June 9, 1925. 1,541,382

R. E. PFENNIG ET AL.

CARRIER

Filed May 18, 1922 2 Sheets-Sheet 1

Fig. 1.

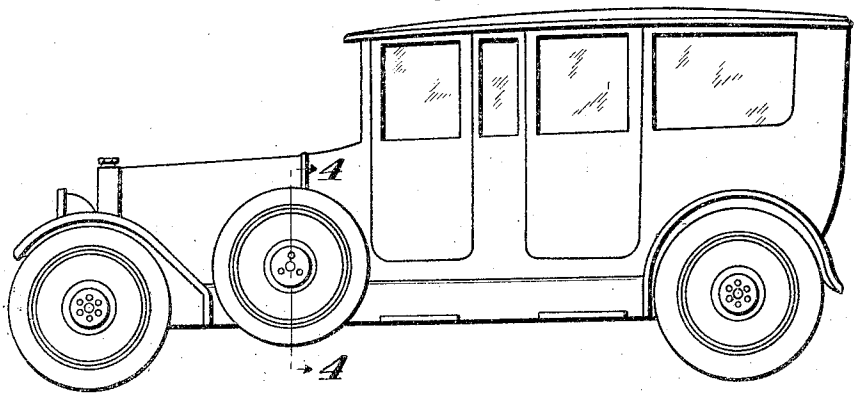


Fig. 2.

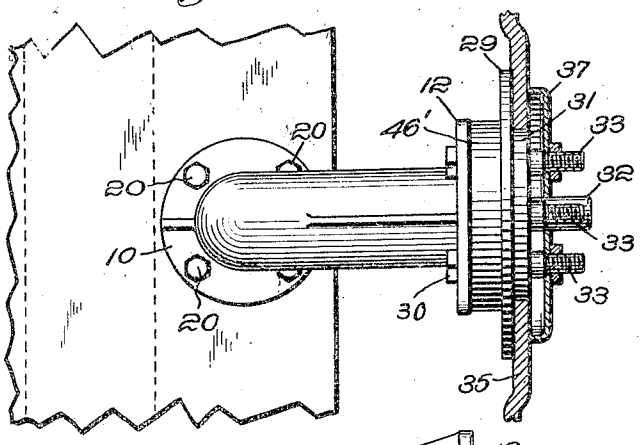


Fig. 3.

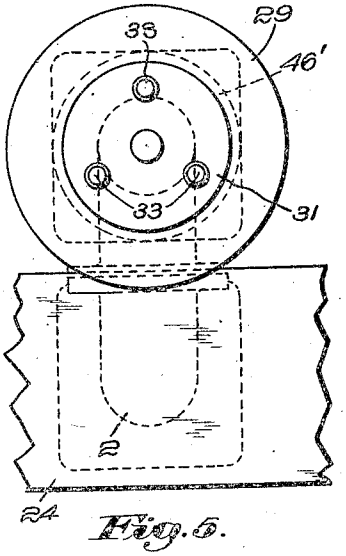


Fig. 4.

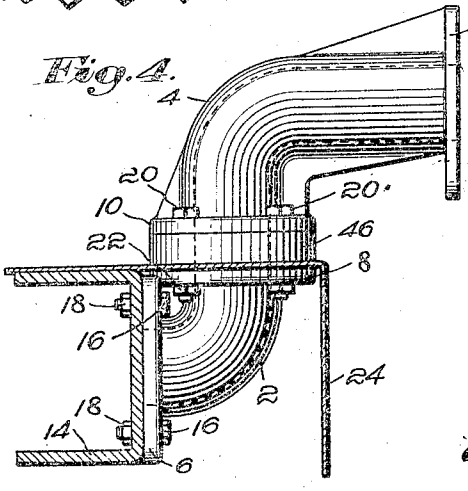
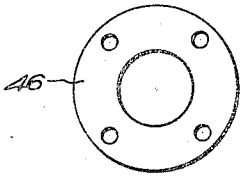


Fig. 5.



Inventors:
Richard E. Pfennig
Edward D. Wright
by Emery, Booth, Aumey & Emery Attys.

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2 Sheets-Sheet 2

Fig. 6.

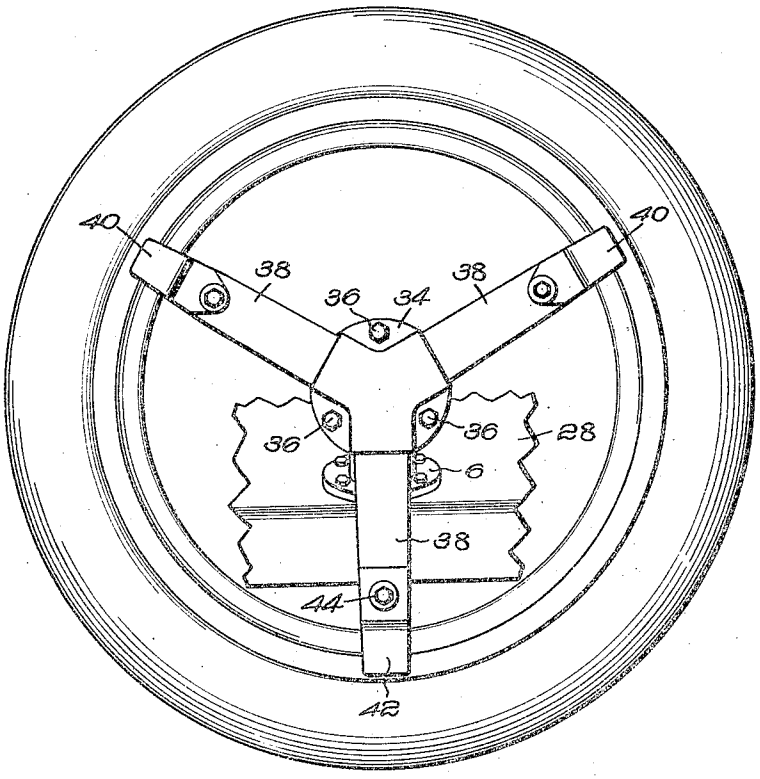
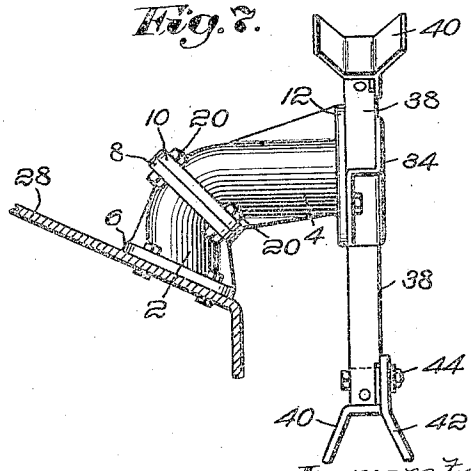


Fig. 7.



Inventors:
Richard E. Pfennig,
Edward D. Wright.
By Emery, Booth, Janney & Varney
Attys

Patented June 9, 1925.

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UNITED STATES PATENT OFFICE.

RICHARD E. PFENNIG AND EDWARD D. WRIGHT, OF BOSTON, MASSACHUSETTS, ASSIGNORS OF ONE-FOURTH TO ARTHUR WILLIS AND ONE-FOURTH TO LEWIS P. KAUFMAN, BOTH OF BOSTON, MASSACHUSETTS.

CARRIER.

Application filed May 18, 1922. Serial No. 562,013.

To all whom it may concern:

Be it known that we, RICHARD E. PFENNIG and EDWARD D. WRIGHT, citizens of the United States, and residents of Boston, county of Suffolk, Commonwealth of Massachusetts, have invented an Improvement in Carriers, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to carriers for demountable rims and spare wheels, and the object of the invention is to provide an improved carrier for this purpose.

The invention and its aims and objects will be best understood from the following description, taken in connection with the accompanying drawings, of one illustrative embodiment of the invention, the invention in its true scope being more particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a general side view of an automobile, illustrating the use of a carrier for carrying a spare wheel at the side of the automobile;

Fig. 2 is a top plan view partly in section of one embodiment of the invention, showing the adapter in use;

Fig. 3 is an end view of the embodiment of the invention shown in Fig. 2, seen from the right of said figure.

Fig. 4 is a lateral sectional elevation of the embodiment of the invention shown in Fig. 2, with the adapter in use at another place;

Fig. 5 is a top plan view of the adapter;

Fig. 6 is a front view of one embodiment of the carrier which may be used for carrying a rim; and

Fig. 7 is a side elevation of the embodiment of the invention shown in Fig. 6 for use at the rear of the automobile.

The carrier embodying our invention may be used as a rim carrier, whether the latter be provided with a shoe or not, and also a spare wheel carrier. Referring more particularly to Figs. 2, 3 and 4, the embodiment of the invention therein shown comprises preferably two arms 2 and 4 respectively. These arms may be of any suitable shape but are preferably of elbowed shape substantially as shown. They may be made of any suitable metal, but for the sake of lightness we preferably make them of any suitable aluminum alloy and for the same reason and also to obtain maximum strength we preferably make them of hollow or tubular form. The arm 2 is intended to be secured to any suitable part of an automobile frame at one end and at its other end to one end of the arm 4, the other end of the latter arm serving to support the rim or wheel. Any suitable means may be provided for securing the carrier to the machine frame and its two parts to each other. As one convenient means for this purpose we provide the arm 2 with a flange 6 at one end and another flange 8 at the other, and similarly we provide the arm 4 with a flange 10 at one end and a flange 12 at the other.

When the carrier is to be used to carry the spare rim or wheel at the side of the automobile, the arm 2 may be conveniently secured to one of the longitudinal side members of the chassis, the longitudinal side member 14 for example. This may conveniently be done by bolts 16 extending through the flange 6 and through the frame member 14, and provided with nuts 18 on the inner side of said frame member. Four such bolts located 90 degrees apart will preferably be used, only two of which are shown in Fig. 4. Similarly the arm 4 may be secured to the arm 2 by bolts 20 extending through the flange 10 of the arm 4 and through the flange 8 of the arm 2, and provided with nuts 22 at the under side of the flange. Where the carrier is thus used at the side of the machine, the lower arm 2 will preferably be so adjusted that the upper face of the flange 8 will be substantially flush with the under side of the skirt-guard or apron 24, which usually extends over the lateral frame member 14 and down to the running board of the automobile. The flange 10 of the upper arm 4 will then rest upon the upper surface of the horizontal portion of the apron 24 and will be secured to the flange 8 of the lower member as above stated, said apron being provided with perforations for the passage of the securing bolts 20.

When used at the rear of the machine the lower arm 2 will preferably be secured to the rear cross member of the chassis. It will be understood that the flanges 6, 8, 10 and 12 are preferably cast integral with

their respective arms and that while in Fig. 4 said flanges are shown as at right angles to the axes of the portion of the arm of which they form a part, they may be formed obliquely to said axes where the surface to which they are to be secured is inclined. Fig. 7 shows a carrier embodying our invention, on which the flange 6 is inclined to correspond to the inclination of the surface of the rear cross member 28 of the chassis to which it is secured.

The rim or spare wheel may be supported on the carrier by any suitable means. Figs. 1 and 2 show a preferable construction for supporting a spare wheel. In the embodiment shown in said figures a disk 29 is provided, having upon one side three bolts 30 spaced at equal angular distances about the center of the disk and adapted to pass through openings similarly spaced in the flange 12. Nuts screwed to the ends of said bolts 30 on the opposite side of the flange 12 secure said disk 29 and flange 12 together. To space the disk 29 from the flange 12 any suitable means may be provided, but we preferably use an adapter 46′ similar to the adapter 46 shown in Fig. 4, and which, like the latter, may be an annulus of different thicknesses to extend the carrier more or less in a horizontal direction, just as the adapter 46 extends the carrier more or less in a vertical direction according to the different thicknesses of the adapter used. Upon the other side of the disk 29 the latter is provided with a central hub portion 31 which carries three bolts 33 spaced relatively to each other in the same arrangement as three of the bolts usually used to secure the spare wheel to the hub of the axle. From the center of the disk 29 there projects a spindle 32. The spare wheel is thus secured to the carrier by sliding the hub of the wheel onto the bolts 33 and spindle 32, the bolts 33 extending through three of the holes provided in the hub of the wheel for securing it to the axle, and the spindle 32 extending through the central opening usually provided in the hub of the wheel. Nuts are then screwed down onto the screw threaded portion of the bolts 33 to clamp the wheel in place on the carrier, as shown in Fig. 2.

The web 35 of the Disteel-wheel is provided with a central opening which fits over the hub-like projection 31 of the disk 29, and a cupped disk 37 may be provided having a central opening through which the spindle 32 extends, and openings so situated as to receive the bolts 33. When the wheel is placed in position on the hub 31, this cupped disk 37 is applied and the securing nuts are screwed onto the ends of the bolts 33 projecting through said disk, thus securing the whole assembly firmly to the carrier.

Where the carrier is to support a spare rim the flange 12 will preferably be provided with radially extending arms which may be cast integral therewith or secured thereto in any suitable manner.

A preferred construction of this kind is shown in Figs. 6 and 7, in which a disk 34 is clamped to the flange 12 by bolts 36, and carries arms 38, provided at their extremities with rests 40 to support the rim by the inner periphery and sides thereof. The side member 42 of one of the rests 40 is preferably adjustably secured by means of a bolt 44 to the end of its arm 38 so that it can be swung out of holding position, the rim then placed in position in the three rests, and the adjustable side member 42 then swung back into holding position, as shown in Fig. 7, whereby the rim will be locked on the carrier.

In order that the carrier embodying our invention may be adapted to carry spare wheels or rims of any size and in the desired position on automobiles of different sizes and designs, our invention contemplates the provision of means whereby the carrier may be extended. While our invention contemplates the provision of any suitable means for this purpose, said means is herein exemplified by what may conveniently be termed an adapter, said adapter herein consisting of a disk 46 (Figs. 2, 4 and 5), which may be interposed between the flanges 8 and 10 of the two arms 2 and 4 respectively. This disk is provided with perforations to coincide with the perforations provided in the flanges 8 and 10, for the passage of the bolts 20. Such adapters of various thicknesses may be used according to the amount to which the carrier is to be extended.

Carriers embodying our invention possess many advantages over carriers heretofore used for the same purpose. They are simple in construction, strong, and may be made at a relatively low cost. They furnish a secure and rigid support for the spare rim or spare wheel and are extensible to suit the various conditions under which they are to be used and the special type of automobile to which they are to be applied, and the rim or spare wheel may be rigidly and quickly secured thereto or removed therefrom. When the spare rim or wheel is to be carried at the side of the automobile the invention avoids the necessity of cutting an opening in the skirt-guard or apron for the passage of the carrier, as would have to be done were the carrier in a rigid piece. It will be readily understood by those skilled in the art that the presence of such perforations in the skirt-guard or apron is extremely undesirable and should be avoided if possible. Another advantage of making the carrier in two parts 2 and 4 enables the carrier always to be so mounted on the machine that the spare

wheel or shoe carried thereby will be parallel to the running board. In many machines the lateral longitudinal frame members, such as 14 shown in Fig. 4, converge toward the front of the machine. If the carrier were in a single piece, as has been usual heretofore, it would be necessary, where it is to be mounted upon the lateral longitudinal frame member of the chassis, where the latter converges, to incline either the flange 6 or the flange 12, or to make other porvisions so as to keep the flange 12 in a plane parallel to the running board. It would, therefore, be necessary to make a special carrier in each case. With the carrier embodying our invention this is not necessary, because the member 2 can be secured to the converging longitudinal chassis member 14, and then the member 4 can be mounted on the member 2 in a plane at an angle to the plane of the latter, and which will bring the flange 12 and consequently the tire or spare wheel secured thereto, in parallelism with the running board. Carriers embodying our invention are therefore adaptable to meet any exigencies of this kind. Other advantages than those specifically set forth will suggest themselves to those skilled in the art.

It will be apparent that it is not indispensable that all of the features of the invention be used conjointly, since they may be used to advantage separately in various combinations and sub-combinations. It will also be understood that, while the invention is herein described as embodied in the details illustrated, it is not to be considered as circumscribed by or limited to these details, or any of them, but that said details may be variously modified within the true scope of the invention which is definitely set forth in the claims.

Claims:

1. A wheel or rim carrier comprising a pair of arms each having tubular portions angularly related and provided with end flanges connectible end to end by bolts passing through spaced holes in said flanges, one of said arms having means enabling it to be attached to the frame of an automobile and the other arm having supporting means for a spare rim or wheel, a protecting vehicle shield secured between said arms, and an adapter consisting of an annulus adapted to increase the effective length of the carrier, said annulus having holes corresponding with those in said flanges for enabling the arm securing bolts to be passed through it to secure it in the desired position with reference thereto and to said shield.

2. A wheel or rim carrier comprising a pair of arms each having tubular portions angularly related provided with end flanges connectible end to end by bolts passing through spaced holes in said flanges, one of said arms having means enabling it to be attached to the frame of an automobile and the other arm having supporting means for a spare rim or wheel, and a protecting vehicle shield secured between said arms.

In testimony whereof, we have signed our names to this specification.

RICHARD E. PFENNIG.
EDWARD D. WRIGHT.