

(No Model.)

M. E. COMPANY.  
FOLDING STEP FOR CARS.

No. 507,415.

Patented Oct. 24, 1893.

Fig. 1.

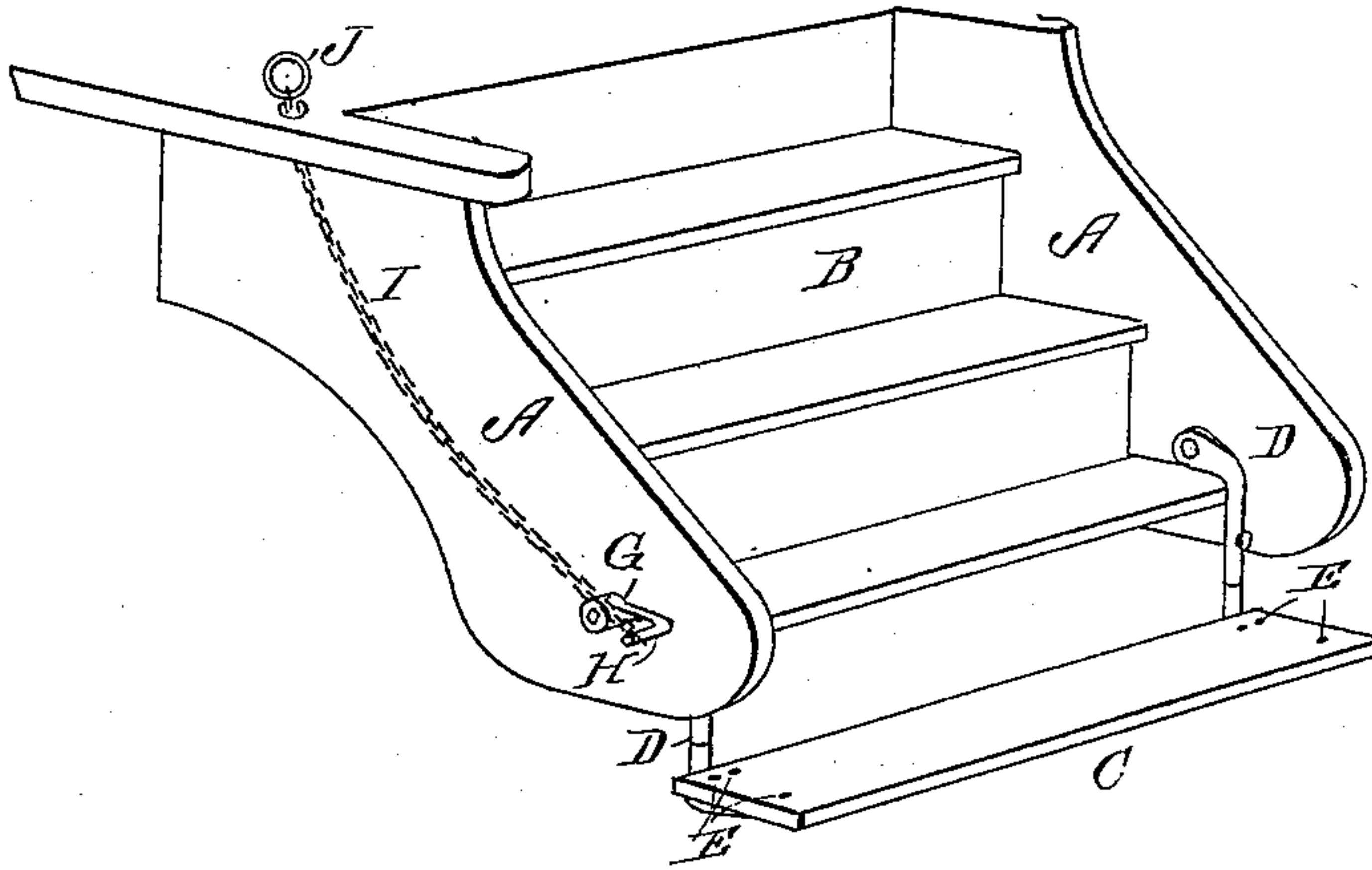


Fig. 2.

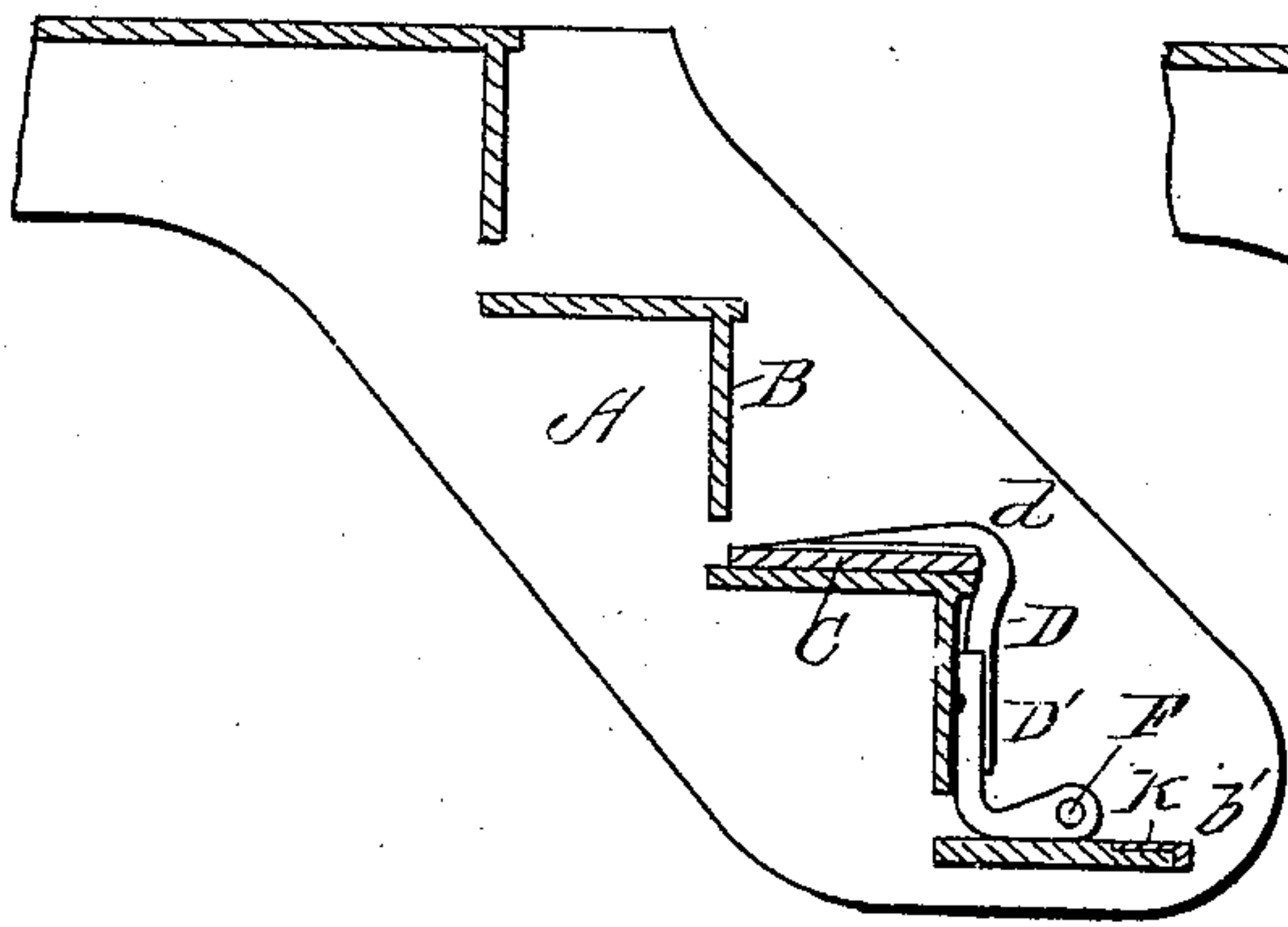


Fig. 3.

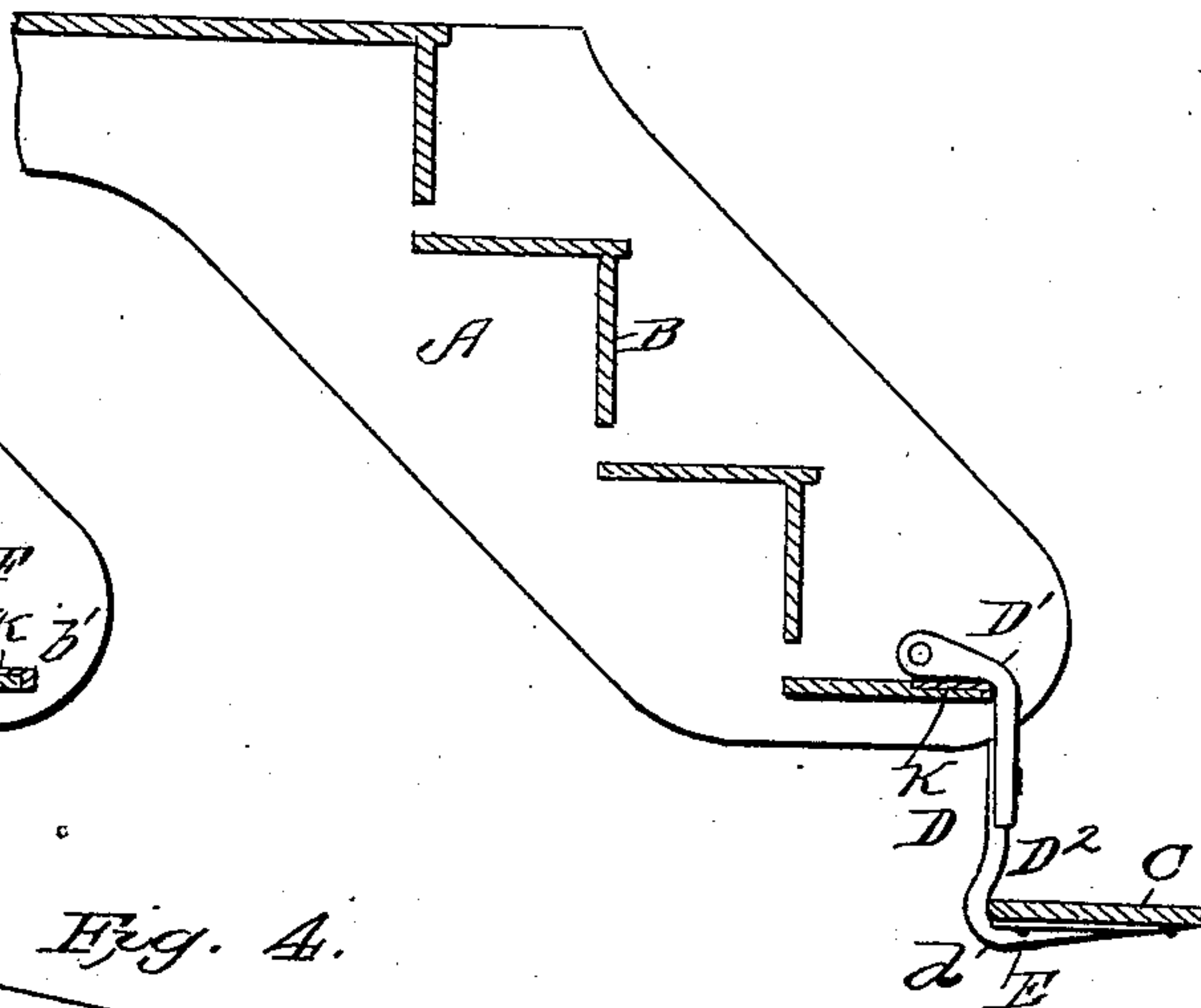
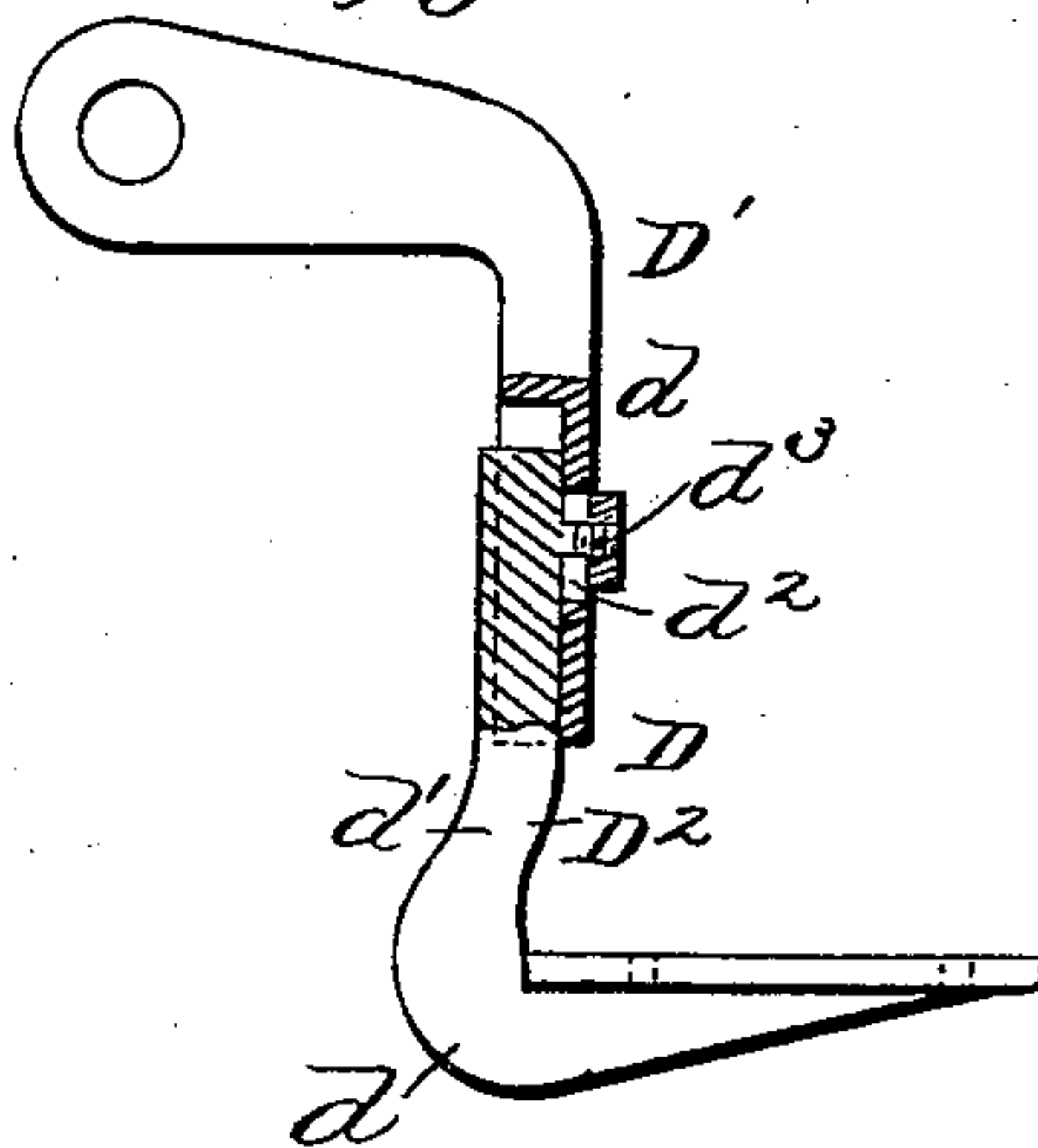


Fig. 4.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## FOLDING STEP FOR CARS.

SPECIFICATION forming part of Letters Patent No. 507,415, dated October 24, 1893.

Application filed December 1, 1892. Serial No. 453,767. (No model.)

*To all whom it may concern:*

Be it known that I, MILTON E. CAMPANY, a citizen of the United States, residing at Hamilton, in the county of Allegan and State of Michigan, have invented certain new and useful Improvements in Folding Car-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 the letters of reference marked thereon, which form a part of this specification.

My invention consists in a novel folding car step, which combines great simplicity of construction with effectiveness and convenience in use; and the invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view illustrating my invention, showing the step lowered or turned down into its operative position. Fig. 2 is a vertical sectional view taken with the step raised or folded. Fig. 3 is a similar view showing the step lowered. Fig. 4 is a detail view.

The same letters of reference indicate corresponding parts in the several figures.

Referring to the several parts by letter, A, A, indicate the side-pieces of the steps, and B the ordinary rigid or fixed steps.

C indicates my folding step, which is mounted on the lower ends of two castings D, D. These castings are formed each with a central, vertical, stem D, an upper end-part D' which extends in at about right-angles to the stem, and the lower part D<sup>2</sup>, of the casting, extends out at right-angles to the stem to receive the flat step C. The lower corners or curved parts *d* of the castings are thickened, made slightly heavier, to give them increased strength at that point; and the flat step C is secured at its ends upon the lower parts D<sup>2</sup> of the castings by bolts E, E, E. The castings are arranged close to the inner sides of the side-pieces A, and their upper ends D' are of such length that they extend to the middle of the lower fixed step, and they are formed at that point with outwardly-extending pintles, F, which extend through holes, G, G, formed

in the side-pieces as shown, and thus support the castings in position. The outer end of one of these pintles F is squared, and extends out through the side-piece A sufficiently far to receive a small crank, H, which is secured upon it. A chain, I, is secured at its lower end to the outer end of the crank-handle H, and its upper end passes up through an opening or bearing in the platform, where a ring, J, is secured to it. By this arrangement the step can be operated from the platform, by merely pulling up the ring J, and with it the chain, thus swinging the crank handle H around to either raise or lower the step C.

It will be seen that when folded up the flat step C will, owing to the shape and pivotal point of the castings D, D, rest flat upon the second fixed step B, (see Fig. 2) where the flat bottom of the step will be trod upon in walking up and down the step; the castings being completely out of the way against the inner sides of the side-pieces A, A.

When wanted for use the step is swung down as shown in Figs. 1 and 3, where it forms a practical continuation of the fixed steps, being instantly ready for use. When the step is thus swung down for use, the castings bear upon the lower rigid step B at *d'*, and thin metal plates, or bearing-pieces, K, are secured upon the step B at *b'*, to receive the castings and prevent wear of the wooden step.

Any suitable connecting device may be used to operate the step from the platform in place of the chain I and ring J.

In order to make the length of the stems D of the castings adjustable, which is necessary because while the steps of a car are all of the same width their height will vary to the extent of an inch, from the lowest to the highest, the said stems are preferably each formed in two pieces, *d*, *d'*, one of which is formed with a slot, *d*<sup>2</sup>, about an inch in length, while the other is formed with a pin or projection, *d*<sup>3</sup>, passing through this slot; and when the length of the stem D has been adjusted binding-nuts can be tightened upon the threaded ends of the projections *d*<sup>3</sup>; or the said projections may be left plain and turned over or beaten down to enlarge their ends and thus bind them at the point to which they are moved; or any other suitable means may be



employed to secure the two pieces of the casting-stems at the point to which they are adjusted, as I do not confine myself to this exact construction for adjusting the length of the said stems.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that my folding car step is very simple, strong, and durable in its construction, and exceedingly convenient and efficient in its operation.

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

1. A folding car step comprising the castings  $D'$ ,  $D$ ,  $D^2$ , having a flat step secured on their lower horizontal ends, and having at their upper ends the pintles  $F$  extending outwardly through openings in the side-pieces  $A$ ; substantially as set forth.

2. A folding car step consisting of the castings  $D'$ ,  $D$ ,  $D^2$ , pivotally secured at their upper ends immediately above, and at the cen-

tral line, of the lowermost fixed step, the stems  $D$  being formed in two pieces adjustably secured together and the flat step  $C$  secured upon the lower parts  $D^2$  of said castings; substantially as set forth.

3. In a folding car step, the combination of the castings  $D'$ ,  $D$ ,  $D^2$ , arranged as specified and having the pintles  $F$  at their upper ends extending through openings in the side-pieces  $A$ , the flat step  $C$  secured on the lower parts  $D^2$  of said castings, a crank-handle,  $H$ , secured on the outer end of one of the casting-pintles, and the operating chain connected to the outer end of said crank-handle and having the ring,  $J$ , attached to its upper end, whereby the step can be operated from the platform; substantially as set forth.

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

MILTON E. CAMPANY.

Witnesses:

H. A. SEARS,  
BEN SEARS.