June 7, 1932. A. N. ROSE 1,862,432

HINGE

Filed June 26, 1930

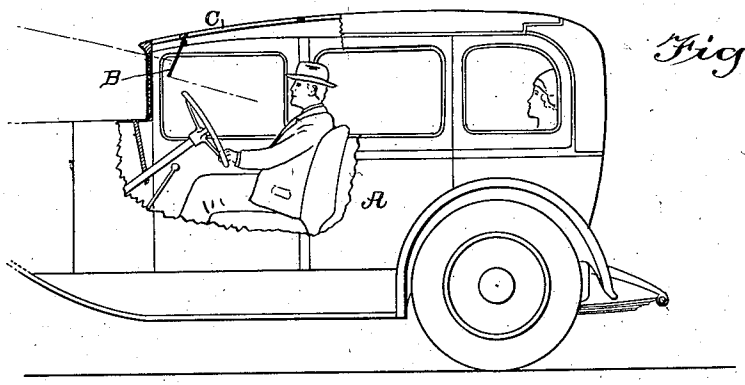

Fig. 1.

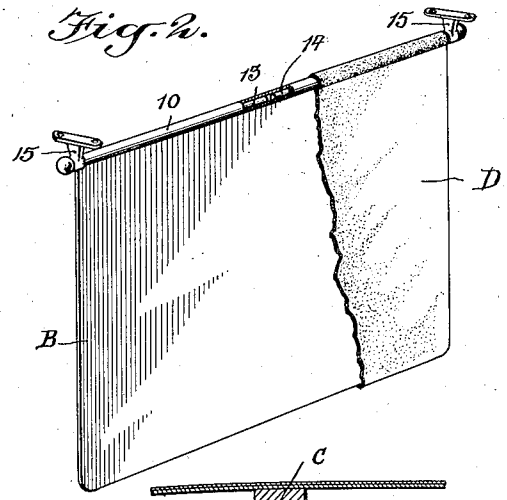

Fig. 2.

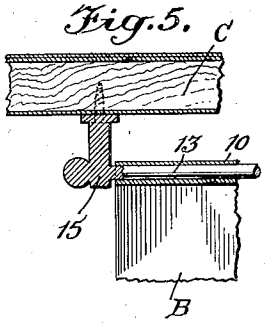

Fig. 5.

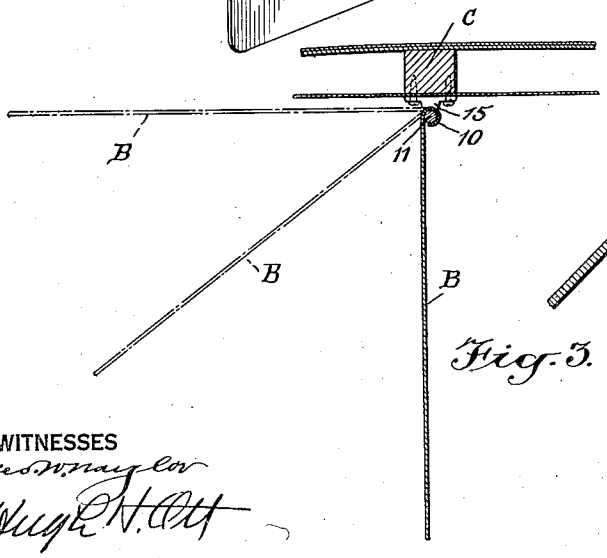

Fig. 3.

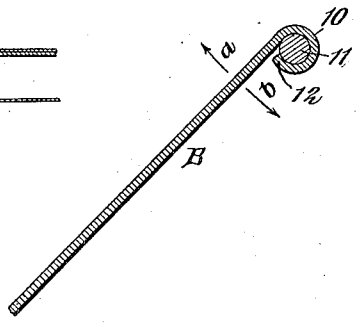

Fig. 4.

WITNESSES

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Patented June 7, 1932 1,862,432

UNITED STATES PATENT OFFICE

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HINGE

Application filed June 26, 1930. Serial No. 464,006.

This invention relates generally to the class of hinges, and comprehends a self sustaining hinge which, while not necessarily restricted to such use, is ideally adapted to, and is particularly designed for the purpose of supporting inside vizors for automobiles.

The principal object in view is to provide a hinge which inherently functions to retain the parts which are hingedly connected thereby in any relative position to which they are moved, against unintentional movement while readily permitting of intentional movement thereof.

The invention further aims to provide an improved hinge structure which is so constructed and the elements of which are so assembled and related as to permit of a freer relative movement of the parts in one direction than in the other direction, whereby when adapted to its principal use for an inside vizor for automobiles, the vizor may be moved upwardly more readily than downwardly to insure against unintentional or accidental downward movement due to vibration or road shocks.

Inside vizors for automobiles which are now rapidly coming into general use are hingedly carried by the ceiling of the vehicle and are swung downwardly from an inactive position parallel with the ceiling, to active forwardly and downwardly disposed various angular positions to suit the individual driver or other occupant of the vehicle. At the present time, the hinges employed for this purpose necessarily embody some form of means in addition to the pintle and pintle rolls, for locking the vizor in its active or inactive position. It is, therefore, evident that in addition to requiring manipulation of the vizor to set it, the locking means must first be released and subsequently fastened. In addition to the inconvenience caused by such an arrangement, it is obvious that in event the driver of the vehicle is called upon while driving, to effect the various manipulations above mentioned, his attention would necessarily be diverted from the road, which, in some instances, would result in a serious accident.

The present invention, therefore, contemplates an improved hinge which when applied to an inside vizor for an automobile, inherently functions to retain the vizor in its inactive or its variously active positions without requiring any act on the part of the driver other than that of setting the same to the desired position, which action may be accomplished with a minimum of conscious effort on the part of the driver.

The invention more specifically resides in the provision of a hinge including a hinge pintle and a leaf having a pintle roll of a resilient circumferentially contractile material, the normal internal diameter of which is less than that of the pintle so that it functions to normally contract about and frictionally grip the pintle for maintaining the leaf in different radial positions against unintentional or accidental movement.

The invention furthermore comprehends in a hinge construction as previously set forth, a leaf which extends tangentially from the pintle roll and outer periphery of the pintle so that the application of less force is required to move the leaf in one direction than in the other.

Other objects of the invention reside in the provision of a hinge which employs few and simple parts, which may be economically produced and assembled and which efficiently performs the function intended.

With the above recited and other objects in view, reference is had to the following description and accompanying drawing, in which there is exhibited one example or embodiment of the invention, while the claims define the actual scope of the same.

In the drawing:

Figure 1 is a fragmentary side view partially in section, showing an automobile

equipped with an inside vizor employing a hinge constructed in accordance with the invention.

Figure 2 is a perspective view on an enlarged scale showing the vizor removed from the vehicle and particularly illustrating the hinge construction.

Figure 3 is a fragmentary vertical sectional view illustrating the vizor mounted and showing respectively in full and dotted lines, various adjusted positions thereof.

Figure 4 is a further enlarged fragmentary sectional view illustrating the vizor hinge construction.

Figure 5 is a fragmentary sectional view of the vizor mounting showing the hinge pintle roll in section with the hinge pintle partly broken away and shown in section.

Referring to the drawing by characters of reference, A designates an automobile or equivalent vehicle and B an inside vizor therefor, which is hingedly carried by the ceiling C of the vehicle and adapted to be swung from a horizontal inactive out-of-the-way position parallel to the ceiling C, to various angular positions with respect to the ceiling. In the present instance, the vizor B is formed of resilient sheet metal and is provided with an integral pintle roll 10 at one edge, although it is clearly apparent within the scope of the invention that the vizor B may be separately constructed and attached to the pintle roll. The vizor or hinge leaf B is tangentially associated with the pintle roll 10, and said pintle roll is normally of lesser internal diameter than the hinge pintle 11 which carries it, so that when the hinge pintle is forced into the pintle roll 10, said pintle roll inherently contracts about and frictionally grips the pintle throughout the entire inner periphery of the pintle roll. This frictional gripping action of the pintle roll on the pintle serves to maintain the vizor or leaf B in different relative positions against unintentional or accidental turning movement. It will be observed, however, that the free extremity or edge 12 of the pintle roll is spaced from the tangentially projecting vizor or leaf B, and, in practice, less force will be required to move or turn the vizor or leaf B in the direction indicated by the arrow *a* in Figure 4 than will be required to move the vizor or leaf B in the direction indicated by the arrow *b* in Figure 4. This is due to the fact that the tangential arrangement of the vizor or leaf B when moved in the direction indicated by the arrow *a* tends to open or unwrap the pintle roll from the pintle 11, thereby reducing the frictional engagement of the inner periphery of the pintle roll on the external periphery of the pintle. Conversely, the force applied to move the vizor or leaf B in the direction indicated by the arrow *b* will be greater, due to the fact that the tangential arrangement of said vizor or leaf B tends to wrap the pintle roll about the pintle, thus increasing the frictional engagement therebetween. It, therefore, follows that in an inside vizor for automobiles, the use of a hinge constructed and mounted as shown positively precludes accidental or unintentional downward movement of the vizor resulting from vibration or road shocks. Furthermore, it is apparent that when the hinge construction is used for a vizor of this type, the operator may manipulate or set the vizor with the least conscious effort and without the necessity of diverting his attention from the road while driving. As particularly illustrated in the present instance, the hinge pintle 11 will include a pair of sections 13 and 14, each of which will be rigidly carried by or integrally formed with an end bracket 15 at its exposed end for attachment to the ceiling construction C of the vehicle. The pintle roll 10 will be initially shaped or formed on a forming die or mandrel to present a lesser internal diameter than the hinge pintle sections, and said hinge pintle sections will be subsequently driven or forced into the pintle roll from the opposite ends thereof. If the material from which the pintle roll is formed possesses the requisite resiliency, the frictional engagement of the same with the hinge pintle will be sufficient to last and effectually perform its function throughout the life of the hinge. It is also obvious that the vizor leaf B and the pintle roll may be covered with material D which matches the ceiling upholstery of the vehicle to which it is applied.

While there has been shown and described a preferred form of the invention and a particular use of the same, it is to be understood that no limitation is intended, either to the precise structural details or to the use selected for the purposes of illustration, and that variations and modifications which properly fall within the scope of the appended claims may be resorted to when desired.

What is claimed is:

1. A hinge comprising a resilient leaf having at one end thereof a split tubular cylindrical portion and a pintle forced into the same, said pintle being of a larger diameter than the original internal diameter of the split tubular cylindrical portion of said leaf with the free edge of said cylindrical portion spaced from the body of said leaf.

2. A hinge comprising a resilient leaf having at one end thereof a split tubular cylindrical portion and a pintle forced into the same, said pintle being of a larger diameter than the original internal diameter of the split tubular cylindrical portion of said leaf, said leaf being disposed at a tangent to the periphery of the hinge pintle, the free edge of said split tubular cylindrical portion being spaced from the body of said leaf so that a relative turning movement of the leaf and

pintle in one direction is freer than in the other.

3. A hinge comprising a resilient split tubular cylindrical pintle roll and a pintle of larger diameter than the original diameter of said pintle roll forced into said pintle roll to separate the ends thereof which define the split portion and a leaf secured to and extending outwardly from one of the ends defining the split portion of the pintle roll.

ALONZO N. ROSE.