

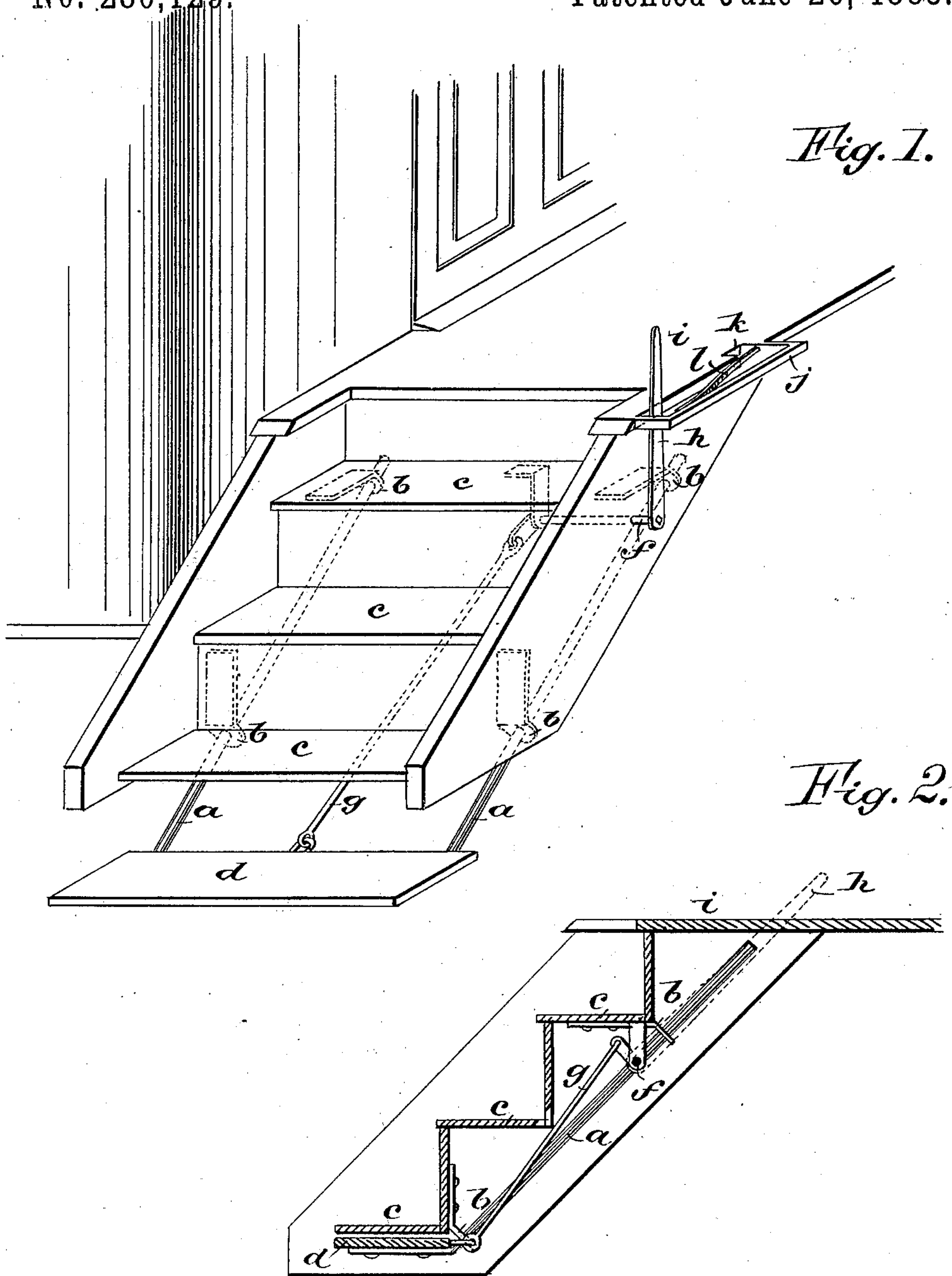
(No Model.)

A. CAMERON & C. E. RUSSELL.

CAR STEP.

No. 280,129.

Patented June 26, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ARTHUR CAMERON, OF KALAMAZOO, AND CHARLES E. RUSSELL, OF GRAND RAPIDS, MICHIGAN.

CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 280,129, dated June 26, 1883.

Application filed April 16, 1883. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR CAMERON, of Kalamazoo, in the county of Kalamazoo and State of Michigan, and CHARLES E. RUSSELL, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and Improved Car-Step, of which the following is a full, clear, and exact description.

Our invention relates to that class of extension devices for car-steps whereby a step can be lowered quickly to afford easier passage from the ground to the cars and from the cars to the ground than is possible with the ordinary steps, and whereby said step can be as quickly raised again, the apparatus being simple, substantial, and in ready command of a person, either on the platform or on the ground; and it consists of the combination and construction of parts, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a perspective view of a portion of the end of a car and platform with our improved extension-step applied to it. Fig. 2 is a sectional elevation of the step and platform.

We arrange two strong rods or bars, *a*, in supporting-brackets *b* under the ordinary steps, *c*, and attached to them for support, so that said rods or bars *a* may slide up and down along the inclined plane of the steps; and on the lower ends of these rods, which ends we bend up parallel with the other steps, we attach an additional step, *d*, so that when the bars are shifted up, said step will rise up under the lower step, *c*, out of the reach of obstructions, about the same as the ordinary lower permanent step, as in Fig. 2; and, when shifted down, said step *d* will form a continuation of the others, lessening the distance between them and the ground by one step, which is about what is required for convenience in mounting the permanent steps and dismounting from them.

If desired, the range of the sliding rods may be longer to let the extension-step down more than the height of the ordinary steps. To

shift said step up and down, we have provided the crank-shaft *f*, connecting-rod *g*, and the lever *h*, the shaft and the connecting-rod being arranged under the permanent steps, and suitably supported and connected with the extension-step, and the lever being connected to one end of the shaft which projects from under the steps at one side, and extending up along the end of the platform *i*, within a guard, *j*, along which it swings toward the center of the car, for raising the step to a notch, *k*, into which it is thrust and held by a spring, *l*, to hold the step up. The lever is within reach of the attendant, whether on the platform or on the ground, so as to be shifted out of the notch against the spring and swing forward, when the step is to be let down, and rest against the front end of the guard.

The lever may be arranged alongside of the step-rail and in a guard attached thereto, to be worked from on the steps or on the ground; and it may be otherwise arranged, if preferred.

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

In a car-step, the combination, with the permanent steps *c*, of the extension-step *d*, the bars or rods *a*, with their lower ends, which are secured to the under side of the extension-step, projecting from the rear edge of said step, and supported in brackets *b*, depending from the under side of the permanent steps, the crank-shaft *f*, with its inner end connected by a rod, *g*, to the extension-step, said rod being arranged under the steps, and the hand-lever *h*, adapted to be operated from the car-platform or from the ground and retained in position, as shown and described.

ARTHUR CAMERON.

CHAS. ELLSWORTH RUSSELL.

Witnesses to the signature of Arthur Cameron:

SAMUEL W. OXENFORD,

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