

(No Model.)

N. GOLDBERG.
FOLDING STEP LADDER.

No. 444,276.

Patented Jan. 6, 1891.

Fig. 1.

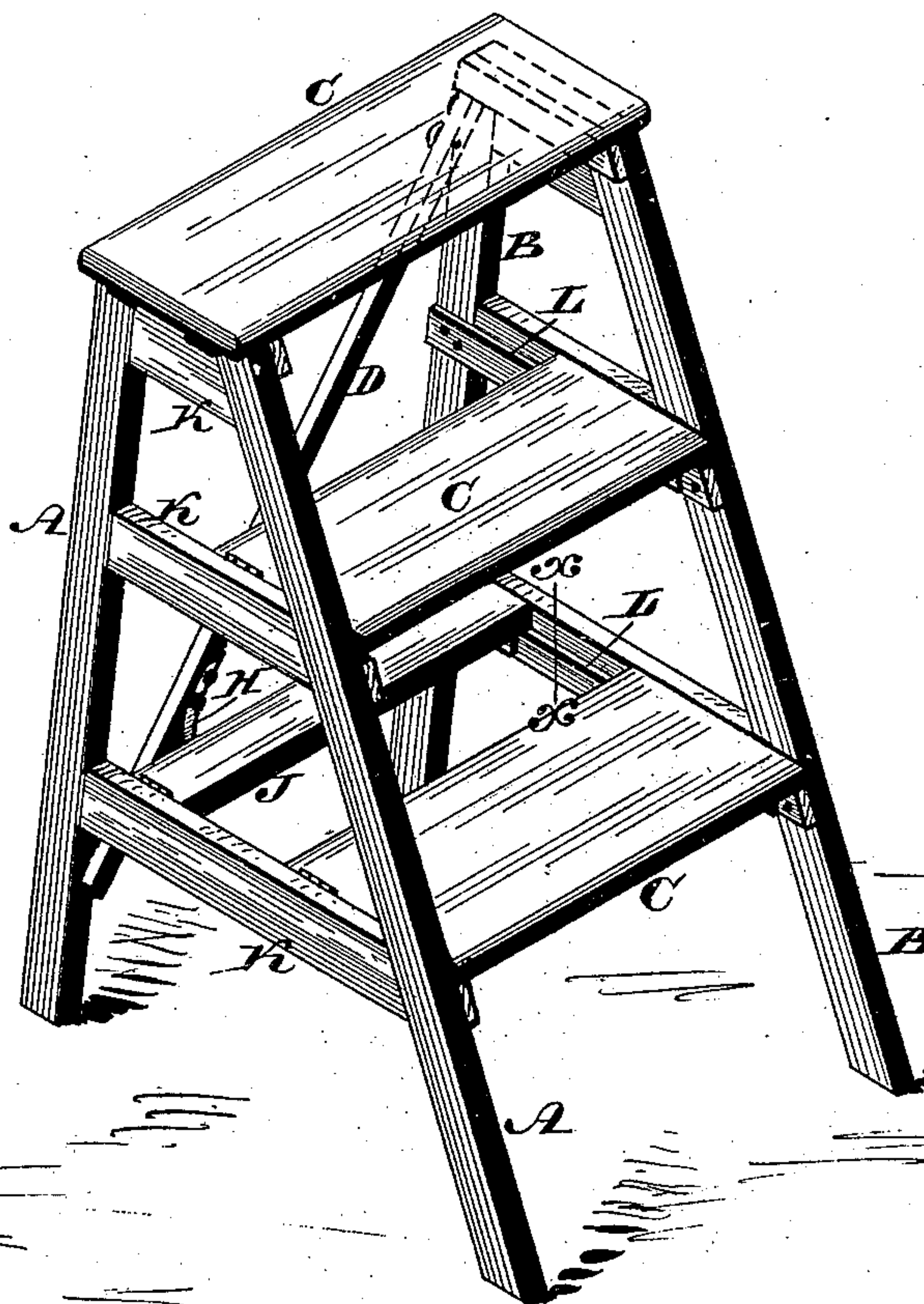


Fig. 3.

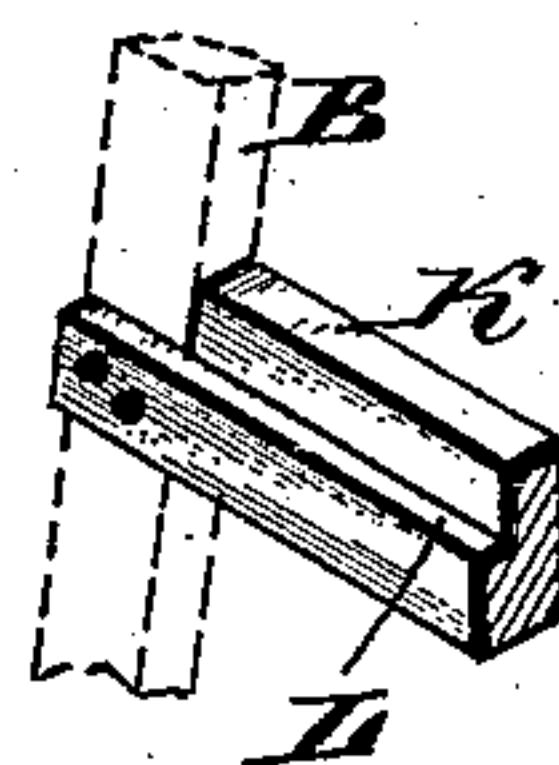


Fig. 2.

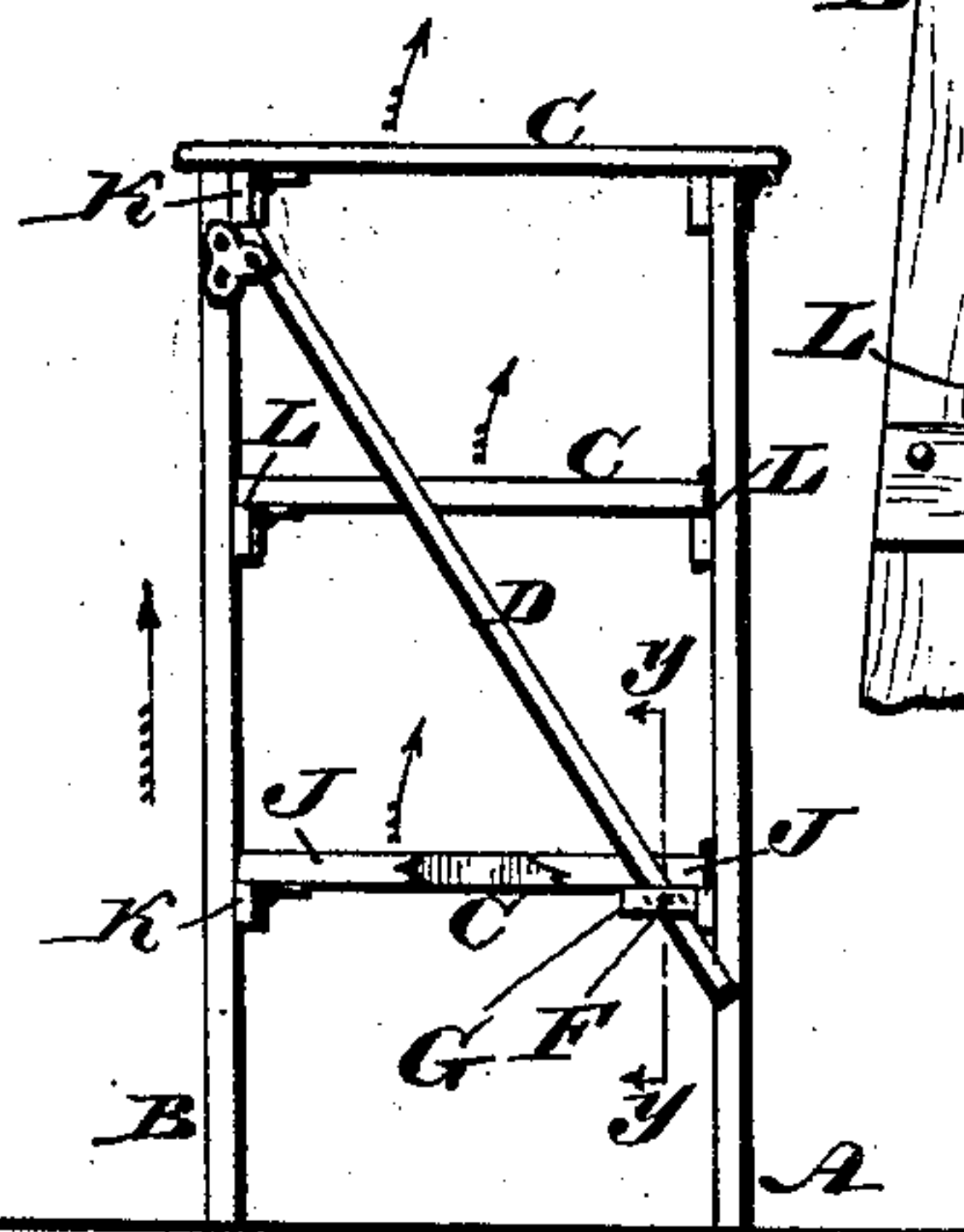
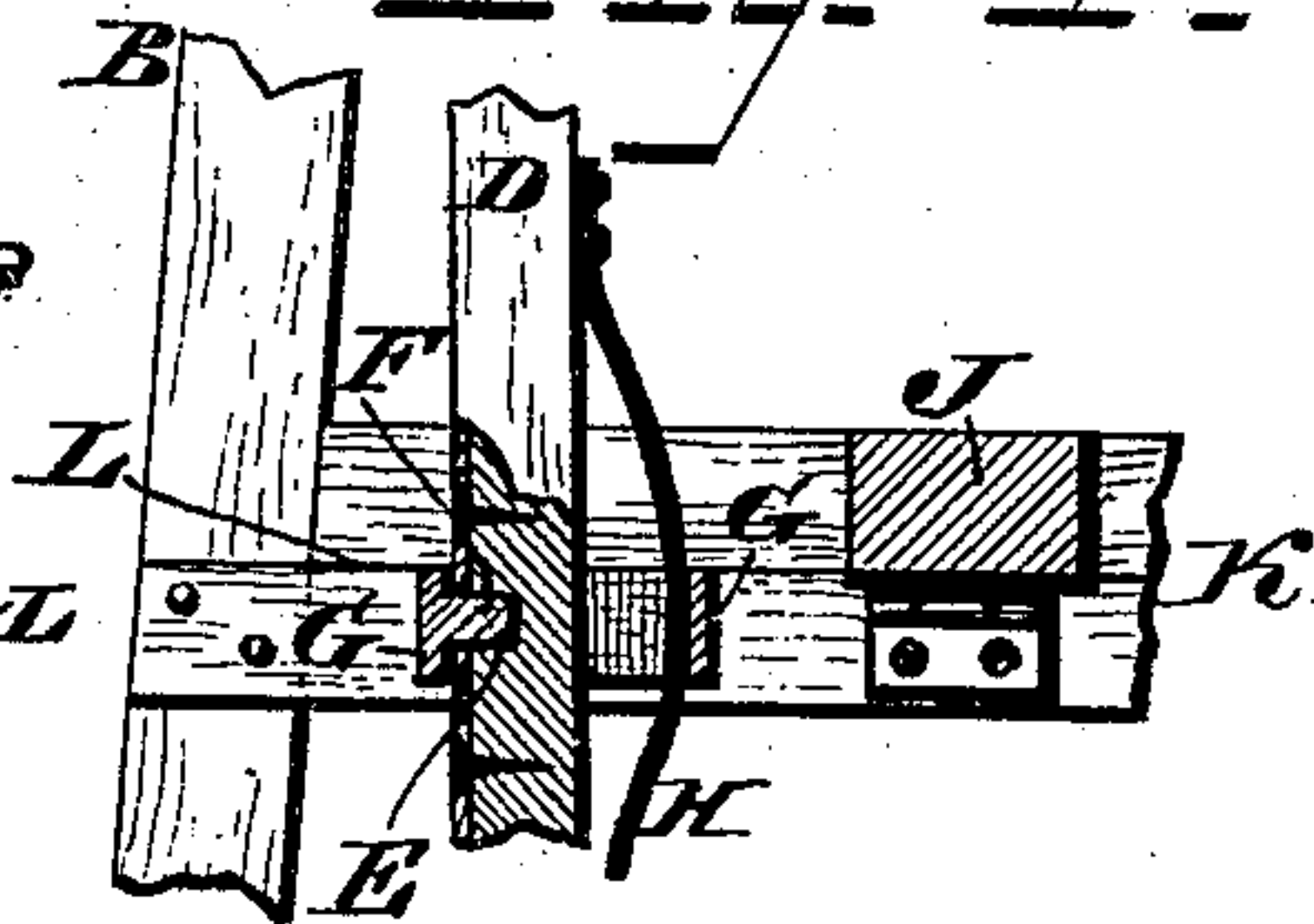


Fig. 4.



WITNESSES:

L. Douville,
W. C. Wiedersheim.

INVENTOR

Nehemiah Goldberg
BY John A. Wiedersheim,
ATTORNEY.

UNITED STATES PATENT OFFICE.

NEHEMIAH GOLDBERG, OF PHILADELPHIA, PENNSYLVANIA.

FOLDING STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 444,276, dated January 6, 1891.

Application filed September 29, 1890. Serial No. 366,450. (No model.)

To all whom it may concern:

Be it known that I, NEHEMIAH GOLDBERG, 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 folding step-ladder having an automating locking device.

Figure 1 represents a perspective view of a folding step-ladder embodying my invention. Fig. 2 represents a rear view thereof on a reduced scale. Fig. 3 represents a sectional view of a detached portion in perspective on line *x x*, Fig. 1. Fig. 4 represents a partial side elevation and partial vertical section of a detached portion on an enlarged scale on line *y y*, Fig. 2.

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

Referring to the drawings, A and B designate legs, and C designates the steps of a folding step-ladder, said steps being hinged to said legs. The hinges of the lower and central steps are respectively on the upper and lower sides of the ends of the same. The hinges of the top step are on the under side of the end of the same, one of the hinges being on the outside of the legs A. By this disposition of the hinges, as aforesaid, provision is made for changing the steps from horizontal to vertical section and adapting the legs thereof for the purposes of folding and unfolding the ladder.

D designates a brace, which is hinged to the top of one of the legs and extends diagonally toward the bottom of the other leg, the lower end of said brace having an opening E to receive a pin F near the leg A, said lower end of the brace D passing through a keeper G, which is secured to a proper part of the leg A, it being noticed that the keeper is of such width that the brace D is permitted to have a lateral play therein. Secured to the brace is a spring H, which bears against the inner face of the keeper, so as to force the brace in a direction toward the pin F, it being noticed that said pin is secured to the keeper and projects therefrom from the side opposite to the spring H.

J designates an auxiliary brace, which is hinged to the cross-pieces of the legs B and adapted to rest on the shoulders of said cross-pieces.

The operation is as follows: When the ladder is in the position shown in Fig. 1, the legs and steps are firmly retained in position, owing to the locking action of the braces D J, the brace D being in engagement with the pin or stud F and held thus owing to the pressure exerted by the spring H. When it is desired to fold the step-ladder, the brace D is pressed in a direction toward the spring H, whereby the opening E clears the pin F, thereby allowing the brace J and the leg B to be raised and the steps placed in vertical position and being folded against the leg A, the ladder thus being in compact condition for transportation, handling, storage, &c.

It is evident that the ladder may be unfolded or restored to its operative condition by moving the leg B, and consequently the step C, the brace D moving in such manner as to bring its opening E in line to register with the pin F when the spring H presses the brace in a direction toward said pin and the latter enters the opening E and interlocks the brace with the respective part of the latter, it being noticed that the locking action is automatic. The brace J is at the same time lowered, and thus the parts are held in a firm and reliable manner.

It is evident that any other spring, bolt, latch, or fastening which is automatic in its engaging action may be substituted for the pin F and opening E.

Each cross-piece K of the legs is formed with a shoulder L, which, as will be seen in Fig. 3, consists of a piece of wood, which is cut away to form said shoulder, leaving the cross-piece integral, avoiding joints in the formation of said shouldered cross-piece, as heretofore practiced.

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

1. A folding step-ladder consisting of legs and steps hinged thereto, and a diagonally-arranged brace hinged at one end and having an automatically-acting locking device at the opposite end, substantially as described.

2. In a folding step-ladder, a pin connected

with the same, a brace having an opening to receive said pin, and a spring for automatically causing the engagement of said brace and pin and the retention of said brace in its
5 locking position, substantially as described.

3. A folding step-ladder having a brace, a keeper which receives said brace and permits lateral play of the same therein, and means connected with said keeper, whereby
10 the brace automatically engages with the pin and is retained in contact with the same, substantially as described.

4. A folding step-ladder having legs with steps hinged thereto, cross-bars which support said steps, having shoulders formed therein, a brace J, and a diagonal brace hinged at one end and having an automatically-locking device in connection therewith, substantially
15 as described.

NEHEMIAH GOLDBERG.

Witnesses:

JOHN A. WIEDERSHEIM,
L. JENNINGS.