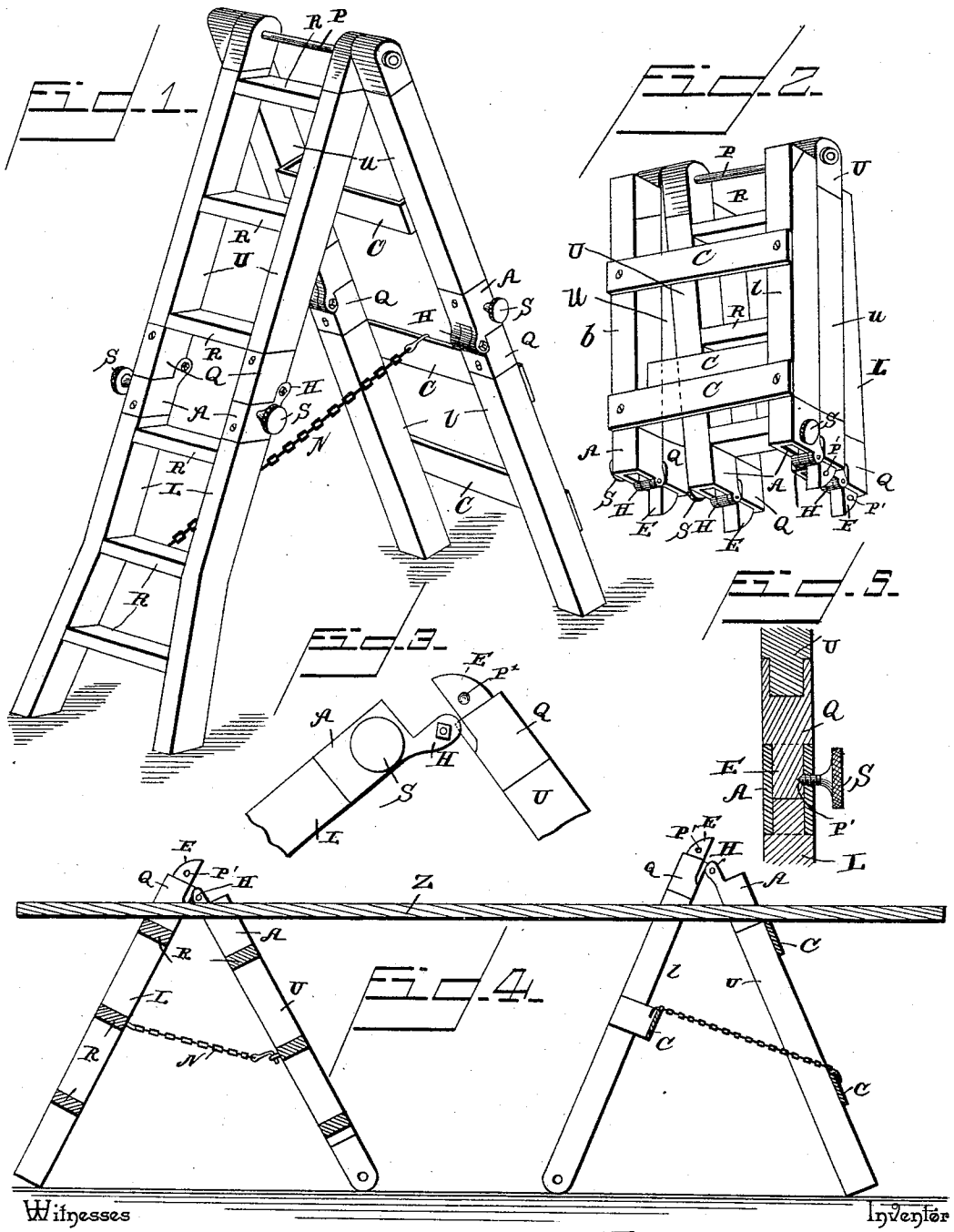
(No Model.)

H. A. KINSER.

STEP LADDER.

No. 453,193. Patented June 2, 1891.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

HARVEY A. KINSER, OF DECATUR, ILLINOIS.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 453,193, dated June 2, 1891.

Application filed February 7, 1891. Serial No. 380,595. (No model.)

To all whom it may concern:

Be it known that I, HARVEY A. KINSER, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented a new and useful Step-Ladder, of which the following is a specification.

This invention relates to ladders, and more especially to that class thereof known as "folding step-ladders;" and the object of the same is to effect certain improvements upon devices of this class.

To this end the invention consists of the specific details of construction hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a perspective view of this improved ladder complete. Fig. 2 is a similar view showing the ladder folded. Fig. 3 is an enlarged side elevation of one of the hinges open. Fig. 4 is a central longitudinal section of the device when used as a scaffold. Fig. 5 is a detail sectional view through one of the hinges when closed.

Referring to the said drawings, the letters U and L designate, respectively, the upper and lower sections of a step-ladder, which are hinged together in a manner hereinafter described, and the letters *u* and *l* designate, respectively, the upper and lower sections of a brace or prop for supporting the ladder. The latter has rungs R, of the usual or of any preferred construction. The side bars of the brace are connected by cross-straps C, and extend at their upper ends outside the upper end of the ladder, and a pivotal rod P detachably connects all the upper ends, whereby the ladder can be folded between the side bars of the brace and upon the cross-straps, all as is well known in this class of ladders.

The meeting ends of the ladder-sections and of the brace-sections are connected by hinges which are each of the following construction: To the end of one bar is secured a tubular section A, having a set-screw S through its outer side, and to the end of the other bar is secured a solid section Q, having an ear E projecting from its end and rounded off on one face, the side of the ear being provided with a recess P′ to receive the tip of the set-screw. The lower sides of these two sections are connected by a hinge H, whose members are cast upon said extensions. In operation, when it is desired to open the folded ladder the disconnected ends thereof are separated and the other ends turned about the pintle of the hinge H, the ear E passing into the tubular section A, and the set-screw S is then turned to seat its tip in the aperture or recess P′. It will be understood that the hinges H are located at the inner edges of the side bars of both the ladder and the brace, so as to prevent an opening of them farther than the desirable point, which is shown in Fig. 1. An ordinary chain or cord N may be used to connect the ladder and brace near the ground for the obvious purpose of preventing the slipping of the feet thereon.

Fig. 2 shows the ladder in its folded condition.

In Fig. 4 is shown the means I employ to convert this improved ladder into a scaffold. This is done by withdrawing the pivotal rod P from the upper ends of the ladder and its prop, folding each of these members into **A** shape, connecting their lower ends by suitable cords or chains, and extending a staging-board Z across from one of the rungs R of the ladder to one of the cross-straps C of the brace. By this arrangement a scaffold is quickly constructed which will be very handy in plastering, papering, or painting a room, and this adaptability of my improved step-ladder I consider one of its important advantages. The improved hinge above described serves in this instance as a connection between the two side bars of the **A**-shaped upright; but in other cases the members of the hinge are locked in alignment, and each of said **A**-shaped uprights becomes in itself one of the side bars of a step-ladder, also **A**-shaped, but of twice the height.

I do not confine myself to the exact details of construction hereinbefore set forth, as various changes may be made therein without departing from the spirit of my invention. I also desire to reserve the right to make any and all improvements in this ladder which properly come within the scope of the following claim.

What is claimed as new is—

The herein-described folding step-ladder, the same comprising a ladder made in two

parts hinged together, a brace also made in two parts hinged together, a pivotal connection between the upper ends of these members, and a chain connecting their lower ends, each of the hinges connecting the parts of the ladder or the parts of the brace consisting of a tubular section having a set-screw through one side, a solid section having an ear on its end with one curved face and an aperture in its side adapted to register with said set-screw, and a hinge connecting the faces of said sections opposite the curved edge of said ear, each and all substantially as and for the purpose hereinbefore set forth.

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

HARVEY A. KINSER.

Witnesses:
RICHARD SHAFFER,
S. R. GHER.