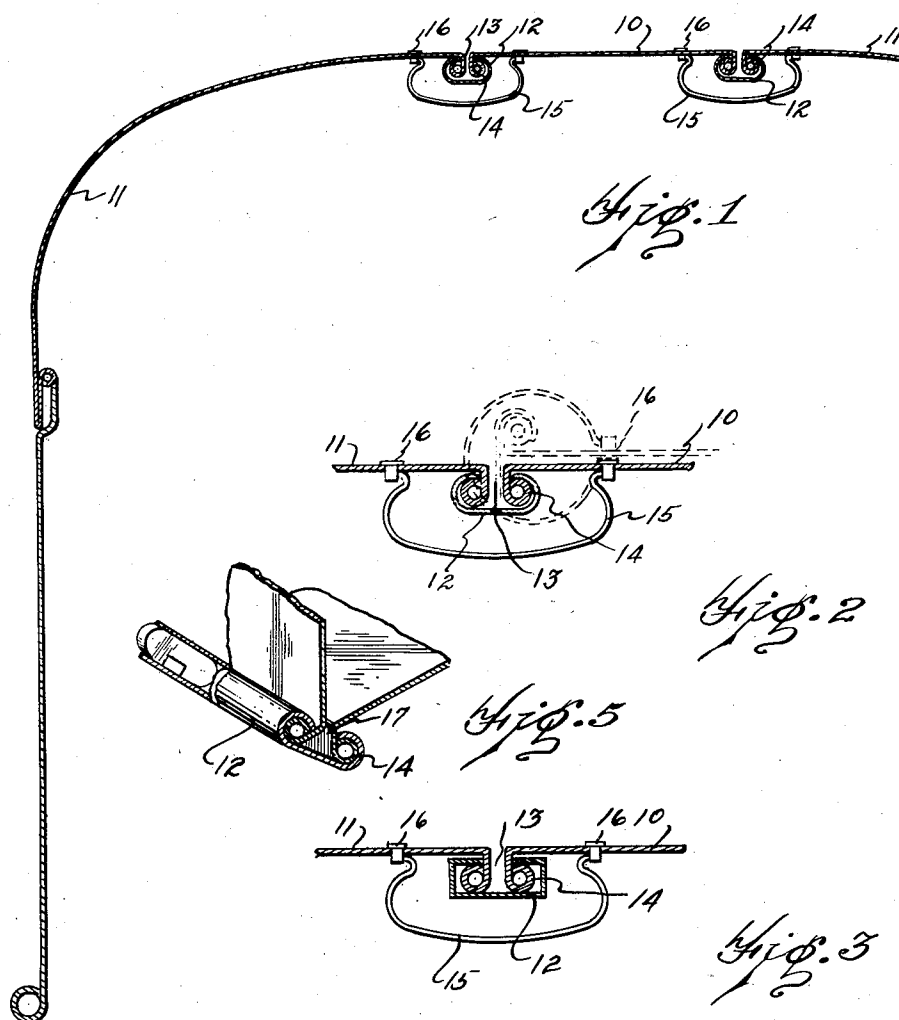
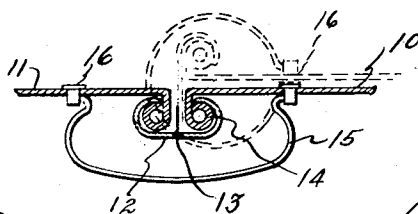
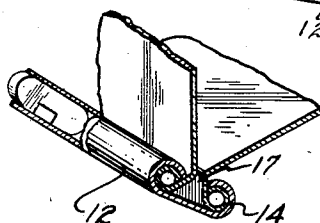
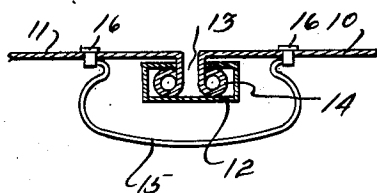


Dec. 7, 1926.

1,609,556

R. W. KUMLER  
HINGED CONNECTION

Filed April 5, 1923



INVENTOR.

BY Roy W. Kumler  
Raymond A. Parker  
ATTORNEY.

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# UNITED STATES PATENT OFFICE.

ROY W. KUMLER, OF DETROIT, MICHIGAN.

## HINGED CONNECTION.

Application filed April 5, 1923. Serial No. 629,989.

My invention relates to improvements in hinged connections and to that class of hinged connections in which a slotted casing is employed to secure the adjacent edges of the relatively swingable panel sections together for swinging movement.

The object is to provide in association with a slotted casing member engaging the adjacent edges of the relatively swingable panel sections together, a simple, durable, inexpensive hinge construction particularly adapted for use with swingable panel sections formed of sheet metal and the in-turned edges of which engage in the slot in the casing.

My invention is illustrated as specifically embodied in an automobile hood having relatively swingable sheet metal panels, though obviously it is not to be confined to this particular use. The general form of hinge structure in association with which my improvement is illustrated is the hinged connection described in United States Patent #1,247,715 of November 27, 1917.

In the drawings,—

Figure 1 is a cross-sectional view through an automobile hood structure transversely of my improved hinge connection.

Fig. 2 is an enlarged sectional view through my improved hinge taken on the same line as Fig. 1.

Fig. 3 is a sectional view through a slightly modified form of my hinge taken on substantially the same line as the view in Fig. 2.

Fig. 4 is a perspective of a spring suitable for use with my improved hinged connection.

Fig. 5 is a perspective of the hinge construction showing the casing which engages the adjacent edges of the panel sections together.

I have illustrated my invention as specifically embodied in an automobile hood hinge as it is peculiarly adapted for such a use. Automobile hoods as generally made consist of a plurality of sheet metal panels suitably hinged together to permit access to the engine underneath the hood. A common construction is to provide a fixed center panel 10 to each side of which is hinged a sheet metal side panel 11.

Automobile hood hinges should be simple, durable and inexpensive, as well as easily assembled. It is also desirable that the hinge be weather-proof and of such a character as to leave a smooth exterior hood

surface unbroken by unsightly projecting portions of the hinge structure.

I provide a tubular casing 12 slotted lengthwise as at 13, where the casing may be rolled of sheet metal to leave a longitudinal gap 13. This casing may take many diverse shapes and yet satisfactorily serve its intended purpose. In Figs. 1 and 2 it is shown in cross-section as elongate. In Fig. 3 it is of rectangular shape, while in the patent above referred to it is in the form of a half-round.

My improvement consists, in connection with such a slotted casing for the purpose described, of panel sections having in-turned adjacent edges received within the slot in the casing, which edges are rolled over as at 14 and provide a curled portion having a bearing within the casing to roll over the interior surface of the casing wall during the relative swinging movement of the panels. In the patent above referred to the bent-over marginal portions of the panels disposed within the slot in the casing are doubled back to retain the panel in association with the casing, the panels being received through an open end of the casing. In application Serial No. 628,252 filed March 28, 1923, stationary pivot rods are provided. The present construction is one in which the edges are rolled over to provide a curled portion on the in-turned edge. Each curled portion bears against the interior of the casing riding thereover in the swinging movement of the panel. In the rectangular construction shown in Fig. 3, the curled portion has a bearing at a plurality of points against the interior wall of the casing, while in the elongated structure shown in Fig. 2, it rolls over substantially the entire surface of the casing.

To hold the swinging panels apart to prevent abrasive contact at the hinge joint of the adjacent turned-over edges which would mar the outer surface of the panels, I provide a spring 15 the opposite ends of which are engaged to the cooperating panels to exert pressure thereon in opposite directions to hold the swinging panel away from the stationary panel to which it is hinged during the swinging movement.

It is conventional hood practice to employ stops such as 16 which are carried by the respective panels and so relatively disposed that the head of the stop carried by one panel engages the head of the stop carried

by the other panel to prevent contact of the panel surfaces when one panel is folded over on top of the other. The lower ends of these stops serve as suitable studs to engage the ends of the spring 15.

As shown in Fig. 5, the casing is provided with end pieces 17 which serve to stiffen the casing and also prevent relative endwise movement of the casing and panels.

The casing swings relative each panel section during the swinging movement of one panel relative the other though not to the same degree as the panel sections swing relative each other. As illustrated, the casing will travel through an arc of approximately ninety degrees while the swinging panel section is traveling through an arc of approximately one hundred eighty degrees.

What I claim is:

1. In a hinged connection, in combination, two panels having in-turned adjacent edges, a tubular casing slotted lengthwise to receive the in-turned edges of said panels to permit swinging movement of one panel relative the other, the in-turned edge of each panel within the casing rolled over upon itself to form a curled portion having a bearing within the casing to roll over the interior surface thereof during the relative swinging movement of the panels, and yielding means disposed exterior the casing engaging the panels to exert pressure thereon to hold the adjacent edges apart during the swinging movement of the panels.

2. In a hinged connection consisting of two panels having in-turned edges, a casing

slotted to receive the in-turned edges of said panels to permit swinging movement of said panels, the in-turned edge of each panel within the casing rolled over to form a curled portion having a bearing throughout the length of the casing to roll thereover during the swinging movement of the panels, and spring members engaging said panels and tensioned to exert pressure thereon tending to prevent rubbing contact of the panels at the in-turned edges.

3. In a hinged connection, two panels having bent marginal portions, a casing slotted to receive said marginal portions to permit swinging movement of the panels, and spring means engaging said panels to exert pressure thereon to hold the in-turned edges apart during the swinging movement.

4. In a hinged connection, in combination, two panels having in-turned adjacent edges, a tubular casing slotted lengthwise to receive the in-turned edges of said panels to permit swinging movement of one panel relative the other, the in-turned edge of each panel within the casing rolled over upon itself to form a curled portion having a bearing within the casing and being slidable through the slot to roll over the interior surface of the casing during the relative swinging movement of the panels, said casing provided with a part interposed between the rolled-over edges of the panels to hold them in the separated relationship during the swinging movement of the panels.

In testimony whereof I sign this specification.

ROY W. KUMLER.