

No. 640,211.

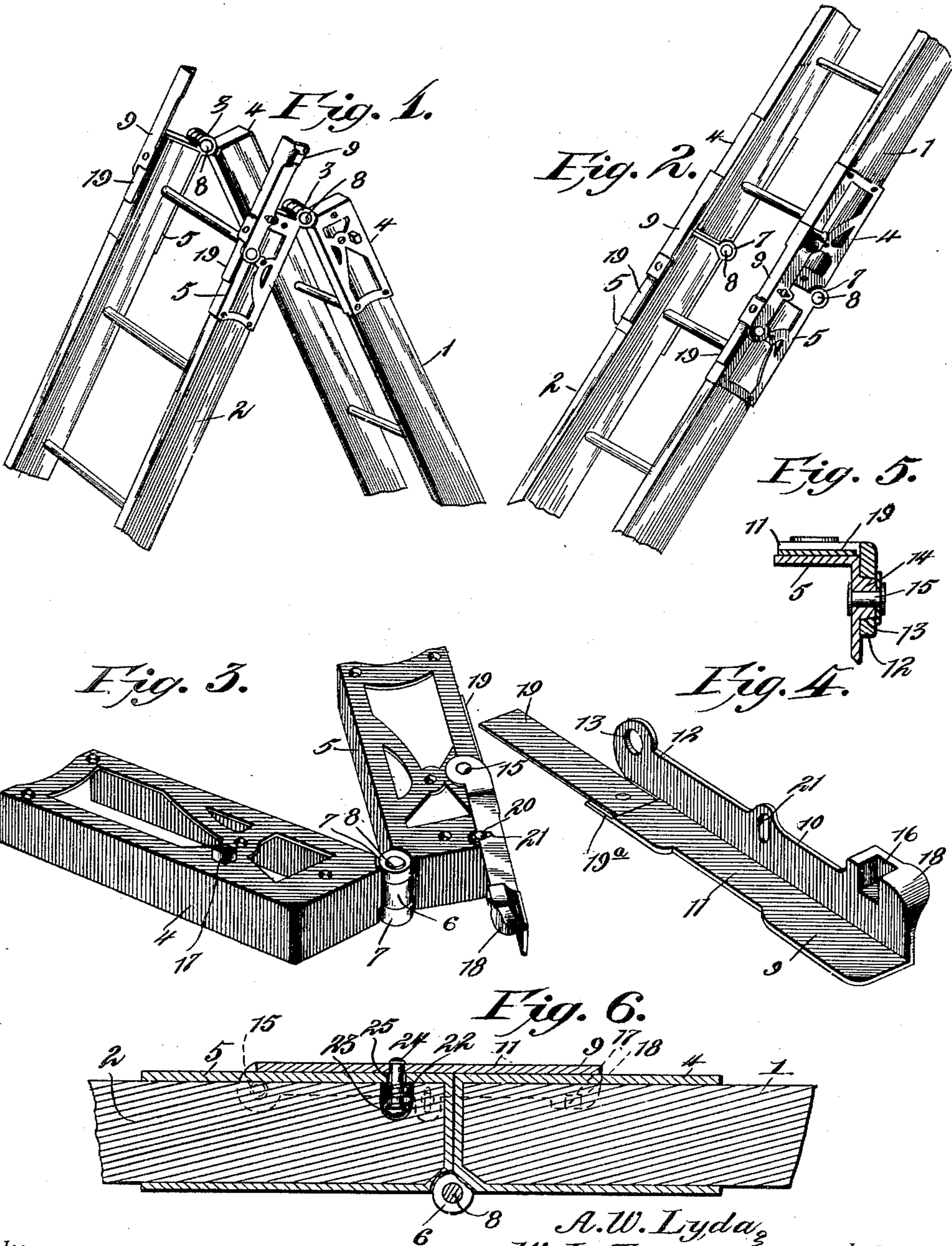
Patented Jan. 2, 1900.

A. W. LYDA & W. L. TURNER.

FOLDING LADDER.

(Application filed Oct. 14, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR W. LYDA AND WILLIAM L. TURNER, OF BLAIRSVILLE,
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FOLDING LADDER.

SPECIFICATION forming part of Letters Patent No. 640,211, dated January 2, 1900.

Application filed October 14, 1899. Serial No. 733,660. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR W. LYDA and WILLIAM L. TURNER, citizens of the United States, residing at Blairsville, in the county of Indiana and State of Pennsylvania, have invented a new and useful Folding Ladder, of which the following is a specification.

The invention relates to improvements in folding ladders.

10 The object of the present invention is to improve the construction of folding ladders, more especially the means for hinging the sections thereof and for securing the same in alinement, and to provide a simple, inexpensive, and efficient hinge adapted to permit the sections of the ladder to be arranged to form a straight or extension ladder and to be disposed at an angle to each other to form a painter's trestle, and also to be compactly
20 folded for storing and shipping.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed
25 out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a portion of a folding ladder provided with hinges constructed in accordance with this invention, the sections of the ladder being arranged at an angle to each other. Fig. 2 is a similar view, the sections being arranged in alinement. Fig. 3 is an enlarged detail perspective view of the hinge. Fig. 4 is a similar view of the pivoted latch. Fig. 5
35 is a detail sectional view taken transversely of one of the leaves of the hinge and illustrating the manner of mounting the latch. Fig. 6 is a detail sectional view illustrating a modification of the invention and showing a coiled spring for holding the latch in engagement with the lug or projection.
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Like numerals of reference designate corresponding parts in all the figures of the drawings.

45 1 and 2 designate sections of a folding ladder which is provided with hinges 3, composed of sections or leaves 4 and 5, secured to the adjacent ends of the sections 1 and 2 and adapted to permit the same to fold against
50 each other for arranging the ladder compactly for shipping and storing and capable of en-

abling the said sections to be disposed at an angle, as illustrated in Fig. 1, or in alinement, as shown in Fig. 2, to provide a painter's trestle, and to form a straight or extension
55 ladder. Each of the leaves or sections consists of an oblong box or casing and comprises a face-plate, parallel sides, and a connecting end piece, and the said leaves or sections are provided at their adjacent ends with eyes 6
60 and 7, located at the inner or rear sides and receiving a pintle 8. The adjacent ends of the leaves abut against each other when the ladder-sections are arranged in alinement to form a straight or extension ladder, as illus-
55 trated in Fig. 2 of the accompanying drawings. The face-plates of the leaves or sections may be constructed of open-work to provide a light and ornamental hinge, and they are perforated for the reception of screws or other
70 suitable fastening devices for securing them to the ends of the side bars of the ladder-sections, which are strengthened thereby.

The leaves of the hinge are securely fastened when in alinement by a latch 9, L-
75 shaped in cross-section, composed of two longitudinal flanges 10 and 11, arranged, respectively, on the face-plates and on the outer sides of the leaves or sections when the same are arranged in alinement. The inner
80 end 12 of the flange 10 is enlarged and provided with a tapering opening 13 to receive an annular boss 14, extending around the perforation of the face-plate of the leaf or section 3, and the parts are secured together
85 by a pivot 15, extending through the opening 13 and the adjacent perforation of the leaf or section 3. The outer end of the flange 10 is enlarged and provided with a recess 16,
90 arranged to engage a lug or projection 17, extending outward from the face-plate of the leaf or section 4, and the extremity of the flange 10 is rounded to form a beveled face or edge 18 to enable the latch to engage the
95 lug or projection automatically. The latch is retained in engagement with the lug or projection 17 by a flat spring 19, secured to the inner end of the flange 11 and extending longitudinally thereof and bearing against
100 the adjacent side of the leaf or section, as clearly illustrated in Figs. 1 and 2 of the drawings. The outer end of the spring is

free, and the outer end of the flange 11 is enlarged and offset to provide an inner recess 19 to receive the inner end of the spring and to enable the inner face of the same to be arranged flush with the inner face of the flange.

Instead of employing a flat spring for holding the latch in engagement with the lug or projection a coiled spring 22 may be used, as illustrated in Fig. 6 of the accompanying drawings. The coiled spring 22 is located within the leaf or section 5 and is interposed between the inner face of the upper side of the same and a stop 23 of a pin or rivet 24, extending through a slot 25 of the said leaf or section 5 and connected with the latch at a point in advance of the pivot thereof. This construction provides a smooth exterior surface for the ladder. The pivotal movement of the latch is limited by a fastening device 20, mounted on the leaf or section 3 and extending through a transverse slot 21 of the flange 10 of the latch.

It will be seen that the means for connecting the sections of the ladder and for securing the same when in alinement are simple and comparatively inexpensive in construction, strong and durable, and capable of enabling the sections of the ladder to be arranged in alinement to form a straight or extension ladder, and to be disposed at an angle for staging purposes, and to be compactly folded for shipping and storing. It will also be apparent that the hinge, which is applicable to light ladders, as illustrated in the accompanying drawings, may also be applied to heavy trussed ladders, where the braces or trusses have central flexible portions to permit the ladder to break at the joint.

What is claimed is—

1. A device of the class described compris-

ing a hinge composed of two leaves or sections hinged together and each consisting of a face-plate, sides, and a connecting end piece, a lug or projection extending from the side of one of the leaves, a latch L-shaped in cross-section mounted on the other section and composed of two longitudinal flanges conforming to the configuration of the leaves or sections, the side flange being provided at its inner face with a recess for engaging the lug or projection, and a longitudinal spring secured to and extending from the inner end of the top flange and arranged flat against and engaging the top of the adjacent leaf or section, substantially as described.

2. A device of the class described comprising a hinge composed of two leaves or sections hinged together at the bottom, a latch L-shaped in cross-section located at the top and composed of two longitudinal flanges, the side flange being slotted between its ends, pivoted at its inner end and provided at its outer end with an interior recess, a lug extending from one side of the hinge and arranged to be engaged by the recess of the latch, a fastening device mounted on the hinge and extending through the slot of the latch, and a spring arranged at the top of the hinge and cooperating with the top flange of the latch, substantially as and for the purpose described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ARTHUR W. LYDA.
WILLIAM L. TURNER.

Witnesses:

ELSA WIGGINS,
H. G. MILLIKEN.