

[54] **REMOVABLE WINCH DRUM FOR
VEHICLE WHEEL**

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[51] **Int. Cl.**..... **B65h 17/46**

[58] **Field of Search**..... **242/95; 254/166**

[56] **References Cited**

UNITED STATES PATENTS

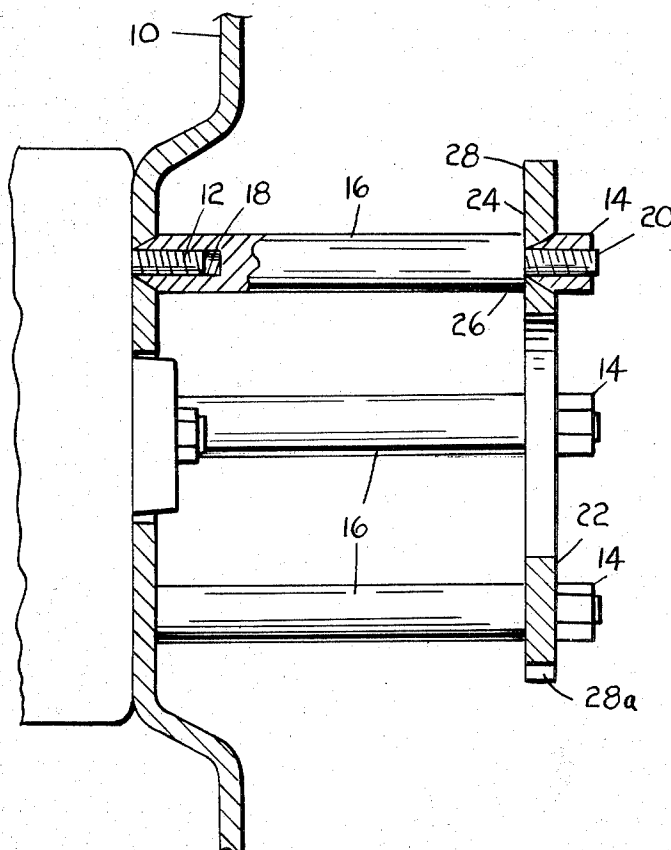
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[57] **ABSTRACT**

A plurality of posts have a threaded opening on one end adapted to threadedly engage vehicle wheel lugs or studs which normally receive the lug nuts. These posts have integral studs on their other ends for projection through an annular plate member and for receiving attaching nuts which secure the plate member on the posts. The projecting portions of the posts are threaded and of a size to receive the lug nuts so that the latter can be used to hold the plate member on the posts, thus forming a winch drum which can be used by the vehicle to pull itself out of trouble.

3 Claims, 3 Drawing Figures



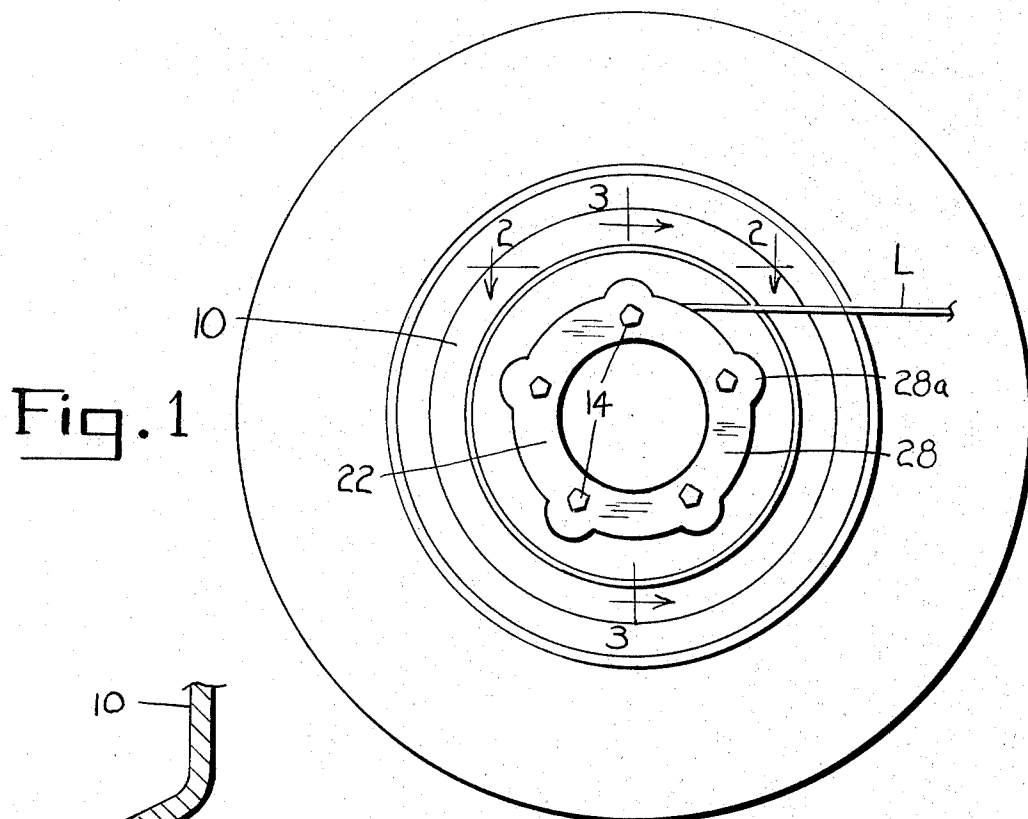


Fig. 1

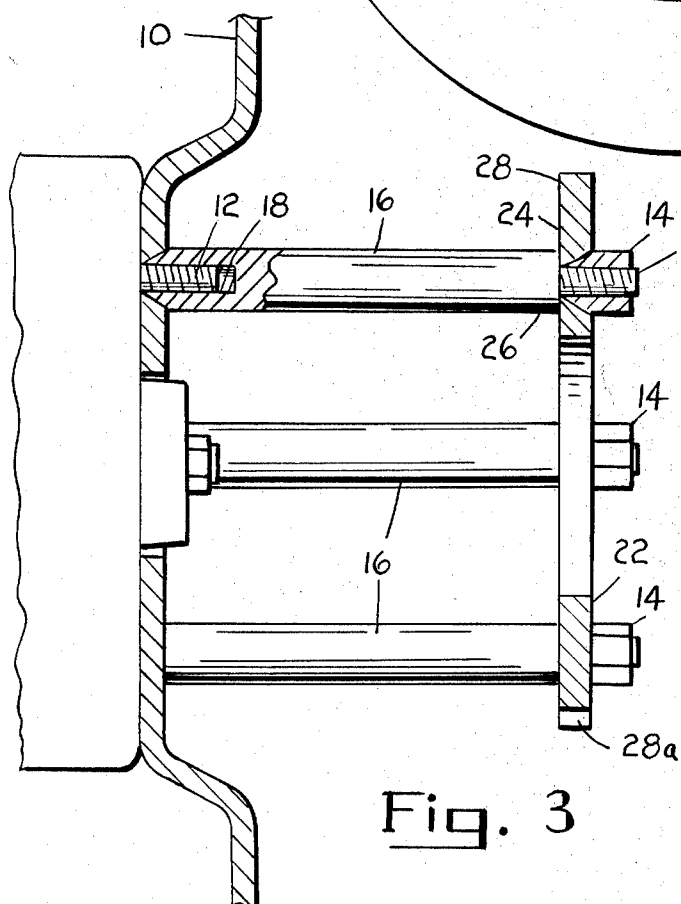


Fig. 3

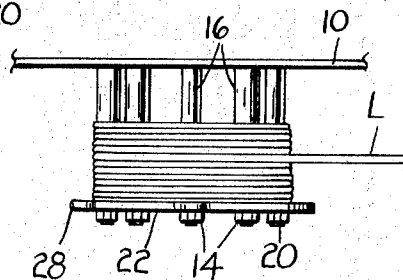


Fig. 2

REMOVABLE WINCH DRUM FOR VEHICLE WHEEL

BACKGROUND OF THE INVENTION

This invention relates to new and useful improvements in removable winch drums for vehicle wheels.

Winch drums have heretofore been provided for attachment to vehicle wheels wherein a line can be attached thereto and the vehicle is able to pull itself out of trouble. The drums heretofore provided have a first disadvantage in that they are difficult to install on the wheel because since the base or installing portion thereof is of a single piece, it is not possible to mount such base on the wheel lugs without removing all the wheel lugs or else attaching it to only a portion of the lugs. In the latter instance, wherein only a portion of the lugs are used a firm attachment of the drum to the wheel is not accomplished. In some structures, a base is permanently attached to the wheel, but in this arrangement, the base is likely to be in the way of the hub cap or in the way of a mechanic for maintenance or repair of the vehicle. Another disadvantage of prior structures is that they use full cast drums which are heavy in weight, expensive to manufacture, and difficult to store when not in use.

SUMMARY OF THE INVENTION

According to the present invention, a removable drum for vehicle wheels is provided which overcomes the disadvantages of the prior art.

More particular objects of the invention are to provide a drum of the type described which is simplified in structure and economical to manufacture; which employs several pieces facilitating progressive attachment to the wheel lugs so that such attachment can be made to all the wheel lugs for a firm connection and also so that the wheel does not have to be removed; to provide a drum of the type described which utilizes the wheel lugs and lug nuts for its attachment; and to provide a drum of the type described which, being provided in several pieces, is capable of being stored and shipped in compact condition.

The invention will be better understood and additional objects and advantages will become apparent from the following description taken in connection with the accompanying drawings which illustrate a preferred form of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a vehicle wheel showing the present drum attached thereto;

FIG. 2 is a top plan view of the drum taken on the line 2—2 of FIG. 1; and

FIG. 3 is an enlarged vertical sectional view taken on the line 3—3 of FIG. 1.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring in particular to the drawings, the numeral 10 designates a conventional vehicle wheel and the numeral 12 designates wheel lugs or studs integral with the brake drum portion of the wheel. The numeral 14 designates lug nuts which generally are engageable with the lugs 12 for holding the wheel on the brake drum portion.

In accordance with the present invention a plurality of independent solid metal posts 16 are provided for making up the instant winch drum. For this purpose, each of the posts has a threaded opening or bore 18 in one end which is arranged to threadedly engage the wheel lugs 12. The opposite ends of the posts 16 have a stud or threaded extension 20 arranged to receive the lug nuts 14.

An annular plate member 22 has a plurality of apertures 24 therein selectively arranged to receive the studs 20 and further arranged to be secured on the posts by the lug nuts 14. As seen in FIG. 3, the studs 20 are of less diameter than the posts 16 so that a shoulder 26 is formed on the posts against which the plate 22 is engaged. The plate is annular in form to reduce the amount of material necessary, and its diameter is greater than the outside diameter of a drum formed by the posts 16 so as to form an outer drum flange 28. Flange 28 has radial extensions 28a at the outer edge thereof disposed adjacent to the openings 24, such extensions serving to reinforce the plate member at the openings 24 and at the same time serving to enlarge the drum flange diametrically.

To install the present drum on a wheel, the hub cap of the wheel is first removed and posts 16 installed on the wheel lugs 12. These posts are installed by removing one of the lug nuts 24 and threading a post 16 on the lug 12 which has been exposed by removing the nut 24, and so on around the wheel. The number of the posts 16 that are provided will depend upon the number of wheel lugs 12 on the wheel. Generally, there are five or six in which case a corresponding number of such posts may be provided, although it is to be understood that as few as two or three may be used just as long as a drum portion is formed.

After the posts have been installed on the wheel, the plate 22 is mounted on the ends of the posts against shoulders 26 by means of the lug nuts 24. Such provides an integral and rugged drum structure. A line L for use with the drum is attached to one of the posts and in assisting a vehicle for removing itself from trouble, the other end of the line being attached to an anchor point such as a tree or the like. Rotation of the wheel operates the drum for applying the pulling force.

In removing the drum, the plate 22 is first removed by taking off the lug nuts 24 and then removing one post 16 at a time while reinstalling the lug nut 24 on the exposed lug 12.

The present drum, being constructed of individual posts 16 and end plate 22, can be shipped and stored compactly. It has the advantage that it can be installed on a vehicle wheel without removing the wheel. At the same time a good connection can be maintained for the wheel on the brake drum portion since at most only one lug nut is off at any time and when the present drum is in place, the wheel has the same connecting structure as it had originally.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

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1. A removable winch drum for vehicle wheels of the type mounted on the vehicle by threaded lugs and lug nuts, comprising

- a. a plurality of individual posts having inner and outer ends,
- b. means in the inner end of said posts defining a threaded bore arranged to be threadedly engaged with the threaded lugs on a vehicle wheel,
- c. and a plate member attachable to the outer ends of said posts, whereby the winch drum is formed by threaded securement of the threaded bores in the inner ends of said posts with respective wheel lugs

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and securement of the said plate member to the outer ends of said posts.

2. The removable winch drum of claim 1 wherein said posts have threaded extensions on their outer ends arranged to receive the lug nuts of the wheel whereby said plate member is attachable to the outer ends of said posts by the lug nuts.

3. The removable winch drum of claim 2 wherein portions of said plate member are of larger diameter than the outside diameter formed by said posts when installed on the wheel to form an outer drum flange.

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