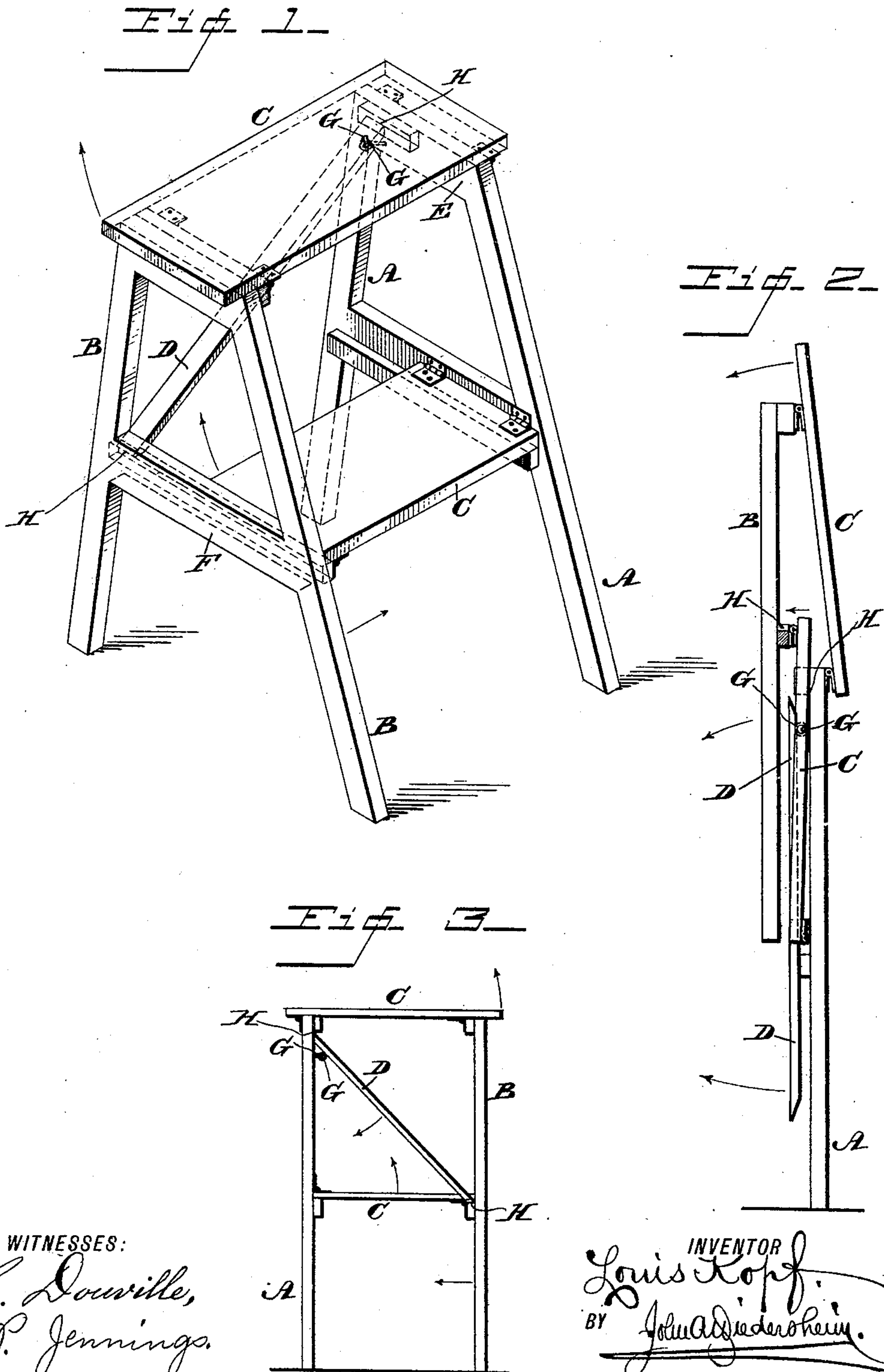


(No Model.)

L. KOPF.
FOLDING STEP LADDER.

No. 434,792.

Patented Aug. 19, 1890.



WITNESSES:

L. Douville,
A. P. Jennings.

INVENTOR
Louis Kopf.
BY *John A. Diederichsen.*
ATTORNEY.

UNITED STATES PATENT OFFICE.

LOUIS KOPF, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO NEHEMIAH GOLDBERG, OF SAME PLACE.

FOLDING STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 434,792, dated August 19, 1890.

Application filed May 8, 1890. Serial No. 351,075. (No model.)

To all whom it may concern:

Be it known that I, LOUIS KOPF, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Folding Step-Ladders, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a step-ladder which may be folded by motion in vertical direction or sidewise, thus placing the same in compact form for storage and transportation, the steps remaining connected at both ends with the ladder, the latter consequently being intact at all times.

Figure 1 represents a perspective front view of a folding step-ladder embodying my invention. Fig. 2 represents a side elevation of the same in folded condition. Fig. 3 represents a rear elevation of the ladder in condition for use, drawn on a reduced scale.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A and B designate legs, and C designates steps whose ends are hinged to said legs, and thus connected therewith.

D designates a brace, which extends diagonally from the top cross-piece E of the leg A to the lower cross-piece F of the leg B, thus preventing the legs from closing or folding on each other. It will be seen that the hinges of the lower step C are respectively on the upper and lower sides of the ends of the same, whereby said step may be transposed from its horizontal to a vertical position for folding purposes. The hinges of the top step are on the under side of the ends of the same, one of the hinges being on the outside of the leg A, thus providing for the change of position of said step for folding purposes and avoiding the location of hinges on the upper side of the same. The brace D and cross-piece E, are connected by eyes G G, which are attached to the respective parts, so that said brace is permitted to have great freedom of motion while being manipulated for application and removal to and from position. It will be seen that when said brace

is in position, all parts being located as in Figs. 1 and 3, the legs are held rigidly apart, whereby the ladder is firmly and steadily supported. The brace is prevented from displacement by having its ends thrust against shoulders H on the respective cross-pieces E and F of the legs A B.

When the ladder is to be folded, the brace is manipulated so that it is disengaged from the shoulder of the cross-piece F, whereby it hangs freely from the cross-piece E and against the leg A. The leg B is now moved upwardly and the steps C follow the same, turning to vertical positions on the legs A as their axes, the legs B and the steps thus folding sidewise, whereby the ladder is in compact condition, as shown in Fig. 2.

It is evident that the ladder may be unfolded or restored by lowering the leg B and the steps and then locating the brace in its diagonal position, whereby the ladder as such is again in serviceable and firm condition, it being noticed that as the brace extends from the top cross-bar of one leg to the lower cross-bar of the opposite leg a single brace is sufficient to keep the leg distended and stiffen the ladder. It will also be noticed that the steps are not disconnected from the legs, or vice versa, when the ladder is folded, the parts thus remaining intact at all times.

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

1. In a folding step-ladder, the combination of legs, steps hinged thereto, and a brace hinged to the top cross-piece of one of said legs and adapted to have a lateral movement, and extending downward diagonally to the lower cross-piece of the other leg, substantially as described.

2. In a folding step-ladder, hinged legs and steps combined with a brace hinged by eyes G, whereby a lateral movement of said brace is permitted to be free of engagement with other parts when folded, substantially as described.

3. In combination with the legs A and B of the lower or intermediate step, having hinges attached to the under side thereof and

adapted to fold upward, the top step hinged on the under side to the inside of one leg and the outside of the other leg, whereby in folding one leg is extended above the other, and
5 a laterally-movable brace hinged to the top cross-piece of one of said legs and extending downward diagonally to the lower cross-piece of the other leg and abutting thereagainst, substantially as described.

LOUIS KOPF.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. JENNINGS.