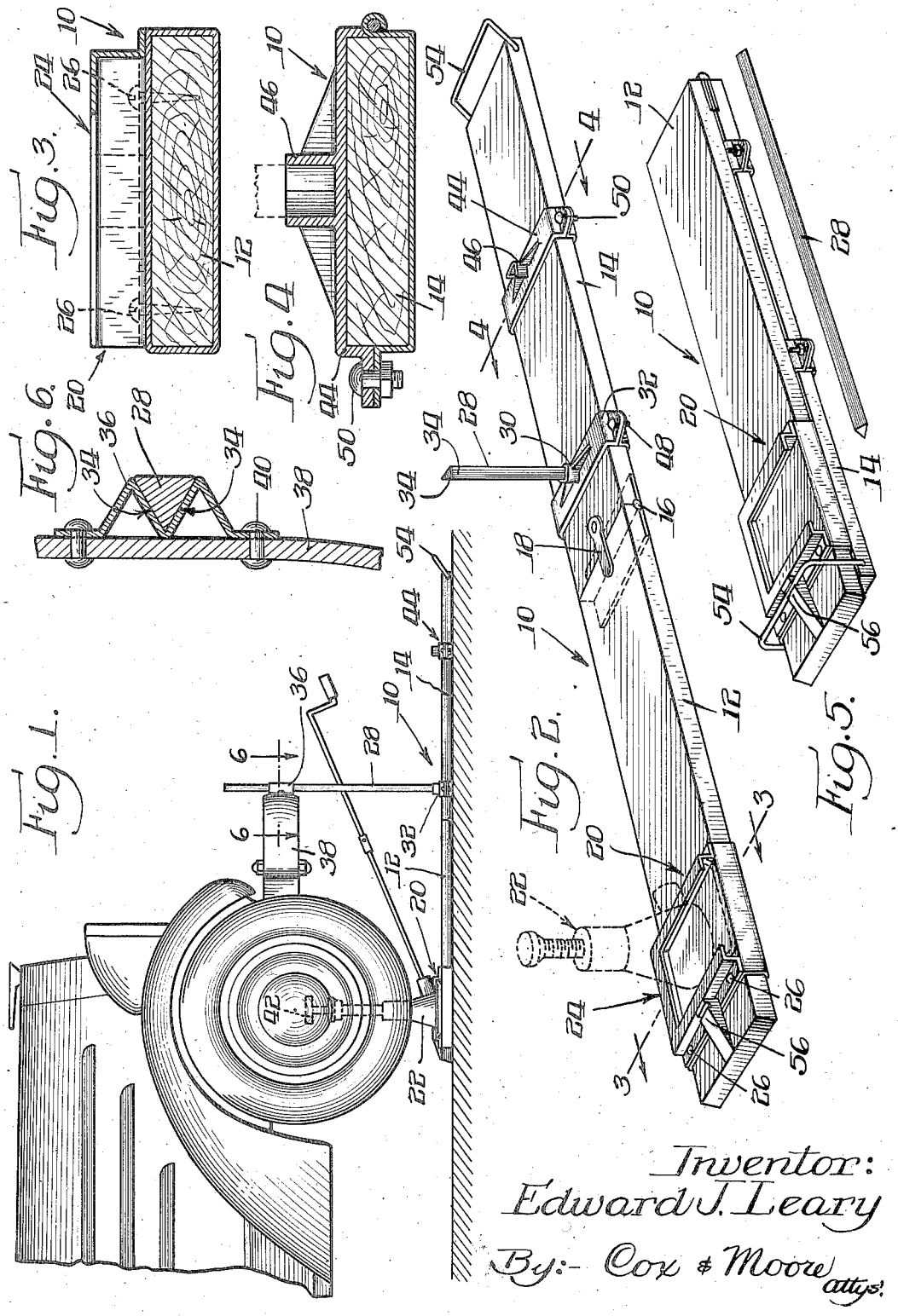
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JACK POSITIONING MECHANISM

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JACK POSITIONING MECHANISM

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This invention relates generally to jack positioning devices, and more particularly to devices for properly positioning a jack beneath the chassis of an automobile.

The problem of properly positioning a jack beneath the chassis of an automobile is one which has confronted the average motorist for many years. With the present-day jacks, which form standard equipment for motor cars, no means is provided for properly positioning the jack beneath the car, with the exception of an elongated handle having a socket coupling at one end with the jack. This type of equipment in many instances proves very unsatisfactory, and this is particularly true in connection with motor cars of modern design, wherein skirted fenders are employed which render the area beneath the car very inaccessible. Furthermore, irregularities of the roadbed make it difficult for the jack user to determine, by mere observation, the proper position for the jack. In other words, the jack might occupy one position at one time and another position at a subsequent time, depending entirely upon the condition of the ground surface beneath the car. In fact, the only certain way to insure proper positioning of a jack, with the present-day equipment, is for the motorist to crawl beneath the car.

It is one of the primary objects of my invention to overcome the above mentioned and other disadvantages resulting from the use of present-day jack equipment, and to this end I propose to provide means engageable with the base of the jack and designed to accurately position the jack with a minimum amount of effort and skill on the part of the user.

More specifically, the invention contemplates a device as generally referred to above, which not only serves to accurately position the jack properly with respect to the car, but serves also to prevent the jack from accidentally tipping, or, in other words, to insure the car from inadvertently slipping off the jack after it has been lifted.

A further object of the invention is to provide an increased area of contact between the jack and the surface of the ground, thereby permitting the use of the device on soft ground, mud, and the like, which otherwise might prevent the use of a conventional jack as it is now supplied by motor car manufacturers.

Still another object of the invention is to provide a jack positioning device as set forth above, having means for positively abutting the structure of the car to thereby accurately position the jack when it is inserted either from the front or the rear of the car.

More specifically, the invention contemplates a shiftable jack support or positioning means adapted to engage the bumper structure for the purpose of accurately locating or adjusting the jack with respect to the car axle or the like underneath the car, where it cannot readily be observed. In fact, the invention contemplates a jack positioning device, which makes it unnecessary for the user to look under the car while getting the range and subsequently setting the jack.

The foregoing and numerous other objects and advantages will be more apparent from the following detailed description when considered in connection with the accompanying drawing, wherein—

Figure 1 is a fragmentary side elevational view of the front end of an automobile in operative association with jack positioning equipment of the type contemplated by the present invention;

Figure 2 is an enlarged perspective view of the positioning device, the jack being indicated by dotted lines;

Figure 3 is a transverse sectional view taken substantially along the line 3—3 of Figure 2;

Figure 4 is a similar transverse sectional view taken substantially along the line 4—4 of Figure 2;

Figure 5 is a perspective view of the positioning device in its compact folded position with the positioning bar removed from its socket; and

Figure 6 is an enlarged horizontal transverse sectional view of the abutment means on the bumper, which cooperates with the upright bar in properly locating the jack beneath the axle or the like of the car.

Referring now to the drawing more in detail wherein like numerals have been employed to designate similar parts throughout the various figures, it will be observed that one embodiment of my invention constitutes a jack positioning device which I have indicated generally by the numeral 10. This device includes a pair of elongated members or boards 12 and 14 connected through the agency of a suitable hinge 16. These members 12 and 14 may be swung to the open position shown in Figures 1 and 2 to provide, in effect, an elongated structure, one end of which is adapted to be conveniently inserted beneath the forward or rear end of an automobile, as clearly illustrated in Figure 1. To secure the members 12 and 14 against inadvertent movement about the axis of the hinge 16, I provide a

finger 18 which may be shifted to the position shown in Figure 2. When it is desired to swing the members 12 and 14 to their compact folded position, as shown in Figure 5, the finger 18 is first shifted through approximately 90° to release said members.

The left extremity of the member 12, as viewed in Figures 1, 2, and 3, is provided with a jack receiving means 20. This jack receiving means 20 may be of any design, which is adapted to receive the base of a conventional jack 22. In the embodiment shown herein for purposes of illustration, the jack receiving means 20 constitutes a three-sided receiving member 24, which is open at one side to permit the jack to be inserted beneath the upper structure of the member 24, as clearly illustrated in Figure 2. This jack receiving means 20 may be fixedly or adjustably secured to the member 12 by any suitable means—for example, by fastening means or screws 26. Furthermore, the jack receiving means may be so arranged as to accommodate jack bases of varying sizes and shapes without departing from the spirit and scope of the present invention.

After the jack 22 has been inserted within the receiving means 20, the opened members 12 and 14 are shifted longitudinally to move the jack into position beneath the element to be engaged by the jack screw. In order to positively locate the jack properly beneath the desired point of engagement, I provide an upright positioning bar or member 28, which is adjustably mounted at its lower end within a suitable socket 30 carried by an adjustable clamping means 32. The bar 28 is preferably provided with abutment surfaces 34, which are angularly disposed so as to provide a structure of V-shaped cross section. These angularly disposed surfaces 34 are adapted to engage a complementary abutment 36 secured in a fixed position to the structure of the car—for example, to the bumper 38 shown in Figures 1 and 6. The disclosed embodiment of the abutment 36 constitutes a metallic strip bent into V-shaped form providing a V-shaped recess corresponding angularly in cross section with the included angle of the surfaces 34 of the positioning bar 28. This abutment 36 may be secured in position in any suitable manner such as by means of screws or rivets 40 (Figure 6).

The adjustable clamping means 32 is so spaced from the center of the jack 22 that, when the surfaces 34 engage the companion surfaces of the abutment 36, the jack will be properly positioned beneath the part to be engaged—for example, beneath the cross frame 42 indicated in Figure 1. The bar 28, in addition to accurately locating the jack longitudinally of the car, also accurately locates the jack transversely of the car. Thus, the abutment member 36 is so positioned on the bumper 38 that the jack 32 will be properly positioned laterally with respect to the car only when the surfaces 34 of the bar are flush with the companion abutment surfaces of the member 36. In this manner the jack is accurately positioned laterally, as well as longitudinally of the car.

A second clamping means 44, similar to the clamping means 32, is provided, as indicated in Figures 1 and 2. This clamping means 44 may be used for properly positioning the jack with respect to the rear wheels of the car. An abutment similar to 36 may be mounted on the rear bumper or on some other convenient part of the car. In other words, the bar 28 may be associated with the socket 46 of the clamping means 44 to position the jack with respect to the rear wheels in the same manner as just described in connection with positioning the jack for the front wheels. Obviously the clamping means 44 is also adjustable in the same manner as the clamping means 32. The clamping means 32 is provided with a clamping screw 48, and the clamping means 44 is provided with a similar screw 50, which screws may be loosened to permit the adjustment of their respective clamping means along the member 14.

This adjustment of the clamping means 32 and 44 obviously is of considerable importance because it renders the positioning device 10 adaptable for all sizes of cars. The owner of a car, after purchasing the device 10, need only make one setting of the clamping means 32 and 44 to conform with the position of the abutment 36 and the desired position of engagement of the jack with the car, and from then on the jack may be placed beneath the car without the user making any particular observation in setting the jack. In other words, the range and setting of the jack may be accomplished by the user without observing the area beneath the car, and this, of course, is of great convenience. After the use of the jack has been dispensed with, the bar 28 may be detached and the members 12 and 14 folded together into the position shown in Figure 5, and conveniently held in this position by means of a suitable clamping member or rod 54, which is designed to interlock with a block 56, as clearly shown in Figure 5. The rod 54 also serves as a convenient handle in moving the free end of the member 12 beneath the car.

From the foregoing it will be apparent that my invention contemplates a positioning device of simple and practical construction, which serves to effectively expedite the location of a jack beneath the car. I prefer to construct the members 12 and 14 of sufficient width to make a substantial surface contact with the ground, and thus facilitate the positioning of the jack on soft or muddy soil, and to thus provide a firm support for the jack. It frequently happens that a blow-out or puncture occurs upon the open highway, requiring the motorist to immediately turn off the main highway or pavement. A soft or uneven soil renders the use of a conventional jack practically impossible without providing additional support therefor. Advancing the car to a point where the surface conditions are more suitable for positioning the jack might be impossible without tearing the inner tube. My invention enables the car to be jacked up at any location regardless of the condition of the road bed or ground surface. In eliminating the necessity of crawling beneath the car to position the jack, the hazards of a busy highway are avoided. In other words, the jack may be positioned beneath the car and operated without obstructing the user's view of the highway in either direction.

Furthermore, by having the jack positioned accurately beneath the surface which is to be engaged thereby, the elevation of the car will take place without the inherent danger of the car slipping from the jack or the jack tilting due to inadequacies of the under-support. Obviously, the invention is not limited to the particular construction disclosed, but is capable of numerous other modifications and changes without departing from the spirit and scope of the invention, as set forth in the appended claims—for example, while I prefer in some instances to construct the members 12 and 14 of wood or similar ma-

terial, other structural designs may be employed to meet the particular needs incident to the use of the device. Likewise, the other elements cooperating to form an embodiment of the invention may be changed in design without departing from the present invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, and means associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

2. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, and means detachably associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

3. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, and an upright member associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

4. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, and adjustable means associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

5. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, means associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means, and means for adjusting the distance between said jack-receiving means and said means for engaging the vehicle structure.

6. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack-receiving means carried by said elongated means and shiftable therewith as a unit, and means associated with said elongated means and having a plurality of abutment surfaces for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

7. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, and means associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, both longitudinally and laterally with respect to the vehicle, of a jack carried by said receiving means.

8. Jack positioning mechanism including elongated foldable means having one extremity adapted to be positioned beneath the structure of a vehicle when said elongated means is unfolded, jack receiving means carried by said elongated means and shiftable therewith as a unit, and means associated with said elongated means for engaging the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

9. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, abutment means attachable to the structure of a vehicle, and means associated with said elongated means for engaging said abutment means with the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

10. Jack positioning mechanism including elongated means having one extremity adapted to be positioned beneath the structure of a vehicle, jack receiving means carried by said elongated means and shiftable therewith as a unit, abutment means attachable to the structure of a vehicle, said abutment means having angularly disposed abutment surfaces, and means associated with said elongated means having complementary angularly disposed surfaces for engaging said abutment means with the structure of the vehicle to insure the proper positioning, with respect to the vehicle, of a jack carried by said receiving means.

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