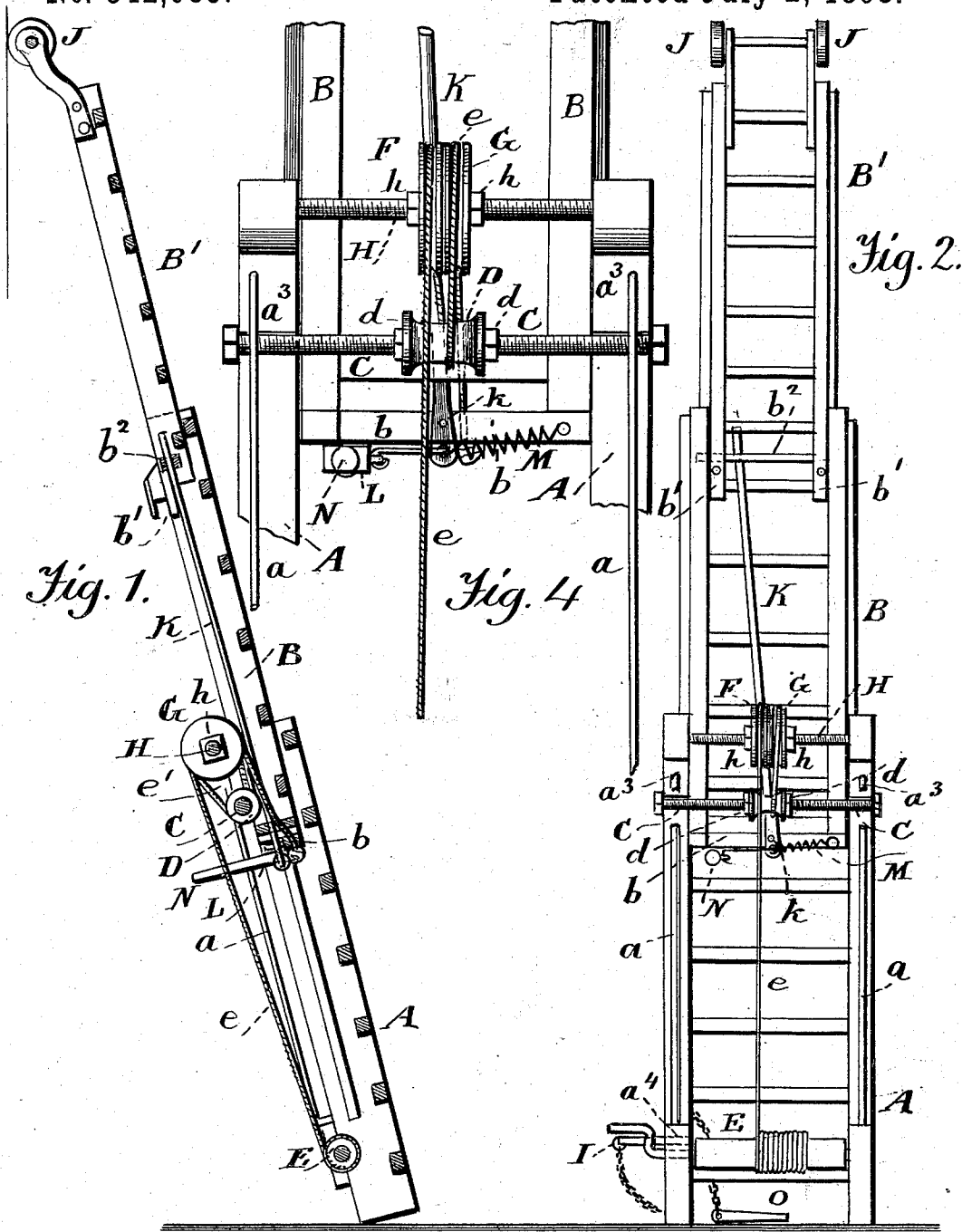


(No Model.)

G. F. LAWVER.
TRIPLE LADDER.

No. 542,085.

Patented July 2, 1895.



Witnesses. *A. Ruppert.* *G. B. Fowler.* *Fig. 3.*

Inventor:
George F. Lawrence
By
Thomas P. Simpson
Atty

UNITED STATES PATENT OFFICE.

GEORGE FRANKLIN LAWVER, OF UNIONTOWN, KANSAS.

TRIPLE LADDER.

SPECIFICATION forming part of Letters Patent No. 542,085, dated July 2, 1895.

Application filed September 21, 1894. Serial No. 523,695. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FRANKLIN LAWVER, a citizen of the United States, residing at Uniontown, in the county of Bourbon and State of Kansas, have invented certain new and useful Improvements in Triple Ladders; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The special object of the invention is to make a triple or three-section ladder whose sections may be run into one another or extended and held conveniently at the desired adjustment.

Figure 1 of the drawings is a longitudinal vertical section; Fig. 2, a bottom elevation, and Fig. 3 a detail view of the connection between the two upper sections. Fig. 4 is an enlarged bottom view.

In the drawings, A represents the ground-section, to which is coupled the second or middle section B by a tongue and groove, the latter being thus enabled to slide into the former. The section A has on its under side the keeper-guides *a a*, in which is moved the screw C, carrying the loose middle pulley D between the two jam-nuts *d d*.

E is the windlass, whose rope *e* holds in a loop *e'* the pulley D after passing over a superposed pulley F, then around and under the pulley D, then up over the pulley G, and finally down to the cross-piece *b* of the middle section B. The pulleys F G are arranged loosely on a fixed screw H between the jam-nuts *h h*.

B' is the top or third section of the ladder and connected by tongue and groove with the section B, so as to be run into it. The section B' has bearings *b' b'*, in which rests the traveling screw when the ladders are nested together and said shaft is at the lower end of the guideways *a* on section A.

*b*³ is a cross-slide in the lower end of section B', which has a tenon *b*³ to be run into the opening *b*⁴ to lock the two ladder-sections together. This slide *b*³ is operated by a lever K, whose upper end passes loosely therethrough,

which fulcrums on a pin *k* in the cross-piece *b*, and which is held in position by the spring M, so as to retain the tenon *b*³ in the opening *b*⁴. Opposite to the spring is attached the wire L, which is moved by a handle N to unlock the two sections and let section B' slide down into the section B. The windlass is then turned until the section B is carried to the top of section A with the lugs *a*³ *a*³ against the screw C, when the pin I is put into a hole *a*⁴ to hold the hand-crank on the windlass and prevent the latter from revolving backward.

I arrange the rollers J J on the upper end of the section B', which will allow the ladder, when its sections are slid together, to be conveniently rolled along on the ground from one place to another. They also form a bearing to rest against the wall or face of a building. The two sections are locked together by a pin O until section B' has been raised to the top of section B, when it is removed.

In extending the ladder, the two sections A B are first locked together by means of the pin O. The windlass E is then turned, and as the end of the rope is secured to the bottom of the middle section of ladder B and this section B is locked to the lower section A by the pin O, the winding of the rope *e* on the drum E will operate to raise the shaft C in its guideways *a*. As this shaft C is raised it engages with the bearings *b' b'* on the upper section B' and carries said section B' with it to the top of the sections A and B. The top section B' is then locked in this position by the shifter *b*², which locks sections B B' together. The screw-shaft C is then at the top of the guideways *a*, as shown in Fig. 4 of the drawings. The two lower sections A B are then unlocked, and by continuing the operation of winding the rope *e* on the windlass the section B is raised and carries with it the section B'. The windlass is prevented from turning backward by the pin I.

The operation is as follows: The two lowest ladder-sections are first locked together by the pin and the windlass turned until the uppermost section has been run up to the top of the middle one, where it is locked by the transverse slide actuated through the vertical shifter and its spring. The two lower sections are then unlocked and the windlass

turned until the middle section has been run up to the top of the bottom one, when the stop-pin for the hand-crank is applied and the ladder ready for use. In order to bring all the sections together again, move the shifter with its hand-lever until the transverse slide has ceased to lock the upper sections, when the top section will slide down into the middle one. Then undo the crank-stop and both the upper sections will slide down into the bottom one.

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

- 15 1. A triple ladder whose upper section slides into the middle one and that into the bottom one, the sections being extensible by means of a windlass, one pulley on a movable shaft, two pulleys on a fixed shaft and a

windlass-rope substantially as shown and described. 20

2. The combination with the three sections of a triple ladder, the upper ones sliding into the bottom one, of a windlass and rope, a movable shaft with one pulley, a fixed shaft 25 with two pulleys, a lock-pin, a stop pin and a transverse movable lock bar, all arranged to operate as described.

3. The combination with the transverse slide which locks the two upper sections together, of the vertical shifting rod, the spring and the hand lever as shown and described. 30

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

GEORGE FRANKLIN LAWVER.

Witnesses:

WILLIAM LAWVER,
A. J. MOORE.