

No. 854,152.

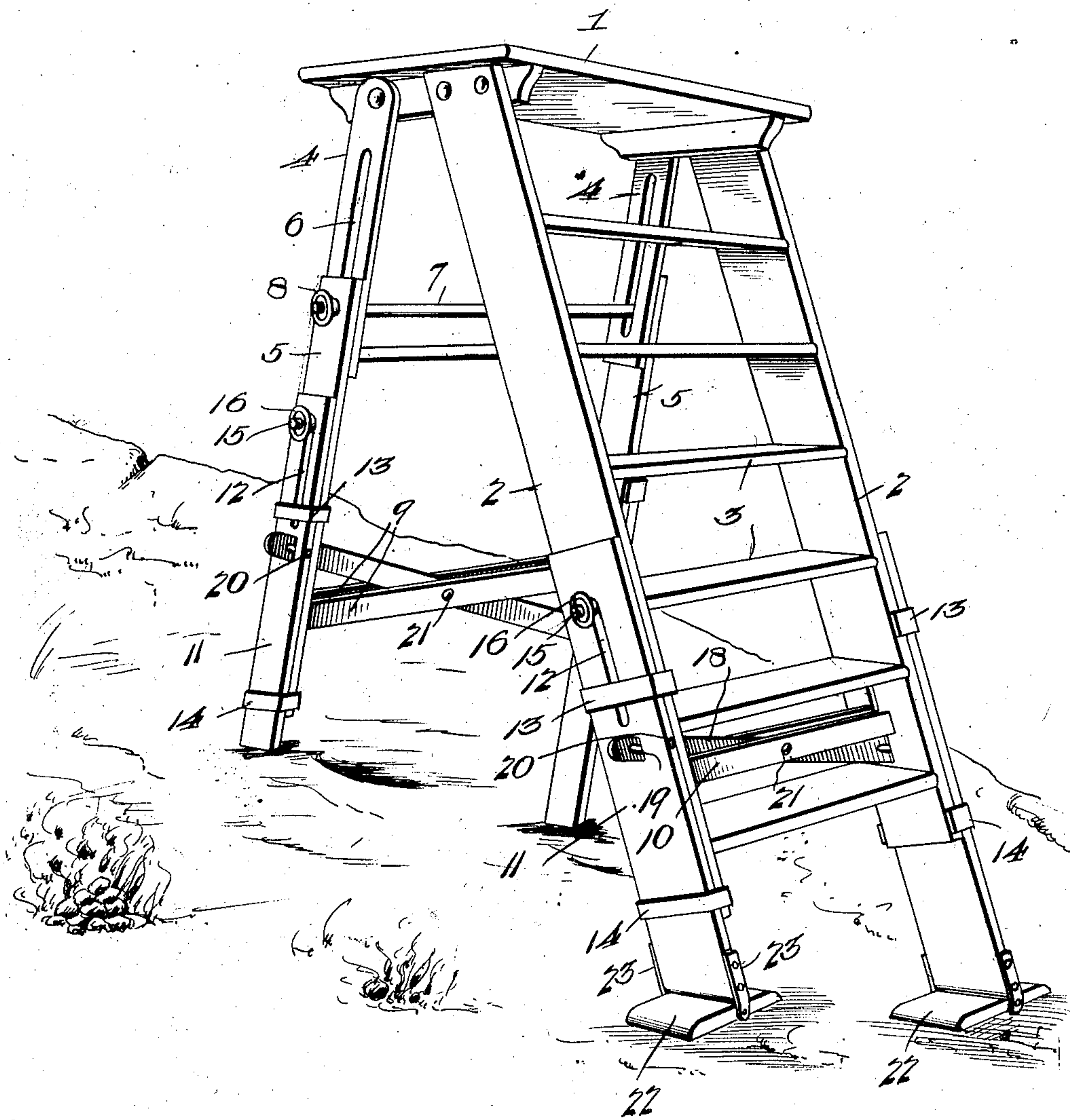
PATENTED MAY 21, 1907.

C. DE COOK.  
LADDER.

APPLICATION FILED MAR. 17, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



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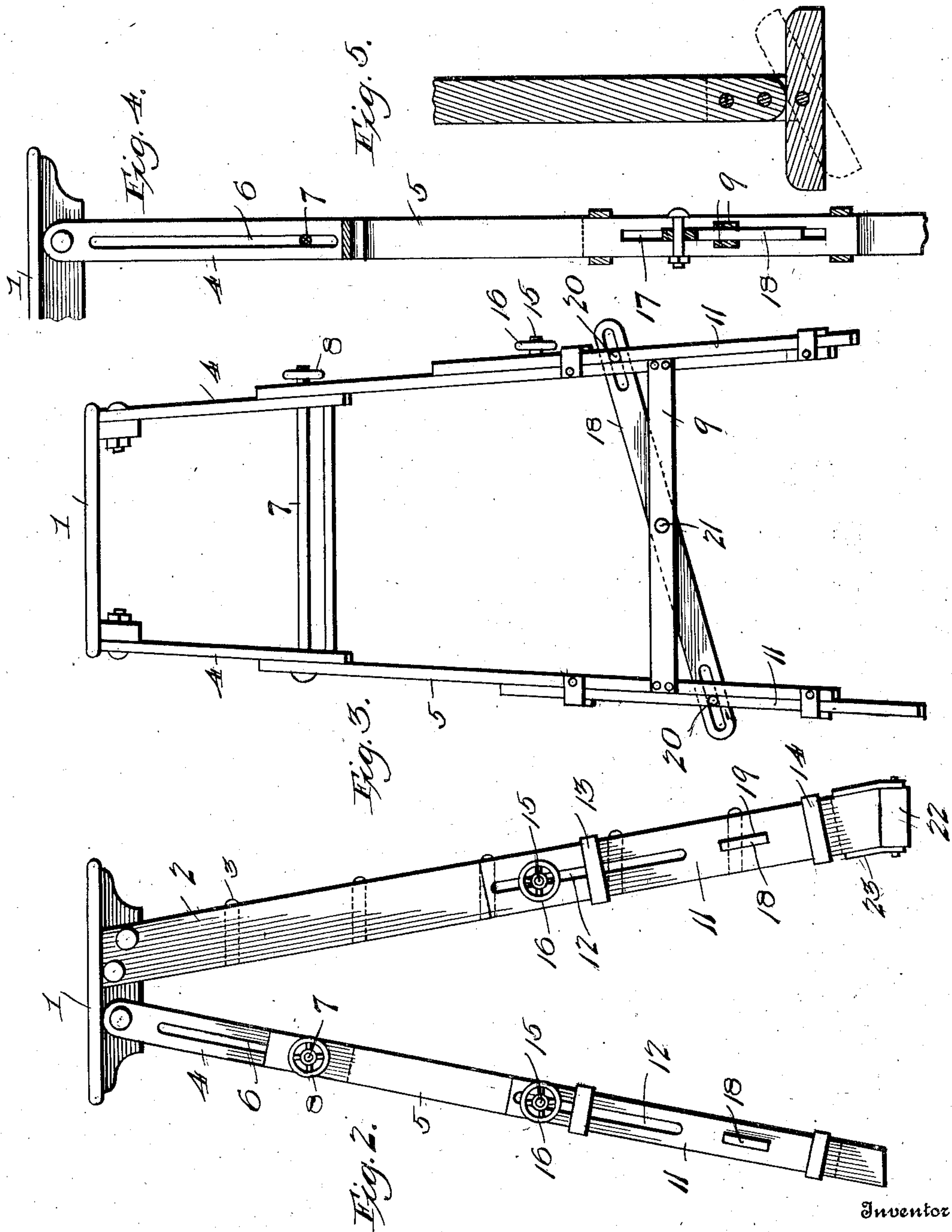
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

CORNELIUS DE COOK, OF BANGOR, MICHIGAN.

## LADDER.

No. 854,152.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed March 17, 1906. Serial No. 306,819.

*To all whom it may concern:*

Be it known that I, CORNELIUS DE COOK, a citizen of the United States, residing at Bangor, in the county of Van Buren and State of Michigan, have invented new and useful Improvements in Ladders, of which the following is a specification.

This invention relates to ladders and particularly to step-ladders and embodies means for lengthening and shortening, as well as adjusting different portions thereof to accommodate variations in the level of the surface or supporting means on which the lowermost terminals of the ladder are disposed to adapt the latter to be held in stable position when used in places where the supporting means or surface has differences in surface elevation or is irregular.

The invention consists in the construction and arrangement of the several parts which will be more fully hereinafter set forth.

In the drawings, Figure 1 is a perspective view of a ladder embodying the features of the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a rear elevation thereof. Fig. 4 is a transverse vertical section through a portion of the ladder. Fig. 5 is a transverse section through the lower extremity of one of the ladder legs, particularly showing an adjustable foot therefor.

Similar numerals of references are employed to indicate corresponding parts throughout the several views.

The improved features which will now be particularly set forth have been illustrated for convenience in connection with a step-ladder. It will be understood, however, that other types of ladders might have the same structural features applied thereto.

The numeral 1 designates the usual form of ladder platform to which is immovably secured side pieces 2 having steps 3 disposed therebetween at regular intervals and in any suitable manner. Prop legs 4 are movably attached at their upper extremities to the platform 1, said legs being preferably provided with adjustable members 5 to increase the extent thereof. The prop legs 4 are formed with longitudinal slots 6 and extending therethrough is a securing rod 7 which also passes through the upper extremities of the adjustable members 5 and is screw-threaded at one end to receive a hand-wheel or analogous device 8, whereby the prop legs and adjustable members may be immovably held in adjusted relation or be fixed with suf-

ficient resistance so as to overcome any tendency of movement after desired adjustment thereof has been made. The members 5 may be of any suitable length and proportionate to the general dimensions of the ladder, and at their lower portions they are tied by parallel cross braces 9 with an intervening space between them. The members 5 and prop legs 4 when held in immovable relation with respect to each other practically constitute rigid legs with the advantage that they may be lengthened or shortened as just explained. The side pieces 2 have parallel cross braces 10 similar to the cross braces 9. On the lower extremities of the adjustable members 5 and side pieces 2 extensions 11 are telescopically mounted and are similar in construction and vary in proportions in accordance with the parts to which they are applied. These extensions 11 are formed with longitudinal slots 12 in their upper extremities and are embraced by upper and lower clips 13 and 14 to maintain them in close relation to the said members 5 and side pieces 2. The members 5 and side pieces 2 have outwardly projecting screw-threaded studs 15 which extend through the slots 12 of the extensions and receive clamping heads or hand-wheels 16 adapted to bear snugly against the outer surface of the extensions to hold the latter in desired adjusted position.

The lower extremities of the members 5 and of the side pieces 2 are formed with longitudinal slots 17 to permit the opposite extremities of shifting bars 18 to adjustably project therethrough, the opposite extremities of said bars also extending through slots 19 in the extensions and held in the latter by securing pins 20. The shifting bars 18 are movable between the braces 9 and 10 and are intermediately fulcrumed with respect to the latter as at 21. By adjusting one of the extensions after it has been loosened by releasing the clamping head or hand-wheel 16, the shifting bar cooperating therewith will be correspondingly moved and adjust the opposite extension. In other words, the shifting bars 18 both serve to uniformly operate the extensions 11 and after the clamping heads or hand-wheels 16 are turned inwardly on their studs 15 it will be impossible for either extension to move. Through the actuation of the shifting bars, the extensions will be projected equal distances with respect to the members 5 or side pieces 2, or said extensions may be held with equal projection in accord-



ance with the position of the said shifting bars, and through the use of said bars the opposite sides of the ladder may be quickly arranged to accommodate any unevenness in the surface on which the ladder is disposed. 5 The ladder is also equipped with means for compensating for unevenness or irregularities in the surface on which the extensions 11 of the side pieces 2 may be brought to bear. 10 This means consists of laterally adjustable feet 22, one foot being attached to each extension. The foot 22 is attached to the extension through the medium of straps 23 secured to the front and rear edges thereof and 15 depending below the latter to embrace the opposite side edges of the foot, a suitable pivot device being inserted in the lower projecting ends of the straps and the side edges of the foot. Each foot 22 is broad or has 20 considerable transverse extent to give it stability as a rest means, and as shown by Fig. 5, the foot will automatically assume an angular position and hold the side pieces 2 and extensions 11 thereof in positive position on 25 the base rest or support for the ladder irrespective of the irregularity or unevenness of the supporting surface.

From the foregoing it will be seen that the ladder is provided with means for arriving at

several adjustments as well as compensating 30 for differences in the height of the supporting surface with respect to the two sets of extensions 11, and this, combined with the adjustability of the members 5, equip the ladder with a wide range of adjustment. The ladder 35 will be found exceptionally advantageous in its use in view of the adjustability of the parts set forth, and it will be observed that the parts are of a strong and durable nature and that the adjustments may be readily 40 obtained.

What I claim is:

A ladder having supporting means, extensions adjustably mounted on the same, locking devices cooperating with the extensions, parallel cross braces connecting the 45 supporting means, and a shifting bar fulcrumed intermediately to and movable between the cross braces and engaging the supporting means and extensions, the ends of 50 the bar being free to move with the said supporting means and extensions.

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

CORNELIUS DE COOK.

Witnesses:

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F. W. REAMS.