Nov. 25, 1952 T. A. KENT 2,619,395

ADJUSTABLE FOLDING TABLE FOR AUTOMOBILE SEATS

Filed May 9, 1949 2 SHEETS—SHEET 1

Fig. 1.

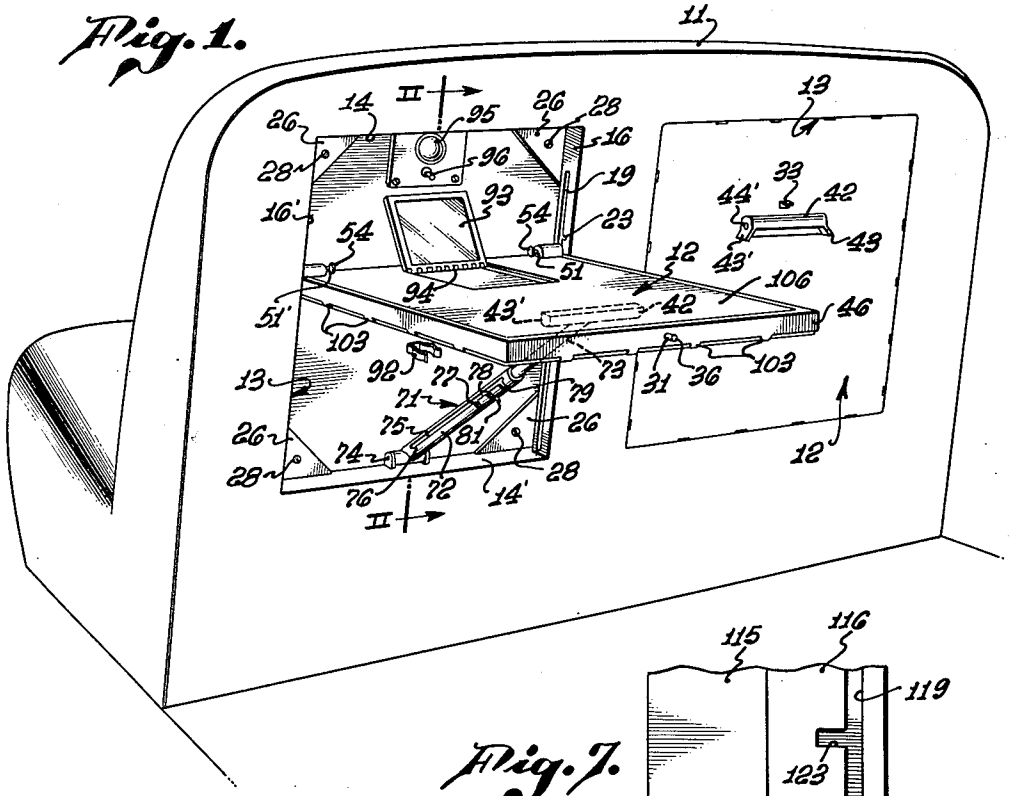


Fig. 7.

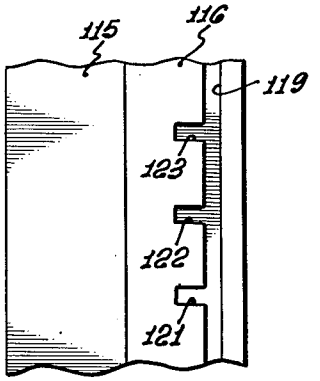


Fig. 5.

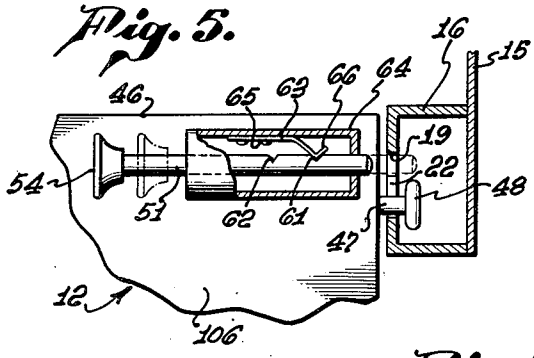
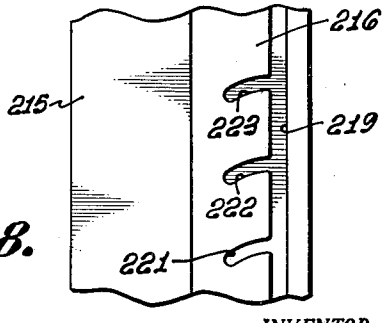


Fig. 8.



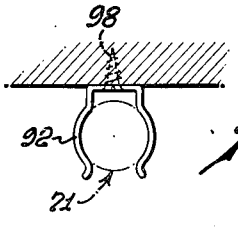


Fig. 6.

INVENTOR.
THOMAS A. KENT,
BY
ATTORNEY.

Nov. 25, 1952 T. A. KENT 2,619,395

ADJUSTABLE FOLDING TABLE FOR AUTOMOBILE SEATS

Filed May 9, 1949 2 SHEETS—SHEET 2

Fig. 2.

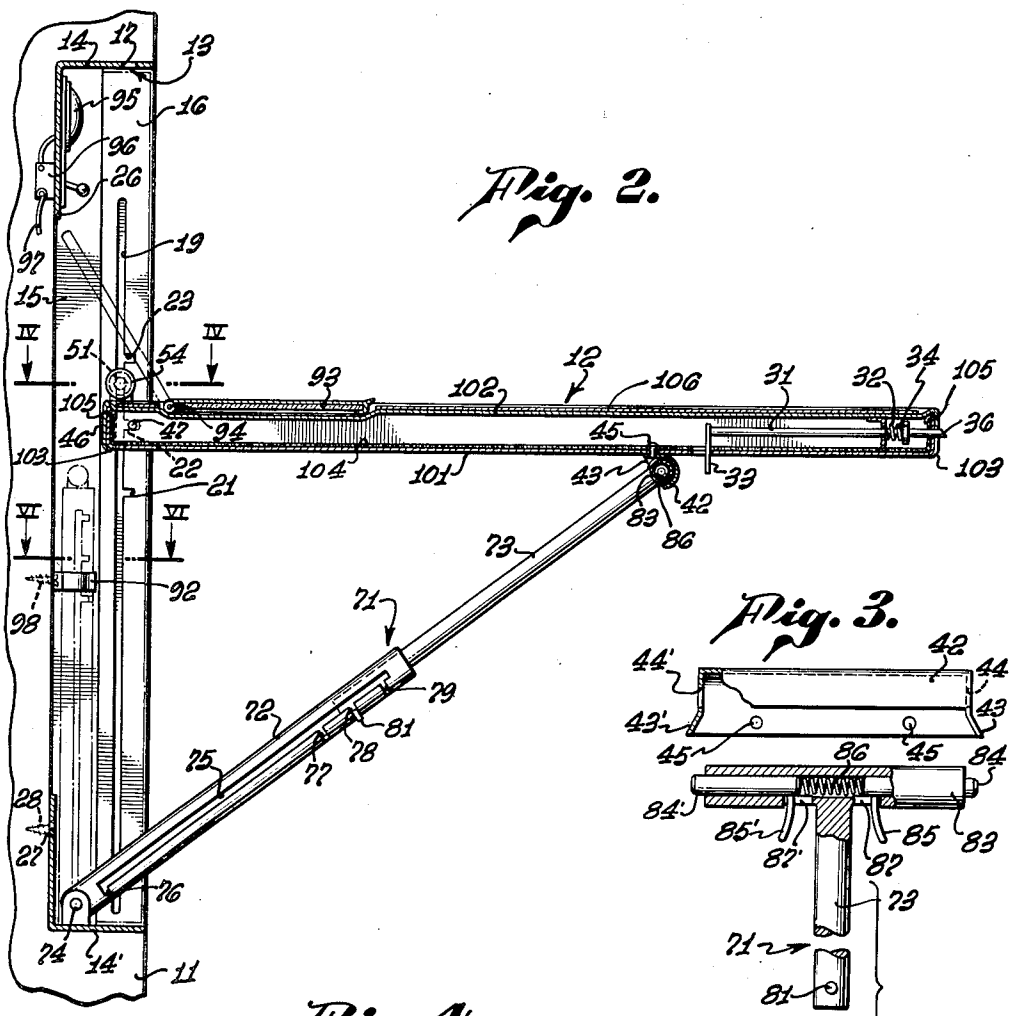
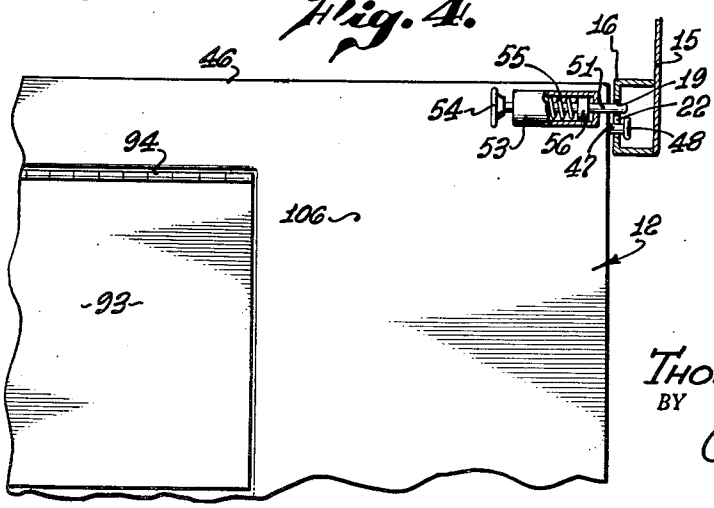


Fig. 3.

Fig. 4.



INVENTOR.
THOMAS A. KENT,
BY
ATTORNEY.

Patented Nov. 25, 1952

2,619,395

UNITED STATES PATENT OFFICE

2,619,395

ADJUSTABLE FOLDING TABLE FOR AUTOMOBILE SEATS

Thomas A. Kent, Los Angeles, Calif.

Application May 9, 1949, Serial No. 92,144

3 Claims. (Cl. 311—21)

1

This invention relates generally to an adjustable convenience table adapted, when not in use, to be recessed into a vertical member as a wall, and relates more particularly to such a device arranged for use in the rear seat of an automobile mounted on or recessed into the back of the front seat.

Tables for this purpose have been made in the past but they have been subject to certain disadvantages which have prevented their wide acceptance by the motoring public. Supporting legs are sometimes so positioned that it is difficult or impossible for persons to enter or leave the automobile while the table is in its open position. Little attention has been paid to eliminating the rattles in the mechanism of the table assembly, especially when the table is in its closed position. Tables are not easily adjustable as to height and slope to suit the convenience of different persons.

An object of my invention is therefore to disclose a folding table for automobiles which is easily and quickly adjustable as to height and slope and which uses only a single centrally disposed supporting leg.

Other objects and purposes will be clear from a reading of the following description taken in connection with the accompanying drawing in which:

Fig. 1 is a perspective view of two table assemblies recessed into the back of a front seat of an automobile, the table on the left side being in opened or operative position and the table on the right being in closed position.

Fig. 2 is a side elevational view, in section, taken on line II—II of Fig. 1, the support leg in collapsed position and the mirror in opened position being shown in dotted outline.

Fig. 3 is an exploded view, partially in section, of the support leg and support bracket.

Fig. 4 is a fragmentary plan view, partially in section, taken on line IV—IV of Fig. 2.

Fig. 5 is a fragmentary plan view of a corner of my table showing an alternative form of support lock bolt, the bolt in locked position being shown in dotted outline.

Fig. 6 is a fragmentary view taken on line VI—VI of Fig. 2.

Fig. 7 is a fragmentary side elevational view of an alternative form of support slots.

Fig. 8 is a fragmentary side elevational view of another alternative form of support slots.

Generally speaking, my invention comprises a rectangular metal frame, a table slidably engaging slots in the side walls of the frame, a

2

single, centrally located supporting leg, and means for adjustability as to height and slope to be described in detail hereinafter. The rectangular frame may be attached to the rear surface of the front seat of an automobile or, preferably, recessed therein.

Fig. 1 shows an automobile front seat 11 and tables 12, each of the latter being preferably of such width, as shown, that two tables may be accommodated in the width of seat 11. A rectangular metal frame, indicated in its entirety by 13, is secured to the rear surface of seat 11 and includes horizontal opposing walls 14 and 14', vertical opposing side walls 15 and 15' and vertically extending U-shaped channel members 16 and 16' (see Fig. 4) parallel to said side walls.

Centrally located in upper horizontal wall 14 is hole 17 through said wall. Channel members 16 and 16' have narrow elongated slots 19 and 19' formed therein, and a plurality of horizontally disposed pairs of support slots 21 and 21', 22 and 22', and 23 and 23' are also formed in said channel members communicating with slots 19 and 19'.

Frame 13 is strengthened at each corner by a triangular metal gusset 26 extending across said corner, each gusset having therein a hole 27 through which passes a screw or bolt 28 for securing frame 13 to seat 11. Gussets 26 are preferably welded to the walls to afford rigidity to the structure.

Table 12 is shown in closed position at the right in Fig. 1 and in open or operative position at the left in that figure. Releasable means are provided for holding table 12 in its closed position (see Fig. 2), such means including latch rod 31, latch rod spring 32, latch rod collar 34 and latch release finger 33. Rod 31 is arranged to engage hole 17 in upper horizontal wall 14 of frame 13 when table 12 is in closed position, being urged into said engagement by the force of spring 32 exerted against latch rod collar 34 fixed to the latch rod 31. The outer end of rod 31 is preferably beveled as shown at 36 to facilitate latching when closing the table. Latch release finger 33 is fixed to the lower end of latch rod 31 and projects outwardly from table 12, spring 32 being of such strength that with table 12 in its closed position a small force exerted on finger 33 withdraws latch rod 31 from its engagement in hole 17, thus permitting table 12 to be opened.

Fixed to table 12 is support bracket 42. Its opposing end walls 43 and 43' are preferably partially sloped outwardly as seen in Fig. 3 for rea-

sons to be described hereinafter, and circular holes 44 and 44' are formed centrally in said end walls 43 and 43'. Bracket 42 is attached to table 12 by rivets or other suitable fastening means 45.

Projecting laterally from the sides of table 12 and near lower edge 46 thereof are retaining studs 47 and 47' having enlarged heads 48 and 48'. Studs 47 and 47' slidably engage slots 19 and 19' and are prevented from disengaging therefrom by enlarged heads 48 and 48'.

Support lock bolts 51 and 51' are provided on table 12 adjacent lower edge 46 thereof. Fig. 4 illustrates spring-loaded support lock bolt 51, including bolt housing 53, finger grip 54, spring 55 and collar 56. Collar 56 is fixed to bolt 51; spring 55, bearing against housing 53 and collar 56, normally urges bolt 51 outwardly as shown, and bolt 51 may be withdrawn into housing 53 by manually moving finger grip 54 away from housing 53.

An alternative form of support lock bolt is shown in Fig. 5, wherein the projecting and withdrawn positions of bolt 51 are maintained by spring detent means. Two notches 61 and 62 are formed in bolt 51. Leaf spring 63 is fixed to housing 64 as by rivets 65 and is formed into a V-shape at 66, said V-shaped portion being urged against bolt 51 by the force of spring 63. Thus bolt 51 will be held in withdrawn position (as in solid lines in Fig. 5) when V-shaped portion 66 is in engagement with notch 61 of bolt 51, and will be held in projecting position (as in dotted outline in Fig. 5) when V-shaped portion 66 is in engagement with notch 62 of bolt 51.

Movement of table 12 from closed position to open or operative position is accomplished in the following manner: Latch release finger 33 is depressed, thus withdrawing latch rod 31 from its engagement in hole 17. The upper part of table 12 may now be moved upwardly and rearwardly using support bracket 42 as a handle. When lower edge 46 of table 12 has been raised to desired height (retaining studs 47 and 47' having slid upwardly in slots 19 and 19') a slight rearward movement of table 12 causes studs 47 and 47' to enter a selected pair of slots, as 22 and 22'. Support lock bolts 51 and 51' may then be moved outwardly so that they engage slots 19 and 19' respectively.

In order to support table 12 in open position, I provide a centrally disposed adjustable support leg, indicated in its entirety by 71. Leg 71 includes support sleeve 72 and support rod 73, the latter slidably engaged within the former in telescoping relation. Support sleeve 72 is pivotally attached at 74 to lower wall 14' of frame 13, the axis of the pivotal movement being so disposed parallel to lower wall 14' as to allow support leg 71 to swing in a plane parallel to vertical side walls 15 and 15'. A longitudinally extending slot 75 is formed in support sleeve 72 in communication with circumferential slot 76 near pivot 74 and with a plurality of circumferential slots 77, 78 and 79 distant from pivot 74. Each of the circumferential slots communicating with longitudinal slot 75 extends only partially around support sleeve 72.

Support rod 73 is provided at its lower end with radially extending support rod stud 81 slidably engaging longitudinal slot 75 or, selectively, one of circumferential slots 76, 77, 78 and 79. When table 12 is in closed position, support rod stud 81 engages circumferential slot 76, support leg 71 thus being in its collapsed position as shown in dotted outline in Fig. 2.

On the end of support rod 73 distant from support rod stud 81 is secured a support latch assembly, as best seen in Fig. 3. The support latch assembly includes hollow cylindrical housing 83, support latch bolts 84 and 84', support latch release fingers 85 and 85' and spring 86. Fingers 85 and 85' are fixed to the inner ends of bolts 84 and 84' respectively and project outwardly through ports 87 and 87' formed in the wall of housing 83. Housing 83 is arranged to be received within support bracket 42, whereupon spring 86 forces support latch bolts 84 and 84' into engagement with holes 44 and 44' in end walls 43 and 43' of support bracket 42.

It can now be seen that when table 12 has been moved into operative position, as described previously, support leg 71 may be swung rearwardly and downwardly around pivot mounting 74. Support rod 73 may then be rotated clockwise approximately a quarter turn in order to move support rod stud 81 out of circumferential slot 76 and into longitudinal slot 75, whereupon support rod 73 may be slid upwardly and rearwardly until support rod stud 81 is opposite a desired one of circumferential slots 77, 78 and 79. A quarter-turn counterclockwise rotation of support rod 73 moves stud 81 into a desired circumferential slot, as 78, as shown in Fig. 2. Support latch housing 83 may then be moved upwardly into support bracket 42, sloping end walls 43 and 43' serving to move support latch bolts 84 and 84' inwardly against the force of spring 86 until said bolts 84 and 84' are opposite holes 44 and 44', whereupon said bolts are forced outwardly into locking engagement with said holes by spring 86.

Disassembly of support leg 71 from support bracket 42 is accomplished by manually moving support latch release fingers 85 and 85' toward each other and withdrawing housing 83 from bracket 42. Collapsing of support leg 71 and restoring of leg 71 and of table 12 to their closed positions are accomplished by sequences of operations the reverse of those described above for assembling the device.

It will be observed that pivotal mounting 74 is disposed in frame 13 interiorly of the closed position of table 12. Thus support leg 71 is hidden from view by table 12 when leg 71 and table 12 are in their closed positions so that a neat external surface is provided.

It should be noted, as can be seen in Figs. 2 and 4, that when table 12 is in horizontal position and support lock bolts 51 and 51' are in engagement with vertical slots 19 and 19', retaining studs 47 and 47' do not contact the rear surface of horizontal support slots 22 and 22'. Said support slots are purposely made deeper than necessary for the horizontal position of table 12 in order to permit said table to be positioned sloping upwardly to the rear if desired by the user.

In order to minimize rattles in my folding table assembly, I may provide a small helical spring 91 in the base of support sleeve 72, as best seen in Fig. 3. When support leg 71 is in collapsed position, the lower end of support rod 73 slightly compresses spring 91 and is restrained from small movements within support sleeve 72 by said contact. I may also provide spring clip 92 secured as by screw 93 to the frame of seat 11 and arranged to receive support sleeve 72 when support leg 71 is in its collapsed position. Clip 92 will hold leg 71 to prevent undesirable movement and consequent noise.

For greater convenience in using my invention,

I may provide folding mirror 93 recessed into the upper surface of table 12, said mirror being hingedly attached to table 12 by hinge 94. I may also provide light 95 mounted on the rear of seat 11 within frame 13 and above the opened position of mirror 93, light 95 being connected through switch 96 and wire 97 to a source of electric power such as the automobile battery (not shown).

It should be noted that table 12 is made up of two flanged sections, lower section 101 and upper section 102, and said sections are joined with their flanges in interlocking relationship. I preferably crimp portions of the flange of upper section 102 around the outer edges of lower section 101 as at 103 to hold said sections together. I also provide for attaching fabric 104 to table 12, marginal portions 105 of fabric 104 being held by the interlocking relationship of the flanges of sections 101 and 102. Thus the fabric used to cover lower section 101 of table 12 (which is the surface exposed to view when table 12 is in closed position) may be made to harmonize with the upholstery or seat cover material used in the automobile, and said fabric 104 may be changed from time to time with relative ease. Upper surface 106 is attached to upper section 102 as by glue or other means, and may be plastic or similar wear- and liquid-resistant material.

It can be seen that I have disclosed a compact convenience table for automobiles with features of adjustability as to height and slope not heretofore provided. It is understood that although I have shown only three pairs of horizontal support slots 21 and 21', 22 and 22', and 23 and 23', and only four circumferential slots 76, 77, 78 and 79, a greater number of these slots may be provided to attain greater adjustability.

Fig. 7 illustrates an alternative disposition of support slots 121, 122 and 123 with relation to narrow elongated slot 119 formed in channel member 116. Reference characters used in this figure are 100 greater than their respective counterparts described previously. Table 12 is moved into open or operative position by the same sequence of operations as described previously except that the final movement of table 12 is a slight movement forward, instead of rearward, to cause retaining studs 47 and 47' to enter a selected pair of support slots.

An alternate shape of support slots is shown in Fig. 8, wherein reference characters are 200 greater than their respective counterparts described previously. Support slots 221, 222 and 223 formed in channel member 216 are curvilinear so that their ends distant from elongated slot 219 are slightly displaced vertically from the points where said support slots respectively communicate with elongated slot 219.

The drawings and description herewith are only exemplary and my invention is to be construed in the light of the appended claims only.

I claim:

1. An adjustable table assembly for attachment to the back of a front seat of an automobile, comprising: a rectangular metal frame comprising two parallel vertical channel members and top and bottom connecting members, each of the vertical channel members being provided with a narrow longitudinally extending slot and with a plurality of horizontally disposed parallel support slots communicating with said elongated slot; a rectangular flat table having attached thereto a laterally projecting retaining stud adjacent the lower end of said table at each side, said studs slidably engaging said elongated slots and engageable with a selected pair of said horizontal support slots, said table having two support lock bolts selectively engageable with said elongated slots; a spring-loaded latch centrally disposed in the upper edge of said table, arranged to engage an opening in the top connecting member of said frame for retaining the table in closed position; a support bracket fixed to the outer surface of said table; and a centrally disposed, longitudinally extendible support leg pivotally attached at its lower end to the bottom connecting member of said frame adjacent the inner edge of said bottom connecting member and inwardly of the plane of said longitudinally extending slots, said support leg having at its upper end spring-loaded support latch means for engaging said support bracket.

2. A table assembly of the character stated in claim 1 wherein said support leg includes a tubular support sleeve provided with an axially extending slot and a plurality of circumferential support slots and a support rod slidable within said support sleeve in telescoping relation, said support rod having adjacent its bottom end a radially extending support rod stud adapted to slide in said axially extending slot and to engage a selected circumferential support slot.

3. An adjustable table assembly for attachment to the back of a front seat of an automobile, comprising: a rectangular metal frame comprising two parallel vertical channel members and top and bottom connecting members, each of the vertical channel members being provided with a narrow longitudinally extending slot and with a plurality of support slots communicating with said longitudinally extending slot; a rectangular flat table having attached thereto a laterally projecting retaining stud adjacent the lower end of said table at each side, said studs slidably engaging said longitudinally extending slots and engageable with a selected pair of said support slots, said table having two support lock bolts selectively engageable with said longitudinally extending slots; a support bracket fixed to the outer surface of said table; and a centrally disposed, longitudinally extendible support leg pivotally attached at its lower end to the bottom member of said frame adjacent the inner edge of said bottom connecting member and inwardly of the plane of said longitudinally extending slots, said support leg having at its upper end spring-loaded support latch means for engaging said support bracket.

THOMAS A. KENT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,403,317	Gross	Jan. 10, 1922
1,553,821	Johnson	Sept. 15, 1925
1,576,034	Butt	Mar. 9, 1926
1,655,516	Simpson	June 10, 1928
1,780,706	Goldbecher	Nov. 4, 1930
1,790,468	Frank	Jan. 27, 1931
1,809,866	Riesche	June 16, 1931
1,893,458	Tatum	June 3, 1933
2,249,287	Gearhart et al.	July 15, 1941