July 9, 1957 N. A. HOLLY ET AL 2,798,632

ASH TRAY ASSEMBLY

Filed July 12, 1954 2 Sheets-Sheet 1

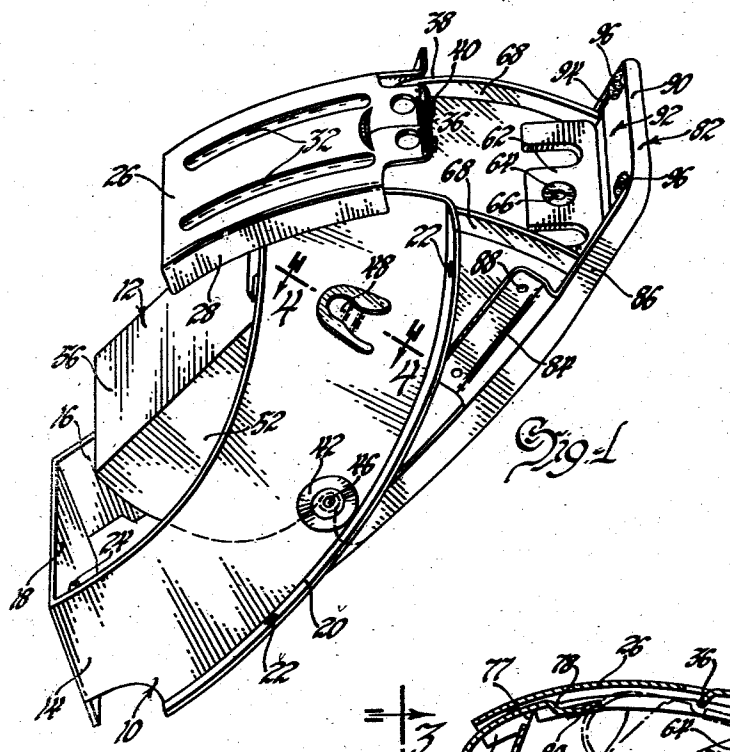


Fig. 1

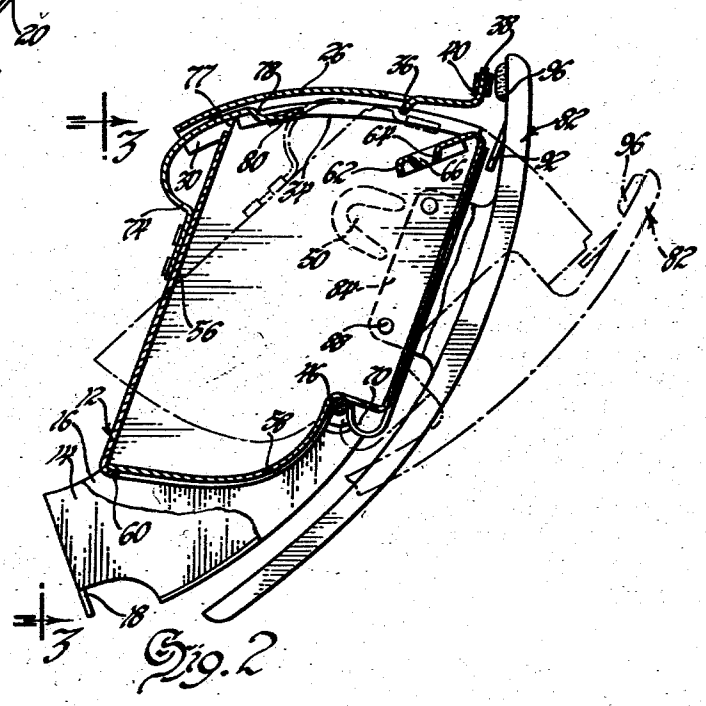


Fig. 2

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ASH TRAY ASSEMBLY

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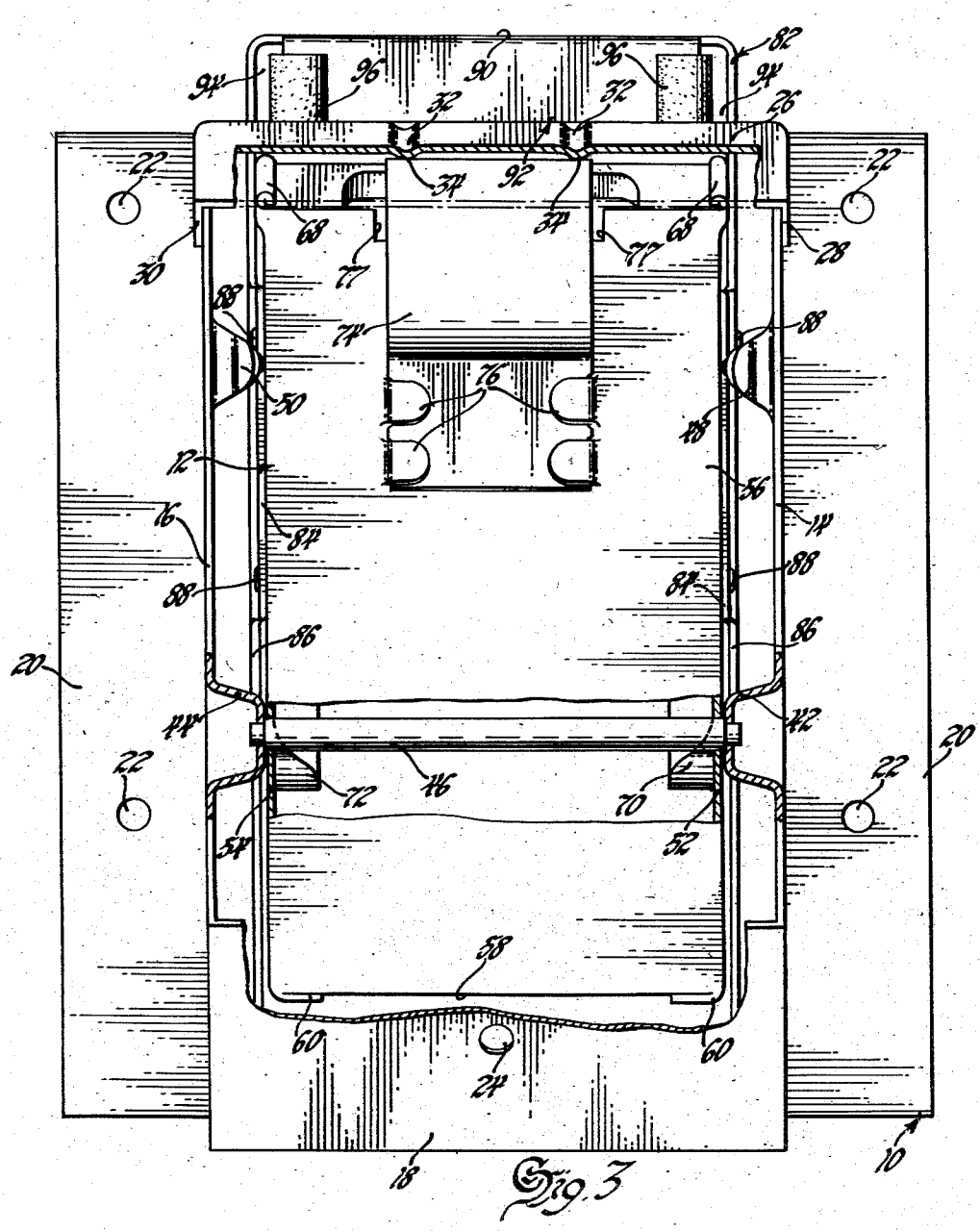


Fig. 3

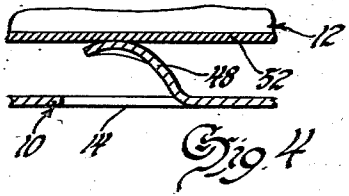


Fig. 4

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ASH TRAY ASSEMBLY

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1 Claim. (Cl. 220—18)

This invention relates to ash trays generally and more particularly to ash tray assemblies including ash receiving trays, housing members, biasing means and the like.

In order to provide an ash tray assembly for use in automotive vehicles or elsewhere at a low unit cost it is necessary that the assembly be such as may be made from low cost materials, be one which is made of few separable parts including no small or intricate members difficult to fabricate or assemble, and that the assembly as a unit be easy to put together and install. Aside from considerations of production ease and cost reduction the ash tray assembly must be smooth and quiet in operation and have the appearance of a quality made product. Heretofore ash trays which have been used in automotive vehicles have waivered between the requisites of low cost and high quality. Inexpensive ash trays adapted for use in automotive vehicles have invariably become a source of rattles due to cost savings effected by eliminating anti-rattle features. While other ash trays have included such features they have been more expensive and have been more difficult to assemble, install, service and repair.

It is now proposed to provide an ash tray assembly which in appearance and operation is of highest quality. It is proposed to provide such an assembly which is nevertheless capable of being made of less expensive materials, in a less complicated manner, and at lower cost than other available ash tray assemblies. It is further proposed to provide an ash tray assembly which is more easily installed and more easily serviced than other ash trays. Such as assembly may be manufactured in greater quantities and at a lower cost while maintaining the appearance of being of the highest quality in workmanship and performance.

It is proposed to provide a one-piece ash receiver which may be stamped from a single piece of metal and which may be formed to provide a tray or box including trunnion support and snuffer members. Such box is strengthened in the very manner in which its walls are formed. It is also proposed to provide a separate one-piece tray receiving or retaining member including means for supporting, centering, and biasing the tray member therein for pivotal movement in a rattle-free manner. The tray retainer is further adapted to be readily installed within any opening provided for such mounting. Welding, riveting and the like are reduced to a bare minimum in the assembly of both the ash tray and receiver members. An ornamental and decorative face plate may be secured to the front of the ash tray member closing the receiving opening of the retainer member and enhancing the structural strength and appearance of the tray assembly. A tray biasing member including stop or limit means to assure restricted pivotal movement of the tray within the receiver member is readily secured to the back of the tray staked to receive such member. The biasing member bears against the cover portion of the tray receiving structure and in conjunction with the retainer member biasing means and small bumper members of low cost disposed between engaging metal surfaces is adapted to further contribute to the proposed rattle-free, high quality ash tray assembly.

In the drawings:

Figure 1 is a perspective view of the proposed ash tray assembly.

Figure 2 is a side view of the proposed ash tray assembly having parts broken away and shown in cross section and also showing the tray member in phantom in the open position.

Figure 3 is an enlarged end view of the proposed ash tray assembly shown in Figure 2 taken in the plane of line 3—3 and looking in the direction of the arrows thereon. Parts of the members of the assembly are broken away and shown in cross section for greater clarification.

Figure 4 is an enlarged cross sectional view of one of the tray receiver spring fingers shown in Figure 1 and taken in the plane of line 4—4 looking in the direction of the arrows thereon.

The ash tray assembly includes a tray receiving or housing member 10 and an ash receiving box or tray 12 adapted to be tiltably disposed within the former.

The tray receiving or housing member 10 is substantially a one-piece member having side walls 14 and 16 and bottom wall 18 formed from the same piece of material. The side walls 14 and 16 are flanged outwardly at their forward edge as at 20 and have apertures 22 formed therethrough for the purpose of securing the housing to an instrument panel, seat back, arm rest or the like within an opening provided for such purpose. Aperture 24 in the bottom wall 18 may likewise be used. An arcuate cover 26 is secured to the side walls 14 and 16 by depending flanges 28 and 30 formed from the cover. The cover 26 includes grooves 32 forming tracks 34 on the underside of the cover and a stop tab 36 struck from the cover and likewise depending. The forward edge of the arcuate cover is bent upward as at 38 and is adapted to receive bumper members 40. The side walls 14 and 16 are dimpled inwardly as at 42 and 44 substantially above the bottom wall 18 and have a pivot rod or shaft 46 extended therebetween and transversely across the housing member. Spring fingers 48 and 50 are struck from opposite side walls 14 and 16 and are bent to extend within the housing structure.

The ash receiver or tray member 12 of the assembly includes a one piece box having side walls 52 and 54, back wall 56 and bottom and front wall 58 all formed from a single sheet of material. The bottom and front wall 58 extends from back wall 56 along the bottom and forward edges of the side walls 52 and 54 which are bent or flanged over along their peripheral edge as shown in Figures 2 and 3 at 60 to receive wall 58. Only the bottom portions need be secured to the flanges as by spot welds or other means. The uppermost end of wall 58 is bent over within the ash receiver box and is formed to provide a cigarette or cigar snuffer 62 including conical depression 64 and aperture 66. The upper edges of side walls 52 and 54 are bent over upon themselves as at 68 to strengthen the top edge of the ash receiving box and to present a clean smooth surface enchancing the quality appearance of the tray member. The side walls 52 and 54 are further formed near their bottom edge to provide trunnion supports 70 and 72 upon which the tray is pivotally or tiltably mounted within the tray receiving member 10 upon shaft 46.

A resilient spring member or combination biasing and stop member 74 is secured to the back wall 56 of the ash receiving box 12 by tabs 76 which are struck out from the back wall and bent over the lower end of mem-

ber 74 for such purpose. No welding or riveting is necessary. The biasing member 74 extends over the back wall 56 of the tray member which is notched as at 77 therebeneath, and is stepped to provide a shouldered stop 78 near its outer end. With the tray member 12 mounted within the housing 10 the biasing member 74 bears against the arcuate cover 26 upon the tracks 34 and acts to hold the tray trunnion supports 70 and 72 upon pivot shaft 46. When the tray 12 is tilted to its open position shoulder 78 engages stop 36 struck from the cover 26 to limit outward travel. The end 80 of the biasing member 74 extending beyond the shoulder 78 is accessible with the tray in the open position for finger tip engagement and depression to allow the shoulder 78 to pass under stop 36 and enable removal of the ash tray 12 from the housing member 10.

An ornamental or decorative face plate 82 is adapted to be secured to the front of the tray member 12. The face plate 82 is formed from a single piece of material flanged rearwardly along all edges to improve its exterior appearance and enhance its structural strength. The face plate 82 is of a size and shape adapted to fill the opening in the housing member 10. Elongated tabs 84 are formed from the side flanges 86 by means of which the face plate may be secured to the side walls 52 and 54 of the tray member 12. In the present instance rivet means 88 are employed though welding or other fastening means may be employed. The turned flange 90 along the upper edge of the face plate 82 is extended downwardly as at 92 in spaced relation to the back side of the face plate and its side edges are spaced from the side flanges 86 to form slots 94 on each side thereof. Small rubber bumper members 96 are retained within slots 94 and are adapted to engage the upturned flange 38 of the arcuate cover 26 to prevent a metal to metal contact in closing the ash tray. In the present instance there are shown bumper members 40 on the cover flange 38 as well as bumper member 96 in association with the face plate 82. Either or both sets of bumpers may be used.

The assembly of each part of the complete ash tray unit is as described a relatively simple matter. The unit as a whole may likewise be as simply installed within a vehicle or wherever desired. The housing member 10 is first installed behind an opening formed in the receiving structure by screw or other means extended through apertures 22 and 24 formed in the side flanges 20 and bottom wall 18 respectively. The tray member 12 is then extended between the side walls 14 and 16 of the housing member 10 to engage the trunnion supports 70 and 72 upon the shaft 46. In so doing the tray member 12 is centered between the side walls 14 and 16 by the dimpled portions 42 and 44 and the spring fingers 48 and 50 which engage the side walls 52 and 54 of the tray member 10. The tray member 12 is then tilted or pivotally moved into the housing 12. The biasing member 74 secured to the back wall 56 of the tray 12 will engage the stop 36 struck from the arcuate cover 26 and will be depressed as it rides against the stop and

until the shoulder 78 snaps upwardly behind the stop. Continued inward movement of the tray 12 will dispose the tray in a housed position within the retaining member 10 with the face plate 82 closing the opening therein and lying flush with the surface of the member within which it has been installed.

In normal use the ash tray 12 is opened by applying a slight pressure to the lower portion of the face plate 82 extended below the pivot shaft 46 which will cause the tray member to be tilted to the open position, limited by stops 36 and 78. The spring fingers 48 and 50 and the dimpled portions 42 and 44 of the housing side walls 14 and 16 serve to center the tray 12 within the housing 10 in spaced and rattle-free relation to the side walls 14 and 16 of the housing. The biasing member 74 further assists in retaining the tray 12 in a rattle-free disposition within the housing member 10 while also serving as a stop and release device. The spring fingers 48 and 50 and biasing member 74 are at all times engaged with the side walls 52 and 54 of the tray or arcuate cover 26 respectively to assure proper spacing and smooth continually biased movement of the tray within the housing member.

We claim:

An ash tray assembly including a housing member having continuous bottom and side walls and an arcuate cover member secured across said side walls, embossments formed from said side walls and extending within said housing, a shaft member extending across said housing between said embossments, spring fingers struck from said housing and extending therewithin, said fingers being disposed in spaced relation to said embossments, spaced guide tracks formed from said cover member inwardly of said housing, an ash tray member pivotally received within said housing and upon said shaft member, said tray member having the side walls thereof engaged by said embossments and said spring fingers for spacing said tray member apart from the side walls of said housing member during the pivotal movement thereof and otherwise, spring means provided on said tray member and engaging said spaced guide tracks of said housing cover member for firmly seating said tray member upon said shaft and centrally between said embossments and spring fingers as aforesaid.

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