

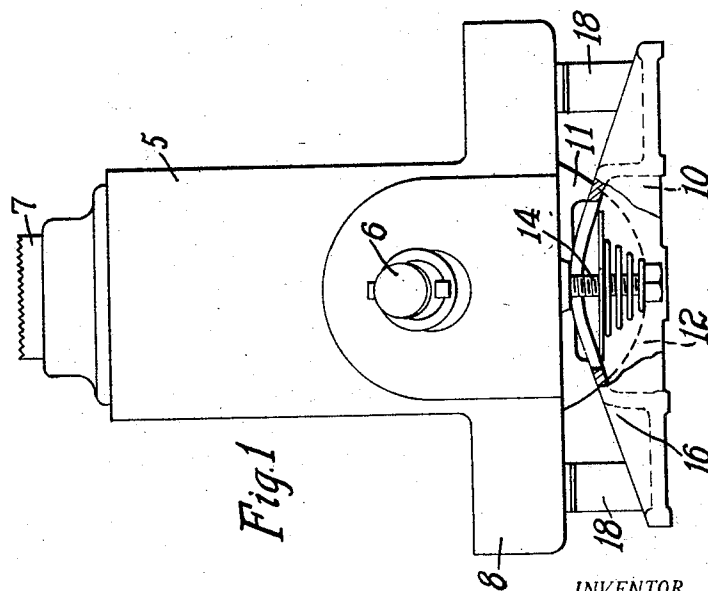
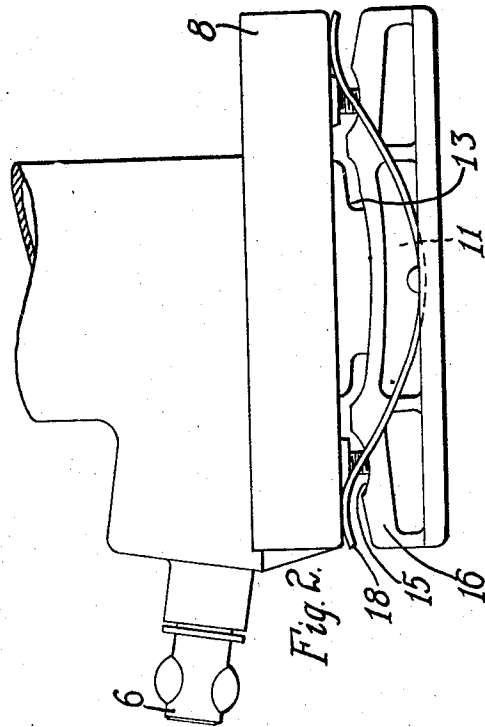
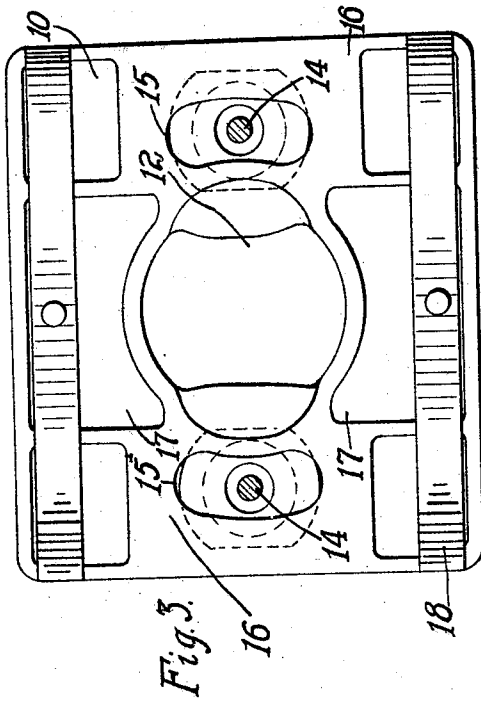
June 16, 1931.

J. H. KOHLER

1,810,657

JACK

Filed May 23, 1928



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UNITED STATES PATENT OFFICE

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JACK

Application filed May 23, 1928. Serial No. 279,878.

This invention relates to jacks and more particularly to automobile jacks such as are commonly employed in connection with automobile trucks and the like.

5 In raising one wheel of an automobile or motor truck off the ground the axle is caused to swing about the point of contact between the opposite wheel and the ground and assume a tilting or inclined position. As a
10 result of this movement, the axle imparts a lateral or bending strain to the lifting mechanism of the jack, resulting in such a binding of the jack elements as to render operation thereof stiff and difficult. The movement of
15 the axle being raised, as a result of the elasticity of the rubber tires, especially under heavy load, is such that a twisting force is applied to a jack, in addition to the lateral strain, and this twisting force is especially
20 noticeable where the lift is of relatively great extent. An object of this invention is to provide a jack of the type set forth capable of lifting an axle to the extreme effective height of the jack without any binding of the parts.

25 A further object is to provide a lifting jack constructed and arranged to permit free movement of the axle with relation to the jack during raising and lowering thereof.

30 A still further object is to provide a jack of the type set forth which will be simple in construction, effective in operation and relatively cheap to manufacture and assemble.

35 These and other objects which will be apparent to those skilled in this particular art are attained by means of the invention illustrated in the accompanying drawings in which Figure 1 is a side elevational view of a lifting jack constructed in accordance with one embodiment of this invention. Fig. 2
40 is a similar view taken at right angles to Fig. 1. Fig. 3 is a top plan view of the bottom base member.

45 The particular embodiment of this invention which has been chosen for the purposes of illustration is shown in connection with a telescoping screw jack 5, but it will be apparent that this invention is equally applicable to other types of lifting jacks. The usual operating shaft 6 for screw jacks is
50 provided. The vertically movable lifting

member 7 is provided with a support 8 which, in the present instant, also constitutes a housing for the operating gear not shown. A base member 10 is provided and the lifting member support 8 is mounted on the base by means of a universal joint in the form of a ball and socket formed by a substantially hemispherical ball 11 provided on the bottom of the support 8 and seating in a socket 12 centrally formed in the base member. In the illustrated construction, the diametrically opposite sides of the ball 11 at the front and back thereof are cut away, as shown at 13, for structural reasons, in view of the fact that tilting movement of the lifting member either forward or back is comparatively slight. Laterally, however, the parts are designed to permit extreme tilting of the lifting member.

55 The two sections of the base formed by the base proper 10, and lifting member support 8, are held together by two diametrically opposite pins 14 formed on the bottom of the support 8 and extending loosely through arcuate slots 15 which are positioned in the tops of upwardly arched portions 16 formed on opposite sides of the base member 10. This arrangement holds the base members together yieldingly so as to permit the support 8 to rock upon the base 10, thus enabling the lifting member 7 to be tilted by the axle, and at the same time provides for limited rotation of the support 8 upon the base 10 as a result of the twisting effect of the axle on the lifting members under heavy load and relatively great lift. Obviously, other ways of absorbing the twisting effect of the raised axle may be provided.

60 The base member is also provided with oppositely disposed spring seats 17 in which flat upwardly curved springs 18 are secured, and these flat springs are so formed that their ends are associated with each of the four corners of the support 8 and bear thereon in such a manner as to normally hold the lifting member in a vertical position, but so as to yield under lateral strains.

What I claim as new and desire to secure by Letters Patent is:

1. The combination in a jack of a base 100

member having a socket therein and slots on each side thereof, a lifting member, a support for said lifting member having a ball and pins adapted to be received in the socket and slots respectively on said base member for permitting rocking movement thereon, means for normally maintaining said lifting member vertical, and means loosely connecting said pins in the slots of said base member so as to permit limited rotation of said support on said base member.

2. The combination in a jack of a base member provided with a socket and a plurality of arcuate slots, a lifting member, a support for said lifting member having a ball seated in the socket of said base member and pins extending through said slots, springs for normally maintaining said support in horizontal position and spring means on said pins for loosely securing said support and said base member together to permit rotation of said support on said base member.

3. The combination in a jack of a base member, a lifting member, a support for said lifting member mounted on said base so as to permit tilting of said lifting member relatively thereto and spring elements longitudinally disposed along opposite sides of said base member for engaging said support so as to normally hold said lifting member in vertical position.

4. The combination in a jack of a base member, a lifting member, means for supporting said lifting member on said base member so as to permit tilting of said lifting member, means associated with said lifting member to permit a limited twisting thereof and spring elements longitudinally disposed along opposite sides of said base member for engaging said supporting means so as to normally hold said lifting member in vertical position.

5. In a jack, the combination of a base member having a socket and a plurality of arcuate slots therein, a lifting member, a support for said lifting member having a ball seated in the socket in said base member, oppositely disposed pins on said support adapted to extend through said slots, means for loosely fastening said pins in said slots to permit tilting and limited rotation of said lifting member, and spring members longitudinally disposed on opposite sides of said base member for engaging said support for normally holding said lifting member in vertical position.

6. A jack having in combination, a base member having a socket therein, a lifting member, a support for said lifting member having a ball seated in said socket, means for yieldingly maintaining said support and lifting member in vertical relation to said base member, and means for limiting the

twisting movement of said support relative to said base member.

7. A jack having a base, a lifting member, and a support for said lifting member, a universal connection between said base and said support, means for yieldingly maintaining said support and lifting member normal to the plane of said base, and means for limiting relative rotary movement between said support and base.

In testimony whereof, I have hereunto subscribed my name this 21st day of May, 1928.

JOHN H. KOHLER.

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