No. 647,744. Patented Apr. 17, 1900.

# A. E. S. CRAIG.

## JACK FOR MOTOR TRICYCLES, &c.

(Application filed Nov. 17, 1899.)

(No Model.)

Fig. 1.

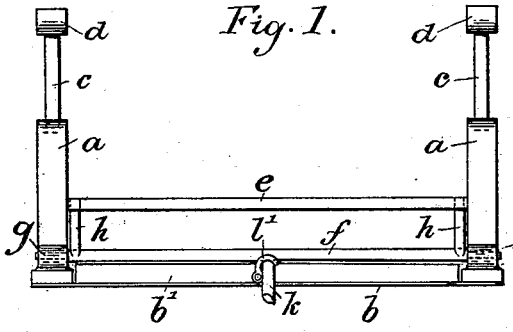



Fig. 2.

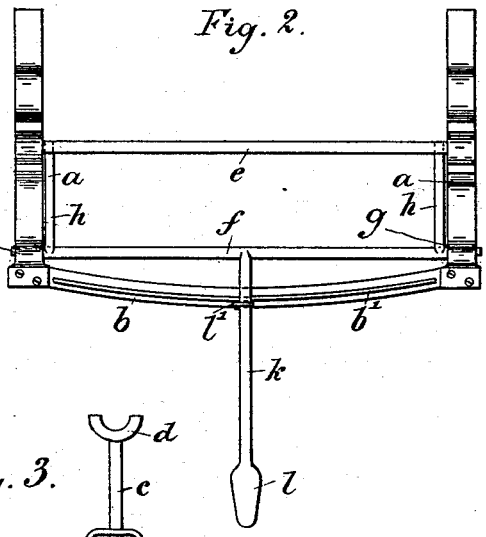



Fig. 3.

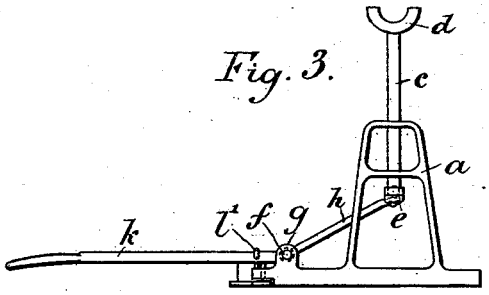



Fig. 4.

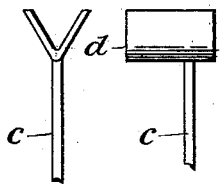



Fig. 9.

Fig. 5.

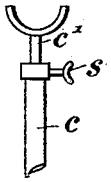



Fig. 7.

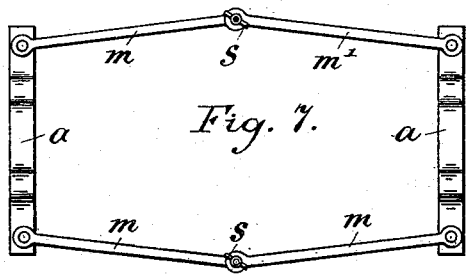



Fig. 8.

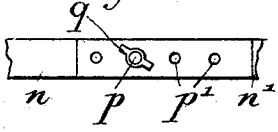
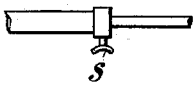



Fig. 6.

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# UNITED STATES PATENT OFFICE.

ARTHUR EDWARD STEWART CRAIG, OF LONDON, ENGLAND.

## JACK FOR MOTOR-TRICYCLES, &c.

SPECIFICATION forming part of Letters Patent No. 647,744, dated April 17, 1900.

Application filed November 17, 1899. Serial No. 737,309. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR EDWARD STEWART CRAIG, a subject of the Queen of Great Britain and Ireland, residing at 17 Grand Parade, Putney, London, England, have invented certain new and useful Improvements in Lifting-Jacks for Motor-Tricycles and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to lifting-jacks or holders, more particularly intended for simultaneously raising two or more wheels of motor cars, carriages, tricycles, and the like and when raised to hold them in a suitable position for revolving the wheels.

In order that this invention may be fully understood, I will now proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the lifting-jack or support; Fig. 2 a plan, and Fig. 3 a side view, thereof. Figs. 4 to 9 illustrate details hereinafter referred to.

This invention consists, essentially, in the combination of two rising and falling rods or jacks provided with independent guides and united in such a manner as to allow of their being simultaneously operated by mechanical or other means, with the more particular object of simultaneously raising and supporting two or more wheels of a motor car, carriage, tricycle, or the like.

In carrying this invention into practical effect in the form preferably employed, and which is illustrated in Figs. 1 to 3 of the accompanying drawings, the lifting-jack comprises two vertical standards or uprights *a*, of cast-iron or other suitable material, secured the required distance apart by a suitable stay-rod, such as *b*. Within each of the standards *a* a sliding rod or jack-stem *c* is arranged, furnished at its upper extremity with a supporting-piece, such as *d*, which may be of V, U, or other suitable shape for the purpose in view, while the lower extremities of these rods are united by a cross-bar *e*, so that when the latter is raised or allowed to fall the sliding bars *c* are simultaneously operated. For this purpose toward the front of the stand a transverse bar *f* is pivoted within bearings *g*, forming a part of the uprights or standards *a*, and which is furnished toward each end with a projecting right-angled arm *h*, the extremities of which bear against the under side of the cross-bar *e*. At or about the center of the transverse rod *f* an operating bar, rod, or lever *k* is welded or secured in any other convenient manner, the free extremity of this bar or rod being furnished with or shaped to form a foot-plate *l*, or at this part it ma be provided with a handle.

The operation of this lifting-jack is as follows: The supporting-pieces *d* are arranged beneath the axle of the vehicle to be raised. The operating rod or lever *k* is then depressed, causing the pivoted bar *f* to turn, which raises the extremities of the right-angled arms *h*, bearing against the cross-bar *e*. In this manner the cross-bar *e* is lifted and simultaneously raises the two sliding rods *c*, carrying the supports *d*. In the raised or any other intermediate position the operating rod or lever *k* may be locked by means of a small hook or catch *l'*, pivoted to the upstanding rib *b'* of the stay-rod *b* and designed to turn over same, or any other equivalent device of this nature may be employed.

I wish it to be understood that I do not in any way restrict myself to the exact shape and arrangement of the parts herein described and shown. For instance, the sliding rods *c* in addition to sliding within the uprights or standards *a* may be arranged to slide without same in suitable guides, while the stay-rod *b* may be modified in form and one, two, or more employed, as required. Furthermore, the operating-lever *k*, in addition to being depressed by the foot or hand, may be operated by means of a screw or by hydraulic or other pressure.

This invention is further capable of being modified in several ways to allow of the parts of the lifting-jack being adjusted as regards their length and height, and in this manner means is provided for the transverse adjustment of the rods *e f* and stay rod or rods *b* and the vertical adjustment of the sliding rods *c*, so as to enable one lifting-jack to be employed for lifting vehicles of any size within certain limits.

In the method shown at Fig. 4 the width of

the stand or support may be increased by causing the supports *d*, which may be V-shaped, as shown, to be held eccentric to the sliding rods *c*, supporting them, so that by reversing them a greater or lesser width is obtained.

As shown at Figs. 5 and 6, vertical and transverse adjustment may be obtained by forming the rising and falling bars in two parts *c c'*, arranged to telescope one within the other and be secured at the required height by a set-screw or the equivalent, such as *s*, while the transverse bars or rods of the device may likewise be formed in two parts in the manner indicated at Fig. 6, one part arranged to telescope within the other and be secured in the required position by a set-screw or its equivalent, such as *s*.

Another method of obtaining transverse adjustment of the standards or guides *a* consists, as indicated in Fig. 7, in forming such tie or stay in two or more pieces, such as *m m'*, pivoted at their extremities to the uprights or standards *a*, and further connected and secured together in the required position by a thumb or set screw or its equivalent, such as *s*, so that they may be opened and closed after the manner of a trellis. When the guides *a* are adjustable in this manner, the arms *h* are placed nearer together than shown in Fig. 2, so that the guides may be slid upon the end portions of the bar *f*. The cross-pieces *b* and *e* are adjusted to the guides in their various positions in any approved manner—as, for instance, in the manner illustrated in Fig. 8.

Adjustment may also be obtained, as shown in Fig. 8, by forming the bars, rods, or the like in two or more parts with overlapping extremities, the one extremity carrying a fixed pin or stud, such as *p*, designed to pass through one of a series of holes *p'*, formed in the extremity of the other part and designed to be locked by a thumb-screw or its equivalent, such as *q*, or the said bars, rods, or the like may be formed in two parts, one part screwing into the other, as shown at Fig 9, while it is obvious that other methods of a similar nature may be employed for securing adjustment of the parts when required.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lifting-jack, the combination, with two guides, and means for connecting them together; of jack-stems slidable in the respective guides, means for coupling the said stems together, and a single operating mechanism for sliding the said stems simultaneously in the guides, substantially as set forth.

2. In a lifting-jack, the combination, with two guides, and means for connecting them together; of jack-stems slidable in the respective guides, a cross-bar coupling the said stems, a bar pivoted in the said guides and provided with arms which project under the said cross-bar, and means for oscillating the said bar, thereby operating the said stems simultaneously, substantially as set forth.

3. In a lifting-jack, the combination, with two guides, and adjustable connections for securing the said guides together at different distances; of jack-stems slidable in the respective guides, means for coupling the said stems together, and a single operating mechanism for sliding the said stems simultaneously in the guides, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR EDWARD STEWART CRAIG.

Witnesses:
CHAS. LEASON,
WM. WOODCOCK.