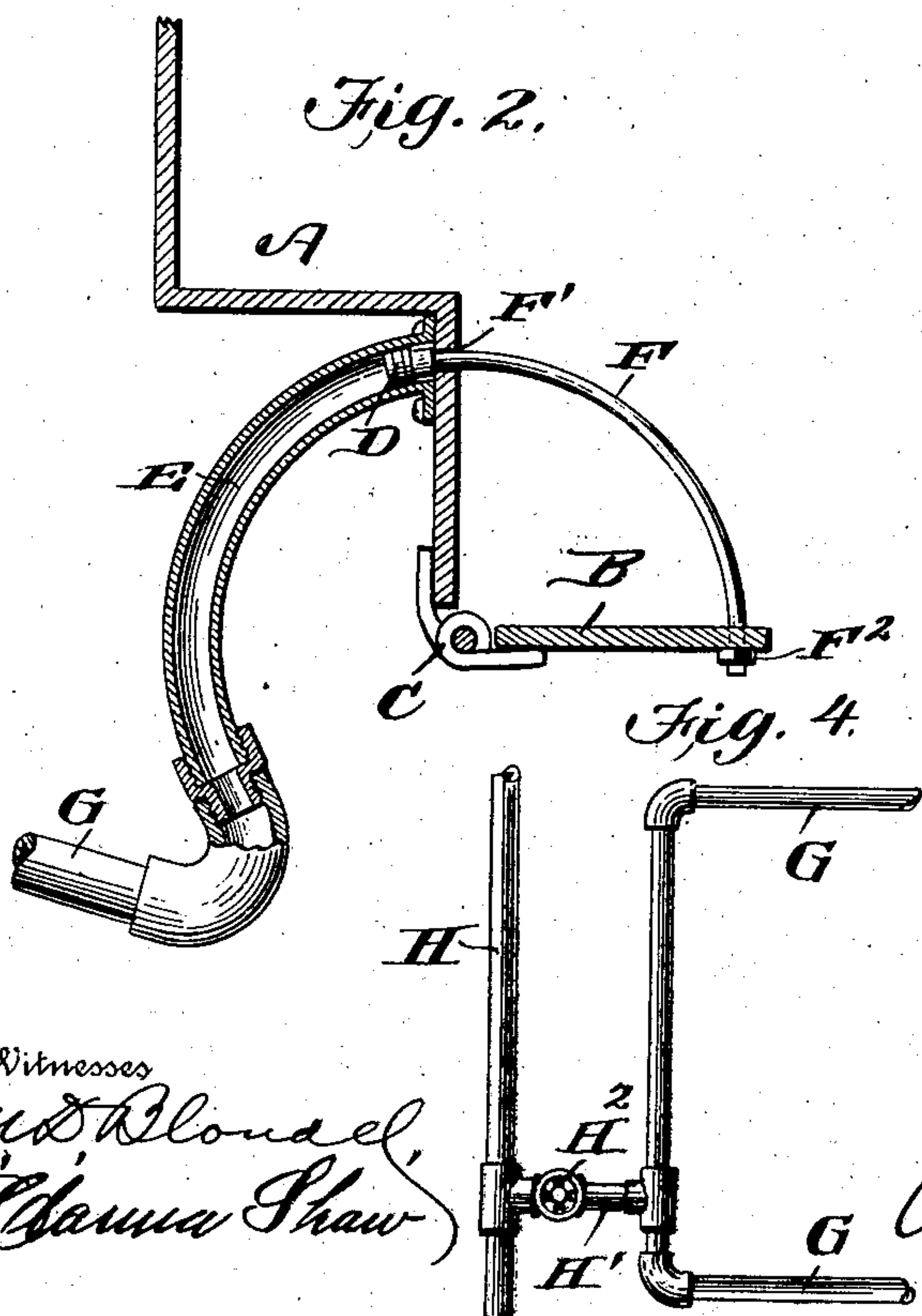
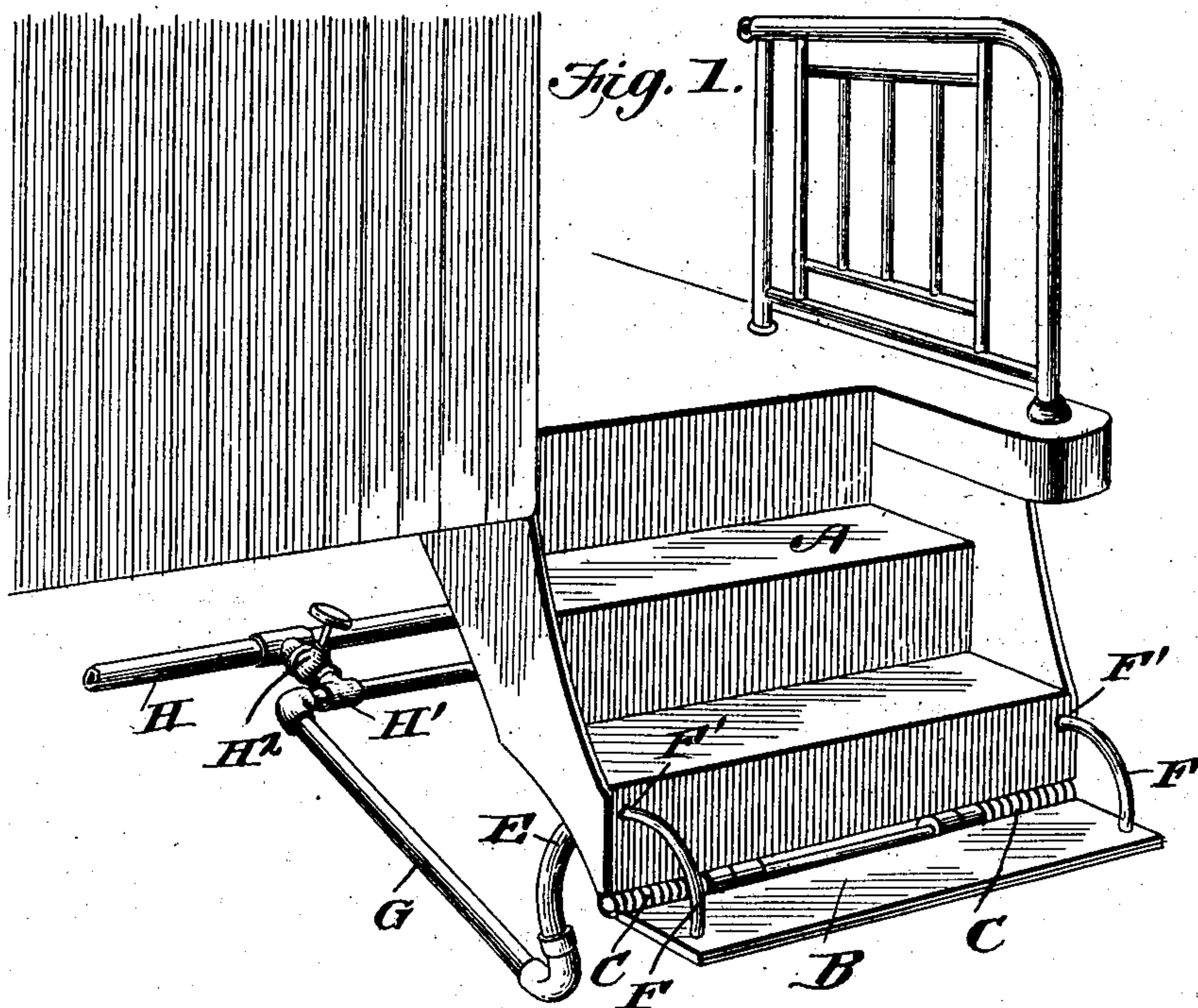


No. 741,486.

PATENTED OCT. 13, 1903.

A. P. GUNN.
FOLDING CAR STEP.
APPLICATION FILED MAR. 30, 1903.

NO MODEL.



Witnesses
M. D. Blouet,
Clara Shaw

Inventor
A. P. Gunn.

by
M. D. Brock
Attorneys

UNITED STATES PATENT OFFICE.

ALAN PERCY GUNN, OF BALTIMORE, MARYLAND.

FOLDING CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 741,486, dated October 13, 1903.

Application filed March 30, 1903. Serial No. 150,288. (No model.)

To all whom it may concern:

Be it known that I, ALAN PERCY GUNN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a new and useful Folding Car-Step, of which the following is a specification.

This invention relates generally to car-steps, and more particularly to an extension car-step, the object being to provide an additional step whereby ingress and egress from the car are facilitated, as it frequently happens that the car stops at a point where the ordinary step is a considerable distance above the ground, and if the car were ordinarily equipped with a low projecting step the bottom step would encounter various objects—such as switch-stands, station-platforms, and the like—and it is with the object of providing a step which can be brought into use when desired and folded when not in use.

With this object in view the invention consists, essentially, in hinging a supplemental step to the lower end of a series of steps, providing said step with a spring for normally closing said step, and also in providing steam or air operated pistons for the purpose of lowering the said step when desired.

The invention consists, also, in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view showing the practical application of my invention. Fig. 2 is a detail sectional view illustrating the supplemental step in a lowered position. Fig. 3 is a similar view showing the supplemental step in a raised or folded position, and Fig. 4 is a detail plan view showing the pipe connections.

Referring to the drawings, A indicates the ordinary steps connected to a platform of a steam or electric coach or car, and pivotally connected to the lower end of the series is a supplemental step B. Springs C are arranged in connection with the hinged or pivotal connection and are adapted to normally hold the supplemental step B raised or closed, as shown in Fig. 3. For the purpose of lowering and holding the supplemental step lowered I employ pistons D, which work in the curved tubes E, said pistons having the

curved rods F connected thereto passing through openings F' in the riser of the bottom step, the outer ends of these rods being rigidly secured to the outer ends of the supplemental step, as shown at F². Connected to the curved tubes E are the pipes G, which convey air or steam to the tubes E, which air or steam operating upon the pistons D will force the said pistons upwardly, projecting the piston-rods outwardly and downwardly, thereby lowering the supplemental step and holding it lowered so long as the air or steam pressure is maintained in the tubes. Air or steam is conveyed to the pipes G from the train-pipe H, and a suitable connection H', having a valve H², may be provided. When the car is moving, the step is held folded, as shown in Fig. 3; but when the car stops steam or air pressure is applied to the tube E, operating upon the pistons, which force the piston-rods outwardly and lower the supplemental step and hold it lowered until the pressure is relieved. The moment pressure is relieved the springs will return the step to its normal or folded position.

It will thus be seen that I provide an exceedingly cheap, simple, and efficient construction of supplemental car-step which will fully carry out all of the purposes hereinbefore referred to.

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

1. In combination with a folding car-step, curved tubes on the rear of said step, curved rods secured to the step and sliding in the tubes, pistons on the inner ends of said rods, means for admitting fluid under pressure to said tubes, and means for folding the step when such pressure is removed.

2. The combination with a series of steps, of a supplemental step hinged thereto, the springs for normally holding the supplemental step elevated, curved tubes connected to the lower portion of the series of steps, the pistons working in said tubes, piston-rods carried by the pistons, and connected to the outer ends of the supplemental step and pipes connected to the tubes for supplying fluid-pressure to the pistons, substantially as specified.

3. The combination with a series of steps,

of a riser depending from the bottom step, a supplemental step hinged to the lower end of said riser, springs for normally holding the said supplemental step folded against the riser, the curved tubes connected to the inner face of the riser, pipes attached to the inner ends of the tubes, pistons working in the tubes, piston-rods connected to the pistons, and passing through the riser and connected at their outer ends to the outer ends of the supplemental step, the pipes connected to the curved tubes being connected with the train-pipe, substantially as described.

ALAN PERCY GUNN.

Witnesses:

STEWART BROWN,
THOS. KELL BRADFORD.