(No Model.) 2 Sheets—Sheet 1.

A. H. NICHOLAS.

FOLDING STEP.

No. 383,902. Patented June 5, 1888.

Fig. 1.

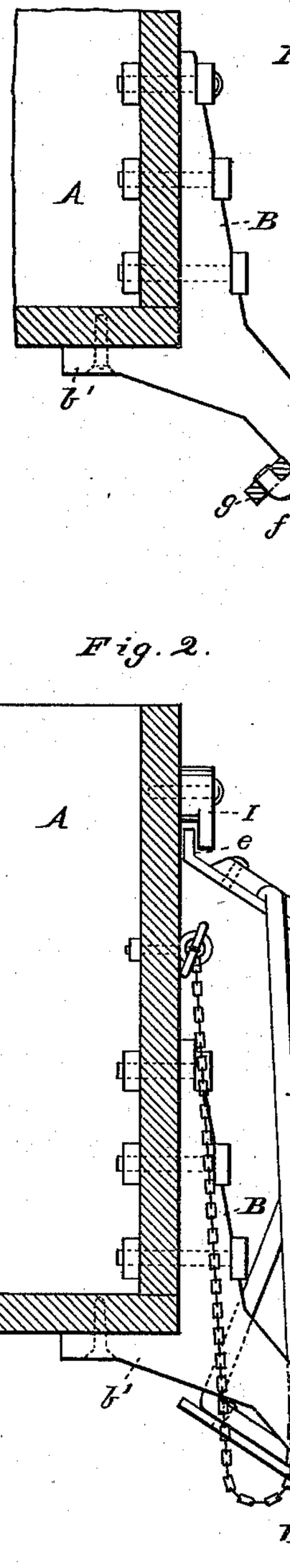

Fig. 2.

Fig. 5.

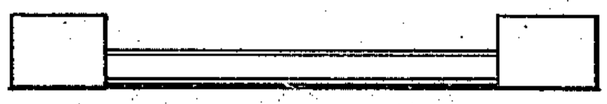

Fig. 3.

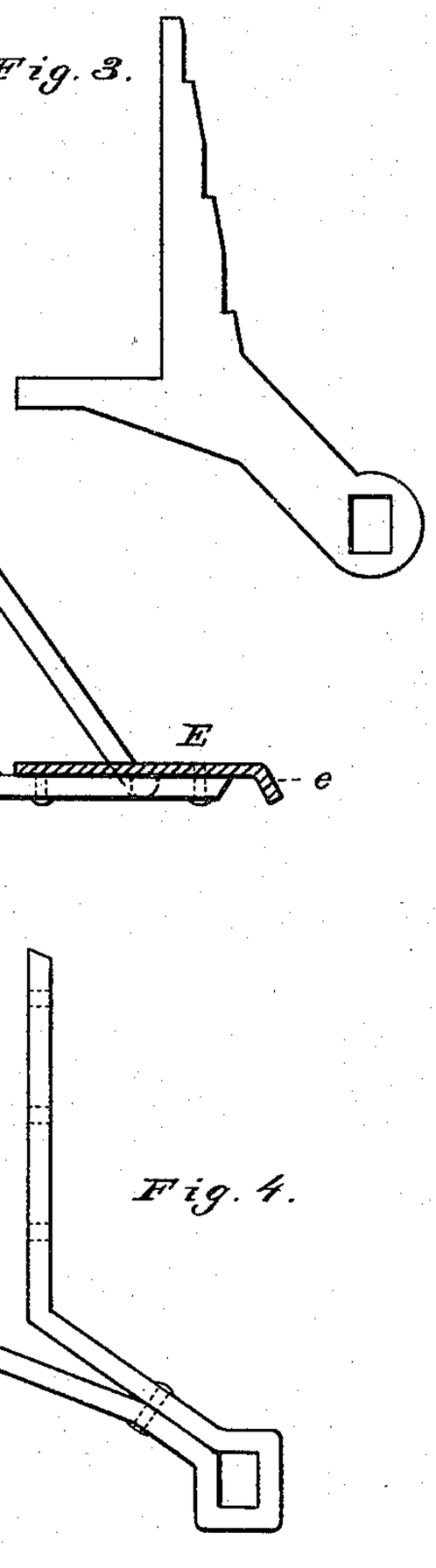

Fig. 4.

WITNESSES.

Villette Anderson.

H. B. Harris.

INVENTOR.

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by E. W. Anderson.

Attorney.

(No Model.) 2 Sheets—Sheet 2.

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FOLDING STEP.

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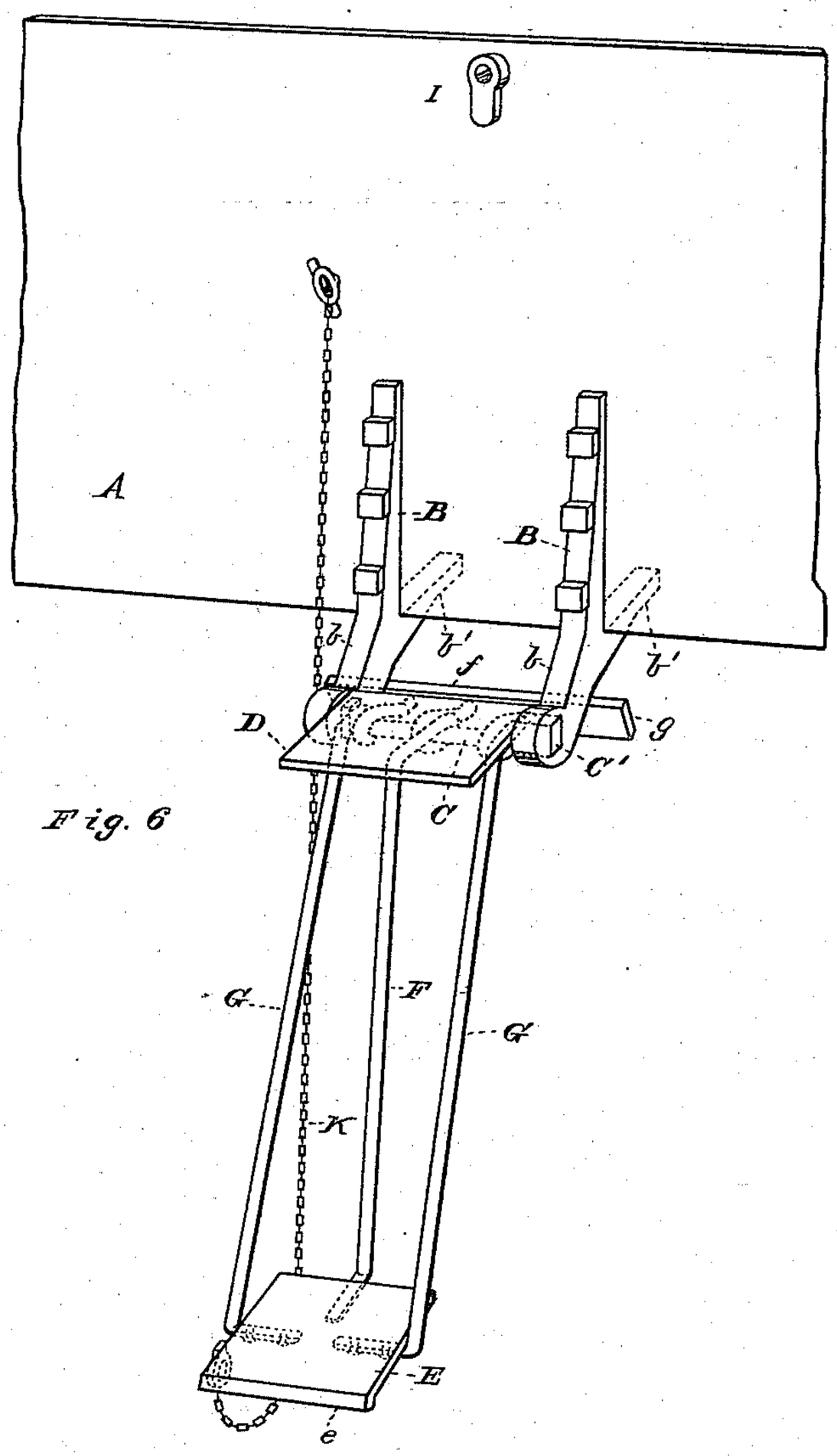

Fig. 6

WITNESSES.

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UNITED STATES PATENT OFFICE.

ALEXANDER H. NICHOLAS, OF BRONSON, KANSAS.

FOLDING STEP.

SPECIFICATION forming part of Letters Patent No. 383,902, dated June 5, 1888.

Application filed September 14, 1887. Serial No. 249,670. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER H. NICHOLAS, a citizen of the United States, and a resident of Bronson, in the county of Bourbon and State of Kansas, have invented certain new and useful Improvements in Folding Steps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention and is a vertical section. Fig. 2 is a side view of the invention, the portion of the vehicle to which it is attached being in section. Figs. 3 and 5 are details. Fig. 4 is a modification of the bracket. Fig. 6 is a perspective view.

The invention, which refers to improvements on the devices shown in my patent granted August 23, 1887, No. 368,896, relates to folding steps for vehicles; and it consists in the construction and novel combination of parts hereinafter set forth.

Referring to the drawings, A designates a wagon-body, and B B are journal-brackets secured thereto, the said brackets being provided with arms that stand up on the side of the wagon and are screwed thereto, and arms *b'*, that extend under the floor of the wagon, and which are also secured in place by screws, thus making a very strong union with the vehicle-body. The journal-arms *b* of said brackets are provided with bearings C' in their ends for the squared ends *c* of the shaft C, which squared portions extend inward a short distance from said bearings. The rod C has thus no rotation.

D and E are the upper and lower steps, respectively, and are connected by the side rods, F F. The said rods have their lower ends bent at right angles under the side edges of the lower step, E, and are riveted or otherwise secured thereto. The upper ends of the rods F are bent around the shaft C and are continued beyond to aid in forming the brace-frame *f*.

G is a rod, having its lower end secured centrally to the under surface of the lower step, E, lying against the same from front to rear between the rods F F, and rising from the rear edge of said step to the front edge of the upper step, under which it runs centrally to the shaft C. It then bends around said shaft and forms the central rod of the brace-frame *f*.

g is a transverse bar, to which the upper ends of the rods F F and G are secured firmly, so that when the steps are turned down the said bar will rest against the under surface of the arms *b b* of the journal-brackets B and be out of the way of the brake mechanism of the vehicle, with which it might interfere if it reached up under the wagon-body.

When the steps are turned down, the inner edge of the upper step rests against the squared ends *c* of the shaft C, thus aiding in the proper support of the step-frame composed of the rods F and G. The lower step, E, has its front edge, *e*, turned downward to form a flange, which, when the device is turned up, can be engaged by the pivoted button I, attached to the side of the vehicle.

K is a lifting-chain, secured by its ends to a suitable point on the wagon and to the device. By means of this chain a person in the vehicle can easily raise and lower the device.

The device as a whole is fully shown, described, and claimed in my patent referred to, the only points of difference being the brackets with arms extending under the floor of the vehicle, the brace-frame made shorter, with the transverse bar made a part thereof, which bar rests against the outwardly-extending arms of the bearing-brackets to prevent interference with the brake mechanism, and the shaft C, with squared ends, which afford supports to the edge of the upper step. These points are not shown in the patent referred to, and are the only points upon which claims can be based in the present application.

By shortening the rods F and G above the pivotal point the said rods are less liable to bend under a heavy weight.

The upper step, D, has its inner corners riveted to the side rods, F, and the said rods above the pivotal point are bent slightly outward from the bearing-brackets to afford room for riveting.

Having described my invention, I claim—

1. The folding steps for a vehicle, constructed substantially as described and provided with the shaft C, having squared ends

that rest within similar bearings in the outwardly-extending arms of the bearing-brackets, the said squared portions of the shaft C extending inwardly from their bearings sufficiently to form supports for the inner edge of the upper step, D, substantially as specified.

2. The folding steps for a vehicle, constructed substantially as described and provided with bearing-brackets to support the shaft C, which brackets have vertically-extending arms and horizontally-extending arms, respectively secured to the side and floor of the vehicle, as specified.

3. The folding steps for a vehicle, constructed substantially as described and provided with the brace-frame *f*, composed of the upper ends of the rods F F and G and the transverse bar *g*, and of suitable length for said bar to rest against the under surfaces of the outwardly-extending arms of the bearing-brackets when the steps are turned down, as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ALEX. H. NICHOLAS.

Witnesses:

J. W. HOLEMAN,

WM. LEONARD.