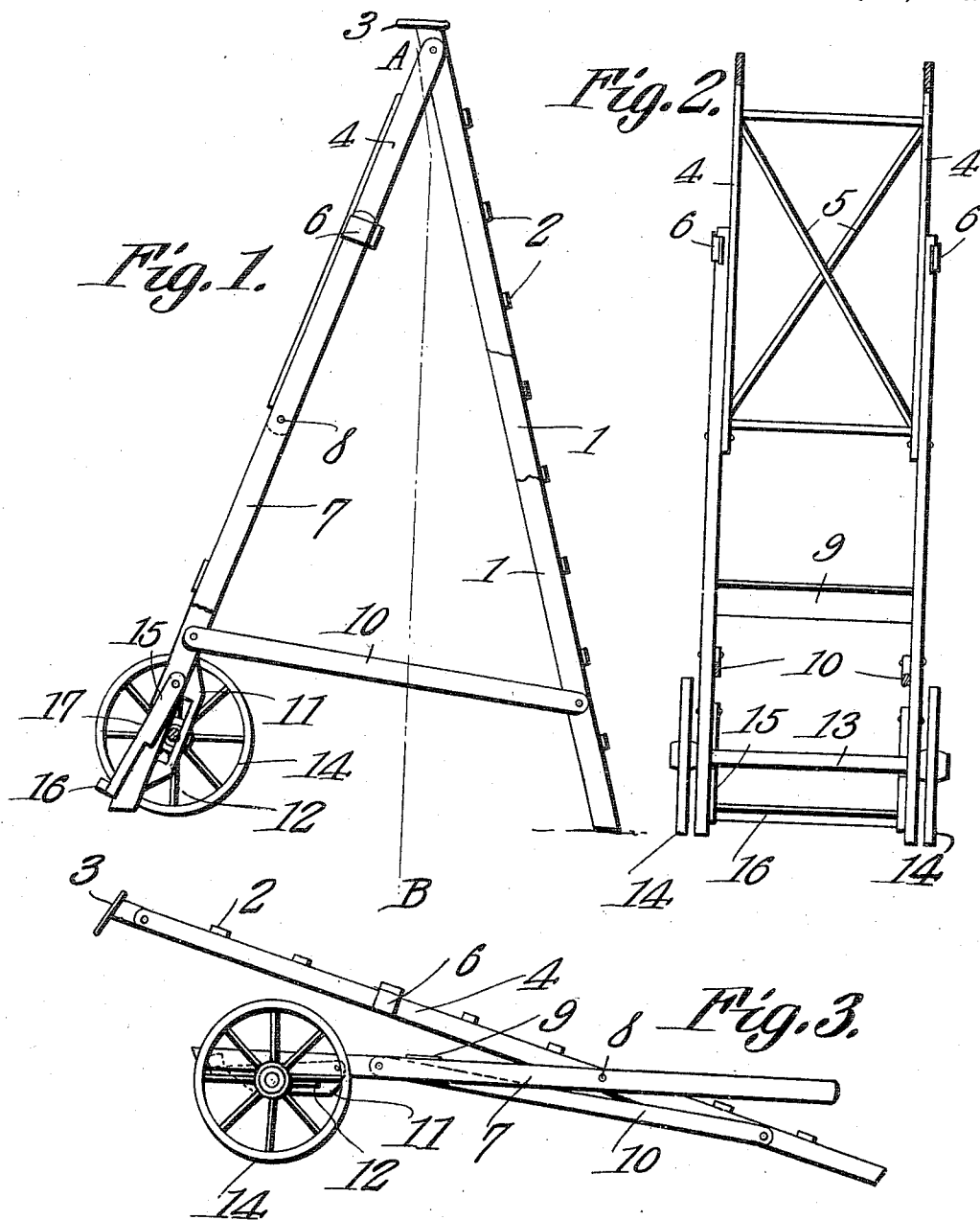


F. B. VAN CLEAVE.  
FOLDING STEP LADDER.  
APPLICATION FILED JAN. 17, 1910.

964,587.

Patented July 19, 1910.



Witnesses  
*E. J. [Signature]*  
*Hubert A. Lawson*

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By *C. A. Snow & Co.* Attorneys

# UNITED STATES PATENT OFFICE.

FRANKLIN B. VAN CLEAVE, OF ECHO, OREGON.

## FOLDING STEP-LADDER.

964,587.

Specification of Letters Patent. Patented July 19, 1910.

Application filed January 17, 1910. Serial No. 538,503.

*To all whom it may concern:*

Be it known that I, FRANKLIN B. VAN CLEAVE, a citizen of the United States, residing at Echo, in the county of Umatilla and State of Oregon, have invented a new and useful Folding Step-Ladder, of which the following is a specification.

This invention relates to step ladders and its object is to provide a device of this character which can be conveniently folded into a compact body and which has supporting wheels combined therewith, whereby the ladder, when folded, can be readily transported from place to place and can, moreover, be utilized as a truck.

Another object is to provide means for slidably connecting the axle of the wheels to the ladder, there being locking means for holding the axle in a predetermined relation to the ladder.

Another object is to provide a device of this type which can be quickly set up for use and quickly collapsed.

With these and other objects in view, the invention consists in certain novel details of construction and the combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of the step ladder set up for use, a portion of the prop being removed. Fig. 2 is a section on line A—B, Fig. 1. Fig. 3 is a side elevation of the ladder folded.

Referring to the figures by characters of reference, 1 designates the side strips of the ladder, said strips being connected by means of rungs 2, while a shelf 3 may, if preferred, be provided at the upper ends of the strips. A sectional prop is combined with the side strips and the upper section 4 of this prop is pivotally connected to the upper portions of the side strips 1 and is provided with cross strips 5. This upper section 4 is provided at points between its ends with side clips 6 formed of spring metal and which are designed to detachably engage the upper ends of the lower section 7 of the ladder prop. The lower prop section 7 is pivotally connected at intermediate points to the upper section 4, as indicated at 8 and is provided at one or more points with cross strips 9. Braces 10 are pivotally connected to the section 7 and also to the lower portions of the side strips 1 and each side of

the section 7 is provided near its lower end with a guide bracket 11 having a longitudinal slot 12 therein. An axle 13 is slidably mounted within the slots 12 and is supported by wheels 14. Locking members 15 are pivotally connected to the inner sides of the section 7 and are secured together by means of a cross strip 16. Each of these members has a shoulder 17 so located that, when axle 13 is arranged in the lower end of the slot 12, said shoulders will lap the axle and hold it against movement longitudinally of the slots.

In setting up the ladder for use, the strip 16 is pulled outward so as to withdraw the shoulders 17 from above axle 13, thus permitting the bracket 11 and the prop to move downward and the lower ends of the section 7 to come into contact with the surface on which the ladder is mounted. Said section is swung upward into engagement with the clips 6 and the strips 1 and thus supported at the proper angle for use. To fold the ladder the section 7 is disengaged from the clips and swung downward, thus causing the upper prop section 4 to fold beside the strips 1 while the section 7 projects across the said strips 1, as clearly indicated in Fig. 3. The axle 13 can then be locked in the end portions of the slots 12 by lowering the members 15 so as to bring the shoulders 17 back of the axle. While the parts are thus disposed the ladder can be pushed from place to place upon the wheels 14 and can be used as a truck for supporting any desired articles to be transported. When the ladder is folded it occupies a comparatively small space.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention.

What is claimed is:

1. A folding ladder including a ladder portion, a foldable prop pivotally connected thereto, pivotal connections between the ladder portion and the lower section of the prop, a wheel supported axle slidably engaging the prop, and means for holding the axle against movement relative to the prop.
2. A folding ladder including a ladder portion, an upper prop section pivotally connected thereto, a lower prop section pivotally connected at intermediate points to said upper section, braces pivotally attached

to the lower section and to the ladder portion, and means upon the upper prop section for automatically engaging and locking it against movement relative to the lower section.

5 3. A folding ladder including a ladder portion, an upper prop section pivotally connected thereto and foldable thereon, a lower prop section pivotally connected at  
10 intermediate points to the upper section, braces pivotally attached to the lower section and to the ladder portion, clips upon the upper section for engaging the lower section to hold said prop sections in pre-  
15 terminated relations, and a wheel supported axle slidably engaging the lower section, and means for locking the axle against sliding movement.

20 4. A folding ladder including a ladder portion, an upper prop section pivotally

connected thereto and foldable thereon, a lower prop section pivotally connected at intermediate points to said upper section, clips upon the upper section for engaging  
25 and holding the lower section, braces pivoted to the ladder portion and the lower section, longitudinally slotted brackets upon the lower section, an axle slidably mounted within the slots, supporting wheels carried by the axle and means pivotally con-  
30 nected to the lower section for locking the axle against movement within the slots.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANKLIN B. VAN CLEAVE.

Witnesses:

W. L. KNIGHT,  
JOHN DORN.