

No. 680,318.

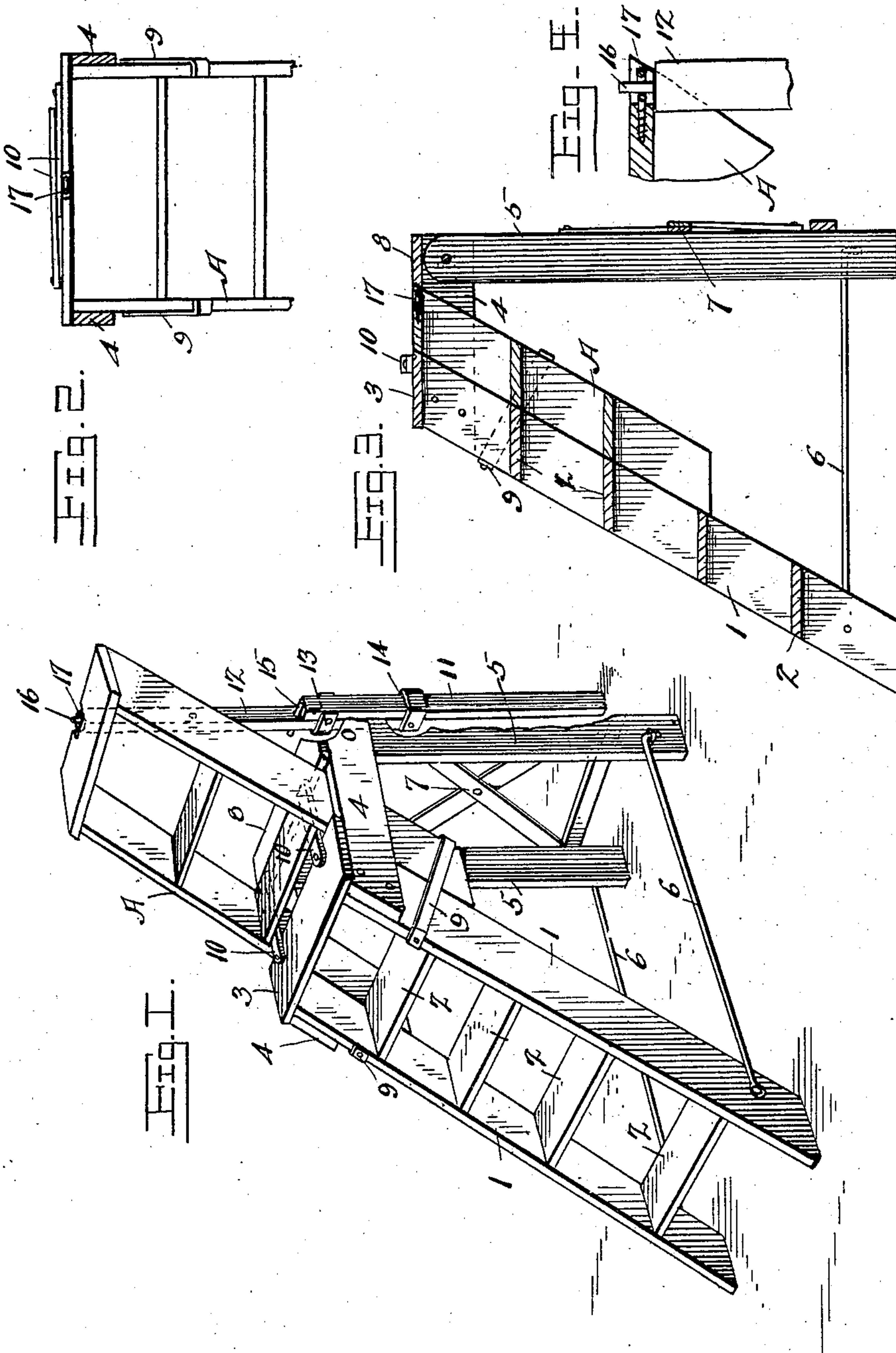
Patented Aug. 13, 1901.

J. B. DETWEILER.

STEP LADDER.

(Application filed May 16, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOSHUA B. DETWEILER, OF NAPPANEE, INDIANA.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 680,318, dated August 13, 1901.

Application filed May 16, 1901. Serial No. 60,508. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA B. DETWEILER, a citizen of the United States, residing at Nappanee, in the county of Elkhart and State of Indiana, have invented a new and useful Step-Ladder, of which the following is a specification.

This invention relates to step-ladders, and has for its object to provide an improved extension attachment therefor which may be normally carried by the body portion of the ladder and housed within the same, so as to be out of the way, and also arranged to be conveniently extended into position for use.

It is furthermore designed to effectually brace the extension when in use and also to arrange for entirely removing the extension without interfering with the other parts of the main ladder portion.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a step-ladder constructed and arranged in accordance with the present invention and showing the extension extended. Fig. 2 is a longitudinal sectional view thereof with the extension withdrawn and in its normal position. Fig. 3 is a detail cross-sectional view through the top of the ladder. Fig. 4 is a detail sectional view illustrating the detachable connection between the prop and the extensible ladder-section.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, 1 designates the opposite side rails of the step-ladder, which are connected by the usual steps 2, there being an upper terminal step 3, that rests upon the tops of the side rails and also projects in opposite directions beyond the outer sides thereof. To the outer sides of the side rails and at their upper ends are secured the cor-

responding ends of opposite cross-bars 4, which project a suitable distance in rear of the rails and have their upper edges supporting the opposite projected ends of the uppermost step 3. The lower ends of the side rails are beveled in the usual manner to give an inclination to the ladder, and the latter is held in this inclined position by means of the opposite props or legs 5, which are pivotally connected to the inner sides of the outer end portions of the respective cross-bars, there being suitable braces or links 6 extending between the rails and the opposite props to lock the same, and thereby form a rigid structure when the ladder is set up for use. The props are braced or connected together in any suitable manner—as, for instance, by the braces 7. There is a suitable interval between the uppermost step and the tops of the props or the rear ends of the cross-bars, and a step or plate 8 is secured across the rear end portions of the cross-bars, said plate cooperating with the adjacent step 3 to form a head for the top of the ladder, with a transverse slot or opening in the center thereof for the slidable reception of the extensible section.

The extensible ladder-section A corresponds to the fixed body-section and is formed by opposite rails, cross-steps, and an upper terminal step projected beyond the rails. This extensible section lies with its side rails in slidable engagement with the inner or rear edges of the main side rails and with its uppermost step filling the opening in the head of the main ladder and the projected ends of said step supported upon the respective cross-bars, at the middles thereof, whereby the opening is closed and a flush head is formed. The side rails of the extensible section are held against the main side rails by means of the substantially L-shaped clips 9, carried by the outer sides of the main rails and embracing the outer sides and rear edges of the rails of the extensible section. It will be observed that the inner edges of the steps 3 and 8 and the opposite edges of the uppermost step of the extensible section are correspondingly beveled to accommodate the inclination of the extensible section.

To increase the height of the ladder, the extensible section is drawn upwardly through the opening in the head until one of the steps

is slightly above the said head, after which the links or arms 10, which are pivoted upon the upper side of the head, are swung transversely beneath the adjacent step of the extensible section, so as to span the opening in the head and support the extensible section. To brace the upper end of the section, there is provided a prop composed of longitudinally-adjustable sections 11 and 12, which slide upon each other and are provided with the cuffs 13 and 14, respectively, for the slidable connection of the parts. The upper part is provided with a plurality of perforations for the adjustable reception of a pin 15 to lie across the top of the bottom section, and thereby support the upper section upon the lower section. The upper end of the upper prop-section is provided with a terminal pin or projection 16, that projects through an eye 17, carried by the rear edge of the uppermost step of the extensible ladder-section. As indicated in Fig. 4, the step is notched and the eye is located within the notch and flush with the outer edge of the step, so as not to interfere with the folding of the section and also to permit of the upper end of the prop bearing against the under side of the step to form a support and brace for the extensible section.

It will be understood that the extensible prop is used only when the extensible section is extended, and said section may be entirely removed from the ladder without affecting its ordinary uses. When collapsed, the extensible section is entirely within the

main ladder, and is thereby housed and out of the way.

What is claimed is—

In an extensible ladder, the combination of an inclined main ladder-section, having a top step extending across the tops of the side rails thereof, opposite cross-bars connected to the outer sides of the rails and projected rearwardly therefrom, a step secured across the rear ends of the cross-bars, there being an intervening space between the opposite steps, the latter forming a head, props connected to the rear ends of the cross-bars, an extensible ladder-section inserted downwardly through the opening or space in the head and in slidable engagement with the rear side of the main ladder-section, the steps of both sections normally corresponding, and the uppermost step having its projected ends lying upon the respective cross-bars and filling the opening in the head, clips secured to the side rails of the main section and slidably embracing the rails of the extensible section, means for adjustably supporting the extensible section upon the main section, and an adjustable prop having a detachable connection with the upper end of the extensible section.

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

JOSHUA B. DETWEILER.

Witnesses:

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