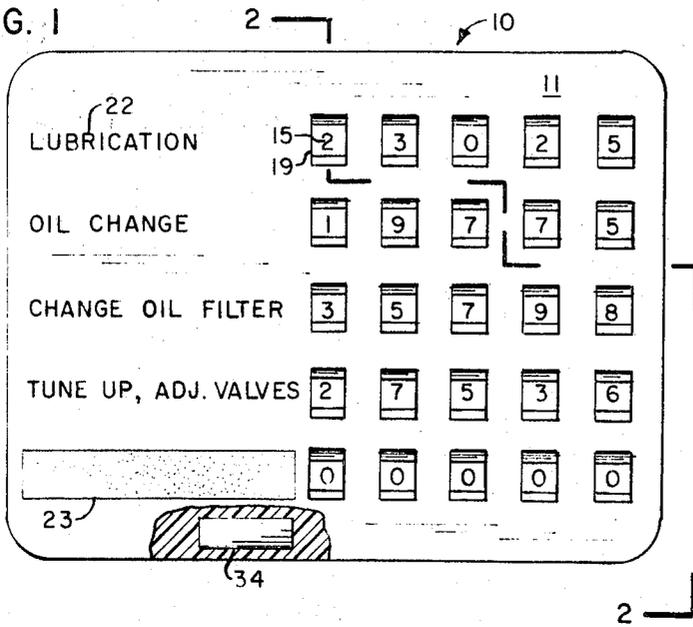


FIG. 2

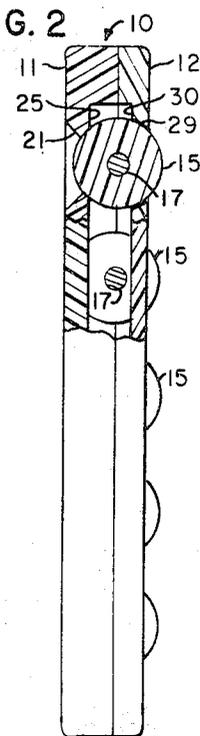
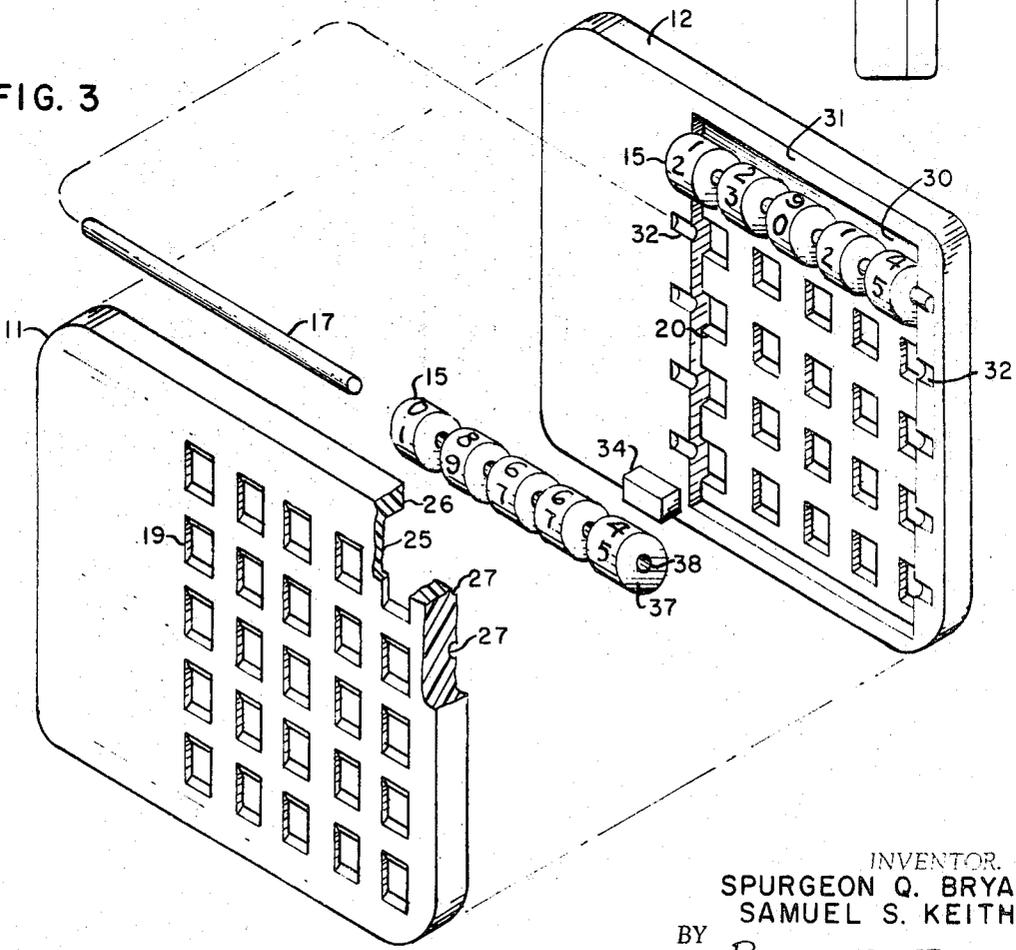
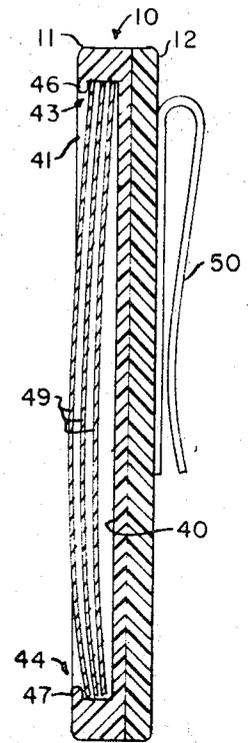
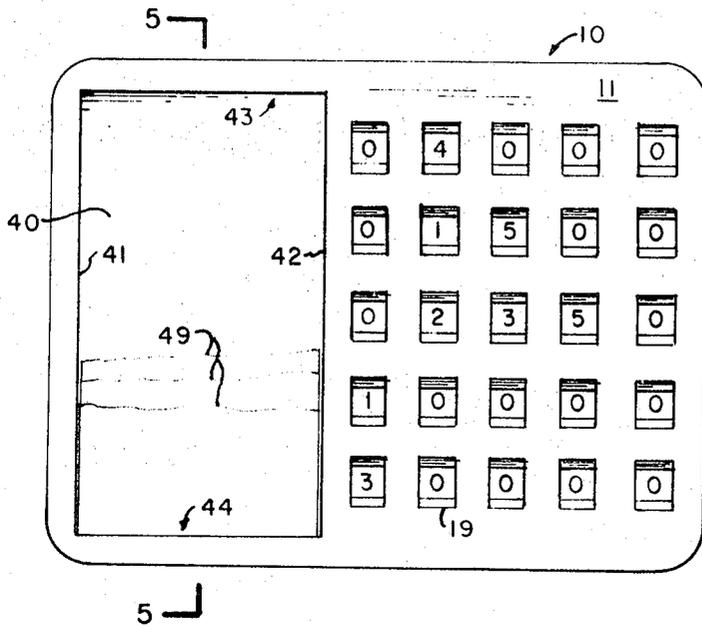


FIG. 3



INVENTOR
 SPURGEON Q. BRYANT
 SAMUEL S. KEITH
 BY *Robert R. Tipton*



INVENTOR.
SPURGEON Q. BRYANT
BY SAMUEL S. KEITH

Robert R. Tignor

SERVICE REMINDER APPARATUS
CROSS REFERENCES TO RELATED
APPLICATIONS

This application is a continuation-in-part of applica- 5
tion Ser. No. 105,438, filed Jan. 11, 1971 now abandoned, of the same title.

BACKGROUND OF THE INVENTION

This invention relates to indicia indicating devices 10
and in particular to devices having individually adjustable indicia indicating means.

The indicia indicating devices of the prior art comprise, generally, a plurality of indicia carrying wheels having knurled sides or notches to facilitate rotation of 15
the wheels. Some devices utilize a shaft having splines to engage individual wheels so that they may be rotated to expose the desired indicia on their surface.

Such devices were used to set mileage, telephone numbers or dates and time for the information of the operator, and are generally expensive to manufacture and mechanically complex.

SUMMARY OF THE INVENTION

The apparatus of the present invention is a service reminder apparatus or indicia indicating device of simplified construction in which each indicia carrying means is accessible for rotation from the rear of the apparatus while viewable from the front with a writing surface provided on the front of the apparatus and means for attaching the device to a support provided integral within the apparatus.

It is, therefore, an object of the present invention to provide an apparatus for displaying indicia which is settable by an operator.

It is another object of the present invention to provide an apparatus for displaying indicia which can be attached to a supporting surface.

It is still another object of the present invention to provide an apparatus for displaying indicia in which further indicia can be added or changed by an operator.

Other and more particular objects will be manifested upon study of the following detailed description when taken together with the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of the indicia indicating device of the present invention;

FIG. 2 is a partial sectional view of the indicia indicating device of the present invention taken at lines 2 — 2;

FIG. 3 is an exploded isometric view of the indicia indicating device of the present invention showing the method of assembly of the various parts of the apparatus;

FIG. 4 is a front elevational view of a second embodiment of the indicia indicating device of the present invention;

FIG. 5 is a sectional view of the second embodiment of the indicia indicating device of the present invention taken at lines 5 — 5;

FIG. 6 is an isometric partial view of another embodiment of the indicia indicating device of the present invention;

FIG. 7 is a partial sectional view of the indicia indicating device of the present invention taken at line 7 — 7 of FIG. 6; and

FIG. 8 is a partial sectional view of the indicia carrying wheel of the indicia indicating device of FIGS. 6 and 7.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. 1 and 2, the indicia indication device of the present invention basically comprises a housing 10 having a generally parallel front panel 11 and back panel 12 between which are disposed a plurality of indicia indicating wheels 15 arranged in rows and columns, each row of wheels 15 journaled on a common shaft 17.

A corresponding plurality of apertures 19 in front panel 11 and oppositely disposed apertures 20 in back panel 12 are arranged to receive wheels 15.

In detail, front panel 11 of housing 10 comprises a plurality of apertures 19 arranged in an ordered array of rows and columns with each aperture 19 provided with a bevel at top and bottom to facilitate reading of the indicia on wheels 15 which are recessed back from the front of front panel 11.

The area to the left of apertures 19 on the front surface of front panel 11 is provided with indicia 22 printed thereon for indicating the type of service to be performed upon reaching the mileage indicated by the indicia exposed through apertures 19 on wheels 15. One space in the area to the left of one row of apertures 19 is provided with a writing surface 23 upon which an operator may write special notes or information not provided for by the indicia 22.

Since housing 10 can be fabricated from either plastic or metal, writing surface 23 may be achieved by etching the surface with an appropriate material common in the art such as a solvent for plastic or an acid or alkali for metal, to create a roughened surface suitable for receiving and erasing pencil or pen markings.

The back or inside of panel 11 is provided with a recess 25 in the area of the rows and columns of apertures 19 to provide clearance for the passage of shaft 17. In lieu of recess 25, a semi-cylindrical groove adapted to receive shaft 17 would have to be provided in the panel material between each aperture 19 in each row.

Around recess 25 is a lip 26 adapted to mate with a like lip 31 on the inside or front of back panel 12. At each end of each row of apertures 19 and in lip 25 are disposed semi-cylindrical recesses 27 adapted to receive the ends of shaft 17.

Back panel 12 of housing 10 comprises a plurality of apertures 20 arranged in ordered array in rows and columns corresponding to the rows and columns of apertures 19 in front panel 11. A bevel 29 is provided at top and bottom of the inside of aperture 20 which is adapted to receive the contour of wheel 15. Aperture 20 is arranged to be of a size sufficient to permit wheel 15 to protrude outwardly from the back surface of panel 12 so that it may be rotated by an operator's fingers.

It is important that such access is available in the back of the device of the present invention in that it is intended that the device be installed on an automobile sun visor with back panel 12 (FIGS. 1 and 2) or back panel 112 (FIGS. 6 and 7) against the visor to prevent

the numbers from being changed while the device is so placed. Thus there will be no accidental movement of the wheels from the back or front side to cause error.

In the indicia indicating device of the present invention, no special knurled portions are required because of the smallness of the area available to the fingers, to facilitate rotation of wheels 15 of FIGS. 1 and 2 (wheels 115 of FIGS. 6 and 7), in that wheels 15 and 115 are sufficiently exposed in the back to permit obtaining a sufficient grip on the indicia carrying surface of the wheel for it to be rotated.

Similar to front panel 11, recess 30 is provided in the front or inside surface of back panel 12 in the area of the rows and columns of apertures 20 to provide clearance for the passage of shaft 17. In lieu of recess 30, a semi-cylindrical groove adapted to receive shaft 17 would have to be provided in the panel material between each aperture 20 in each row.

Around recess 30 is lip 31 adapted to mate with lip 26 on the inside or back of front panel 11. At each end of each row of apertures 20 and in lip 31 are disposed semi-cylindrical recesses 32 adapted to receive the ends of shaft 17.

Each indicia carrying wheel 15 comprises a cylindrical body 37 having a hole 38 through its axis of rotation which is adapted to receive shaft 17.

The outer cylindrical surface of wheel 15 is provided with indicia printed thereon. In the present embodiment, the numbers 0 through 9 are used. These numbers are distributed equally spaced at 36° intervals around the surface of wheel 15.

It must be noted that the width of wheel 15 is slightly less than the width of apertures 19 and 20 in order to provide sufficient clearance to permit wheel 15 to rotate freely within apertures 19 and 20. In addition, the opening of aperture 19 must be high enough to permit viewing of only one indicia on wheel 15 at a time. The height of both apertures 19 and 20 must also be sufficient to allow clearance for wheel 15 to rotate about shaft 17.

With reference to FIG. 3, the indicia indicating device of the present invention is assembled by first placing wheel 15 on shaft 17 corresponding to the number of columns of apertures 19. The wheel-and-shaft assemblies are then placed with the ends of shaft 17 in semi-cylindrical grooves 32 of back panel 12 and wheels 15 received in each aperture 20. Front panel 11 is then placed over back panel 12 mating at lips 26 and 31 with wheels 15 received in apertures 19 and the ends of shaft 17 received in grooves 27.

An adhesive is used on lips 26 and 31 to permanently fasten front panel 11 to back panel 12. Other fasteners such as screws, nails and bolts or the like may also be used.

For proper operation of the indicia indicating device of the present invention, shaft 17 must be prevented from rotating. This may be accomplished either by applying an adhesive to the end of shaft 17 to affix it to either groove 32 or 27 or reduce the diameter of semi-cylindrical grooves 27 and 32 and provide, in effect, a "shrink fit" about the ends of shaft 17.

Since the indicia indicating device of the present invention will be subjected to vibration which may tend to cause wheels 15 to rotate, it is preferable that hole 38 in body 37 of wheel 15 be slightly smaller in diameter than shaft 17 to resist but not prevent manual rotation of wheel 15 about shaft 17. To permit such resis-

tance, wheel 15 and shaft 17 can be fabricated from a resilient material such as polystyrene or other plastic material.

With reference to FIGS. 6 and 7, there is illustrated a second embodiment of the indicia indicating device of the present invention incorporating, basically, similar elements as the embodiment of FIGS. 1 and 2, namely, a housing 110 having a front panel 111 which is generally parallel to a back panel 112 between which are disposed a plurality of indicia carrying wheel 115 arranged in rows and columns.

A corresponding plurality of apertures 119 in front of panel 111 and oppositely disposed apertures 120 in back panel 119 are arranged to receive wheels 115.

The indicia indicating device of FIGS. 6 and 7 is distinguished from the device of FIGS. 1 and 2 in that no common shaft is provided to facilitate rotation of indicia carrying wheels 115, but rather, each indicia carrying wheel 115, as shown in FIG. 8, comprises a generally circular body member 123 about the periphery of which is a generally cylindrical indicia carrying surface 124 with a first hub 126 having its axis of rotation coincident with the axis of rotation 125 of said body member 123 and attached to one side thereof.

A second hub 127, also having its axis of rotation coincident with the axis of rotation 125 is attached to the other side of body member 123.

First hub 126 further comprises a plurality of flat surfaces 129 disposed about the periphery of hub 126 and parallel to the axis of rotation 125.

The number and placement of flat surfaces 129 will depend upon the number and placement of indicia on indicia carrying surface 124. For the present example, in which the number "0" through "9" are equally spaced about surface 124, there are 10 surfaces 129 at equal angular spacing of 36 degrees about the periphery of hub 126.

It will be noted that second hub 127 has been made of a different diameter than that of hub 126 and is generally cylindrical in shape. As will be discussed below, the purpose of the different diameter hubs is to facilitate installation of wheels 115 in housing 110.

With reference to FIGS. 6 and 7, a support and spacer ridge 131 is provided in the back of front panel 111 on which are disposed hub retainer arms 132 and 133 which are adapted to receive hubs 126 and 127, respectively.

With particular reference to FIG. 7, back panel 112 is provided on its interior surface with hub retainers 135 and 136 which are adapted to engage the top ends of hub retainer arms 132 and 133, respectively. Hub retainer arms 132 and 133 are arranged to be of a length equal to the diameter of the hub it is to retain so that when either hub retainer 135 or 136 engages the ends of retainer arms 132 and 133, respectively, there will be little or no "play" or looseness between the respective hub retainer and hub, and the hub will be in slidable contact with its hub retainer.

Furthermore, it will be noted that the flat portion of hub retainer 135 is in engagement with a flat surface 129 on hub 126 thereby acting as a detent or means for restraining rotation of hub 126. Since the material from which panel 112 and wheel 115 is fabricated is flexible to a small degree, namely a molded plastic, wheel 115 can be rotated in increments according to the placement of flat portions 129 by an operator's finger applied to the indicia carrying surface 124 which pro-

trudes from back panel 112, to override the detent action of surface 129 and retainer 135. This feature is important since the device will be fastened to a vehicle and will be subjected to vibration which would cause the indicia carrying wheels 115 to move from their initial setting by the operator.

It will also be noted that the length of hub retainer arms 133 is shorter than the length of hub retainer arms 132 due to the different diameters of hubs 127 and 126. The lengths of hub retainer 136 has been adjusted and increased to permit its engagement with the ends of arms 133 to maintain slidable engagement of retainer 136 with hub 127.

It can be seen that through the use of the wheel 115 configuration of FIGS. 6, 7 and 8, only three basic dies will be needed to mold the parts for the indicia indicating device of the present invention. One die for wheel 115, one die for front panel 111 and one die for back panel 112.

Since wheel 115 includes two different size hubs 126 and 127, assembly of the device is facilitated since wheels 115 can be installed in only one manner. Hub 126 will fit only between arms 132 while hub 127 will fit only between arms 133.

So that the indicia indicating device of the present invention may be attached to the automobile where it can be in continuous view of an operator, a permanent magnet 34 is provided in housing 10. Of course, other devices may be used such as a spring clip 50 shown in FIG. 5, where the device is to be fastened to a sun visor or like part of the automobile interior.

With reference to FIG. 4, another embodiment of the indicia indicating device is shown having a recess 40 in the space to the left and adjacent apertures 19 for the purpose of holding paper or other sheet material upon which indicia may be imprinted or indicia may be written by an operator.

FIG. 5 is a section through housing 10 and recess 40 at lines 5 - 5.

Recess 40, in FIG. 4, comprises basically, left and right vertical sides 41 and 42, respectively, and upper and lower horizontal sides 43 and 44, respectively, and is of a depth sufficient to accommodate more than one card or sheet of material.

Vertical sides 41 and 42 are generally straight and perpendicular to the surface of housing 10 while horizontal sides 43 and 44 are each provided with an inwardly projecting lip 46 and 47, respectively. Lips 46 and 47, in the illustrated embodiment are the means by which paper or cards 49 are retained in recess 40.

Paper or cards 49 are cut to a length equal to or slightly longer than the height of recess 40 measured between upper side 43 and lower side 44 under lips 46 and 47, respectively. Cards 49 are also cut to a width

slightly less than the distance between vertical sides 41 and 42 so that they may be removed merely by bending or bowing card 49 sufficiently in the middle to release it from lips 46 and 47.

The indicia on cards 49 can be imprinted in various combinations to provide an unlimited variety including one or more spaces in which indicia may be written by an operator thus permitting maximum flexibility in the use of the indicia indicating device of the present invention.

To operate the indicia indicating device of the present invention, an operator, using his fingers against the protruding part of wheel 15 or 115 from the back of housing 10 or 110, rotates each wheel 15 or 115 as required to expose the desired indicia at the front of housing 10 or 110 through apertures 19 or 119. The numbered indicia on wheels 15 or 115 of the present apparatus can be set for the particular mileage at which the service noted to the left of the row must be performed. Special indicia, of course, can be written on surface 23.

We claim:

- 1. An indicia indicating apparatus comprising
 - a housing having generally parallel front and back panels,
 - a plurality of front apertures in said front panel,
 - a plurality of corresponding back apertures in said back panel disposed opposite said front apertures,
 - a plurality of corresponding indicia carrying wheels comprising a generally circular body member having a generally cylindrical indicia carrying surface viewably disposed at said front aperture and protruding from said back aperture for rotation by an operator's fingers using said indicia carrying surface,
 - a first hub having a plurality of flat surfaces corresponding in number to the number of indicia on said indicia carrying surface of said body member, said first hub attached to one side of said body member having its axis of rotation coincident with the axis of rotation of said circular body member,
 - a second hub, smaller in diameter than said first hub, attached to the other side of said body member and having its axis of rotation coincident with the axis of rotation of said circular body member,
 - a set of first retainer arms attached to said housing adapted to receive said first hub and exert a force on at least one of said flat surfaces of said first hub, and
 - a set of second retainer arms attached to said housing disposed adjacent said set of first retainer arms, adapted to receive said second hub.

* * * * *

55

60

65