

No. 622,847.

Patented Apr. 11, 1899.

T. N. GARDER.
LADDER.

(Application filed Feb. 3, 1899.)

(No Model.)

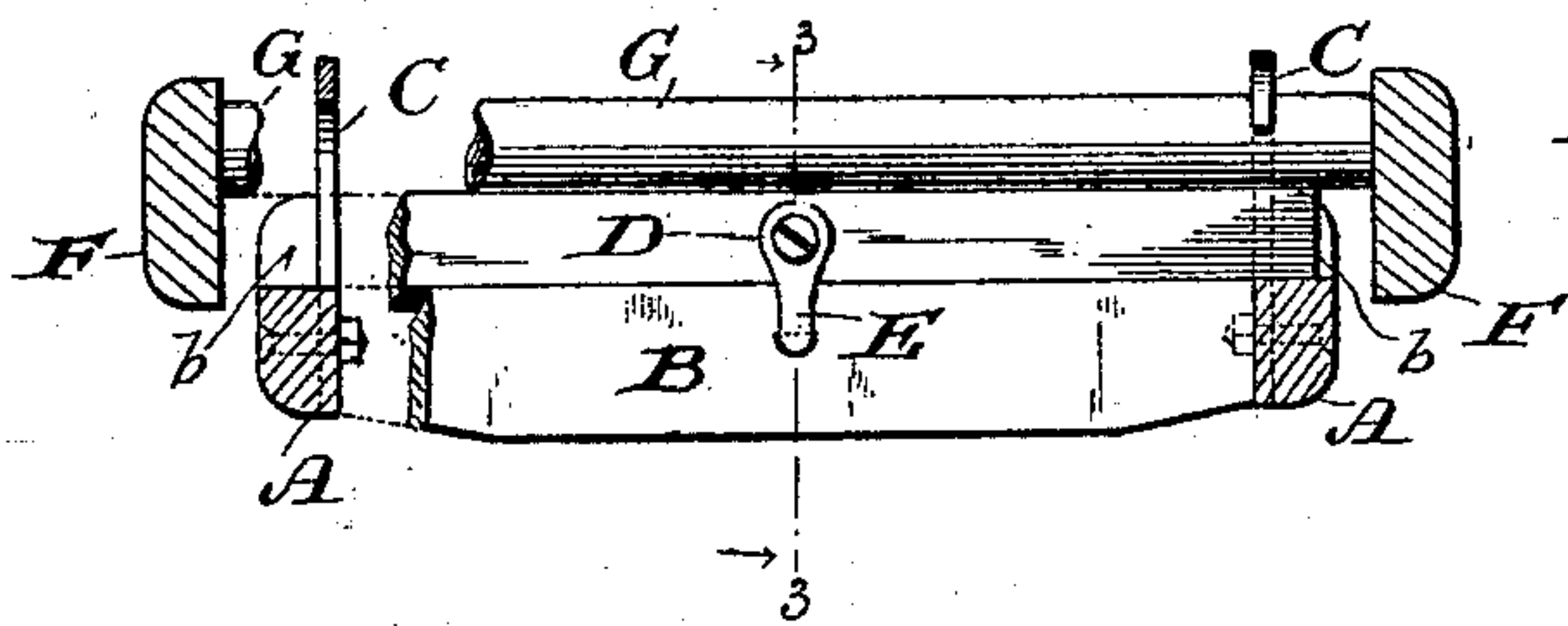


Fig. 4.

Fig. 3.

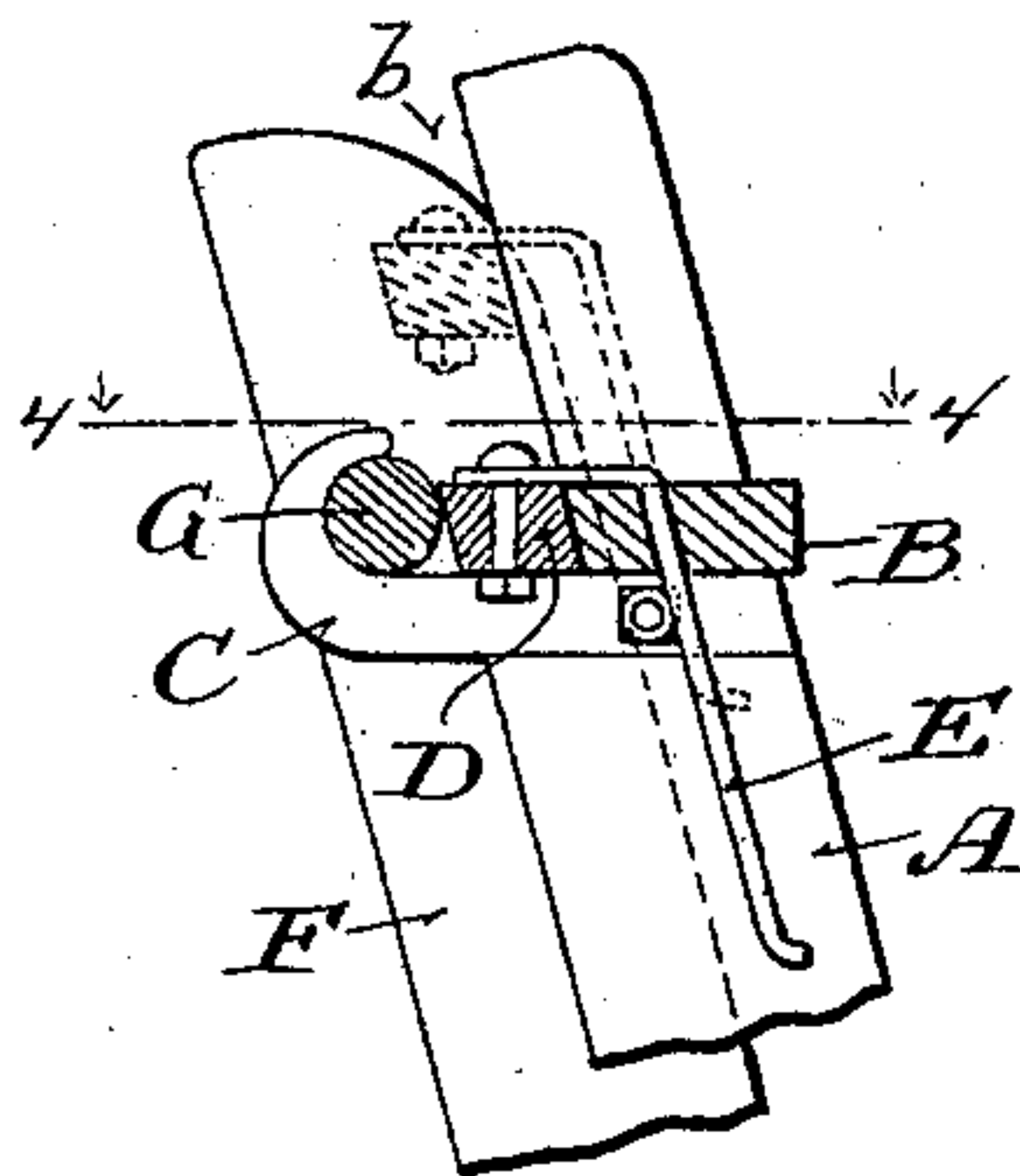


Fig. 1.

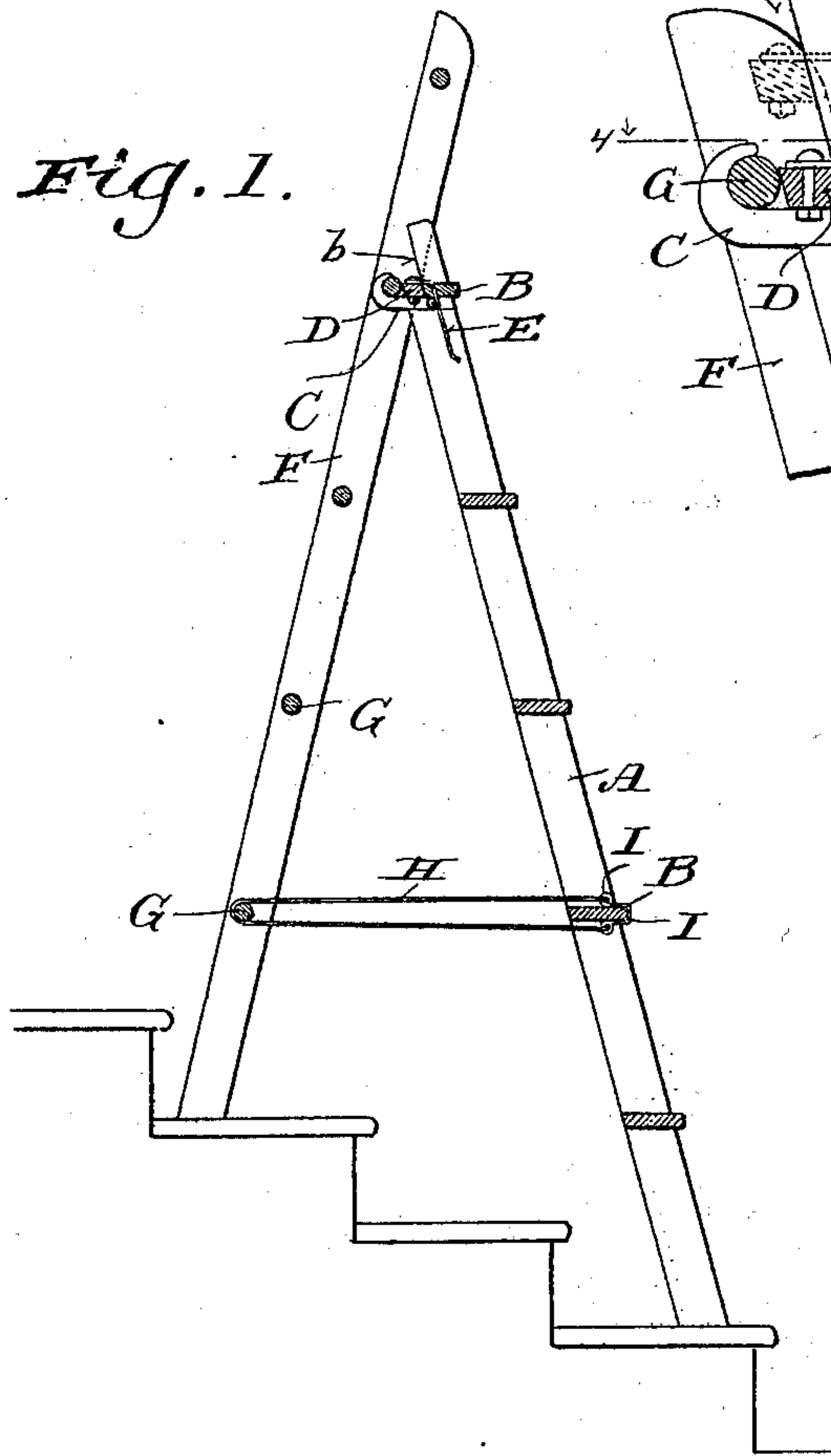


Fig. 2.

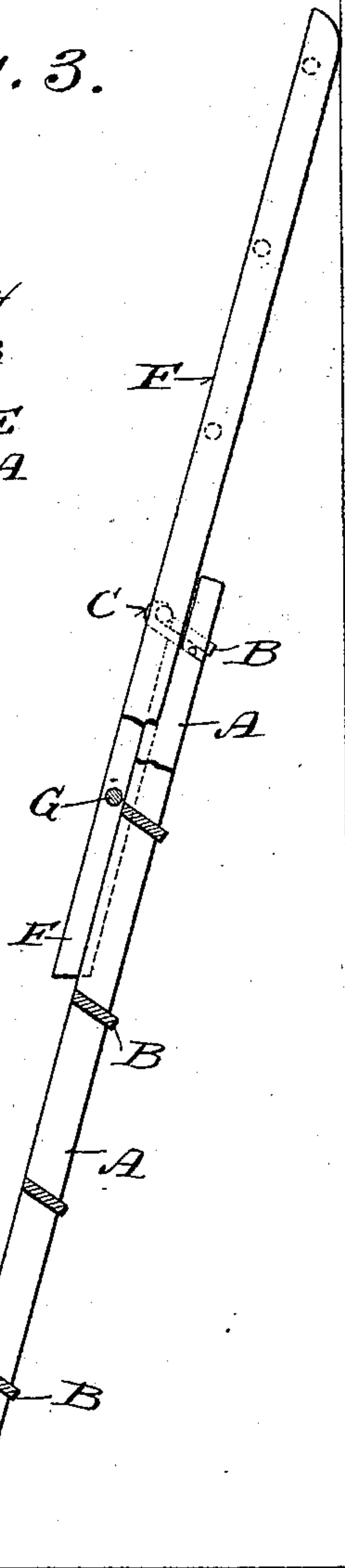
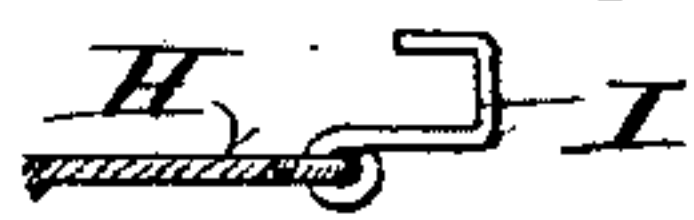


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

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LADDER.

SPECIFICATION forming part of Letters Patent No. 622,847, dated April 11, 1899.

Application filed February 3, 1899. Serial No. 704,378. (No model.)

To all whom it may concern:

Be it known that I, TORVAL N. GARDER, a citizen of the United States, and a resident of Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Ladders; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple economical extension-ladder convertible into an ordinary step-ladder or a stairway step-ladder. Therefore it consists in certain peculiarities of construction and combination of parts hereinafter specified with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents the ladder in sectional elevation set up on a stairway; Fig. 2, a side elevation of said ladder having one of its sections extended on the other; Fig. 3, a detail sectional view indicated by line 3 3 in the succeeding figure to illustrate the coupling of the ladder-sections; Fig. 4, another detail sectional view indicated by line 4 4 in the preceding figure, and Fig. 5 a detail view of a portion of a hook-cord that may be utilized to limit spread of the aforesaid structure set up in step-ladder form.

Referring by letter to the drawings, A indicates each of the sides of one section of my ladder, and B each of a series of steps connecting said sides. The upper ends of the sides A are notched, as shown at *b*, and the upper step is of proportionately less width than the others, so as not to project beyond the side notches. Bolted or otherwise made fast in the sides A, flush with their inner faces, immediately under the upper step, are the shanks of hooks C, and these shanks support a bar D, provided with an angular center tongue E, engaging a guide-slot in said upper step. The other section of my ladder consists of sides F and a series of rungs G, connecting said sides. The bar D is lifted away from the shanks of the hooks C far enough to permit of these hooks being engaged by one of the aforesaid rungs, and said bar being restored to normal position the engagement of said rung and hooks is maintained.

From the foregoing it will be readily under-

stood that one ladder-section may be extended on the other longitudinally of the same, as shown in Fig. 2, or if the upper-rung of one section be in engagement with the hooks of the other section an ordinary step-ladder is the result. When the rung-section of the ladder is extended on the step-section of said ladder and the two sections spread apart, a stairway-ladder is the result, as shown in Fig 1.

To limit spread of either form of step-ladder, I may utilize a cord H, provided with end hooks I, this cord being passed around a rung of one ladder-section and having its hooks engaged with the front edge of a step in the other ladder-section. However, various other means may be employed for the same purpose, and either section of the ladder may be utilized independent of the other section.

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

1. A ladder comprising a step-section provided with rigid hooks, a rung-section having one rung thereof in engagement with the hooks of the former section, and a bar normally at rest on the hook-shanks between said rung and the upper step of the ladder.

2. A ladder comprising a step-section provided with rigid hooks, a rung-section having one rung thereof in engagement with the hooks of the former section, a bar normally at rest on the hook-shanks between said rung and upper step of the ladder, and an angular tongue on the bar engaging a guide-slot in said step.

3. A ladder comprising a step-section provided with rigid hooks, a rung-section having one rung thereof in engagement with the hooks of the former section, a bar normally at rest on the hook-shanks between said rung and the upper step of the ladder, and means for limiting spread of said ladder.

In testimony that I claim the foregoing I have hereunto set my hand, at Marinette, in the county of Marinette and State of Wisconsin, in the presence of two witnesses.

TORVAL N. GARDER.

Witnesses:

C. J. JOHNSON,
N. J. LUELFWHU.