Nov. 23, 1943. M. MORAN 2,335,130

COMBINED JACK AND LIFTING TACKLE

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Fig. 1

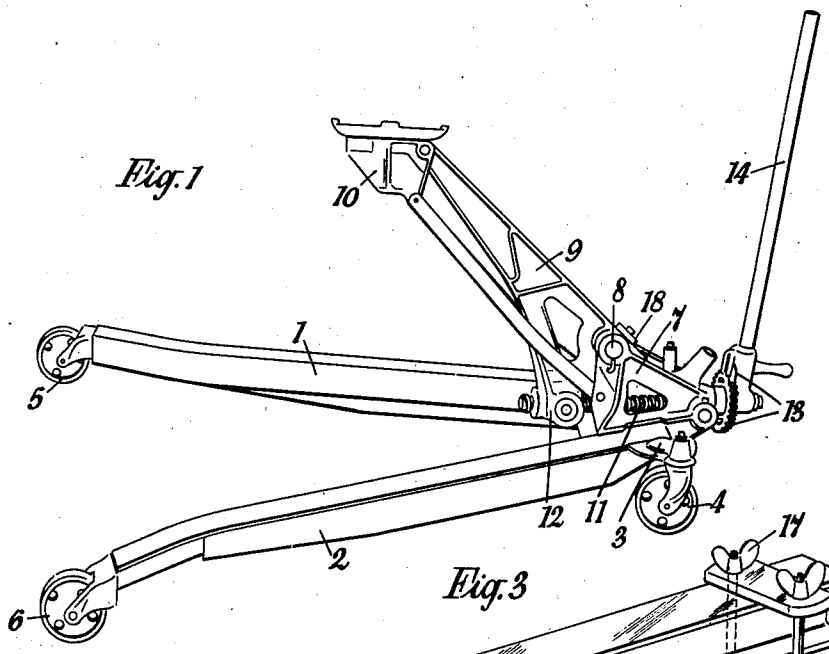


Fig. 3

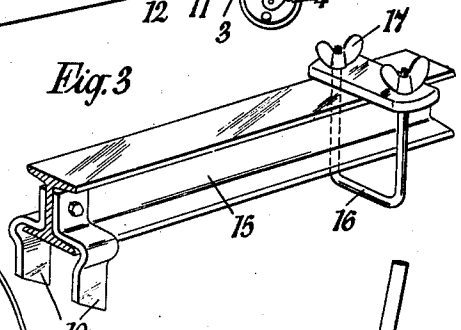
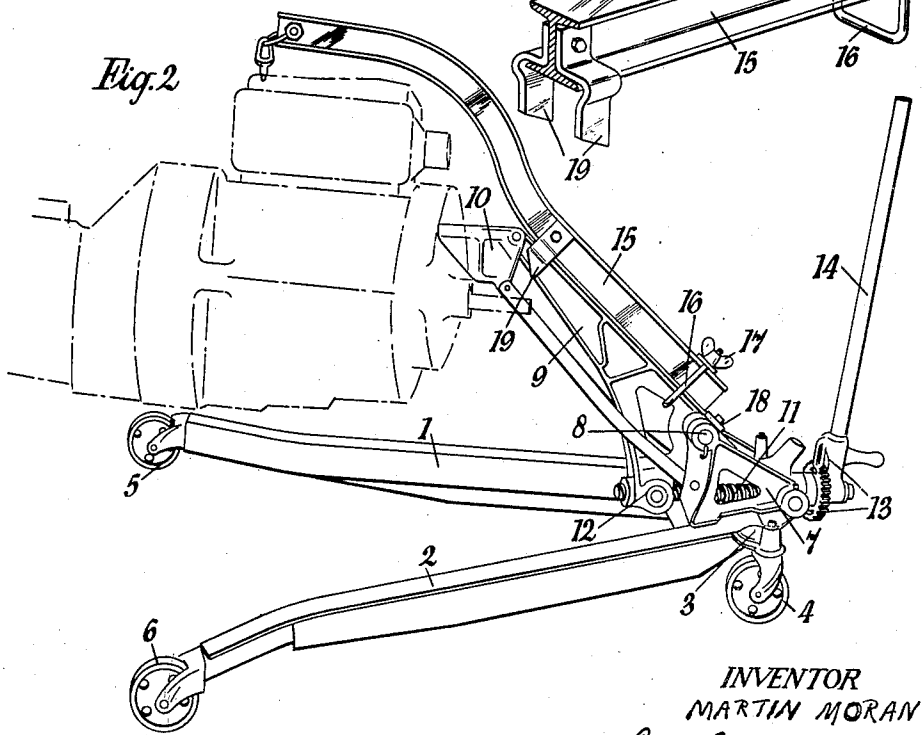


Fig. 2



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COMBINED JACK AND LIFTING TACKLE

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4 Claims. (Cl. 254—2)

This invention is for improvements in or relating to a combined jack and lifting tackle and has for its object the provision of mechanism for use in garages and like engineering shops in which it is necessary from time to time either to raise an object by exerting pressure from underneath or exerting a pull from above. Particularly in automobile engineering there is provided jacks which are arranged to extend under the front and back axles and raise the vehicle from the ground by an upward thrust, and there has not hitherto been provided a simple and composite mechanism which for example will enable an engineer either to raise a vehicle by exerting pressure from underneath or enable him to remove the engine from an automobile by lifting it bodily in an upward direction and then forwardly away from the chassis, and it is the primary object of the present invention to provide such a mechanism which is simple in its construction, cheap to manufacture and easy to operate.

According to the present invention there is provided a combined jack and lifting tackle which comprises a beam pivotally connected at one end to a carriage so as to be movable about the pivot in a substantially vertical plane, and means for permitting an overhanging arm to be mounted upon the said beam in such a manner as to permit the device to be employed either by the beam exerting pressure through a crutch head underneath an object or by the overhanging arm exerting a pull upon the object from above.

The invention will be more particularly described with reference to the accompanying drawing, in which:

Figure 1 illustrates a combined jack and lifting tackle wherein the lifting tackle has been removed to enable the device to be employed solely as a jack;

Figure 2 illustrates the jack shown in Figure 1 with an overhanging arm attached thereto so as to enable the device to be employed as a lifting tackle for transporting by a pull from above an object from one place to another; and

Figure 3 is a perspective view of the lower end of the overhanging arm of the said device.

Referring to the drawing, the jack illustrated in Figure 1 comprises a carriage built up of two rearwardly extending arms 1 and 2 mounted at one end in close proximity to one another upon a support 3 carrying a castor 4. The free ends of the arms 1 and 2 carry castors 5 and 6. Mounted at the adjacent ends of the arms 1 and 2 is a frame 7 to which is pivotally attached at 8 a beam 9 which carries at its free end a crotch head 10. Extending through the frame 7 is a worm 11 arranged to engage with a screw-threaded member 12 attached to the beam 9, the said worm 11 being operable by a ratchet and pawl mechanism 13 and by a lever 14. The operation of the jack is such that when the lever 14 is swung periodically backwards and forwards it turns the worm 11 which extends into the screw-threaded member 12 so as either to raise or lower the free end of the beam 9 about its pivot 8 in a substantially vertical plane. Normally when raising an object the crutch is first placed underneath the object, for example the front axle of an automobile, the lever 14 is thereafter operated and the free end of the beam is moved in a vertical plane so as to raise the vehicle from the ground. When it is desired to use the device as a lifting tackle an overhanging arm 15 is placed upon the upper side of the beam 9 in the manner indicated in Figure 2 and a U-bolt 16 is threaded through the beam and around the overhanging arm and the butterfly nuts 17 of the U-bolt are tightened so as to draw the overhanging arm into close contact with the beam 9. In order to prevent the beam from unintentionally moving in a downward direction the beam is provided with a stop 18 against which the lower edge of the overhanging arm bears. At a point adjacent to the free end of the beam there is provided on the overhanging arm two lugs 19 which are arranged to extend on either side of the beam and prevent the overhanging arm moving laterally with respect to the beam when it is placed in position.

The operation of the device is as follows:

When it is desired to move an engine from an automobile the carriage of the tackle is moved so that the arms 1 and 2 extend beneath the same and the free end of the overhanging arm extends above the engine. The engine is then connected by means of shackle, link, swivel, rope, magnet or like connection to the overhanging arm and in the lifting mechanism in the example shown in the drawing, the ratchet and pawl mechanism is operated so as to raise the engine clear of the chassis and permit it to be drawn forward away from the automobile.

It will be appreciated that the means for raising the beam and the overhanging arm in an upward or downward direction can be operated in any desired manner other than that illustarted in the accompanying drawing, for example if necessary it may be electrically, hydraulically or mechanically operated.

Thus, it will be seen that according to the present invention there is provided a combined

jack and lifting tackle which is simple in its construction, efficient in its operation and easy to manipulate.

What I claim as my invention and desire to secure by Letters Patent of the United States is:

1. A combined jack and lifting tackle comprising a portable carriage, a beam provided at one end with a crutch head and pivotally connected at the other end to the carriage and arranged to swing about its pivot in a substantially vertical plane, an overhanging arm arranged on said beam to swing vertically therewith and provided with means for detachably securing it to said beam and extending outwardly beyond the beam and having its outer portion arranged to overhang an object to enable the combined device to be employed for exerting a pull upon the object from above, the beam being adapted to exert pressure through the crutch head underneath the object, when the arm is removed from the beam, and means connected with the carriage and the beam for raising and lowering said beam.

2. A combined jack and lifting tackle comprising a portable carriage, a beam provided at one end with a crutch head and pivotally connected at the other end to the carriage and arranged to move about its pivot in a substantially vertical plane, an overhanging arm having a straight portion at its inner end arranged on and in parallel relation to the upper face of said beam to swing with the latter and provided with means for detachably securing it to the said beam and at its outer end extending upwardly and outwardly beyond the beam to overhang an object to enable the combined device to be employed for exerting a pull upon the object from above, the beam being adapted to exert pressure through the crutch head underneath the object when the arm is removed from the beam, and means connected with the carriage and the beam for raising and lowering the beam.

3. A combined jack and lifting tackle comprising a portable carriage, a beam provided at one end with a crutch head and pivotally connected at the other end to the carriage and arranged to move about its pivot in a substantially vertical plane, an overhanging arm arranged on and provided with means for detachably securing it to said beam and extending outwardly beyond the beam and having its outer portion arranged to overhang an object to enable the combined device to be employed for exerting a pull upon the object from above, said arm being provided with spaced depending lugs intermediate its ends to engage opposite sides of the beam to prevent lateral movement of the arm with relation to the beam, the beam being adapted to exert pressure through the crutch head underneath the object, when the arm is removed from the beam, and means connected with the carriage and the beam for raising and lowering said beam.

4. A combined jack and lifting tackle comprising a portable carriage, a beam provided at one end with a crutch head and pivotally connected at the other end to the carriage and arranged to move about its pivot in a substantially vertical plane, an overhanging arm arranged on and provided with means for detachably securing it to said beam and extending outwardly beyond the beam and having its outer portion arranged to overhang an object to enable the combined device to be employed for exerting a pull upon the object from above, said arm being provided with spaced depending lugs intermediate its ends to engage opposite sides of the beam to prevent lateral movement of the arm with relation to the beam, a stop carried by the beam and engageable by the arm to prevent unintentional downward movement of the arm, the beam being adapted to exert pressure through the crutch head underneath the object when the arm is removed from the beam, and means connected with the carriage and the beam for raising and lowering said beam.

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