June 8, 1937. G. A. LYON 2,082,803

BEAD FOR ORNAMENTAL WHEEL DISKS

Filed March 28, 1935

Fig. 1.

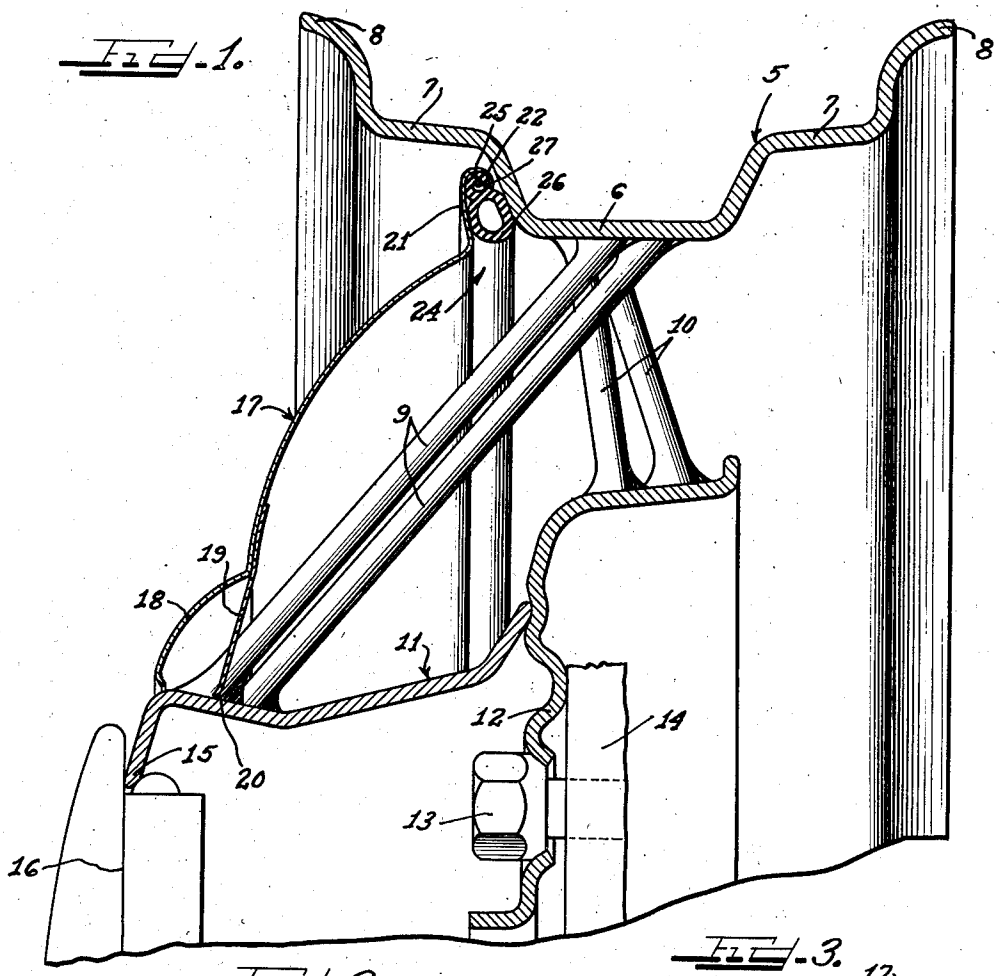


Fig. 2.

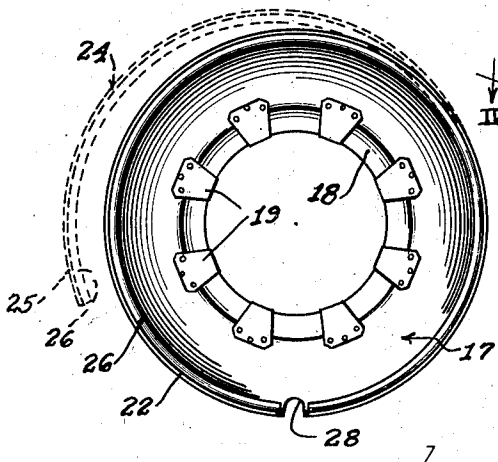


Fig. 3.

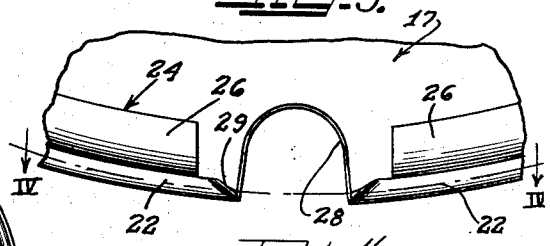
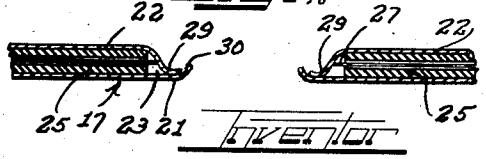


Fig. 4.



Inventor

George Albert Lyon

By

Attys.

Patented June 8, 1937 2,082,803

UNITED STATES PATENT OFFICE

2,082,803

BEAD FOR ORNAMENTAL WHEEL DISKS

George Albert Lyon, Allenhurst, N. J.

Application March 28, 1935, Serial No. 13,402

10 Claims. (Cl. 301—37)

This invention relates to improvements in an ornamental wheel disk and contact bead construction, and to a novel method of applying the contact bead to the disk or a similar article.

In the manufacture of ornamental wheel disks for overlying the side surface of vehicle wheels, it is desirable to provide suitable contact means for engagement with the wheel rim at the outer margin of the ornamental disk. Economy, not only in the cost of the relative parts, but also in the simplicity of construction and ease of assembly, is an essential to this industry. Of course, even while economy is maintained to the best possible extent, the effectiveness of the contact means between the ornamental disk and a portion of the wheel cannot be sacrificed. These contact means must be such as to eliminate rattling, vibration and noises of similar character which may occur between the ornamental disk and the wheel.

With the foregoing in mind, it is an object of this invention to provide a simple and inexpensive method of applying a contact bead to an ornamental wheel disk.

Another object of this invention is the provision of an ornamental wheel disk having a contact member associated therewith, which is readily and easily applied to the disk and as readily and easily removed for repair or substitution.

Still another object of this invention is the provision of an ornamental wheel disk with a cushioning element for contact with a portion of a wheel associated with the disk in such a manner as to be firm and secure in position relatively to the disk and yet not directly secured to the disk.

In accordance with the general features of this invention, a contact element is provided, which may be in the form of a figure 8 in cross section with one of the loops of the 8 larger than the other. In the smaller loop a resilient spring wire or the equivalent is inserted and projects slightly beyond the ends of the cushioning element. The inner spring element causes the entire cushioning member, which is substantially circular or preformed with unjoined ends, to tend to spread so as to enlarge the space between the ends of the member. The wheel disk is provided with a groove formation adjacent its outer edge, and this groove formation is also closed for a relatively short distance so as not to entirely encircle the disk. One end of the cushion member is inserted in an end of the groove with the resilient element in contact with the groove termination. Holding this end in position in the groove, the cushioning member is gradually worked into the groove around the disk, until the other end of the cushioning member is snapped into position. The resiliency of the cushioning member, tending to expand the same, results in the cushioning member being firmly held in the groove of the disk. Thus, the smaller loop of the cushion member is used to hold the member in position on the disk, leaving the larger loop exposed for cushioning contact with a portion of the wheel to which the disk is applied.

Other objects and features of this invention will more fully appear from the following detailed description taken in connection with the accompanying drawing which illustrates a single embodiment thereof, and in which:

Figure 1 is a fragmentary vertical sectional view, with parts in elevation, of a vehicle wheel equipped with an ornamental disk and cushioning means embodying the teachings of this invention;

Figure 2 is a reduced inside elevational view of the disk and contact means alone, illustrating in dotted lines a method of applying the contact means to the disk in accordance with teachings of this invention;

Figure 3 is an enlarged fragmentary view of the lower portion of the structure seen in Figure 2;

Figure 4 is a fragmentary sectional view taken substantially along the line IV—IV of Figure 3, looking in the direction indicated by the arrows.

As shown on the drawing:

The illustrated embodiment of this invention is shown in connection with a standard vehicle wheel including a drop-center wheel rim generally indicated by reference numeral 5, which wheel rim includes a base flange 6, opposite intermediate flanges 7—7, and outer turned edges 8—8. The rim 5 is connected by a double set of spokes 9 and 10 to a central hub generally indicated by reference numeral 11. The hub construction 11 includes the usual central flange 12 adapted to be secured by a plurality of bolts or tap screws 13 to a supporting member such as a vehicle part 14, which part 14 may be an axle part or a spare wheel mounting part. The hub construction 11 includes an inwardly turned margin 15 defining a central opening normally closed by a conventional hub cap 16 snapped into engagement with the margin 15.

Disposed over the outer side surface of the wheel is an ornamental wheel disk generally indicated by reference numeral 17, which is pref-

erably formed from relatively thin sheet material, such as sheet metal. The novel mechanical features of this disk other than the outer marginal portion thereof are being covered in a separate co-pending application for Letters Patent entitled "Ornamental wheel disk," filed December 8, 1934, Serial No. 756,569.

The disk 17 is preferably transversely curved into convex shape and may be formed in any suitable way, such as by spinning or by die mechanism. The radial inner peripheral margin of the disk 17 is bulged outwardly as at 18 to provide an ornamental construction, and the portion 18 at its innermost extremity defines a suitable aperture for engagement over the hub construction 11. Secured to the rear or inner face of the disk by any suitable means, such, for example, as by projection welding, are a plurality of spring elements 19 arranged in spaced relationship for engagement with the hub construction 11 between the spokes 9. Each of the members 19 is provided with a slightly outwardly turned end 20, thereby permitting easy positioning of the disk over the hub construction 11 but resisting any tendency towards removal of the disk by biting engagement with the hub.

It will, of course, be appreciated that the disk 17 may be attached to the wheel in a manner to permit removal of the disk, or in any other suitable manner, the construction shown being merely indicative of means for holding the disk upon the wheel.

In accordance with the features of my present invention, the outer marginal portion of the disk is bent at an angle to the central convex body portion, as indicated at 21, so that this portion 21 extends substantially radially in respect to the wheel, and forms what may be termed a decorative bead. The marginal edge of the bead 21 is rolled inwardly or underturned as at 22 to provide a substantially circumferential groove 23 (Fig. 4) adjacent the outer edge of the disk. This groove 23 is for the reception of the cushion or contact member to be later described.

The contact member, generally indicated by numeral 24, comprises in this instance a hollow resilient element having the general cross-section of a figure eight, with one of the loops of the eight larger than the other. The element is preferably made of rubber or some equivalent material. As the contact member is mounted upon or associated with the disk 17 in the present instance, the smaller loop 25 is disposed in the groove 23 adjacent the edge of the disk. This leaves the larger loop 26 in exposed position for contact with a portion of the wheel. As the structure is seen in Figure 1, the large loop 26 contacts the rim 5 between the base flange 6 and intermediate flange 7. Since the contact member is hollow, it may be deformed to some extent when pressed between the disk and the wheel. However, the resilient character of the element effectively eliminates any rattle, vibration or similar noises between the disk and wheel.

Within the smaller loop 25 of the cushion member, a resilient spring wire 27 or equivalent element is inserted. As seen best in Figure 4, this spring wire preferably projects slightly beyond the ends of the loop or tube 25. The spring wire 27 is of such character as to urge the cushion member into expanded position at all times, while retaining its general circular shape. In other words, the cushion member as a whole is of a character tending by its inherent resiliency to expand and maintain a relatively large space between the ends of the ring. It may be in the form of a split ring or preformed adjacent the ends thereof to eliminate the likelihood of an end portion extending substantially straight when in position rather than follow the curvature of the groove.

Now, with reference again to the disk 17 itself, it will be seen that this disc is provided with an indentation or notch 28 leading inwardly from the edge thereof to provide accommodation for the projection of the usual valve stem associated with a vehicle tire. Immediately adjacent the notch 28, and on each side thereof, the rolled or underturned portion 22 of the disk 17 is formed inwardly against the inner face of the bead 21 as indicated at 29 to provide an end termination of the groove 23. Both edges of the bead 21 and portion 29 adjacent the notch 28 are turned inwardly as at 30 to present a smooth, pleasing appearance from the outside of the disk.

The contact member 24 may be associated or mounted upon a disk 17 by a very simple and economical method. The method of forming the disk and the contact member is believed to be sufficiently apparent from the foregoing description. After each of these parts has been formed, it is a simple expedient to place an end of the contact member in the groove 23 with the projecting tip of the spring wire 27 abutting the inturned wall 29, as seen in Figure 4. The part 26 of the contact member is exposed and provides a ready hold for the hand or a suitable implement to retain the respective ends of the contact member within the groove. Then, holding the one end of the member in the groove, the member can be worked into the groove around the disk, and the other end of the member snapped into position with the opposite end of the wire 27 adjacent the portion 29 on the opposite side of the notch 28. The inherent resiliency of the contact member, this member tending to expand as above stated, maintains the contact member firmly seated in the groove and in positive connection with the ornamental disk. The operation of placing the contact member in the groove 33 is illustrated diagrammatically in Figure 2 by dotted lines, wherein it is apparent how the member may be worked into the groove around the disk.

From the foregoing, it will be apparent that I have provided a novel combination ornamental disk and contact member construction, in which all of the parts are simple in construction, efficient in operation and economical to manufacture. It will also be apparent that I have provided a new and novel method of joining the ornamental disk with the contact member, which method results in a distinct saving in time and labor.

It will also be apparent that the disk 17 may be provided with a separate decorative circumferential bead secured to the disk, in the manner shown in my aforesaid co-pending application, for example, in lieu of the integral bead 21. Such separate bead would otherwise have a similar construction to that illustrated herein.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention and I, therefore, do not purpose limiting the patent granted hereon otherwise than is necessitated by the scope of the appended claims.

I claim as my invention:

1. In combination, an ornamental wheel disk

structure having a generally circular groove therein, and a resilient split ring contact member having spaced ends expanded in said groove.

2. In combination, an ornamental wheel disk structure having a generally circular groove therein with spaced end terminations, and a resilient split ring contact member seated in said groove, said member being retained in said groove solely by its inherent tendency to expand.

3. In combination, an ornamental wheel disk structure shaped to provide a groove adjacent a margin thereof, and a resilient split ring contact member including a plurality of longitudinally joined annular portions seated in said groove, one annular portion of said member being retained in said groove by the inherent tendency of said member to expand, and another annular portion of said member extending without said groove for contact with that to which said disk may be attached.

4. In combination, an ornamental disk structure for attachment over the side surface of a vehicle wheel, said disk having a notch therein to accommodate a tire valve stem, said disk having the outer margin thereof rolled to form an inside groove terminating adjacent each side of said notch, and a resilient split ring contact member expanded into said groove with an end thereof adjacent each termination of said groove.

5. In combination, an ornamental structure for attachment to a vehicle wheel and having an elongated groove-like formation therein with closed ends, and a resilient contact member sprung into said formation and held therein solely by its inherent tendency to expand with the ends of the member in association with the closed ends of the groove.

6. As an article of manufacture, a split ring contact member of resilient material and comprising a pair of joined tubes, and a spring element in one of said tubes, the entire contact member having an inherent resiliency tending towards expansion of the member and the maintenance of a space between the ends of the member.

7. In combination, an ornamental disk structure for disposition over the side surface of a vehicle wheel, said disk structure having a notch therein, a margin of said disk structure being rolled inwardly to provide a groove, said margin being bent to terminate said groove adjacent each side of said notch, and a contact member in said groove.

8. In combination, an ornamental disk structure for disposition over the side surface of a vehicle wheel, said disk structure having a notch therein, a margin of said disk structure being rolled inwardly to provide a groove, said margin being bent to terminate said groove adjacent each side of said notch, the associated edges of both said margin and said notch being turned inwardly to provide a smooth exterior, and a contact member in said groove.

9. In combination, an ornamental disk structure for disposition over the side surface of a vehicle wheel, said disk structure being of relatively thin sheet material and having a margin rolled inwardly to provide a groove, said margin being formed into intimate association with an outer portion of said disk structure to provide spaced end terminations for said groove, and a resilient split ring contact member positioned in said groove with an end of said member in engagement with each termination of said groove.

10. In combination, an ornamental disk structure having a generally circular groove therein, and a resilient split ring contact member having spaced ends, said member being sprung into said groove and having a formation comprising a part to seat within said groove and a part to extend without said groove for contact with that to which said disk is applied.

GEORGE ALBERT LYON.