

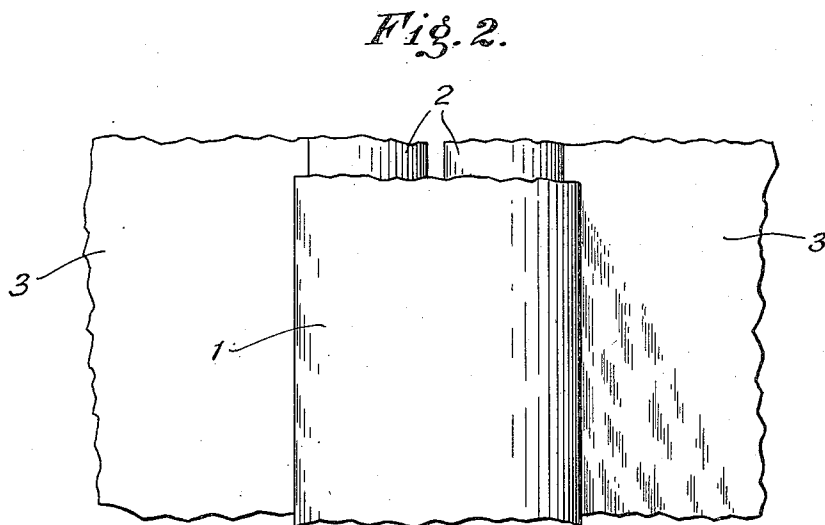
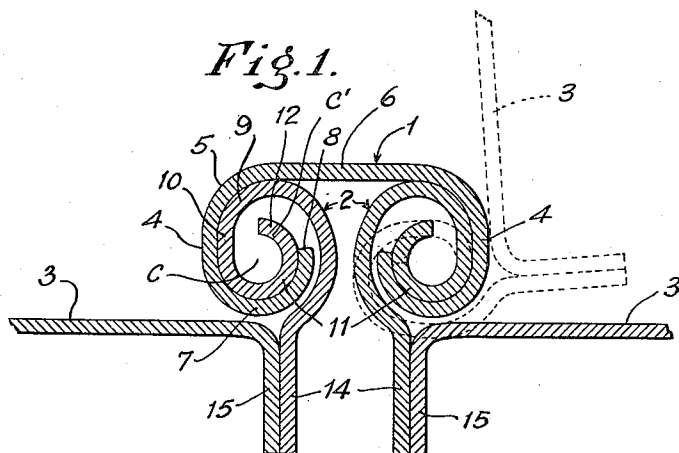
March 19, 1935.

H. L. SPAUNBURG

1,995,254

HINGE

Filed May 29, 1930



INVENTOR
HARVEY L. SPAUNBURG

BY

ATTORNEY.

UNITED STATES PATENT OFFICE

1,995,254

HINGE

Harvey L. Spaunburg, Bristol, Conn., assignor to
Veeder-Root Incorporated, a corporation of
Connecticut

Application May 29, 1930, Serial No. 457,259

20 Claims. (Cl. 16—163)

My invention relates to hinges.

It has for its object to provide an improved hinge, and more particularly, an improved hinge adapted to use on hoods for automobiles or the like. A further object of my invention is to produce such a hinge which is adapted to function with facility while being of long life, of attractive appearance, free from rattles, and capable of being manufactured at small expense. A still further object of my invention is to provide an improved hinge construction including a cover strip and cooperating movable hinge members and having the latter movable with an improved rocking action in the cover strip and supported and positioned in the open and closed positions of the parts in an improved manner. Other objects and advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing I have shown one embodiment of my improved hinge applied to use in an automobile hood structure.

In this drawing—

Figure 1 is an enlarged partial transverse vertical section through a hood equipped with my improvement; and

Fig. 2 is a similarly enlarged fragmentary plan view of the hood shown in Figure 1.

In this illustrative construction, it will be noted that the hinge structure, which, as shown, is approximately twice its normal size, comprises a narrow cover strip 1 rolled along its depending edges to form journals, and cooperating beaded strips 2 hinged on the journals provided in the edges of the strip 1, and carrying hood covers 3.

In practice, the strip 1 is extended throughout the length of the engine hood and suitably supported in a stationary position at its opposite ends on the cowl and radiator casing in such manner as to form an attractive cover, housing and concealing the hinges of the hood covers 3. This member 1, as shown, is also provided at each side with a depending portion 4, herein substantially straight and having above the same a rounded portion 5 intermediate the portion 4 and the top 6 of the portion 1, and, below the same, a rounded journal forming an edge or lip portion 7 directed inward and upward and underlying one side of the strip 1 with its edge 8 substantially spaced from the inside surface of the top thereof and the adjacent edges 8 substantially spaced from one another.

The members 2, each of which preferably extends throughout the length of its hood cover 3, are in turn each provided with a rounded portion 9 adapted to fit the inside of the portion 5, an

intermediate portion 10 adapted to fit the portion 4, and a journal portion 11 adapted to fit the portion 7, while this portion 11 is, preferably but not necessarily, provided with an extension 12 which in the closed position of the covers 3, projects beyond the edge 8 as shown in Figure 1. As shown, this portion 12 is concentric with the portion 11, both being disposed in arcs struck from an axis C above the portions 7 and 11, while the portion 12 extends to a point above the axis C. Moreover, it will be noted that the axis C' of the arcs on which the portions 5 and 9 are disposed is herein located in this extension.

In a preferred construction, each of the portions 2 is curved downwardly and outwardly in such manner as to clear the portion 7 and edge 8 during a predetermined turning movement in the journals heretofore described. It will also be noted that these two portions 2 are spaced apart in such manner that when they are moved about the axis of the portions 7 and 11, they may pass one another. Herein, each of the portions 2 also has a straight depending portion 14 on its lower end to which is suitably attached, as by welding or riveting, a depending flange 15 on its cover 3.

In use, it will be evident that when the member 1 is suitably supported on the cowl and radiator frame with the parts associated as shown in Figure 1, the covers 3 will be held in closed position. When, however, it is desired to raise either cover 3 and the same is pulled up in a usual manner, the part 2 attached to the cover moves from the position shown in full lines in Figure 1 to the position shown in dotted lines in that figure. More specifically, the portions 12 and 11 travel along the portions 8 and 7 while turning about the axis C, and the portions 9 and 10 move away from the portion 4. This movement continues until the part 10 of the member 2 engages the edge 8 and the portion 3 comes in contact with the outside of the portion 4 as indicated in dotted lines in Fig. 1, in which position it will be noted that the cover 3 is raised sufficiently to enable its usual pivoted depending portion (not shown) to be supported on the cowl or suitable special support in a customary manner. Similarly, when it is desired to close the hood, the cover 3 is moved reversely until the parts again assume the full line position illustrated.

As a result of my improved construction, it will be noted that the portions 5, 4 and 7 of the outer or stationary hinge element 1 being engaged with the portions 9, 10 and 11 of each movable hinge element 2 whenever the hood

is closed, a substantial area of contact is provided acting to prevent relative displacement, while holding the parts snugly together and preventing rattling at the same time that binding is avoided. It will further be noted that the structure is such as to enable the member 1 and co-operating members 2 to be economically produced, as for example, by rolling the same in long strips, subsequently cut into the desired lengths to adapt them to use and slipped together longitudinally to assemble the hinge and also separable longitudinally when desired.

Moreover, it will be evident that in my improved construction a wholly new cooperation is provided between the stationary hinge member, or cover strip, and the movable hinge members, resulting both from an improved pivotal support for the movable hinge members on the cover strip between the depending sides and the upwardly extending edge portions thereof, and also from the new rocking movement relative to the new abutment portions located in a new position above said pivotal supports and remote from the edges of the hinge members, whereby the parts are brought into engagement to hold the movable hinge members as the latter are rocked about their pivots into closed position. Further, it will be evident that in the open position of the parts the movable hinge members are vertically supported on the upturned edges on the cover strip irrespective of the length of the portions 11, and in the illustrative construction wherein a long extension 12 is provided, are also supported on the pivot portions 7, while they are held against separation from the cover strip in open position by engagement of still another portion of the movable hinge members with the depending sides of the cover strip beneath the latter.

The above described support provided for the movable hinge member eliminates the tendency to binding inherent in a cylindrical journal construction, while the freedom from abrupt changes in section, and especially the absence of small grooves, in the cooperating hinge parts further results in an inexpensive and commercially practical construction eliminating certain difficulties in manufacture which otherwise result in wholly unwarranted manufacturing cost. Attention is also directed to the attractive appearance of the structure, and particularly to the fact that through my improved construction, the cover member can shroud or cover the connection of the hood covers to the depending portions on the co-operating members. These and other advantages of my invention will, however, be clearly apparent to those skilled in the art.

While I have in this application specifically described this embodiment of my invention, it will be understood that the latter may be modified and embodied in various other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:—

1. In combination, a cover strip having oppositely disposed depending portions provided with inwardly and upwardly projecting arcuate edge portions, and cooperating hinge strips supported by said cover strip and pivoted thereon and each having an arcuate portion conforming to a part of the inside of one of said edge portions in the closed position of the parts and another portion spaced from said arcuate edge portion and movable bodily away from and into locating engage-

ment with the inside of said cover strip in different positions of the parts.

2. In combination, a cover strip having oppositely disposed depending portions providing inner arcuate journal portions having upturned edges disposed substantially in the arcs of said arcuate portions, and cooperating hinge members between said depending portions each having an arcuate portion engageable with the inside of one of said arcuate journal portions and in the closed position of the parts extended beyond said upturned edges and laterally relative thereto and toward said depending portions.

3. In combination, a cover strip having oppositely disposed depending portions providing upwardly directed arcuate edge portions having upturned edges and abutment portions remote from said upwardly directed arcuate edge portions, and cooperating hinge members between said depending portions each having a cooperating abutment portion movable bodily laterally into engagement with the inside of one of said abutment portions in the closed position of the parts and also having an arcuate supporting portion engageable in the closed position of the parts with the inside of one of said depending portions between the abutment portion and the upwardly directed arcuate edge portion thereof, said hinge members having a support on the upturned edges of said cover strip with the edges thereof free from supporting engagement with said cover strip in the open position of the parts.

4. In combination, a cover strip having oppositely disposed depending portions having continuously curved inwardly and upwardly directed hinge supporting portions terminating in upturned inner arcuate edge portions, and cooperating hinge members between said depending portions each having an arcuate portion leading to its edge corresponding to and engageable in a closed position of the parts with a portion of the inside of the arcuate edge portion on one of said hinge supporting portions between the edge thereof and said depending portion, said depending portions and hinge members having, on the side of said cooperating arcuate portions remote from the edges thereof, corresponding portions thereon non-concentric with said arcuate portions and cooperating therewith to position said hinge members in the closed position of the parts.

5. In combination, a cover strip having a top portion and depending extensions thereof terminating in upturned arcuate portions beneath said top portion, and cooperating hinge strips hingedly connectible with said cover strip between said top and extensions, said cover strip and hinge strips each having corresponding arcuate pivotal surface portions engageable in the closed position of the parts along the edges of said arcuate terminal portions and also abutment surface portions which are disposed between said top portion and said arcuate terminal portions and which cooperate in the closed position of the parts while permitting opening movements of said hinge strips.

6. In combination, a cover strip having a top portion and depending extensions thereof having continuously curved inwardly and upwardly directed hinge supporting portions terminating in upturned edges beneath said top portion, and cooperating hinge strips hingedly connectible with said cover strip between said top and extensions and each having a curved portion adjacent its edge conforming to the curved portion of a hinge supporting portion between the upturned edge

thereof and the depending portion of said extension, said hinge strips being freely movable while supported on said extensions into open position, and said cover strip and hinge strips each having
 5 between said top and said inwardly and upwardly directed hinge supporting portions, corresponding abutment surface portions which register in abutting relation in the closed position of the parts and limit the closing movement of said hinge
 10 strips.

7. In combination, a cover strip having a top portion and depending extensions thereof terminating in upturned edge portions beneath said top portion, and arcuate and non-arcuate inner
 15 surface portions between said top portion and said edge portions, and co-operating hinge strips receivable within said extensions and each having corresponding portions co-operating with said inner surface portions in the closed position of the
 20 parts and freely movable into open position while turning on said extensions and rocking its non-arcuate portion away from the like portion on said cover strip.

8. In a hinge, a cover strip having a top portion forming an external finishing strip and having depending portions terminating in upturned edges disposed therebeneath and also having between said top and edge portions arcuate and non-arcuate inner surface portions, and co-
 30 operating hinge members supported on the inside of said depending portions in the closed and open positions of the parts and having cooperating arcuate and non-arcuate outer surface portions cooperating with said first mentioned surface portions to prevent rattling in the closed position
 35 of the parts, said non-arcuate portions on said cover strip and hinge members abutting throughout the length of the non-arcuate portions on the latter in the closed position of the parts and said
 40 hinge members engaging and being supported on said upturned edges with the edges thereof free from supporting engagement with said cover strip in the open position of the parts.

9. In a hinge, a cover strip having a top connecting portion and depending extensions thereof terminating in upturned edge portions having up-
 45 turned edges, cooperating movable hinge strips receivable within said extensions and having a rocking support on said extensions, each of said
 50 movable strips having a portion thereof bodily movable away from and into engagement throughout its length with said cover strip in different positions of the hinge parts and being supported on said extensions in one position of the
 55 parts and on said upturned edge in another position thereof.

10. In a hinge, a cover strip having a top connecting portion and spaced depending extensions thereof having upturned portions terminating in upturned edges beneath said top portion, and cooperating movable hinge strips having pivot means receivable within said extensions and having a portion overlying the inner surface of said extensions in the closed position of the parts and portions rocking into engagement with cooperating portions on said extensions to inhibit chattering in the closed position of the parts, said hinge strips being supported by said extensions free from rubbing engagement with the outer surface of said cover strip when moving into the open position of the parts.

11. In combination, a cover member having depending sides provided with inturned edge portions upwardly extended and terminating in upturned edges, and cooperating hinge members

each having a portion engageable with and movable about the inside of one of said depending sides into open position and supported vertically by said inturned edge portions in open position with the edges of said hinge members out of supporting engagement with said inturned edge portions, said hinge members also having external
 5 portions between and spaced laterally from said inturned edge portions in the closed position of the parts and disposed closely adjacent the under-
 10 side of said edge portions in the open position of the parts while said hinge members remain supported by said inturned portions.

12. In combination, a cover strip having oppositely disposed inturned arcuate edge portions, and cooperating hinge strips each having a portion spaced from one of said arcuate portions and movable bodily away from and into locating engagement with the inside of said cover strip in different positions of the parts and each also
 20 having a similarly disposed arcuate edge portion journaled on one of said first mentioned edge portions and extending beyond said first mentioned edge portion in the closed position of the parts.

13. In combination, a cover strip having oppositely disposed depending portions providing inner arcuate portions having upturned arcuate edge portions constituting a continuation of said arcuate portions, and cooperating hinge members between said depending portions each having an arcuate portion engageable with the inside of one of said inner arcuate portions and an abutting portion adjacent said arcuate portion and movable laterally into and out of engagement with an adjacent portion of the inside of one depending
 35 portion and cooperating with said arcuate portions in positioning the parts in closed position.

14. In combination, a cover strip having oppositely disposed depending portions provided with inwardly and upwardly projecting arcuate edge portions, and cooperating hinge strips each having an arcuate portion pivoted inside one of said edge portions and conforming in the closed position of the parts to a portion of the inside surface of said arcuate edge portion between the edge of said upwardly projecting arcuate edge portion and said depending portion, and each of said hinge strips having a support in the open position of the parts on the edge of an arcuate edge portion of said cover strip with its edge free from supporting engagement with said cover strip.

15. In combination, a cover strip having oppositely disposed depending portions provided with inwardly and upwardly projecting arcuate edge portions, and cooperating hinge strips each having an arcuate portion pivoted inside one of said edge portions and overlying a portion of the inside arcuate surface of said edge portion between the edge of said upwardly projecting arcuate edge portion and said depending portion in the closed position of the parts, said cover strip and each of said cooperating strips being provided with abutting portions adjacent said pivots in the closed position of the parts and on the side thereof remote from said edge portions engaging in said closed position, and each of said hinge strips having a support in the open position of the parts on the edge of an arcuate edge portion of said cover strip with its edge free from supporting engagement with said cover strip.

16. In combination, a cover strip having a top connecting portion and spaced sides depending therefrom and each provided with an inwardly directed portion having an upturned edge por-
 75

tion terminating in an upturned edge, and cooperating movable hinge members each having a support in the closed position of the parts on one of said inwardly directed portions and having an edge portion terminating in an edge spaced from the upturned edge of said cover strip, each of said hinge members rocking about its support and toward said upturned edge when moving into open position and having a support on and in engagement with a portion of said upturned edge in the open position of the parts with the edge of said edge portion free from supporting engagement with said cover strip.

17. In combination, a cover strip having a top connecting portion and spaced sides depending therefrom and each provided with an inwardly directed portion having an upturned edge portion terminating in an upturned edge and an inner abutment surface portion spaced from the extremity of said edge portion, and cooperating movable strips each having a rocking pivotal support in the closed position of the parts on one of said inwardly directed portions between the abutment surface portion and the upturned edge thereof and spaced from said upturned edge, and each having an outer abutment surface portion rockable into abutting engagement with one of said inner abutment surface portions in the closed position of the parts, and each also having an edge portion thereof supported on and in engagement with an upturned edge of said cover strip in the open position of the parts with the edge of said edge portion free from supporting engagement with said cover strip.

18. In combination, a cover strip having in-

turned depending portions terminating in inner arcuate portions, and cooperating hinge members between said depending portions each having an arcuate edge portion slidable over a portion of the inside of one of said first mentioned arcuate portions, said hinge members being supported by the edges of said first mentioned portions in the open position of the parts.

19. In combination, a cover strip having oppositely intumed depending portions terminating in arcuate journal portions spaced from one another and the top of said strip, and co-operating strips having oppositely disposed portions between said journal portions and each terminating in an arcuately disposed portion engaging one journal portion, said co-operating strips having their arcuate portions of greater extent than said journal portions and extending to a point substantially above the axis of said journal.

20. In combination, a cover strip having oppositely intumed depending portions terminating in arcuate journal portions spaced from one another and the top of said strip, and co-operating strips having oppositely disposed portions between said journal portions and each terminating in an arcuately disposed portion engaging one journal portion, said co-operating strips having their arcuate portions of greater extent than said journal portions and extending to a point substantially above the axis of said journal, and said cover strip engaging and fitting each co-operating strip from the edge of said cover strip to a point above the edge of said extension while enabling free movement of said co-operating strip.

HARVEY L. SPAUNBURG.