

May 14, 1940.

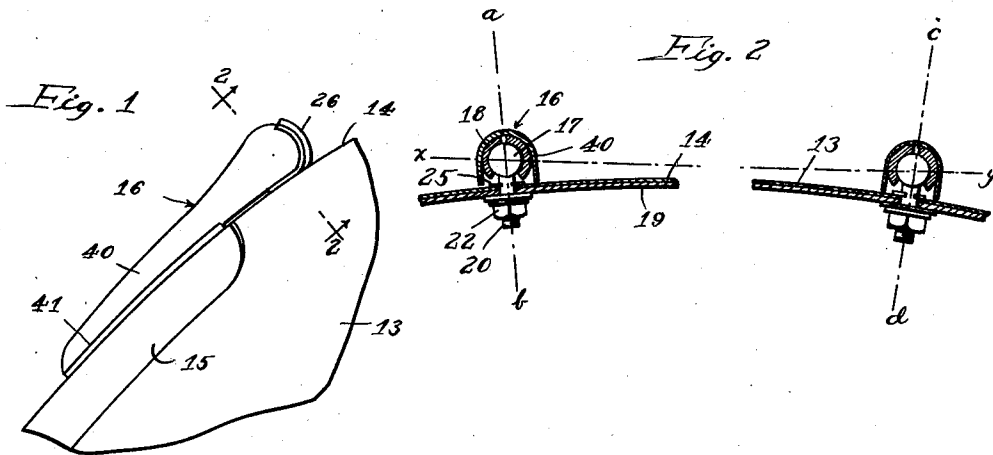
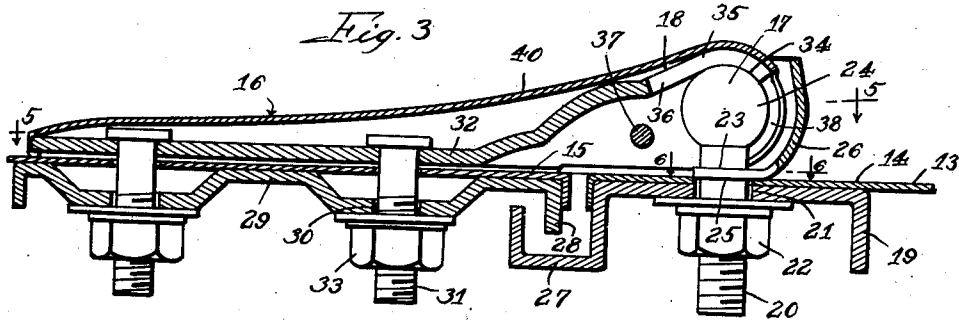
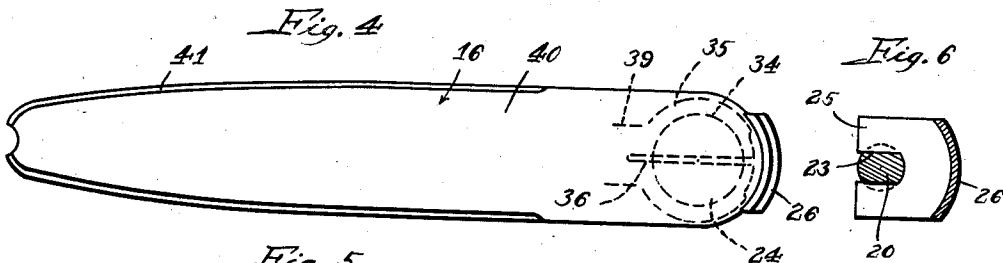
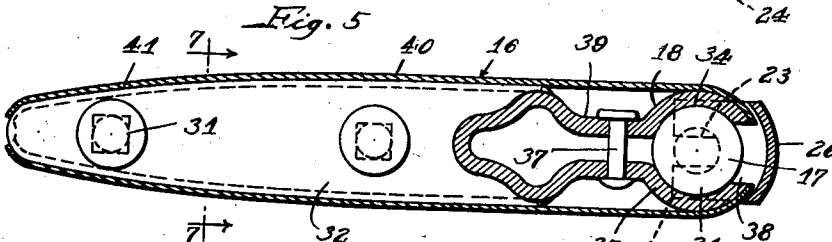
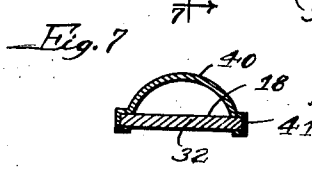
S. B. ATWOOD

2,200,253

HINGE

Filed Sept. 23, 1937

2 Sheets-Sheet 1



Inventor:
Seth B. Atwood
By
McLanna, Wintercorn & Morabach
Attys.

May 14, 1940.

S. B. ATWOOD

2,200,253

HINGE

Filed Sept. 23, 1937

2 Sheets-Sheet 2

Fig. 9

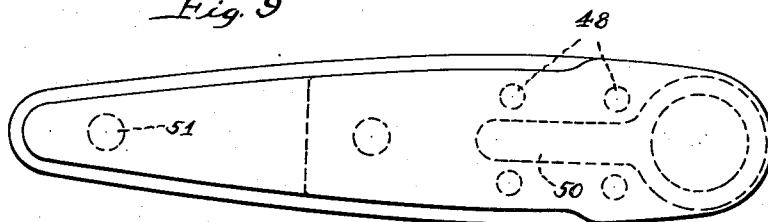


Fig. 8

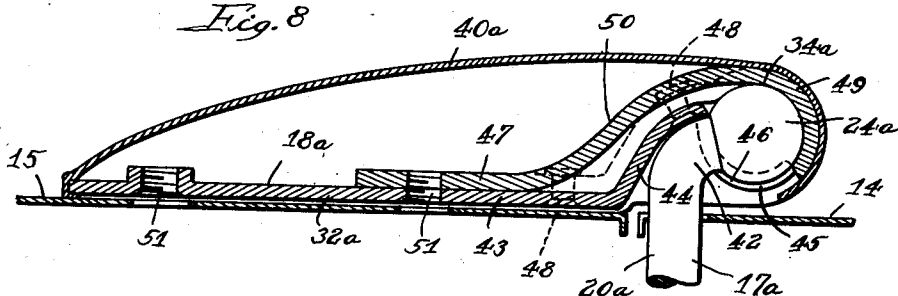


Fig. 11

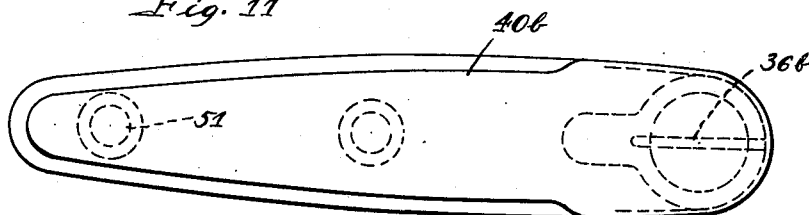


Fig. 10

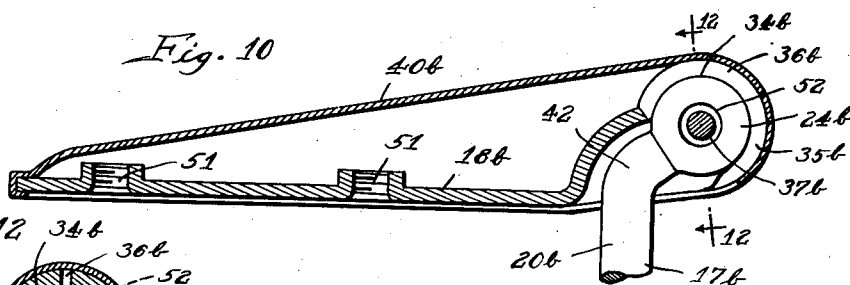
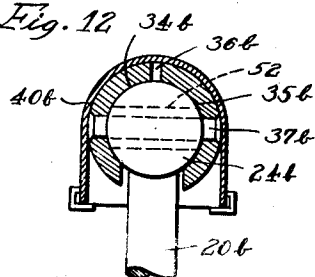


Fig. 12



Inventor:

Seth B. Atwood

By

McLanna, Hintersbach & Hintersbach
Attys.

UNITED STATES PATENT OFFICE

2,200,253

HINGE

Seth B. Atwood, Rockford, Ill.

Application September 23, 1937, Serial No. 165,274

20 Claims. (Cl. 16—148)

This invention relates to an improved hinge especially designed and adapted for use as an automobile deck hinge, but, of course, suited for other purposes wherever similar requirements are presented.

Pintle type hinges have been used generally for hinging the lid of the luggage compartment, these hinges being commonly referred to as the "deck" hinges. Due to the curvature of the deck and lid and the fact that the hinge pintles had to be in alignment on the hinging axis of the lid, it was necessary to make right and left hand hinges to fit the opposite slopes on the deck. Then, too, there was invariably a certain amount of difference between the curvature of a lid and the curvature of the deck for which the pintle type hinges made right and left hand to fit the opposite slopes on a lid could not compensate. As a result, despite the usual care in assembling the lid on the car, there was almost invariably enough misalignment of the pintles to impose appreciable resistance to raising and lowering of the lid, and in aggravated cases the misalignment would cause a buckling of the sheet metal on the deck and eventually the hinges would work loose and the lid would develop a rattle.

It is the principal object of my invention to provide a ball-and-socket type deck hinge which not only eliminates the problem of pintle alignment and the objectionable features that were mentioned in that connection, but also obviates the necessity for making "rights" and "lefts", inasmuch as the two hinges when constructed as herein disclosed can and will be identical.

A further object is to provide a hinge of cheaper but stronger construction than the pintle type deck hinges heretofore provided, which were usually of die cast construction, the present hinge having the main body part of the socket member of heavy stamped sheet metal construction adapted to be enclosed within a thin ornamental sheet metal cover, suitably plated for good appearance and to endure under service conditions. The socket body member may be of one-piece or two-piece construction.

Still another object is to provide in connection with the ball head member of the hinge a guard to protect the ball and socket from entrance of rain and sleet, the guard being a sheet metal stamping forked at its lower end to fit a slotted portion of the shank of the ball head member so as to be clamped in place when the ball head member is fastened by its retaining nut threaded on the shank.

Another object is to provide a combination pin-

tle and ball-and-socket type hinge in which the pintle, however, serves merely to secure the socket member to the ball head and the ball head is free to swivel relative thereto through a sufficient angularity in all directions to meet the service requirements of a deck hinge and permit use of the same hinge on the right or left hand side.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a fragmentary side view of the rear deck portion of an automobile, showing the lid equipped with hinges made in accordance with my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1, with an intermediate portion of the section broken away to permit the two deck hinges to be shown in the one view on a larger scale than would otherwise be permitted;

Fig. 3 is a longitudinal section through one of the hinges, illustrating also the mode of fastening to the body and lid;

Fig. 4 is a plan view of Fig. 3;

Fig. 5 is a horizontal section taken generally on the line 5—5 of Fig. 3;

Fig. 6 is a sectional detail on the line 6—6 of Fig. 3;

Fig. 7 is a sectional detail on the line 7—7 of Fig. 5;

Fig. 8 is a longitudinal section similar to Fig. 3, but showing another hinge construction;

Fig. 9 is a plan view of Fig. 8;

Fig. 10 is still another longitudinal section similar to Fig. 3, showing another modification;

Fig. 11 is a plan view of Fig. 10, and

Fig. 12 is a sectional detail on the line 12—12 of Fig. 10.

Similar reference numerals are applied to corresponding parts throughout the views.

Referring first to Figs. 1 to 7, the numeral 13 in Fig. 1 designates a portion of the luggage compartment of an automobile, the top 14 of which is commonly referred to as the "deck." 15 is the lid or door for the luggage compartment, commonly hinged to swing upwardly in opening, its hinges being known as "deck" hinges because of the fact that they are mounted on the deck 14. The deck hinges 16 of my invention are of the ball-and-socket type and comprise ball head members 17 mounted on the body, and socket members 18 mounted on the lid. A reinforcing channel member 19 in the body under the deck 14 has the threaded shank 20 of the ball head member 17 entered through a hole 21 therein and fastened in place with a nut and washer, as indicated at 22. The cylindrical shank 20 is

slotted at 23 on diametrically opposite sides in spaced relation to the ball head 24, and the forked end 25 of a sheet metal guard 26 fits on this slotted portion of the shank and is drawn down against the deck 14 as the nut 22 is tightened. Thus, both the ball head member 17 and guard 25 are anchored tightly at the same time by the tightening of one nut. The channel 19 has an extension on the back thereof formed to channel-shaped cross-section, as indicated at 27, and the down-turned flange 28 on the front edge of the reinforcing member 29 on the inside of the lid 15 projects into this channel when the lid is closed, in the manner shown in Fig. 3. If desired, a rubber sealing strip may be placed in the channel 27 for engagement with and compression by the flange 28 to seal the luggage compartment and make it substantially weather tight and water tight. The reinforcement 29 has holes 30 therein through which studs 31 project from the attaching shank 32 of the socket member 18, and nuts 33 along with washers therefor are applied to the threaded end of these studs to fasten the socket member to the lid 15. The socket member 18 is made from a single piece of sheet metal blanked and formed between dies to provide a socket 34 in the bifurcated end 35 for reception of the ball head 24. In the formation of the socket 34, the sheet metal blank goes through several operations to give the end 35 a generally channel or trough shape diminishing in height rearwardly from the socket 34 toward the flat attaching portion 32, as illustrated in Fig. 3. The slot 36 is something incidental to the process of forming the socket end of the member, and this slot comes in the web of the channel, but a rivet 37 extending transversely from side to side of the channel adjacent the inner end of the slot adds enough strength and rigidity so that there is no likelihood of the socket portions spreading apart. The front end of the channel is open, as at 38, just enough to provide operating clearance for the shank 20 of the ball head member in the turning of the socket member relative to the ball head 24. By pressing the side walls of the channelled end of the socket member inwardly, as at 39, behind the socket 34, I further confine the ball head 24 and prevent inward displacement thereof, as indicated in Fig. 5. This narrow channel formation between the socket formation to the rear adds greatly to the stiffness and strength of the socket member 18, particularly with the rivet 37 reinforcing it. The socket member 18 can be of any suitable heavy sheet metal stock and can be used without plating or otherwise enhancing the appearance thereof, inasmuch as a cover 40 of thin sheet metal is provided to enclose it, the cover being given any suitable or preferred ornamental design and configuration and being suitably plated for good appearance. The cover 40 can be secured to the socket member 18 in any suitable or preferred manner, although, as indicated in Fig. 7, I have shown the channel formation on the marginal edges of the cover, as at 41, to fit the edges of the flat attaching portion 32 of the socket member. It is obvious that the channel 41 will be partially formed in the original forming of the cover 40 and that the outer flange of the channel is bent inwardly after the socket member is inserted, whereby to fasten the parts together permanently.

In operation, it is evident that two identical hinges of this construction can be used for hing-

edly mounting the lid 15 on the deck 14 of the luggage compartment 13, because it is immaterial whether the longitudinal axis of the ball head member 17 is inclined to the left, as at *a-b*, or to the right, as at *c-d*, in Fig. 2. That is, there is no difference in construction of the hinges to be used on the right and left sides of the lid, whereas heretofore the right-hand hinge was made to fit the one slope and the left-hand hinge was made to fit the opposite slope of the lid and deck. Furthermore, whereas the pintle hinges made especially for right or left hand usage frequently were caused to bind by reason of some slight "run-out" from standard specifications in the transverse curvature of the lid or deck, the present hinges operate easily and have no tendency to bind regardless of differences in transverse curvature of the lid and deck, because of the fact that the socket members 18 mounted on the lid can be placed in planes at various angles with respect to the shanks 20 of the ball head members 17 mounted on the body. The extent to which the socket members may be inclined one way or the other from right-angle relationship to the lines *a-b* and *c-d* is determined, of course by the width of the slots 38, and it is apparent from an inspection of Fig. 2 where the shanks 20 are shown in spaced relation to opposite sides of these slots in the socket members 18 that there is no danger of either of the hinges binding or scraping as a result of the normal amount of deviation in transverse curvature of the lid, or deck, whereas, if pintle hinges were used, it is clear that a slight deviation in transverse curvature would be sufficient to set up a binding action on the pintles, due to their being thrown out of alignment. Each hinge of my invention determines only one point of suspension, and the two points determine a line *x-y*, which is the hinging axis of the lid. Manifestly, with the two ball-and-socket hinges, there is no possibility of binding, because there is eliminated the necessity for accurate lineal alignment of two hinge pintles. That is to say, a shifting one way or the other of the center of one of the ball heads 24 from a predetermined line joining the centers of the two ball heads merely shifts the hinging axis to that extent without setting up a binding action. The assembling lids on cars on the assembly line is therefore greatly facilitated and the operation of the lids is at the same time greatly improved, and since binding is eliminated, it goes without saying that wear in the hinges is proportionately diminished and there is therefore less likelihood of the lids developing rattles when the cars have been in service for some time. The guard 26 covering the front end of each hinge not only conceals the slot 38 and the portion of the ball head that would otherwise be exposed through this slot, so that a better appearance is obtained, but shields the hinges against down-wash of dirt, grit, water, and sleet off the deck 14 so that lubrication of the hinges will not be impaired and there will be less danger of ice forming at these points and interfering with the opening of the lid. The guards 26, as clearly appears in Fig. 3, leave ample working clearance between them and the ball heads 24 for the socket portions 34 to operate in the opening and closing of the lid, so that the plating on the covers 40 will not be scratched or marred by rubbing contact with the guards 26. The stamped sheet metal construction is just as cheap, if not cheaper, than the die-cast construc-

tions previously used, and is much stronger and more durable.

Figs. 8 and 9 illustrate another deck hinge construction in which the ball head member 17a has the ball head 24a on the end of an elbow or gooseneck 42 formed on the upper end of the shank 20a over the deck 14. The socket member 18a in this case is of two-piece construction, the piece 43 which provides the main part of the attaching shank 32a being bent upwardly near its socket end, as at 44, toward the socket 34a for which it provides the lower half 45 in the bifurcated end thereof. The slot 46 between the halves of the socket portion 45 receives the elbow or gooseneck portion 42 of the shank and permits about 90° of lid movement. The other piece 47 of the socket member 18a is arranged to have its shank portion riveted or otherwise suitably secured, as at 48, to the main body part 43, and the outer end 49 thereof is formed to a substantially semi-spheroidal shape to provide the upper half of the socket 34a. Between the socket portion 49 and attaching shank portion of the part 47, the piece is given a channel formation, as indicated at 50, for added strength and stiffness. The tapped holes 51 in the attaching shank portion of the socket member 18a are adapted to receive the fastening screws or bolts for fastening the hinge to the lid. The cover 40a will in general correspond to the cover 40 on the other hinge. The operation of this hinge will be substantially the same as the other hinge, but it is apparent that by virtue of the elbow or gooseneck formation of the ball head shanks, several advantages are derived, the principal one being that the front ends of the hinges are substantially closed and therefore give a better appearance and at the same time eliminate the necessity for the guards 26. Of course, some modified form of guards similar to the guards 26 might still be provided to keep the space under the front ends of the hinges clear of dirt or sleet, although it is not believed that such precautions are necessary with this construction. Another advantage derived with the gooseneck formation of the ball head shanks is that there is no necessity for as great accuracy in the location of the bolt holes on the lid and body, and if the bolt holes on the lid do not happen to line up accurately with the related bolt hole on the body, the shank 20a being in offset relation to the ball head 24a and being rotatable will permit the ball head 24a to assume the desired position to the right or left with respect to the center of the shank 20a to compensate for the wear, and thus the hinge will operate without any unnecessary side pressure of the ball head in the socket and the lid will accordingly work that much easier. Wear will accordingly be eliminated so that rattles are not apt to arise.

In Figs. 10 to 12 is shown still another hinge which resembles the first hinge from the standpoint that its socket member 18b is of one-piece construction but resembles the second hinge of Figs. 8 and 9 from the standpoint that the ball head member 17b has a gooseneck bend 42 on the shank 20b next to the head 24b. In this hinge, however, the rivet 37 is eliminated in favor of a rivet 37b which extends through a hole 52 in the ball head 24b and through registering holes in the opposed halves of the bifurcated portion 35b and has its ends upset, as shown in Fig. 12, to permanently assemble the parts together. The socket 34b is provided in the bifurcated portion 35b. The slot 36b which is incidental to the

process of forming the socket member from a single piece of flat sheet metal does not involve any weakening of the socket member, in view of the rivet 37b, which prevents spreading apart of the two halves of the socket. Since the hole 52 through the ball head 24b is considerably larger in diameter than the rivet 37b, there is ample clearance left to permit lateral oscillation of the ball head relative to the socket. In other words, even though the rivets 37b on the two hinges of a lid will in actual operation be disposed in angular relation to one another, the hinges will still operate as ball-and-socket hinges similarly as the hinges previously described. The tapped holes 51 in the attaching shank portion of the socket member 18b will receive the threaded ends of bolts or screws for fastening the hinges to the lid. The cover 40b on each socket member corresponds generally to the covers 40 and 40a, previously described. The same general advantages are obtained with a hinge of this design as with the hinge of Figs. 8 and 9.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claims are drawn with a view to covering all legitimate modifications and adaptations.

I claim:

1. In an automobile having a transversely curved body portion and a lid to be hingedly mounted thereon and having a corresponding transverse curvature on the outside thereof, a pair of hinges providing a two-point support for the lid on the body comprising a pair of substantially identical spherical heads in laterally spaced relation on said body portion having attaching shanks extending downwardly therefrom to the body portion securing the heads to said body portion, said shanks being each substantially normal to the body portion and extending in outwardly diverging relation to one another because of the body curvature, and a pair of substantially identical socket members secured to the curved outside of the lid in laterally spaced relation and having the aforesaid spherical heads swivelled in the sockets thereof with more than ordinary operating clearance allowance relative to the attaching shanks, whereby said lid is free to swing about a substantially horizontal straight line through the centers of said heads as an axis.

2. In an automobile having a transversely curved body portion and a lid to be hingedly mounted thereon and having a corresponding transverse curvature on the outside thereof, a pair of ball-and-socket hinges hingedly mounting the lid on the body portion, the hinges each comprising a socket member affixed to the lid and projecting from the edge of the lid in substantially parallel relation to a surface on the adjacent body portion and terminating in a socket portion, and a ball head member affixed to the body portion in spaced relation to the lid and projecting from the body portion and swivelled in the socket portion in the end of the socket member with more than ordinary operating clearance allowance relative to the attaching shanks, the interfitting ball and socket of each hinge determining a point of suspension for the lid, whereby said lid is free to swing about a substantially horizontal straight line through the centers of the ball heads as an axis.

3. In an automobile having a transversely curved body portion and a lid to be hingedly mounted thereon and having a corresponding transverse curvature on the outside thereof, a

- pair of ball-and-socket hinges hingedly mounting the lid on the body portion, the hinges being exteriorly mounted on the body portion and each comprising a socket member affixed to the outside of the lid and projecting from the edge of the lid over the adjacent body portion and terminating in a socket portion, a ball head member affixed to the body portion in spaced relation to the lid and projecting from the body portion and swivelled in the socket portion in the end of the socket member, the interfitting ball and socket of each hinge determining a point of suspension for the lid, whereby said lid is free to swing about a substantially horizontal straight line through the centers of the ball heads as an axis, the front ends of said socket members having substantially vertical slots provided therein for reception of the portions of the ball head members below the ball heads in the opening of the lid, and a dirt and weather guard stationary with the ball head member and extending upwardly from the body portion in front of the slotted portion of the socket member, substantially as and for the purpose described.
4. In an automobile having a transversely curved body portion and a lid to be hingedly mounted thereon and having a corresponding transverse curvature on the outside thereof, a pair of ball-and-socket hinges hingedly mounting the lid on the body portion, the hinges being exteriorly mounted on the body portion and each comprising a socket member affixed to the outside of the lid and projecting from the edge of the lid over the adjacent body portion and terminating in a socket portion, a ball head member affixed to the body portion in spaced relation to the lid and projecting from the body portion and swivelled in the socket portion in the end of the socket member, the interfitting ball and socket of each hinge determining a point of suspension for the lid, whereby said lid is free to swing about a substantially horizontal straight line through the centers of the ball heads as an axis, and a dirt and weather guard stationary with the ball head and extending upwardly from the body portion in front of the end of the socket member, the guard being spaced from the ball head to leave working clearance therebetween for the end of the socket member in the opening and closing of the lid.
5. A hinge suitable for a liftable closure comprising a ball head member adapted to be affixed to a support next to the closure with the ball head disposed in elevated relation to the top of the support, a socket member comprising an attaching portion adapted to be secured on top of said closure and a socket portion extending from one end thereof and enclosing the top and sides of the ball head, the ball head having a swivel fit in the socket portion, the socket portion having a substantially vertical slot provided in the wall thereof at the extremity of the socket member to be entered by that portion of the ball head member below the ball head when the closure is raised, and a dirt and weather guard fixed to the support and extending upwardly therefrom in closely spaced relation to the ball head and covering said slot while permitting free movement of the end of the socket end of the member relative thereto in the raising and lowering of said closure.
6. A hinge suitable for a liftable closure comprising a ball head member adapted to be affixed to a support next to the closure with the ball head disposed in elevated relation to the top of the support, a socket member comprising an attaching portion adapted to be secured on top of said closure and a socket portion extending from one end thereof and enclosing the top and sides of the ball head, the ball head having a swivel fit in the socket portion, the ball head member having a threaded shank adapted to receive a nut threaded thereon from below the support, the shank being cut away on opposite sides thereof below the ball head and above the plane of the top of said support, and a guard having a forked attaching portion fitting on the shank in said cut-away portion whereby to be clamped on said support in the fastening of the ball head member by said nut, said guard having a portion extending upwardly from said support and partially enclosing the socket end of the socket member.
8. In a hinge of the character described, the combination of a ball head member comprising an upright attaching shank terminating in a ball head at its upper end, and a sheet metal socket member in substantially right-angle relation to the attaching shank of the ball head member in the closed position of the hinged members comprising a flat attaching portion having one end formed to inverted substantially channel-shaped cross-section, a portion of the channel-shaped end being further formed to provide a downwardly opening spheroidal socket receiving the aforesaid ball head, the socket being open on the open side of the channel formation for projection of the attaching shank of the ball head member from the socket and said socket being so formed in relation to said ball head and its attaching shank to permit relative pivotal movement between said members substantially to co-extensive relation.
9. In a hinge of the character described, the combination of a ball head member comprising an attaching shank terminating in a ball head, and a sheet metal socket member comprising a flat attaching portion having one end formed to a substantially channel-shaped cross-section, a portion of the channel-shaped end being further formed to provide a spheroidal socket receiving the aforesaid ball head, the socket being open on the open side of the channel formation for projection of the attaching shank of the ball head member from the socket, there being a longitudinal slot provided in the web of the channel traversing the socket portion, and a cross-tie interconnecting the opposite side walls of the channelled end of the socket member to prevent spreading apart of the portions of the socket on opposite sides of said slot.
10. In a hinge of the character described, the combination of a ball head member comprising an attaching shank terminating in a ball head, and a sheet metal socket member comprising a flat attaching portion having one end formed to

a substantially channel-shaped cross-section, a portion of the channel-shaped end being further formed to provide a spheroidal socket receiving the aforesaid ball head, the socket being open on the open side of the channel formation for projection of the attaching shank of the ball head member from the socket, there being a longitudinal slot provided in the web of the channel traversing the socket portion, the opposite sides of the channel portion being depressed inwardly toward each other behind the socket and adjacent the inner end of said slot, and a cross-tie interconnecting the opposite side walls of that portion of the channel.

11. In a hinge of the character described, the combination of a ball head member comprising an attaching shank terminating in a ball head, and a sheet metal socket member comprising a flat attaching portion having one end formed to a substantially channel-shaped cross-section, a portion of the channel-shaped end being further formed to provide a spheroidal socket receiving the aforesaid ball head, the socket being open on the open side of the channel formation for projection of the attaching shank of the ball head member from the socket, there being a longitudinal slot provided in the web of the channel traversing the socket portion, the ball head having a diametrical hole provided therein substantially at right angles to the attaching shank, and a fastener extending through said hole with ample clearance with relation to the walls thereof and interconnecting the two halves of the socket on opposite sides of said slot to prevent spreading apart thereof.

12. In a ball-and-socket hinge of the character described, a ball head member comprising an attaching shank terminating in a ball head, and a socket member comprising a relatively thick main sheet metal body member formed to provide a flat attaching shank portion, one end of which is formed to inverted substantially channel-shaped cross-section, a portion of which is further formed to provide a spheroidal socket receiving the aforesaid ball head, the socket being open on the lower side corresponding to the open side of the channel for downward projection from the socket of the attaching shank of the ball head member, attaching studs projecting from the one face of the attaching shank portion having heads protruding on the opposite face of said shank portion, and a relatively thin sheet metal cover disposed in spaced relation to said stud heads and conformed only generally to the shape of said body member and formed to a substantially channel-shaped cross-section throughout to enclose said body member and conceal said stud heads, the edges of said cover being suitably secured to the edges of the body member.

13. In a hinge of the character described, the combination of a ball head member comprising an attaching shank terminating in an elbow portion having a ball head on the end thereof, a socket member comprising an attaching shank portion in substantially right angle relation to the attaching shank portion of the ball head member on the side remote from the ball head and having an end portion extending over and in the same direction as the elbow portion of the ball head member terminating in a socket wherein the ball head is received with a swivel fit.

14. In an automobile having a transversely curved body portion and a lid to be hingedly mounted thereon and having a corresponding transverse curvature on the outside thereof, a

pair of ball-and-socket hinges hingedly mounting the lid on the body portion deck, the hinges being exteriorly mounted on the body portion and each comprising a socket member affixed to the outside of the lid and projecting from the edge of the lid over the body portion and terminating in a socket portion, and a gooseneck member secured to and extending upwardly from the body portion with a gooseneck formation on the upper end thereof terminating in a ball head forwardly in relation to the rest of the gooseneck member and remote with respect to the lid, the socket portion of the socket member being formed to enclose the top, front, and opposite sides of the ball head and to receive the ball head with a swivel fit, the interfitting ball and socket of each hinge determining a point of suspension for the lid, whereby said lid is free to swing about a substantially horizontal straight line through the centers of the ball heads as an axis.

15. A hinge suitable for a liftable closure comprising a gooseneck member adapted to be affixed to a support next to a closure and having a gooseneck portion extending away from the closure and terminating in a ball head above and in closely spaced relation to the top of said support, and a socket member comprising an attaching portion adapted to be secured on top of said closure and a socket portion extending from one end thereof and enclosing the top and sides of the ball head, the ball head having a swivel fit in the socket portion.

16. A hinge of the character described comprising a gooseneck member having an upright attaching shank terminating in an angular gooseneck portion having a ball head on the upper end thereof, and a socket member in substantially right-angle relation to said attaching shank comprising a sheet metal body member formed to provide a flat attaching shank portion, one end of which is bent to conform generally to the form of the gooseneck portion of the gooseneck member and terminates in a bifurcated half-socket portion fitting under the ball head with the gooseneck portion extending through the slot of the bifurcated half-socket portion, and an auxiliary sheet metal body member superimposed on the first body member and extending from the shank portion over the end portion of the first-mentioned body member and formed at the end thereof with a complemental half-socket portion fitting over the top of the ball head to retain the same in the first-mentioned half-socket with a swivel fit, the socket provided between said sheet metal body members being so formed in relation to said ball head and its attaching shank to permit relative pivotal movement between said gooseneck and socket members substantially to coextensive relation and means securing the two body members together.

17. A hinge of the character described comprising a gooseneck member having an attaching shank terminating in an angular gooseneck portion having a ball head on the end thereof, and a socket member comprising a sheet metal body member formed to provide a flat attaching shank portion, one end of which is bent to conform generally to the form of the gooseneck portion of the gooseneck member and terminates in a bifurcated half-socket portion fitting under the ball head with the gooseneck portion extending through the slot of the bifurcated half-socket portion, and an auxiliary sheet metal body member superimposed on the first body member and extending from the shank portion over the end portion of

the first-mentioned body member and formed at the end thereof with a complemental half-socket portion fitting over the top of the ball head to retain the same in the first-mentioned half-socket with a swivel fit, means securing the two body members together, the two sheet metal body members being of relatively thick sheet metal, and a relatively thin sheet metal cover disposed throughout the major portion thereof in spaced relation to and conformed only generally to the shape of said body members and formed to a substantially channel-shaped cross-section throughout so that the lateral portions of the channel are adapted to engage the marginal portions of said body members, the edges of said cover being suitably secured to the edges of the body members.

18. A deck hinge for hingedly connecting an exteriorly transversely curved lid to an exteriorly transversely curved deck portion on an automobile, said hinge comprising a ball head member adapted to be mounted on the outside of the deck portion, and a socket member adapted to be mounted on the outside of the lid, the ball head member comprising an attaching shank terminating in a ball head, and means for securing the attaching shank to a deck portion in substantially right-angle relation thereto with the ball head in spaced relation to the outside of the deck portion, and the socket member comprising an attaching shank terminating in a socket portion receiving said ball head with a swivel fit, said socket member having a slot provided in one end thereof opening into the socket portion through

which the attaching shank of the ball head member extends, said slot permitting relative oscillatory movement between the members throughout substantially 90°, and means for securing the attaching shank of the socket member to the outside of a lid.

19. A hinge as set forth in claim 18, wherein the slot in the socket member is wider than the attaching shank of the ball head member to allow for difference in transverse curvature of the lid and deck portion.

20. A hinge suitable for a liftable closure comprising a ball head member adapted to be affixed to a support next to the closure with the ball head disposed in elevated relation to the top of the support, a socket member comprising an attaching portion adapted to be secured on top of said closure and a socket portion extending from one end thereof and enclosing the top and sides of the ball head, the ball head having a swivel fit in the socket portion, the ball head member having a threaded shank portion adapted to receive a nut threaded thereon from below the support when the shank portion is extended through an opening in said support, said shank portion having a shoulder thereon above the support, and a guard having an attaching portion fitting on the shank under said shoulder so as to be clamped on said support in the fastening of the ball head member by said nut, said guard having a portion extending upwardly from said support and partially enclosing the socket end of the socket member.

SETH B. ATWOOD.

CERTIFICATE OF CORRECTION.

Patent No. 2,200,253.

May 14, 1940.

SETH B. ATWOOD.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, second column, line 28, claim 7, for "portion" read --portions--; page 5, first column, line 12, claim 10, for "solt" read --slot--; line 33, claim 11, for "ralves" read --halves--; line 45, claim 12, for "hear" read --head--; same page, second column, line 2, claim 14, strike out the word "deck"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of July, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.