J. P. DORAU.

JACK.

APPLICATION FILED DEC. 20, 1920.

1,388,103. Patented Aug. 16, 1921.

2 SHEETS—SHEET 1.

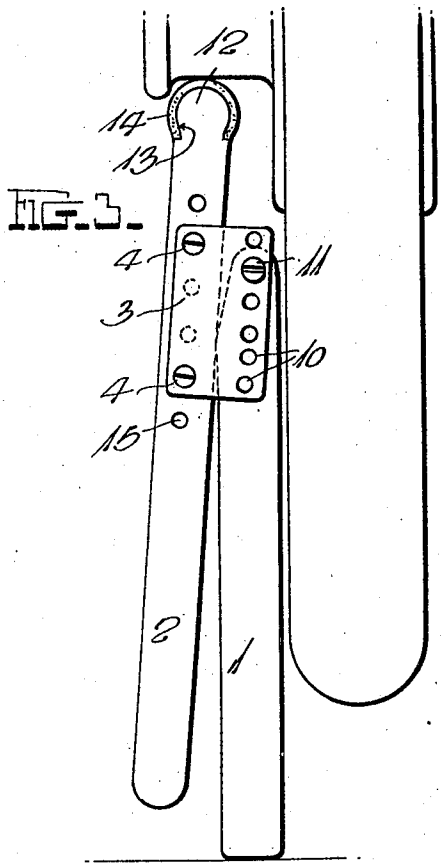


FIG. 3.

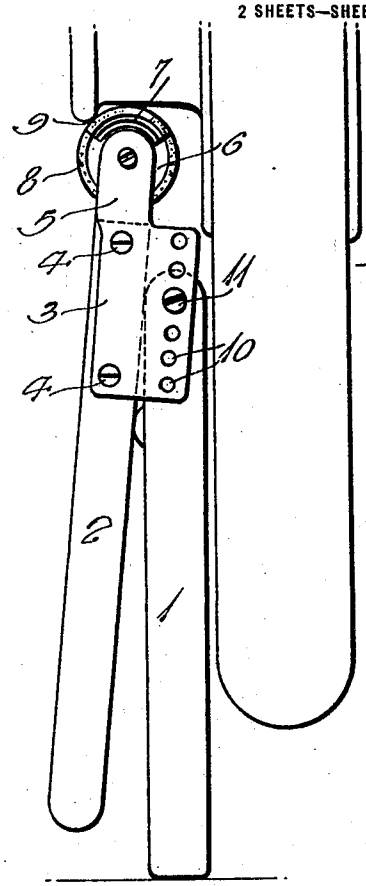


FIG. 1.

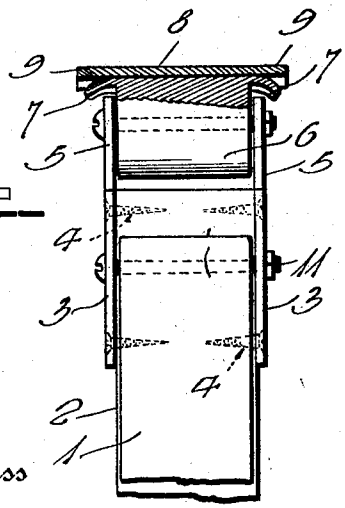


FIG. 2.

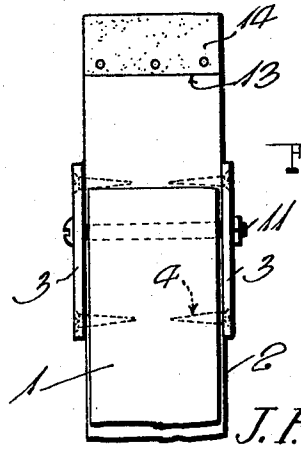


FIG. 4.

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2 SHEETS—SHEET 2.

FIG. 5.

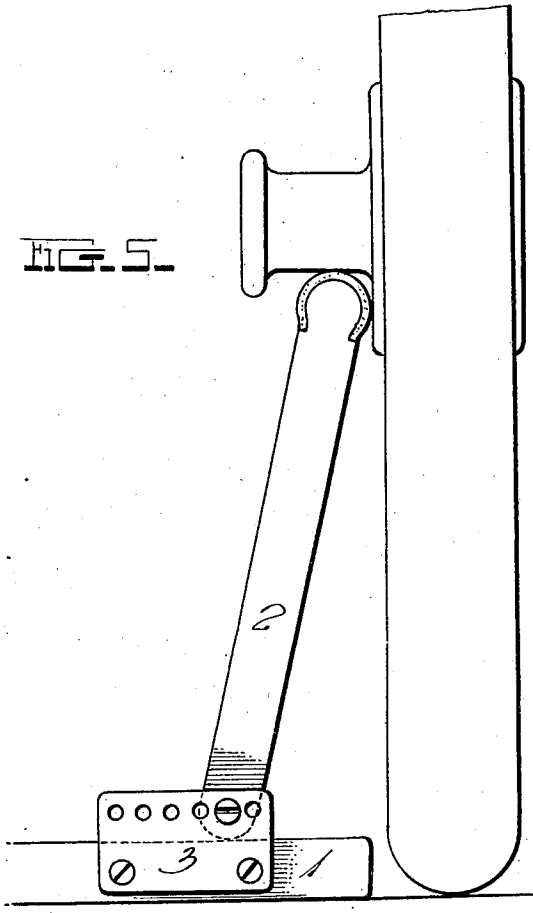


FIG. 6.

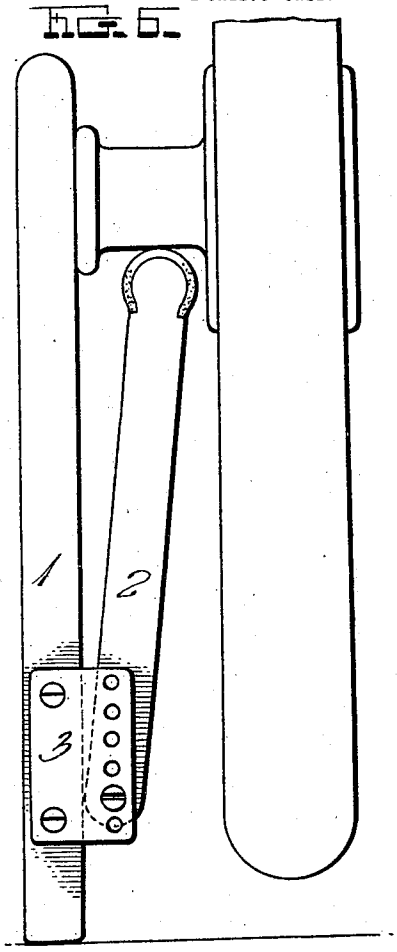


FIG. 7.

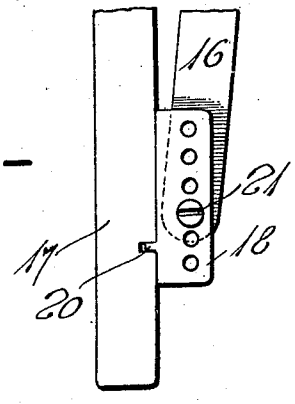
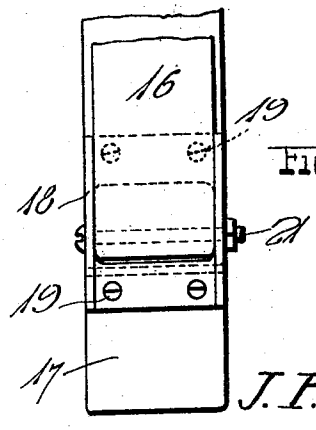


FIG. 8.



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1,388,103. Specification of Letters Patent. Patented Aug. 16, 1921.

Application filed December 20, 1920. Serial No. 431,990.

To all whom it may concern:

Be it known that I, JOHN P. DORAU, a citizen of the United States, residing at North Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Jacks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved jack to be used in elevating automobile wheels, and it has for one of its objects to provide a device of this class which is especially designed for raising the tires off of the garage floor and retaining it in such position when the vehicle is "put up" at night or for long periods, thus relieving the tires of unnecessary weight and greatly prolonging their life.

Another object of the invention is to provide a jack of this class which is extremely simple in construction and very inexpensive to manufacture, thus making it possible to obtain enough of such devices for supporting all of the wheels without placing the user under unnecessary and great expense.

A further object of the invention is to provide a jack which is an improvement over my patented jack disclosed in Patent No. 1,349,502, granted to me on August 10, 1920.

In the referred to patent, there is disclosed a manually operated lever and a supporting standard, the two being connected by novel means such as would permit use of the device with cars having wheels of different sizes. This invention contemplates the embodiment of all the features disclosed in patented device together with several additional features. To this end, the connecting means is entirely different and is such that it permits quick connection and disconnection of the support and operating lever, permits of relative adjustment, and permits the leverage to be varied so that the operator will be placed under less strain in using the device. Furthermore, it contemplates a novel oscillatory hub engaging member which assists in setting up the jack and makes it practically impossible to mar or disfigure the hub caps. These and other advantages and constructional differences and features will be set forth more fully as the description goes on.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevational view of the preferred form of jack, the same being shown in use.

Fig. 2 is a front elevation of the upper portion of the form of jack above referred to, parts being broken away to show the construction more clearly.

Fig. 3 is a view like Fig. 1 showing a slightly modified type of jack.

Fig. 4 is a view like Fig. 2 but looking at the type of jack shown in Fig. 3.

Fig. 5 is still another modified form of jack simulating more closely the type of jack disclosed in the above referred to patent and showing the position of the parts of the jack prior to being moved to operative position.

Fig. 6 is a view like Fig. 5 except the parts are shown in their operative position.

Figs. 7 and 8 are substantially the same as the construction of jack shown in my patent, except that they are shown as being adjustable.

For the sake of clearness of description and also for convenience, I will refer to each different form of the invention separately.

To this end, and by referring to Fig. 1, which is the preferred form of the invention, it will be seen that the device comprises a supporting leg 1 and a manually operated lever 2 which can be operated either by hand or by foot. It is obvious that in actuating the device, it is only necessary to exert a downward pressure on the lever 2. Novel means serves to connect the parts 1 and 2 together and permit them to be adjusted to accommodate the device for use in connection with cars having wheels of different diameters. This means could be of some other construction, but as shown it consists of a pair of substantially rectangular plates 3 which are disposed on opposite sides of the upper end of the lever 2, and project beyond one of the wide faces thereof and are detachably connected thereto by means of screws or the like 4. The plates in addition to having one of their edges extended beyond the inner face of the lever 2, includes extensions 5 and these extensions

extend beyond the upper ends of this lever in the manner shown, thus forming ears which are formed with horizontally alined openings constituting bearings. Journaled between the ears 5 and having an oscillatory movement, is a roller 6 which may well be termed here as a hub engaging member. As better seen in Fig. 2, this roller is provided at its opposite ends with opposed extensions 7 which in one instance serve as stops for limiting the movement of the aforesaid roller. Excessive movement of the roller may possibly permit the device to become accidentally displaced from its operative position. On the other hand, a slight movement of this hub engaging member is desired so as to permit the device to be more readily set up. At this point, I wish to call attention to the fact that the extensions 7 are curved downwardly to permit the hub to become disengaged from the roller without permitting the hub to become damaged. To further guard against injury to the hub, I entirely cover or partially cover the roller with a pad of leather or rubber 8, this pad including extensions 9 to cover the extensions 7. I wish to also direct attention to the fact that the aforesaid extensions are long enough to extend beyond the opposite ends of the retaining bolts which serve to connect the plates to the standard 1. This being the case, it will be seen that in case the hub should slide endwise off of these extensions, it will not strike against these bolts and thus become injured or marred. Now, by referring to the other extended parts of the plates, it will be seen that they are formed with vertically spaced bearing openings 10 through which the connecting bolts 11 pass. With this construction and arrangement it will be seen that a relative adjustment of the lever and supporting standard may be had whenever desired or necessary in order to permit the device to be effectively used in connection with cars having wheels of various diameters. The manner in which this adjustment is obtained is clearly obvious and need not be described.

Reference being had to Figs. 3 and 4, it will be seen that the form of jack disclosed in these figures comprises, as the already described forms, a supporting standard 1, a manually operated lever 2 and connecting plates 3 which are such as to permit relative adjustment of the parts 1 and 2, the construction employed for this purpose being the same as that already described. The principal difference between this type of jack and the one first described, resides in the fact that the jack now under consideration eliminates the use of the movable hub engaging member 6. Instead of this, I merely round the upper end of the lever 2 as shown at 12, and provide it with oppositely disposed shallow grooves 13 and I place over this rounded portion and secure at its opposite ends in the grooves 13 by means of tacks or the like, a pad in the form of a piece of leather or suitable material 14. In this form of the invention and in all of the others if desired, the lever 2 can well be provided with a plurality of transverse holes 15 for passage of the bolts 4 which permit greater range of adjustment and permit the leverage to be varied when the device is used in connection with heavy vehicles.

Now by referring to Figs. 5 and 6, it will be seen that the form of jack there shown is more like the one shown in the aforesaid patent. However, the jack shown in these figures is adjustable and the connecting plates are secured in place in the way already described. The same reference characters already used are also used to describe the parts in this form of the invention.

As before intimated, the form of the invention disclosed in Figs. 7 and 8 is practically the same as that shown in my prior patent. A brief description may well be used here. To this end, the numeral 16 designates the vertical supporting standard and the numeral 17 indicates the lever which must be moved upwardly in order to render the device effective. Part 16 is connected to the lever 17 by means of a channel 18 connected to the lever 17 by means of screws or other suitable fastenings 19. The channel includes a laterally extending rib or flange 20 which extends into a groove formed in the lever, this rib serving the purpose more fully set forth in my patented device. The opposite side walls are formed with a plurality of oppositely disposed bearing openings for passage of the fulcrum pin or bolt 21.

A careful consideration of the foregoing decription taken in connection with the accompanying drawings is thought to be sufficient to enable persons skilled in the art to which the invention relates to obtain a clear understanding of the manner in which the different forms of jacks are used. Therefore, a description setting forth the use of the jacks is thought to be unnecessary.

The most important features of the invention have probably become apparent from the foregoing description. However, it may be well to recall that in all forms of the jack, the construction is such as to permit adjustment, whereby any one of the jacks may be used in different size wheels. The construction of the hub engaging roller is such as to permit the jack to be placed in position very easily and to prevent marring or scratching of the hub cap. Furthermore, considerable bearing surface for the hub is provided and the downturned sections of the hub engaging member will permit the hub to slip off should the device not be properly placed in position, that is, if the hub is

placed too close to the ends of the movable hub engaging member. With all forms of the jack shown and described, the leverage may be varied in order to make it as easy as possible to elevate the car. These and other advantages and features of the invention have, no doubt, become apparent from the foregoing description and drawings.

Since probably the best results may be obtained with the construction and arrangement shown and described, these constructions and arrangements are taken as the preferred embodiment of the invention. However, I wish it to be understood that various minor changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A jack of the class described comprising a lever, plates connected to the upper end of the latter and extending beyond said upper end and inner face, said extended portions being formed with bearing openings, a supporting standard arranged between the plates, a fulcrum pin passing through the standard and rotatable in the adjacent bearing openings, and a movable hub engaging member also arranged between said plates and fulcrumed in the adjacent bearings.

2. A jack of the type described comprising a lever, plates connected to the upper end of the latter and extended beyond said end, the extended portions being formed with bearings, a supporting standard to which the plates are also connected, and a roller journaled in said bearings, having opposed down-turned extensions at its opposite end and being covered with a hub-protecting pad.

3. A jack for relieving tires of unnecessary weight comprising a relatively short supporting standard, a relatively long manually actuated lever, said lever and standard being arranged opposite one another and being of substantially the same width, connecting plates arranged on opposite sides of said lever and standard adjacent the upper ends of the latter, said plates being provided with a plurality of openings to permit relative adjustment of the standard and lever and said plates including apertured ears extending beyond the upper end of said lever, a roller movably mounted between said ears, said roller including opposed downturned extensions at its opposite ends of a length to extend beyond the opposite ends of an adjacent bolt, and a pad covering said roller.

In testimony whereof I have hereunto set my hand.

JOHN P. DORAU.