

April 8, 1958

E. H. HEITLER

2,829,745

LUGGAGE CASE SUCH AS HAT BOX

Filed Jan. 27, 1955

2 Sheets-Sheet 1

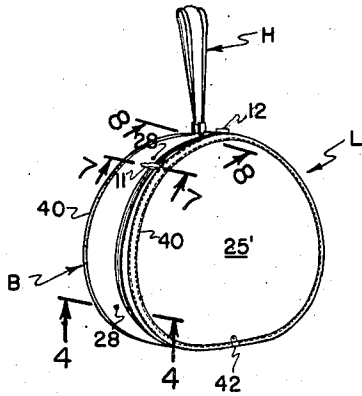


Fig. 1

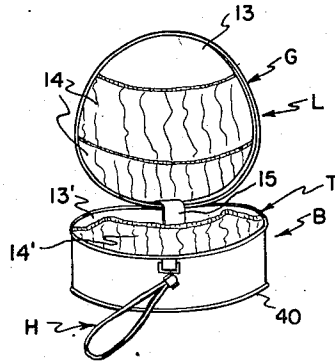


Fig. 2

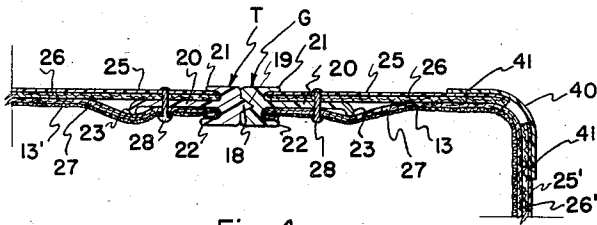


Fig. 4

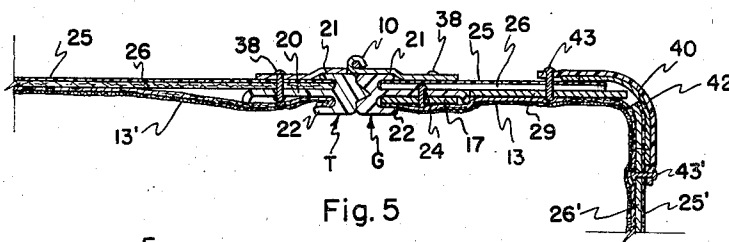


Fig. 5

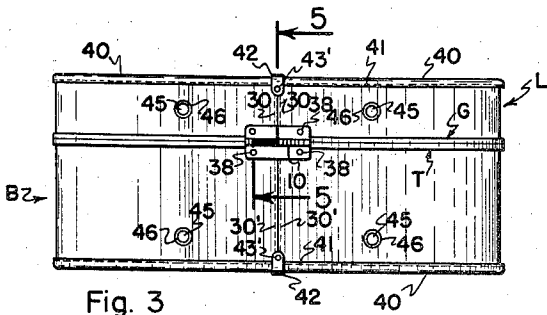


Fig. 3

INVENTOR.
 Emmett H. Heitler
 BY
Horace B. Van Valkenburg
 ATTORNEY

April 8, 1958

E. H. HEITLER

2,829,745

LUGGAGE CASE SUCH AS HAT BOX

Filed Jan. 27, 1955

2 Sheets-Sheet 2

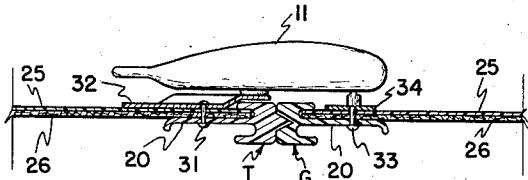


Fig. 7



Fig. 10

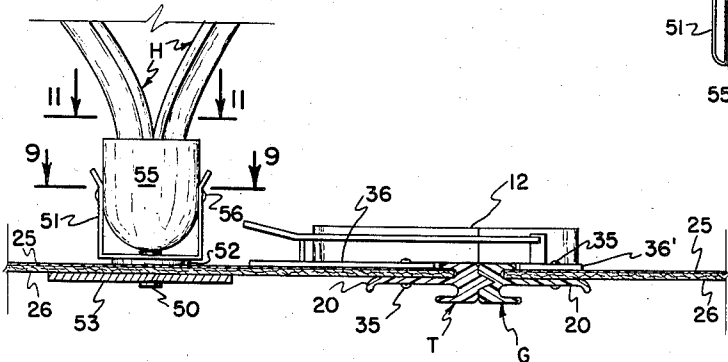


Fig. 8

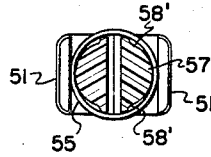


Fig. 11

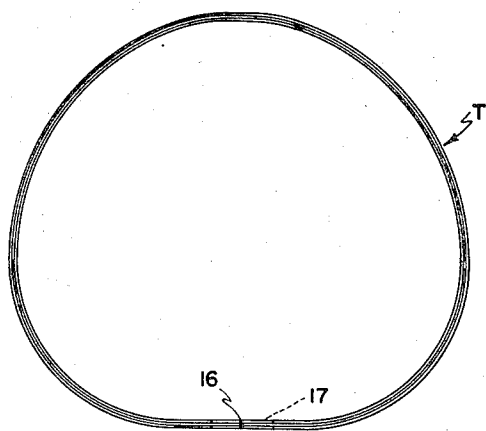


Fig. 6

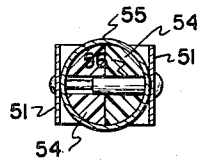


Fig. 9

INVENTOR.

Emmett H. Heitler

BY

Horace B. Van Velsor
ATTORNEY

2,829,745

LUGGAGE CASE SUCH AS HAT BOX

Emmett H. Heitler, Denver, Colo., assignor to Shwayder Bros., Inc., Denver, Colo., a corporation of Colorado

Application January 27, 1955, Serial No. 484,335

10 Claims. (Cl. 150—28)

This invention relates to luggage cases and more particularly to hat boxes, although certain principles of this invention may be applied to types of luggage cases other than hat boxes.

In previous luggage cases and particularly hat boxes, numerous and varied types of constructions have been utilized. For instance, luggage cases have been made of leather, formed to shape and sewed at the corners of two sections, the sections being generally rectangular or perhaps having other shapes, and often provided with a lining of fabric. Along the bottom, such sections have been provided with a backing plate or reinforcement to which a hinge or hinges connecting the two sections together are attached. Also, a reinforcement for the remaining edges of one section may be adapted to be received by an L-shaped reinforcement for the corresponding edges of the opposite section. The two sections may be held in closed position by various types of locks, bolts, draw bolts and the like. However, the principal structural element of such luggage cases is the leather, with the parts attached to the abutting edges of the sections being merely reinforcement for the leather. In other types of luggage cases, the principal load resisting elements of the two interfitting sections have been made from panels of plywood or the like, covered with fabric or plastic, with reinforcing plates, hinges, cooperating edge reinforcements, hardware and similar parts being attached thereto in a manner similar to the leather case described above. While sturdy in construction and highly resistant to wear and therefore quite serviceable and highly popular, since many millions have been sold, such luggage cases tend to be heavier than desired. Also, the two sections of the case have been made from metal drawn to shape, so that there are no abutting edges or joints at the corners, but the weight is still unduly great. Numerous improvements have of course been made in the construction of luggage cases, but the essential load bearing elements have always comprised the material of which the case sections are made. Of course, reinforcing strips have been added at the corners and at various points, particularly on the outside edges, which contribute considerably to the strength and durability of the case. Nevertheless, with the principal load bearing elements being the sides, bottoms and ends of the case sections, the walls of the sections are necessarily sufficiently heavy to withstand the load imposed thereon so that the ultimate in light-weight luggage cases has not been achieved.

Among the objects of the present invention are to provide a novel type of construction for luggage cases; to provide such a construction which is particularly applicable to hat boxes, but certain features of which are also applicable to other types of luggage cases; to provide such a construction in which the principal load bearing elements are comparatively light in weight; to provide such a construction in which the bottom, sides and ends of the sections are not required to resist the load to be placed thereon and therefore may be lighter in weight than previously; to provide a novel hat box; to provide such a hat

box which is light in weight, yet has sufficient resistance to forces which would tend to deform the same; to provide such a hat box comprising two sections which fit together easily and provide a maximum of strength when so fitted together; to provide various novel parts for a luggage case, including the load bearing parts, the parts of the sections which interfit and the manner in which the remainder of the sections are attached thereto; to provide a novel handle for a hat box or the like; and to provide such a hat box and other luggage cases embodying certain principles of construction thereof, which are relatively economical to manufacture.

Additional objects and the novel features of this invention will become apparent from the description which follows, taken in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of a hat box, in closed position, constructed in accordance with this invention;

Fig. 2 is a perspective view of the hat box of Fig. 1, in open position;

Fig. 3 is a bottom view, on an enlarged scale, of the hat box of Fig. 1;

Fig. 4 is an enlarged fragmentary cross section, taken along line 4—4 of Fig. 1;

Fig. 5 is an enlarged offset fragmentary cross section, taken along line 5—5 of Fig. 3;

Fig. 6 is a plan view of a tongue or groove section, which forms the principal load bearing part of each of the sections of the hat box;

Fig. 7 is a fragmentary enlarged section, taken along line 7—7 of Fig. 1;

Fig. 8 is an enlarged fragmentary section, taken along line 8—8 of Fig. 1;

Fig. 9 is a section taken along line 9—9 of Fig. 8;

Fig. 10 is a cross section at the center of a handle loop; and

Fig. 11 is a section taken along line 11—11 of Fig. 8.

As illustrated in Figs. 1-3, a hat box constructed in accordance with this invention may comprise a body section B and a lid section L, each having a flat bottom so that with the sections closed, as in Fig. 1, the flat bottom will form a base on which the hat box may conveniently be placed with a handle H uppermost. For access to the interior of the hat box, it may be placed with the body B laid on a support so that the lid L may be raised, as to the position of Fig. 2. The two sections may be connected at the bottom by a hinge 10, as in Fig. 3. In closed position, the sections may be held together by a pair of draw bolts 11 and a lock 12, the draw bolts 11 being conveniently positioned about 120° apart, i. e., the hinge and draw bolts thus being placed substantially equidistantly around the periphery of the case. The lock 12 is preferably disposed opposite the hinge 10 to lock the case in closed position, when access by unauthorized persons is to be denied. During use when closed, the case is most conveniently placed on the flat bottom, as in the position of Fig. 1, and is conveniently carried by means of the loop handle H. The interior of the hat box may be provided with a suitable lining 13 for the lid L and a lining 13' for the body B, formed of rayon or other suitable fabric material. In addition, pockets 14 may be attached to the underside of the lid L, while additional pockets 14' may be attached around the sides of the body B. The pockets 14 and 14' may be conventional shirred material, similar to the lining, provided with covered elastic along the upper edges. Also, an apron 15 may connect the two sections of the case, at the hinge, to prevent articles being caught between the sections as the case is closed.

In accordance with this invention, the principal load bearing members of a luggage case, comprise a pair of cooperating strips, such as a tongue strip T extending

3

around the entire peripheral edge of one section, such as body B, and a groove strip G extending around the entire periphery of the other section, such as the lid L. These tongue and groove strips interfit with the case in closed position to form a stable frame adapted to resist the load and stresses placed on the case, which will normally be imposed with the case in the upright position of Fig. 1. The tongue and groove strips are identical in contour such as that shown in Fig. 6 for tongue strip T, being extruded or produced in any other suitable manner from aluminum alloy or other light-weight metal and formed to the shape of the edge between the two sections of the case. The extruded strips may be cut to length and formed to shape with the abutting ends meeting at a point 16, conveniently at the flat base, with the abutting ends connected by a plate 17, shown also in Fig. 5. The head of tongue strip T is, of course, provided with a tongue 18, and the head of the groove strip G with a groove 19 which, as in Figs. 4 and 5, interfit with the case in closed position. It is to be noted that the tongue 18 and the groove 19 fit together around the entire periphery of the case, so that when the sections are held together in closed position, as by the hinge and draw bolts, or also by the lock, as previously described, the forces which tend to deform the case are resisted by the two strips in unison.

In further accordance with this invention, each of the tongue strip T and groove strip G, as in Figs. 4 and 5, is provided with a central web 20 extending in the opposite direction and on the opposite side of the head from the tongue 18 and groove 19, respectively, while an outer flange 21 and an inner flange 22 extend substantially parallel to the web 20 and in spaced relation thereto, with the web 20 preferably having a greater depth, i. e., with the flanges 21 and 22 preferably having less depth than the web 20. The web 20 may also be provided with an intumed end or bead 23, conveniently facing to the inside, to add additional strength to the web 20 and the strips, which can thereby be made slightly lighter in cross section to reduce the weight of the case. Each plate 17 may be riveted to the web 20 of the abutting ends of the strips T and G, respectively, as in Fig. 5, by hollow rivets 24. Each plate 17 is preferably placed on the inside, extending beneath flange 22 and is preferably attached to the strips prior to assembly of the case, so that each strip will be a ring-shaped structure for use in assembly.

The side walls of the body B and lid L, as well as the ends thereof, may be made of a plurality of layers, the extending edges of which fit between the web 20 and flange 21, while the corresponding edges of the lining and backing for the lining fit between web 20 and flange 22, as in Figs. 4 and 5. The outermost layer may be a covering layer 25 of a vinyl plastic or other suitable wear-resistant material, preferably bonded to an intermediate layer 26 of fibrous material, such as fiberboard, reinforced as by impregnation with plastic on one or both sides, preferably at least on the side to which the plastic covering layer 25 is bonded, the edges of layers 25 and 26 extending into the space between web 20 and flange 21 of the tongue and groove strips. On the inside, a lining backing layer 27, formed of "kraft" paper or other suitable material, along with the lining 13 of the lid L and the lining 13' of the body B, respectively, extends into the space between the inner flange 22 and web 20. At spaced points around the periphery of the tongue strip T and the groove strip G, the respective layers are securely attached to the web 20, as by rivets 28 of Fig. 4, which extend through the web 20 of the strips T and G, respectively, as well as through the layers.

The sides of the body B and lid L may be formed integrally with the ends thereof, but are preferably formed separately, the sides being formed by a rectangular strip of the layers 25 and 26 bonded together and formed into

4

a circular shape of the desired perimeter, with the abutting edges connected by a reinforcing fiber strip 29, on the inside as shown in Fig. 5, and conveniently attached to the abutting ends by stitching 30 and 30', respectively, shown in Fig. 3. The edges of these endless strips of layers 25 and 26 may then be inserted between the flange 21 and web 20 of the respective tongue strip T and groove strip G and conveniently attached to the webs 20 thereof by the same rivets by which the hardware is attached to the case, such as a rivet 31 for the base 32 of each draw bolt 11 and each rivet headed draw bolt pin 33, preferably bearing against a plastic washer 34 on the outside, as in Fig. 7, as well as the rivets 35 for flanges 36 and 36' of lock 12, as in Fig. 8. Hinge 10, which may be attached by rivets 38, outside the ends of plates 17, as in Figs. 3 and 5, may be attached at this time, but is conveniently attached at a later time, to permit the body B and lid L to be handled separately while attaching the ends thereto, each of which comprises a sheet of layers 25' and 26' bonded together and cut to the desired shape. The layers 25 and 26 of the sides of body B and lid L may be attached to the end layers 25' and 26', as in Figs. 4 and 5, by the edge strips 40 formed of extruded or molded plastic and fitted around the corner between the sides and ends and secured thereto by stitching 41. The abutting ends of edge strips 40 are preferably placed at the bottom of the case and each joint protected, as by a knee 42 attached by rivets 43 and 43', extending through the layers 25, 26 and 29 at one end, and layers 25' and 26' at the opposite end, as in Fig. 5. In addition, at the bottom, as in Fig. 3, a number of metal buttons 45, each resting on a washer 46 of plastic or other suitable material, may be riveted to the layers 25 and 26, such as a pair of buttons 45 in spaced positions on the bottom of each of the body B and lid L. Buttons 45 support the case when placed in upright position, as in Fig. 1, thereby preventing it from resting on hinge 10 or on the edge strips 40.

The handle H may also be mounted on the body B at this time, as by a flat-headed rivet 50 of Fig. 8 which extends through the base of a U-shaped bracket 51 resting on a washer 52, with rivet 50 extending through the covering layer 25 and reinforcing fiber layer 26 and the inner end of rivet 50 being riveted over against a metal plate 53 which preferably is sufficiently large that the load imposed by the handle H will be distributed over a sufficient area of the side wall of the case that there will be little possibility of the plate 53 damaging the hat box when the box is lifted by the handle H. Of course, with the relatively light-weight construction described herein, the load is quite light, since hats weigh very little and other accessories, such as gloves, stockings and the like which might also be carried in the hat box, do not add unduly to the total weight. The handle H may comprise a generally flattened strip conveniently molded from a suitable material, such as a flexible plastic composition, and provided with molded ends 54 which are arcuate on the outside so as to fit together within a cylindrical cup 55, conveniently closed at its lower end. Both handle H and cup 55 may be pivoted between the legs of bracket 51 by a pin 56, which may be formed in two sections, as in Fig. 9, one adapted to be inserted into the other and the two adapted to be attached together, as by a force fit, or by each being riveted to a side of bracket 51. As will be evident, handle H may pivot about pin 56 so that it may be disposed at any other desired angle to the hat box, thus adding to the convenience of its use. The handle H, at the top of the loop, as shown in Fig. 10, may include a sector-shaped center 57 with a flange 58 terminating in a bead 59 at each side. The width of the handle strip may decrease slightly from about the middle of the loop to each end 54, so that over this portion, the beads 59 first disappear and then the flanges 58 become narrower until only a slight flange 58' exists just above each end 54, as in Fig. 11.

5

After the handle H has been attached to the body section B or prior thereto, the ends of the case sections may be attached to the side walls by placing the edge strips 40 in position and stitching the side walls and ends thereto, after which the knees 42 may be riveted in position. Up to this point, the operations may be conducted on the body B and lid L separately, for convenience in assembly. Then, the hinge 10 may be attached to the two sections of the case and, as a final operation, the linings 13 and 13' may be installed in the case sections. Each lining may be attached to the lining backing 27 in a conventional manner, the edges of the linings 13 and 13' which are to be placed beneath the inner flanges 22 preferably being folded over the edges of backing strips 27, glued in place on the back and then stitched around the edges. The pockets 14 and 14' may be attached to the linings prior to placement in the respective case section, while apron 15 is conveniently attached to the lining for the lid L prior to placement therein. The edges of the linings are inserted beneath the flanges 22, whereupon the rivets 28 may be installed, and apron 15 then brought down from lid L and attached to lining 13' of the body B, as by a suitable adhesive. The hat box is then complete.

From the foregoing, it will be evident that the luggage case of this invention fulfills to a marked degree the requirements and objects hereinbefore set forth. The use of interfitting strip means forming the abutting edges of the two sections of a luggage case, when interfitting together around the entire periphery of the case, provide a relatively strong yet light-weight principal stress resisting member. The central web of these strips, in preferred form, permits the sides of the sections of the case to be attached thereto, as by rivets, quite readily, and also provides a convenient place for attachment of the hardware, including the hinge 10 and the separable closure means, such as drawbolts 11 and lock 12. The flanges of the inside and outside of these strips protect the edges of the outer layers provided for strength and wear, and also the inner layers of the case. When the inner edge of the web of the tongue and groove strips is provided with a bead, sufficient additional strength is added that the weight of the strips may be reduced. The tongue and groove strips are particularly adapted to be produced by extrusion of light-weight metal, such as magnesium or magnesium alloys, although other light-weight metal may be utilized. The webs of the tongue and groove strips also provide convenient places for attachment of the hinge or hinges and the luggage hardware, such as drawbolts and a lock or other suitable fastening means, to the principal load sustaining member. The handle for a hat box, constructed in accordance with this invention, is comparatively simple to install and has numerous operational advantages, including the ability to be positioned at any desired angle and to permit the case to be carried conveniently by one hand of the user inserted in the handle loop. The flexibility of the handle loop and the relatively easy positioning thereof at any desired angle tends to minimize the stress on the point at which it is attached to the case.

Although a preferred embodiment of a luggage case, as exemplified by a hat box, has been illustrated and described with particularity, it will be understood that other embodiments may exist and various changes made, all without departing from the spirit and scope of this invention.

What is claimed is:

1. In a luggage case, a strip for forming the edge of a case section, said strip having a head; a longitudinal web depending centrally from said head; a longitudinal outer flange and a longitudinal inner flange, each spaced from said web and extending from said head in generally parallel relation to said web; and said head on the side opposite said web and flanges having one of a longitudinal tongue and a longitudinal groove so that said head is adapted to interfit with a head of a corresponding strip

6

of an opposed case section having the other of said tongue and groove.

2. In a luggage case, a strip as defined in claim 1, wherein said web has a greater depth than said flanges.

3. In a luggage case, a strip as defined in claim 1, wherein the exposed edge of said web is provided with a longitudinal bead, the longitudinal axis of said bead being offset laterally from the longitudinal axis of said web.

4. A luggage case comprising two concave sections having walls; metal strip means extending completely around the peripheral edge of each said section, each said strip means having a head, a longitudinal web extending from said head, a longitudinal flange on each side of said web and spaced therefrom and extending from said head in the same direction as said web, the edges of at least the outer portions of the walls of said sections extending between said outer flange and said web, with the heads of said strip means, opposite said webs, having longitudinally interfitting portions so that, with said sections closed against each other, said interfitting strip means will act as a unitary element to resist deformation; at least one hinge connecting said sections together; means extending through said webs of said strip means for attaching said hinge to said sections; separable closure means for holding said sections together and disposed in at least two positions spaced from said hinge; and means extending through said webs of said strip means for attaching said closure means to said sections.

5. A hat box having the elements of a luggage case as defined in claim 4, wherein said hat box has a flat bottom, said hinge connecting said sections together at said bottom; a handle and a lock at the top; and said separable closure means are positioned at each side in spaced relation to said lock.

6. In a luggage case, a one-piece strip conforming in peripheral shape to the edge of a section of said case, said strip having a head constructed and arranged to engage the edge of an opposed section of said case; a longitudinal web depending from said head; a longitudinal flange depending from said head at the inside thereof; a longitudinal flange depending from said head at the outside thereof; and a plate attached to said web at each side of the abutting ends of said strip, said plate extending into the space between said web and one of said flanges.

7. A luggage case comprising two concave sections, each having a wall provided with a peripheral edge; and a separate strip, each as defined in claim 6, extending completely around the peripheral edge of the wall of the respective section, the edge of the wall of each section being attached to said web of the strip thereof and the heads of said strips having longitudinally interfitting portions so that, with said sections closed against each other, said interfitting strips will act as a unitary element to resist deformation.

8. A luggage case in which two concave opposed sections have walls and are adapted to meet along the edges thereof in closed position, comprising a metal strip extending completely around the edge of each said section, each said strip having a head, a longitudinal web extending from said head and a longitudinal flange on each side of and spaced from said web and extending from said head in the same direction as said web, at least the edges of the walls of said sections extending between said outer flange and said web and attached thereto, each said strip having abutting ends attached together by a plate on the inside of said web and the heads of said strips having longitudinally interfitting portions so that, with said sections closed against each other, said interfitting strips will act as a unitary element to resist deformation; at least one hinge connecting said sections together; rivets extending through said webs of said strips and also through said walls at the position of said plates for attaching said hinge to said sections; separable closure means for holding said sections together and disposed in at least two

7

positions spaced from said hinge; rivets extending through said webs of said strips and also through said walls for attaching said closure means to said sections; a lock opposite said hinge; rivets extending through said webs and also through said walls for attaching said lock to said sections; a fabric and backing forming a lining for each said section, said lining extending between said inner flange and web of the respective strip; and rivets disposed in spaced positions about each said section and extending through said wall, said strip web and said lining.

9. In a luggage case including two concave sections having walls, strip means extending completely around the peripheral edge of each said section with the edge of said wall of each section attached to said strip means thereof and said strip means of one section being longitudinally interfitting with the strip means of the other section substantially completely therearound so as to act as a unitary element to resist deformation with said sections closed against each other, the improvement wherein each said strip means includes a head and a longitudinal web to which the wall of the respective section is attached, the head of one said strip means being provided with a tongue opposite said web and the head of the other said strip means being provided with a groove opposite said web; each said strip means is provided with a longitudinal

8

outer flange spaced outwardly from said web and extending from said head generally parallel to said web; and the edge of the wall of each respective case section extends into the space between said outer flange and said web.

10. In a luggage case as defined in claim 9, wherein each said case section is provided with a lining; each said strip means is provided with a longitudinal inner flange spaced inwardly from said web and extending from said head generally parallel to said web; and the edge of the lining of each respective case section extends into the space between the inner flange and said web.

References Cited in the file of this patent

UNITED STATES PATENTS

959,235	Lemieux -----	May 24, 1910
1,227,929	Ralston -----	May 29, 1917
1,667,567	Shwayder -----	Apr. 24, 1928
1,818,754	Ritter -----	Aug. 11, 1931
2,176,857	Hamlin -----	Oct. 17, 1939
2,200,972	Stein -----	May 14, 1940
2,604,961	Koch -----	July 29, 1952
2,672,224	Horwitz -----	Mar. 16, 1954
2,714,945	Koffler -----	Aug. 9, 1955
2,717,093	Mautner -----	Sept. 6, 1955