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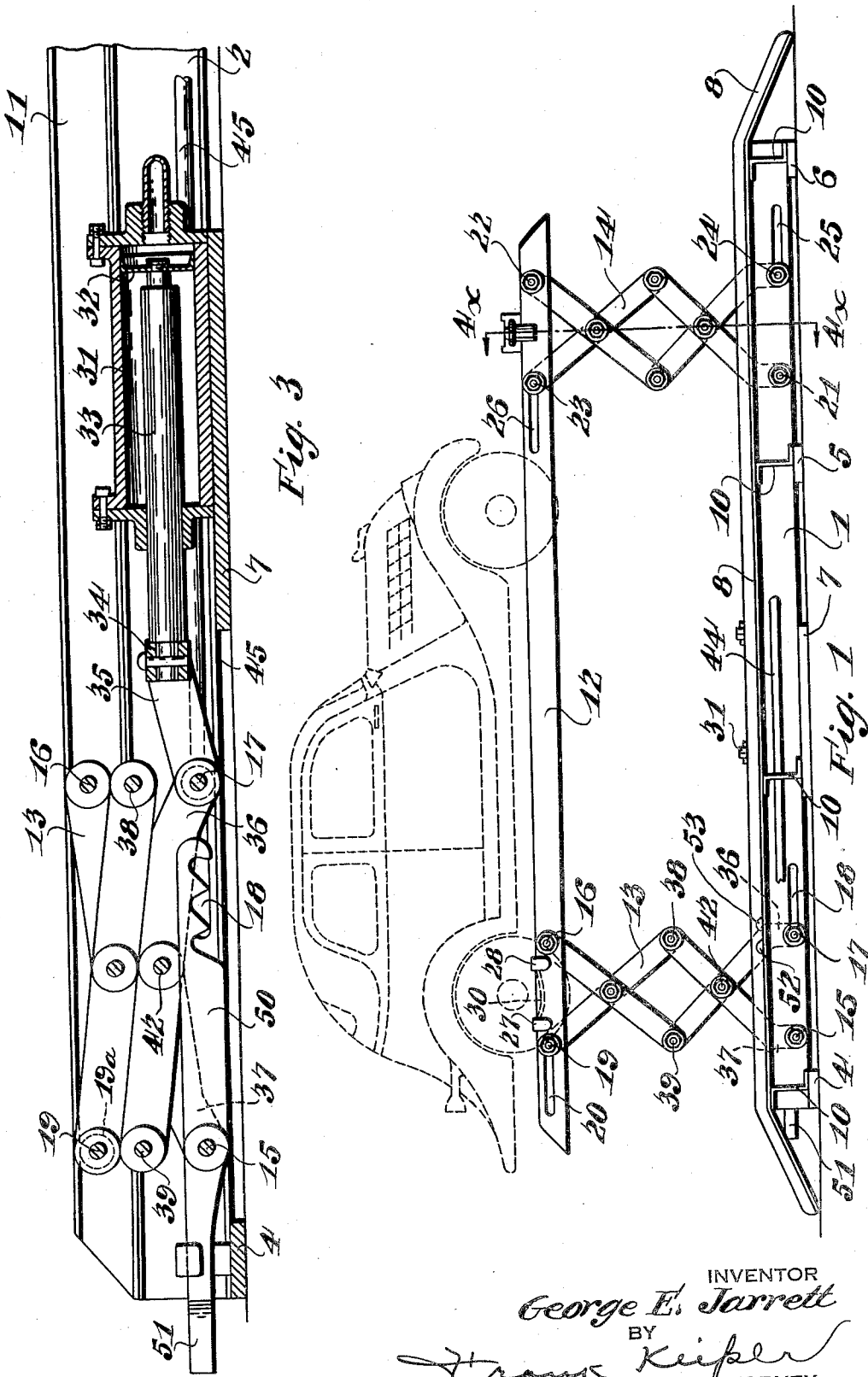
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2,132,343

LIFTING JACK FOR AUTOMOBILES

Filed May 2, 1935

3 Sheets-Sheet 1



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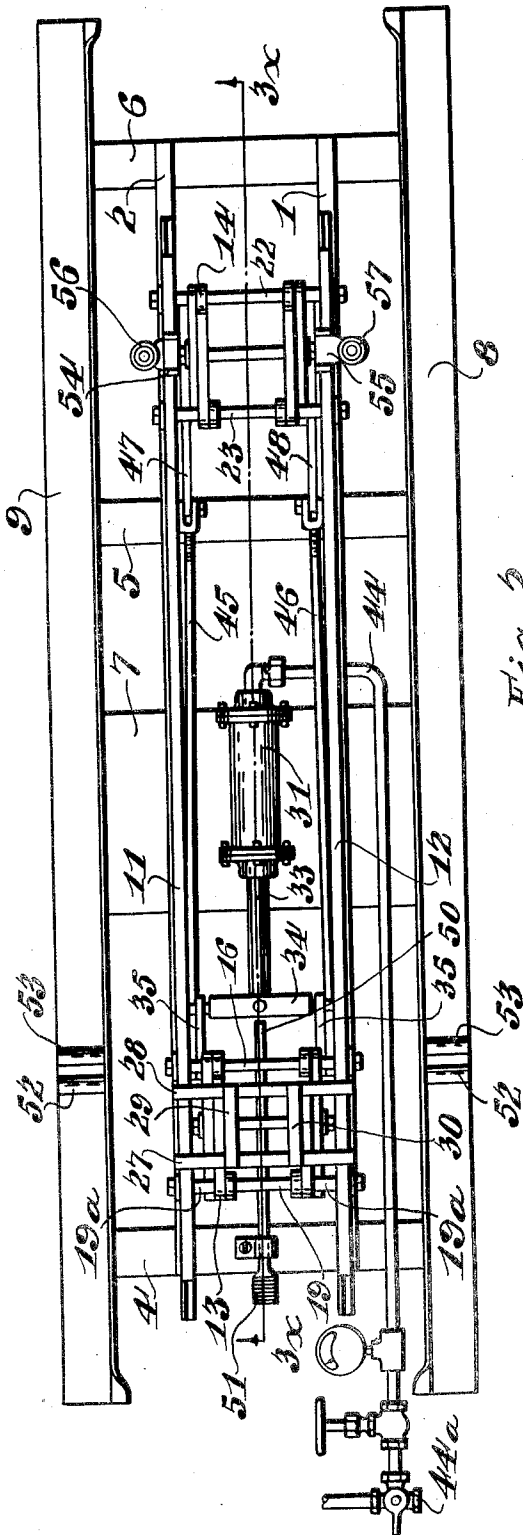


Fig. 2

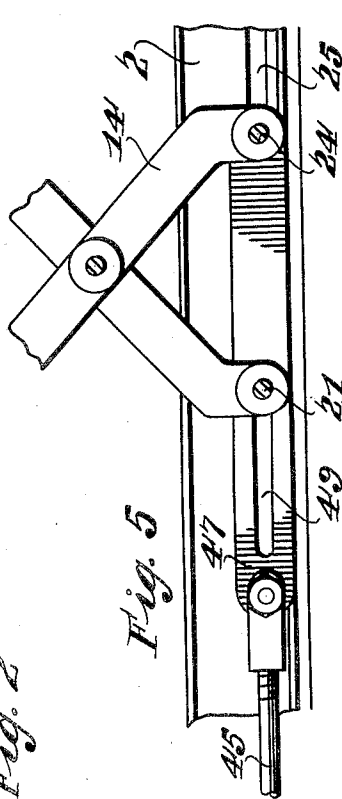


Fig. 5

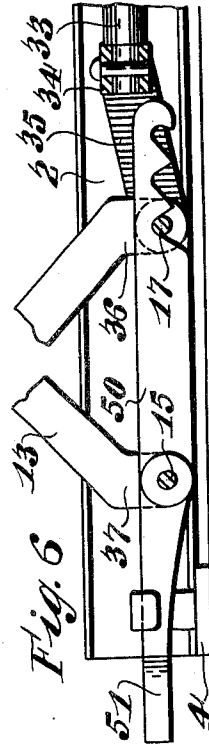


Fig. 6

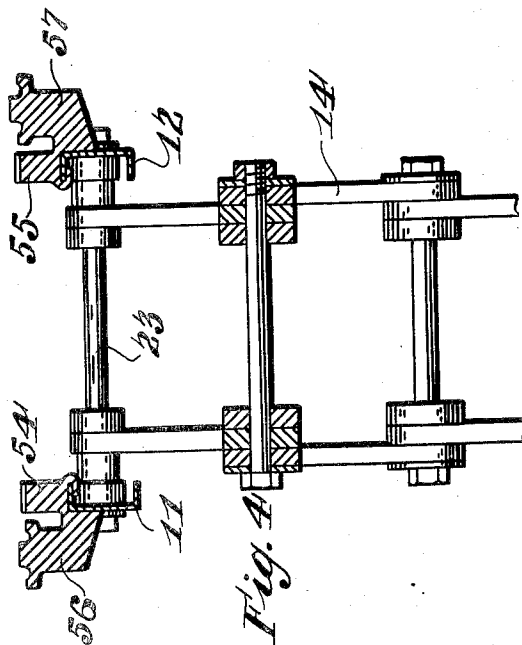


Fig. 4

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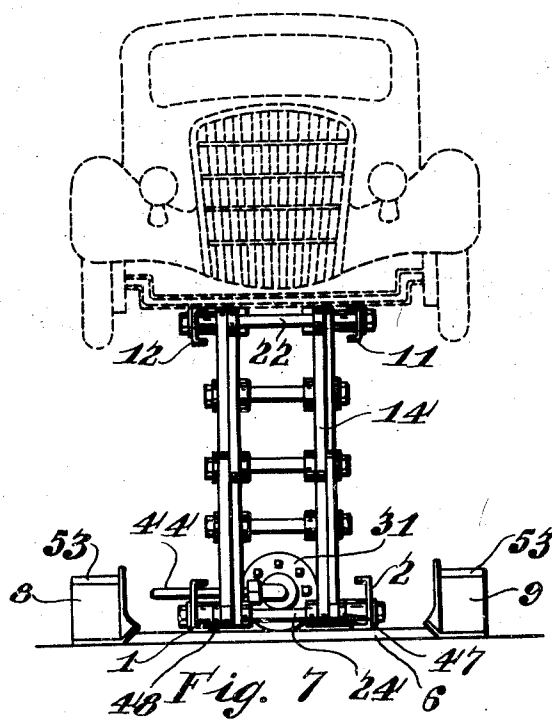
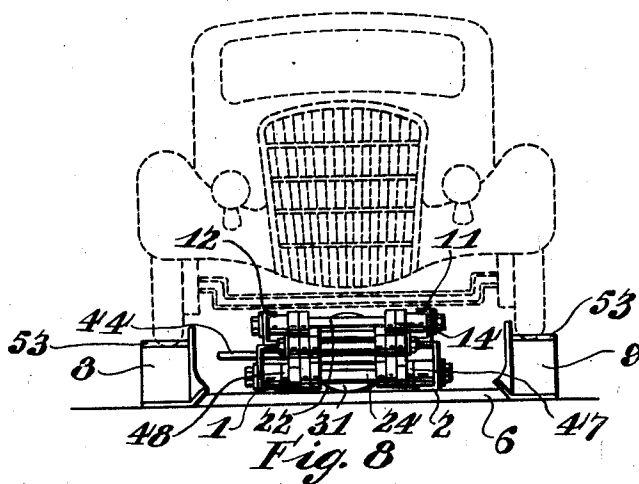
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LIFTING JACK FOR AUTOMOBILES

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3 Sheets-Sheet 3



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2,132,343

LIFTING JACK FOR AUTOMOBILES

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Application May 2, 1935, Serial No. 19,459

3 Claims. (Cl. 254-122)

The object of this invention is to provide a new and improved lifting jack, more especially for lifting an automobile and holding it elevated at both ends so that a workman can work under it.

These and other objects of the invention will be illustrated in the drawings, described in the specification and pointed out in the claims at the end thereof.

In the drawings:

Figure 1 is a side elevation of the lifting jack shown in elevated position with an automobile thereon.

Figure 2 is a top plan view of the jack.

Figure 3 is a section on the line 3x-3x of Figure 2, the jack being shown in lowered position and being partly broken away at the right hand end.

Figure 4 is a vertical section on the line 4x-4x of Figure 1, showing the parts in elevated position.

Figure 5 is a detail view of part of the mechanism for operating the lazy tongs.

Figure 6 is a detail view of the device for locking the lazy tongs in elevated position.

Figure 7 is an elevation of the device as shown in Figure 1, looking at it from the right of Figure 1, and showing the jack in raised position.

Figure 8 is the same as Figure 7 except that it shows the jack in its lowest position.

In the drawings like reference numerals indicate like parts.

In the drawings reference numerals 1 and 2 show the channel bars of the base running lengthwise of the jack, and 4, 5 and 6 represent the cross bars on which the channels 1 and 2 rest and to which they are connected. 7 indicates a plate which is attached to the channels 1 and 2. To the outer ends of the cross bars and plate are fastened the runways 8 and 9, which are adapted to receive the wheels of the car, when the car is run to its first position on the jack. The channels 1 and 2 and the cross bars 4, 5, 6 and 7 all together constitute the base of the jack and rest on the ground. The runways 8 and 9 are supported from the cross bars by the Z-bars or brackets 10, so that the runways stand at a suitable elevation above the floor on which the cross bars rest.

Above this base is the lifting frame, which consists of two channel bars 11 and 12. This lifting frame is supported on the base by the lazy tongs 13 and 14. In the lazy tongs 13 the pin 15 is rigidly fastened in the channels 1 and 2, and the pin 16 is rigidly fastened in the channels 11 and 12. The pin 17 is mounted to slide in

slots 18 provided in the channels 1 and 2, and the pin 19 is mounted to slide or engage in slots 20 provided in the channels 11 and 12. The pin 19 has antifriction rollers 19a, 19a thereon that engage in the channels 11 and 12 and make rolling contact therewith and reduce the sliding contact between the pin 19 and the channels. Similar antifriction rollers are provided on the pins 17, 24 and 26.

Similar pins 21 and 22 are mounted rigidly in the lower and upper channels, and pins 23 and 24 are mounted to slide in the slots 25 and 26 in the lower and upper channels, as shown at the right of Figure 1. The upper channels 11 and 12 are tied together by the pins 16 and 22 and by a cradle, which consists of two cross bars 27 and 28 which are fastened to the channels 11 and 12. These cross bars are tied together by the straps 29 and 30.

Fastened to the plate 7 is the cylinder 31. In this cylinder slides a piston 32, which in turn drives the piston rod 33, to which is connected a cross bar 34. To the ends of this cross bar are attached the links 35, 35 that are connected by the pin 17 to the free end 36 of the lazy tongs 13. When the piston 32 moves to the left from the position shown in Figure 2, it pushes the pin 17 toward the pin 15 and causes the lazy tongs to move from the position shown in Figure 3 to the position shown in Figure 1. The lifting of the lazy tongs is facilitated by the shape of the lower members 36 and 37 of the lazy tongs. These are bent down, so that the pins 15 and 17 are further from the pins 38 and 39 than the pins 38 and 39 are from the pins 16 and 19. In so doing, the pins 15 and 17 are placed further away from a dead center on the pin 42, making it easier to lift the lazy tongs through the first part of its movement than would otherwise be possible.

The piston 32 is driven by compressed air, which is admitted through a tube or pipe 44 and valve 44a. The lazy tongs at the left hand end of Figures 1 and 3 are lifted in this way. To raise the lazy tongs at the other end, I provide as follows: Connected to the pin 17 are the links 45 and 46, which in turn are connected to the bars 47 and 48. These bars are slotted as indicated at 49 and these slots encircle the pin 21 and enable the bars to ride thereon. These bars are connected to the pin 24 and draw the pin from the right to the position shown in Figure 5, causing the lazy tongs 14 to erect to the position shown in Figure 1 at the same time that the lazy tongs 13 is erected; that is, the pins 17

and 24 move together to the position shown in Figure 1 when the piston 32 moves, and both sets of lazy tongs will therefore act together to lift the channels 11 and 12 simultaneously at both ends.

On the stationary pin 15 is pivoted the latch 50, which has recesses at the right hand end thereof that are adapted to engage the pin 17 and hold the pin with the lazy tongs in either of three positions; namely, fully erected, in intermediate position, or in its lowest position. The right hand end of the latch extends out to the left as indicated at 51 and forms a treadle, on which the operator can step and press it down at the left hand end and release the latch from the pin 17 at the right hand end. The recesses in the latch are shaped so that the pin 17 will lift the right hand end of the latch as the pin 17 moves to the left.

In operation, the device acts as follows:

The automobile is run on the runways 8 and 9, the compressed air is then turned into the cylinder 31, and the lazy tongs are lifted to the position shown in Figure 1. As the lazy tongs lift they carry up the channel bars 11 and 12, which engage the automobile from underneath the body thereof, and do not engage the wheels. The bars 1 and 2 engage under the front axle, and the cradle formed by the bars 27 and 28 engage under the differential housing, and by this engagement the lazy tongs operate to lift the car off of the runways 8 and 9. So that the cradle formed by the bars 27 and 28 will correctly engage under the differential housing, it is necessary that the car be stopped on the runways 8 and 9 with the wheels in a definite place. This is secured by using the blocks 52 and 53 which are fastened on the runway. When the rear wheels rest on these blocks the car is correctly positioned for the purpose above mentioned.

For the purpose of lifting the car at the front, blocks 54 and 55 are provided which are mounted to slide on the channels 11 and 12. These blocks are positioned so that they will engage under the front axle. Each of these blocks has an extension 56 and 57 which engages under the knee-action, if such is present, and in this way the car is held in level position.

I claim:

1. A lifting jack for automobiles comprising a

base adapted to rest upon the ground, running boards on either side of the base forming a part thereof and adapted to form a runway for the tires of an auto, a lifting frame above the base adapted to engage the frame of the auto inside of the tires thereof, lazy tongs interposed between the base and the lifting frame at each end thereof, and positively connected to both, a cylinder and a piston mounted horizontally on the base, said piston moving horizontally and being connected to the lazy tongs at one end of the jack, and being adapted to move the lazy tongs to lift the lifting frame, links connecting the two sets of lazy tongs whereby both sets are caused to operate in unison by one cylinder and piston.

2. A lifting jack for automobiles comprising a base adapted to rest upon the ground, a lifting frame above the base, lazy tongs interposed between the base and the lifting frame at each end thereof, and positively connected to both, a cylinder and a piston mounted horizontally on the base, said piston moving horizontally and being connected to the lazy tongs at one end of the jack, and being adapted to move the lazy tongs to lift the lifting frame, links connecting the two sets of lazy tongs whereby both sets are caused to operate in unison by one cylinder and piston, a latch mounted on the base and adapted to engage the lazy tongs when in extended position, and hold them in that position.

3. A lifting jack for automobiles comprising a base adapted to rest upon the ground, a lifting frame above the base, lazy tongs interposed between the base and the lifting frame at each end thereof, and positively connected to both, a cylinder and a piston mounted horizontally on the base, said piston moving horizontally and being connected to the lazy tongs at one end of the jack, and being adapted to move the lazy tongs to lift the lifting frame, links connecting the two sets of lazy tongs whereby both sets are caused to operate in unison by one cylinder and piston, a latch mounted on the base and adapted to engage the lazy tongs when in extended position, and hold them in that position, a pedal on said latch by which it may be raised to release the lazy tongs and permit the lowering of the lifting frame.

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