(No Model.)

C. A. POLAND.

COMBINATION STEP LADDER.

No. 480,342. Patented Aug. 9, 1892.

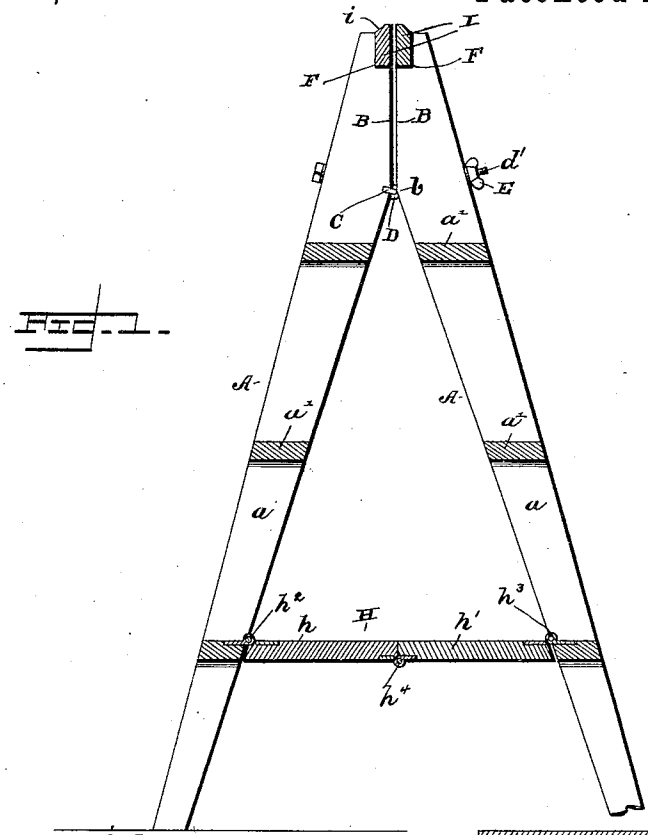

Fig. 1.

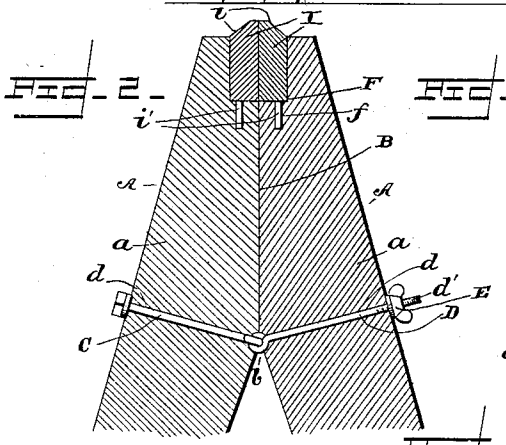

Fig. 2.

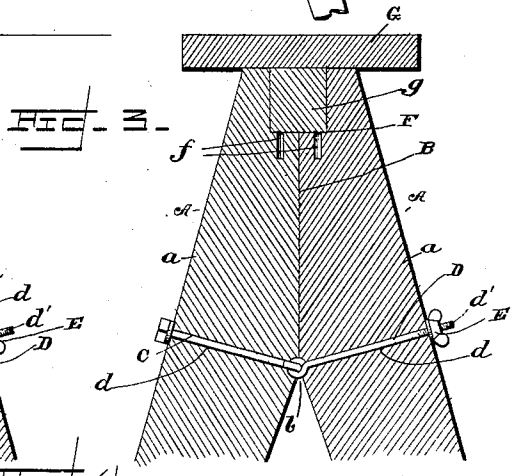

Fig. 3.

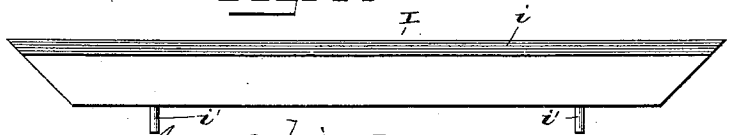

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES ALPHONSEUS POLAND, OF ANN ARBOR, MICHIGAN.

COMBINATION STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 480,342, dated August 9, 1892.

Application filed November 4, 1891. Serial No. 410,862. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALPHONSEUS POLAND, a citizen of the United States, residing at Ann Arbor, in the county of Washtenaw and State of Michigan, have invented a new and useful Combination Step-Ladder, of which the following is a specification.

This invention relates to combination step-ladders; and it has for its object to provide a double step-ladder provided with means whereby double supports may be secured in place between the top ends or jaws thereof, and particularly provided with various adjustments adapting the same particularly for use as a saw-clamp for holding saws when being filed, and in this use is peculiarly advantageous over stationary clamps, where it is impossible always to get the proper light and where the saw has to be shifted in its position many times during the process of filing.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a central vertical section of a combination step-ladder provided with a saw-clamp constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section of the same through a portion of the sides of the ladder with the clamps in place. Fig. 3 is a similar view with the top support or step in place. Fig. 4 is a detail in perspective of one of the clamping-jaws.

Referring to the accompanying drawings, A A represent the opposite members of my improved step-ladder, the same comprising the ordinary sides or rails *a*, which are connected with the intermediate steps *a'*. The upper ends of each of the side rails of each opposite member of the ladder is provided with a beveled portion B, the meeting-point of which at *b*, with the inner edge of each of the side rails, is the point at which the members of the combination-ladder are hinged together.

Projecting through the sides of one of the members A of the ladder is the stationary eye-bolt C, the eye of which is seated slightly within the meeting apex or hinged point *b*, while the opposite member of the ladder is provided with the eyebolts D, extending transversely through the rails thereof and engaging the eye of the bolts C, thus forming a knuckle-joint which allows each ladder member to be drawn toward the other or away from the same as the ladder is either opened or closed, and said eyebolt extends loosely through the perforations *d* adapted for its reception, and is provided with a screw-threaded end *d'*, projecting beyond the outer edge of said side rails and engaged by the thumb adjusting-nuts E, by means of which when the ladder is spread the beveled inner edges or "clamping-jaws" B, as the same may be appropriately termed, may be opened or closed so as anything may be clamped therebetween as desired, and particularly adjusted to the various sizes of saws. The extreme upper ends of each side rail upon the inner sides thereof are provided with the squared notches F, provided in the horizontal portions thereof with the circular recesses *f*, for the purposes to be presently described. It can be readily seen when the opposite ladder-sections are spread apart and the beveled edges of the same meet that the said squared notches form a complete seat and clamp, which receive the support secured in place therein. The top step or top support for the articles carried upon a step-ladder and for which the same may be in use (designated by G) is provided upon its under side with the opposite tongues *g*, that are adapted to fit within said squared recesses and be securely clamped by the spreading of the ladder and held in this locked position by the spreader H. The said spreader H consists of the opposite sections *h* and *h'*, respectively, that are each hinged to the bottom step of the opposing members of the ladder at h^2 and h^3, respectively, and said opposing sections *h* and *h'* are hinged upon their under sides centrally between the ladder members at h^4, which thus allows the spreader when opened to fold up between the ladders and allows the same to be closed, while by forcing the spreader downward the same locks and holds the ladder rigid in its spread position and clamping the top support thereon.

Interchangeably used with the top support G are the saw-clamp jaws I, each of which are provided with the top beveled edges *i*, which allow room for the working of the filing-

instrument when the saw is clamped between said jaws, and each of the jaws are further provided with the downwardly-projecting pins *i'*, that are adapted to take within the circular recesses *f* in the squared notches of each ladder members, and are thus independently carried by said ladder members, so that when the same is closed or slightly closed the saw may be readily inserted between the jaws of the clamp, and by forcing the spreader downward and causing the jaws to come together the saw is securely clamped for the usual purposes.

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

1. The combination, with opposing clamping-sections hinged near their upper ends and provided with clamping-jaws, of a support adapted to be clamped between said clamping-jaws and a spreader hinged to said clamping-sections, substantially as set forth.

2. In a combination step-ladder, the combination, with the opposing ladder members hinged near their upper ends and provided with clamping-jaws, of supplemental saw-clamping jaws adapted to be operated by and between the ladder-jaws, substantially as set forth.

3. In a combination step-ladder, the combination, with the opposing ladder members hinged at their upper ends and provided with squared notches, of opposing members of a saw-clamp carried in each pair of notches of the opposing ladder members and operated thereby and a locking-spreader hinged to each ladder, substantially as set forth.

4. In a combination step-ladder, the combination, with the opposing ladder members provided at their upper ends with squared notches having circular recesses therein, of eyebolts hinging the ladder members together near their upper ends and transversely adjustable opposing jaws of a saw-clamp, each provided with depending pins engaging the circular recesses of each ladder member and carried thereby, and a locking-spreader having opposite sections hinged together upon their under sides and to the bottom step of each opposing member, substantially as set forth.

5. In a combination step-ladder, the combination, with the opposing ladder members hinged at their upper ends and provided with squared notches adapted to receive either the two jaws of a saw-clamp or the top support of a step-ladder, of a locking-spreader hinged to each ladder, substantially as set forth.

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

CHARLES ALPHONSEUS POLAND.

Witnesses:
SAMUEL G. HORACK,
W. D. HARRIMAN.