April 10, 1934. G. A. LYON 1,954,140

CONSTRUCTION FOR ORNAMENTING RIMS

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Fig. 1.

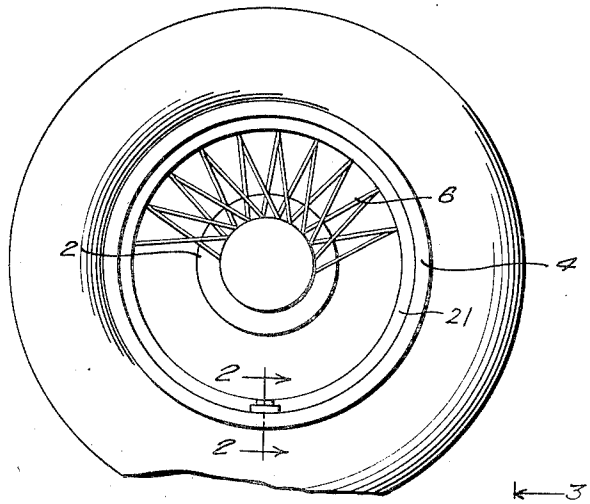


Fig. 2.

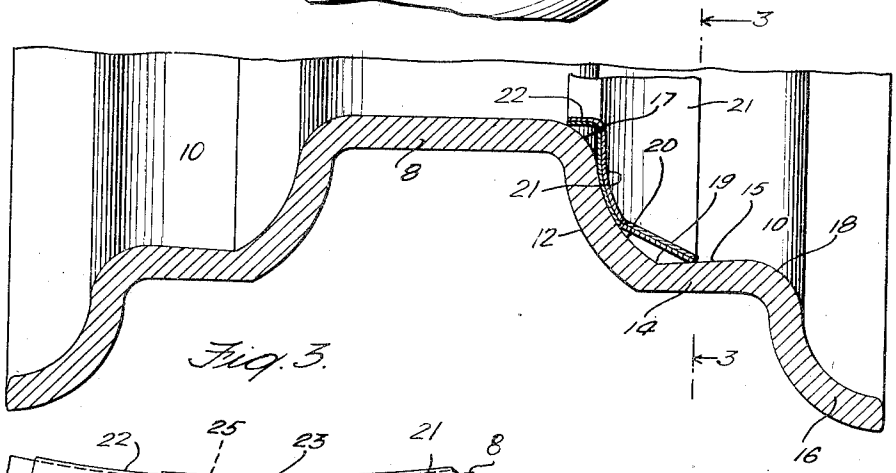


Fig. 3.

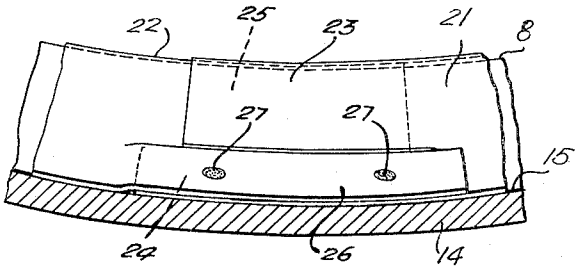
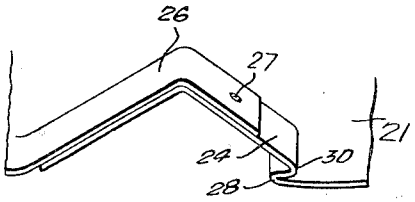


Fig. 5.



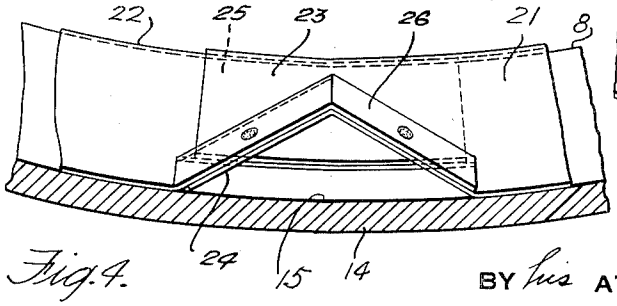


Fig. 4.

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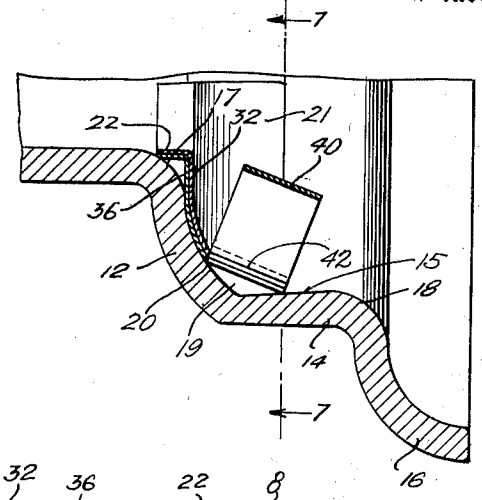
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Fig 6.



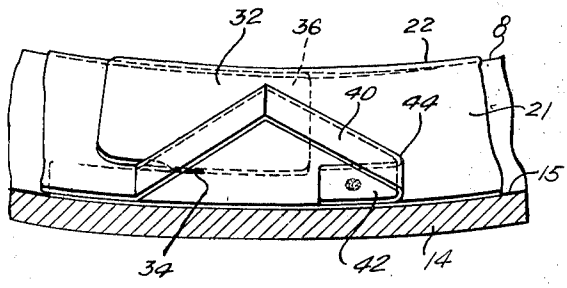


Fig. 7.

Fig. 8.

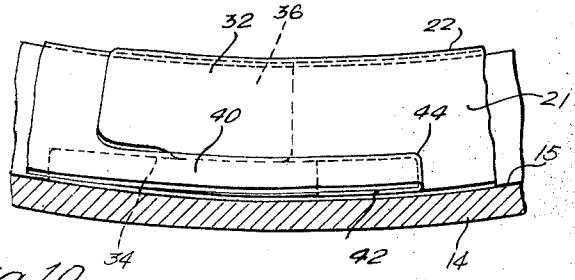
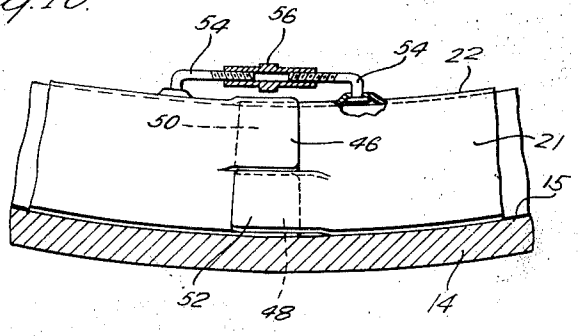
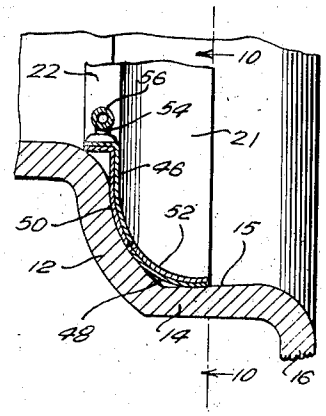


Fig. 9.

Fig. 10.





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UNITED STATES PATENT OFFICE

1,954,140

CONSTRUCTION FOR ORNAMENTING RIMS

George Albert Lyon, Allenhurst, N. J.

Application October 14, 1931, Serial No. 568,742

11 Claims. (Cl. 41—10)

This invention relates to means for ornamenting the tire rims or wheel rims of automobiles.

It is common practice to plate with chromium or other plating material one side flange of each rim of an automobile. The plating material is applied only to the side flange which occupies the outside position when the rim is in place on an automobile. The rims are made from hot rolled steel and the surfaces thereof are comparatively rough. The flanges are concavo-convex in cross section, the concave surface being on the outside of the flange. Because of the concave form of the surface to which the plating is applied, it is difficult to grind this surface and form-grinding wheels are required for this operation. In the application of chromium plating to the side flange of a rim, the side flange is first copper plated, then buffed, after which a plating of nickel is applied. The surface is then again buffed and the chromium plating is applied over the coating of nickel. Because of the difficulty of grinding the surface of the steel and because of the number of operations required in plating and polishing the surface of the rim, the ornamentation of the rims in this manner adds considerably to the cost of the same. As such rims are now manufactured, they rust quickly along the surface to which the plating is applied because of the abrasive action of dirt, stones and gravel thrown up by the tires.

The principal objects of the present invention are to improve the construction of automobile rims and to produce an automobile rim having as attractive an appearance as a rim having a side flange plated in the manner above described, which may be manufactured at a considerably reduced cost as compared with such plated rims, and in which the ornamental surface thereof will not be subject to rust or corrosion.

With these and other objects in view, the invention comprises the novel and improved features, constructions and combinations of parts hereinafter described and particularly pointed out in the claims, the advantages of which will be readily understood and appreciated by those skilled in the art.

In accordance with the present invention, applicant has produced a radially expansible and contractible ornamental ring arranged to be applied to one of the side flanges of an automobile rim. This ring is constructed to be secured in position on the rim by varying the radius of the ring. In the present construction this variation of the radius of the ring brings the same into holding engagement with the rim. Preferably the ring is expanded into holding position and preferably also the ring is provided with means for expanding positively the ring.

The invention is particularly intended as an improvement on the construction illustrated and described in applicant's pending application, Serial No. 467,325, filed July 11, 1930. It is to be understood, however, that the invention is not limited to the particular construction shown and described in said application but that certain features thereof may be embodied in other constructions.

The above and other features of the invention will be clearly understood from the accompanying drawings illustrating the invention in its preferred form and the following detailed description of the constructions therein shown.

In the drawings,

Fig. 1 is a view in side elevation illustrating a construction embodying the invention applied to the rim of a demountable wheel;

Fig. 2 is a detail sectional view taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a detail sectional view taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is a view similar to Fig. 3 illustrating the positions of certain of the parts before the ornamental ring is expanded into its final position;

Fig. 5 is a view similar to Fig. 4 illustrating a modified construction;

Fig. 6 is a detail sectional view similar to Fig. 2 illustrating a modified form of the invention with the parts in the positions which they assume before the ring is expanded into its final position;

Fig. 7 is a detail sectional view taken substantially on the line 7—7 of Fig. 6;

Fig. 8 is a view similar to Fig. 7 illustrating certain of the parts in the positions which they assume after the ornamental ring is expanded into its final position;

Fig. 9 is a view similar to Figures 2 and 6 illustrating a still further modified form of the invention, and

Fig. 10 is a detail sectional view taken substantially on the line 10—10 of Fig. 9.

The invention is illustrated in this application as applied to the rim of a wire wheel for automobiles such as those used upon the Ford and Chevrolet. The wire wheel shown in the drawings comprise a hub 2, a rim 4, and a series of spokes 6 connecting the hub with the rim. The rim has the shape in transverse cross section illustrated in Figures 2, 6 and 10. As shown in said figures, the rim comprises a base indicated

at 8 and side flanges 10 extending obliquely outwardly from said base.

Each side flange comprises a portion 12 adjacent to the base sharply inclined to the central plane of the rim and extending laterally from the central portion of the rim and outwardly from the axis of the rim, an intermediate portion 14 extending laterally and having its inner surface 15 extending inwardly at a slight angle toward said axis and an outer sharply inclined portion 16 extending laterally and outwardly from the portion 14, rounded shoulders 17 and 18 being formed respectively between the base 8 of the rim and the portion 12 and between the portions 14 and 16 thereof. It will be noted that the inner diameter of the portion 14 of the rim flange increases from the shoulder 18 toward the portion 12 of the rim. Thus each flange of the rim is formed with an annular recess or groove 19 having a concave surface indicated at 20.

In accordance with the present invention an annular ornamental strip 21 is applied to one of the side flanges of the rim so that it engages the side flange in the manner shown particularly in Figures 2, 6 and 10. This strip is preferably made of highly resilient sheet metal having a relatively light gauge and of a character which resists corrosion and may be given a high polish. In actual practice a strip made of stainless sheet steel and having a gauge between .006 and .020 of an inch has been found to give highly satisfactory results. The strip is rolled into the form of a ring having a normal outside diameter about the same as the inside diameter of the rim flange at the shoulder 18, and with the ends of the ring overlapping for a short distance. In the rolling operation, the strip is shaped into the concavo-convex cross-sectional form shown in Figs. 2, 6 and 10. The ring is fitted within the portion 14 of the rim with its curved intermediate portion engaging the curved surface 20 on the portion 12 of the rim and with its outer margin engaging or substantially engaging the portion 14 of the rim and may be expanded positively to force said outer portion against the portion 14 to hold the ring in position.

The ornamental ring is preferably provided at its inner margin with a flange 22 extending at substantially right angles to the adjacent portion of the body of the ring substantially parallel with the axis of the rim, said flange and the adjacent portion of the body of the ring extending over the shoulder 17 between the base portion 8 of the rim and the adjacent portion of the rim flange. Figs. 2, 6 and 10 show clearly the manner in which the ornamental strip is fitted to the rim flange and base of the rim.

In order to enable the ring to be expanded positively, the ends of the ring are preferably connected by a mechanism by which said ends may be moved relatively to expand the ring. As shown in Figures 3 and 4 one end of the ring is provided with a longitudinal slot forming a relatively wide projection 23 on the inner portion of the ring and a relatively narrow projection 24 on the outer portion of the ring extending a short distance beyond the projection 23. Similarly, the other end of the ring is provided with a longitudinal slot forming a relatively wide projection 25 on the inner portion of the ring and a relatively narrow projection 26 on the outer portion of the ring extending a short distance between the projection 25. The ends of the ring are overlapped with the projection 23 over-lying the projection 25 and with the projection 26 over-lying the projection 24. Before the ring is inserted in the rim the ring is expanded to a diameter such that it will fit tightly within the portion 14 of the ring and the projection 20 is then spot-welded to the projection 24 as indicated at 27. The projections 26 and 24 are then bent with relation to the body of the ring into the V shape shown in Fig. 4. This results in moving relatively the ends of the ring to contract the ring sufficiently to enable the same to be inserted within the portion 14 of the rim. With the ring thus in contracted condition, the ring is fitted into the rim with the body of the ring engaging the portion 12 of the rim and with the periphery of the ring in position to engage the inner surface of the portion 14 of the rim. After the ring is thus positioned the projections 26 and 24 are forced outwardly to bring the obliquely extending portions thereof into alinement with each other and with the body of the ring. This is done preferably by giving the projection 24 a sharp blow with a hammer or similar instrument at the apex of the V. This will drive the parts of the projections 24 and 26 into alined positions as shown in Figs. 2 and 3. The forcing of the parts of the projections 26 and 24 outwardly into alinement expands the ring and forces the periphery of the ring into secure engagement with the inner surface of the portion 14 of the rim. This will attach the ring securely to the rim flange since the inside diameter of the portion 14 of the flange diminishes from the points engaged by the ring toward the shoulder 18.

Certain variations occur in the inside diameters of the portions 14 of rims of the same size. In cases in which the ornamental ring is made of very thin gauge metal the periphery of the ring may be engaged with the inner surface of the portion 14 of the ring before the ring is fully expanded and the further expansion of the ring is accommodated by the slight buckling of the periphery of the ring. These variations in the inside diameter of the portion 14 of the rim, however, may be accommodated in other ways. Figure 5 shows a slightly different construction from that shown in Figures 2 and 3 for accommodating these variations. In the construction shown in Figure 5, the projection 24 on the ring is bent at a relatively sharp angle at 28 and is provided with a rounded bend indicated at 30. With this construction, if the periphery of the ring engages the inner surface of the portion 14 of the rim before the obliquely extending portions of the projections 24 and 26 are forced into alignment, the bend 30 will be rolled back to the right, Figure 5, away from the bend 28 and carried relatively toward the apex of the V until the obliquely-extending portions of the projections are finally brought into alignment, the projection 24 then being flattened down forming a sharp bend at 30. Thus the ring will be secured tightly in engagement with the portion 14 of the rim. The construction shown in Figure 5 is adapted to be employed when a slightly heavier material is used than with the construction shown in Figures 2, 3 and 4.

Figures 6, 7 and 8 show a construction which it is preferred to use when a still heavier gauge material is employed in the making of the ornamental ring. As shown in these figures, one end of the ring is provided with a longitudinal slot forming a relatively wide projection 32 at the inner portion of the ring and a relatively narrow projection 34 at the outer portion of the ring

extending a short distance beyond the projection 32. The other end of the ring is provided with a longitudinal slot forming a relatively wide projection 36 at the inner portion of the ring and a relatively narrow projection 40 at the outer portion of the ring extending a considerable distance beyond the projection 36. The ends of the ring are overlapped with the projection 32 overlying the projection 36, and with the projection 40 overlying the projection 34. The projection 40 is provided at its end with a reversely bent portion 42 which is preferably secured to the other end portion of the ring by spot-welding the same. This reversely bent portion of the projection 40 is secured to the other end of the ring at a point such that when the ring is fully expanded with the projection 40 substantially aligned with the body of the ring as shown in Figure 8, the ring will fit tightly within the portion 14 of the rim. When the ring is contracted, the portion 40 is bent substantially into the V shape shown in Figure 7. With the projection bent into this shape, the ring is contracted so that it may be fitted within the portion 14 of the rim. After application to the rim, the ring is expanded to secure the same in position by forcing the obliquely-extending portions of the projection 40 substantially into alignment with each other and with the body of the ring. The projection 40 is provided with a rounded bend 44 adjacent the point at which it contacts with the body of the ring. With this construction, if the periphery of the ring engages the rim before the ring is fully expanded, the bend 44 will be rolled outwardly away from the end of the reversely bent portion 42 of the projection 40 and relatively toward the apex of the V. Thus, when the projection 40 is flattened down substantially into the position shown in Figure 8, the ring will have been forced securely into engagement with the rim and will be held in this position.

The construction shown in Figs. 6, 7 and 8 is ordinarily used when the ornamental strip is made of sheet metal of the thicker gages within the range stated above. This construction may be satisfactorily employed when the gage of the material of the strip is between .015 and .020 inches.

In the construction shown in Figs. 9 and 10 one end of the ring is provided with a longitudinal slot forming projections 46 and 48 having substantially the same length, and the other end of the ring is provided with the longitudinal slot forming projections 50 and 52 of corresponding length. The ends of the ring are overlapped with the projection 46 overlying the projection 50 and with the projection 52 overlying the projection 48 as shown in Fig. 10.

In the construction shown in these figures the ring is provided with mechanism for expanding and contracting positively the ring. This mechanism comprises the rods 54 which are secured within suitable openings in the respective end portions of the ring and project for a short distance therefrom toward the axis of the ring. The rods are bent so that the body portions thereof extend toward each other in substantial alignment as shown in Fig. 10. The two rods are provided respectively with left and right hand threads and a rotary member or nut 56 is threaded on the rods. Thus the rods 54 and the nut 56 form a turnbuckle construction.

In applying the ornamental ring to the rim of the wheel the nut 56 is adjusted to adjust the outside diameter of the ring so that said diameter is slightly less than the inside diameter of the part 14 of the rim flange just within the shoulder 18. The ring is then inserted within the part 14 of the flange and is positioned with relation to the rim flange as shown in Fig. 9. The nut 56 is then rotated in a direction to expand the ring. The expansion of the ring forces the marginal portion thereof into holding engagement with the inclined surface 15.

The ornamental ring as stated above is preferably made of stainless steel and is given a very high polish. The highly polished ring imparts a very attractive and ornamental appearance to the rim.

The rings may be manufactured in substantially the same manner as the rings illustrated and described in said application Serial No. 467,325, except that after cutting the spirally formed coils to produce the rings, the ends of the rings are not welded or otherwise secured together.

The ornamental rings above described may be manufactured and applied to the rims of automobile wheels with a considerable saving of expense as compared with the plating of the rim flanges. The rings, when made of stainless steel, are not subject to corrosion and will preserve their high finish indefinitely.

It is to be understood that the invention is not limited to the particular construction and arrangement of parts of the illustrated embodiments of the invention, but that the invention may be embodied in other forms within the scope of the plans.

Having explained the nature and object of the invention, and having specifically described a construction embodying the invention in its preferred form, what is claimed is:

1. An automobile rim construction comprising a base and side flanges extending outwardly from said base, and a radially expansible and contractible ornamental ring applied to the outer surface of one of said flanges.

2. An automobile rim construction comprising a base and side flanges extending outwardly from said base, and a radially expansible and contractible split ring applied to the outer surface of one of said flanges, and secured in position on the rim by varying the radius of the ring.

3. An automobile rim construction comprising a base and side flanges extending outwardly from said base, and a radially expansible and contractible split ring applied to the outer surface of one of said flanges, and held in position on the rim by the expansion of the ring.

4. An automobile rim construction comprising a base and side flanges extending outwardly from said base, and a radially expansible and contractible split ring, applied to the outer surface of one of said flanges and means for varying positively the radius of the ring to secure the ring in place on the rim.

5. An automobile rim construction comprising a base and side flanges extending outwardly from said base, and a radially expansible and contractible split ring applied to the outer surface of one of said flanges, and means for expanding positively the ring to secure the ring in place on the rim.

6. A construction for ornamenting automobile rims comprising a radially expansible and contractible ring constructed and arranged to be applied to the outer face of a rim flange and to be secured in position by varying the radius of the ring.

7. A construction for ornamenting rims of automobiles comprising a radially expansible and contractible ornamental ring of relatively thin

sheet metal constructed and arranged to be applied to the outer face of a rim flange and to be secured in position by varying the radius of the ring.

8. A ring-like finish strip comprising a split ring member and a coupling member between the opposite ends of said split ring member to connect the same.

9. A ring-like finish strip comprising a split ring member and a coupling member between the opposite ends of said split ring member to connect the same and for expanding and contracting the split ring member.

10. The combination with a wheel rim of an ornamental bead therefor of curved transverse cross section, and held in tight cooperation with the rim solely by its engagement with the rim and having means for expanding and contracting the rim for its application to and removal from the rim.

11. The combination with a wheel rim of an ornamental split bead therefor held in cooperation with the rim and being manually expansible into tight engagement with the rim.

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