ABSTRACT OF THE DISCLOSURE

An auto transmission jack as an accessory for an auto lift to support the transmission when released from the auto and permit dropping of the lift and jack until the jack is supported upon the floor on wheels to permit moving the jack and supported transmission away from the lift for repair and re-installing the repaired transmission in the same manner.

The present invention relates to auto jacks and more particularly to a jack to be used with an auto lift that is designed specifically for removing and returning a transmission from or to its normal affixed relationship with the auto engine.

In the removal of a transmission from an automobile for repair or replacement, there is considerable difficulty because of its weight and because it is only accessible from below the auto. Most transmissions are removed by lifting the auto on a typical car hydraulic or electric hoist, so that the mechanic can get under the car to remove all the attaching bolts. The transmission must be supported during the removal, therefore various forms of jacks have been designed for this specific operation. All of these jacks are supported upon the floor and therefore require a long lift or drop as most of the cars are first lifted or jacked up to give the mechanic working space. In view of the considerable weight of the transmission, it must be handled very carefully and the jack must be adequate for the operation. The average garage or service station doing this type of work is equipped with a lift and the car is first positioned upon the lift to provide working space.

The car is raised to permit the mechanic to get under the car. To support the transmission during the removal operation, a jack is positioned under it generally supported upon the floor. After the transmission is released from the engine, the jack is lowered to drop it to the floor or in a position for the mechanic to work on it.

The jacks used are generally mounted on a dolly, that is, they are on wheels and movable in any direction to permit rolling the transmission out from under the car. The car may remain upon the lift until the transmission is repaired or replaced and again hoisted into position and bolted in place.

It is an object of this invention to provide a special jack for removal of transmissions from cars in which the jack is supported entirely upon the auto lift during removal or replacement or installation of the transmission.

It is a further object of this invention to provide a special jack for removal of transmission from cars in which the jack is supported entirely upon the auto lift during removal or replacement or installation of the transmission and in which the jack is supported upon a dolly that hangs from the jack when the lift is raised, but contacts the ground when the lift is lowered.

Other objects of this invention shall be apparent by reference to the accompanying detailed description and the drawings in which:

FIG. 1 is a side elevational view of a hydraulic lift supporting a car and the transmission jack.

FIG. 2 is a front elevational view slightly enlarged showing the transmission jack hanging between the runners of a car lift.

FIG. 3 is an exploded elevational view showing the car and lift raised with the transmission jack supported upon a dolly on the ground, and

FIG. 4 is a plan view of the transmission jack supported in a hanging relationship upon the car lift.

Referring to the drawings and particularly FIG. 1 there is illustrated an auto lift 10 which is comprised of a central hydraulically actuated shaft 11 mounted in a hydraulic cylinder 12 in which the shaft 11 supports a cross member 14 and upon which a pair of rods 15 are mounted in spaced relationship so that a car 16 may be supported upon the air lift 10. The subject of this invention is a specially designed jack 17 used for the removal of transmission and for the replacement of transmissions. Jack 17 is designed to be used only with an auto lift such as that illustrated. Therefore, referring to FIG. 2, there is illustrated a front elevational view of the transmission jack 17 in which the jack is positioned in a hanging relationship supported between the car supporting runners 15. Referring to FIGS. 2 and 4 jack 17 is comprised of a pair of rods 18 positioned in spaced relation and joined by reinforcing rods 19 to provide a supporting frame for said jack. A plate 20 is positioned centrally between rods 18 and rigidly affixed or welded thereto. At either end of each rod 18 there is provided a wheel 21. Wheel 21 is retained on shaft 18 by a cotter pin and may be held in this position by a collar 22 on shaft 18.

Wheels 21 are spaced to fit upon the runners 15 and preferably to fit upon the tread of the runner 15 within the raised side portion 15A. Thus the framework of the jack is positioned in a rolling relationship upon the two runners 15. Plate 20 supports a hydraulic jack 24 in a central position, the back end of jack 24 being affixed or welded to plate 20. Jack 24 is provided with a piston 25. Piston 25 at its upper end is provided with a plate 26, plate 26 being affixed or welded to a special transmission supporting plate 27.

A dolly 30 is rotatably supported under plate 27, that is, plate 27 is provided with a downwardly projecting shaft 31. A bearing 32 is mounted on shaft 31 and dolly 30 is mounted under bearing 32 with shaft 31 passing through the supporting platform 30A of dolly 30. The shaft 31 may be pinned or affixed as illustrated to retain dolly 30 in a rotatable supporting position for the jack 17. It is to be understood that the dolly 30 is of a standard type in which there is platform 30A and a swivel wheel 40 mounted at each corner of platform 30A thus permitting dolly 30 to be rolled in any direction upon the floor when the jack is dropped to the floor. The transmission supporting plate 27 is specially designed, that is, it is provided with L shaped cutout keys 34 in opposed relation and centrally positioned on each side of plate 27 so that when plate 27, as in FIG. 2, is raised to abut with the lower surface of a transmission, a pair of chains or cables 41 may be passed around the transmission and each end of the cable may be secured in the L shaped key 34 simply by providing an enlarged end on the chain or cable. One or two cables may be used as desired to strap the transmission firmly upon plate 27. In operation a car 16 may be lifted to an approximate working position and jack 17 may be rolled along the runners 15 so that plate 27 may be raised to a supporting position under the transmission of a car. In this position the bolts and all connections for the transmission may be removed and the hydraulic jack 24 may be lowered dropping the transmission. With the transmission free of all attachments to the car, the mechanic may step out from under the lift and drop the lift 10 until the dolly 30 rests upon the ground supporting the transmission. The framework of the jack 17 must then be rotated so that wheels 21 are removed from runners 15. The lift 10 may then again be raised leaving the dolly supported transmission jack and
the transmission upon the ground where it may be rolled to any desired spot for repair. In a reverse sequence the repaired transmission or a new transmission may be positioned upon the plate 27 and firmly retained in position by cables or chains 41 and with the car 16 in a raised position on lift 10, the dolly 30 may be rolled to an approximate position below the car. The lift may be lowered and the dolly 30 may be moved as desired so that the transmission falls into line with its intended position and when the runners 15 of the lift 10 are low enough as illustrated in FIG. 2, the framework of the jack may be rotated so that wheels 21 will be in the position as illustrated in FIG. 2 and the lift may then be raised thus lifting the transmission jack and its supporting dolly off the floor and the lift may be raised to a desired height for the mechanic. In the position as illustrated in FIG. 1, the hydraulic jack 24 may be actuated to lift the transmission into an exact position for installation of all of the necessary attachments. At the same time, the whole jack may be moved forward or rearward on the runners 15 to assist in the positioning of the transmission for attachment. When the transmission is attached, jack 24 may be dropped and the lift 10 may be dropped. As soon as dolly 30 contacts the floor, the framework may be turned releasing wheels 21 from runners 15 and by slightly lifting lift 10, the transmission jack 17 may be rolled out of the way. The lift may then be dropped to the floor and the car removed from the lift.

Although we have shown a particular type of hydraulic lift, the transmission jack may be used with any lift where the car is supported upon a pair of runners and although we have shown a hydraulic jack mounted upon the transmission jack, any type of jack, whether hydraulic or mechanical, may be utilized and although we have shown a particular form of plate for attachment of the transmission, other forms of transmission plates may be utilized without departing from the spirit of this invention and although we have shown one form of dolly to support the transmission jack, any form of dolly may be utilized without departing from the spirit of this invention and this invention shall be limited only by the appended claims.

What is claimed is:

1. In combination a jack and auto lift in which said jack is specifically designed for removal of the transmission of an auto, said auto lift having two spaced runners to support a car, said jack supported upon a hanging platform that spans the space between runners of said auto lift, said jack and hanging platform affixed to a dolly, means to lift said jack with an auto upon said lift, means to position said jack under the transmission of said auto and raise said jack to support said transmission, means to lower said transmission when it has been detached from said auto, means to support said jack and transmission upon said dolly when they are lowered to the ground, means to release said hanging platform from said auto lift and raise said auto lift to clear said jack and supported transmission.

2. In a device according to claim 1 in which said hanging platform is rotatably affixed to said dolly.

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