Dec. 22, 1936. N. G. JENSEN 2,065,277

LIFTING JACK

Filed Feb. 25, 1935

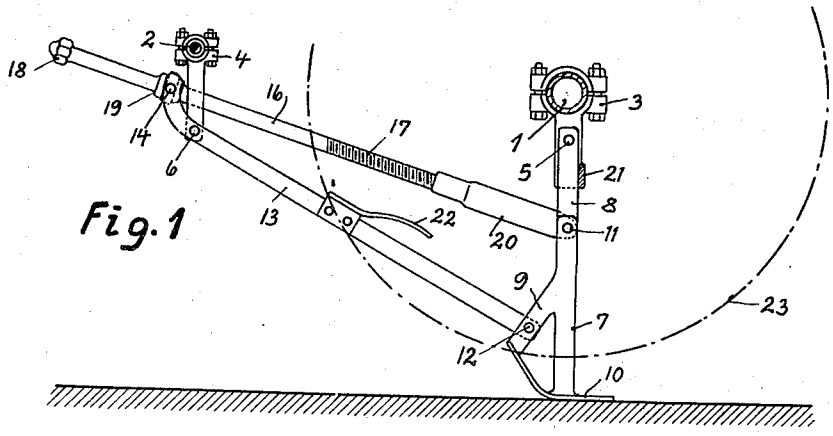


Fig. 1

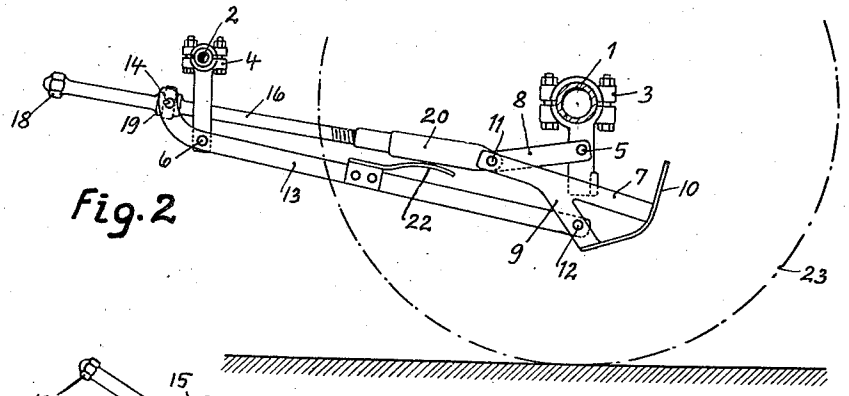


Fig. 2

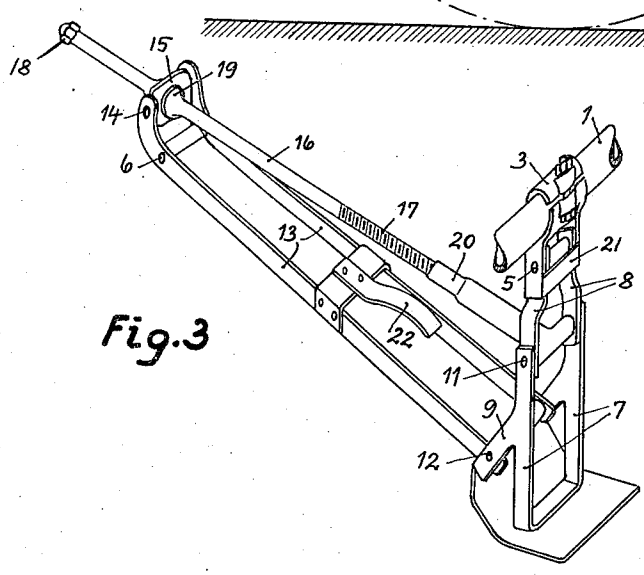


Fig. 3

Inventor.

Niels Bade Jensen

Patented Dec. 22, 1936 2,065,277

UNITED STATES PATENT OFFICE

2,065,277

LIFTING JACK

Niels Gade Jensen, Viborg, Denmark

Application February 25, 1935, Serial No. 7,952
In Denmark January 16, 1935

7 Claims. (Cl. 254—86)

This invention relates to a jack for vehicles, especially for motor cars, of the type which remains permanently on the vehicle under the chassis and when required can be actuated by hand, by means of which the vehicle can be completely or partly raised sufficiently high, for example, to enable the exchanging of a wheel.

The characteristic feature of the invention is that the jack body is a U-shaped piece provided with a foot and movably suspended on the vehicle, at two points situated in the same horizontal plane, by means of intermediate members of different lengths. The jack body can be oscillated by hand so that the foot is pressed on the track and the corresponding end of the vehicle is lifted to a height determined by the difference between the length of the jack body and the shorter intermediate member and by the distance between the point at which the jack body is suspended to the vehicle and the track.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which:—

Fig. 1 shows in side elevation the jack with operating mechanism on a vehicle and in operative position.

Fig. 2 is a similar view to Fig. 1 showing the jack in inoperative position.

Fig. 3 is a perspective view of the jack.

The lifting jack consists of a U-shaped jack body 7 of band iron which is attached by a member 8 to a clip 3 on the axle 1 of the vehicle and by means of a longer member 13 to a clip 4 mounted at 2 on the chassis. The jack body 7 is pivotally connected with the member 8 by bolts 11 and has rearwardly projecting and downwardly inclined arms 9 to which by bolts 12 the longer member 13 is pivotally mounted. The jack body 7 has a foot 10 adapted to rest upon the track.

On the outer end of the intermediate member 13 a plate 15 is pivoted by means of pins 14 and a spindle 16 is journalled in this plate. This spindle has abutments 19, one on each side of the plate 15, so that it cannot shift in longitudinal direction when rotated. The spindle 16 has at its free end a hexagonal portion 18 designed to receive a hand crank, or, when the jack is employed on a motor car, the starting crank. The other end of the spindle has a screw threaded portion 17 screwed into an internally screw-threaded sleeve 20 fixed on the bolt 11 of the jack body 7.

The length of the jack body 7 and the intermediate member 8 together is slightly greater than the distance between the bolt 5 which hingedly connects the intermediate member 8 with the clip 3 and the track. When the spindle 16 is rotated, the jack body 7 with the intermediate members 8 and 13 can be lifted into the normally inoperative position shown in Fig. 2. When it is desired to raise the vehicle, the spindle 16 is rotated in the opposite direction as before so that the screw sleeve 20 moves away from the plate 15. As the sleeve is connected by the bolt 11 to the U-shaped jack body 7, this body and the intermediate members 8 and 13 are shifted into the position shown in Fig. 1. The jack body 7 and the intermediate member 8 are thus in the vertical or substantially vertical position so that the vehicle is raised so high that the wheel or wheels 23 are lifted from the track.

In order to prevent the different parts of the device from coming into contact and causing disagreeable noise when the jack is in the inoperative position, a spring 22 may be inserted between the sleeve 20 and the intermediate member 13. A similar element may be inserted between the intermediate member 8 and the jack body 7. The clip 3 may have an abutment 21 for eliminating the lifting oscillation of the jack body. The movement of the jack body in the opposite direction can be limited for example by the springs 22 or by an abutment ring or nut arranged on the spindle 16 but not shown in the drawing. In order to prevent the individual parts of the lifting jack from coming into contact when, owing to the spring suspension of the vehicle when travelling, the points of suspension 5 and 6 must be situated in the same horizontal plane.

The individual parts of the lifting jack may be otherwise constructed than described and illustrated without departing from the scope of the invention; for example the jack body 7 and the intermediate members 8 and 13 instead of being U-shaped may have the shape of a cast or pressed arm. Under certain circumstances the outer end of the spindle 18 may carry a bevel wheel which meshes with a second bevel wheel keyed on an axle so that the spindle can be rotated from the side of the vehicle.

Furthermore, the arrangement may be such that the spindle can be driven by hydraulic or pneumatic power. In this instance a cylinder and piston may be substituted for the sleeve 20 and the spindle 16, liquid under pressure or compressed air being supplied in known way as soon

as the lifting jack has to be operated to lift the vehicle.

The jack of the type above described can be employed on any kind of vehicle and as many jacks as there are wheels or sets of wheels may be provided.

I claim:—

1. A jack especially for motor cars of the type permanently mounted on the chassis of the vehicle and adapted to be actuated by hand to lift at least a part of the vehicle, comprising in combination a jack body, a foot on said body, two intermediate members of different lengths pivotally connected at one end to said jack body, the short member to the upper end and the long member near the lower end of the same, means for pivoting the members to the vehicle, and a spindle pivotally connected to the upper end of said jack body and rotatably mounted in the longer of said intermediate members, said spindle adapted to be rotated to displace the upper end of said jack body to swing the same relatively to said long member to lower and raise said foot.

2. A jack as specified in claim 1, in which the pivoting means are arranged substantially in the same horizontal plane.

3. In a jack as specified in claim 1 a bolt connecting the jack body to the short member and plate arranged at the end of the long member remote from the jack body and adapted to rotatably support the operating spindle.

4. A jack as specified in claim 1, in which a spring is arranged between the operating spindle and the long member adapted to mutually support said spindle and said member to prevent rattling when the vehicle is travelling.

5. A jack as specified in claim 1, in which a spring is arranged between the operating spindle and the long member to mutually support said spindle and said long member to prevent rattling when the vehicle is travelling.

6. In a jack as specified in claim 1 a plate arranged at the end of the long member remote from the short member and adapted to rotatably carry the spindle, and abutments on the spindle one on either side of said plate adapted to prevent the longitudinal displacement of said spindle in said plate.

7. A jack as specified in claim 1, in which an abutment is provided on the member fixed to the axle and carrying the pivot to limit the swinging movement of said member away from the other fixing means.

NIELS GADE JENSEN.